June 1, 2017

Mr. Keith Stefanik
Central 70 Deputy Director of Project Delivery
Colorado Bridge Enterprise; High Performance Transportation Enterprise
200 S. Holly St.
Denver, CO 80222

Re: **Central 70 Project; Administrative and Technical Proposal Submission**

Mr. Stefanik:

Kiewit-Meridiam Partners is pleased to submit our Administrative and Technical Proposal to the Procuring Authorities. Our transmittal includes:

- One original and eight copies of Volume 1; and
- One original and eight copies of Volume 2; and
- One original and eight copies of Volume 3; and
- Eight digital copies of the full proposal; and
- Eight digital copies of the P6 Proposal Schedule; and
- Two physical copies of our Public Disclosure Technical Proposal
- One digital copy of our Public Disclosure Technical Proposal

A detailed list of our transmittal is attached. If there are any questions or comments regarding this submission, please feel free to contact me at (212) 798-8683 or via email at J.Dionisio@meridiam.com.

Sincerely
Kiewit Meridiam Partners

John Dionisio
Official Representative
Kiewit-Meridiam Partners

Central 70

ADMINISTRATIVE AND TECHNICAL PROPOSAL
KIEWIT-MERIDIAM PARTNERS

VOLUME NUMBER	BINDER NUMBER *1	APPENDIX	BOX	DESCRIPTION	NOTES
1	1 of 1	N/A	1 of 1	Administrative Submission	Includes USB drive with electronic copy of submission*2
2	1 of 13	N/A	1 of 3	Executive Summary & Parts 1 - 6	
	N/A	A	3 of 3	Draft Design Drawings: Roll Plot	Roll plots provided in 5" tubes
	2 of 13	A	2 of 3	Draft Design Drawings: Roadway Plans Typical Sections Pavement Details	
	3 of 13	A	2 of 3	Draft Design Drawings: Roadway Profiles	
	4 of 13	A	2 of 3	Draft Design Drawings: Drainage Plans Bridge Plans Wall Key Maps Cross-Sections	
	5 of 13	A	2 of 3	Draft Design Drawings: Urban Design Narrative Cover Plans	
	6 of 13	A	1 of 3	Draft Design Drawings: Remediation Activities Management Plan Design Approvals	
	7 of 13	B	1 of 3	Draft Project Management Plan	
	7 of 13	C	1 of 3	Draft Schedule Narrative	Includes USB drive with P6.xer copy of Proposal Schedule*3
	8 of 13	D	1 of 3	Draft Stage 1 Quality Management Plan	
	8 of 13	E	1 of 3	Draft Stage 2 Quality Management Plan	
	9 of 13	F	1 of 3	Draft Transportation Management Plan	
	10 of 13	G	1 of 3	Draft Cover Design Baseline Report	
	11 of 13	H	1 of 3	Draft Operations Management Plan	
	11 of 13	I	1 of 3	Draft Maintenance Management Plan	
	12 of 13	J	1 of 3	Draft Strategic Communications Plan	
	12 of 13	K	1 of 3	Draft Small and Disadvantage Business Participation Plan	
	12 of 13	L	1 of 3	Draft Workforce Development Plan	
	12 of 13	M	1 of 3	Draft Environmental Compliance Work Plan	
	13 of 13	N/A	1 of 3	Technical Submission: ATC's	
3	1 of 4	N/A	1 of 3	Financial Capacity Updates: Meridiam	
	2 of 4	N/A	2 of 3	Financial Capacity Updates: Kiewit	
	3 of 4	N/A	3 of 3	Financial Capacity Updates: Parsons Brinckerhoff	
	4 of 4	N/A	3 of 3	Financial Capacity Updates: Roy Jorgensen Associates, Inc.	

*1 Original Set includes a total of 18 binders and 1 roll plot; 8 identical copies of the Original Set have been provided.
*2 A searchable electronic copy of the submission is included on the inside cover of each copy of Volume 1, Binder 1 of 1.
*3 The Proposal Schedule in P6.xer format is included on the inside cover of each copy of Volume 2, Binder 7 of 13.

Central 70

PUBLIC DISCLOSURE: ADMINISTRATIVE AND TECHNICAL PROPOSAL

KIEWIT-MERIDIAM PARTNERS

VOLUME NUMBER	BINDER NUMBER *1	APPENDIX	BOX	DESCRIPTION	NOTES
1	1 of 1	N/A	1 of 3	Administrative Submission	Includes one USB drive with electronic copy of submission*2
2	1 of 13	N/A	1 of 3	Executive Summary & Parts 1 - 6	
	N/A	A	3 of 3	Draft Design Drawings: Roll Plot	Roll plots provided in 5" tubes
	2 of 13	A	2 of 3	Draft Design Drawings: Roadway Plans Typical Sections Pavement Details	
	3 of 13	A	2 of 3	Draft Design Drawings: Roadway Profiles	
	4 of 13	A	2 of 3	Draft Design Drawings: Drainage Plans Bridge Plans Wall Key Maps Cross-Sections	
	5 of 13	A	2 of 3	Draft Design Drawings: Urban Design Narrative Cover Plans	
	6 of 13	A	1 of 3	Draft Design Drawings: Remediation Activities Management Plan Design Approvals	
	7 of 13	B	1 of 3	Draft Project Management Plan	
	7 of 13	C	1 of 3	Draft Schedule Narrative	
	8 of 13	D	1 of 3	Draft Stage 1 Quality Management Plan	
	8 of 13	E	1 of 3	Draft Stage 2 Quality Management Plan	
	9 of 13	F	1 of 3	Draft Transportation Management Plan	
	10 of 13	G	1 of 3	Draft Cover Design Baseline Report	
	11 of 13	H	1 of 3	Draft Operations Management Plan	
	11 of 13	I	1 of 3	Draft Maintenance Management Plan	
	12 of 13	J	1 of 3	Draft Strategic Communications Plan	
	12 of 13	K	1 of 3	Draft Small and Disadvantage Business Participation Plan	
	12 of 13	L	1 of 3	Draft Workforce Development Plan	
	12 of 13	M	1 of 3	Draft Environmental Compliance Work Plan	
	13 of 13	N/A	1 of 3	Technical Submission: ATC's	
3	1 of 4	N/A	1 of 3	Financial Capacity Updates: Meridiam	
	2 of 4	N/A	1 of 3	Financial Capacity Updates: Kiewit	
	3 of 4	N/A	1 of 3	Financial Capacity Updates: Parsons Brinckerhoff	
	4 of 4	N/A	1 of 3	Financial Capacity Updates: Roy Jorgensen Associates, Inc.	

*1 Each set includes 18 binders and 1 roll plot. Two copies have been provided.

*2 One electronic copy of the Public Disclosure submission is included on the inside cover of Volume 1, Binder 1 of 1, Copy 1 of 2.

PART H: FORMS

FORM A: PROPOSAL LETTERS

Form A-1: Administrative and Technical Proposal Letter

High Performance Transportation Enterprise and Colorado Bridge Enterprise
c/o High Performance Transportation Enterprise
Colorado Department of Transportation
4201 East Arkansas Avenue
Denver, Colorado 80222
Attn: HPTE Director and Colorado Bridge Enterprise Director

Re. Submission of Administrative and Technical Proposal in connection with the Central 70 Project

1. Introduction

   (a) Kiewit-Meridiam Partners ("Proposer") submits this letter, the Annexes hereto and the documents described in paragraph 2(b) below (this letter, such Annexes and such documents, together, this "Administrative and Technical Proposal") in response to the Request for Proposals to Design, Build, Finance, Operate and Maintain the Central 70 Project issued September 15 and 29 (as amended by Addendum Nos. 1, 2, 3, 4, 5, and 6 (such Addendum No. 6 being the "Final RFP") thereto, and by Addendum Nos. 1 and 2 to the Final RFP, such Addenda issued, respectively, December 23, 2015, February 23, 2016, June 14, 2016, July 28, 2016, October 27, 2016, March 6, 2017, April 25, 2017 and May 25, 2017 (collectively, the "RFP Addenda"), the "RFP") issued by the High Performance Transportation Enterprise ("HPTE") and the Colorado Bridge Enterprise ("BE") (HPTE and BE, together, the "Procuring Authorities") in relation to the Project.

   (b) Capitalized terms not otherwise defined in this letter have the meanings given to them in the Instructions to Proposers that is included in the RFP (the "ITP").

   (c) References to Sections and Parts in this letter are references to Sections and Parts of the ITP.

2. Annexes and Enclosures

   (a) For the Procuring Authorities' ease of reference:

      (i) attached as Annex A to this letter is a list confirming the identity of:

         (A) all of Proposer's Core Proposer Team Members as of the date of this letter; and

         (B) all known advisors, consultants and Subcontractors of any tier as of the date of this letter; and

      (ii) attached as Annex B to this letter is a reference chart indicating the conclusions of Proposer's evaluation of each element of the Administrative and Technical Proposal for compliance with the Administrative and Technical Pass/Fail Criteria.

   (b) Enclosed, and by this reference and paragraph 1(a) above incorporated in this letter and made a part of this Administrative and Technical Proposal, are each of Volume 1, Volume 2 and Volume 3 of the Administrative and Technical Proposal as required to be submitted in accordance with the ITP. This letter itself constitutes the Administrative and Technical Proposal Letter.

3. Proposal Validity

   Proposer and each of the undersigned Core Proposer Team Members undertakes to keep its Administrative and Technical Proposal and any Financial Proposal submitted by Proposer open for acceptance initially for the maximum Proposal Validity Period as defined in paragraph (a) of the

definition thereof in Section 1 of Part A (subject always to the Proposal Validity Period ending earlier in accordance with the definition thereof in Section 1 of Part A), without unilaterally varying or amending its terms and without making any Organizational Change or Key Personnel Change, without first obtaining the prior written consent of the Procuring Authorities (which may be given or withheld at the sole discretion of the Procuring Authorities).

4. Representations and Warranties

Proposer and each of the undersigned Core Proposer Team Members, in each case as noted below, represents and warrants to the Procuring Authorities as of the date hereof that:

(a) this Administrative and Technical Proposal is submitted, and any Financial Proposal submitted by Proposer will (when submitted) be submitted, without reservations, qualifications, assumptions, deviations or conditions except, in the case of assumptions, to the extent expressly permitted by the ITP;

(b) all statements made in the SOQ previously delivered by Proposer to the Procuring Authorities regarding Proposer or each Core Proposer Team Member (where applicable, as such statements have been or may be amended, resubmitted and/or updated by (i) any Proposer Update Submission in accordance with Section 4.3 of Part C, (ii) this Administrative and Technical Proposal, including any completed Form D (*Legal Disclosures*) and/or Form E (*Certifications*) to the RFQ that is attached to this letter as an update to the equivalent form(s) included in the SOQ and/or (iii) (when submitted) the Proposer's Financial Proposal, including any completed Form D (*Legal Disclosures*) and/or Form E (*Certifications*) to the RFQ that is attached to the Financial Proposal Letter as an update to the equivalent form(s) included in the SOQ) are correct, complete and not materially misleading as of the date hereof;

(c) prior to the date hereof, Proposer has conducted, and has had the opportunity to conduct, all due diligence and design development that would be considered prudent and reasonable in preparing and submitting this Administrative and Technical Proposal; and

(d) prior to the date hereof, Proposer has previously notified the Procuring Authorities of (A) any deficiencies or inconsistencies in or omissions from the RFP and Project Information and (B) any material Project risks (including any related to site conditions) related to health or safety, the Environment, the community or property, in the case of (A) and (B), of which it became aware and which were not otherwise recognized, acknowledged or addressed by the Procuring Authorities in the RFP or the Reference Documents.

5. Acknowledgements and Agreements

Proposer and each of the undersigned Core Proposer Team Members acknowledges and agrees:

(a) Acceptance of ITP: to all the terms and conditions of the ITP;

(b) Project Information:

(i) that it has received or had access to, and understands and has considered, the RFP (including all RFP Addenda) and all Reference Documents; and

(ii) that the provisions of the RFP (including the Project Agreement) and the Project Information together provide Proposer with sufficient information relating to the Project (including with respect to the obligations to be assumed under the terms of the Project Agreement, the Construction Contract and the O&M Contract) for purposes of preparing and submitting this Administrative and Technical Proposal;

(c) Proposal acceptance: that the Procuring Authorities' acceptance of the delivery of this Administrative and Technical Proposal does not, and shall not be deemed to, constitute any statement or determination as to its completeness, responsiveness or compliance with the requirements of the RFP;

(d) Public disclosure:

(i) to the Procuring Authorities' disclosure of the Public Statement (following submittal in Proposer's Financial Proposal);

(ii) to the Procuring Authorities' disclosure of the Public Disclosure Technical Proposal and (when submitted) the Public Disclosure Financial Proposal as contemplated by Section 1.5.2 of Part D; and

(iii) to any other disclosures contemplated by Section 1.5 of Part D,

and expressly waives any right to contest such disclosures;

(e) Bid costs: that all costs and expenses incurred by it in preparing this Administrative and Technical Proposal and Proposer's Financial Proposal and participating in the Project procurement process will be borne solely by Proposer and/or the Core Proposer Team Members, except for any Stipend Payment that the Procuring Authorities pay Proposer in accordance with the Stipend Agreement that is entered into between the Core Proposer Team Members and the Procuring Authorities;

(f) Protest rights: to the protest procedures set out in Section 7.4.1 of Part C, including the limitations imposed by such provisions on Proposer's and each Core Proposer Team Member's rights and remedies to protest or challenge any aspect of the RFP process, including any determination or selection of a Preferred Proposer made pursuant to the RFP;

(g) Reserved Rights: that, under the terms of the ITP, the Procuring Authorities have reserved to themselves a number of rights related to the procurement of the Project (including the selection of a Preferred Proposer), including the Reserved Rights; and

(h) RFP priority: that the representations and warranties made in paragraph 4 above and the acknowledgements and agreements in this paragraph 5 are without prejudice to the operation of the provisions of the Project Agreement, and this letter shall not be admissible as evidence in any dispute arising after the execution of the Project Agreement.

6. Governing law

This letter shall be governed by and construed in all respects according to the law of the State of Colorado.

Under penalty of perjury, I hereby swear and affirm that I am authorized to act on behalf of Proposer in signing and delivering this letter, and acknowledge that the Procuring Authorities are each relying on my representation to this effect.

Proposer: Kiewit-Meridiam Partners

By: _____

Printed Name: John Dionisio

Title: Official Representative

Under penalty of perjury, each of the undersigned:

(a) certifies on behalf of the entity for which he or she signs that:

(i) the Official Representative named above is authorized by such entity to sign this letter on behalf of Proposer; and

(ii) the representations, certifications, statements, disclosures, authorizations and commitments made, and information contained, in this Administrative and Technical Proposal, including in this letter, by or in respect of such entity have been authorized by such entity, and is or are correct, complete and not materially misleading; and

(b) swears and affirms that he or she is authorized to act on behalf of the entity for which he or she signs and acknowledges that the Procuring Authorities are each relying on his or her representation to this effect:

Equity Member and Joint Venturer in Lead Operator	Meridiam I-70 East CO, LLC
By:	
Printed Name:	John Dionisio
Title:	Authorized Signatory

Under penalty of perjury, each of the undersigned:

(a) certifies on behalf of the entity for which he or she signs that:

(i) the Official Representative named above is authorized by such entity to sign this letter on behalf of Proposer; and

(ii) the representations, certifications, statements, disclosures, authorizations and commitments made, and information contained, in this Administrative and Technical Proposal, including in this letter, by or in respect of such entity have been authorized by such entity, and is or are correct, complete and not materially misleading; and

(b) swears and affirms that he or she is authorized to act on behalf of the entity for which he or she signs and acknowledges that the Procuring Authorities are each relying on his or her representation to this effect:

Financially Responsible Party for Meridiam I-70 East CO, LLC:	Meridiam Infrastructure North America Corp. on behalf of Meridiam Infrastructure North America Fund II
By:	_____
Printed Name:	Emmanuel Rotat
Title:	Chief Financial Officer

Under penalty of perjury, each of the undersigned:

(a) certifies on behalf of the entity for which he or she signs that:

(i) the Official Representative named above is authorized by such entity to sign this letter on behalf of Proposer; and

(ii) the representations, certifications, statements, disclosures, authorizations and commitments made, and information contained, in this Administrative and Technical Proposal, including in this letter, by or in respect of such entity have been authorized by such entity, and is or are correct, complete and not materially misleading; and

(b) swears and affirms that he or she is authorized to act on behalf of the entity for which he or she signs and acknowledges that the Procuring Authorities are each relying on his or her representation to this effect:

Equity Member and Joint Venturer in Lead Operator: Kiewit Development Company

By: _____

Printed Name: James Geer

Title: Vice President, Development

Under penalty of perjury, each of the undersigned:

(a) certifies on behalf of the entity for which he or she signs that:

(i) the Official Representative named above is authorized by such entity to sign this letter on behalf of Proposer; and

(ii) the representations, certifications, statements, disclosures, authorizations and commitments made, and information contained, in this Administrative and Technical Proposal, including in this letter, by or in respect of such entity have been authorized by such entity, and is or are correct, complete and not materially misleading; and

(b) swears and affirms that he or she is authorized to act on behalf of the entity for which he or she signs and acknowledges that the Procuring Authorities are each relying on his or her representation to this effect:

Lead Contractor: Kiewit Infrastructure Co.

By: _____

Printed Name: Craig A. Briggs

Title: Senior Vice President

Under penalty of perjury, each of the undersigned:

(a) certifies on behalf of the entity for which he or she signs that:

(i) the Official Representative named above is authorized by such entity to sign this letter on behalf of Proposer; and

(ii) the representations, certifications, statements, disclosures, authorizations and commitments made, and information contained, in this Administrative and Technical Proposal, including in this letter, by or in respect of such entity have been authorized by such entity, and is or are correct, complete and not materially misleading; and

(b) swears and affirms that he or she is authorized to act on behalf of the entity for which he or she signs and acknowledges that the Procuring Authorities are each relying on his or her representation to this effect:

Financially Responsible Party for Kiewit Development Company and Kiewit Infrastructure Co.: Kiewit Infrastructure Group Inc.

By: _____

Printed Name: Scott Cassels

Title: President

Under penalty of perjury, each of the undersigned:

(a) certifies on behalf of the entity for which he or she signs that:

(i) the Official Representative named above is authorized by such entity to sign this letter on behalf of Proposer; and

(ii) the representations, certifications, statements, disclosures, authorizations and commitments made, and information contained, in this Administrative and Technical Proposal, including in this letter, by or in respect of such entity have been authorized by such entity, and is or are correct, complete and not materially misleading; and

(b) swears and affirms that he or she is authorized to act on behalf of the entity for which he or she signs and acknowledges that the Procuring Authorities are each relying on his or her representation to this effect:

Lead Engineer: Parsons Brinckerhoff, Inc.

By: _____

Printed Name: Frank Medina

Title: Senior Vice President Regional Director Tx/Mtn

Under penalty of perjury, each of the undersigned:

(a) certifies on behalf of the entity for which he or she signs that:

(i) the Official Representative named above is authorized by such entity to sign this letter on behalf of Proposer; and

(ii) the representations, certifications, statements, disclosures, authorizations and commitments made, and information contained, in this Administrative and Technical Proposal, including in this letter, by or in respect of such entity have been authorized by such entity, and is or are correct, complete and not materially misleading; and

(b) swears and affirms that he or she is authorized to act on behalf of the entity for which he or she signs and acknowledges that the Procuring Authorities are each relying on his or her representation to this effect:

Joint Venturer in Lead Operator: Roy Jorgensen Associates, Inc.

By: Charles E. Henningsgaard

Printed Name: Charles E. Henningsgaard, PE

Title: Senior Vice President

Annex A: List of Proposer Team Members

Part 1: Core Proposer Team Members

We hereby certify that, for the purposes of Proposer's Proposal, the full legal names of the entities that are Proposer's Core Proposer Team Members, and (to the extent applicable) the respective percentage interest that each of them will have in the equity of Proposer's Developer (in the case of the Equity Members) or in the principal contract for the relevant works for which it has primary responsibility (in the case of the Lead Contractor, the Lead Engineer and the Lead Operator), are as set out in Column 1 in the table below. In addition, in Columns 2 and 3 in the table below we identify any changes made to the identity of any Core Proposer Team Members or the relevant percentages during the period specified in the relevant column.

Column 1	Column 2	Column 3
Core Proposer Team Members	**Changes (if any) between submission of SOQ and submission of Preliminary Organizational Conflict of Interest Disclosure**	**Changes (if any) since submission of Preliminary Organizational Conflict of Interest Disclosure**
1. Equity Members Meridiam I-70 East CO, LLC (60%) Kiewit Development Company (40%)	 No Change No Change	 No Change No Change
2. Lead Contractor Kiewit Infrastructure Co. (100%)	No Change	No Change
3. Lead Engineer Parsons Brinckerhoff, Inc. (100%)	Jacobs Engineering Group contract relationship has been clarified to a Prime / Sub. Detailed in the Preliminary Organizational Conflict of Interest Disclosure	No Changes
4. Lead Operator ~~Kiewit Meridiam Partners~~ Roy Jorgensen Associates, Inc. Meridiam I-70 East CO, LLC Kiewit Development Company	 No Change No Change	An administrative change has been made to the Lead Operator column to be consistent with the ITP's definition of Lead Operator. No change to the team structure has occurred.

5. Financially Responsible Parties		
Meridiam Infrastructure North America Fund II, responsible for Meridiam I-70 East CO, LLC	No Change	No Change
Kiewit Infrastructure Group Inc., responsible for Kiewit Infrastructure Co. and Kiewit Development Co.	No Change	No Change

Part 2: Other Proposer Team Members

Column 1	Column 2	Column 3
Other Proposer Team Members	**Changes (if any) between submission of SOQ and submission of Preliminary Organizational Conflict of Interest Disclosure**	**Changes (if any) since submission of Preliminary Organizational Conflict of Interest Disclosure**
1. Financial Advisors to Proposer		
Co-Financial Advisor: Agentis Capital Partners	No Change	No Change
Co-Financial Advisor/Co-Underwriter: Barclays Capital Inc. (60% of Underwriting)	No Change	No Change
Co-Underwriter: RBC Capital Markets (40% of Underwriting)	No Change	No Change
Model Auditor: ~~WeiserMazars LLP~~ Mazars Global Infrastructure (US) LLC	WeiserMazars LLP acquired Corality detailed in the Preliminary Organizational Conflict of Interest Disclosure	Changes in this document reflect formal correction of corporate names. No other changes to the team structure have occurred.
Tax/Accounting Advisor: PricewaterhouseCoopers LLP (PwC)	No Change	No Change
2. Legal Advisors		
To Proposer: Norton Rose Fulbright US LLP	No Changes	No changes
To Lenders: Nixon Peabody LLP	No Change	No Change
3. Technical Advisors to Lenders		
Sponsors' Traffic Advisor: BuroHappold Engineering	Not in SOQ	No changes
Lenders' Technical Advisor: Turner & Townsend	No Changes	No Changes
PML Study: INAMAR	Not in SOQ	No Changes
Pavement/LCC Analysis: Transtec Group Inc.	No Change	No Changes

4. Insurance Advisors		
To Proposer: In Tech Risk Management GmbH	No Change	No Change
To Lenders: In Tech Risk Management GmbH	No Change	No Change
5. Consultants		
Civitas – Landscape and Urban Design	Not in SOQ	No Change
Clanton and Associates – Lighting Design	Not in SOQ	No Change
HCL Engineers – Civil Design and Survey	No Change	No Change
Muller Engineering Co. – ITS and Drainage Design	No Change	No Change
Railroad Coordination, LLC – Railroad Coordination Services	No Change	No Change
RMC Consultants, Inc. – Environmental, Phase II ESA, Contaminated Materials	Not in SOQ	No Change
Shannon & Wilson, Inc. – Geotechnical Design	No Change	No Change
Shrewsberry & Associates, LLC – Civil Design	Not in SOQ	No Change
Transtec Group, Inc. – Pavement Design	No Change	No Change

6. Sub-contractors		
Anderson Drilling – Drilled Shafts	No Change	No Change
Bilingual Communication Services, LLC – Communications, Community Outreach	No Change	No Change
Colorado Asphalt and Concrete – Paving	Not in SOQ	No Change
Hamon Infrastructure – Bridges, Structures	Not in SOQ	No Change
Iron Woman – Drainage, Environmental Remediation, Trucking, Utilities	No Change	No Change
JKS Industries – Environmental	No Change	No Change
Lawrence - Structures	Not in SOQ	No Change
Sturgeon Electric – Electrical, Lighting, ITS	No Change	No Change
Villalobos – PCCP	No Change	No Change

Annex B: Pass/Fail Evaluation Criteria Verification

No.	Initial Administrative and Technical Pass/Fail Criteria	ITP Sec. Ref.	Satisfied?
1.	Administrative and Technical Proposal submitted at the Proposal Submission Location on or before the Technical Proposal Deadline.	Sections 5.1.1.a and 5.1.2.a.i of Part C	☒
2.	Proposer's Baseline Substantial Completion Date is no later than November 30, 2022.	Section 2.1.10 of the Administrative and Technical Proposal Submission Requirements	☒
3.	No Proposer Material Adverse Change has occurred since the date of the Proposer's SOQ or exists at the date of its Administrative and Technical Proposal.	Section 3 of the Administrative and Technical Proposal Submission Requirements	☒
4.	Administrative and Technical Proposal conforms to all ITP instructions regarding organization, format and content.	Sections 1.1 and 1.4 of the General Proposal Instructions	☒
	(a) The Administrative and Technical Proposal is properly formatted.	Section 1.1.1 of the General Proposal Instructions	☒
	(b) The Administrative and Technical Proposal is arranged in the order set out in the tables specifying the relevant Administrative and Technical Proposal Submission Requirements.	Section 1.1.2.a of the General Proposal Instructions	☒
	(c) Each Volume is sub-divided and tabbed to correspond to the Section numbering set out in the tables specifying relevant Administrative and Technical Submission Requirements.	Section 1.1.2.b of the General Proposal Instructions	☒
	(d) Proposer has submitted:		☒
	(i) all required hardcopy volumes, properly separated and labeled; and	Sections 1.2.1.a.i, 1.2.2.a.i, 1.2.2.b and 1.2.2.d of the General Proposal Instructions	☒
	(ii) all required digital materials.	Section 1.2.1.b of the General Proposal Instructions	☒
	(e) The Proposal is exclusively in the English language, uses United States customary units of measure specifies monetary amounts in US dollar denominations.	Section 1.3.1 of the General Proposal Instructions	☒
	(f) There is no electively included information or materials in addition to the information	Section 1.3.4 of the General Proposal	☒

No.	Initial Administrative and Technical Pass/Fail Criteria	ITP Sec. Ref.	Satisfied?
	and materials specifically requested in the RFP.	Instructions	
5.	Volume 1 of the Administrative and Technical Proposal includes each of the following:		☒
	(a) Administrative and Technical Proposal Letter (Form A-1) attaching:	Section 1.1 of the Administrative and Technical Proposal Submission Requirements	☒
	(i) Annex A (*List of Proposal Team Members*); and		☒
	(ii) Annex B (*Pass/Fail Evaluation Criteria Verification*).		☒
	(b) Form B (*Confidential Contents Index*).	Section 1.2 of the Administrative and Technical Proposal Submission Requirements	☒
	(c) Either: (i) confirmation of absence of any organizational conflicts of interest; or (ii) narrative description of any such organizational conflicts of interest.	Section 1.3. of the Administrative and Technical Proposal Submission Requirements	☒
	(d) Any of: (i) Stipend Agreement; (ii) statement regarding waiver of rights to payment of the Stipend Payment; or (iii) statement regarding prior submission of the Stipend Agreement.	Section 1.4 of the Administrative and Technical Proposal Submission Requirements	☒
6.	Volume 2 of the Administrative and Technical Proposal includes each of the following:	Section 2.1. of the Administrative and Technical Proposal Submission Requirements	☒
	(a) Executive Summary.	Section 2.1.1.a of the Administrative and Technical Proposal Submission Requirements	☒
	(b) Part 1: Project Management.	Section 2.1.2 of the Administrative and Technical Proposal Submission Requirements	☒
	(c) Part 2: Quality Management.	Section 2.1.3 of the Administrative and Technical Proposal Submission Requirements	☒

No.	Initial Administrative and Technical Pass/Fail Criteria	ITP Sec. Ref.	Satisfied?
	(d) Part 3: Maintenance of Traffic.	Section 2.1.4 of the Administrative and Technical Proposal Submission Requirements	☒
	(e) Part 4: Environmental Management, Strategic Communications, Community Development Programs, Small and Disadvantaged Business Participation and Workforce Development.	Section 2.1.5 of the Administrative and Technical Proposal Submission Requirements	☒
	(f) Part 5: Operations and Maintenance.	Section 2.1.6 of the Administrative and Technical Proposal Submission Requirements	☒
	(g) Part 6: Technical Approach and Solutions.	Section 2.1.7 of the Administrative and Technical Proposal Submission Requirements	☒
	(h) Appendix A: Draft Design Drawings.	Section 2.1.8 of the Administrative and Technical Proposal Submission Requirements	☒
	(i) Appendix B: Draft Project Management Plan.	Section 2.1.9 of the Administrative and Technical Proposal Submission Requirements	☒
	(j) Appendix C: Proposal Schedule.	Section 2.1.10 of the Administrative and Technical Proposal Submission Requirements	☒
	(k) Appendix D: Draft Stage 1 Quality Management Plan.	Section 2.1.11 of the Administrative and Technical Proposal Submission Requirements	☒
	(l) Appendix E: Draft Stage 2 Quality Management Plan.	Section 2.1.12 of the Administrative and Technical Proposal Submission Requirements	☒
	(m) Appendix F: Draft Transportation Management Plan.	Section 2.1.13 of the Administrative and Technical Proposal Submission Requirements	☒

No.	Initial Administrative and Technical Pass/Fail Criteria	ITP Sec. Ref.	Satisfied?
	(n) Appendix G: Draft Cover Design Baseline Report.	Section 2.1.14 of the Administrative and Technical Proposal Submission Requirements	☒
	(o) Appendix H: Draft Operations Management Plan.	Section 2.1.15 of the Administrative and Technical Proposal Submission Requirements	☒
	(p) Appendix I: Draft Maintenance Management Plan.	Section 2.1.16 of the Administrative and Technical Proposal Submission Requirements	☒
	(q) Appendix J: Draft Strategic Communications Plan.	Section 2.1.17 of the Administrative and Technical Proposal Submission Requirements	☒
	(r) Appendix K: Draft Small and Disadvantaged Business Participation Plan.	Section 2.1.18 of the Administrative and Technical Proposal Submission Requirements	☒
	(s) Appendix L: Draft Workforce Development Plan.	Section 2.1.19 of the Administrative and Technical Proposal Submission Requirements	☒
	(t) Appendix M: Draft Environmental Compliance Work Plan.	Section 2.1.20 of the Administrative and Technical Proposal Submission Requirements	☒
	(u) ATC Submissions (in final form) that Proposer is electing to incorporate into its Proposal, including copies of any applicable final approvals received from the Procuring Authorities.	Section 2.2 of the Administrative and Technical Proposal Submission Requirements	☒
7.	Volume 3 of the Administrative and Technical Proposal includes each of the following:	Section 3.1 of the Administrative and Technical Proposal Submission Requirements	☒
	(a) Either: (i) financial statements; or (ii) a statement regarding their absence, for:	Section 3.1.1 of the Administrative and Technical Proposal Submission Requirements	☒
	(i) Meridiam I-70 East CO, LLC		☒ ☒

No.	Initial Administrative and Technical Pass/Fail Criteria	ITP Sec. Ref.	Satisfied?
	(ii) Kiewit Development Company		
	(iii) Kiewit Infrastructure Co.		☒
	(iv) Parsons Brinckerhoff		☒
	(v) Meridiam I-70 East CO, LLC (vi) Kiewit Development Company (vii) Roy Jorgensen Associates, Inc.		☒ ☒ ☒
	(viii) Meridiam Infrastructure North America Fund II, responsible for Meridiam I-70 East CO, LLC (ix) Kiewit Infrastructure Group Inc.		☒ ☒
	(b) Either: (i) information regarding material changes in financial capacity; or (ii) confirmation of the absence of any such changes, for:	Section 3.2 of the Administrative and Technical Proposal Submission Requirements	☒
	(i) Meridiam I-70 East CO, LLC (ii) Kiewit Development Company		☒ ☒
	(iii) Kiewit Infrastructure Co.		☒
	(iv) Parsons Brinckerhoff		☒
	(v) Meridiam I-70 East CO, LLC (vi) Kiewit Development Company (vii) Roy Jorgensen Associates, Inc.		☒ ☒ ☒
	(viii) Meridiam Infrastructure North America Fund II, responsible for Meridiam I-70 East, LLC (ix) Kiewit Infrastructure Group Inc.		☒ ☒
	(c) Off balance sheet liabilities letter from each of:	Section 3.3 of the Administrative and Technical Proposal Submission Requirements	☒
	(i) Meridiam I-70 East CO, LLC (ii) Kiewit Development Company		☒ ☒
	(iii) Kiewit Infrastructure Co.		☒
	(iv) Parsons Brinckerhoff		☒
	(v) Meridiam I-70 East CO, LLC (vi) Kiewit Development Company		☒ ☒ ☒

No.	Initial Administrative and Technical Pass/Fail Criteria	ITP Sec. Ref.	Satisfied?
	(vii) Roy Jorgensen Associates, Inc.		
	(viii) Meridiam Infrastructure North America Fund II, responsible for Meridiam I-70 East CO, LLC (ix) Kiewit Infrastructure Group Inc.		☒ ☒
	(d) Completed Form G-3 for each entity that has a credit rating.	Section 3.4.1 of the Administrative and Technical Proposal Submission Requirements	☒
	(i) N/A – no entity has a credit rating		☒

FORM B: CONFIDENTIAL CONTENTS INDEX

Proposer Name: Kiewit-Meridiam Partners

Form B: Confidential Contents Index

Administrative and Technical Proposal

Volume 2:

No.	Proposal Heading(s)	Proposal Section(s)	Proposal Page(s)[1]	Other Identifying Information (if any)	Relevant CORA Exemption(s)	Duration of Exemption(s)
(1)	Draft Project Management Plan	Attachment 3 Key Personnel Resumes	928, 931, 934, 937, 940, 943, 946, 949, 952, 955 958, 961 of 3110	All rows except Project/Transaction name for Attachment A of each Resume	Personally Identifiable Information	Permanent
(2)	Draft Stage 1 Quality Management Plan	Attachment 3 Quality ATC Submissions and Responses	1238 of 3110	Client Contact and Phone Number columns of Section 9 Additional Information table	Personally Identifiable Information	Permanent
(3)	Draft Stage 1 Quality Management Plan	Attachment A Table 1 Project Comparison	1243 of 3110	Total QA/QC as a % of total cost and QA/QC Cost per Craft Man Hour columns Table 1 – Project Comparison	C.R.S. §§ 24-72-204(3)(a)(IV) –Trade secrets and privileged information C.R.S. §§ 24-72-204(3)(a)(IV) –Confidential financial data	Permanent
(4)	Draft Strategic Communications Plan	Attachment 4 Communications Team Resumes	2398 of 3110	All rows except Project/Transaction name for Attachment A of each Resume	Personally Identifiable Information	Permanent
(5)	ATC Submissions	ATC 09 Submission	2579 of 3110	Client Contact and Phone Number columns of Section 9 Additional Information table	Personally Identifiable Information	Permanent
(6)	ATC Submissions	ATC 09 Submission	2584 of 3110	Total QA/QC as a % of total cost and QA/QC Cost per Craft Man Hour columns Table 1 – Project Comparison	C.R.S. §§ 24-72-204(3)(a)(IV) –Trade secrets and privileged information C.R.S. §§ 24-72-204(3)(a)(IV) –Confidential financial data	Permanent

[1] Proposal Pages refer to the electronic submission "Central 70 Project – Kiewit Meridiam Partners – Administrative and Technical Proposal – Full Submission"

Volume 3, Sub-Volume 1:

No.	Proposal Heading(s)	Proposal Section(s)	Proposal Page(s) [1]	Other Identifying Information (if any)	Relevant CORA Exemption(s)	Duration of Exemption(s)
(1)	Financial Capacity Updates	Volume III, Binder 1	2895 – 2960 of 3110 removed in their entirety	Financial Statements, Material Changes in Financial Condition, Off Balance Sheet Liabilities, and Credit Ratings	C.R.S. §§ 24-72-204(3)(a)(IV) – Confidential financial data	Permanent

Volume 3, Sub-Volume 2:

No.	Proposal Heading(s)	Proposal Section(s)	Proposal Page(s) [1]	Other Identifying Information (if any)	Relevant CORA Exemption(s)	Duration of Exemption(s)
(1)	Financial Capacity Updates	Volume III, Binder 2	2961 – 3062 of 3110 removed in their entirety	Financial Statements, Material Changes in Financial Condition, Off Balance Sheet Liabilities, and Credit Ratings	C.R.S. §§ 24-72-204(3)(a)(IV) – Confidential financial data	Permanent

Volume 3, Sub-Volume 3:

No.	Proposal Heading(s)	Proposal Section(s)	Proposal Page(s) [1]	Other Identifying Information (if any)	Relevant CORA Exemption(s)	Duration of Exemption(s)
(1)	Financial Capacity Updates	Volume III, Binder 3	3063 – 3071 of 3110 removed in their entirety	Financial Statements, Material Changes in Financial Condition, Off Balance Sheet Liabilities, and Credit Ratings	C.R.S. §§ 24-72-204(3)(a)(IV) – Confidential financial data	Permanent

Volume 3, Sub-Volume 4:

No.	Proposal Heading(s)	Proposal Section(s)	Proposal Page(s) [1]	Other Identifying Information (if any)	Relevant CORA Exemption(s)	Duration of Exemption(s)
(1)	Financial Capacity Updates	Volume III, Binder 4	3072 – 3110 of 3110 removed in their entirety	Financial Statements, Material Changes in Financial Condition, Off Balance Sheet Liabilities, and Credit Ratings	C.R.S. §§ 24-72-204(3)(a)(IV) – Confidential financial data	Permanent

[1] Proposal Pages refer to the electronic submission "Central 70 Project – Kiewit Meridiam Partners – Administrative and Technical Proposal – Full Submission"

Central 70

June 1, 2017

Mr. Keith Stefanik
Central 70 Deputy Director of Project Delivery
Colorado Bridge Enterprise; High Performance Transportation Enterprise
200 S. Holly St.
Denver, CO 80222

Re: **Kiewit-Meridiam Partners – Central 70 Project – Organizational Conflict of Interest**

Mr. Stefanik:

Kiewit-Meridiam Partners is writing to confirm the absence of any organization conflicts of interest (as defined in Section 1.3.1.a of Part D). The steps taken to confirm with the Procuring Authorities the absence of any such conflicts are outlined in the attached files:

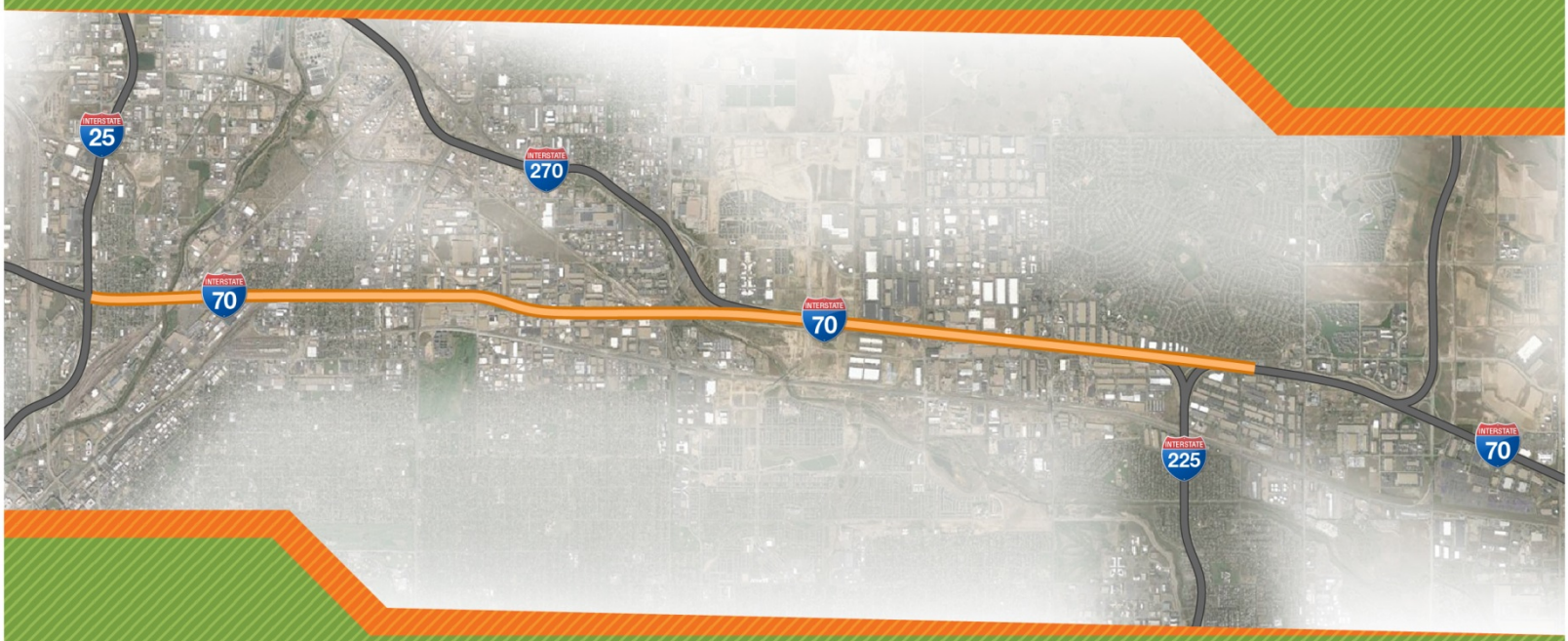
- Preliminary Organizational Conflict of Interest Disclosure, March 27, 2017
- KMP's reply to Procuring Authorities' response to the Preliminary Conflict of Interest Disclosure, May 5, 2017
- Supplemental Aconex correspondence regarding Procuring Authorities conditions in Preliminary Organizational Conflict of Interest Disclosure Response, May 10, 2017 and May 15, 2017
- Procuring Authorities response, and KMP's reply, to the request for exceptions to Condition 2.b of the Procuring Authorities response to the Preliminary Organizational Conflict of Interest Disclosure, May 25, 2017
- Model Auditor Approval Letter, May 25, 2017

If there are any questions or comments regarding this submission please feel free to contact me at (212) 798-8683 or via email at J.Dionisio@meridiam.com.

Sincerely
Kiewit Meridiam Partners

John Dionisio
Official Representative
Kiewit Meridiam Partners

Central 70 Project



Submitted to:
Colorado Bridge Enterprise
High Performance Transportation Enterprise
c/o Colorado Department of Transportation

Kiewit meridiam PARTNERS

Annex 5 – Organizational Conflict of Interest

Proposer Update Submission

March 27, 2017

CONFIDENTIAL

March 27, 2017

Mr. Nicholas Farber
Designated Representative
Colorado Bridge Enterprise; High Performance Transportation Enterprise
5640 East Atlantic Place
Denver, CO 80222

Re: **Proposer Update Submittal**
Annex 5 – Organizational Conflict of Interest

Mr. Farber:

As requested by Section 1.3.1.b of Part D of the Instructions to Proposers, Kiewit-Meridiam Partners (KMP) is pleased to provide you with our Organizational Conflict of Interest (Annex 5) submittal.

Attached you will find One (1) electronic copy in searchable (.pdf format).

KMP appreciates the Department's consideration of this submittal. If there are any questions or comments regarding this submission please feel free to contact me at (212) 798-8683 or via email at J.Dionisio@meridiam.com.

Sincerely
Kiewit Meridiam Partners

John Dionisio
Official Representative
Kiewit Meridiam Partners

ANNEX 5: PROPOSER UPDATE SUBMISSION FORM

Proposer Name: Kiewit-Meridiam Partners
Date: March 27, 2017

Proposer Update Submission No. KMP - Annex 5-01

Part A

Approval or Verification Requested[1]

Model Auditor Appointment ☐
Underwriter Appointment ☐
Organizational Change ☐
Key Personnel Change ☐

Organizational Conflict of Interest

See Section 1.3.1 of Part D

☐ None
☒ Previously Disclosed (disclosure attached)
☐ Not Previously Disclosed (disclosure attached)

[1] Select only one.

ANNEX 5 INDEX

ENCLOSED ARE:

- Organizational COI regarding Mr. Robbins (Previously Submitted – October 21, 2016)
- Organizational COI regarding Ms. Rude (Previously Submitted – August 18, 2016)
- Organizational COI regarding Jacobs Engineering and Parsons Brinckerhoff (Previously Submitted – April 23, 2015)

Central 70

October 21, 2016

Mr. John Dionisio
Official Representative, Kiewit Meridiam Partners
605 Third Avenue, 28th Floor
New York, NY 10158

RE: Organizational Conflict of Interest

Dear Mr. Dionisio:

Reference is hereby made to the Instructions to Proposers ("ITP") contained in the Request for Proposals to Design, Build, Finance, Operate and Maintain the Central 70 Project (the "Project"), as amended, and in particular Section 1.3.1 of Part D of the ITP regarding Organizational Conflicts of Interest, which incorporates relevant provisions of the Code of Federal Regulations and the Code of Colorado Regulations. Capitalized terms used herein but not otherwise defined shall have the meaning given to them in the ITP.

An organizational conflict of interest includes any activities or relationships that confer an unfair competitive advantage. It has come to the attention of the Procuring Authorities that Mr. Lon Robbins, a former senior engineer at CH2M Hill, a member of the Front Range Mobility Group ("FRMG") Proposer team, was recently hired by Kiewit Infrastructure Co., a member of the Kiewit Meridiam Partners Proposer team. The Procuring Authorities understand that as a result of the scope and nature of Mr. Robbins' prior involvement with FRMG, he is likely in possession of information that, if revealed to Kiewit Meridiam Partners, might confer an unfair competitive advantage to Kiewit Meridiam Partners, thus creating a potential organizational conflict of interest in violation of the prohibitions contained in 2 C.C.R. 601-15 Sec. 7 and 23 CFR § 636.116.

In the interest of maintaining a fair and transparent procurement for the Project, the Procuring Authorities are hereby imposing the following conditions with respect to Mr. Robbins:

1. Mr. Robbins will not participate in the planning or development of the proposal Kiewit Meridiam Partners will submit for the Project;

2. Mr. Robbins will not be included in the Proposal Kiewit Meridiam Partners will submit for the Project;

3. Kiewit Meridiam Partners will prohibit cross-sharing of any information regarding the Project between Mr. Robbins and Kiewit Meridiam Partners or Kiewit Infrastructure Co. personnel involved in the pursuit of the Project. Kiewit Meridiam Partners must provide evidence regarding the Information Barriers implemented to exclude the involvement of Mr. Robbins in the Project and to prevent the cross-sharing of information in relation thereto; and

4. Mr. Robbins must sign a confidentiality agreement (a copy of which must be provided to the Procuring Authorities) acknowledging that sharing of any information in relation to the Proposals of either FRMG or Kiewit Meridiam Partners is prohibited and violation thereof will result in disciplinary actions, including possible termination of employment.

As a condition of Kiewit Meridiam Partners' continued participation in the Project procurement, it shall ensure that all of the conditions specified above are met throughout the procurement process. The Procuring Authorities further request that Kiewit Meridiam Partners provide to the Procuring Authorities details regarding any confidential or proprietary information disclosed by Mr. Robbins prior to the date of this letter or confirm in writing that no confidential or proprietary information has been disclosed.

As a reminder, all Proposers are required to disclose to the Procuring Authorities, on an ongoing basis, all relevant facts concerning any interest that may constitute a potential organizational conflict of interest as described in the ITP. Without limiting the reserved rights of the Procuring Authorities under Section 2 of Part D of the ITP, or the express right of the Procuring Authorities to re-evaluate the existence of organizational conflicts of interest at any time, if at any time full compliance with any of the aforementioned conditions is not maintained, Kiewit Infrastructure Co. will no longer be permitted to continue as a member of the Kiewit Meridiam Partners team.

Please acknowledge your receipt of this letter and the terms thereof, and your agreement to comply with such terms, by counter-signing and returning a copy of this letter to the Procuring Authorities.

We thank you for your continued interest in the Central 70 Project.

Sincerely,

Nicholas Farber
Designated Representative
Colorado Bridge Enterprise
High Performance Transportation Enterprise

Acknowledgement:

We hereby acknowledge receipt of the above letter and the terms thereof and agree to comply with such terms.

Kiewit Meridiam Partners

Signature of Official Representative

John Dionisio
Name of Official Representative

Date: 10/25/2016

Central 70

August 18, 2016

Mr. John Dionisio
Official Representative, Kiewit Meridiam Partners
605 Third Avenue, 28th Floor
New York, NY 10158

RE: Organizational Conflict of Interest Regarding Ms. Rude

Dear Mr. Dionisio,

Reference is hereby made to (i) the Instructions to Proposers ("**ITP**") contained in the Request for Proposals ("**RFP**) to Design, Build, Finance, Operate and Maintain the Central 70 Project (the "**Project**"), as amended, and in particular Section 1.3.1 of Part D of the ITP regarding Organizational Conflicts of Interest, which incorporates relevant provisions of the Code of Federal Regulations and the Code of Colorado Regulations; (ii) that certain letter provided by Kiewit-Meridiam Partners ("**KMP**"), dated August 5, 2016, requesting confirmation that there is not a conflict of interest with regards to Ms. Becky Rude (a former Atkins employee) participating as part of the KMP environmental team in response to the RFP. Capitalized terms used herein and not otherwise defined shall have the meaning given to them in the RFP.

Pursuant to Section 1.3.1.d. and 1.3.1.e. of Part D of the ITP, consultants and/or sub-consultants who assist the High Performance Transportation Enterprise and the Colorado Bridge Enterprise (together the "**Procuring Authorities**") in the preparation of a RFQ or RFP document will not be allowed to participate as an offeror or join a team submitting a proposal in response to the RFP. However, the Procuring Authorities may determine there is not an Organizational Conflict of Interest for a consultant or sub-consultant where there is no potential for impartial work or an unfair competitive advantage.

The Procuring Authorities have reviewed the information provided in your letter and have determined that Ms. Rude's participation on the KMP environmental team in response to this RFP does not pose an Organizational Conflict of Interest, subject to an acknowledgement from you that Ms. Rude has had no involvement at any stage in the preparation of the RFQ or RFP documents on behalf of the Procuring Authorities or CDOT.

As a condition of Ms. Rude's participation on the Project, please acknowledge your receipt of this letter confirming that Ms. Rude has had no involvement at any stage in the preparation of the RFQ or RFP documents on behalf of the Procuring Authorities or CDOT.

We thank you for your continued interest in the Central 70 Project.

Sincerely,

Nicholas Farber
Designated Representative
Colorado Bridge Enterprise
High Performance Transportation Enterprise

Acknowledgement:

We hereby acknowledge receipt of the above letter and the terms thereof and hereby acknowledge that Ms. Rude has had no involvement at any stage in the preparation of the RFQ or RFP documents on behalf of the Procuring Authorities or CDOT.

Kiewit Meridiam Partners

_____
Signature of Official Representative

John Dionisio
Name of Official Representative

Date: 8/30/2016

3.1 Organizational Conflicts of Interest

Kiewit-Meridiam Partners confirms the absence of any organizational conflicts of interest as defined in Section 5.3.1a of Part B of the Request for Qualifications, as amended by Addendum No. 1 thereto dated May 29, 2015. On April 23, 2015, in order to ensure compliance with the conflict of interest rules applying to this procurement, Kiewit-Meridiam Partners submitted letters provided by Parsons Brinckerhoff and Jacobs to the Procuring Authorities. The letters describe past business and employment relationships that, for the reasons cited therein, do not create any conflict per the guidelines set forth in the RFQ.

707 17th Street, Suite 2300
Denver, Colorado 80202-5131
United States
T +1.303.820.5240
F +1.303.820.2402
www.jacobs.com

April 22, 2015

Douglas W. Andrew
Parsons Brinckerhoff
555 17th Street, Suite 500
Denver, CO 80202

Re: I-70 East Request for Qualifications
Conflict of Interest Policy

Dear Mr. Andrew:

This letter is in response to your April 15, 2015 email regarding "Reporting Potential Conflicts of Interest for I-70E". Attached is an electronic copy of the "Conflict of Interest Policy" document signed by our Division Vice President. Note - an original copy was provided to you on April 21st.

As you may recall, we provided PB a letter from CDOT's Chief Engineer that our involvement with the I-70 East EIS related work was not an issue (see attached). The CDOT letter was in response to our November 1, 2012 letter to CDOT (also attached) which indicated that Mr. Reza Akhavan would comply with CRS 24-18-105 to avoid any organizational conflict of interest. The CDOT response letter acknowledged our original letter and specifically cleared Reza.

In addition, we also provided PB with a signed letter from Peter Kozinski (CDOT's Office of Major Project Development) that our Feasibility Study for a proposed second cover for the City and County of Denver was not a conflict of interest (see attached).

Per our conversation from yesterday, Ken Szeliga did not receive a letter from CDOT when he resigned as the Colorado Bridge Enterprise (CBE) program manager; but, we feel there is no conflict of interest for the following reasons.

- Ken left AECOM and his position as the CBE program manager in May of 2014; approximately 1 year ago
- Jacobs is serving as a sub-consultant to PB (and not the Lead Engineer)
- Ken is currently supporting the RFQ effort and is not identified as a key position
- Ken had no involvement with the I-70 environmental document, preparation of the I-70 East RFQ or other procurement documents while at CBE
- His work was completed in collaboration with CDOT staff and anything of significance was publicly shared with the CBE Board of Directors at the monthly meetings

Furthermore, it has been determined that AECOM is not conflicted out as they are part of another I-70 pursuit team. In summary, we do not feel that either Ken's or Reza's prior roles as the CBE program manager or CDOT Region 6 RTD constitute a conflict of interest.

I hope this meets your satisfaction; if not, please call or email me for additional information.

Sincerely,

Ken Szeliga
Rocky Mountain Region
Business Development Manager

Kiewit meridiam

April 2, 2015

Re: I-70 East Request for Qualifications
Conflict of Interest Policy

Team Members:

The Colorado Bridge Enterprise ("BE) and High Performance Transportation Enterprise ("HPTE"), collectively referred to as the Procuring Authorities, have developed a project-specific Communications and Conflict of Interest ("COI") policy for the I-70 East Project (the "Project") respecting their consultants and their affiliates. A copy of the current policy is attached to this letter (RFQ Sections 5.2 and 5.3), as well as 23 CFR § 636.116. Our team intends to comply with the Communications and COI policies and we request that each of our subcontractors, consultants and advisors comply as well.

The Procuring Authorities have engaged a number of consultants to assist and participate in the Project development stages, as well as assist the Procuring Authorities during the procurement process. Proposers are prohibited from teaming with, receiving any advice or discussing any aspect relating to the Project or the procurement of the Project with any such consultants.

By execution of this letter (below), you certify that you are not in violation of the Procuring Authorities policies with respect to organizational Communications and COI and that you have had no unpermitted contact nor will you have contact with any such restricted parties.

Sincerely,

James Geer
Vice President
Kiewit Development Company

John M. Dionisio
Senior Investment Director
Meridiam Infrastructure

Acknowledgement

We acknowledge we have reviewed the Communications and COI policies and we comply and will continue to comply with the obligations set forth in the RFQ.

Officer/Employee Signature: _____

Officer/Employee Name: Julie Skeen, Division Vice President

Legal Title of Company: Jacobs Engineering Group Inc.

Date: 4/21/15

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Chief Engineer's Office
4201 E. Arkansas Ave., Room 262
Denver, CO 80222
(303) 757-9204
(303) 757-9656 - FAX

November 19, 2012

Jacobs
Bob Sakaguchi, Business Development Leader
707 17th Street Suite 2400
Denver, CO 80202

Re: Request Approval I-70 East EIS

Dear Mr. Sakaguchi:

This letter shall confirm your request that there is no conflict of Interest pertaining to the I-70 East EIS-Related work as specified in your letter dated November 1, 2012. This concurrence will apply only to the request specified in said letter(attached) and to no other work.

I, hereby, acknowledge that Jacobs does not have an organizational conflict of interest and you will not be precluded from working on future I-70 projects.

CDOT further acknowledges that Jacobs continues to play an important role in meeting our transportation objectives and look forward to your continued participation in future projects.

Sincerely,

Timothy J. Harris, P.E.
Chief Engineer

JACOBS®

707 17th St., Suite 2400
Denver, CO 80202
Phone: 303.820.5240
Fax: 303.820.2402
www.jacobs.com

November 1, 2012

Mr. Timothy Harris, P.E.
Chief Engineer
Colorado Department of Transportation
4201 E Arkansas Avenue
Denver, Colorado 80222

RE: Consideration of No Organizational Conflict of Interest on I-70 East EIS-Related Work

Dear Tim:

Further to our telephone conversation earlier this week you may recall that Jacobs was precluded from proposing on the I-70 West co-development work, reportedly because of our involvement with the AGS study on the I-70 corridor. We accepted the Department's direction and did not propose on the co-development work.

To make certain that we have a clear and complete understanding in advance of any work opportunities subsequent to the I-70 East EIS, we are respectfully requesting your confirmation that Jacobs would not have an organizational conflict of interest that would preclude our working on future I-70 East projects.

We have reviewed the relevant documents (2 CCR 601.15, Section 7, CFR 636.116 and CDOT Policy Memo 23) and do not believe that we are conflicted in participating on future I-70 East projects. We are aware of two important factors that may create perception of impaired objectivity or unfair competitive advantage, and we want to bring them to your attention to eliminate them as possible conflicts.

1. To avoid any organizational conflicts of interest relative to our new-hire, Mr. Reza Akhavan, we will maintain strict adherence to CRS 24-18-105, ethical principles for public officers, local government officials, and employees.

2. Jacobs is a subconsultant to Atkins on the I-70 East EIS, our participation to date is approximately 14% and will not exceed the 20% limit, as referenced in the CDOT Policy Memo 23 and 2 CCR 601.15, Section 7. It is important to note that the bulk of Jacobs work was completed between 2003 and 2005.

We are very interested in pursuing future work in this corridor. We look forward to your response so we can better assist the Department to deliver this important work.

Sincerely,

Bob Sakaguchi
Business Development Leader

JACOBS

707 17th Street
Suite 2400
Denver, Colorado 80202 USA
1.303.820.4858 Fax 1.303.820.2402

November 18, 2014

Mr. Peter Kozinski, P.E.
Colorado Department of Transportation
4201 East Arkansas Avenue, Room 158
Denver, Colorado 80222

RE: I-70 East Reconstruction PPP Project

Dear Peter:

Jacobs Engineering Group Inc. was retained by the City and County of Denver (CCD) in early 2014 to conduct a Feasibility Study for a proposed "Second Cover" for the I-70 East project. As the work progressed, rather than a separate second cover, the focus of the feasibility study became a proposed extension of the Swansea Cover as shown in the I-70 East Draft EIS.

The purpose of the study was to help identify considerations and requirements for extending the proposed cover. Jacobs provided a concept-level planning document which provided technical information and evaluations to determine the feasibility of extending the Swansea Cover, and identified items to be further considered as the design progressed. Conceptual costs were developed using only independent pricing, no non-public pricing information was provided to Jacobs, to obtain a magnitude of cost. The study did not provide detailed drawings, specifications or reports, nor did it provide any recommendations to CCD. The basis for our technical evaluations was information that is available to the public, including the I-70 East Draft EIS and supporting documents. Jacobs was not provided with any information that is not available to the public. Further, the report that we delivered to CCD is not confidential, and can be shared with CDOT or any of the proposers for the I-70 East project.

Services for this study were completed in May 2014. The CCD project manager for this study was Mr. Steven Coggins (Steven.Coggins@denvergov.org, 720-865-3043).

Jacobs intends to pursue the upcoming I-70 East reconstruction project as a member of a PPP team. So that we can move forward with teaming agreements, we would appreciate your concurrence that our involvement with the Feasibility Study of the Swansea Cover Extension for CCD does not create any conflict of interest for our pursuit of the upcoming PPP project. Please sign this letter below and return to my attention at your earliest convenience to indicate your concurrence.

Thank you for your assistance with this matter. If you have any questions concerning this request, please contact me at 303-820-4895 or at Julie.Skeen@Jacobs.com.

Sincerely,
JACOBS ENGINEERING GROUP INC.

Julie Skeen
Vice President, Manager of Operations - Denver

Concur: _____ Date: 11/14/14

Printed Name: Peter Kozinski

PARSONS BRINCKERHOFF

555 17th Street
Suite 500
Denver, CO 80202
Phone: 303-832-9091
Fax: 303-728-1936
www.pbworld.com

April 21, 2015

Mr. Joseph Wingerter
Director of P3 Projects
Kiewit Corporation
3555 Farnam Street
Omaha, NE 68131

Re: **Colorado I-70 East Project**
Disclosure of Potential Conflicts of Interest

Dear Mr. Wingerter:

In accordance with the Request for Qualifications (RFQ) for the above referenced project, Parsons Brinckerhoff confirms the absence of any organizational conflicts of interest per Section 5.3.1.a of Part B of the RFQ for the referenced Project.

In an abundance of caution, we describe in the attached pages, the following:

ALLTECH, Inc., a subsidiary of Parsons Brinckerhoff is providing back-office support for E-470. ALLTECH will in no way be involved with Parsons Brinckerhoff's delivery of our services for the Project. ALLTECH and Parsons Brinckerhoff are separate and distinct entities. We suggest that we notify CDOT of this, along with our plan to firewall Parsons Brinckerhoff and ALLTECH staff, to allay any concerns that CDOT may have.

Donna Adams, a current employee of Parsons Brinckerhoff, and slotted to provide SOQ and Proposal development work only for the Project, is a prior Atkins, Inc. employee As referenced in the RFQ, we will assist Kiewit in submitting information to CDOT stating that Ms. Adams, while at Atkins, was not involved whatsoever, with regard to the Project.

In each instance we have detailed steps taken to date, and proposed future steps to be taken, to eliminate or mitigate the perception of any conflict of interest. We request that this information be forwarded to the Colorado Department of Transportation for their review and concurrence that no conflict of interest exists.

Should you wish to discuss this matter further, pleae do not hesitate to contact me.

Sincerely,

PARSONS BRINCKERHOFF, INC.

James Price, PE
Vice President

Attachments: Disclosure items 1 to 4

Disclosure of Potential Conflicts of Interest
Colorado I-70 East Project
Parsons Brinckerhoff, Inc.

Item 1 – Employment of Donna Adams

In June 2014, Donna Adams joined Parsons Brinckerhoff (PB) as the Business Development Manager for the Texas/Mountain Region, a territory that includes Colorado. PB plans for Donna to have an active role in preparing our response to the Request for Qualifications (RFQ) and RFP. Donna will not be involved in the I-70 East Project after the submission of a bid and proposal.

Prior to joining PB, Donna was the National Strategic Pursuits Manager for Atkins. As the National Strategic Pursuits Manager she assisted with pursuits for CDOT, none of which were related to I-70 East. At no time during her tenure at Atkins was Donna involved in providing technical services on any project in Colorado or for CDOT, nor did she do any work related to the I-70 East Project.

Atkins now serves in an advisory role to CDOT for I-70 East. Since PB has no reason to believe that any prior role Donna had with Atkins creates a conflict with her current role with PB, no prior steps have been taken with CDOT under RFQ Section 5.3.1.c of Part B to confirm CDOT's view that there are no conflicts.

We would recommend contacting CDOT to confirm its view that since Donna's former work did not involve I-70 East, Donna's proposed role on the project for the Kiewit Meridiam Team does not create a conflict.

Item 2 – Alltech Staff working with E-470

ALLTECH, Inc. (ALLTECH), a Parsons Brinckerhoff company, currently provides toll support services to the E-470 Authority under a re-newed contract executed January 8, 2015. The term of this subcontract ends December 31, 2016. Under this agreement, ALLTECH is a vendor of customer service center operations for toll facilities. For E-470, ALLTECH's services include:

- Support of toll collection;
- Monitoring traffic cameras for accidents, congestion, and other traffic incidents;
- Providing safety patrols; and
- Customer service support.

ALLTECH has no responsibility for the design, selection or installation of tolling equipment for the Authority. Further, CDOT will have the responsibility for these services on I-70 East. Also, given its scope of work with E-470, ALLTECH has not and will not in the future have any access to I-70 East Project information.

E-470 is listed in Section 5.3.1.d of the RFQ. Given ALLTECH's services are solely for operational support we do not believe a conflict exists.

Although no prior steps have been taken under RFQ Section 5.3.1.c of Part B to confirm the absence of any such conflicts with CDOT, we have discussed the matter with John McCuskey of E-470 and received an indication that PB's involvement as a Lead Designer would not create a conflict.

PB recommends that Kiewit/Meridaim correspond with CDOT and ask for their written confirmation that PB is not conflicted given ALLTECH's work for E-470. As part of that correspondence to CDOT, please include our plan to firewall ALLTECH's E-470 staff and PB's I-70 East Staff as noted below:

- No communications or information concerning the Project or E-470 will be shared directly or indirectly, between ALLTECH and PB staff;
- Each PB staff on I-70, and ALLTECH staff on E-470, will execute certifications recognizing their obligations to maintain a firewall.

Item 3 – Other Work with CDOT, Members of DRCOG and Related Activities

As part of Parsons Brinckerhoff's (PB's) position as a major regional design firm, we are currently under contract with many of the agencies listed in Section 5.2.2.e of the RFQ. Additionally, many of the subconsultants we plan to use also perform work for these same agencies.

Because we will adhere to the rules for contact as described in Section 5.2.2 of the RFQ and because we have not performed any work for these agencies related to I-70 East, a conflict does not exist for either PB or our subconsultants.

The RFQ does not require, and we do not believe, that there needs to be any disclosure to CDOT concerning the foregoing.

Item 4 – Organizational Conflicts of Interest from Subconsultants and PB Staff

As part of our review of potential conflicts of interest (COI) we requested a detailed review of the proposal requirements from both our subconsultants and PB staff planned to be assigned to the project.

All of the key staff PB plans on assigning to the Project are free from personal COI as defined in the RFQ.

The table below documents COI requests sent to PB's intended subconsultants and when we were notified of their status.

Subconsultant	Date COI Request Sent	Date COI Request Received	COI?
Apex Design	4/15/15	4/21/15	No
Clanton & Associates, Inc.	4/15/15	4/16/15	No
Entitlement & Engr. Solutions (EES)	4/15/15	4/20/15	No
HCL Engineering & Surveying	4/15/15	4/20/15	No
Jacobs	4/15/15	4/21/15	No
Railroad Coordination, LLC	4/15/15	4/20/15	No
RMC Consultants	4/15/15	4/16/15	No
Shannon & Wilson, Inc.	4/15/15	4/15/15	No
Transtec	4/15/15	4/21/15	No

Although Jacobs does not have any identified conflicts, they are providing additional clarification on roles for Ken Szeliga and Reza Akhavan which we will forward upon receipt.

May 5, 2017

Mr. Keith Stefanik
Central 70 Deputy Director of Project Delivery
Colorado Bridge Enterprise; High Performance Transportation Enterprise
200 S. Holly St.
Denver, CO 80222

Re: **Central 70 Project; Preliminary Organization Conflict of Interest Disclosures**

Mr. Stefanik:

Kiewit-Meridiam Partners (KMP) has prepared the following information in response to the Procuring Authorities' comments regarding KMP's Preliminary Organization Conflict of Interest Disclosures submission.

1. *Please confirm in writing that your Proposer team has no potential or actual organizational conflicts of interest not previously disclosed.*

   KMP is pleased to confirm that there are no potential or actual organization conflicts of interest not previously disclosed.

2. *The Procuring Authorities note that Kiewit Infrastructure Co., Lead Contractor for Kiewit Meridiam Partners ("KMP"), is presently the Integrated Construction Program Manager for the City of Denver (the "ICPM Engagement"). Subject to the following conditions, the Procuring Authorities have determined that Kiewit's continued participation in the Project procurement does not constitute an organizational conflict of interest as described in 2 C.C.R. 601-15 Sec. 7 and 23 CFR § 636.116 or the ITP…*

   KMP acknowledges and will implement the Procuring Authorities' conditions to ensure there is no conflict of interest with Kiewit's continued participation in the Central 70 procurement. Enclosed is a memorandum from Kiewit Infrastructure Co. describing the actions taken to mitigate any potential or actual organizational conflicts of interest.

   KMP requests an exception to the Procuring Authorities' conditions for our approved Project Communications Manager, Hunter Sydnor. Hunter Sydnor will sign a confidentiality agreement and has not and will not share any proprietary technical or other information between the two projects.

3. *The Procuring Authorities acknowledge the disclosure of a potential organizational conflict of interest with regards to WeiserMazars LLP acting as the model auditor for another Proposer team. The Procuring Authorities also acknowledge the April 8, 2016 letter from Corality describing the Information Barriers that will manage this potential organizational conflict of interest. The Procuring Authorities require that appropriate Information Barriers remain in place throughout the duration of the Project procurement. Written confirmation from Kiewit Meridiam Partners regarding the Information Barriers that are in place in regards to WeiserMazars LLP model auditor services.*

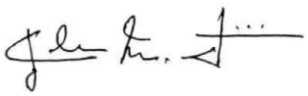
   This letter serves as KMP's written confirmation to the Procuring Authorities that WeiserMazars LLP acknowledges the Procuring Authorities' requirement that the Information Barriers described in Corality's letter of April 8, 2016 will remain in place throughout the duration of the Project procurement. In addition, KMP will provide a revised Model Auditor submittal by 11:00 am MDT, May 10, 2017 addressing the issues identified by the Procuring Authorities.

4. *In accordance with Section 1.3.1.c.iii. of Part D of the ITP, please submit a completed version of columns 1 and 2 of the tables set out in Parts 1 and 2 of Annex A to Form A-1 (Administrative and Technical Proposal Letter) in Part H of the ITP.*

   In accordance with Section 1.3.1.c.iii. of Part D of the ITP, KMP has attached a completed version of columns 1 and 2 of the tables set out in Parts 1 and 2 of Annex A to Form A-1 (Administrative and Technical Proposal Letter) in Part H of the ITP.

KMP appreciates the Department's consideration of this submittal. If there are any questions or comments regarding this submission please feel free to contact me at (212) 798-8683 or via email at J.Dionisio@meridiam.com.

Sincerely
Kiewit Meridiam Partners



John Dionisio
Official Representative
Kiewit Meridiam Partners

Enclosures: Memorandum from Kiewit Infrastructure Co. (pg. 3)
Form A-1 (pg. 8)

Kiewit

MEMORANDUM

Date: May 5, 2017
To: John Dionisio, KMP
From: Craig Briggs
CC: Van Groves, Vice President; Tom Howell, Vice President

Mr. Dionisio,

In response to the letter dated April 27, 2017 from the Central 70 Procuring Authorities, we have taken the following steps to eliminate or mitigate any potential material adverse effect of Kiewit Infrastructure Co.'s involvement as the Integrated Construction Program Manager for the City of Denver.

1. We have notified all Kiewit personnel working directly on the ICPM Engagement not to communicate with Kiewit staff supporting the Central 70 pursuit regarding the development or planning of KMP's Project proposal.
2. We have notified Kiewit personnel supporting the Central 70 pursuit not to communicate with Kiewit staff working directly on the ICPM Engagement regarding the development or planning of KMP's Project proposal.
3. We have initiated the process of collecting signed confidentiality agreements from all staff working on each engagement. The confidentiality agreements will be executed by Wednesday, May 10, 2017.
4. We have imposed Information Barriers, which have and will remain in place throughout the duration of the procurement, to prevent the cross-sharing of information. These Information Barriers include:
    a. Independent access-controlled SharePoint sites
    b. Physical separation between the two teams
5. No Kiewit staff directly working on the ICPM Engagement will be included in the KMP Project proposal.

We are committed to the pursuit of the Central 70 Project and will ensure there is no conflict of interest. Please contact me directly with any questions.

Thank you,

Craig Briggs

Kiewit

MEMORANDUM

Date: May 5, 2017
To: Kiewit Central 70 Pursuit Staff
From: Craig Briggs, Kiewit
CC: John Dionisio, KMP

As you are aware, Kiewit Infrastructure Co. is the Lead Contractor for the Kiewit-Meridiam Partners team pursuing the Central 70 Project. Independently, Kiewit Infrastructure Co. is also the Integrated Construction Program Manager (ICPM Engagement) for the City of Denver.

Kiewit's involvement in the ICPM Engagement has the potential to constitute a conflict of interest for our role in Central 70 Project procurement. To eliminate this potential conflict of interest, the following conditions will be implemented:

a. All Kiewit staff working on the Central 70 Project procurement must submit a signed copy of the attached confidentiality agreement to Michael Svoboda (Michael.Svoboda@kiewit.com) by Wednesday, May 10, 2017. Violation of this agreement will result in disciplinary actions, including possible termination of employment.
b. We have imposed Information Barriers, which will remain in place throughout the duration of the procurement, to prevent the cross-sharing of information. These Information Barriers include:
    a. Independent access-controlled SharePoint sites
    b. Physical separation between the two teams
c. No Kiewit staff directly working on the ICPM Engagement shall be included in the KMP Project proposal.

As a reminder, all Kiewit staff supporting the pursuit of the Central 70 Project shall strictly comply with the Procurement Rules identified in Part D of the ITP, including, but not limited to, the General Rules for Contact and Communications in Section 1.1.2 of Part D of the ITP.

I appreciate your attention and effort to ensure there is no conflict of interest in Kiewit's continued participation in the Central 70 procurement. Please contact me directly with any questions.

Thank you,

Craig Briggs

CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT

This Confidentiality and Non-Disclosure Agreement ("**Agreement**") is made and entered into as of the ____ day of May, 2017, by and between Kiewit Infrastructure Co. ("**Kiewit**") and _____ ("**Recipient**").

PRELIMINARY STATEMENT. Kiewit is part of a shortlisted team in relation to the Central 70 project in Denver, CO (the "C-70 Project") and is also the Integrated Construction Program Manager for the City of Denver ("ICPM Project"). Recipient is employed by Kiewit and is currently working on the C-70 Project.

NOW, THEREFORE, Kiewit and Recipient hereby agree as follows:

1. As used herein, "**Confidential Information**" means any and all financial, technical, proprietary, confidential, and other information, including data, reports, interpretations, forecasts, analyses, compilations, studies, summaries, extracts, records, know-how, statements (written or oral) or other documents of any kind, to the extent they contain information related to the C-70 Project. "Confidential Information" shall not include information which: (a) was or becomes generally available to the public other than as a result of a disclosure by Recipient; (b) was or becomes available to Recipient on a non-confidential basis prior to its disclosure hereunder, provided that the source of the information is not bound by a confidentiality agreement or otherwise prohibited from transmitting such information by a contractual, legal or fiduciary duty; or (c) was independently developed by Recipient without the use of or reliance upon any Confidential Information.

2. Recipient will keep, hold, maintain and treat the Confidential Information strictly confidential and will not disclose any Confidential Information to Kiewit staff working on the pursuit of the ICPM Project.

3. Recipient agrees that any disclosure of Confidential Information to Kiewit employees working directly on the ICPM Project will be grounds for disciplinary action up to and including termination.

4. This Agreement shall be governed and construed in accordance with the laws of Colorado.

IN WITNESS WHEREOF, the parties executed this Agreement as of the date first above written.

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

Kiewit

MEMORANDUM

Date:	May 5, 2017
To:	Kiewit ICPM Staff
From:	Craig Briggs, Kiewit
CC:	John Dionisio, KMP

As you are aware, Kiewit Infrastructure Co. is presently the Integrated Construction Program Manager for the City of Denver (ICPM Engagement). Independently, Kiewit Infrastructure Co. is also the Lead Contractor for the Kiewit-Meridiam Partners team pursuing the Central 70 Project.

Our involvement in the ICPM Engagement has the potential to constitute a conflict of interest for our role in Central 70 Project procurement. To eliminate this potential conflict of interest, we have imposed Information Barriers to prevent the cross-sharing of information which includes independent access-controlled SharePoint sites and physical separation between the two teams. These Information Barriers will remain in place throughout the duration of the procurement.

For further certainty, all Kiewit staff directly working on the ICPM Engagement must submit a signed copy of the attached confidentiality agreement to Michael Svoboda (Michael.Svoboda@kiewit.com) by Wednesday, May 10, 2017. Violation of this agreement will result in disciplinary actions, including possible termination of employment.

I appreciate your attention and effort to ensure there is no conflict of interest in Kiewit's continued participation in the Central 70 procurement. Please contact me directly with any questions.

Thank you,

Craig Briggs

CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT

This Confidentiality and Non-Disclosure Agreement ("**Agreement**") is made and entered into as of the ____ day of May, 2017, by and between Kiewit Infrastructure Co. ("**Kiewit**") and _____ ("**Recipient**").

PRELIMINARY STATEMENT. Kiewit is part of a shortlisted team in relation to the Central 70 project in Denver, CO (the "C-70 Project") and is also the Integrated Construction Program Manager for the City of Denver ("ICPM Project"). Recipient is employed by Kiewit and is currently working on the ICPM Project.

NOW, THEREFORE, Kiewit and Recipient hereby agree as follows:

1. As used herein, "**Confidential Information**" means any and all financial, technical, proprietary, confidential, and other information, including data, reports, interpretations, forecasts, analyses, compilations, studies, summaries, extracts, records, know-how, statements (written or oral) or other documents of any kind, to the extent they contain information related to the ICPM Project. "Confidential Information" shall not include information which: (a) was or becomes generally available to the public other than as a result of a disclosure by Recipient; (b) was or becomes available to Recipient on a non-confidential basis prior to its disclosure hereunder, provided that the source of the information is not bound by a confidentiality agreement or otherwise prohibited from transmitting such information by a contractual, legal or fiduciary duty; or (c) was independently developed by Recipient without the use of or reliance upon any Confidential Information.

2. Recipient will keep, hold, maintain and treat the Confidential Information strictly confidential and will not disclose any Confidential Information to Kiewit staff working on the pursuit of the C-70 Project.

3. Recipient agrees that any disclosure of Confidential Information to Kiewit employees working directly on the C-70 Project will be grounds for disciplinary action up to and including termination.

4. This Agreement shall be governed and construed in accordance with the laws of Colorado.

IN WITNESS WHEREOF, the parties executed this Agreement as of the date first above written.

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

Annex A: List of Proposer Team Members

Part 1: Core Proposer Team Members

We hereby certify that, for the purposes of Proposer's Proposal, the full legal names of the entities that are Proposer's Core Proposer Team Members, and (to the extent applicable) the respective percentage interest that each of them will have in the equity of Proposer's Developer (in the case of the Equity Members) or in the principal contract for the relevant works for which it has primary responsibility (in the case of the Lead Contractor, the Lead Engineer and the Lead Operator), are as set out in Column 1 in the table below. In addition, in Columns 2 and 3 in the table below we identify any changes made to the identity of any Core Proposer Team Members or the relevant percentages during the period specified in the relevant column.

Column 1	Column 2	Column 3
Core Proposer Team Members	**Changes (if any) between submission of SOQ and submission of Preliminary Organizational Conflict of Interest Disclosure**	**Changes (if any) since submission of Preliminary Organizational Conflict of Interest Disclosure**
1. Equity Members Meridiam I-70E CO, LLC (60%) Kiewit Development Company (40)%	**No changes**	
2. Lead Contractor Kiewit Infrastructure Co. (100)%	**No changes**	
3. Lead Engineer Parsons Brinckerhoff, Inc. (100%)	**Jacobs Engineering Group contract relationship has been clarified to a Prime / Sub.** **Detailed in the Preliminary Organizational Conflict of Interest Disclosure**	
4. Lead Operator Kiewit-Meridiam Partners Roy Jorgensen Associates, Inc.	**No changes**	
5. Financially Responsible Parties Meridiam Infrastructure North America Fund II, responsible for Meridiam I-70E CO, LLC (60%) Kiewit Infrastructure Group, Inc. (40%)	**No changes**	

Part 2: Other Proposer Team Members[1]

Column 1	Column 2	Column 3
Other Proposer Team Members	**Changes (if any) between submission of SOQ and submission of Preliminary Organizational Conflict of Interest Disclosure**	**Changes (if any) since submission of Preliminary Organizational Conflict of Interest Disclosure**
1. Financial Advisors to Proposer Co-Financial Advisor: Agentis Capital Partners Co-Financial Advisor/Co-Underwriter: Barclays Capital Inc. (60% of Underwriting) Co-Underwriter: RBC Capital Markets (40% of Underwriting) Model Audit: WeiserMazars LLP Tax/Accounting Advisor: PricewaterhouseCoopers LLP (PwC)	**WeiserMazars LLP acquired Corality detailed in the Preliminary Organizational Conflict of Interest Disclosure**	
2. Legal Advisors To Proposer: Norton Rose Fulbright US LLP To Lenders: Nixon Peabody LLP	**No changes**	
3. Technical Advisors to Lenders Sponsors' Traffic Advisor: BuroHappold Engineering Lenders' Technical Advisor: Turner & Townsend PML Study: INAMAR Pavement/LCC Analysis: Transtec Group Inc.	**BuroHappold Engineering and INAMAR have been added as Technical Advisors to Lenders since submission of the SOQ.**	

[1] Proposers are only required in this Part to identify external advisors and consultants.

4. Insurance Advisors To Proposer: In Tech Risk Management GmbH To Lenders: In Tech Risk Management GmbH		
5. Consultants[2] Bilingual Communication Services, LLC – Communications, Community Outreach Civitas – Landscape and Urban Design Clanton and Associates – Lighting Design HCL Engineers – Civil Design and Survey Muller Engineering Co. – ITS and Drainage Design Railroad Coordination, LLC – Railroad Coordination Services RMC Consultants, Inc. – Environmental, Phase II ESA, Contaminated Materials Shannon & Wilson, Inc. – Geotechnical Design Shrewsberry & Associates, LLC – Civil Design Transtec Group, Inc. – Pavement Design	**Civitas, Clanton and Associates, and Shrewsberry & Associates, LLC have been added as Consultants since submission of the SOQ.**	
6. Sub-contractors[3] Anderson Drilling Inc. – Drilled Shafts Colorado Asphalt Services Inc. – Paving Hamon Infrastructure – Bridges, Structures	**Colorado Asphalt Services, Inc., Hamon Infrastructure, and Lawrence Construction Company have been added as Sub-contractors since**	

[2] Proposers are required to identify the names and roles of all other consultants engaged or proposed to be engaged by Proposer or any Core Proposer Team Member whose identity is known as of the date of this letter. Such consultants would include specialists in areas such as environmental, public relations, DBE and workforce issues etc.
[3] Proposers are required to identify the names and roles of all Subcontractors (other than Core Proposer Team Members) engaged or proposed to be engaged by Proposer or any Core Proposer Team Member whose identity is known as of the date of this letter.

Iron Woman Construction and Environmental Services, LLC – Drainage, Environmental Remediation, Trucking, Utilities JKS Industries, Inc.– Environmental Lawrence Construction Company, Ltd - Structures Sturgeon Electric Company, Inc. – Electrical, Lighting, ITS Villalobos Concrete Company – PCCP	**submission of the SOQ.**	

CONFIDENTIAL

Kiewit Meridiam Partners
605 Third Ave
New York
NY 10538 United States
Ph. +1 212 7988683

MAIL TYPE	MAIL NUMBER	REFERENCE NUMBER
General Correspondence	KMP-GNC-000163	CDOT-TRN-000290

Re: Central 70 - Model Auditor and COI Responses

From	Mr John Dionisio - Kiewit Meridiam Partners
To (2)	Central 70 Project - CDOT
	Mr John Dionisio - Kiewit Meridiam Partners
Cc (2)	Keith Stefanik - CDOT
	Tony Devito - CDOT
Sent	Wednesday, May 10, 2017

MESSAGE

Dear Mr. Stefanik,
Upon further review, KMP would like to request an additional exception to Condition 2.b of the Preliminary Organizational Conflict of Interest Disclosure Response. KMP is requesting to be allowed to include Bill Whitaker in our proposal as the Independent Quality Control Lab Manager. Bill is currently the Quality Control Program Manager on the ICPM Engagement. Bill is not involved in the development of our proposal and has signed a confidentiality agreement stating that he will not share any proprietary technical or other information with Kiewit employees working on the Central 70 Pursuit.
Thank you,
John
John M. Dionisio
Official Representative
Kiewit Meridiam Partners

From: J Dionisio
Sent: 5/5/17 12:49:48 PM PDT (GMT -07:00)
To: Central 70 Project
Cc: Tony Devito, Keith Stefanik
Mail Number: KMP-GNC-000161
Subject: Re: Central 70 - Model Auditor and COI Responses

Dear Mr. Stefanik,
Please find KMP's responses to the Procuring Authorities' comments on the Preliminary Organizational Conflict of Interest Disclosures attached for review.
Thank you,
John
John M. Dionisio
Official Representative
Kiewit Meridiam Partners

From: C Project
Sent: 4/27/17 11:27:29 AM PDT (GMT -07:00)
To: John Dionisio
Cc: Tony Devito, Keith Stefanik
Mail Number: CDOT-TRN-000290
Subject: Central 70 - Model Auditor and COI Responses

Dear Proposer,
Please see attached for the Procuring Authorities' responses to your Model Auditor Appointment and Preliminary Organizational Conflict of Interest Disclosure submissions.
Kind Regards,
Central 70 Project

CONFIDENTIAL

Kiewit Meridiam Partners
605 Third Ave
New York
NY 10538 United States
Ph. +1 212 7988683

MAIL TYPE	MAIL NUMBER	REFERENCE NUMBER
General Correspondence	KMP-GNC-000164	CDOT-TRN-000290

Re: Central 70 - Model Auditor and COI Responses

From	Mr John Dionisio - Kiewit Meridiam Partners
To	Central 70 Project - CDOT
Cc (2)	Keith Stefanik - CDOT
	Tony Devito - CDOT
Sent	Monday, May 15, 2017

MESSAGE

Dear Mr. Stefanik,
In addition to Hunter Sydnor and Bill Whitaker, KMP would like to request an exception to Condition 2.b of the Preliminary Organizational Conflict of Interest Disclosure Response for Keynon Manley. KMP is requesting to be allowed to include Kenyon Manley in our proposal as the Construction Safety Manager. Kenyon is currently the Safety Manager on the ICPM Engagement. Kenyon is not involved in the development of our proposal and has signed a confidentiality agreement stating that he will not share any proprietary technical or other information with Kiewit employees working on the Central 70 Pursuit.
Thank you,
John
John M. Dionisio
Official Representative
Kiewit Meridiam Partners

From: J Dionisio
Sent: 5/10/17 10:13:28 AM PDT (GMT -07:00)
To: Central 70 Project, John Dionisio
Cc: Tony Devito, Keith Stefanik
Mail Number: KMP-GNC-000163
Subject: Re: Central 70 - Model Auditor and COI Responses

Dear Mr. Stefanik,

Upon further review, KMP would like to request an additional exception to Condition 2.b of the Preliminary Organizational Conflict of Interest Disclosure Response. KMP is requesting to be allowed to include Bill Whitaker in our proposal as the Independent Quality Control Lab Manager. Bill is currently the Quality Control Program Manager on the ICPM Engagement. Bill is not involved in the development of our proposal and has signed a confidentiality agreement stating that he will not share any proprietary technical or other information with Kiewit employees working on the Central 70 Pursuit.
Thank you,
John
John M. Dionisio
Official Representative
Kiewit Meridiam Partners

From: J Dionisio
Sent: 5/5/17 12:49:48 PM PDT (GMT -07:00)
To: Central 70 Project
Cc: Tony Devito, Keith Stefanik
Mail Number: KMP-GNC-000161
Subject: Re: Central 70 - Model Auditor and COI Responses

Dear Mr. Stefanik,
Please find KMP's responses to the Procuring Authorities' comments on the Preliminary Organizational Conflict of Interest Disclosures attached for review.
Thank you,
John
John M. Dionisio
Official Representative
Kiewit Meridiam Partners

From: C Project
Sent: 4/27/17 11:27:29 AM PDT (GMT -07:00)
To: John Dionisio
Cc: Tony Devito, Keith Stefanik
Mail Number: CDOT-TRN-000290
Subject: Central 70 - Model Auditor and COI Responses

Dear Proposer,
Please see attached for the Procuring Authorities' responses to your Model Auditor Appointment and Preliminary Organizational Conflict of Interest Disclosure submissions.
Kind Regards,
Central 70 Project

CONFIDENTIAL

CDOT
4201 E. Arkansas Avenue
Denver
Colorado 80202 United States
Ph. +1 303 7579011

MAIL TYPE	MAIL NUMBER	REFERENCE NUMBER
General Correspondence	CDOT-GNC-000916	CDOT-TRN-000290

Re: Central 70 - Model Auditor and COI Responses

From	Central 70 Project - CDOT
To	Mr John Dionisio - Kiewit Meridiam Partners
Cc (2)	Keith Stefanik - CDOT (+1 more...)
Sent	Thursday, May 25, 2017 4:44:12 AM PDT (GMT -07:00)
Status	N/A

MESSAGE

Dear Mr. Dionisio,

The Procuring Authorities are writing in regards to certain individuals inclusion in Kiewit Meridiam Partners' Proposal, specifically: (A) Hunter Sydnor's participation as Project Communications Manager, (B) Bill Whitaker's participation as Independent Quality Control Lab Manger, and (C) Kenyon Manley's participation as Construction Safety Manager. The Procuring Authorities have determined that these individuals participation in the Central 70 Project as part of the Kiewit Meridiam Partners' Proposer team is unlikely to confer an unfair competitive advantage to Kiewit Meridiam Partners at this time, and, as a result, would not constitute an organizational conflict of interest.

Notwithstanding the foregoing, the Procuring Authorities require these individuals to continue to refrain from sharing information from (A) the Central 70 Project with staff participating on the ICPM Engagement; and (B) the ICPM Engagement with staff participating on the Central 70 Project to the maximum extent possible. The Procuring Authorities request that copies of the confidentiality agreements referenced in your May 5th, May 10th, and May15th submissions be provided to the Procuring Authorities by Tuesday, May 30, 2017 at 2:00pm MT.

As a condition to the Procuring Authorities' approval of Hunter Sydnor's participation as Project Communications Manager, the Procuring Authorities require that if you are selected as the Preferred Proposer, the Project Agreement will be amended to include provisions that (a) permit the Enterprises to require Developer to exclude from, or otherwise limit the participation in, meetings and activities by the Developer's Project Communications Manager would otherwise be permitted or required to participate in or undertake and (b) provide that any such resulting exclusion or limitation shall not alter or relieve Developer from any obligation or liability under the Project Agreement or otherwise give rise to any claim for relief by Developer under the Project Agreement.

Kind Regards,
Central 70 Project

CONFIDENTIAL

Kiewit Meridiam Partners
605 Third Ave
New York
NY 10538 United States
Ph. +1 212 7988683

MAIL TYPE	MAIL NUMBER	REFERENCE NUMBER
General Correspondence	KMP-GNC-000166	CDOT-TRN-000290

Re: Central 70 - Model Auditor and COI Responses

From	Mr John Dionisio - Kiewit Meridiam Partners
To	Central 70 Project - CDOT
Cc (2)	Keith Stefanik - CDOT (+1 more...)
Sent	Thursday, May 25, 2017 6:47:56 AM PDT (GMT -07:00)
Status	N/A

FILE ATTACHMENTS (3)

File Name
Bill Whitaker NDA.pdf
Hunter Sydnor NDA.pdf
Kenyon Manley NDA.pdf

MESSAGE

Dear Mr. Stefanik,

Thank you for the response regarding inclusion of Hunter Sydnor, Bill Whitaker, and Kenyon Manley in KMP's Proposal. As requested, attached are confidentiality agreements for each individual. Please let me know if any other action is necessary.

Thank you,
John
John M. Dionisio
Official Representative
Kiewit Meridiam Partners

CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT

This Confidentiality and Non-Disclosure Agreement ("**Agreement**") is made and entered into as of the 5TH day of May, 2017, by and between Kiewit Infrastructure Co. ("**Kiewit**") and BILL WHITTAKER ("**Recipient**").

PRELIMINARY STATEMENT. Kiewit is part of a shortlisted team in relation to the Central 70 project in Denver, CO (the "C-70 Project") and is also the Integrated Construction Program Manager for the City of Denver ("ICPM Project"). Recipient is employed by Kiewit and is currently working on the ICPM Project.

NOW, THEREFORE, Kiewit and Recipient hereby agree as follows:

1. As used herein, "**Confidential Information**" means any and all financial, technical, proprietary, confidential, and other information, including data, reports, interpretations, forecasts, analyses, compilations, studies, summaries, extracts, records, know-how, statements (written or oral) or other documents of any kind, to the extent they contain information related to the ICPM Project. "Confidential Information" shall not include information which: (a) was or becomes generally available to the public other than as a result of a disclosure by Recipient; (b) was or becomes available to Recipient on a non-confidential basis prior to its disclosure hereunder, provided that the source of the information is not bound by a confidentiality agreement or otherwise prohibited from transmitting such information by a contractual, legal or fiduciary duty; or (c) was independently developed by Recipient without the use of or reliance upon any Confidential Information.

2. Recipient will keep, hold, maintain and treat the Confidential Information strictly confidential and will not disclose any Confidential Information to Kiewit staff working on the pursuit of the C-70 Project.

3. Recipient agrees that any disclosure of Confidential Information to Kiewit employees working directly on the C-70 Project will be grounds for disciplinary action up to and including termination.

4. This Agreement shall be governed and construed in accordance with the laws of Colorado.

IN WITNESS WHEREOF, the parties executed this Agreement as of the date first above written.

By: Bill Whittaker
Name: BILL WHITTAKE
Title: IC PROGRAM QC MANAGER

By: Craig Briggs
Name: Craig Briggs
Title: Senior Vice President

CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT

This Confidentiality and Non-Disclosure Agreement ("**Agreement**") is made and entered into as of the 9 day of May, 2017, by and between Kiewit Infrastructure Co. ("**Kiewit**") and Hunter Sydnor ("**Recipient**").

PRELIMINARY STATEMENT. Kiewit is part of a shortlisted team in relation to the Central 70 project in Denver, CO (the "C-70 Project") and is also the Integrated Construction Program Manager for the City of Denver ("ICPM Project"). Recipient is employed by Kiewit and is currently working on the C-70 Project.

NOW, THEREFORE, Kiewit and Recipient hereby agree as follows:

1. As used herein, "**Confidential Information**" means any and all financial, technical, proprietary, confidential, and other information, including data, reports, interpretations, forecasts, analyses, compilations, studies, summaries, extracts, records, know-how, statements (written or oral) or other documents of any kind, to the extent they contain information related to the C-70 Project. "Confidential Information" shall not include information which: (a) was or becomes generally available to the public other than as a result of a disclosure by Recipient; (b) was or becomes available to Recipient on a non-confidential basis prior to its disclosure hereunder, provided that the source of the information is not bound by a confidentiality agreement or otherwise prohibited from transmitting such information by a contractual, legal or fiduciary duty; or (c) was independently developed by Recipient without the use of or reliance upon any Confidential Information.

2. Recipient will keep, hold, maintain and treat the Confidential Information strictly confidential and will not disclose any Confidential Information to Kiewit staff working on the pursuit of the ICPM Project.

3. Recipient agrees that any disclosure of Confidential Information to Kiewit employees working directly on the ICPM Project will be grounds for disciplinary action up to and including termination.

4. This Agreement shall be governed and construed in accordance with the laws of Colorado.

IN WITNESS WHEREOF, the parties executed this Agreement as of the date first above written.

By: Hunter Sydnor
Name: Hunter Sydnor
Title: PI Manager

By: [signature]
Name: Craig Briggs
Title: Senior Vice President

CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT

This Confidentiality and Non-Disclosure Agreement ("**Agreement**") is made and entered into as of the 12 day of May, 2017, by and between Kiewit Infrastructure Co. ("**Kiewit**") and Kenyon Manley ("**Recipient**").

PRELIMINARY STATEMENT. Kiewit is part of a shortlisted team in relation to the Central 70 project in Denver, CO (the "C-70 Project") and is also the Integrated Construction Program Manager for the City of Denver ("ICPM Project"). Recipient is employed by Kiewit and is currently working on the ICPM Project.

NOW, THEREFORE, Kiewit and Recipient hereby agree as follows:

1. As used herein, "**Confidential Information**" means any and all financial, technical, proprietary, confidential, and other information, including data, reports, interpretations, forecasts, analyses, compilations, studies, summaries, extracts, records, know-how, statements (written or oral) or other documents of any kind, to the extent they contain information related to the ICPM Project. "Confidential Information" shall not include information which: (a) was or becomes generally available to the public other than as a result of a disclosure by Recipient; (b) was or becomes available to Recipient on a non-confidential basis prior to its disclosure hereunder, provided that the source of the information is not bound by a confidentiality agreement or otherwise prohibited from transmitting such information by a contractual, legal or fiduciary duty; or (c) was independently developed by Recipient without the use of or reliance upon any Confidential Information.

2. Recipient will keep, hold, maintain and treat the Confidential Information strictly confidential and will not disclose any Confidential Information to Kiewit staff working on the pursuit of the C-70 Project.

3. Recipient agrees that any disclosure of Confidential Information to Kiewit employees working directly on the C-70 Project will be grounds for disciplinary action up to and including termination.

4. This Agreement shall be governed and construed in accordance with the laws of Colorado.

IN WITNESS WHEREOF, the parties executed this Agreement as of the date first above written.

By: _____
Name: Craig Briggs
Title: Senior Vice President

By: _____
Name: Manley, Kenyon
Title: Safety Manager

May 25, 2017

High Performance Transportation Enterprise
4201 East Arkansas Ave., Room 230
Denver, CO 80222

Colorado Bridge Enterprise
4201 East Arkansas Ave., Room 230
Denver, CO 80222

Re: Central 70 Project; Model Auditor

Dear Mr. Dionisio,

We refer to the Final Request for Proposals to Design, Build, Finance, Operate and Maintain the Central 70 Project issued March 6, 2017 (as amended by Addendum No. 1 thereto issued April 25, 2017 and Addendum No. 2 thereto issued May 25, 2017 ("**Addendum No.2**"), the "**Final RFP**"). Capitalized terms used but not defined herein have the meanings given to them in the Final RFP.

The High Performance Transportation Enterprise and the Colorado Bridge Enterprise (together the "**Procuring Authorities**") are writing to you in response to your Model Auditor Proposer Update Submission from April 3, 2017 and your resubmission from May 10, 2017 (the "**Submissions**"). The Procuring Authorities have reviewed your Submissions and approve Kiewit Meridiam Partners' model auditor and the model auditor's terms of engagement.

When preparing your Financial Proposal, please note the amendments made in Addendum No. 2 to (a) Section 6.10.3 of the Financial Proposal Submission Requirements and (b) paragraph (b) of Attachment A to Annex 5 of Part G of the ITP.

Sincerely,

Keith Stefanik
Designated Representative
Central 70 Deputy Director of Project Delivery

FORM H: STIPEND AGREEMENT

STIPEND AGREEMENT

THIS STIPEND AGREEMENT (this "Agreement") is made and entered into as of this 1 day of June, 2017 by and between:

(1) the Colorado High Performance Transportation Enterprise ("HPTE") and the Colorado Bridge Enterprise ("BE"), each of which is a government-owned business within the Colorado Department of Transportation ("CDOT") and, in the case of HPTE, is a division of CDOT (together, the "Procuring Authorities");

(2) Meridiam I-70 East CO, LLC and Kiewit Development Company (together, the "Equity Members");

(3) Kiewit Infrastructure Co. (the "Lead Contractor");

(4) Parsons Brinckerhoff, Inc. (the "Lead Engineer"); and

(5) Roy Jorgensen Associates, Inc., Meridiam I-70 E CO, LLC and Kiewit Development Company (together, the "Lead Operator");

(6) Kiewit Infrastructure Group Inc. (a "Financially Responsible Party" and, together with the Equity Members, the Lead Contractor, the Lead Engineer and the Lead Operator, the "Core Proposer Team Members").

WITNESSETH:

WHEREAS, in response to the Request for Proposals dated March 6, 2017 (as amended by any Addenda thereto, the "RFP") issued by the Procuring Authorities in relation to the Central 70 Project (the "Project"), (a) Kiewit-Meridiam Partners ("Proposer") comprising the Core Proposer Team Members has submitted an Administrative and Technical Proposal and (b) Proposer is intending to submit a Financial Proposal;

WHEREAS, if Proposer is selected as the Preferred Proposer in accordance with the RFP, Proposer will, subject to the terms and conditions of the RFP, procure that an entity established by it will enter into a project agreement relating to the Project (the "Project Agreement") with the Procuring Authorities;

WHEREAS, as part of the procurement process for the Project under the RFP (the "Procurement Process"), Proposer has already provided and/or furnished to the Procuring Authorities, and may continue to provide and/or furnish to the Procuring Authorities, certain intellectual property, materials, information and ideas, including, but not limited to, such matters that are: (a) conveyed verbally and/or in writing during the Procurement Process including during proprietary meetings or interviews; and (b) contained in, related to or associated with Proposer's Proposal, including, but not limited to, written correspondence, designs, drawings, plans, exhibits, photographs, reports, printed material, tapes, electronic disks, Alternative Technical Concepts submitted to the Procuring Authorities during the Procurement Process (whether or not approved and whether or not incorporated into Proposer's Proposal), other graphic and visual aids, or information contained in Proposer's Proposal (all such intellectual property, materials, information and ideas, collectively, but subject to the exclusion specified in Section 2 below, "Proposer's Intellectual Property");

WHEREAS, the Procuring Authorities are willing to provide a payment to Proposer, subject to the express conditions stated in this Agreement, in exchange for a license to use the Proposer's Intellectual Property; and

WHEREAS, Proposer wishes to be eligible to receive the payment offered by the Procuring Authorities, in exchange for granting the Procuring Authorities the rights contained in this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants and agreements in this Agreement and other good and valuable consideration, the receipt and sufficiency of which are acknowledged by the parties, the parties agree as follows:

1. The Procuring Authorities' Rights in Proposer's Intellectual Property.

   a. Each of the Core Proposer Team Members hereby grants to the Procuring Authorities a non-exclusive, transferable (to any permitted assignee or transferee pursuant to Section 9.b. below), irrevocable, fully paid up and sub-licensable license to use that part of Proposer's Intellectual Property owned or licensed by such Core Proposer Team Member, which includes, without restriction or limitation, the right of the Procuring Authorities, and anyone contracting with the Procuring Authorities, to incorporate any ideas or information from such part of Proposer's Intellectual Property into: (i) the Project, including the Project Agreement (and/or any relevant sub-contract thereto); (ii) any other contract entered into in relation to the Project, (iii) any subsequent procurement of the Project; or (iv) any other project. Each of the Core Proposer Team Members agrees that it will, at the request of the Procuring Authorities, execute all papers and perform all other acts that may be necessary to ensure that the Procuring Authorities' rights, title and interest in the relevant part of Proposer's Intellectual Property are licensed as purported to be licensed hereunder and protected, provided that such acts do not extend to engaging in litigation, but each of the Core Proposer Team Members hereby authorizes the Procuring Authorities to litigate in its name. The rights licensed pursuant hereto to the Procuring Authorities include, without limitation, the Procuring Authorities' ability to use and re-use Proposer's Intellectual Property without the obligation to notify or seek permission from Proposer or any of the Core Proposer Team Members.

   b. The Procuring Authorities acknowledge that any designs, plans, drawings or other documents of such nature included as Proposer's Intellectual Property are preliminary in nature and use or reuse by the Procuring Authorities is at the Procuring Authorities' sole risk.

2. Exclusions from Proposer's Intellectual Property. Notwithstanding Section 1 above, it is understood and agreed that Proposer's Intellectual Property does not include, and the Core Proposer Team Members do not pursuant to this Agreement license or convey any rights in, the Base Financial Model.

3. Stipend Payment. The Procuring Authorities agree to pay Proposer (on behalf of all Core Proposer Team Members) a stipend payment (the "Stipend Payment") in the amount specified in Section 4 below, which constitutes payment in full to Proposer for the license of Proposer's Intellectual Property to the Procuring Authorities in accordance with this Agreement. The Procuring Authorities shall pay the Stipend Payment to Proposer on condition that:

   a. unless the Procuring Authorities have publicly announced the cancellation of the Procurement Process prior to the Technical Proposal Deadline, Proposer submits an Administrative and Technical Proposal which is responsive to, and compliant with, the RFP (including being compliant with all Administrative and Technical Pass/Fail Criteria and passing the Technical Substantive P/F Evaluation), as determined by the Procuring Authorities in their discretion; and

   b. unless the Procuring Authorities have publicly announced the cancellation of the Procurement Process prior to the Financial Proposal Deadline, Proposer submits a Financial Proposal which is responsive to, and compliant with, the RFP (including being

compliant with all Financial Pass/Fail Criteria), as determined by the Procuring Authorities in their discretion; and

c. Proposer has complied with all other terms and conditions of this Agreement and the ITP.

4. Stipend Payment Amount. Subject to the satisfaction of the conditions specified in Section 3 above, the Procuring Authorities shall make the Stipend Payment to Proposer in the amount of either:

a. $1,250,000, following the public announcement by the Procuring Authorities of the cancellation of the Procurement Process after the issuance of the final RFP but prior to the Technical Proposal Deadline; or

b. $2,500,000, following:

i. the public announcement by the Procuring Authorities of the cancellation of the Procurement Process after the Technical Proposal Deadline;

ii. the public announcement by the Procuring Authorities of a Preferred Proposer that is not Proposer (except that, if the Procuring Authorities enter into a Project Agreement with Proposer's Developer at any time after another Proposer is first selected as Preferred Proposer, the Procuring Authorities shall have no obligation to pay the Stipend Payment to Proposer); or

iii. the public announcement by the Procuring Authorities of the cancellation of the Procurement Process after the Financial Proposal Deadline, unless Proposer is first selected as the Preferred Proposer and the Procuring Authorities then become entitled to draw on Proposer's Proposal Security in accordance with Section 5.4.2.a of Part C of the ITP (in which event, for certainty, the Procuring Authorities shall have no obligation to pay the Stipend Payment to Proposer).

5. Payment Due Date. Subject to the satisfaction of the conditions specified in Section 3 above, the Procuring Authorities will make payment of the Stipend Payment to the Proposer (on behalf of the Core Proposer Team Members) by no later than the earlier of (a) 90 Calendar Days after the date on which the Procuring Authorities publicly announce the cancellation of the Procurement Process and (b) five Working Days after Financial Close, subject to prior receipt of an invoice therefor (which invoice shall specify the account details for such payment).

6. Effective Date of this Agreement. This Agreement shall not be valid until, and the rights and obligations of the Procuring Authorities, Proposer and the Core Proposer Team Members under this Agreement (including the Procuring Authorities' license rights in Proposer's Intellectual Property) shall only vest once, the Colorado State Controller (or designee) has approved, signed and dated this Agreement, except that the Procuring Authorities' license rights in any Proposer's Intellectual Property that is not created until after such date shall vest upon the date of creation.

7. Waiver. Notwithstanding any other provisions of this Agreement, if any one or more of the conditions set out in Section 3 above is not satisfied, then Proposer and the Core Proposer Team Members shall be deemed to have irrevocably waived and released any right to receive the Stipend Payment and any other right, in contract, law or equity, to recover the costs associated with the development of Proposer's Intellectual Property and/or costs incurred in participating in the Procurement Process, and the Procuring Authorities will have no rights or obligations under this Agreement (including, for the avoidance of doubt, to the Proposer's Intellectual Property).

8. Indemnity. The Core Proposer Team Members will, at their own expense, indemnify, protect and hold harmless the Procuring Authorities and their agents, directors, officers, employees,

representatives and contractors from all claims, costs, expenses, liabilities, demands, or suits at law or equity ("Claims") of, by or in favor of or awarded to any third party (including any costs (including legal fees) incurred by the Procuring Authorities in defending any such Claims or otherwise in seeking to protect their rights, title and interest in Proposer's Intellectual Property licensed, or purported to be licensed, to them hereunder) arising in whole or in part from breach of any of the obligations of the Core Proposer Team Members under this Agreement or the representation and warranty given by each of them under Section 10.a below, in each case only to the extent such breach gives rise to the relevant Claim, provided that this indemnity will not apply with respect to any Claim to the extent that such Claim is solely and directly caused by or results from (a) the negligence or willful misconduct of, or (b) the misuse or (only with respect to any designs, plans, drawings or other documents of such nature) use or reuse of Proposer's Intellectual Property by, the Procuring Authorities, or their agents, directors, officers, employees, representatives or contractors.

9. Assignment.

a. None of the Core Proposer Team Members shall be entitled to assign or otherwise transfer any of their rights or obligations under this Agreement without the Procuring Authorities' prior written consent, which consent may be given or withheld in the Procuring Authorities' sole discretion. Any such assignment or transfer without such consent will be null and void.

b. The Procuring Authorities shall be entitled to assign or otherwise transfer their rights under this Agreement and/or their rights, title and interest in Proposer's Intellectual Property Rights licensed to them hereunder to any division, agency or political subdivision of the State of Colorado.

c. Except as otherwise expressly provided in this Agreement, a reference to any person or entity includes such person's or entity's permitted successors, assigns and transferees.

10. Authority to Enter into this Agreement. By executing this Agreement:

a. each of the Core Proposer Team Members specifically represents and warrants that:

i. it has the power and authority to enter into this Agreement; and

ii. it has the power and authority and all necessary rights to grant, pursuant to Section 1.a above, the license to use Proposer's Intellectual Property; and

b. each of the Procuring Authorities specifically represents and warrants that it has the authority to enter into this Agreement and to pay the Stipend Payment.

11. Miscellaneous.

a. The parties hereto agree that Proposer, the Core Proposer Team Members, and their respective employees are not agents of the Procuring Authorities as a result of entering into this Agreement.

b. Capitalized terms not otherwise defined in this Agreement have the meanings given to them in the RFP.

c. This Agreement:

i. together with the RFP, embodies the entire agreement of the parties with respect to the subject matter hereof and there are no promises, terms, conditions, or

obligations other than those contained herein or in the RFP relating to such subject matter; and

ii. will supersede all previous communications, representations, or agreements, either verbal or written, between the parties hereto in relation to such subject matter.

d. It is understood and agreed by the parties that, if any part, term, or provision of this Agreement is by the courts held to be invalid, illegal or in conflict with any law of the State of Colorado, the validity and legality of the remaining parts, terms and provisions will not be affected, and the rights and obligations of the parties will be construed and enforced as if this Agreement did not contain the particular part, term, or provision held to be invalid, illegal or in conflict with any law of the State of Colorado.

e. Colorado law, and rules and regulations issued pursuant thereto, shall be applied in the interpretation, execution, and enforcement of this Agreement. Any provision included or incorporated herein by reference which conflicts with said laws, rules, and regulations shall be null and void. Any provision incorporated herein by reference which purports to negate this or any other Special Provision in whole or in part shall not be valid or enforceable or available in any action at law, whether by way of complaint, defense, or otherwise. Any provision rendered null and void by the operation of this provision shall not invalidate the remainder of this Agreement, to the extent capable of execution.

f. With respect to any suit, action or proceeding relating to this Agreement ("Proceedings"), each of the Core Proposer Team Members irrevocably:

i. submits to the exclusive jurisdiction of the United States District Court of Colorado and the State District Court of Colorado for the City and County of Denver;

ii. waives any objection which it may have at any time to the laying of venue of any Proceedings brought in any such court;

iii. waives any claim that any such Proceedings has been brought in an inconvenient forum; and

iv. waives the right to object, with respect to any such Proceedings, that such court does not have any jurisdiction with respect to such Proceedings.

12. Other Special Provisions.

a. **Fund Availability. CRS §24-30-202(5.5).** Financial obligations of the Procuring Authorities payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available.

b. **Governmental Immunity.** No term or condition of this Agreement shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions, of the Colorado Governmental Immunity Act, CRS §24-10-101 et seq., or the Federal Tort Claims Act, 28 U.S.C. §§1346(b) and 2671 et seq., as applicable now or hereafter amended.

c. **Independent Contractor.** Proposer and each Core Proposer Team Member shall perform their duties hereunder as independent contractors and not as employees. None of Proposer, any Core Proposer Team Member or any agent or employee of any thereof shall be deemed to be an agent or employee of the State. Proposer and each Core

Proposer Team Member and the employees and agents of each thereof are not entitled to unemployment insurance or workers' compensation benefits through the State and the State shall not pay for or otherwise provide such coverage. Unemployment insurance benefits will be available to Proposer and each Core Proposer Team Member and its employees and agents only if such coverage is made available by Proposer or any Core Proposer Team Member or a third party. Proposer and each Core Proposer Team Member shall pay when due all applicable employment taxes and income taxes and local head taxes incurred pursuant to this Agreement. Neither Proposer nor any Core Proposer Team Member shall have authorization, express or implied, to bind the State to any agreement, liability or understanding, except as expressly set forth herein. Proposer and each Core Proposer Team Member shall (a) provide and keep in force workers' compensation and unemployment compensation insurance in the amounts required by law, (b) provide proof thereof when requested by the State, and (c) be solely responsible for its acts and those of its employees and agents.

d. **Compliance with Law.** Proposer and each Core Proposer Team Member shall strictly comply with all applicable federal and State laws, rules, and regulations in effect or hereafter established, including, without limitation, laws applicable to discrimination and unfair employment practices.

e. **Binding Arbitration Prohibited.** The State of Colorado does not agree to binding arbitration by any extra-judicial body or person. Any provision to the contrary in this Agreement or incorporated herein by reference shall be null and void.

f. **Software Piracy Prohibition.** State or other public funds payable under this Agreement shall not be used for the acquisition, operation, or maintenance of computer software in violation of federal copyright laws or applicable licensing restrictions. Proposer and each Core Proposer Team Member hereby certifies and warrants that, during the term of this Agreement and any extensions, Proposer and each Core Proposer Team Member has and shall maintain in place appropriate systems and controls to prevent such improper use of public funds. If the State determines that Proposer or any Core Proposer Team Member is in violation of this provision, the Procuring Authorities may exercise any remedy available at law or in equity or under this Agreement, including, without limitation, immediate termination of this Agreement and any remedy consistent with federal copyright laws or applicable licensing restrictions.

g. **Employee Financial Interest/Conflict of Interest. CRS §§ 24-18-201 and 24-50-507.** The Proposer and each Core Proposer Team Member avers that, to its knowledge, no employee of the State has any personal or beneficial interest whatsoever in the service or property described in this Agreement. Neither Proposer nor any Core Proposer Team Member has any interest and shall not acquire any interest, direct or indirect, that would conflict in any manner or degree with the performance of Proposer's and each Core Proposer Team Member's obligations under this Agreement and neither Proposer nor any Core Proposer Team Member shall employ any person having such known interests.

h. **Vendor Offset. CRS §§ 24-30-202(1) and 24-30-202.4.** Subject to CRS §24-30-202.4(3.5), the State Controller may withhold payment under the State's vendor offset intercept system for debts owed to State agencies for: (a) unpaid child support debts or child support arrearages; (b) unpaid balances of tax, accrued interest, or other charges specified in CRS §39-21-101, et seq.; (c) unpaid loans due to the Student Loan Division of the Department of Higher Education; (d) amounts required to be paid to the Unemployment Compensation Fund; and (e) other unpaid debts owing to the State as a result of final agency determination or judicial action.

i. **Public Contracts for Services. CRS § 8-17.5-101.** Proposer and each Core Proposer Team Member certifies, warrants, and agrees that it does not knowingly employ or

contract with an illegal alien who will perform work related to this Agreement and will confirm the employment eligibility of all employees who are newly hired for employment in the United States to perform work related to this Agreement, through participation in the E-Verify Program or the Department program established pursuant to CRS §8-17.5-102(5)(c), None of Proposer or any Core Proposer Team Member shall knowingly employ or contract with an illegal alien to perform work related to this Agreement or enter into a contract with a subcontractor that fails to certify to Proposer or the relevant Core Proposer Team Member, as the case may be, that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work related to this Agreement. Proposer and each Core Proposer Team Member (a) shall not use E-Verify Program or Department program procedures to undertake pre-employment screening of job applicants while work related to this Agreement is being performed, (b) shall notify the subcontractor and the Procuring Authorities within three days if Proposer or such Core Proposer Team Member has actual knowledge that a subcontractor is employing or contracting with an illegal alien for work related to this Agreement, (c) shall terminate the subcontract if a subcontractor does not stop employing or contracting with the illegal alien within three days of receiving the notice, and (d) shall comply with reasonable requests made in the course of an investigation, undertaken pursuant to CRS §8-17.5-102(5), by the Colorado Department of Labor and Employment. If Proposer or such Core Proposer Team Member participates in the Department program, it shall deliver to the Procuring Authorities, Institution of Higher Education or political subdivision a written, notarized affirmation, affirming that Proposer or such Core Proposer Team Member has examined the legal work status of such employee, and shall comply with all of the other requirements of the Department program. If Proposer or such Core Proposer Team Member fails to comply with any requirement of this provision or CRS §8-17.5-101 et seq., the contracting State agency, institution of higher education or political subdivision may terminate this Agreement for breach and, if so terminated, Proposer and each Core Proposer Team Member shall be liable for damages.

IN WITNESS WHEREOF, this Agreement has been executed and delivered as of the day and year first above written.

COLORADO HIGH PERFORMANCE TRANSPORTATION ENTERPRISE

_____

By: _____

Title:_____

Date: _____

COLORADO BRIDGE ENTERPRISE

_____

By: _____

Title:_____

Date: _____

APPROVED:

[ ], ATTORNEY GENERAL

By: _____

Title:_____

Date: _____

Financially Responsible Party

Kiewit Infrastructure Group Inc.

By: _____

Printed Name: Scott Cassels

Title: President

Equity Member

Meridiam I-70 East CO, LLC

By: _____

Printed Name: John Dionisio

Title: Authorized Signatory

Equity Member

Kiewit Development Company

By: _____

Printed Name: James Geer

Title: Vice President, Development

Lead Contractor

Kiewit Infrastructure Co.

By: _____

Printed Name: Craig A. Briggs

Title: Senior Vice President

Lead Engineer

Parsons Brinckerhoff, Inc.

By: _____

Printed Name: Frank Medina

Title: Senior Vice President, Regional Director Tx/Mnt

Under penalty of perjury, each of the undersigned:

(a) certifies on behalf of the entity for which he or she signs that:

(i) the Official Representative named above is authorized by such entity to sign this letter on behalf of Proposer; and

(ii) the representations, certifications, statements, disclosures, authorizations and commitments made, and information contained, in this Administrative and Technical Proposal, including in this letter, by or in respect of such entity have been authorized by such entity, and is or are correct, complete and not materially misleading; and

(b) swears and affirms that he or she is authorized to act on behalf of the entity for which he or she signs and acknowledges that the Procuring Authorities are each relying on his or her representation to this effect:

Joint Venturer in Lead Operator: Roy Jorgensen Associates, Inc.

By: Charles E. Henningsgaard

Printed Name: Charles E. Henningsgaard, PE

Title: Senior Vice President

ALL CONTRACTS REQUIRE APPROVAL BY THE STATE CONTROLLER

STATE CONTROLLER

ROBERT JAROS, CPA, MBA, JD

By:_____ , Delegee

Date:

CENTRAL 70

The Central 70 Project is an iconic revitalization of a highway corridor that has exceeded its capacity, functionality and service life. The Department's rebuild of the Gateway to Denver promotes community connectivity and enhances economic development. The network receives upgrades for roadway/vehicle communication. **When completed, Central 70 will be the most technologically advanced stretch of highway in Colorado.** The Department, City and County of Denver, corridor communities, and other stakeholders/users have coalesced with a vison that will deliver decades of enhancements.

To ensure success for this endeavor Kiewit Meridiam Partners (KMP) came together as unified, like-minded firms with shared core values and previous working relationships. With an established hometown presence in Denver and over 70 years of commitment to the Colorado market, Kiewit joined with Meridiam, a long-term investor of infrastructure assets with a proven community involvement focus. KMP's collaborative approach ensures a successful delivery to exceed your Project Goals.

This Executive Summary highlights explicit benefits to the community and the Department.

INVESTING IN THE COMMUNITY

- **KMP honors our commitment to the community with a charitable foundation and contributions exceeding $1,000,000 over the Term.** Our Foundation aims to improve the quality of life with business investment, food access, scholarship programs, and education and social programs.

NOBODY GETS HURT

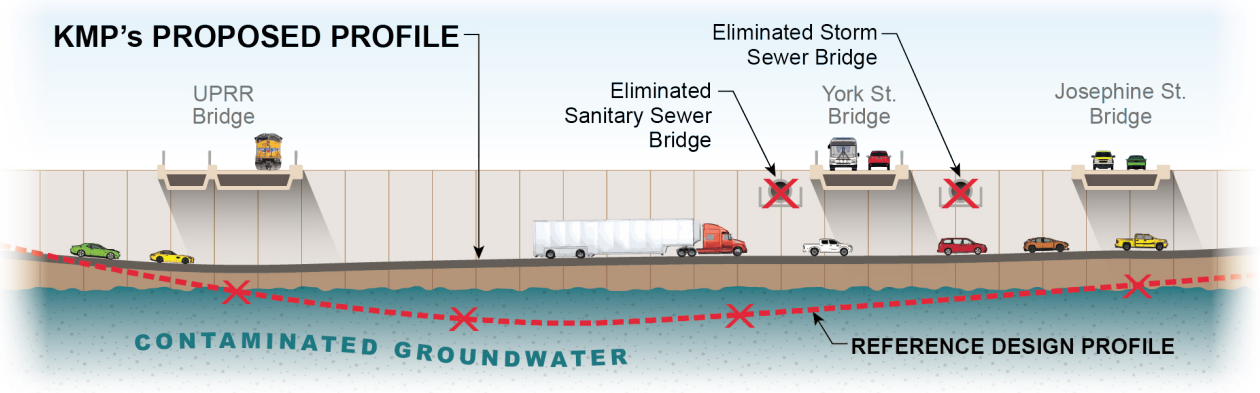
- Safety of people on the Project and those using the roadways and surrounding community is our most important priority.

TECHNICAL SOLUTIONS – OPTIMIZATION

We incorporated 25 alternative technical concepts (ATC) during our initial design enhancement.

- Our O&M professionals supported design development of highly resilient asphalt pavement which reduces noise in the neighborhoods.
- We engaged the Denver Metro Area's two best consultants for railroad coordination and utility relocations to mitigate the greatest challenges of the Project.

- Our Design raises the roadway profile, removing the community's great concern of exposure to toxic groundwater. This also eliminates a pump station and water treatment plant.



"A great company has great people...never lose sight of that fact." –WALTER SCOTT, JR.
Kiewit Chairman Emeritus and Colorado State University College of Engineering Namesake

EXECUTIVE SUMMARY

Kiewit meridiam PARTNERS

KMP'S LONG-TERM COMMITMENT TO EXCELLENCE

- From early days in the state with an office on Colorado Boulevard, Kiewit has grown to be the premier local highway contractor with the largest equipment fleet and staff of construction professionals in the state. Kiewit has responded to the Department's needs for over 70 years.

Kiewit's first Denver office at 1950 S. Colorado Blvd. (circa 1944)

- Meridiam has developed more P3 projects in the US than any other firm and differs from other developers through an investment horizon of 25 years, allowing a true buy-and-hold long-term partnership.

> "Meridiam and the entire port tunnel team...set out to do something amazing, and they did. It was a fantastic project for Miami and the entire Miami-Dade community."
> – JUAN KURYLA
> *Director, Port Miami*

COMMUNITY STEWARDSHIP

For decades, Kiewit has focused on developing sustained relationships with Colorado stakeholders and the local business communities.

As a result, experienced Colorado subcontractors including multiple DBE and ESB firms are current team members. Demonstrating our commitment, KMP sought out and engaged Denver Print Company, an MBE firm on the Project Corridor, to print the Appendices and ATCs in this submittal to the Department.

- KMP will exceed DBE and ESB goals, maximizing relationships and developing new partnerships.
- Kiewit has the best training program and facility in the state. This is the foundation for our commitment to workforce development.
- We hold ourselves accountable to executives of the DBE community through an established Diversity and Inclusion Council, exceeding the Department's requirements.

RIGHT PEOPLE

- Our leadership team combines decades of intimate knowledge in the Denver Metro Area with the support of national experts in P3, design build, operations, and maintenance.
- KMP includes Jorgensen as Lead Operator, who leverages their O&M experience from thousands of US lane miles.
- Our team diligently collaborated with the Department through the procurement process to bring innovative and value-added solutions.

> "I stand behind all that we do."
> –CHRIS HODGKINS
> *KMP Project Manager*

- We will continue our proactive relationship with the Department to embrace a *Project First* philosophy. Collaboration is enhanced through joint participation of KMP, key stakeholders, and the Department in design development and construction.

ENVIRONMENTAL INTEGRITY

- Our unique design solutions minimize exposure of hazardous materials.
- KMP conducts extensive investigations to confirm locations of hazardous substances and contaminated groundwater. We identify certified RHM waste disposal sites.
- We follow a strict three-step rule for hazardous substances: 1) proper use, 2) correct handling, and 3) recognition and notification training.

> "HCTRA serves over one million patrons per day. With the help of Roy Jorgensen Associates and its many dedicated employees we provide a cleaner, safer, and more viable transportation alternative to the traveling public."
> –DAVID GOLDBERG, PE
> *Facilities and Maintenance Engineer*
> *Harris County Toll Road Authority*

Key Personnel Structure

NOBODY GETS HURT - Our most important priority: no incidents and no injuries on the roadway or in the surrounding community.

"Successfully navigating the challenges of large and complex projects in urban settings requires close collaboration among all parties based on a what's-best-for-the-project-focus, a high level of technical expertise, and an earned trust. During the T-REX project, **Tom Howell** proved to be a committed DB contractor leader that exemplified these attributes."

–RICHARD CLARKE *Chief Program Management Officer, Metro Los Angeles*

CORE VALUES

People: Care for the well-being of people, and help them grow in their ability to be successful.

Integrity: Conduct business to the highest ethical standards and take responsibility for our actions.

Excellence: A commitment to excellence in all we do with a focus on continuous improvement.

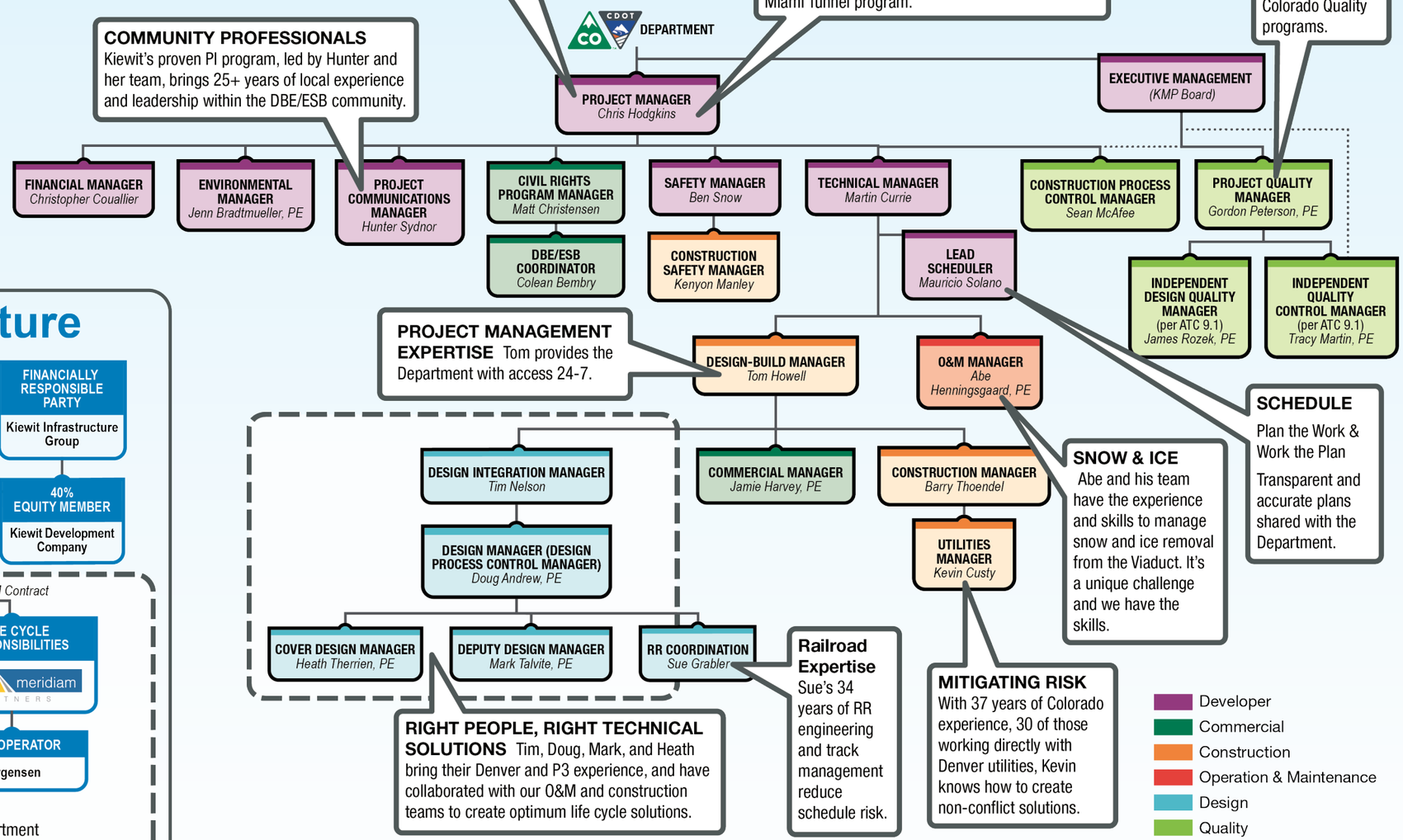
Stewardship: Embrace the culture of building a sustainable infrastructure for future generations.

RESPONSIVE
Single entity through Term with Kiewit performing in all roles. Meridiam is steadfast in their buy-and-hold investment philosophy for the communities in which they serve.

CENTRAL 70 COMMUNITY FOUNDATION Chris will manage KMP's $1,000,000 charitable foundation applying experience gained on the award-winning Port of Miami Tunnel program.

QUALITY DELIVERY
Gordon is an industry leader and pioneer in Colorado Quality programs.

COMMUNITY PROFESSIONALS
Kiewit's proven PI program, led by Hunter and her team, brings 25+ years of local experience and leadership within the DBE/ESB community.



PROJECT MANAGEMENT EXPERTISE Tom provides the Department with access 24-7.

SCHEDULE
Plan the Work & Work the Plan
Transparent and accurate plans shared with the Department.

SNOW & ICE
Abe and his team have the experience and skills to manage snow and ice removal from the Viaduct. It's a unique challenge and we have the skills.

Railroad Expertise
Sue's 34 years of RR engineering and track management reduce schedule risk.

MITIGATING RISK
With 37 years of Colorado experience, 30 of those working directly with Denver utilities, Kevin knows how to create non-conflict solutions.

RIGHT PEOPLE, RIGHT TECHNICAL SOLUTIONS Tim, Doug, Mark, and Heath bring their Denver and P3 experience, and have collaborated with our O&M and construction teams to create optimum life cycle solutions.

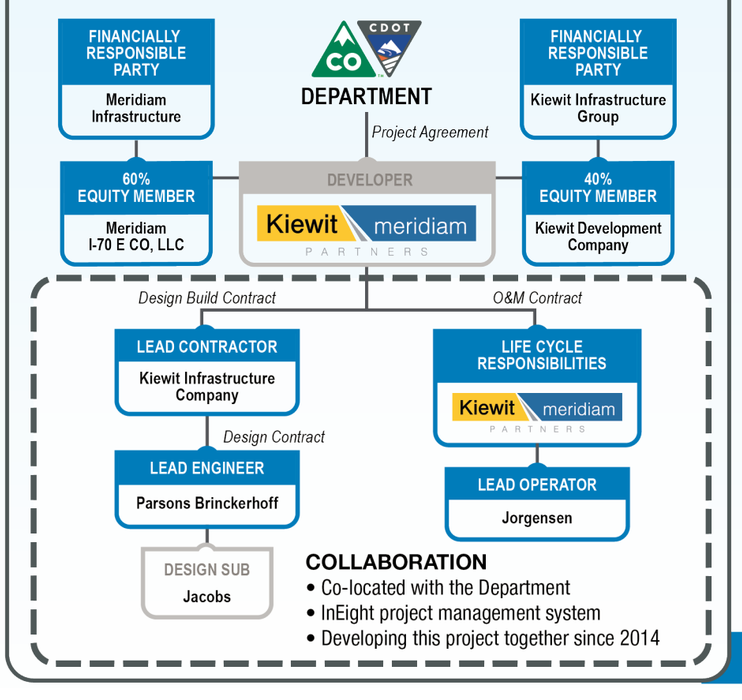
PROJECT FIRST - Collaboration to prioritize the best solution for the project and community through honesty, transparency and trust.

RIGHT FIRST TIME - Doing the right thing effectively and efficiently, even when no one is looking, to deliver *right first time* every time.

SUMMARY

EXECUTIVE

Our Team Structure



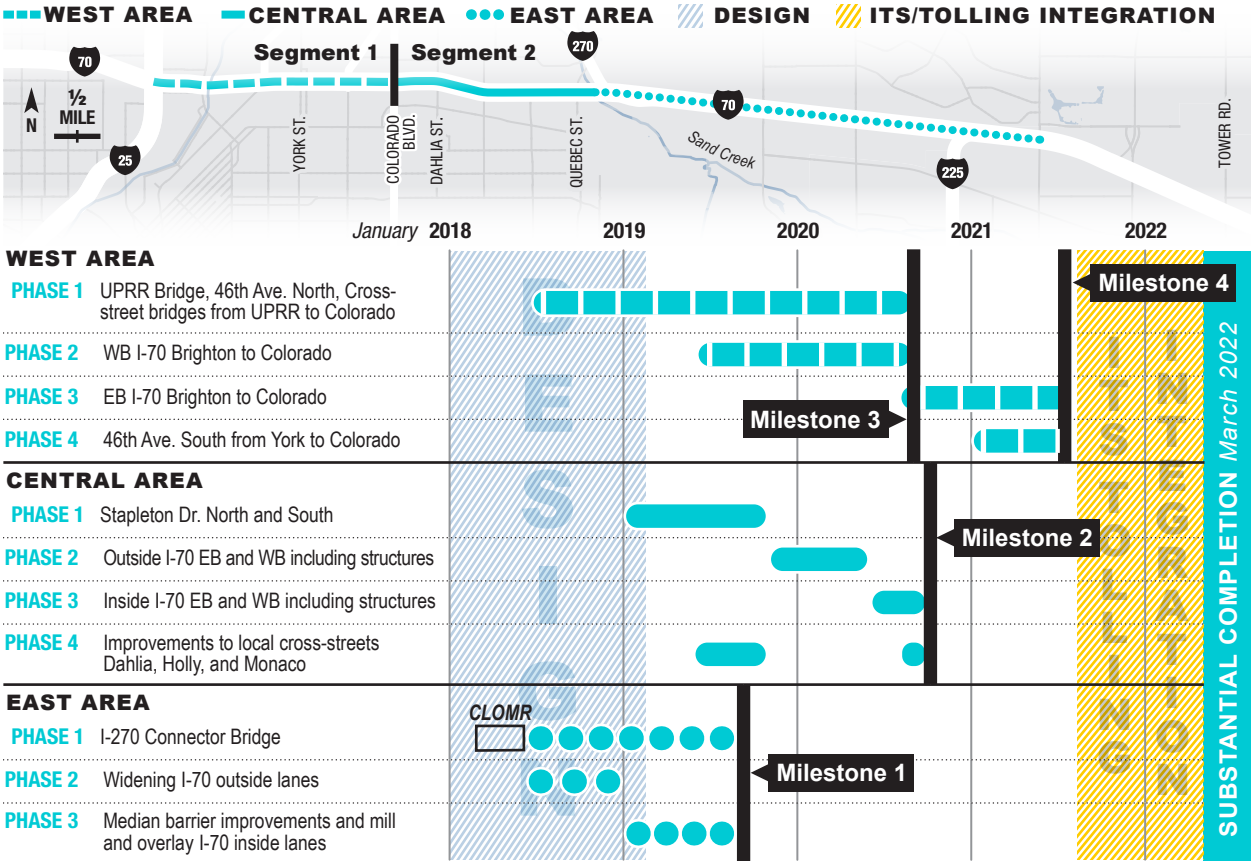
COLLABORATION
- Co-located with the Department
- InEight project management system
- Developing this project together since 2014

Kiewit meridiam PARTNERS

OPTIMIZED TRAFFIC MANAGEMENT, SCHEDULE, AND RENEWALS

- **Traffic Management.** We optimized 8 Department-approved full ramp closures, reducing mainline traffic shifts, and improving workforce, traveling public, and community safety. Our extended use of existing traffic patterns enable safer and smoother travel, reducing accidents and improving travel times and service levels.
- **Schedule. Substantial completion is achieved in March 2022, eight months ahead of the Project deadline.** Our transparent, realistic schedule respects all the Department's commitments and goals. Key items addressed include community needs, Swansea Elementary School access and safety, and timeframes for third party utility relocations. We based these durations on our institutional knowledge of the local utility providers.
- **Durability.** We provide a reliable asset for 30 years and reduced future costs for the Department by engaging O&M professionals early in our design development. For example, robust pavement design and phenolic fiberglass conduits for the Cover provide durability and minimize the impact of maintenance interventions.
- **Renewal Milestones.** Our Renewal Schedule includes Routine Maintenance with pavement surface renewal (Year 14) followed by strengthening and resurfacing (Year 28) of the Operating Period.
- **Future Proofing.** Kiewit and Parsons Brinckerhoff are actively participating in Smart Road technology. We will work directly with the Department, manufacturers, and universities to **integrate up to $5M in effective construction value for products, materials, and other intelligent highway innovations.**

Construction Traffic Management Plan and Milestone Schedule



PROFESSIONALS PROVIDE THE COMMUNITY WITH PROJECT INFORMATION

- KMP team members have lived and worked in the Swansea, Elyria, and Globeville communities for many years.
- Jenn Bradtmueller (Environmental), Hunter Sydnor (Communications), and Ana Mostaccero (Bilingual Liaison) are invested in the community, and are familiar with the characteristics and cultures.

COMMUNICATION PRINCIPLES

- Use tools specifically tailored for the community for early and continuous communication with the public and stakeholders.
- Communicate transparently with simple, clear, and accurate information.
- Provide timely response to public input with appropriate adaptations to our Project communications approach.

COMMUNITY ENGAGEMENT

- Invest $1,000,000 in the community we live in through our Foundation.
- Engage the community in Cover park decor selections.
- Collaborate with Registered Neighborhood Organizations to name the Cover park to honor local legends, as was done for the Bruce Randolph School. Follow the Denver Parks and Recreation Policy for Naming of Parks and Recreational Facilities.

A CORRIDOR OF QUALITY ENHANCEMENTS

Since September 2015 KMP engaged with the Department to pursue Reference Design enhancements. Material highlights of ATCs and innovations incorporated in our proposal are shown on the following page.

Kiewit's state-of-the-art 150,000 sf training facility in Aurora offers all craft NCCER-accredited courses

Hunter Sydnor leads the public involvement team

Cover design manager & project corridor resident, Heath Therrien

> "To me, sincere interest means genuine concern for a person's well-being. We should develop the habit of going out of our way to do things for others."
>
> –PETER KIEWIT
> *former Kiewit President and Chairman*

East 46th Avenue Plaza adjacent to multi-purpose field

Innovative Design and Technical Concepts

Safe Routes for Pedestrians

We included a covered, lit, and secure pedestrian pathway under the UPRR tracks to circumvent current unsafe track crossing during construction.

ATC 17 and UPRR Crossing Optimizations

Our ATC increased safety for operations adjacent to the railroad, reduced our construction schedule, and minimized impacts to UPRR operations. We applied prudent design methods to reduce the structure depth of the UPRR crossing, which contributes to our raised profile.

ATC 57 Construct Clayton and Columbine Bridges Concurrently in One Season

Our approach:

- Occurs outside of school year
- Maintains year-round access to Swansea Elementary School
- Meets Project Agreement street closure requirements

ATCs 43 and 33 Pavement Optimizations

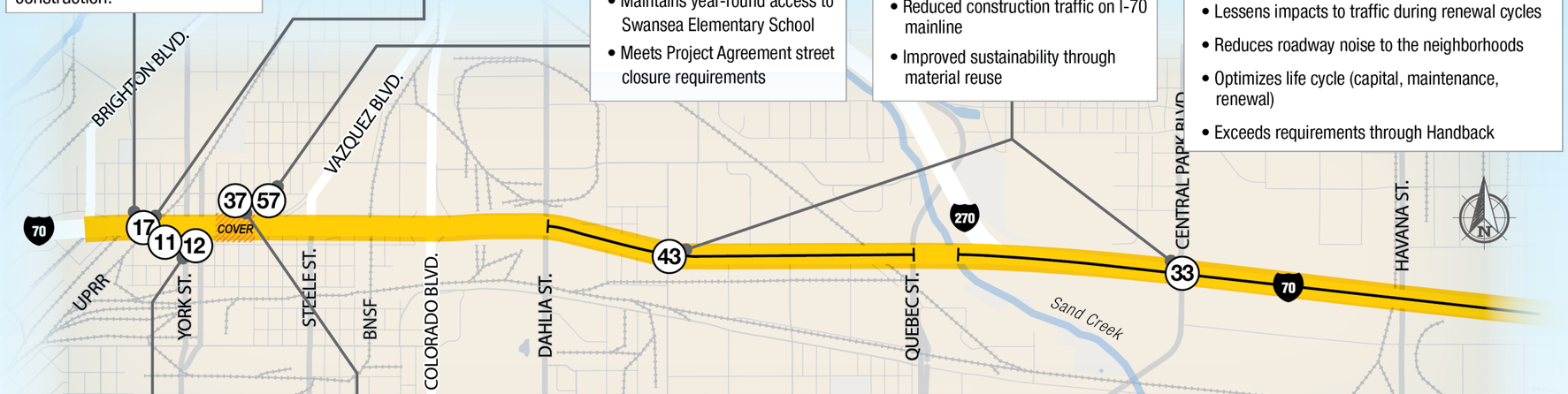
Our Pavement Design is based on high performance reconstruction and optimized remediation techniques from Dahlia St. to Chambers Blvd. which delivers:

- Improved safety through shorter work duration
- Optimized life cycle Maintenance costs
- An efficient construction schedule
- Reduced construction traffic on I-70 mainline
- Improved sustainability through material reuse

High-performance asphalt in the Lowered Section

Our Pavement Selection:

- Facilitates traffic switches within 24 hours
- Provides better rideability for the traveling public
- Lessens impacts to traffic during renewal cycles
- Reduces roadway noise to the neighborhoods
- Optimizes life cycle (capital, maintenance, renewal)
- Exceeds requirements through Handback



ATCs 11 & 12 Raising the Road Profile Above the Groundwater Table

Through our team's local utility knowledge, we achieved a sustainable and practical long-term roadway design which:

- Eliminates need for a groundwater pumping and treatment station
- Reroutes Reference Design utilities to remove Storm and Sanitary Sewer Bridges over I-70
- Eliminates large diameter utility pipes from congested local streets avoiding extensive community intrusion

ATC 37 Alternate Cover Electrical System

A revised electrical system built upon proven cover systems elsewhere in the US. This approach reduces schedule, construction and O&M costs, and the associated reduction in equipment space needed brings an increase to Park space on the cover.

Design Enhancements to Support the Community

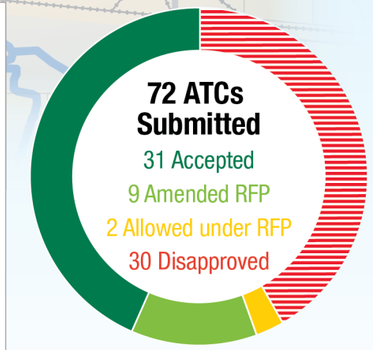
- Minimized hauls through diversion of excess excavation to future CCD development sites
- Eliminated ROW impacts to the Goodwill Outlet World building

GOODWILL INDUSTRIES OF DENVER

ATC 68 Relocate Pump Station

Our design eliminates over 1-mile of storm sewer and the associated impacts, including:

- Local road closures
- Construction within private business ROW, such as E&K Services
- Long-term maintenance of a facility more than a mile from the Project ROW



KMP Delivers. Value is what you get.

Department Benefits

Risk Mitigation

- Raised road profile eliminates concerns with contaminated groundwater
- Detail analysis of utility relocations achieved roadway realignment and schedule certainty
- Advanced drainage design during procurement
- Full 3D model of existing/proposed utilities developed for clash detection

Quality Design Optimizing Life Cycle

- Revised geometry reduces the number of drainage inlets to maintain
- Raised road profile eliminates groundwater's ability to undermine pavement foundations and reduces maintenance costs
- Onsite drainage pump station relocated closer to Project Limits reduces community impact

Reducing Community Impacts

- Optimized 8 of 16 full ramp closures
- Only 2 major traffic switches
- Project designed within Project ROW
- Raised profile eliminates 4,000 truckloads of material from I-70 mainline

Local Knowledge

- Institutional utility expertise
- In-depth understanding of local construction requirements
- Local P3 lessons learned
- Unique understanding as local residents
- Signatory to all major unions
- Immediate availability of local staff

Project Management

For more than 10 years the Department has diligently pursued a Corridor of Opportunity for Denver—a vision for economic development and growth to bring the Central 70 Project to fruition. To achieve a successful Project, KMP Team members commit to continue our partnerships with the Department to meet all Project Goals. We deliver through a culture of safety and quality embraced by every member of our Team. The foundation of our success is the health of our local communities, sustainable practices, and a safe environment for every individual in the Project Area. We bring the Department proven management processes and our safety commitment that *Nobody Gets Hurt*.

DEPARTMENT PROJECT GOAL: Protect the health and safety of the workforce and public.

KMP achieves this goal and benefits the Department through:

✓ **LONG-TERM PROJECT COMMITMENT** KMP's partners, Kiewit and Meridiam, are loyal to their communities. Kiewit has been in Denver since 1938 and plans to be here for generations to come. Meridiam is a true long-term investor, with equity funds in excess of 50 years structured to support projects through handback.

✓ **PROJECT MANAGEMENT EXPERTISE** Our team brings successful P3 and design build experience led by Project Manager **Chris Hodgkins**, Design-Build Manager **Tom Howell**, Design Manager **Doug Andrew**, and O&M Manager **Abe Henningsgaard** backed by executives committed to Central 70's success.

✓ **A RESPONSIVE PARTNERSHIP** As the general contractor and not in a newly formed JV, Kiewit is integrated into all Project phases—as developer, builder, and O&M. KMP brings continuity through the Term, with a proven structure of clear leadership and accountability. Chris, Tom, and Doug are accessible to the Department, 24/7—when you need us, we will be there.

✓ **LOCAL PRESENCE** Our team members are long-term community investors with a focus on health, safety, and welfare for the project, our employees, and the community. Transparent management systems provide accountable, honest, and fair leadership, sustaining our *Nobody Gets Hurt* culture in the Project corridor. Kiewit has the largest privately owned fleet of construction equipment in the US. Our entire team offers significant local resources, staff, equipment, and facilities—all based in Denver.

✓ **ABILITY TO MITIGATE RISK** Our long-standing relationships and extensive design build, operations, and management experience increase our mitigation of project risks. With 30 years of local experience, **Kevin Custy** provides trusted relationships with impacted local utility companies. For example, his unique experience with in-ground utilities enabled KMP to find proper routing for relocations and new installations.

Management Philosophy and Approach *2.2.2.a.i*

Kiewit has established a hometown presence in the Denver metro area. Given this deeply-rooted foundation, it was important to partner with like-minded firms with proven successful projects; thus the creation of Kiewit-Meridiam Partners. Our local stakeholder relationships, staff, and equipment inform our risk management strategy—a *Right First Time* culture achieved through our core values and exemplified by our successful *Nobody Gets Hurt* commitment translates to safety that outperforms the industry norm. **Our focused approach to program management excellence uses the proven state-of-the-art, integrated, and real-time InEight Project Suite (InEight) highlighted in** *Figure 1.1 (pg. 2)* **to facilitate our project management processes.** ✓

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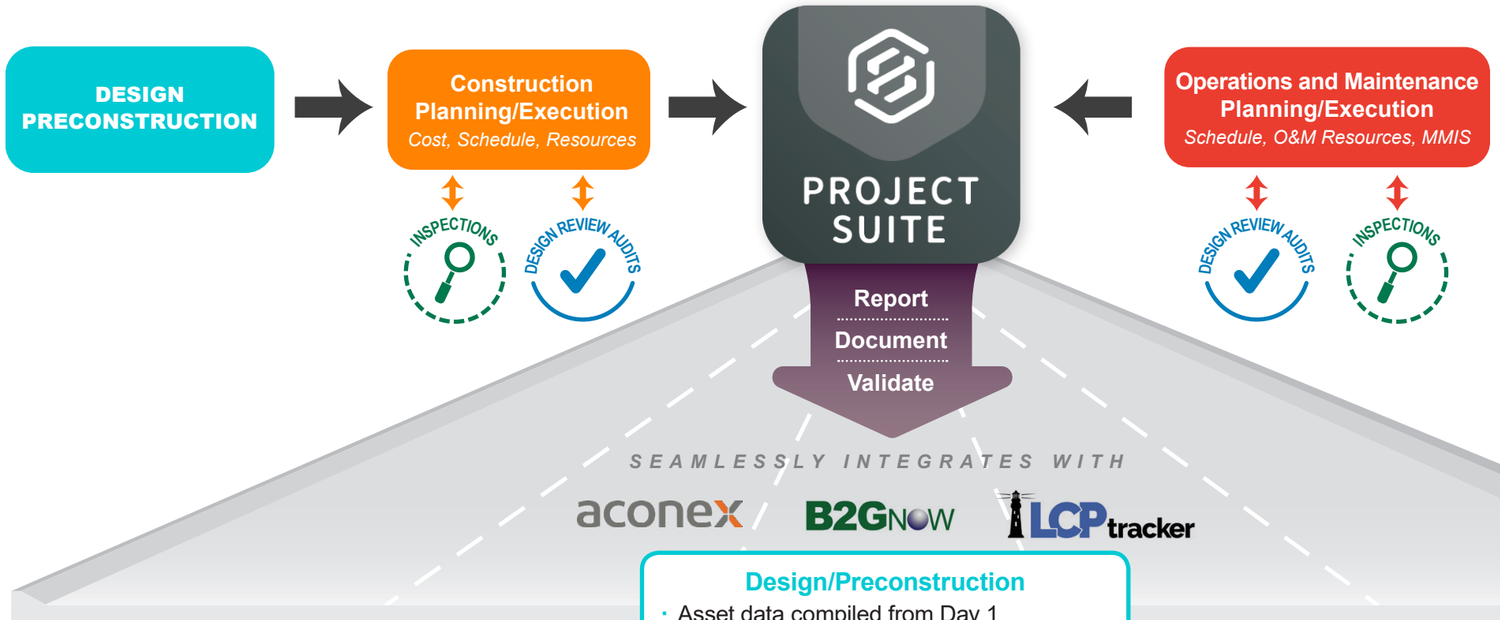
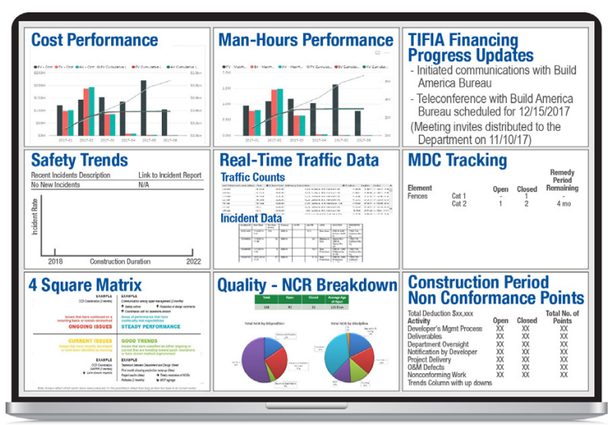
FIGURE 1.1 Components and Processes of our Project Management Excellence

InEight Project Suite

InEight is the most recent, advanced program on the market and is the only system that can manage complex data seamlessly, across all elements of asset life (design, construction, operation, and maintenance). The Department benefits from InEight's efficient data control of Central 70 over the Term with **Transparency, Quality, Accuracy.**





Example Dashboard Screenshot

- *Customizable for each user*
- *Updates refreshed constantly and reflected immediately*
- *Data over life of Project at your fingertips*

Design/Preconstruction

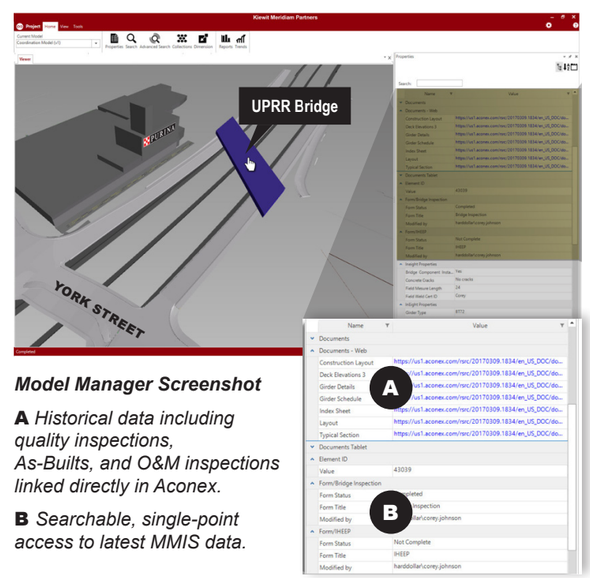
- Asset data compiled from Day 1
- Clash detection occurs prior to construction
- Clear and concise information for public outreach
- Facilitates efficient reviews and Approvals

Construction

- Reports, As-Builts, and Quality inspections
- Customizable dashboard, real-time reports
- Scheduled reports delivered through Aconex
- Progress and mitigation communication tool

Operations

- Seamless integration with MMIS
- Single source of information for asset life
- Structured and accurate O&M database
- Usable data for efficient life cycle decisions



Model Manager Screenshot

A *Historical data including quality inspections, As-Builts, and O&M inspections linked directly in Aconex.*

B *Searchable, single-point access to latest MMIS data.*

Department Benefits

Transparency

- Intuitive
- Full accessibility promotes *Project First*
- Real-time Project status and notifications
- Developed based on over 100 years of construction best practices
- Customizable dashboard and reports

Quality

- Assures timeliness of inspections
- Accurate on-going documentation
- Promotes *Right First Time*
- Presentation quality data readily available

Accuracy

- *Nobody Gets Hurt* on a well planned job
- Full access to technical support
- Single point for all Project data
- Online access to data for asset life

See **Project Management Plan (Appendix B)** *for full details on InEight*

Kiewit meridiam PARTNERS

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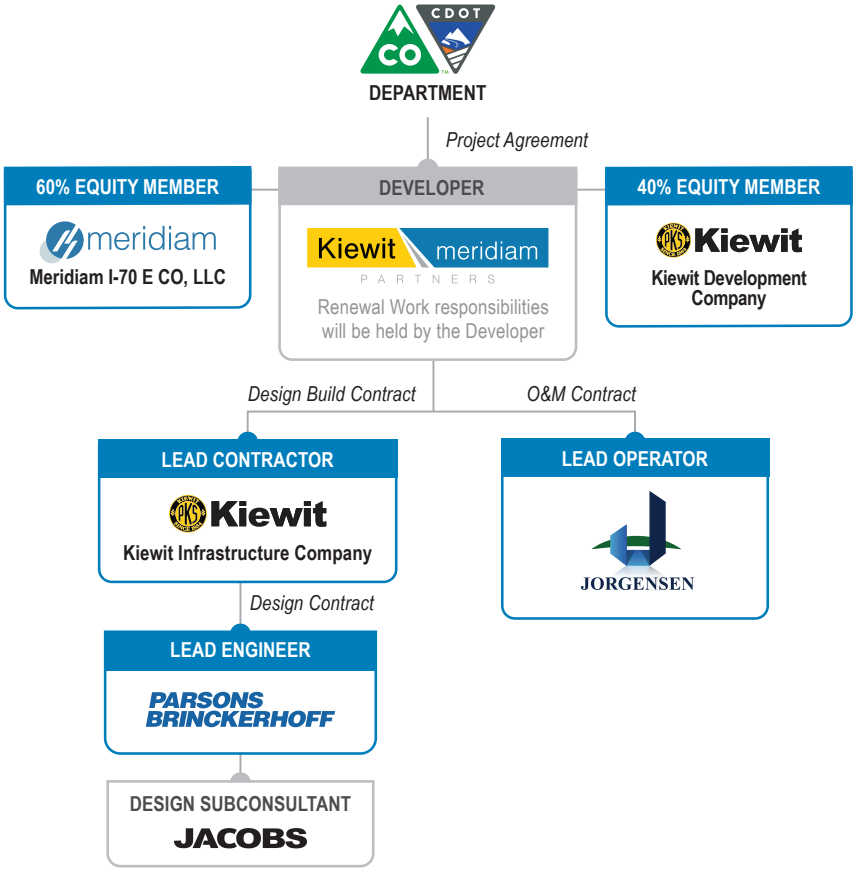
KMP Project Management Organization *2.2.2.a.ii.A*

KMP is energized to bring our team of companies' collective expertise, experience, and local knowledge to deliver a signature Central 70 Project to the Department. *Figure 1.2* shows the KMP corporate entities and the streamlined organization among the Team's partners. This efficient structure provides a **responsive partner with a consistent single organization** ✓ that is engaged and accountable to achieve all Project goals from initiation through Handback.

FIGURE 1.2
KMP Management Organization *Core Team members labeled in blue*



KMP partnered with a broad range of local Colorado design and construction subcontractors and Subconsultants.

◆ **DBE** ● **ESB**

DESIGN

- Civitas
- Clanton & Associates
- HCL Engineers ◆ ●
- Jacobs Engineering
- Muller Engineering
- Railroad Coordination
- RMC Consultants ◆
- Shannon & Wilson
- Shrewsberry & Associates ◆
- The Transtec Group

CONSTRUCTION

- Anderson Drilling
- Bilingual Communication Services ◆
- Colorado Asphalt Services
- Hamon Infrastructure
- Iron Woman ◆
- JKS Industries ◆ ●
- Lawrence
- St. Andrews ◆
- Sturgeon Electric
- Villalobos Concrete ◆

Organizational Charts *2.2.2.a.ii.B*

KMP Project organization charts are provided as *Figures 1.3 and 1.4 (pgs. 4-5)* with detailed staffing positions and personnel dedicated to the Construction and Operating Periods, and a seamless transition period commencing eight months prior to Substantial Completion and into the Operating Period. The charts identify a **responsive partner through clear single points of contact in Project Manager Chris Hodgkins and Design-Builder Tom Howell.** ✓

KMP's management structure, including our reporting lines that define relevant authorities confirm staff who have direct lines to the Department with separation of responsibility between Process Control and independent quality control. Throughout the Project Term, Key Personnel and the same dedicated core management team continues to provide consistency of service to the Department.

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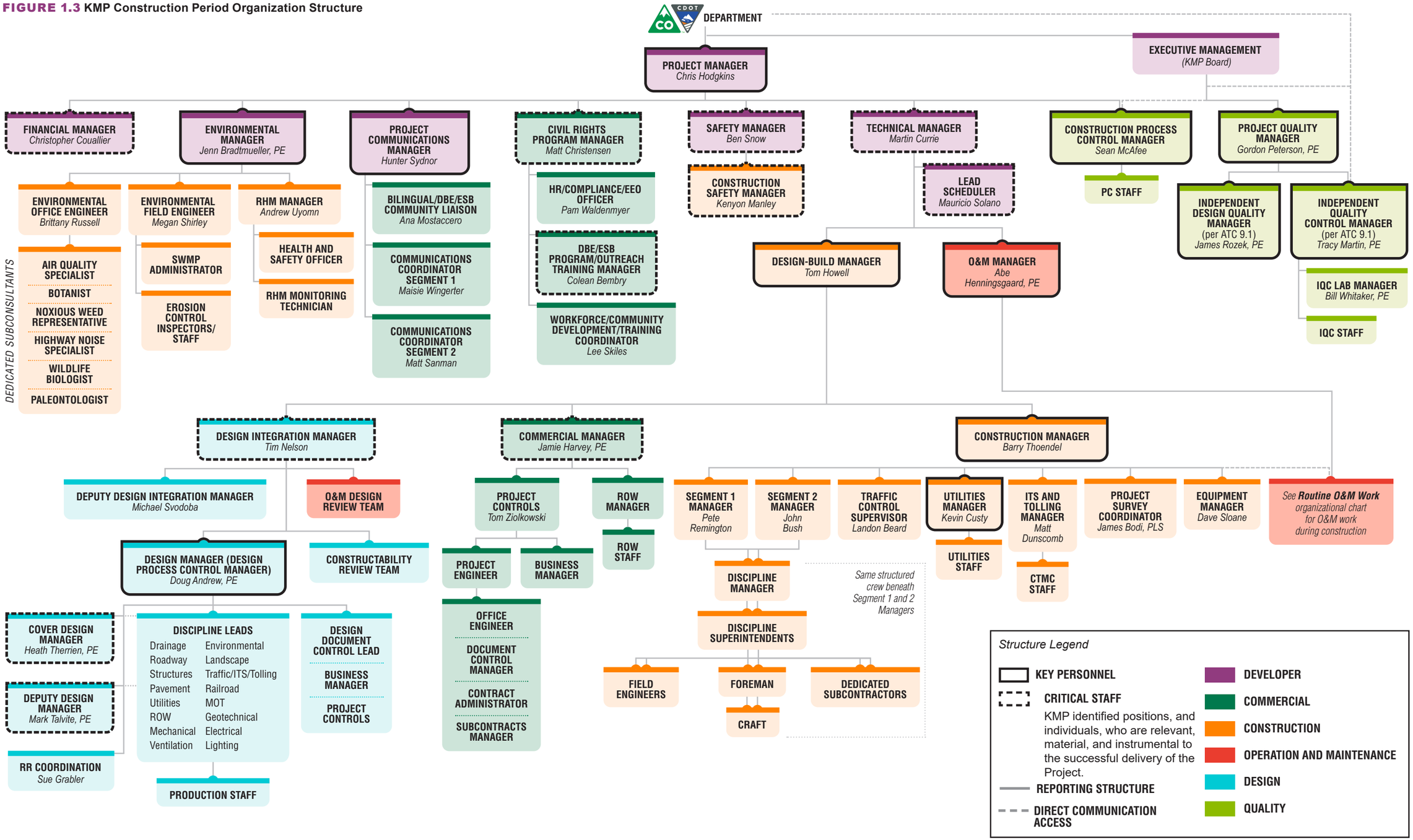
FIGURE 1.3 KMP Construction Period Organization Structure



Kiewit meridiam PARTNERS

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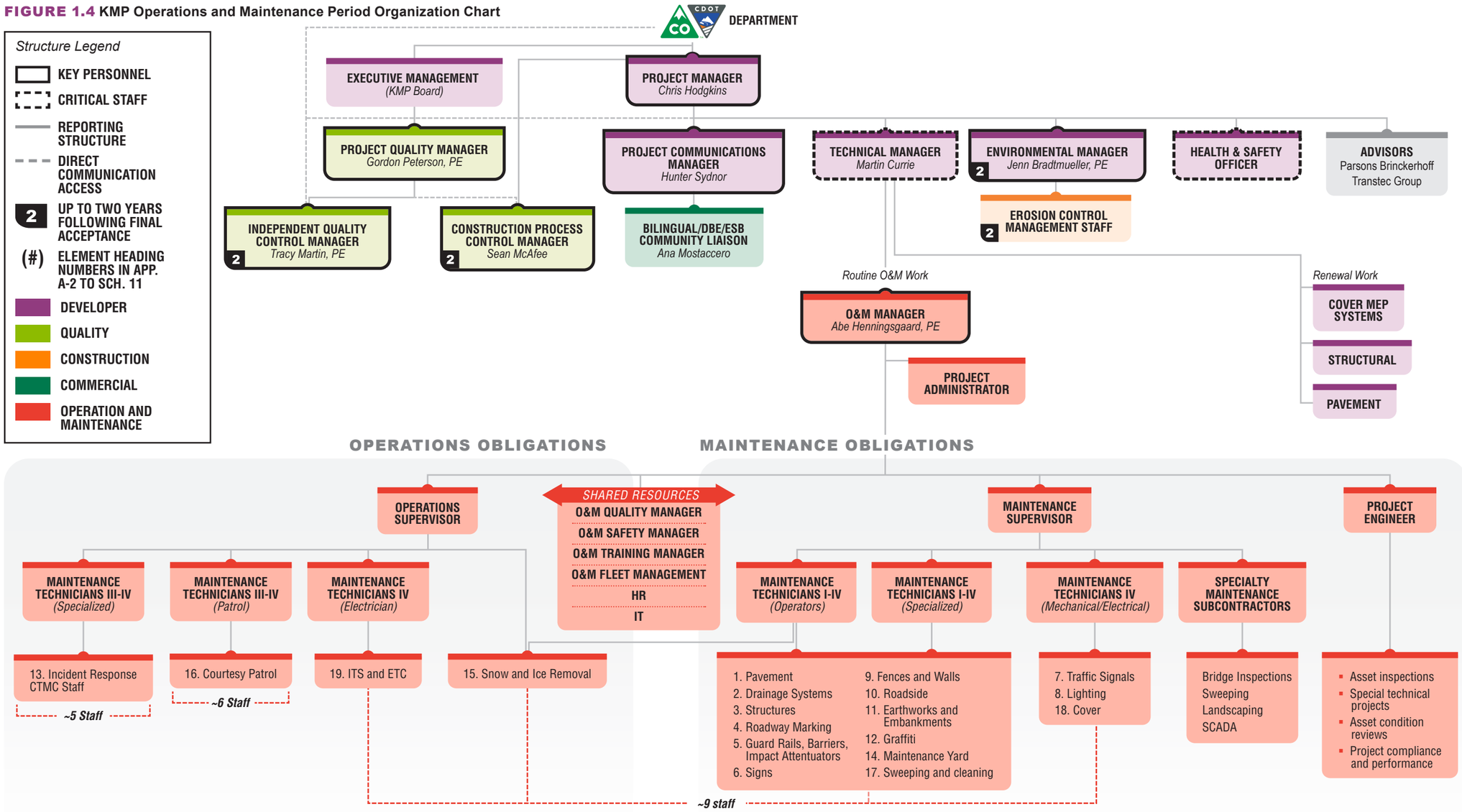
FIGURE 1.4 KMP Operations and Maintenance Period Organization Chart



TEAM MEMBER ROLES AND RESPONSIBILITIES

Kiewit meridiam Partners — *KMP, Developer*

- Oversees work of all KMP Team Members
- Provides contractual compliance
- Develops and refines O&M strategies and plans
- Communicates and coordinates with Department, Design, Construction, and O&M Teams
- Interface with third party stakeholders and general public
- Performs Renewal Work through sub-contracts

Kiewit — *KIC, Lead Contractor*

- Construction
- Responsible for O&M during construction as a subcontractor to KMP
- Engineer in Responsible Charge

Jorgensen — *RJA, Lead Operator*

- Operations and Routine Maintenance
- Subcontractor to the Lead Contractor during the Construction Period
- Subcontractor to KMP during the Operating Period

Parsons Brinckerhoff — *PB, Lead Engineer, Advisor*

- Engineering and design as subcontractor to the Lead Contractor
- Advisor to KMP during the Operating Period
- Undertake bridge, structural, and Specialty Inspections as a subcontractor to the Lead Operator

The Transtec Group — *The Transtec Group, Advisor*

- Advisor to KMP during the Construction and Operating Periods
- Life cycle management and forecast overview services for Renewal Work

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Experienced Personnel, Equipment, and Facilities *2.2.2.a.ii.C*

KMP is dedicated to this Project and to providing the right people to successfully execute it on schedule. This includes local experts who worked on T-REX and Denver Union Station (DUS) as well as personnel with valuable P3 experience from I-495 Express (Virginia) and the Port of Miami Tunnel. Lead members of the KMP Team have continuously delivered priority projects for CDOT as a responsive partner.

In addition to our Team's resources and established presence in Colorado, Kiewit built long-standing relationships with small and disadvantaged business organizations. For example, on the $1.29B T-REX design build, 40 percent of subcontractors were certified DBE firms and approximately $250M of work went to small firms. T-REX completed in 2006 on schedule and within budget and we continue working with these firms on other projects, including five already affiliated to our KMP Team.

Prior to starting any Design, Construction Work, or O&M activities, readiness review meetings are held that communicate to project and executive management the quality plan, activity schedule, and all resource needs to execute the Work. The readiness review provides the entire Team, including the Department, an opportunity to review the plan and have the right resources in place prior to starting Work. Our InEight platform facilitates all planning with integrated access to our Project Schedules and resources (people, equipment, and facilities) enabling proactive decision-making to evaluate and maintain the right resources on the Project. *Figure 1.5* **illustrates KMP's local presence and an unmatched level resources which includes access to Kiewit's 18,500 unit equipment fleet with a replacement value of $2.4B.**

FIGURE 1.5 KMP Local and Regional Employees and Resources

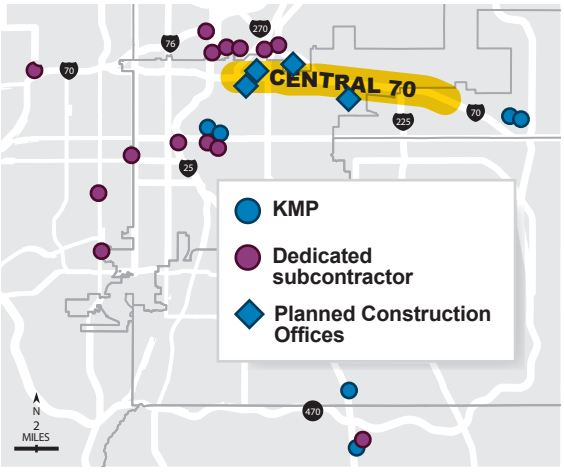
PERSONNEL

172
KMP employees reside in the local hiring area

1,970
KMP employees regionally
(excludes craft personnel)

79,170
KMP employees US-based

OFFICE LOCATIONS



AVAILABLE EQUIPMENT

113 30-100 Ton Cranes

164 100+ Ton Cranes

151 Dozers & Crawlers

310 Backhoes & Excavators

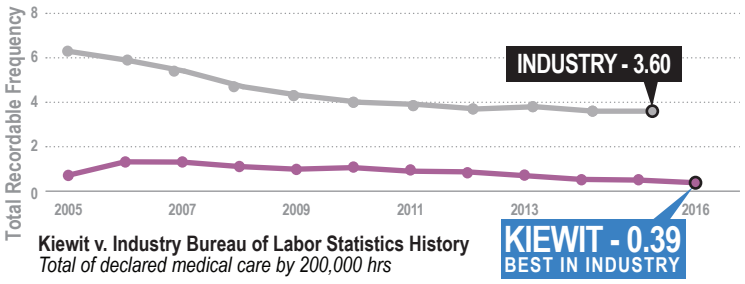
657 Loaders & Forklifts

93 Snow & Ice Equipment

Safety *2.2.2.b*

Our safety culture embraces a simple but powerful goal—*Nobody Gets Hurt*. These goals are adopted from KMP's Lead Contractor, Kiewit, where the culture permeates each and every project and safety performance is continually improving and surpassing construction industry averages *(Figure 1.6, pg. 7)*.

FIGURE 1.6 Kiewit Proven Safety Performance



Kiewit v. Industry Bureau of Labor Statistics History
Total of declared medical care by 200,000 hrs

> **"Effective communication and teamwork with management creates a healthy craft environment. As a voice for the craft, I create a confidence in others to embrace a culture where Nobody Gets Hurt."**
>
> **— KENYON MANLEY**
> *Construction Safety Manager*

We recognize the dynamic aspects of this Project, including the increasing pace of changing techologies, and plan our work to provide protection and safety for the traveling public, including motorists, pedestrians, cyclists, community members, and students. The safety of all groups is addressed through the **InEight platform, which enables better decisions through strong communication in real-time.** This includes ongoing activities and on-the-spot hazard analysis for any unplanned activities that arise while operating the facility. Our Safety Manager Ben Snow works with the Project Team to implement the Safety Management Plan (SMP), which complies fully with Schedule 8 of the Project Agreement. SMP components document a safety program, training, organization and responsibilities, site controls, safety policies and plans, and incident response.

Ben champions safety across the whole organization and reports directly to Project Manager Chris Hodgkins. Using our *Nobody Gets Hurt* approach, five keys to safety excellence are applied by Ben and Construction Safety Manager Kenyon Manley for all administrative and Work activities *(Figure 1.7)*. Both are diligent safety leaders who live and breathe the Project. Kenyon developed his passion for safety during extensive experience as a craftsman; he "owns" the SMP and on a daily basis reviews field operations and all public safety interface points. To further lead our SMP compliance, Ben meets with Chris, Design-Build Manager Tom Howell, Construction Manager Barry Thoendel, Construction Safety Manager Kenyon Manley, and the CVIS team weekly to review project safety and address any concerns from the craft or management teams. Together this leadership team embraces the community to successfully and safely complete the Project.

FIGURE 1.7 Five Keys to Safety Excellence

1 Hire & train the right people
All personnel receive project-specific training before beginning Work. Our Safety Manager and other management meet every person working on the Project and train them first-hand on our safety philosophy and SMP.
SMP Section 6.1

2 Know the Details
All our people know details of the Project Agreement and SMP that are communicated daily through operational hazard analysis and crew communications.
SMP Section 4.4

3 Craft Ownership
Craft ownership is instrumental to achieving our safety goal. **Craft Voice in Safety (CVIS)** is our rotating group of craftsmen who mentor new hires, promote care for our people, and build trust within our Team.
SMP Section 5.1

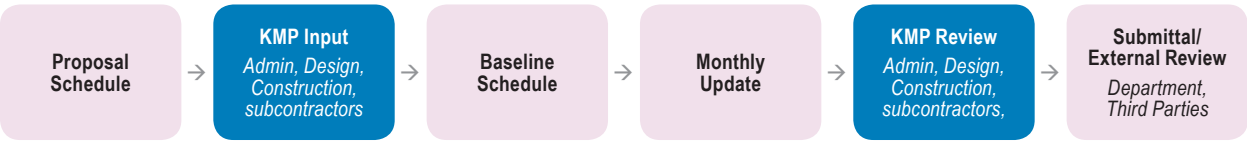
4 Lead by Example
Everyone has responsibility to work safely and look out for those around them. Everyone has authority to stop unsafe Work. We coach each other and build positive energy to set clear expectations and hold each other accountable.
SMP Section 3.2

5 Recognize Change
Change is a constant. We train our people to recognize changes in their operation, identify new hazards, understand precautions, and modify actions. As the jobsite transforms, recognizing change is critical to ensuring a safe work environment.
SMP Section 2.2.2

Proposal Schedule Approach and Key Milestones *2.2.2.c*

The Proposal Schedule is the basis for developing the integrated Project Baseline Schedule. KMP's approach to developing and updating the Baseline Schedule is a cohesive effort among the Project Team *(Figure 1.8)*.

FIGURE 1.8 Baseline Schedule Update Cycle

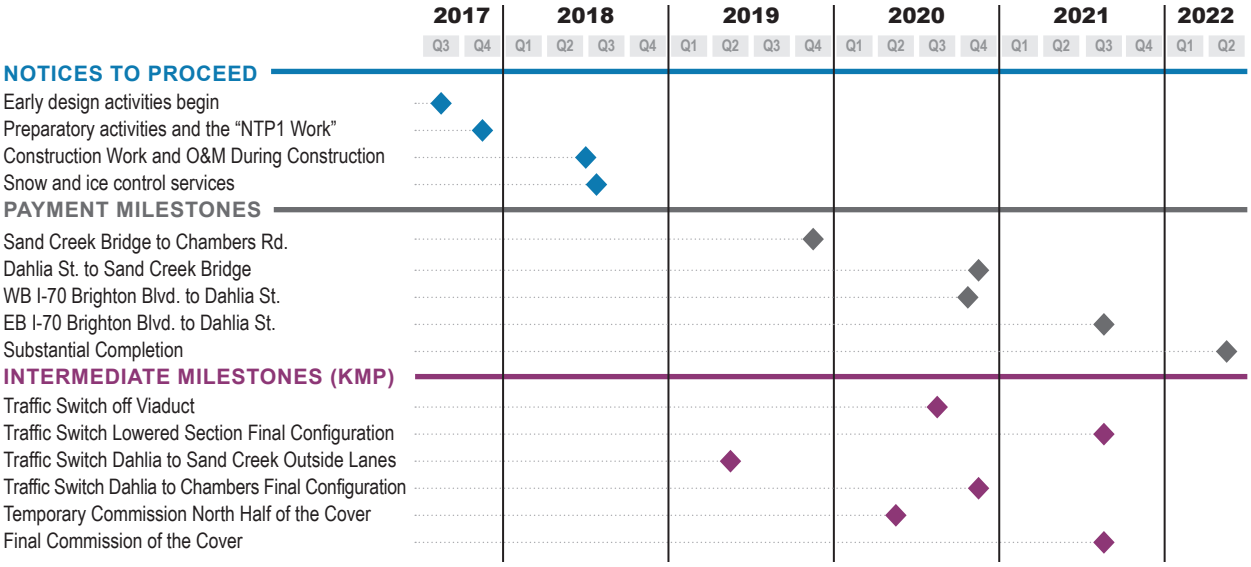


The Baseline Schedule and narrative are reviewed by the full team for accuracy, feasibility, and conformance with the Project Agreement. InEight's interactive ability with the Department includes:

- Applying a Baseline Schedule completion checklist
- **External review by a third party scheduling professional** ✔
- Review and concurrence from critical subcontractors and other stakeholders
- **In-person review with the Department** ✔

On a monthly basis, we update the schedule using the real-time progress information from InEight to provide accurate data directly from those overseeing the work. The update is **reviewed and approved by KMP's executive management to verify the health, risk, and status** ✔ of the schedule. The executive management team tracks trends against critical milestone dates *(Figure 1.9)* with particular attention to recovery efforts for any items that may fall behind.

FIGURE 1.9 KMP Construction Period Milestone Schedule



Managing Schedule Resources and Activities *2.2.2.d.i*

Our schedule efforts are an ongoing and interactive process. We use our five-step planning process *(Figure 1.10)* to continually evaluate and manage all of our schedules. **InEight provides instant report generation with programmed 90-Day, 3-Week, and Daily Schedules.**

FIGURE 1.10 **KMP Five-Step Planning Process**

1 TRACK Brainstorm, review, and approve Work plans

2 PLAN Confirm resources and assess planning process progress

3 EXECUTE Implement and monitor

4 IMPROVE Study, analyze, review, and improve

5 DOCUMENT Document actual Work; summarize process improvements

Our staff inputs actual progress and Work performed (whether subcontracted or self-performed) into InEight's integrated project controls software. The Work Breakdown Structure (WBS) of our schedule and cost reporting structures are aligned through InEight as an accurate resource to update the status of our schedule activities.

Our Project Schedule includes inputs for man-hours, crews, major equipment, and commodities which gives us the ability to track resource curves. These curves are updated and reviewed monthly to verify and plan upcoming resource needs.

All of our schedules are linked together through milestone activities to align with key milestone commitments. KMP management uses the schedule to make prompt decisions to ensure the Project progresses as planned.

Approach to Ensure Timely Deliveries of Materials *2.2.2.d.ii*

We assign construction engineers to oversee the procurement of materials ranging from long lead items such as steel, beams, or girders, to daily deliveries of aggregates, concrete, or small tools and supplies. Major event and long lead items are tracked on the Project Schedule. The responsible engineer is supported by Kiewit's 60-person local procurement department who help facilitate and plan all major procurements. The Quality Management Team engages to ensure that fabrication and plant site tests are scheduled. Items required on a daily or frequent basis are discussed each week in the 3-week look-ahead schedule meeting and at the daily coordination meetings to ensure the appropriate orders are made for the upcoming Design, maintenance, or Construction Work activities. This process is consistent over the Project Term—Design, Construction, and O&M.

KMP'S Overall Approach to Managing the Schedule *2.2.2.d.iii*

For construction, the Project is broken into two segments, active simultaneously, and seven construction areas managed by Pete Remington and John Bush, both local and with decades of

SEGMENT 1, Areas 1-4:
Pete Remington

SEGMENT 2, Areas 5-7:
John Bush

experience. Pete served as project manager on I-225 and John's experience includes construction manager on I-225 and grading manager on T-REX.

The WBS used for the schedule matches the structure used for our Project Control tracking. InEight helps ensure accurate data is fed into the Project Schedule for all activities.

When the schedule is updated, it is reviewed internally by KMP management for Design, Construction, O&M, subcontractors, and supplier activities. Following review and any changes, it is submitted to the Department and reviewed and communicated with the Department, governmental authorities, and other stakeholders and agencies.

We use the various coordination meetings to communicate the schedule and make changes based on feedback received. *Figure 1.11* identifies the parties invited to attend ongoing

FIGURE 1.11 Coordination Meetings and Participants

	DEPARTMENT	SUBCONTRACTORS	SUPPLIERS	DESIGN	QUALITY	CONSTRUCTION	O&M	COMMUNICATIONS
Monthly 90-day Schedule Review	■	■		■	■	■	■	■
Weekly 3-week Schedule Meeting	■	■		■	■	■	■	■
Weekly Progress	■	■		■	■	■	■	■
Daily Coordination	■	■	■	■	■	■	■	■
Specific Coordination (i.e. RR, Utilities, CCD, Suppliers)	■		■	■	■	■	■	■

coordination meetings. For parties not attending, relevant communication is documented and meeting minutes are distributed as appropriate to keep the whole Project Team updated.

For the Central 70 Project, planning, scheduling, and implementation of activities is critical to successfully achieving Project Goals. Commitments to the Department and communications with residents, businesses, and stakeholders must be accurate, correct, and timely. KMP invests significant resources into our schedules to commit to the plan and dates that we publish. **Our project management expertise allows us to exceed the Department's expectations with success achieved through planning and communicating our Work plans to avoid surprises.**

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Quality Management

Our quality management culture is straightforward. All KMP staff, including subcontractors, are personally accountable for producing quality work in accordance with the Project Agreement and exceeding the Department's expectations. **KMP's Quality Management Plan and commitment to *Right First Time* delivers project life cycle cost savings.**

DEPARTMENT PROJECT GOAL Optimize operating and life cycle maintenance costs by delivering a Project using quality design, materials, and techniques.

KMP achieves this goal and benefits the Department through:

INDEPENDENT QUALITY MANAGEMENT **Kiewit, Meridiam, and Parsons Brinckerhoff** are all third-party certified to ISO 9001:2015 and KMP will obtain ISO certification. KMP provides the Project with quality control in-house per ATC 9.1 (which was based on the highly successful quality program used on T-REX), removing any associated risks with third party inefficiency. KMP's oversight and management offers better performance and increased opportunities for DBE and ESB organizations.

OPTIMIZING THROUGH QUALITY DESIGN, MATERIALS, & TECHNIQUE **KMP submitted 72 ATCs to optimize the Project's life cycle cost and minimize future traffic impacts**. This passion for innovation will continue after award. Early engagement during design development from experts in safety, quality, Construction, and O&M optimizes our design, materials, and techniques during Construction and through the full Term.

***PROJECT FIRST* APPROACH** Our collaboration and partnership with the Department results in a *Project First* philosophy that is synonymous with KMP's approach for successful project delivery. **Gordon Peterson** is an industry leader who has pioneered quality programs in Colorado, such as CDOT's first accredited contractor's materials testing lab.

CONTINUOUS IMPROVEMENT To maintain our focus on quality and continual performance, KMP uses a Four Square Matrix, a standing agenda item at the monthly Executive Oversight Committee Meeting, to document and communicate requirements to perform, learn, and improve.

General Requirements *2.2.3.a*

Every KMP Team member will produce quality work in accordance with our policies to meet or exceed Department expectations, perform *Right First Time*, and fully implement the QMP.

Our auditable, comprehensive QMP is defined and monitored to confirm all work is compliant *(Figure 2.1)*.

Our approach is detailed in the QMP and DQMP (Appendix D), CQMP (Appendix E), and OMQMP (Appendix I). **We certify this Project for ISO 9001:2015 for Design and Construction.**

FIGURE 2.1 **KMP Quality Management Approach**

- **QMP** Quality Management Plan
- **DQMP** Design QMP
- **CQMP** Construction QMP
- **OMQMP** Operations and Maintenance QMP

FIGURE 2.4
Previous ISO 9001 Certified Quality Projects
KMP developed QMPs based on succcess with T-REX, DUS, and DFW Connector. All quality plans aim to minimize rework, eliminate schedule delays, and provide the Department with long-lasting, quality installations. Our reviews identify standards of workmanship, checklists of specification requirements, and include quality hold points for IQC testing, inspections, and Department verifications.

DFW CONNECTOR
Dallas, Texas Kiewit/PB Team successfully delivered DB project, with an initial value/scope of $916 million, on time.

17 months
Final Design Period

11,700
Drawings

344
Deliverable Packages

17
Design Office Locations

0
Nonconformance Reports

100%
Compliance by Drawing

© JAMES BLAND

"THE KIEWIT/PB Team, when delivering DFW Connector Design-Build project, showed great teamwork in their approach to solving constructability issues associated with the multi-level interchanges along the project."

– BILL HALE
TxDOT, Chief Engineer

Organizational Chart *2.2.3.a.i*

KMP's organization chart *(Figure 2.2, pg. 13)* includes full-time Project Quality Manager Gordon Peterson. Project roles and responsibilities are shown in *Figures 2.3A and 2.3B*.

Procedures that Meet/Exceed Project Agreement *2.2.3.a.ii*

KMP's quality management approach maintains a well-defined Independent Quality Control (IQC) and Process Control structure clearly outlined in our QMPs. The KMP Team is personally committed to, and accountable for, quality design production, Construction delivery, and Operations and Maintenance performance. Our QMPs define our quality processes and procedures for documentation requirements, inspection, testing procedures, oversight, and reviews.

Through our Approved ATC 9.1, we execute our proven quality plan—used successfully on local projects T-REX and DUS, as well as on Port Mann (Vancouver) and I-15 Reconstruction (Utah) representing nearly $5B in work—to provide a full IQC.

ATC 9.1 provides:

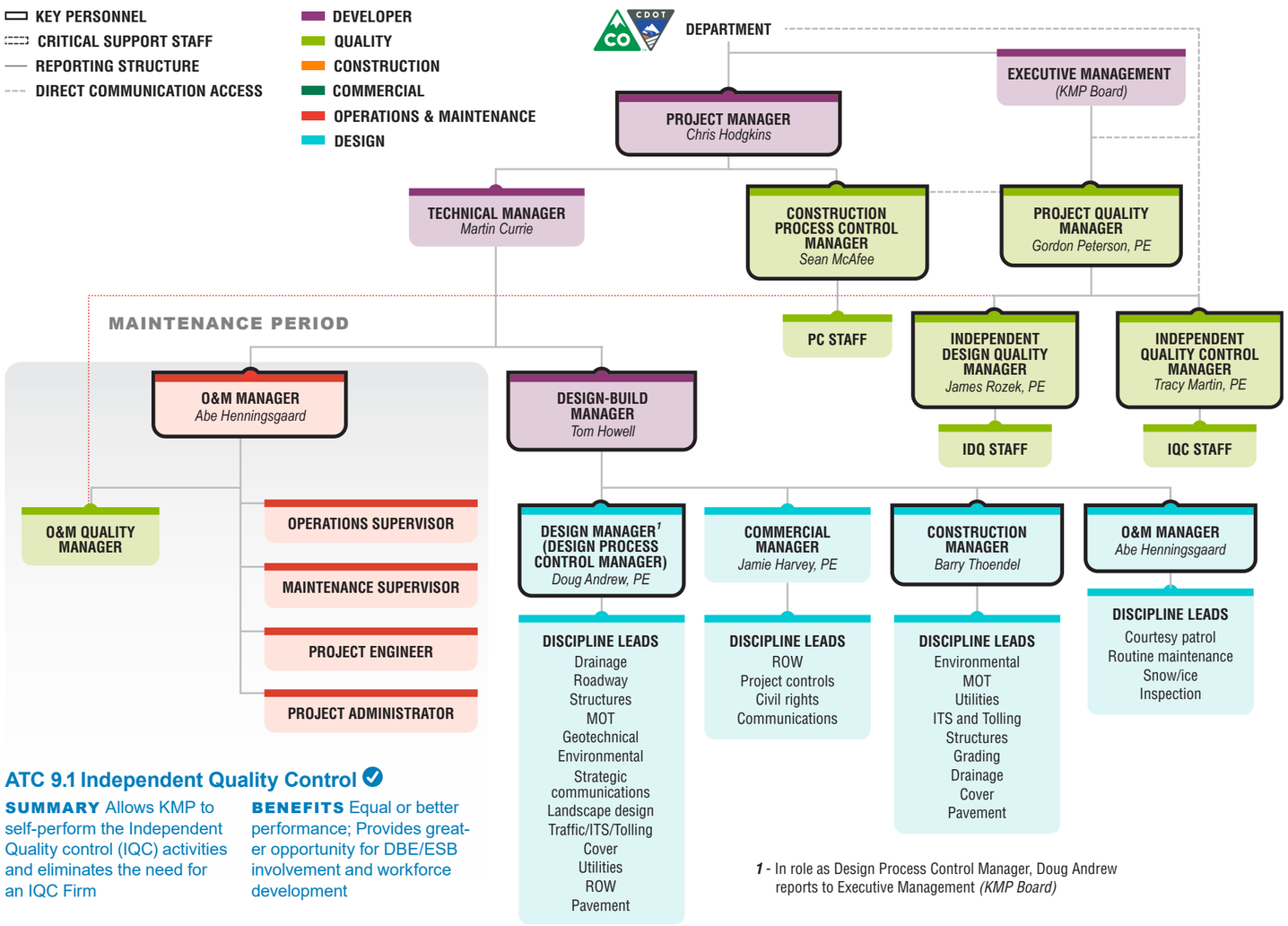
- Greater opportunity for small business participation
- QC Team fully integrated into Project Team
- No learning curve as our entire team has significant experience with this QMP model
- Process Control reviews, Process Control and Independent Quality Control audits, and certifications more frequent than required by Schedule 8

Previous projects completed with ISO 9001 certified quality procedures are prime examples of our experience working together *(Figure 2.4).*

Our QMP defines management authority lines and authority levels that empower every quality staff member to immediately stop Work *(Figure 2.5, pg. 13)* when nonconformance exists that may cause risk or significant damage/rework. We achieve resolutions through the noncompliance report process. In addition, all KMP Team Members are empowered to stop-work to prevent any safety issue.

KMP's quality managers and team are independent with no responsibilities for oversight or production of Work. These staff members proactively work together with production teams to ensure a *Project First* focus, solidify the mentality to be *Right First Time*, and exceed the Department's expectations.

FIGURE 2.2 Quality Management Organization Chart



1 - In role as Design Process Control Manager, Doug Andrew reports to Executive Management *(KMP Board)*

ATC 9.1 Independent Quality Control

SUMMARY Allows KMP to self-perform the Independent Quality control (IQC) activities and eliminates the need for an IQC Firm

BENEFITS Equal or better performance; Provides greater opportunity for DBE/ESB involvement and workforce development

FIGURE 2.5 Stop Work Notification Process/Resolution

Identify Nonconformance ▶ Issue Stop Work Notice (electronic) ▶ Notify Construction Manager & Discipline Manager (electronic) ▶ **Suspend/ Stop Work; Fix, Repair, Correct** ▶ Follow NCR process for Restrictions and Approval

FIGURE 2.3A Quality Management Key Staff Roles and Responsibilities

Project Quality Manager (PQM) | Gordon Peterson

As PQM, Gordon leads the Quality Team from the Agreement Date to the end of the Term.

- Establishes, manages, and implements CQMP
- Verifies qualified resources to meet all QMP needs and commitments
- Monthly certification that Work is performed in compliance with law and design
- Single point of contact on quality to the Department
- Reports directly to KMP Executive Management
- Maintains communication with Department, Project Manager, and Design Build Manager, and Quality staff (Construction Period)
- Oversees O&M Quality Manager; maintains communication with Department, Project Manager, and Chief Technical Officer (Operating Period)
- Direct line of communication with Department on quality
- Authority to suspend Work per QMP

Independent Design Quality Manager (IDQM) | James (Jim) Rozek

As IDQM, Jim is engaged from the Agreement Date to Final Acceptance.

- Responsible for certifying all Design Work is undertaken in accordance with DQPM
- Manages quality of all production plans and reports (Design)
- Maintains communication with Design Manager, supervises Design IQC staff
- Manages quality of responses to construction team requests for information (RFI), notices of design change (NDC), field design changes (FDC), and Nonconformance Reports (NCR) (Construction)
- Authority to suspend Work per QMP

Construction Process Control Manager (CPCM) | Sean McAfee

Sean is engaged from the Agreement Date to the second anniversary of Final Acceptance.

- Manages all Process Control methods and procedures in QMP/CQMP
- Maintains communication with PQM, IQCM, Construction Manager, and segment managers.
- Oversees Process Control staff and certifies entire KMP team complies with QMP
- Maintains communication with the O&M Quality Manager, IQCM and the O&M Manager (Year 1, Operating Period)
- Authority to suspend Work per QMP

FIGURE 2.3B Quality Management Critical Staff Roles and Responsibilities

Independent Quality Control Manager (IDQC) | Tracy Martin, PE

Tracy is engaged from the Agreement Date to the second anniversary of Final Acceptance.

- Responsible for all IQC in accordance with Construction Quality Management Plan (Stage 2 QMP)
- Oversees Construction IQC staff for execution and enforcement of quality procedures, processes, inspections, and tests for Work
- Maintains communication with Department, CPCM, Construction Manager, IQCM, Construction Manager, and segment managers.
- Maintains communication with the Department, the CPCM, O&M Quality Manager, and the O&M Manager (Year 1, Operating Period)
- Authority to suspend Work per QMP

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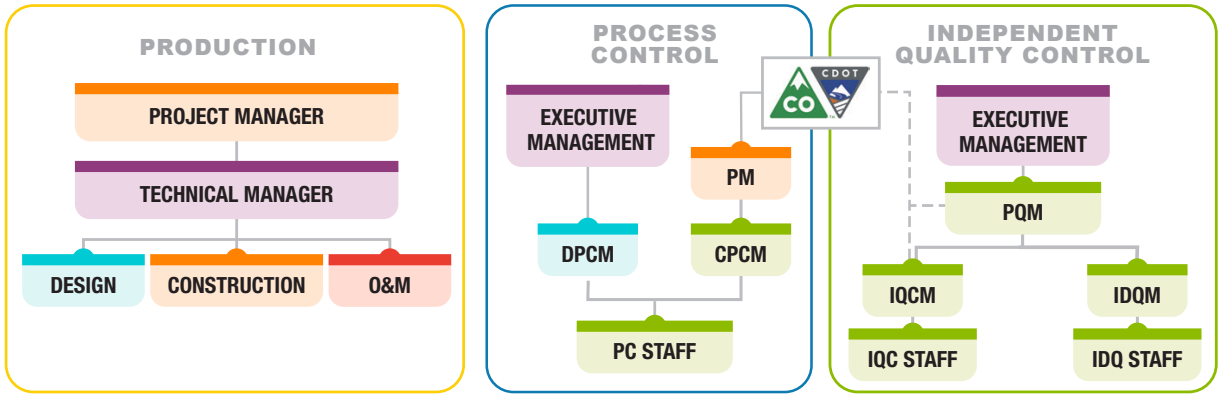
Independence between PC and IQC *2.2.3.a.iii*

For independence between PC and IQC functions, we have separate reporting and independent staff *(Figure 2.6)*. Teams work closely to comply with the Project Agreement.

FIGURE 2.6 Independent Quality Management Processes



Communication and Documentation *2.2.3.a.iv*

Proactive management, open communication, and dedication to early problem solving are cornerstones of our Project delivery success. **Our initial Quality Summit in the first month after award is a collaboration with the Department to achieve *Project First* consensus on our plans so that QMPs can be finalized prior to the Project-wide Quality Kick-Off Meeting.** ✔ Co-location with the Department helps develop trust and collaboration. We look forward to sharing ideas, concerns, and recommendations with the Department to jointly maximize the Project's innovation, timeliness, and quality performance. *Figure 2.7* exhibits the meetings and participants in the Project Meeting Schedule. Quality documents posted throughout the Project Office on

FIGURE 2.7 KMP Communication Chart—Driving Quality Results

	DEPARTMENT	CCD/OTHER STAKEHOLDERS	EXECUTIVE MANAGEMENT	DESIGN BUILD MANAGER	PROJECT QUALITY MANAGER	IQCM & STAFF	CPCM & STAFF	DESIGN MANAGER & STAFF	CONSTRUCTION MANAGEMENT & STAFF	O&M MANAGEMENT & STAFF	SUBCONTRACTORS & SUPPLIERS
Quality Summit / Kick-Off Meetings	■			■	■	■	■	■	■	■	■
Daily Play-of-the-Day Meetings	■				■		■	■		■	■	■
Interdisciplinary Reviews	■				■	■	■	■	■	■	■	■
Weeky Quality Tour Review	■				■	■	■	■		■	■	■
Weekly Schedule Meetings	■		■		■	■	■	■	■	■	■	■
Weekly Quality Meetings	■				■	■	■	■	■	■	■	■
Pre-Activity Meetings	■		■			■	■			■	■	■
Task Force Meetings	■		■		■		■		■	■	■	■
Design Process Review Meetings	■				■	■	■	■	■	■	■	
Progress Status Meetings	■		■			■	■		■		■	
Quarterly Quality Meetings	■			■		■	■				■	
Quarterly Executive Management Reviews	■			■		■	■				■	

dashboards and Work sites remain highly visible to the entire KMP Team. We prepare drawings, reports, and similar Design deliverables in accordance with the Project's document provisions and standards. **We document and transmit all Quality records including correspondence, transmittals, logs, presentations, and workflows through real-time project controls platform, InEight.** ✔

Roles and Responsibilities of Quality Team Key Personnel *2.2.3.a.v*

Quality Management Key Staff roles and responsibilities are on *Figure 2.3A, pg. 13.*

Ensuring Qualifications of Quality Staff *2.2.3.a.vi*

PQM Gordon Peterson is responsible for quality staff training and for having all required qualifications and certifications in place. KMP's InEight tracks certifications and provides automatic notifications 30 days prior to expiration; Gordon reviews and arranges appropriate renewals. Gordon interviews all quality employee candidates and, upon appointment, those employees attend KMP's on-going training programs to ensure full understanding of our QMP. Under no circumstances are KMP staff ever engaged in construction inspections or O&M services unless their personal certifications and training are current. We welcome participation by the Department's oversight staff for joint understanding of roles and responsibilities for audits.

Method to Establish Staffing Levels *2.2.3.a.vii*

Our Quality Team consists of full-time leadership staff, Design reviewers, field inspectors, and specialist inspectors. These resources provide appropriate oversight of all activities for day and night shifts. When Construction, O&M, operations, or renewal services are ongoing, quality management staff provides on-site oversight, inspection, or verifications using properly calibrated tools and equipment, and as prescribed in the Approved Materials Testing and Inspection Plan. Quality Managers stay informed of upcoming needs through:

- Annual big picture look-ahead of work and person-hour curves by discipline
- Quarterly Quality meeting to major work sequences and off-site inspection needs
- Monthly Project Team meeting to review Project Schedule
- Weekly Scheduling Meeting and Pre-Activity Meetings with specific PC/IQC requirements to enable Gordon to coordinate and schedule inspection staff and equipment

The PQM is supported through Term by experienced subcontractors augmented with specialized quality management/inspection personnel to enable activity scheduling and bring schedule efficiencies. This provides increased opportunities to engage small businesses and train a local workforce.

Document Control/Control Work Products *2.2.3.a.viii-2.2.3.a.ix*

We establish procedures and maintain records that verify conformity to the requirements and effective operation of the QMPs. Records include daily inspection reports, test results, audits, photographs, nonconformances, and field change sheets.

PC and IQC onsite staff use iPads to capture real-time data (e.g., inspection reports, checklists, and audit forms). InEight tracks inspections; stores reports, videos, and images, and is available to the Department in real-time through InEight for access to the real-time status of any Quality record.

Independent Control of Processes and Products *2.2.3.a.x*

Independent Quality Control (IQC) is separate from Process Control (PC) *(Figure 2.6, pg.14)*, and IQC staff are separate from any PC activities or management and production of the Design, Construction, or operating services. IQC is responsible for administering and managing inspection, sampling, and testing. Independent quality control includes the observations, measurements, and documentation specified in the CDOT Field Materials Manual and the Frequency Guide Schedule for materials sampling. IQC Quality records document all audits—both completed and ongoing—and the results against pass/fail criteria established in the Project Agreement.

We perform IQC inspections from NTP1 through Design, Final Acceptance of Construction, and during the O&M Period. The IQC inspects and verifies Design and Construction, environmental compliance, strategic communications, MOT, safety, DBE/workforce development, training, Project management, and the QMP.

Continuous Improvement Program *2.2.3.a.xi*

KMP's executive management and PQM Gordon Peterson oversee the identification and implementation of quality management continuous improvement programs using tools described further in the QMP, Appendix D, QMP, Section 6.3 *(Figure 2.8A)*. **Our continuous improvement Four Square Matrix tool** *(Figure 2.8B)* **provides a framework to track results, identify trends, and improve processes.** ✓ The matrix, a visual communication tool to aid interpretation, is posted in the Project Office, on the InEight dashboard, and communicated to the Project Team for continual improvement. We also fully understand that the Department maintains an oversight program and we meet with the Department to review Quality documentation and procedures on a quarterly basis.

Nonconformance: Identify, Categorize, Resolve *2.2.3.a.xii*

We track all nonconformance, whether a noncompliance notification (NCN) from the Department or our own

FIGURE 2.8A Continuous Improvement Tools

- Four Square Matrix
- Audits (ISO, PC, IQC)
- Third party training
- Preventative Actions
- Weekly quality meetings
- Executive review of QMP
- After action analysis
- Corrective Actions
- Technology updates
- Root cause analysis
- Client engagment survey
- Major work quality reviews

FIGURE 2.8B
Four Square Matrix

Current Issues Issues recently developed or identified as looming	**Steady Performance** Areas of performance continually meeting expectations
Ongoing Issues Issues recurring on continued basis or remain unresolved	**Good Trends** Issues classified as ongoing or current that are moving toward resolution or exhibit improvement

> **"The innovative Four Square Quality Matrix tool was developed by Kiewit on T-REX. The T-REX team met monthly with Southeast Corridor Constructors to discuss quality issues and the Matrix became an effective tool to document, address, and communicate the overall quality of the Project to the Executive Committee (CDOT, RTD, FHWA and FTA)."** ✓
>
> **— LARRY WARNER**
> *CDOT, retired*

Nonconformance Report (NCR) through our NCR workflow. The eight-step NCR workflow example *(Figure 2.9)* provides notification to all parties—including the Department through Aconex—and shows immediate response times and transparent communication of all documentation.

Any noncompliance event or Non-Permitted Closures are immediate action NCRs. All RFIs and NCRs are logged and reviewed at weekly Project meetings. The process of early identification, documentation, Design review, and quality control captures a full chronology and history of the Project's development and enables quality As-Built details for O&M operations and the Department. The Department staff has electronic access to review through InEight.

FIGURE 2.9 KMP Steps for Nonconformance Reporting

1. Identification	▪ Team trained to understand Project Agreement ▪ Specifications summarized in work plans and reviewed at Pre-Activity Meetings and Play of the Day (POD) at start of shift meetings ▪ All staff expected to communicate potential nonconforming work
2. Verification	▪ Quality Team verifies, categorizes and assigns NCR number through InEight ▪ All parties alerted through InEight for timely resolution & minimum project impact
3. Design Review	▪ Recommendations for use with repair, rejection, or use as-is ▪ Resolutions proceed towards agreement and obtain formal Approval
4. Project Management Review	▪ Confirm or reject the design review recommendation
5. Schedule	▪ Discipline Lead produces correction plan, including schedule and timeframe ▪ All documents (e.g., photos, sketches, schedules, or action plans) linked and tagged in InEight for ease of review, storage, trend analysis, and auditing
6. Department and Developer Approval	▪ NCR action plan distributed for Department and all appropriate KMP (including O&M) implementation of the approved plan
7. Corrective Action	▪ Action plan implemented and Approved
8. Quality Verification	▪ PQM and the Department verify successful completion of correction

Strategy to Address Defects, Deficiencies, Trends *2.2.3.a.xiii*

RFI, FDC, and NCR issues provide detailed history of actual Project conditions by categorizing Discipline, Work Area, Material Type, Risk Level and Project Location. The Quality Team uses the information to identify recurring issues or increasing trends. PQM Gordon Peterson works with design, construction, or operations staff to develop potential Corrective Actions, reports, and appropriate recommendations to executive management and to the Department. Executive management provides the relevant design, Construction, or O&M managers with direction to prepare training or institute new review or Construction procedures to eliminate similar clarifications/nonconformances.

Approach to Meet Quality Management Obligations *2.2.3.b.i*

We meet Schedule 8 obligations by rigorously implementing our quality plans. The QMP and DQMP deal with Stage 1 non-construction elements of the Project. IDQM Jim Rozek and CPCM Sean McAfee *(Figure 2.1, pg. 11)* manage the implementation of these plans following their roles and responsibilities *(Figure 2.3A, pg. 13)*. Sean uses the Administrative Material Testing and Inspection Plan (MTIP) to identify all requirements and processes for non-construction

related elements of the Project. The Administrative MTIP is tracked with InEight and provides notifications to the relevant Design or Construction Manager and Sean to ensure that commitments are executed as required by the Project Agreement and Management Plans.

Stage I Quality Resources and Procedures *2.2.3.b.ii*

IQCM Tracy Martin works with Gordon Peterson to implement the QMP procedures and manage resources for Process Control staff. Design quality follows a Four-Step Process of review and verification of deliverables from initiation to RFC documents *(Figure 2.10)*. The procedures comply with both Project Agreement Schedules and ISO 9001:2015 certification.

FIGURE 2.10 Four-Step Design Quality Process

1 Production
Designer
Deliverable packages prepared to match the project needs

2 Constructability/IDR
Contractor/Designer
Contractor and discipline leads check deliverable and PM checks document's preparation status

3 PC Hold Point
KMP Quality Manager
IDQM performs PC audits to verify that the IQC process is properly completed and documented

4 Design Approval
Department
After internal reviews are completed, the plans are formally transmitted for Department review

Jim Rozek communicates responsibilities, processes, and procedures for planning, preparing, checking, reviewing, auditing, and certifying that the Design complies fully with the Project Agreement, FHWA, and all Department requirements (Schedules 8, 14, 15, 18, federal and state). To ensure QMP compliance, the IDQ staff performs unannounced site inspections at remote facilities of the Lead Engineer and its subconsultants at all stages of work.

Interdisciplinary Design Review Process *2.2.3.b.iii*

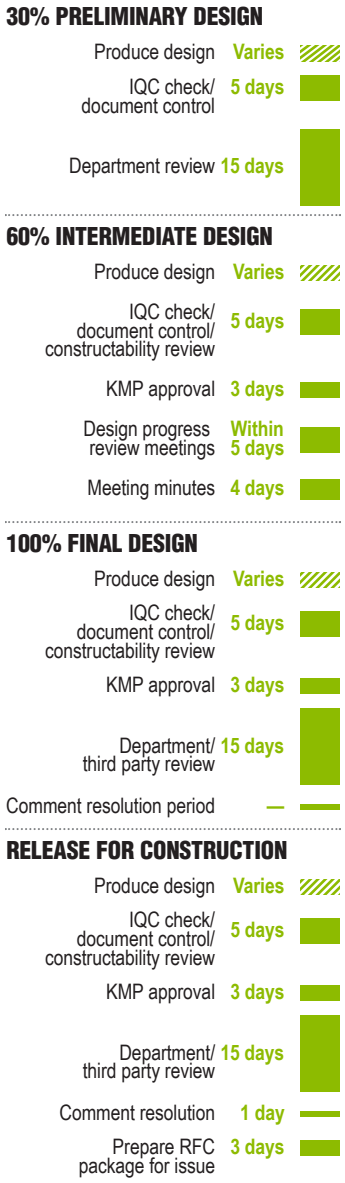
Design deliverables include an Interdisciplinary Design Review (IDR), constructability comments, O&M Design review, and community or third party input (e.g., utilities, RRs). Discipline leaders participate in weekly Task Force meetings to review status of packages; address interdisciplinary coordination points; and confirm compliance with construction requirements, Project standards, and Project Agreement requirements. Prior to submission, packages enter an IDR and constructability review cycle. KMP welcomes informal review comments from the Department, CCD, and PI personnel to enable timely, formal review of submittals. These reviews also confirm Third Party Agreements, ROW, survey, environmental permitting, utilities, RR, NEPA, ROD, and community commitments are appropriately incorporated into the final package.

Interface to Enhance, Expedite Design and Ensure Constructability, O&M *2.2.3.b.iv*

The formal interface between various design discipline personnel and construction, O&M, and quality personnel is achieved through constructability review meetings. Informal interaction is constant; cross discipline, construction, O&M, and quality personnel use Bluebeam Studio for electronic real-time reviews and to concurrently share comments and responses with the Lead Engineer, Parsons Brinckerhoff. **This truly innovative and interactive approach to Design coordination promotes the most constructable and enhanced design.** ✔ The Lead Engineer addresses and responds to all comments through Bluebeam or in-person at comment resolution meetings.

Design deliverables include plans, studies, reports, specifications, calculations, and quality requirements. To embrace appropriate review, coordination, checks, Approvals, and schedules, all deliverables follow the Four-Step workflow *(Figure 2.10)*.

FIGURE 2.11
Design Deliverables Flow and Timeline



To minimize Project Construction and Schedule concerns, Design deliverables also allow:

- Timely release of components or unique elements to meet procurement, subcontractor pricing, and Construction phasing deadlines
- Early Construction activities (utility relocations and demolition) to progress as final Design and detailed working drawings/shop submittals are Approved
- Constructability, operability, and maintainability

Approach for Delivering the Design *2.2.3.b.v.A*

Design Manager Doug Andrew is responsible for delivering the Project Design and is supported by Deputy Design Managers Heath Therrien and Mark Talvite. Heath and Mark bring decades of Denver project experience and lead the full Design through a shared pool of Discipline Leads, production staff, and Design subconsultants. Responsibilities for all personnel are defined in the DQMP (Appendix D, Draft Stage 1, DQMP, Section 3.2). *Figures 2.2, 2.3A, and 2.3B* provide further details on the roles, relationships, and Design staff authority levels.

Managing Subs and Off-Site Design Work *2.2.3.b.v.B*

KMP manages, trains, and mentors smaller subconsultants by providing meaningful opportunities to participate in design. All services adhere to the specific aspects of the DQMP. All Design Team personnel are fully trained and attend focused quality training. All subconsultant efforts—such as CADD standards, calculation procedures, software authorizations, and interdisciplinary coordination—are performed uniformly and consistently. Non-Project office locations are subject to random and periodic Quality Audits by the IDQM.

Ensuring Consistency and Quality *2.2.3.b.v.C*

All Design-related documents (e.g., manuals, lists, databases) are stored in InEight and accessible to KMP's Design Team period. CADD files are stored in ProjectWise which seamlessly integrates with InEight. Doug creates and maintains a matrix of Design criteria to be used on the Project. External or internal parties (e.g., the Department, stakeholders, third parties) may recommend changes to Design documents and standards as the Design develops. Doug reviews and approves or rejects and resolves each Design input change request. Documentation of any review as well as Approvals are disseminated to Design Teams per communication protocols outlined in the PMP. KMP's

commitment to quality design is exemplified by our use of Department-approved software and the formal verification of Vendor-Supplied Computer programs, including hand calculation checks of these systems. **All Design drawings are completed in InRoads/MicroStation and submitted in accordance with the Department's requirements.** ✔

Design Personnel Interface & Procuring Authorities *2.2.3.b.vi*

Our Construction, O&M, and project management leadership teams are co-located at the Project Office. We promote timely, frequent communication and believe in developing trust throughout the Project Team. Dedicated office space is available for Department staff to foster and strengthen early communications during the Design process.

To promote collaboration and foster our team's *Project First* commitment, we plan to include the Department, approving authorities (CCD), and their agents in Task Force meetings for over-the-shoulder reviews and recommendations prior to the formal submittal and review periods ✔ (PA Sch 9, Sect 9.d). All Design plans and Construction documents are reviewed by the Department through the 30/60/100 percent phases *(Figure 2.11)*. KMP addresses all comments and concerns to the Department's satisfaction prior to beginning Construction.

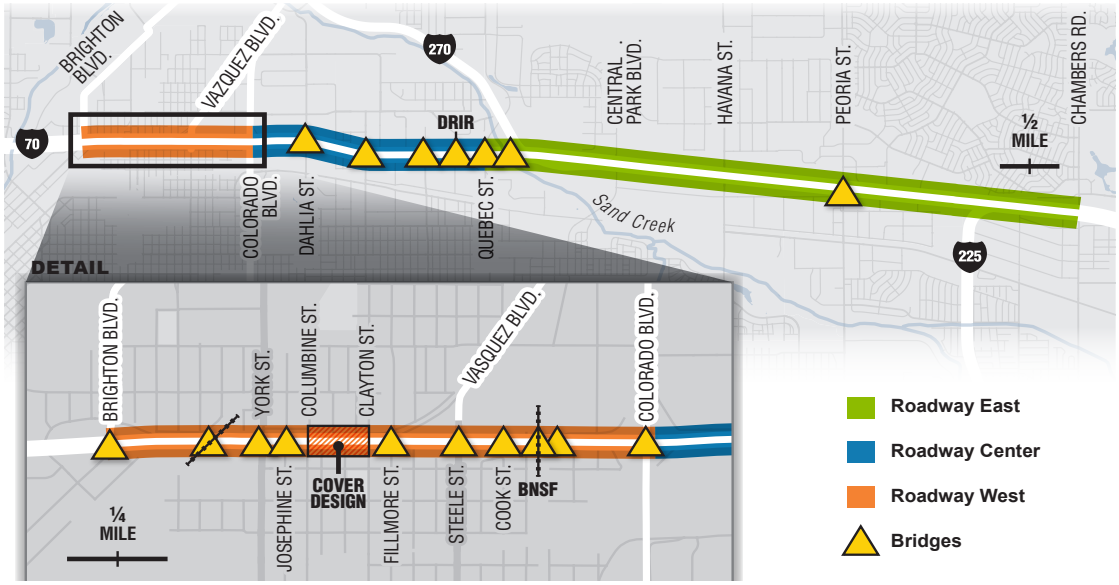
KMP allocates dedicated resources for timely, efficient review and Approval with CCD engagement. **Our Project Office includes space for CCD to co-locate a full-time liaison and CCD coordinator.** ✔

KMP also embraces the Department's Quality Control inspections and formal Quality Assurance audits. Through these and our own internal reviews, KMP adjusts or modifies processes and procedures as recommended to deliver quality Project results.

Proposed Design Deliverables *2.2.3.b.vii*

A thorough review during the proposal phase and previous Department projects provided us with a solid understanding of required deliverables, and we developed a preliminary schedule for executing the Work. *Figure 2.12* summarizes Bridge Design packages.

FIGURE 2.12 KMP Design Packages



Stage 2 Quality Management *2.2.3.c*

Our CQMP has been developed with the goal of meeting and exceeding the Department's expectations based on proven and time-tested plans for the delivery of similar projects. **Our commitment for all staff is to implement *Right First Time* and eliminate rework.**

Meeting the Quality Management Obligations *2.2.3.c.i*

PQM Gordon Peterson oversees the QMP and its component, the CQMP, and has ultimate responsibility for meeting the obligations set out in Schedule 8. He is supported by IQCM Tracy Martin, responsible for all IQC, and CPCM Sean McAfee, responsible for Process Control. Our quality commitments apply to all temporary and permanent Work, whether self-performed or subcontracted, including fabricators, suppliers, and vendors.

The CQMP (Stage 2, Appendix E) details specific processes and procedures including inspection frequencies, as outlined in the Material Testing and Inspection Plan (MTIP), and material control schedules to meet the requirements of the Project Agreement.

KMP TARGETS QUALITY AT EVERY STEP

- **Exceed Department's expectations.** Build trust at all levels from a base of working alongside the Department for over 70 years
- **Meet requirements.** Work plans and Pre-Activity Meetings for all tasks to support field performance
- ***Right First Time*.** Experienced supervisors and craftsmen promoting a quality culture
- **Eliminate rework.** Any quality concerns immediately addressed, a rectification action developed and reported with primary and contributing cause of any nonconformances, and shared to prevent reoccurrence
- **Demonstrate continuous quality improvement.** We apply our **Four Square Matrix** to improve, innovate, and bring further excellence to all that we do *(Figure 2.8B, pg. 16).*

Plan and Control of the Construction Work *2.2.3.c.ii*

Quality Control is successfully accomplished through strong organization and processes with solid work plans, Pre-Activity Meetings, Weekly Schedule reviews, daily toolbox briefings, and foreman meetings. *Right First Time* is key to meeting Project Milestones. The success of our CQMP comes from our team's focus on Project Start-Up, Work planning, and field execution *(Figure 2.13)*.

For critical or major work elements (e.g., crane picks, traffic shifts, nighttime closures), our Pre-Activity Meetings involve construction supervisors, designers, PC/IQC Teams, subcontractors, and Department representatives. This meeting reviews task-specific checklists inclusive of detailed daily, hourly, and occasionally minute-by-minute efforts (Appendix E, Draft Stage 2 CQMP, Section 7.2.3) KMP integrates Construction start-up, planning, and field execution processes work to be successful and meet Project Milestones and schedule commitments. Furthermore, during critical activities (e.g., pre-pour inspections) inspectors consider innovative technologies such as body-cams to document our work.

FIGURE 2.13 **Quality control procedures to execute construction activities**

PROJECT START-UP	WORK PLANNING	FIELD EXECUTION
Sets the stage for successful work activity	*Defines plans; resources needed; and safety, quality, testing, and environmental requirements*	*Applies procedural knowledge to actual Construction, including scope of work risk assessments*
Contract and specification review	Inspection and test plans	Play-of-the-Day
Control of Quality records	Work plans, step-by-step	Self inspection of work
Selection of subs and suppliers	Pre-Activity Meetings, including Department, O&M, and third parties	Visibility, recognition, and accountability
Clarify client expectations	Review of shop drawings and product submittals	Client communications for IQC
Control of project quality documents		Source inspections
IQC review		Inspections and tests for Acceptance
Quality Control Review	**Independent Quality Control**	Calibration for inspection
Process Control	**Project Quality Control**	Materials receiving and storage

Integrating with Design and Maintenance *2.2.3.c.iii*

KMP's Construction Manager Barry Thoendel is responsible for the management of Construction Work, and has support from segment managers Pete Remington and John Bush. Barry, Pete, and John are all long-time Denver-area residents and worked together on Kiewit's successful delivery of T-REX and 225. They work with shared discipline managers and superintendents to implement the Project Start-Up, Work planning, and field execution consistent with the CQMP. The construction, quality, design, and maintenance staff attend Weekly Schedule meetings to coordinate upcoming Work and plan for inspection and follow-up.

We include discipline designers and O&M representatives in IQC inspections (for major activities at a minimum). These reviews provide for another set of eyes on the Work and confirm that the Design is implemented correctly and that O&M is getting the product that meets or exceeds Term and Handback requirements. In addition, **during Construction of all temporary structures, KMP's onsite designer verifies temporary construction is compatible with the Design to reduce or mitigate physical risk and increase safety.** ✔

Managing Construction with Ongoing O&M *2.2.3.c.iv*

Barry is responsible for the management of all Construction Work and coordinates with O&M Manager Abe Henningsgaard, who is fully engaged from the Agreement Date, for Project Operations and maintenance during Construction. Abe is supported by an O&M Engineer *(Figure 1.3, pg. 4)* and they participate in all Project Scheduling, Work planning, and Task Force meetings. The O&M Team plans, communicates, and executes their operations in the same fashion as those executing permanent Work.

Interface with the Procuring Authority Staff *2.2.3.c.v*

Department staff are encouraged to attend all daily and weekly coordination meetings to understand and plan for upcoming Work. **The quality interface and a feature of *Project First* begins at Design Task Force collaborations. The Department can see constructability as a priority in action. It progresses into Construction Work with a multitude of interactions as we reinforce the Department's involvement with Pre-Activity Meetings, Play-of-the-Day, and tool box meetings.** ✔ As the Department performs verification tests during Construction Period, our IQC and construction field staff build relationships with Department personnel. **All IQCM reports are directly communicated to the Department from InEight's real-time platform through Aconex.** ✔

Constructability, Durability, Maintainability, and Environmental Compliance *2.2.3.c.vi*

Other special features of our quality management approach *(Figure 2.14)* are assessed during Task Force Meetings to influence Design deliverables and once RFC drawings are issued, these items are monitored, validated, and documented.

FIGURE 2.14 Quality Management and Other Special Topics

Construction Period Constructability	▪ Managers continually assess ways to improve constructability ▪ Field design changes for material application and selection
Durability	▪ Design Manager Doug Andrew, O&M Manager Abraham Henningsgaard, and Construction Manager Barry Thoendel collaborate to achieve comprehensive durability plan ▪ Plan is continually updated for relevant Residual Elements
Environmental Compliance	▪ Environmental Manager Jenn Bradtmueller uses ECWP Environmental Matrix in InEight with real-time tracking on environmental laws and regulations ▪ PC Administrative MTIP includes environmental compliance
Maintainability	**O&M Team:** ▪ Participates in Design Review process *(Figure 2.10, pg. 19)* ▪ Integrates through the Construction Period ▪ NCRs to provide input on proposed corrective ▪ Attends all project update meetings with focus on ongoing and upcoming maintenance **Prior to Substantial Completion, our Quality Team expands:** ▪ O&M Quality Manager joins to report directly to Gordon ▪ O&M Quality Manager leads the OMQMP that is integrated into QMP

Maintenance of Traffic (MOT)

Based on our long-time Denver relationships and outreach events, we understand local business and community concerns, which allows us to effectively address traffic concerns within our Construction phasing and MOT. Our MOT approach and innovative design focuses on minimizing disruption with clarity, convenience, and safety. We use proven communication tools to keep the public and local communities aware of upcoming Work and changes. **Our plan achieves all Design and Construction requirements of the Project Agreement and KMP optimized and reduced closure periods for 8 of the Department's 16 allowable long-term ramp closures.** ✓ Our innovative approach throughputs traffic and facilitates efficient local access throughout the Project corridor. We integrate these factors with all Operation, Maintenance, and Construction activities to make the greatest use of every lane closure. The outcome of our detailed planning efforts are safe and effective traffic control measures that minimize impacts to local residents, businesses, and road users—motorists, cyclists, students, and pedestrians alike.

DEPARTMENT PROJECT GOAL Minimize impacts to the traveling public, businesses, and nearby communities during and after Construction.

KMP achieves this goal and benefits the Department through:

✓ **MAINTAINING SPECIFIED RAMPS AND OPTIMIZING RAMP CLOSURES** Through diligent design, KMP optimized traffic flows on 8 of the 16 allowable full ramp closures and keeps all ramps open required by the Project Agreement.

✓ **REDUCED TRAFFIC SHIFTS** KMP's TMP maintains viaduct traffic in its current pattern for the longest possible period. This reduces the number of traffic shifts, improves traffic flow with driver familiarity, and provides certainty of daily driving conditions. **More importantly, fewer traffic accidents occur associated with traffic management changes.**

✓ **COMMUNITY SATISFACTION WITH PROJECT CORRIDOR OPERATIONS** KMP's comprehensive Strategic Communication Plan (Appendix J) combines our integrated team policies by embracing all task forces, and creates an informed local community and commuter understanding. This knowledge reduces traffic delays as well-informed road users follow optimized routes.

✓ **STUDENT AWARENESS AND SAFETY** We are committed to student safety, when they are going to and from school or enjoying new playground facilities. To promote and maximize safety, our proposal includes a covered and secure access under the UPRR shoofly during Construction, reducing risk for local residents, pedestrians, and Swansea Elementary School students that currently cross active tracks. **We plan on providing multiple Project construction learning opportunities for all students.**

Traffic Management Control, Coordination, & Sequencing Approach to Major Activities *2.2.4.a*

The KMP Transportation Management Plan (Appendix F) includes detailed planning to accomplish the MOT program for all Construction phases in the Proposal Schedule. All of our major Work activities are coordinated with the Denver Traffic Management Center and the Colorado Transportation Management Center (CTMC). We provide fixed signage and VMS alerts at key points enabling drivers to consider alternate routes in advance to prevent impact from construction activities. The policies provide focus on four key strategic MOT applications *(Figure 3.1, pg.25)* from NTP1 through the Term and fully comply with all appropriate specifications and standards including Schedule 10, Section 2 of the Project Agreement.

Impact to Local Agency and CDOT Roadways *2.2.4.b*

PLANNED CLOSURES AND DETOUR ROUTES Major traffic shifts and required detours are detailed in Appendix F; proposed duration of closures, TMP features, and methods to reduce impacts are shown in *Figure 3.2 (pg. 26)*. Local road closures in the final TMP submittal reflect Construction needs. Our team creates MHT plans to address specific community access concerns and each traffic shift MHT event is submitted to the Department for review and Approval.

MINIMIZING IMPACTS Our Design, Construction, and O&M Teams have collaboratively reviewed the Project corridor and Work activities and developed preliminary MOT concepts to minimize impacts to local and CDOT roadways.

MITIGATING IMPACTS We actively manage our MOT to meet the Schedule 10 requirements and minimize negative impacts to the environment, property damage, and inconvenience to adjacent communities and residents.

Full Closures of I-70 Mainline and Ramps *2.2.4.c*

The Project's preliminary MOT concepts (Appendix F) include forecast traffic movements for each Work Area and Phase. All closures are coordinated to maintain active freeway speeds and traffic flow along the I-70 Mainline during Construction and Operating Periods per Project Agreement requirements. Protecting the ROW, ancillary roads, and adjacent properties are critically important to KMP and mitigation efforts are incorporated throughout our MHT plans.

By maintaining I-70 Mainline traffic on the existing viaduct for an extended period (NTP – Fall 2020) we minimize changes to driver expectations and allow driver knowledge, established routes, and practices to continue uninterrupted. As there are only two major traffic changes (West Work Area Phases 3 and 4, Appendix F), when traffic is shifted onto the final roadway alignment, residents, commuters, and visitors will adapt more quickly than if there were multiple, irregular and short duration shifts. **This facilitates safer and more reliable travel on I-70.** ✓

Of the Department's 16 allowable full ramp closures, **we optimized 8** *(Figure 3.3, pg. 26)* **to provide benefits including shorter closures, familiar routes for drivers, and support for local commerce and bus routes.** ✓ All 16 ramp closures, including the 8 optimizations, are fully compliant with the Project Agreement. Our plan is in full compliance with ramps which remain open throughout the Construction Period.

FIGURE 3.1 KMP Framework for Traffic Management Plan *Four strategic applications of MOT and their respective compliance documents*

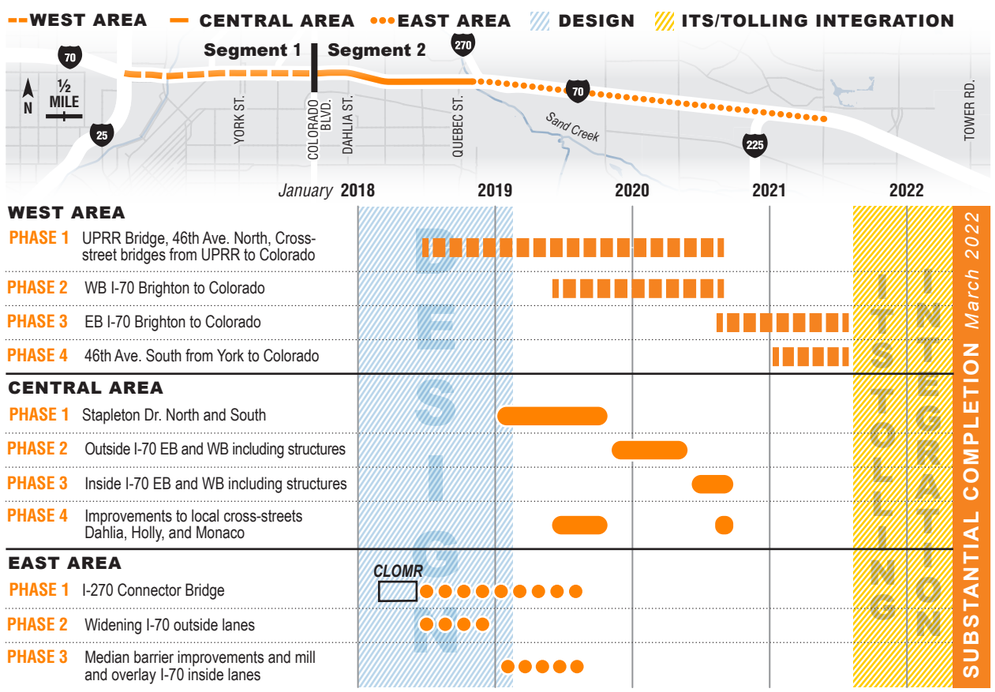
1 Early design and field investigations (survey, geotech, traffic and circulation pattern studies, utility identification/ relocations, and business inventory assessments) *Project Agreement Schedule 10*

2 MOT phases for three major Work areas including traffic shifts, closures, and detours with typical sections and access details for Work Zone Safety and Mobility Rule Procedures *Work Zone Safety and Mobility Rule Procedures*

3 Methods of handling of traffic (MHT) during the Construction Period *Guidelines for Developing Daily Traffic Control Plans*

4 MHT during the Operating Period and for Renewal and Handback Work *Manual on Uniform Traffic Control Devices (MUTCD)*

FIGURE 3.2 KMP Summary of TMP



Features of planned closures & traffic management approach

Minimal long-term ramp closures	▪ **Project Schedule plans optimize 8 of 16 PA-permitted long-term ramp closures** ✓ ▪ Maintain freeway access and smoother traffic flows on Mainline and local roadways
Limited major traffic switches	▪ **Phase 1.** Maintain existing traffic patterns on I-70 viaduct for initial two construction phases to complete new improvements to the north ▪ **First Major Shift.** Move traffic off the viaduct onto newly installed permanent pavement ▪ Remove viaduct in a single operational cycle, complete installations to the south ▪ **Second/Final Major Shift. Move motorists in final configurations** ✓
Reduced neighborhood impacts	▪ Construct Columbine/Clayton improvements (adjacent to Swansea Elementary) during same summer period **(Approved ATC 57** ✓**)** ▪ Provides a quicker completed neighborhood access improvement ▪ Improves **Student safety** ✓ reduces inconveniences around Swansea Elementary
Expedited business access	▪ Majority of Work related to the Stapleton Drive improvements completed in Phase 1 ▪ Earlier, permanent, and full access to businesses along major commercial arterial
Local traffic signing and access	▪ Short-term traffic re-alignments for turn lanes, ramp access, and merge lanes ▪ Residential and business access along detour routes properly signed and access maintained for local traffic through alternate means (e.g., flaggers, temporary pavement or routings, walkway bridges, temporary business signage) ▪ Other business support (e.g., advertisements, coupons, sidewalk sales, and participation in business fairs and Farmer's Markets)

Methods to reduce the impact of the Project on local CDOT, CCD, and contiguous jurisdictions

Combine multiple Work activities and events into single closures	▪ Coordinate closures and detours to minimize impact to the local residents ▪ Maintain unobstructed business access, provide clear travel lanes with safe pullouts for commuters, and provide safe work zones for KMP and Department employees ▪ **Repeat resounding success of I-405 Carmageddon weekend closure (California)** (*Figure 3.4*) ✓
Issue early and clear bilingual notices	▪ Issue to affected parties and general public via website updates, social media blasts, door-to-door canvassing, mobile traffic smart phone apps, and ride-share programs
Denver Traffic Management Center	▪ Coordinate to correctly phase traffic signals and ramp metering systems for efficient and safe traffic flows and monitor effectiveness through MOT set-ups
Outreach and coordinate with CTMC and CDOT Traffic Web Portal *www.cotrip.org*	▪ Facilitate and coordinate public media with CTMC for safety and traffic notices ▪ Display messages current traffic conditions, and advance warning notifications for visitors and commuters across the metro area using ITS and VMS ▪ Use creative messages similar to ADOT's 'Drinking & Driving Go Together Like Peas & Guac' campaign to capture the attention of commuters
Identify potentially impacted stores or businesses and major civic events	▪ **Meet monthly with local stakeholders to assess current roadway closures and ensure we do not create delays Before, During, or After Special Events (Schedule 10, Section 2.5)** ✓ ▪ Extensive outreach to CCD and other stakeholders to understand concerns ▪ Project Schedule coordinated with known sporting events and festivals (e.g., Stock Show, Sports Authority Field, Pepsi Center, Taste of Colorado, runs/marathons/parades) ▪ **Conduct stakeholder workshops for future event planning** ✓ ▪ Proactive incident Plan with protocols and provisions for unplanned events (e.g., political rallies or dignitary visits)

FIGURE 3.3 Full Ramp Closures

Optimized **PA Compliant** **Remain Open**

We optimized 8 of the 16 allowable full ramp closures to provide these benefits: ✓

- **Shorter closure durations** ✓
- **Similar traffic movements without increasing local roadway usage** ✓
- **Extended periods for drivers to maintain existing habits and travel patterns** ✓
- **Support local commerce by maintaining major arterial access (e.g., Quebec)** ✓
- **Retain existing local bus routes** ✓
- **Facilitate efficient operations at the National Western Center** ✓

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Residential, Business, & Pedestrian Access; Potential Impacts & Access to Adjacent Roads *2.2.4.d*

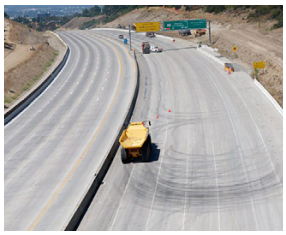
KMP developed a detailed MOT plan that optimizes phasing, traffic switches, and traffic detours. We work closely with the Department, CCD, neighborhood associations, and other impacted entities to continuously communicate upcoming activities and the associated MOT/MHT adjustments. *Figure 3.4* highlights our success on I-405 in California.

FIGURE 3.4 Carmageddon Revisited: Metro, Caltrans, and Kiewit reopen iconic Mulholland Bridge

The iconic Mulholland Bridge…spawned two unprecedented weekend closures of the nation's busiest freeway and introduced the word "Carmageddon" into the American vernacular. The 405 had never been deliberately closed for 10 miles in a dense urban environment like Los Angeles...

…an aggressive, multi-agency public outreach campaign advising motorists to "Plan Ahead, Avoid the Area or Stay Home" in efforts to achieve up to two-thirds traffic diversion and suppression of freeway traffic during the bridge's demolition.

> **"The contractor [Kiewit] executed a precision traffic management and demolition operation, and completed demolition 17 hours ahead of schedule. There were no threats to public safety the entire weekend, and traffic conditions were the lightest seen in decades."**
>
> — **DAVE SOTERO** "The Source" LA METRO, December 18, 2013



Our MOT plans are developed to create a positive impact on the pedestrian/bike, transit, and business access across the Project corridor. In many cases **our temporary improvements—roadway, sidewalk, and signage—could remain and become long-term benefits to residents.** To summarize features of our approach that focus on community connectivity and improvements to minimize the impact of construction activities:

- **For the duration of new UPRR bridge construction, we install covered and secure pedestrian access beneath the UPRR shoofly track** for local residents (particularly for students walking to/from school), reducing risk for current routes across active tracks.
- **Our storm drain design for the Lowered Section eliminates impacts from constructing 5,300 feet of large diameter onsite outfall through the Elyria/Swansea neighborhood.** We also eliminate impacts to Eaton Sales and Services and G&K Services, which are associated with the Reference Design outfall alignment.
- **The span over eastbound lanes at Colorado Boulevard are lengthened to allow all existing I-70 lanes to remain in their current configuration while the bridge is constructed, which reduces traffic and driver impacts and improves constructability.**
- **Our plans minimize the use of local roadways for construction-related hauls (as a last resort option) and implement detailed signing and advanced VMS notifications to channel local traffic to approved arterials and other routes.** Upon monitoring these movements to assess effectiveness and impacts, we will make appropriate changes if necessary. All permit requirements are logged and monitored in the MOT/MHT daily logs.
- KMP provides 400,000 CY of clean fill material to CCD as requested in the CCD interagency agreement, which includes 200,000 CY of clean fill material to the National Western Center. Further, we identified the opportunity to provide CCD with clean fill material for the BNSF Market Lead Ditch adjacent to the Project. **By raising the Mainline profile through the Lowered Section, KMP greatly reduced the volume of material which needs to be hauled off site.**

Lay-down, Recycling, Staging, Disposal, and Maintenance *2.2.4.e*

KMP optimized our Project Office location to fulfill the requirements, facilitating efficient construction and minimizing community impacts. Specifically, we developed our plan ensuring that material storage would not occur within 500 feet of Swansea Elementary. The location of our office and construction work areas are shown on the Appendix A roll plots and in *Figure 3.5*.

These locations provide the necessary facilities for both the Lead Contractor and the Developer. To further our commitment to the environment and produce a sustainable project:

- Each laydown facility has recycling and disposal operations to sort and minimize waste, reduce our carbon footprint, and increase the sustainability index value.
- On-site recycling programs, material repurposing, and whole-life selection of permanent materials offer long-term environmental and community benefits.
- **Team members hold current Envision EVP certifications and apply this knowledge to increase sustainability for Construction, Maintenance, and operation.** ✔
- Our dedicated staging sites are built and organized to contain any potential spills from fueling or maintenance. Routine Maintenance occurs inside a dedicated staging area and any emergency repairs that could result in fluid leaks are done in accordance with the spill prevention, control/countermeasure plan, and containment procedures.
- Our staffing, training, policies, and procedures mandate that we maintain environmental compliance during Construction, enhance each location after we exit the facility, and **return each laydown area to a better condition when we leave.** ✔

FIGURE 3.5 Project Office and three primary laydown, staging, material storage, and maintenance locations

Project Office, AP-86A and AP 86B *(Pilot Truck Stop)*	▪ Two acres to house 30,000 sf of office trailers for the entire duration of the Project; approximately 10,000 sf to accommodate Department office space.
Community Outreach, AP-93 and AP-93A *(Anderson Drilling 5775 Eudora St. Commerce City)*	▪ 64,000 sf used for community outreach, in coordination with the CDOT Communications Team until January 31, 2020, and for CDOT activities such as workforce training.
Supplemental Field Office, AP-109	▪ Existing 15,000 sf for quality, survey, and other field staff, used following NTP2.
Staging/Storage, AP-122	▪ Warehouse with approximately 7,000 SF of office space and 30,000 sf indoor storage, used for secure storage of sensitive items such as ITS devices and, as needed, additional field offices.
Laydown Areas	▪ Multiple areas (i.e., northwest, southwest, and southeast quadrants of the Steele/Vasquez interchange) identified within the right-of-way, each to be analyzed to ensure no potential community impacts
Aurora Yard *(Kiewit-owned)*	▪ More than 55 acres, a batch plant, rail access with a material handling system, and approximately 8,000 sf of maintenance facilities available for Project use. Located at Piccadilly and Smith Roads, 12 miles from Colorado Boulevard, **less than 1 mile from Chambers Road and I-70.** ✔
Havana Maintenance Yard	▪ Existing yard located within the southeast quadrant of the Havana Street interchange used for O&M during Construction and O&M after Construction.

Environmental, Communications, Community, ESB, DBE, and WDP

KMP is excited to deliver a focused approach to enhance and develop the local community while constructing Denver's Corridor of Opportunity premiere Project. Through clear, concise, and accurate two-way communication, we encourage and support the community's growth and local workforce development. Additional financial contributions from KMP benefit schools and students; create local art opportunities to highlight community history; reinvigorate local businesses; and reinforce Denver and Colorado pride. Our detailed investigation of existing conditions and creative technical solutions helps eliminate or minimize environmental impacts and risks.

DEPARTMENT PROJECT GOAL Use a collaborative process to enhance community values and Project benefits.

KMP achieves this goal with a Project First approach that benefits the Department through:

INVESTING IN THE COMMUNITY KMP Team members are strongly committed to helping the community beyond Construction of a new roadway. **We dedicate $1,000,000 in funding and in-kind services for a variety of community enhancement programs (e.g., loans or grants, food access, college scholarships, and construction education) over the Project Term.**

MINIMIZING GROUNDWATER AND OTHER ENVIRONMENTAL IMPACTS KMP focuses on minimizing hazardous materials during Construction and long-term. Our design solutions decreased environmental risks, by raising the road profile above the groundwater. **This eliminates the requirement for a groundwater treatment pumping station for contaminated water exposure along the corridor and O&M costs in the short- and long-term.**

PROFESSIONALS PROVIDING THE COMMUNITY WITH PROJECT INFORMATION Our tenure of previous work with the Swansea, Elyria, and Globeville communities has laid the foundation for strong relationships with local leaders. **Hunter Sydnor** (Communications) and **Ana Mostaccero** (Bilingual Liaison) are familiar with the community and its culture. **Jenn Bradtmueller** (Environmental) brings best management practices applying regulations and permit applications from local projects (I-25 North, I-225 Rail Line, DUS, and T-REX).

A STRONG TEAM WORKING WITH THE COMMUNITY A local presence since 1938, Kiewit knows Denver and has maintained strong relationships with project stakeholders, major subcontractors, and DBE/ESB companies. Our Team already includes **8** DBE/ESB or small businesses. Our Workforce Development Plan (WDP) augments resources with a pool of qualified staff who have progressed through detailed on-the-job training and/or apprenticeship positions. This approach was successfully implemented on the I-225 and DUS projects. Meridiam also has a history of implementing robust community involvement plans, such as Operation 305, a WDP for the Port of Miami Tunnel Project. (https://vimeo.com/179216679)

General *2.2.5*

As witnessed during Project development and ROD commitments, the community cares deeply about quality of life and environmental impacts. KMP Team members are part of this community—as residents with children attending local schools, and as business patrons. We commit to enforce all environmental regulations for air, and water quality; protect wildlife habitats and valued vegetation; and minimize disruption to residents and businesses from dust, construction vehicle activity/emissions, and noise/light pollution.

FIGURE 4.1
KMP Rules for Dealing with Recognized Hazardous Materials

1 Usage Prohibit incorrect and unnecessary use of hazardous materials on the Project at all times.

2 Material Handling Enforce Approved procedures and BMPs for safe use and proper handling of all products.

3 Hazardous Materials In known contamination area: ***Dewatering.*** Test and evaluate prior to discharge. ***Soils.*** Staff trained for 'RHM recognition' and procedures in place to identify, notify, and rectify as necessary

Environmental Successes Reducing Spill Incidents

A key component of KMP's goal to achieve zero environmental incidents is a robust spill prevention program, modeled after Kiewit's proven spill prevention program. On a project which included movement of almost 100 million bank CY, Kiewit implemented this program and achieved a 90% spill incident reduction.

Hazardous Substances *2.2.5.a.i*

A specific aim of KMP is to **minimize the environmental impact of the Project through reduction in hazardous materials that reduce associated O&M activities.** ✔ Through additional boring and water quality investigations, our Project profile decreases environmental risk. **With an elevated road profile above the groundwater, we eliminated the risk of handling, treatment, and disposal of contaminated water** ✔, reducing Construction and O&M costs in the short- and long-term.

KMP is responsible for identification, investigation, removal, treatment, storage, transportation, management, and disposal of known recognized hazardous materials (RHM) in the soil and groundwater. We employ a three-rule approach *(Figure 4.1)*. Systems are in place to address unexpected RHM and specific activities include:

- Obtaining all remediation permits necessary to treat and discharge contaminated groundwater during Construction
- Obtaining CDPHE permits to treat and discharge groundwater if encountered During Operating Term
- Submitting, as necessary, a RHM Management Completion Report for Acceptance

RHM Manager Andrew Uyomn oversees activities in the Construction and Operating Periods and government approvals for removal, management, and disposal of RHMs using procedures described in our Environmental Compliance Work Plan (ECWP).

- Implementation of the Materials Management Plan (MMP)
- Submitting/reviewing monthly RHM management statements on efforts with the Department
- Confirming KMP follows all environmental requirements applicable to RHM
- Notifying the Department in writing within 8 hours of encountering/discovery of hazardous substances (including releases thereof) affecting the site or the Work

Beyond our compliance with the hazardous material and dewatering requirements, our environmental staff provides leadership across the Project to improve sustainability through recycling efforts and minimizing impacts from items such as air, water, noise, emissions, or vibrations. For example, our idling program restricts vehicles and equipment from idling for more than five minutes, reducing emissions, and conserving fuel.

Environmental Compliance Work Plan (ECWP) *2.2.5.a.ii*

Our Draft ECWP (Appendix M) and associated plans define the reporting structure, authorities, and procedures to develop effective solutions that meet the Project's EIS/ROD commitments. We developed an environmental matrix of all commitments, which reflects the Department's allocation of responsibility, to continually track our compliance to make the Project successful.

Our environmental management expertise is facilitated through InEight with real time, consistent, and reliable tracking of commitment, requirement, law, or Approval by the Project Team and the Department. The InEight platform provides proactive action plans for all requirements and peace of mind to the Department that all commitments are continuously and properly addressed.

Prior to NTP2, we provide staff training with Project field guides outlining all environmental compliance needs. Using the field guides and the InEight platform, our Team is committed to providing environmental services through **a 95 percent paperless process.** Partnering with the Department remains a priority, and we plan meetings with stakeholders throughout the Term to discuss environmental performance and priorities and to identify improvement opportunities.

The Colorado Contractor's Association *recognized Kiewit with the 2012 Environmental Excellence Award for promoting and protecting the environment during the construction of Denver Union Station.* **Jenn Bradtmueller** *led the environmental effort using innovative procedures and best management practices.*

Strategic Communications *2.2.5.b*

The Department's comprehensive and inclusive community outreach program for over a decade led to the innovative Cover consensus. Local stakeholders motivated this design and built public trust, resulting in stronger relationships with community leaders and businesses. Construction will receive close public scrutiny and KMP is committed to follow our communications principles to respect and align with the Department. Our communications strategy and principles *(Figure 4.2)* build on the Department's strong ties to the community.

Project Communications Manager Hunter Sydnor collaborates daily with the Department. She manages our Strategic Communications Plan (Appendix J) that is continually reviewed and updated to meet stakeholder needs and minimize issues requiring direct Department engagement. Hunter is supported by a dedicated bilingual translator and communication coordinators *(Figure 4.3, pg. 32)*. This team works alongside the Construction Team and hosts weekly internal meetings to understand upcoming activities for communicating through the most important element—people-to-people relationships. Quarterly updates to the Department outline effective communication goals and planned actions. Our Project communications program remains engaged throughout Project Term.

FIGURE 4.2
KMP Communication Principles

- **Early and continuous communication with the public and stakeholders using tailored tools and platforms**
- **Transparency of activity for the public to know what is happening on the Project**
- **Clear, accurate information that tells a complete story simply, and maintains the Department and KMP's credibility**
- **Timely response to public input with appropriate adaptations to the Project's approach**

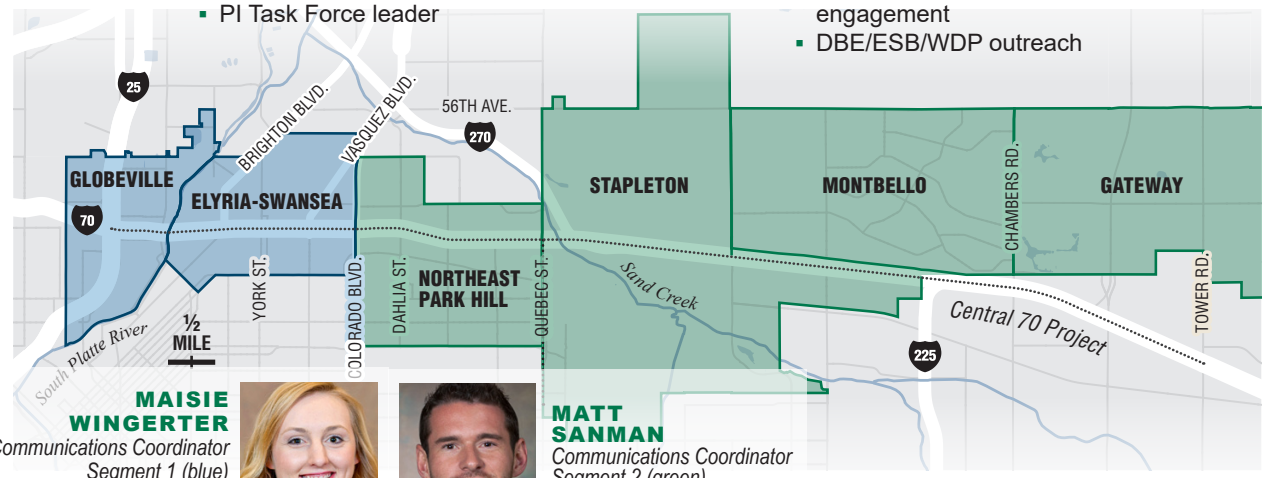
FIGURE 4.3 KMP Communication Team

HUNTER SYDNOR
Project Communications Manager

- KMP spokesperson
- Oversees entire KMP communication team
- Strategic oversight
- PI Task Force leader

ANA MOSTACCERO
Bilingual/DBE/ESB Community Liaison

- Translation and cultural services
- One-on-one interaction with stakeholders
- Present at community meetings
- Strategic partnership and community engagement
- DBE/ESB/WDP outreach



MAISIE WINGERTER
Communications Coordinator
Segment 1 (blue)

MATT SANMAN
Communications Coordinator
Segment 2 (green)

FIGURE 4.4
Communication Collaborators

- **Registered Neighborhood Organizations.** Comuidades Unidades Globeville Elyria & Swansea, Elyria Swansea/Globeville Business Association, Elyria and Swansea Neighborhood Association, Globeville Civic Partners, Globevilles K.A.R.E.S., Montbello 2⁰⁄₂₀
- **Local Chambers of Commerce.** Aurora, Metro Denver, Hispanic Chamber, North Metro
- **Tourism.** VISIT Denver, DEN, Colorado Tourism
- **Travel.** CMCA, DRCOG, Traffic.com, Waze

As part of our WDP, we identified potential jobs for community members to develop Public Information skills and assist with two-way communication among local communities and businesses. ✔

We co-locate with the Department at a **community office at the heart of the corridor to meet the community where they are.** ✔ The office serves as a center where residents can meet with us, learn about the Construction, explore employment opportunities, and receive workforce training. At KMP's Construction Project Office, we offer free space for community meetings. The office features video kiosks with Project information, and access to computers and tablets. All KMP offices provide free Wi-Fi access to visitors.

Maintaining Two-way Communication *2.2.5.b.I*

Our Strategic Communications Plan (including Construction Period, Maintenance and Operations, and Crisis Communications Plans) formalizes our outreach and communication protocols During Construction and O&M. It transitions the relevant experience, technology, commitments, and mitigation history with consistent leadership through Term.

For resident communications, our best practice is to distribute information with the help of known public communication collaborators *(Figure 4.4)*. **These organizations are familiar**

with the neighborhoods and residents and send emails, newsletters, and social media updates for the Project to wider audiences using established databases. ✓

Through timely and complete responses to public inquiries, we build trust and convey accountability from the public, who are the best indicators of the effectiveness of our messages. Our interactions demonstrate empathy to the community and center on mutual understanding and beneficial resolutions. *Figure 4.5* provides further examples of adaptable tools to achieve successful communication with a broad group of stakeholders.

New and Effective Communication *2.2.5.b.ii*

Beyond the general communication strategies, we deliver creative, interactive, and engaging Public Information tactics that meet individual stakeholder needs and address specific

FIGURE 4.5 Communication Techniques and Tools

- **Face-to-Face (F2F) Interaction.** Offer Project update kiosks and F2F interaction with the community; employment opportunities and OJT
- **Phone.** Hotline with a 24-hour response time
- **Public Meetings in Coordination with the Department.** Hosted by KMP or non-profits, associations, and neighborhood groups; regular status meetings (e.g., "Meet our Staff", "How is it Built?", and more)
- **Business Outreach.** Focus on local/regional businesses; Koffee with Kiewit and construction quarterly meetings
- **Social Media.** Facebook, Twitter, and other emerging forms of social media
- **Stakeholder Distribution List.** Important Project updates to all website and email registrants
- **TV News Releases.** Coordination with CDOT media
- **Email.** Weekly Construction schedule emails with type, location, and duration
- **Lane Closure Reports.** Accurate and easy-to-understand weekly updates via the stakeholder distribution list, social media, and Project website
- **Traffic Alerts.** Weekly alerts with GovDelivery and COTRIP; immediate alerts with the CTMC and Denver TMC
- **Web Page Updates.** Work with Department to maintain Project website with weekly subscriber email/texts
- **Project Newsletters.** Quarterly, with updates, schedule, and fun facts for stakeholders
- **Language Assistance.** KMP provided all resources in English and Spanish and has a bilingual community liaison on the core Team
- **Tours/Communication Events.** Periodic site tours to engage/energize community; celebrate Project Milestones
- **State and Local Officials.** Briefings available for elected and appointed officials in coordination with the Department

PI OUTREACH AND APPLICATION OF TOOLS TO SPECIFIC GROUPS

Residents
- Door-to-door canvassing
- Telephone town halls
- E-alerts
- Text messages
- Neighborhood meetings
- Website updates
- Construction information posters at churches, recreation centers, libraries, and other public gathering places

Businesses
- One-on-one meetings
- Business survival guide
- Lunch-n-Learn presentations
- Detour/access maps
- Supplemental business signage

Organizations
- Targeted ad campaigns
- E-alerts
- Text messages
- Signage

Education/Churches
- Present at teacher and parent meetings
- Project info in school newsletters or Friday backpack notes
- Detour/access maps
- Info on school website
- Student training programs on safety around construction
- Participate in appropriate church and other community meetings

Others
(Emergency Response)
- Weekly MOT taskforce meetings that include EMS responders
- Detour/access maps
- One-on-one meetings to plan for incidents, crisis, special events
- Meetings to review major traffic pattern changes
- Joint review and root-cause analysis for all incidents

Construction impacts (e.g., a booth at the Stock Show, sponsoring a steer, and developing a 3D educational model) while maintaining flexibility to accommodate changing community dynamics and technology advancements *(Figure 4.6).*

FIGURE 4.6 New Communication Techniques

Targeted digital media	Stories of interest to local media, and Cone Zone safety
"How is it Built" videos	Posted online and used at community events to reiterate safety and explain Construction operations
Live webcam	Posted on Project website, and social media to show progress. Live Facebook Video of groundbreaking Construction activities and community events
Targeted advertising campaigns	Inform the public on traffic shifts, Construction activities, employment and educational training opportunities
Telephone town halls	Provide Project updates to a large group without leaving their home—in English and Spanish and with interactive Q&A
Mobile public information office	Visible presence at community events to bring the Project community office to additional residents and stakeholders
Construction safety coloring book	Teaches children about construction zone safety and links with the Department's Safe Routes to School program
Construction viewing site & tours	Safe viewing areas and tours to peek into Construction progress
Educational outreach	Fact sheets and work with local schools to bring real-life STEM to the classroom demonstrating how math and science applies to our everyday needs; sponsor a museum exhibit
Project mascot	Work with the local schools and students to create a mascot

Community Development Programs *2.2.5.c*

The Department has created positive relationships with the Globeville, Elyria, and Swansea neighborhoods. As members of the local community, we share the desire to deliver strong programs through approved 501(c)(3) organizations that help improve the community and offer significant value to residents *(Figure 4.7)*. KMP dedicates **$1,000,000 in funding and in-kind services over the Project Term for community development programs.**

The KMP executive management Team has established a panel to oversee and administer programs and charitable donations dedicated to supporting the local community residents and small business entities. **We teamed with local banks, charities, and social agencies to assist with evaluation and administration of our community development funds.**

Small and Disadvantaged Business Participation *2.2.5.d*

KMP commits to exceed DBE/ESB goals through the Project's entire Operating Term. Our DBE/ESB approach builds on our experience with RTD's award-winning WIN program. By engaging, training, mentoring, and employing Colorado's DBE and ESB firms, we improve our construction and operational service performance and increase qualified talent for the Denver region. Working with KMP, these businesses build marketable skills and strengthen resources available in the community.

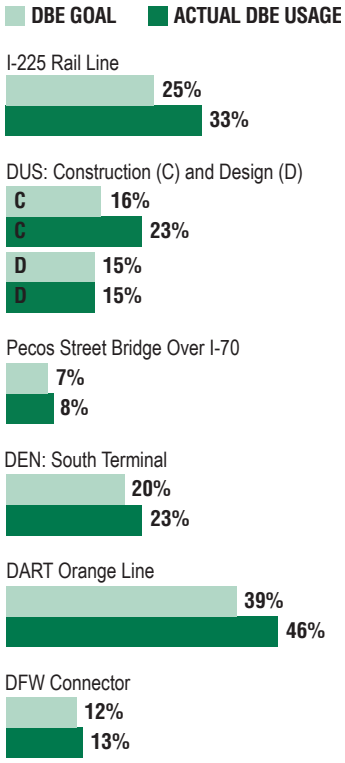
FIGURE 4.7 **KMP Sample Community Development Investment Programs**

Business investment revolving loans and/or grants	▪ Collaborate with local banks to administer a revolving loan/grant endowed by KMP for local businesses and residents planning to expand or open in the Project corridor ▪ Partner with Community Enterprise Development Services (http://cedsfinance.org/about/); provide financial help to Denver residents who want to own or strengthen a business ▪ Partner with Rocky Mountain MicroFinance Institute (http://www.rmmfi.org/programs/); offering micro loans to those who complete Institute program
Food truck access	▪ Team with Civic Center Conservancy for cost-appropriate meals for residents, internal staff meetings, and selected Public Outreach events ▪ Provide designated jobsite areas for parking
Coupon programs/ advertisements	▪ Share social media example programs with businesses ▪ Provide free ads or coupons for local business websites in newsletters and each month feature a local buiness
Food access partnerships	The community is an 'urban food desert'—greater than one mile from healthy food vendor: ▪ Help residents access quality food supplies through support to agencies such as Grow Haus ▪ Provide volunteer hours, equipment, and support community gardens ▪ Allow use of community office computers to order food for delivery ▪ Hold neighborhood Farmer's Markets, subsidize food ▪ Deliver healthy dinners to 10 area recreation centers for special events
College scholarship program	Endow a scholarship fund to students enrolled at Swansea Elementary School and future kindergarteners who graduate between NTP and Spring of 2026, administered by a local third party charitable organization.
Construction education	▪ KMP Team members maintain memberships: Hispanic Contractor's Agency Platinum; Black Construction Group (BCG), and WTS; COMTO; and continue to provide trainers, equipment yard, and facilities to lead construction classes ▪ Offer Project tours for residents and training sessions at the Kiewit yard in Aurora ▪ Continue to participate with Arrupe Jesuit's Corporate Workforce Program (Kiewit has been involved for many years) ▪ Partner with Denver Public Schools Career Connect
Partner with other programs	▪ Focus Points whose commitments to the GES community include school readiness (childcare), adult self-sufficiency, health and wellness, resident engagement, and workforce development ▪ Mile High United Way to address child development, community engagement, housing, workforce, and small business development ▪ Elyria-Swansea-Globeville Business Association (esgba.org/about) ▪ Direct Charity Distributions Supporting local programs (i.e., YMCA, Girl Scouts, or Surround Care) ▪ Highlighting Central 70 on mikeroweWORKSFoundation ▪ Education tutoring for residents; volunteers to lead a computer lab providing online training programs in business, math, and science; tutors in STEM classes ▪ Habitat for Humanity GES Home Repair Program (habitatmetrodenver.org) ▪ Groundwork Denver (groundworkcolorado.org/areas-of-service/air) ▪ Denver Foundation (denverfoundation.org/scholarships)

Our draft Small and Disadvantaged Business Participation Plan (SDBPP, Appendix K) is prepared in accordance with Section 2.3.11 of the Project Agreement requirements. Our plan follows four key approaches *(Figure 4.8, pg. 36)* for companies to provide Design and Construction services and supports the growth of DBE/ESB firms who competitively seek subcontracts throughout Term.

The Civil Rights Program Manager (CRPM) Matt Christensen serves as the Department's contact and is responsible for the SDBPP and compliance with the Project Agreement.

FIGURE 4.9
KMP Team Members' Historic Delivery of DBE Goals



DBE Success Story

Kiewit subcontracted St. Andrews, a Denver-based DBE, on T-REX in 2002 for a relatively small electrical systems contract, and in 2011 at DUS for a larger electrical scope. By 2013, their scope on I-225 included installation of duct banks and electrical work on station platforms and parking lots.

St. Andrews grew from seven employees in 2002 to 85 during T-REX, and maintains 50 employees today with revenues approaching $10 million annually. St. Andrews Construction is now a valued and influential partner for Kiewit and contributes significantly to the Denver construction community.

FIGURE 4.8 **Approach to Achieving DBE/ESB Participation**

1 Significant and meaningful business opportunities

- Provide work packages to match skills sets of DBE/ESBs and local firms.
- Enable local businesses to competitively bid and pursue.
- Aggressively market bidding opportunities to DBE/ESB firms with compatible core competencies and resource capability

2 Remove barriers that limit diversity, opportunity, growth, and advancement

- Continue on-going support services.
- Use outreach to businesses and educate our leaders to the "barriers to entry" they face.
- Work collaboratively to remove those barriers through contract language.
- Provide industry-wide training on how to address diversity.

3 Build increased financial, bonding, and work capacity

- Dedicate key team leaders (Chris Hodgkins, Tom Howell, Hunter Sydnor, and Martin Currie) to foster our alliance.
- Forge strong, personal ties.
- Build solid two-way communication.
- Develop solutions to financial impediments to participation.
- Embrace Kiewit's successful Diversity and Inclusion Council (est. 2009) to increase the pool of bidders, provide training, understand cultures and appreciate challenges faced.
- Facilitate Koffee with Kiewit events and quarterly Capacity Building Workshops.

4 Ensure best practices flow down to all contracting tiers

- Subcontractors are managed, trained, and supported as our own personnel and resources.
- Subcontractors are held accountable for meeting the same safety, quality, schedule, and contract compliance requirements.
- Develop personal relationships to fully understand their pressures and capacity issues.
- Share business tools to communicate best practices.

Through our strong support and their capacity growth, DBE/ESBs provide a larger resource pool to the Team and Department and increase the Work opportunities for local residents.

Our Team engaged DBE/ESB firms with local hires and will add organizations as the Project progresses. *Figure 4.9* demonstrates that our Team members have exceeded the DBE goals by more than 40 percent on recent and similar projects. **KMP will exceed all DBE/ESB goals for the Project.** ✔

Workforce Development Plan *2.2.5.e*

KMP embraces investment in our workforce as an important feature of Project success. WDP includes increasing skills, education, local job creation, improved community economic conditions, and broadened opportunities throughout our industry. Our Team's strong, local hiring efforts coupled with mentoring and training currently employs 172 residents from the Project corridor zip codes. We are excited to invest in our staff and to train new hires for professional services and skilled crafts.

Our WDP program creates a steady flow of workers of varied ages, skill, and education levels who join the Project as interns, trainees, or apprentices. New employees progress through initial assimilation—safety, quality, environmental—and learn basic skills that can lead to advancement opportunities. They are supported through additional on-site training, guidance from superintendents and foremen, and mentoring by craft, subcontractors, engineers, and Project personnel as their careers progress. We work with our subcontractors in a Project-wide coordinated manner to encourage participation and maximize the outcome of the WDP commitment.

ATTRACTING APPLICANTS TO ACHIEVE LOCAL HIRE AND OJT GOALS KMP Teams with the community and uses a variety of ways to attract and inform employment and training opportunities *(Figure 4.10)*. **KMP provides OJT hours and local hiring that helps the Department deliver the economic value of the ROD to the local residents.** ✓

Our outreach creates a pipeline for individuals to advance through positions with increasing responsibility and build long-term careers in the industry. We encourage workers with demonstrated leadership and managerial skills to complete relevant training and progress from entry-level positions to leadership and senior management roles. Trainees and apprentices for engineering, management, and skilled crafts are needed throughout the entire Operating Period to fulfill the Department's hiring objective of local residents performing 20 percent of the Work.

We recruit for careers, not for jobs; we promote retention by providing mentoring for personnel and continued training. Prior to public announcement, we internally advertise job opportunities. All programs aim to qualify more minorities and women, and enable long-term careers.

Local hiring goals are a key factor in subcontractor bid evaluations and all subcontracts require training and adherence to utilization and reporting requirements for local workers from applicable zip codes. CRPM Matt Christensen *(Figure 1.3, pg. 4)* manages and supervises a team that conducts training of internal and subcontractor staff on successful hiring practices and reviews and confirms compliance with utilization rates and reporting documents.

FIGURE 4.10 Techniques to Attract New Staff

Project Community Office	Information kiosks include employment and training opportunities
Project website	Details of employment opportunities, in coordination with the Department
Outreach/recruiting events	Highlights construction industry opportunities for local hires
Local advertisements	Use local media outlets including social media to advertise
Leverage relationships	Unions, technical training schools, pre-apprenticeship programs, local workforce development organizations and programs colleges and community organizations
Work with local unions	KMP, as signatory, aims to develop joint field and classroom training for Labor, Carpenters, Electricians and Operators Unions all of whom have an Approved apprenticeship program (e.g., Colorado Contractor's Association) and training facilities
Work with the area colleges	Provide students an opportunity to use classroom education and access to potential full-time jobs through engineering-based internships (e.g., CSU, CU, DU, Metro, Regis, UNC, and community colleges, Red Rocks, Denver, Aurora, and Arapahoe)
Pre-Apprenticeship Programs	Encourage applicants to participate in Construction Careers Now! at Emily Griffith Technical College and other learning institutions. Skills learned for employment include construction measurement, safety, blueprint reading, and building techniques

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Operations & Maintenance Management

Our seasoned team, expansive staff capabilities, and the right equipment ensure that KMP provides high level roadway service that minimizes impacts to the public. Following *Project First* and *Right First Time* principles, we integrated O&M experts at the start of design to optimize the asset life cycle. The same O&M staff provide services during construction and operations for a consistent level of service and provide the oversight to safeguard reliable managed lane (ML) travel speeds that ensure O&M performance measures.

DEPARTMENT PROJECT GOAL Once operational, ensure reliable travel speeds in the managed lanes and, for all lanes, a minimum appropriate standard of maintenance.

KMP achieves this goal and benefits the Department through:

- ✓ **MINIMIZING DISRUPTION DURING OPERATIONAL PERIOD** Focus on O&M during design produced a selection of quality construction products that reduce the need for lane closures and maintenance intervention. Scheduled multi-discipline Routine Maintenance decreases disruption.
- ✓ **MANAGED LANES EXPERTISE** KMP knows how important ML revenue is for funding to the Department. Our efforts ensure travel speeds are maintained with quality toll backbone systems to attract consistent ML users. Meridiam developed, operates, and maintains 602 lane miles of MLs in Texas alone, and Jorgensen's current portfolio has ML contracts totaling some 6,500 lane miles.
- ✓ **OPERATIONS AND MAINTENANCE DURING CONSTRUCTION** KMP's O&M plan keeps traffic flowing safely and efficiently through work zone(s) as construction progresses. Our integrated teams deliver a single point of accountability and streamlined process during construction. All KMP personnel are trained to be observant and assist O&M teams as necessary to facilitate traffic movement.
- ✓ **COMPREHENSIVE SERVICES AND OPERATIONS** KMP provides trained personnel, equipment, and proven procedures to achieve the highest level of service for courtesy patrol and snow and ice control in Colorado. Our O&M Leadership Team—Project Manager Chris Hodgkins, Technical Manager Martin Currie, and O&M Manager Abraham Henningsgaard—collaborate to confirm resources are readily available to undertake and support O&M services.

Approach to Meeting Operations Obligations *2.2.6.i*

The Operations Management Plan (OMP, Appendix H) is KMP's approach to all operations. For the critical snow and ice control we integrate MDSS ClearPath Weather forecasting, incident response, and courtesy patrols. The OMP details KMP's organization *(Figure 5.1, pg. 40)*, staff, equipment, and management systems to meet all obligations in Schedule 11. KMP actively manages the operations activities provided by Jorgensen as Lead Operator. We prepare a detailed transition plan for smooth passage from the Department to KMP and from Construction to Operating Periods. Transition concerns are minimal as the same O&M Leadership Team and staff continue throughout the Term. **Team Members' experience in operations areas and our redundant capabilities** ✓ reduces risk and ensures obligations are met *(Figure 5.2, pg. 40)*.

We use InEight, which works directly with Aconex, to manage project information and ensure compliance with documentation requirements. **InEight integrates our established maintenance management information system (MMIS), JAMMS, to track, inventory, record, and monitor performance of all O&M work** ✓ and meet the required reporting obligations.

KMP will use the Department's existing Maintenance Yard at Havana Street as the office location for O&M staff, storage of equipment, and materials including snow and ice treatments. Havana allows immediate access to the corridor plus expedited resources and equipment to manage incidents. This site offers adequate space for storage including spare parts, 5-10 CY of bulk materials, 20+ pieces of equipment, and up to 20 employees:

As the Ultimate I-70 configuration at Havana Street Maintenance Yard is confirmed, KMP plans to use the available space and supplement a new yard, if necessary, with Kiewit's Aurora maintenance facility or at an alternative location during the Construction or Operating Period.

Jorgensen, supported by KMP' leadership team and other Team Members, provides the workforce and primary expertise to perform operations. Jorgenson holds 30 O&M contracts in the U.S., including more than 13,000 lane miles, 900 bridges, 350 major interchanges, and related facilities in multiple states. Around 50 percent of these contracts include MLs. Jorgensen uses a self-perform model and primarily hires local employees and DBEs/ESBs for specialty areas (e.g., towing, bridge inspections, electrical, signals, and striping).

Robust Operations Strategy and Risk Assessment *2.2.6.a.ii*

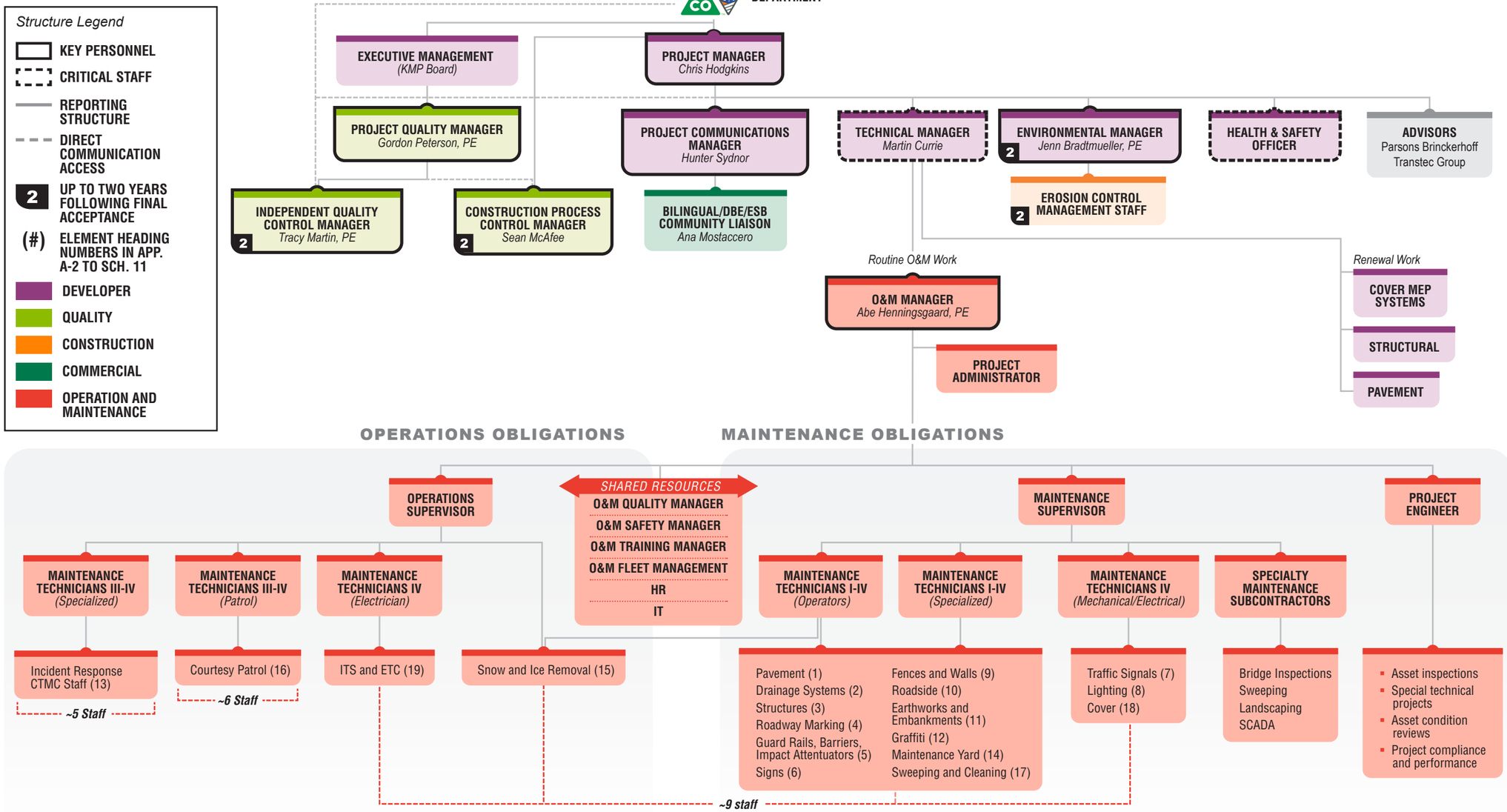
Roadway operation activities include highly visible services to the community and traveling public and involve some of the most challenging and dangerous working environments. Integrating best practices from all Team Members with in-house training and skilled staff is our key risk mitigation to ensure KMP meets or exceeds all obligations. Redundant resources provide for a robust operations strategy that reduces corridor-wide risks *(Figure 5.3)*.

FIGURE 5.3 Operations Strategy to Minimize Corridor-Wide Risks

RISK	OPERATIONS STRATEGY
Start-up delay	▪ Complete staff appointments and training during final negotiations ahead of NTP1 ▪ Mobilize for NTP1 Day 1 to provide appropriate levels of equipment, staff, and storage facilities
Continuity between periods	▪ Involve Jorgensen for O&M design review and construction phase operations through Term ▪ Implement detailed transition from Department to KMP, and Construction to Operations ▪ Meet with Department and stakeholders to drive consensus and finalize planning
Snow and Ice/ Incident Response	▪ Use internal resources for lower level events ▪ Provide cross-training to an expanded pool of secondary personnel ▪ Use additional KMP Team members' equipment and operators for large events ▪ Identify and confirm towing and snow and ice contractors during Project mobilization
Worker and Public Safety	▪ Maintain *Nobody Gets Hurt* culture ▪ Implement Safety Plans and site safety training for all staff and visitors ▪ Apply MOT controls to protect workers and public
Meeting Performance Metrics	▪ Implement project manuals and plans (Appendix A through M) and full audit compliance ▪ Frequently communicate with Department, stakeholders, adjacent authorities, and others

***JAMMS**, a proven MMIS to manage O&M activities, is currently used on more than 13,000 lane miles of roadway infrastructure in the US. JAMMS integrates with InEight and uses real-time tracking through mobile devices to report work by Department functional maintenance code, infrastructure element, reference marker, crew, and unit of measurement providing real-time data and transparent read-access.*

FIGURE 5.1 Operations and Maintenance Organization Chart and Team Responsibilities



Kiewit meridiam — *KMP, Developer*

- Oversees work of all KMP Team Members
- Provides contractual compliance
- Develops and refines O&M strategies and plans
- Communicates and coordinates with Department, design, construction, and O&M teams
- Interface with third party stakeholders and general public
- Performs Renewal Work through sub-contracts

Kiewit — *KIC, Lead Contractor*

- Construction
- Responsible for O&M during construction as a Subcontractor to KMP
- Engineer in Responsible Charge

JORGENSEN — *RJA, Lead Operator*

- Operations and Routine Maintenance
- Subcontractor to the Lead Contractor during the Construction Period
- Subcontractor to KMP during the Operating Period

PARSONS BRINCKERHOFF — *PB, Lead Engineer, Advisor*

- Engineering and design as Subcontractor to the Lead Contractor
- Advisor to KMP during the Operating Period
- Undertake bridge, structural, and Specialty Inspections as a subcontractor to the Lead Operator

THE TRANSTEC GROUP — *The Transtec Group, Advisor*

- Advisor to KMP during the Construction and Operating Periods
- Life cycle management and forecast overview services for Renewal Work

FIGURE 5.2 KMP Robust Operations through Resource and Experience Redundancy

KMP
KIC
RJA
Other subs

Staffing with Experience

Safety Implementation

Environmental Mitigation

Public Information/ Community

Quality Management

Snow and Ice Control

Courtesy Patrol

Traffic Operations

CTMC Staffing

Traffic Control

Cover Operations

Incident Management Plan

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Approach to Performing Operations *2.2.6.a.iii*

Nobody Gets Hurt is our core value that follows a proven approach for MOT controls, incident management, hazards, exposure mitigation, and PPE to maintain a safe workplace for employees and the public. Safety is woven into all tasks, and production goals are achieved without compromising safety.

For Courtesy Patrol service, KMP monitors the Department's live-streaming traffic cameras and traffic speed maps (COTRIP and SIGALERT-Denver) to detect emergencies, accidents, and incidents. Simultaneously, our patrols continuously cycle through the corridor and relay accurate, timely information to the Colorado Traffic Management Center (CTMC). Furthermore, **all construction personnel are trained to be observant and support during incidents.**

Courtesy Patrols minimize road hazards that impact the traveling public, ensure reliable travel speeds in all lanes, and protect the safety of the workforce and public. Dispatchers monitor and coordinate patrols so they operate in 15 minute cycles and response times. We establish multiple routes and strategically place resources to provide redundancy and buffer time. During Construction, all KMP personnel in the Project corridor are trained to assist courtesy patrols and facilitate traffic movement.

In addition to the interfaces above, during the Operations period, KMP maintains 24/7 co-location with the Department at the CTMC to operate the Command and Control and Monitoring System (CCMS). We emphasize interfacing to build strong, positive relationships with all parties and communicate using a "zipper plan" that aligns Department and O&M staff.

Our Transportation Management Plan provides detailed procedures for traffic control and management during periods of traffic restrictions and lane closures, and we are completely familiar with the work zone traffic control applications defined by the Department. Work activities are coordinated with Denver Traffic Management Center and the CTMC. To maximize lane availability we also **combine multiple work activities into single closures to limit traffic switches.**

KMP uses the Department's briefings and MDSS ClearPath Weather, National Weather Service, and forecasting and tracking websites to detect and respond to hazardous weather. We liaise with the Department and emergency services through quarterly meetings, post incident debriefs, mock response scenarios and training sessions with response modifications embracing lessons learned. KMP provides full coordination with the Department during incident response and our Communications Team provides timely and frequent updates for emergency access routes.

Maximizing lane availability during small and large snow and ice events is a priority. Preparations and staging for solid deicing chemical application and plowing operations begin 8 to 10 hours prior to the event. Our own in-house crew, equipment, and materials handle most events with subcontractor support as-needed to scale up for hazardous weather. Our courtesy patrols advise the crews of live traffic conditions to maximize snow plow access and efficiency.

KMP uses MMIS performance monitoring policies and procedures developed in the JAMMS system to manage quality, inspections, audits, daily/weekly activity updates, and customer feedback. Historical data saved enables trend analysis to allow for continuous improvement.

Approved ATCs 10, 11, and 14 raised the roadway profile and eliminated the need for permanent groundwater pumping facilities providing a substantial reduction in long-term risk, including freeze/thaw damage of pavement foundations, and O&M costs.

Approach to Meeting Maintenance Obligations *2.2.6.b.i*

Our draft Maintenance Management Plan (MMP, Appendix I) defines our approach and action plan to meet maintenance obligations and allow for safe, effective, and reliable roadway operations. **Our experience, such as Meridiam's Texas ML experience with O&M brings a real-life and in-depth understanding for maintaining lane availability. The MMP is the technical approach to preserve asset values and extend their lifespan. These efforts include:**

- Daily maintenance and periodic activities in coordination with the Renewal Work plan
- Routine and preventive inspection and maintenance of structures
- Support for highway operation (i.e., ETC, ITS, and signage) and Department interfaces
- Manage, track, and report detailed maintenance records through JAMMS, InEight and Aconex

We repeat our operations management approach for the MMP—KMP oversees and performs maintenance activities with Jorgensen. *Figure 5.1 (pg. 40)* illustrates our integrated Key Personnel and maintenance staff (some staff perform both O&M activities).

Maintenance Obligations Approach Characteristics *2.2.6.b.ii*

KMP's management structure, work delivery methods, and execution are consistent for the construction and operating periods allowing for a seamless delivery of maintenance services. To meet our obligations throughout the entire Term, KMP:

- Commits an integrated team with demonstrated experience and a history of successful maintenance implementation
- Trains all O&M staff on safety and maintenance requirements
- Right-sizes crews, equipment, and materials to meet obligations
- Makes decisions including life cycle and maintenance requirements
- Inspects and monitors the asset and adjusts maintenance activities to conditions
- Uses JAMMS as a tool to track and InEight to manage information, organize documents, and provide reports

Robust Maintenance and Risk Assessment *2.2.6.b.iii*

Figure 5.4 (pg. 43) illustrates KMP's robust maintenance strategy that meets the maintenance obligations while responding to risks.

Routine Maintenance and its Relationship to Renewal Work *2.2.6.b.iv*

Routine Maintenance prolongs the life of Project elements and minimizes the extent of Renewal Work to meet the Schedule 11 Tables A-1 and A-2 performance obligations. Together, Routine Maintenance activities and Renewal Work facilitate full compliance with O&M and Handback and allow KMP and the Department to maximize the life of all asset components. Details on the frequency and types of activities for Maintenance and Renewal Work are given in the Schedules found in Appendix I. Some overarching activities KMP anticipates are:

- Asset optimization by effective Routine Maintenance, ongoing inspections, and planned Renewal Work
- Modifications for Colorado-specific environmental and climatic conditions which impact activity cycles

FIGURE 5.4 Maintenance Assessment and Mitigation Strategies

Remedy O&M Defects	▪ Assess existing condition of all elements to maintain during Construction ▪ Condition assessments and visual inspections, act quickly to correct deficiencies and safety hazards
Requirements for Pavements	▪ Evaluate, inspect, and assess existing pavement condition including markings ▪ Design pavement packages are prepared with O&M input and detailed renewal analysis ▪ Complete corrective interventions on pavements including pavement markings
Cover Systems	▪ Keep all luminaries, control systems and programmed scenarios working ▪ Periodically running jet fans and exercising the emergency generator ▪ Timely inspection and reporting and action
Requirements for Roadway Elements	▪ Maintain free of defects and fully functional (drainage, sidewalks, guardrails, barriers/impact attenuators, curbs, roadsides, medians, and landscaping) ▪ Conduct Renewal Work based on condition assessments, inspections, and testing ▪ Renewal activities provide full compliance with Handback Requirements
Requirements Related to Structures	▪ Maintain structures in accordance with CDOT Standards ▪ National Bridge Inspection Standards (NBIS) periodic inspections and evaluation ▪ Inform renewals by inspection process complementary to Routine Maintenance ▪ Continuous testing and preventative maintenance provide compliance
Requirements for Electrical & ITS Element	▪ Consistent maintenance gives electrical supply to all Project infrastructure, electrical network and components, ITS, and emergency systems and redundant supply sources ▪ Comprehensive inspection system, consistent supply of replacement parts and components, specialized personnel to evaluate ITS and toll infrastructure, training, and diligent response to any deficiencies ▪ Train staff in all equipment and technologies in use, common defects, best defect detection practices, record keeping, response protocols
Add'l Elements	▪ Perform rigorous inspection and evaluation of every element as essential for safety

- Daily surveys and ongoing inspections to validate the effectiveness of the Routine Maintenance regime and provide the data for deterioration curves
- Flexibility for Renewal Work based on Routine Maintenance data and ongoing inspections

Coordinated sweeping, litter, debris, and graffiti removal preserve the environment, extend the asset life and ensure safety of the traveling public and our workforce.

Courtesy patrols assist motorists and monitor roadway conditions to evaluate needs for sweeping, landscape maintenance, and weed control. Priority is given to elements with potential risk to safety and roadway operations. Sweeping is at periodic intervals including bridge surfaces in spring to remove winter de-icing material and sand. Debris, litter, and graffiti are removed at required cycles or more often if conditions are offensive or a potential life safety or roadway operations risk exists. Bridge superstructures are cleared of debris, and signs are washed as appropriate to maintain reflectivity standards.

Courtesy Patrols and O&M staff receive project-specific training to recognize Category 1 and 2 Defects that are then immediately reported with mobile devices through JAMMS that initiates a deficiency record and subsequent action (Appendix H, I).

Approach to Renewal Work *2.2.6.b.v*

KMP team members Meridiam and KDC provide firsthand experience in managing Routine and Renewal life cycle of infrastructure assets throughout North America. **Their combined experience ensures project delivery and Handback requirements are met or exceeded.**

KMP's approach to Renewal Work *(Figure 5.5)* includes specific expert advice on life cycle analysis and Renewal Work strategy from the Transtec Group.

The Renewal Work schedule is based on a life cycle cost analysis developed alongside industry best practice, experience with other projects, and comparison against baseline assessments; it includes:

- Extent and timing of Routine Maintenance
- Evaluation of material and system durability
- Expected life
- Cost to repair/replace
- Performance requirements

Life cycle costs are derived from many aspects, including initial and forecasted future costs, resource needs to perform Renewal Work, and changes in technology. Acknowledging that future labor, energy, and material costs rise, KMP has incorporated cost indexation for oil-based product variances for pavements over the Operating Period. KMP continuously seeks innovation (Future Proofing) to be incorporated into the Project Renewal Work.

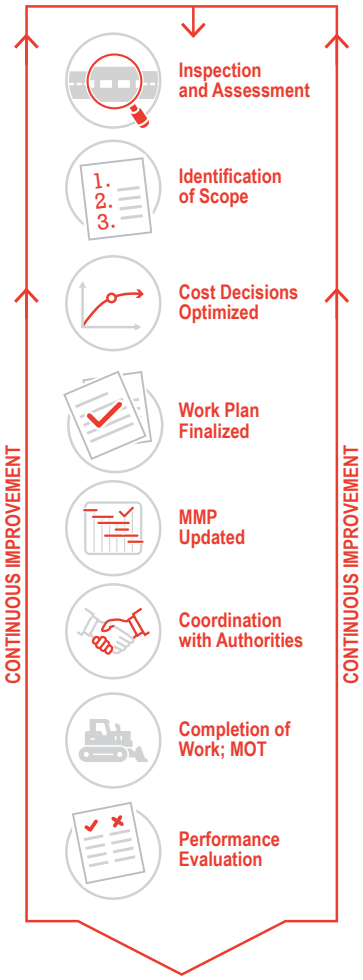
KMP maintains a rolling Five-Year Renewal Work Schedule to continuously update the life cycle costs forecast. The Renewal Work Plan is updated annually and uses information from inspections and Routine Maintenance to adjust Renewal Work to meet performance obligations as indicated in Section 2.2.6.iv.

KMP inspects Project Elements for deficiencies resulting from incidents, weather, or unforeseeable events. Any work to preserve the integrity and the safe operation of the Project is prioritized in the Renewal Work Schedule and Renewal Work Plan.

Inspection and testing requirements conform to good industry practice and reflect technological advancements in inspection, testing, and Residual Life calculation. Inspections of critical structural elements are conducted in accordance with Schedule 11, and include the FHWA's Bridge Inspector Reference Manual (BIRM) and NBIS. Parsons Brinckerhoff will perform NBIS and other critical structure elements inspections during the Operating Period. The data collected is used to predict Useful Life and develop the Residual Life Methodology report.

The combination of our Routine Maintenance and Renewal Work throughout the Term provides the Department a high performance roadway at Handback. When approaching the Expiry Date, Annual Renewal Work Schedules and Renewal Work Plans are updated to meet Handback Requirements and address the constructability, durability, and maintainability of all Elements as well as environmental compliance. KMP achieves

FIGURE 5.5.
Relationship between Maintenance and Renewal Work



1 Maintenance and Renewal Work identified early

2 Renewal Work integrated into Routine Maintenance Work and Plans

3 Asset deterioration patterns identified during maintenance inspections

4 Lessons learned inform future Renewal Work

5 Handback Requirements and life cycle objectives met

Schedule 12 Handback Requirements through:

- Design decisions that address constructability, durability, and maintainability of the Elements
- Adhering to a rigorous quality program that includes inspections, testing, and monitoring with continuous improvement
- Selection of materials and systems that meet life cycle requirements
- Successful implementation of the MMP and Renewal Work Plan
- Compliance with environmental regulations and permits

Cover Top O&M Manual Summary *2.2.6.c*

The Cover Top O&M Manual specifically addresses all surface components to be maintained by others. The Manual also describes the interactions among all parties—KMP, DPS, CCD, Utility Owners, and interactions with emergency services—so all parties are prepared for an event on or under the Cover.

The Manual includes recommendations to control the size and locations of vehicles and loadings to prevent damage to the Cover or its components. During design, loads are evaluated jointly with CCD, KMP's structural designers, and others with the resulting design a robust structure capable of supporting crowds, events, and emergencies. Removable bollards or other physical barriers placed between roadways and walkways maintain public safety and enforce design loading.

To maintain the waterproofing system integrity, the Manual details specific measures to prevent damage. These measures start with design, using root barrier under plants, and installing protection board over the finished waterproofing. During construction, KMP video records the installation of the waterproofing membrane and the protective layer placed over the waterproofing system. Post construction, restrictions on excavation techniques (hand digging or vacuum extraction only) include preventing the use of pesticides or cleaning agents which could damage the membrane and selecting plant materials without invasive root systems that maintain the design intent.

A typical loading condition encountered in Denver is snow accumulation. For streets, snow removal equipment is expected to be a street-legal truck meeting the Cover structural design load. For the athletic field, a vehicle with an AASHTO H10 equivalent loading can be used. Stockpiling snow is specifically not allowed on any portion of the Cover structure.

The function of each component determines the requirements and frequency of inspections. The Manual specifies inspections which are expected to include cameras and lighting evaluated weekly, structures inspected yearly, and playground equipment inspected following DPS guidelines. Recordkeeping starts with the Cover Baseline Inspection performed by KMP and continues through the life of the park.

During Construction, KMP works closely with CCD to provide a seamless handoff and transfer of knowledge. To aid this handoff, our Cover Top O&M Manual demonstrates our understanding of the scope of the Work, describes interfaces with the Cover Maintainer, and provides a review timeline for major modifications. In addition to CCD, coordination during design and construction is needed from DPS for facilities related to Swansea Elementary; Denver Water Distribution due to the water conduit under Columbine Street; and the Department for interaction with I-70 operations below the Cover.

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Technical Approach & Solutions

KMP is dedicated to enhancing design through innovations that meet and exceed Project requirements. Our relentless efforts to identify and implement innovations yielded refinements to your solid Reference Design (RD). Our local team applied intimate knowledge and experience of Department requirements to develop more than 70 ATCs—with several approved for the benefit of all Proposers—demonstrating our *Project First* approach to technical challenges.

DEPARTMENT PROJECT GOAL Optimize the scope of the transportation and supporting infrastructure delivered through the Project to promote corridor-wide economic and community vitality.

KMP achieves this goal and benefits the Department through:

QUALITY TECHNICAL SOLUTIONS FOR DESIGN, CONSTRUCTION, O&M, AND LIFE CYCLE COSTS **Our proposal phase achieved significant design optimization through 72 technical ATCs 31 were approved and 25 were incorporated into the design. These focused efforts continue as the design progresses and is finalized.**

- Engaging O&M professionals in all Task Forces for RFP development.
- **Raising the road profile above groundwater level, thus removing the short- and long-term need for a groundwater pumping station and eliminating O&M costs to Term and beyond.**
- Maximizing the use of existing pavements while achieving an optimal intervention and renewal strategy that minimizes life cycle costs.

THE RIGHT PEOPLE AT THE RIGHT TIME Our team leaders have the relevant knowledge and experience to achieve success and exceed the Department's expectations.

- **Doug Andrew**, Design Manager, brings leadership expertise from major design build projects in the US and has been full time in Denver for this Project since 2014.
- **Mark Talvite** and **Heath Therrien** are long-time Denver professionals with intimate knowledge of the local communities and a long history working with the Department.
- **Kevin Custy's** more than 30 years of work with the Department and utilities in Denver provides extensive knowledge that optimizes relocations and significantly reduces risks for all project stakeholders, including the Department. **Tim Nelson's** 20 years of design management including T-REX and DFW connector blends construction needs with design insights to assist Doug in timely delivery of design.

COLLABORATION WITH THE DEPARTMENT FOR OPTIMUM SOLUTIONS

KMP is committed to a *Project First* solution characterized by a highly engaged team.

- Formed in 2013 and worked closely together through the procurement process.
- Proactive one-on-one participation has grown our relationship with the Department bringing resolution to key project issues, such as contract adjustments to drive Project value and support for integrating **25** innovative ATCs.
- Continued collaboration and partnership with the Department through co-location and joint Task Force participation

Design Approach *2.2.7.A*

KMP promotes solutions founded on proven design standards enhanced by extensive local knowledge, an in-depth understanding of O&M needs integrated into the design, and a cohesive team following a coordinated schedule.

Led by Design Manager Doug Andrew we use established design standards, as listed in Schedule 10A of the Project Agreement including (M and S Standards) as a starting point for a compliant, safe, and durable design. Blending our team's local knowledge and experience working in the Denver metro area with the depth of our team's national resources allows us

to tailor the technical solutions to the benefit of the Project. From using Phenolic fiberglass conduits in a fire-rated application (ATC 56) as Team members did for Mid-Town Tunnel (Virginia), to leveraging Kevin Custy's relationships with local utility agencies, we have the right approach to achieve a successful Project outcome.

KMP's solutions conform to the Project Agreement and provide the most efficient O&M services to Term. **A significant benefit of our design is eliminating groundwater impacts to permanent roadway conditions.** ✔ *Figure 6.1 (pg. 48)* identifies all Approved ATCs in our proposal with key solutions fashioned to exceed Project goals. Our Appendix A roll plots provide callouts to our ATCs, optimizations, and other innovative solutions. The roll plot drawings present details for roadway, drainage, bridges, and the Cover. All ATCs are reproduced in an attachment to this Proposal.

Following the *CDOT Design-Build Manual*, our integrated team includes representatives from the Department, and KMP's design, construction, O&M, and quality staff. **Continuous collaboration and partnership with the Department is promoted through our co-located Project Office, interdisciplinary Task Forces, and over-the-shoulder project reviews.** ✔ Each Task Force promotes a life cycle strategy by considering O&M with design and constructability needs. Third-party stakeholders are encouraged to contribute, collaborate, and share Project Office space.

KMP uses InRoads SS4, 3D design software fully compatible with InEight. By starting with SS4 we **support software upgrades during the Term and can provide clarity in design information with 3D modeling and visualization tools, enhancing the public's ability to visualize the finished Project.** ✔

To prevent schedule delays, we use an integrated design and construction schedule including time for reviews and approvals. The schedule includes Early Work design packages (e.g., METRO-SS-102, connection from York Street to the Delgany Interceptor) and accounts for special conditions like seasonal outages required for the water conduits.

Design Features to Increase Maintainability *2.2.7.B*

Our approach integrates innovative technical design solutions to increase safety, and reduce Project duration, while improving operational efficiency and the Project's maintainability *(Figure 6.2)*. ✔

FIGURE 6.2 **Design Features to Increase Maintainability**

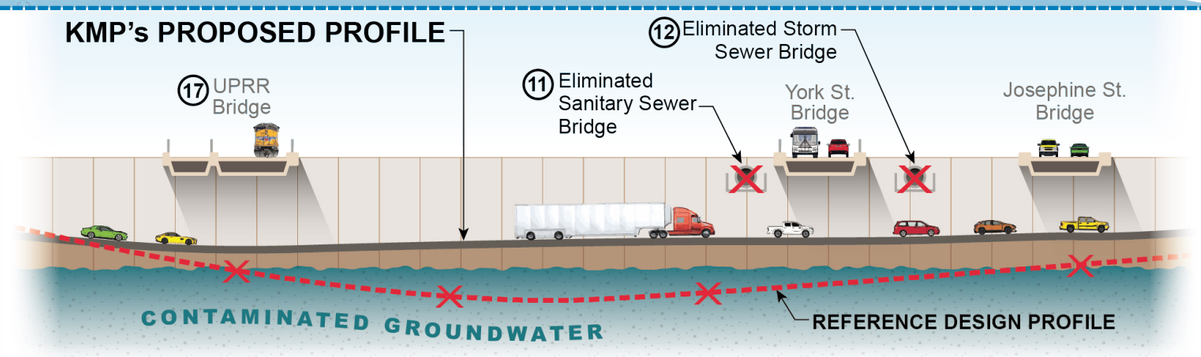
Design Feature	Benefit/Effect
Eliminated Sanitary Sewer & Storm Drain Utility Bridges (ATCs 11 and 12)	Improves safety by eliminating maintenance of a utility and bridge over a heavily traveled interstate highway; eliminates long-term groundwater impacts; provides a more durable pavement solution
"Butterfly" typical section through Lowered Section (ATC 14)	Reduces need for deicing and reduces the number of inlets; improves overall safety for maintenance crews and the public; raises profile out of groundwater
Phenolic Fiberglass Cable Management System (ATC 56)	Alternative to stainless steel with a higher fire resistance with superior long-term life-cycle performance; more durable material; more efficient and safe installation
Eliminated Need for Pump for Cover Fixed Fire Fighting System (FFFS)	Upgrading a waterline (Steavenson Place) creates sufficient pressure for the FFFS; eliminates a mechanical component; reduces community impact
Combined Parallel Drainage Systems on the Corridor	Less pipe to maintain; larger diameter pipes are less likely to clog and easier and safer to inspect; reduces community impact
Native Plant Materials	Replacement less likely and no irrigation with amended soil

FIGURE 6.1 Identifying ATCs and Exceeding Project Criteria

Why raise the profile?

Benefits of a raised profile include:

- Elimination of a permanent groundwater treatment facility
- Faster and more efficient construction
- A safer driving surface for the traveling public
- More durable pavement section



Department Project Goals

- Protect the health and safety of the workforce and public
- Optimize operating and life cycle maintenance costs by delivering a Project using quality design, materials, and techniques
- Optimize scope of the transportation and supporting infrastructure delivered through the Project to promote corridor-wide economic and community vitality
- Minimize impacts to the traveling public, businesses, and nearby communities during and after construction
- Once operational, ensure reliable travel speeds in the managed lanes and, for all lanes, a minium appropriate standard of maintenance
- Use a collaborative process to enhance community values and Project benefits

Key Innovative ATCs to Meet and Exceed Goals

(shown on map)

17.1 **Revised UPRR Track phasing**

57.0 **Local roadway closure restrictions** *Construct Columbine and Clayton in one season*

11.2 **Sanitary sewer realignment** *Eliminate sanitary sewer bridge*

43.0 **High performance pavement reconstruction**

12.2 **Optimize offsite drainage** *Eliminate storm sewer bridge*

37.2 **Alternate Cover Electrical System** *Added park space at the Cover*

Other approved ATCs included in KMP's proposal *(not on map)*

6.1	**Detention Pond Revisions** *BMPs are easier to maintain; Eliminates degradation of concrete elements; Reduces standing water in the BMP; Leads to more eco-friendly detention system*	18.1	**Cross Slope on Cross Streets** *Contributes to raising I-70 profile; Improved airflow under the Cover; Improved MOT phasing at Colorado*	33.1	**Optimized Pavement Remediation** *Alternate renewal methods improve safety; Same performance with reduced cost and improved sustainability*	56.0	**Phenolic Fiberglass Conduits** *Higher fire rating than stainless conduits; Safer; Superior long-term life cycle performance; Easier to handle and install*	68.0	**Alternate Stormwater Pump Station** *Eliminates 5,300 LF of storm drain pipe; Incorporates redundant pumps to simplify maintenance; Handles 100-Year design flows*
8.1	**Modify Embankment Materials** *Greater reuse of onsite material; Minimized disruptions from external hauling; Increased sustainability*	28.1	**I-270 Ramp Inside Shoulder Width** *Provides compliant horizontal stopping sight distance; Flatter curve is safer in inclement weather*	38.0	**Non-standard Precast Girders** *Contributes to raising I-70 profile; Reduced duration of construction activities; More efficient girder design*	58.0	**Overhead Signs Vertical Clearance** *Improved visibility of signs in Lowered Section; Limit encroachment of signs on narrow shoulders*	70.0	**Alternate Roadway Lighting Fixture** *Reduces risk from maintenance activities; Lower life cycle maintenance costs*
9.1	**Independent QC** *ISO 9001 certified QMP; Maintains efficient and cost-effective organizational independence; Commitment to Department oversight*	30.1	**Changes to Standard MSE Walls** *Reduction in localized construction durations; Greater reuse of onsite materials*	42.0	**Increased Deck Overhang Allowance** *Reduced number of girders; Easier to construct; Fewer temporary impacts when erecting girders*	62.0	**Anti-Graffiti Coating** *Allows flexibility in selecting right product for Project; Simplifies/minimizes maintenance and is more sustainable*	71.0	**Alternate Cover Standpipe System** *Single standpipe header serving both bores; easily accessed, repaired, and maintained*
14.2	**Modified Typical Section** *Contributes to raising I-70 profile; Reduces potential for roadway icing, and number of inlets needed*	31.1	**Best Value Pavement** *Reduce material quantities through optimized pavement selection; Optimized performance improvements reduces maintenance*	47.0	**Reuse Existing Drainage** *Optimize life cycle of existing infrastructure; Sustainable design; Eliminates neighborhood impacts when replacing existing storm drains*	66.0	**Cover Air Quality Monitoring** *Reduces time and frequency of maintenance reducing impacts to public; Same level of monitoring with fewer sensors*		

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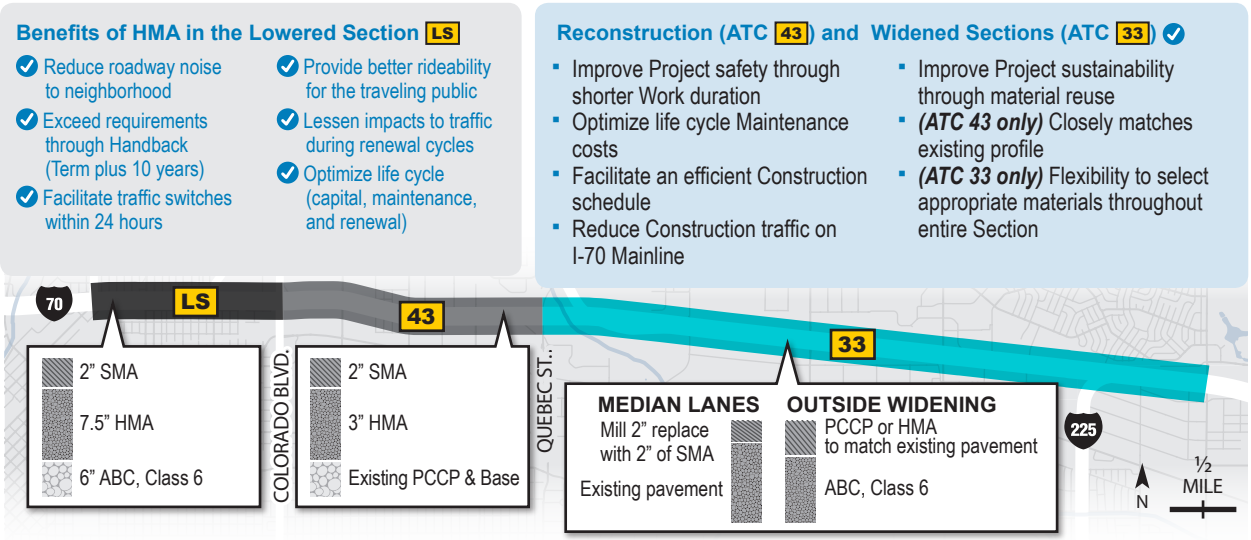
Pavement Design *2.2.7.C*

KMP designed the pavements using the Department's M-E Pavement Design Manual and AASHTOWare software to exceed the rigorous structural and material performance requirements (PA, Sch 10, Sec 6).

MATERIAL TYPES. We plan to use both hot mix asphalt (HMA) and Portland Cement Concrete Pavement (PCCP) *(Figure 6.3)*. Aggregates used in pavements are selected for durability, frictional properties, stability, economy, and resistance to load-induced distresses. Optimizing material sources and blending raw materials from various local sources lead to pavement uniformity and smoother, long-lasting pavement.

FIGURE 6.3 Proposed Pavement Selection for the Corridor



Local roadways designed per Local Agency standards (Appendix A)

ROADWAY CLASSIFICATIONS I-70 Mainline, I-70 Ramps, CDOT Roadways, Local Agency Roadways.

TRAFFIC LOADING CONSIDERATIONS

- Use Department traffic data to forecast and develop base year traffic volume estimates for each road section and vehicle type
- Validate data with our independent modeling, including socio-economic factors
- Derive traffic inputs of 20- and 30-year design of flexible and rigid pavements

DESIGN LIFE CONSIDERATIONS. Our designed pavements are based on an extensive model created by KMP team member Transtec, and **exceed the performance requirements outline in the Project Agreement.** Transtec's designs innovatively improve pavement quality and performance while reducing cost, time, and risk. KMP carefully balanced initial cost of construction against maintenance scenarios to develop a life cycle cost analysis that became the foundation for pavement selection decisions. We also understand the need to integrate signing, pavement markings, lighting, signals, ramp meters, and tolling to provide reliable and safe operating roadways.

Transtec has worked with Department and is experienced with using the CDOT methodology on many projects including these initiatives:

- **improve pavement smoothness**
- **evaluate high-performance concrete pavements**
- **study and implement quieter pavement solutions,**
- **trials of high-friction surface treatments**
- **develop concrete pavement texture specification**
- **use of fiber-reinforced concrete for paving.**

Signing, Delineation, Pavement Markings, Signalization and Lighting *2.2.7.D*

SIGNING. The Interstate Access Request provided the basis for our highway signing plan. Other signage is developed from our local experience working with agencies like the City and County of Denver (CCD). In the Lowered Section where closely spaced bridges can obstruct the driver's ability to read signing, we reinforce the messaging using additional pavement markings such as route shields. An important part of our approach incorporates electronic signs including variable toll and message signs, lane use signals, and guide signs as part of our comprehensive ITS design. KMP is committed to maintaining uninterrupted communication to the electronic signs during Construction.

DELINEATION AND PAVEMENT MARKINGS. Legible pavement markings create a safe environment for the traveling public. Based on our local knowledge, KMP recognizes how critical and challenging it is to provide adequate pavement markings during Construction. Coupled with proper lighting, well-maintained and brightly lit traffic control devices improve traffic flow particularly at night or on wet/snow-covered pavement. KMP's commitment to maintaining proper pavement markings is especially applicable when temporary lanes may not align with concrete joints. Proper and visible delineation between the tolled express lanes and the General Purpose Lanes is paramount to the ability to detect violations.

SIGNALIZATION. All traffic signals will meet Project and CCD standards and incorporate long-term maintenance needs like safe access points and signal heads visible from the controller cabinet. Throughout construction, we maintain existing signals and address special needs such as the **specialized radio link between the existing signal at 47th and Josephine Street and the CCD communications backbone.** ✔ Ramp meter signals remain functional until new ramp meters are in place, tested, and operational (e.g., eastbound I-70 on-ramps at Monaco Street and Quebec Street).

LIGHTING. Roadway, ramp, and special lighting required under the Cover, is compliant with the applicable CCD or Xcel Energy standard as warranted. **Our innovative light fixtures (ATC 70) improve Operation and Maintenance efficiencies.** ✔ Standard double cobraheads are used predominantly along the I-70 Mainline; luminaires on signal heads are used at cross streets; under-bridge lighting included at overpasses; and we retain the existing high mast lighting east of I-270. Under the Cover, design adheres to IES RP-22 providing threshold and transition zones and on top of the Cover we plan high mast lighting for the playing field coupled with pedestrian scale lighting in the Cover Park.

Earthwork *2.2.7.E*

GEOTECHNICAL APPROACH AND FUTURE INVESTIGATIONS. KMP undertakes an extensive subsurface investigation program prior to NTP2. Data obtained allows us to classify materials and prepare the Materials Management Plan. Based on information provided to us during the bid phase, the majority of the in-situ material will meet Colorado Department of Public Health and Environment's (CDPHE) industrial standard and can be reused on the Project or provided to CCD.

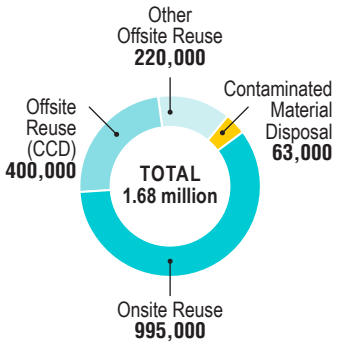
APPROACH TO EARTHWORK. With high levels of existing traffic, and close proximity to homes, schools, and businesses, KMP's excavation plan for the Project reflects carefully choreographed movements by an ensemble of experienced equipment operators, teamsters, laborers, and engineers. Our approach accurately classifies earthwork material, uses proven construction techniques, optimizes the flow of material on the Project, and fully complies with all environmental regulations.

METHODS AND TECHNIQUES. KMP uses various equipment—excavators, loaders, legal haul and off-road trucks, dozers, and rollers—to excavate and move earthwork, via onsite haul roads wherever possible. When offsite, using main thoroughfares avoids neighborhood streets whenever possible. As the Lowered Section is excavated, inclinometers placed along adjacent walls monitor deflection.

KMP will jack and bore major drainage culverts crossing under I-70 to minimize disruption to traffic. When construction occurs under a railroad (RR), such as the new sanitary sewer line (ATC 11), placing settlement transducers adjacent to the embankments measures the effects of the pipe jacking operations and evaluate compliance with the RR's standards.

MASS HAULING. Construction of the Lowered Section provides an excess of material, resulting in a combination of onsite reuse, offsite reuse, and disposal *(Figure 6.4)*. Suitable excavated material is reused onsite for embankments and as structural backfill. **Building 3:1 slopes maximizes reuse and provides easier slope maintenance.** ✔ A large quantity of usable material goes to CCD for offsite reuse. For embankments and roadways and CCD, soil used complies with CDPHE industrial standard while the CDPHE residential standard applies to fill used in parks and neighborhoods. We dispose of all unsuitable material offsite in accordance with permitting and environmental requirements. To maximize reuse of soils near the Project, we propose some excess soils to fill the abandoned Burlington Northern Santa Fe (BNSF) Market Lead between E. 42nd Street and Monroe Street. This reuse of soils is consistent with the 2015 Elyria and Swansea Neighborhoods Plan and provides CCD with usable space for future development.

FIGURE 6.4
Mass Haul Volumes
(in cubic yards)



Excavation during T-REX

SCREENING AND SAMPLING. We conduct screening and sampling of the materials as excavation proceeds. Field screening looks for discoloration or odors; soil layers appearing out of place; and use a photoionization detector or an x-ray fluorescence analyzer in areas containing known or suspected metals. If we identify potentially contaminated soil in the field, we perform laboratory testing following applicable federal, state, and local regulations including Colorado Hazardous Waste Regulations (6 CCR 1007-3). We dispose of any confirmed contaminated materials properly *(Figure 4.1, page 30*).

As part of our classification procedure, a professional paleontologist observes the excavation when required. Another advantage of raising the profile in the Lowered Section (ATCs 11, 12, 14, and 18) is **not exposing the Denver and Arapahoe Formations** ✔ with excavation, thus minimizing potential disturbance to paleontological resources.

MAXIMIZING ONSITE REUSE AND MINIMIZING DISPOSAL. Our detailed plan for construction phasing maximizes reuse and minimizes waste. Only about 40 percent of the material from the Lowered Section is needed by the Project; the remainder can be used by CCD or hauled off site to support other growing developments along the corridor in an efficient and sustainable manner. Preliminary indications are a substantial quantity of the excavated material can be reused as-is without stockpiling, blending, or double-handling although specific backfill materials (e.g., Structure Backfill, Class 1), can be produced from in-situ soils with some processing.

TRACKING AND DOCUMENTING FINAL DISPOSITION. Documenting the ultimate disposition of excavated material (stored and tracked in InEight and submitted through Aconex) allows us to confirm we have met commitments to CCD and contaminated material is disposed of properly.

Railroad Approach and Coordination *2.2.7.F*

Although the processes vary between RRs, before starting fieldwork, **we train our staff in the specifics of each RR's safety requirements and we execute right-of-entry (ROE) agreements with each RR.** ✔ After finalizing ROEs, we meet with each RR to review work obligations, scheduling, communications and logistics, and to advance the positive working relationship the Department developed while preparing the Reference Design (RD). We continue coordination meetings throughout the Construction Period to optimize the schedule, promote cooperation, and minimize construction impacts.

Our design submittals follow the Union Pacific RR (UPRR) and BNSF Guidelines for Railroad Grade Separation Projects, dated May 2016 (The Guidelines). Prior to submittal, **each design package undergoes an internal evaluation led by our RR Coordinator, Sue Grabler**. ✔ Sue verifies our submissions and follows RR guidelines to minimize the time and effort required for comment resolution. During her 34 years as a UPRR employee, including engineering manager for local track segments, Sue led projects in nine states including Colorado, making her uniquely qualified for this role *(Figure 6.5, pg. 53).* Sue also pre-reviews each of the required Public Utility Commission (PUC) submittals required for approval before we start Work.

Implementation of ATC 17 provides a safer construction environment ✔ by eliminating the need for construction traffic to cross the RR. This also allows us to construct the new UPRR bridge in less time than the RD and reduces impact to UPRR operations. At BNSF, **changing to a two-span bridge expedites construction and shortens the planned outage** ✔. At DRIR,

FIGURE 6.5 Meeting Railroad Expectations

	UPRR	BNSF	DRIR
Project Construction Requirements	Crosses I-70 between York Street and Brighton Blvd; York at grade north of I-70 and Brighton south of I-70 (Pepsi Lead Crossing)	Market Lead track crosses I-70 between Monroe Street and Steele Street; 46th Avenue north and south grade crossing	I-70 crosses the DRIR between Quebec Street and Monaco Street
Coordination Approach	ATC 17 which includes efficient constructability phasing to provide expedited and safer construction	Construct all work including new grade crossings at 46th Avenue north and south during the allotted closure window	Lengthen bridge spans to allow construction to proceed without impact to RR operations
Solutions to Protect RR Facilities	Demolition of the viaduct during coordinated work windows; install demolition shields over tracks	Two-span bridge shortens construction outage	Erect bridges over RR within planned outages
Railroad Provided Services	▪ Construct their own trackwork ▪ Provide RR signalization and grade crossing panels ▪ Tie into KMP's work ▪ Provide flaggers and RR protective staff		Provide flaggers and RR protective staff

we lengthened the planned bridge, which locates the abutments more than 25 ft. from the centerline of the track. **This change to the bridge greatly reduces the need for RR flaggers for substructure construction** ✓, and reduces potential impacts to DRIR's operations.

Cover *2.2.7.G*

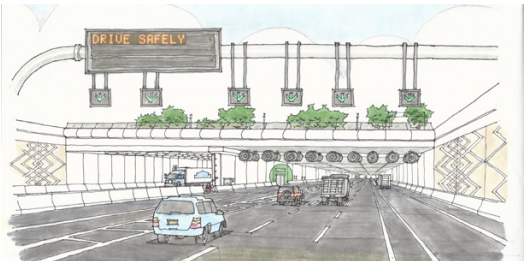
The Cover is the signature element of the Project and its development and operation require the roadway features, the Cover Park, and the supporting structure to perform in harmony. KMP is excited about the opportunity to help make the Department's and the Community's vision for the Cover become a reality.

SAFETY. At the heart of our design is safety. Safety includes the traveling public and in the unlikely event of an emergency situation, we provide for safe egress and first responder access. All fire life safety (FLS) components meet, or exceed, the requirements of the Project Agreement and the National Fire Protection Association Standard 502 (NFPA 502).

MEP SYSTEMS. This section addresses the interaction of the various FLS features of the Cover. Section 2.2.7.h discusses the Cover Park and the interaction with the park patrons. To develop the complete design for the Cover FLS systems, we:

- Space-proof facilities to confirm proper clearances are provided
- **Optimize the layout of the surface components to minimize the impact on the park (ATC 37)** ✓
- Use Phenolic Fiberglass Conduits (ATC 56) which **exceed the Project Agreement requirements for fire rating** ✓
- Enhance the ventilation system design with full consideration of FFFS effects during a fire event using 100 ft. zones and dual supply feeds. In the event of a fire, two FFFS zones deluge for 30 minutes at a rate of 0.15 GPM/SF.
- Locate the emergency power generator just off the northeast corner of the Cover in a site accessible from 46th Avenue for maintenance, enclosable by screen walls to be hidden from public view.

Since NFPA 502 defers to the Authority Having Jurisdiction (AHJ) for enforcement, upon award, **KMP will establish a Fire and Life Safety Committee (FLSC)** consisting of the AHJ, the Department, and key Project participants and stakeholders with interest in fire protection, life safety, and emergency response planning. During design, the committee synchronizes the Cover development with project specific operational concepts for both normal operation and emergencies.



Visualizing the finished Cover simplifies coordination of the design

COVER UTILITIES. We capitalized on the available space in the restroom/concession building to house the electric rooms on the ground level supporting all MEP and FLS systems, with the communications and splash pad pump room in the basement. Our approach keeps system equipment hidden from park users and **creates more useable open space in the parks** therefore, portions of the bookends are not required for systems components. Because the equipment rooms are adjacent to the westbound lanes of I-70, the Cover systems can be fully operational before traffic is placed in the Lowered Section.

FLS SYSTEMS INTEGRATION. To complement the FLS system KMP provides a robust ITS with over-height vehicle detectors, lane use signals, dynamic message signs, traffic cameras and highway advisory radio broadcast. FLS systems for the Cover are fully integrated to synchronize with the ITS system allowing all systems to function in unison during an emergency. The Cover systems can be manually operated from the local control room, or the Colorado Transportation Management Center (CTMC).

STRUCTURE. Tying together all parts of the Cover, the supporting structure safely accommodates the weight of all features; plants, soil, park structures, lights, visitors, and dynamic loading induced by potential events and the weight of emergency and service vehicles. We moved the playing field's high mast light poles just off the south of the Cover to provide a more stable foundation with no change to the required illuminance.

Cover Landscape and Aesthetics Design *2.2.7.H*

The Cover Park becomes a destination and a connected, versatile public space transforming and anchoring the community. Children will enjoy the new playground facilities and playing field; community members will gather for events at the amphitheater; and families and children will enjoy the splash pad, playing courts, and other relaxing open-air features. When you cross 46th Avenue you are seamlessly transported into a park, oblivious of the roadway beneath.

KMP incorporated the aesthetic designs provided by the Department. We coordinate our final designs with the Department and stakeholders including Denver Parks (DP) and Denver Public Schools (DPS) to be true to the original intent, enhancing the design for constructability and maintainability. KMP will **invite local artists, school children, and the community to further develop aesthetic features** reflecting the neighborhood identity. The Cover landscape and aesthetic drawings in Appendix A offer more insight into our approach.

INTEGRATION WITH OTHER COVER SYSTEMS SURFACE. KMP's designers, contractor, and O&M staff worked together to knit the needs of an active public park with the requirements to efficiently operate and maintain the power, traffic control features, and FLS components for the roadway beneath. Our design evolves the Department's solid RD, integrating needs for

public and non-public spaces with the requirements for proper drainage, public safety, and the Americans with Disability Act. In addition to the features highlighted above, an example of our system integration is the use of lowered sections in the Cover superstructure to connect utilities north/south across the park; accessible if needed but out of site to park patrons.

LONG-TERM O&M OF COVER ELEMENTS. The long-term maintenance and life cycle of the Cover elements starts with the selection of durable materials and hardy plant species. Accessibility for maintenance is reviewed for both routine tasks like snow or trash removal and also unexpected events like replacement of a ventilation fan. The *Cover Top O&M* Manual, a summary of which is provided in Part 5 of this Proposal, and the *Tunnel Operation, Maintenance, Inspection and Evaluation* Manual is developed during the design with input from our O&M staff, the Department, DP, and DPS.

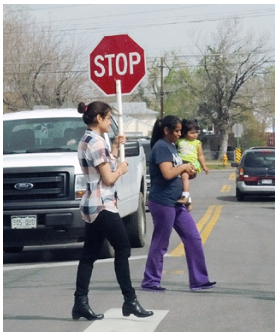
Construction Approach Adjacent to Schools *2.2.7.I*

Our approach to school access during construction is twofold. First, we maintain pedestrian and bicycle safety in the community, especially for children traveling to and from school. Second, we work with DPS for students' safe access to and from all schools using DPS's Success Express services. In design, the MOT Task Force coordinates and mitigates school access issues which arise. The narrative below presents an overview of our approach and more detail can be found in Appendix F, Draft Transportation Management Plan, Part 3.

TRAFFIC PHASING. KMP is committed to maintain year-round school access for deliveries, maintenance, students, and teaching staff at Swansea Elementary, Grace Place Elementary, and Bruce Randolph schools. We do not expect any changes to traffic circulation or pick up and drop-off areas at Grace Place or Bruce Randolph from our Work. At Swansea, we meet the street closure restrictions in the Project Agreement; we **construct the Cover and Clayton Street and Columbine Street in one season ✓,** outside of the school year (ATC 57).

CONSTRUCTION DURATION. The majority of the periodic work performed adjacent to and impacting Swansea Elementary involves constructing the north abutment and the Cover structure over the future westbound lanes of I-70. These major tasks are accomplished in summer months, outside of the school year. Once the entire Cover structure is erected, the Cover Park is completed in the basic time frame as work on the eastbound lanes of I-70. Additional detail on our schedule can be found in Appendix C of this Proposal.

SAFE ROUTES TO SCHOOL. The Transportation Management Plan defines our approach to safely connecting neighborhood schools with the least impact. Even though a portion of 46th Avenue closes during Construction, we maintain pedestrian access at all times along the same corridor by constructing a **covered, lit, and secure pedestrian pathway under the UPRR shoofly fills.** ✓ This allows pedestrians to avoid the unsafe crossing of UPRR tracks at York Street supporting our commitment that *Nobody Gets Hurt*. Other actions KMP undertakes include maintaining continuity of RTD's #44 and #48 bus routes during construction including the stops adjacent to Swansea Elementary, clearly delineating pedestrian access corridors through the Work, and using flaggers to assist pedestrians where needed.



Everyone needs to get to school safely

Geotechnical and Foundations *2.2.7.j*

Foundation selections are based on the local soils. These soils mainly consist of fine-grained and granular materials over a weathered rock claystone and sandstone bedrock layer. Groundwater is perched on the bedrock and flows generally north and west to the Platte River. Because of the depth to rock we plan to use deep foundations for all structures and predominately drilled shafts. For the Lowered Section, bridge abutments are a continuation of adjacent retaining walls between bridges. Shafts are set in the bedrock layer, even at the paleo channel under the Cover structure where bedrock is lower.

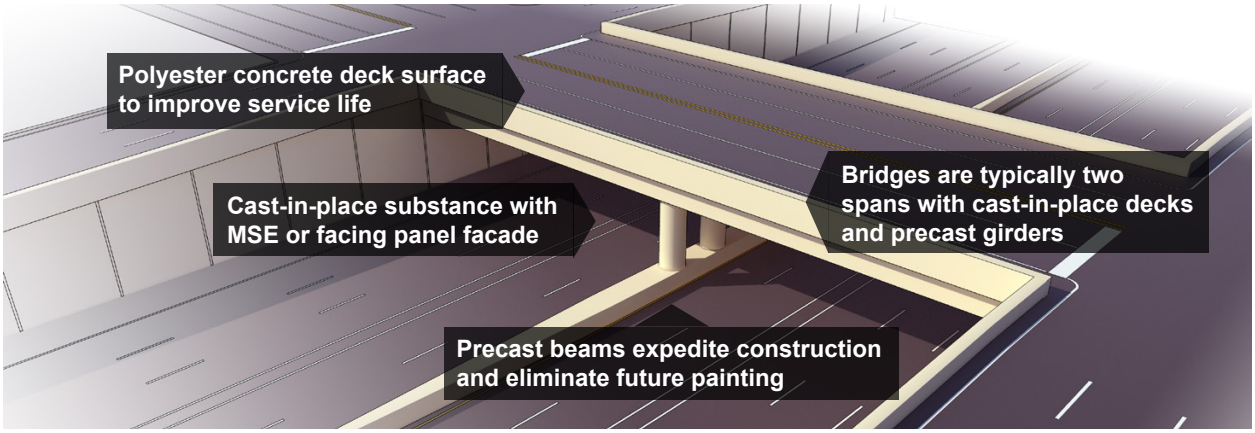
West of Colorado Boulevard and East of Sand Creek, bridges are supported on driven piles to take advantage of the lower bedrock. As I-70 follows the southern limit of the Chemical Sales Superfund Site the **use of piling also mitigates the risk of handling potential contaminants in the groundwater plume** ✔ which would be required with drilled shafts. East of Sand Creek, drilled shafts support the I-270 Ramp and Peoria Street bridge to minimize traffic impacts on I-70 and adjacent roadways. At the south abutment of the I-270 Ramp, the 35 ft. of embankment will likely experience short term consolidation (up to 8 in.) over a period of 4 to 6 weeks. To mitigate, we construct the south abutment and embankment early and proceed with the rest of construction once we confirm the short term settlement has occurred.

Structures *2.2.7.k*

HIGHWAY STRUCTURES. Vehicular bridges and retaining walls encompass the majority of I-70 highway structure requirements. We design and construct these structures in accordance with the AASHTO Load and Resistance Factor Design Bridge Design Specifications, and the Department's *Bridge Design* Manual and Standards (BDM). Structures have aesthetic treatments as prescribed by the Project Agreement. *Figure 6.6* shows typical bridge components, and bridge plans are included in Appendix A.

For some bridges, non-standard girders are used following a Utah DOT standard (ATC 38), **a more efficient shape which can achieve longer span lengths** ✔ using fewer girders. Additional efficiencies were obtained by **using AASHTO LRFD in lieu of BDM** ✔ criteria for bridge overhangs (ATC 42). Some bridges spanning the Lowered Section were **slightly shifted to facilitate construction around the existing viaduct columns.** ✔

FIGURE 6.6 **Bridge components are selected for constructability, durability, and ease of maintenance**



WALLS. Retaining walls types are based on height, loading, and constructability considerations. Drilled shafts, CIP, mechanically stabilized earth, and soil nail walls are used, recognizing that soil nails are not allowed under CCD owned roadways, a lesson learned from T-REX. Please refer to the plans in Appendix A for locations and types for each specific wall.

RAILROAD BRIDGES. Design follows Guidelines and the *AREMA Manual for Railway Engineering*. Use of **optimized steel plate girders** ✓ on UPRR and BNSF bridges reduced required under clearance and **contributed to raising the roadway profile out of the groundwater.** ✓

Drainage *2.2.7.I*

Opportunities to incorporate other drainage projects include coordinating onsite flows (within the Project) and offsite flows (Park Hill and Montclair basins); maintaining historic flow patterns; and limiting peak flow rates passed into proposed and existing drainage systems. **Our solution includes strategically placed detention ponds to reduce peak system flows and combining parallel trunk lines yielding an overall efficient and more easily maintainable system.** ✓

Installing drainage at DUS

DESCRIPTION OF SURFACE WATER COLLECTION SYSTEM AND OUTFALLS. West of Colorado Boulevard water entering the Project from the south is intercepted prior to reaching I-70 and conveyed to the Globeville Outfall. East of Colorado Boulevard, water connects directly into the existing local storm drain system or outfalls into Sand Creek. Connecting the new drainage system to existing CCD storm sewer is a concept used throughout the RD which KMP has adopted. Water on the north side of I-70 generally flows north, however along the north side of the Lowered Section offsite runoff is intercepted, connecting to a trunk line in York Street. Stormwater in the Lowered Section is captured and collected at the low point and conveyed to a stormwater pump station and detention pond between Claude Court and the UPRR with an outlet in the same trunk line in York Street.

ONSITE SYSTEM. Stormwater in the onsite system is collected at a pump station adjacent to the low point of the Lowered Section. Our stormwater pump station (ATC 68) consists of six pumps with two designated for normal flows and the remaining four for the 100-year flood event. The two smaller pumps are cycled for consistent wear and are sized to address the routine flows from the typical Colorado storm. Three of the four pumps handle the peak 100-year flow storm event and the fourth is for redundancy. The adjacent detention pond provides water quality treatment for stormwater in the Lowered Section. Once treated, water is released into the existing 72 in. storm drain in York Street, which can accommodate the onsite volume because our **ATC 12 eliminated the offsite flows going to this pipe from the RD.** ✓ ATC 12 removes 230 cfs in volume from this 72 in. drain, while the combined volume from Lowered Section and the north side is only 173 cfs. ATC 12 also eliminates installing 5,300 LF of large diameter storm sewer and associated maintenance. Because the pump station is located off the WB lanes of I-70, it is fully operational when traffic is in the Lowered Section. The stormwater pump station does not impact CCD's planned UPRR pedestrian bridge.

Included in the onsite requirements is the approval of a Conditional Letter of Map Revision (CLOMR) for modifications to the Sand Creek overflow channel. At the conclusion of the construction, we file for the Letter of Map Revision (LOMR).

OFFSITE FLOWS. Substantial offsite flows from the Montclair and Park Hill drainage basins move toward I-70 from the south. We capture and convey these flows before entering the Lowered Section through a series of detention ponds, large-diameter pipes and box culverts along the south side of the Project. On the eastern end of the Project, our design essentially matches the RD. One optimization is **routing the flow from the 20'x5' concrete box culvert in Stapleton Drive South directly into the Colorado South pond** ✔ rather than into the Colorado North pond. This provides additional attenuation of the flows from the Park Hill basin and reduces the culvert length by 300 LF.

DETENTION FACILITIES. Our detention pond facilities are multi-functional, providing peak flow attenuation and water quality treatment while offering aesthetically pleasing environments following criteria from the *Project Agreement, the Department's Drainage Design* Manual, and Urban Drainage and Flood Control District Standards. Our ATC 6 supplemented these requirements **using a natural pond bottom for a more sustainable, easier to maintain solution.** ✔

REDUCING MAINTENANCE. Maintainability and redundancy are integral parts of our design. We sized all temporary "detour culverts" for a **10-year flood frequency in lieu of the recommendations in the Department's manuals for a 2 to 5-year frequency.** ✔ The ability to handle a typical daily summer thunderstorm far outweighs the minor additional cost to up-size the pipe. **Our ATC 6 uses natural bottom ponds, on a case-by-case basis, eliminating the need to replace the concrete channels, degraded from Denver's numerous freeze/thaw cycles.** ✔ Our stormwater pumping station (ATC 68) includes redundant pumps to ensure no interruption of service and to simplify maintenance at this critical facility.

Utilities *2.2.7.m*

KMP's proactive approach to utility engineering facilitates timely relocation of utilities to meet the construction schedule, provide safe construction operations, and reduce overall risk. Through aggressive outreach, **Utilities Manager Kevin Custy leveraged his extensive knowledge of the Project corridor and surrounding utility infrastructure** ✔ to achieve a general consensus on our approach to utility coordination, design, and construction including meeting with every Utility Owner during the bidding phase to understand their unique requirements.

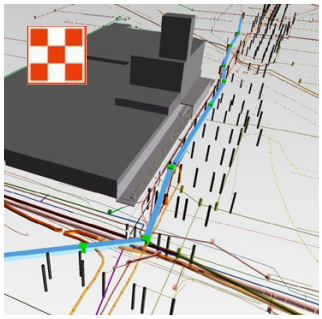


FIGURE 6.7
KMP threaded the needle through all known utilities and existing I-70 substructure to eliminate the storm and sanitary sewer bridges (ATCs 11 and 12) ✔

IDENTIFYING, VERIFYING AND DOCUMENTING UTILITY LOCATIONS. KMP uses subsurface utility engineering (SUE) to identify and document utility locations. Although a number of utilities are impacted by the Lowered Section, most are removed, which simplifies required SUE. Incorporating utility locations in our 3D design model aids planning and provides clash detection *(Figure 6.7)*.

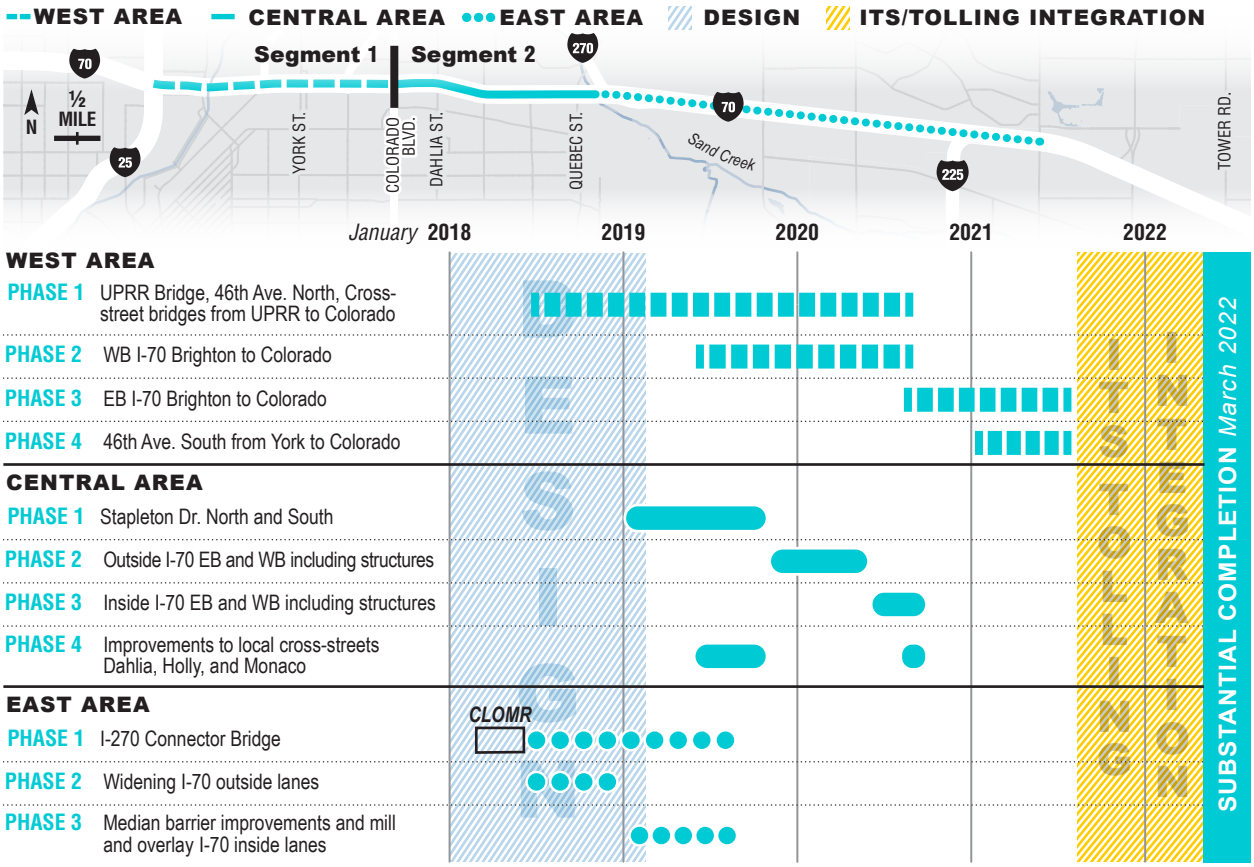
COORDINATING RELOCATIONS. Working closely with the Department and Utility Owners, Kevin finalizes outstanding utility agreements or right-of-way requirements including schedule, design, and construction responsibilities, approved designers/contractors, betterments requested by the Utility Owner, and pricing. When the Department approves, we address betterments including scheduling to avoid delays. Our first choice is to avoid relocation, then protect in place and relocate if needed. Kevin's thorough analysis of the Utility Matrix and his intimate knowledge of local Utility Owners allowed us to avoid dozens of relocations. An example is the **Metro Wastewater interceptor sewer along I-270 which can be avoided** ✔ and protected in place.

Phasing *2.2.7.n*

We divided the Project at Colorado Boulevard into two segments and three work areas (East, Central, West) to facilitate design delivery and to correspond to Project Milestones. Each area is constructed in several phases to assist with scheduling and resource allocation *(Figure 6.8)*. Our phasing plans considered potential safety impacts and construction constraints including high priority underground utilities, major construction needs, and long lead items for third-party relocations (Appendix F). The Work areas are:

- **West: I-25 to Colorado Boulevard.** Construction of the Brighton Boulevard, Steele/Vasquez, and Colorado Boulevard interchanges, the EB/WB Lowered Section of I-70, the Cover, UPRR and BNSF crossings, 46th Avenue North and South and all cross streets. We maintain traffic on the viaduct while constructing cross streets, and the new WB portions of I-70.
- **Central: Colorado Boulevard to Sand Creek.** Reconstruct and widen I-70 including the improvements at Stapleton Drive North and South. We maintain all lanes and ramp connections on I-70 and maintain connectivity on cross streets.
- **East: Sand Creek to Chambers Road.** Widening occurs when EB/WB I-70 traffic shifts to the middle in conjunction with Phase 2 work in the Central area. **We shift EB/WB traffic to the median only one time to minimize impacts to the traveling public.** ✔

FIGURE 6.8 Work Areas and Phasing Overview



Reference Design Changes *2.2.7.o*

Since September of 2015, KMP has engaged with the Department to pursue opportunities for enhancement of an already robust RD. Our ATCs incorporated into the Project *(Figure 6.1, pg. 48)* and the innovations discussed in this Part 6 are all a part of those enhancements. Notes on our roll plots in Appendix A provide an overview of our design and identify KMP's Project approach and benefits including the numerous ways in which we exceed the Project requirements.

Approach to Construction Dewatering *2.2.7.p*

METHODOLOGY, APPROACH AND CRITERIA. KMP's design raises the profile of the Lowered Section above the groundwater table, eliminating long-term dewatering. KMP's extensive analysis indicates the groundwater table a minimum of 2 ft below the pavement section in the Lowered Section. Our analysis takes into consideration typical fluctuations of groundwater levels. **Because the final disposition of water is below the pavement section, KMP's design does not require an approach for managing contaminated groundwater long-term.** ✔

For temporary dewatering during construction of elements below the groundwater table, such as drilled shafts, KMP pumps groundwater into steel liquid containment tanks, stored onsite until full and hauled for disposal at McDonald Farms Enterprises (4647 National Western Drive). For extended operations, such as drainage installation in the Lowered Section during excavation, KMP installs a groundwater cutoff wall in two halves (EB/WB) to bedrock from west of the UPRR Bridge to approximately Thompson Court.

Temporary dewatering during and after installation of the cut-off walls until the drainage is complete requires use of a temporary treatment facility designed to treat all contaminants identified in the Ground Water Benchmark Concentrations. (Appendix A, Draft Dewatering Design and Draft Remedial Management Plan).

ANTICIPATED ENVIRONMENTAL APPROVALS REQUIRED. KMP anticipates the required environmental approvals for the following permits:

CDPHE

- Clean Water Act Section 402 Construction
- Dewatering Permit

Colorado Division of Water Resources

- Notice of Intent to Construct Dewatering Wells
- Dewatering Systems Well Report

APPROACH TO MINIMIZING THE QUANTITY OF DEWATERING. KMP installs cut-off walls prior to installation of any Project elements below the groundwater table to significantly minimize the quantity of dewatering required.

> **"KMP's approach is a long-term commitment to the financing, delivery, operations, and maintenance of Central 70. Our commitment is to the local community in Denver and Colorado for 30 years. Thank you, CDOT, for the opportunity to participate in this project. We at Kiewit-Meridiam Partners truly believe this is the start of a long-term and transparent relationship."**
>
> **— JOHN M. DIONISIO**
> *Official Representative, Kiewit-Meridiam Partners*

APPENDIX A

Relates to Part 1, Volume 2

Kiewit meridiam PARTNERS

Draft Design Drawings

SUBMITTED TO:
Colorado Bridge Enterprise
High Performance Transportation Enterprise
c/o Colorado Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

Project Location Map

Legend:

CENTRAL 70

OVERVIEW OF PROJECT DESIGN

Kansas Department of Transportation

SHEET NUMBER

R-01

May 2017

EXPRESS TOLL LANE ENTRANCE

EXPRESS TOLL LANE SLIP RAMP

EXPRESS TOLL LANE - TYPICAL

TOLL LANE OPERATION NOTES:
1. TOLL LANE OPERATIONS WILL BE ACCOMPLISHED BY ELECTRONIC TOLLING ONLY.
2. TOLL LANE OPERATIONS WILL BE ACCOMPLISHED BY ELECTRONIC TOLLING ONLY.

Legend:

Mile Markers

Legend:

Legend:

Legend:

U.S. Department of Transportation
Federal Highway Administration

Project Location Map

Legend:

CENTRAL 70

OVERVIEW OF PROJECT DESIGN

Kansas Department of Transportation

SHEET NUMBER

R-01

May 2017

PoDI / NHS	
FHWA PROJECT OF DIVISION INTEREST (PoDI)?	☐ NO ■ YES
NATIONAL HIGHWAY SYSTEM?	☐ NO ■ YES

DEPARTMENT OF TRANSPORTATION
STATE OF COLORADO

HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED

FEDERAL AID PROJECT NO. FBR 0704-234

INTERSTATE HIGHWAY NO. 70

DENVER COUNTY

CONSTRUCTION PROJECT CODE NO. 19631

Related Projects:

P. E. UNDER PROJECT:
Project Number FBR 0704-234
Project Code: 19631

R.O.W. Projects:

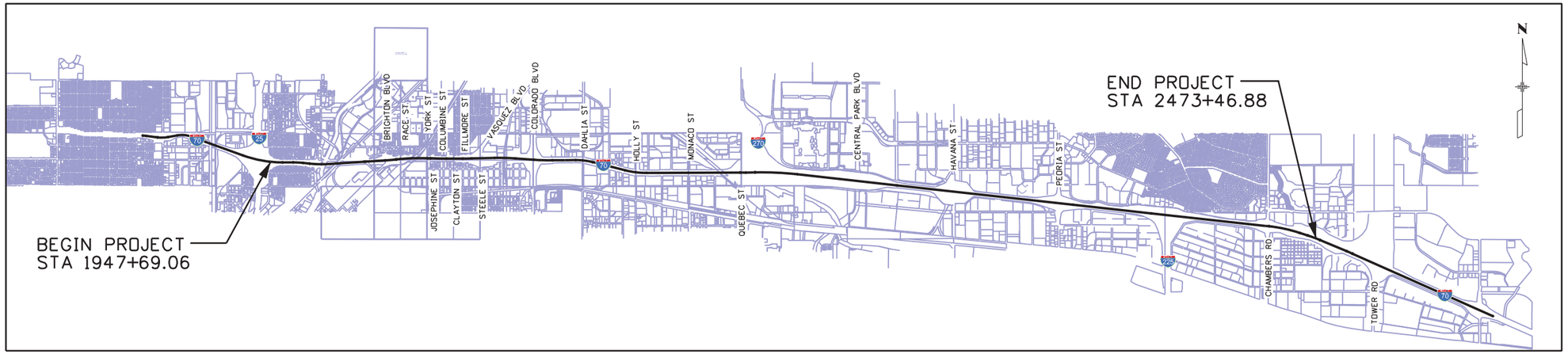
R.O.W. Project Description
FBR 0704-234, 19631

TABULATION OF DESIGN DATA

DESIGN DATA	I-70 MAINLINE	RAMPS	LOCAL STREETS (2 LANES)	LOCAL STREETS (4 OR 6 LANES)
DESIGN SPEED	60 - 70 MPH	45 - 55 MPH	25 - 35 MPH	35 - 45 MPH
MINIMUM RADIUS	1330 - 2040 FT	643 - 1060 FT	198 - 510 FT	510 - 1039 FT
S.S.D. (LEVEL GRADE)	570 - 730 FT	360 - 495 FT	155 - 360 FT	250 - 360 FT
CLEAR ZONE - MINIMUM	30 FT	16 - 20 FT	N/A	20 FT
CLEAR ZONE - DESIRED	34 FT	18 - 22 FT	N/A	22 FT
SUPERELEVATION (eMAX)	6%	6%	NORMAL CROWN	NORMAL CROWN
GRADE (MAXIMUM)	3% - 4%	4% - 6%	3% - 6%	6%
GRADE (MINIMUM)	0.5% - 0.75%	0.5%	0.5%	0.5%
2012 AADT	247000	15000	7400	33000
DHV % TRUCKS	0.08	0.08	0.1	0.09

APPENDIX A - (BINDER 2 OF 13)

SHEET NO.	INDEX OF SHEETS
1	TITLE SHEET
2 - 4	APPENDIX A EVALUATION CRITERIA MATRIX
5 - 57	GEOMETRY PLAN SHEETS
58	ROADWAY KEY MAP
59 - 118	ROADWAY PLAN SHEETS
119 - 134	TYPICAL SECTIONS
135	PAVEMENT DETAILS



PROJECT LOCATION MAP

Kiewit meridiam PARTNERS

Central 70

0' 3,000' 6,000' 12,000'

Contract Information	
Contractor:	
Resident Engineer:	
Project Engineer:	
PROJECT STARTED: / /	ACCEPTED: / /
Comments:	

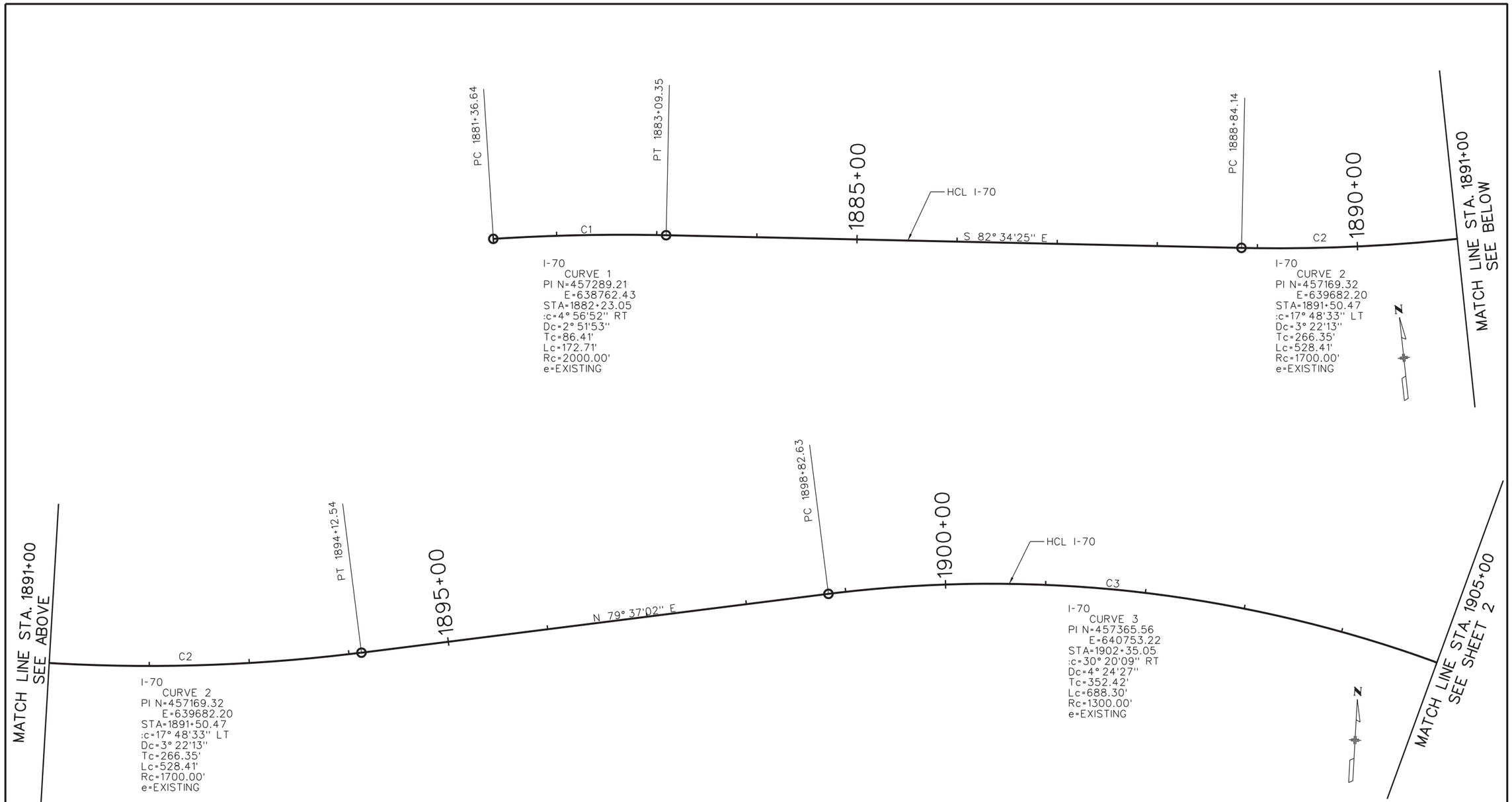
Project No./Code
FBR 0704-234
19631
Sheet Number 1

KMP has provided a full Evaluation Criteria Matrix to align the requirements of the Draft Design Drawings per the Instructions to Proposers with the drawings provided.

	Item	Presented On	Roll Plots	Binder 2 of 13	Binder 3 of 13	Binder 4 of 13	Binder 5 of 13	Binder 6 of 13	CHECK
A. DRAFT ROADWAY DESIGN DRAWINGS	i. General Project roadway information including Project limits, design speeds, functional classification(s), and minimum design values met	Title Sheet for Each Plan Volume		X	X	X	X		☐
	ii. Project horizontal alignments including PI station/location, degree of curve, radius, length of curve, PC and PT (graphical location) and bearings shown on a schematic plan at 1” to 100’, or 1” to 200’ scale and on Plan sheets at 1” to 100’ scale	Alignment Plans		X					☐
	iii. All lanes on mainline ramps and cross streets, including turn lanes	Roadway Plans		X					☐
	iv. Project planimetrics including curbs and barriers, driveways and edge of pavement	Roadway Plans		X					☐
	v. Bridge locations and limits, bridge types, foundation types, controlling vertical clearances, and span arrangements	Bridge Plans				X			☐
	vi. Preliminary wall types, proposed locations and limits for retaining walls	Retaining Wall Location Plans				X			☐
	vii. Approximate locations of proposed site access and borrow and waste sites	Roll Plot	X						☐
	viii. Directional arrows indicating the number of lanes	Roadway Plans		X					☐
	ix. Proposed right-of-way (ROW) limits and control of access limits including any Additional Right-of-Way and any Temporary Properties that, in each case, Proposer has identified as necessary to implement its Proposal	Roadway Plans		X					☐
	x. Existing/natural ground and project and vertical alignments including vertical clearance, grades, VPI station, vertical curve length and K-values shown on profiles at a scale of horizontal - 1” = 100’ and vertical - 1” = 20”	Roadway Profiles			X				☐
	xi. Typical sections including existing ground, pavement cross slope, super-elevation, lane and shoulder widths, and slope ratio for fills and cuts, drainage and ditches, legend of material types and thicknesses	Typical Sections		X					☐
	xii. Cross sections of the mainline at a spacing of 1,000 ft. and at a scale of 1” = 50’ (horizontal and vertical)	Cross Sections				X			☐
	xiii. Location and text of the large guide signs	Roll Plot	X						☐

	Item	Presented On	Roll Plots	Binder 2 of 13	Binder 3 of 13	Binder 4 of 13	Binder 5 of 13	Binder 6 of 13	CHECK
B. DRAFT DRAINAGE DRAWINGS	i. Location of major drainage elements including trunk lines and cross culverts	Drainage Plans			X				☐
	ii. Outfall locations	Drainage Plans			X				☐
	iii. Water quality features including detention and retention structures	Drainage Plans			X				☐
	iv. Connections to existing systems	Drainage Plans			X				☐
C. DRAFT COVER AND SWANSEA ELEMENTARY SCHOOL LANDSCAPE AND AESTHETIC DESIGN DRAWINGS	i. Urban design plans, which shall be consistent with the requirements therefor specified in Section 14 (*Landscaping and Aesthetics*) of Schedule 10 (*Design and Construction Requirements*) to the Project Agreement, excluding the visual renderings otherwise required by Section 14.5.5.e of Schedule 10 (*Design and Construction Requirements*) to the Project Agreement	Urban Design Plans and Landscape Narrative					X		☐
	a. Narrative of the Developer's design process to be completed and approach to achieving the vision set forth for the space both in program and character.	Urban Design Narrative					X		☐
	b. Narrative and plans that outline the opportunities and constraints in the design and construction Elements.	Urban Design Narrative; Cover Landscaping Detail Plans					X		☐
	c. Narrative and plans for the cross streets, Columbine, Clayton, and 46th Avenue, depicting the character and context of how they relate to the Cover and Swansea Elementary School outdoor areas landscaping and aesthetic designs.	Urban Design Narrative; Cover Landscaping Detail Plans					X		☐
	d. Narrative and plans related to the coordination and integration of other disciplines including structures, the Cover MEP System, drainage, roadway, utilities, and lighting.	Urban Design Narrative; Cover Structure and Systems Plans					X		☐
	e. The Developer shall provide visual renderings that show the proposed designs.	Not Required for Proposal							☐
	f. The Developer's Preliminary Landscape and Aesthetics Plans shall include plans, elevations, sections, perspectives, isometric drawings, details, etc., as necessary to fully convey the proposed Cover and Swansea Elementary School outdoor areas landscape and urban designs including color and texture applications; drawings, tables and schedule that show where specific Elements are located; and plant palette schedules, size, number, location of trees, shrub beds, accent beds, and planning types.	Cover Landscaping Detail Plans					X		☐
	g. The Developer's landscape and aesthetics work shall include underground permanent irrigation systems to maintain plant material in accordance with DPR Planning, Design + Construction Standards.	Cover Landscaping Detail Plans					X		☐
	ii. Materials and layout details for each of the program Element requirements identified in Schedule 10B (Contract Drawings) to the Project Agreement	Cover Landscaping Detail Plans					X		☐
	iii. Grading and drainage plans	Cover Landscaping Detail Plans					X		☐
	iv. Preliminary landscape, irrigation and aesthetics plans, which shall be consistent with the requirements therefor specified in Section 14 (Landscaping and Aesthetics) of Schedule 10 (Design and Construction Requirements) to the Project Agreement	Cover Landscaping Detail Plans					X		☐
	v. Section elevations depicting the proposed surface topography and key site Elements	Cover Landscaping Detail Plans					X		☐

	Item	Presented On	Roll Plots	Binder 2 of 13	Binder 3 of 13	Binder 4 of 13	Binder 5 of 13	Binder 6 of 13	CHECK
D. DEWATERING PLAN	Draft dewatering design and/or, if and to the extent water will be treated on-site, a Draft Remedial Management Plan (a "RAMP") that meets CDPHE requirements for the Construction Period and Operating Period	Draft Remediation Activities Management Plan						X	☐
E. GOVERNMENT APPROVALS	Identification of alignments or other elements proposed by Proposer's schematic to the extent they will require an evaluation for compliance with existing Governmental Approvals and possibly re-evaluations and delays associated with such re-evaluations.	Design Approvals						X	☐



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 1881+36.64 TO STA 1905+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	1 of 53		Sheet Number 05

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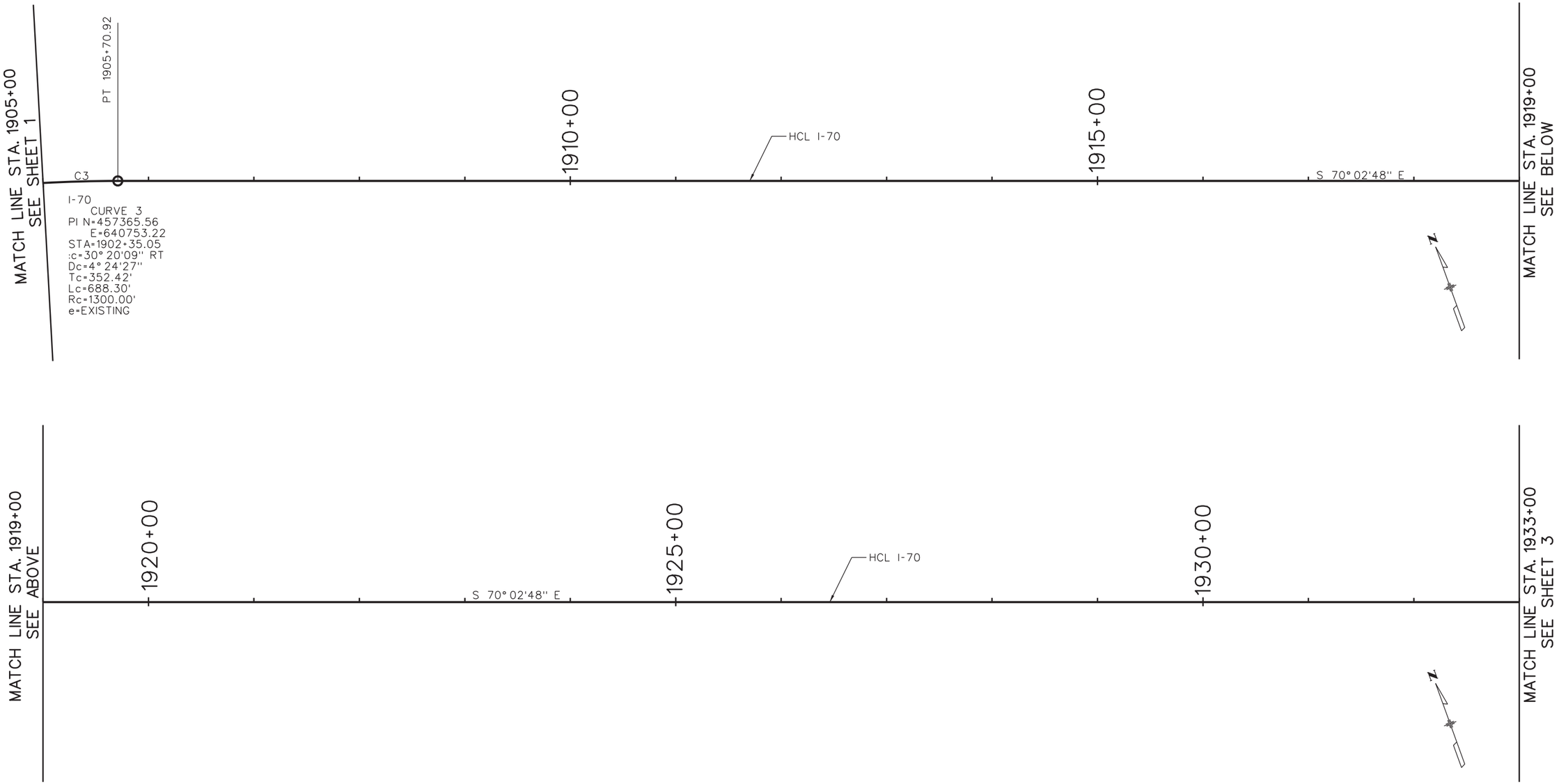

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 1905+00 TO STA 1933+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	2 of 53	Sheet Number 06

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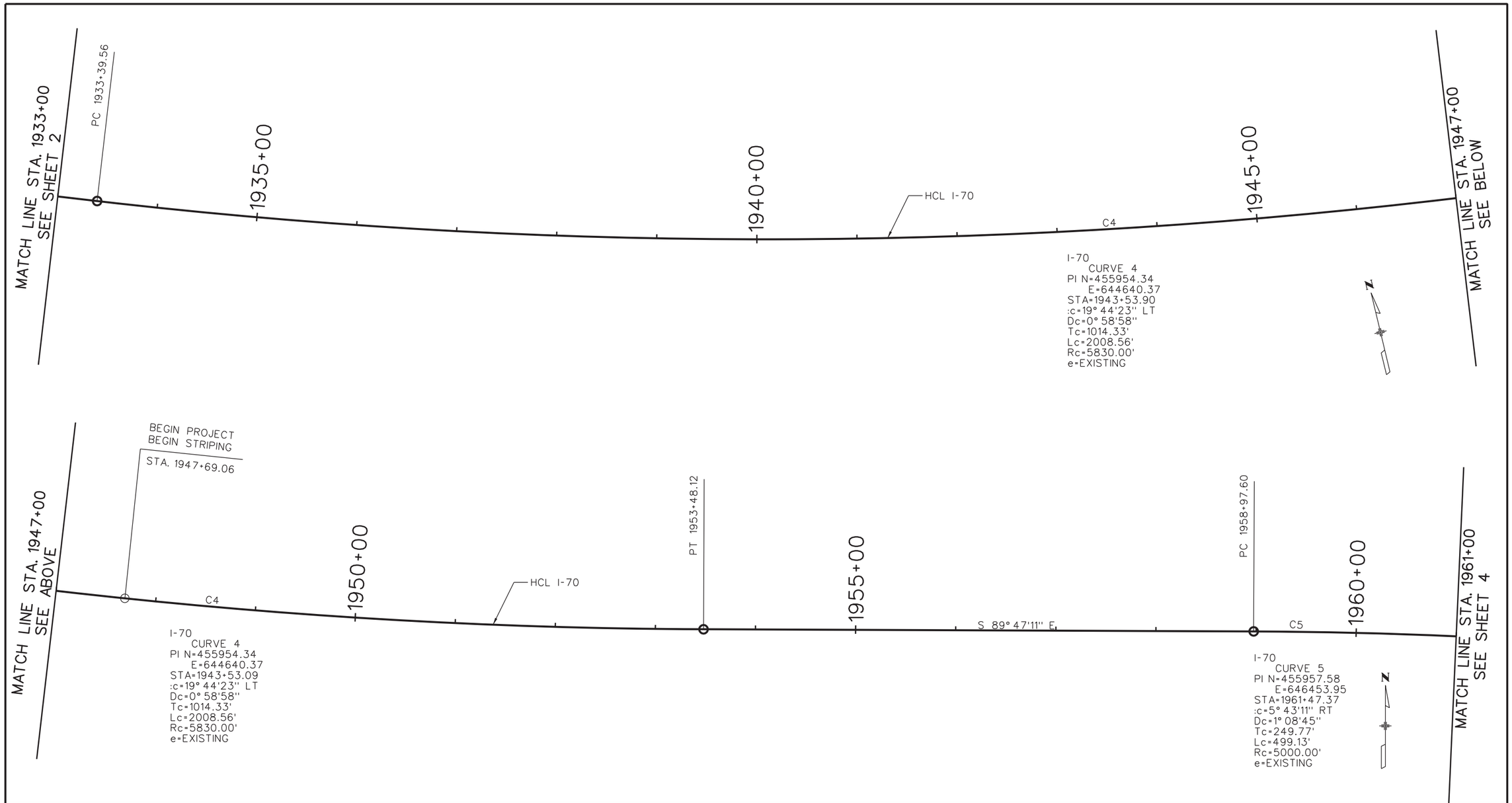

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL
STA 1933+00 TO STA 1961+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	3 of 53

Project No./Code

FBR 0704-234

19631

Sheet Number 07

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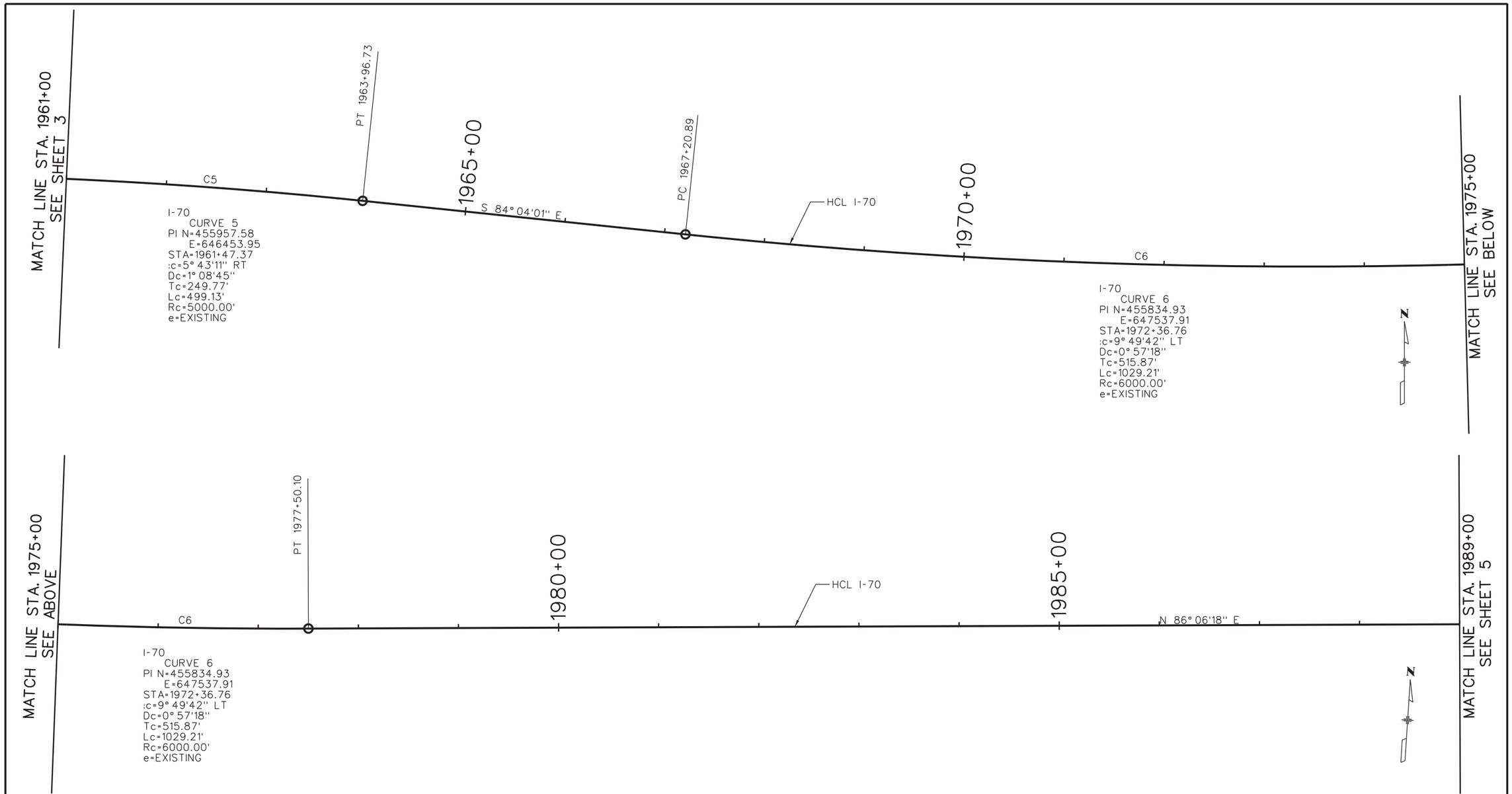

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 1961+00 TO STA 1989+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	4 of 53		Sheet Number 08

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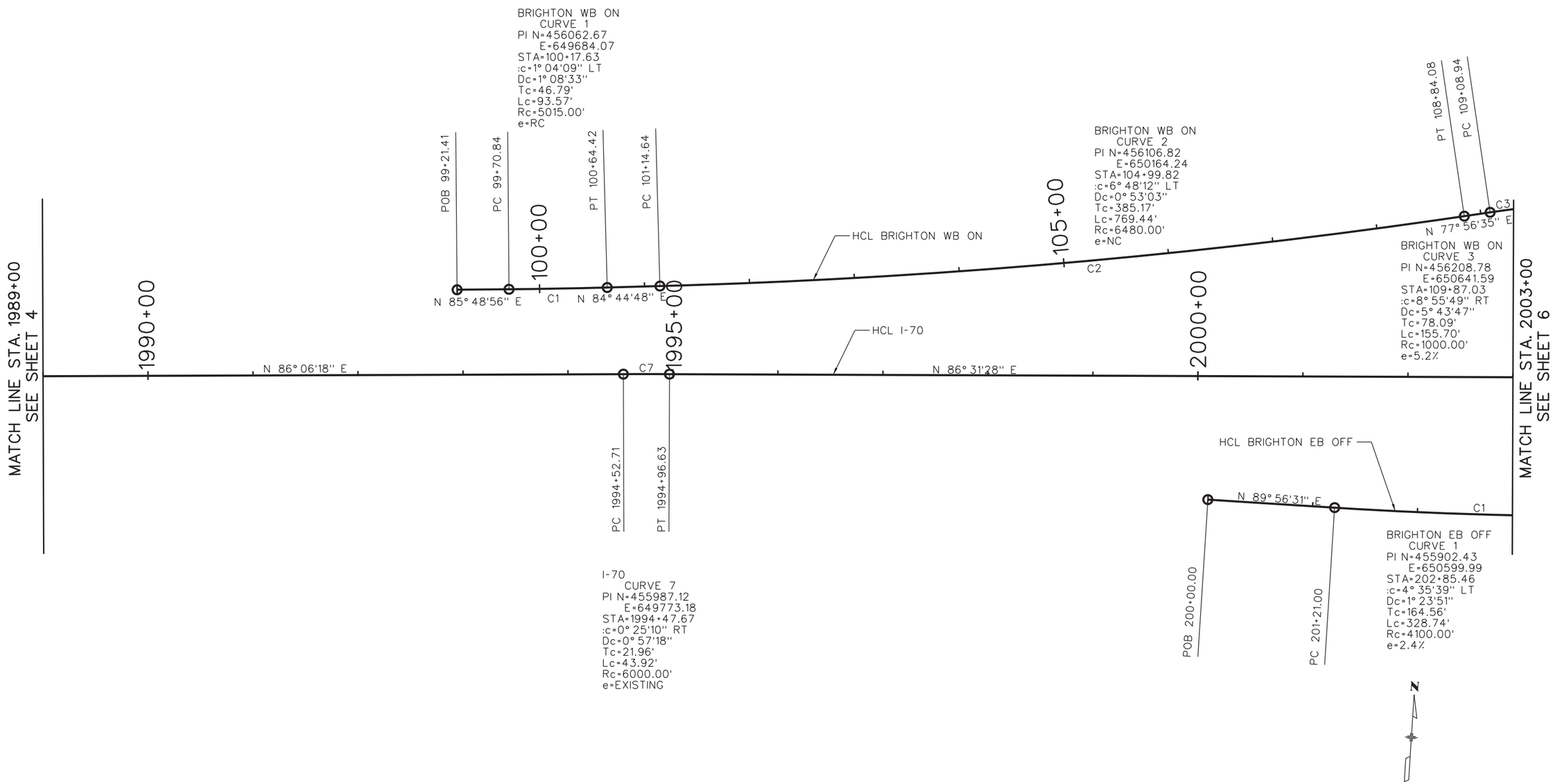

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 1989+00 TO STA 2003+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	5 of 53		Sheet Number 09

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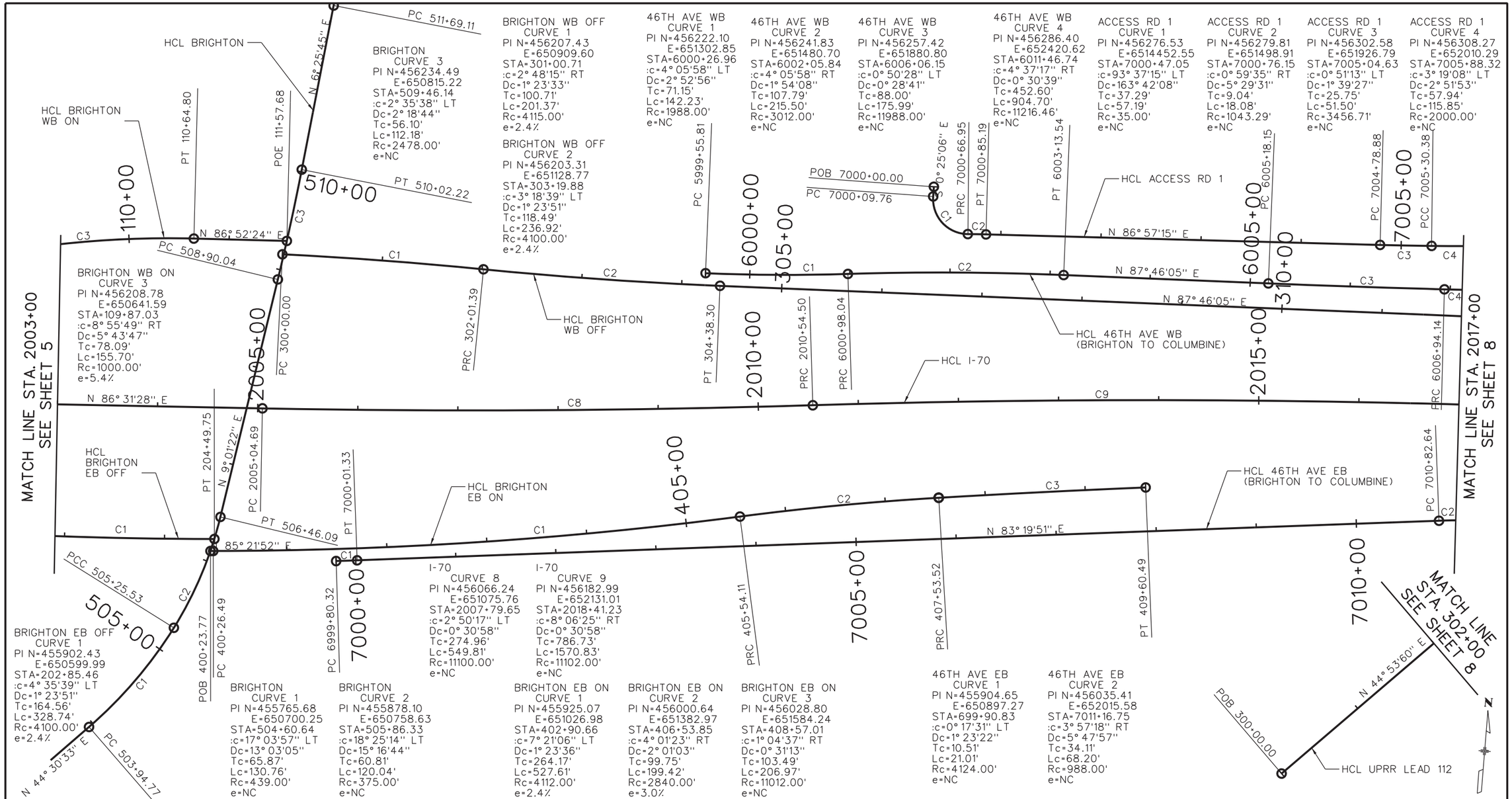

Kiewit meridiam PARTNERS

Central 70

CENTRAL 70 HORIZONTAL CONTROL STA 2003+00 TO STA 2017+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	6 of 53		Sheet Number 10

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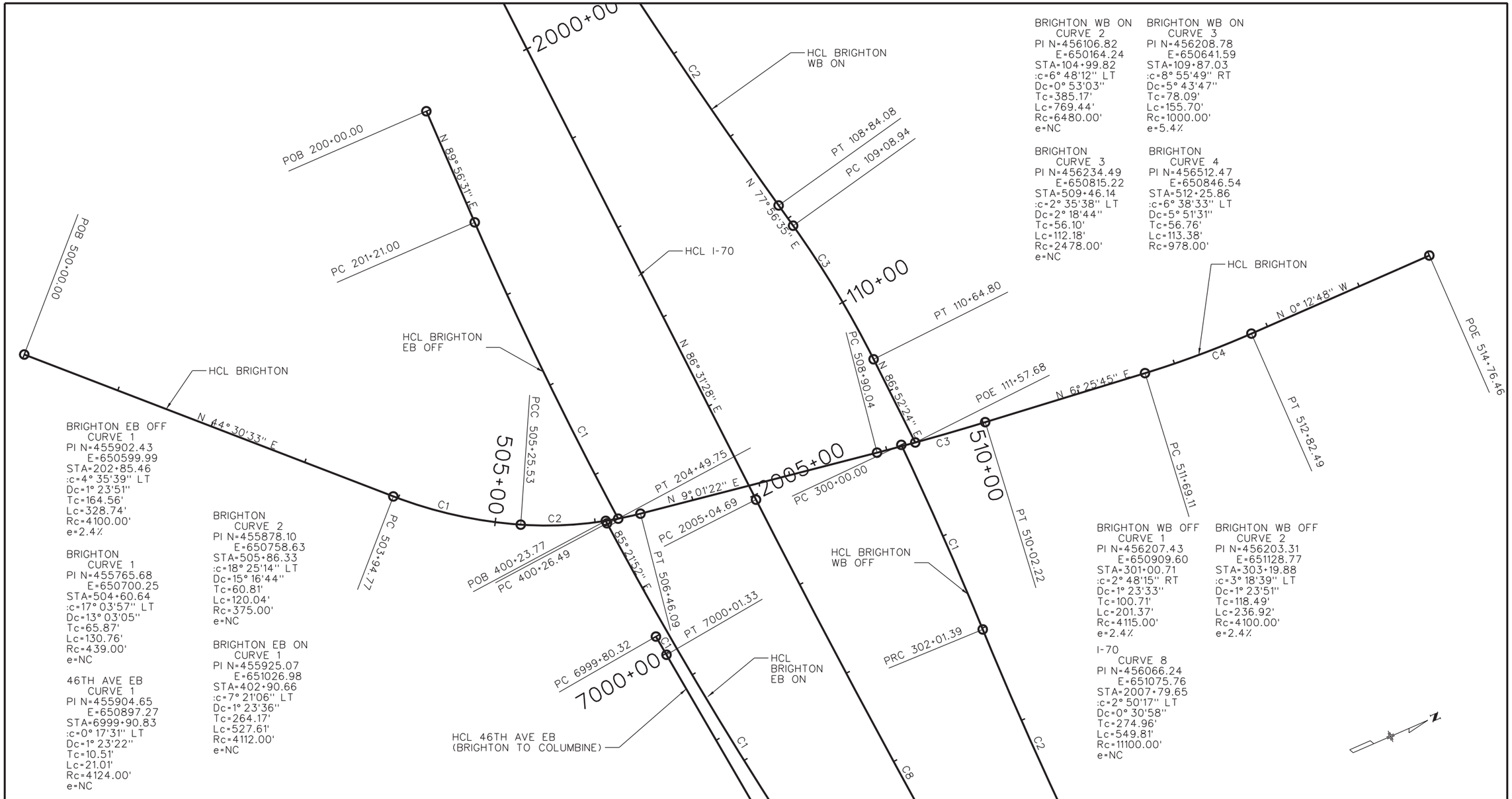

BRIGHTON WB ON
CURVE 2
PI N=456106.82
E=650164.24
STA=104+99.82
:c=6° 48'12" LT
Dc=0° 53'03"
Tc=385.17'
Lc=769.44'
Rc=6480.00'
e=NC

BRIGHTON WB ON
CURVE 3
PI N=456208.78
E=650641.59
STA=109+87.03
:c=8° 55'49" RT
Dc=5° 43'47"
Tc=78.09'
Lc=155.70'
Rc=1000.00'
e=5.4%

BRIGHTON
CURVE 3
PI N=456234.49
E=650815.22
STA=509+46.14
:c=2° 35'38" LT
Dc=2° 18'44"
Tc=56.10'
Lc=112.18'
Rc=2478.00'
e=NC

BRIGHTON
CURVE 4
PI N=456512.47
E=650846.54
STA=512+25.86
:c=6° 38'33" LT
Dc=5° 51'31"
Tc=56.76'
Lc=113.38'
Rc=978.00'

BRIGHTON EB OFF
CURVE 1
PI N=455902.43
E=650599.99
STA=202+85.46
:c=4° 35'39" LT
Dc=1° 23'51"
Tc=164.56'
Lc=328.74'
Rc=4100.00'
e=2.4%

BRIGHTON
CURVE 1
PI N=455765.68
E=650700.25
STA=504+60.64
:c=17° 03'57" LT
Dc=13° 03'05"
Tc=65.87'
Lc=130.76'
Rc=439.00'
e=NC

46TH AVE EB
CURVE 1
PI N=455904.65
E=650897.27
STA=6999+90.83
:c=0° 17'31" LT
Dc=1° 23'22"
Tc=10.51'
Lc=21.01'
Rc=4124.00'
e=NC

BRIGHTON
CURVE 2
PI N=455878.10
E=650758.63
STA=505+86.33
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Dc=15° 16'44"
Tc=60.81'
Lc=120.04'
Rc=375.00'
e=NC

BRIGHTON EB ON
CURVE 1
PI N=455925.07
E=651026.98
STA=402+90.66
:c=7° 21'06" LT
Dc=1° 23'36"
Tc=264.17'
Lc=527.61'
Rc=4112.00'
e=NC

BRIGHTON WB OFF
CURVE 1
PI N=456207.43
E=650909.60
STA=301+00.71
:c=2° 48'15" RT
Dc=1° 23'33"
Tc=100.71'
Lc=201.37'
Rc=4115.00'
e=2.4%

BRIGHTON WB OFF
CURVE 2
PI N=456203.31
E=651128.77
STA=303+19.88
:c=3° 18'39" LT
Dc=1° 23'51"
Tc=118.49'
Lc=236.92'
Rc=4100.00'
e=2.4%

I-70
CURVE 8
PI N=456066.24
E=651075.76
STA=2007+79.65
:c=2° 50'17" LT
Dc=0° 30'58"
Tc=274.96'
Lc=549.81'
Rc=11100.00'
e=NC

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL - BRIGHTON
STA 500+00 TO STA 514+76.46

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	7 of 53

Project No./Code
FBR 0704-234
19631
Sheet Number 11

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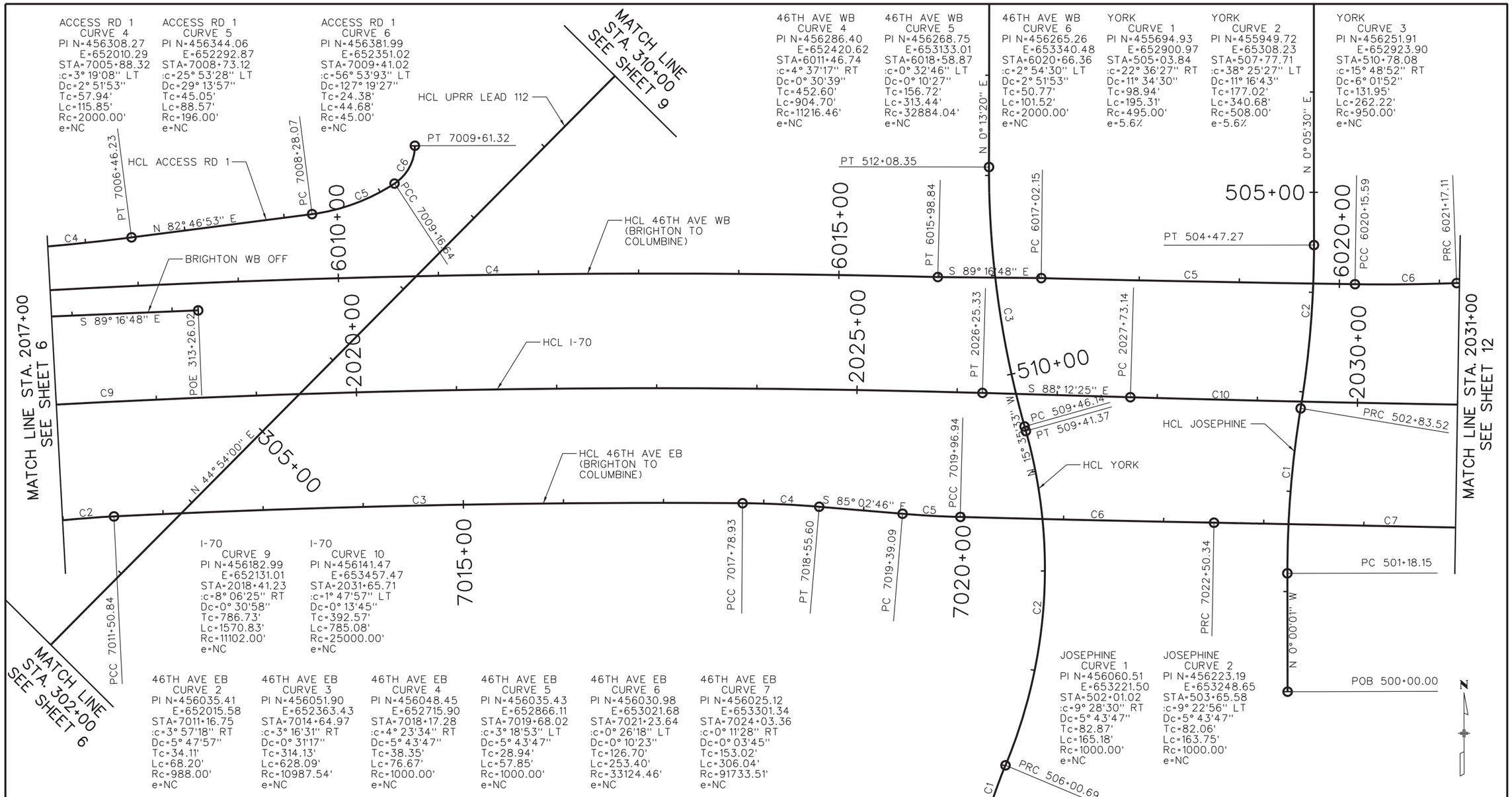

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 ROADWAY PLAN STA 2017+00 TO STA 2031+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	8 of 53		Sheet Number 12

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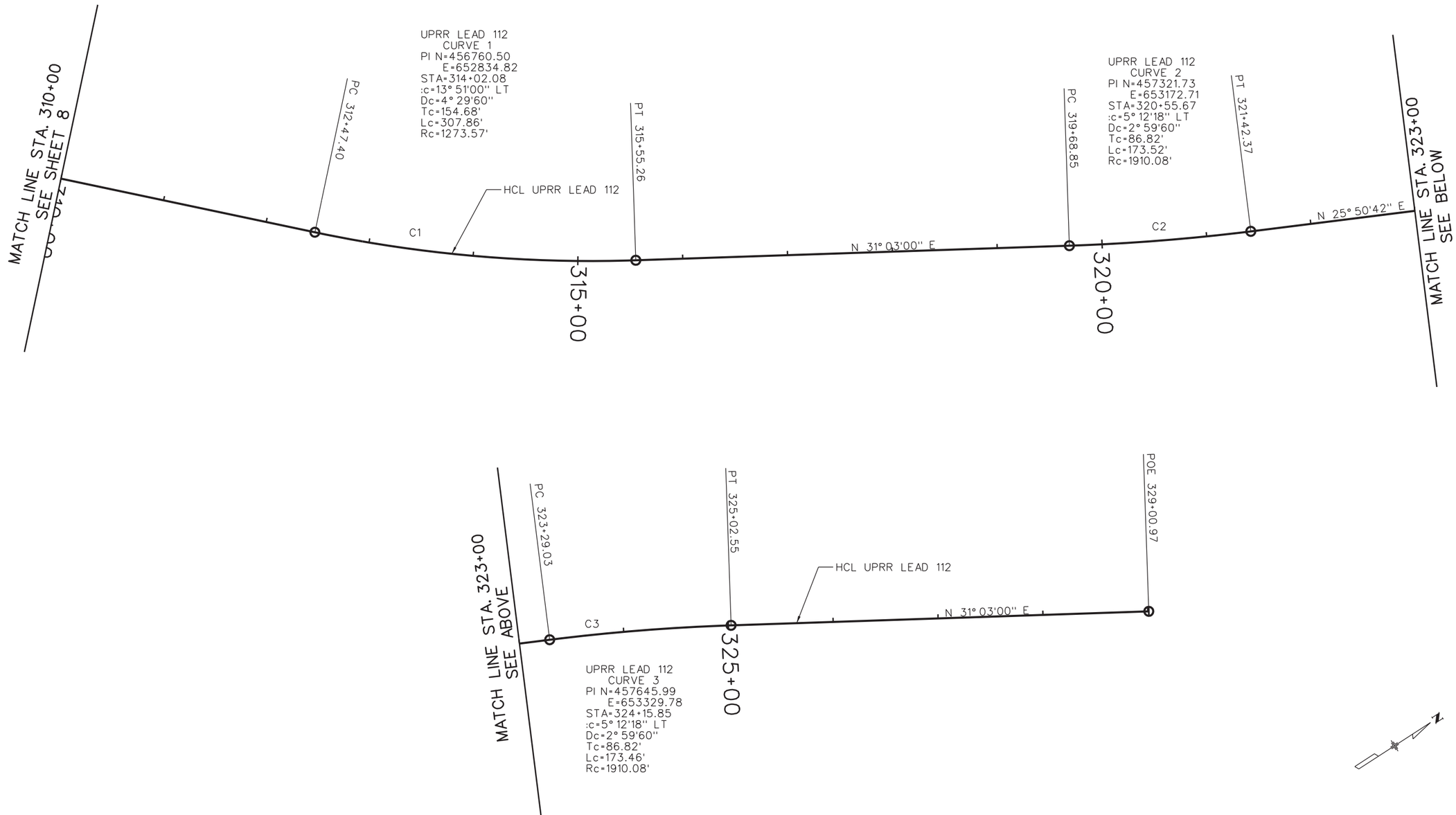

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROI - UPRR LEAD 112
STA 310+00 TO STA 329+00.97

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	9 of 53

Project No./Code
FBR 0704-234
19631
Sheet Number 13

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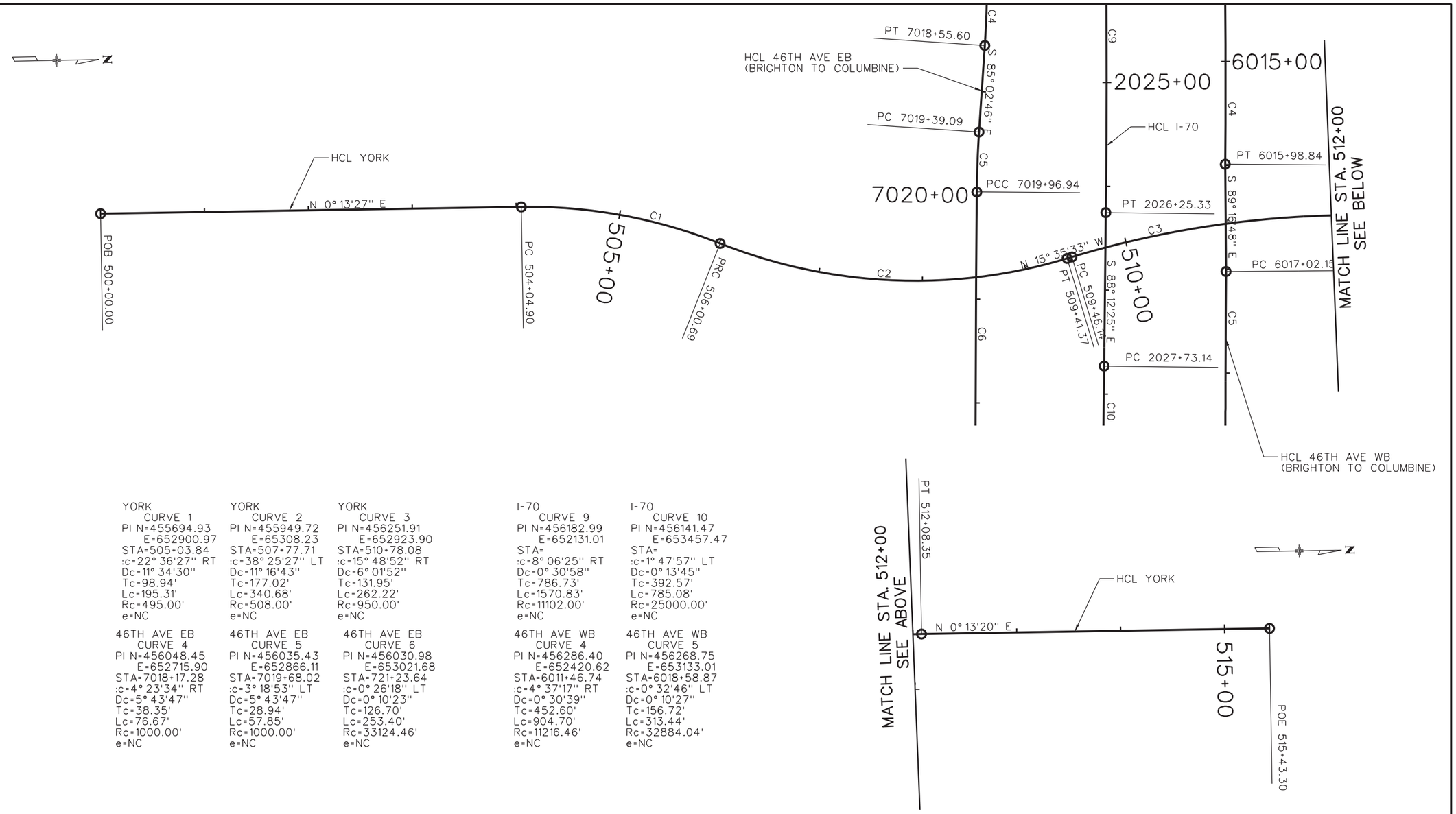

YORK
CURVE 1
PI N=455694.93
E=652900.97
STA=505+03.84
:c=22° 36'27" RT
Dc=11° 34'30"
Tc=98.94'
Lc=195.31'
Rc=495.00'
e=NC

YORK
CURVE 2
PI N=455949.72
E=65308.23
STA=507+77.71
:c=38° 25'27" LT
Dc=11° 16'43"
Tc=177.02'
Lc=340.68'
Rc=508.00'
e=NC

YORK
CURVE 3
PI N=456251.91
E=652923.90
STA=510+78.08
:c=15° 48'52" RT
Dc=6° 01'52"
Tc=131.95'
Lc=262.22'
Rc=950.00'
e=NC

I-70
CURVE 9
PI N=456182.99
E=652131.01
STA=
:c=8° 06'25" RT
Dc=0° 30'58"
Tc=786.73'
Lc=1570.83'
Rc=11102.00'
e=NC

I-70
CURVE 10
PI N=456141.47
E=653457.47
STA=
:c=1° 47'57" LT
Dc=0° 13'45"
Tc=392.57'
Lc=785.08'
Rc=25000.00'
e=NC

46TH AVE EB
CURVE 4
PI N=456048.45
E=652715.90
STA=7018+17.28
:c=4° 23'34" RT
Dc=5° 43'47"
Tc=38.35'
Lc=76.67'
Rc=1000.00'
e=NC

46TH AVE EB
CURVE 5
PI N=456035.43
E=652866.11
STA=7019+68.02
:c=3° 18'53" LT
Dc=5° 43'47"
Tc=28.94'
Lc=57.85'
Rc=1000.00'
e=NC

46TH AVE EB
CURVE 6
PI N=456030.98
E=653021.68
STA=721+23.64
:c=0° 26'18" LT
Dc=0° 10'23"
Tc=126.70'
Lc=253.40'
Rc=33124.46'
e=NC

46TH AVE WB
CURVE 4
PI N=456286.40
E=652420.62
STA=6011+46.74
:c=4° 37'17" RT
Dc=0° 30'39"
Tc=452.60'
Lc=904.70'
Rc=11216.46'
e=NC

46TH AVE WB
CURVE 5
PI N=456268.75
E=653133.01
STA=6018+58.87
:c=0° 32'46" LT
Dc=0° 10'27"
Tc=156.72'
Lc=313.44'
Rc=32884.04'
e=NC

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL - YORK
STA 500+00 TO STA 515+43.30

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	10 of 53

Project No./Code
FBR 0704-234
19631
Sheet Number 14

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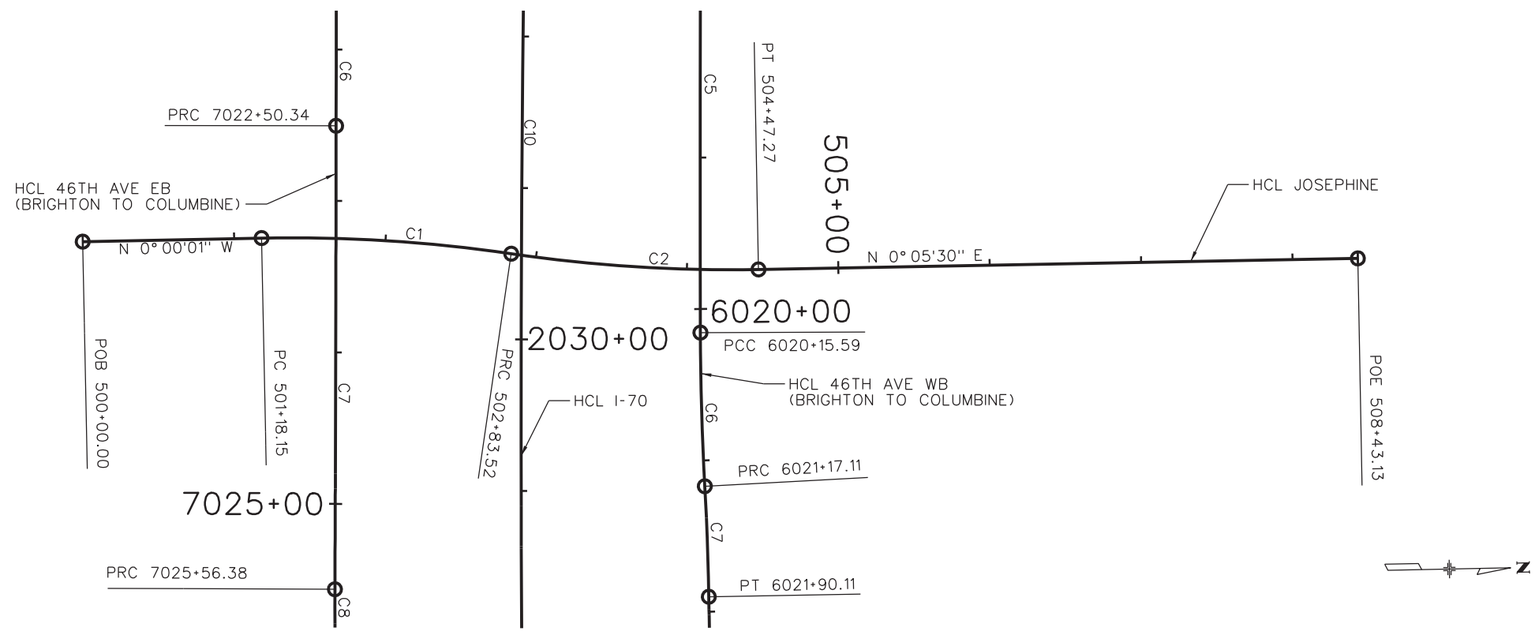

JOSEPHINE
CURVE 1
PI N=456060.51
E=653221.50
STA=502+01.02
:c=9° 28'30" RT
Dc=5° 43'47"
Tc=82.87'
Lc=165.18'
Rc=1000.00'
e=NC

JOSEPHINE
CURVE 2
PI N=456223.19
E=653248.65
STA=503+65.58
:c=9° 22'56" LT
Dc=5° 43'47"
Tc=82.06'
Lc=163.75'
Rc=1000.00'
e=NC

46TH AVE EB
CURVE 6
PI N=456030.98
E=653021.68
STA=7021+23.64
:c=0° 26'18" LT
Dc=0° 10'23"
Tc=126.70'
Lc=253.40'
Rc=33124.46'
e=NC

46TH AVE EB
CURVE 7
PI N=456025.12
E=653301.34
STA=7024+03.36
:c=0° 11'28" RT
Dc=0° 03'45"
Tc=153.02'
Lc=306.04'
Rc=91733.51'
e=NC

46TH AVE EB
CURVE 8
PI N=456020.49
E=653491.92
STA=7025+93.99
:c=2° 50'32" LT
Dc=3° 46'46"
Tc=37.61'
Lc=75.21'
Rc=1516.00'
e=NC

I-70
CURVE 10
PI N=456141.47
E=653457.47
STA=2031+65.71
:c=1° 47'57" LT
Dc=0° 13'45"
Tc=392.57'
Lc=785.08'
Rc=25000.00'
e=NC

46TH AVE WB
CURVE 5
PI N=456268.75
E=653133.01
STA=6018+58.87
:c=0° 32'46" LT
Dc=0° 10'27"
Tc=156.72'
Lc=313.44'
Rc=32884.04'
e=NC

46TH AVE WB
CURVE 6
PI N=456265.26
E=653340.48
STA=6020+66.36
:c=2° 54'30" LT
Dc=2° 51'53"
Tc=50.77'
Lc=101.52'
Rc=2000.00'
e=NC

46TH AVE WB
CURVE 7
PI N=456268.22
E=653427.70
STA=6021+53.62
:c=2° 04'47" RT
Dc=2° 50'57"
Tc=36.50'
Lc=72.99'
Rc=2011.00'
e=NC

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL - JOSEPHINE STA 500+00 TO STA 508+43.13				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	11 of 53		Sheet Number 15

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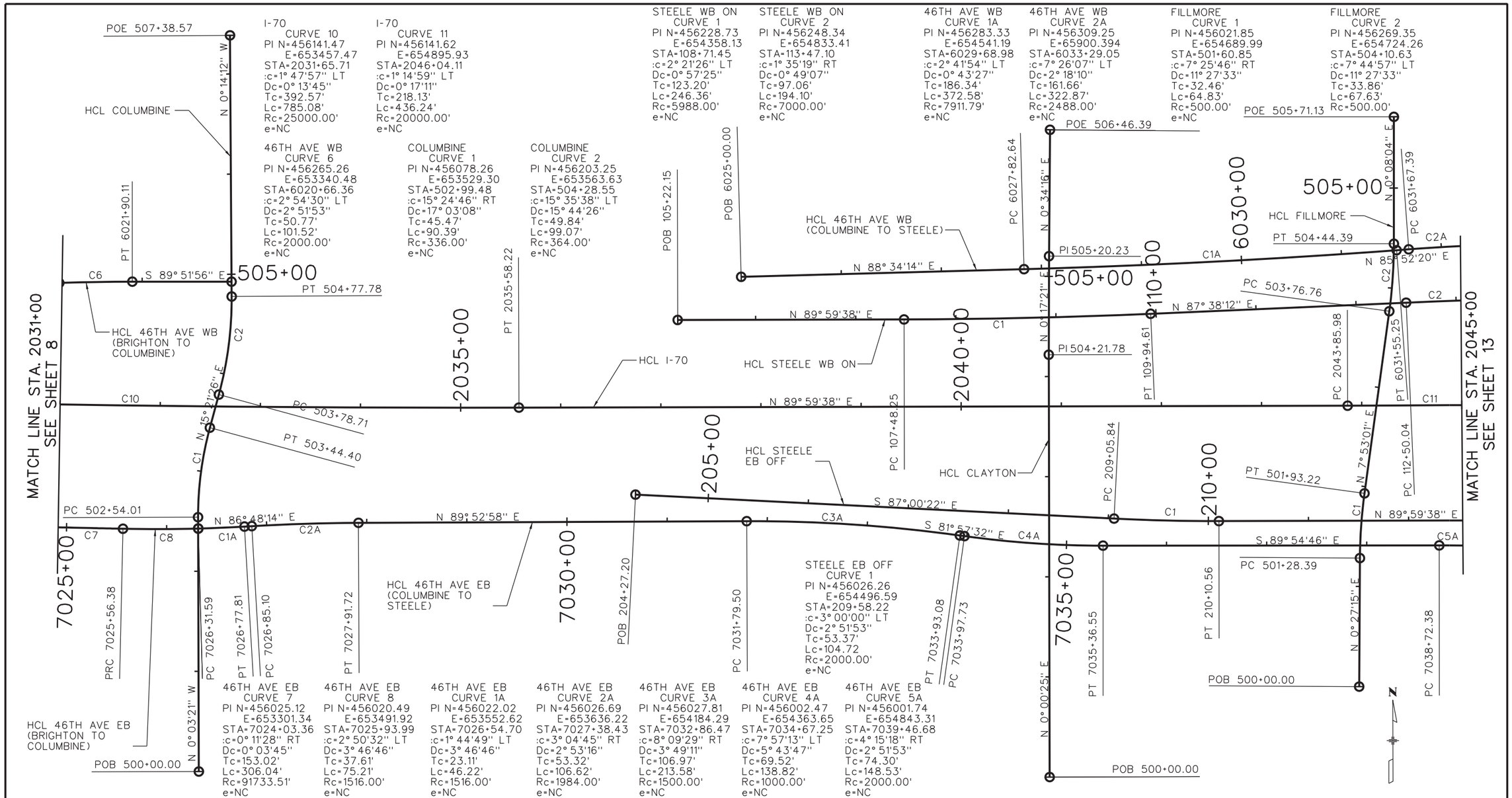

Kiewit meridiam PARTNERS

Central 70

CENTRAL 70 HORIZONTAL CONTROL STA 2031+00 TO STA 2045+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	12 of 53		Sheet Number 16

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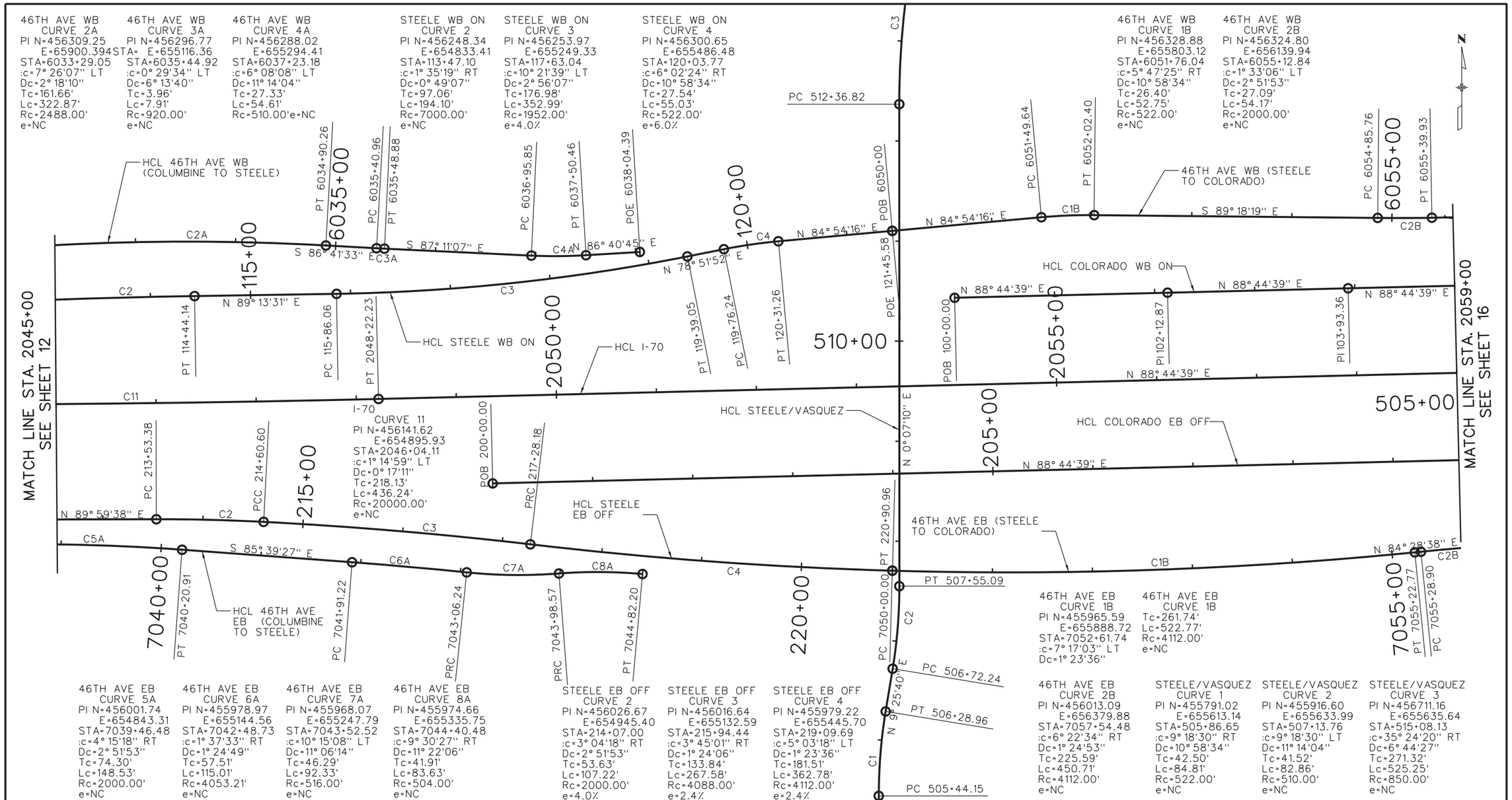

Kiewit meridiam PARTNERS

Central 70

CENTRAL 70
HORIZONTAL CONTROL
STA 2045+00 TO STA 2059+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	13 of 53

Project No./Code
FBR 0704-234
19631
Sheet Number 17

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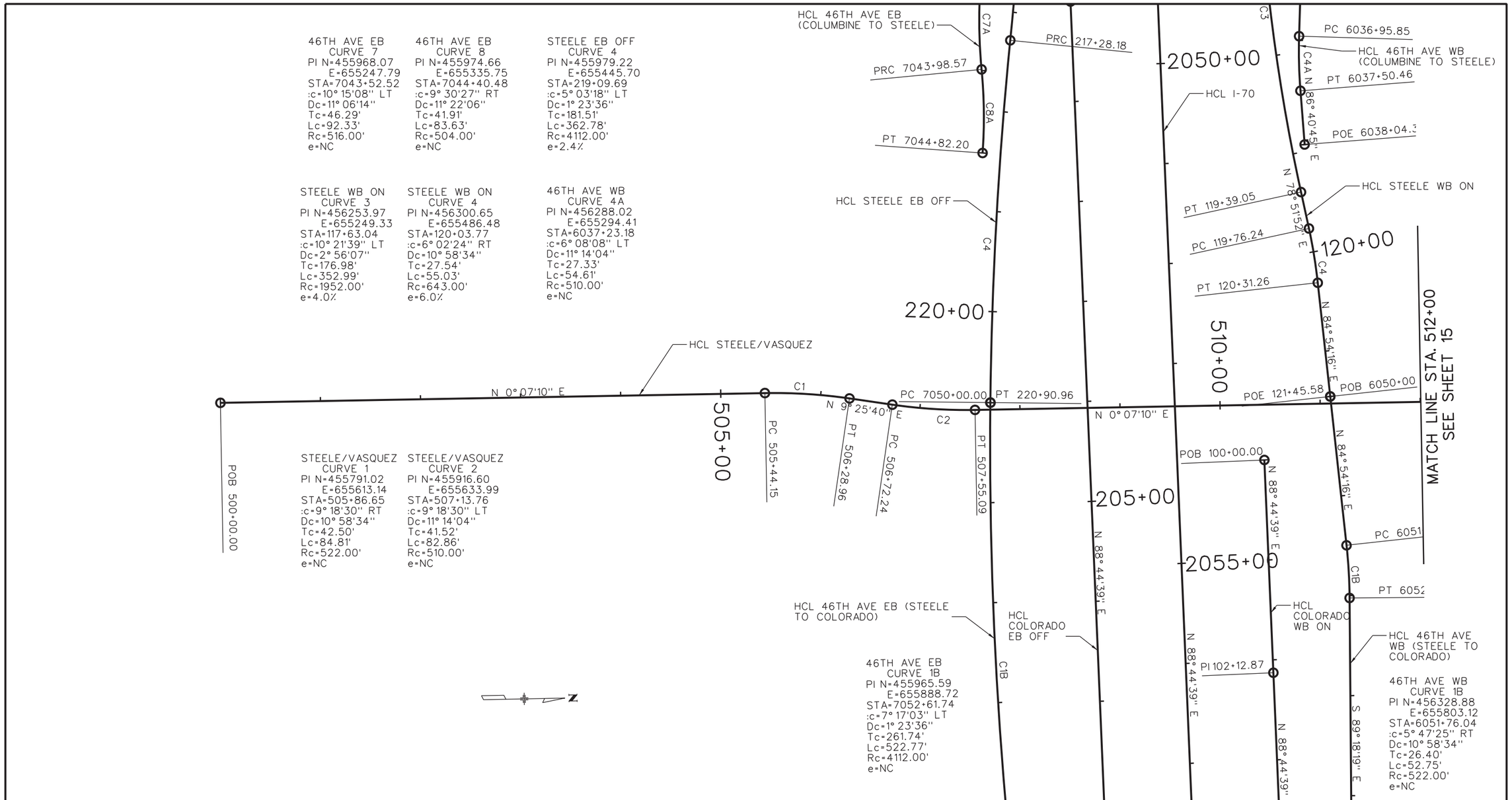

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 - HORIZONTAL CONTROL STEELE/VASQUEZ STA 500+00 TO STA 512+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	14 of 53		Sheet Number 18

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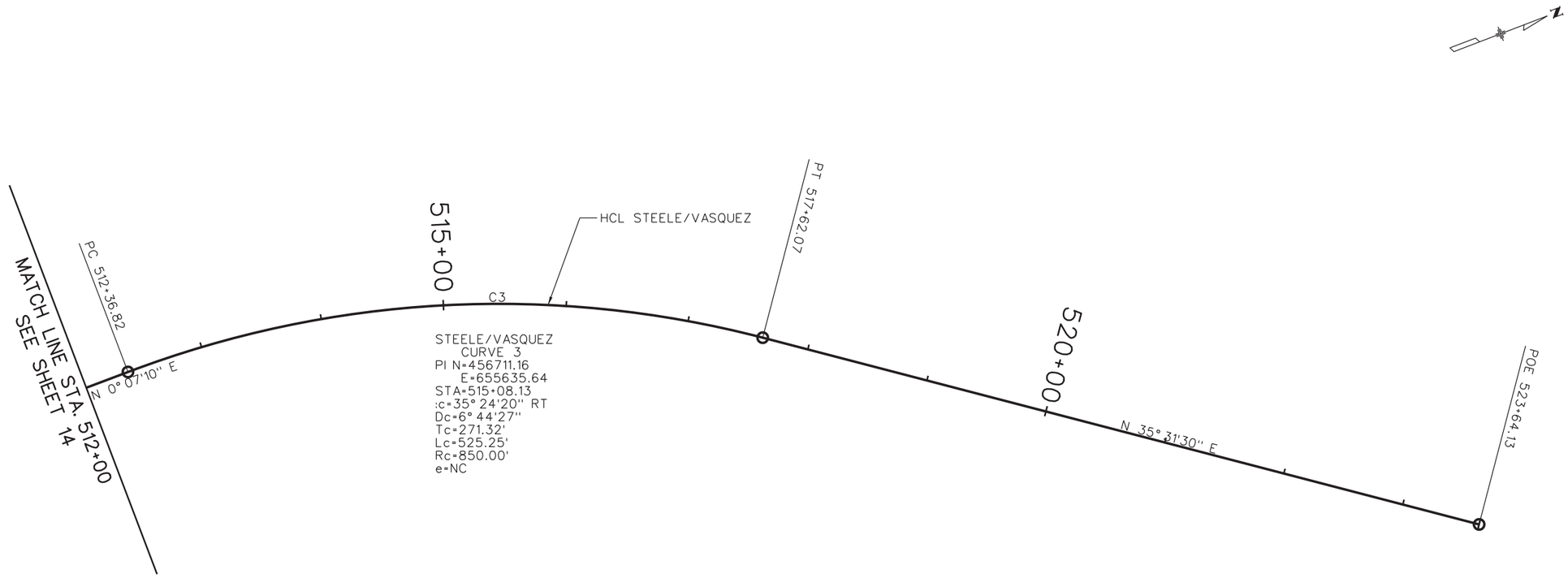


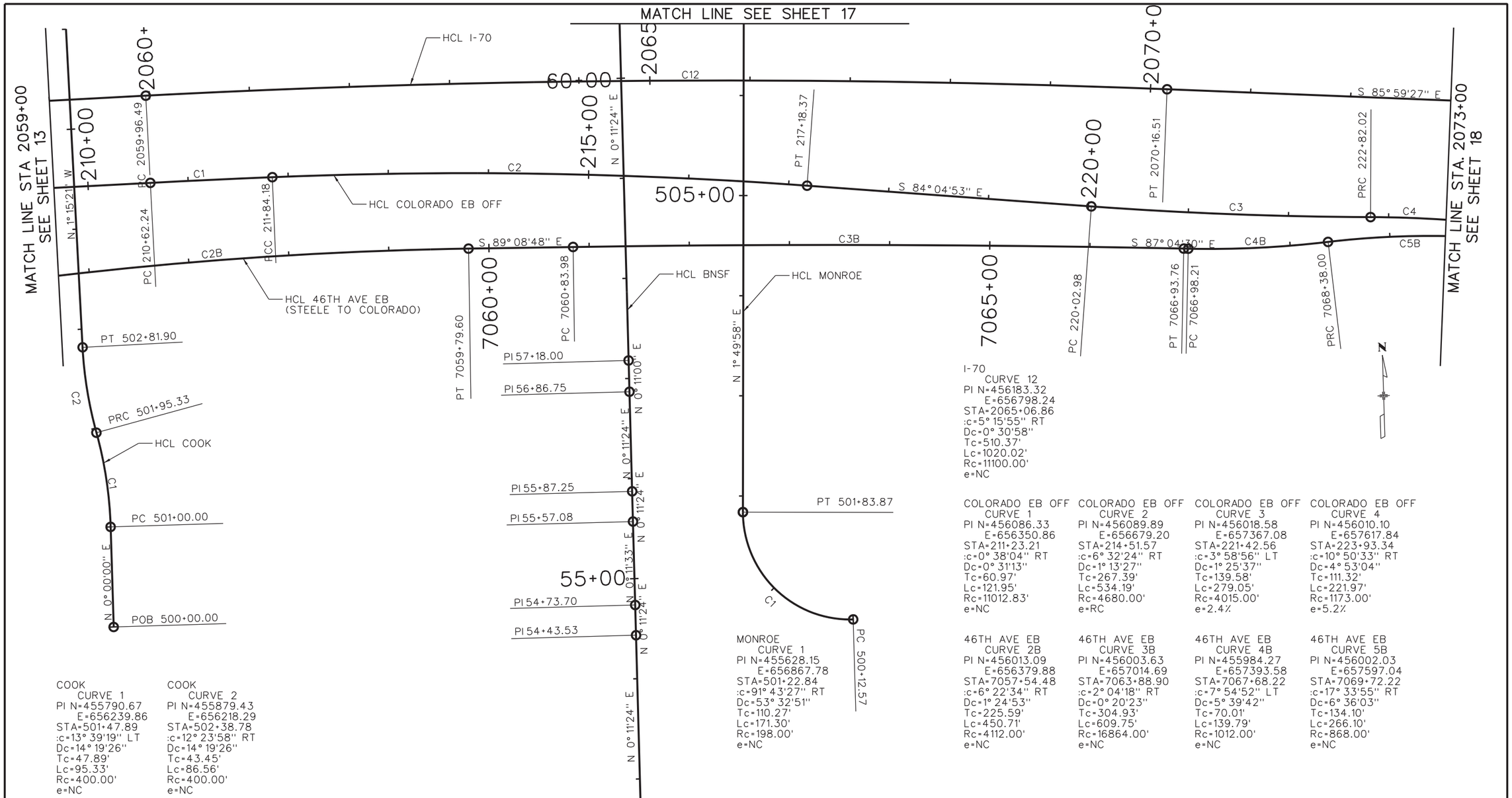
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 - HORIZONTAL CONTROL STEELE/VASQUEZ STA 512+00 TO STA 523+65.79				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	15 of 53	Sheet Number 19

martinezd 3:46:43 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan15.dgn



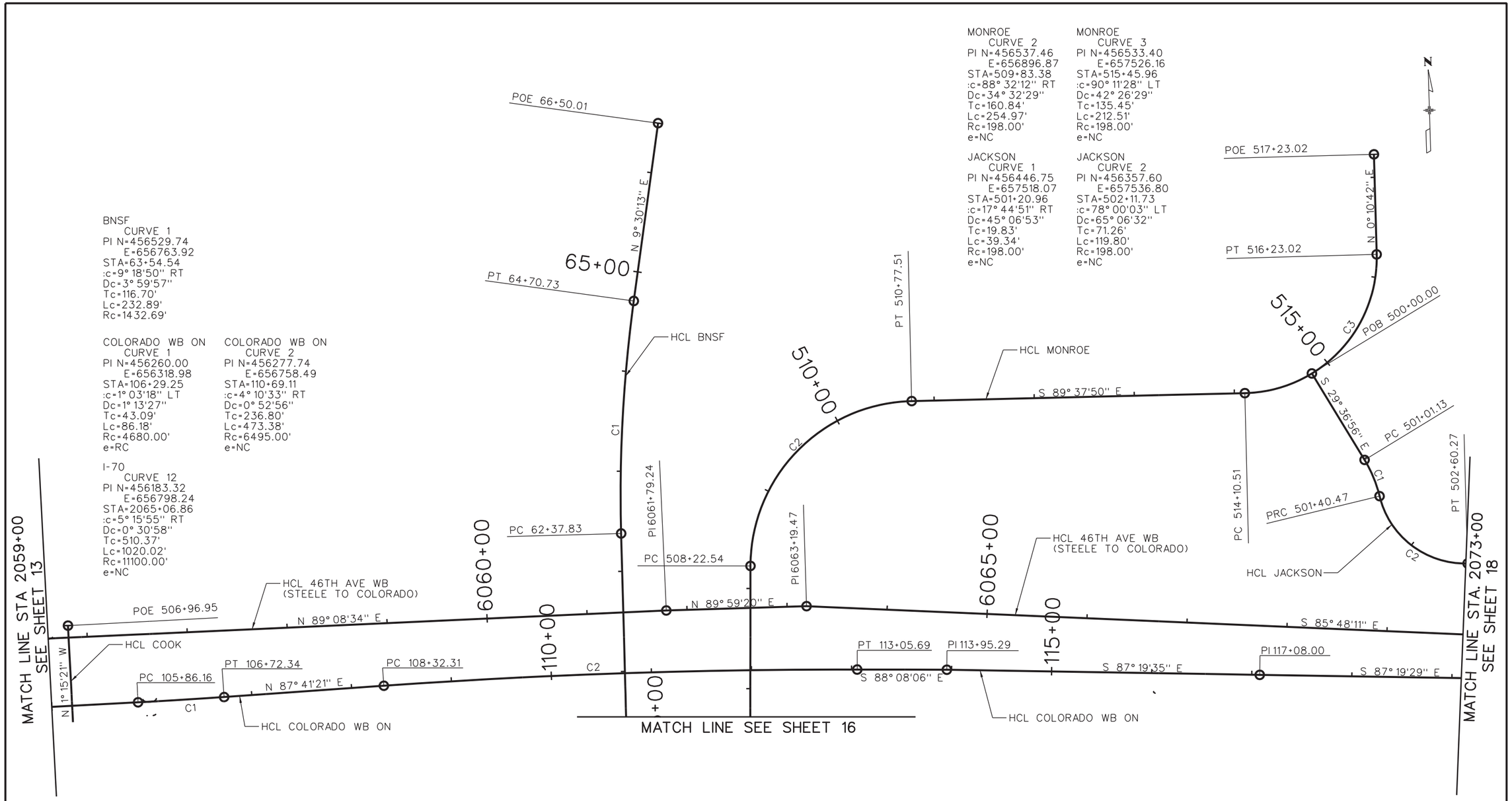
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2059+00 TO STA 2073+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	16 of 53		Sheet Number 20

martinezd 3:46:49 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan16.dgn



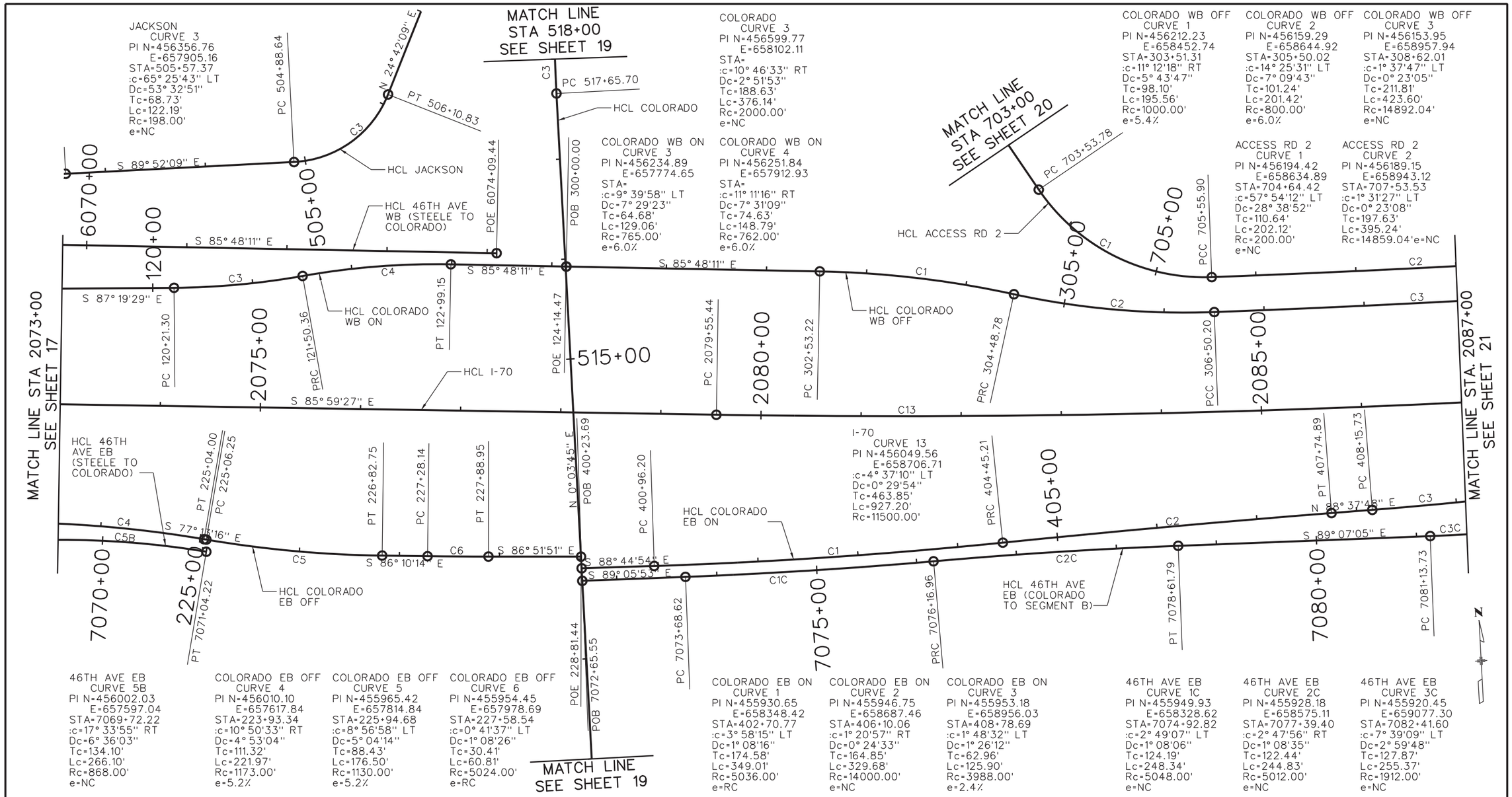
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2059+00 TO STA 2073+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	17 of 53		Sheet Number 21

martinezd 3:46:54 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan17.dgn



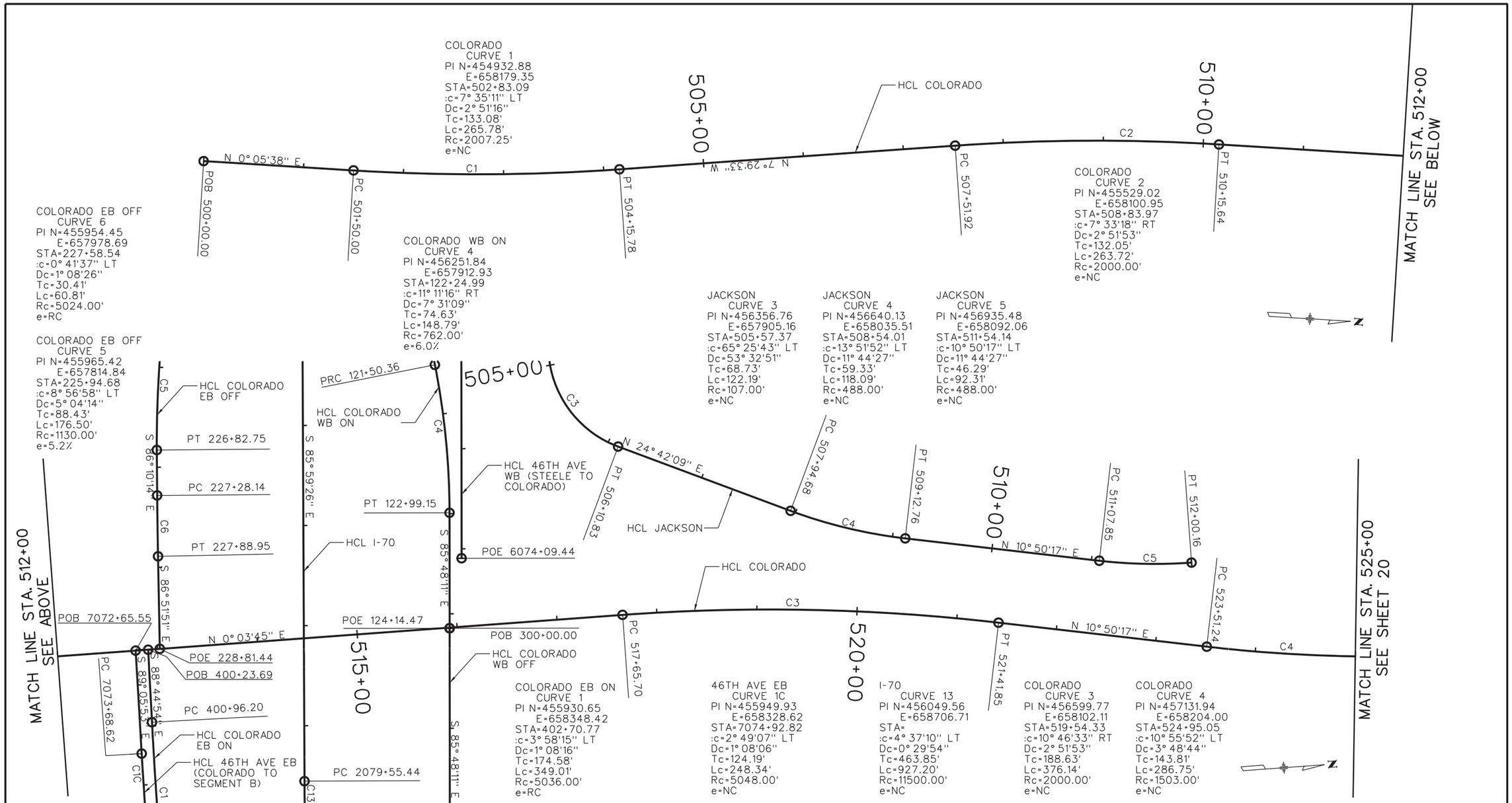
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2073+00 TO STA 2087+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	18 of 52		Sheet Number 22

martinezd 3:47:01 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\13599DES_GEOM-Plan18.dgn

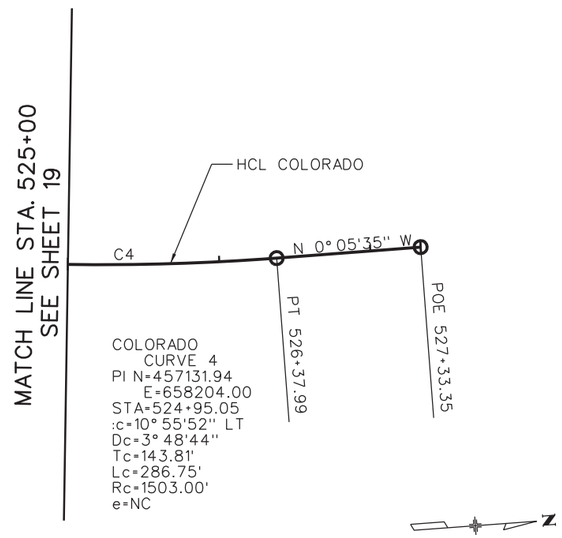


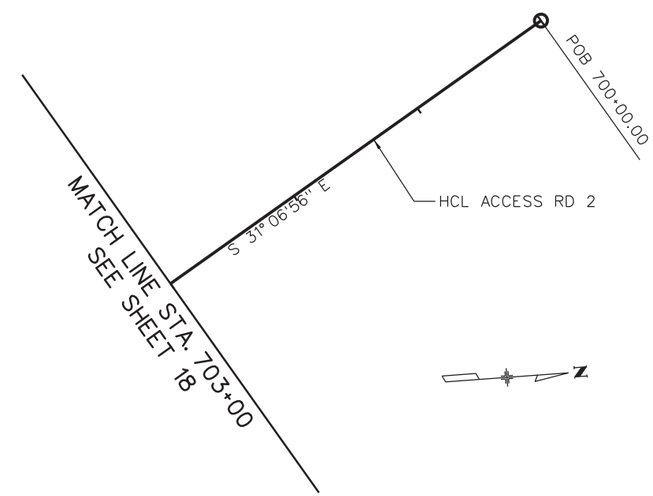
Kiewit meridiam PARTNERS

Central 70

CENTRAL 70 HORIZONTAL CONTROL - COLORADO STA 500+00 TO STA 525+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	19 of 53		Sheet Number 23

martinezd 3:47:05 PM pw:\\projectwise.pbid.com:pwise V8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan19.dgn





Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 - HORIZONTAL CONTROL COLORADO/ACCESS RD2 STA 525+00/700+00 TO STA 527+33/703+00			Project No./Code FBR 0704-234
Designer: KMP	Structure Numbers	-	19631
Detailer: KMP		-	
Subset: GEOMETRY	Subset Sheets: 20 of 53		Sheet Number 24

martinezd 3:47:09 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan20.dgn

ACCESS RD 2
CURVE 2
PI N=456189.15
E=658943.12
STA=707+53.53
:c=1° 31'27" LT
Dc=0° 23'08"
Tc=197.63'
Lc=395.24'
Rc=14859.04'
e=NC

ACCESS RD 2
CURVE 3
PI N=456191.99
E=659243.43
STA=710+53.84
:c=1° 13'30" RT
Dc=0° 45'38"
Tc=80.54'
Lc=161.07'
Rc=7533.00'
e=NC

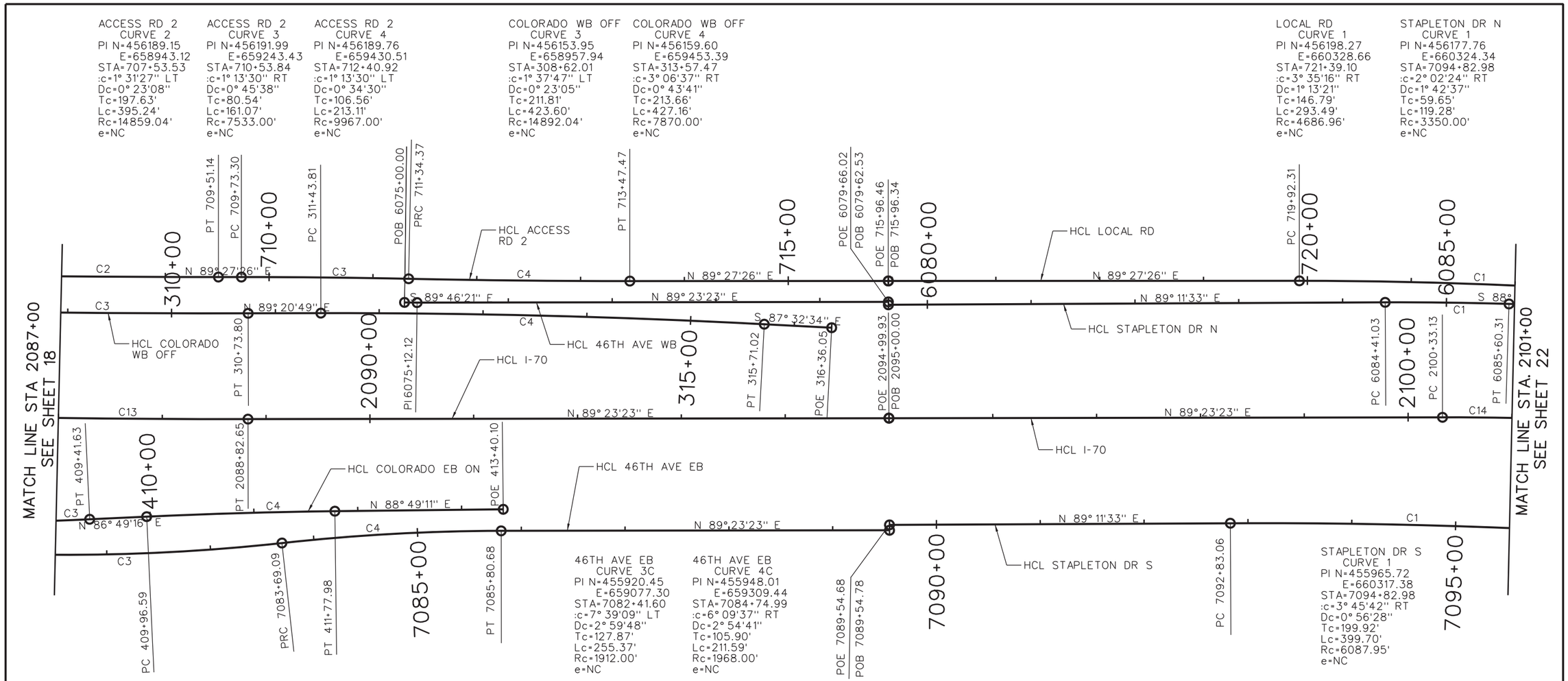
ACCESS RD 2
CURVE 4
PI N=456189.76
E=659430.51
STA=712+40.92
:c=1° 13'30" LT
Dc=0° 34'30"
Tc=106.56'
Lc=213.11'
Rc=9967.00'
e=NC

COLORADO WB OFF
CURVE 3
PI N=456153.95
E=658957.94
STA=308+62.01
:c=1° 37'47" LT
Dc=0° 23'05"
Tc=211.81'
Lc=423.60'
Rc=14892.04'
e=NC

COLORADO WB OFF
CURVE 4
PI N=456159.60
E=659453.39
STA=313+57.47
:c=3° 06'37" RT
Dc=0° 43'41"
Tc=213.66'
Lc=427.16'
Rc=7870.00'
e=NC

LOCAL RD
CURVE 1
PI N=456198.27
E=660328.66
STA=721+39.10
:c=3° 35'16" RT
Dc=1° 13'21"
Tc=146.79'
Lc=293.49'
Rc=4686.96'
e=NC

STAPLETON DR N
CURVE 1
PI N=456177.76
E=660324.34
STA=7094+82.98
:c=2° 02'24" RT
Dc=1° 42'37"
Tc=59.65'
Lc=119.28'
Rc=3350.00'
e=NC



46TH AVE EB
CURVE 3C
PI N=455920.45
E=659077.30
STA=7082+41.60
:c=7° 39'09" LT
Dc=2° 59'48"
Tc=127.87'
Lc=255.37'
Rc=1912.00'
e=NC

46TH AVE EB
CURVE 4C
PI N=455948.01
E=659309.44
STA=7084+74.99
:c=6° 09'37" RT
Dc=2° 54'41"
Tc=105.90'
Lc=211.59'
Rc=1968.00'
e=NC

STAPLETON DR S
CURVE 1
PI N=455965.72
E=660317.38
STA=7094+82.98
:c=3° 45'42" RT
Dc=0° 56'28"
Tc=199.92'
Lc=399.70'
Rc=6087.95'
e=NC

I-70
CURVE 13
PI N=456049.56
E=658706.71
STA=2084+19.30
:c=4° 37'10" LT
Dc=0° 29'54"
Tc=463.85'
Lc=927.20'
Rc=11500.00'
e=NC

COLORADO EB ON
CURVE 3
PI N=455953.18
E=658956.03
STA=408+78.69
:c=1° 48'32" LT
Dc=1° 26'12"
Tc=62.96'
Lc=125.90'
Rc=3988.00'
e=2.4%

COLORADO EB ON
CURVE 4
PI N=455964.74
E=659164.32
STA=410+87.29
:c=1° 59'55" RT
Dc=1° 06'07"
Tc=90.70'
Lc=181.39'
Rc=5200.00'
e=RC

I-70
CURVE 14
PI N=456071.47
E=660763.56
STA=2104+75.83
:c=14° 52'49" RT
Dc=1° 41'25"
Tc=442.70'
Lc=880.42'
Rc=3390.00'
e=4.0%

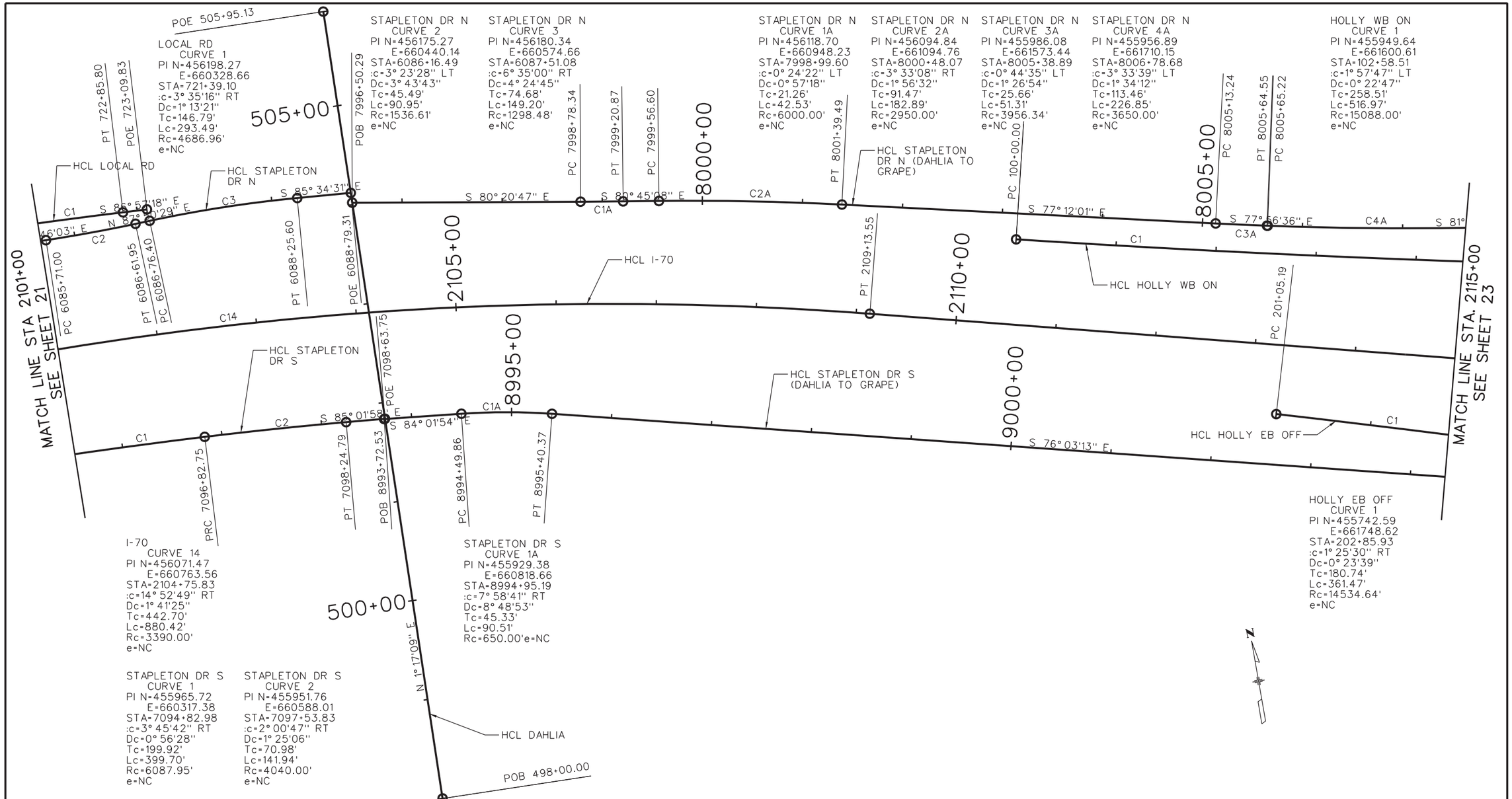
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL PLAN STA 2087+00 TO STA 2101+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	21 of 53		Sheet Number 25

martinezd 3:47:15 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan21.dgn



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2101+00 TO STA 2115+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets: 22 of 53			Sheet Number 26

martinezd 3:47:20 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan22.dgn

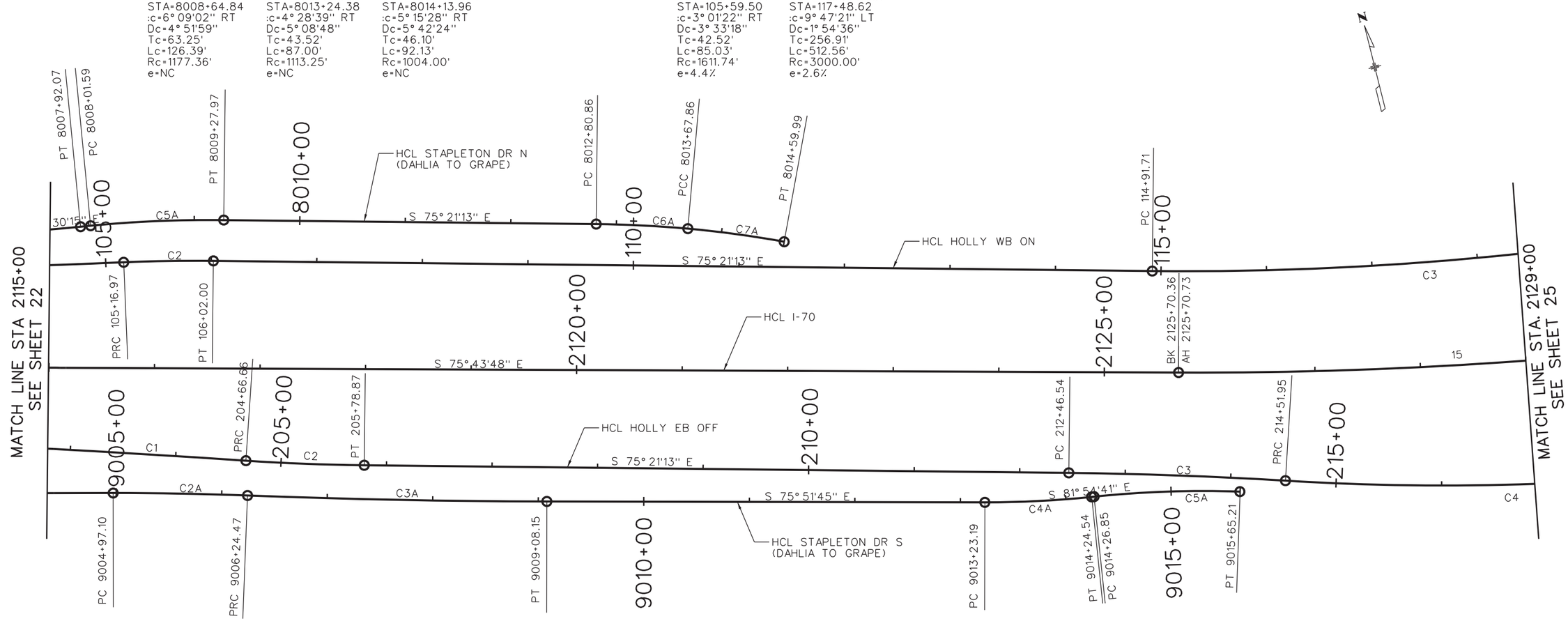
STAPLETON DR N
CURVE 5A
PI N=455929.37
E=661894.34
STA=8008+64.84
:c=6° 09'02" RT
Dc=4° 51'59"
Tc=63.25'
Lc=126.39'
Rc=1177.36'
e=NC

STAPLETON DR N
CURVE 6A
PI N=455813.15
E=662339.07
STA=8013+24.38
:c=4° 28'39" RT
Dc=5° 08'48"
Tc=43.52'
Lc=87.00'
Rc=1113.25'
e=NC

STAPLETON DR N
CURVE 7A
PI N=455783.78
E=662423.74
STA=8014+13.96
:c=5° 15'28" RT
Dc=5° 42'24"
Tc=46.10'
Lc=92.13'
Rc=1004.00'
e=NC

HOLLY WB ON
CURVE 2
PI N=455888.98
E=661895.47
STA=105+59.50
:c=3° 01'22" RT
Dc=3° 33'18"
Tc=42.52'
Lc=85.03'
Rc=1611.74'
e=4.4%

HOLLY WB ON
CURVE 3
PI N=455588.31
E=663045.97
STA=117+48.62
:c=9° 47'21" LT
Dc=1° 54'36"
Tc=256.91'
Lc=512.56'
Rc=3000.00'
e=2.6%



HOLLY EB OFF
CURVE 1
PI N=455742.59
E=661748.62
STA=202+85.93
:c=1° 25'30" RT
Dc=0° 23'39"
Tc=180.74'
Lc=361.47'
Rc=14534.64'
e=NC

HOLLY EB OFF
CURVE 2
PI N=455669.94
E=661974.07
STA=205+22.77
:c=3° 12'53" LT
Dc=2° 51'53"
Tc=56.12'
Lc=112.21'
Rc=2000.00'
e=3.6%

HOLLY EB OFF
CURVE 3
PI N=455460.95
E=662773.73
STA=213+49.27
:c=2° 51'49" RT
Dc=1° 23'39"
Tc=102.73'
Lc=205.41'
Rc=4110.00'
e=2.4%

HOLLY EB OFF
CURVE 4
PI N=455367.27
E=663070.68
STA=216+60.60
:c=9° 42'50" LT
Dc=2° 20'00"
Tc=208.65'
Lc=416.31'
Rc=2455.50'
e=3.4%

STAPLETON DR S
CURVE 2A
PI N=455672.52
E=661853.00
STA=9005+60.79
:c=2° 15'11" RT
Dc=1° 46'08"
Tc=63.69'
Lc=127.37'
Rc=3239.02'
e=NC

STAPLETON DR S
CURVE 3A
PI N=455615.18
E=662050.39
STA=9007+66.33
:c=2° 03'43" LT
Dc=0° 43'37"
Tc=141.86'
Lc=283.68'
Rc=7882.79'
e=NC

STAPLETON DR S
CURVE 4A
PI N=455466.76
E=662639.60
STA=9013+73.92
:c=6° 02'56" LT
Dc=5° 58'06"
Tc=50.72'
Lc=101.35'
Rc=960.00'
e=NC

STAPLETON DR S
CURVE 5A
PI N=455449.55
E=662760.71
STA=9014+96.14
:c=7° 55'40" RT
Dc=5° 43'47"
Tc=69.29'
Lc=138.37'
Rc=1000.00'
e=NC

I-70
CURVE 15
PI N=455419.56
E=663326.68
STA=2131+15.95
:c=14° 29'09" LT
Dc=1° 20'08"
Tc=545.22'
Lc=1084.62'
Rc=4290.00'
e=3.4%

Kiewit meridiam PARTNERS

Central 70

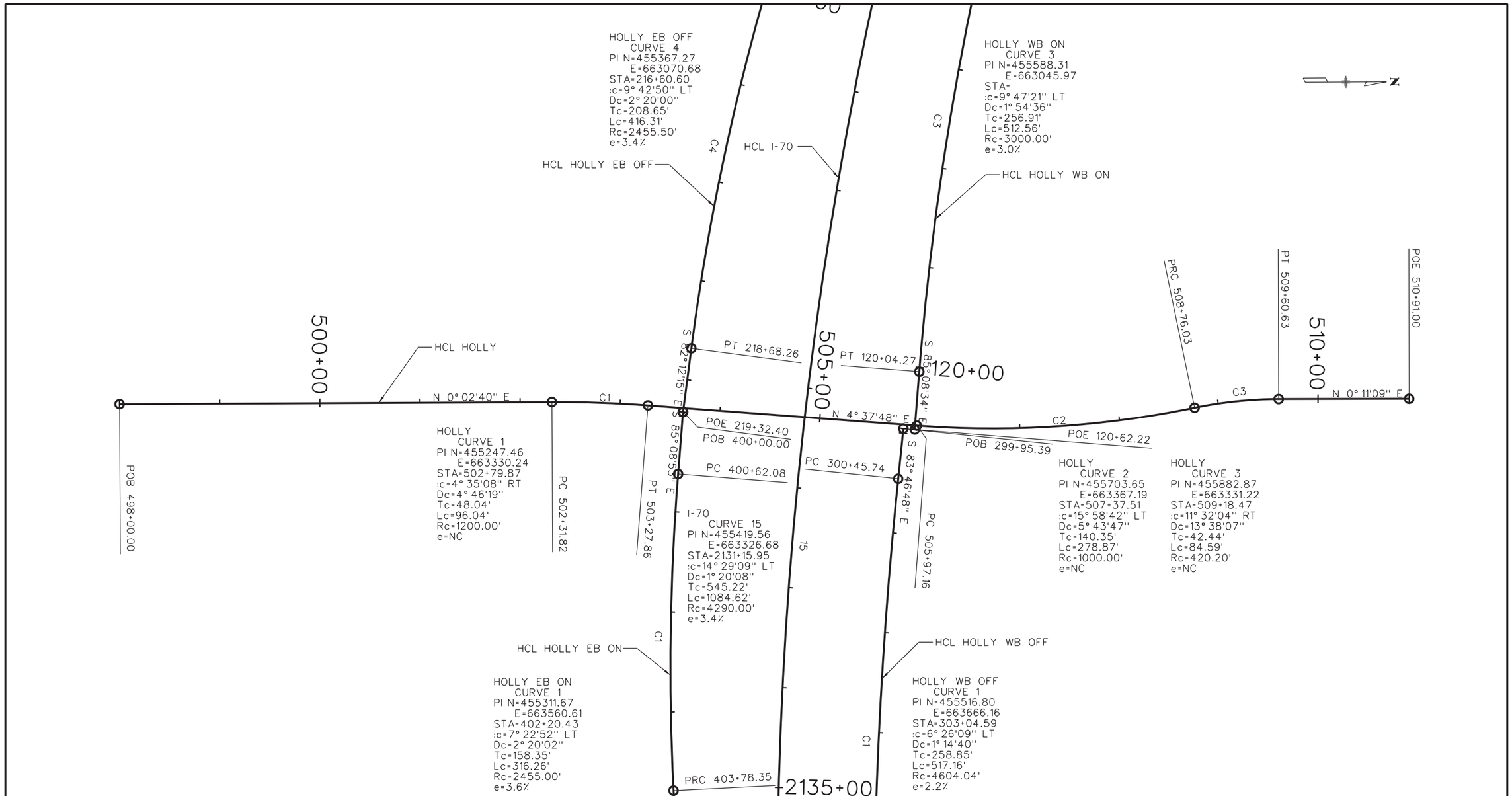
0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL
STA 2115+00 TO STA 2129+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	23 of 53

Project No./Code
FBR 0704-234
19631
Sheet Number 27

martinezd 3:47:24 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan23.dgn

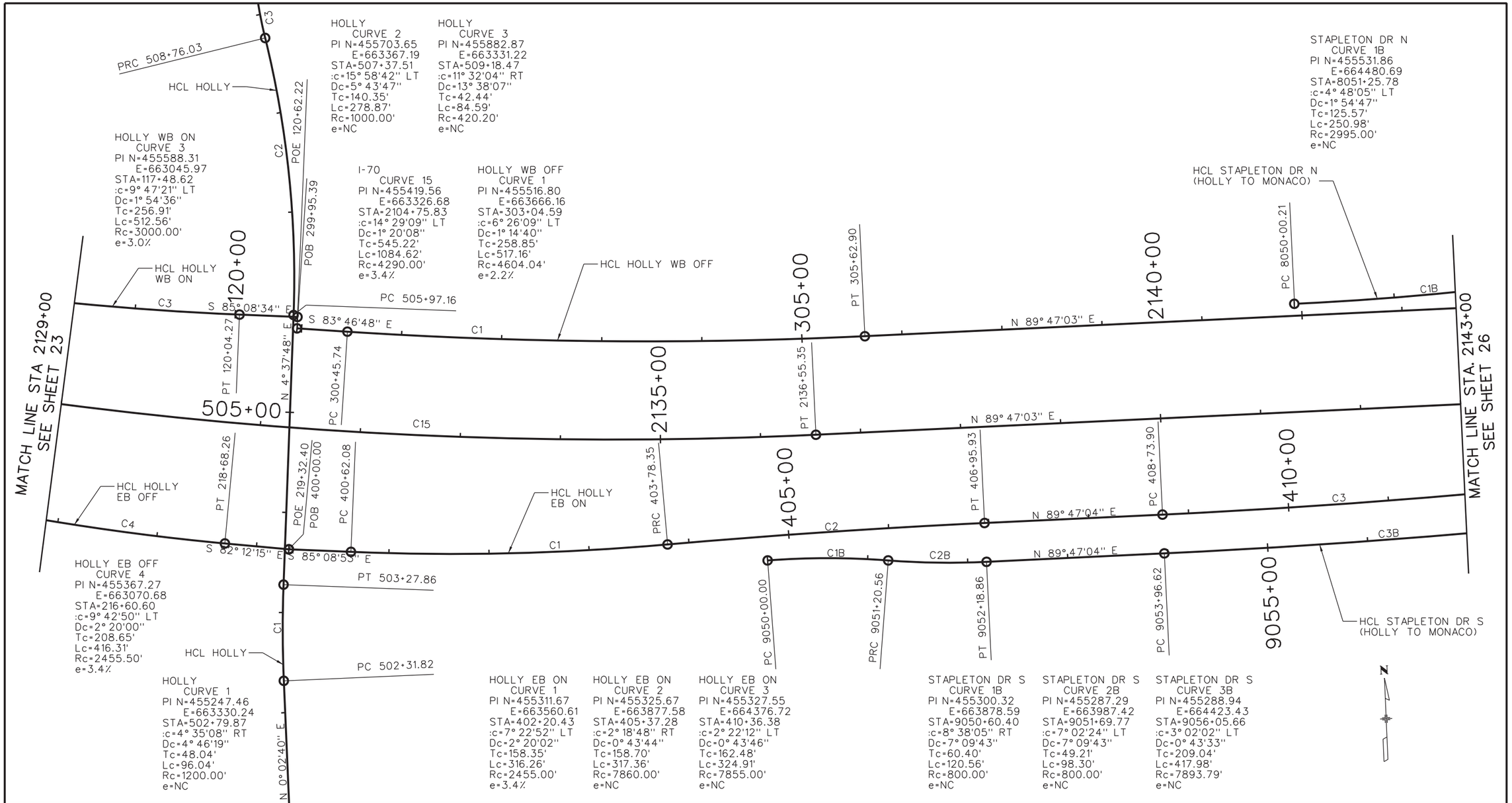


Kiewit meridiam PARTNERS

Central 70

CENTRAL 70 HORIZONTAL CONTROL - HOLLY STA 498+00 TO STA 510+91				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets: 24 of 53			Sheet Number 28

martinezd 3:47:29 PM pw:\\projectwise.pbid.com:pwiseV8\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135999DES_GEOM-Plan24.dgn



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2129+00 TO STA 2143+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets: 25 of 53			Sheet Number 29

martinezd 3:47:33 PM pw:\\projectwise.pbid.com:pwiseY8\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan25.dgn

STAPLETON DR N
CURVE 1B
PI N=455531.86
E=664480.69
STA=8051+25.78
:c=4° 48'05" LT
Dc=1° 54'47"
Tc=125.57'
Lc=250.98'
Rc=2995.00'
e=NC

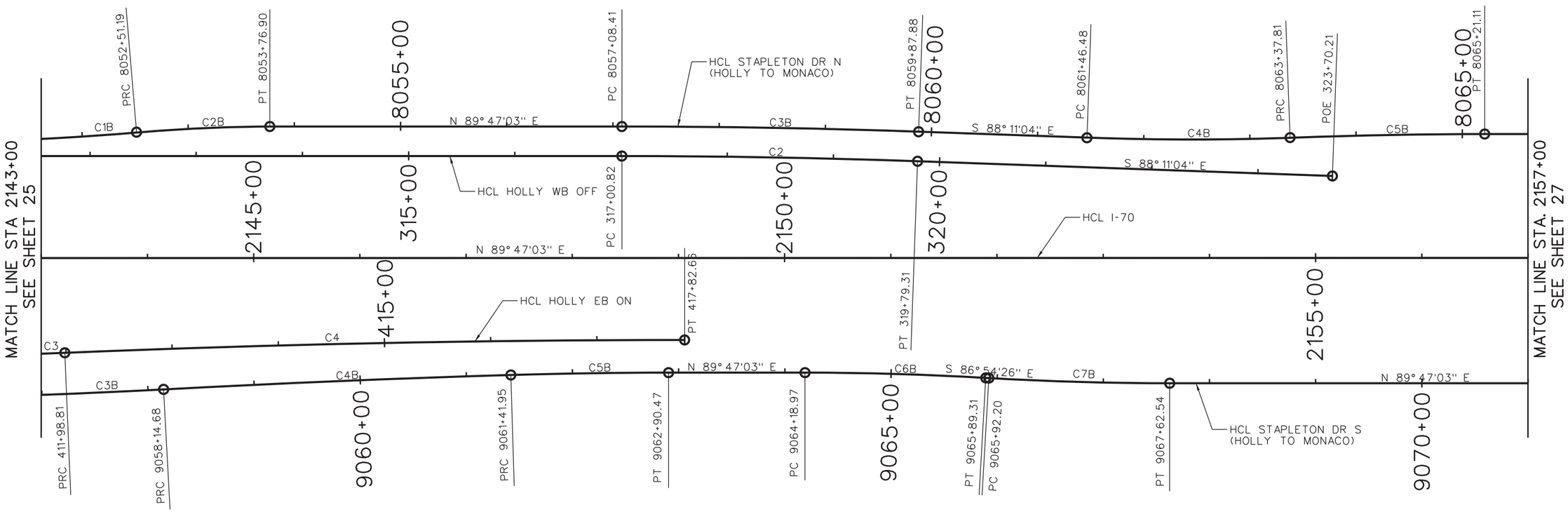
STAPLETON DR N
CURVE 2B
PI N=455548.36
E=664668.63
STA=8053+14.29
:c=4° 48'05" RT
Dc=3° 49'57"
Tc=62.68'
Lc=125.28'
Rc=1495.00'
e=NC

STAPLETON DR N
CURVE 3B
PI N=455550.37
E=665202.57
STA=8058+48.16
:c=2° 01'53" RT
Dc=0° 43'37"
Tc=139.75'
Lc=279.46'
Rc=7882.79'
e=NC

STAPLETON DR N
CURVE 4B
PI N=455537.89
E=665596.42
STA=8062+42.19
:c=4° 08'13" LT
Dc=2° 09'44"
Tc=95.71'
Lc=191.34'
Rc=2650.00'
e=NC

STAPLETON DR N
CURVE 5B
PI N=455545.48
E=665783.64
STA=8064+29.47
:c=2° 06'20" RT
Dc=1° 08'55"
Tc=91.66'
Lc=183.30'
Rc=4988.00'
e=NC

HOLLY WB OFF
CURVE 2
PI N=455522.58
E=665202.18
STA=308+40.08
:c=2° 01'53" RT
Dc=0° 43'46"
Tc=139.26'
Lc=278.49'
Rc=7855.00'
e=NC



HOLLY EB ON
CURVE 3
PI N=455327.55
E=664376.72
STA=410+36.38
:c=2° 22'12" LT
Dc=0° 43'46"
Tc=162.48'
Lc=324.91'
Rc=7855.00'
e=NC

HOLLY EB ON
CURVE 4
PI N=455348.05
E=664830.70
STA=414+90.78
:c=2° 22'12" RT
Dc=0° 24'21"
Tc=291.97'
Lc=583.85'
Rc=14115.00'
e=NC

STAPLETON DR S
CURVE 3B
PI N=455288.94
E=664423.43
STA=9056+05.66
:c=3° 02'02" LT
Dc=0° 43'33"
Tc=209.04'
Lc=417.98'
Rc=7893.79'
e=NC

STAPLETON DR S
CURVE 4B
PI N=455310.07
E=664795.58
STA=9059+78.32
:c=1° 19'58" RT
Dc=0° 24'26"
Tc=163.65'
Lc=327.27'
Rc=14070.00'
e=NC

STAPLETON DR S
CURVE 5B
PI N=455318.02
E=665033.40
STA=9062+16.25
:c=1° 42'04" RT
Dc=1° 08'45"
Tc=74.23'
Lc=148.45'
Rc=5000.00'
e=NC

STAPLETON DR S
CURVE 6B
PI N=455319.11
E=665321.32
STA=9065+04.16
:c=3° 18'30" RT
Dc=1° 56'32"
Tc=85.20'
Lc=170.32'
Rc=2950.00'
e=NC

STAPLETON DR S
CURVE 7B
PI N=455309.76
E=665494.34
STA=9066+77.39
:c=3° 18'30" LT
Dc=1° 56'32"
Tc=85.20'
Lc=170.34'
Rc=2950.00'
e=NC

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2143+00 TO STA 2157+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	26 of 53	Sheet Number 30

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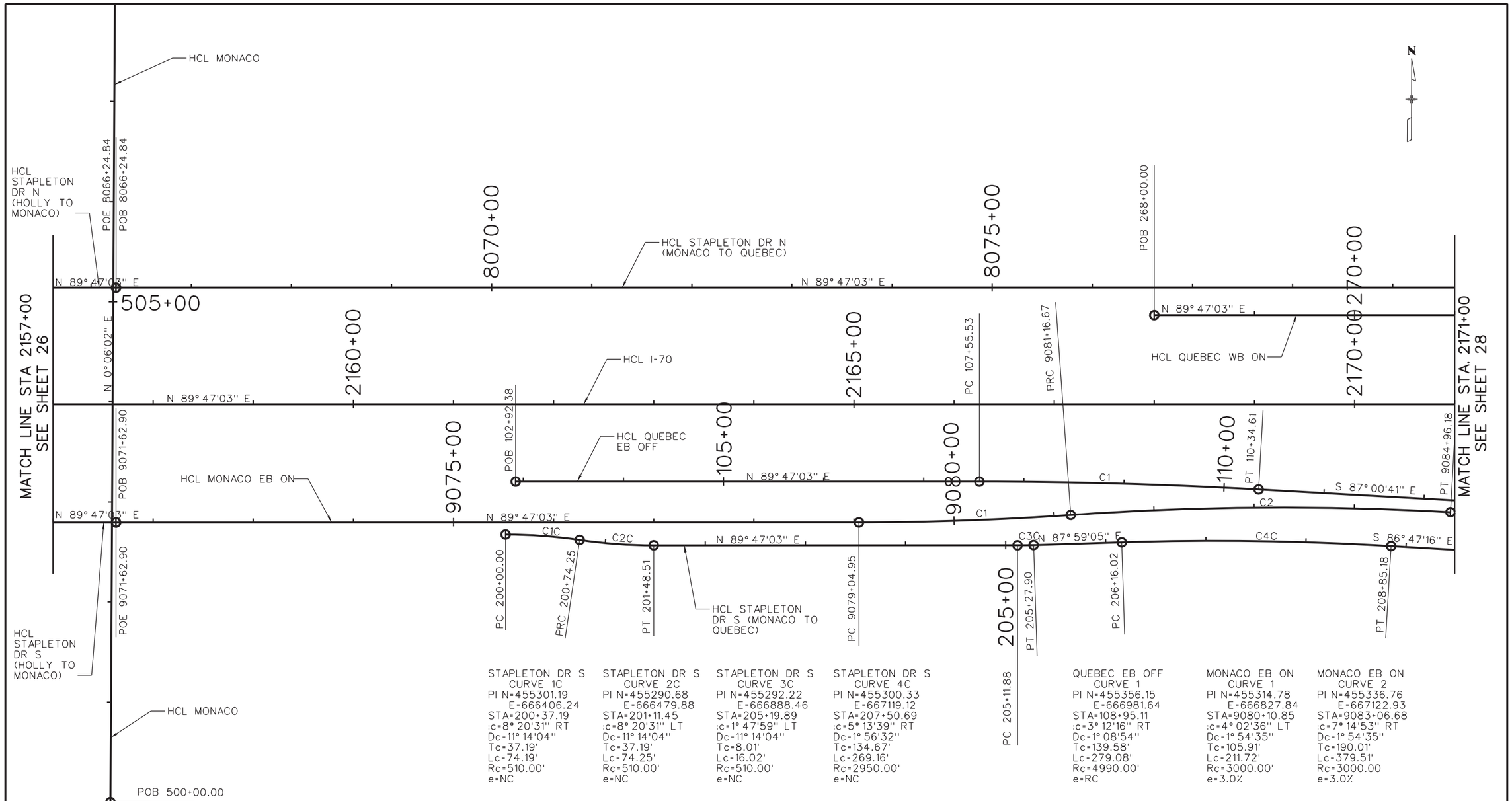


STAPLETON DR S
CURVE 1C
PI N=455301.19
E=666406.24
STA=200+37.19
:c=8° 20'31" RT
Dc=11° 14'04"
Tc=37.19'
Lc=74.19'
Rc=510.00'
e=NC

STAPLETON DR S
CURVE 2C
PI N=455290.68
E=666479.88
STA=201+11.45
:c=8° 20'31" LT
Dc=11° 14'04"
Tc=37.19'
Lc=74.25'
Rc=510.00'
e=NC

STAPLETON DR S
CURVE 3C
PI N=455292.22
E=666888.46
STA=205+19.89
:c=1° 47'59" LT
Dc=11° 14'04"
Tc=8.01'
Lc=16.02'
Rc=510.00'
e=NC

STAPLETON DR S
CURVE 4C
PI N=455300.33
E=667119.12
STA=207+50.69
:c=5° 13'39" RT
Dc=1° 56'32"
Tc=134.67'
Lc=269.16'
Rc=2950.00'
e=NC

QUEBEC EB OFF
CURVE 1
PI N=455356.15
E=666981.64
STA=108+95.11
:c=3° 12'16" RT
Dc=1° 08'54"
Tc=139.58'
Lc=279.08'
Rc=4990.00'
e=RC

MONACO EB ON
CURVE 1
PI N=455314.78
E=666827.84
STA=9080+10.85
:c=4° 02'36" LT
Dc=1° 54'35"
Tc=105.91'
Lc=211.72'
Rc=3000.00'
e=3.0%

MONACO EB ON
CURVE 2
PI N=455336.76
E=667122.93
STA=9083+06.68
:c=7° 14'53" RT
Dc=1° 54'35"
Tc=190.01'
Lc=379.51'
Rc=3000.00
e=3.0%

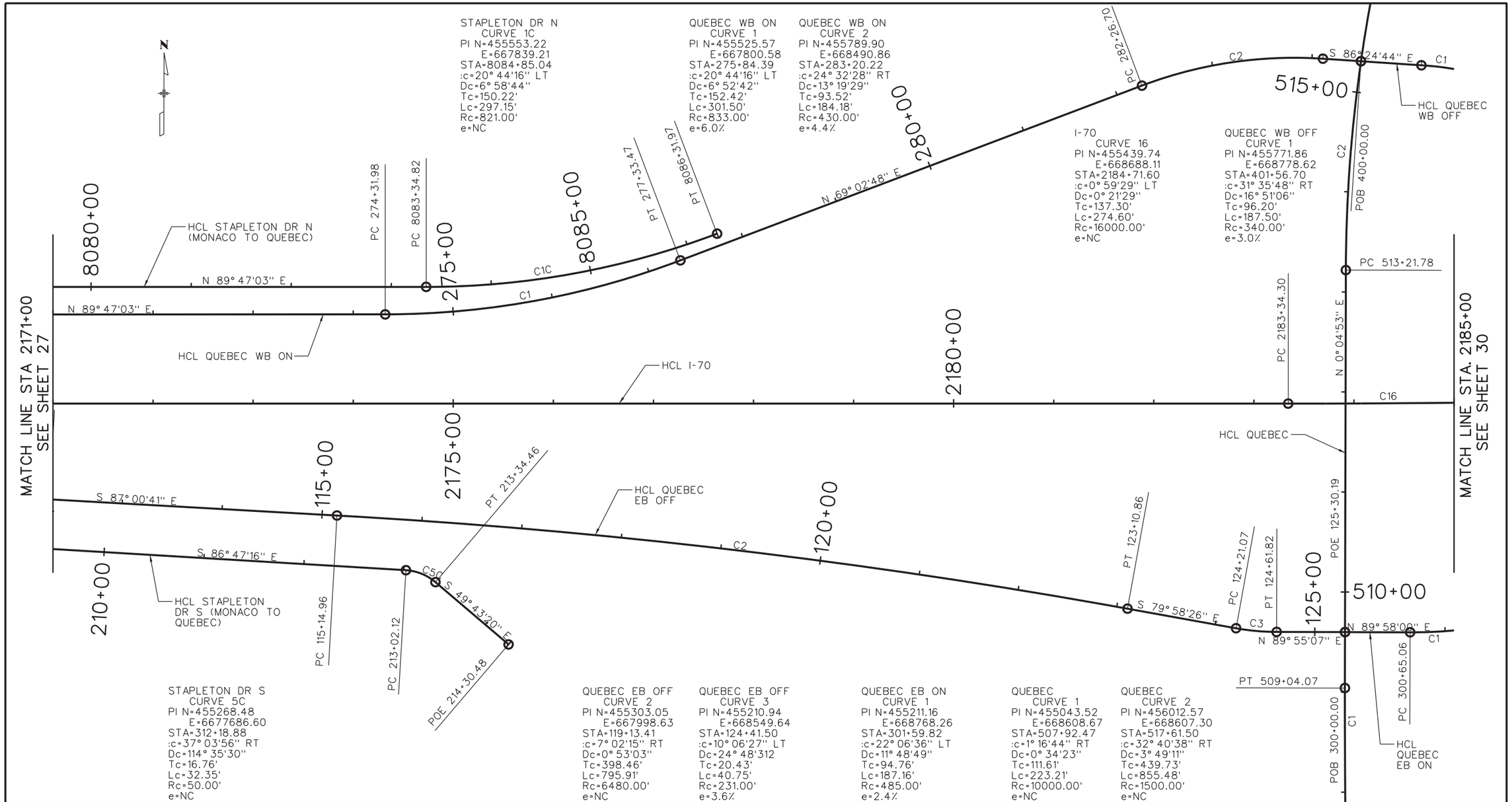
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2157+00 TO STA 2171+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets: 27 of 53			Sheet Number 31

martinezd 3:47:44 PM pw:\\projectwise.pbid.com:pwiseV8\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan27.dgn

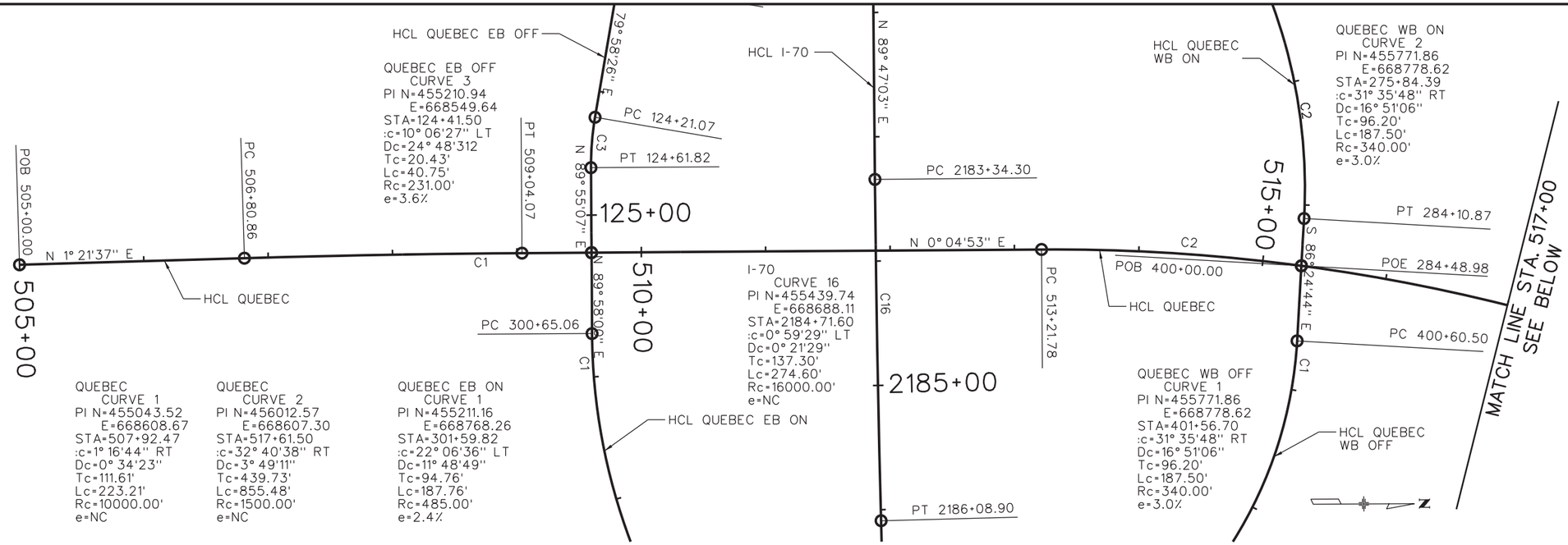


Kiewit meridiam PARTNERS

Central 70

CENTRAL 70 HORIZONTAL CONTROL STA 2171+00 TO STA 2185+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets: 28 of 53			Sheet Number 32

martinezd 3:47:48 PM pw:\\projectwise.pbid.com:pwiseV8\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan28.dgn



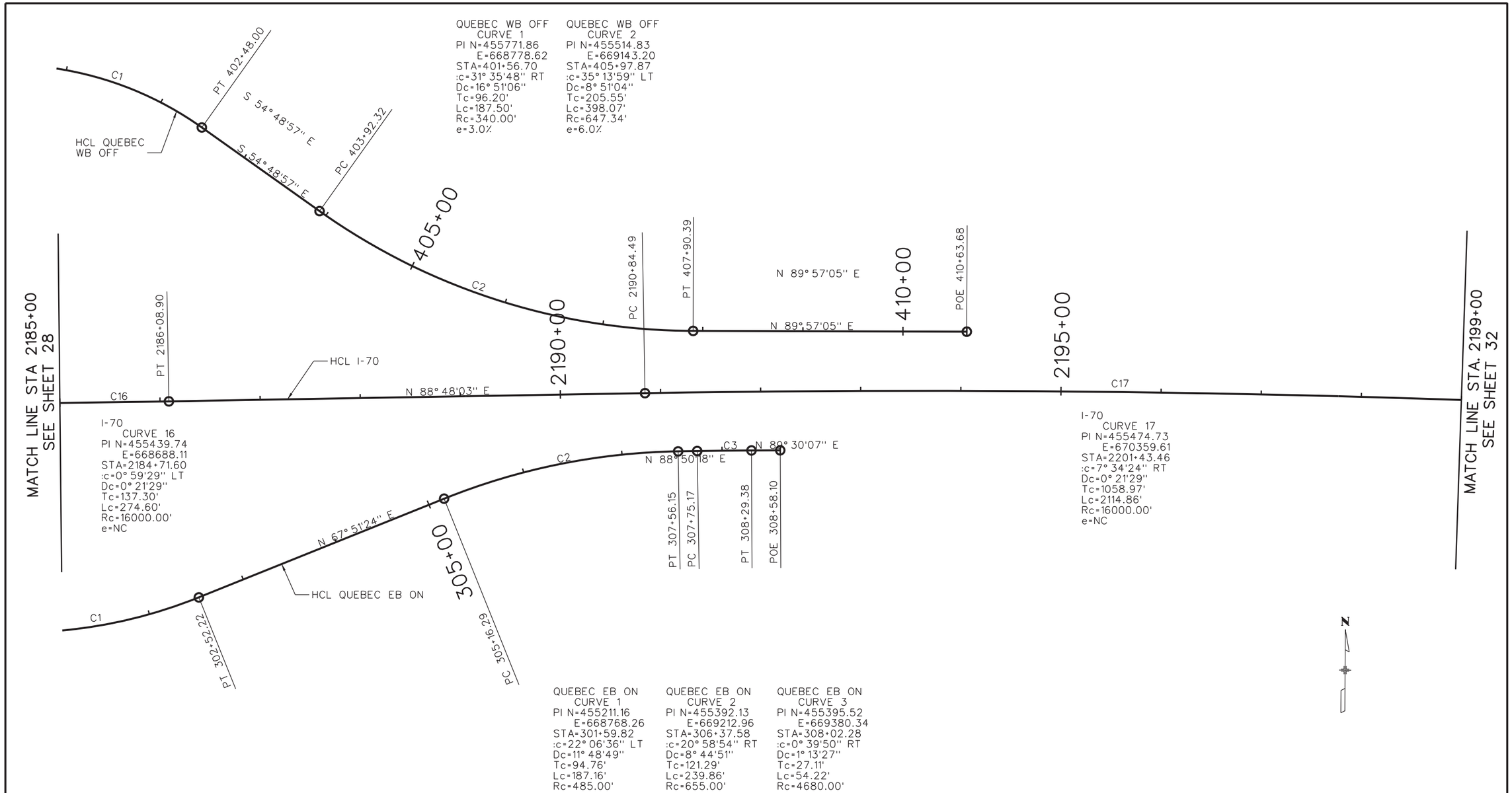
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL - QUEBEC STA 505+00 TO STA 525+58.73				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	29 of 53		Sheet Number 33

martinezd 3:47:54 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\13599DES_GEOM-Plan29.dgn



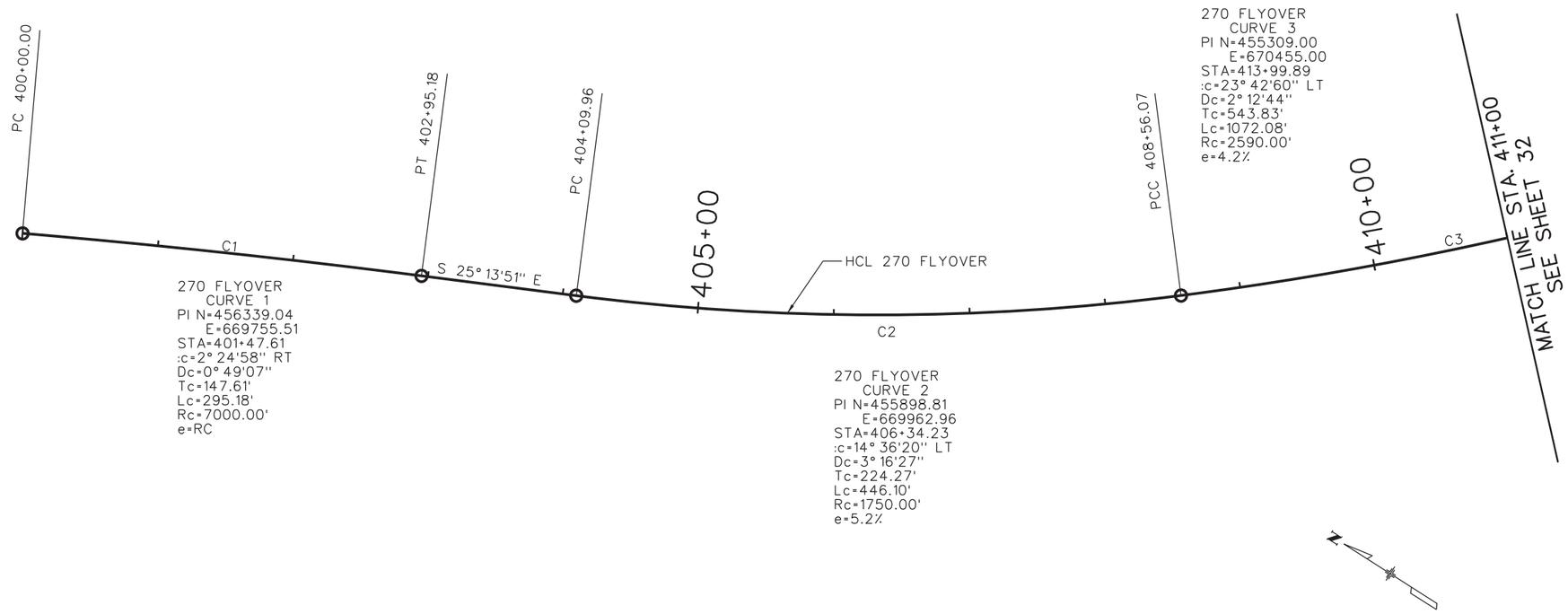
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2185+00 TO STA 2199+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	30 of 53		Sheet Number 34

martinezd 3:47:58 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan30.dgn



Kiewit meridiam PARTNERS

Central 70

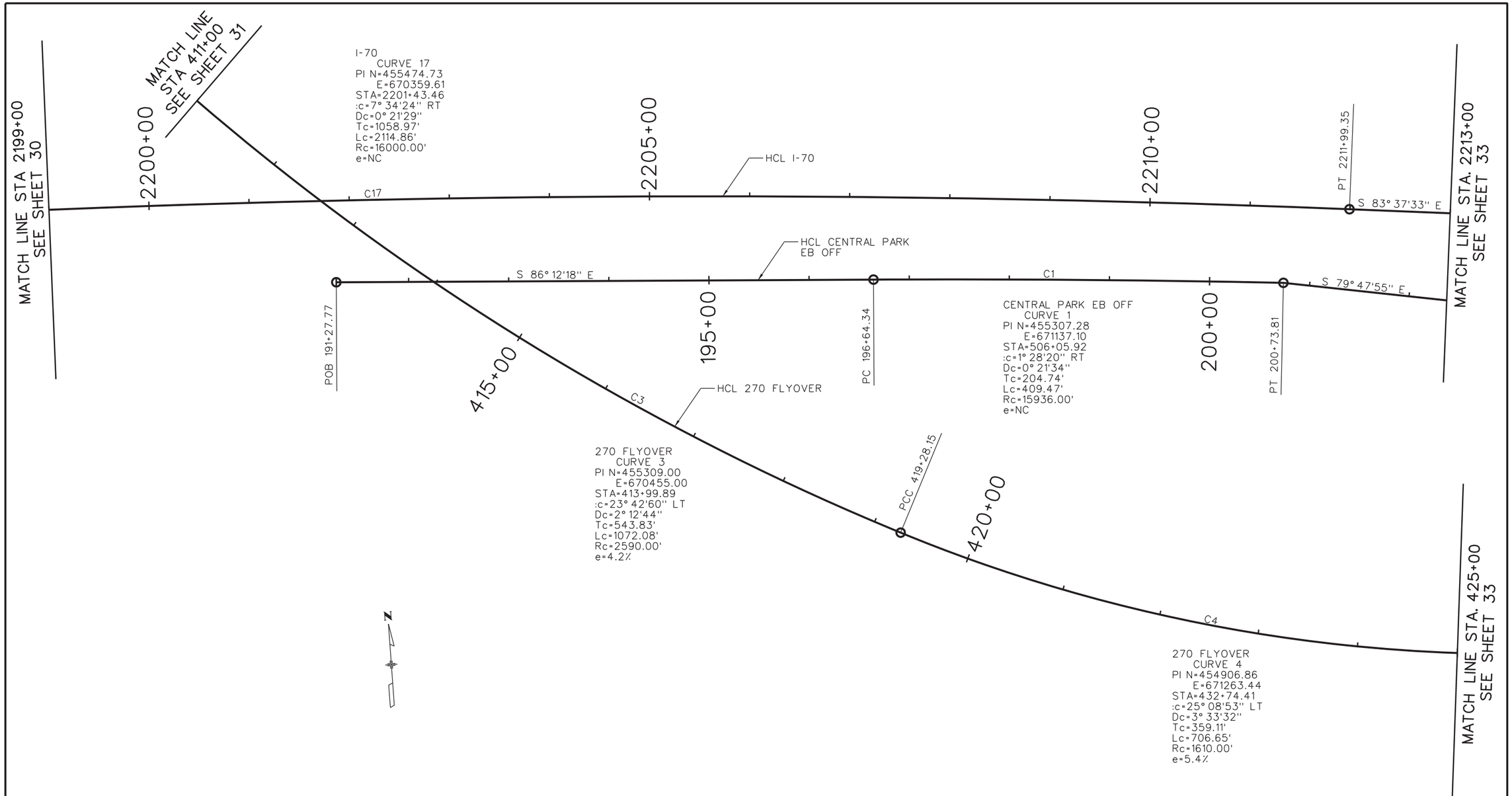
0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL I-270
STA 400+00 TO STA 411+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	31 of 53

Project No./Code
FBR 0704-234
19631
Sheet Number 35

martinezd 3:48:04 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan31.dgn



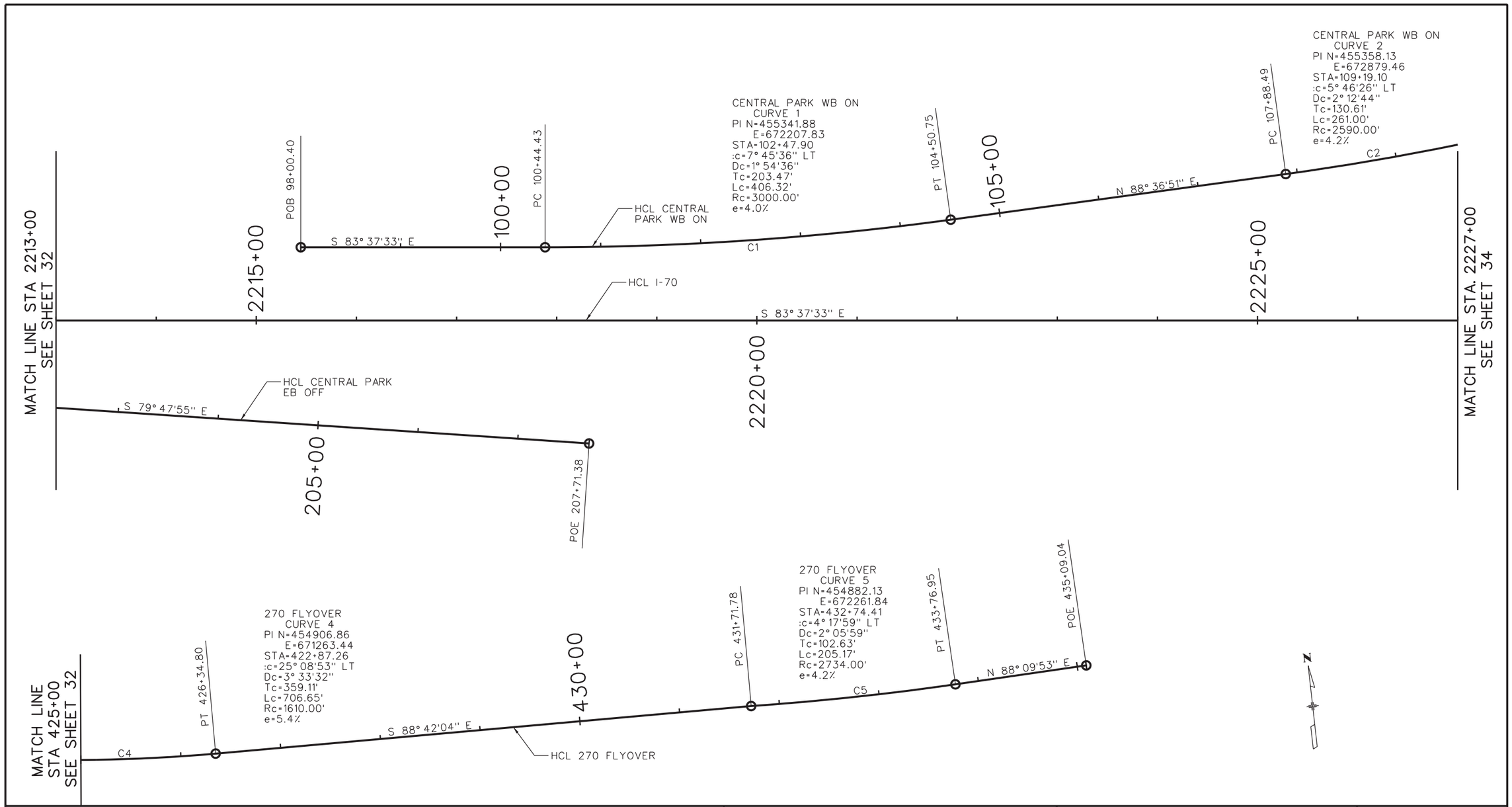
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2199+00 TO STA 2213+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets: 32 of 53			Sheet Number 36

martinezd 3:48:08 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan32.dgn



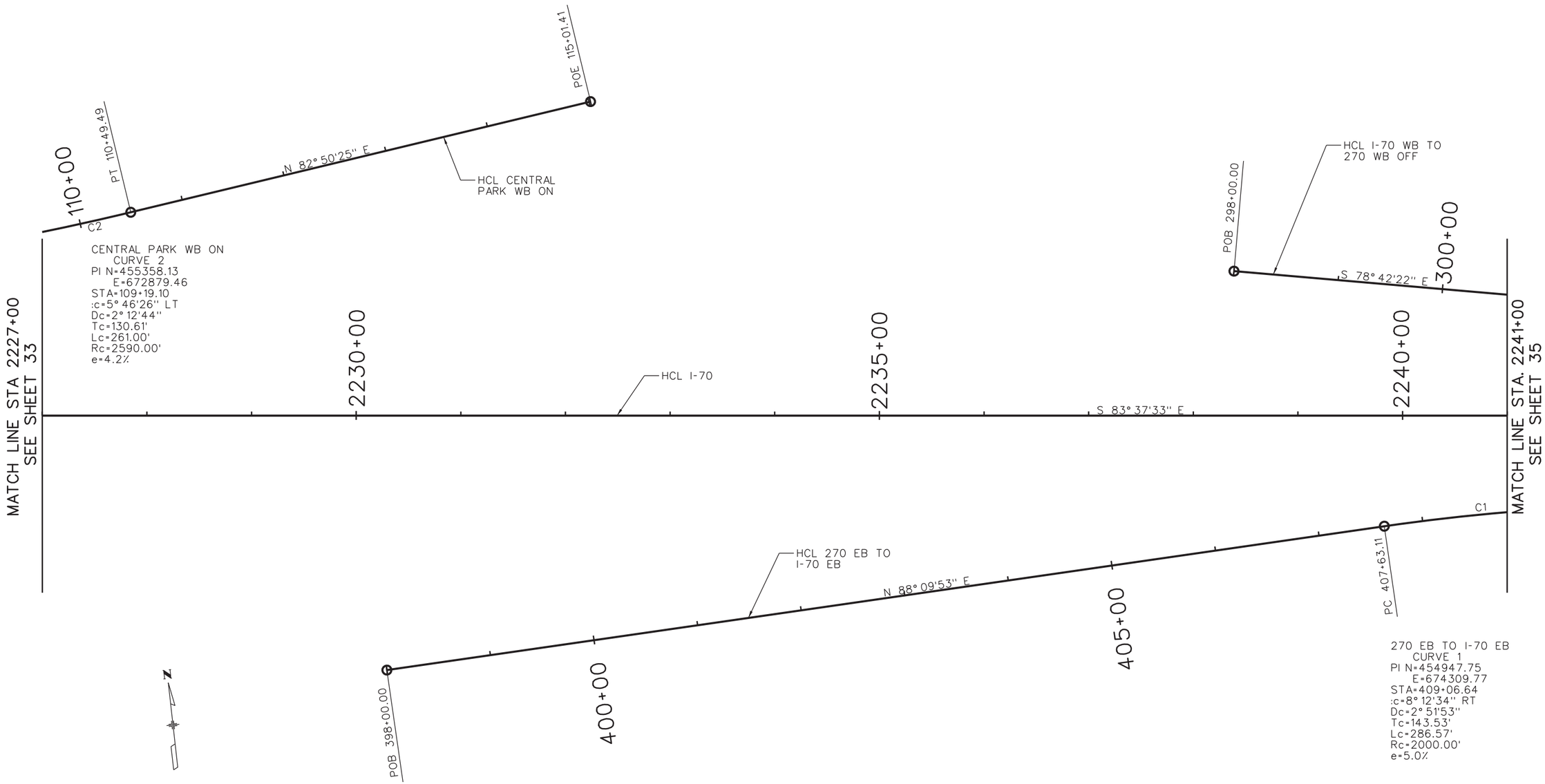
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2213+00 TO STA 2227+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets: 33 of 53			Sheet Number 37

martinezd 3:48:11 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\13599DES_GEOM-Plan33.dgn



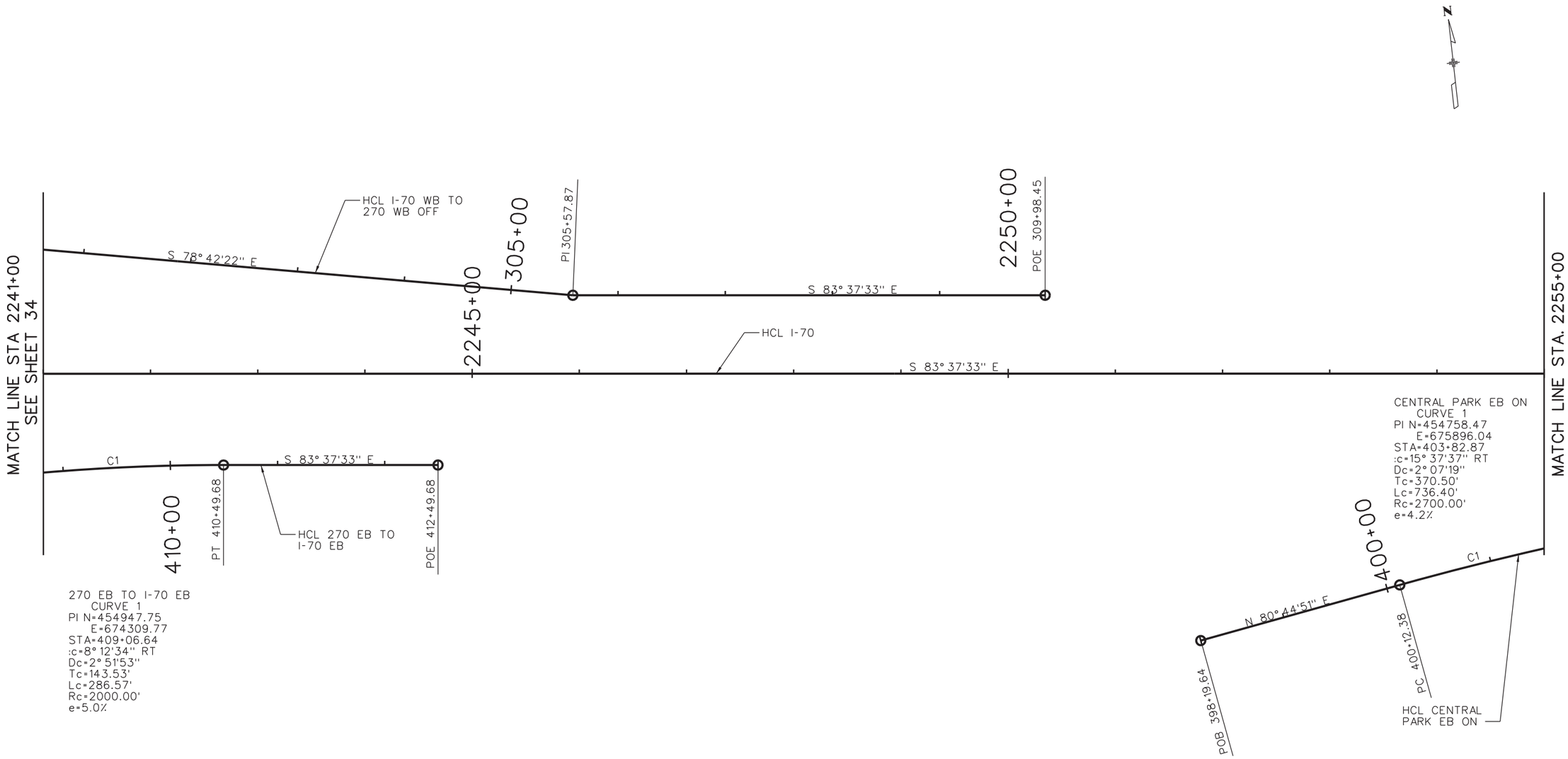
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2227+00 TO STA 2241+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	34 of 53		Sheet Number 38

martinezd 3:48:17 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan34.dgn



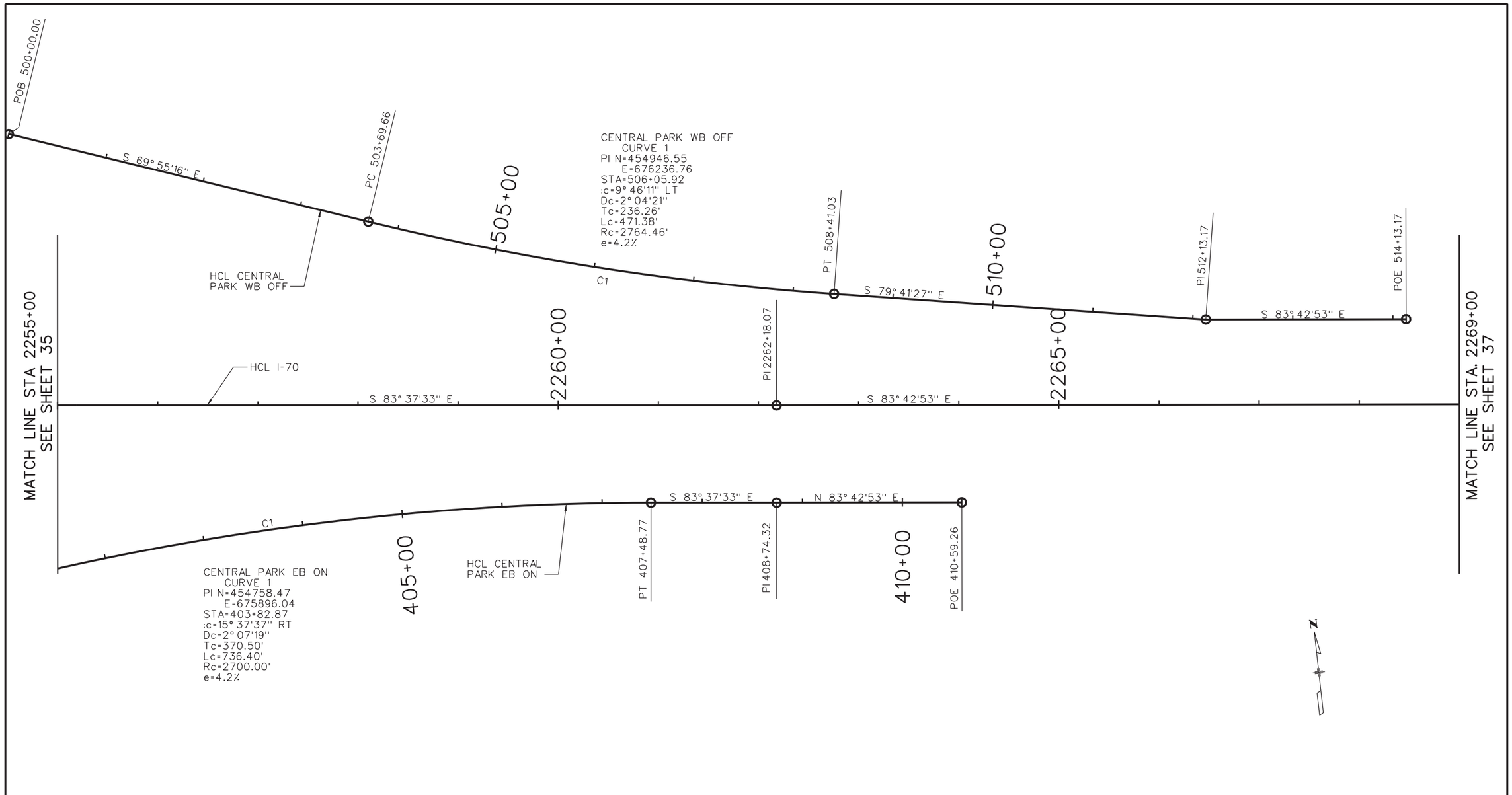
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2241+00 TO STA 2255+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	35 of 53	Sheet Number 39

martinezd 3:48:21 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan35.dgn



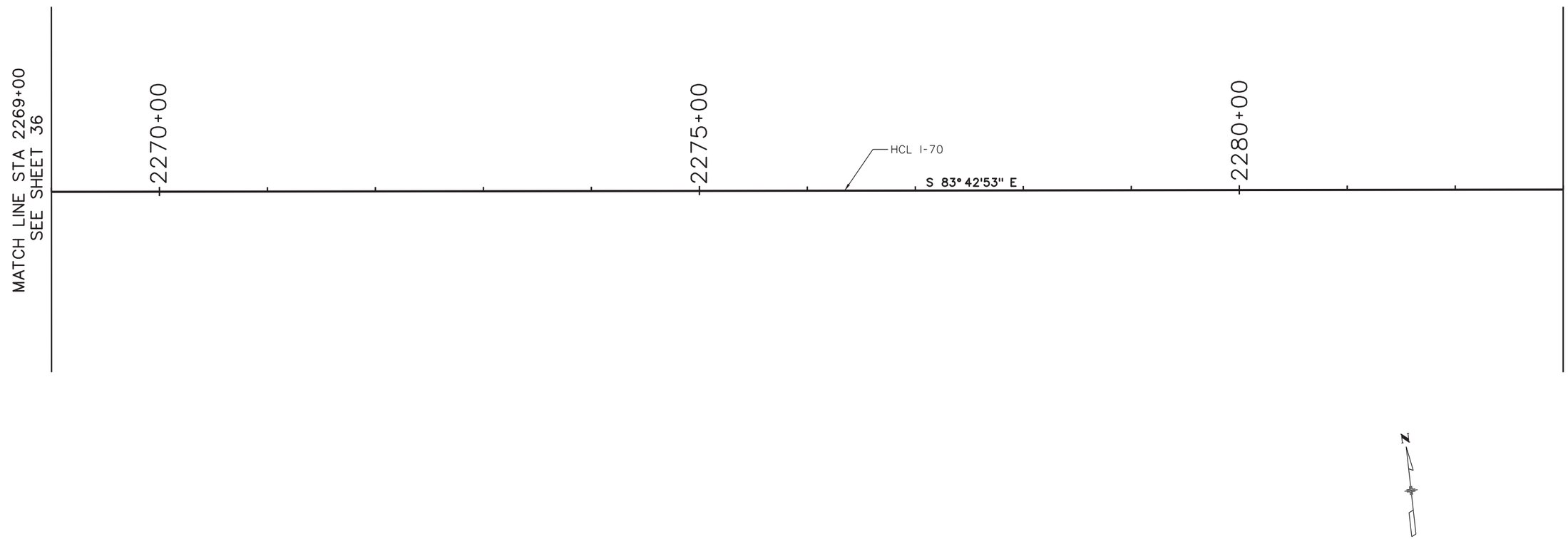
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2255+00 TO STA 2269+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	36 of 53		Sheet Number 40

martinezd 3:48:25 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan36.dgn



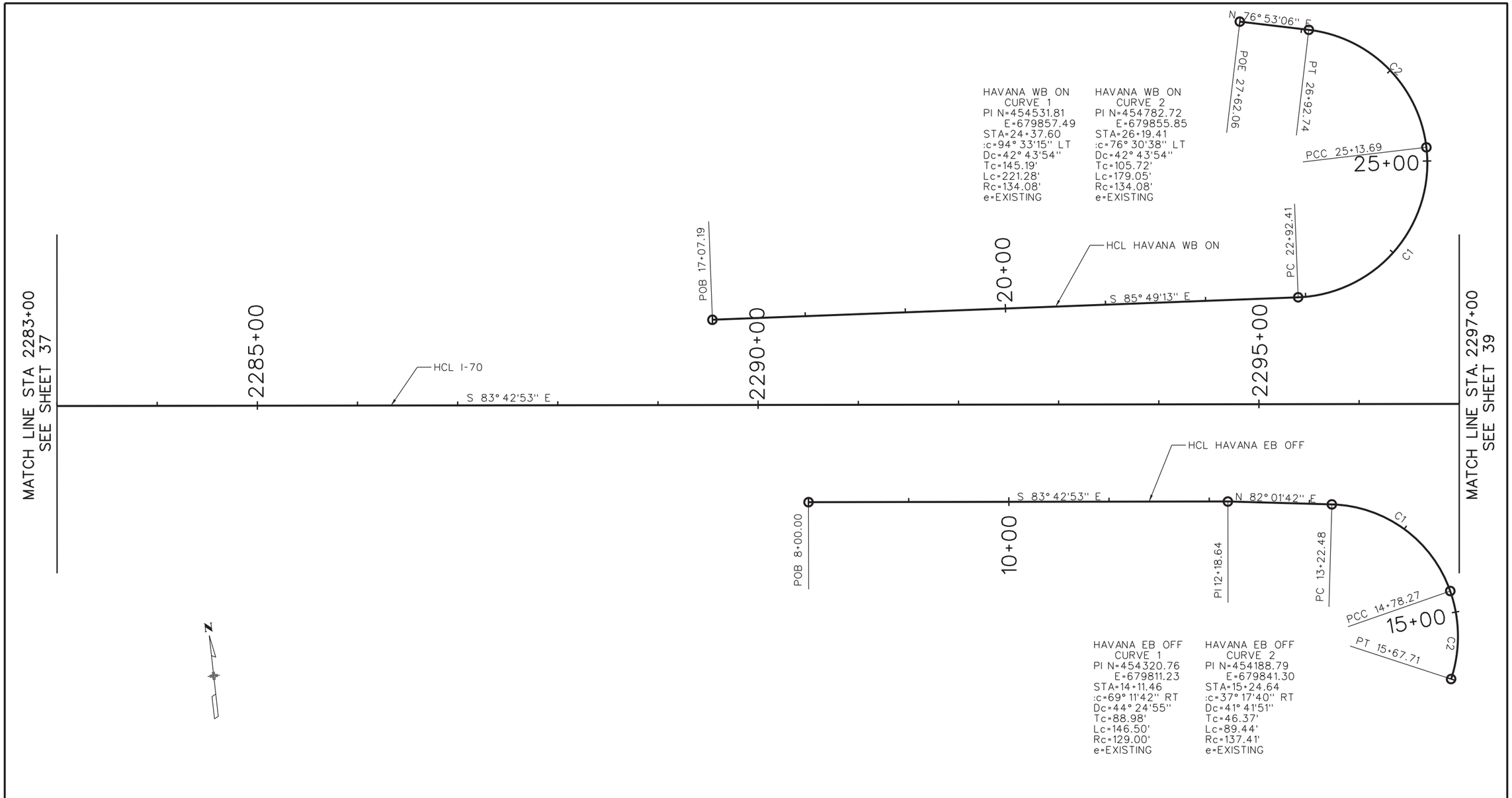
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2269+00 TO STA 2283+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	37 of 53	Sheet Number 41

martinezd 3:48:32 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan37.dgn



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL
STA 2283+00 TO STA 2297+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	38 of 53

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	42

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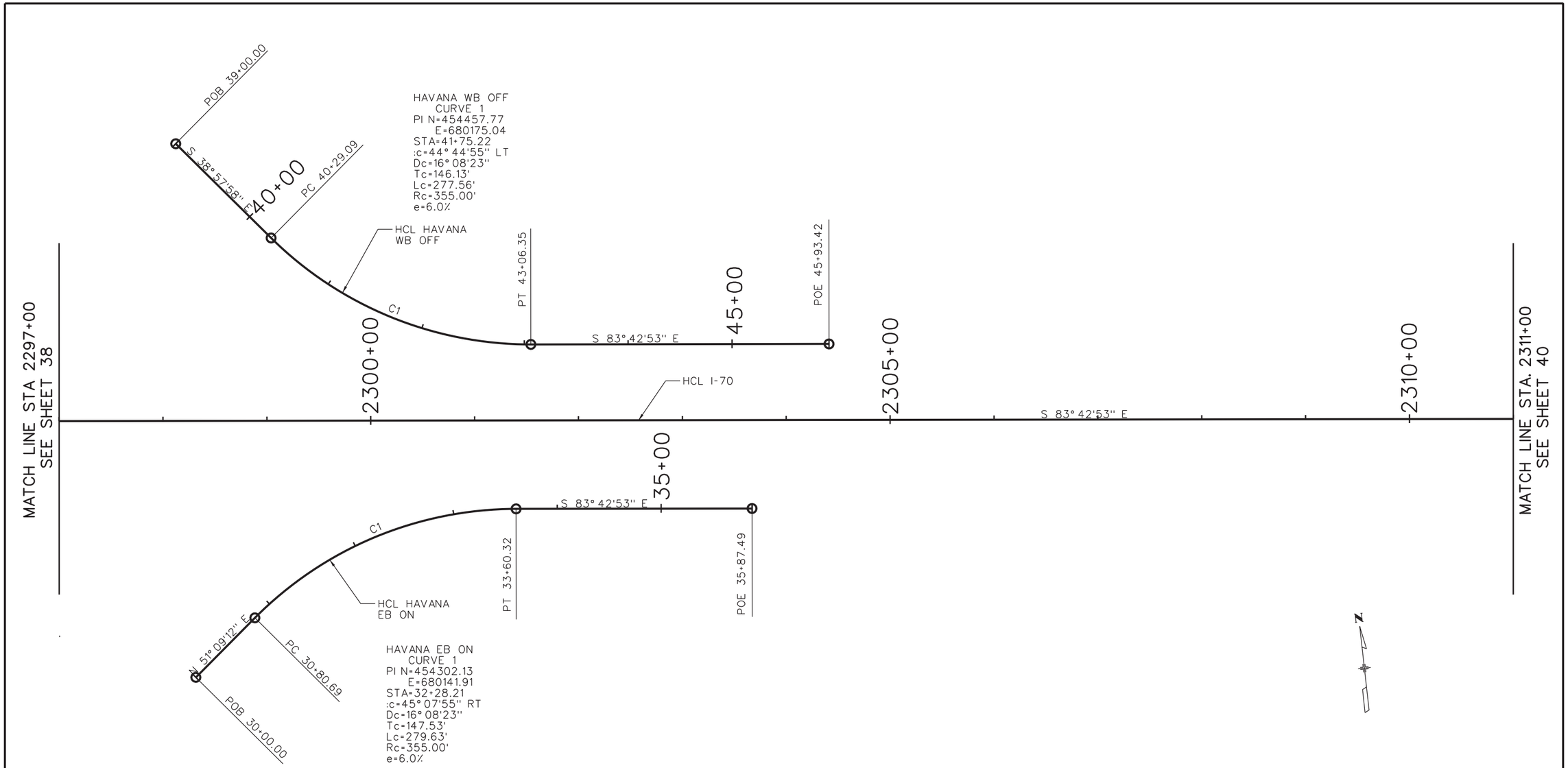

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2297+00 TO STA 2311+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	39 of 53		Sheet Number 43

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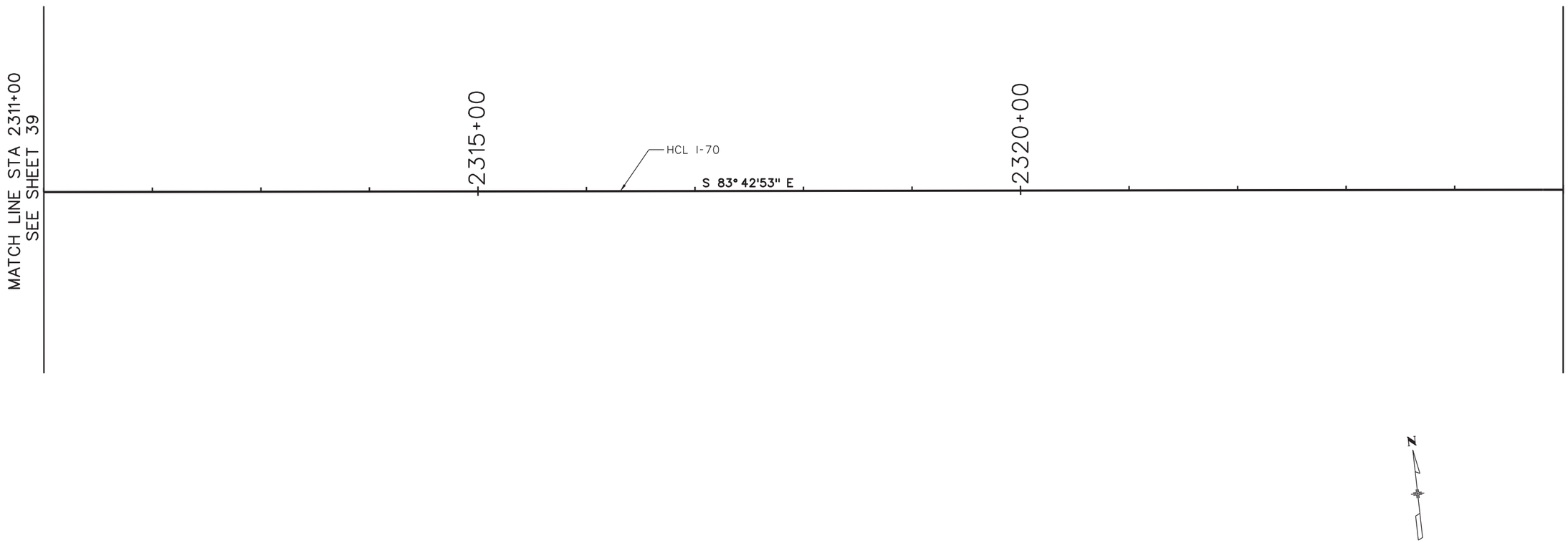

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL
STA 2311+00 TO STA 2325+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	40 of 53

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	44

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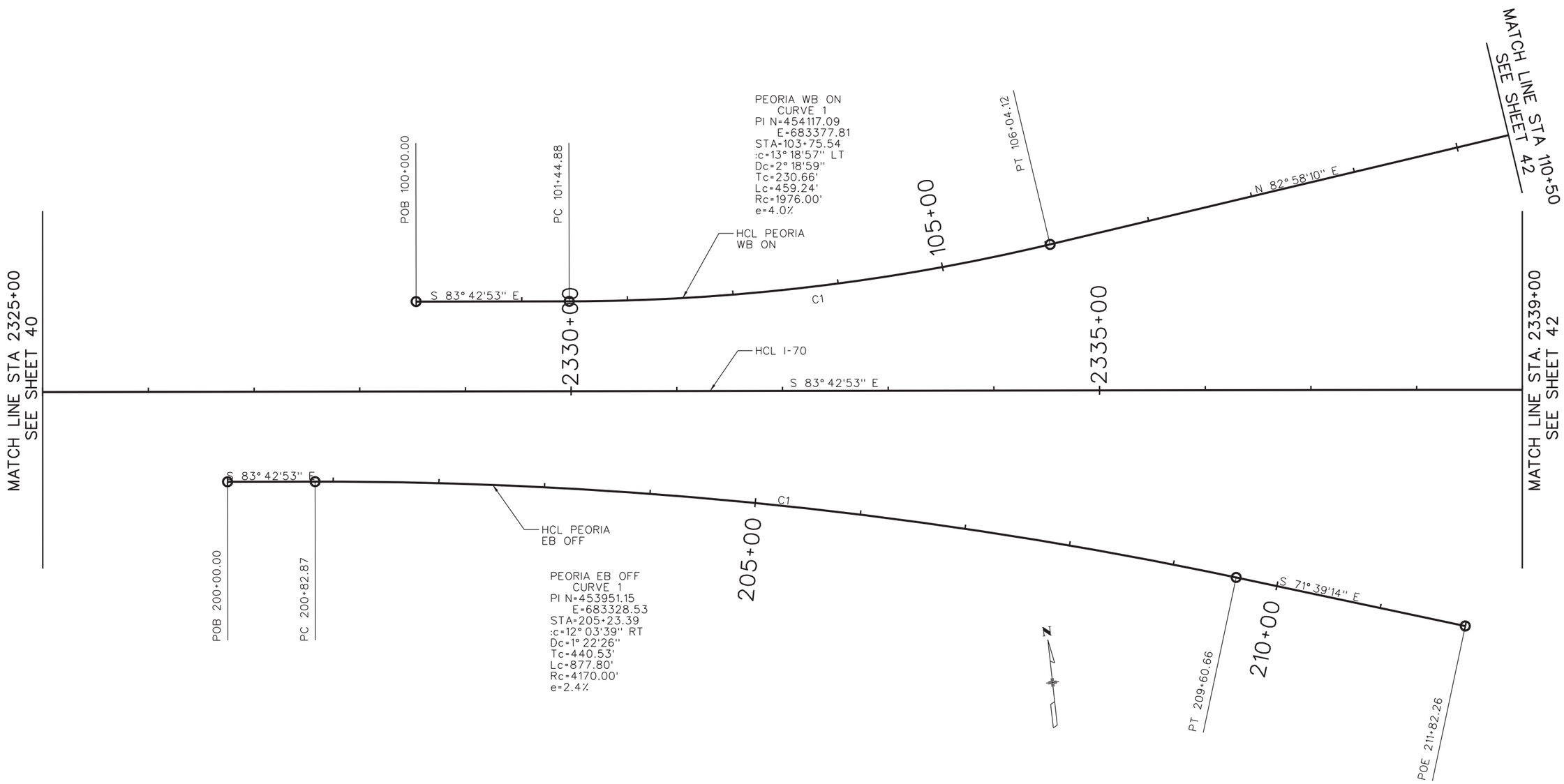


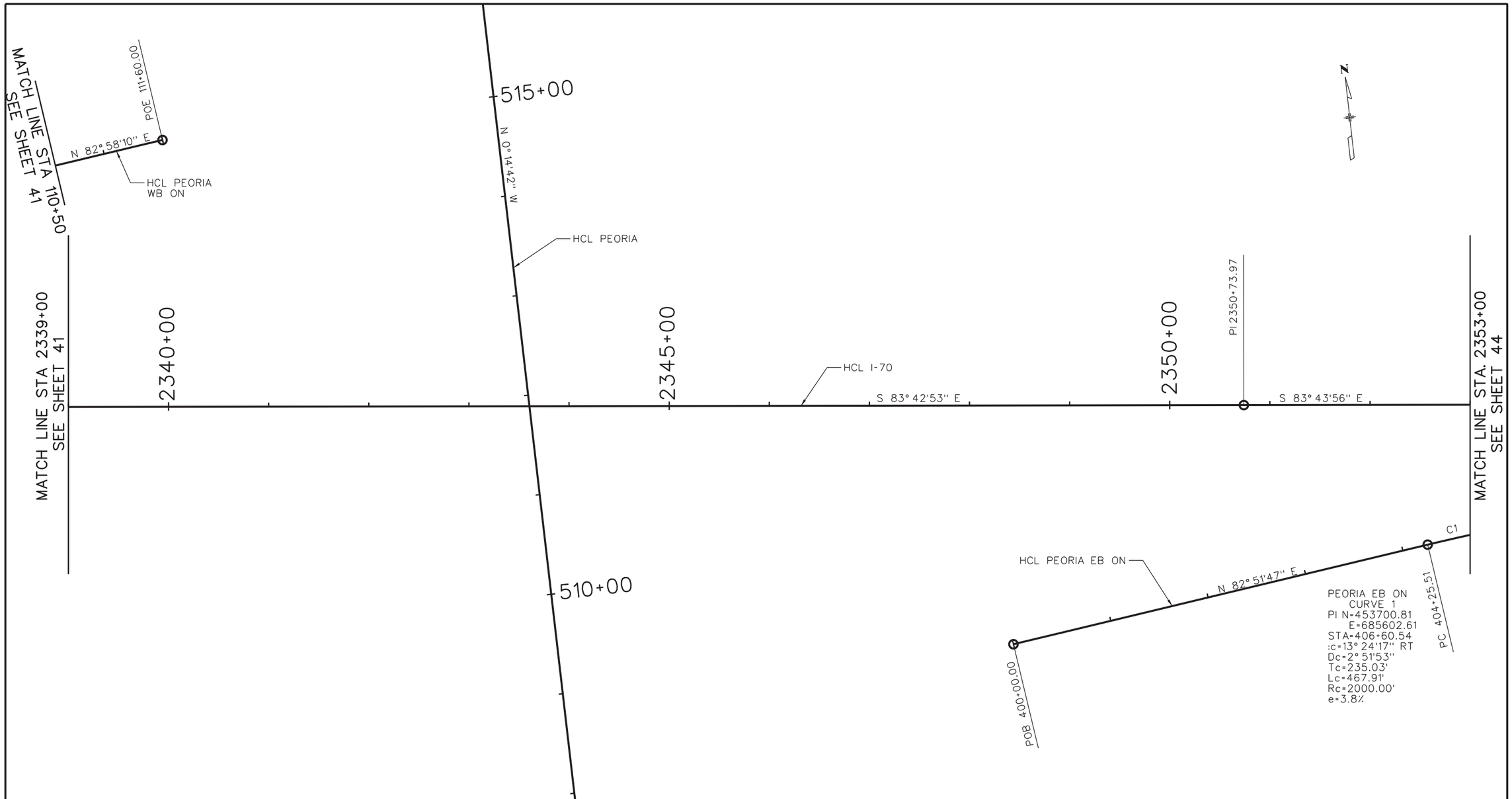
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2325+00 TO STA 2339+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	41 of 53	Sheet Number 45

martinezd 3:48:49 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan41.dgn



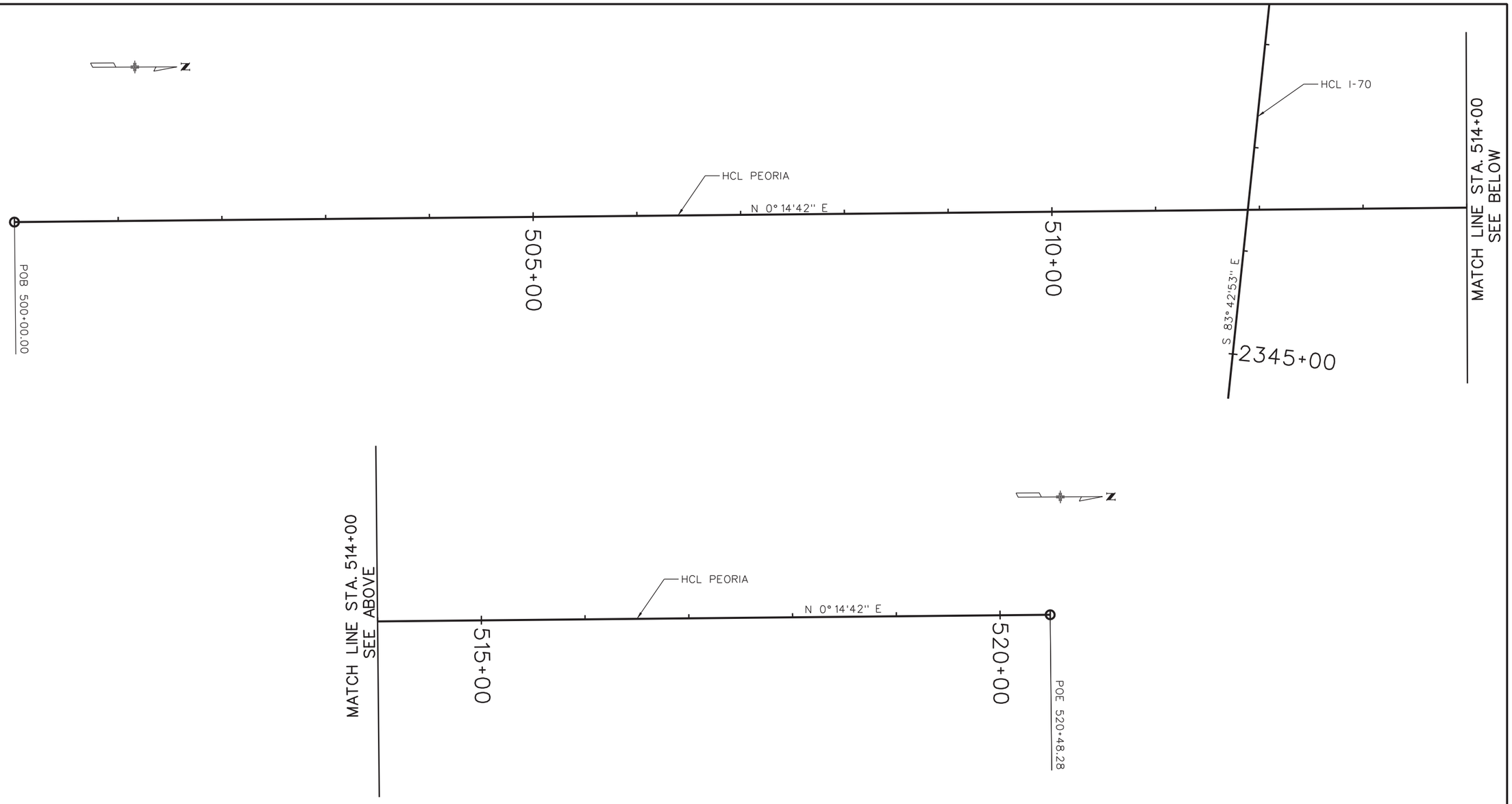
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2339+00 TO STA 2353+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	42 of 53	Sheet Number 46

martinezd 3:48:53 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\13599DES_GEOM-Plan42.dgn



Kiewit meridiam PARTNERS

Central 70

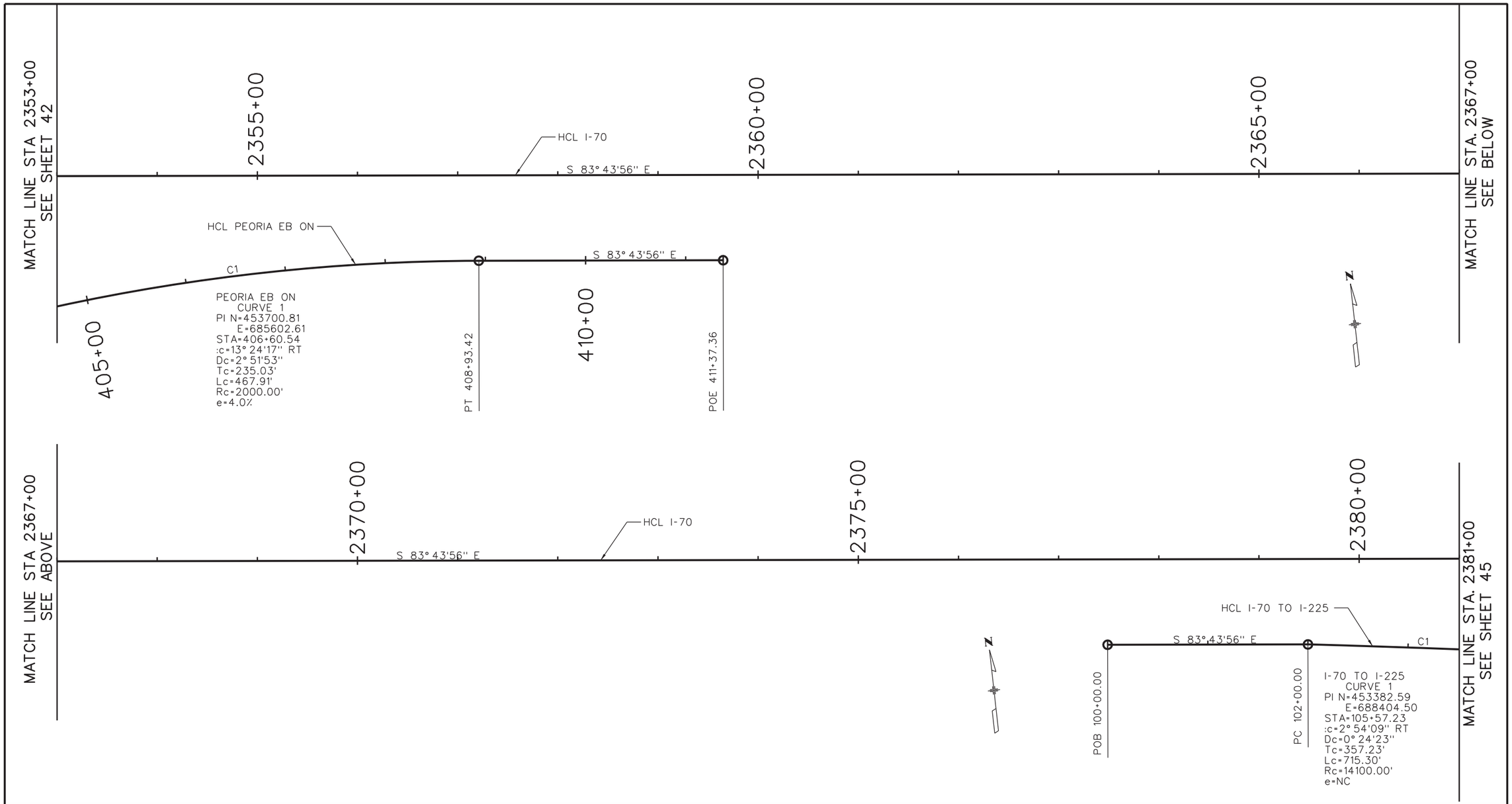
0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL - PEORIA
STA 500+00 TO STA 520+48.28

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	43 of 53

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	47

martinezd 3:48:59 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan43.dgn



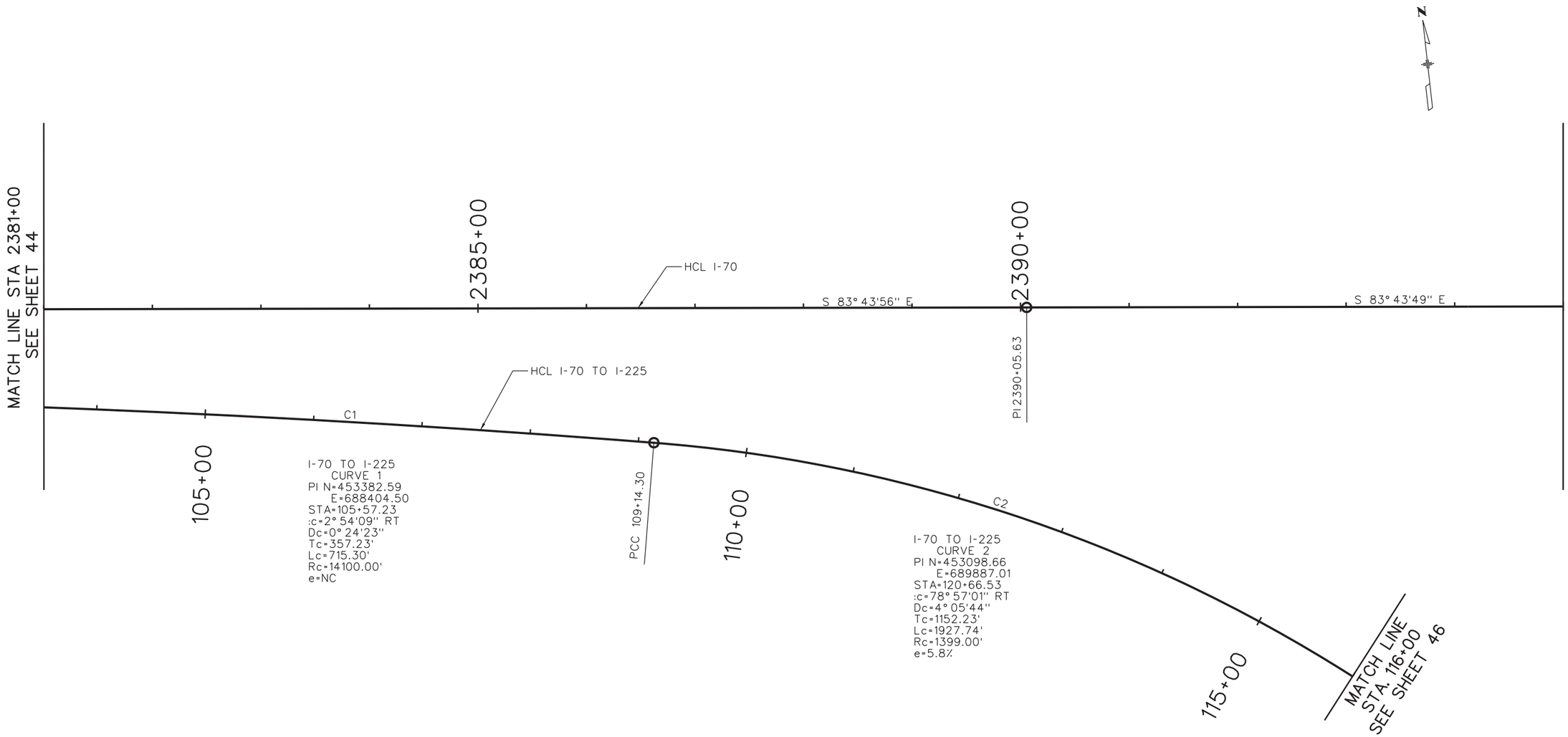
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2353+00 TO STA 2381+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets: 44 of 53			Sheet Number 48

martinezd 3:49:03 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan44.dgn



Kiewit meridiam PARTNERS

Central 70

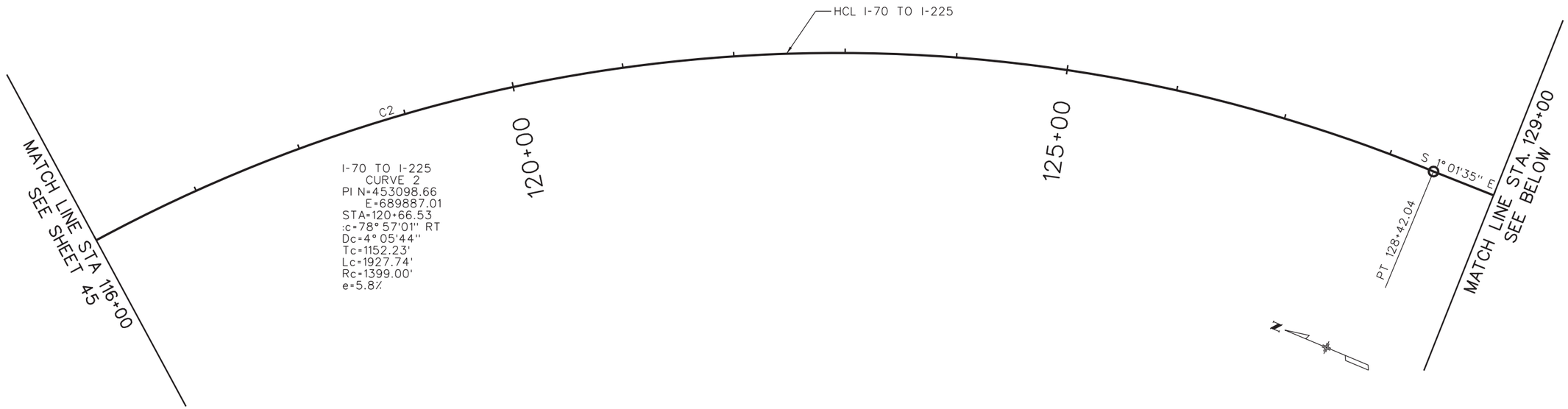
0' 50' 100' 200'

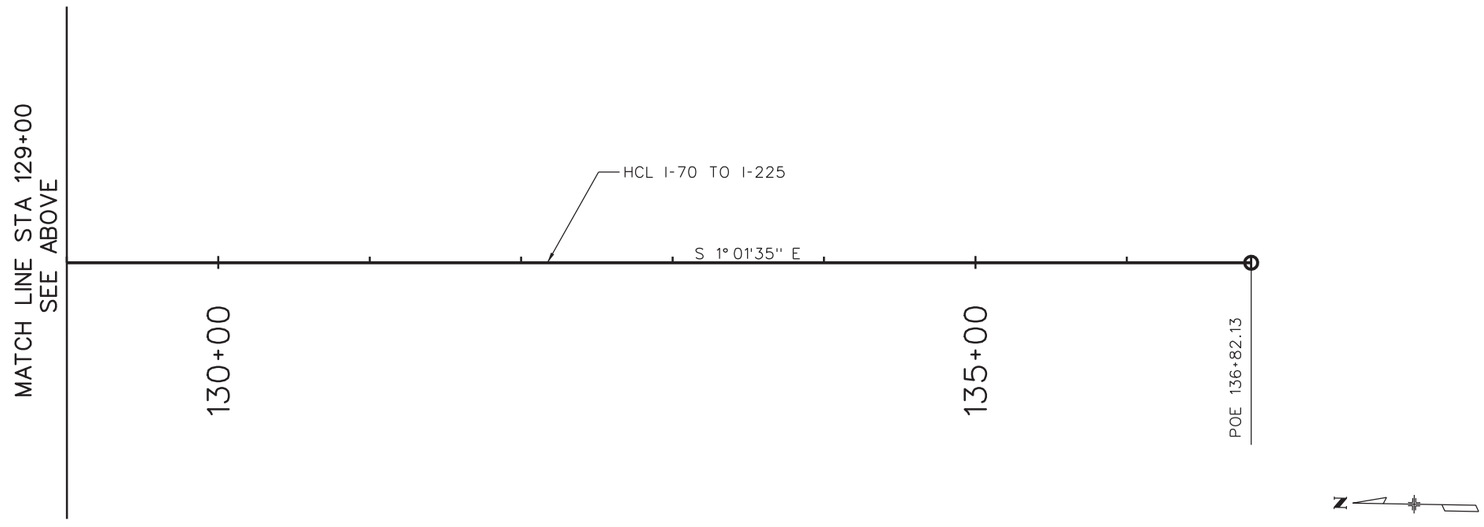
CENTRAL 70
HORIZONTAL CONTROL
STA 2381+00 TO STA 2395+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	45 of 53

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	49

martinezd 3:49:07 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan45.dgn





Kiewit meridiam PARTNERS

Central 70

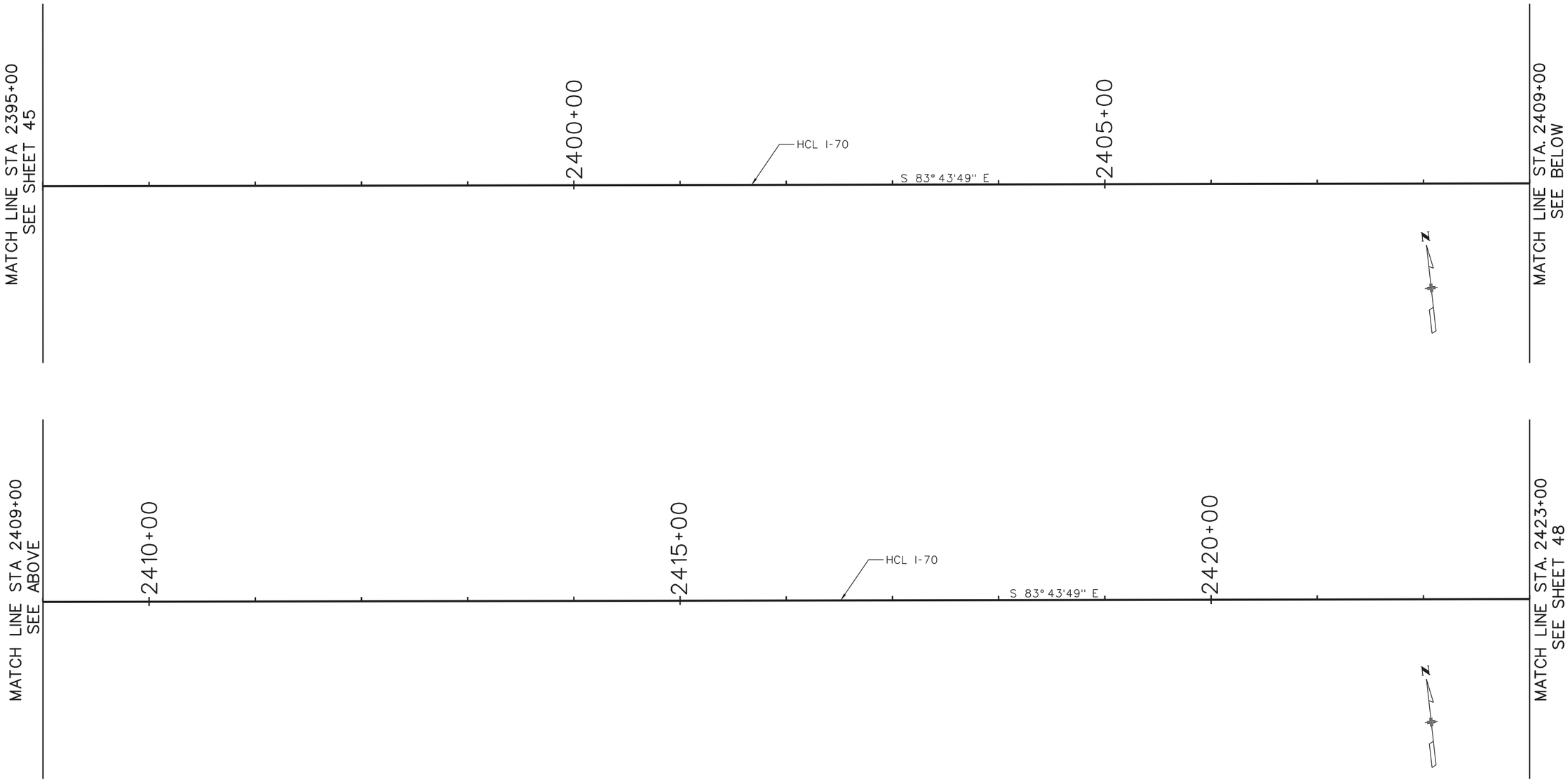
0' 50' 100' 200'

CENTRAL 70 - HORIZONTAL CONTROL
I-70 TO I-225 CONNECTOR
STA 116+00 TO STA 136+82.13

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	46 of 53

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	50

martinezd 3:49:13 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan46.dgn



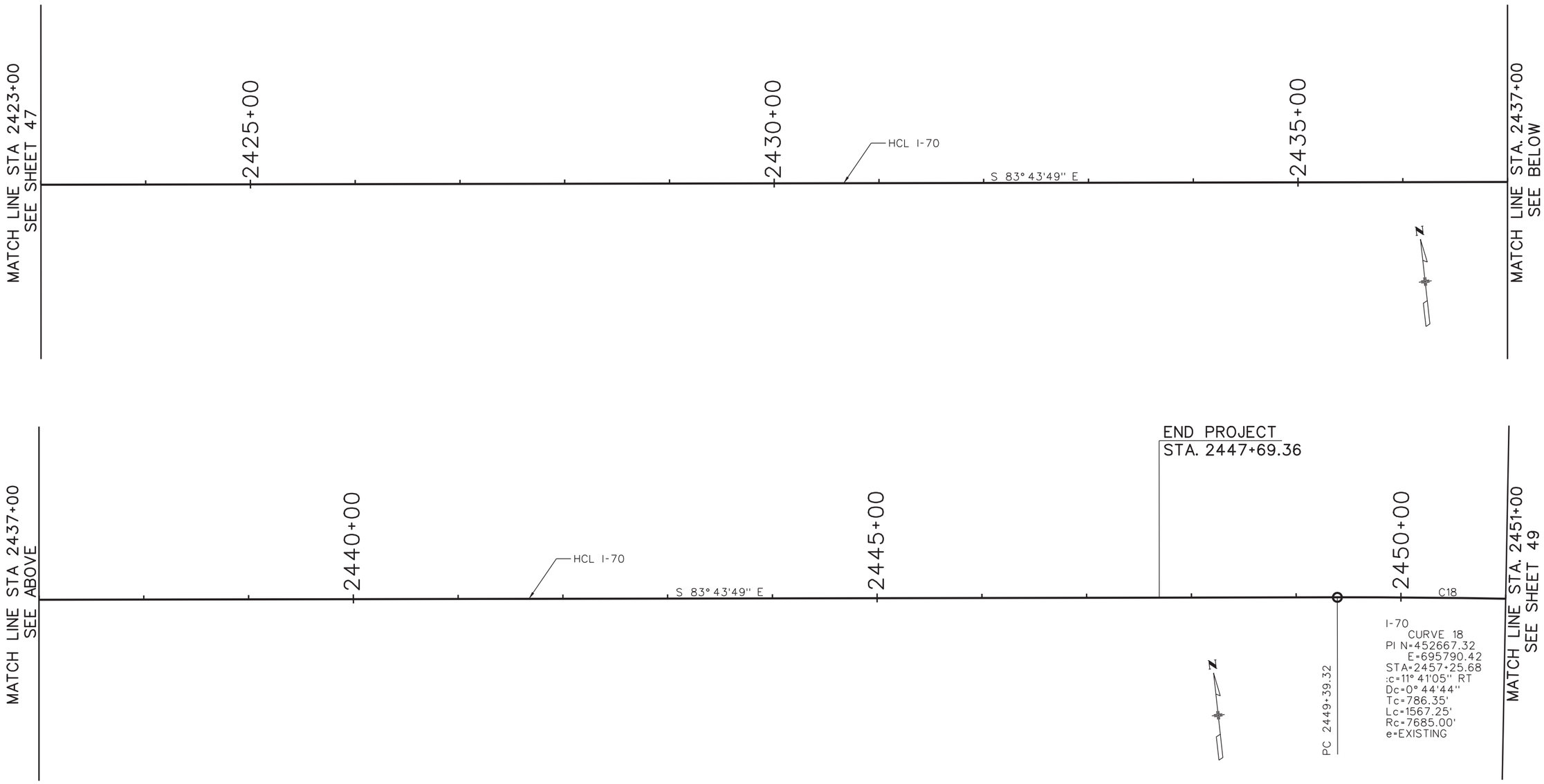
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2395+00 TO STA 2423+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	47 of 53	Sheet Number 51

martinezd 3:49:17 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan47.dgn



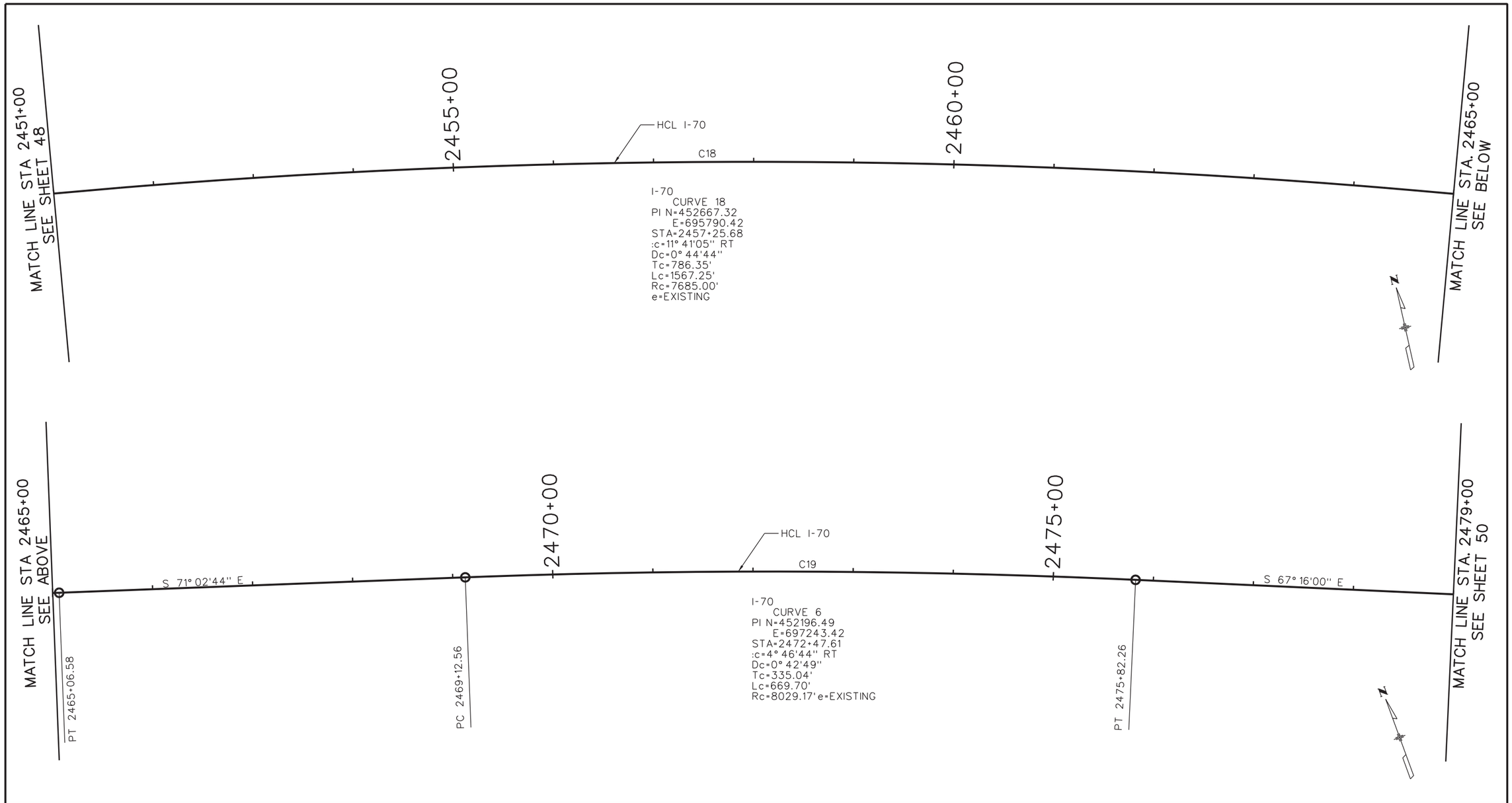
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2423+00 TO STA 2451+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	48 of 53	Sheet Number 52

mortinezd 3:49:23 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan48.dgn



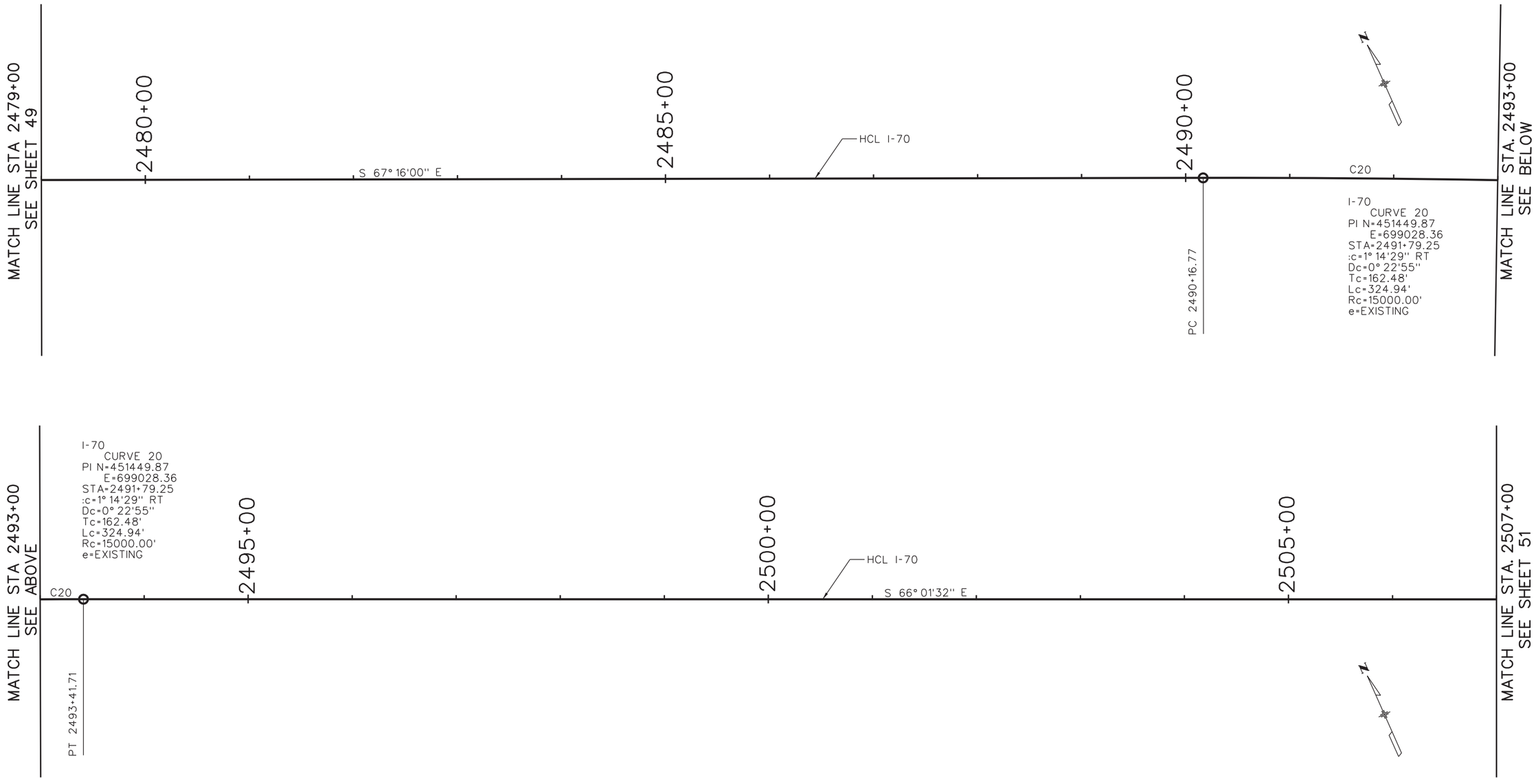
Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2451+00 TO STA 2479+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	GEOMETRY	Subset Sheets:	49 of 53	Sheet Number 53

mortinezd 3:49:28 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan49.dgn



Kiewit meridiam PARTNERS

Central 70

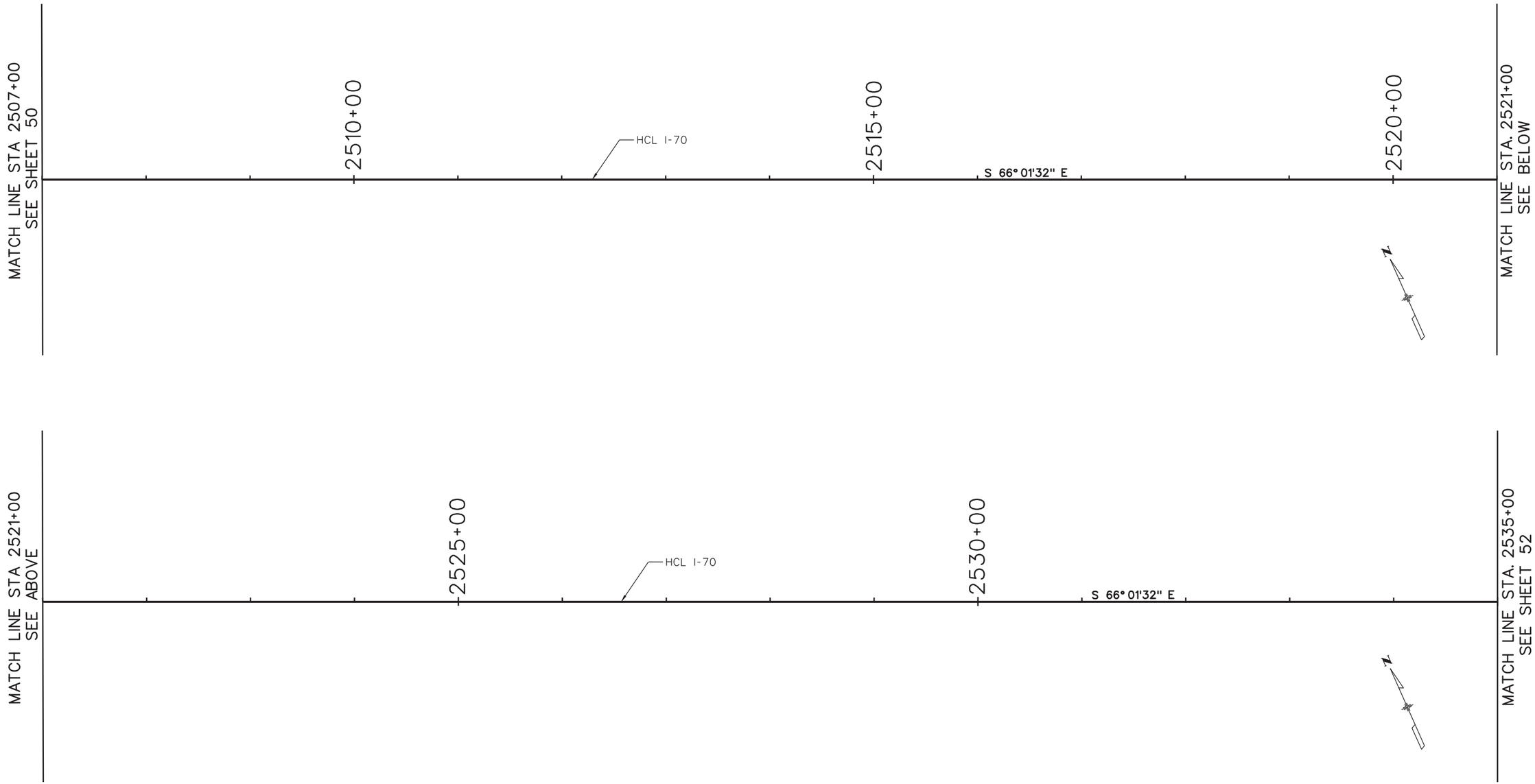
0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL
STA 2479+00 TO STA 2507+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	50 of 53

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	54

martinezd 3:49:32 PM pw:\\projectwise.pbid.com:pwiseV8i\Documents\Central 70\Design\Drawings\11X17 Sheets (Appendix A)\135990ES_GEOM-Plan50.dgn



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70 HORIZONTAL CONTROL STA 2507+00 TO STA 2535+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: GEOMETRY	Subset Sheets:	51 of 53		Sheet Number 55

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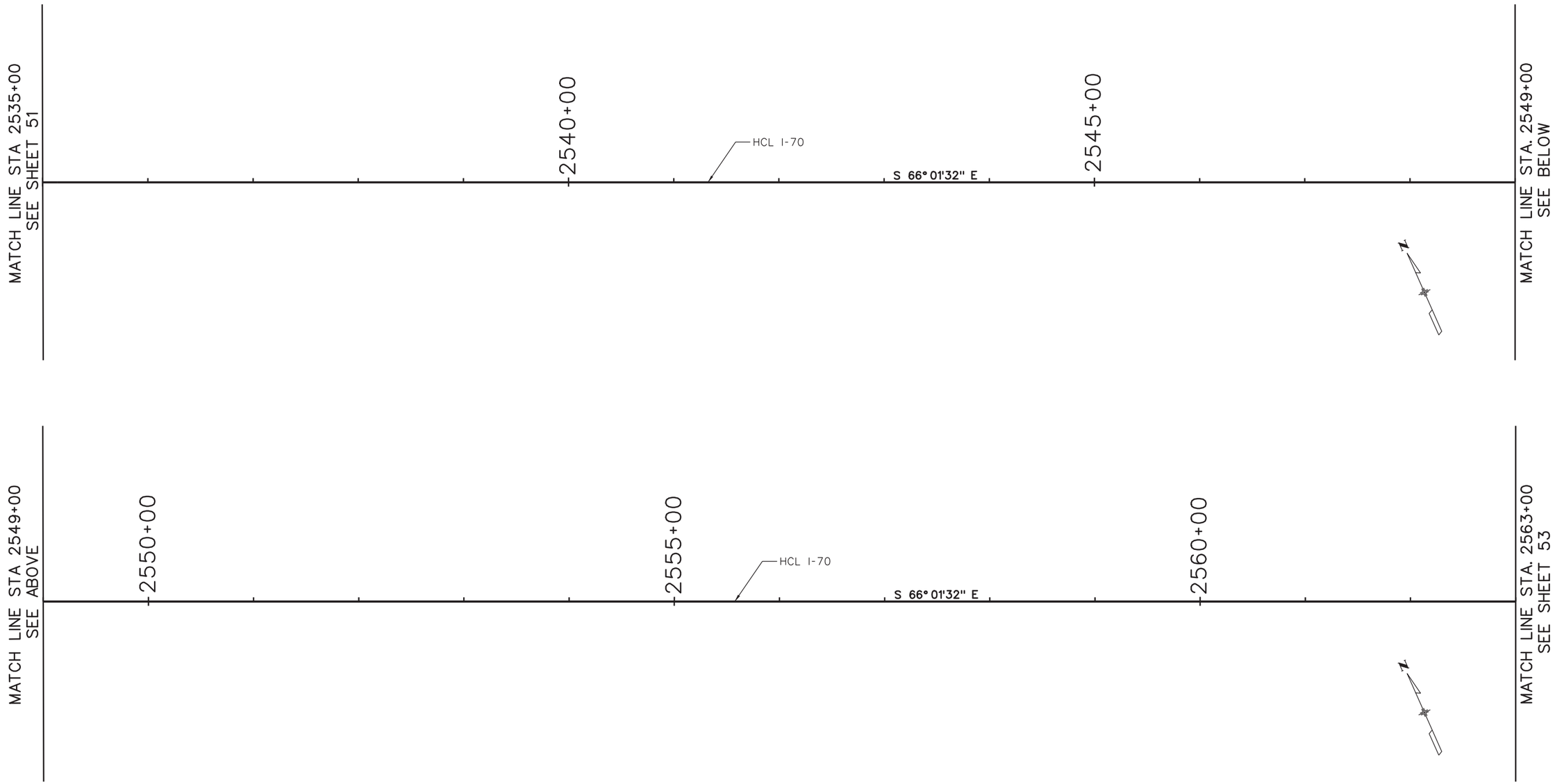

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL
STA 2535+00 TO STA 2563+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	52 of 53

Project No./Code
FBR 0704-234
19631
Sheet Number 56

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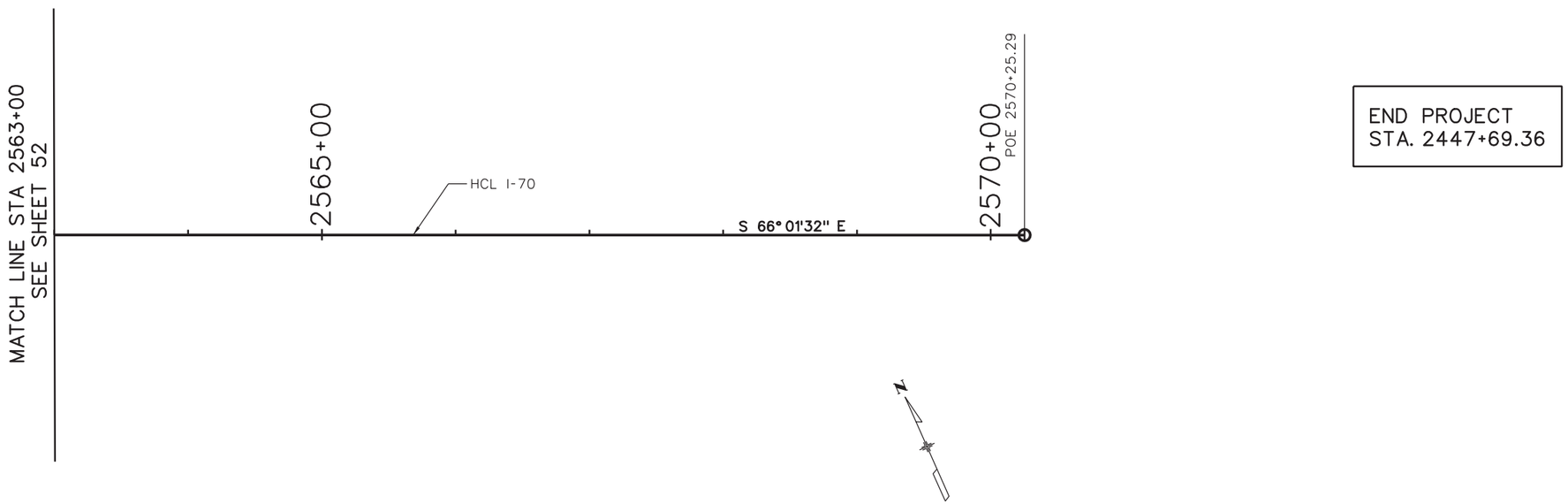

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

CENTRAL 70
HORIZONTAL CONTROL
STA 2563+00 TO STA 2570+25.29

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	GEOMETRY	Subset Sheets:	53 of 53

Project No./Code
FBR 0704-234
19631
Sheet Number 57

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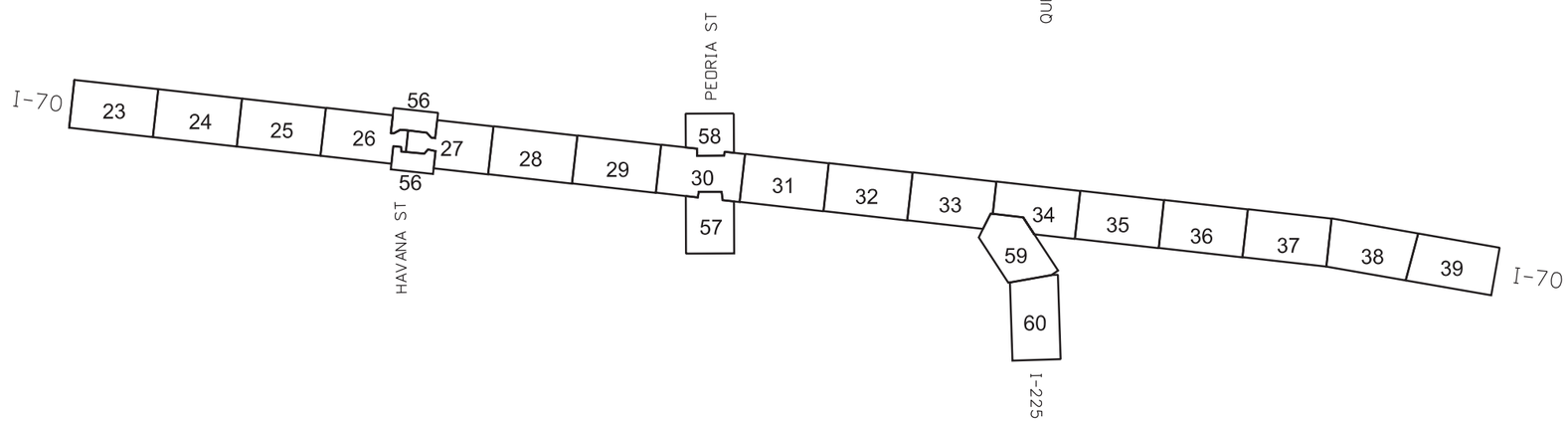


Legend

Proposed Curb & Gutter	Existing Curb & Gutter
Proposed Right of Way Line	Existing Right of Way
Proposed Type 7 Guardrail	Existing Guardrail
Proposed Type 3 Guardrail	Existing Concrete Barrier
Proposed Retaining Wall With Barrier	Existing Fence Chainlink
Proposed Retaining Walls	Existing Fence Wood
Proposed Permanent Easement	Proposed Drainage Pipes
Proposed Temporary Construction Easement	Proposed Concrete Box Culverts
Proposed Noise Barriers	Proposed Drainage Ditches
Limits of Disturbance	Proposed Sanitary Sewer
Directional Arrows and Number of Lanes	Proposed Water
Gas Lines	Fiber Optic Lines
Electric Lines	SHADING USED FOR NEW PORTIONS OF THE ROADWAY ARE SHOWN FOR ILLUSTRATIVE PUPOSES ONLY AND ARE NOT INDICATIVE OF A SELECTION OF FINAL PAVEMENT SURFACING
Overlay Limits	

NOTES:

1. FOR DRAINAGE PLANS SEE BINDER 4
2. FOR BRIDGE PLANS SEE BINDER 4
3. FOR PROFILES SEE BINDER 3
4. HORIZONTAL ALIGNMENT DATA SHOWN ON GEOMETRIC PLANS, SEE BINDER 2

Kiewit meridiam PARTNERS

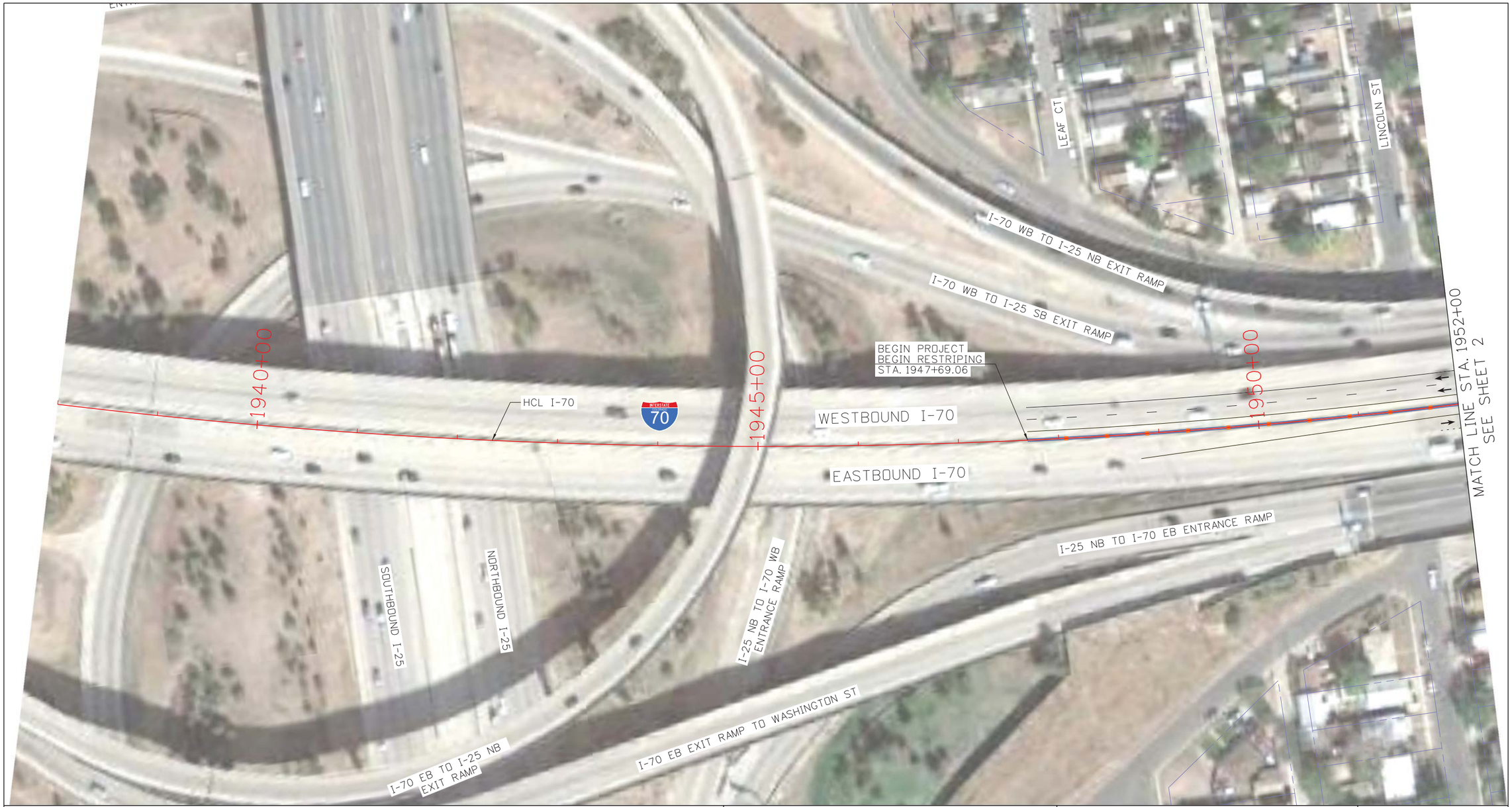
Central 70

0' 1250' 2500' 5000'

N

CENTRAL 70 ROADWAY KEY MAP			Project No./Code FBR 0704-234
Designer: KMP	Structure Numbers	-	19631
Detailer: KMP		-	
Subset: RDWY KEY MAP	Subset Sheets:	1 of 1	Sheet Number 58

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 1938+00 TO STA 1952+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	1 of 60

Project No./Code

FBR 0704-234

19631

Sheet Number 59

$PLOT_INFO$

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 1952+00 TO STA 1966+00				Project No./Code
Designer: KMP	Structure Numbers	-		FBR 0704-234
Detailer: KMP		-		19631
Subset: ROADWAY	Subset Sheets:	2 of 60		Sheet Number 60

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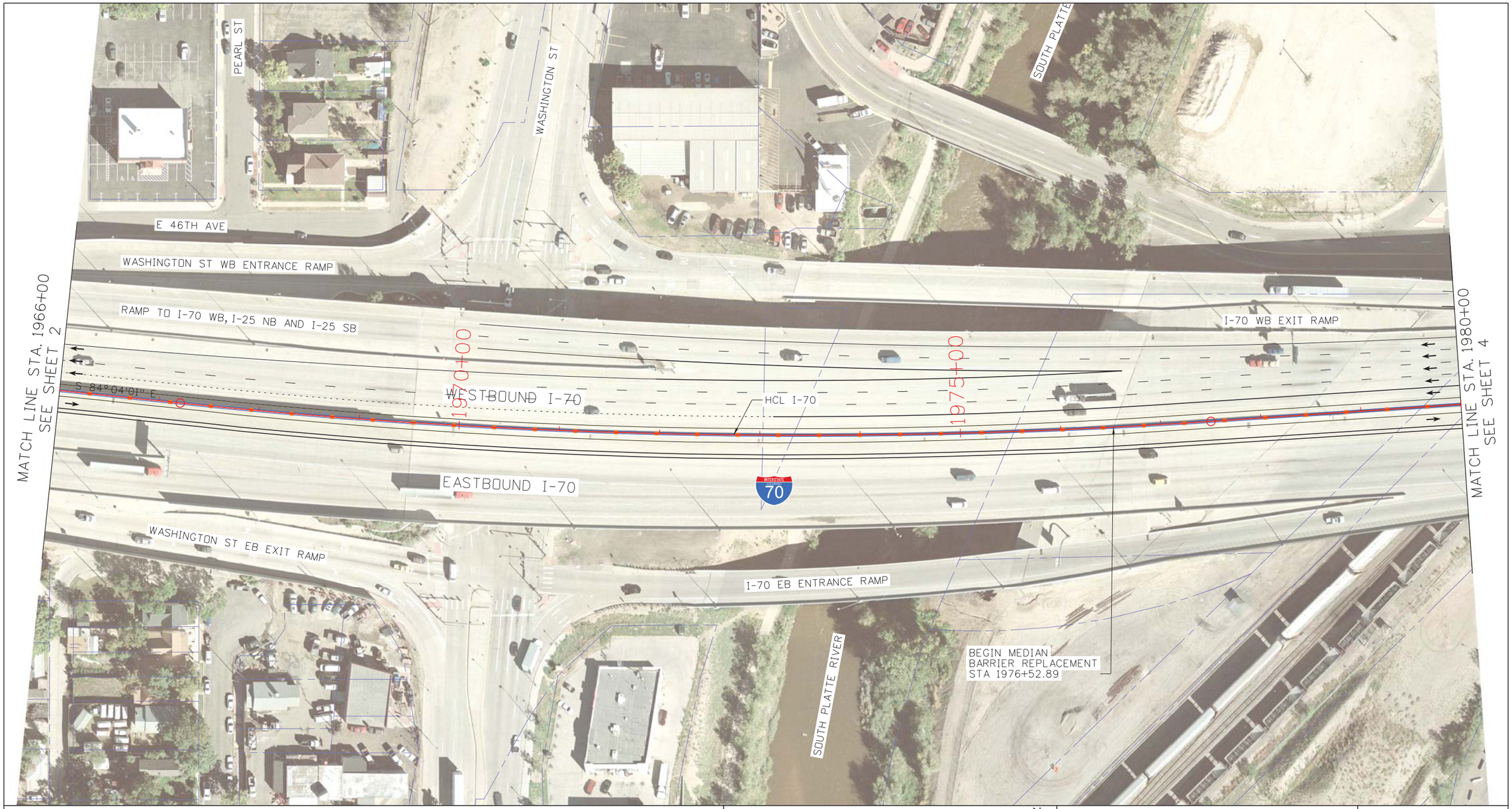


Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 1966+00 TO STA 1980+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	3 of 60

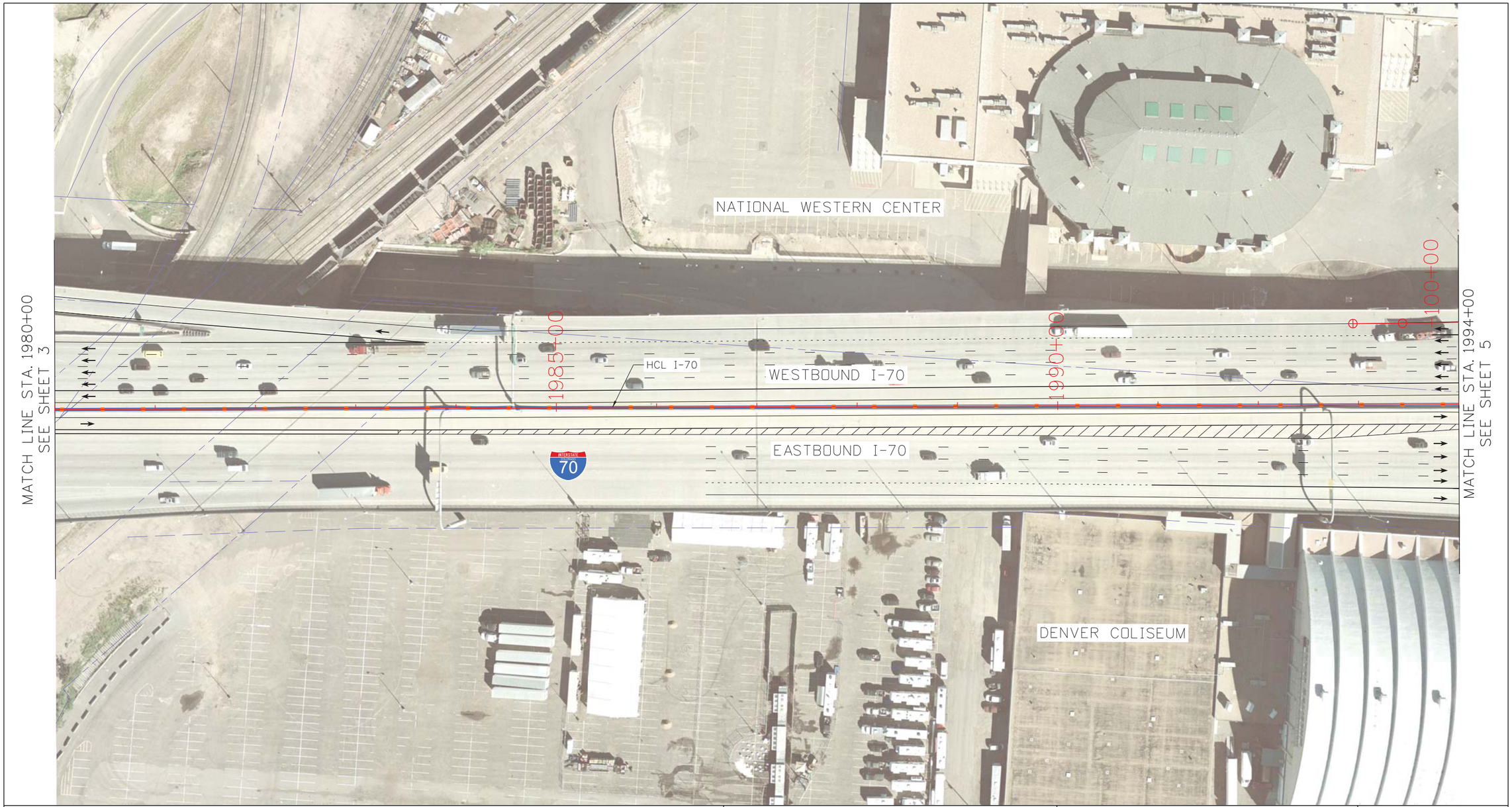
Project No./Code

FBR 0704-234

19631

Sheet Number 61

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 1980+00 TO STA 1994+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	4 of 60

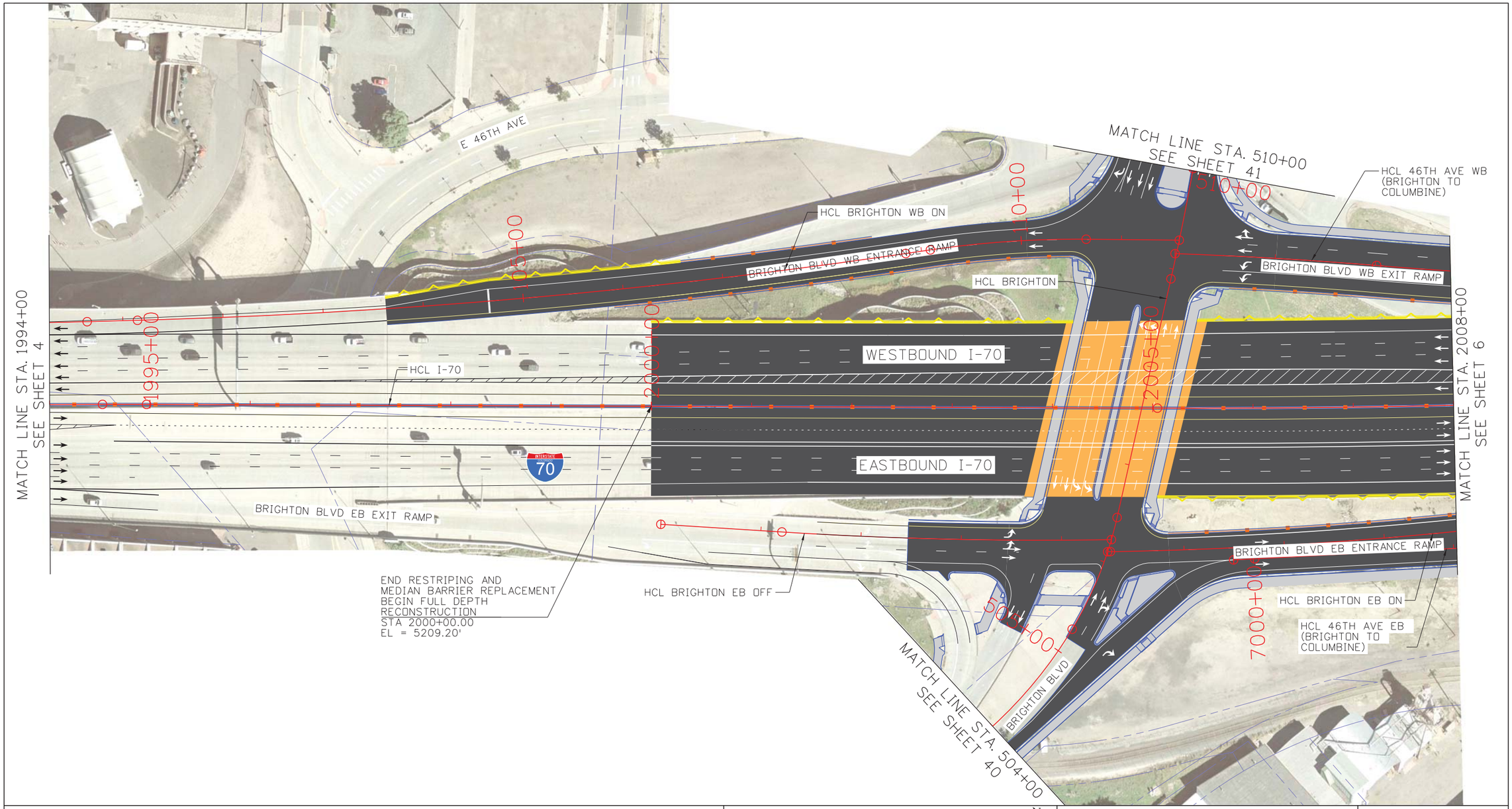
Project No./Code

FBR 0704-234

19631

Sheet Number 62

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

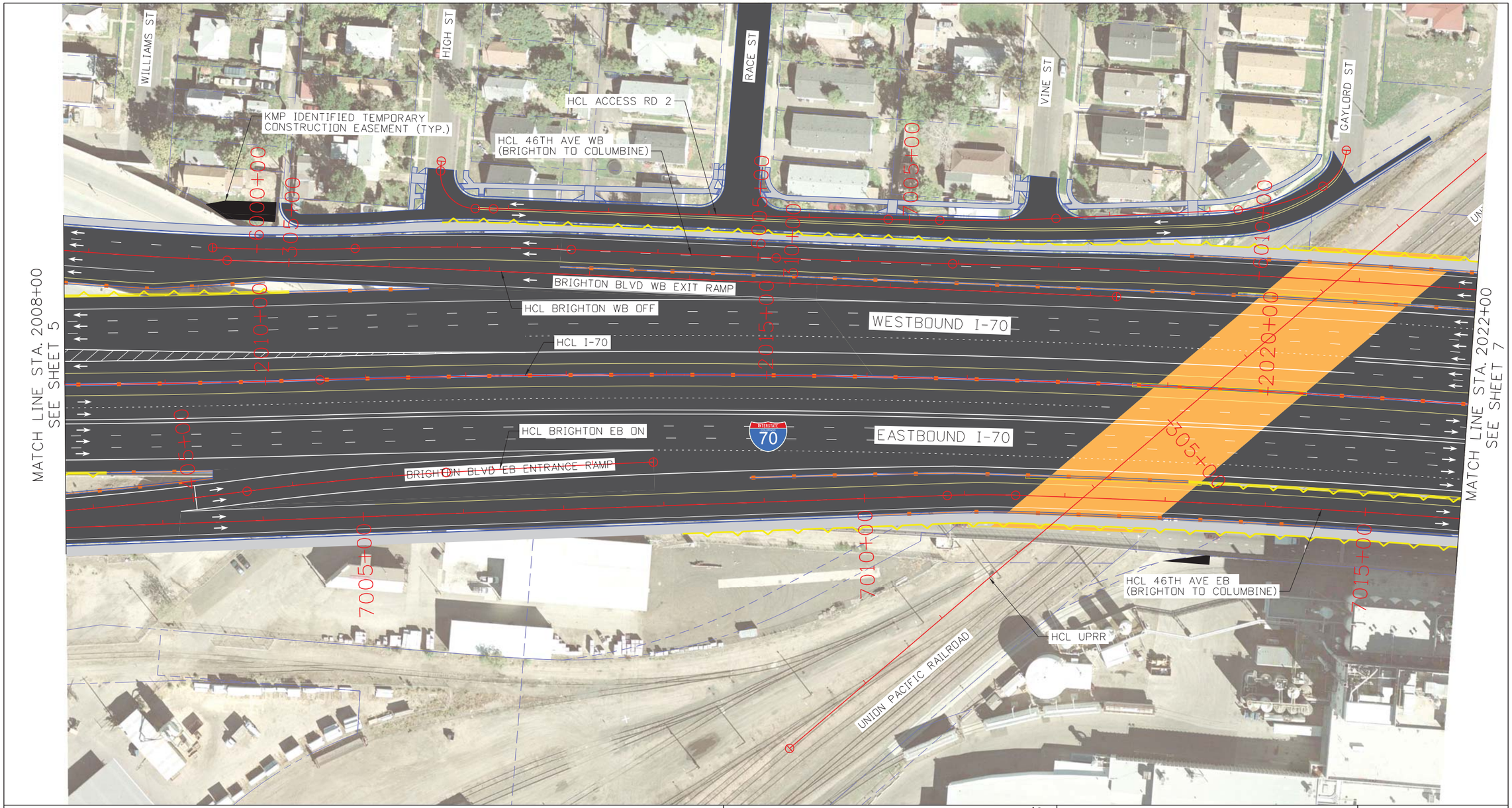
N

CENTRAL 70
ROADWAY PLAN
STA 1994+00 TO STA 2008+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	5 of 60

Project No./Code
FBR 0704-234
19631
Sheet Number 63

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2008+00 TO STA 2022+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	6 of 60	Sheet Number 64

$PLOT_INFO$

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2022+00 TO STA 2031+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	7 of 60	Sheet Number 65

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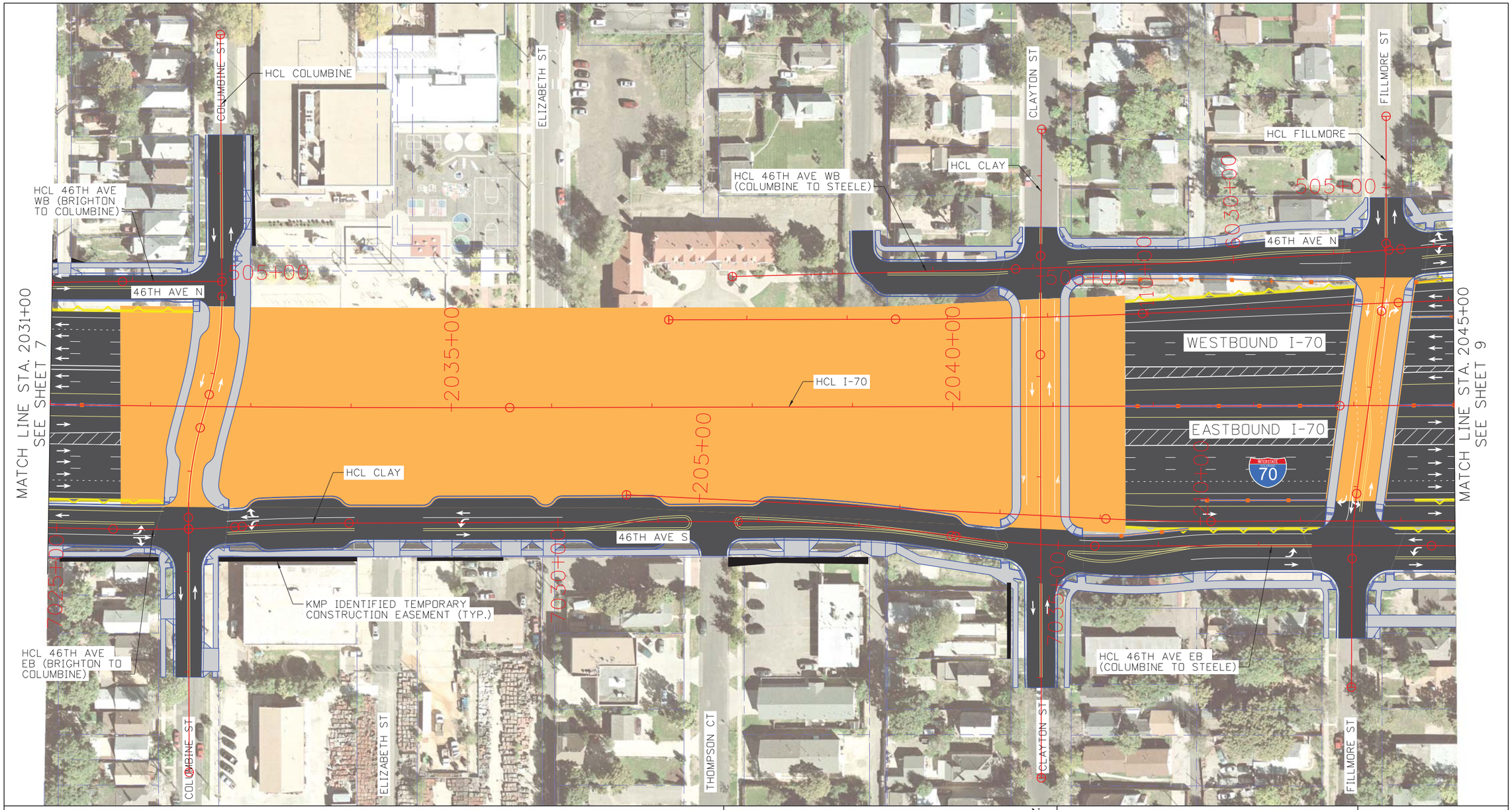


Kiewit meridiam PARTNERS

Central 70

CENTRAL 70
ROADWAY PLAN
STA 2031+00 TO STA 2045+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	8 of 60

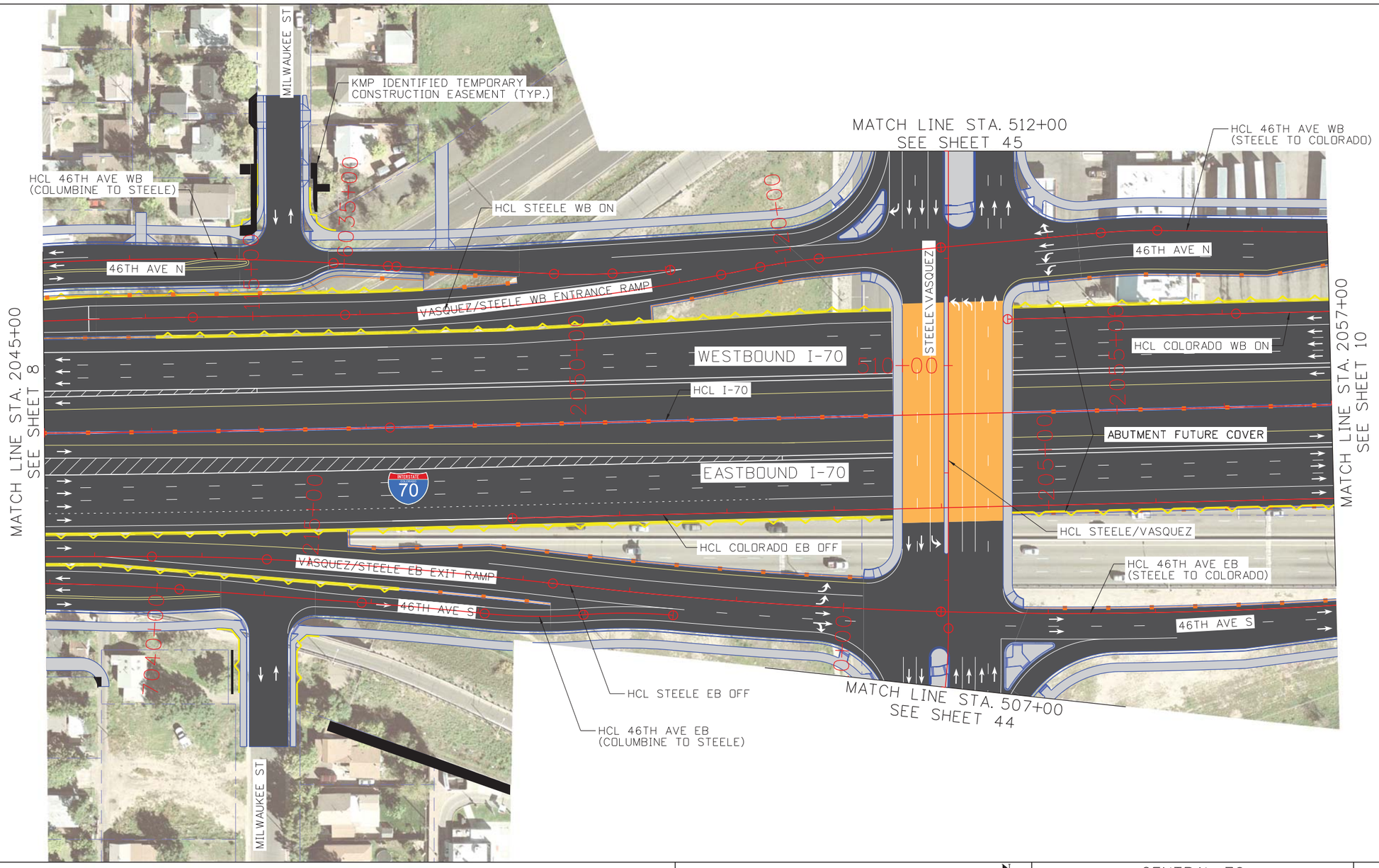
Project No./Code

FBR 0704-234

19631

Sheet Number 66

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2045+00 TO STA 2057+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	9 of 60

Project No./Code
FBR 0704-234
19631
Sheet Number 67

$PLOT_INFO$

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

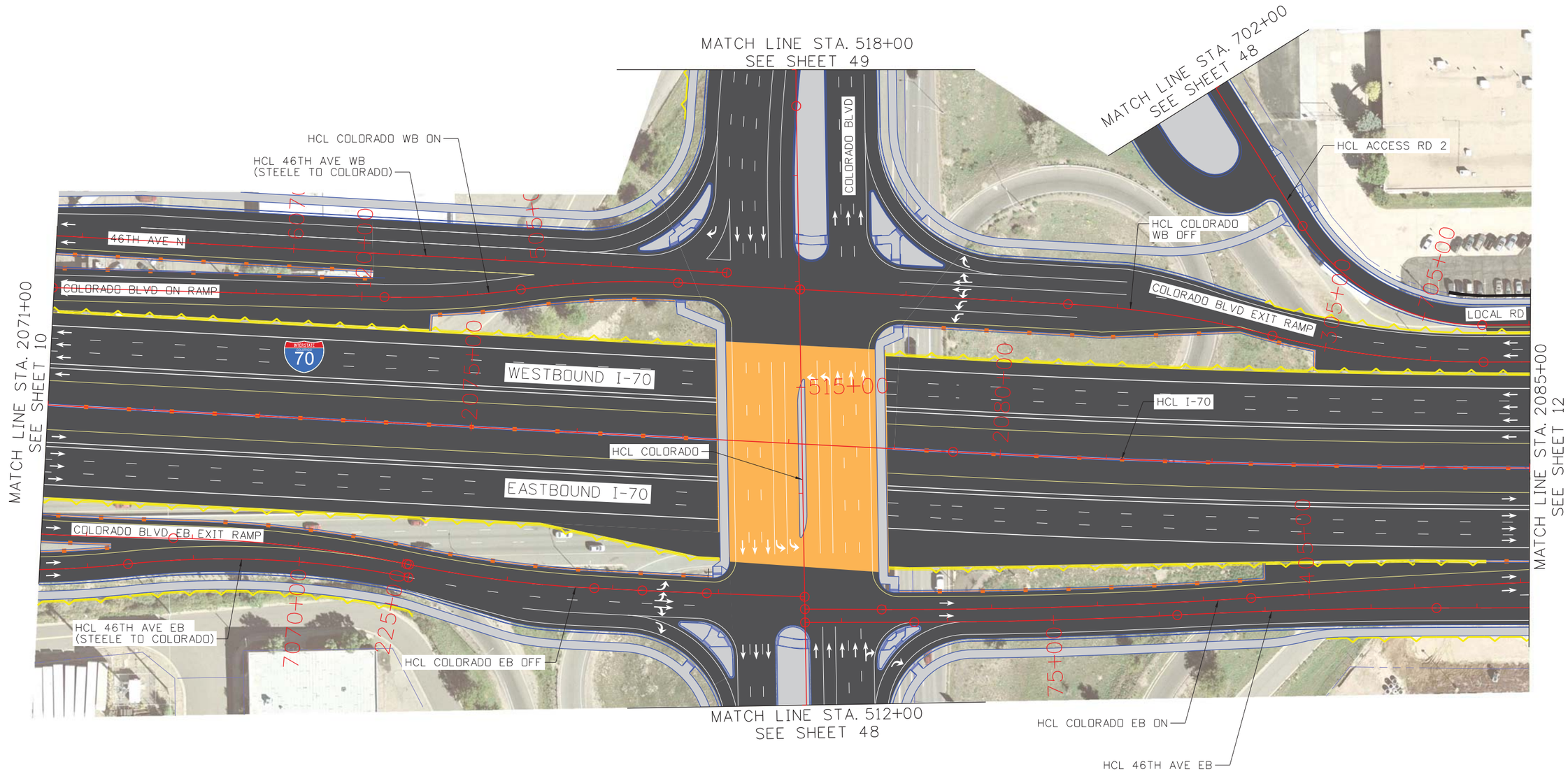
N

CENTRAL 70
ROADWAY PLAN
STA 2057+00 TO STA 2071+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	10 of 60

Project No./Code
FBR 0704-234
19631
Sheet Number 68

$PLOT_INFO$



Kiewit meridiam PARTNERS

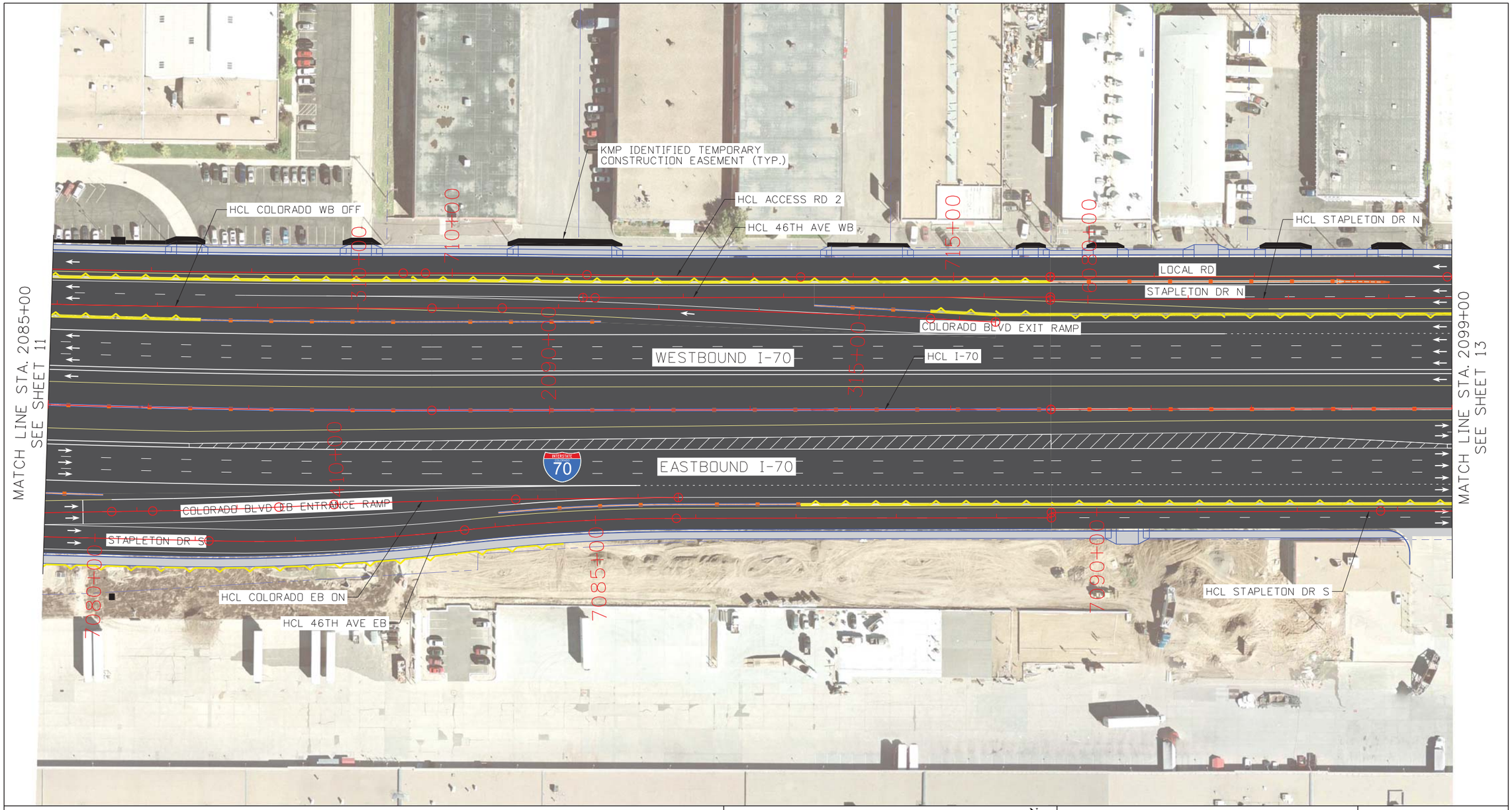
Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2071+00 TO STA 2085+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	11 of 60	Sheet Number 69

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2085+00 TO STA 2099+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	12 of 60	Sheet Number 70

$PLOT_INFO$

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2099+00 TO STA 2113+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	13 of 60

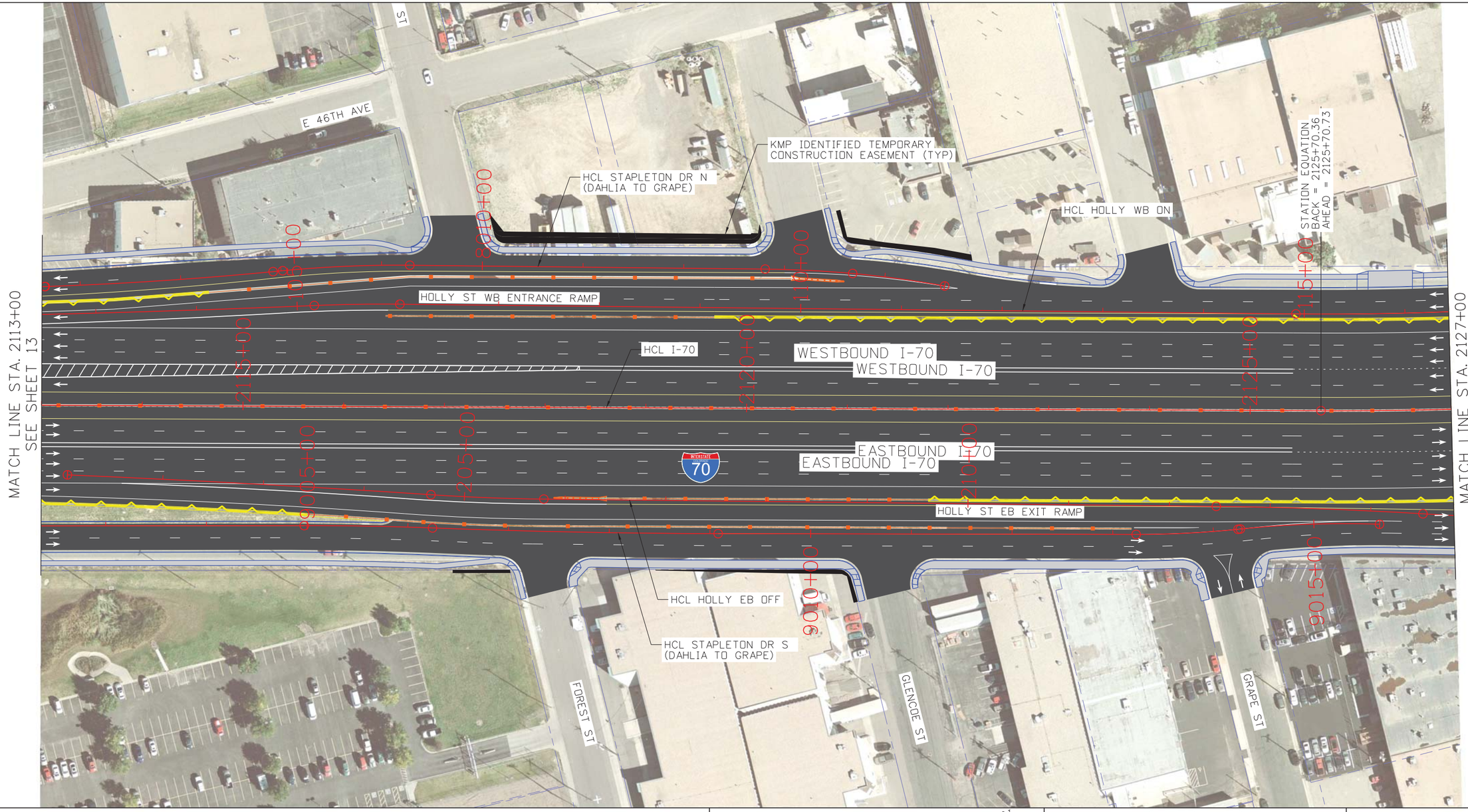
Project No./Code

FBR 0704-234

19631

Sheet Number 71

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2113+00 TO STA 2127+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	14 of 60	Sheet Number 72

$PLOT_INFO$

Kiewit meridiam PARTNERS

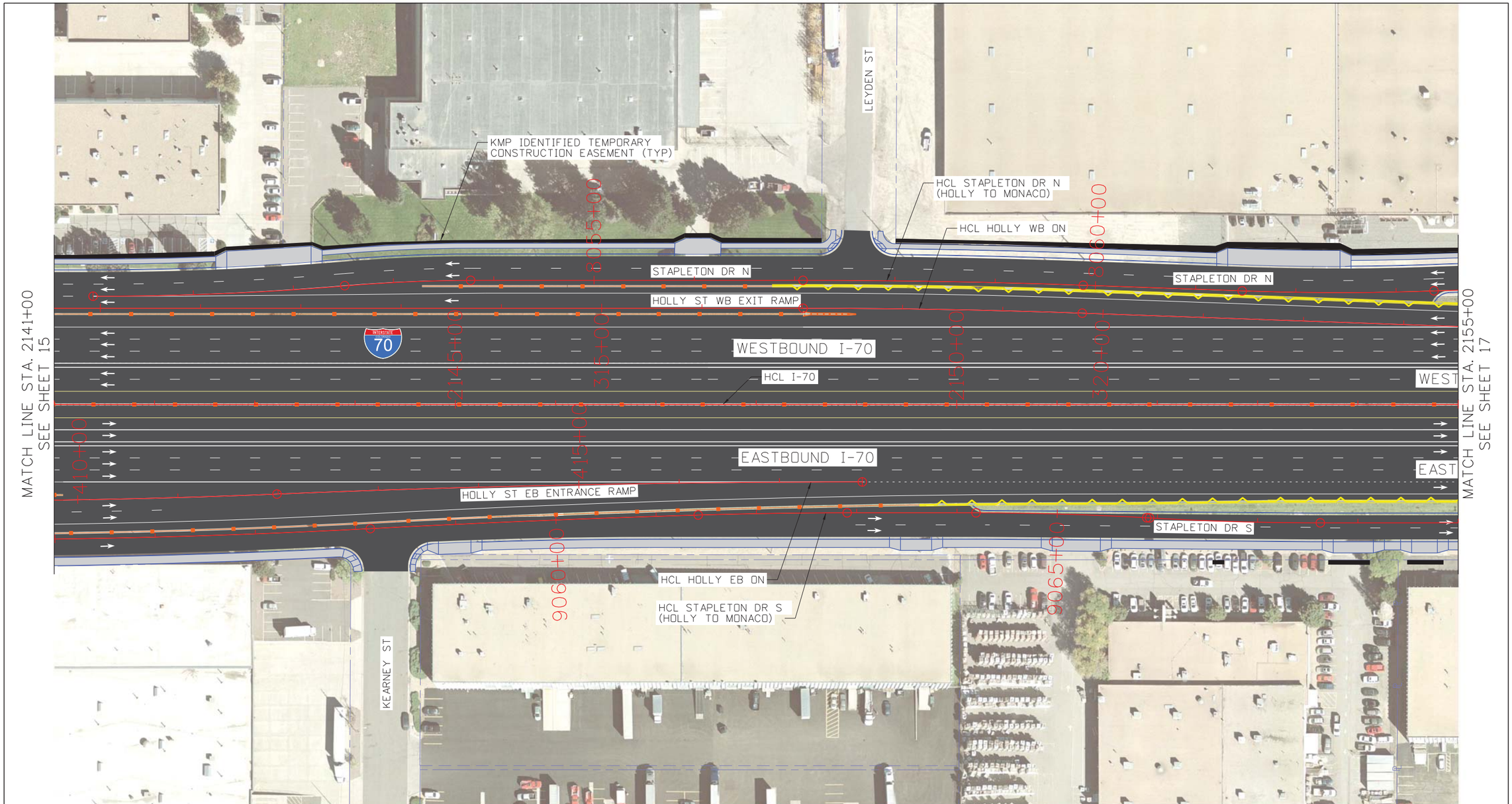
Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2127+00 TO STA 2141+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	15 of 60	Sheet Number 73

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2141+00 TO STA 2155+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	16 of 60	Sheet Number 74

$PLOT_INFO$

MONACO ST
HCL STAPLETON DR N
(HOLLY TO MONACO)
HCL MONACO
HCL STAPLETON DR N
(MONACO TO QUEBEC)
KMP IDENTIFIED TEMPORARY
CONSTRUCTION EASEMENT (TYP)
HCL QUEBEC WB ON
QUEBEC ST WB ENTRANCE RAMP
HCL I-70
BOUND I-70
BOUND I-70
INTERSTATE
70
MONACO ST EB ENTRANCE RAMP
HCL MONACO EB ON
HCL STAPLETON DR N
(MONACO TO QUEBEC)
MATCH LINE STA 2155+00
SEE SHEET 16
MATCH LINE STA. 2169+00
SEE SHEET 18
1605+00
1805+00
1905+00
2005+00
2105+00
2205+00
2305+00
2405+00
2505+00
2605+00
2705+00
2805+00
2905+00
3005+00
3105+00
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4605+00
4705+00
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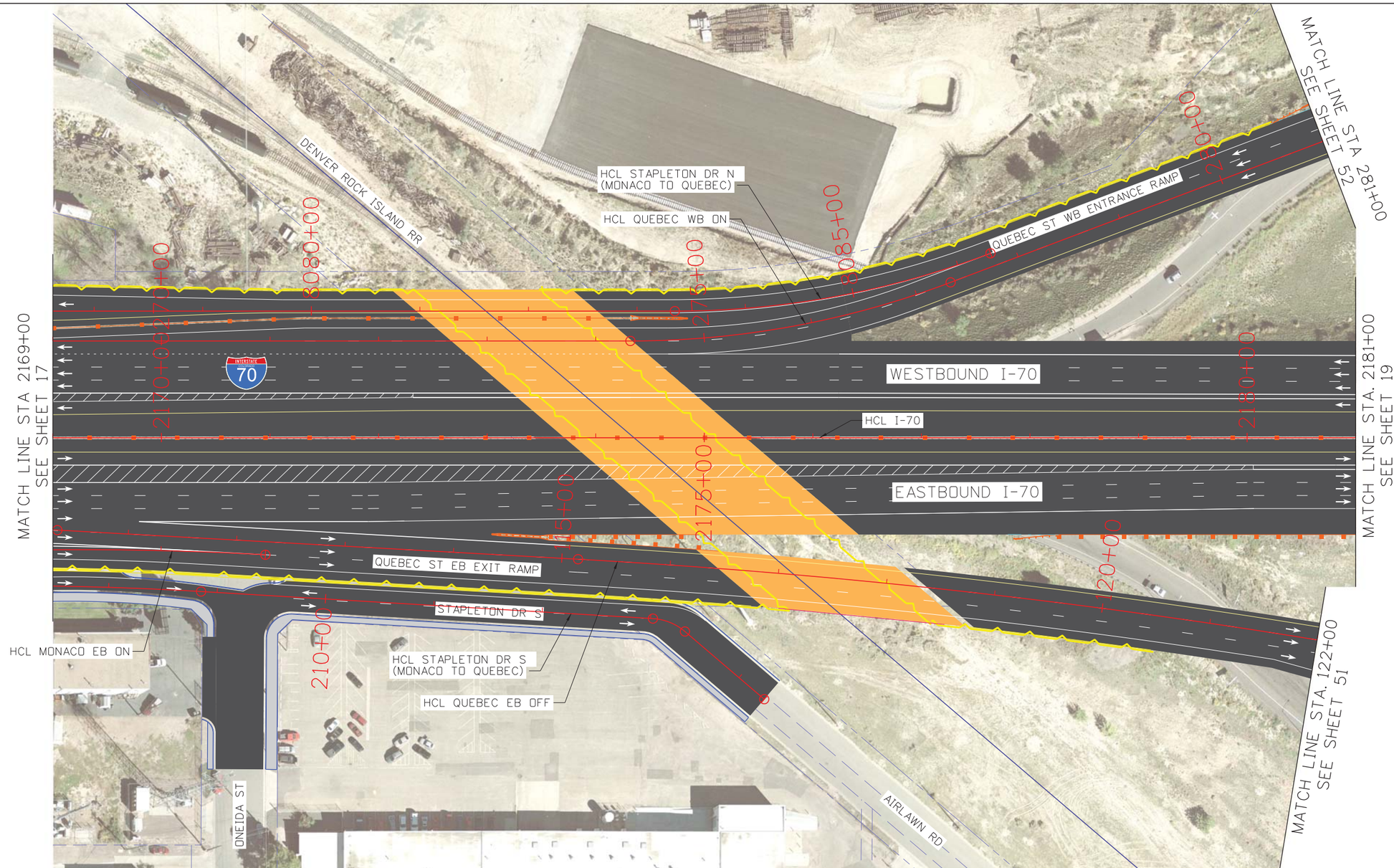
5705+00



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2169+00 TO STA 2181+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	18 of 60

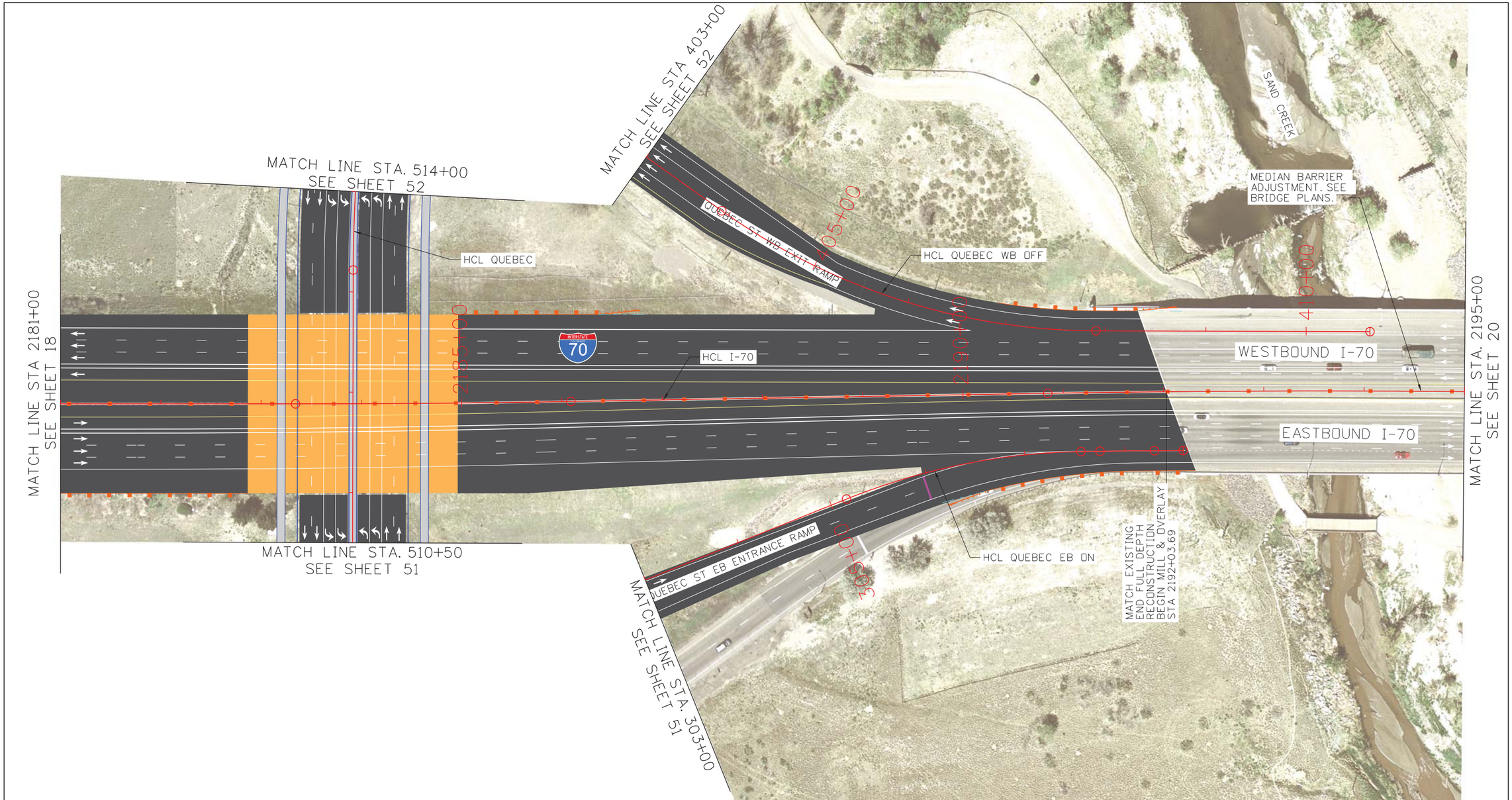
Project No./Code

FBR 0704-234

19631

Sheet Number 76

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

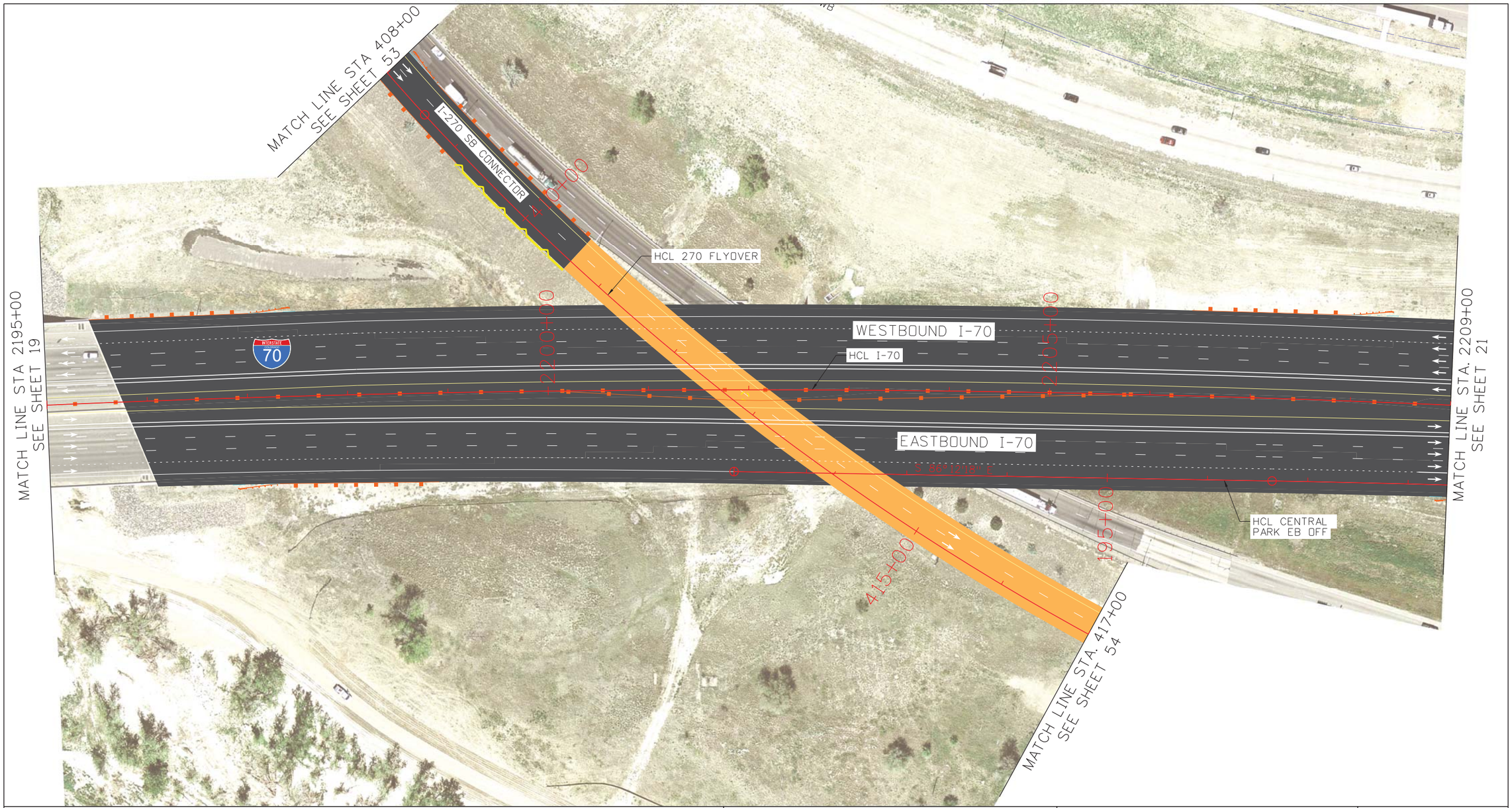
N

CENTRAL 70
ROADWAY PLAN
STA 2181+00 TO STA 2195+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	19 of 60

Project No./Code
FBR 0704-234
19631
Sheet Number 77

$PLOT_INFO$



Kiewit meridiam PARTNERS

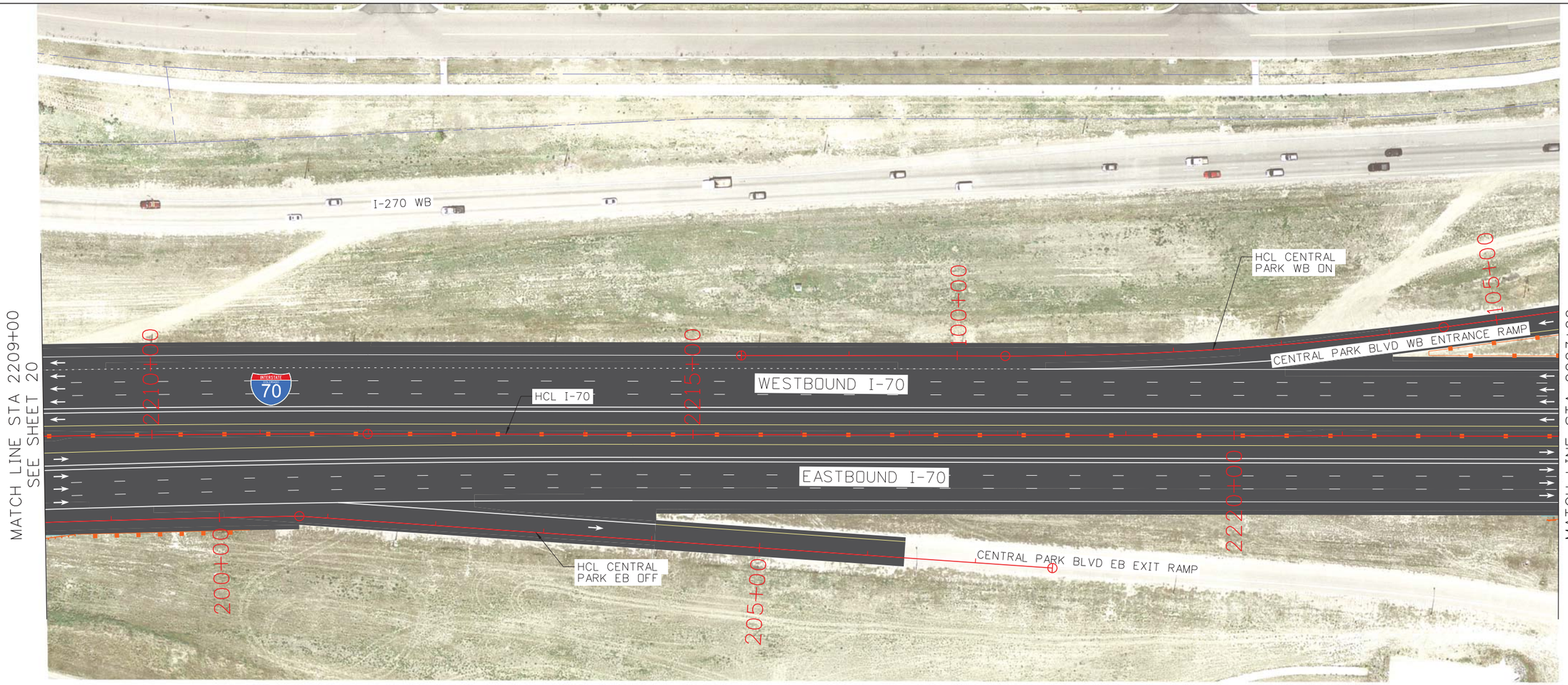
Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2195+00 TO STA 2209+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	20 of 60	Sheet Number 78

$PLOT_INFO$



Kiewit meridiam PARTNERS

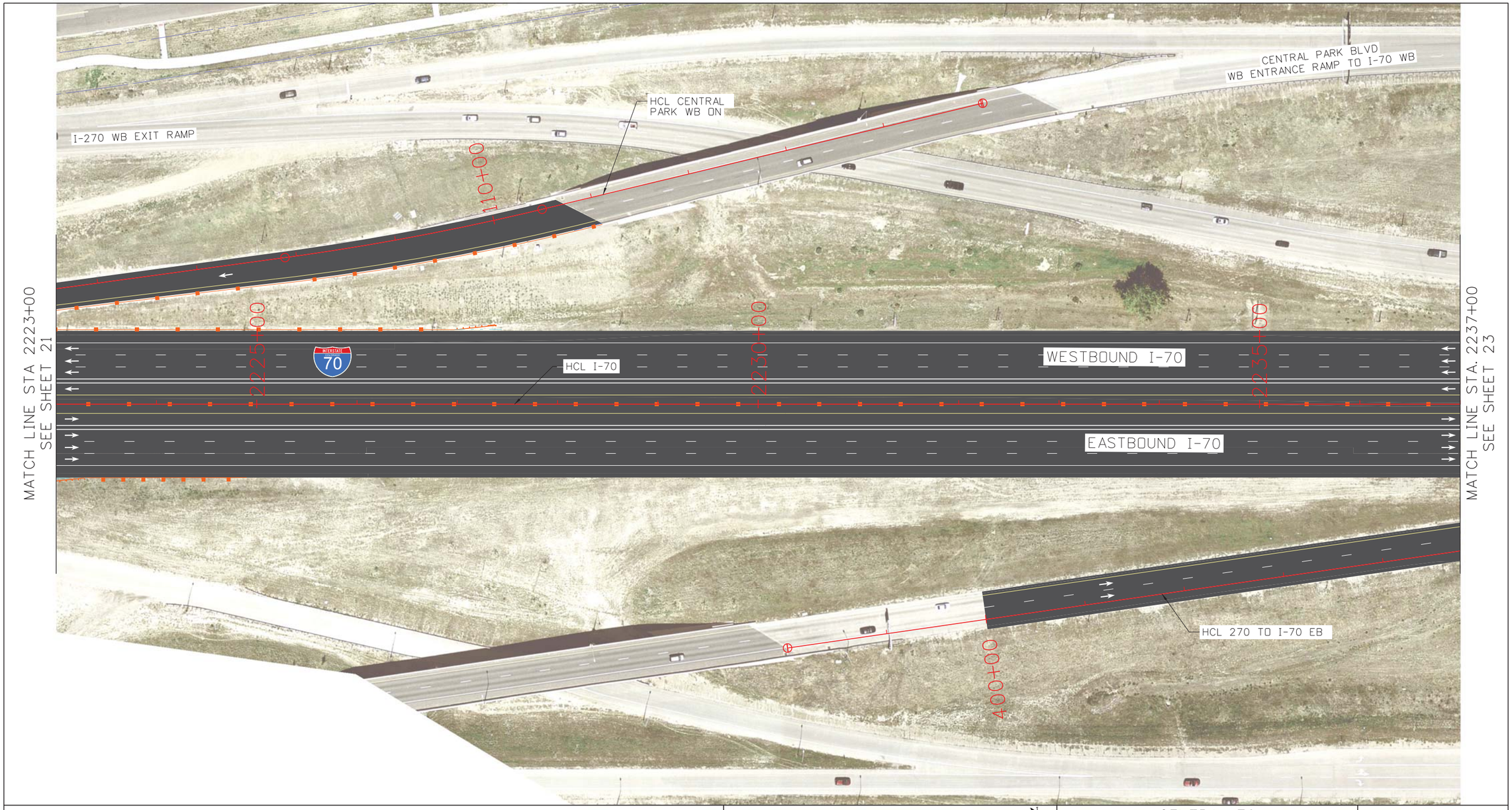
Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2209+00 TO STA 2223+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	21 of 60	Sheet Number 79

$PLOT_INFO$



Kiewit meridiam PARTNERS

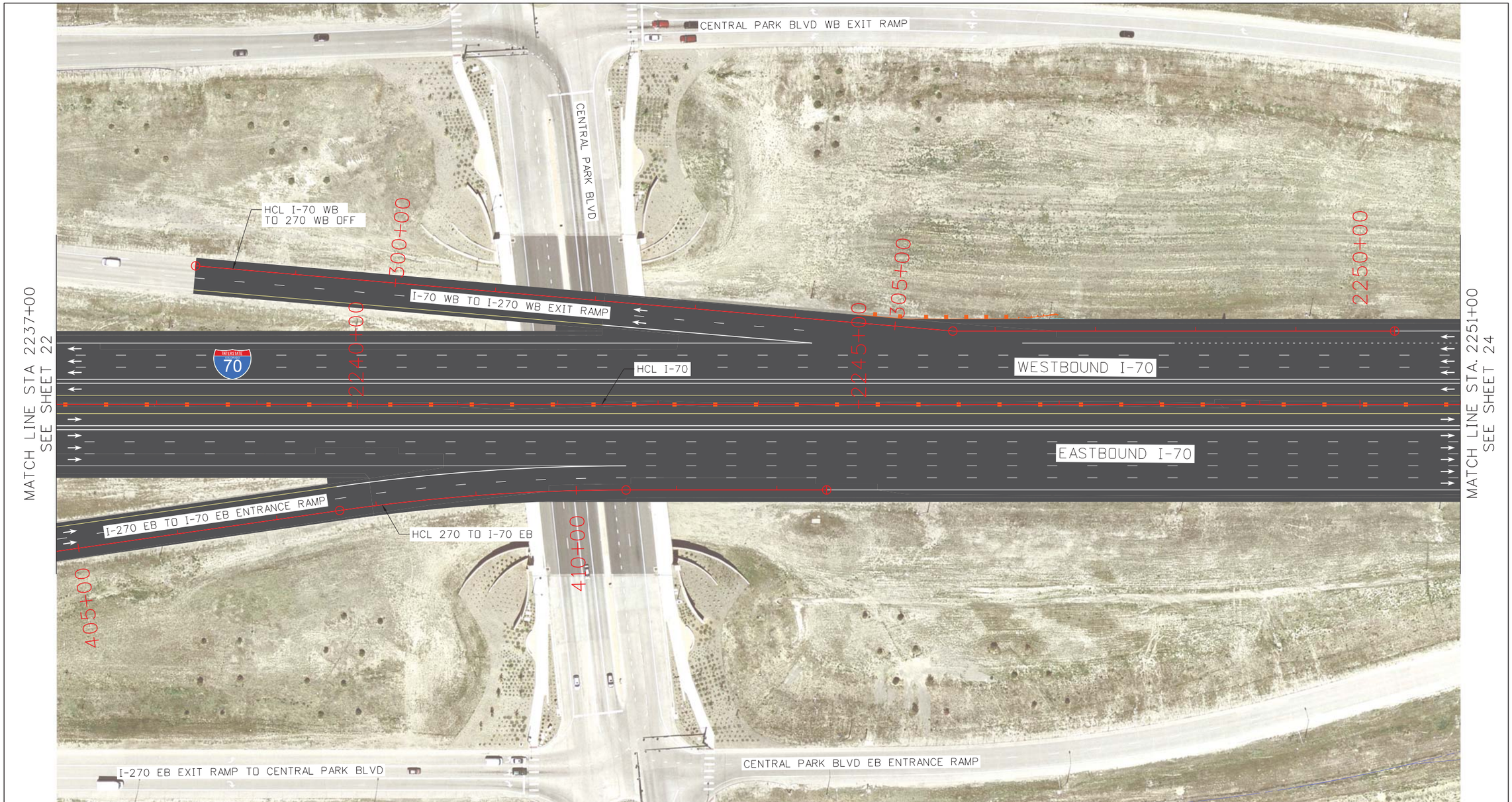
Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2223+00 TO STA 2237+00				Project No./Code
Designer:	KMP	Structure Numbers	-	FBR 0704-234
Detailer:	KMP		-	19631
Subset:	ROADWAY	Subset Sheets:	22 of 60	Sheet Number 80

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2237+00 TO STA 2251+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	23 of 60

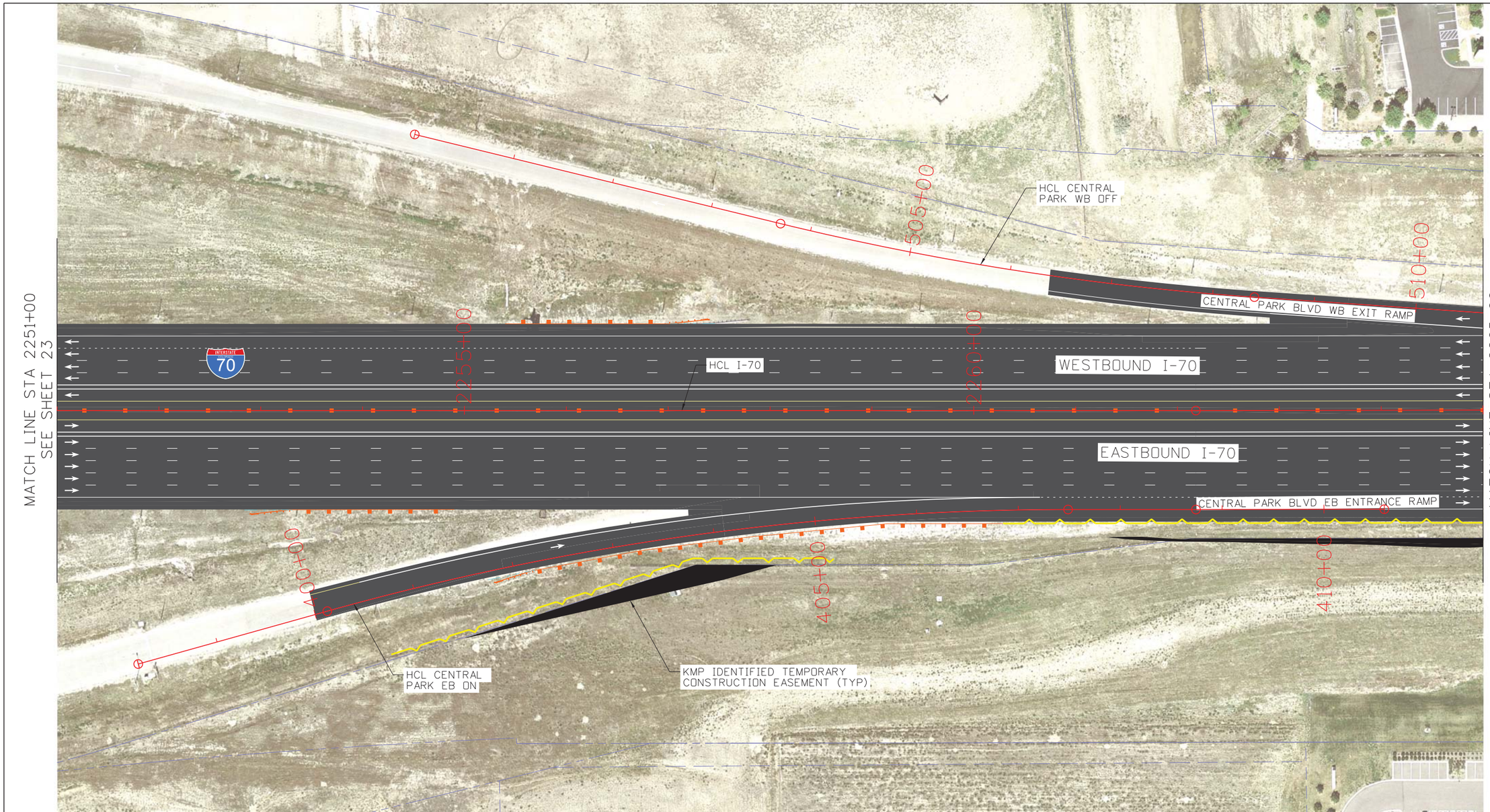
Project No./Code

FBR 0704-234

19631

Sheet Number 81

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2251+00 TO STA 2265+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	24 of 60

Project No./Code

FBR 0704-234

19631

Sheet Number 82

$PLOT_INFO$

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2265+00 TO STA 2279+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	25 of 60

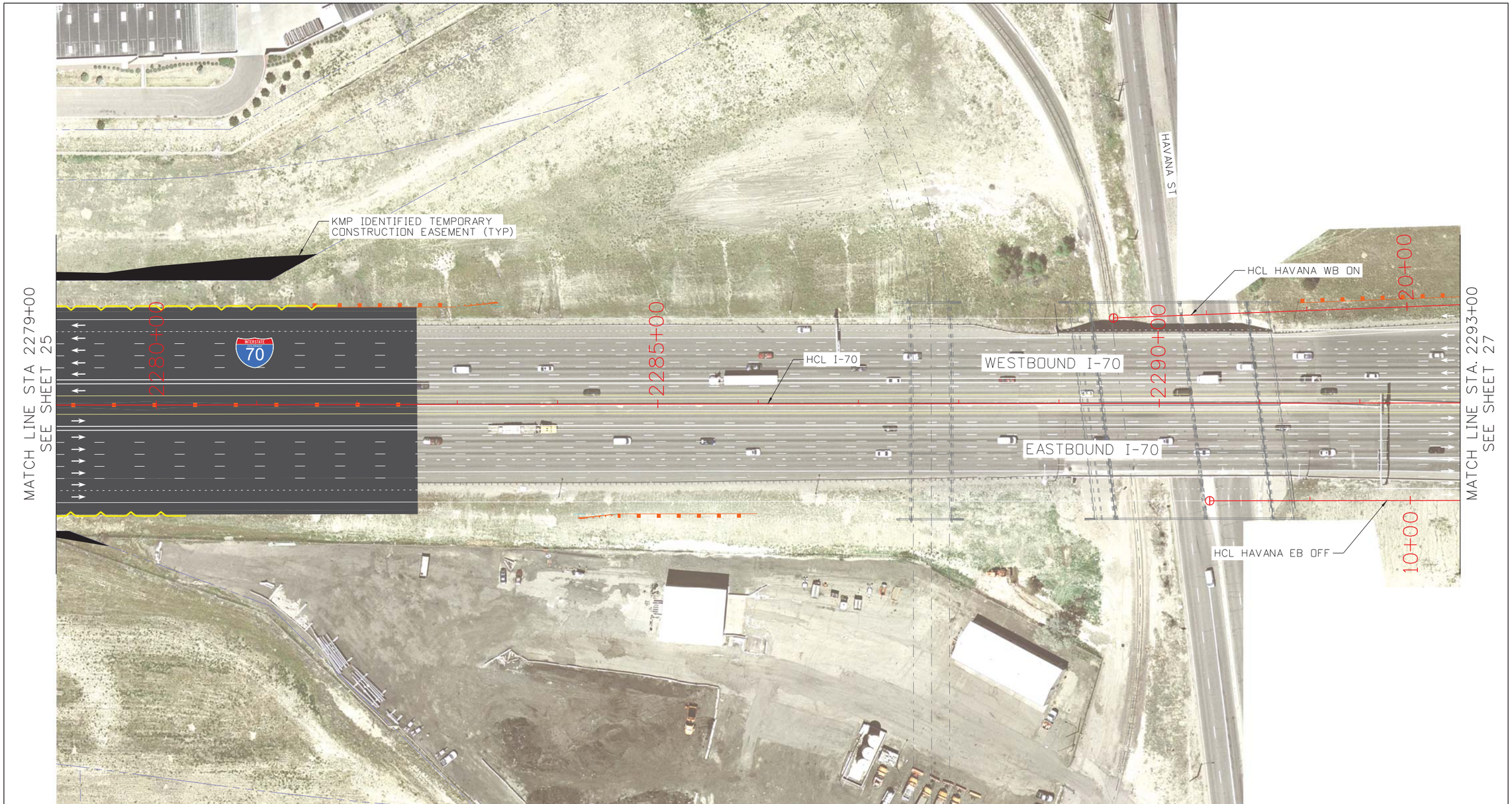
Project No./Code

FBR 0704-234

19631

Sheet Number 83

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

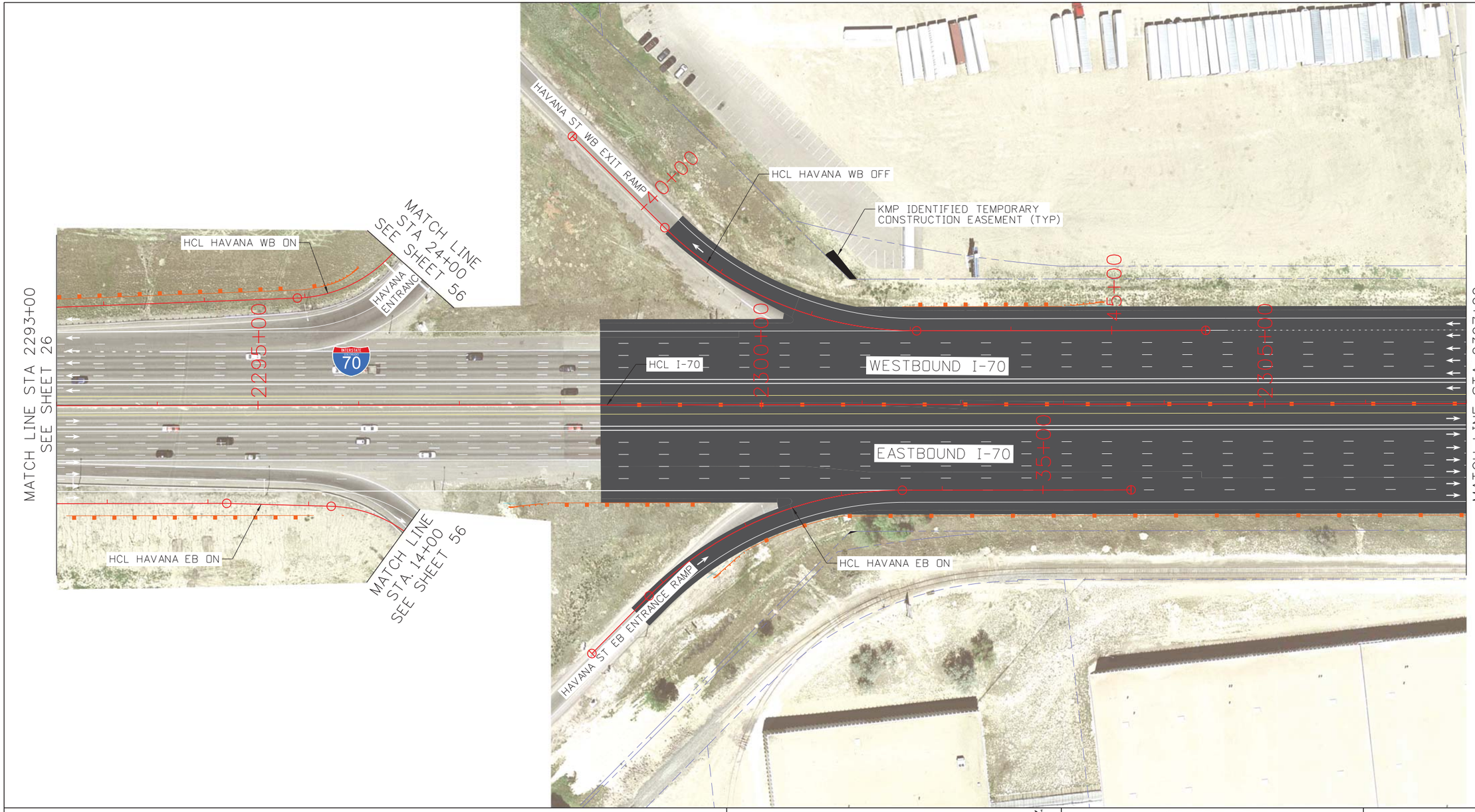
N

CENTRAL 70
ROADWAY PLAN
STA 2279+00 TO STA 2293+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	26 of 60

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	84

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2293+00 TO STA 2307+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	27 of 60	Sheet Number 85

$PLOT_INFO$

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2307+00 TO STA 2321+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	28 of 60

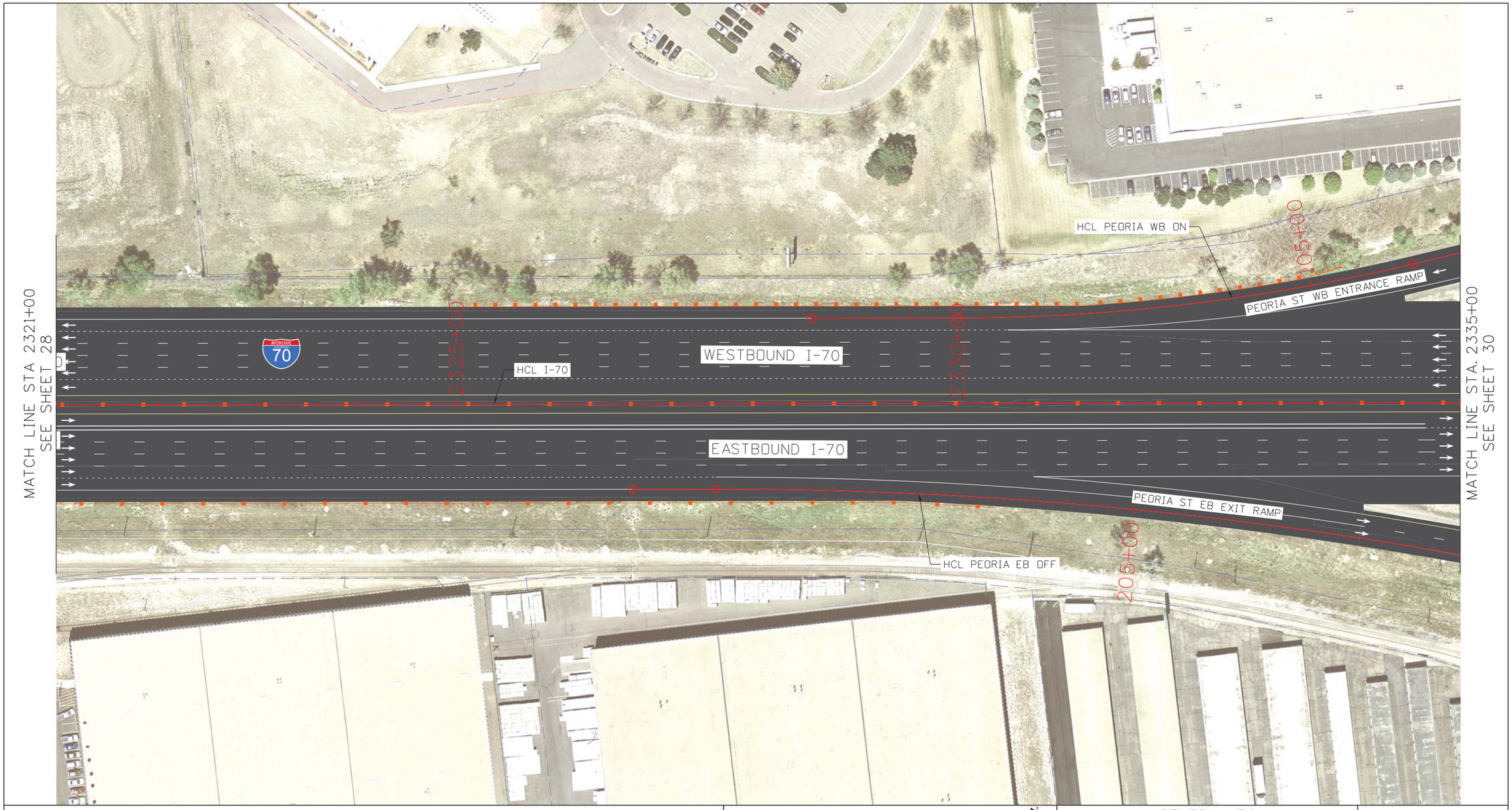
Project No./Code

FBR 0704-234

19631

Sheet Number 86

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2321+00 TO STA 2335+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	29 of 60

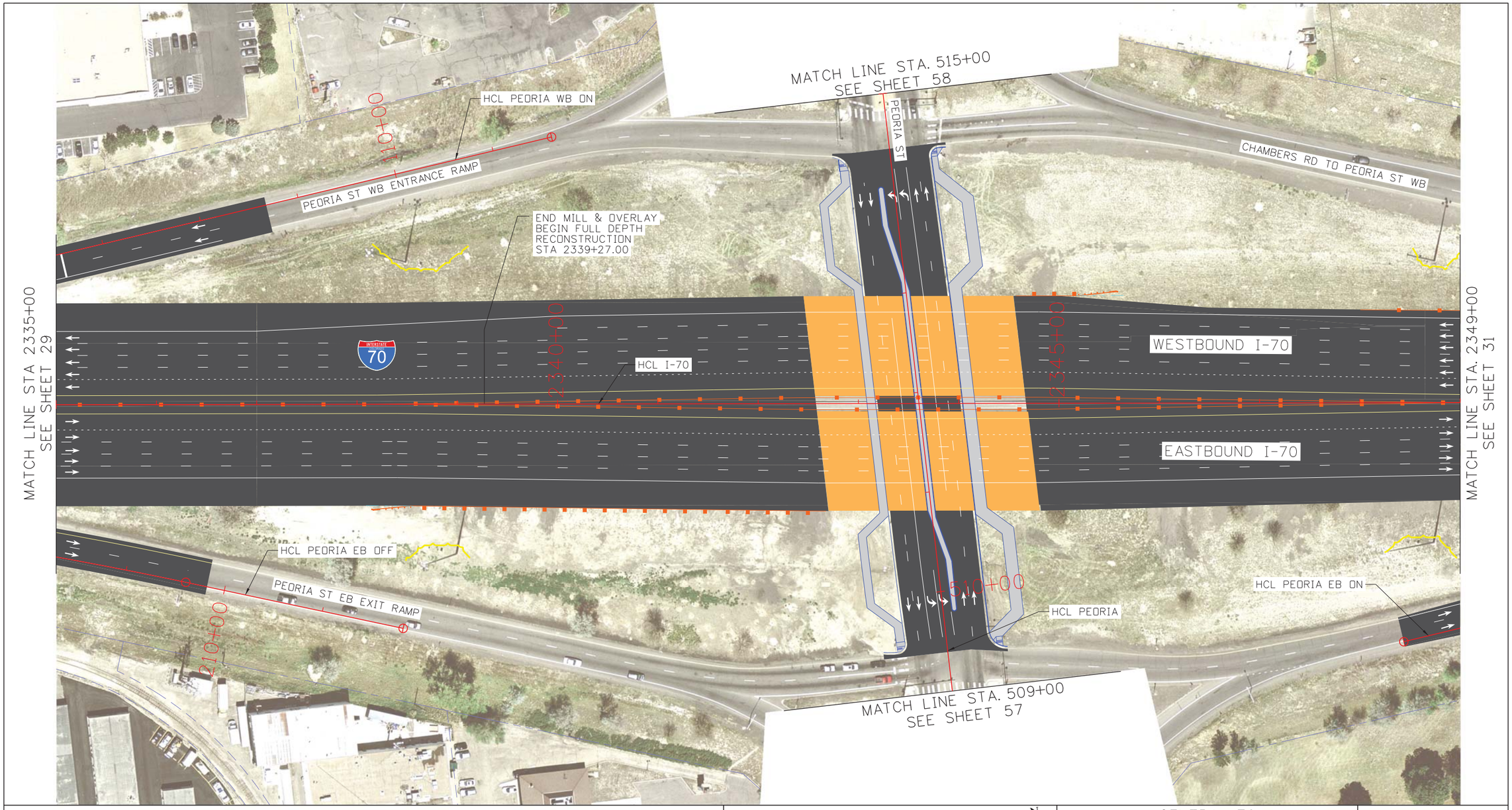
Project No./Code

FBR 0704-234

19631

Sheet Number 87

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2335+00 TO STA 2349+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	30 of 60

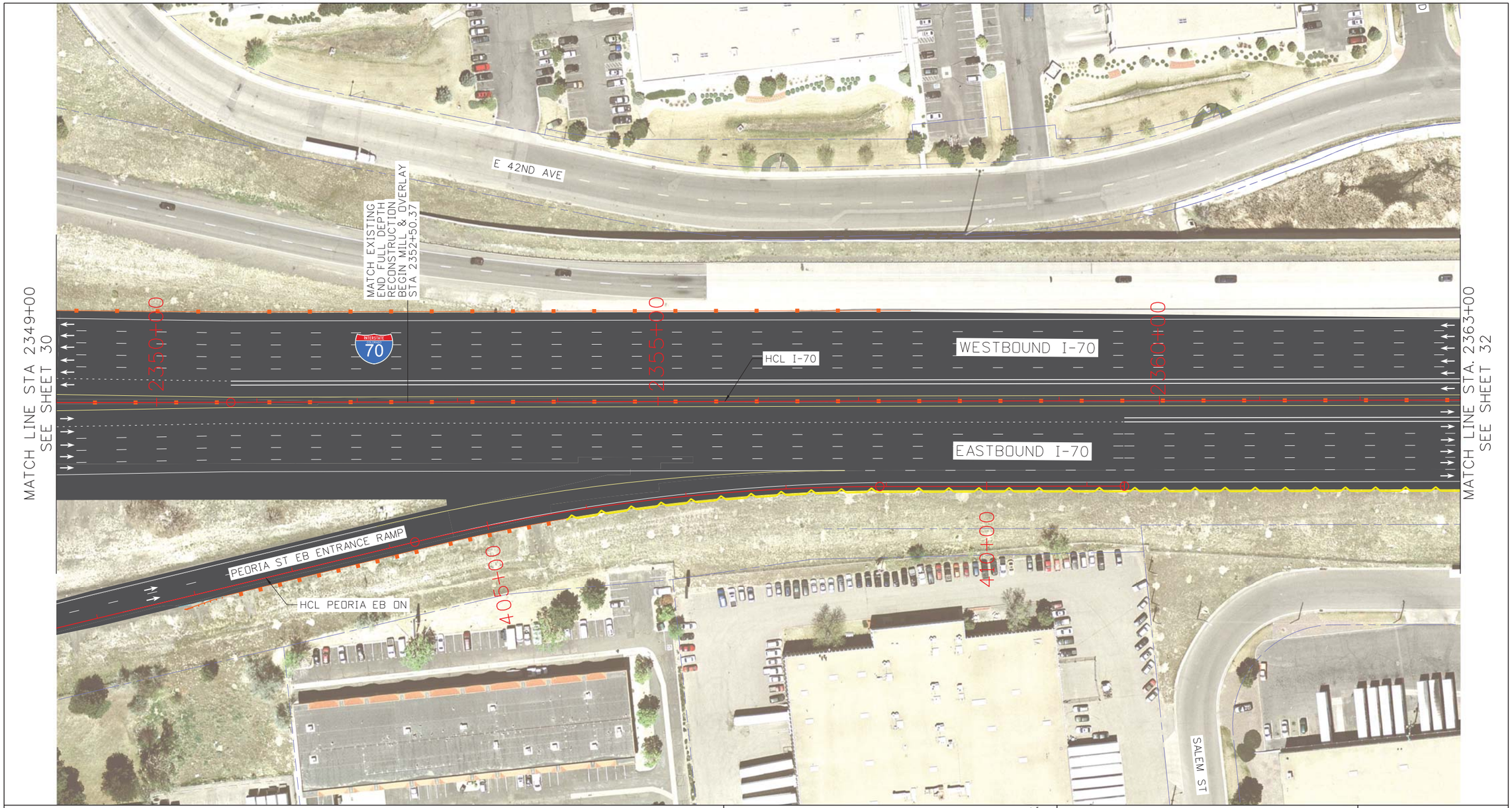
Project No./Code

FBR 0704-234

19631

Sheet Number 88

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2349+00 TO STA 2363+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	31 of 60

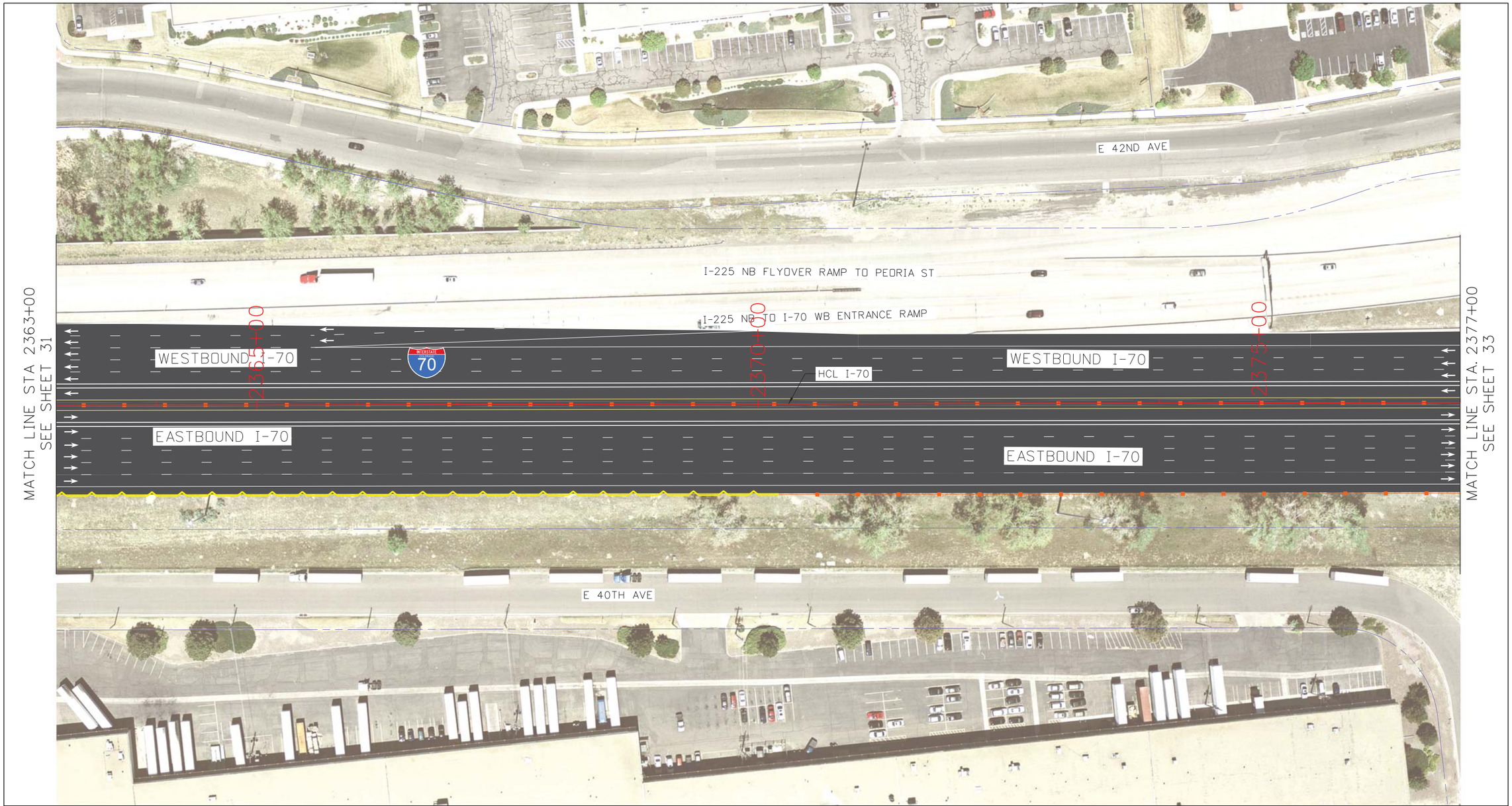
Project No./Code

FBR 0704-234

19631

Sheet Number 89

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

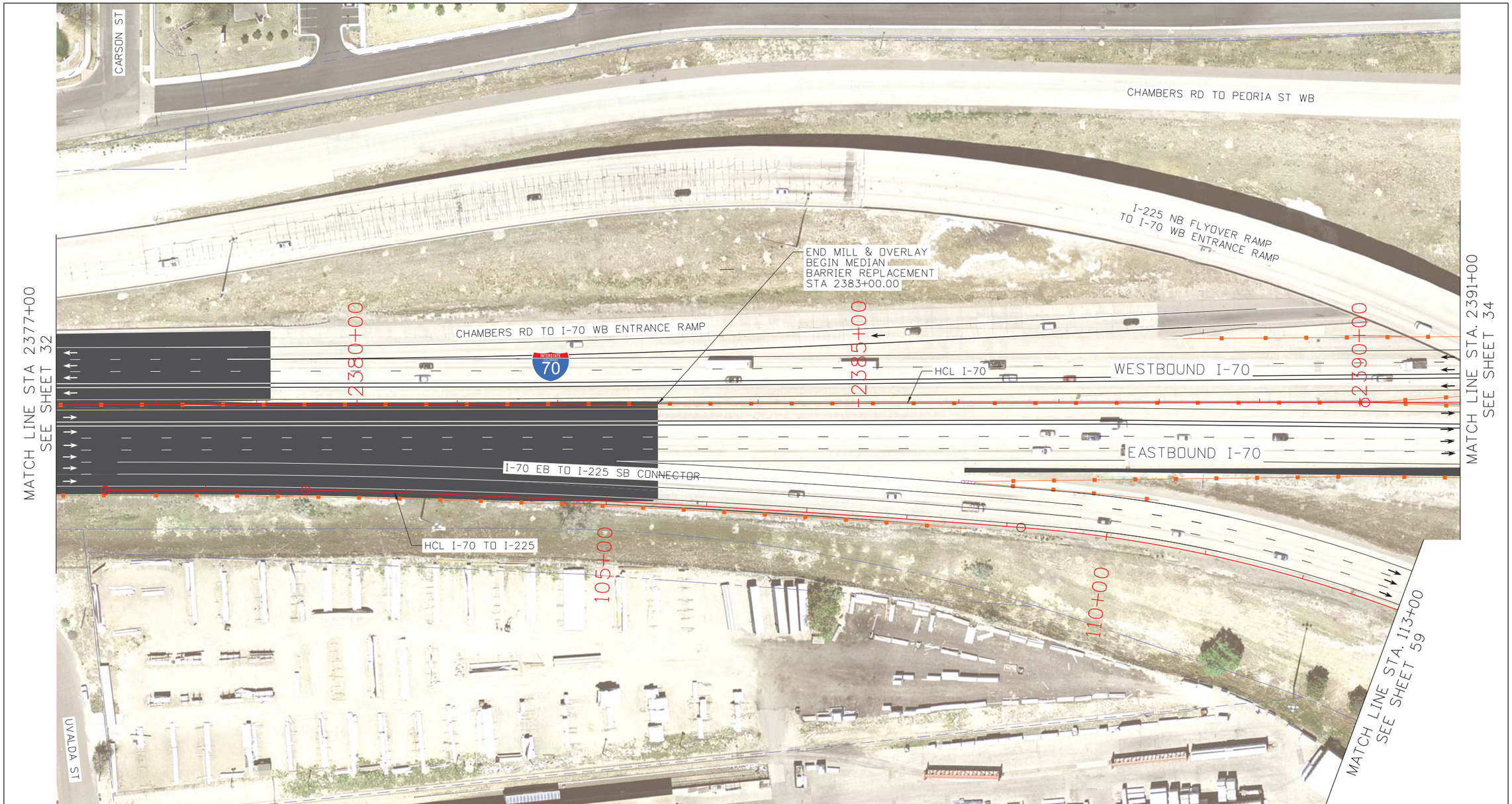
N

CENTRAL 70
ROADWAY PLAN
STA 2363+00 TO STA 2377+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	32 of 60

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	90

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

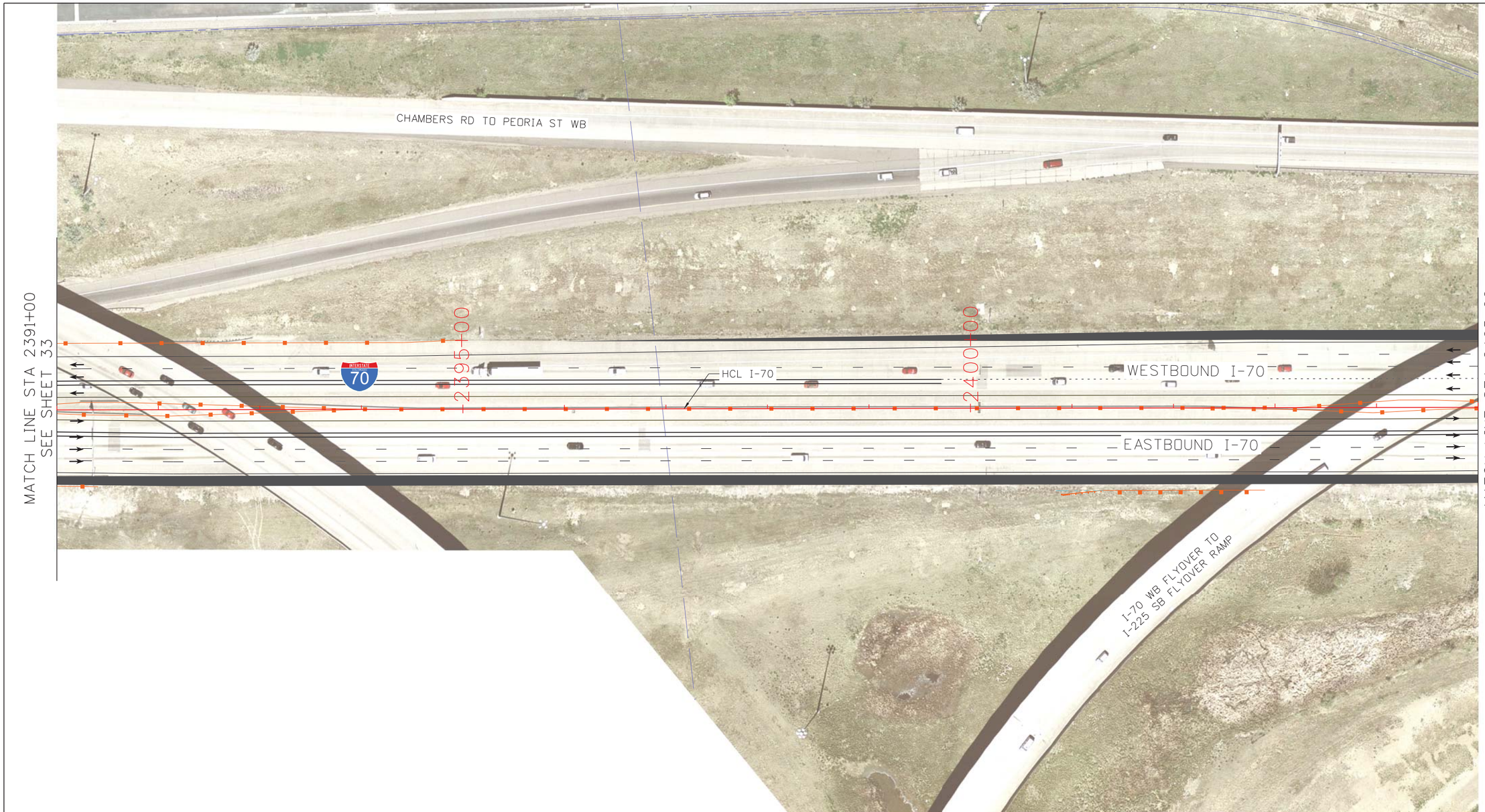
N

CENTRAL 70
ROADWAY PLAN
STA 2377+00 TO STA 2391+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	33 of 60

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	91

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

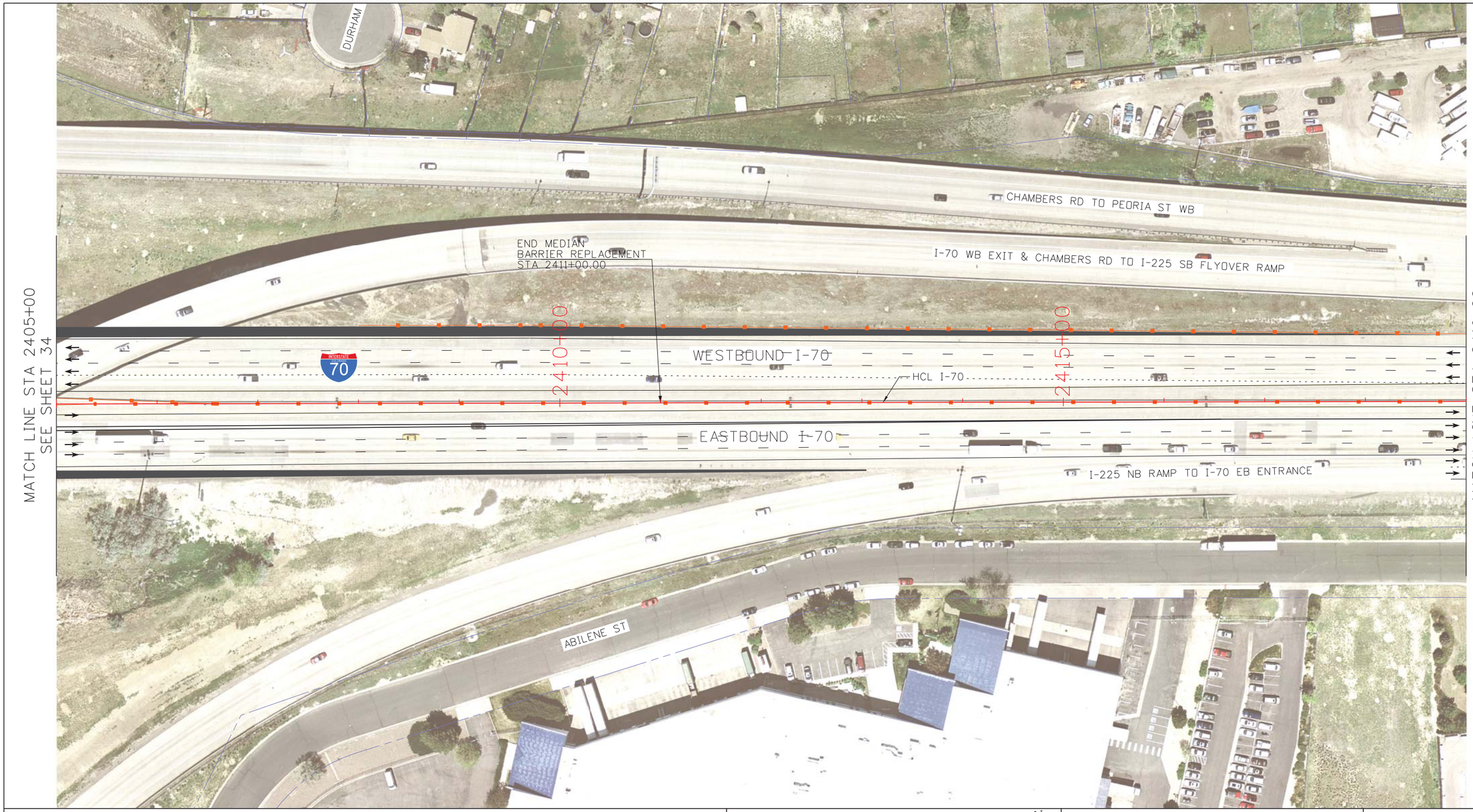
N

CENTRAL 70
ROADWAY PLAN
STA 2391+00 TO STA 2405+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	34 of 60

Project No./Code	
FBR 0704-234	
19631	
Sheet Number	92

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2405+00 TO STA 2419+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	35 of 60

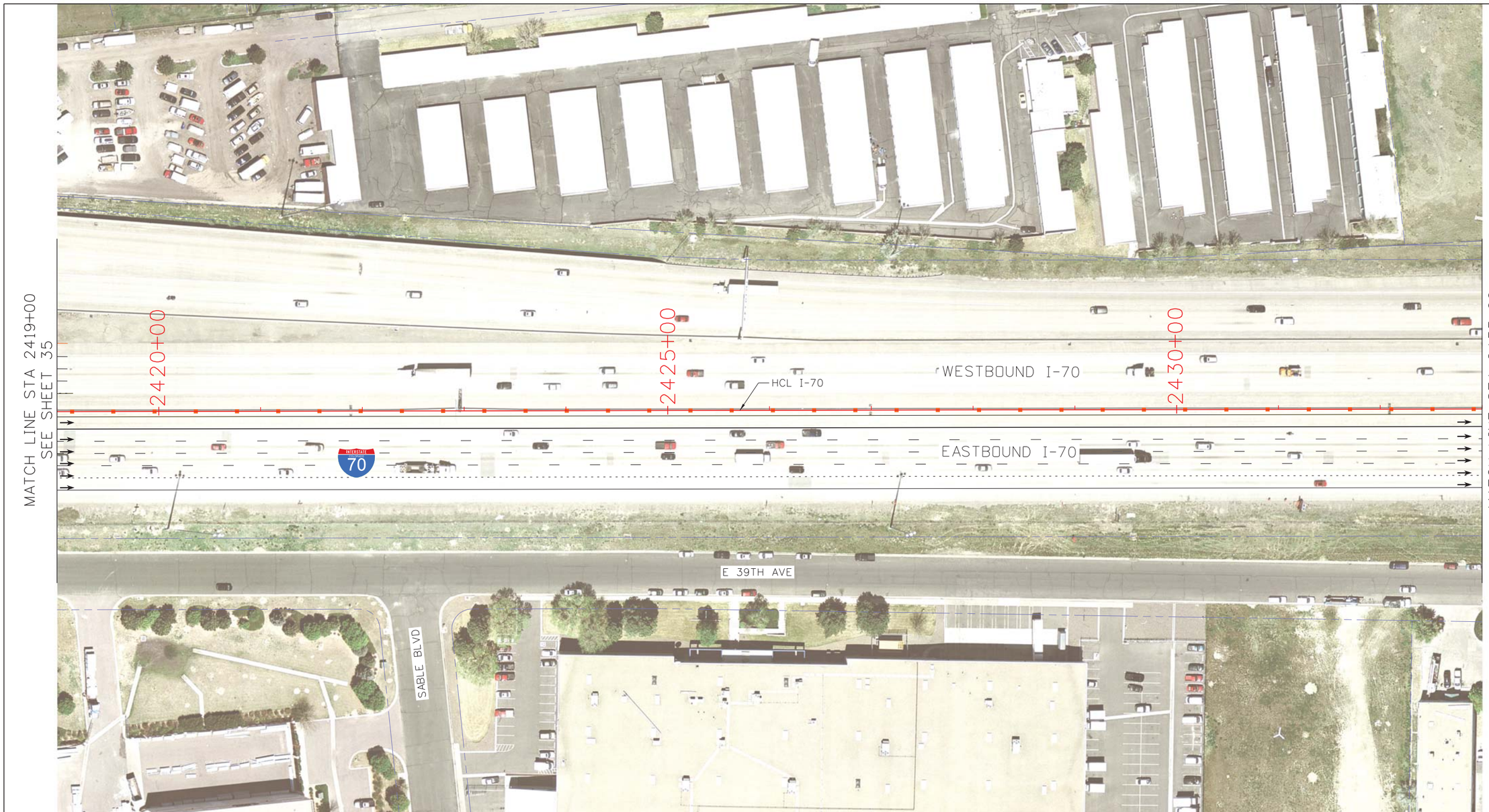
Project No./Code

FBR 0704-234

19631

Sheet Number 93

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2419+00 TO STA 2433+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	36 of 60

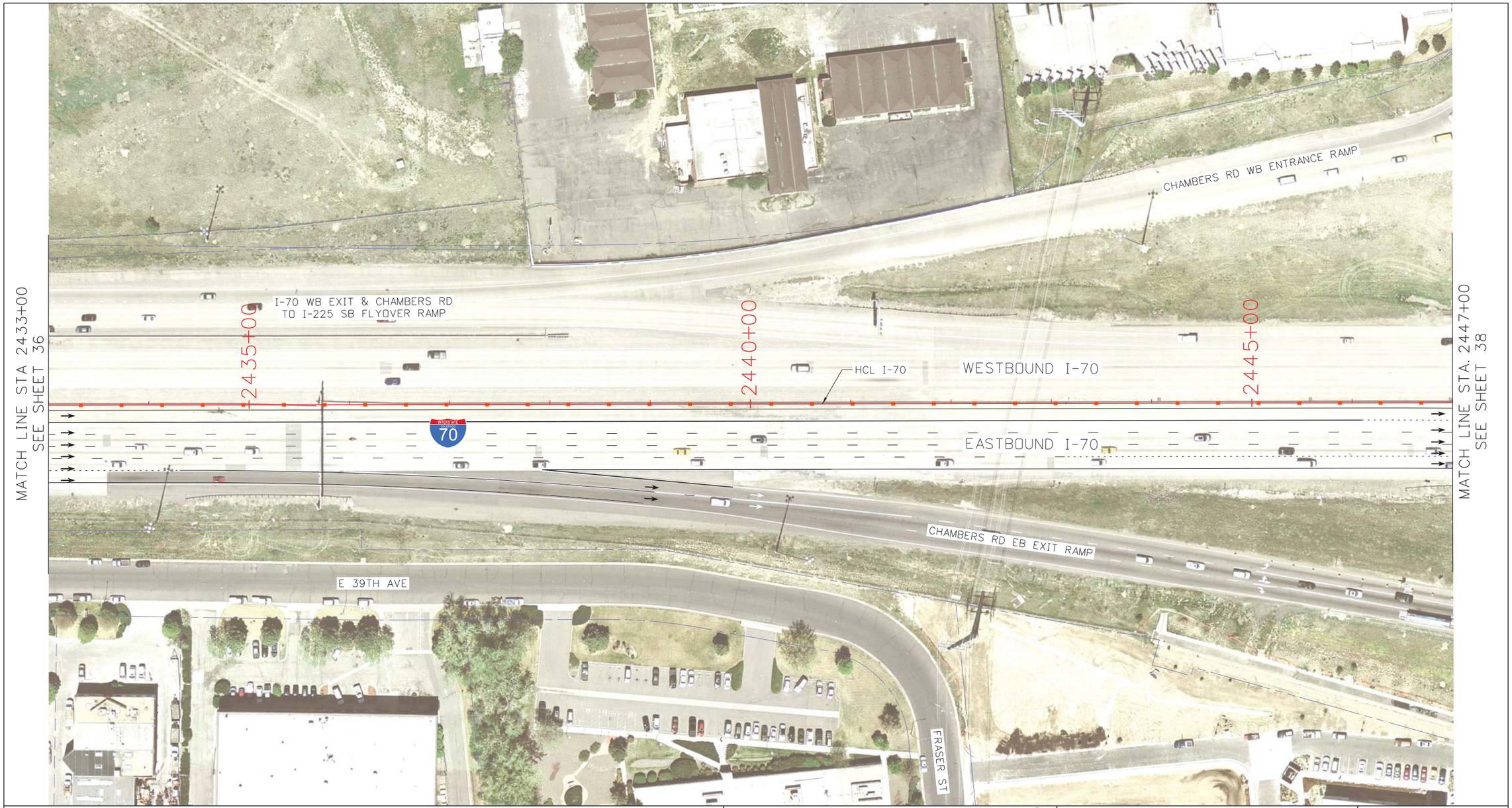
Project No./Code

FBR 0704-234

19631

Sheet Number 94

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

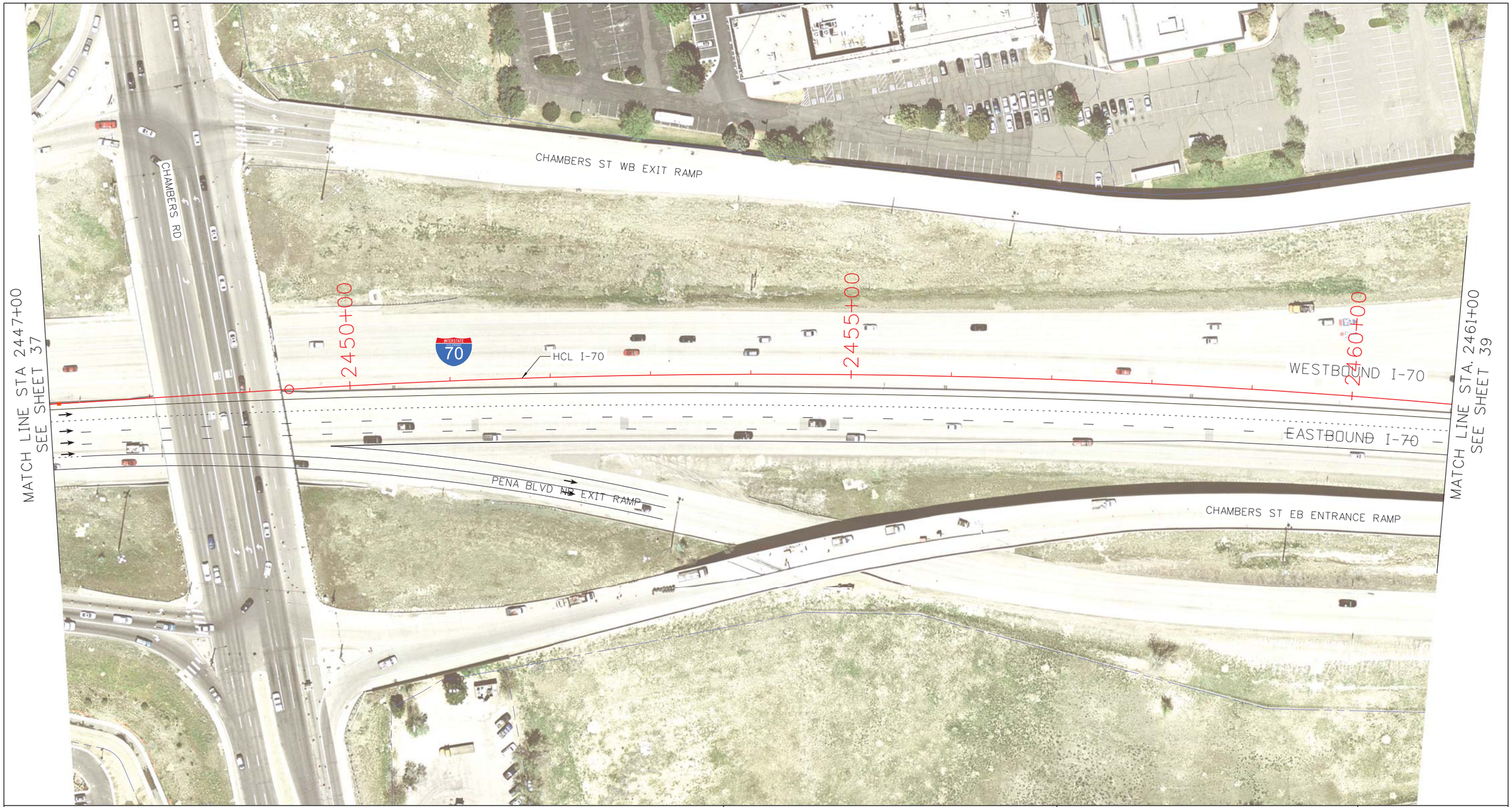
N

CENTRAL 70
ROADWAY PLAN
STA 2433+00 TO STA 2447+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	37 of 60

Project No./Code
FBR 0704-234
19631
Sheet Number 95

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70
ROADWAY PLAN
STA 2447+00 TO STA 2461+00

Designer:	KMP	Structure Numbers	-
Detailer:	KMP		-
Subset:	ROADWAY	Subset Sheets:	38 of 60

Project No./Code

FBR 0704-234

19631

Sheet Number 96

$PLOT_INFO$

Kiewit meridiam PARTNERS

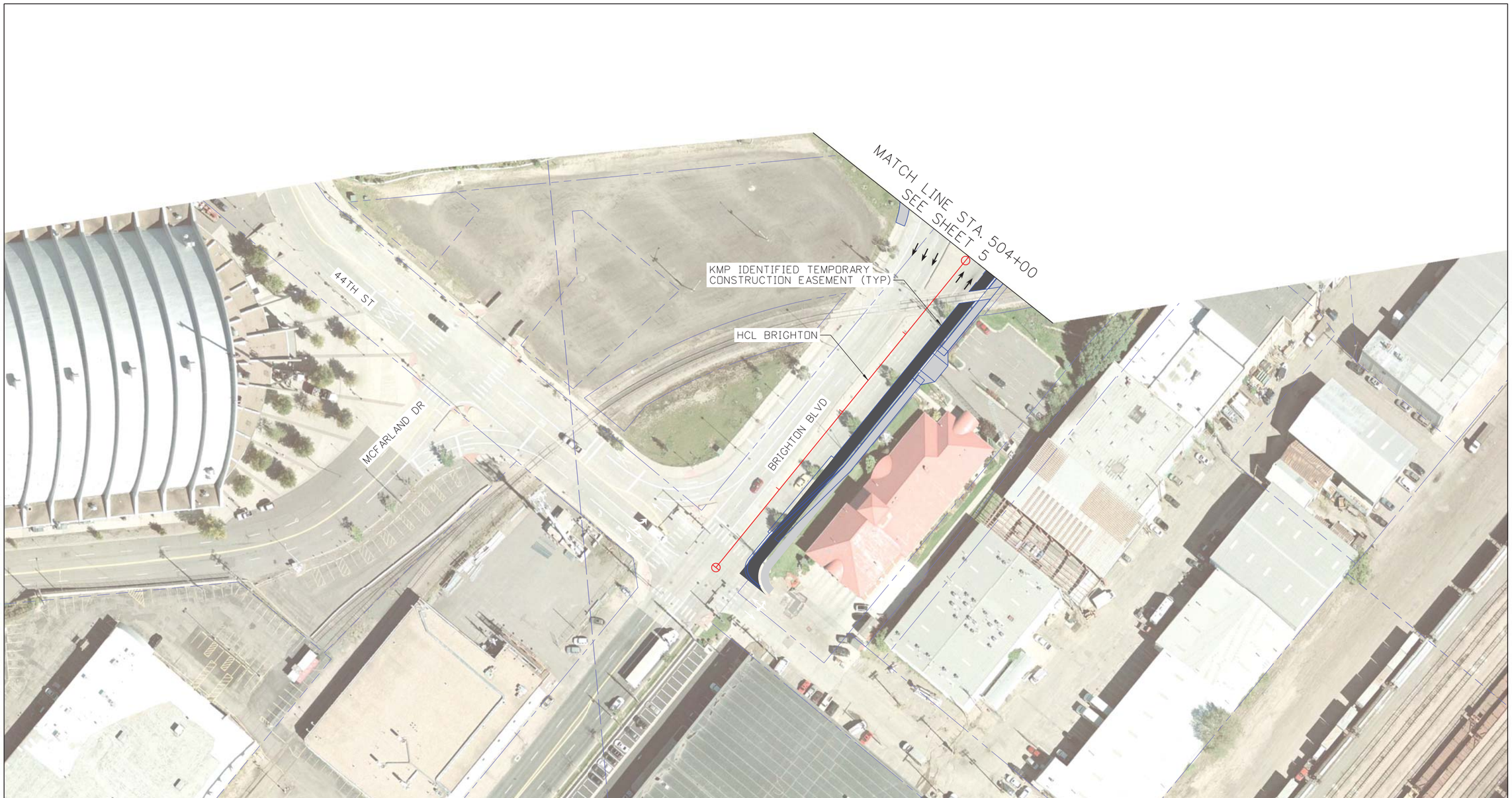
Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN STA 2461+00 TO STA 2474+00				Project No./Code
				FBR 0704-234
Designer: KMP	Structure Numbers	-		19631
Detailer: KMP		-		
Subset: ROADWAY	Subset Sheets:	39 of 60		Sheet Number 97

$PLOT_INFO$



Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN - BRIGHTON STA 500+00 TO STA 504+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	40 of 60	Sheet Number 98

$PLOT_INFO$

Kiewit meridiam PARTNERS

Central 70

0' 50' 100' 200'

N

CENTRAL 70 ROADWAY PLAN - BRIGHTON STA 510+00 TO STA 514+76.46				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	41 of 60	Sheet Number 99

$PLOT_INFO$

Kiewit meridiam PARTNERS

Central 70

N

0' 50' 100' 200'

CENTRAL 70 ROADWAY PLAN - YORK STA 500+00 TO STA 507+00				Project No./Code
				FBR 0704-234
Designer:	KMP	Structure Numbers	-	19631
Detailer:	KMP		-	
Subset:	ROADWAY	Subset Sheets:	42 of 60	Sheet Number 100

$PLOT_INFO$