Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
purchasing@bouldercounty.org

INVITATION TO BID
COVER PAGE

BID Number:	**7189-20**
BID Title:	**Jay Road Overlay**
Pre-Bid Meeting:	Tuesday, December 1, 2020 – 9:00 a.m. Join Microsoft Teams Meeting +1 720-400-7859 United States, Denver (Toll) Conference ID: 736 026 835#
BID Questions Due:	Thursday, December 3, 2020 – 2:00 p.m.
Submittal Due Date:	Monday, December 14, 2020 – 2:00 p.m.
Email Address:	purchasing@bouldercounty.org
Documents included in this package:	Bid Instructions Terms and Conditions Specifications Insurance and W-9 Requirements Bid Tab Section Submittal Checklist Signature Page Sample Contract

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INSTRUCTIONS

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1. Purpose/Background

This project is for the overlay of Jay road from US 36 to SH 119. Also included is the overlay of 47th St from Jay Rd. to Apple Way. Other aspects of this project is the pedestrian improvements of the access ramps and concrete sidewalk repairs within the adjacent subdivision(Orange Orchard).

Other salient items are :

(1) Erosion Control, Mobilization
(2) Construction Surveying
(3) Traffic Control Phasing
(4) Unclassified Excavation
(5) Storm Drainage
(6) Hot Mix Asphalt Placement
(7) Concrete Pavement
(8) Concrete Curb and Ramp
(9) Signing and Striping
(10) Planting, Seeding & Clean Up

2. Non-Mandatory Pre-Bid Meeting

A Non-Mandatory Pre-Proposal Video Conference Meeting through Microsoft Teams will be held on December 1, 2020 at 9:00 a.m. Please click on the link on the cover page, or call +1 720-400-7859 United States, Denver (Toll), Conference ID: 736 026 835#.

3. Written Inquiries

All inquiries regarding this BID will be submitted via email to the Boulder County Purchasing Office at purchasing@bouldercounty.org on or before **2:00 p.m., Thursday, December 3, 2020.** A response from the county to all inquiries will be posted and sent via email no later than **Close of Business, Monday, December 7, 2020.**

Please do not contact any other county department or personnel with questions or for information regarding this solicitation.

4. Submittal Instructions

BIDs are due at the email box only, listed below, for time and date recording on or before **2:00 p.m. Mountain Time on Monday, December 14, 2020**. A bid opening will be conducted at 3:00 p.m. via email by sending a copy of the bid tab to all who have submitted a bid.

Please note that email responses to this solicitation are limited to a maximum of 50MB capacity. NO ZIP FILES OR LINKS TO EXTERNAL SITES ALLOWED. Electronic submittals must be received in the email box listed below. Submittals sent to any other box will NOT be forwarded or accepted. This email box is only accessed on the due date of your questions or proposals. Please use the Delivery Receipt option to verify receipt of your email. It is the sole responsibility of the proposer to ensure their documents are received before the deadline specified above. Boulder County does not accept responsibility under any circumstance for delayed or failed email or mailed submittals.

Email purchasing@bouldercounty.org**;** identified as **BID # 7189-20** in the subject line.

All BIDs must be received and time and date recorded by authorized county staff by the above due date and time. Sole responsibility rests with the bidder to see that their BID response is received on time at the stated location(s). Any BIDs received after due date and time will be returned to the bidder.

The Board of County Commissioners reserves the right to reject any and all BIDs, to waive any informalities or irregularities therein, and to accept the proposal that, in the opinion of the Board, is in the best interest of the Board and of the County of Boulder, State of Colorado.

Americans with Disabilities Act (ADA): If you need special services provided for under the Americans with Disabilities Act, contact the ADA Coordinator or the Human Resources office at (303) 441-3525 at least 48 hours before the scheduled event.

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TERMS AND CONDITIONS

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1. Bidders are expected to examine the drawing, specifications, schedule of delivery, and all instructions. Failure to do so will be at the bidder's risk.

2. Each bidder will furnish the information required in the Invitation to Bid.

3. The Contract/Purchase Order will be awarded to that responsible bidder whose submittal, conforming to the Invitation to Bid, will be most advantageous to the County of Boulder, based on best value not only price.

4. The County of Boulder reserves the right to reject any or all bids and to waive informalities and minor irregularities in bids received, and to accept any portion of or all items proposed if deemed in the best interest of the County of Boulder to do so.

5. No submittal will be withdrawn for a period of thirty (30) days subsequent to the opening of bids without the consent of the County Purchasing Agent or delegated representative.

6. A signed purchase order or contract furnished to the successful bidder results in a binding contract without further action by either party.

7. Late or unsigned bids will not be accepted or considered. It is the responsibility of bidders to ensure that the bid arrives at the Administrative Services Information Desk prior to the time indicated in the "Invitation to Bid."

8. The proposed price will be exclusive of any Federal or State taxes from which the County of Boulder is exempt by law.

9. Any interpretation, correction or change of the bid documents will be made by Addendum. Interpretations, corrections and changes of the bid documents made in any

other manner will not be binding, and bidder will not rely upon such interpretations, corrections and changes. The County's Representative will not be responsible for oral clarification.

10. Confidential/Proprietary Information: Bids submitted in response to this "Invitation to Bid" and any resulting contract are subject to the provisions of the Colorado Public (Open) Records Act, 24-72-201 et.seq., C.R.S., as amended. Any restrictions on the use or inspection of material contained within the bid and any resulting contract will be clearly stated in the bid itself. Confidential/proprietary information must be readily identified, marked and separated/packaged from the rest of the bid. **Co-mingling of confidential/proprietary and other information is NOT acceptable. Neither a bid, in its entirety, nor bid price information will be considered confidential/proprietary. Any information that will be included in any resulting contract cannot be considered confidential.**

    The Boulder County Attorney's Office retains sole authority for determining whether the Colorado Open Records Act requires or permits Boulder County to disclose proposal or bid documents, or any information contained therein, pursuant to an open records request.

11. Boulder County promotes the purchase/leasing of energy efficient, materials efficient and reduced toxic level products where availability, quality and budget constraints allow. Bidders are expected whenever possible to provide products that earn the ENERGY STAR and meet the ENERGY STAR specifications for energy efficiency with power management features enabled. Bidders are encouraged to offer products and equipment with post-consumer recycled-content materials. Products should be packaged and delivered with a minimum amount of recycled packaging that adequately protects the product, but is not excessive.

12. Pursuant to Colorado law (House Bill 1292), in any bidding process for public works in which a bid is received from a non-resident bidder who is from a state that provides a percentage bidding preference, a comparable percentage disadvantage will be applied to the bid of that bidder. Bidders may obtain additional information from the Department of Personnel's website: http://www.colorado.gov/dpa/.

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SPECIFICATIONS

PROJECT SPECIFICATIONS
Jay Road Overlay

INDEX

	Date
	(Oct. 20, 2020)

PROJECT SPECIAL PROVISIONS

Name	**Date**
Commencement and Completion of Work (Working or Calendar Date)	(Oct. 20, 2020)
Revision of Section 101 – Definition of Terms	(Oct. 20, 2020)
Revision of Section 102 – Project Plans and Other Data	(Oct. 20, 2020)
Revision of Section 104 – Maintaining Traffic	(Oct. 20, 2020)
Revision of Section 106 – Control of Material	(Oct. 20, 2020)
Revision of Section 107 – Air Quality Control	(Oct. 20, 2020)
Revision of Section 107 – Fire Protection Plan	(Oct. 20, 2020)
Revision of Section 108 – Prosecution and Progress	(Oct. 20, 2020)
Revision of Section 202 – Removal of Pavement Marking	(Oct. 20, 2020)
Revision of Section 202 – Removal of Topsoil	(Oct. 20, 2020)
Revision of Section 203 – Excavation and Embankment	(Oct. 20, 2020)
Revision of Section 207 – Topsoil	(Oct. 20, 2020)
Revision of Section 208 – Erosion Control	(Oct. 20, 2020)
Revision of Section 209 – Dust Palliatives	(Oct. 20, 2020)
Revision of Section 212 – Seeding, Fertilizer, Soil Conditioner, Sodding	(Oct. 20, 2020)
Revision of Section 403 – Hot Mix Asphalt	(Oct. 20, 2020)
Revision of Section 603 – Tracer Wire	(Oct. 20, 2020)
Revision of Section 626 – Public Information Services	(Oct. 20, 2020)
Revision of Sections 627 and 713 – Glass Beads for Pavement Marking	(Oct. 20, 2020)
Revision of Section 627 – Pavement Marking	(Oct. 20, 2020)
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Force Account Items	(Oct. 20, 2020)
Traffic Control Plan - General	(Oct. 20, 2020)
Utilities	(Oct. 20, 2020)

CDOT STANDARD SPECIAL PROVISIONS

Name	**Date**
Revision of Section 103 – Award and Execution of Contract	(Sept. 18, 2020)
Revision of Section 107 – Project Safety Management Plan	(April 13, 2020)
Revision of Sections 107 and 208 – Water Quality Control under One Acre of Disturbance	(Oct. 1, 2019)
Revision of Section 109 – Prompt Payment (Local Agency)	(Oct. 1, 2019)
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Revision of Section 212 – Soil Amendments, Seeding, and Sodding	(July 7, 2020)
Revision of Section 412 – Dowel Bar for Joints	(Dec. 13, 2019)
Revision of Section 412 – Portland Cement Concrete Pavement	(Sept. 3, 2020)
Revision of Section 601 – Concrete Mix Designs	(Jan. 13, 2020)
Revision of Section 614 – Pedestrian Push Buttons	(Jan. 23, 2020)

PROJECT SPECIAL PROVISIONS

The 2019 Colorado Department of Transportation Standard Specifications for Road and Bridge Construction controls construction of this project. The following special provisions supplement or modify the Standard Specifications and take precedence over the Standard Specifications and plans.

COMMENCEMENT AND COMPLETION OF WORK (WORKING DAYS OR CALENDAR DATE)

The Contractor shall commence work under this Contract on or after the 5th day following contract execution, unless such time for beginning the work shall be changed by Boulder County Public Works in the "Notice to Proceed." The contractor has until September 30, 2021 to complete the work in accordance with the Notice to Proceed. Once work has begun, the contractor will have 60 working days to complete. The contractor shall notify Boulder County 30 days prior to start of construction. Once the contractor starts in a particular location with a specific element of work, he cannot leave that portion of the project until it is complete. Due to paving temperature requirements, construction will not take place over the winter.

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REVISION OF SECTION 101
DEFINITIONS AND TERMS

Certain terms utilized in the latest edition of the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction shall be interpreted to have different meanings within the scope of this Contract. A summary of redefinitions is as follows:

Section 101 of the Standard Specifications is hereby revised for this project as follows:

Subsection 101.22 "Contractor" shall mean prefabricator and/or contractor as described in subsection 101.23

Subsection 101.28 "Department" shall mean Boulder County, Colorado (where applicable).

Subsection 101.29 "Engineer" shall mean County Engineer, Boulder County, Colorado or designated representative (where applicable).

Subsection 101.36 shall include:

Additional holidays recognized by Boulder County are:

New Year's Eve Day, Starting at Noon, if falls on Tuesday through Thursday
Full Day New Year's Eve, only if day falls on Monday.
President's Day
Election Day (Even years)
Day after Thanksgiving Day
Christmas Eve, Starting at Noon, if falls on Tuesday through Thursday
Full Day Christmas Eve, only if day falls on Monday

Subsection 101.39 "Laboratory" shall mean Boulder County, Colorado or their designated representative.

Subsection 101.51 "Project Engineer" shall mean Boulder County's duly authorized representative who may be a Boulder County employee or an employee of a consulting engineer (consultant) under contract to Boulder County. (where applicable)

Subsection 101.51 (a) "CDOT Project Engineer" shall be replaced with "Project Engineer" within these specifications. When applicable and when these documents reference a CDOT engineer, this reference shall be construed to mean Project Engineer.

REVISION OF SECTION 101
DEFINITIONS AND TERMS

Subsection 101.51 (b) shall be replaced with the following:

"Consultant Project Engineer". The consultant employee under the responsible charge of the consultant's Professional Engineer who is in direct charge of the work and is responsible for the administration and satisfactory completion of the project. The Consultant Project Engineer's duties are delegated by the Project Engineer in accordance with the scope of work in the consultant's contract with Boulder County. The Consultant Project Engineer is not authorized to sign or approve Contract Modification Orders.

Subsection 101.58 "Region Transportation Director" shall mean Boulder County Engineer, Boulder County, Colorado or designated representative (where applicable).

Subsection 101.76 "State" shall mean Boulder County, Colorado (where applicable).

REVISION OF SECTION 102
PROJECT PLANS AND OTHER DATA

Section 102 of the Standard Specifications is hereby revised for this project as follows:

Subsection 102.05 shall include the following:

Boulder County will provide electronic files of drawings, the sample contract document, the project technical specifications in PDF format, online at the designated internet bid advertisement site, and they will be considered as the official bid set and record set.

REVISION OF SECTION 104
MAINTAINING TRAFFIC

Section 104 of the Standard Specifications is hereby revised as follows:

Subsection 104.04 shall include the following:

Employee vehicle parking is prohibited where it conflicts with safety, access or flow of traffic. The Contractor is responsible for obtaining, coordinating and maintaining acceptable parking and staging areas for the duration of the construction activities. This shall not be paid for separately but shall be included in the work.

REVISION OF SECTION 106
CONTROL OF MATERIAL

Section 106 of the Standard Specifications is hereby revised for this project as follows:

Subsection 106.03 shall include the following:

For projects not funded with State or Federal Highway Administration (FHWA) monies, sampling and testing will be done in accordance with Boulder County Public Work Department's Minimum Guideline for Sampling and Testing.

The Contractor will be responsible for establishing, documenting, and implementing a Quality Control Plan. The Quality Control Plan shall include all procedures necessary for the Contractor to control the quality of its production processes to meet the requirements of the Contract. The Contractor's Quality Control Plan shall include a testing and inspection schedule to control the production processes.

Boulder County will provide a qualified Construction Quality Assurance team to perform Quality Assurance (QA) testing, auditing and acceptance testing. The QA staff shall remain independent from the Contractor's production and Quality Control (QC). The Boulder County Construction Inspection team and/or testing firm will perform on-site inspection and testing of the construction elements of the work to verify that all work has been constructed in conformance with the Contract requirements.

REVISION OF SECTION 107
AIR QUALITY CONTROL

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Subsection 107.24 shall include the following:

Equipment Emissions. Boulder County projects shall meet or exceed current Colorado Air Quality standards. The project work shall be performed using practices that minimize air quality detriments during construction. All the standards below shall be followed to improve air quality related to this project:

(a) Emissions standards:
  (1) Optimally, electric or hybrid powered equipment or vehicles will be used on all projects.
  (2) Equipment engines shall be compliant with the most recent Environmental Protection Agency (EPA) requirements.
  (3) Contractors are required to maintain a minimum emissions level for diesel fueled equipment at a Tier 3 level.
  (4) Contractors shall provide certification of compliance with diesel emissions standards. Failure to do so will result in immediate stoppage of work and is a non-excusable delay per subsection 108.08(c)2.
  (5) All diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel (B20) blend approved by the original engine manufacturer with sulfur content of 15 ppm or less.

(b) Proximity. Any project within 1000 linear feet of a residence or regular gathering location of multiple people (i.e., schools, parks, places of worship, commercial buildings, etc.) is required to have either electric, hybrid or Tier 4 diesel powered equipment or vehicles.

(c) Exemption. Emergency equipment is exempt from this specification. All reasonable effort will be made to replace equipment placed in service at the beginning of the emergency work with equipment as specified above as soon as possible.

(d) Definition. Vehicle, for the purposes of this specification, is defined as any diesel-powered company owned car or truck. It does not apply to personal vehicles.

(e) Cost. Unless shown otherwise in the bid tabulation for this project, costs to achieve this specification will be included in the overall cost of the project.

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REVISION OF SECTION 107
FIRE PROTECTION PLAN

Section 107 of the Standard Specifications is hereby revised as follows:

Subsection 107.18 shall be deleted and replaced with the following:

107.18 Fire Protection Plan. The following work elements are considered safety critical work for this project:

(a) *Fire Protection Plan.* Prior to start of work, the Contractor shall submit a Fire Control Plan in writing to the Engineer and Local Fire Authority for approval. The plan shall include the following:

(1) The name and contact information of a Fire Control Coordinator who shall be assigned to the project.
(2) A 24-hour Emergency Contact List which, at a minimum, includes Project Superintendent, Project Foreman and Project Traffic Control Supervisor.
(3) A complete list, including storage locations, of all tools and equipment the Contractor will use in the event of an emergency within project limits.
(4) Methods that will be employed if a fire is encountered or started during construction activities within the project limits.
(5) Specific fire prevention precautions, and the required fire mitigation equipment, for every activity which has the potential for starting a fire. At a minimum the plan shall address prevention planning related to use of heavy equipment, vehicles, hand tools, storage and parking areas.
(6) Specific precautions for fueling operations.
(7) Provisions for field safety meetings. The Contractor shall conduct field safety meetings (also known as toolbox or tailgate meetings) at least once per week to include a local Fire Authority Representative. The Contractor shall encourage participation by all persons working at the project site. Participants shall discuss specific fire prevention precautions for construction activities.

(b) *Open Burn Exemption.* A BURN EXEMPTION may be requested by the Contractor from the Boulder County Sheriff's Office if current fire restrictions are in place. The fire restrictions Prohibit:

(1) Building, maintaining, attending, or using an open fire, campfire or stove fire (including charcoal barbecues and grills) on public land;
(2) Use of all personal fireworks;
(3) Shooting or discharging firearms for recreational purposes, except for hunting with a valid and current hunting license on public land;
(4) Smoking, except in an enclosed vehicle or building, a developed recreation site, or while stopped in an area at least three feet in diameter that is barren or cleared of all flammable materials;
(5) Operating a chainsaw without a USDA or SAE-approved spark arrester properly installed and in effective working order. A chemical, pressurized fire-extinguisher must be kept with the operator, and at least one round-point shovel with an overall length of at least 35 inches must be readily available for use;
(6) Welding or operating acetylene or other open-flame torches, except in cleared areas of at least 10 feet in diameter, and with a chemical, pressurized fire-extinguisher immediately available for use; and
(7) Using an explosive.

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REVISION OF SECTION 107
FIRE PROTECTION PLAN

(c) *Equipment and Procedures.*

Fire Boxes. If required by the local Fire Authority shall contain tools and equipment that shall be used exclusively for controlling or suppressing fires which occur due to construction activities on project sites. Each fire box shall contain, as a minimum, the following:

(1) Five round-pointed shovels,
(2) Two double-bitted axes,
(3) Three Pulaskis or mattocks,
(4) Two backpack pumps, and
(5) Four large fire extinguishers as prescribed by the local Fire Authority.

Welding/Torching/Cutting/Drilling. If work at field locations is required, the work shall be done at a location where all flammable material has been cleared within a 30-foot radius and approved by the local Fire Authority.

Spark Arrestors. All diesel and gasoline powered engines, both mobile and stationary, shall be equipped with serviceable spark arrestors each gasoline power saw shall be provided with a spark screen and a muffler in good condition. Spill-proof metal safety cans shall be used for refueling. Approved and inspected by the local Fire Authority.

Storage and Parking Areas. Batch plant areas, equipment service areas, parking areas, gas and oil drum storage areas, and explosive storage areas shall be cleared of all flammable materials for a distance of 50 feet. Small stationary engine sites shall be cleared of all flammable material for distance of 20 feet. Other mitigation methods may be used as approved by the Engineer and applicable codes.

(d) *Fire Control Coordinator Responsibilities.* The Fire Control Coordinator shall:

(1) Be the primary contact for the local Fire Authority and Project Engineer
(2) Implement the Fire Control Plan.
(3) Monitor, manage, and adjust the Fire Control Plan as needed as construction work progresses.
(4) Document in a letter to the Engineer and Local Fire Authority changes to the Fire Control Plan.
(5) Contact local firefighting authorities 3 days in advance when a hazardous operation is scheduled. Inspection due to construction activities within project limits may be required.
(6) Coordinate fire control, mitigation and possible suppression activities until authorities arrive, including the evacuation of staff.

When the Fire Control Coordinator cannot be on the project site, he shall designate a person who is on site to serve as the Fire Control Coordinator. The Fire Control Coordinator, or his designee, shall always be on site while work is performed.

(e) *Open Burning During Weather Events.* **During any of the following weather events, <u>open burning is not permitted</u> in unincorporated Boulder County from time of issuance until midnight in which the event expires: Red Flag Warning, High Wind Warning, High Wind Watch and Fire Danger Warning**. Check the local forecast for up to date information issued by the National Weather Service. This is per Boulder County Ordinance 2018-1, "An Ordinance Repealing and Replacing Boulder County Ordinance 2006-2 and Authorizing the Declaration of Open Fire Bans by the Board of County Commissioners or the County Sheriff."

The National Weather Service issues weather statements to inform area firefighting and land use management agencies that conditions are ideal for wildland fire ignition and propagation (Red Flag Warning, High Wind Warning, High Wind Watch, Fire Danger Warning).

For this standard special provision, smoking is an open flame and shall be included in the definition of open burning, which is not permitted for the above listed weather events. Any smoking or lighting of items outside or within a vehicle with open windows is not permitted on the project site or within 500 feet of the project's limits of disturbance. With the approval of the Engineer, who consults with the local Fire Authority, a designated smoking area may be established.

No additional payment or compensation will be paid to the Contractor during any weather events associated with open burning and include Red Flag Warning, High Wind Warning, High Wind Watch, Fire Danger Warning. Delays may be counted as an excusable delay per Standard Specification 108.08 or at the discretion of the Engineer.

(f) *Costs.* All costs associated with the preparation and implementation of the Plan and compliance with all fire protection provisions and requirements will not be measured and paid for separately but shall be included in the work.

REVISION OF SECTION 108
PROSECUTION AND PROGRESS

Section 108 of the Standard Specifications is hereby revised for this project as follows:

Subsection 108.03 shall include the following:

The Contractor shall submit a CPM baseline schedule to the Engineer at least three (3) working days prior to the preconstruction meeting. This CPM baseline schedule shall show the major salient features of the project through completion.

The minimum salient features to be shown on the Contractor's CPM Schedule are:

(11) Erosion Control, Mobilization
(12) Construction Surveying
(13) Traffic Control Phasing
(14) Unclassified Excavation
(15) Storm Drainage
(16) Hot Mix Asphalt Placement
(17) Concrete Pavement
(18) Concrete Curb and Ramp
(19) Signing and Striping
(20) Planting, Seeding & Clean Up

Meetings will be required to review progress and plan upcoming activities. The Erosion Control Supervisor, other representatives, as appropriate, the Contractor and all active subcontractors shall attend the meetings. Such meetings will be required on a weekly basis at a time to be determined by the Engineer and the Contractor.

At the weekly progress meetings, the Contractor shall submit a written statement of planned activities and anticipated inspection, testing, and surveying requirements for the upcoming three (3) weeks. The Contractor shall provide a twenty-four24-hour notice to the Engineer if the Contractor elects to change a planned activity.

Subsection 108.05 shall include the following:

All work performed by the Contractor or any of his agents shall be accomplished during the established working hours of 8:00 A.M. and 4:30 P.M., Monday through Friday. Neither the Contractor nor his agents shall work outside of the daily working hours without prior approval by the Engineer.

If the Contractor receives approval to work additional hours for his convenience, the Contractor shall reimburse the County for the cost of providing additional engineering and inspection services. The reimbursement to the County will be at a rate of $125.00 per hour for each County employee and $175.00 per hour for each consultant required to be on the job site. This cost will be deducted from any money due the Contractor.

REVISION OF SECTION 202
REMOVAL OF PAVEMENT MARKING

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Subsection 202.05 shall include the following:

Pavement Markings to be removed shall be marked by the Contractor no less than 48 hours prior to removal. The Department shall review and approve the pavement markings to be removed prior to the work. All Removal of Pavement Markings shall be completed prior to permanent striping layout. All pavement markings removed shall become the property of the Contractor and disposed of properly offsite.

REVISION OF SECTION 202
REMOVAL OF TOPSOIL

Section 202 of the Standard Specification is hereby revised as follows:

Subsection 202.02 shall include the following:

Topsoil Removal: After the construction area and its access have been delineated, the vegetation should be mowed to a maximum height of four (4) inches over the area to be disturbed. If the amount of vegetation exceeds what can be incorporated into the soil without interfering with establishing a proper seedbed, then excess vegetation shall be removed.

Topsoil should be removed by a front-end loader (preferred method) or grader. Under no circumstances should upland topsoil be removed under wet soil moisture conditions. The depth of the topsoil layer may vary. Topsoil may be delineated from the subsoil by a higher organic matter content (usually, but not always, indicated by a darker color) and a relatively loose and friable soil structure. Typically, topsoil is between four (4) and eight (8) inches in depth.

Under no circumstances shall subsoil be mixed with topsoil, and subsoil shall not be placed on top of the topsoil. If necessary, salvaged topsoil shall be cordoned off to delineate the topsoil from subsoil or other materials. The topsoil shall be protected from contamination by subsoil material, weeds, etc. and from compaction by construction equipment and vehicles.

REVISION OF SECTION 203
EXCAVATION AND EMBANKMENT

Section 203 of the Standard Specifications is hereby revised for this project as follows:

Subsection 203.05 (b), first paragraph, shall include the following:

Excess material that must be removed from the project shall become the property of the Contractor and disposed of outside the project limits.

The Contractor shall make all arrangements to obtain any required agency permit(s) and written permission from property owners for disposal locations outside the limits of the project, within unincorporated Boulder County.

Disposal of more than 50 cubic yards of unclassified excavation within unincorporated Boulder County may qualify for one of the following Boulder County Community Planning & Permitting review processes:

(a) Grading Permit,
(b) Site Plan Review,
(c) Site Plan Review Waiver, or
(d) Limited Impact Special Review.

Copies of the permit(s) and written permission shall be furnished to the Engineer before the disposal area is used.

Subsection 203.12 shall include the following:

Payment for Unclassified Excavation and Unclassified Excavation (Complete in Place) shall also include costs associated with obtaining any necessary permits or written permissions and will not be paid separately.

REVISION OF SECTION 207
TOPSOIL

Section 207 of the Standard Specification is hereby revised as follows:

Subsection 207.01 last sentence shall be replaced with the following:

It shall include the placing of topsoil upon constructed cut and fill slopes after grading operations are completed.

Subsection 207.02 shall include the following:

All topsoil shall be either secured from the site or imported and shall be approved by Boulder County at the source prior to import.

Subsection 207.03 shall include the following:

Relieving Compaction: Areas to receive topsoil that have been compacted by heavy equipment shall be ripped or chiseled **prior to redistribution of topsoil.** Construction areas and other compacted areas will be chiseled to a minimum depth of 10 inches, with no more than a 10-inch interval between chiseled furrows. Two passes with a chiseler may be necessary, with the second pass chiseling between the first furrows, or perpendicular to original furrows.

Redistribution of Topsoil and Application of Soil Conditioning: The topsoil should be redistributed uniformly over the disturbed areas, minimizing compaction by equipment. **Topsoil redistribution shall not occur under wet soil conditions**. When applicable, fertilizer or soil conditioning shall be incorporated evenly throughout the topsoil as described in Specification.

REVISION OF SECTION 208
EROSION CONTROL

Section 208 of the Standard Specification is hereby revised as follows:

Subsection 208.02(h) shall include the following:

All erosion logs shall be biodegradable unless otherwise approved by the Engineer. Photodegradable will not be accepted.

Subsection 208.02 (k) shall include the following:

Prior to the initial arrival onto the project site, all equipment shall be thoroughly power washed, including the undercarriages and tires. Equipment must be clean of mud, vegetative matter, and other debris to prevent importation of non-native and noxious weed seeds from other project sites.

REVISION OF SECTION 209
DUST PALLIATIVES

Section 209 of the Standard Specifications is hereby revised as follows:

Subsection 209.05 shall include the following:

The contractor shall be responsible for controlling vehicle and equipment speeds within the project site to keep dust to a minimum. The Contractor shall monitor activities daily for dust. If excessive dust is being generated by construction speeding vehicles or equipment , the contractor shall immediately take corrective action to ensure operators and drivers control speeds, thereby, assisting in dust suppression.

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REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER, AND SODDING

Section 212 of the Standard Specification is hereby revised as follows:

Subsection 212.02 (a) shall include the following:

Maximum crop and weed content shall follow the Colorado Seed Certification Standards for certified seed:

(1) Prohibited (Primary) Noxious Weeds (List A): None,

(2) Restricted (Secondary) Noxious Weeds (List B): Less than 0.1%, and

(3) Total Other Crop Seed: Less than 1.0%.

Seed shall be free of Prohibited (Primary) Noxious Weeds (List A) including, but not limited to, Canada thistle, diffuse knapweed, spotted knapweed, Russian knapweed, field bindweed, hoary cress, jointed goat grass, leafy spurge, musk thistle, and yellow toadflax. The Contractor shall be responsible for replacing any refused seed at no additional cost to the project.

If specified type or variety of seed is not available, substitutions must be submitted and approved by the Engineer.

Subsection 212.02 (b) 1 shall be replaced with the following.

(b) Fertilizer, Soil Conditioners and Biochar

1. Fertilizer: Fertilizer may only be used if directed by the project specific documents.

   Fertilizer shall meet the following description; a slow release organic fertilizer composed of dried granulated fungal and bacterial biomass. The nutrient source shall be derived from fermented plant material along with nutrients such as cottonseed meal, soybean meal and trace elements all under sterile conditions. It shall not contain urea or sewage material.

The fertilizer shall meet the following minimum requirements:

Criteria	Requirement
Nutrient Content (N-P-K)	7-2-1 • Nitrogen (total) >7% • Nitrogen (water soluble) <0.5% • Phosphorus (P205) 2-4%, • Potassium (K20) 1%
Phosphorous Content	3-6-3, 4-6-4, 3-7-4, or comparable
pH level	6.5-7.5
Organic Material	>75%

Subsection 212.02 (b) 2 shall be replaced with the following:

2. Soil Conditioner: Soil conditioner shall consist of compost, biological nutrient, biological culture or humic acid-based material. Compost shall be used as a soil conditioner unless otherwise specified in the project specific documents.

   Humic acid-based material (Humate) shall be mined from fresh water, sand matrix source and shall include the following:

   (1) A pH 3.5 to 4.0.

   (2) Maximum 15 percent inert ingredients.

   (3) Minimum 85 percent organic material with 50 percent minimum humic acid.

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REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

Compost shall be weed–free, organic compost derived from a variety of feed stocks including agricultural, biosolids, forestry, food, leaf and yard trimmings, manure, tree wood with no substance toxic to plants. Material shall be aerobically composted in a facility permitted by the Colorado Department of Public Health and Environment (CDPHE) to produce or sell compost in accordance with House Bill (HB) 1181. The Contractor shall submit a copy of this permit to the Engineer for approval and the project records. The compost shall be tested in accordance with the U.S. Composting Council's Test Methods for Examining of Composting and Compost (TMECC) manual.

The compost manufacturer shall be a participating member of in the U.S. Composting Council's Seal of Testing Assurance Program (STA). The Contractor shall provide a participation certificate and test data on a Compost Technical Data Sheet. The Contractor shall provide a participation certificate and test data showing the lab analysis on a Compost Technical Data sheet that verifies that the compost meets the requirements. The Contractor shall submit documentation showing the feedstock amount by percentage in the final compost product. Compost feedstock may include, but is not limited to, leaves and yard trimmings, food scraps, food-processing residuals, manure or other agricultural residuals, forest residues, bark, and paper. Biosolids (from sewage treatment facilities) are not considered suitable feedstock.

Compost shall consist of a carbon to nitrogen ratio between 10:1 and 20:1. Compost may consist of one or more of the following, or include other appropriate composts:

(1) Well-aged dairy cattle manure,

(2) Well-aged poultry manure, or

(3) Composted yard wastes.

Compost shall have the following physical properties:

Compost Parameters	Reported As	Requirement	Test Method
pH	pH units	6.0 – 8.5	TMECC 04.11-A
Soluble Salts (Electrical Conductivity)	dS m-1 or mmhos cm-1	Maximum 10dS/m	TMECC 04.10-A
Moisture Content	%, wet weight basis	30 – 60%	TMECC 03.09-A
Organic Matter Content	%, dry weight basis	30 – 65%	TMECC 05.07-A
Particle Size (sieve sizes)	%, dry weight basis for each sieve fraction	Passing 1 inch – 100% 1⁄2 inch – 95%	TMECC 02.02-B
Man-made Inert Contamination	%, dry weight basis	< 1%	TMECC 03.08-A
Stability (Respirometry)	mg CO2-C per g TS per day mg CO2-C per g OM per day	8 or below	TMECC 05.08-B
Select Pathogens	(PASS/FAIL) Limits: Salmonella <3 MPN/4grams of TS, or Coliform Bacteria <1000 MPN/gram	Pass	TMECC 07.01-B Fecal Coliforms, or 07.02 Salmonella
Trace Metals	(PASS/FAIL) Limits (mg kg-1, dw basis): As 41, Cd 39, Cu 1500, Pb 300, Hg 17, Ni 420, Se 100, Zn 2800	Pass	TMECC 04.06
Maturity (Bioassay) Percent Emergence Relative Seedling Vigor	%, (average) %, (average)	> 80% > 80%	TMECC 05.05-A
The Contractor shall provide a CTR in accordance with subsection 106.13 confirming that the material has been tested in accordance with TMECC.			

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REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

3. Biochar: Biochar shall be a USDA Certified Biobased Product. Biochar shall be made in a slow pyrolysis process and exceed 70% carbon content in the delivered product. The size of an individual piece of char shall range between 0.25 inches to 1.25 inches.
   Mycorrhizae: Supplemental mycorrhizae, Quantum Growth VSC:

   (1) 1.32% humic acid (from peat humus)

   (2) 0.50% *Rhodopsuedomonas palustris*..... 1.0 E+6 cfu/ml

   (3) 0.25% *Bacillus amyloliquefaciens*..... 5.0 E+5 cfu/ml

   (4) 0.25% *Bacillus licheniformis*..... 3.0 E+5 cfu/ml

   (5) 0.25% *Bacillus megaterium*..... 1.0 E+5 cfu/ml

   (6) 0.25% *Bacillus subtilis*..... 2.0 E+5 cfu/ml

   Supplemental mycorrhizae, Quantum Growth Light:

   (1) 0.5% *Rhodopsuedomonas palustris*.....5.0 E+6 cells/ml

   (2) 99.5% de-ionized water

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REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

Subsection 212.06 (a) shall be replaced with the following:

(a) *Soil Preparation.* Following redistribution of topsoil, the disturbed areas shall be chiseled again to a minimum depth of 12 inches, with no more than a 10-inch interval between chiseled furrows. Slopes flatter than 2:1, shall be tilled to a well settled, firm, and friable seedbed four (4) inches deep. Slopes 2:1 or steeper shall be left in a roughened condition. Slopes shall be free of soil clods, sticks, stones, and debris more than four (4) inches in any dimension and be brought to the desired grade and line. Uneven grading of the soil surface is acceptable and encouraged to prevent further compaction from excess heavy machinery operation. All slopes shall be free of concrete and asphalt. No soil preparation for seeding shall occur when soil is frozen or in an extreme wet or dry condition.

Subsection 212.06 (b) shall be replaced with the following:

(c) *Fertilizing and Soil Conditioning.* Prior to seeding, fertilizer, soil conditioner, or both shall be applied evenly throughout the topsoil.

1. Fertilizing. Apply approved product at 800 to 1,300 lbs. per acre. Fertilizers shall be incorporated into the top four (4) inches of soil after broadcasting seed.
2. Compost. Biological nutrient, culture or humic based material called for on the plans shall be uniformly applied at three (3) cubic yards per 1000 square feet onto the soil service. Organic amendments shall be applied uniformly over the soil surface and incorporated into the top six (6) inches of soil. No measurable quantity of organic amendment shall be present on the surface after incorporation.
3. Biochar. Supplemental mycorrhizae – Quantum Growth VSC applied at 2 gal/acre and Quantum Growth Light applied at 1 gal/acre.

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REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

Subsection 212.06 (c) shall be replaced with the following:

(c) *Seeding.* Seeding shall be accomplished within 24 hours of tilling or scarifying to make special seed bed preparation unnecessary. The seeding application rate shall be as designated in the Contract. All slopes flatter than 2:1 shall be seeded with grass or no-till drills followed by packer wheels. Drag chains are not allowed. Drills shall have depth bands set to maintain a planting depth between ½ and ¾ inch and shall be set to space the rows not more than seven (7) inches apart. Packer wheels that firm the soil over the drill row are required. Seed that is extremely small shall be sowed from a separate hopper adjusted to the proper rate of application. The Contractor shall notify the Engineer 24 hours in advance and request inspection of seeding areas prior to installation.

Seed must be applied with a grass or no-till drill that is specifically designed to accommodate variability in size and physical characteristic of native grass seeds.
Seed drills must be clean of seed from previous seeding jobs before any seeding begins.

If strips greater than seven (7) inches between the rows have been left unplanted or other areas skipped, the Engineer will require additional seeding at the Contractor's expense.

When requested by the Contractor and approved by the Engineer, seeding may be accomplished by broadcast or hydraulic type seeders at twice the rate specified in the Contract at no additional cost to the project.

All seed sown by broadcast-type seeders shall be "raked in" or covered with soil to a depth of at least ¼ inch. Broadcasting seed will be permitted only on small areas not accessible to machine methods. Broadcast seeding shall proceed on freshly disturbed (raked or harrowed) soil surface and broadcast seed shall be immediately raked or harrowed into the surface. Raking shall be accomplished using metal-tined garden or landscape rakes; no plastic leaf rakes shall be allowed. If harrowing is used, an English harrow or its equivalent shall be required.

Hydraulic seeding will not be accepted.

Seeded areas damaged due to circumstances beyond the Contractor's control shall be repaired and reseeded as ordered. Payment for this corrective work, when ordered, shall be at the contract prices.

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REVISION OF SECTION 212
SEEDING, FERTILIZER, SOIL CONDITIONER AND SODDING

Areas not requiring seeding that have been damaged due to the seeding operation shall be required as ordered. Payment for this corrective work, when ordered, shall at the contract prices.

Multiple seeding operations shall be anticipated as portions of job are completed to take advantage of growing conditions and to comply with Section 208 and subsection 212.03.

Application of various types of seeding are as follows:

1. Seeding (Upland). Prior to seeding, the soil conditioner shall be applied at 3 CY per 1000 SF and incorporated into the top eight (8) inches of soil.

   Seed shall be applied at the percent of mix (% of mix) and application rate (PLS/Acre) that is designated on the plans under Seeding (Upland). Seed shall be applied to Seeding (Upland) areas shown on plans.

2. Seeding (Riparian). Prior to seeding, the soil conditioner shall be applied at 6 CY per 1000 SF and incorporated into the top eight (8) inches of soil.

   Seed shall be applied at the percent of mix (% of mix) and application rate (PLS/Acre) that is designated on the plans under Seeding (Riparian). Seed shall be applied to Seeding (Riparian) and Perennial (Tublings) areas shown on plans.

3. Combined Seeding. Prior to seeding, the soil conditioner shall be applied at three cubic yards per 1000 SF and incorporated into the top eight (8) inches of soil.

   Seed shall be made up of 70% Seeding (Upland) and 30% Seeding (Riparian). Combined seeding shall be applied at the percent of mix (% of mix) and application rate (PLS/Acre) that is designated on the plans under both Seeding (Upland) and Seeding (Riparian).

Subsection 212.07, paragraph four, shall include the following:

The Contractor shall furnish the Engineer with delivery tickets or bag weight tickets prior to placing any soil conditioner. Any soil conditioner placed by the Contractor without the Engineer’s approval will not be paid for.

Tags attached to bags of seed will not be removed until the bag is opened on site at the time of seeding.

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REVISION OF SECTION 403
HOT MIX ASPHALT

Section 403 of the Standard Specifications is hereby revised for this project as follows:

Subsection 403.02 shall include the following:

The design mix for hot mix asphalt shall conform to the following:

Table 403-1

Property	**Test Method**	**Value for Grading**		
		S(75)	SX(75)	Patching
Air Voids, percent at: N (design)	CPL 5115	3.5 – 4.5	3.5 – 4.5	3.5 – 4.5
Lab Compaction (Revolutions): N (design)	CPL 5115	75	75	75
Stability, minimum	CPL 5106	28	28	28
Aggregate Retained on the 4.75 mm (No. 4) Sieve with at least 2 Mechanically Induced fractured faces, % minimum	CP 45	60	60	60
Accelerated Moisture Susceptibility Tensile Strength Ratio (Lottman), minimum	CPL 5109 Method B	80	80	80
Minimum Dry Split Tensile Strength, psi	CPL 5109 Method B	30	30	30
Grade of Asphalt Cement, Top Layer			PG 64-22	
Grade of Asphalt Cement, Layers below Top		PG 64-22		PG 64-22
Voids in the Mineral Aggregate (VMA) % minimum	CP 48	See Table 403-2	See Table 403-2	See Table 403-2
Voids Filled with Asphalt (VFA), %	AI MS-2	65-80	65-80	65-80
Dust to Asphalt Ratio: Fine Gradation	CP 50	0.6 – 1.2	0.6 – 1.2	0.6 – 1.2
Dust to Asphalt Ratio: Coarse Gradation	CP 50	0.8 – 1.6	0.8 – 1.6	0.8 – 1.6

- AI MS-2 = Asphalt Institute Manual Series 2
- The current version of CPL 5115 is available from the Region Materials Engineer.
- Mixes with gradations having less than 40% passing the 4.75 mm (No. 4) sieve shall be approached with caution because of constructability problems.
- Gradations for mixes with a nominal maximum aggregate size of one-inch or larger are considered a coarse gradation if they pass below the maximum density line at the #4 screen.
- Gradations for mixes with a nominal maximum aggregate size of ¾ inch or smaller are considered a coarse gradation if they pass below the maximum density line at the #8 screen.

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REVISION OF SECTION 403
HOT MIX ASPHALT

All mix designs shall be run with a gyratory compaction angle of 1.25 degrees and properties must satisfy Table 403-1. The job mix formula (Form 43) will establish construction targets for asphalt cement and all mix properties at Air Voids up to 1.0 percent below the mix design optimum.

Table 403-2

Minimum Voids in the Mineral Aggregate (VMA)			
Nominal Maximum Size*, mm (inches)	***Design Air Voids **		
	3.5%	**4.0%**	**4.5%**
37.5 (1½)	11.6	11.7	11.8
25.0 (1)	12.6	12.7	12.8
19.0 (¾)	13.6	13.7	13.8
12.5 (½)	14.6	14.7	14.8
9.5 (⅜)	15.6	15.7	15.8
* The Nominal Maximum Size is defined as one sieve larger than the first sieve to retain more than 10%.			
** Interpolate specified VMA values for design air voids between those listed.			
*** Extrapolate specified VMA values for production air voids beyond those listed.			

The Contractor shall prepare a quality control plan outlining the steps taken to minimize segregation of HMA. This plan shall be submitted to the Engineer and approved prior to beginning the paving operations. When the Engineer determines that segregation is unacceptable, the paving shall stop, and the cause of segregation shall be corrected before paving operations will be allowed to resume.

The hot mix asphalt will include reclaimed asphalt pavement (RAP) per revised Standard section 401.

Hot mix asphalt for patching shall conform to the gradation requirements for Hot Mix Asphalt (Grading S) (75) (PG 64-22).

A minimum of one percent hydrated lime by weight of the combined aggregate shall be added to the aggregate for all hot mix asphalt.

Acceptance samples shall be taken according to CP-41.

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REVISION OF SECTION 403
HOT MIX ASPHALT

Subsection 403.03 shall include the following:

A material transfer device will be required for the placement of asphalt on the top lift of paving.

Prior to placing tack coat and beginning overlay work, the surface to be tack coated shall be swept to remove accumulations of loose gravel, vegetation and debris.
Patching shall be coordinated with the Project Inspector/Project Engineer after the milling activities.

Subsection 403.05 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Hot Mix Asphalt (Grading SX) (75)(PG 64-22)	Ton
Hot Mix Asphalt (Patching) (Asphalt)	Ton

Aggregate, asphalt recycling agent, additives, hydrated lime, and all other work necessary to complete each hot mix asphalt item will not be paid for separately but shall be included in the unit price bid. When the pay item includes the PG binder grade, the asphalt cement will not be measured and paid for separately but shall be included in the work. Asphalt cement will not be measured and paid for separately but shall be included in the work. Asphalt cement used in Hot Mix Asphalt (Patching) will not be measured and paid for separately but shall be included in the work.

Hot Mix Asphalt (Patching) (Asphalt) shall include, neat line cutting around the perimeter of the patch area, the removal and disposal of existing pavement and underlying material six (6) inches in depth to achieve the desired patch section, mechanical compaction of subgrade, placement of emulsified asphalt (CSS-1H) tack coat, and the haul, placement, and compaction of six (6) inches of full depth Hot Mix Asphalt.

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REVISION OF SECTION 603
TRACER WIRE

Section 603 of the Standard Specifications is hereby revised for this project as follows:

Subsection 603.01 shall include the following:

This work consists of tracer wire installation for culverts and storm sewer. Tracer wire shall be installed at all underground culvert and storm sewer locations, except as noted below.

Tracer wire does not need to be installed for the following situations:

(a) Short pipe culverts in which a light shining through one end is visible from the other end;
(b) Short pipe culverts in which the inlet and outlet may easily be observed/identified from the same (or nearly the same) vantage point;
(c) Underground storm sewer pipe in which a light shining through one end, or through a manhole, is visible on either end.

Subsection 603.02 shall include the following:

The following materials shall be accepted for tracer wire installation.

(a) *Tracer Wire:* All tracer wire shall have HDPE insulation intended for direct bury, color coded green. High Heat-resistant Nylon coated (THHN) wire is not acceptable as tracer wire.
    (1) Open Trench. Tracer Wire shall be #14 AWG copper, high strength with minimum 450 lb. break load, with minimum 30 mil HDPE insulation thickness.
    (2) Direction Drilling/Boring. Tracer wire shall be #14 AWG copper, extra high strength with minimum 1,150 lb. break load, with minimum 30 mil HDPE insulation thickness.
    (3) Pipe Bursting/Slip Lining. Tracer wire shall be 7 x 7 stranded copper c, extreme strength with 4,700 lb. break load, with minimum 50 ml HDPE insulation thickness.
(b) *Connectors:*
    (1) Mainline. All mainline tracer wires must be interconnected in intersections, at mainline tees and mainline crosses. At tees, the three wires shall be joined using a single 3-way lockable connector. At Crosses, the four wires shall be joined using a 4-way connector. Use of two 3-way connectors with a short jumper wire between them is an acceptable alternative.

(2) Direct bury wire connectors – Direct bury wire connectors shall include 3-way lockable connectors and mainline to lateral lug connectors specifically manufactured for use in underground tracer wire installation. Connectors shall be dielectric silicon-filled to seal out moisture and corrosion and shall be installed in a manner to prevent any uninsulated wire exposure.

(3) Prohibited - Non-locking friction fit, twist on or taped connectors are prohibited.

(c) *Termination/Access Box:*

(1) All tracer wire termination points must utilize an approved tracer wire access box (above ground access box or grade level/in-ground access box as applicable), specifically manufactured for this purpose.

(2) All grade level/in-ground access boxes shall be appropriately identified with “storm” cast into the cap and shall be color coded in green

(3) A minimum of two feet of excess/slack wire is required in all tracer wire access boxes after meeting final elevation.

(4) All tracer wire access boxes must include a manually interruptible conductive/connective link between the terminal(s) for the tracer wire connection and the terminal for the grounding anode wire connection.

(5) Grounding anode wire shall be connected to the identified (or bottom) terminal on all access boxes.

(d) *Prohibited Materials:*

(1) Uninsulated wire insulations other than HDPE

(2) Non-locking, friction fit, twist on or taped connectors

(3) Brass or copper ground rods

(4) Wire connections utilizing a taping or spay-on waterproofing

Subsection 603.03A, Tracer Wire Installation, shall be added and include the following:

603.03A.01 General Construction Requirements. Tracer wire installation shall be performed in such a manner that allows proper access for connection of line tracing equipment, proper locating of wire without loss or deterioration of low frequency (512Hz) signal for distances greater than 1,000 linear feet and without distortion of signal caused by multiple wires being installed near one another. Tracer wire systems must be installed as a single continuous wire, except where using approved connectors. No looping or coiling of wire is allowed.

Tracer wire shall be installed on top of the pipe and secured (taped/tied) at five-foot intervals. Tracer wire must be properly grounded as specified.

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REVISION OF SECTION 603
TRACER WIRE

In occurrences where an existing tracer wire is encountered on an existing utility that is being extended or tied into, the new tracer wire and existing tracer wire shall be connected using approved splice connectors and shall be properly grounded at the splice location as specified.

Any damage occurring during installation of the tracer wire must be immediately repaired by removing the damaged wire and installing a new section of wire with approved connectors. Taping and/or spray coating shall not be allowed.

603.03A.02 Storm Sewer System Construction Requirements. A mainline tracer wire must be installed, with all interconnecting storm sewer line tracer wires properly connected to the mainline tracer wire, to ensure full tracing/locating capabilities from a single connection point. Lay mainline tracer wire continuously, by-passing around the outside of manholes/structures on the North or East side. Tracer wire on all interconnecting storm sewer line tracer wires must terminate at an approved tracer wire access box location and color-coded green.

(a) *Storm Sewer on public property* - Tracer wire must terminate at an approved grade level/in ground tracer wire access box, located at the edge of the road right-of-way, and out of the roadway.
(b) *Long-runs, greater than 300linear feet without manholes* - Tracer wire access must be provided utilizing an approved grade level/in-ground tracer wire access box, located at the edge of the road right-of-way, and out of the roadway. The grade level/in-ground tracer wire access box shall be delineated using a minimum 48” polyethylene marker post, color coded green.

603.03A.03 – Grounding Construction Requirements. Tracer wire must be properly grounded at all dead ends/stubs. Grounding of tracer wire shall be achieved by use of a drive-in magnesium grounding anode rod with a minimum of 20ft of #14red HDPE insulated copper wire connected to anode (minimum 1.5 lb.) specifically manufactured for this purpose and buried at the same elevation as the utility. When grounding the tracer wire at dead ends/stubs, the grounding anode shall be installed in the opposite direction to the tracer wire, at the maximum possible distance. When grounding the tracer wire in areas where the tracer wire is continuous and neither the mainline tracer wire or the grounding anode wire will be terminated at/above grade, install grounding anode directly beneath and in-line with the tracer wire. Do not coil excess wire from grounding anode. In this installation method, the grounding anode wire shall be trimmed to an appropriate length before connecting to tracer wire with a mainline to lateral lug connector. Where the anode wire will be connected to a tracer wire access box, a minimum of two (2) ft. of excess/slack wire is required after meeting final elevation.

(c)

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REVISION OF SECTION 603
TRACER WIRE

603A.03A.04 Prohibited Construction Methods.

(a) Looped wire or continuous wire installations, that have multiple wires laid side-by-side or near one another;
(b) Tracer wire wrapped around the corresponding utility;
(c) Brass fittings with tracer wire connection lugs;
(d) Wire terminations within the roadway, i.e. in valve boxes, cleanouts, manholes, etc.;
(e) Connecting tracer wire to existing conductive utilities

603.03A.05 Testing Construction Requirements. All new tracer wire installations shall be located using typical low frequency (512Hz) line tracing equipment, witnessed by the contractor, engineer and facility owner as applicable, prior to acceptance of ownership.

This verification shall be performed upon completion of rough grading and again prior to final acceptance of the project.

Continuity testing in lieu of actual line tracing shall not be accepted.

Subsection 603.12 shall include the following:

Tracer wire will be measured by the linear foot complete in place and accepted.

Subsection 603.13 shall include the following:

Tracer wire, connectors, and termination/access boxes will not be measured and paid for separately but shall be included in the work for piping items, which includes items specified in Standard Specifications 603, 605, 623, and 624.

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REVISION OF SECTION 626
PUBLIC INFORMATION SERVICES

Section 626 of the Standard Specifications is hereby revised for this project as follows:

Subsection 626.01 shall include the following:

The Boulder County Public Works Department Public Information Officer (PIO) will coordinate public information regarding the project and provide timely updates regarding construction to the public through a variety of established channels

The contractor shall designate a representative with whom the PIO can confer with as needed to ensure that all pertinent construction-related information is conveyed to the public. The contractor-designated representative may maintain a direct line of contact with the PIO to assist with answering questions from the public. The PIO will also conduct any media related activities that may arise over the course of the project. All media inquiries will be directed to the PIO for follow up. The contractor-designated representative may be called upon to assist with media related requests for information and photo or video content.

It shall be the contractor's responsibility to maintain adequate signage throughout the construction site. The signs shall conform to the requirements of Section 630 and shall be erected at least one week prior to the beginning of construction. These signs shall be updated if the project schedule changes, at no cost to the project.

The contractor should confer with the PIO and the Engineer on any messages that will appear on static or variable messaging boards. It will also be the responsibility of the contractor to maintain timely and frequent communications with construction zone area residents/property owners who will be directly impacted by daily construction activities. The contractor can do this as they so choose (door hangers, site visits, etc.) but they are to inform any resident at least 48-hours prior to work being conducted in front of a property so that they understand the impacts of the work on their daily activities and how they can access their home while work is taking place in their area. The contractor is also responsible for informing impacted property owners and residents of any utility service interruptions (i.e., water, power, cable, phone, internet).

REVISION OF SECTION 626
PUBLIC INFORMATION SERVICES

Access for emergency vehicles must always be provided. Coordination with emergency service providers is the responsibility of the contractor. The contractor must inform local emergency service providers (Sheriff, Fire Protection District, ambulance services) of any work that may impact their ability to respond to an emergency in the area of the construction project prior to completing the work.

The Contractor must also coordinate with the United States Postal Service (USPS) and trash haulers if construction-related activities will interfere with their ability to complete their duties.

Impacts to local school bus routes must also be coordinated by the contractor and the affected school district. The same can be said for impacts to Regional Transportation District Route (RTD) that are impacted by construction.

The Contractor shall submit weekly lane closure reports to the Engineer and the PIO.

Public Information Services Contacts:

Project Manager
Name:
Phone:
Email:

Boulder County Public Works Public Information Officer
Andrew Barth
Phone: 303-441-1032
Fax: 303-441-4594
Email: abarth@bouldercounty.org

REVISION OF SECTIONS 627 AND 713
GLASS BEADS FOR PAVEMENT MARKING

Sections 627 and 713 of the Standard Specifications are hereby revised for this project as follows:

Subsection 627.05, shall include the following:

Contractor shall sweep excess glass beads within 24 hours once the modified epoxy pavement marking is dry.

Subsection 627.05, delete the last paragraph and replace with the following:

Modified epoxy pavement marking and beads shall be applied within the following limits:

Application Rate or Coverage
Per Gallon of Modified Epoxy Pavement Marking

	Minimum	**Maximum**
16 – 18 mil marking	90 sq. ft.	100 sq. ft.
Beads	18 lbs.	20 lbs.

Subsection 713.08 (8) delete and replace with the following:

A minimum of 40 percent of the total weight shall be manufactured using a molten kiln direct melt method. All molten kiln direct melt glass beads shall be above the 600 µm (#30) sieve.

REVISION OF SECTION 627
PAVEMENT MARKING

Section 627 of the Standard Specifications is hereby revised for this project as follows:

Subsection 627.03 shall include the following:

Full-compliance pavement markings by means of temporary or final markings shall be in place at the end of the day following placement of the upper asphalt lift both for detour pavement and permanent pavement.

(f) *Pre-striping and Marking Construction Meeting*. A pre-striping and marking construction meeting shall be held prior to the layout to confirm the pavement marking plan. At a minimum, attendees shall include the Contractor, the Striping Contractor or Subcontractor and Department representative(s).

Any striping or marking detail or minor modification shall be provided by the Department in advance of layout. Minor changes shall be addressed in the Pre-striping and Marking Construction Meeting and vetted for constructability and cost.

Any significant modification shall be addressed by an approved change modification order with the Engineer prior the Pre-striping and Marking Construction Meeting.

Control Points and layout shall be done by the Contractor no less than 48 hours prior to striping and marking, and the Department shall review and approve the layout prior to the work whether temporary or final. Layout of all pavement marking, whether temporary or final, is included in the work.

Subsection 627.05 shall include the following:

The Contractor shall clean up excess beads from the roadway, shoulders and adjacent facilities. When used, Contractor shall leave all “Highway Striping” “next __miles” construction warning signs in place until excess glass beads have been cleared from the facilities.

Subsection 627.06 shall include the following:

Crosswalk bars shall be two feet wide and nine feet long unless otherwise noted.

Thermoplastic pavement marking arrows shall be the elongated type.

The Contractor shall clean up excess beads from the roadway, shoulders and adjacent facilities. Clean up of excess beads shall be included in the work.

Subsection 627.13 shall include the following:

Clean up of excess beads shall be included in the cost of the work.

REVISION OF SECTION 630
CONSTRUCTION ZONE TRAFFIC CONTROL

Section 630 of the Standard Specifications is hereby revised as follows:

Subsection 630.11 shall include the following:

The Contractor's Superintendent and Traffic Control Supervisor (TCS) shall always be equipped with a mobile telephone unit that has a local number for contact with one another, the Engineer, and emergency response dispatchers when emergency services are required. The TCS shall make immediate contact with emergency personnel as required to assist accident victims, expedite the removal of broken-down vehicles, and maintain the smooth flow of traffic. This shall not be paid for separately but shall be included in the work items under Section 630.

REVISION OF SECTION 703
AGGREGATES

Section 703 of the Standard Specification is hereby revised for this project as follows:

Subsection 703.00 shall include the following:

No crushed slag, crushed reclaimed concrete or recyclced asphalt material may be used as a substitute for aggregates when used for aggregate material that is exposed to the elements.

Subsection 703.03 shall include the following:

Aggregates for bases used for shoulder material shall be crushed stone, crushed gravel or natural gravel and shall not be crushed slag, crushed reclaimed concrete or asphalt material unless otherwise approved by the Engineer.

FORCE ACCOUNT ITEMS

DESCRIPTION

This special provision contains the Department's estimate for force account items included in the Contract. The estimated amounts marked with an asterisk will be added to the total bid to determine the amount of the performance and payment bonds. Force Account work shall be performed as directed by the Engineer.

BASIS OF PAYMENT

Payment will be made in accordance with subsection 109.04. Payment will constitute full compensation for all work necessary to complete the item.

Force account work valued at $5,000 or less, that must be performed by a licensed journeyman in order to comply with federal, state, or local codes, may be paid for after receipt of an itemized statement endorsed by the Contractor.

Force Account Item	Quantity	Estimated Amount
F/A Minor Contract Revisions	F.A.	$50,000*****
F/A Erosion Control	F.A.	$20,000
F/A Landscaping	F.A.	$5,000

Force Account Descriptions

F/A Minor Contract Revisions – Consists of minor work authorized and approved by the Engineer, which is not included in the contract plans or specifications, and is necessary to accomplish the scope of work of this contract.

F/A Erosion Control – Supplemental erosion control measures suggested by the Erosion Control Supervisor, but not provided for in the contract plans or specifications. All items shall be approved by the Engineer prior to installation or they will be at no cost to the project.

F/A Landscaping – Supplemental landscaping measures suggested by the Erosion Control Supervisor, but not provided for in the contract plans or specifications. For example, Irrigation System impacts/improvements. All items shall be approved by the Engineer prior to installation or they will be at no cost to the project.

TRAFFIC CONTROL PLAN - GENERAL

The key elements of the Contractor's method of handling traffic (MHT) are outlined in subsection 630.10(a).

The components of the TCP for this project are included in the following:

(a) Subsection 104.04 and Section 630 of the specifications,
(b) Standard Plan S-630-1, Traffic Controls for Highway Construction and Standard Plan S-630-2,
(c) Manual of Traffic Control Devices (MUTCD)

Unless otherwise approved by the Engineer, the Contractor's equipment shall follow normal and legal traffic movements. The Contractor's ingress and egress of the work area shall be accomplished with as little disruption to traffic as possible. Traffic control devices shall be removed by picking up the devices in a reverse sequence to that used for installation. This may require moving backwards through the work zone. When located behind barrier or at other locations shown on approved traffic control plans, equipment may operate in a direction opposite to adjacent traffic.

Special Traffic Control Plan requirements for this project are as follows:

(a) During the construction of this project, traffic shall use the present traveled roadway unless identified on the plans or approved by the Engineer.
(b) The Contractor shall not have construction equipment or materials in the lanes open to traffic at any time, unless approved by the Engineer.
(c) During the resurfacing work, only one lane may be closed to traffic at any time unless approved by the Engineer. Traffic shall not be delayed for more than 10 minutes or as directed by the Engineer.
(d) The Contractor shall submit to the County Traffic Engineer a method of handling vehicular traffic (MHT) for approval at least 10 working days prior to each construction phase, prior to changes in traffic control and or prior to start of any construction. Contractor shall obtain any necessary permits required from other agencies.
(e) Access to residents' and properties shall always be maintained.
(f) At least one week prior to starting construction, the Contractor shall notify the Engineer of the date the Contractor intends to start construction.

All costs incidental to the foregoing requirements shall be included in the original contract prices for the project.

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UTILITIES

The following utilities are within the limits of this project but are not expected to be involved.

UTILITY OWNER / ADDRESS	CONTACT / EMAIL	PHONE / FAX
Xcel Energy – Gas & Electric	Jeremy Jensen	720-219-8664
Various Member Utilities	UNCC	811 or 1-800-922-1987

The work described in the contract documents, including the plans and specifications, requires coordination and scheduling between the Contractor and the utility companies in accordance with subsection 105.11 in conducting their respective operations as necessary to complete the utility work with minimum delay to the project. Utility relocation work may not have been completed prior to the contractor beginning construction activities. The County will work to encourage utilities to move their facilities before construction commences but cannot provide any assurance that utility work will have been completed prior to start of construction.

Coordinating and scheduling utility relocation with utility owners is ultimately the responsibility of Contractor; any assistance provided by County shall be deemed a courtesy to Contractor and will not alleviate Contractor of its responsibility to coordinate and schedule utility relocation.

Contractor's failure to initially provide for sufficient time in the project schedule for all required utility relocations shall not alleviate Contractor from its obligations hereunder, and shall not entitle Contractor to additional time or compensation.

THE WORK LISTED BELOW SHALL BE PERFORMED BY THE CONTRACTOR:

The work listed below shall be performed by the Contractor in accordance with the plans and specifications, and as directed by the Engineer. The Contractor shall keep each utility company advised of any work being done to its facility, so that the utility company can coordinate its inspections for final acceptance of the work with the Engineer.

The Contractor shall provide written notice to each utility owner, with a copy to the Engineer, immediately prior to each utility work element expected to be coordinated with construction.

FOR:

No Utility Work is anticipated by the Contractor.

THE WORK LISTED BELOW WILL BE PERFORMED BY THE UTILITY OWNERS OR THEIR AGENTS:

No Utility Work is anticipated by the Utility Owners.

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UTILITIES

GENERAL:

The Contractor shall comply with Article 1.5 of Title 9, CRS ("Excavation Requirements") when excavation or grading is planned in the area of underground utility facilities. The Contractor shall notify all affected utilities at least two (2) business days, not including the day of notification, prior to commencing such operations. The Contractor shall contact the Utility Notification Center of Colorado (UNCC) at (8-1-1) or 1-800-922-1987 to have locations of UNCC registered lines marked by member companies. All other underground facilities shall be located by contacting the respective company. Utility service laterals shall also be located prior to beginning excavating or grading.

The location of utility facilities as shown on the plan and profile sheets, and herein described, were obtained from the best available information. It is Contractor's responsibility to verify such information and to locate, preserve, and coordinate the relocation (if required) of all existing utilities, whether shown in the contract documents or not. If utility conflicts, beyond those described in the contract documents, are encountered by Contractor during construction, Contractor shall file prompt, sufficient notice to the owner of the utility so that it may make the necessary adjustments, as well as the Engineer.

Unless otherwise noted in the contract documents, Contractor may relocate or adjust the utility lines or service connections for its convenience with the permission of the owner of the utility and the Engineer, at no increase in contract price or contract time.

At all times, Contractor shall take reasonable steps to protect the utilities and prevent service disruption. Whenever Contractor damages a utility or causes any interruption to any utility service, Contractor shall promptly notify the Engineer, the affected utility owner, and the appropriate governmental authorities. Contractor shall cooperate with the affected utility owner and the appropriate governmental authorities in the restoration of service. If the damage is to a utility that is known or should have been discovered before damage occurred, Contractor shall be responsible for all costs associated with its repair and restoration of service, at no increase in contract price or contract time.

Prior to excavating or performing any earthwork operations, the Contractor shall positively locate all potential conflicts with existing underground utilities and proposed construction, as determined by the Contractor according to proposed methods and schedule of construction. The Contractor shall propose modifications to construction plans to avoid existing underground facilities as needed, and as approved by the Engineer.

The Contractor shall provide traffic control and survey for any utility work expected to be coordinated with construction, as directed by the Engineer.

All costs incidental to the foregoing requirements will not be paid for separately but shall be included in the work.

Coordination with utility owners includes, but is not limited to, the Contractor staking construction features, providing and periodically updating an accurate construction schedule which includes all utility work elements, providing written notification of upcoming required utility work elements as the construction schedule indicates, allowing the expected number of working days for utilities to complete necessary relocation work, conducting necessary utility coordination meetings, and all other necessary accommodations as required for the project to continue per the schedule. Surveying or staking of utility relocations to be performed by the utility owner shall be the responsibility of the utility owner.

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UTILITIES

The County will cooperate with the Contractor and the utility owner for the relocation of utilities, but cannot guarantee utilities will be relocated in a timely manner. Contractor acknowledges that utilities may not be relocated prior to commencement of construction and has considered this uncertainty in preparation of its bid/proposal.

In the event of delayed utility relocations caused by utility owners, Contractor shall use best efforts to mitigate the resulting impacts on the project schedule and costs. Best efforts to mitigate shall include evaluating and proposing alternative methods of work sequencing or construction methods in order to continue the work; Contractor is prohibited from implementing any alternative methods without prior approval of the Engineer and County.

Contractor hereby holds the County harmless against all risks arising from acts or omissions of utility owners that damage the work or generate delays, disruptions, or additional cost to Contractor in performance of the work. Subject to subsection 108.08, contract time may be extended on account of acts and omissions of utility owners that delay the work without fault of the Contractor.

September 18, 2020

CDOT STANDARD SPECIAL PROVISIONS

REVISION OF SECTION 103
AWARD AND EXECUTION OF CONTRACT

Section 103 of the Standard Specifications is hereby revised for this project. Delete Subsection 103.03 and replace with the following:

103.03 Requirement of Contract Bonds. At the time of the execution of the Contract, the successful bidder shall furnish a Contract Payment Bond and a Contract Performance Bond. Each bond shall be in a penal sum equal to the nearest integral one hundred dollars in excess of the sum of the original bid items plus all force account items specified in the project special provisions to be included in the payment and performance bonds. The Contract Payment Bond and the Contract Performance Bond shall remain in full force and effect for the term of the Contract. The bonds and the security shall be acceptable to the Department.

April 13, 2020

REVISION OF SECTION 107
PORTLAND CEMENT CONCRETE PAVEMENT

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Subsection 107.06a shall include the following:

(13) The safety plan should address issues including, but not limited to the following:

Protocols for requiring symptomatic individuals to stay away from the project site.

Protocols for identifying and protecting vulnerable individuals.

Protocols on reporting of potential and confirmed infections to project and CDOT staff.

Cleaning and sanitizing of devices and materials brought to the site for installation.

Cleaning and sanitizing practices for equipment, work spaces, and sanitation facilities both for everyday situations and for a situation where a worker is found to have been infected by the pandemic virus. Provisions and protocols for washing hands or other means of hand sanitizing.

The planned use of shift work to minimize interpersonal contact between crews.

Task specific protocols that ensure people minimize contact and maximize social distancing while performing particular jobs. For example, rules for laborers to follow when forced to work in close quarters like tying steel on a structure, or installing pipe in a trench, or other similar operations.

Protocols to ensure materials testers, inspectors and other project staff can perform their work while maintaining proper social distancing from contractor staff. This includes the exchange of necessary documents like load tickets, COC's, payroll information etc.

Meeting arrangements, including techniques for remote meetings, and maintaining 6 feet minimum spacing if face-to-face meetings are unavoidable, and when trying to verbally communicate around loud machinery and operations. Protocol and plan for enforcement on who may access Field office and Material testing trailers to ensure social distancing is maintained. Protocols to ensure staff maintain social distancing while taking breaks from work activities, including the use of temporary lodging on remote jobs.

Supplemental PPE to be used during the pandemic.

October 1, 2019

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REVISION OF SECTIONS 107 AND 208
WATER QUALITY CONTROL UNDER ONE ACRE OF DISTURBANCE

Sections 107 and 208 of the Standard Specifications are hereby revised for this project as follows:

In subsection 107.25(b) 6 delete the second paragraph and replace it with the following:

The Contractor shall record the location of potential pollutants on the plans. Descriptions of the potential pollutants shall be submitted for approval.

Delete subsection 107.25 (c) and replace with the following:

A Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) is not required for this project.

The Engineer will coordinate with CDOT Maintenance and the Region Water Pollution Control Manager prior to initiating partial or final acceptance of the stormwater construction work, including soil conditioning and seeding for permanent stabilization. Unsatisfactory and incomplete erosion control work will be identified in this walkthrough, and will be summarized by the Engineer in a punch list.

In subsection 208.01 delete the third paragraph and replace with the following:

When a provision of Section 208 or an order by the Engineer requires that an action be immediate or taken immediately, it shall be understood that the Contractor shall at once begin effecting completion of the action and pursue it to completion, as approved.

In subsection 208.03, delete the first and second paragraphs.

Delete subsection 208.03 (b) and replace with the following:

(b) *Erosion and Sediment Control Activities*. The erosion and sediment control activities shall be included in the weekly meeting update. The project schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent erosion control features and stabilization. The project schedule shall include erosion and sediment control work for haul roads, borrow pits, storage and asphalt or concrete batch sites, and all areas within the project limits. If during construction the Contractor proposes changes which would affect the Contract's BMPs, the Contractor shall propose revised BMPs to the Engineer for approval in writing.

In subsection 208.03, delete (c), (d) and (e) and replace with the following:

(c) SWMP Administrator. The Contractor shall assign to the project an individual to serve in the capacity of SWMP Administrator. These duties may be assumed by the Superintendent. The SWMP Administrator shall have working knowledge and experience in construction and have satisfactorily completed the Transportation Erosion Control Supervisor Certification (TECS) training provided by the Department. Proof that this requirement has been met shall be submitted to the Engineer prior to start of work. The SWMP Administrator shall:

(1) Ensure the Method Statement for Containing Pollutant Byproducts is implemented.

(2) Review the construction site for compliance with CDOT specifications and the SWMP.

(3) Follow all stormwater requirements and inspections for other applicable State and local agencies unless a waiver or other agreement has been made.

(4) Immediately report to the Contractor and Engineer the following instances of noncompliance:

(i) Noncompliance which may endanger health or the environment.
(ii) Spills or discharge of hazardous substance or oil which may cause pollution of waters of the State.
(iii) Discharge of stormwater which may cause an exceedance of a water quality standard.
(iv) Discharge of pollutants that have occurred on site.

(d) Documentation Available on the Project. The SWMP Administrator shall provide the following Contract documents and references. They shall be made available for reference in one location on the project during construction. The documents shall be kept in a single notebook:

(1) SWMP Plan Sheets – Notes, tabulation, sequence of major activities, area of disturbance, existing soil data, existing vegetation percent cover, potential pollutant sources, receiving water, non-stormwater discharges, and environmental impacts.

(2) SWMP Site Maps (if included in the original Contract) - Construction site boundaries ground surface disturbance, limits of cut and fill, flow arrows, structural BMPs, non-structural BMPs, springs, streams, wetlands, and surface water. Also included on the map are the protection of trees, shrubs, and cultural resources.

(3) BMP Details not in Standard Plans M-208-1, M-216-1 and M-615-1.

(4) Spill Response Plan – Reports of reportable spills submitted to CDPHE.

(5) List and Evaluation of Potential Pollutants – List of potential pollutants as described in subsection 107.25 and approved Method Statement for Containing Pollutant Byproducts.

(6) All Project Environmental Permits-All Project environmental permits and associated applications and certifications, including, Senate Bill 40, USACE 404, dewatering and all other permits applicable to the project, including any separate CDPS-SCP obtained by the Contractor for staging area on private property, asphalt or concrete plant, etc.

(7) Form 105 and all other correspondence related to water quality which are issued by the Engineer for Contractor's lack of compliance.

The Contractor shall incorporate the documents and reports and have Items 1-7 available for the first working day of the project. None of these documents are required to be updated during the course of the project.

(e) Weekly Meetings. The Contractor shall conduct weekly meetings with the Engineer to discuss the following:

(1) Requirements of the SWMP.

(2) Problems that may have arisen in implementing the site specific SWMP or maintaining BMPs.

(3) Unresolved issues from inspections and concerns from last inspection

(4) BMPS that are to be installed, removed, modified, or maintained.

(5) Planned activities that will affect stormwater in order to proactively phase BMPs.

(6) Recalcitrant inspection findings.

Delete the third paragraph in subsection 208.04 and replace with the following:

New inlets and culverts shall be protected during their construction. Appropriate protection of each culvert and inlet shall be installed immediately after installation of the culvert or inlet. When riprap is called for at the outlet of a culvert, it shall be installed within 24 hours of completion of each pipe. The Contractor shall remove sediment, millings, debris, and other pollutants from within the newly constructed drainage system prior to use, at the Contractor's expense. All removed sediment shall be disposed of in accordance with all applicable regulations.

Delete the first paragraph in subsection 208.04 (f) and replace with the following:

(f) Maintenance. Erosion and sediment control practices and other protective measures identified in the SWMP as BMPs for stormwater pollution prevention shall be maintained in effective operating condition until final acceptance of the project. BMPs shall be continuously maintained in accordance with good engineering, hydrologic and pollution control practices, including removal of collected sediment when silt depth is 50 percent or more of the height of the erosion control device. When possible, the Contractor shall use equipment with an operator rather than labor alone to remove the sediment.

In subsection 208.06, first paragraph, delete the first sentence.

In subsection 208.07, second paragraph, delete the second sentence.

In subsection 208.08, delete the first paragraph and replace with the following:

208.08 Limits of Disturbance. The Contractor shall limit construction activities to those areas within the limits of disturbance shown on the plans and cross-sections. Construction activities, in addition to the Contract work, shall include the on-site parking of vehicles or equipment, on-site staging, on-site batch plants, haul roads or work access, and all other action which would disturb existing conditions. Off road staging areas must be pre-approved by the Engineer, unless otherwise designated in the Contract. Construction activities beyond the limits of disturbance due to Contractor negligence shall be restored to the original condition by the Contractor at the Contractor's expense.

In subsection 208.09, delete the first and second paragraph and replace with the following:

208.09 Failure to Perform Erosion Control. Failure to implement the Stormwater Management Plan is a violation of the Colorado Water Quality Control Act. Penalties may be assessed to the Contractor by the appropriate agencies. Penalties will be assessed by the Department as liquidated damages for failure to meet

the contract documents. All fines assessed to the Department for the Contractor's failure to implement the SWMP will be deducted from monies due the Contractor.

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REVISION OF SECTIONS 107 AND 208
WATER QUALITY CONTROL UNDER ONE ACRE OF DISTURBANCE

The Contractor will be subject to liquidated damages for incidents of failure to perform erosion control as required by the Contract. Liquidated damages will be applied for failure to comply with these specifications, including the following:

(1) Failure of the Contractor to implement necessary actions required by the Engineer as required by subsection 208.03(b) and (c)

(2) Failure to construct or implement erosion control or spill containment measures required by the Contract, or failure to construct or implement them in accordance with the Contractor's schedule.

(3) Failure to stabilize disturbed areas as required by subsections 208.04(e) and 208.08.

(4) Failure to replace or perform maintenance on an erosion control feature after notice from the Engineer to replace or perform maintenance as required by subsection 208.04(f).

(5) Failure to remove and dispose of sediment from BMPs as required.

(6) Failure to install and properly utilize a concrete washout structure for containing washout from concrete placement operations.

(7) Failure to perform permanent stabilization as required by subsection 208.04 (e).

(8) Failure to prevent discharges not composed entirely of stormwater from leaving the construction site.

(9) Failure to provide the survey of Permanent Water Quality BMPs when required on the project in accordance with subsection 208.10.

In subsection 208.09, delete the 10th paragraph, and replace with the following:

If the Contractor's corrective action plan and schedule are not submitted and approved within 96 hours of the initial notice, the Engineer will issue a Stop Work Order and have an on-site meeting with the Superintendent, SWMP Administrator, and the Superintendent's supervisor. This meeting will also be attended by the Resident Engineer, the Region Water Pollution Control Manager, and the Region Program Engineer. This meeting will identify and document needed corrective actions and a schedule for completion. If after the meeting, the unacceptable work is not remedied within the schedule as agreed to in the meeting, the Engineer will take action to effect compliance with the Contract and these specifications by utilizing CDOT Maintenance personnel or other non-Contractor forces and deduct the cost from any monies due or to become due to the Contractor pursuant to subsection 105.17. Delays due to these Stop Work Orders shall be considered non-excusable. The Stop Work Order shall be in place until the project is in compliance.

REVISION OF SECTIONS 107 AND 208
WATER QUALITY CONTROL UNDER ONE ACRE OF DISTURBANCE

In subsection 208.10, delete (c) and replace with the following:

(c) *Locations of Temporary BMPs.* The Engineer will identify locations where modification, cleaning or removal of temporary BMPs are required, and will provide these in writing to the Contractor.

In subsection 208.11, delete the first paragraph.

In subsection 208.12, delete the third, fourth and fifth paragraphs and replace with the following:

SWMP Administrator duties on projects having less than one acre of total disturbed area will not be measured and paid for separately but shall be included in the work. The Erosion Control Management Pay Item will not apply to this project.

April 13, 2020

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REVISION OF SECTION 109
PROMPT PAYMENT (LOCAL AGENCY)

Section 109 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 109.06(e) and replace with the following:

(e) *Prompt Payment*. The Contractor shall pay subcontractors and suppliers for all work which has been satisfactorily completed within seven calendar days after receiving payment for that work from the Local Public Agency (LPA). For the purpose of this section only, work shall be considered satisfactorily complete when the LPA has made payment for the work. The Contractor shall include in all subcontracts a provision that this requirement for prompt payment to subcontractors and suppliers must be included in all subcontracts at every tier. The Contractor shall ensure that all subcontractors and suppliers at every tier are promptly paid. If the Contractor or its subcontractors fail to comply with this provision, the Engineer will not authorize further progress payment for work performed directly by the Contractor or the noncompliant subcontractor until the required payments have been made. The Engineer will continue to authorize progress payments for work performed by compliant subcontractors.

Delete subsection 109.06(f)5 and replace with the following:

5. In determining whether satisfactory completion has been achieved, the Contractor may require the subcontractor to provide documentation such as certifications and releases, showing that all laborers, lower-tiered subcontractors, suppliers of material and equipment, and others involved in the subcontractor's work have been paid in full. The Contractor may also require any documentation from the subcontractor that is required by the subcontract or by the Contract between the Contractor and the LPA or by law such as affidavits of wages paid, material acceptance certifications and releases from applicable governmental agencies to the extent that they relate to the subcontractor's work.

Delete subsection 109.06(f)8 and replace with the following:

8. If additional quantities of a particular item of work are required at a later date after final measurement has been made, the Contractor shall perform this work in accordance with Contract requirements and at unit bid prices.
   For this subsection only, satisfactory completion of all work described on CDOT Form No. 205 is when all tasks called for in the subcontract as amended by changes directed by the Engineer have been accomplished and documented as required by the LPA.
   The requirements stated above do not apply to retainage withheld by the LPA from monies earned by the Contractor. The LPA will continue to process the release of that retainage based upon the completion date of the project as defined in the Commencement and Completion of Work special provision.

REVISION OF SECTION 109
PROMPT PAYMENT (LOCAL AGENCY)

Delete subsection 109.06(f)9 and replace with the following:

9. If during the prosecution of the project a portion of the work is partially accepted in accordance with subsection 105.21(a), the Contractor shall release all subcontractors' retainage on the portion of the partially accepted work performed by subcontractors. Prior to the LPA releasing the Contractor's retainage on work that has been partially accepted in accordance with subsection 105.21(a), the Contractor shall submit to the Engineer a certified statement for each subcontractor that has participated in the partially accepted work. The statement shall certify that the subcontractor has been paid in full for its portion of the partially accepted work including release of the subcontractor's retainage. The statement shall include the signature of a legally responsible official for the Contractor, and the signature of a legally responsible official for the subcontractor.

Delete subsection 109.06(g) and replace with the following:

(g) *Good Cause Exception.* If the Contractor has "good cause" to delay or withhold a subcontractor's progress payment, the Contractor shall notify the LPA and the subcontractor in writing within seven calendar days after receiving payment from the LPA. The notification shall specify the amount being withheld and provide adequate justification for withholding the payment. The notice shall also clearly state what conditions the subcontractor must meet to receive payment. "Good cause" shall include but not be limited to the failure of the subcontractor to make timely submission of required paperwork.

Delete subsection 109.06(h) and replace with the following:

(h) *Monthly Reporting.* On a monthly basis, the Contractor shall submit the Form 1418, Monthly Payment Report, to the Engineer along with the project schedule updates, in accordance with subsections 108.03(g). Failure to submit a complete and accurate Form 1418 shall be grounds for CDOT to withhold subsequent payments or retainage from the Contractor.

July 9, 2020

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REVISION OF SECTION 207
TOPSOIL

Section 207 of the Standard Specifications is hereby deleted for this project and replaced with the following:

DESCRIPTION

207.01 This work consists of salvaging topsoil from onsite locations, stockpiling, maintaining, and preparing the subsoils for the placement of the topsoil at locations shown on the plans. It also includes creating seeding media by amending subsoils, and importing offsite topsoil when shown on the plans.

Substitutions from this specification will not be allowed unless submitted in writing to the Engineer and approved by the Region or Headquarters Landscape Architect.

MATERIALS

207.02 General. Topsoil shall be salvaged onsite, imported, or produced as shown on the plans. Topsoil shall be free of refuse and litter along with noxious weed seed and reproductive plant parts, as listed in current State of Colorado A and B Noxious Weed List and local agency weed lists. Topsoil shall not include heavy clay, hard clods, toxic substances, pathogens, or other material, which would be detrimental to growing native vegetation. All required amendments shall be thoroughly incorporated to parent material, onsite. All amendments shall conform to Section 212. Topsoil and parent material shall be free of clods, sticks, stones, debris, concrete, and asphalt in excess of 4 inches in any dimension for all material used within the designed clear zone for the project. Topsoil outside of the clear zone may contain rock larger than 4 inches in any dimension. For slopes with no structures being used to protect areas from falling rocks the Contractor shall remove or secure any rocks deemed unstable and could pose a safety hazard.

Topsoil shall be generated from one or more of the following as shown on the plans:

(a) *Topsoil (Onsite).* Topsoil shall consist of the upper 6-inch layer of the A horizon, as defined by the Soil Science Society of America, or at the depths and locations shown on the Stormwater Management Plan (SWMP). It shall consist of loose friable soil, salvaged from onsite and stockpiled or windrowed. Litter and duff (layer of partially decomposed plant material) shall be collected as part of the salvaging of topsoil unless specified to be removed and hauled offsite on the plans.

(b) *Topsoil (Wetland).* Wetland topsoil shall consist of moist, organic soil obtained from delineated wetlands, including any existing wetland vegetation and seeds. Wetland topsoil shall be extracted from the project site at locations shown on the plans or as directed, to a minimum depth of 12 inches or at the depths as shown on the plans.

(c) *Seeding Media.* Seeding Media shall consist of one or all of the following approved materials: sub-soil, overburden, or material generated from rock. Contractor shall select onsite or offsite locations to generate material that meet the requirements of Table 207-1. The Contractor shall provide a Certified Test Report (CTR) in accordance with subsection 106.13, excluding lot, heat, and batch confirming that the excavated material conforms to Table 207-1.

(d) *Topsoil (Offsite).* The Contractor shall submit a CTR for Topsoil (Offsite) for approval a minimum of 60 days prior to import in accordance with subsection 106.13. The Contractor shall include with the CTR a complete Soil Nutrient Analysis for the properties listed in Table 207-2 from an independent laboratory that participates in the National Association for Proficiency Testing (NAPT). If topsoil nutrient analysis is deficient, an Amendment Protocol shall be submitted by the Contractor for approval. The Amendment Protocol shall contain a complete list of amendments and associated quantities to produce topsoil that conforms to Table 207-2.

The Contractor shall submit a Certificate of Compliance (COC) for Topsoil (Offsite) for approval a minimum of 60 days prior to import that the source has controlled noxious weeds in accordance with the State of Colorado Noxious Weed Act 35-5.5-115.

Table 207-1
PHYSICAL PROPERTIES OF SEEDING MEDIA

Property	Range	Test
Soil pH (s.u.)	5.6 – 7.5	ASA Mono. #9, Part 2, Method 10-3.2 or TMECC 04.11-A
Soil Electrical Conductivity (EC) (mmhos/cm or ds/m)	< 5.0	ASA Mono. #9, Part 2, Method 10-3.3
Soil SAR (s.u.)	0 - 10	ASA Mono. #9, Part 2, Method 10-3.4
Rock Content (%)	≤ 25	USDA NRCS Rock Fragment Modifier Usage
Trace Contaminants (Arsenic, Cadmium, Copper, Mercury, Selenium, Zinc, Nickel, and Lead)	Meets US EPA, 40 CFR 503 Regulations	TMECC 04.06 or EPA6020/ASA (American Society of Agronomy)
Rock Content (%) greater than 3” diameter	≤ 25	USDA NRCS Rock Fragment Modifier Usage
USDA Soil Texture	No more than 70% clay, silt, and sand by percentage volume of topsoil.	ASA Monograph #9, Part 1, Method 15-4 or ASA 1 43-5
All Particle Sizes	< 6 Inches	
Physical contaminants (man-made inerts) (%)	< 1	TMECC 03.08-C
C:N ratio	<20	TMECC 05.02-A
* Fines % when manufacturing material from rock	>25% material passing through #4 sieve	ASTM D6913

Amendments to the base imported material shall have the quantities of material verified onsite prior to incorporation into parent material, either at the stockpiles or after placement of parent material. Topsoil amended at the stockpiles shall be distributed to the site within seven days. * Substitute this requirement for
USDA Soil Texture requirement when project are approved to use material manufactured from native rock material on site.

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REVISION OF SECTION 207
TOPSOIL
Table 207-2
TOPSOIL (OFFSITE) PROPERTIES

Property	Range	Test Methods
Soil pH (s.u)	5.6 – 7.5	ASA Mono. #9, Part 2, Method 10-3.2 or TMECC 04.11-A
Salt by Electrical Conductivity (EC) (mmhos/cm or ds/m)	< 2.0	ASA Mono. #9, Part 2, Method 10-3.3
Soil SAR (s.u.)	0 – 10	ASA Mono. #9, Part 2, Method 10-3.4
Soil OM (%)	3 – 5	Methods of Soil Analysis, Part 3, Method 34
Soil N (NO_3-n, ppm)	$\geq$ 20.0	Methods of Soil Analysis, Part 3. Chemical Methods. Ch. 38 Nitrogen – Inorganic Forms
Soil P (ppm)	$\geq$ 13.0	ASA Mono. #9, Part 2, Method 24-5.4 or others as required based on soil pH
Soil K (ppm)	$\geq$ 80	ASA Mono. #9, Part 2, Method 13-3.5
Rock Content (%) greater than 3” diameter	$\leq$ 25	USDA NRCS Rock Fragment Modifier Usage
Bioassay (seedling emergence and relative vigor)	> 80% of control	TMECC 05.05-A or Approved Germination Test
Soil Texture	No more than 70% clay, silt and sand by percentage volume of topsoil	ASA Mono. #9, Part 1, Method 15-4
Physical contaminants (man-made inerts) (%)	< 1	TMECC 03.08-C
Trace Contaminants (Arsenic, Cadmium, Copper, Mercury, Selenium, Zinc, Nickel, and Lead)	Meets US EPA, 40 CFR 503 Regulations	TMECC 04.06 or EPA6020/ASA (American Society of Agronomy)
All Particle Sizes	< 6 Inches	
C:N ratio	<20	TMECC 05.02-A

The Contractor shall utilize a rod penetrometer for determining subgrade soil preparation and determining looseness of soil after ripping. The penetrometer shall have a psi pressure gage, and shall meet the following requirements:

(1) Steel rod with a minimum diameter of ½ inch with graduations (tick marks) every 6 inches.
(2) The rod shall be made of stainless steel or other metal that will not bend when weight is applied.
(3) The end of the rod shall have a 30-degree cone tip.
(4) The diameter of the cone at its tip shall be no more than 0.1 inch.
(5) The top of the rod shall be a T-handled configuration.

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REVISION OF SECTION 207
TOPSOIL

CONSTRUCTION REQUIREMENTS

207.03 Site Pre-vegetation Conference. Prior to the start of the initial Subgrade Soil Preparation for the project, the Contractor shall request a Site Pre-vegetation Conference. The Engineer will set up the conference and will include: the Engineer or designated representative, the Superintendent or designated representative, the sub-contractor(s) performing the subgrade soil preparation and soil amendments, and the CDOT Landscape Architect representing the Region. Only one meeting is required for the project unless a new sub-contractor is brought on that did not attend the previous meeting.

The Agenda of the Pre-vegetation Conference can be found in Appendix A of the Construction Manual and includes the following:

(1) Final review of the Topsoil (Offsite) Amendment Protocol

(2) Review of the Method Statement detailing the equipment which will be used for the subgrade soil preparation operations

(3) Review of rod penetrometer which will be used to determine subgrade soil preparation of topsoil

(4) Permanent Stabilization Phasing Plan (identify strategies and site management measures to protect de-compacted, topsoil amended, seeded, and blanketed areas from foot, vehicle loads, and other disturbances).

(5) Seeding. See subsection 212.03 for submittal requirements.

(6) Meeting attendee sign-in log

207.04 Topsoil Stockpiling. Stockpiles of topsoil shall be created as shown on the plans or as approved by the Engineer. All Stockpiles of topsoil which are scheduled to remain in place for 14 days or more shall receive interim stabilization in accordance with subsection 208.04. All topsoil stockpiles shall be identified using white pin flags with “TOPSOIL” printed in black letters and shall have their locations shown on the SWMP Plans. Each individual stockpile shall require at least one flag, and one additional flag for each 10 cubic yards of salvaged topsoil. The contractor shall provide only perimeter flags for stockpile larger than 100 cubic yards with a minimum spacing of 25 feet.

Topsoil may be placed in stockpiles or windrowed at the edge of the disturbance. Windrowed topsoil shall not be used as perimeter erosion control or extensively compacted. When topsoil is windrowed, all stockpile requirements still apply.

(1) Upland Topsoil. If included on the plans, stockpiles shall be treated with herbicide, in accordance with Section 217, or as directed.

(2) Wetland Topsoil. Wetland stockpiles shall not be treated with herbicide. Weeds shall be hand pulled. Wetland topsoil shall be placed within 24 hours from excavation, unless otherwise approved by the Engineer. Wetland topsoil shall not be stockpiled for more than six months.

207.05 Subgrade Soil Preparation. Before placement of topsoil, the subgrade shall be ripped to a

minimum depth of 14 inches. Subgrade shall be mostly dry and friable. Subgrade shall crumble without sticking together, yet not be so dry and hard that it does not break apart easily.

Underground utilities shall be located prior to soil preparation.

Subgrade soil preparation equipment shall meet the requirements for either winged tip or parabolic shanks. Operation shall be performed to fracture the soil uniformly without lifting or furrowing the surface excessively. The Contractor shall submit a method statement for subgrade soil preparation other equipment will be considered.

1. Winged tip shanks (dozer equipment) shall be a minimum of 6 inches wide and have 2 inches of vertical profile change on the blade with a 40 – 60-degree sweep angle.

The Contractor shall calibrate the subgrade soil preparation equipment using a minimum 30 linear feet of the initial pass. The Contractor shall utilize the rod penetrometer to verify that that de-compaction was successfully done. The Contractor shall take penetration measurements every 6 inches across a transect perpendicular to the direction of the tractor and spanning the width of the subgrade soil preparation. Depths of penetration shall confirm that a minimum of 12 inches can be achieved without reaching 300 psi on the rod penetrometer pressure gage (approximately 30 pounds of pressure on the T-handle).

Existing subgrade shall be de-compacted to a depth of 14 inches. If multiple passes are needed, the subsequent passes shall be positioned so that the ripping equipment (subsoilers) from the previous pass are split by the subsequent pass. Following ripping, the Contractor shall remove all sticks, stones, debris, clods, and all other substances greater than 6 inches in diameter. The Contractor shall restrict motorized vehicle and foot traffic from passing over the ripped area since this would recompact the areas that received subgrade soil preparation.

The first 4 feet from the edge of pavement shall be ripped to a depth of 6 inches. If the project is going to use aggregate base course or recycled asphalt as a shouldering technique, those areas will not require subgrade soil preparation. Depth of soil ripping for the subgrade soil preparation shall be checked with the rod penetrometer.

The Contractor shall verify adequate de-compaction of the entire area to have topsoil placed using a rod penetrometer in the presence of the Engineer. Tests shall be performed at a minimum of ten random locations per each acre as selected by the Engineer. The Test shall verify that a depth of 12 inches of penetration into the soil can be achieved without reaching 300 psi on the rod penetrometer pressure gage (approximately 30 pounds of pressure on the T-handle). If this depth cannot be achieved for 80 percent of the penetrations, the Contractor shall re-rip the area at no additional cost to the Department.

207.06 Placement of Topsoil and Seeding Media. Topsoil and Seeding Media shall be hauled and placed at the locations disturbed and will be re-vegetated or as shown on the plans. The contractor shall place a minimum thickness of 6 inches and should only be handled when it is dry enough to work without damaging soil structure. Topsoil and Seeding Media shall be placed a minimum depth of twelve (12) inches when placed over riprap as required on the plans. No Topsoil or Seeding Media shall be placed below ordinary high water mark except as otherwise specified in bio-stabilization bank treatments.

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REVISION OF SECTION 207
TOPSOIL

Salvaged topsoil placement deeper than 6 inches is allowed if additional approved material is on-site.

Contractor shall place topsoil in a method that does not re-compact subgrade material using low ground-contact pressure equipment, or by excavators and/or backhoes operating adjacent to it.

The final grade shall be free of all materials greater than 4 inches in diameter within the designed clear zone for the project. Equipment not required for revegetation work will not be permitted in the areas of placed topsoil.

Soil amendments, seedbed preparation, and permanent stabilization mulching shall be accomplished within four working days of placing the topsoil on the de-compacted civil subgrades. If placed topsoil is not mulched with permanent stabilization mulch within four working days, the Contractor shall complete interim stabilization methods in accordance with subsection 208.04(e), at no additional cost to the Department. Time to perform the work may be extended for delays due to weather.

METHOD OF MEASUREMENT

207.07 Topsoil material will be measured by the actual number of cubic yards of topsoil placed and accepted.
Subgrade soil preparation will be measured by the square yards of subgrade which is ripped and accepted for adequate de-compaction.

BASIS OF PAYMENT

207.08 The accepted quantities measured will be paid for at the Contract unit price for each of the pay items listed below that appear in the bid schedule.

Payment will be made under:

Pay Item	**Pay Unit**
Topsoil (Onsite)	Cubic Yard
Seeding Media	Cubic Yard
Topsoil (Offsite)	Cubic Yard
Topsoil (Wetland)	Cubic Yard
Subgrade Soil Preparation	Square Yard

Amendments for Topsoil (Onsite) and Seeding Media will be measured and paid for in accordance with Section 212.

Amendments for Topsoil (Offsite) will not be measured and paid for separately, but shall be included in the work.

Noxious Weed Management will be measured and paid for in accordance with Section 217.

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REVISION OF SECTION 207
TOPSOIL

Stockpiling or windrowing of topsoil will not be measured and paid for separately, but shall be included in the work.

Testing of Seeding Medial and Topsoil (Offsite) will not be measured and paid for separately but shall be included in the work.

Rod penetrometer and associated verification testing of random locations will not be measured and paid for separately, but shall be included in the work.

The Site Pre-vegetation Conference will not be paid for separately, but shall be included in the work.

Additional passes with the ripping equipment to achieve the desired de-compaction will not be measured and paid for separately, but shall be included in the work.

Removing of clods, sticks, stones, debris, concrete, and asphalt in excess of 4 inches in any dimension for all topsoil and Seeding Media used within the designed clear zone for the project will not be measured and paid for separely, but shall be included in the work.

REVISION OF SECTION 212
SOIL AMENDMENTS, SEEDING, AND SODDING

Section 212 of the Standard Specifications is hereby deleted for this project and replaced with the following:

DESCRIPTION

212.01 This work consists of application of fertilizer, soil amendments, seedbed preparation, and placing seed and sod.

Substitutions from this specification will not be allowed unless submitted in writing to the Engineer and approved by the Region or Headquarters Landscape Architect.

MATERIALS

212.02 Seed, Fertilizers, Soil Conditioners, Mycorrhizae, Elemental Sulfur, and Sod.

(a) *Seed.* Seed shall be delivered to the project site in sealed bags tagged by a registered seed supplier conforming to the requirements of the Colorado Seed Act, CRS 35-27-111(1). Seed used on the project shall not be in the Contractor's possession for more than 30 days from the date of pickup or delivery on the seed vendors packing slip. Bags which have been opened or damaged prior to Engineer inspection will be rejected. The State required legal tags shall remain on the bag until opened and the seed is placed in either the drill or hydraulic seeders in the presence of the Engineer. The Engineer shall remove all tags after seed has been planted. Each seed tag shall clearly show the following:

(1) Name and address of the supplier

(2) Botanical and common name for each species

(3) Lot numbers

(4) Percent by weight of inert ingredients

(5) Guaranteed percentage of purity and germination

(6) Pounds of Pure Live Seed (PLS) of each seed species

(7) Total net weight in pounds of PLS in the sealed bag

(8) Calendar month and year of test date

Seeds shall be free from all noxious weed seeds in accordance with Colorado Seed Act (CRS 35-17) prohibited noxious weed seed list.

Weed seed content shall not exceed the requirements in part 7.2 of the Colorado Department of Agriculture's Seed Act Rules and Regulations.

Seed which has become wet, moldy, or damaged in transit or in storage will not be accepted.

Seed and seed labels shall conform to all current State regulations and to the testing provisions of the Association of Official Seed Analysis. Computations for quantity of seed required on the project shall include the percent of purity and percent of germination.

The Contractor shall store seed under dry conditions, at temperatures between 35 °F to 90 °F, under low humidity and out of direct sunlight. The Contractor shall provide the location of where seed is stored and access to stored seed locations to the Engineer. Seed stored by the Contractor for longer than 30 will be rejected.

(b) *Organic Fertilizer*. Fertilizer derived directly from plant or animal sources shall conform to Colorado Revised Fertilizer Rules 8 CCR 1202-4. Fertilizer shall be uniform in composition and shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's name, address, and nutrient analysis. Fertilizer bags (containers) which arrive at the project site opened, damaged, or lacking a label will be rejected. The Contractor shall only use bulk shipments such as tote bags or super sacks that have a manufacture’s original label and sealed at the manufacturing facility. Fertilizer which becomes caked or damaged will not be accepted. Fertilizer shall be stored according to manufacturer’s recommendations in a dry area where the fertilizer will not be damaged.

Organic fertilizer formulation being submitted for use must be registered with the Colorado Department of Agriculture.

Verification tests may be conducted by CDOT on grab samples of organic fertilizer delivered to the site to determine the reliability of bag label analysis and for ingredients which are injurious to plants. If a product of any supplier is found to consistently deviate from the bag level analysis, the acceptance of that product will be discontinued. Copies of the failing test reports will be furnished to the Colorado State Board of Agriculture for appropriate action under the "Colorado Fertilizer Law".

Fertilizer shall be supplied in one of the following physical forms:

(1) A dry free-flowing granular fertilizer, suitable for application by agricultural fertilizer spreader.

(2) A homogeneous pellet, suitable for application by agricultural fertilizer spreader. Pellet size shall be 2-3 mm. Smaller may be allowed when Seeding (Native) Hydraulic is shown on the plans.

(3) A soluble form that will permit complete suspension of insoluble particles in water, suitable for application by power sprayer.

The application rate of the organic fertilizer shall be either as high or low nitrogen (N) fertilizer as shown on the plans.

High N organic fertilizer chemical analysis shall conform to Table 212-1.

Table 212-1
Chemical Analysis for High N Fertilizer

Ingredient	Range	Test Method
Nitrogen (N) (%)	6 - 10	AOAC Official Method 993.13 Nitrogen (Total) in Fertilizers Combustion Method
Phosphorus (P) (%)	1 - 8	AOAC Official Method 960.03 Phosphorus (Available) in Fertilizers
Potassium (K) (%)	1 - 8	AOAC Official Method 983.02 Potassium in Fertilizers

Low N organic fertilizer chemical analysis shall conform to Table 212-2.

Table 212-2
Chemical Analysis for Low N Fertilizer

Ingredient	Range	Test Method
Nitrogen (N) (%)	2 -5	AOAC Official Method 993.13 Nitrogen (Total) in Fertilizers Combustion Method
Phosphorus (P) (%)	3 - 8	AOAC Official Method 960.03 Phosphorus (Available) in Fertilizers
Potassium (K) (%)	1 - 8	AOAC Official Method 983.02 Potassium in Fertilizers

Organic fertilizers shall conform to Table 212-3.

Table 212-3
Organic Fertilizer Properties

Criteria	Range
Moisture content by weight	< 6%

(c) *Compost (Mechanically Applied).* Compost shall be suitable for use in Erosion Log (Type 2) and permanent seeding applications. Compost shall not contain visible refuse, other physical contaminants, or substances considered harmful to plant growth. Compost shall be used in accordance with all applicable EPA 40 CFR 503 standards for Class A biosolids including the time and temperature standards. Materials that have been treated with chemical preservatives as a compost feedstock will not be permitted.

The Contractor shall provide material that has been aerobically composted in a commercial facility. Compost shall be from a producer that participates in the United States Composting Council's (USCC) Seal of Testing Assurance (STA) program. The Department will only accept STA approved compost that is tested in accordance with the USCC Test Methods for Examining of Composting and Compost (TMECC) manual.

Verification tests may be conducted by CDOT on grab samples of compost delivered to the site to determine the gradation and physical properties. Testing may be done for indication of ingredients which are injurious to plants. Sampling procedures will follow the STA 02.01 Field Sampling of Compost Materials and 02.01-B Selection of Sampling Locations for Windrows and Piles. If a product is found to consistently deviate from the gradation and property analysis, the acceptance of that product will be discontinued. Copies of the failing test reports will be furnished to the USCC.

1. Compost for permanent seeding soil conditioner locations onsite and application rates shall be as shown on the plans.

   Organic matter in compost shall be no more than 2 inches in length.

   Compost (Mechanically Applied) for permanent seeding shall meet the gradation and physical properties as shown in Table 212-4 and Table 212-5. The Contractor shall provide a written explanation for compost tested parameters not within the acceptable requirements for review and consideration.

   The Contractor shall provide documentation from the composting facility confirming that the material has been tested in accordance with USCC TMECC.

Table 212-4
Gradation for Permanent Seeding Compost

Sieve Size	Percent Passing		
	Minimum	Maximum	Test Method
25.0 mm (1”)	100		TMECC 02.02-B, “Sample Sieving for Aggregate Size Classification”
19.0 mm (3/4”)	90	100	
6.25 mm (1/4”)	70	100	

Note: Compost shall be from a producer that participates in the USCC STA program.

REVISION OF SECTION 212
SOIL AMENDMENTS, SEEDING, AND SODDING

Table 212-5
Properties for Permanent Seeding Compost

Compost Parameters	Reported as	Requirements	Test Method
pH	pH units	6.0 - 8.5	TMECC 04.11-A
Soluble Salts (Electrical Conductivity)	dS/m (mmhos/cm)	< 5.0	TMECC 04.10-A
Moisture Content	%, wet weight basis	25% - 50%	TMECC 03.09-A
Organic Matter Content	%, dry weight basis pounds per cubic yard	20% - 50% >240	TMECC 05.07-A
Carbon to Nitrogen Ratio (C:N)		< 15:1	
Man-made Inert Contamination (plastic, concrete, ceramics, metal, etc.)	%, dry weight basis	< 1%	TMECC 03.08-A
Stability (respirometry)	mg CO_2-C per g TS per day mg CO_2-C per g OM per day	8 or below	TMECC 05.08-B
Select Pathogens and weed free	(PASS/FAIL) Limits: Salmonella < 3 MPN/4 grams of TS, or Coliform Bacteria < 1000 MPN/gram	Pass	TMECC 07.01-B Fecal Coliforms, or 07.02 Salmonella
Trace Metals	(PASS/FAIL) Limits (mg $kg^{-1,}$ dw basis): Arsenic (As) 41, Cadmium (Cd) 39, Copper (Cu)1500, Lead (Pb) 300, Mercury (Hg) 17, Nickel (Ni) 420, Selenium (Se) 100, Zinc (Zn) 2800	Pass	TMECC 04.06
Maturity (Bioassay) Percent Emergence Relative Seedling Vigor	 %, (average) %, (average)	 > 80% > 80%	TMECC 05.05-A
Use the STA Lab bulk density lb/cu ft as received, multiplied by organic matter % as received, multiplied by 27 to calculate pounds per cubic yard of organic matter.			

2. Compost for Erosion Log (Type 2) shall meet the gradation and physical properties as shown in Table 212-6 and Table 212-7.

REVISION OF SECTION 212
SOIL AMENDMENTS, SEEDING, AND SODDING

Table 212-6
Gradation for Erosion Log (Type 2) Compost

Sieve Size	Percent Passing		
	Minimum	Maximum	Test Method
75.0 mm (3")	100		TMECC 02.02-B, "Sample Sieving for Aggregate Size Classification"
25.0 mm (1")	90	100	
9.5 mm (3/8")	10	50	

Note: Organic matter for erosion log compost shall be no more than 4 inches in length. Compost shall be from a producer that participates in the USCC STA program.

Table 212-7
Properties for Erosion Log (Type 2) Compost

Compost Parameters	Reported as	Requirements	Test Method
pH	pH units	6.0 - 8.5	TMECC 04.11-A
Soluble Salts (Electrical Conductivity)	dS/m (mmhos/cm)	< 5.0	TMECC 04.10-A
Moisture Content	%, wet weight basis	< 60%	TMECC 03.09-A
Organic Matter Content	%, dry weight basis	25% - 100%	TMECC 05.07-A
Man-made Inert Contamination (plastic, concrete, ceramics, metal, etc.)	%, dry weight basis	< 0.5%	TMECC 03.08-A
Stability (respirometry)	mg CO_2-C per g TS per day mg CO_2-C per g OM per day	N/A	TMECC 05.08-B
Select Pathogens and weed free	(PASS/FAIL) Limits: Salmonella < 3 MPN/4 grams of TS, or Coliform Bacteria < 1000 MPN/gram	Pass	TMECC 07.01-B Fecal Coliforms, or 07.02 Salmonella
Trace Metals	(PASS/FAIL) Limits (mg $kg^{-1,}$ dw basis): Arsenic (As) 41, Cadmium (Cd) 39, Copper (Cu)1500, Lead (Pb) 300, Mercury (Hg) 17, Nickel (Ni) 420, Selenium (Se) 100, Zinc (Zn) 2800	Pass	TMECC 04.06
Maturity (Bioassay)			
Percent Emergence	%, (average)	N/A	TMECC 05.05-A
Relative Seedling Vigor	%, (average)	N/A	

(d) *Biotic Soil Amendments (Hydraulically Applied*). Soil amendments shall be a combination of natural fibers, growth stimulants, and other biologically active material designed to improve seed germination and vegetation establishment as shown in Table 212-8. Biotic soil amendments shall be pre-packaged in ultraviolet and weather resistant packaging and labeled from the manufacturer. Bags (containers) which arrive at the project site opened, damaged, or lacking a label will be rejected. Bulk shipments such as tote bags will be rejected. Biotic soil amendments shall be stored in locations not exceeding 80 °F. Acceptance of material shall be subject to the requirements of the Department's Approved Product List (APL).

The application rate of the biotic soil amendments shall be in accordance with the rates shown on the plans. Use of mulch tackifier (Plantago Insularis or pre-gelatinized corn starch polymer) shall be in accordance with Section 213. It shall be used as a wetting agent at a rate of 30 pounds per acre. Biotic soil amendments shall provide a continuous and uniform cover and shall consist of one of the components in Table 212-8 and all of the performance and physical properties in Table 212-9.

Table 212-8
Required Percentage Ranges of Biotic Soil Amendments

Components	Units	Requirement
Professional grade sphagnum peat moss, professional grade reed sedge peat moss or compost that meets the Seal of Testing Assurance Program of the US Composting Council	%, dry weight basis	> 41%
Mechanically processed straw consisting of weed free agricultural straw, flexible flax fiber or rice hulls	%, dry weight basis	< 57%

Table 212-9
Performance and Physical Requirements of Biotic Soil Amendments

Parameters	Reported as	Requirement	Test Method
pH	pH units	5.0 – 7.5	ASTM D1293
Moisture content	%, wet weight basis	10% - 50%	ASTM D 2974
Organic matter content	%, dry weight basis	> 85%	ASTM D586
Carbon Nitrogen Ratio	Ratio C:N	< 38:1	ASTM E1508
Man-made inert contamination	%, dry weight basis	< 1.0%	
Acute Toxicity	(Pass/Fail)	Pass (non-toxic)	ASTM 7101 or EPA Method 2021.0 or EPA Method 2002.0
Vegetative Minimum		> 400%	ASTM 7322
The Contractor shall provide a CTR with independent laboratory analysis for the required parameters in accordance with subsection 106.13.			

(e) *Humate*. The Contractor shall provide a screened dry granular form of organic humic and fulvic acid substance. Humate shall be pre-packaged and labeled from the manufacturer. Bags (containers) which arrive at the project site opened, damaged, or lacking label will be rejected. The Contractor shall only use bulk shipments such as tote bags or super sacks that have a manufacture's original label and sealed at the manufacturing facility. Humate shall be stored in locations not exceeding 80 °F. Humate shall be provided in accordance with the rates shown on the plans. Product shall conform to the parameters in Table 212-10 and Table 212-11.

Table 212-10
Screened Size Requirements for Humate

Seeding Method	Reported as	Requirement
Seeding (Native) Drill, Hydraulic and Broadcast	inches	< 1/4

Table 212-11
Performance and Physical Requirements of Humate

Parameters	Reported as	Requirement	Test Method
Organic Matter	%, dry weight basis	>70%	
Fines (material that is finer than the No. 200 (75-µm) sieve)	%, dry weight basis	<2%	ASTM D7928
pH	pH units	3.0 - 4.5	ASTM D1293
Acute Toxicity	Pass / Fail	Non Toxic	ASTM 7101 or EPA Method 2021 or 2002
Humic and Fulvic Acids	%, dry weight basis	> 70%	A & L Western method; total alkali extractable
Carbon Content	%, dry weight basis	40% - 50%	
Moisture Content	%, dry weight basis	< 20%	
Heavy Metal / Ash Content	%, dry weight basis	< 15%	
The Contractor shall provide a CTR with independent laboratory analysis for the required parameters in accordance with subsection 106.13.			

(f) *Mycorrhizae*. Mycorrhizae shall arrive onsite in original and undamaged packaging. Handling of this material shall follow manufacturer's safety recommendations. Mycorrhizae shall be stored onsite in such a way as to avoid exposure to direct sunlight for more than four hours and to prevent package temperatures to rise above 85 °F. The endo mycorrhizal inoculum shall provide at least 60,000 propagules per pound and shall contain all of the following species and conform to the parameters in Table 212-12:

(1) Glomus intraradices (a.k.a. Rhizophagus intraradices)
(2) Glomus mosseae (a.k.a. Funneliformis mosseae)
(3) Glomus aggregatum (a.k.a. rhizophagus aggregatus)
(4) Glomus etunicatum (a.k.a. Claroideoglomus etunicatum)

REVISION OF SECTION 212
SOIL AMENDMENTS, SEEDING, AND SODDING

Table 212-12
Physical Requirements of Endo Mycorrhizae

Parameters	Reported as	Requirement	Test Method
Acute Toxicity	Pass or Fail	Non Toxic	ASTM 7101 or EPA Method 2021 or 2002
The Contractor shall provide a CTR with independent laboratory analysis has been done on the product for the required parameters in accordance with subsection 106.13.			

The following rates shall be used for Seeding Methods:

(1) For Seeding (Native) Drill, the mycorrhizae product shall be provided as a dry free-flowing granular material, suitable for application by agricultural drill seeder. Application rate shall be 8 pounds per acre.

(2) For Seeding (Native) Hydraulic, the mycorrhizae product shall be provided as a fine granular (< 2 mm) or powdered form (particle size less than 300 microns) that will permit complete suspension and used with hydro-seeder equipment. Application rate shall be 20 pounds per acre.

(3) For Seeding (Native) Broadcast, the mycorrhizae product shall be provided as a dry free-flowing granular material, suitable for application by fertilizer spreader. Application rate shall be 20 pounds per acre.

(g) *Elemental Sulfur.* The Contractor shall provide a free-flowing granular material consistent in size suitable for application by agricultural spreader and conform to the parameters in Table 212-13. Elemental sulfur shall arrive onsite in original and undamaged packaging.

Table 212-13
Physical Requirements of Elemental Sulfur

Parameters	Reported as	Requirement
Guaranteed Analysis of Elemental Sulfur (S)	%	> 90
Bulk Density	Lbs per cu. ft.	> 75

(h) *Sod.* Sod shall be nursery grown and 99 percent weed free. Species shall be as shown on the plans. The 1 percent allowable weeds shall not include undesirable perennial or annual grasses or plants defined as noxious by current State statute or county noxious weed list. Soil thickness of sod cuts shall not be less than ¾ inch or more than 1 inch. Sod shall be cut in uniform strips with minimum dimensions of 18 inches in width and 48 inches in length. The Contractor shall submit a sample of the sod proposed for use, which shall serve as a standard if approved. Sod furnished, whether in place or not, that is not up to the standard of the sample will be rejected. CDOT will reject all sod that was cut more than 72 hours prior to installation.

Each load of sod shall be accompanied by a certificate from the grower stating the type of sod and the date and time of cutting. The Contractor shall submit the certificate to the Engineer prior to application of the sod. Only sod that is accompanied by the certificate from the grower will be accepted and paid for.

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REVISION OF SECTION 212
SOIL AMENDMENTS, SEEDING, AND SODDING

CONSTRUCTION REQUIREMENTS

212.03 Submittals. The Contractor shall provide the name and contact information of the seeding contractor 30 days prior to start of seeding work. The Contractor shall provide two copies of items (1) - (14) listed below to the Pre-vegetation Conference in accordance with Section 207. When the Contractor provides resubmittals to meet Contract requirements, the Region or Headquarters Landscape Architect shall be copied on all correspondence.

(1) Written confirmation from the registered seed supplier, on the Contractor's letterhead, that the Contract specified seed has been secured. No substitutions of the contract specified seed will be permitted unless evidence is submitted, from one of the registered seed suppliers that the Contract specified seed is not available and will not become available during the anticipated construction period.

(2) Seed vendor's "seed dealer" endorsement.

(3) A copy of each seed species germination report of analysis that verifies the lot has been tested by a recognized laboratory for seed testing within 13 months prior to the date of seeding.

(4) A copy of each seed species purity laboratory report of analysis that verifies that the lot has been tested by a recognized laboratory for seed testing. The report shall list all identified species, seed count, and date of test.

(5) Manufacturer's documentation stating that the fertilizer meets the Contract requirements.

(6) Organic fertilizer documentation showing manufacturer and chemical analysis.

(7) Permit issued from CDPHE confirming that the vendor can produce or sell compost in accordance with House Bill (HB) 1181.

(8) Documentation from the compost manufacturer that it is a participating member of in the U.S. Composting Council's Seal of Testing Assurance Program (STA).

(9) Results of compost testing on an STA Compost Technical Data Sheet confirming all required test methods are met using the STA Program.

(10) Sample of physical compost (at least one cubic foot of material).

(11) Manufacturer's documentation confirming that biotic soil amendment meets the required physical and performance criteria based on independent testing by the manufacturer.

(12) Manufacturer's documentation confirming that humate meets the required physical and performance criteria based on independent testing by the manufacture.

(13) Manufacturer's documentation confirming that mycorrhizae meets the physical criteria based on independent testing and that the minimum required species is provided.

(14) Pictures and descriptions of seeding equipment proposed to be used on the project. Based on the seeding methods required at a minimum this should include the drill seeder, hydraulic seeder, cultipacker or seed bed roller implements.

(15) Instructions and documentation on how seeders will be calibrated onsite, in accordance with subsection 212.05(a).

212.04 Seeding Seasons. Seeding in areas that are unirrigated shall be restricted according to the parameters in Table 212-14.

Table 212-14
Seeding Seasons

Zone	Spring Seeding	Fall Seeding
Areas other than the Western Slope		
Below 6000’	Spring thaw to June 1	September 15 until consistent ground freeze
6000’ - 7000’	Spring thaw to June 1	September 1 until consistent ground freeze
7000’ - 8000’	Spring thaw to July 15	August 1 until consistent ground freeze
Above 8000’	Spring thaw to consistent ground freeze	
Western Slope		
Below 6000’	Spring thaw to May 1	August 1 until consistent ground freeze
6000’ - 7000’	Spring thaw to June 15	September 1 until consistent ground freeze
Above 7000’	Spring thaw to consistent ground freeze	

(1) "Spring thaw" is the earliest date in a new calendar year in which seed can be buried ½ inch into the surface soil (topsoil) through normal drill seeding methods.

(2) "Consistent ground freeze" is the time during the fall months in which the surface soil (topsoil), due to freeze conditions, prevents burying the seed ½ inch through normal drill seeding operations. Seed shall not be sown, drilled, or planted when the surface soil or topsoil is in a frozen or crusted state.

Seeding accomplished outside the time periods listed above will be allowed only when the Contractor's request is approved by the Engineer in writing, with coordination from the Region Landscape Architect. If requested by the Contractor, the Contractor must agree to perform the following work at no cost to the Department: reseed, remulch, and repair areas which fail to produce species indicated in the Contract.

If seeding is ordered by the Engineer outside the time periods listed above, the cost to repair areas that fail to produce species will be paid for by the Department.

212.05 Native Seeding Methods. Areas to be seeded shall be installed in accordance with SWMP Permanent Stabilization Plan.

All amendments and seeding shall be applied based on the seeding method and rates specified on the plans.

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REVISION OF SECTION 212
SOIL AMENDMENTS, SEEDING, AND SODDING

The Contractor shall complete the Amendments Verification Prerequisite for each of the seeding methods described herein. This shall be done by completing a Seed and Amendment Quantities Worksheet for each work area. This worksheet shall have a list of all amendments and the seed labels for each of the areas to be worked on. The State required legal tags shall remain on the bag until opened and the seed placed in either the drill or hydraulic seeders in the presence of the Engineer. Seeding work shall not begin until written approval of the worksheet has been received from the Engineer.

In determining the weight of seed required for each work area, the Contractor shall use the Pure Live Seed (PLS) weight shown on each bag of seed. Calculations based on net weight will not be accepted.

The Contractor shall submit a proposed Permanent Stabilization Phasing Plan to the Engineer prior to the Pre-revegetation Conference for approval showing how the SWMP Permanent Stabilization Plans will be implemented to minimize traffic loading damage to subgrade soil prepared and seeded areas. The proposed sequencing shall consider and identify strategies and site management control measures to protect seeded areas from foot, vehicle, and other disturbances. The strategic planning of the permanent seeding and mulch shall consider all other phasing of construction activities including traffic management and utility work. Areas damaged due to the Contractor's failing to protect the seeded areas shall be repaired at no cost to the Department. Seeded areas damaged due to circumstances beyond the Contractor's control shall be repaired and reseeded as ordered. Payment for corrective work, when ordered, shall be at the Contract prices shown and in accordance with subsection 109.04.

The following seeding application methods shall not be implemented during winds which are consistently higher than 20 MPH, or when the ground is frozen, excessively wet, or otherwise untillable. The Engineer may test to see if the moisture level in the soil is acceptable to work the soil by performing a Soil Plasticity Test as described in the Construction Manual. Multiple seeding operations shall be anticipated, based on acceptable seeding conditions. The seeding methods to be implemented shall be one or more of the following, as shown on the plans:

(a) *Seeding (Native) Drill.*

(i) *Fertilizer, Compost, Humates and Elemental Sulfur.* The Contractor shall uniformly apply compost and elemental sulfur on the surface of the topsoil using an agricultural spreader at the rate of application specified on the plans. All competitive, non-native vegetation shall be uprooted and hauled offsite prior to spreading amendments. Prior to starting incorporation of compost and elemental sulfur, the Contractor shall receive written acceptance from the Engineer on the Seed and Amendment Quantities Worksheet. Verification Prerequisite for this method also requires documentation on the Permanent Stabilization SWMP Site Maps with the approved areas outlined, signed, and dated by the Engineer to track progress. If SWMP Site Maps are not included in the Contract, the Contractor shall use the Contract grading or roadway plan sheets.

Once the Quantities Verification Prerequisite is completed for an area, the Contractor shall homogenously incorporate the compost and elemental sulfur into the top 6 inches of topsoil. Tillage of the amendments shall be completed using a disc and harrow, field cultivator, vibra-shank, or other method suitable to site conditions. For small areas tillage shall be completed using rotary tillers. No measurable depth of organic amendment shall be present on the surface.

The shanks on the back of a grader or dozer shall not be used for tillage. Tillage may take multiple passes to achieve the desired harmonious incorporation. If multiple passes are required, the Contractor shall cross till the soil with the second pass occurring at a 30-degree angle to the first pass. On slope areas, all tillage shall be parallel to the contour. For project that will utilize aggregate or recycled asphalt shouldering material amendments, tillage is not required under shouldering material. Projects seeding up to the edge of pavement, tillage is not required for first 12" from the edge of pavement.

Once incorporation of compost and elemental sulfur is approved, the Contractor shall uniformly apply fertilizer and humates on the surface of the topsoil using an agricultural spreader, as shown in the Contract documents.

(ii) *Seedbed Preparation.* Amended topsoil shall be cultivated to a firm but friable seedbed using cultipacker or seed bed roller implements. Crusted hard soils shall be broken up and all areas shall be free of clods, sticks, stones, debris, concrete, and asphalt in excess of 4 inches in any dimension in accordance with Section 207. Areas shall be left in a rough and uncompacted condition with a surface variance of 2 to 4 inches.

(iii) *Seed and Mycorrhizae.* Prior to seeding, the finished grade of the soil shall be 1 inch below the top of all curbs, junction and valve boxes, walks, drives and other structures. Seeding shall be done within two days of seedbed preparation efforts (tilling or scarifying). If a rain event occurs that compacts or erodes the seedbed prior to performing seeding, the seedbed shall be re-prepared as directed by the Engineer.

Areas shall be seeded by mechanical power drawn drills suitable for area soils, topography, and size followed by packer wheels. Mechanical power drawn drills shall have furrow openers and depth bands set to maintain a planting depth of at least ¼ inch and not more than ½ inch and shall be set to space the rows not more than 8 inches apart. Seeding equipment shall have a double disk opener, seed box agitator, and seed metering device.

The seeder shall be calibrated by collecting seed from a single drop tube in the presence of the Engineer based on the following procedure. The Contractor shall provide the tape measure, scale, collection cup, and seed bag with complete label from the supplier. The Contractor may submit an alternative method for approval at the site Pre-vegetation Conference.

(1) Measure the total width (W) of the drill seeder in feet.

(2) Count the number of drill rows (N) on the seeder.

(3) On drill seeders that the tire drives the seeding mechanism, measure the tire circumference (C) in feet.

(4) Calculate the number of rotations the tire will complete per acre using the following equation:

A = one acre or 43,560 square feet (SF)

A /W = feet (F) the drill seeder needs to travel for each acre

F/C = number of rotations (R) of the tire per acre

(5) Reduce the amount of tire rotations by one tenth.

.90R = # Tire rotations to calibrate seeder (RCS)

(6) Find the seeding rate (LBS PLS / Acre) on the Stormwater Management Plan.

(7) Using the information from the seed tag, convert the PLS seed rate to a bulk seeding rate using the following equations:

% PLS = (% purity (in decimal form) from seed label) x (% germination (in decimal form) from seed label)

(LBS PLS / Acre) from the SWMP / % PLS = Required bulk seed per acre in LBS

(8) Reduce the required bulk seed per acre based on the number of seeder tubes.

Required bulk seed per acre / N = Weight in LBS of bulk seed from one tube

(9) Reduce the required bulk seed rate from the tube by one tenth.

0.90 x Weight of bulk seed from one tube = Collected bulk seed weight (CBS) in LBS

(10) Set the drill seeder to the correct seeding rate using the manufacturer's recommendation.

(11) With the collection cup under one tube and the driving wheel jacked up, rotate the tire the RCS amount of times. Use the value stem to count the rotations.

(12) Using the scale, weigh the seed in the collection cup.

(13) Adjust the drill calibration until the weight of bulk seed in the collection cup equals the CBS in LBS.

Drill seeders shall be recalibrated every time the drill is mobilized onsite. The Contractor shall submit a written statement that the equipment is calibrated, and shall provide the correct depth based on conditions before seeding actions are initiated. The Contractor shall continuously monitor equipment to ensure that it is providing a uniform seed application.

If mycorrhizae is called for on the plans, the granules shall be included with the seed in the drill seeder such that the mycorrhizae is placed at or below the seed.

The distance between furrows produced using the drill shall not be more than 8 inches. If rows on the drill exceed 8 inches, the Contractor shall drill the areas twice (if achievable at 30-degree angles to each other) at no additional cost to the Department.

After seeding, the furrows that were created by the drill shall be maintained in place. Construction traffic, other than what is needed to mulch the areas, shall not be permitted on the areas completed.

Permanent stabilization mulching shall be accomplished within 24 hours of drill seeding.

(b) *Seeding (Native) Hydraulic.*

This method utilizes water as the carrying agent and mixes biotic soil amendments, seed, organic fertilizer, humates, mycorrhizae and elemental sulfur into a single slurry for hydraulic application. The Contractor shall furnish and place combined slurry with a hydro-seeder that will maintain a continuous agitation and apply homogenous mixture through a spray nozzle. The pump shall produce enough pressure to maintain a continuous, non-fluctuating spray that will reach the extremities of the seeding area. Water tanks shall have a means of measuring volume in the tank. Seed shall be added to the slurry onsite, no more than 60 minutes before starting application. Slurry shall be applied from a minimum of two opposing directions to achieve complete soil coverage.

The application of the single slurry shall be applied within four hours of adding Mycorrhizae.

The Contractor shall prevent seed, fertilizer, and mulch from falling or drifting onto areas occupied by rock base, rock shoulders, plant beds, or other areas where grass is detrimental. The Contractor shall remove material that falls on plants, roadways, gravel shoulders, structures, and other surfaces where material is not specified.

(i) *Seedbed Preparation*. All areas shall be loosened to at least 6 inches, leaving the surface in rough condition with a surface variance of 6 to 8 inches. On steep slopes, tillage shall be accomplished with appropriate equipment as the slope is constructed. Soil areas shall be tilled to produce loose and friable surfaces with crusted hard soils broken up. All slopes shall be free of clods, sticks, stones, debris, concrete, asphalt and all other materials in excess of 4 inches in any dimension. All competitive, non-native vegetation shall be uprooted and hauled offsite prior to spreading amendments. Under no circumstances shall the ground surface be smooth and compacted.

(ii) *Biotic Soil Amendment, Fertilizer, Humate, Mycorrhizae and Seed*. The Contractor shall assemble all materials for proposed areas to hydro-seed and review quantities with area of coverage with the Engineer as the Quantities Verification Prerequisite for this method. Prior to mixing in the tank, the Contractor shall receive written acceptance from the Engineer on the Seed and Amendment Quantities Worksheet that the correct quantities are onsite. This quantities verification prerequisite also requires documentation on the Permanent Stabilization SWMP Site Maps with the approved areas outlined, signed, and dated by the Engineer to track progress. If SWMP Site Maps were not included in the Contract, grading or roadway plan sheets shall be used. For the verification process, the Contractor shall provide the Engineer with all documentation for materials in unopened packaging.

After the Quantities Verification Prerequisite has been approved, the hydro-seeder shall be filled with water to 1/3 of its required volume. Following this, water and biotic soil amendments shall be added to the hydro-seeder at a consistent rate. The ratio of water to Biotic Soil Amendments shall be in accordance with manufacturer’s recommendations. Fertilizer, humates and mycorrhizae shall then be added until the tank has reached 3/4 of its required volume. The tank shall then be filled with water to the required volume. Uniform slurries shall be agitated or mixed for a minimum of ten minutes after all water and materials are in the tank.

Hydraulic seeding equipment shall include a pump capable of being operated at 100 gallons per minute and at 100 pounds per square inch pressure. The equipment shall have a nozzle adaptable to hydraulic seeding requirements. Storage tanks shall have a means of estimating the volume used or remaining in the tank.
Seed shall be added to the slurry onsite no more than 60 minutes before starting application. The Contractor shall increase the Seed Plan rates (LBS PLS / Acre) as shown on the plans by 1.5 times at no additional cost to the Department. The Contractor may be required to apply slurry using multiple hoses to ensure uniform application to all areas of the site. Coverage rates shall be based on the volume of material in the tank, as verified by the Engineer. Areas of lighter applications (covering more area than what is calculated) will require additional application, as directed.

An appropriate curing period shall be in accordance with manufacturer's recommendations, and shall consider forecasted weather conditions.

Permanent stabilization mulching shall be accomplished within 24 hours of hydraulic application of native seed.

(c) *Seeding (Native) Broadcast.*

This method utilizes hand equipment to broadcast spread amendments and seed over prepared seedbeds.

(i) *Fertilizing, Compost, Humate and Elemental Sulfur*. The Contractor shall uniformly apply compost and elemental sulfur on the surface of the placed topsoil using an agricultural spreader at the rate of application specified on the plans. All competitive non-native vegetation shall be uprooted and hauled offsite prior to spreading amendments. Prior to starting incorporation, the Contractor shall receive written acceptance from the Engineer on the Seed and Amendment Quantities Worksheet that the correct quantities will be applied. The Quantities Verification Prerequisite for this method also requires documentation on the Permanent Stabilization SWMP Site Maps with the approved areas outlined, signed, and dated by the Engineer to track progress. If SWMP Site Maps are not included in the Contract, the grading or roadway plan sheets shall be used.

Once the Quantities Verification Prerequisite is completed for an area, the Contractor shall homogenously incorporate the Compost into the top 6 inches of soil. Tillage of the amendments shall be completed using appropriate tools depending on the size of the area to be worked. Contractor shall use hand tillers or approved small space implements.

Once incorporation of compost and elemental sulfur is approved, the Contractor shall uniformly apply organic fertilizer and humates on the surface of the topsoil using an agricultural spreader.

(ii) *Seedbed Preparation.* Amended topsoil shall be cultivated to a firm but friable seedbed using tractor implements. Crusted hard soils shall be broken up and all areas shall be free of clods, sticks, stones, debris, concrete, and asphalt in excess of 4 inches in any dimension in accordance with Section 207. Areas shall be left in a rough condition with a surface variance of 2 to 4 inches. Under no circumstances shall the ground surface be smooth and compacted.

(iii) *Seed and Mycorrhizae.* Prior to seeding, the finished grade of the soil shall be 1 inch below the top of all curbs, junction and valve boxes, walks, drives and other structures. Seeding shall be accomplished within two days of seedbed preparation efforts (tilling or scarifying) to make additional seedbed preparation unnecessary. If a rain event occurs that compacts or erodes the seedbed prior to performing seeding, the seedbed shall be re-prepared as directed.

Areas shall be seeded by broadcast-type seeders (cyclone or approved mechanical seeders). The Contractor shall increase the Seed Plan rates (LBS PLS / Acre) as shown on the plans by 1.5 times at no additional cost to the Department.

After seeding, mycorrhizae shall be evenly hand-distributed across the area. Seed and mycorrhizae shall be covered by hand raking and covering with ¼ to ½ inch of topsoil. To ensure seeds have a firm contact with the soil the Contractor shall use a heavy roller as approved in the Site Pre-vegetation Conference. Mycorrhizae shall not be exposed to sunlight for more than four hours. Using equipment with continuous cleat tracks (cat-tracking) to cover seed is not permitted.

Permanent stabilization mulching shall be accomplished within 24 hours of broadcast seed application of native seed.

212.06 Seeding (Temporary). Areas of topsoil shall be seeded with annual grasses in accordance with SWMP Interim Site Maps or as directed by the Engineer.

Seeding may take place at any time during the year as long as the ground is not covered in snow and topsoil is not frozen. Topsoil may be placed in a stockpile or distributed on-grade after receiving subgrade soil preparation.

Interim stabilization for areas that receive temporary seeding shall be in accordance with subsection 208.04(e)2. Seed shall not be included with interim hydraulic mulch applications.

The Contractor shall wait to amend topsoil until the area is ready for permanent seeding with native seed mix shown on the SWMP. The Contractor shall use either the drill, hydraulic, or broadcast method of seeding. Seeding rates (LBS PLS / Acre) shall be increased by 1.5 times for hydraulic and broadcast methods at no additional cost to the Department.

Seed shall meet the requirements of 212.02(a) and shall be selected from Table 212-1 based on the application time.

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REVISION OF SECTION 212
SOIL AMENDMENTS, SEEDING, AND SODDING

Table 212-1
Temporary Seed Mixes

Common Name	Botanical Name	Application Time	Seeding Rates (LBS PLS / Acre)	Planting Depth (inches)
Oats	Avena sativa	October 1 - May 1	35	1 - 2
Foxtail Millet	Setaria italica	May 2 - September 30	30	1/2 - 3/4

The Contractor shall restrict motorized vehicle and foot traffic from areas that have received temporary seeding.

212.07 Seeding (Lawn). Lawn grass seeding shall be accomplished in the seeding seasons in accordance with subsection 212.03.

(a) *Fertilizing and Soil Conditioning.* The first application of fertilizer, soil conditioner, or both shall be incorporated into the soil immediately prior to seeding, and shall consist of a soil conditioner, commercial fertilizer, or both as designated in the Contract. Fertilizer called for on the plans shall be worked into the top 4 inches of soil at the rate specified in the Contract. Biological nutrient, culture, or humate based material called for on the plans shall be applied in a uniform application onto the soil service. Organic amendments shall be applied uniformly over the soil surface and incorporated into the top 6 inches of soil.

The second application of fertilizer shall consist of a fertilizer having an available nutrient analysis of 20-10-5 applied at the rate of 100 pounds per acre. It shall be uniformly broadcast over the seeded area three weeks after germination or emergence. The area shall then be thoroughly soaked with water to a depth of 1 inch.

Fertilizer shall not be applied when the application will damage the new lawn.

(b) *Seedbed Preparation.* In preparation of seeding lawn grass, irregularities in the ground surface, except the saucers for trees and shrubs, shall be removed. Measures shall be taken to prevent the formation of low places and pockets where water will stand.

Immediately prior to seeding, the ground surface shall be tilled or hand worked into an even and loose seedbed to a depth of 6 inches, free of clods, sticks, stones, debris, concrete, and asphalt in excess of 2 inches in any dimension, and brought to the desired line and grade.

(c) *Seeding.* Seed shall be drilled with mechanical landscape type drills. Broadcast type seeders or hydraulic seeding will be permitted only on small areas not accessible to drills. Seed shall not be drilled or broadcast during windy weather or when the ground is frozen or untillable.

212.08 Sodding.

(a) *Fertilizing and Soil Conditioning.* Prior to laying sod, the 4 inches of subsoil underlying the sod shall be treated by tilling in fertilizer, compost, or humates as specified on the plans. Amendments shall be applied uniformly over the soil surface and incorporated into the top 6 inches of soil.

After laying the sod, it shall be fertilized with a fertilizer having a nutrient analysis of 20-10-5 at the rate of 200 pounds per acre. Fertilizer shall not be applied when the application will damage the sod.

(b) *Soil Preparation.* Prior to sodding, the ground shall be tilled or hand worked into an even and loose sod bed to a depth of 6 inches, and irregularities in the ground surface shall be removed. Sticks, stones, debris, clods, asphalt, concrete, and other material more than 2 inches in any dimension shall be removed. Depressions or variances from a smooth grade shall be corrected. Areas to be sodded shall be smooth before sodding occurs.

(c) *Sodding.* Sod shall be placed by staggering joints with all edges touching. On slopes, the sod shall run approximately parallel to the slope contours. Where the sod abuts a drop inlet, the subgrade shall be adjusted so that the sod shall be 1-½ inches below the top of the inlet.

Within one hour after the sod is placed and fertilized it shall be watered. After watering, the sod shall be permitted to dry to the point where it is still wet enough for effective rolling. The Contractor shall roll the sod in two directions with a lawn roller capable of applying between 50 - 80 pounds per square inch of surface pressure to eliminate air pockets.

METHOD OF MEASUREMENT

212.09 The quantities of lawn seeding and the three native seeding types will not be measured but shall be the quantities designated in the Contract, except that measurements will be made for revisions requested by the Engineer, or for discrepancies of plus or minus five percent of the total quantity designated in the Contract.

The quantity of sod will be by the actual number of square feet, including soil preparation, water, fertilizer, and sod, completed and accepted.

Organic Fertilizer, Compost (Mechanically Applied), Humates, Mycorrhizae soil amendments for Seeding (Native) methods drill, hydraulic, and broadcast will be measured by the actual quantity of material applied and accepted.

Measurement for acres will be by slope distances.

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REVISION OF SECTION 212
SOIL AMENDMENTS, SEEDING, AND SODDING

BASIS OF PAYMENT

212.10 The accepted quantities of lawn seeding, native seeding, soil conditioning, and sod will be paid for at the contract unit price for each of the pay items listed below that appear in the bid schedule. Rejected seed that has been stored longer than 30 days shall be re-ordered at the expense of the Contractor.

Payment will be made under:

Pay Item	Pay Unit
Organic Fertilizer	Pound
Compost (Mechanically Applied)	Cubic Yard
Biotic Soil Amendments (Hydraulic Applied)	Pound
Humate	Pound
Mycorrhizae	Pound
Elemental Sulfur	Pound
Seeding (Native) Drill	Acre
Seeding (Native) Hydraulic	Acre
Seeding (Native) Broadcast	Acre
Seeding (Wetland) Drill	Acre
Seeding (Wetland) Hydraulic	Acre
Seeding (Wetland) Broadcast	Acre
Seeding (Temporary)	Acre
Seeding (Lawn)	Acre
Sod	Square Foot

Topsoil preparation including incorporating and applying amendments, seedbed preparation, water, and seed mix (LBS PLS / Acre) will not be measured and paid for separately but shall be included in the work.

Calibrating, adjusting, or readjusting seeding or fertilizing equipment will not be measured and paid for separately but shall be included in the work.

No additional cost will be accepted for approved substitution of specified seed mix.

No payment will be made for areas seeded using one of the seeding methods without receiving signed Seed and Amendment Quantities Worksheet from the Engineer.

Additional seedbed preparation prior to seeding to correct compaction or erosion from storm events will not be measured and paid for separately but shall be included in the work.

Additional mobilizations as needed to complete seeding within allowed seeding seasons will not be measured and paid for separately but shall be included in the work.

Removal of all competitive, non-native vegetation prior to spreading amendments will not be measured and paid for separately but shall be included in the work.

December 13, 2019

REVISION OF SECTION 412
DOWEL BARS FOR JOINTS

In subsection 412.13(b)2, after the last paragraph, add the following:
The Engineer will witness the use of the MIT-Scan-2 on the test section(s) and weekly section(s). The Contractor shall provide the Engineer a copy of the raw data files from the MIT Scan-2 prior to analysis, for verification of the Contractor's analysis. Data files will be sent by the Engineer to DOT_Profiles@state.co.us for analysis. The Contractor's analysis and the Department's analysis will be compared, and if the bar alignments and joint score for each joint match, the Contractor's analysis will be approved. If the Contractor's analysis is not approved, analysis procedures will be reviewed and the Contractor may be required to re-test the joints representing the data. A minimum of 10 percent of the sections or test sections will be evaluated for verification by CDOT Staff Materials.

September 3, 2020

REVISION OF SECTION 412
PORTLAND CEMENT CONCRETE PAVEMENT

Section 412 of the Standard Specifications is hereby revised for this project. Delete the first paragraph of Subsection 412.15 and replace with the following:

412.15 Cold Weather Concrete Paving. The Contractor is responsible for the strength and quality of the concrete placed during cold weather. Before starting paving operations, the Contractor shall be prepared to protect the concrete from freezing. Maturity meters, to monitor and record time and pavement temperature, shall be installed at the time of placement when the air temperature is expected to fall below 40 ˚F during the next three days or as requested by the Engineer when the air temperature is expected to fall below 45 ˚F during the next three days. The Contractor shall maintain the temperature of the pavement at or above 40 ˚F until the pavement has attained a compressive strength of at least 2000 psi. The compressive strength of the concrete shall be determined by the use of maturity meters. Maturity meters shall be placed in three locations for each day's concrete paving operations. One maturity meter shall be placed in the final 15 feet of paving, and the two other maturity meters shall be placed at locations designated by the Engineer. The maturity meter probes shall be located on the outside edge of the slab, at least 1 foot and not more than 2 feet from the edge and at mid depth of the slab. Each maturity meter shall be capable of recording the time and temperature. The maturity meters shall remain in place until the concrete has attained a compressive strength of 2000 psi.

January 13, 2020

REVISION OF SECTION 601
CONCRETE MIX DESIGNS

Section 601 of the Standard Specifications is hereby revised for this project as follows:

Subsection 601.05, second paragraph shall include the following:

(12) For air entrained concrete, the SAM number according to AASHTO TP118 Characterization of the Air-Void System of Freshly Mixed Concrete by the Sequential Pressure Method (Super Air Meter) shall be reported. The SAM meter readings for each step shall be included. In addition, two 4”x8” cylinders shall be cast from the same batch of concrete and submitted to the Engineer with the mix design. A SAM leak test shall be performed prior to the SAM testing. Results of the leak test shall be included in the SAM data.

January 23, 2020

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REVISION OF SECTION 614
PEDESTRIAN PUSH BUTTONS

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 614.08(f) and replace with the following:

(f) *Pedestrian Push Buttons.* Pedestrian push buttons shall be a piezo, direct push button contact type and shall consist of electronic control equipment, mounting hardware, and push button.

The pedestrian push button shall be weatherproof, tamper-proof, constructed so that it will be impossible to receive any electrical shock under any weather condition, and operate on a voltage not to exceed 24 VAC.

The housing shall be shaped to fit the curvature of the pole to which it is attached to provide a rigid installation. Saddles shall be provided to make a neat fit when required.

Materials for Pedestrian Push Button Post Assembly shall conform to the following:

(1) The Pedestrian Push Button Post Assembly, sign, and push button shall conform to the following:

(i) The latest version of the ADA Standards for Accessible Design, Chapter 3, Section 309 Operable Parts.

(ii) Current CDOT adopted Manual of Uniform Traffic Control Devices (MUTCD), Chapter 4E-Pedestrian Control Features.

(iii) NEMA TS 2 Section 2.1 requirements for Temperature and Humidity, Transient Voltage Protection, and Mechanical Shock and Vibration.

(iv) IEC 61000-4-4; 4-5 Transient Suppression requirements.

(v) FCC Title 47, Part 15, Class A, Electronic Noise requirements.

(2) The post for the Pedestrian Push Button Post Assembly shall be aluminum Schedule 40.

(3) Wiring for the Pedestrian Push Button Post Assembly shall conform to the manufacturer's recommendations.

(4) A #10 AWG (minimum) bare copper wire shall be used to connect the Pedestrian Push Button to the signal grounding system.

(5) For signalized intersection crossings, the system shall have a programmable Extended Push Activation feature with the ability to extend the Walk time. Activation shall be programmable from one to six seconds.

REVISION OF SECTION 614
PEDESTRIAN PUSH BUTTONS

Delete subsection 614.08(g) and replace with the following:

(g) *Accessible Pedestrian Signals.* The Accessible Pedestrian Signal (APS) shall be an audible vibro-tactile pedestrian signal system and shall consist of all electronic control equipment, mounting hardware, and push button, designed to provide both a push button with a raised, vibrating tactile arrow on the button as well as a variety of audible indications for differing pedestrian signal functions.

The integrated pedestrian push button shall be weatherproof, tamper-proof, constructed so that it will be impossible to receive any electrical shock under any weather condition, and operate on a voltage not to exceed 24 VAC.

The housing shall be shaped to fit the curvature of the pole to which it is attached to provide a rigid installation. Saddles shall be provided to make a neat fit when required.

Materials for Pedestrian Push Button Post Assembly shall conform to the following:

(1) The pedestrian push button post assembly, integrated push button, and sign shall meet the following requirements:

(i) The latest version of the ADA Standards for Accessible Design, Chapter 3, Section 309 Operable Parts.

(ii) Current CDOT adopted Manual of Uniform Traffic Control Devices (MUTCD), Chapter 4E – Pedestrian Control Features.

(iii) NEMA TS 2 Section 2.1 requirements for Temperature and Humidity, Transient Voltage Protection and Mechanical Shock and Vibration.

(iv) IEC 61000-4-4; 4-5 Transient Suppression requirements.

(v) FCC Title 47, Part 15, Class A, Electronic Noise requirements.

(vi) The APS pushbutton enclosure shall meet the NEMA 250 – Type 4X enclosure requirement.

(2) The post for the Pedestrian Push Button Post Assembly shall be aluminum, Schedule 40.

(3) Wiring for the Pedestrian Push Button Assembly shall conform to the manufacturer's recommendations.

(4) A #10 AWG (minimum) bare copper wire shall be used to connect the Pedestrian Push Button Post Assembly to the signal grounding system.

(5) For signalized intersection crossings, the system shall have a programmable Extended Push Activation feature with the ability to extend the Walk time and provide an informational audible message. Activation shall be programmable from one to six seconds.

REVISION OF SECTION 614
PEDESTRIAN PUSH BUTTONS

The Accessible Pedestrian Signal shall have the following functional requirements:

1. APS functional features.

   The APS shall be programmable and adjustable. Programming and adjustments shall be made using a laptop computer, smart device, or vendor supplied programmer. No additional hardware or equipment shall be required. The APS shall be fully compatible with the three latest versions of the Windows operating platform. The programmable features shall be:

   (1) Push-button locator tone.

   (2) Walk and Wait audible message.

   (3) Audible push-button informational message.

   (4) Audible crossing beacon.

   (5) Vibrating, tactile arrow push button.

   (6) Independent minimum and maximum volume limits for the Locator Tone, Walk, and Audible Beaconing features.

   Audible features shall emanate from the pedestrian pushbutton housing. The APS shall utilize digital audio technology, having a minimum 12-bit sample at a 16k Hz sample rate. Total harmonic distortion shall be less than 3 percent at 75 decibels. The APS shall provide independent ambient sound adjustment for the Locator Tone feature. The APS shall allow for Locator Tone volume to be set below the ambient noise level. The system shall have a minimum of three programmable locator tones. All sound levels shall adjust automatically utilizing an internally mounted, interval ambient sensing microphone, in accordance with the MUTCD.
   For signalized intersection crossings, the APS shall monitor the Walk condition for conflict operation. As a standalone unit, the APS shall disable the Walk functionality should a conflict be detected.

   The APS system shall log cumulative call data. The data shall be date and time stamped, and shall be accessible via laptop or smart device.

   For signalized intersection crossings, the system shall provide a programmable audible Wait message when the button is pushed. The message shall only annunciate once per actuation.

2. Power Control Unit (PCU).

   The PCU shall be mounted in the pedestrian signal head and shall be powered by the activation of Walk or Don't Walk using 120 Volts Alternating Current (VAC).

REVISION OF SECTION 614
PEDESTRIAN PUSH BUTTONS

The PCU shall utilize separate power inputs for Walk and Don't Walk. The PCU shall not require more than four wires from the PCU to the corresponding push button.

3. Push Button Assembly (PBA).

   The PBA shall be a single assembly containing an ADA compliant, vibro-tactile (signalized) directional arrow button, weatherproof audible speaker, and informational sign with optional placard braille messages. The PBA housing shall not incorporate any plastic or polycarbonate parts.

   The PBA tactile arrow shall be 2 inches in length and shall be field adjustable to two directions.

   The push button shall utilize Piezo switch technology rated at greater than twenty million operations. Vibro-tactile operation shall pulse at 20 Hz with a minimum 0.003-inch displacement against a 2 pound applied force.
   The PBA assembly shall be capable of mounting on a curved or flat surface utilizing either machine screws or bolts or banding type mounting hardware. The PBA shall accommodate mounting to a minimum 4-inch diameter pole.

Delete paragraph 3 of subsection 614.09(4) and replace with the following:

Prior to start of the installation of a APS, the Contractor shall submit all units for testing. Installation of the APS shall not begin until written approval of each unit has been received from the Engineer. If a unit fails to pass testing, the Contractor shall repair or replace the unit at their expense.

Delete paragraphs 4 and 5 of subsection 614.09(4)

Subsection 614.10(j) shall include the following:

(j) A field test of a single APS shall be performed in the presence of the Engineer. All repairs or replacements required to ensure a fully operational system shall be at the Contractor's expense.

   The APS shall be installed in accordance with the manufacturer's recommendations.

Subsection 614.13 shall include the following:

Pedestrian Push Button will be measured by the actual number that are installed and accepted.

Subsection 614.14 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Pedestrian Push Button	Each

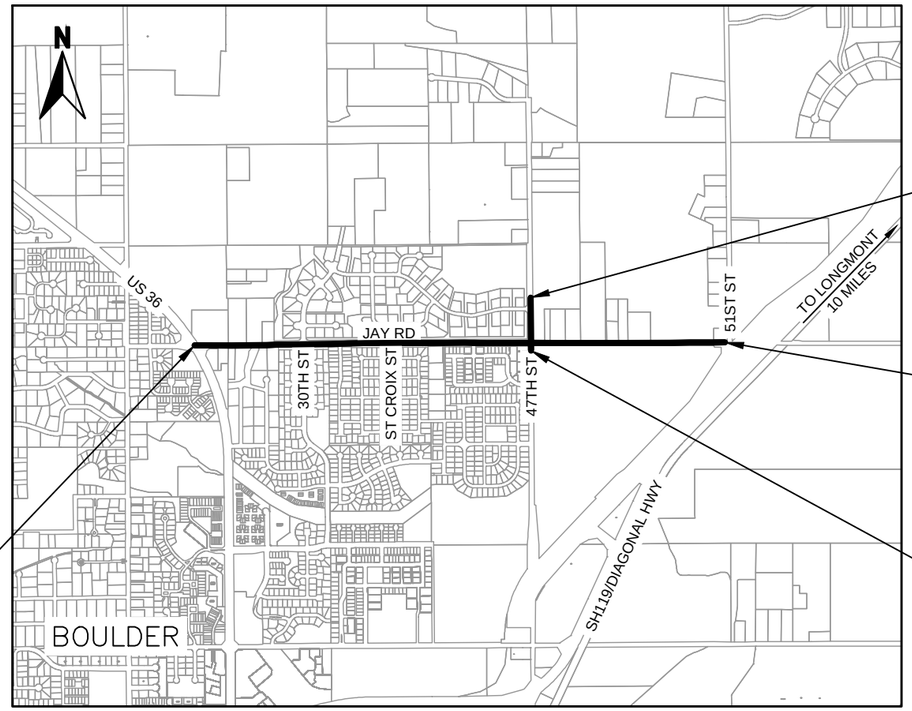
JAY ROAD AND 47TH STREET OVERLAY PROJECT

JAY ROAD
ADVERTISEMENT PLANS
BOULDER COUNTY

(100% DESIGN)
OCTOBER 2, 2020
RS-044-0118

TABULATION OF LENGTH & DESIGN DATA		
STATION	FEET	
	ROADWAY	STRUCTURE
JAY RD		
STA 100+00.00 TO STA 170+00.00	7,000	0
47TH ST		
STA 0+00.00 TO STA 7+00.00	700	0
TOTAL	7,700	0
SUMMARY OF PROJECT LENGTH	FEET	MILES
ROADWAY (NET LENGTH)	7,700	1.46
STRUCTURE	0	0.00
PROJECT GROSS LENGTH	7,700	1.46

DESIGN DATA	JAY RD	47TH ST
DESIGN SPEED (5 MPH OVER POSTED)	40 MPH	25 MPH
MINIMUM RADIUS OF CURVE	25'	25'
MAXIMUM GRADE	EXISTING	EXISTING
MINIMUM GRADE	EXISTING	EXISTING
MINIMUM S.S.D. HORIZONTAL	305'	155'
MINIMUM S.S.D. VERTICAL	305'	155'



LOCATION MAP
0 2000' 4000'
HORIZONTAL SCALE: 1"=2000'

END PROJECT 47TH STREET
N 1262154.89
E 3071595.10

END PROJECT JAY ROAD
N 1261567.62
E 3074160.18

BEGIN PROJECT JAY ROAD
N 1261527.96
E 3067160.80

BEGIN PROJECT 47TH STREET
N 1261454.91
E 3071600.88

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3-5	GENERAL NOTES
6	TYPICAL SECTIONS
7-8	SUMMARY OF APPROXIMATE QUANTITIES
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37-41	SWMP NARRATIVE
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50-63	SIGNING AND STRIPING PLANS

Print Date: 8/11/20
File Name: Jay Rd-Title.dwg
Horiz. Scale: n/a Vert. Scale:
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Sheet Revisions		
Date:	Comments	Init.

BOULDER COUNTY PUBLIC WORKS
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As Constructed
No Revisions:
Revised:
Void:

Jay Road and 47th Street
Title Sheet

Designer: LDL
Detailer: BJK
Sheet Subset: Title
Structure Numbers
Subset Sheets: 1 of 1

Project Number
100070613
RS-044-0118
Sheet Number 1

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COLORADO
DEPARTMENT OF TRANSPORTATION

M&S STANDARDS PLANS LIST

July 31, 2019

Revised on September 30, 2020

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

THE M&S STANDARD PLANS USED TO DESIGN THIS PROJECT ARE INDICATED BY A MARKED BOX ■, AND WILL BE ATTACHED TO THE PLANS. ALL THE OTHER M&S STANDARD PLANS ARE STILL ELIGIBLE FOR CONSTRUCTION IF APPROVED BY AN APPROPRIATE CDOT ENGINEER.

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File Name: Jay Rd-M&S.dwg
Horiz. Scale: n/a Vert. Scale:
City Project Manager

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Sheet Revisions		
Date:	Comments	Init.

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As Constructed
No Revisions:
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Void:

Jay Road and 47th Street
M&S Standard Plans List

Designer: LDL
Detailer: BJK
Sheet Subset: M&S Plans
Structure Numbers
Subset Sheets: 1 of 1

Project Number
100070613
RS-044-0118
Sheet Number 2

GENERAL NOTES:

G1. ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2019 AND THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD PLANS M&S STANDARDS, BOULDER COUNTY MULTIMODAL TRANSPORTATION STANDARDS, APPLICABLE STATE AND FEDERAL REGULATIONS, PROJECT SPECIAL PROVISIONS AND PROJECT PLANS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS, SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE MOST RESTRICTIVE STANDARD SHALL APPLY. ALL REFERENCE TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.

G2. LOCATION OF STAGING AREAS, EQUIPMENT AND MATERIAL STORAGE ARE THE CONTRACTOR'S RESPONSIBILITY, AND MUST BE COORDINATED WITH THE PROPERTY OWNER.

G3. CONTRACTOR SHALL PROTECT ALL SURVEY AND RIGHT-OF-WAY MONUMENTATION DURING CONSTRUCTION OPERATIONS. ANY MONUMENTS DISTURBED BY THE CONSTRUCTION OPERATIONS SHALL BE RESET BY THE CONTRACTOR AT HIS EXPENSE, IN ACCORDANCE WITH CDOT SPECIFICATIONS, SECTION 629, SURVEY MONUMENTATION.

G4. CONSTRUCTION SURVEYING INCLUDES ALL FIELD SURVEY STAKING AS REQUIRED FOR CONSTRUCTION OF THE PROJECT, INCLUDING LAYOUT FOR STRIPING AND PAVING MARKINGS.

G5. CONTRACTOR SHALL PROTECT EXISTING VEGETATION NOT DESIGNATED FOR REMOVAL, INSIDE AND OUTSIDE THE PROJECT AREA. LOCATE, MARK, AND PROTECT VALVES AND CONTROL BOXES ADJACENT TO CONSTRUCTION ACTIVITIES. DAMAGED VEGETATION UNDESIGNATED FOR REMOVAL, SHALL BE REPLACED WITH SIMILAR ITEMS AT THE CONTRACTOR'S EXPENSE.

G6. CONSTRUCTION INSPECTION AND MATERIAL TESTING WILL BE PROVIDED BY BOULDER COUNTY.

G7. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE. ANY DISTURBANCE BEYOND THOSE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. CONSTRUCTION ACTIVITIES SHALL ALSO INCLUDE VEHICLE AND EQUIPMENT PARKING, DISPOSAL OF LITTER, AND ANY OTHER ACTIVITY THAT WOULD ALTER EXISTING CONDITIONS.

G8. UNLESS OTHERWISE SPECIFIED, REMOVAL ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. REMOVALS SHALL BE DISPOSED OF OUTSIDE OF THE PROJECT'S LIMITS, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

G9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL AND SECURITY. REFER TO OSHA PUBLICATION 2226, EXCAVATING AND TRENCHING.

G10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE BOULDER COUNTY INSPECTOR AT ALL TIMES. THESE UPDATES SHALL BE DONE AS WORK PROGRESSES. PREPARATION OF ASBUILT PLANS WILL NOT BE PAID FOR SEPARATELY. FINAL PIPE INVERTS AND SIGN LOCATIONS SHALL BE PROVIDED IN CAD FORMAT AND SHALL BE INCLUDED IN THE WORK.

G11. UPON COMPLETION OF CONSTRUCTION, THE SITE SHALL BE CLEANED AND RESTORED TO A CONDITION EQUAL TO OR BETTER THAN, THAT WHICH EXISTED BEFORE CONSTRUCTION, OR TO THE GRADES AND CONDITION REQUIRED IN THESE PLANS.

G12. DISPOSAL OF EXCESS MATERIAL OFF-SITE OR THE IMPORTING OF MATERIALS ON-SITE, REGARDLESS OF PROPERTY OWNERSHIP, MUST BE DONE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS AND POLICES.

G13. ALL EXCESS MATERIAL GENERATED WITHIN THE PROJECT LIMITS SHALL BE REMOVED FROM THE PROJECT SITE AT NO ADDITIONAL COST TO THE PROJECT UNLESS SPECIFIED IN THE PLANS.

G14. A BOULDER COUNTY HAULER LICENSE IS REQUIRED FOR HAULING OF MATERIAL OFF SITE, REGARDLESS OF WHERE THE MATERIAL IS DEPOSITED. THIS APPLIES TO THE PRIME CONTRACTOR AS WELL AS ANY SUBCONTRACTORS THAT COLLECT, TRANSPORT OR DISPOSE OF DISCARDED MATERIALS (GARBAGE, RECYCLABLES, OR COMPOSTABLES, CONSTRUCTION AND DEMOLITION WASTE, OR LANDSCAPING MATERIALS) IN UNINCORPORATED BOULDER COUNTY. SEE LINK FOR ADDITIONAL INFORMATION HTTPS://WWW.BOULDERCOUNTY.ORG/ENVIRONMENT/TRASH/HAULER-LICENSE/.

EARTHWORK NOTES:

E1. WATER SHALL BE USED AS A DUST PALLIATIVE, WHERE REQUIRED, AND APPROVED BY THE ENGINEER. LOCATIONS SHALL BE AS ORDERED AND WILL NOT BE PAID FOR SEPARATELY. DEPTH OF MOISTURE – DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
- FULL DEPTH OF EMBANKMENTS
- BASES OF CUTS AND FILLS EIGHT (8) INCHES

E2. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

E3. EXCAVATION AND EMBANKMENT REQUIRED FOR SIDEWALK CONSTRUCTION WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

E4. THE TYPE OF COMPACTION FOR EARTHWORK ON THIS PROJECT SHALL BE AASHTO T99 (STANDARD PROCTOR). PROOFROLLING OF ALL SUBGRADE WILL BE REQUIRED PRIOR TO PAVING AND SHALL BE INCLUDED IN THE COST OF THE WORK.

SIGNING, STRIPING AND TRAFFIC CONTROL NOTES:

S1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING, INSTALLING, AND MAINTAINING THE REQUIRED CONSTRUCTION ZONE TRAFFIC CONTROL DEVICES AND PERSONNEL PER SPECIAL PROVISIONS, SECTION 630 OF THE STANDARD SPECIFICATIONS AND THE MUTCD. THE CONTRACTOR IS PROHIBITED FROM STARTING WORK AT ANY LOCATION IF A TRAFFIC CONTROL PLAN, INCLUDING BICYCLES AND PEDESTRIANS, HAS NOT BEEN SUBMITTED AND APPROVED BY THE BOULDER COUNTY ENGINEER OR TRAFFIC ENGINEER.

S2. ALL TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE PAID FOR AS TRAFFIC CONTROL MANAGEMENT LUMP SUM. THIS LUMP SUM ITEM SHALL INCLUDE ALL DEVICES AND WORK REQUIRED TO SAFELY CONTROL TRAFFIC FOR THE PUBLIC AND WORKERS PER SECTION 630. THIS WORK INCLUDES, BUT IS NOT LIMITED TO: PREPARATION OF TRAFFIC CONTROL PLANS, TRAFFIC CONTROL INSPECTION/MANAGEMENT, UNIFORMED TRAFFIC CONTROL, FLAGGING, CONSTRUCTION TRAFFIC SIGNS, TEMPORARY STRIPING, DRUMS/CONES, BARRICADES, SEQUENCING ARROW PANELS AND PORTABLE MESSAGE SIGNS.

S3. CONTRACTOR SHALL PROVIDE SAFE, LOCAL ACCESS FOR ALL ADJACENT PROPERTY OWNERS, EMERGENCY SERVICES, SCHOOL BUSES, DELIVERIES, ETC. AT ALL TIMES.

S4. REMOVAL OF TEMPORARY PAVEMENT MARKINGS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

S5. THE CONTRACTOR SHALL MAINTAIN PAVEMENT MARKINGS ON THE PROJECT AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD.

S6. TRAFFIC WILL USE THE PRESENT ROADWAY DURING CONSTRUCTION.

S7. ONLY ONE LANE MAY BE CLOSED TO TRAFFIC AT ANY TIME, UNLESS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL ONLY CLOSE THE SECTION OF ROADWAY REQUIRED TO PERFORM THE WORK FOR THE CURRENT CONSTRUCTION PHASE.

S8. TWO LANES OF TRAFFIC SHALL BE MAINTAINED DURING ALL NON-WORKING HOURS.

S9. THE CONTRACTOR SHALL NOT LEAVE A VERTICAL EDGE NEXT TO THE TRAVELED WAY DURING NON-WORKING HOURS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

S10. THERE SHALL BE NO SITE CONSTRUCTION ACTIVITIES ON SATURDAYS, SUNDAYS OR HOLIDAYS UNLESS THERE IS SPECIFIC WRITTEN APPROVAL BY BOULDER COUNTY.

POSTS:

SIGN POSTS SHALL BE 2" X 2" X 10' (14 GAUGE) GALVANIZED PERFORATED SQUARE STEEL TUBING.

SIGN POST BASES SHALL BE 2 ¼" X 2 ¼" (12 GAUGE, 3' IN LENGTH) GALVANIZED PERFORATED SQUARE STEEL TUBING.

BASES SHALL BE INCLUDED IN THE COST FOR SIGN POSTS. TOP OF BASES SHALL BE 3□± ABOVE FINISHED GRADE. THE SIGN POST SHALL BE INSTALLED 4□IN TO THE BASE AND BOLTED BOTH WAYS.

SIGN POST LOCATIONS SHALL BE APPROVED BY THE ENGINEER AND ROAD MAINTENANCE SIGN SHOP REPRESENTATIVE PRIOR TO INSTALLATION.

POST LOCATIONS IN CONCRETE MEDIAN OR ISLANDS SHALL HAVE 6□PVC INSTALLED PRIOR TO POURING CONCRETE.

SIGNS:

THICKNESS OF ALL SIGN PANELS SHALL BE .100□

PAVEMENT MARKINGS:

FINAL PAVEMENT STRIPING SHALL BE EPOXY PER CDOT STANDARD SPECIFICATIONS.

ALL STOP LINES, CROSSWALKS AND PAVEMENT MARKING SYMBOLS SHALL BE WHITE, PREFORMED THERMOPLASTIC, □PREMARK□OR EQUIVALENT.

STOP LINES SHALL BE 2' WIDE; CROSSWALKS SHALL BE 2' X 9', UNLESS OTHERWISE NOTED.

PAVEMENT MARKING ARROWS SHALL BE ELONGATED.

BICYCLE DETECTOR PAVEMENT MARKINGS SHALL BE PER MUTCD FIG. 9C-7 B WITH HELMETED BICYCLE SYMBOL.

PAVEMENT MARKINGS FOR BIKE LANES SHALL BE PER MUTCD FIG. 9C-3 B WITH HELMETED BICYCLE SYMBOL.

PREFORMED THERMOPLASTIC INSTALLATION ON CONCRETE SHALL HAVE THE CONCRETE CURE REMOVED PRIOR TO INSTALLATION OR A BONDING AGENT APPLIED TO THE CONCRETE BEFORE INSTALLATION. INSTALLATION SHALL FOLLOW THE MANUFACTURER'S SPECIFICATIONS.

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City Project Manager		PHONE: (303) 413-7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221-7275, Fax: 303/221-7276		FAX: (303) 441-4594	Designer: LDL / Detailer: BJK / Sheet Subset: Gen Notes

Jay Road and 47th Street
General Notes

Structure Numbers

Subset Sheets: 1 of 3

Project Number: 100070613

RS-044-0118

Sheet Number 3

EROSION AND STORMWATER NOTES:

ER1. A BOULDER COUNTY STORMWATER QUALITY PERMIT (SWQP) IS REQUIRED FOR THIS PROJECT. BECAUSE IT:
IS WITHIN 100 HORIZONTAL FEET OF A PERMANENT PERENNIAL STREAM OR A MAIN IRRIGATION DITCH. FOR MORE INFORMATION ON QUALIFYING WATERWAYS AND PROJECTS, REFER TO THE GUIDANCE FOR SMALL CONSTRUCTION PROJECTS AVAILABLE ON THE BOULDER COUNTY PUBLIC WORKS DEPARTMENT WEBSITE.

THE BOULDER COUNTY STORMWATER QUALITY PERMIT CAN BE ACQUIRED VIA https://www.bouldercounty.org/transportation/permits/stormwater-quality-permit/

ER2. THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM WATER AT ALL TIMES. AREA AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO COST TO THE OWNER. THIS SHALL INCLUDE REMOVAL OF ANY DEBRIS CAUSED BY FLOODING.

ER3. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION AND AT AREAS WITH DISTURBED SOIL, ON OR OFF SITE, PRIOR TO ANY OTHER GROUND DISTURBING ACTIVITY. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR, UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING. EROSION CONTROL MEASURES SHALL BE PLACED CONTINUALLY AS DRAINAGE FEATURES ARE BEING CONSTRUCTED.

ER4. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN EXISTING CONTROL MEASURES AND ENSURE THEIR COMPLETE REMOVAL FROM THE PROJECT ONCE 70% OF THE PRE-EXISTING VEGETATION HAS BEEN RE-ESTABLISHED.

ER5. IT IS ANTICIPATED THE TOPSOIL FOR THE FINAL SEEDING SHALL BE OBTAINED FROM THE WITHIN THE PROJECT SITE. THE REMOVAL OF THE EXISTING TOPSOIL, TOPSOIL STOCKPILING AND PLACEMENT OF TOPSOIL SHALL ALL BE PAID FOR AS "TOPSOIL (ONSITE)" CUBIC YARD PAY ITEM.

ER6. SEE STORMWATER MANAGMENT PLAN.

ER7. CONTRACTOR/PERMITTEE SHALL PERIODICALLY INSPECT ALL INSTALLED CONTROL MEASURES, PROVIDE MAINTENANCE, AND MAKE REPAIRS AS NECESSARY TO PREVENT THEIR FAILURE.

ER8. SILT FENCE OR AN EQUIVALENT SHALL BE PLACED AS PERIMETER CONTROL ON ALL CONSTRUCTION ACTIVITIES THAT OCCUR ON LAND. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS, OR OTHERWISE REQUESTED, REMOVE PERIMETER CONTROLS WITHIN 30 DAYS AFTER THE DATE OF WARRANTY PERFORMANCE OF THE WORK OR IN ACCORDANCE WITH CONTROL MEASURES.

ER9. VEHICLE TRACKING CONTROLS SHALL BE USED AT ALL VEHICLE AND EQUIPMENT ACCESS POINTS TO THE SITE TO PREVENT SEDIMENT EXITING THE PROJECT SITE ONTO PAVED PUBLIC ROADS. ACCESS SHALL BE PROVIDED ONLY AT LOCATIONS APPROVED BY THE ENGINEER. VEHICLE TRACKING CONTROL LOCATIONS SHALL BE RECORDED ON THE SWMP SITE MAP.

ER10. ALL INLETS AND CULVERTS SHALL BE PROTECTED DURING ONSITE CONSTRUCTION ACTIVITIES. INLET PROTECTION LOCATIONS SHALL BE RECORDED ON THE SWMP SITE MAP.

ER11. CONCRETE WASTED IN DESIGNATED DEWATERING AREAS SHALL BE COLLECTED, REMOVED FROM THE PROJECT SITE, AND DISPOSED OF PROPERLY. WASTED CONCRETE ALSO INCLUDES EXCESS CONCRETE REMOVED FROM FORMS, SPILLS, SLOP, AND ALL OTHER UNUSED CONCRETE THAT ENDS UP ON THE GROUND.

ER12. THE CONTRACTOR/PERMITTEE MUST MAINTAIN A SPILL KIT ON SITE WHEN WORKING AROUND SURFACE WATERS. IF POLLUTANTS ARE SPILLED INTO ANY SURFACE WATERS DURING THE COURSE OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR/PERMITTEE MUST NOTIFY THE OWNER'S REPRESENTATIVE OR ENGINEER IMMEDIATELY.

ER13. ALL EXISTING MATURE TREES WITHIN THE DESIGNATED PROJECT AREA ARE TO BE FENCE PROTECTED IN PLACE AT DRIPLINE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PRIOR TO THE INITIATION OF WORK, THE ENGINEER SHALL MARK ANY TREES AND/OR LARGE SHRUBS TO BE REMOVED AS PART OF CONSTRUCTION ACTIVITIES. AREAS OF TREE REMOVAL SHALL BE DETERMINED AND MARKED IN COLLABORATION BETWEEN THE CONTRACTOR/PERMITTEE AND THE ENGINEER.

ER14. ALL EXCAVATION ACTIVITIES OCCURRING WITHIN 10 FEET OF THE DRIPLINE SHALL BE PERFORMED BY HAND AND IF NECESSARY, ROOTS SHALL BE CLEANLY CUT NOT TORN OR RIPPED. IF EXPOSED, TREE ROOTS SHALL BE BACKFILLED AND WATERED ON THE SAME DAY OF CUTTING AND APPROVED ROOT STIMULATOR SHALL BE APPLIED. SOILS SHALL NOT BE COMPACTED WITHIN THE DRIPLINE OF MATURE TREES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

WASTE MANAGEMENT:

WM1. THE CONTRACTOR/PERMITTEE SHALL NOT BURN, BURY, OR OTHERWISE DISCHARGE CONSTRUCTION OR DEMOLITION WASTE ON THE SITE UNLESS SPECIFIED OTHERWISE.

WM2. THE CONTRACTOR/PERMITTEE SHALL PROVIDE A SANITARY FACILITY AND ASSOCIATED MAINTENANCE SCHEDULE FOR THE CONSTRUCTION AREA SUFFICIENT TO ACCOMMODATE THE CONSTRUCTION CREW AND ALL OTHER AUTHORIZED PERSONS TO BE ONSITE DURING CONSTRUCTION ACTIVITIES TO BE PAID FOR AS SANITARY FACILITY (EACH).

HAZARDOUS MATERIALS:

HM1. THE CONTRACTOR/PERMITTEE SHALL TRANSPORT, USE, AND STORE HAZARDOUS MATERIALS IN ACCORDANCE WITH ALL REGULATORY REQUIREMENTS. SPILLED HAZARDOUS MATERIALS, INCLUDING HAZARDOUS LIQUID WASTES, SHALL BE REMOVED FROM THE SITE AND THE PROPERTY RESTORED TO ITS PRE-SPILL STATE IN ACCORDANCE WITH REGULATORY REQUIREMENTS.

HM2. THE CONTRACTOR/PERMITTEE SHALL IMMEDIATELY REPORT SPILLS TO THE PROPER REGULATORY AUTHORITY AND SHALL IMMEDIATELY NOTIFY THE ENGINEER.

HM3. HANDLING OF CONSTRUCTION FUELS AND LUBRICANTS:

A. THE CONTRACTOR/PERMITTEE SHALL EMPLOY PERSONS QUALIFIED TO HANDLE CONSTRUCTION EQUIPMENT FUELS AND LUBRICANTS.

B. THE CONTRACTOR/PERMITTEE SHALL REFUEL AND SERVICE EQUIPMENT AWAY FROM FLOODPLAINS OF RIVERS, STREAMS AND OTHER BODIES OF WATER. THE CONTRACTOR/PERMITTEE SHALL ENSURE EQUIPMENT THAT ENTERS THE WATER IS FREE FROM EXTERNAL GREASE, OIL, AND MUD.

C. THE CONTRACTOR/PERMITTEE SHALL PREVENT HANDLING AND FUELING OPERATIONS FROM CONTAMINATING THE GROUND, SURFACE WATER, AND GROUND WATER. THE CONTRACTOR/PERMITTEE SHALL USE CONTAINMENT BERMS AND AN IMPERMEABLE BASE COURSE OR OTHER SYSTEM TO CONTAIN SPILLED FUEL.

GENERAL CARE OF WATER

WC1. NO CONSTRUCTION EQUIPMENT SHALL BE OPERATED BELOW THE EXISTING WATER SURFACE UNLESS SPECIFICALLY AUTHORIZED BY THE STORMWATER QUALITY PERMIT ISSUED BY BOULDER COUNTY, AND ANY OTHER APPLICABLE LOCAL, STATE OR FEDERAL LICENSE OR PERMIT.

WC2. THE CONTRACTOR/PERMITTEE SHALL COMPLY WITH ALL USACE 404 PERMIT REQUIREMENTS INCLUDING ANY SPECIAL CARE REQUIREMENTS ISSUED FOR THIS PROJECT.

WC3. CARE OF WATER SHALL INCLUDE PROVISIONS FOR HANDLING GROUNDWATER, RAINSTORM RUNOFF, SNOW, SNOWMELT, AND ICE THAT MAY ENTER THE WORK AREA.

WC4. THE CONTRACTOR/PERMITTEE SHALL PROVIDE AND MAINTAIN SEDIMENT PONDS OR OTHER MEANS, REMOVE SEDIMENT FROM WATERS COLLECTED WITHIN ACTIVE CONSTRUCTION AREAS PRIOR TO ALLOWING IT TO ENTER OR RETURN INTO THE WATERCOURSE. CONTRACTOR/PERMITTEE SHALL DISPOSE OF SEDIMENTS IN A SUITABLE OFF- SITE WASTE DISPOSAL FACILITY.

WC5. IN THE EVENT OF UNSCHEDULED CONSTRUCTION ACTIVITY THAT RESULTS IN A VISUALLY CONSPICUOUS PLUME OF SEDIMENT, CONTRACTOR/PERMITTEE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND UNDERTAKE MITIGATION ACTIONS NECESSARY TO COMPLY WITH THE SPECIFIED CLEAN WATER CRITERIA.

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File Name: Jay Rd-GenNotes.dwg	Date:	Comments	Init.
Horiz. Scale: n/a Vert. Scale:			
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As Constructed	Jay Road and 47th Street General Notes			Project Number
No Revisions:	Designer: LDL	Structure Numbers		100070613
Revised:	Detailer: BJK			RS-044-0118
Void:	Sheet Subset: Gen Notes	Subset Sheets: 2 of 3		Sheet Number 4

UTILITY NOTES:

U1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/ OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE.

U2. THE CONTRACTOR SHALL CALL FOR UTILITY LOCATIONS A MINIMUM OF THREE (3) WORKING DAYS (PREFERRED SEVEN (7) WORKING DAYS) PRIOR TO ANY EXCAVATION AT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 OR 811. ALSO, NOTIFY INDIVIDUAL UTILITIES 48-HOURS PRIOR TO ANY EXCAVATION.

U3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING UTILITIES, INCLUDING ALL ACTIVE IRRIGATION FACILITIES DURING CONSTRUCTION AND SHALL HOLD THE COUNTY HARMLESS FOR DAMAGE ARISING FROM FAILURE TO ADEQUATELY PROTECT UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS REQUIRED TO PROTECT EXISTING UTILITIES AND/OR TO WORK AROUND SUCH UTILITIES. THIS INCLUDES, BUT IT NOT LIMITED TO, SUPPORTING AND SHORING OF EXISTING UTILITIES.

U4. ALL UNDERGROUND UTILITY CONSTRUCTION SHALL BE COMPLETED AND ACCEPTED PRIOR TO PLACING PAVEMENT.

U5. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH BOULDER COUNTY AND ALL UTILITY COMPANIES INVOLVED, WITH REGARD TO RELOCATIONS, EXTENSIONS AND REARRANGEMENTS OF EXISTING UTILITIES DURING CONSTRUCTION AND TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES, IN ADVANCE, AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE AS WELL AS THE UTILITY COMPANIES.

U6. IF A CONFLICT EXISTS BETWEEN UTILITIES AND PROPOSED IMPROVEMENTS AND/OR A DESIGN MODIFICATION IS REQUIRED, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO MODIFY THE DESIGN. DESIGN MODIFICATION(S) MUST BE APPROVED BY BOULDER COUNTY PRIOR TO BEGINNING CONSTRUCTION.

U7. SIX (6) POTHOLES ARE ANTICIPATED AND WILL BE PAID AS POTHOLING (EACH).

U8. THE FOLLOWING IS A LIST OF KNOWN UTILITIES WITH SERVICE WITHIN THE PROJECT AREA AND THE CONTACT INDIVIDUALS:

AGENCY	UTILITY	CONTACT	PHONE
XCEL	GAS	JEREMY JENSEN	720-219-8664
VARIOUS MEMBER UTILITIES		UNCC	811 OR 1-800-922-1987

ENVIRONMENTAL NOTES:

EN1. THE MIGRATORY BIRD TREATY ACT (MBTA) PROTECTS MIGRATORY BIRDS AND THEIR NESTS AND EGGS. FOR PROJECTS THAT COULD POTENTIALLY HAVE AN IMPACT, THE FOLLOWING CONDITIONS APPLY.

A. TREE TRIMMING/REMOVAL: TREE TRIMMING AND/OR REMOVAL ACTIVITIES SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. IN COLORADO, MOST NESTING AND REARING ACTIVITIES OCCUR BETWEEN APRIL 1 AND AUGUST 31. HOWEVER, SINCE SOME BIRDS NEST AS EARLY AS FEBRUARY, A NESTING BIRD SURVEY SHALL BE CONDUCTED BY A BIOLOGIST BEFORE ANY TREE REMOVAL OR TRIMMING ACTIVITIES BEGIN.

B. CLEARING/GRUBBING ACTIVITIES: CLEARING AND GRUBBING OF VEGETATION THAT MAY DISTURB GROUND NESTING BIRDS SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. IN COLORADO, MOST NESTING AND REARING ACTIVITIES OCCUR BETWEEN APRIL 1 AND AUGUST 31. VEGETATION SHALL BE REMOVED AND/OR TRIMMED TO A HEIGHT OF SIX (6) INCHES OR LESS PRIOR TO APRIL 1. ONCE VEGETATION HAS BEEN REMOVED AND/OR TRIMMED, APPROPRIATE MEASURES, I.E. REPEATED MOWING/TRIMMING, SHALL BE IMPLEMENTED TO ASSURE VEGETATION DOES NOT GROW MORE THAN SIX (6) INCHES. FAILURE TO MAINTAIN VEGETATION HEIGHT OF SIX (6) INCHES OR LESS MAY POSTPONE PROJECT CONSTRUCTION.

C. BIRDS OF PREY: IF CONSTRUCTION OCCURS BETWEEN FEBRUARY 15 AND AUGUST 31, A PRE-CONSTRUCTION SURVEY FOR NESTING RAPTORS MUST BE COMPLETED WITHIN A HALF-MILE BUFFER OF THE PROJECT LIMITS. IF ANY NESTING RAPTORS OCCUR WITHIN THIS BUFFER AREA, FOLLOW THE COLORADO PARKS AND WILDLIFE'S "RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS" GUIDELINES

(HTTPS://CPW.STATE.CO.US/DOCUMENTS/WILDLIFESPECIES/LIVINGWITHWILDLIFE/RAPTORBUFFERGUIDELINES2008.PDF).

EN2. NOXIOUS WEEDS: NOXIOUS WEEDS MAY PERSIST ON OR ADJACENT TO THE PROJECT LOCATION. NOXIOUS WEEDS ON THE STATE A & B WEEDS LIST MUST BE CONTROLLED IN ACCORDANCE WITH STATE REQUIREMENTS. THE STATE WEED LIST IS AVAILABLE HERE: (HTTPS://WWW.COLORADO.GOV/PACIFIC/AGCONSERVATION/NOXIOUS-WEED-SPECIES). WEED CONTROL SHALL BE INCLUDED IN THE COST OF THE WORK.

EN3. WASTE MANAGEMENT: CONTRACTOR SHALL INSPECT EQUIPMENT AND VEHICLES AS OFTEN AS IS NECESSARY TO INSURE THAT PETROLEUM, OILS AND LUBRICANTS (POL) ARE NOT LEAKING ONTO THE SOIL OR PAVEMENT. THE CONTRACTOR SHALL HAVE READY APPROVED ABSORBENT MATERIALS OR CONTAINERS OF SUFFICIENT CAPACITY TO CONTAIN ANY LEAK OF POL THAT CAN REASONABLY BE FORESEEN. ALL MATERIALS RESULTING FROM POL LEAKAGE CONTROL AND CLEANUP SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. THE COST OF CONTROL AND CLEANUP OF POL LEAKS WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE COST OF THE WORK.

EN4. WASTE MATERIALS: THERE SHALL BE NO STOCKPILING OR SIDE CASTING OF WASTE MATERIALS, INCLUDING BUT NOT LIMITED TO, PAINT CHIPS, ASPHALT OR CONCRETE ADJACENT TO WETLANDS OR WATERS OF THE U.S.

EN5. MATERIALS STOCKPILES: ALL STOCKPILED PROJECT MATERIALS SHALL BE LOCATED AWAY FROM SENSITIVE AREAS AND CONFINED SO THAT NO MATERIAL(S) OR THEIR RUNOFF ENTERS WETLANDS OR WATERS OF THE U.S., WHETHER FLOWING OR DRY.

EN6. ONCE VEGETATION HAS BEEN COMPLETED, THE ENGINEER AND THE CONTRACTOR WILL CONDUCT A WALKTHROUGH OF THE PROJECT SITE. THE PURPOSE OF THE WALKTHROUGH IS TO IDENTIFY ANY AREAS WHERE CONTROL MEASURES NEED TO BE REMOVED OR MAINTAINED AND IDENTIFICATION OF RESPONSIBLE PARTY UNTIL CDPS PERMIT IS CLOSED.

PAVEMENT NOTES:

P1. PLAN QUANTITIES OF SURFACING MATERIALS ARE BASED ON THE FOLLOWING UNIT WEIGHTS AND APPLICATION RATES:
- HOT MIX ASPHALT @ 147 LBS/C.F.
- TACK COAT DILUTED EMULSIFIED ASPHALT (SLOW SETTING @ 0.10 GAL/S.Y. (DILUTED 1:1 WITH WATER)
- AGGREGATE BASE COURSE @ 133 LBS./C.F.

THE ENGINEER SHALL RESERVE THE RIGHT TO ADJUST RATES OF APPLICATION IN THE FIELD AS CONDITIONS WARRANT.

P2. TACK COAT WILL NOT BE REQUIRED FOR NEW PAVEMENT PLACED ON AN AGGREGATE BASE COURSE.

P3. SWEEP DIRT AND GRAVEL FROM THE EXISTING ASPHALT SURFACE PRIOR TO PLACING HOT MIX ASPHALT. THIS WORK WILL NOT BE MEASURED OR PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.

P4. ANY LAYER OF HOT MIX ASPHALT PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACED.

P5. EMULSIFIED ASPHALT (SLOW SETTING) SHALL CONSIST OF 1 PART WATER AND 1 PART EMULSIFIED ASPHALT. EMULSIFIED ASPHALT (SLOW SETTING) WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.

P6. A TACK COAT OF EMULSIFIED ASPHALT (SLOW SETTING) IS TO BE APPLIED TO IMPROVE BOND AT THE FOLLOWING LOCATIONS:
- BEFORE PLACING NEW PAVEMENT OVER EXISTING PAVEMENT
- ALONG THE FACE OF ALL CURBS, GUTTERS, MANHOLES, ADJACENT EXISTING PAVEMENT, AND OTHER SURFACES AGAINST WHICH ASPHALT WILL BE PLACED BETWEEN PAVEMENT COURSES

P7. DUE TO THE NATURE OF THE PROJECT INCENTIVES WILL NOT BE USED FOR ASPHALT PAVEMENT SMOOTHNESS. PROVIDE A BITUMINOUS PAVER AND DEVICES IN ACCORDANCE WITH SUBSECTION 401.10 OF THE SPECIFICATIONS.

DRAINAGE NOTES

D1. THE CONTRACTOR IS REQUIRED TO KEEP ALL DRAINAGE FACILITIES FUNCTIONAL AND MAINTAIN DRAINAGE TO THOSE FACILITIES AT ALL TIMES DURING CONSTRUCTION.

QUANTITY NOTES:

Q1. THE FOLLOWING ITEMS ARE INCLUDED IN THE SUMMARY OF APPROXIMATE QUANTITIES:

SANITARY FACILITY	EA	1
CONSTRUCTION SURVEYING	LS	1
MOBILIZATION	LS	1
SURVEY MONUMENT (TYPE 5)	EA	4
F/A MINOR CONTRACT REVISIONS	F/A	1

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City Project Manager

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Sheet Revisions

Date:	Comments	Init.

Boulder County
BOULDER COUNTY PUBLIC WORKS
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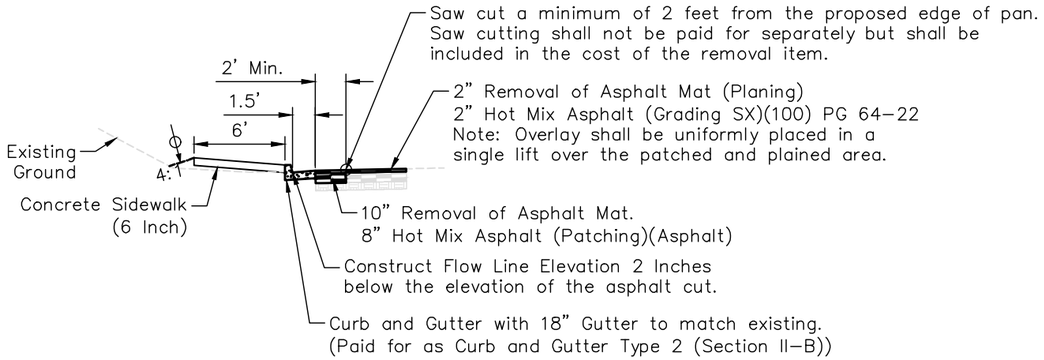
As Constructed
No Revisions:
Revised:
Void:

Jay Road and 47th Street
General Notes

Designer: LDL
Detailer: BJK
Sheet Subset: Gen Notes
Structure Numbers
Subset Sheets: 3 of 3

Project Number
100070613
RS-044-0118
Sheet Number 5



TYPICAL SECTION
47th Street Sidewalk
Sta. 1+40 to Sta. 5+05

TYPICAL SECTION NOTES:

See roadway plans for additional information.

▲ Break points in slopes shall be rounded during construction for a pleasing appearance.

Cross slope.

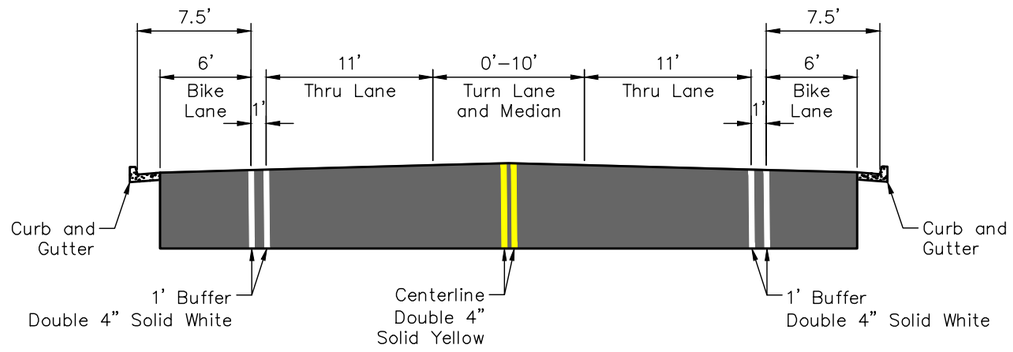
O Vertical alignment control points.

Minimum 4" Topsoil or Specified Alternative.

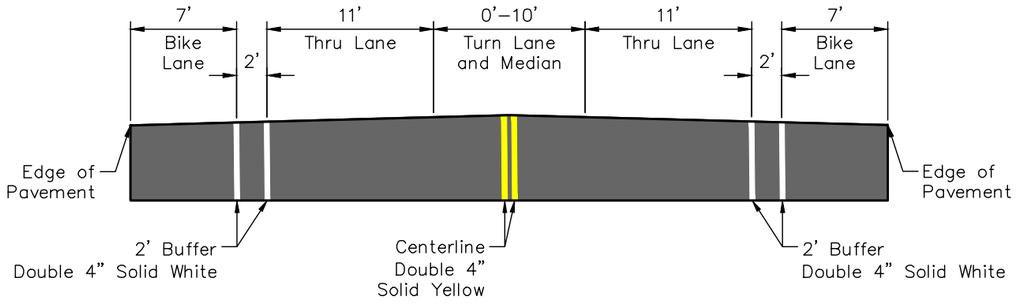
PAVEMENT TYPICAL NOTES:

(1) Saw cutting of pavement shall not be paid separately, but shall be included in the cost of removal of asphalt.

(2) Tack coat (Emulsified asphalt CCS-1H) is required between each lift of asphalt and where new asphalt joins existing asphalt. Tack coat shall not be paid separately, but shall be included in the cost of asphalt.



TYPICAL SECTION
Jay Road Striping Detail
Sta. 100+00 to Sta. 143+90



TYPICAL SECTION
Jay Road Striping Detail
Sta. 144+70 to Sta. 167+75

Print Date: 8/11/20	Sheet Revisions			BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd-Typicals.dwg	Date:	Comments	Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: n/a Vert. Scale:				BOULDER, CO 80304	Revised:
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Jay Road and 47th Street Typical Sections				Project Number
				100070613
Designer: LDL	Structure Numbers			RS-044-0118
Detailer: LDL				
Sheet Subset: Typicals	Subset Sheets: 1 of 1			Sheet Number 6

SUMMARY OF APPROXIMATE QUANTITIES

INDEX			BID	CDOT ITEM NO.	ITEM DESCRIPTION	UNIT	REMOVAL		ROADWAY		SWMP		TOTAL QUANTITY	
BOOK	PAGE	SHEET	ITEM	FOR INFO ONLY			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
			1	202-00019	REMOVAL OF INLET	EA	1						1	
			2	202-00035	REMOVAL OF PIPE	LF	77						77	
			3	202-00037	REMOVAL OF END SECTION	EA	2						2	
			4	202-00200	REMOVAL OF SIDEWALK	SY	266						266	
			5	202-00201	REMOVAL OF CURB	LF	66						66	
			6	202-00203	REMOVAL OF CURB AND GUTTER	LF	363						363	
			7	202-00206	REMOVAL OF CONCRETE CURB RAMP	SY	173						173	
			8	202-00210	REMOVAL OF CONCRETE PAVEMENT	SY	47						47	
			9	202-00220	REMOVAL OF ASPHALT MAT	SY	510						510	
			10	202-00240	REMOVAL OF ASPHALT MAT (PLANING)	SY	35,347						35,347	
			11	202-04002	CLEAN CULVERT	EA					5		5	
			12	202-00828	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	LS	1						1	
			13	203-01598	POTHOLING	EA			6				6	
			14	207-00700	TOPSOIL (ONSITE)	CY					60		60	
			15	208-00002	EROSION LOG TYPE 1 (12 INCH)	LF					186		186	
			16	208-00020	SILT FENCE	LF					847		847	
			17	208-00035	AGGREGATE BAG	LF					78		78	
			18	208-00045	CONCRETE WASHOUT STRUCTURE	EA					2		2	
			19	208-00053	STORM DRAIN INLET PROTECTION (TYPE I)(84 INCH)	EA					6		6	
			20	208-00057	STORM DRAIN INLET PROTECTION (TYPE I)(144 INCH)	EA					2		2	
			21	208-00075	PRE-FABRICATED VEHICLE TRACKING PAD	EA					1		1	
			22	208-00103	REMOVAL AND DISPOSAL OF SEDIEMENT (LABOR)	HR					15		15	
			23	208-00105	REMOVAL AND DISPOSAL OF SEDIEMENT (EQUIPMENT)	HR					15		15	
			24	208-00106	SWEEPING (SEDIMENT REMOVAL)	HR					10		10	
			25	208-00107	REMOVAL OF TRASH	HR					10		10	
			26	208-00207	EROSION CONTROL MANAGEMENT (ECM)	DAY					60		60	
			27	210-00050	RESET FIRE HYDRANT	EA	1						1	
			28	210-00810	RESET GROUND SIGN	EA	4						4	
			29	210-00827	RESET PULL BOX	EA	1						1	
			30	210-04010	ADJUST MANHOLE	EA	1						1	
			31	210-04050	ADJUST VALVE BOX	EA	1						1	
			32	212-00009	SEEDING (TEMPORARY)	AC					0.05		0.05	
			33	212-00701	COMPOST (MECHANICALLY APPLIED)	CY					15		15	

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Sheet Revisions

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As Constructed
No Revisions:
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Jay Road and 47th Street
Summary of Approximate Quantities

Designer: LDL
Detailer: BJK
Sheet Subset: SAQ
Structure Numbers:
Subset Sheets: 1 of 2

Project Number
100070613
RS-044-0118
Sheet Number 7

SUMMARY OF APPROXIMATE QUANTITIES

INDEX			BID	CDOT ITEM NO.	ITEM DESCRIPTION	UNIT	REMOVAL		ROADWAY		SWMP		TOTAL QUANTITY	
BOOK	PAGE	SHEET	ITEM	FOR INFO ONLY			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
			34	212-00706	SEEDING (NATIVE) DRILL	AC					0.11		0.11	
			35	212-01210	LANDSCAPE RESTORATION	SF					100		100	
			36	213-00004	MULCHING (WEED FREE STRAW)	AC					0.16		0.16	
			37	213-00061	MULCH TACKIFIER	LB					21		21	
			38	403-00720	HOT MIX ASPHALT (PATCHING) (ASPHALT)	TON			191				191	
			39	403-34741	HOT MIX ASPHALT (GRADING SX) (75) PG 64-22	TON			3,931				3,931	
			40	412-00800	CONCRETE PAVEMENT (8 INCH)	SY			120				120	
			41	503-00012	DRILLED CAISSON (12 INCH)	LF			6				6	
			42	603-01185	18 INCH REINFORCED CONCRETE PIPE (CIP)	LF			166				166	
			43	603-05018	18 INCH REINFORCED CONCRETE END SECTION	EA			1				1	
			44	604-00305	INLET TYPE C (5 FOOT)	EA			1				1	
			45	604-19105	INLET TYPE R L 5 (5 FOOT)	EA			1				1	
			46	607-11525	FENCE (PLASTIC)	LF					76		76	
			47	608-00006	CONCRETE SIDEWALK (6 INCH)	SY			669				669	
			48	608-00010	CONCRETE CURB RAMP	SY			198				198	
			49	609-20010	CURB TYPE 2 (SECTION B)	LF			58				58	
			50	609-21020	CURB AND GUTTER TYPE 2 (SECTION II-B)	LF			898				898	
			51	613-00200	2 INCH ELECTRICAL CONDUIT	LF			22				22	
			52	613-10000	WIRING	LS			1				1	
			53	614-72860	PEDESTRIAN PUSH BUTTON	EA			2				2	
			54	614-72872	LOOP DETECTOR (MICRO TYPE)	EA			2				2	
			55	614-84106	PEDESTRIAN PUSH BUTTON POST ASSEMBLY	EA			2				2	
			56	620-00020	SANITARY FACILITY	EA			1				1	
			57	625-00000	CONSTRUCTION SURVEYING	LS			1				1	
			58	626-00000	MOBILIZATION	LS			1				1	
			59	627-00008	MODIFIED EPOXY PAVEMENT MARKING	GAL			178				178	
			60	627-30205	THERMOPLASTIC PAVEMENT MARKING (WORD-SYMBOL)	SF			1,514				1,514	
			61	627-30210	THERMOPLASTIC PAVEMENT MARKING (XWALK-STOP LINE)	SF			4,056				4,056	
			62	629-01005	SURVEY MONUMENT (TYPE 5)	EA			4				4	
			63	630	TRAFFIC CONTROL MANAGEMENT	LS			1				1	
			64	700-70010	F/A MINOR CONTRACT REVISIONS	FA			1				1	
			65	700-70380	F/A EROSION CONTROL	FA					1		1	
			66	700-90026	F/A LANDSCAPING	FA					1		1	

Print Date: 8/11/20
File Name: Jay Rd-SAQ.dwg
Horiz. Scale: n/a Vert. Scale:
City Project Manager

ATKINS
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Sheet Revisions

Date:	Comments	Init.

Boulder County
BOULDER COUNTY PUBLIC WORKS
2525 13TH STREET, SUITE 203
BOULDER, CO 80304
PHONE: (303) 413-7039
FAX: (303) 441-4594

As Constructed
No Revisions:
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Jay Road and 47th Street
Summary of Approximate Quantities

Designer: LDL
Detailer: BJK
Sheet Subset: SAQ
Structure Numbers:
Subset Sheets: 2 of 2

Project Number: 100070613
RS-044-0118
Sheet Number: 8

TABULATION OF REMOVALS AND RESETS

Location	202-00019	202-00035	202-00037	202-00200	202-00201	202-00203	202-00206	202-00210
	Removal of Inlet	Removal of Pipe	Removal of End Section	Removal of Sidewalk	Removal of Curb	Removal of Curb and Gutter	Removal of Concrete Curb Ramp	Removal of Concrete Pavement
	EA	LF	Each	SY	LF	LF	SY	SY
JAY ROAD								
100+00 to 132+50	1	77	2	30	66	225	11	
132+50 to 170+00	0	0	0	11	0	138	12	47
47th STREET								
1+75 to 7+00	0	0	0	0	0	0	0	
ORANGE ORCHARD				225			150	
CONTINGENCY								
PROJECT TOTALS	1	77	2	266	66	363	173	47

TABULATION OF REMOVALS AND RESETS

Location	202-00220	202-00247	202-00828	210-00050	210-00810	210-00827	210-04010	210-04050
	Removal of Asphalt Mat	Removal of Asphalt Mat (Planing)	Removal of Traffic Signal Equipment	Reset Fire Hydrant	Reset Ground Sign	Reset Pull Box	Adjust Manhole	Adjust Valve Box
	SY	SY	LS	EA	EA	EA	EA	EA
JAY ROAD								
100+00 to 132+50	228	16,200			1		0	
132+50 to 170+00	68	17,865	1		3	1	0	
47th STREET								
1+75 to 7+00	170	1,282		1			1	1
ORANGE ORCHARD								
CONTINGENCY	44							
PROJECT TOTALS	510	35,347	1	1	4	1	1	1

NOTES:

1) Clearing and grubbing shall not be paid for separately but shall be included in the cost of work.
2) Saw cutting shall not be paid for seperatel but shall be included in the cost of the removal item.
3) Removal of asphalt mat (Planing) shall remove 2 inches of asphalt.
4) Tree trimming shall not be paid for separately but shall be included in the cost of the work.
5) Removal of pavement marking will not be measured but shall be included in the work.
6) Removal of traffic signal equipment shall consist of the removal of an existing push button pole.

Print Date: 8/11/20
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Sheet Revisions

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Boulder County
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BOULDER, CO 80304
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Jay Road and 47th Street Tabulations

Designer: LDL
Detailer: BJK
Sheet Subset: Tabs
Structure Numbers
Subset Sheets: 1 of 3

Project Number
100070613
RS-044-0118
Sheet Number 9

TABULATION OF SURFACING

Location	403-00720		403-34741		412-00800		603-01185		603-05018		604-00305		604-19105		608-00006		608-00010		609-20010		609-21020	
	Hot Mix Asphalt (Patching) (Asphalt)		Hot Mix Asphalt (Grading SX) (75) PG 64-22		Concrete Pavement (8 Inch)		18 Inch Reinforced Concrete Pipe (CIP)		18 Inch Reinforced Concrete End Section		Inlet Type C (5 Foot)		Inlet Type R L 5 (5 Foot)		Concrete Sidewalk (6 Inch)		Concrete Curb Ramp		Curb Type 2 (Section B)		Curb and Gutter Type 2 (Section II-B)	
	TON		TON		SY		LF		EA		EA		EA		SY		SY		LF		LF	
	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.
JAY ROAD																						
100+00 to 132+50	70		1,803		87		166		1		1		1		90		26		58		301	
132+50 to 170+00	30		1,976		33		0		0		0		0		105		15		0		213	
47th STREET																						
1+75 to 7+00	41		152		0		0		0		0		0		249		7		0		384	
ORANGE ORCHARD															225		150					
CONTINGENCY	49																					
PROJECT TOTALS	191		3,931		120		166		1		1		1		669		198		58		898	

NOTES:

1) Calculations for Hot Mix Asphalt (Patching)(Asphalt) assumes 147 LBS/CF. Calculation assumes 8" HMA thickness.
2) Calculations for Hot Mix Asphalt (Grading SX) (75) PG 64-22assumes 147 LBS/CF. Calculation assumes 2" HMA thickness.

TABULATION OF FINAL PAVEMENT MARKINGS

Location	627-00008					627-30205		627-30210		
	Modified Epoxy Pavement Marking (Gal)					Thermoplastic Pavement Marking (Word-Symbol) (SF)		Thermoplastic Pavement Marking (Xwalk-Stopline) (SF)		
	4" Double Yellow Center Line (LF)	4" Solid White Edge Line (LF)	8" Solid White Channel Line (LF)	8" Solid White Cross-Hatching (LF)	8" Solid Yellow Cross-Hatching (LF)	Symbols	Word	24" Stop Line (LF)	Bike (6'x2') (EA)	Xwalk (9'x2') (EA)
JAY ROAD										
100+00 to 132+50	4464	10778	1102			723		55	132	43
132+50 to 170+00	4651	13650	873	305	53	723	68	110	90	16
47th STREET										
1+75 to 7+00	367	18								
CONTINGENCY										
PROJECT TOTALS (LF)	9482	24447	1975	305	53			165	222	59
PROJECT TOTALS (SF)	6321	8149	1316	203	35	1446	68	330	2664	1062
PROJECT TOTALS (GAL)	70.2	90.5	14.6	2.3	0.4					
PROJECT TOTAL	178					1514		4056		

NOTES:

1) FOR CALCULATION PUROSES, IT WAS ASSUEMED 90 SF/GAL FOR MODIFIED EPOXY PAVEMENT MARKINGS.
2) FOR DETAILS OF PAVEMENT MARKING LINES AND LINE PAVEMENT, SEE STANDARD S-627-1.
3) THE CONTRACTOR SHALL COMPLETE AN INVENTORY OF EXISTING STRIPING LAYOUT PRIOR TO START OF CONSTRUCTION.
4) THE CONTRACTOR SHALL MATCH EXISTING STRIPING LAYOUT UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
5) REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE INCIDENTAL TO THE COST OF THE STRIPING PAY ITEMS.

Print Date: 8/11/20
File Name: Jay Rd-Tabs.dwg
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City Project Manager

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Sheet Revisions

Date:	Comments	Init.

Boulder County
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PHONE: (303) 413-7039
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As Constructed
No Revisions:
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Jay Road and 47th Street Tabulations

Designer: LDL
Detailer: BJK
Sheet Subset: Tabs
Structure Numbers
Subset Sheets: 2 of 3

Project Number
100070613
RS-044-0118
Sheet Number 10

TABULATION OF SIGNAL

Location	503-00012		613-00200		613-1000		614-72860		614-72872		614-84106	
	Drilled Caisson (12 Inch)		2 Inch Electrical Conduit		Wiring		Pedestrian Push Button		Loop Detector (Micro Type)		Pedestrian Push Button Post Assembly	
	LF		LF		LS		EA		EA		EA	
	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.	Plan	As-Const.
JAY ROAD												
100+00 to 132+50												
132+50 to 170+00	6		22		1		2		2		2	
47th STREET												
1+75 to 7+00												
ORANGE ORCHARD												
CONTINGENCY												
PROJECT TOTALS	6		22		1		2		2		2	

NOTES:

1) Wiring Lump Sum shall be for the full work to complete the wiring and to have operational push buttons and loop detectors.

Print Date: 8/11/20	Sheet Revisions			BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd-Tabs.dwg	Date:	Comments	Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: n/a Vert. Scale:				BOULDER, CO 80304	Revised:
City Project Manager				PHONE: (303) 413-7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221-7275, Fax: 303/221-7276				FAX: (303) 441-4594	

Jay Road and 47th Street Tabulations				Project Number
Designer: LDL	Structure Numbers			100070613
Detailer: BJK				RS-044-0118
Sheet Subset: Tabs	Subset Sheets: 3 of 3			Sheet Number 11

SURVEY CONTROL DIAGRAM

A PORTION OF SECTIONS 16, AND 17, TOWNSHIP 1 NORTH, RANGE 70 WEST OF THE 6TH PRINCIPAL MERIDIAN,
BOULDER COUNTY, STATE OF COLORADO

CONTROL POINTS FOR 51ST STREET & JAY ROAD				
Point #	Northing	Easting	Elevation	Description
508	1261537.80	3073788.05	5289.53	SET #5 REBAR WITH 2" ALUMINUM CAP STAMPED FGI
509	1261591.94	3074021.35	5286.14	SET #5 REBAR WITH RED PLASTIC CAP STAMPED FGI
510	1261521.14	3074199.89	5285.04	SET MAG NAIL WITH 1-1/2" STEEL WASHER

CONTROL POINTS FOR HIGHWAY 38 & JAY ROAD				
Point #	Northing	Easting	Elevation	Description
501	1261563.62	3067075.76	5393.00	SET #5 REBAR WITH 2" ALUMINUM CAP STAMPED FGI
502	1261560.73	3067271.53	5391.44	SET #5 REBAR WITH RED PLASTIC CAP STAMPED FGI
503	1261506.55	3067414.84	5386.60	SET #5 REBAR WITH RED PLASTIC CAP STAMPED FGI

CONTROL POINTS FOR 47TH STREET & JAY ROAD				
Point #	Northing	Easting	Elevation	Description
504	1262093.34	3071563.38	5319.76	SET #5 REBAR WITH RED PLASTIC CAP STAMPED FGI
505	1261765.58	3071536.01	5323.04	SET #5 REBAR WITH RED PLASTIC CAP STAMPED FGI
506	1261473.78	3071628.10	5322.60	SET #5 REBAR WITH RED PLASTIC CAP STAMPED FGI
507	1261525.59	3071507.38	5325.01	SET 10" GALVANIZE SPIKE

SURVEY DIAGRAM CONTROL NOTES:

1. SURVEY CONTROL WAS ESTABLISHED USING EXISTING TOPOGRAPHIC SURVEY AND SURVEY CONTROL INFORMATION PROVIDED BY OTHERS.

   VERTICAL CONTROL WAS REFERENCED FROM JAY ROAD PEDESTRIAN ISLANDS SURVEY CONTROL, PROJECT NUMBER RD-044-020 DATED MAY 16, 2018. THERE WERE NOT ENOUGH CONTROL POINTS REMAINING FROM THIS SURVEY TO USE AS A REFERENCE FOR HORIZONTAL CONTROL.
   POINT 101 ELEVATION = 5324.65.
   ELEVATIONS WERE CONFIRMED WITH CHECKS TO EXISTING NGS MONUMENTS:
   Y 453 (PID DJ8200) = 5289.02 NAVD 88
   Q 440 (PID LL1106) = 5392.80 NAVD 88
   B 322 RESET (PID LL0695) = 5508.88 NAVD 88
   R 440 (PID LL1105) = 5463.48 NAVD 88

   HORIZONTAL CONTROL WAS REFERENCED FROM EXISTING TOPOGRAPHIC SURVEY INFORMATION CONTAINED IN THE CAD FILE EX-SURFACE-JAY-121816.DWG. VALVE LOCATIONS AT THE INTERSECTIONS OF JAY ROAD AND 30TH STREET, LONETREE COURT AND ST. CROIX STREET WERE USED TOGETHER WITH CONTROL POINT 101 FROM JAY ROAD PEDESTRIAN ISLAND SURVEY CONTROL, PROJECT NUMBER RD-044-020 DATED MAY 16, 2015.

2. PROJECT CONTROL POINTS WERE ESTABLISHED AS NOTED ON THE CONTROL TABULATION.
3. FARNSWORTH GROUP UTILIZED GPS REAL-TIME KINEMATIC TECHNIQUES TO LOCATE THE MONUMENTS SHOWN HEREON.
4. ACHIEVED ESTIMATED HORIZONTAL AND VERTICAL POSITIONAL ACCURACY OF THE RESULTANT GPS NETWORK IS ±0.05 FEET.
5. GPS OBSERVATIONS WERE CONDUCTED BETWEEN JULY 22 THRU JULY 29, 2020.
6. THIS SURVEY IS NOT A MONUMENT BOUNDARY SURVEY AND IS PREPARED AS A SURVEY CONTROL DIAGRAM ONLY, THE PURPOSE OF THIS SURVEY WAS TO ESTABLISH HORIZONTAL AND VERTICAL CONTROL BY FPS RELATIVE POSITIONING TECHNIQUES AT MONUMENTS INSTALLED BY FARNSWORTH GROUP, INC.
7. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
8. ACCORDING TO THE COLORADO STATE BOARD OF LICENSURE FOR ARCHITECTS, PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS RULE 6.2.2 THE SURVEYOR'S CERTIFICATION IS:
   a. BASED UPON THE PROFESSIONAL LAND SURVEYOR'S KNOWLEDGE, INFORMATION AND BELIEF,
   b. IN ACCORDANCE WITH APPLICABLE STANDARDS OF PRACTICE, AND
   c. NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

SURVEYOR'S CERTIFICATION

THIS SURVEY CONTROL DIAGRAM WAS COMPLETED BY ME OR UNDER MY DIRECT SUPERVISION AND I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF COLORADO. IT IS INTENDED TO REPRESENT SURVEY CONTROL SET FOR USE IN COMPLETION OF A TOPOGRAPHIC SURVEY AND FOR FUTURE CONSTRUCTION LAYOUT. THE SURVEY CONTROL WAS OBSERVED ON JULY 22 THRU JULY 29, 2020.

THIS DOCUMENT IS NOT INTENDED TO REPRESENT A LAND SURVEY PLAT, IMPROVEMENT SURVEY PLAT OR IMPROVEMENT LOCATION CERTIFICATE AND IS BASED UPON THE PROFESSIONAL LAND SURVEYOR'S KNOWLEDGE, INFORMATION AND BELIEF. THIS DOCUMENT IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

DAVID J. BERGLUND
COLORADO PLS 38199
FOR AND ON BEHALF OF FARNSWORTH GROUP, INC.
1612 SPECHT POINT ROAD, SUITE 105
FORT COLLINS, COLORADO 80525
(970) 484-7477

THE FIELD WORK WAS COMPLETED ON JULY 22 THRU JULY 29, 2020.

COLORADO LICENSED
DAVID J. BERGLUND
38199
08/06/2020
PROFESSIONAL LAND SURVEYOR

Farnsworth GROUP
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(970) 484-7477 / info@f-w.com
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Engineers | Architects | Surveyors | Scientists

ISSUE:

#	DATE:	DESCRIPTION:

PROJECT:
ATKINS NORTH AMERICAN

JAY ROAD OVERLAY, STRIPING AND CONCRETE IMPROVEMENTS

JAY ROAD, BOULDER COUNTY, CO

DATE:	08/06/2020
DESIGNED:	JAN
DRAWN:	JAN
REVIEWED:	DJB
FIELD BOOK NO.:	2513

SHEET TITLE:
SURVEY CONTROL DIAGRAM

SHEET NUMBER:
1
OF 2

PROJECT NO.: 0200885.00

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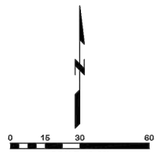
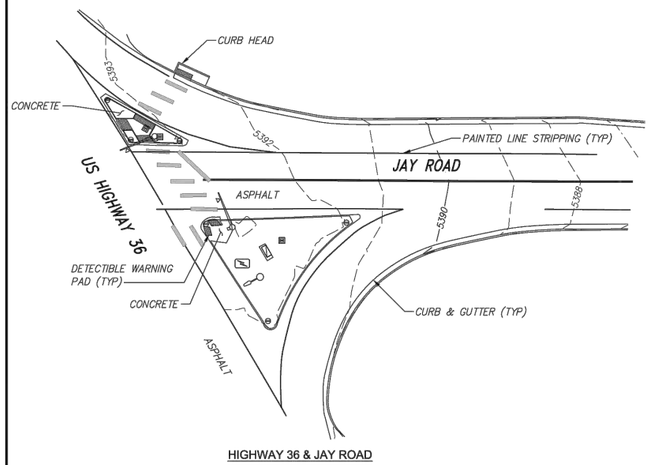
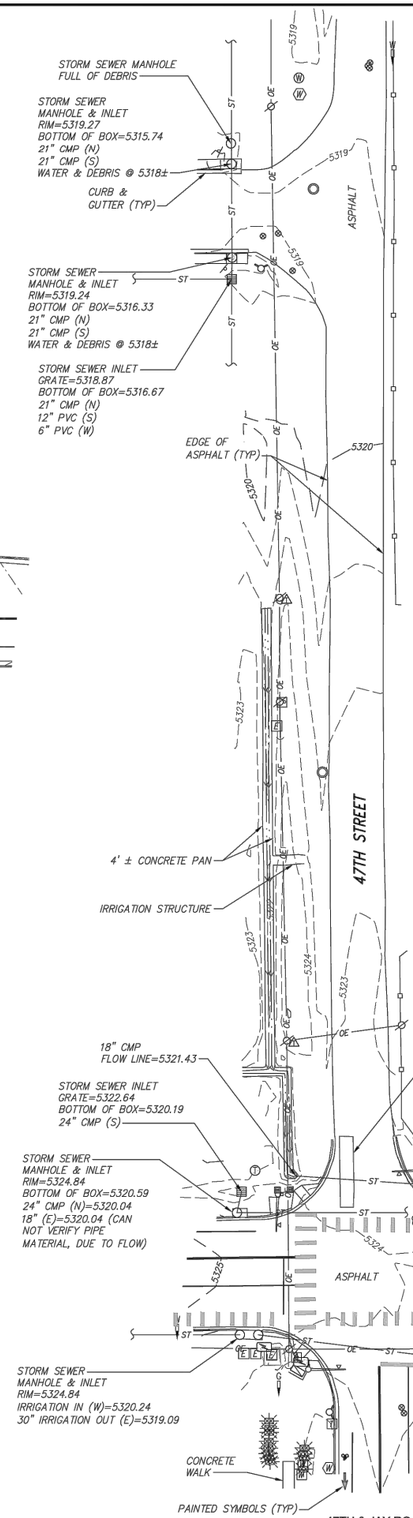
TOPOGRAPHIC SURVEY

A PORTION OF SECTIONS 16, AND 17, TOWNSHIP 1 NORTH, RANGE 70 WEST OF THE 6TH PRINCIPAL MERIDIAN, BOULDER COUNTY, STATE OF COLORADO

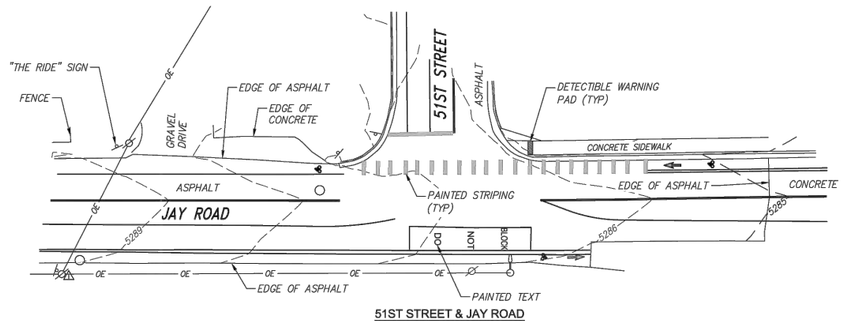




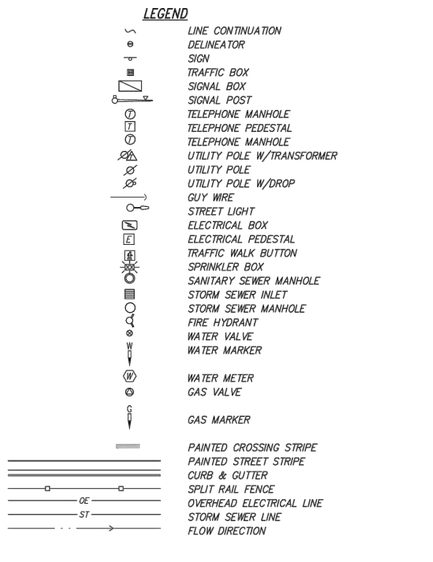
HIGHWAY 36 & JAY ROAD



47TH & JAY ROAD



51ST STREET & JAY ROAD



TOPOGRAPHIC SURVEY NOTES:

1. THE FIELD SURVEY TO LOCATE IMPROVEMENTS WAS PERFORMED ON JULY 22 THRU JULY 29, 2020, AND AUGUST 4, 2020. FARNSWORTH GROUP IS NOT RESPONSIBLE FOR NOT LOCATING IMPROVEMENTS WHICH WERE NOT VISIBLE ON THE DATE OF THE FIELD SURVEY OR IMPROVEMENTS WHICH WERE ADDED OR REMOVED AFTER THE DATE OF THE SURVEY.
2. THIS TOPOGRAPHIC SURVEY IS NOT A MONUMENTED LAND SURVEY, LAND SURVEY PLAT OR IMPROVEMENT SURVEY PLAT AND IS SUBJECT TO ANY INACCURACIES THAT A SUBSEQUENT BOUNDARY SURVEY MAY DISCLOSE.
3. THIS SURVEY WAS PERFORMED WITHOUT BENEFIT OF ANY FORM OF TITLE INFORMATION AND/OR VERIFICATION. THEREFOR, THERE MAY BE RECORDINGS ESTABLISHING EASEMENTS, BURDENS OR OTHER AGREEMENTS AFFECTING THE PROPERTY WHICH IS THE SUBJECT MATTER OF THIS SURVEY OF WHICH WE ARE NOT AWARE AND, THUS, ARE NOT SHOWN HEREON.
4. THIS SURVEY IS NOT IN SUPPORT OF A "SUBSURFACE UTILITY ENGINEERING - REQUIRED PROJECT".
5. UTILITY INFORMATION SHOWN HEREON IS FROM APPARENT SURFACE EVIDENCE. THIS SURVEY MAY NOT ADDRESS FULL UTILITY INFORMATION OF ALL AVAILABLE UTILITIES FOR THIS SITE. OTHER UTILITIES, IN USE OR ABANDONED, MIGHT EXIST WITHIN THE AREAS SHOWN HEREON.
6. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
7. ACCORDING TO THE COLORADO STATE BOARD OF LICENSURE FOR ARCHITECTS, PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS RULE 6.2.2 THE SURVEYOR'S CERTIFICATION IS:
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THIS DOCUMENT IS NOT INTENDED TO REPRESENT A LAND SURVEY PLAT, IMPROVEMENT SURVEY PLAT OR IMPROVEMENT LOCATION CERTIFICATE AND IS BASED UPON THE PROFESSIONAL LAND SURVEYOR'S KNOWLEDGE, INFORMATION AND BELIEF. THIS DOCUMENT IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

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COLORADO LICENSED DAVID J. BERGLUND 38199 08/06/2020 PROFESSIONAL LAND SURVEYOR

THE FIELD WORK WAS COMPLETED ON JULY 22 THRU JULY 29, 2020, AND AUGUST 4, 2020.

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Engineers | Architects | Surveyors | Scientists

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PROJECT:
ATKINS NORTH AMERICAN

JAY ROAD OVERLAY, STRIPING AND CONCRETE IMPROVEMENTS

JAY ROAD, BOULDER COUNTY, CO

DATE:	08/06/2020
DESIGNED:	JAN
DRAWN:	JAN
REVIEWED:	DJB
FIELD BOOK NO.:	2513

SHEET TITLE:
TOPOGRAPHIC SURVEY

SHEET NUMBER:
2
OF 2

PROJECT NO.: 0200885.00

J:\mel | J:\2020\0200885.00 – Jay Road, Boulder County, Colorado\Survey\03_drawings\V_SITE – 0200885.00.dwg | 8/6/2020 1:06 PM |

NOTES:
- PIP = Protect in place
- Sawcutting shall not be paid for separately but shall be included in the cost of the removal item.
- Removal of asphalt mat (Planing) shall remove 2 inches of asphalt.
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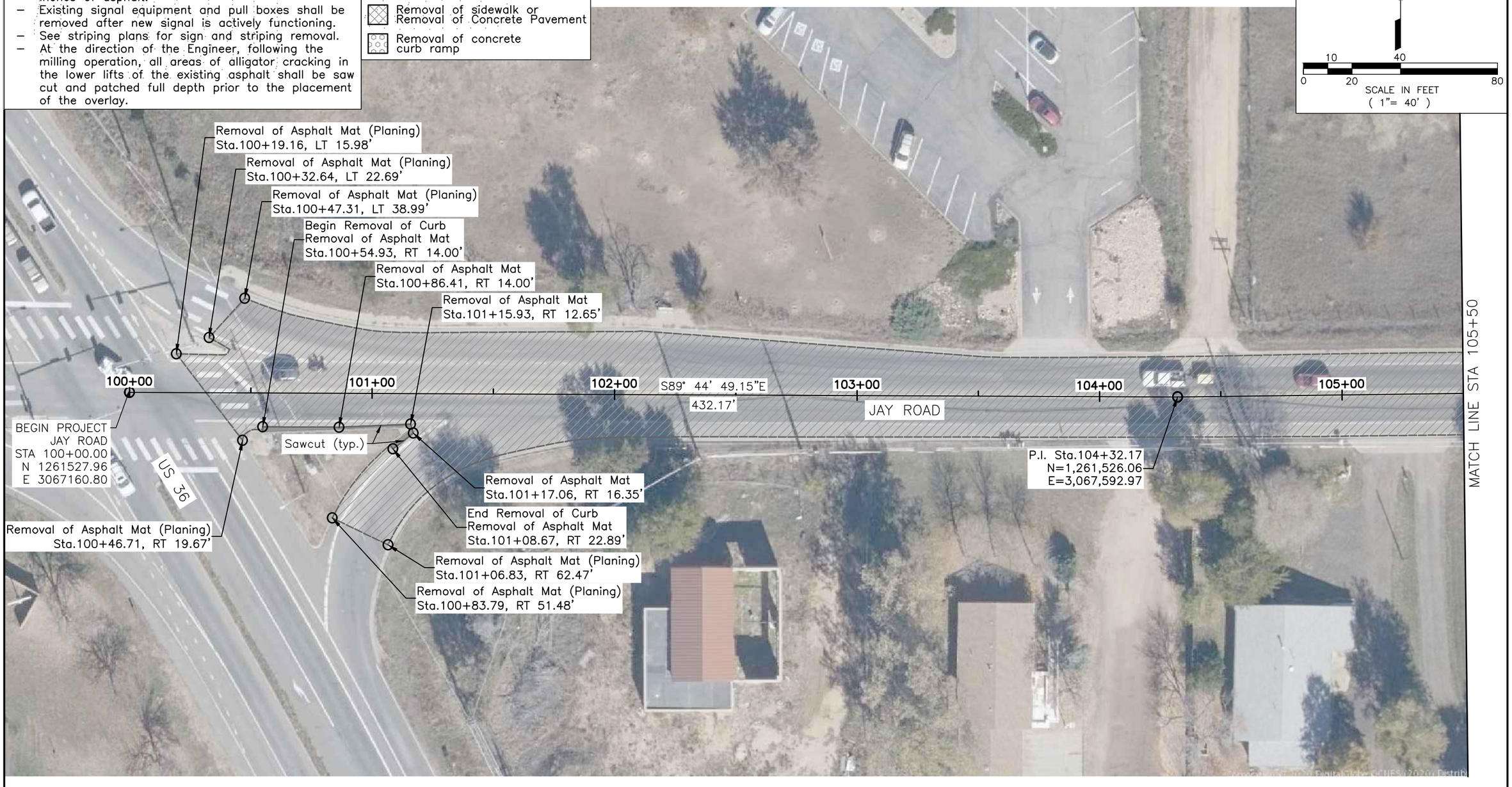
- See striping plans for sign and striping removal.
- At the direction of the Engineer, following the milling operation, all areas of alligator cracking in the lower lifts of the existing asphalt shall be saw cut and patched full depth prior to the placement of the overlay.

LEGEND:
- Removal of asphalt mat
- Removal of asphalt mat (Planing)
- Removal of sidewalk or Removal of Concrete Pavement
- Removal of concrete curb ramp

N

10 40
0 20 80
SCALE IN FEET
(1"= 40')



Print Date:	9/24/2020		
File Name:	Jay Rd-RMPL.dwg		
Horiz. Scale:	1" = 40'	Vert. Scale:	
City Project Manager			

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Sheet Revisions		
Date:	Comments	Init.

Boulder County

BOULDER COUNTY PUBLIC WORKS
2525 13TH STREET, SUITE 203
BOULDER, CO 80304
PHONE: (303) 413-7039
FAX: (303) 441-4594

As Constructed
No Revisions:
Revised:
Void:

Jay Road and 47th Street
Removal Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Removals	Subset Sheets:	1 of 14

Project Number
100070613
RS-044-0118
Sheet Number 14

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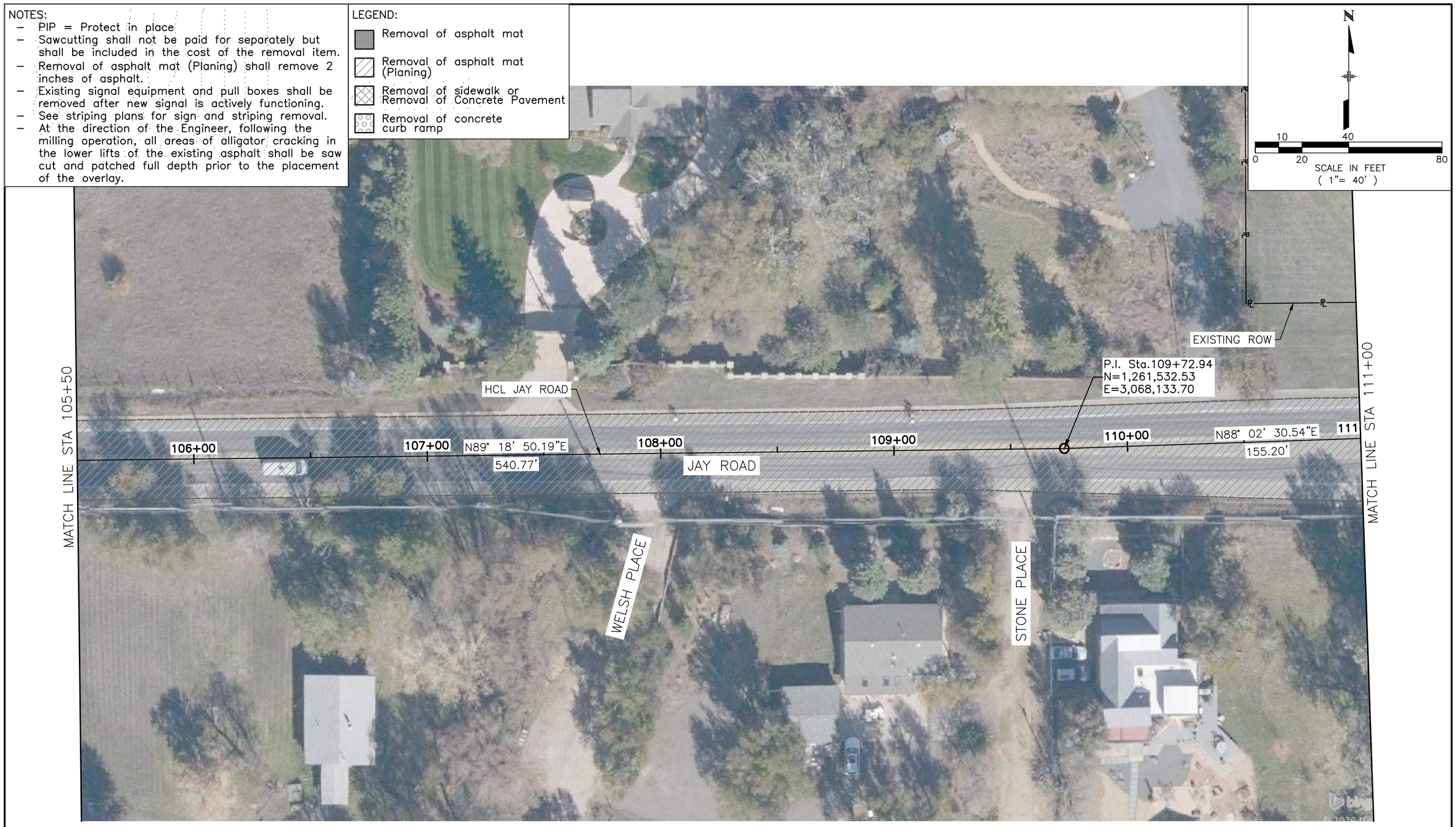

Print Date:	8/21/2020		
File Name:	Jay Rd-RMPL.dwg		
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Jay Road and 47th Street
Removal Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Removals	Subset Sheets:	2 of 14

Project Number
100070613
RS-044-0118
Sheet Number 15

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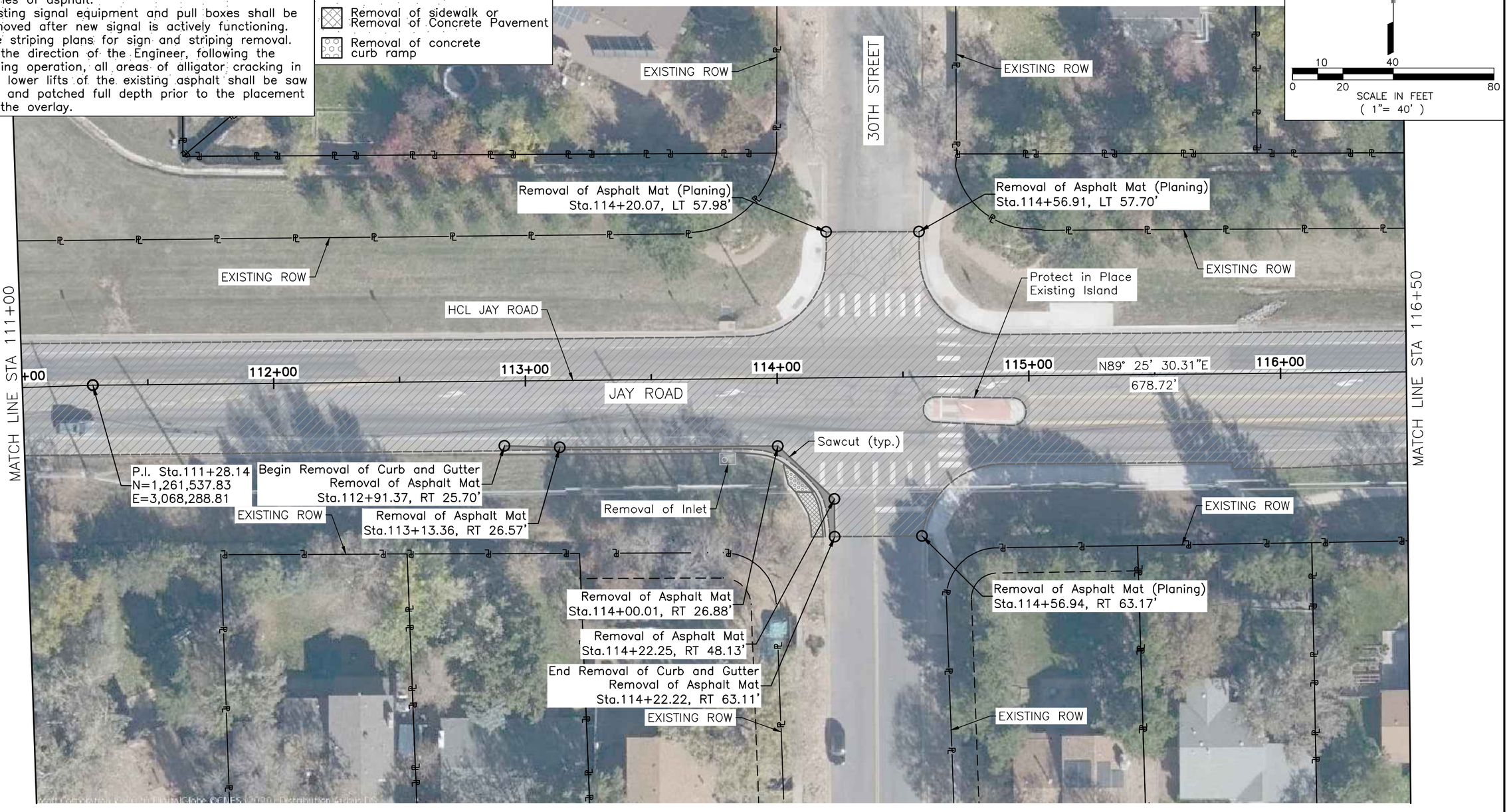

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Jay Road and 47th Street
Removal Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Removals	Subset Sheets:	3 of 14

Project Number
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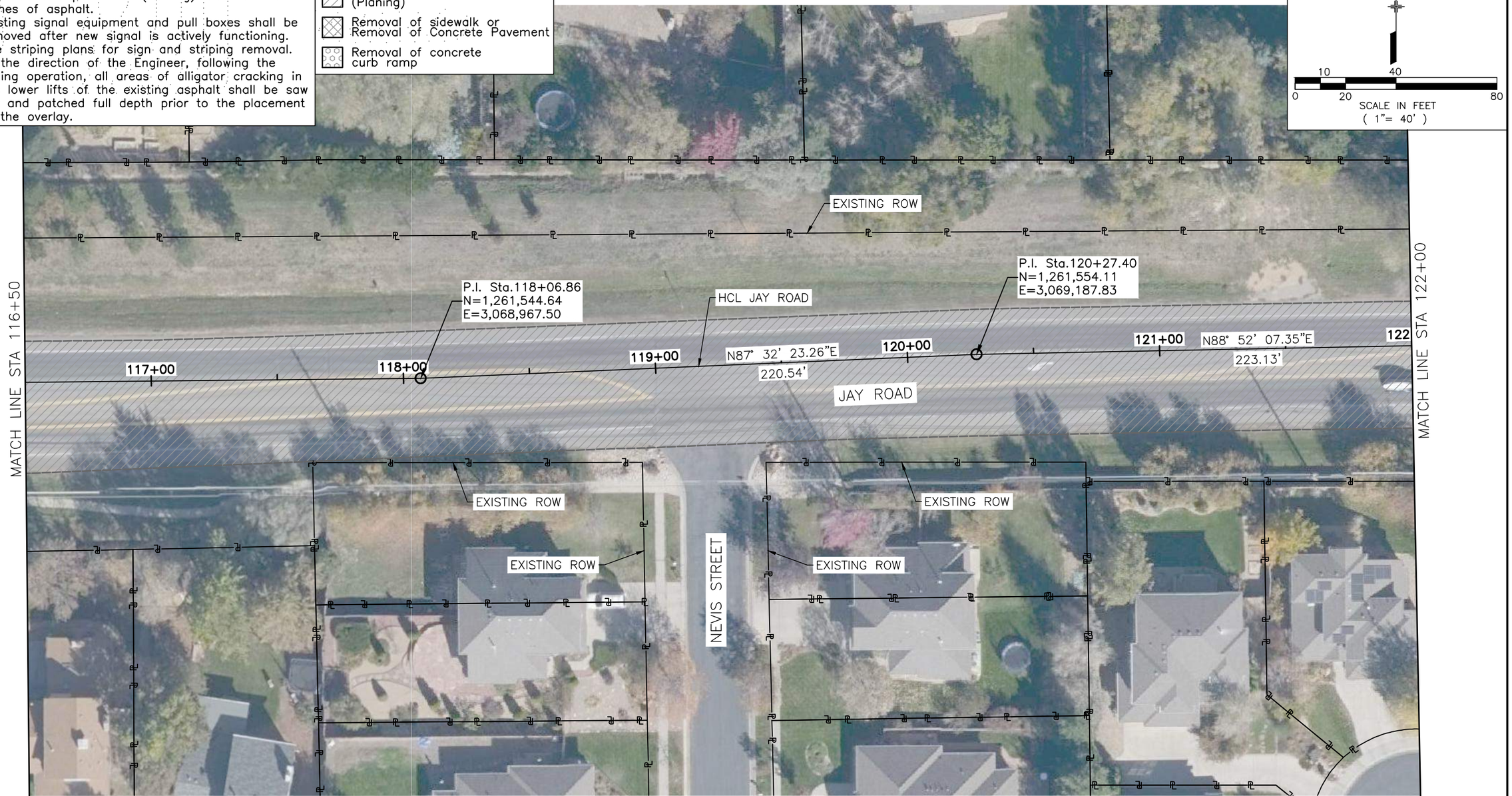

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Jay Road and 47th Street
Removal Plan

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Sheet Subset:	Removals	Subset Sheets:	4 of 14

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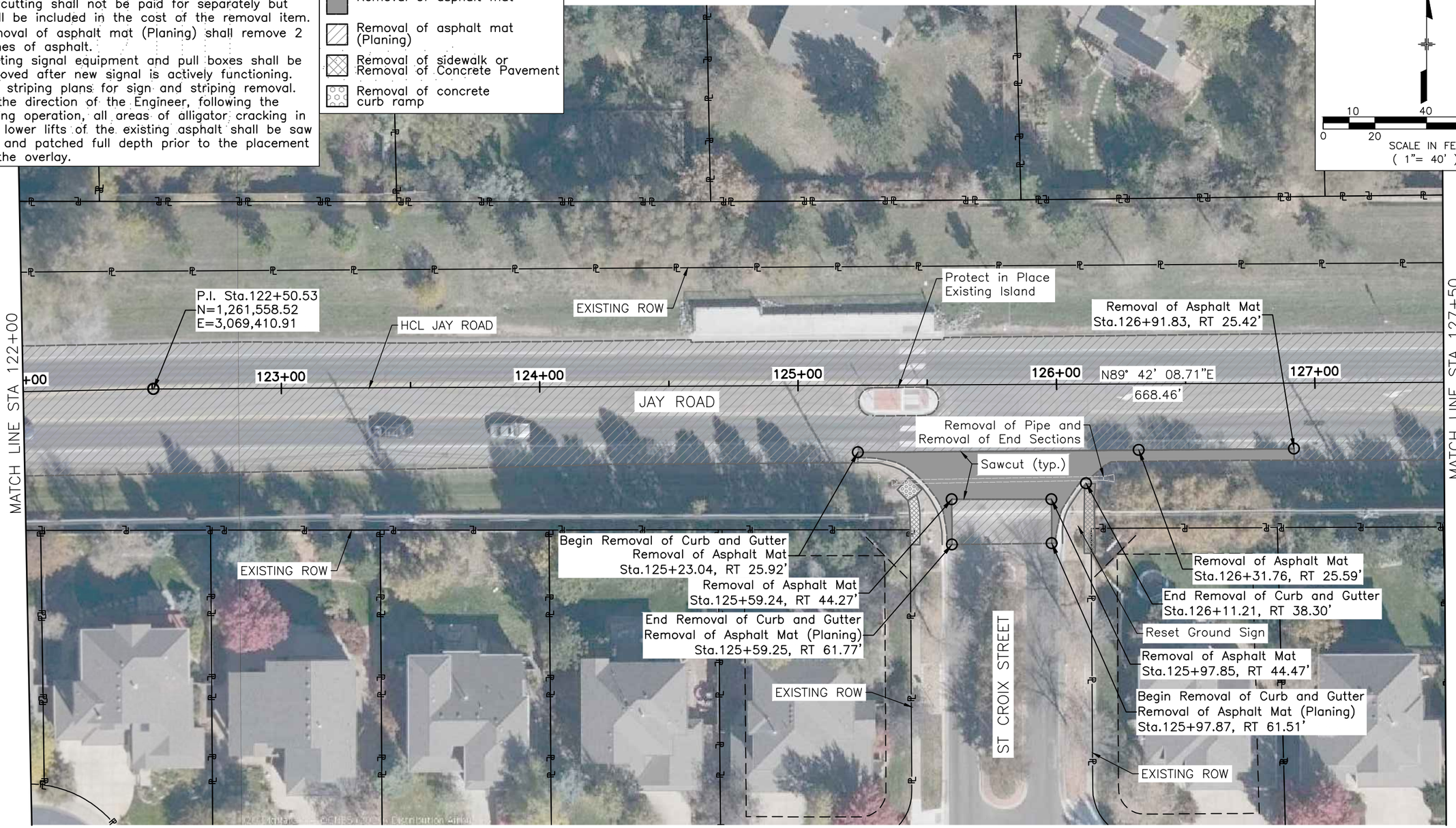

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Jay Road and 47th Street
Removal Plan

Designer:	LDL	Structure Numbers	
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Project Number
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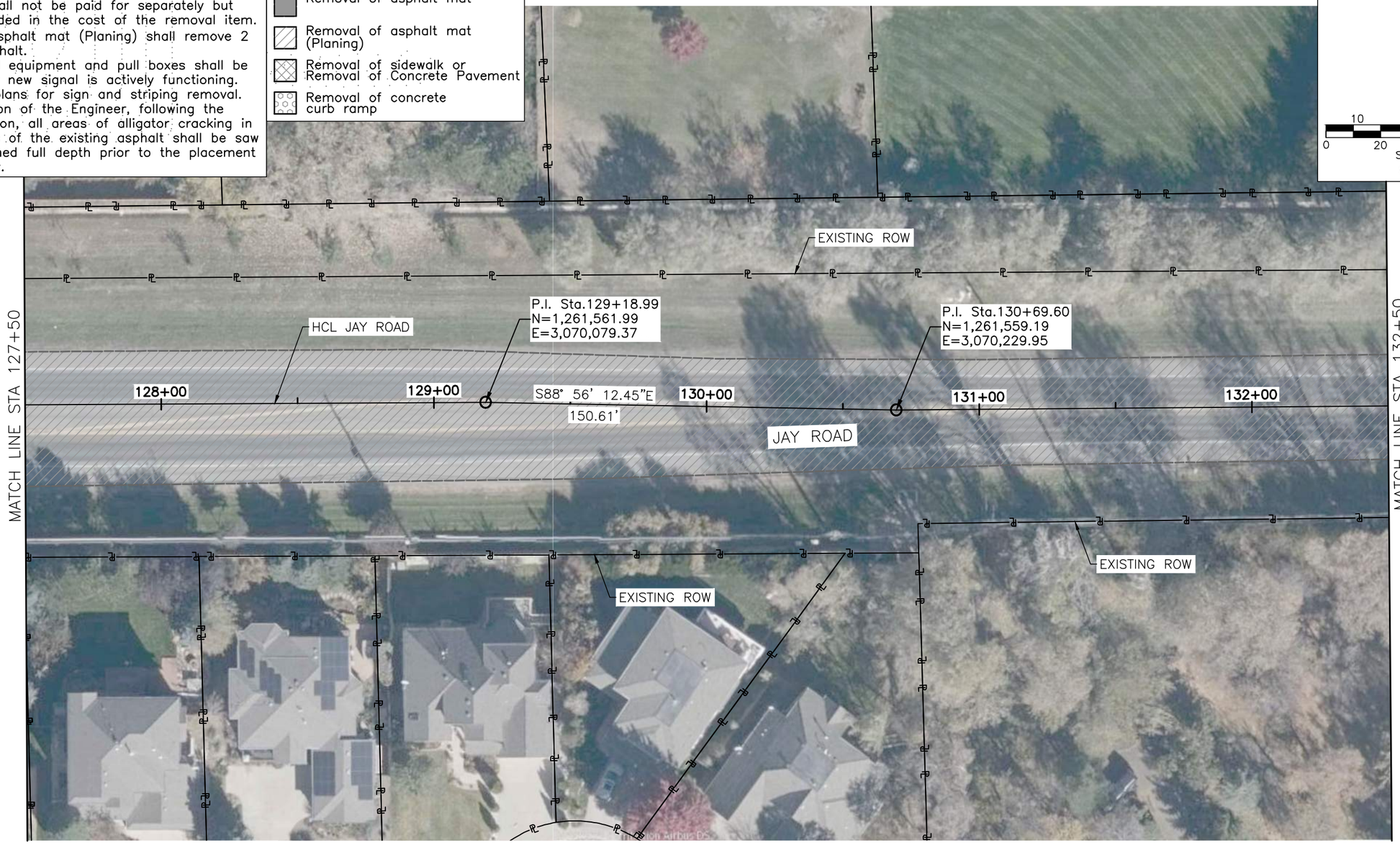

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Horiz. Scale: 1" = 40' Vert. Scale:		BOULDER, CO 80304	Revised:
City Project Manager		PHONE: (303) 413-7039	Void:
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Jay Road and 47th Street Removal Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Removals	Subset Sheets:	6 of 14

Project Number	
100070613	
RS-044-0118	
Sheet Number	19

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- Revised:
- Void:

Jay Road and 47th Street
Removal Plan

Designer:	LDL	Structure Numbers	
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Sheet Subset:	Removals	Subset Sheets:	7 of 14

Project Number
100070613
RS-044-0118
Sheet Number 20

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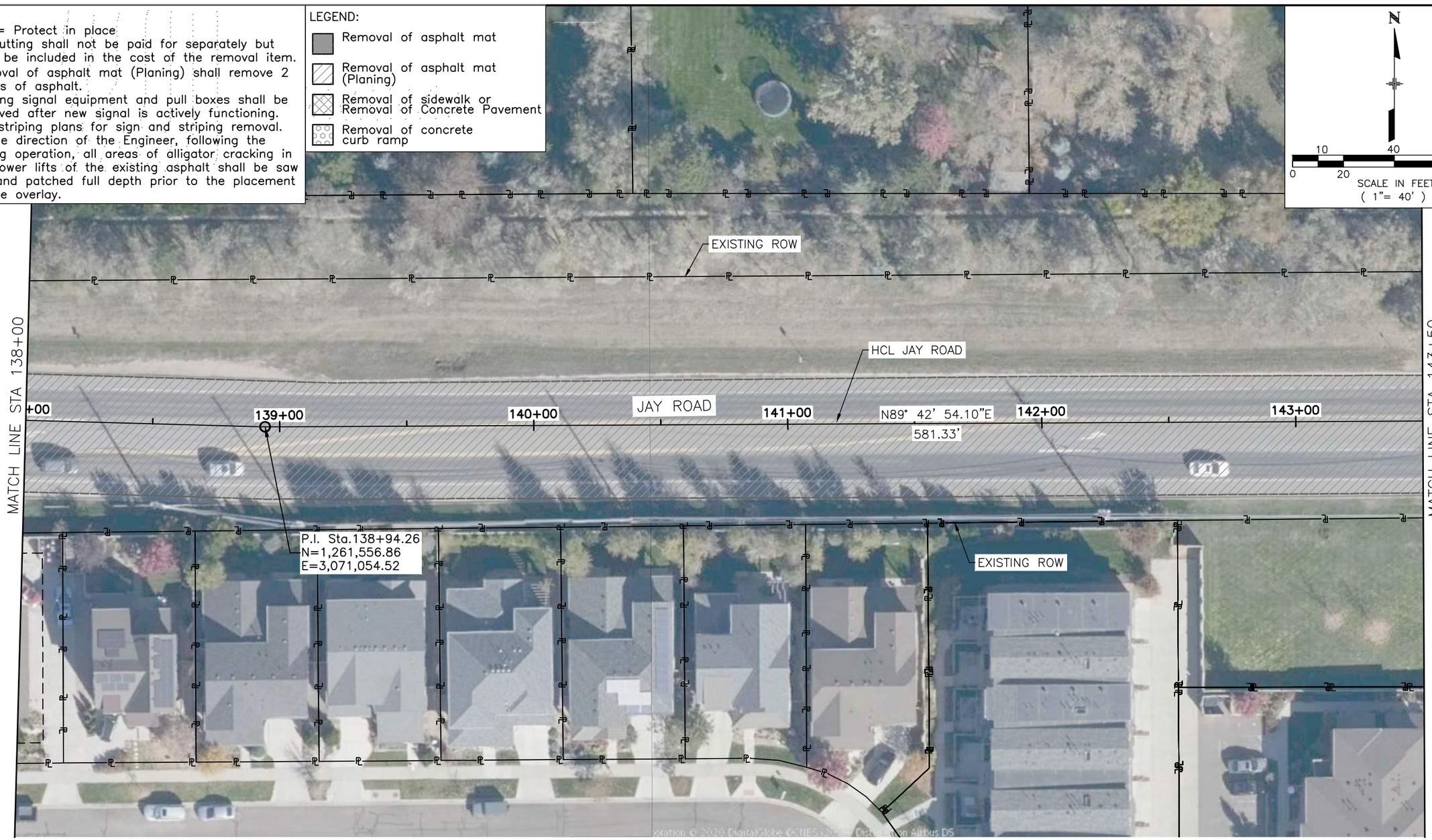

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Horiz. Scale:	1" = 40'	Vert. Scale:	
City Project Manager			

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Sheet Revisions

Date:	Comments	Init.

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As Constructed
No Revisions:
Revised:
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Jay Road and 47th Street Removal Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Removals	Subset Sheets:	8 of 14

Project Number
100070613
RS-044-0118
Sheet Number 21

MATCH LINE STA 2+50 – SEE SUBSET SHEET 14

47TH STREET

2+00

EXISTING ROW

End Removal of Curb and Gutter
Sta.144+14.63, LT 52.44'

Sawcut (typ.)

Begin Removal of Curb and Gutter
Removal of Asphalt Mat
Sta.143+81.62, LT 15.96'

Removal of Asphalt Mat
Sta.144+18.23, LT 35.76'

EXISTING ROW

Removal of Asphalt Mat
Sta.143+98.67, LT 15.93'

Reset Pull Box
(Adjust to New
Sidewalk Height)

Loop Detectors shall be removed prior to Removal of Asphalt Mat (Planing) and shall be paid for as part of Removal of Signal Equipment (LS)

EXISTING ROW

P.I. Sta.144+75.59
N=1,261,559.75
E=3,071,635.84

HCL JAY ROAD

MATCH LINE STA 143+50

144+00

145+00

146+00

147+00

S89° 40' 13.81"E
421.58'

148+00

149

MATCH LINE STA 149+00

1+00

JAY ROAD

Begin Removal of Curb and Gutter
Removal of Asphalt Mat
Sta.143+96.84, RT 29.55'

EXISTING ROW

PIP Utility Pole

PIP Signal Pole

Sawcut (typ.)

Removal of Asphalt Mat
Sta.144+07.57, RT 34.89'

Removal of Push Button Pole, Shall be paid for as part of Removal of Signal Equipment (LS)

Removal of Traffic Pull Box and Removal of Signal Controller, Shall be part of a future project.

Removal of Asphalt Mat (Planing)
Sta.144+64.07, RT 65.50'

Removal of Asphalt Mat
Sta.144+18.45, RT 54.15'

End Removal of Curb and Gutter
Removal of Asphalt Mat
Sta.144+18.43, RT 65.66'

P.I. Sta.148+97.18
N=1,261,557.33
E=3,072,057.42

0+00

47TH STREET

BEGIN PROJECT
47TH STREET
STA 0+00.00
N 1261454.91
E 3071600.88

EXISTING ROW

N

0 10 20 40 80

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Sheet Revisions		
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As Constructed	
No Revisions:	
Revised:	
Void:	

Jay Road and 47th Street
Removal Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Removals	Subset Sheets:	9 of 14

Project Number	
100070613	
RS-044-0118	
Sheet Number	22

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Horiz. Scale: 1" = 40' Vert. Scale:						Revised:	Designer: LDL / Structure Numbers	RS-044-0118
City Project Manager						Void:	Detailer: BJK	Sheet Number 23
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221-7275, Fax: 303/221-7276							Sheet Subset: Removals / Subset Sheets: 10 of 14	

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Project Number
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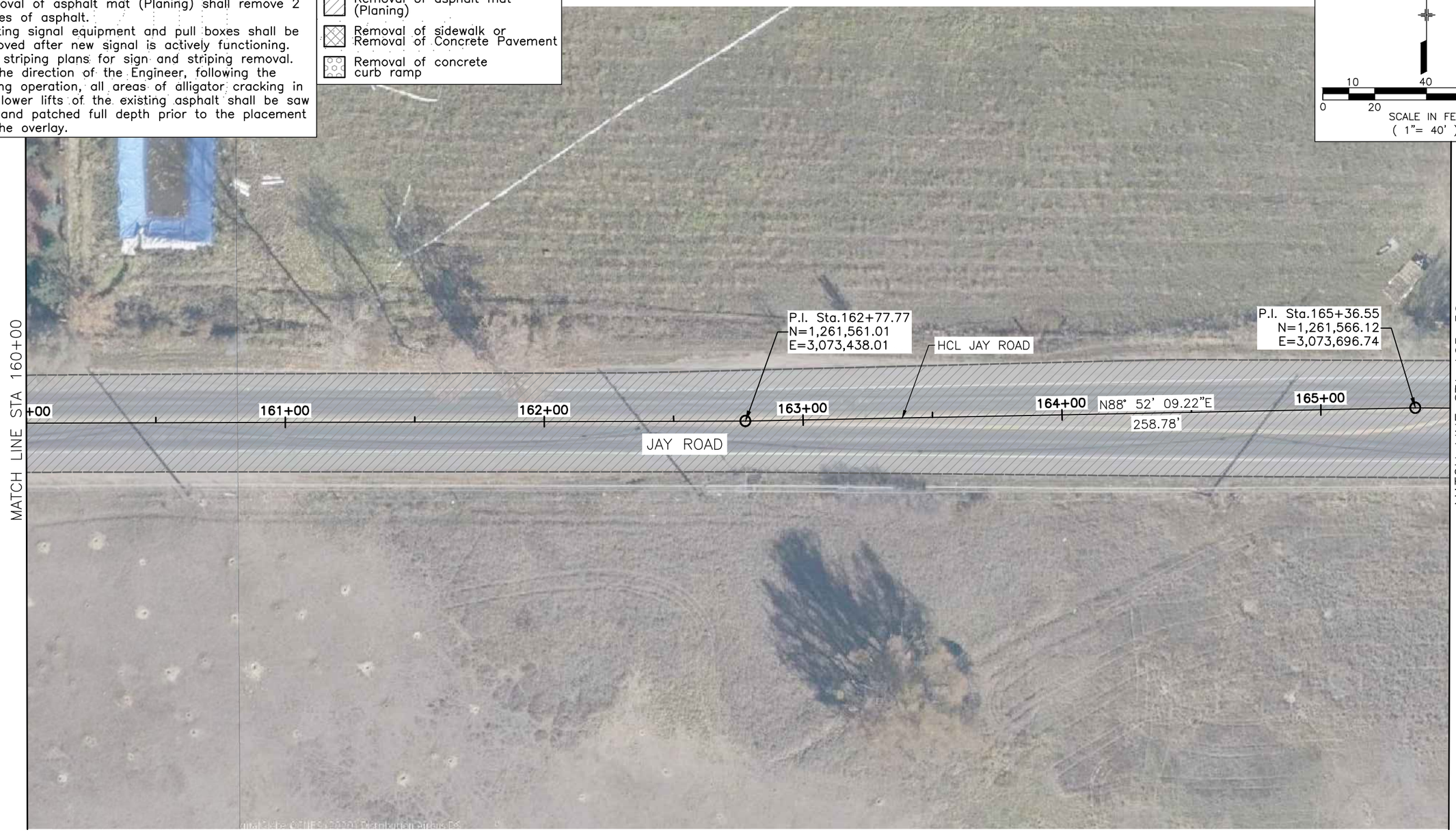

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Project Number
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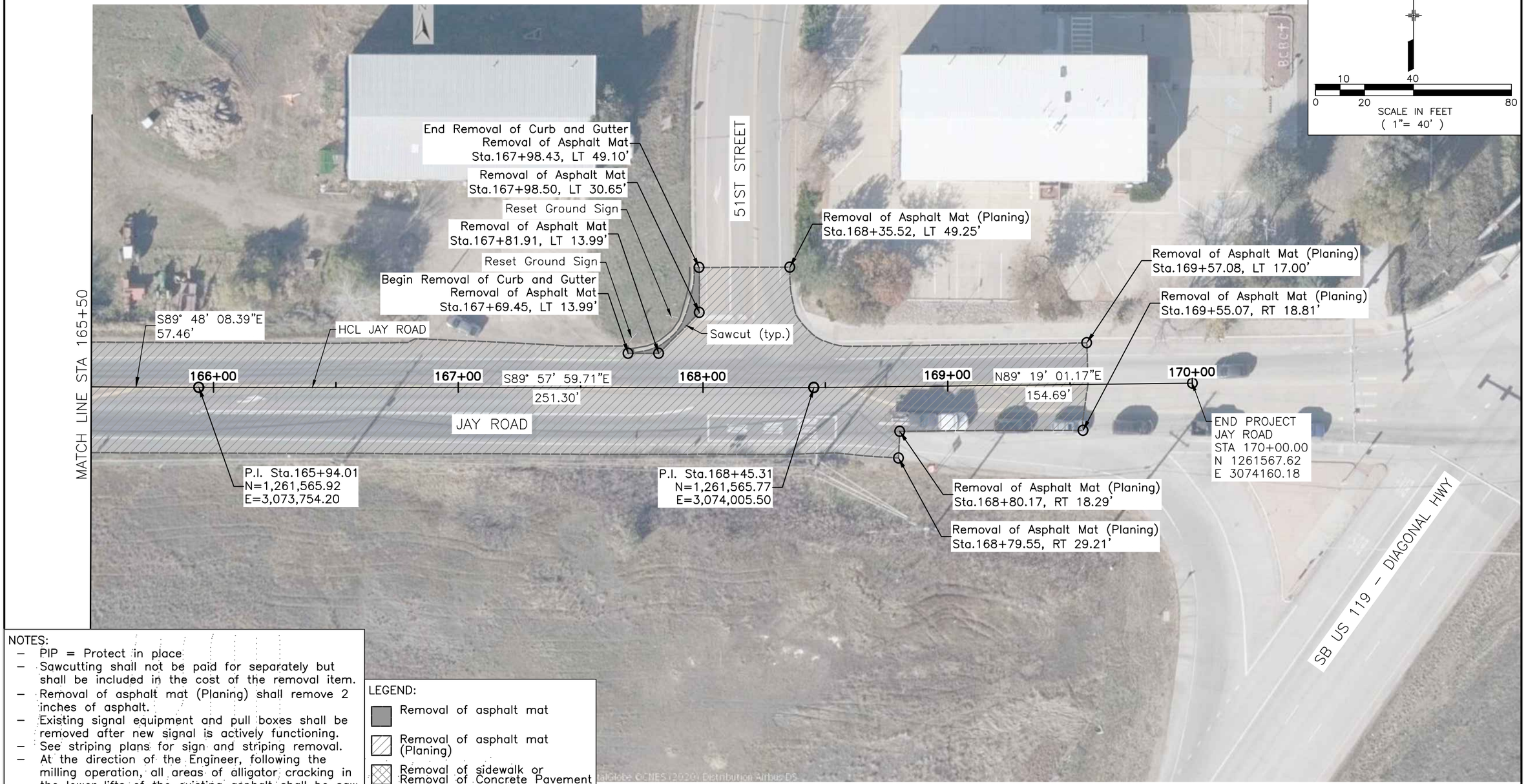

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- PIP = Protect in place
- Sawcutting shall not be paid for separately but shall be included in the cost of the removal item.
- Removal of asphalt mat (Planing) shall remove 2 inches of asphalt.
- Existing signal equipment and pull boxes shall be removed after new signal is actively functioning.
- See striping plans for sign and striping removal.
- At the direction of the Engineer, following the milling operation, all areas of alligator cracking in the lower lifts of the existing asphalt shall be saw cut and patched full depth prior to the placement of the overlay.

LEGEND:
- Removal of asphalt mat
- Removal of asphalt mat (Planing)
- Removal of sidewalk or Removal of Concrete Pavement
- Removal of concrete curb ramp

N

10 40
0 20 80
SCALE IN FEET
(1"= 40')

MATCH LINE STA 2+50 - SEE SUBSET SHEET 9

EXISTING ROW

Removal of Asphalt Mat
Sta.5+43.94, LT 61.03'

Removal of Asphalt Mat
Sta.5+43.93, LT 43.96'

Reset Fire Hydrant

Adjust Valve Box

Removal of Asphalt Mat
Sta.5+21.38, LT 21.42'

APPLE WAY

Removal of Asphalt Mat (Planing)
Sta.5+76.27, LT 61.17'

Removal of Asphalt Mat (Planing)
Sta.6+40.07, LT 19.50'

Removal of Asphalt Mat (Planing)
Sta.6+40.02, RT 1.94'

EXISTING ROW

Adjust Manhole

47TH STREET

Sawcut (typ.)

Sawcut (typ.)

3+00 4+00 5+00 6+00 7+00

N00° 28' 21.82"W
700.00'

HCL 47TH STREET

END PROJECT
47TH STREET
STA 7+00.00
N 1262154.89
E 3071595.10

EXISTING ROW

Print Date:	9/24/2020
File Name:	Jay Rd-RMPL.dwg
Horiz. Scale:	1" = 40'
Vert. Scale:	
City Project Manager	

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7604 Technology Way, Suite 400
Denver, CO 80237
Phone: 303/221-7275, Fax: 303/221-7276

Sheet Revisions		
Date:	Comments	Init.

Boulder County

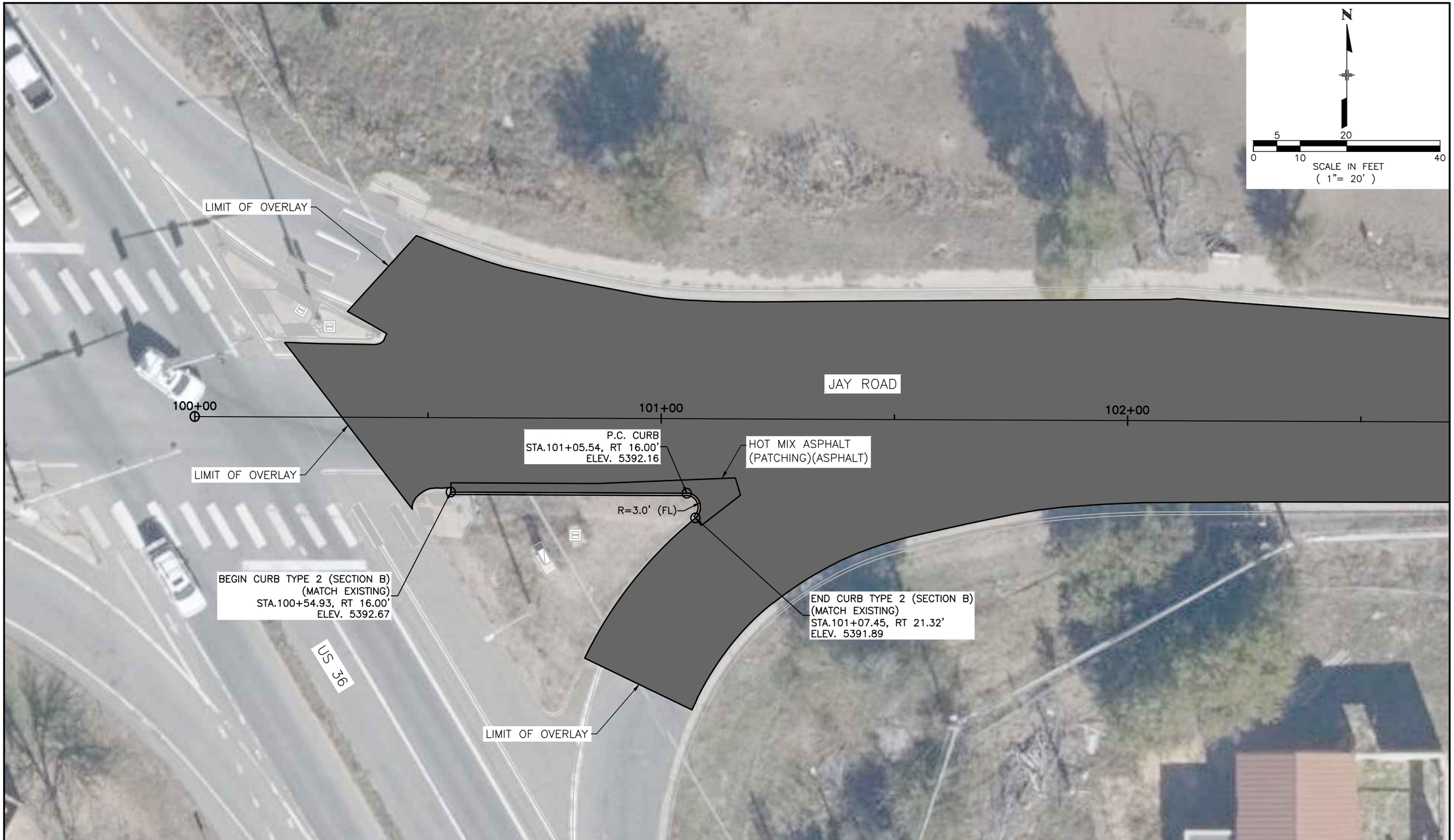
BOULDER COUNTY PUBLIC WORKS
2525 13TH STREET, SUITE 203
BOULDER, CO 80304
PHONE: (303) 413-7039
FAX: (303) 441-4594

As Constructed
No Revisions:
Revised:
Void:

Jay Road and 47th Street
Removal Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Removals	Subset Sheets:	14 of 14

Project Number
100070613
RS-044-0118
Sheet Number 27



Print Date: ----	Sheet Revisions		
File Name: Jay Rd-RDPL.dwg	Date:	Comments	Init.
Horiz. Scale: 1" = 20' Vert. Scale:			
City Project Manager			
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Boulder County

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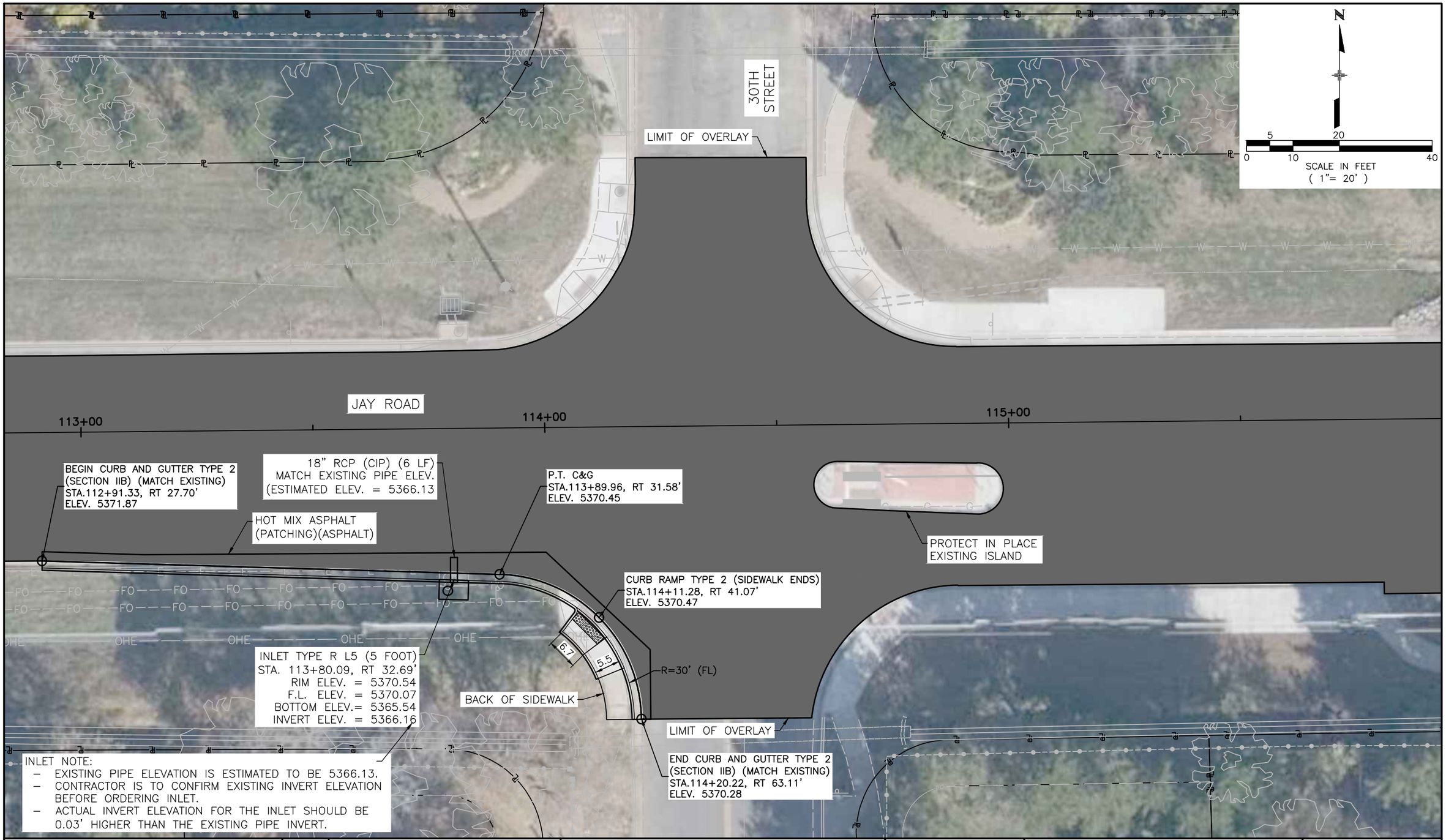
BOULDER, CO 80304
PHONE: (303) 413-7039
FAX: (303) 441-4594

As Constructed
No Revisions:
Revised:
Void:

Jay Road and 47th Street
Jay Road @ US 36 Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Roadway	Subset Sheets:	1 of 7

Project Number
100070613
RS-044-0118
Sheet Number 28



Print Date: 8/11/20	Sheet Revisions		
File Name: Jay Rd–RDPL.dwg	Date:	Comments	Init.
Horiz. Scale: 1" = 20' Vert. Scale:			
City Project Manager			
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Boulder County

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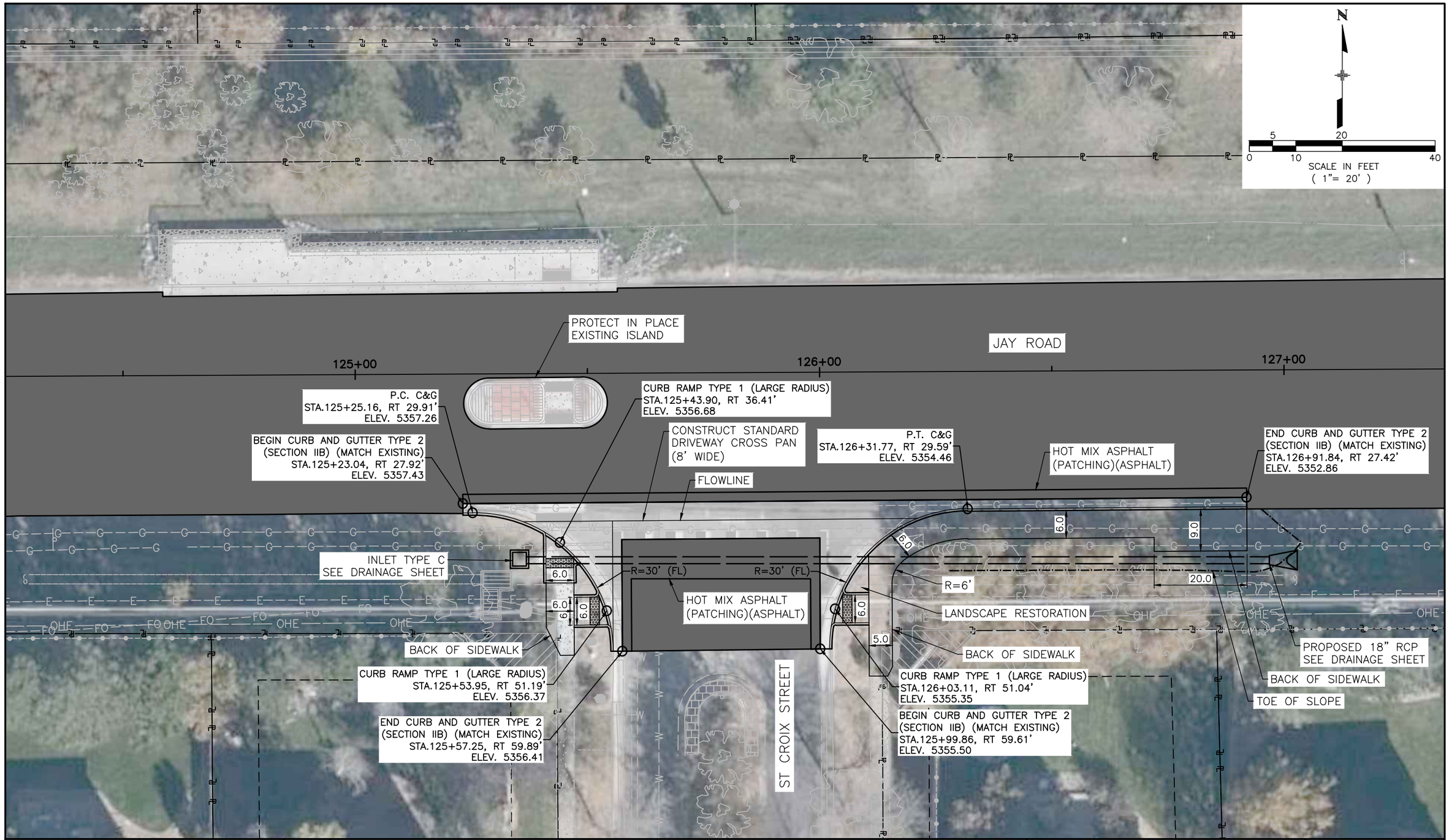
BOULDER, CO 80304
PHONE: (303) 413–7039
FAX: (303) 441–4594

As Constructed
No Revisions:
Revised:
Void:

Jay Road and 47th Street
Jay Road @ 30th Street Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Roadway	Subset Sheets:	2 of 7

Project Number
100070613
RS–044–0118
Sheet Number 29



Print Date: 8/11/20	Sheet Revisions	BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd–RDPL.dwg	Date: / Comments / Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:		BOULDER, CO 80304	Revised:
City Project Manager		PHONE: (303) 413–7039	Void:
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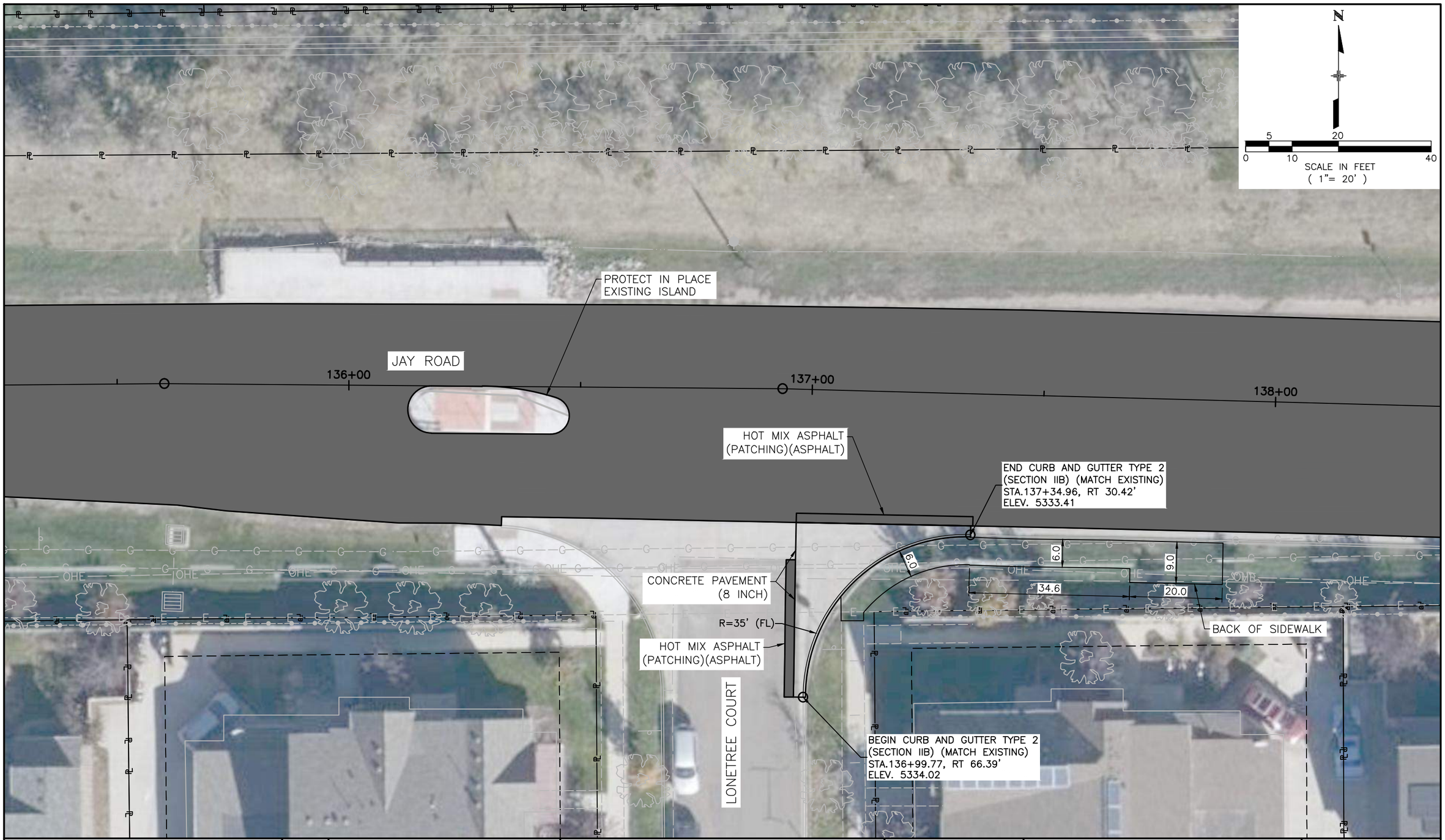
Jay Road and 47th Street	Designer: LDL	Structure Numbers	Project Number 100070613
Jay Road @ St Croix Street Plan	Detailer: BJK		RS–044–0118
	Sheet Subset: Roadway	Subset Sheets: 3 of 7	Sheet Number 30



Print Date: 8/11/20	Sheet Revisions			BOULDER COUNTY PUBLIC WORKS	As Constructed	Jay Road and 47th Street
File Name: Jay Rd–RDPL.dwg	Date:	Comments	Init.	2525 13TH STREET, SUITE 203	No Revisions:	Jay Road @ Lonetree Court Plan
Horiz. Scale: 1" = 20' Vert. Scale:				BOULDER, CO 80304	Revised:	Designer: LDL
City Project Manager				PHONE: (303) 413–7039	Void:	Detailer: BJK
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276				FAX: (303) 441–4594		Sheet Subset: Roadway
						Structure Numbers:
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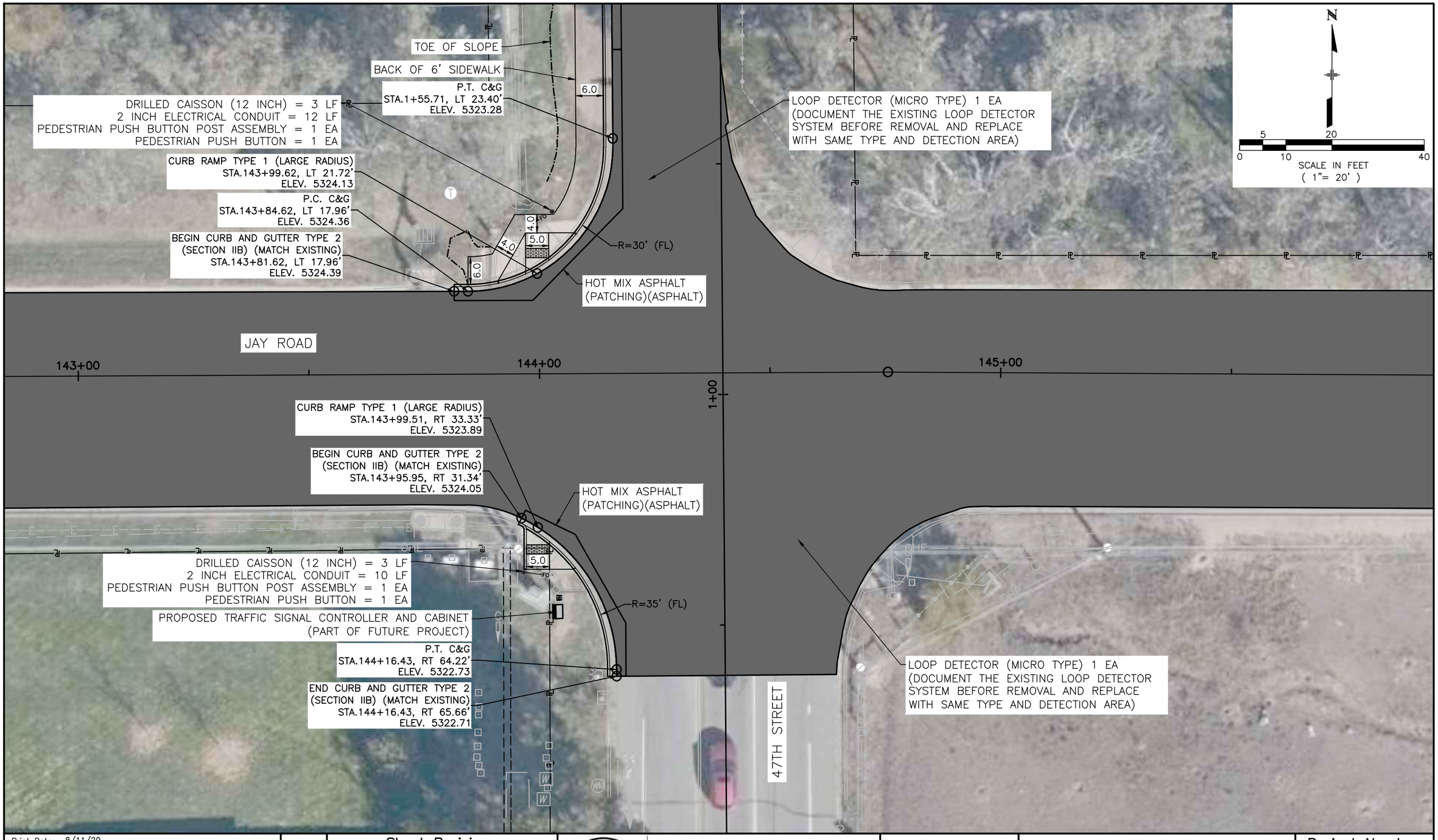
Project Number
100070613
RS–044–0118
Sheet Number 31



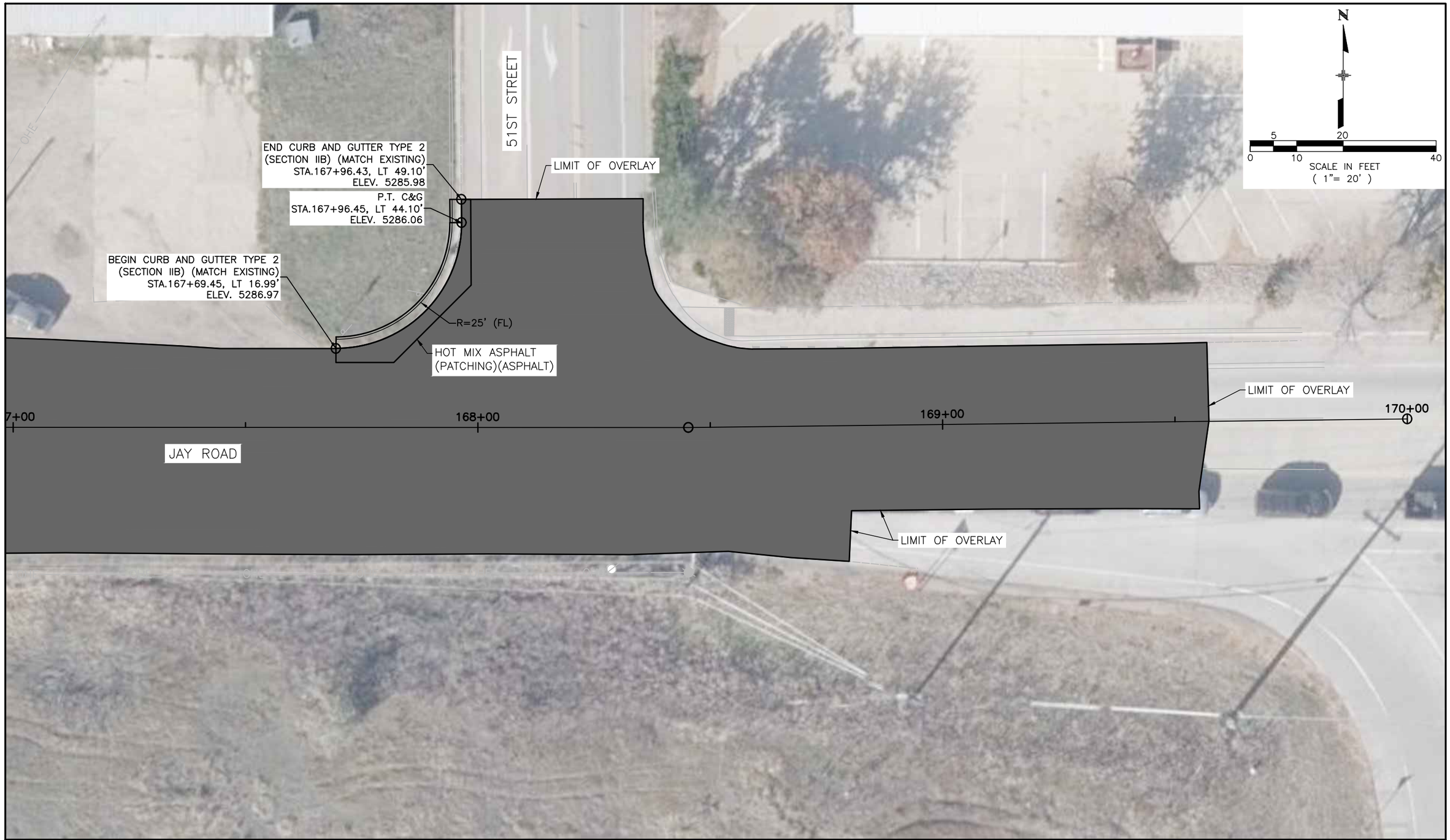
Print Date: 8/11/20	Sheet Revisions	BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd–RDPL.dwg	Date: / Comments / Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:		BOULDER, CO 80304	Revised:
City Project Manager		PHONE: (303) 413–7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276		FAX: (303) 441–4594	Designer: LDL / Detailer: BJK / Sheet Subset: Roadway

Jay Road and 47th Street
Jay Road @ 47th Street Plan

Structure Numbers

Subset Sheets: 5 of 7

Project Number
100070613
RS–044–0118
Sheet Number 32



Print Date: 8/11/20			
File Name: Jay Rd-RDPL.dwg			
Horiz. Scale: 1" = 20'	Vert. Scale:		
City Project Manager			
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221-7275, Fax: 303/221-7276			

Sheet Revisions

Date:	Comments	Init.

Boulder County

BOULDER COUNTY PUBLIC WORKS
2525 13TH STREET, SUITE 203
BOULDER, CO 80304
PHONE: (303) 413-7039
FAX: (303) 441-4594

As Constructed

No Revisions:

Revised:

Void:

Jay Road and 47th Street
Jay Road @ 51st Street Plan

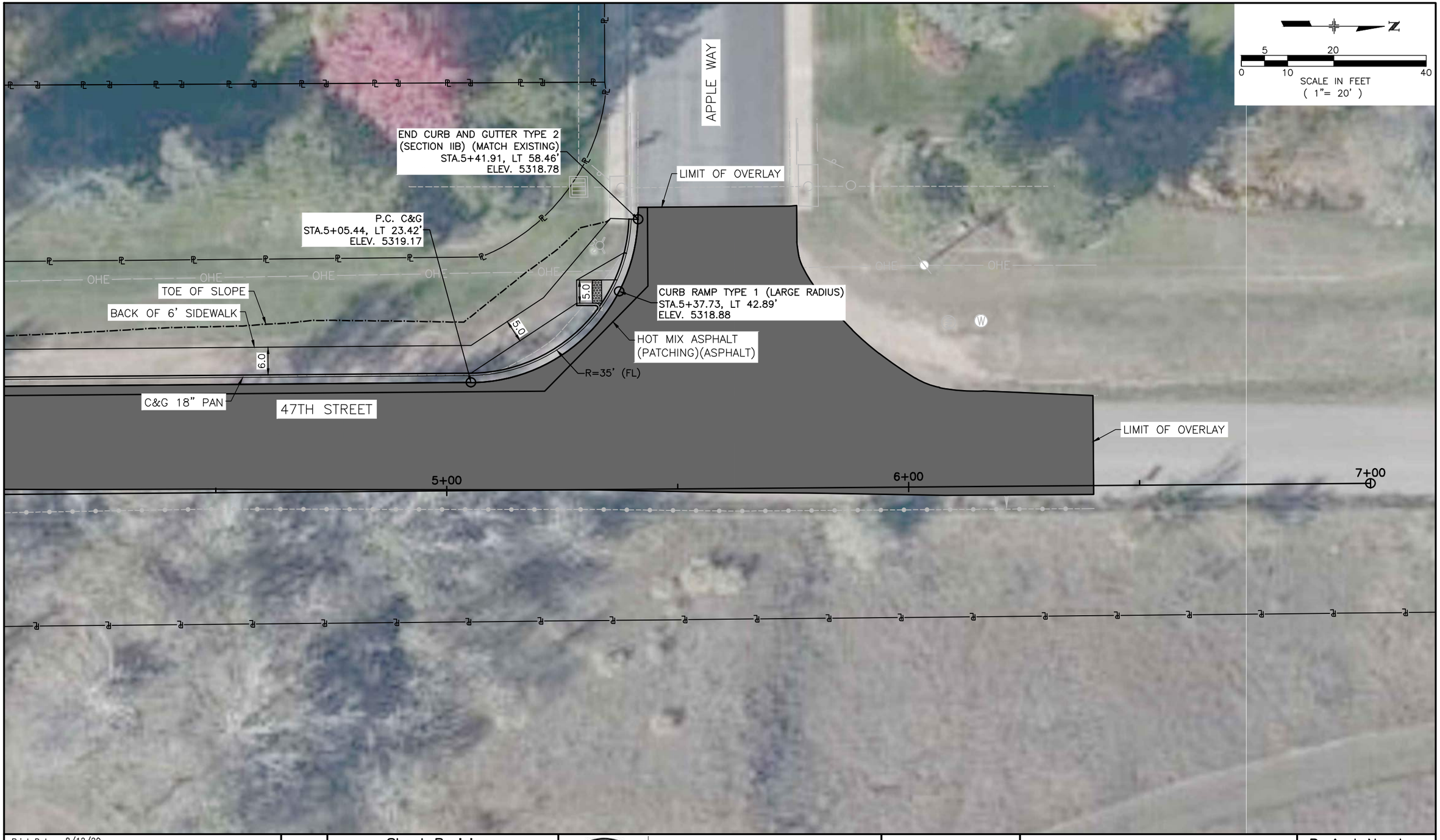
Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Roadway	Subset Sheets:	6 of 7

Project Number

100070613

RS-044-0118

Sheet Number 33



Print Date: 8/12/20		Sheet Revisions			BOULDER COUNTY PUBLIC WORKS
File Name: Jay Rd-RDPL.dwg		Date:	Comments	Init.	2525 13TH STREET, SUITE 203
Horiz. Scale: 1" = 20' Vert. Scale:					BOULDER, CO 80304
City Project Manager					PHONE: (303) 413-7039
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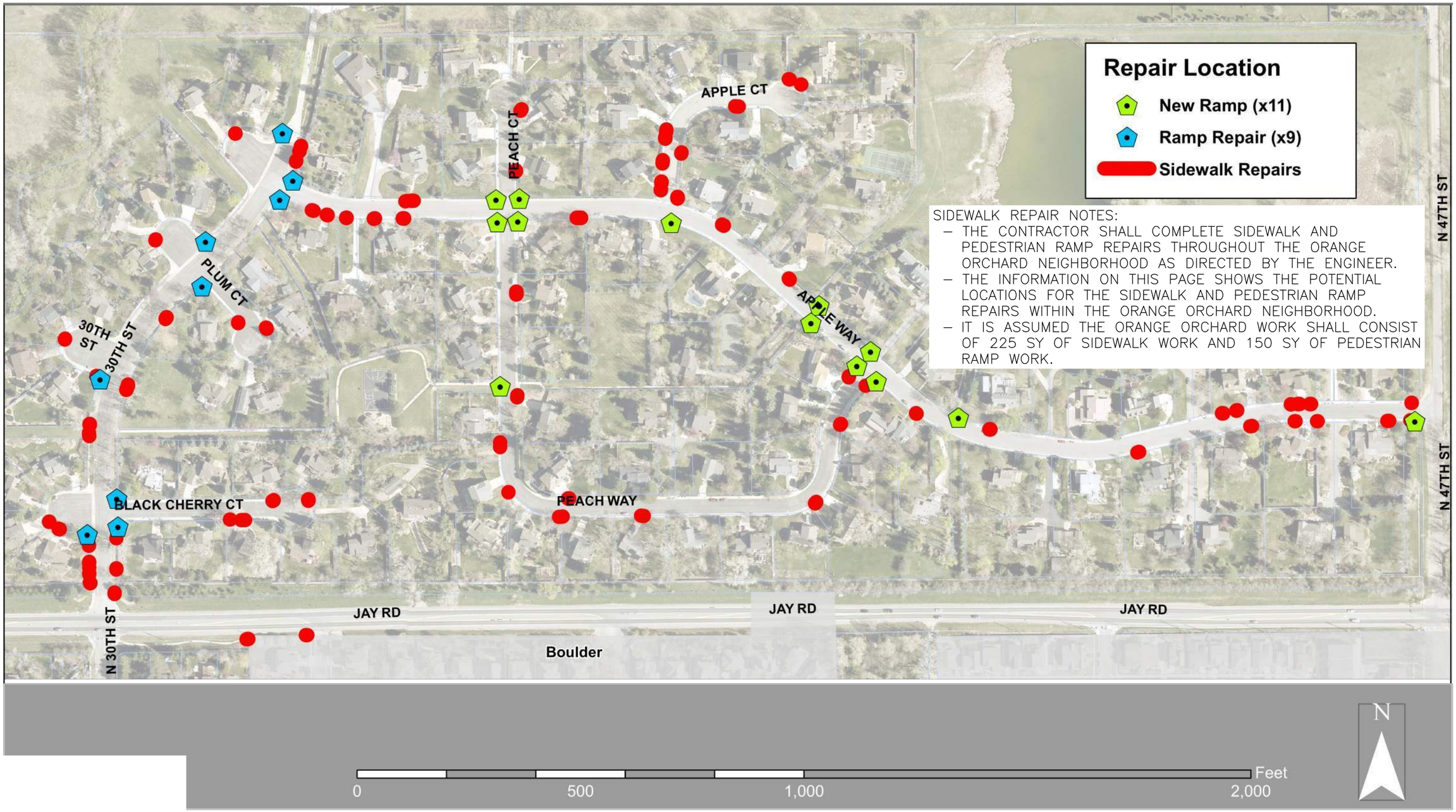
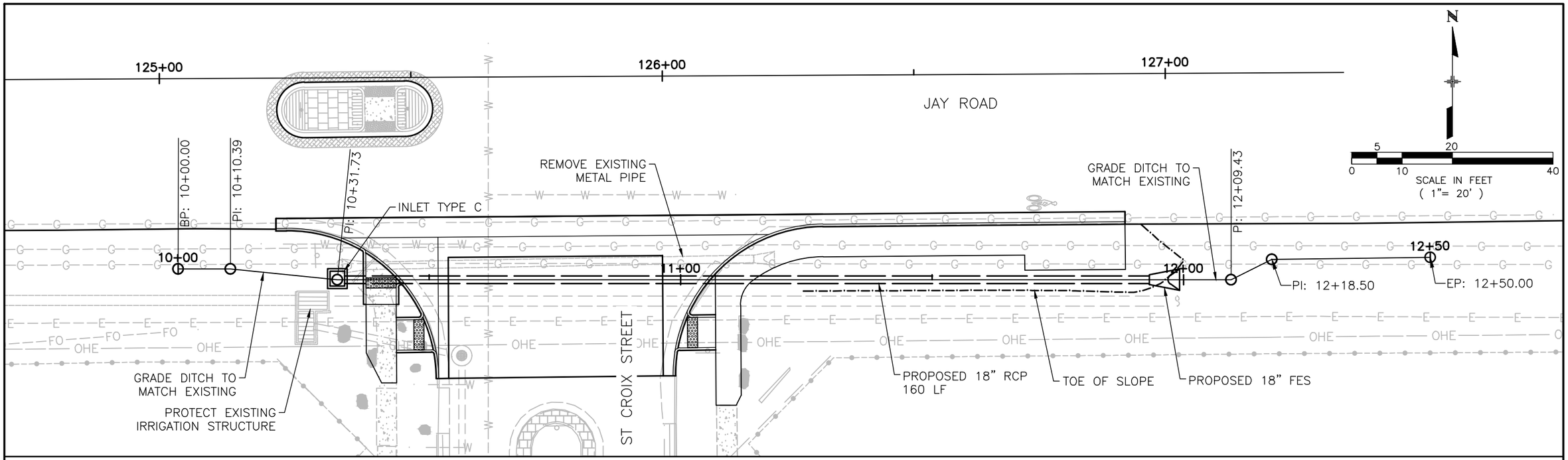
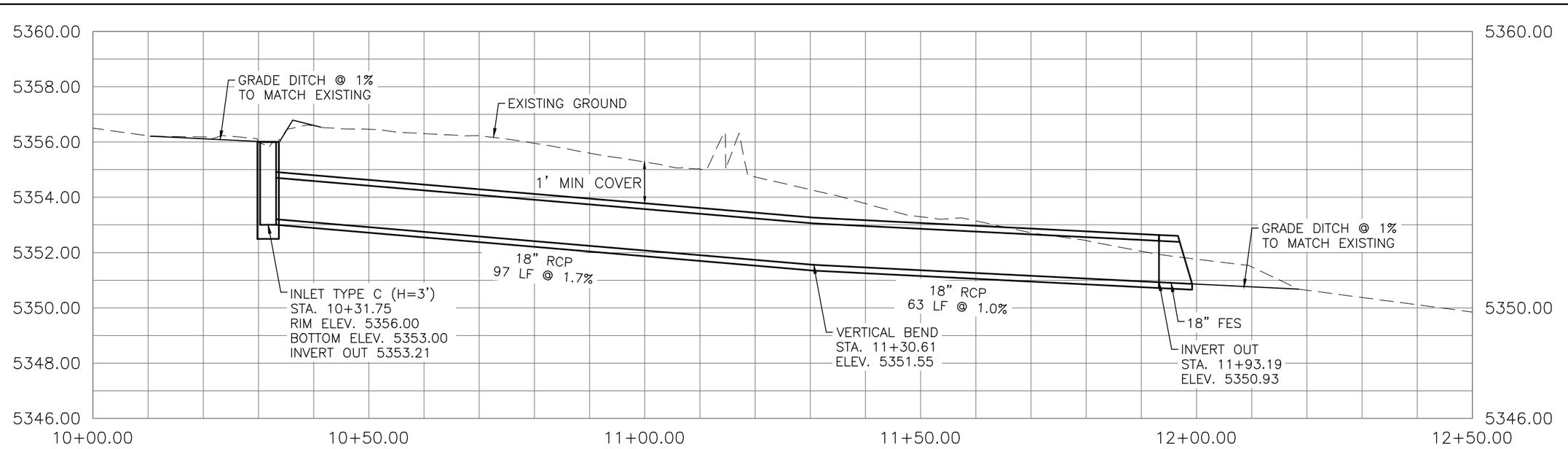
As Constructed	Jay Road and 47th Street 47th Street @ Apple Way Plan			Project Number
No Revisions:				100070613
Revised:	Designer: LDL	Structure Numbers		RS-044-0118
Void:	Detailer: BJK			Sheet Number 34
	Sheet Subset: Roadway	Subset Sheets: 7 of 7		



Print Date: ----		Sheet Revisions			BOULDER COUNTY PUBLIC WORKS	As Constructed	Jay Road and 47th Street Orange Orchard Sidewalks	Project Number
File Name: Jay Rd–Sidewalks.dwg		Date:	Comments	Init.	2525 13TH STREET, SUITE 203 BOULDER, CO 80304 PHONE: (303) 413–7039 FAX: (303) 441–4594	No Revisions:		100070613
Horiz. Scale: 1" = 20' Vert. Scale:						Revised:	Designer: LDL / Detailer: BJK / Sheet Subset: Sidewalks	RS–044–0118
City Project Manager						Void:	Structure Numbers / Subset Sheets: 1 of 1	Sheet Number 35
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276								





Print Date: 8/11/20	Sheet Revisions	BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd–DRPP.dwg	Date: / Comments / Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:		BOULDER, CO 80304	Revised:
City Project Manager		PHONE: (303) 413–7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276		FAX: (303) 441–4594	

St Croix – South Pipe
Plan & Profile

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	Drainage	Subset Sheets:	1 of 1

Project Number	
100070613	
RS–044–0118	
Sheet Number	36

1. SITE DESCRIPTION

The Contractor shall comply with all CDOT contractual requirements. The SWMP Administrator for Construction shall update to reflect current project site conditions.

A. PROJECT SITE LOCATION: The project is located North of the City of Boulder and is primarily along Jay Road in Boulder County. The project runs the entire length of Jay Road between US 36 on the West side and SH 119 on the East side and along 47th Street between Jay Road and Apple Way.

B. PROJECT SITE DESCRIPTION: This is primarily a resurfacing project, with some ADA pedestrian ramp improvements including a new sidewalk along the West side of 47th Street. As a part of the ADA improvements, some concrete work will be required like curb and gutter and cross pan construction. Also, there will be some drainage pipe and inlet construction to solve some existing issues. After resurfacing, comprehensive stripping will be completed to improve bike mobility along the corridor.

C. PROPOSED SEQUENCING FOR MAJOR CONSTRUCTION ACTIVITIES: Construction phasing is expected as follows: Construction of drainage items, construction of curb & gutter and cross pans, construction of sidewalk, milling of asphalt, asphalt overlay and final striping.

D. ACRES OF DISTURBANCE:

1. Total area of construction site (LOC): 0.25 acres
2. Total area of proposed disturbance (LDA): 0.20 acres
3. Total area of seeding: 0.11 acres

E. EXISTING SOIL DATA: The project area is primarily Valmont Clay Loam with clay loam, clay and very gravelly loam.

F. EXISTING VEGETATION, INCLUDING PERCENT COVER:
During design the SWMP Administrator for Design in consultation with the Engineer will determine if the SWMP Administrator for Design or the SWMP Administrator for Construction will conduct the Vegetation Transects as outlined in Chapter 4.11.2 of the CDOT's Erosion Control and Stormwater Quality Guide.

Pre-Construction Date of survey: _____ % Density: _____
Description of existing vegetation:
Map or table showing transect locations in SWMP tab 17:

Post-Construction Date of survey: _____ % Density: _____
Description of existing vegetation:
Map or table showing transect locations in SWMP tab 17:

2. STORMWATER MANAGEMENT CONTROLS FOR FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

A. POTENTIAL POLLUTANT SOURCES

1. Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place any Control Measures required to contain potential pollutants.

B. OFFSITE DRAINAGE (RUN ON WATER)

1. Place Control Measures to address run-on water in accordance with subsection 208.03.

C. CONSTRUCTION DEWATERING:

1. Obtain a CDPS Dewatering Permit from CDPHE if conditions of their Low Risk Guidance for Discharges of Uncontaminated Groundwater to Land are not met; see subsections 107.02 and 107.25.

   Refer to CDPHE Low Risk Discharge Guidance Document of Uncontaminated Groundwater to Land.
   https://www.colorado.gov/pacific/sites/default/files/WQ%20LOW%20RISK%20GW.pdf

D. VEHICLE TRACKING CONTROL

1. Control Measures shall be implemented in accordance with subsection 208.04.

E. PERIMETER CONTROL

1. Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters.
2. Perimeter control may consist of berms, silt fence, erosion logs, existing landforms, or other Control Measures as approved.

3. QUALIFIED STORMWATER MANAGERS:

A. SWMP ADMINISTRATOR FOR DESIGN: CDOT Certified Individual responsible for developing SWMP Plan Sheets and SWMP Site Maps during the design phase.

Name/Title	Contact Information
Loren Lauvray	720-475-7100 Loren.Lauvray@Atkinsglobal.com

B. SWMP ADMINISTRATOR FOR CONSTRUCTION: (As defined in Subsection 208) The Contractor shall designate a SWMP Administrator for Construction. The SWMP Administrator for Construction shall become the operator for the SWMP and assume responsibility for all design changes to the SWMP implementation and maintenance in accordance to 208.03, the SWMP shall remain the property of CDOT. The SWMP Administrator for Construction shall be responsible for implementing, maintaining and revising SWMP, including the title and contact information. The activities and responsibilities of the SWMP Administrator for Construction shall address all aspects of the project's SWMP. (Update the information below for each new SWMP Administrator for Construction) (Copy of TECS Certification must also be included in the SWMP.)

Name/Title	Contact Information (phone & email)	Certification #	Start Date	Engineer Approval

C. PERMANENT STABILIZATION SUBJECT MATTER EXPERT: This qualified individual will be either a Regional Environmental Staff member, or an Independent Contractor Controller (Independent Assurance Program). This expert is a project team leader responsible for ensuring project adherence to requirements of the 207 and 212 Project Special Provisions as follows, and will be available for questions regarding permanent stabilization requirements.

1. Review the Topsoil Management Plan and the Permanent Stabilization Site Maps.
2. Attend the Environmental Pre-construction Conference.
3. Coordinate the Site Pre-vegetation Conference.
4. Review and recommend approval of products.
5. Review and recommend approval of the Quantities Verification Prerequisite.
6. Attend the Substantial Landscape Completion Walkthrough.
7. Attend the Final Landscape Completion Walkthrough.

Name/Title	Contact Information

4. DURING CONSTRUCTION

The SWMP should be considered a "living document" that is continuously reviewed and modified. During construction, the following items shall be added, updated, or amended as needed by the Contractor in accordance with Section 208

A. MATERIALS HANDLING AND SPILL PREVENTION: prior to construction commencing the Contractor shall submit a Spill Prevention, Control and Countermeasure Plan, see subsection 208.06. Materials handling shall be in accordance with subsection 208.06.

B. STOCKPILE MANAGEMENT: shall be done in accordance with subsections 107.25 and 208.07

C. CONCRETE WASHOUT: Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.

Template Revised: 9/1/20

Print Date: 8/11/20	Sheet Revisions			BOULDER COUNTY PUBLIC WORKS	As Constructed	Jay Road and 47th Street SWMP Narrative	Project Number
File Name: Jay Rd-SWMP-Narrative.dwg	Date:	Comments	Init.	2525 13TH STREET, SUITE 203 BOULDER, CO 80304 PHONE: (303) 413-7039 FAX: (303) 441-4594	No Revisions:		100070613
Horiz. Scale: n/a Vert. Scale:					Revised:	Designer: LDL / Detailer: BJK / Structure Numbers	RS-044-0118
City Project Manager					Void:	Sheet Subset: SWMP Nar / Subset Sheets: 1 of 5	Sheet Number 37
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D. SAW CUTTING: shall be done in accordance with subsections 107.25, 208.04, 208.05

E. STREET SWEEPING: shall be done in accordance with subsection 208.04

5. CONTROL MEASURE MAINTENANCE

A. Maintenance shall be in accordance with subsection 208.04 (f).

6. INTERIM AND PERMANENT STABILIZATION

The Contractor shall comply with all interim stabilization and permanent stabilization requirements in accordance with subsection 208.04(e).

A. SEEDING PLAN

COMMON NAME	BOTANICAL NAME	LBS. PLS PER ACRE
Side Oats Grama	Bouteloua Curtipendula - Vaughn	2.74
Blue Grama	Bouteloua Gracilis – Native, Alma, or Hachita	0.84
Buffalograss	Buchloe Dactyloides – Native	9.33
Western Wheatgrass	Pascopyrum Smithii – Arriba	3.96
Western Wheatgrass	Pascopyrum Smithii – Native	3.96
Little Bluestem	Schizachyrium Scoparium – Cimarron or Pastura	1.74
Green Needlegrass	Stipa Viridula – Lodorm or Native	2.31
TOTAL		24.88

B. SEEDING APPLICATION: The following seeding methods shall be used for all areas which are not surfaced and as shown on the Permanent Stabilization Site Maps. Soil compaction shall be minimized for areas where permanent stabilization will be achieved through vegetative cover.

SEEDING METHOD (subsection 212.05)	ACRE
Seeding (Native) Drill, CDOT Pay Item 212-00706	0.11
TOTAL	

The Contractor shall provide the location of where seed is stored and access to stored seed locations to the Engineer. Seed stored by the Contractor for longer than 30 days will be rejected.

C. MULCHING APPLICATION: Apply a minimum of 2 tons of certified weed free hay or 2 1/2 tons of certified weed free straw per acre and in accordance with Section 213, and mechanically crimp it into the soil in combination with an organic mulch tackifier.

1. Prior to winter shutdown or the summer seeding window closure: Uncompleted slopes shall be mulched with 2 tons of mulching (weed free) per acre, mechanically crimped into the topsoil in combination with an organic mulch tackifier in accordance with subsections 208 and 213.

D. SPECIAL REQUIREMENTS:

1. The Contractor shall increase the Seeding Plan rates (LBS. PLS / Acre) as shown by 1.5 times for hydraulic and broadcast methods at no additional cost to the Department.
2. Soil amendments, seedbed preparation, and permanent stabilization mulching shall be accomplished within four working days of placing the topsoil on the de-compacted civil subgrades. If placed topsoil is not mulched with permanent stabilization mulch within four working days, the Contractor shall complete interim stabilization methods in accordance with subsection 208.04(e) at no additional cost to the Department.
3. Permanent stabilization mulching shall be accomplished within 24 hours of hydraulic application of native seed.
4. The Contractor shall submit a proposed Permanent Stabilization Phasing Plan to the Engineer for approval showing how the SWMP Permanent Stabilization Plans will be implemented to minimize damage to seeded areas.

E. SOIL AMENDMENT REQUIREMENTS: Minimum amendment material requirements for all disturbances to receive seeding (native).

Total Acres of Seeding (Native) Drill

Seeding (Native)Drill Pay Item 212-00706	Pay Item	Description	Amount/Acre	Units	Total For This Method
	212-00700	Organic Fertilizer		Pounds	
	212-00701	Compost (Mechanically Applied)	0.11	CY	15
	212-00703	Humate		Pounds	
	212-00704	Mycorrhizae		Pounds	
	212-00705	Elemental Sulfur		Pounds	

F. SOIL RETENTION COVERING: On slopes and ditches requiring a blanket or turf reinforcement mat (trm), the blanket/trm shall be placed in lieu of mulch and mulch tackifier and placed after seeding (native). See SWMP Site Map for blanket/trm locations.

G. Permanent Stabilization Application Under Structures: Under structures shade patterns should be considered and the use of Median Cover Material (Stone) or other stabilized options with an approved Project Special Provision should be used. See SWMP Site Map for locations.

H. RESEEDING OPERATIONS/CORRECTIVE STABILIZATION:
Prior to partial acceptance.

1. All seeded areas shall be reviewed by the SWMP Administrator for Construction and or Engineer for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be re-graded, seeded, and have the designated mulching applied as necessary, at no additional cost to the project.
2. The Contractor shall maintain seeding/mulch/tackifier/blanket/TRM, mow to control weeds or apply herbicide to control weeds in the seeded areas until Partial Acceptance of the stormwater construction work.

7. PRIOR TO PROJECT FINAL ACCEPTANCE

A. Partial Acceptance shall be in accordance with subsections 208.10 and 214.04. At the Partial Acceptance of the project, it shall be determined by the SWMP Administrator for Construction and the Engineer which temporary control measures shall remain until 70% revegetation is established or which shall be removed. When directed by the Engineer, removal and disposal of temporary control measures shall be included in the cost of work.
B. At the end of the project, all ditch checks shall either consist of temporary erosion logs (or equivalent) or permanent riprap.
C. All storm drains shall be cleaned prior to the Final Acceptance of the project. Work shall be included in 202 Clean Culvert.

Template Revised: 9/1/20

11. NARRATIVES:

Control Measure Matrixes During Construction:

1. Control measure narratives have been included for the CDOT Standard Specifications and Standard Plan M-208 and M-216 along with any non-standard control measures approved during the design process. If a Non-Standard Control Measure not included in the SWMP is proposed and approved by the Engineer the SWMP Administrator for Construction shall do the following: Place an "X" in the column for non-standard and complete a Non-Standard Control Measure Specification and Narrative covering the what, when, where and why the control measure is being used shall be add to the SWMP. The appropriate "X" shall also be added to the implementation phase(s).
2. The SWMP Administrator for Construction shall place an "X" in the column In Use On Site when the control measure has been installed.
3. A "B" in the Initial Activities Column indicates that the control measure shall be installed **before** construction activity starts. Locations and quantities will be discussed during the Environmental Pre-Construction Conference with the Regional Water Pollution Control Manager.

STRUCTURAL Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

APPLICATION, CONTROL MEASURE	NARRATIVE	M- 208 STANDARD or "X" for NON-STANDARD	IN USE ON SITE	CONTROL MEASURE IMPLEMENTATION PHASE		
				INITIAL ACTIVITIES	INTERIM ACTIVITIES	PERMANENT STABILIZATION
PROTECTION OF EXISTING TREES/LANDSCAPING Fence (plastic)	Fence (plastic) shall be used in areas indicated in the plans to prevent encroachment of construction traffic and sediment for the protection of mature trees and/or existing landscaping prior to start of construction disturbances.			B		
CHECK DAM/DITCH CHECK Erosion log, silt berm, silt dike, rock check dam	Placed in ditches immediately upon completion of ditch grading to reduce velocity of runoff in ditch. For existing ditches, place prior to start of construction disturbances.	M-208		X	X	
Storm Drain Inlet Protection In Paved Roadways (Type 1, 2 and 3 as shown on M-208-1, sheet 5 of 11)	Manufactured storm drain inlet protection placed prior to construction disturbances as detailed in M-208-1, to protect existing inlets or immediately upon completion of new inlets to prevent sediment from entering the inlet throughout construction.	M-208		B	X	
Storm Drain Inlet Protection In Native Seed Areas (M-604 Standard Inlets Type C and D)	Erosion logs or aggregate bags placed around inlet grate to prevent sediment from entering inlet. Place prior to construction disturbances to protect existing inlets or immediately upon completion of new inlets.	M-208			X	
CULVERT INLET/OUTLET PROTECTION Erosion logs, aggregate bags	Placed at mouth of culvert inlets and over top of culvert at inlet and outlet where disturbance may be occurring adjacent to pipe to prevent sediment laden water from entering pipe or drainage. Place prior to start of construction disturbances.	M-208		B	X	
TYPE C, TYPE D AND TYPE 13 PROTECTION Erosion logs, aggregate bags, erosion bales	Placed around inlet grate or slope and ditch paving to prevent sediment from entering inlet. Place prior to start of construction disturbances.	M-208		B	X	
*STOCKPILE PROTECTION Temporary berm, erosion logs, aggregate bags**	Placed within specified distance, in accordance with subsection 208.06, from toe to contain sediment around stockpile. *Aggregate bags are easily moved and replaced for access during the work day. Place prior to start of stockpile, increase control as stockpile increases size.	M-208			X	
*TOE OF FILL PROTECTION Erosion logs, temporary berm, silt fence, topsoil windrow**	Place prior to slope/embankment work to capture sediment and protect and delineate undisturbed areas. *Can be used to stockpile topsoil for salvage.	M-208		X		
*PERIMETER CONTROL Erosion logs, silt fence, temporary berm, topsoil windrow**	Placed prior to construction commencing to address potential run-on water from off site, and to divert around disturbed area. *Can be used to stockpile topsoil for salvage.	M-208		B		
SEDIMENT CONTROL/ SLOPE CONTROL Silt fence, erosion logs	Placed on the contour of a slope to contain and slow down construction runoff. Place prior to start of construction disturbances.	M-208				
EMBANKMENT PROTECTION OR TEMPORARY SLOPE DRAIN	Placed as a conduit or chute to drain runoff down slope and to prevent erosion of slope.	M-208				
OUTLET PROTECTION Riprap, or approved other	Material placed as energy dissipater to prevent erosion at outlet structure.	M-601-12				
CONCRETE WASHOUT In-ground or fabricated	Construction control, used for waste management of concrete and concrete equipment cleaning. Place prior to start of concrete activities.	M-208		X		
VEHICLE TRACKING PAD	Source control, placed to prevent tracking of sediment from disturbed area to offsite surface. Place prior to start of construction disturbances.	M-208		X		
DEWATERING (Contractor is responsible for obtaining a permit from Colorado Department of Health and Environment.)	Shall be done in such a manner to prevent potential pollutants from entering state waters.					
OTHER						

Template Revised: 9/1/20

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Horiz. Scale: n/a Vert. Scale:					Revised:	RS–044–0118
City Project Manager					Void:	Sheet Number 39
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276					Designer: LDL Detailer: BJK Sheet Subset: SWMP Nar	Structure Numbers Subset Sheets: 3 of 5

Boulder County

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Jay Road and 47th Street
SWMP Narrative

NON-STRUCTURAL Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:
Erosion control devices are used to limit the amount of soil loss on site. Sediment control devices are designed to capture sediment on the project site.

APPLICATION, CONTROL MEASURE	NARRATIVE	M-STANDARD or "For NON-STANDARD	IN USE ON SITE	CONTROL MEASURE IMPLEMENTATION PHASE		
				INITIAL ACTIVITY	INTERIM ACTIVITIES	PERMANENT STABILIZATION
TOPSOIL MANAGEMENT STOCKPILE/SALVAGE Windrow or stockpile	Prior to any site disturbance work commencing, existing topsoil shall be scraped to a depth four inches or as specified, and placed in stockpiles or windrows. Upon completion of final grading, topsoil shall be evenly distributed over embankment to a depth of four inches or as specified.	M-208		X	X	X
SURFACE ROUGHENING / GRADING TECHNIQUES	Temporary stabilization of disturbance and to minimize wind and erosion.					
SEEDING (TEMPORARY)	Temporary stabilization used for over wintering of disturbance or used to control erosion for areas scheduled for future construction.				X	
Straw or Hay MULCH/MULCH TACKIFIER	Interim or Permanent Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as Interim Stabilization as a surface cover when work is temporarily halted and as approved by the Engineer				X	X
SEEDING PERMANENT (NATIVE)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.					X
Sweeping	Source control, used to remove sediment tracked onto paved surfaces and to prevent sediment from entering drainage system. Sweep daily and at the end of the construction shift as needed. Kick brooms shall not be permitted.			X	X	X
OTHER						

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Horiz. Scale: n/a Vert. Scale:				Revised:	RS–044–0118
City Project Manager				Void:	Sheet Number 40
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276				Designer: LDL Detailer: BJK Sheet Subset: SWMP Nar	Structure Numbers Subset Sheets: 4 of 5

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Jay Road and 47th Street
SWMP Narrative

12. TABULATION OF STORMWATER QUANTITIES

A. Control Measure sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other control measure maintenance shall be included in the cost of the control measure.

PSP Spec.	Pay Item	Description	Pay Unit	Initial Const	Interim Const.	Permanent Stabilization	*Total Quantity
	202-04002	Clean Culvert	Each			5	5
	207-00700	Topsoil (Onsite)	CY			60	60
	208-00002	Erosion Log Type 1 (12 inch)	LF	166	20		186
	208-00020	Silt Fence	LF	847			847
	208-00035	Aggregate Bag	LF	60	18		78
	208-00045	Concrete Washout Structure	Each		2		2
	208-00053	Storm Drain Inlet Protection (Type I)(84 Inch)	Each	5	1		6
	208-00057	Storm Drain Inlet Protection (Type I)(144 Inch)	Each	2			2
	208-00075	Pre-fabricated Vehicle Tracking Pad	Each	1			1
	208-00103	Removal and Disposal of Sediment (Labor)	Hour		15		15
	208-00105	Removal and Disposal of Sediment (Equipment)	Hour		15		15
	208-00106	Sweeping (Sediment Removal)	Hour		10		10
	208-00107	Removal of Trash	Hour		10		10
	208-00207	***Erosion Control Management (ECM)	Day		60		60
	212-00009	Seeding (Temporary)	Acre		0.05		0.05
	212-00701	Compost (Mechanically Applied)	CY			15	15
	212-00706	Seeding (Native) Drill	Acre			0.11	0.11
	212-01210	Landscape Restoration	SF			100	100
	213-00004	Mulching (Weed Free Straw)	Acre		0.05	0.11	0.16
	213-00061	Mulch Tackifier	LB		7	14	21
	607-11525	Fence (Plastic)	LF	76			76
X	700-70380	F/A Erosion Control	FA			1	1
X	700-90026	F/A Landscaping	FA			1	1

*It is anticipated that additional control measures and control measure quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsections 208.03 and 208.04. **Quantities for all control measures shown above are estimated, and have been increased for unforeseen conditions and normal control measure life expectancy.** Quantities shall be adjusted according to the conditions encountered in the field as directed and approved by the Engineer. Payment shall be for the actual work completed and material used.
*** Using Erosion Control Management Pay Item on the project must be approved by the Regional Environmental Staff and Engineer. See 208.11 for method of measurement for the day pay unit.
**** F/A refers to CDOT's Force Account Pay Items.

13. BIOLOGIC IMPACTS and DEWATERING

A. ENVIRONMENTAL IMPACTS:
1. Wetland Impacts: NO
2. Stream Impacts: NO
3. Threatened and Endangered Species: No species are anticipated to be impacted by the project.

B. DEWATERING (Not Covered Under the CDPHE Low Risk Discharge Guidance Document of Uncontaminated Groundwater to Land):
1. Dewatering: Refer to other environmental permits in accordance with subsection 107.02.

14. NOTES

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City Project Manager						Void:	Sheet Subset: SWMP Nar / Subset Sheets: 5 of 5	Sheet Number 41
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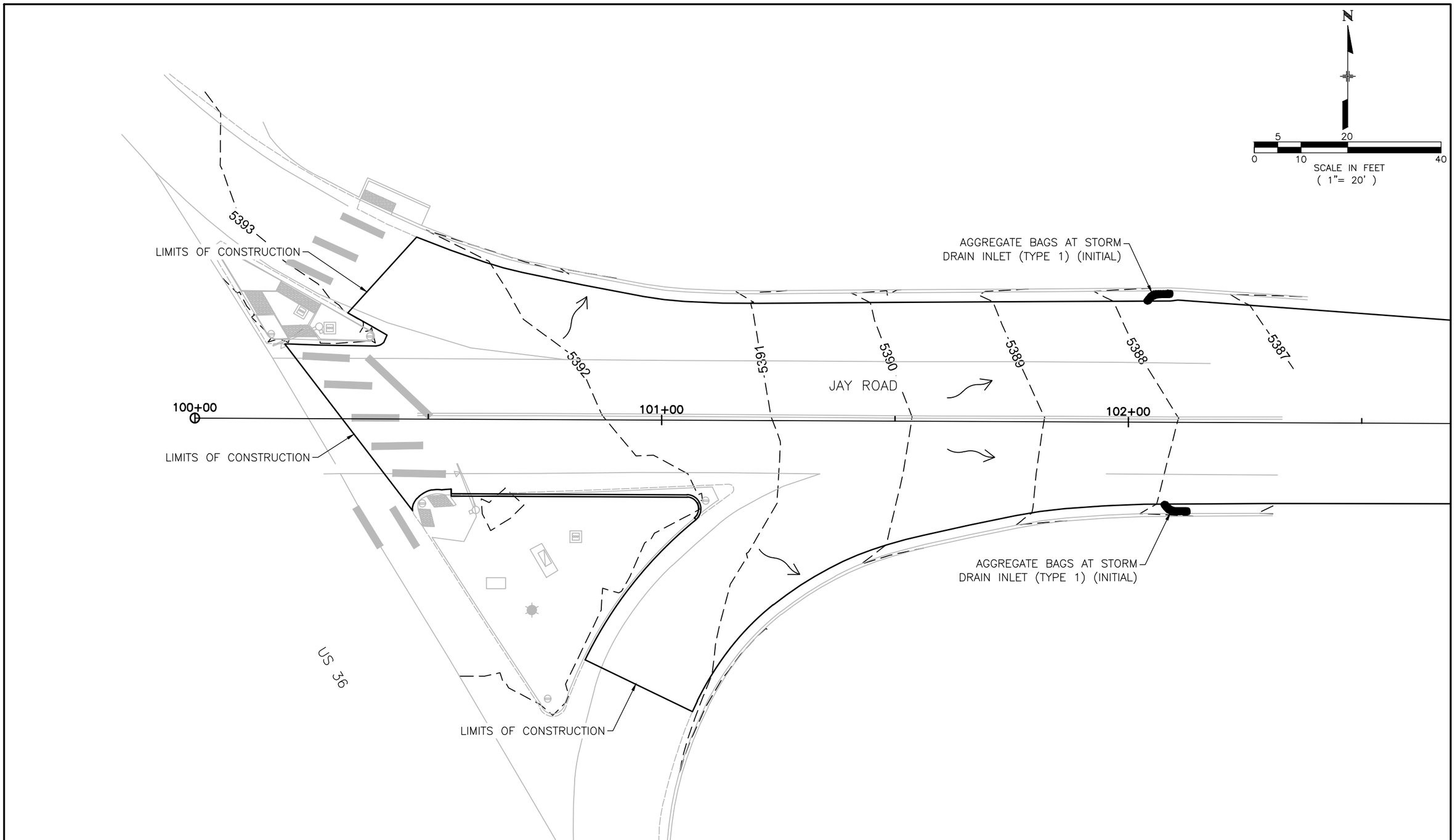

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Date:	Comments	Init.

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Jay Road and 47th Street
Erosion and Sediment Control Plan

Designer: LDL
Detailer: BJK
Sheet Subset: Erosion Ctrl
Structure Numbers:
Subset Sheets: 1 of 8

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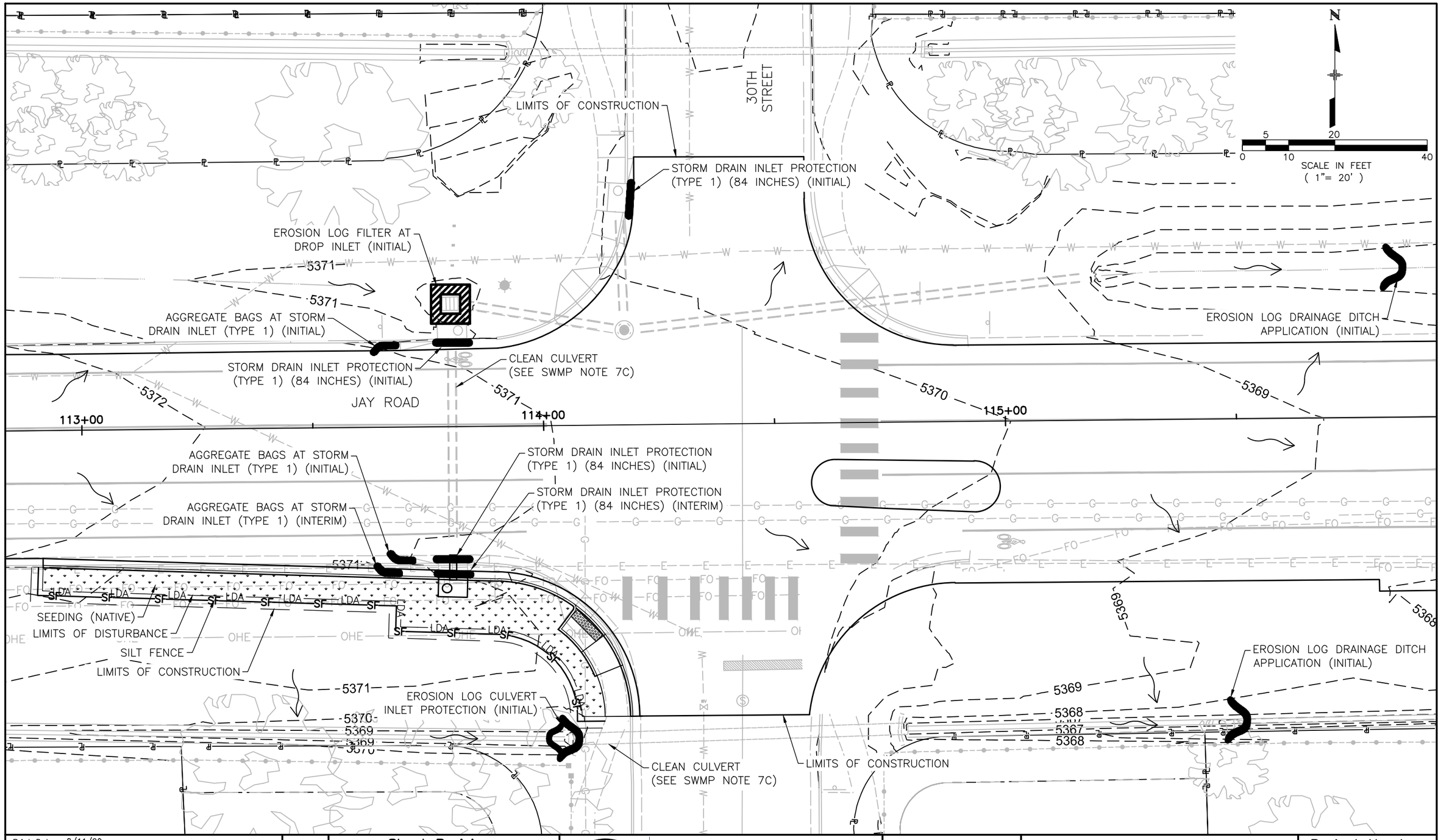

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EROSION LOG DRAINAGE DITCH APPLICATION (INITIAL)

EROSION LOG DRAINAGE DITCH APPLICATION (INITIAL)

EROSION LOG DRAINAGE DITCH APPLICATION (INITIAL)

N

5 20

0 10 40

SCALE IN FEET
(1"= 20')

5360 5359 5358 5357 5356 5355 5354 5353 5352

125+00 126+00 127+00

JAY ROAD

EROSION LOG DRAINAGE DITCH APPLICATION (INITIAL)

EROSION LOG FILTER AT DROP INLET (INTERIM)

EROSION LOG DRAINAGE DITCH APPLICATION (INITIAL)

LANDSCAPE RESTORATION

EROSION LOG CULVERT OUTLET PROTECTION (INTERIM)

5361 5360 5354 5355 5352

CLEAN CULVERT (SEE SWMP NOTE 7C)

LIMITS OF CONSTRUCTION

SEEDING (NATIVE)

LIMITS OF DISTURBANCE

SILT FENCE

ST CROIX STREET

LIMITS OF CONSTRUCTION

LIMITS OF CONSTRUCTION

SEEDING (NATIVE)

TOE OF SLOPE

LIMITS OF DISTURBANCE

SILT FENCE

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Revised:	Detailer: BJK			RS-044-0118
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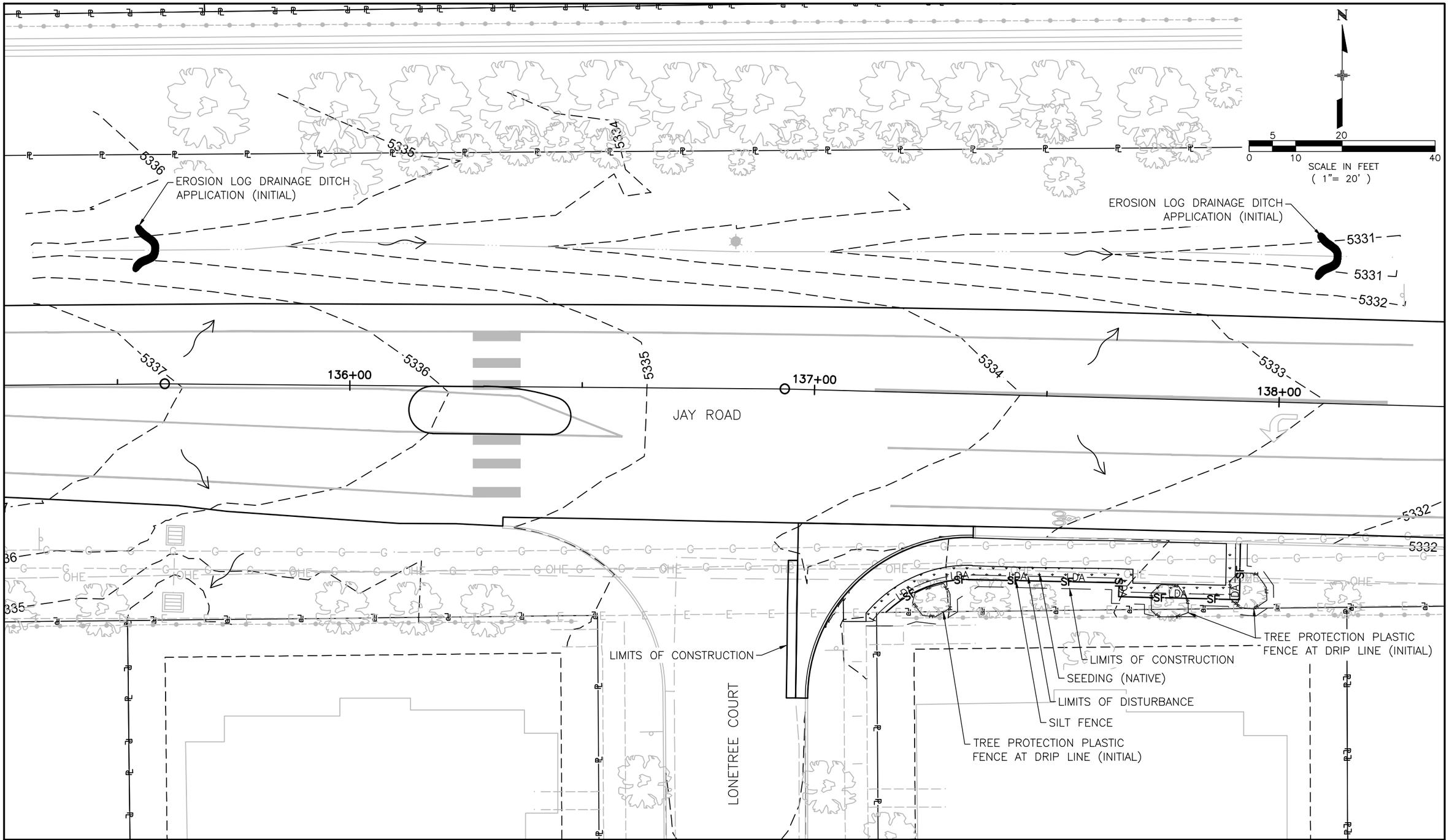

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MATCH LINE STA 1+75 – SEE SUBSET SHEET 6

LIMITS OF CONSTRUCTION
SILT FENCE
LIMITS OF DISTURBANCE
TOE OF SLOPE
SEEDING (NATIVE)

EROSION LOG FILTER AT DROP INLET (INITIAL)

AGGREGATE BAGS AT STORM DRAIN INLET (TYPE 1) (INITIAL)

STORM DRAIN INLET PROTECTION (TYPE 1) (84 INCHES) (INITIAL)

CLEAN CULVERT (SEE SWMP NOTE 7C)

AGGREGATE BAGS AT STORM DRAIN INLET (TYPE 1) (INTERIM)

JAY ROAD

143+00 144+00 145+00 1+00

AGGREGATE BAGS AT STORM DRAIN INLET (TYPE 1) (INITIAL)

STORM DRAIN INLET PROTECTION (TYPE 1) (144 INCHES) (INITIAL)

AGGREGATE BAGS AT STORM DRAIN INLET (TYPE 1) (INITIAL)

47TH STREET

LIMITS OF CONSTRUCTION

N

SCALE IN FEET
(1"= 20')

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File Name: Jay Rd–SWMP.dwg	Date: Comments Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:		BOULDER, CO 80304	Revised:
City Project Manager		PHONE: (303) 413–7039	Void:
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Jay Road and 47th Street
Erosion and Sediment Control Plan

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Detailer:	BJK		
Sheet Subset:	Erosion Ctrl	Subset Sheets:	5 of 8

Project Number 100070613
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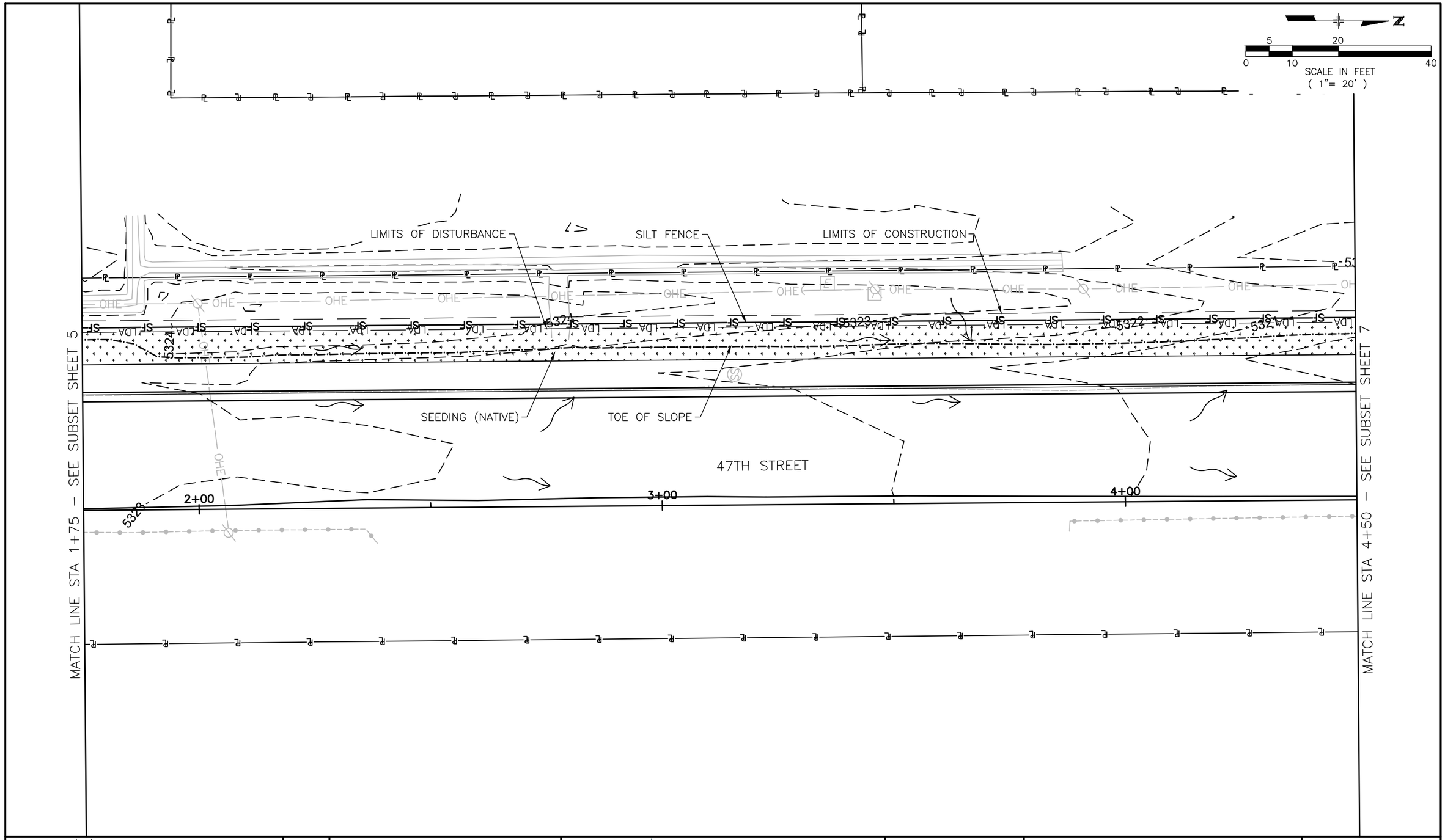

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City Project Manager			
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Jay Road and 47th Street
Erosion and Sediment Control Plan

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Detailer:	BJK		
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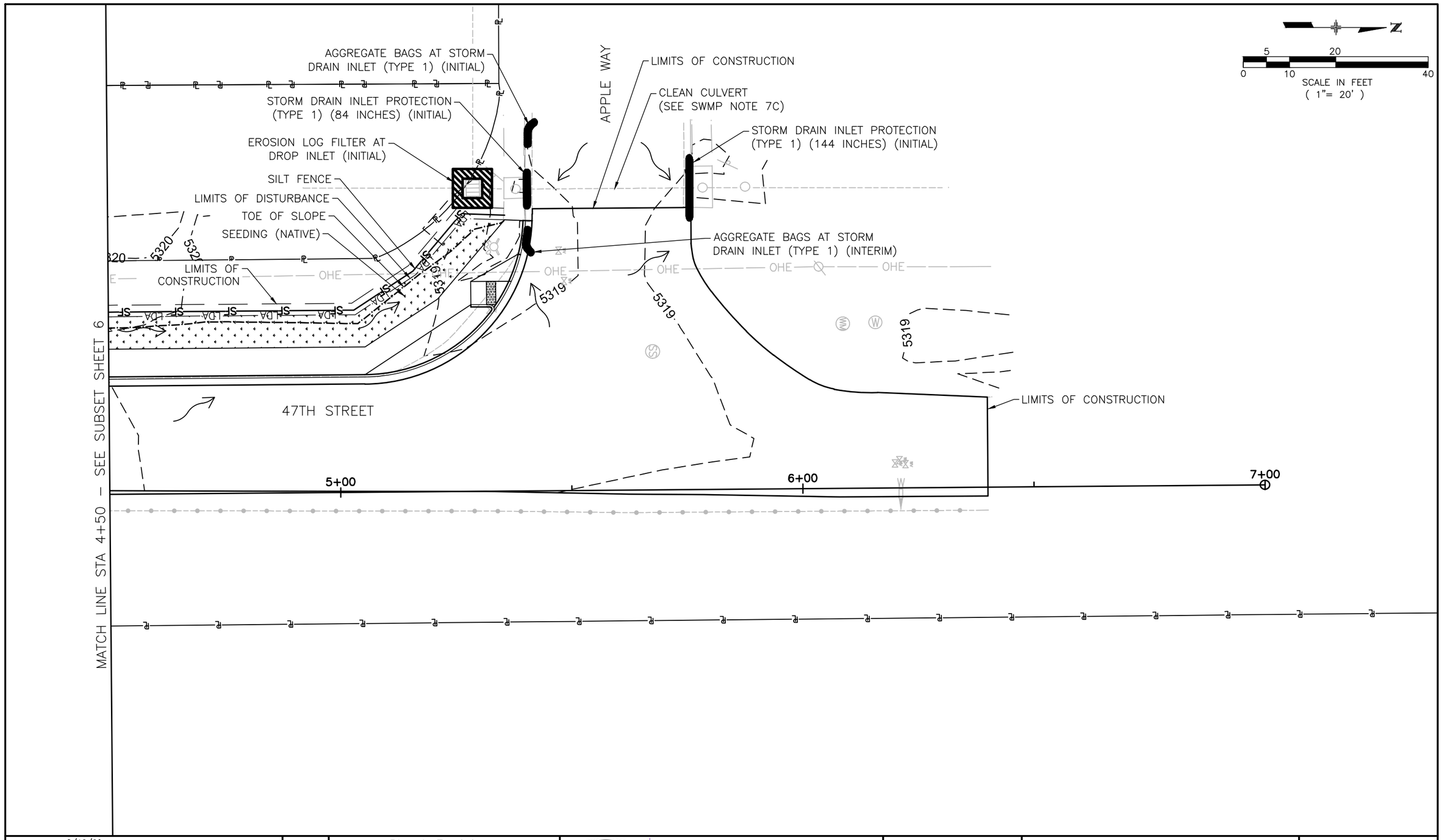

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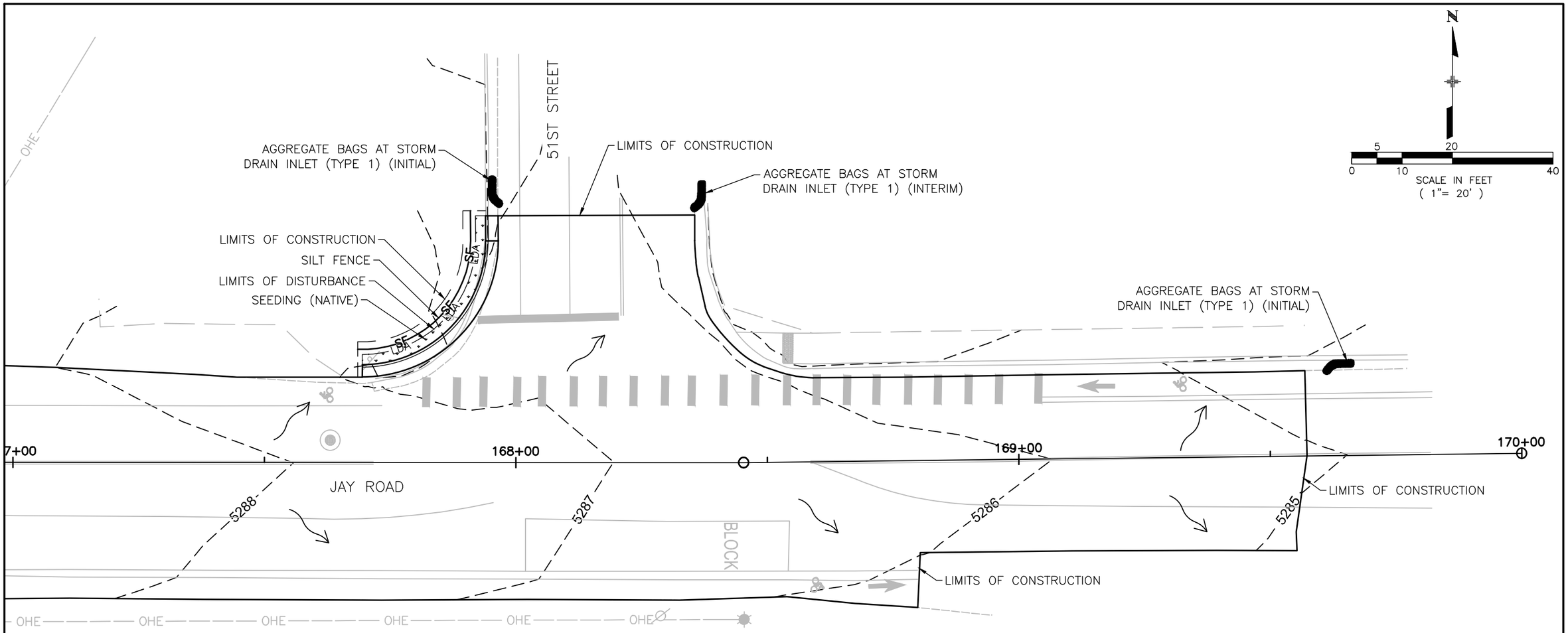

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City Project Manager						Void:	Detailer: BJK	Sheet Number 49
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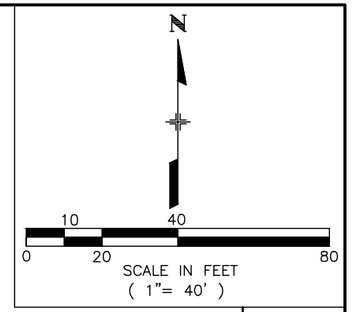
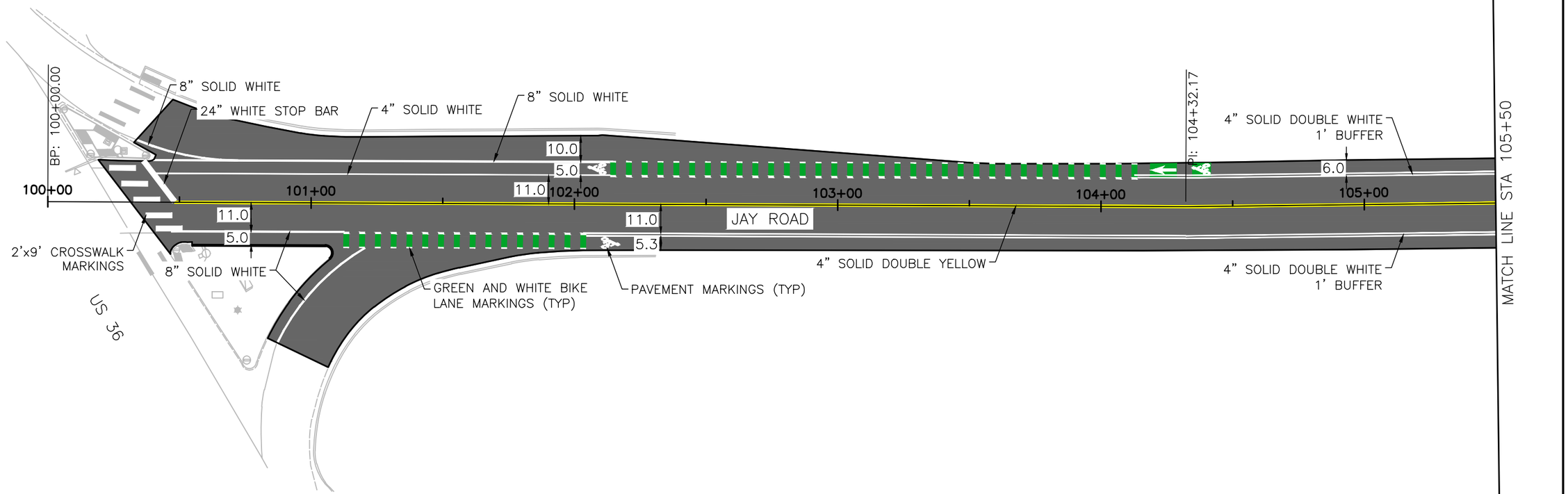
SIGNING NOTES:
– See Removal Plans for locations of signs being reset.





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File Name: Jay Rd–SSPL.dwg		Date:	Comments	Init.	2525 13TH STREET, SUITE 203 BOULDER, CO 80304 PHONE: (303) 413–7039 FAX: (303) 441–4594	No Revisions:		100070613
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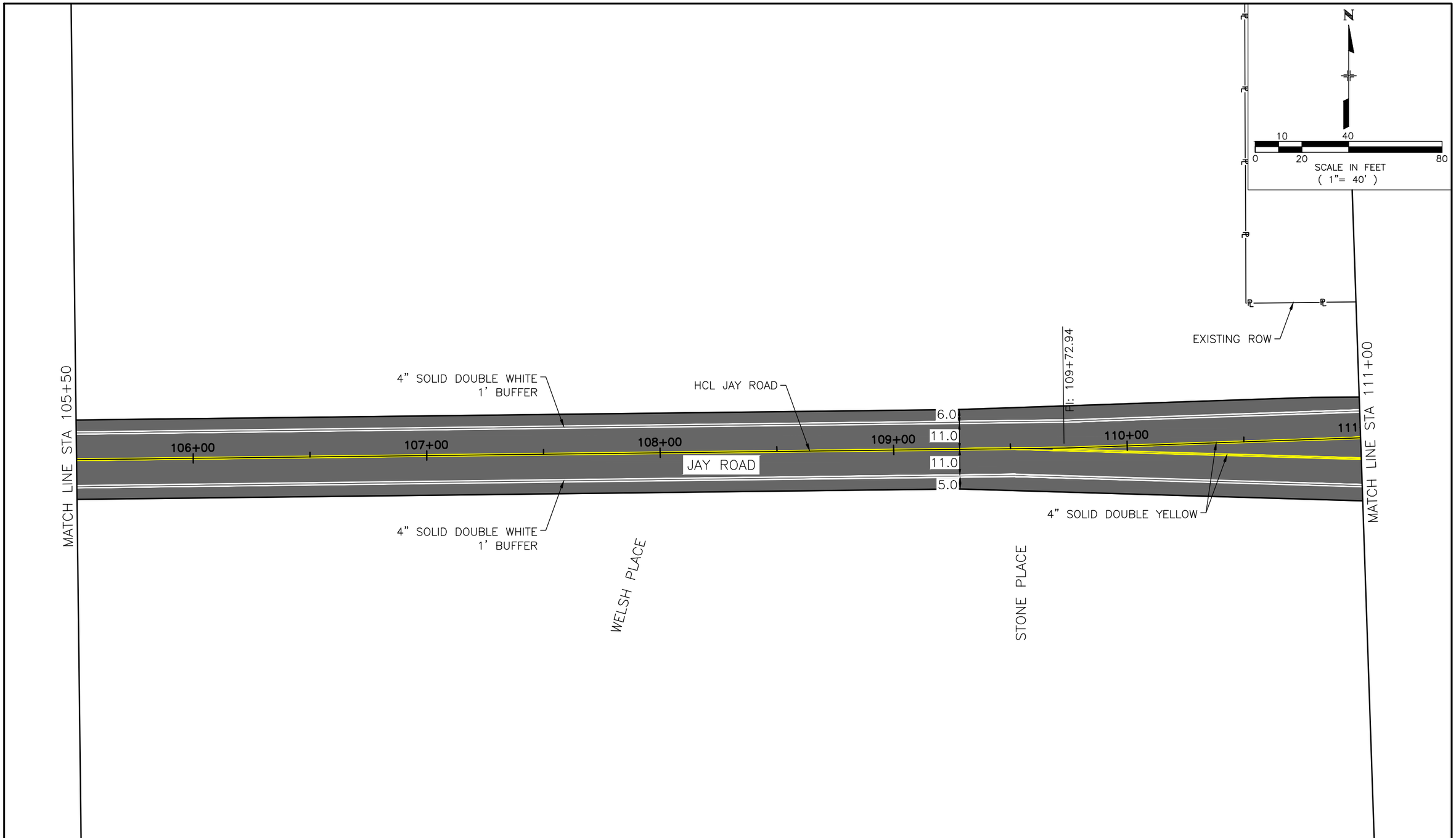

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Jay Road and 47th Street Signing and Striping Plan				Project Number
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Designer: LDL	Structure Numbers			RS-044-0118
Detailer: BJK				
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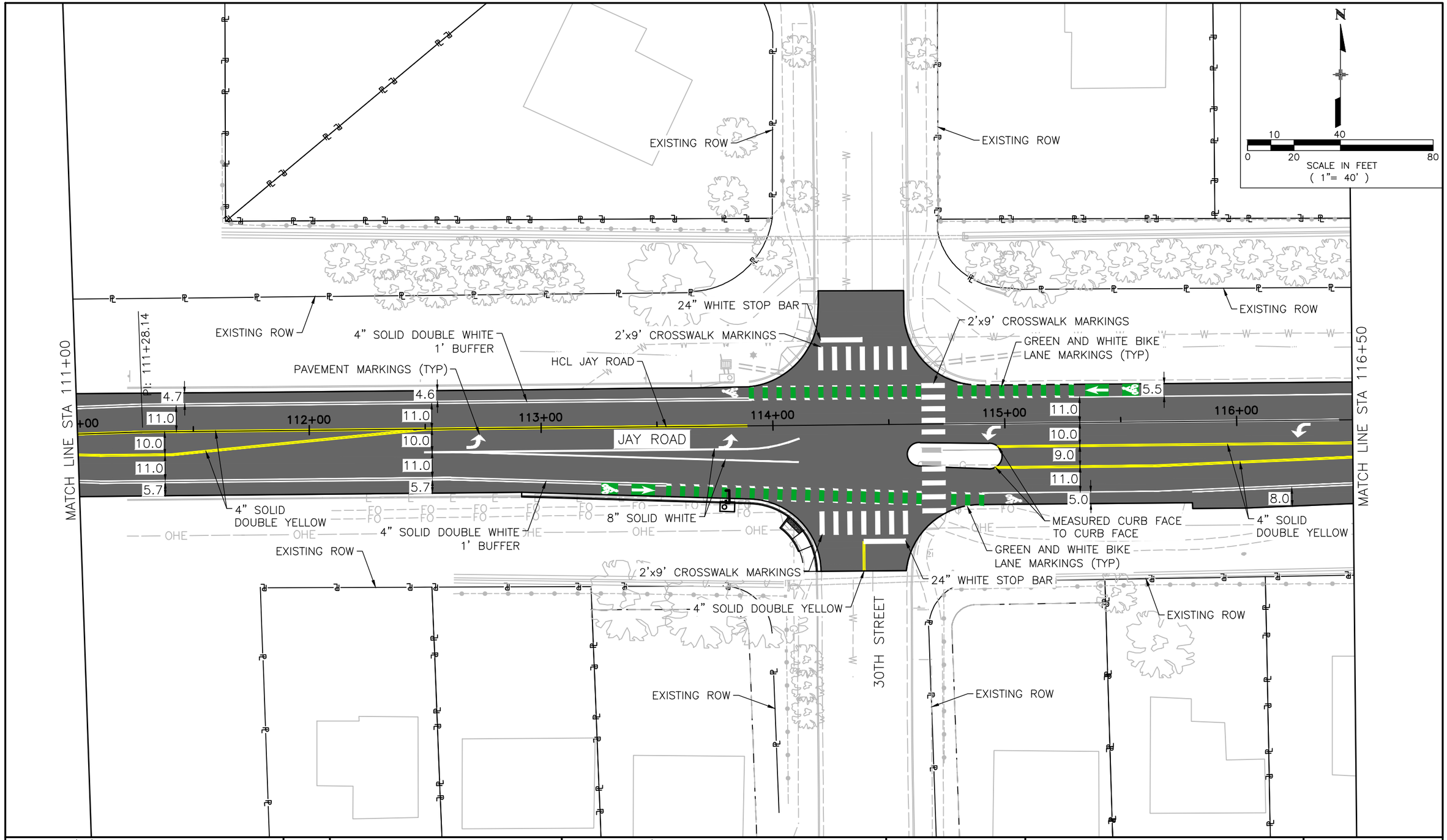

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Jay Road and 47th Street
Signing and Striping Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	SS	Subset Sheets:	3 of 14

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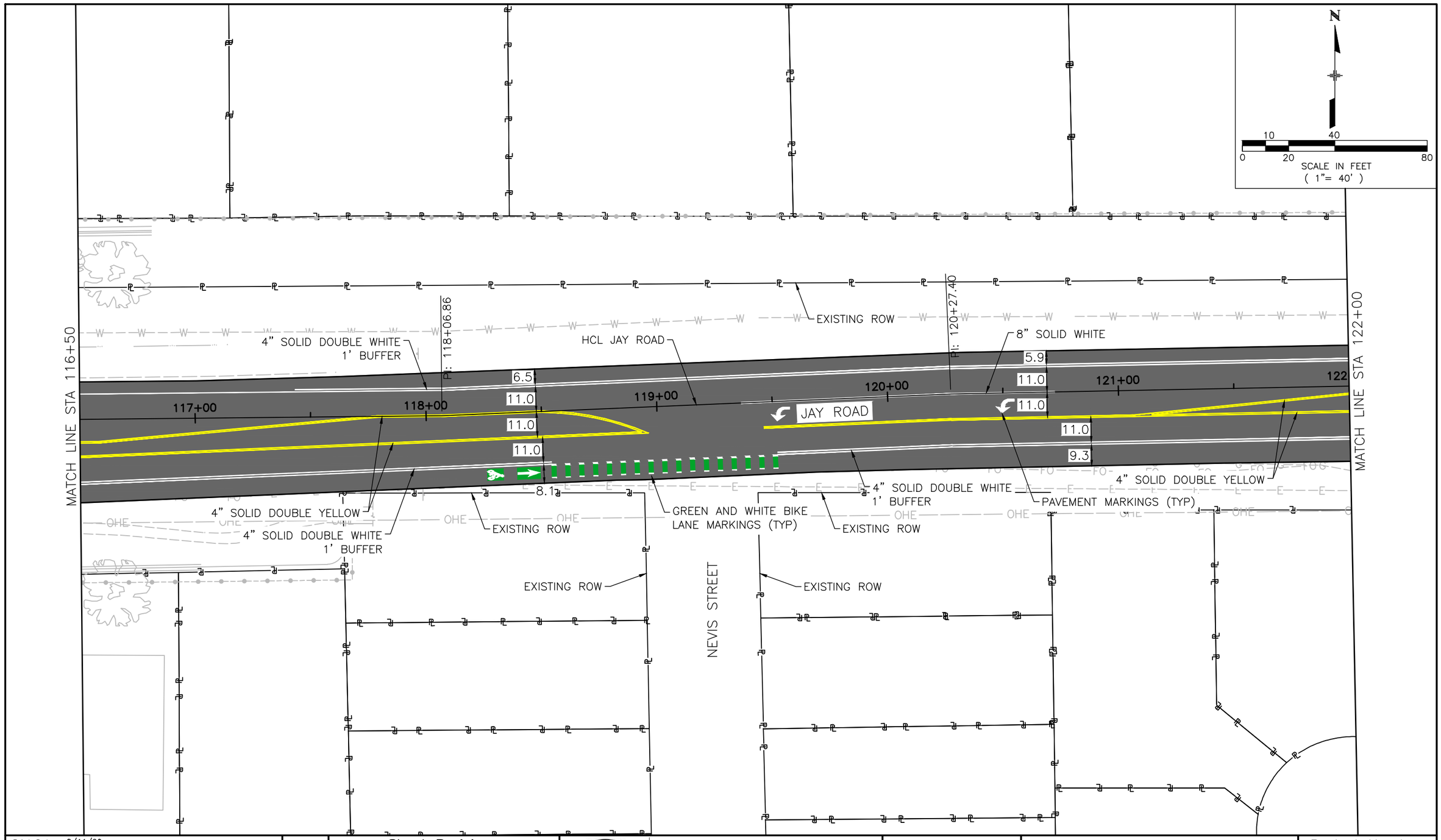

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Jay Road and 47th Street
Signing and Striping Plan

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Detailer:	BJK		
Sheet Subset:	SS	Subset Sheets:	4 of 14

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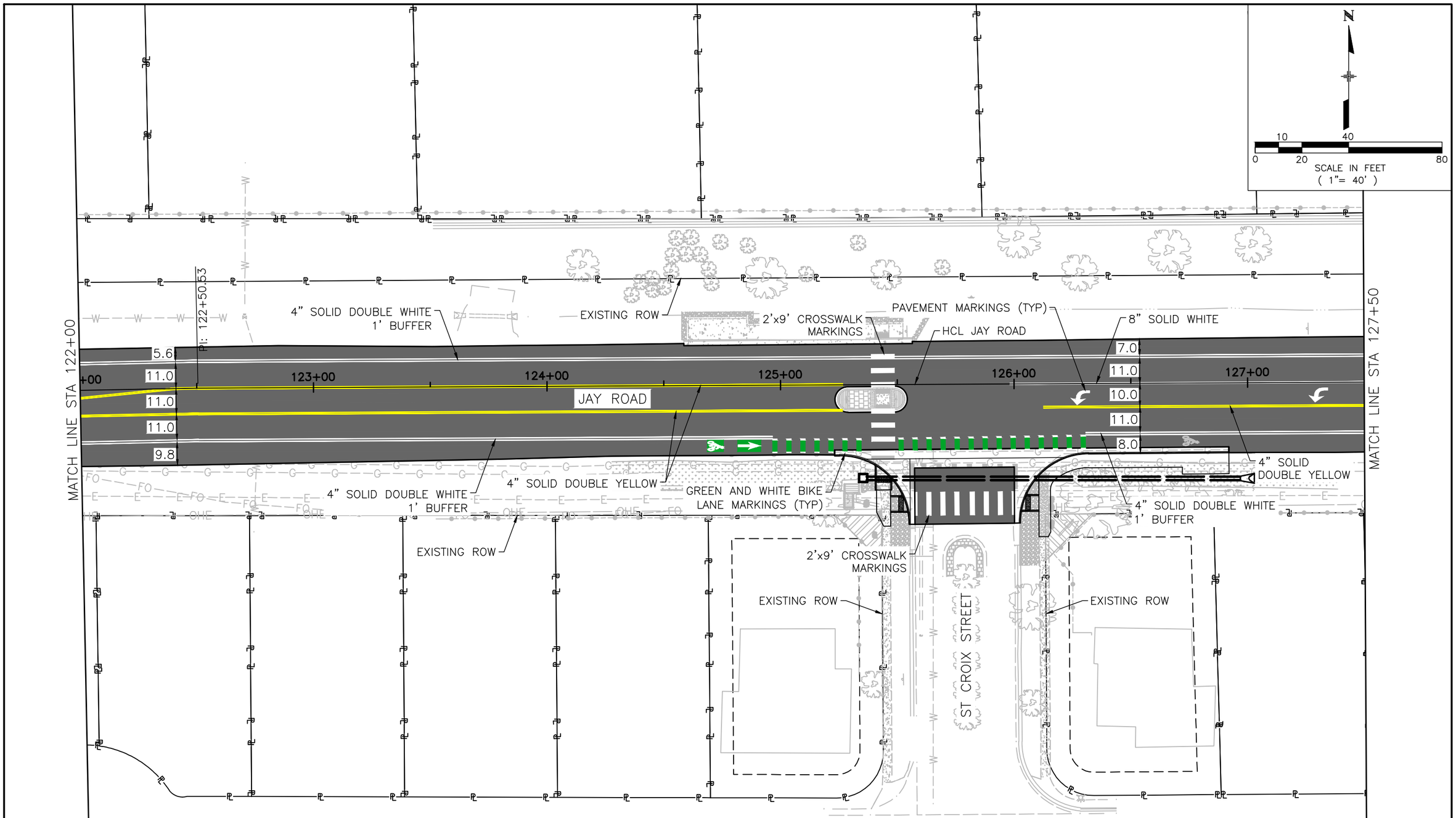
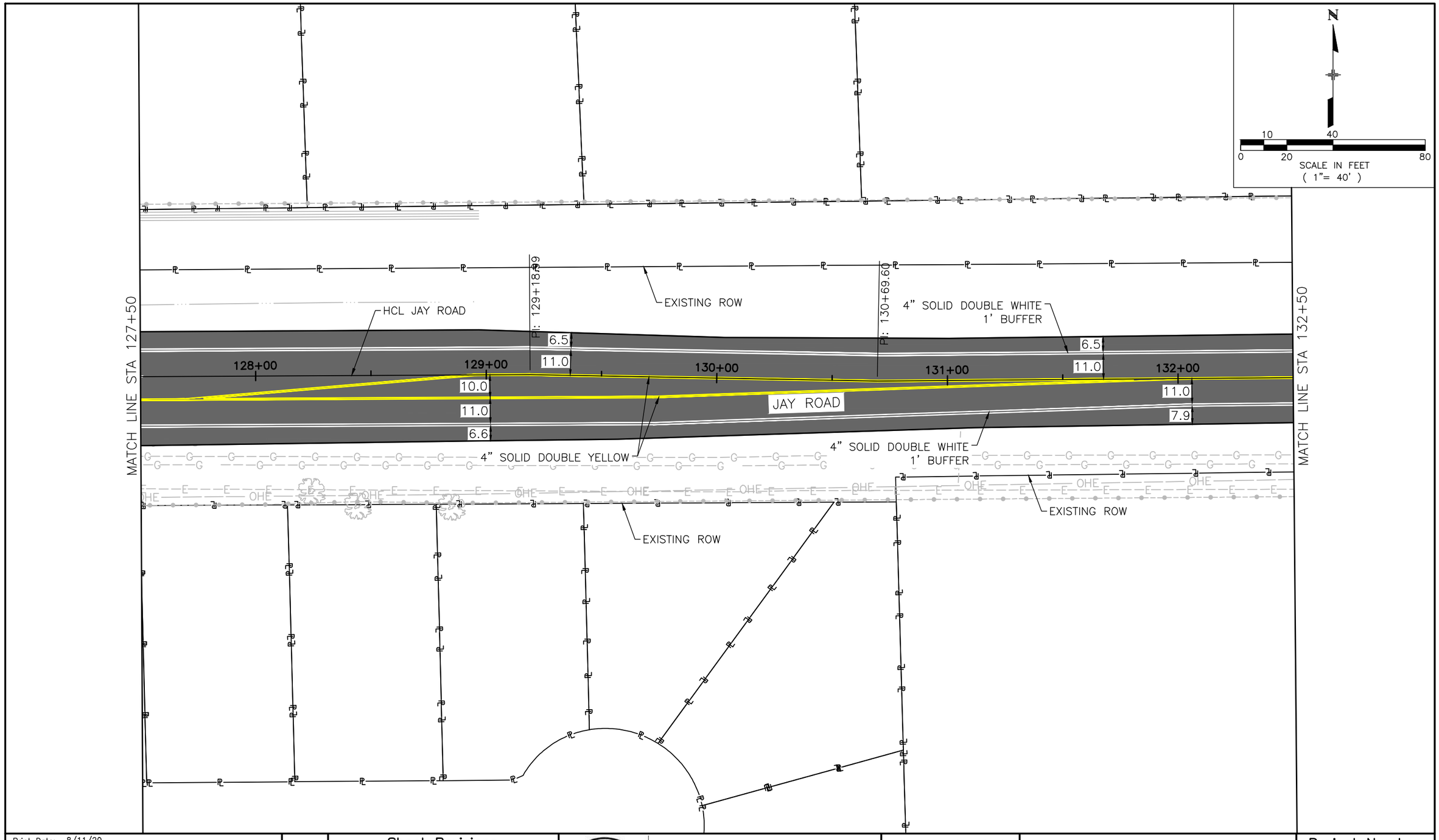


Print Date: 8/11/20	Sheet Revisions	BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd-SSPL.dwg	Date: / Comments / Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:		BOULDER, CO 80304	Revised:
City Project Manager		PHONE: (303) 413-7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221-7275, Fax: 303/221-7276		FAX: (303) 441-4594	

Jay Road and 47th Street Signing and Striping Plan			Project Number 100070613
Designer: LDL	Structure Numbers		RS-044-0118
Detailer: BJK			
Sheet Subset: SS	Subset Sheets: 5 of 14		Sheet Number 54

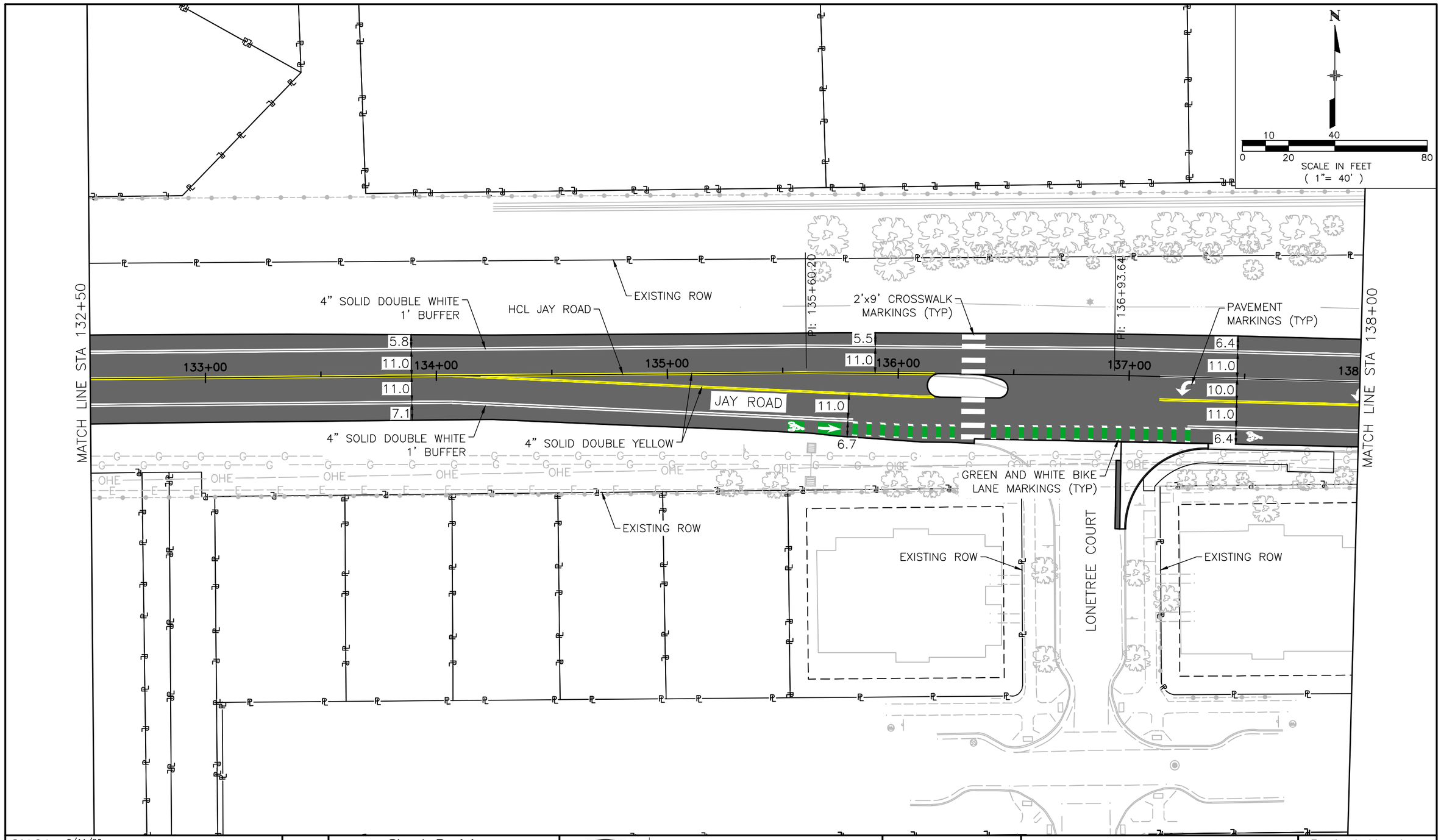


Print Date: 8/11/20	Sheet Revisions	BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd–SSPL.dwg	Date: / Comments / Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:		BOULDER, CO 80304	Revised:
City Project Manager		PHONE: (303) 413–7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276		FAX: (303) 441–4594	

Jay Road and 47th Street
Signing and Striping Plan

Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	SS	Subset Sheets:	6 of 14

Project Number	
100070613	
RS–044–0118	
Sheet Number	55



Print Date: 8/11/20	Sheet Revisions		
File Name: Jay Rd-SSPL.dwg	Date:	Comments	Init.
Horiz. Scale: 1" = 20' Vert. Scale:			
City Project Manager			
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221-7275, Fax: 303/221-7276			

Boulder County

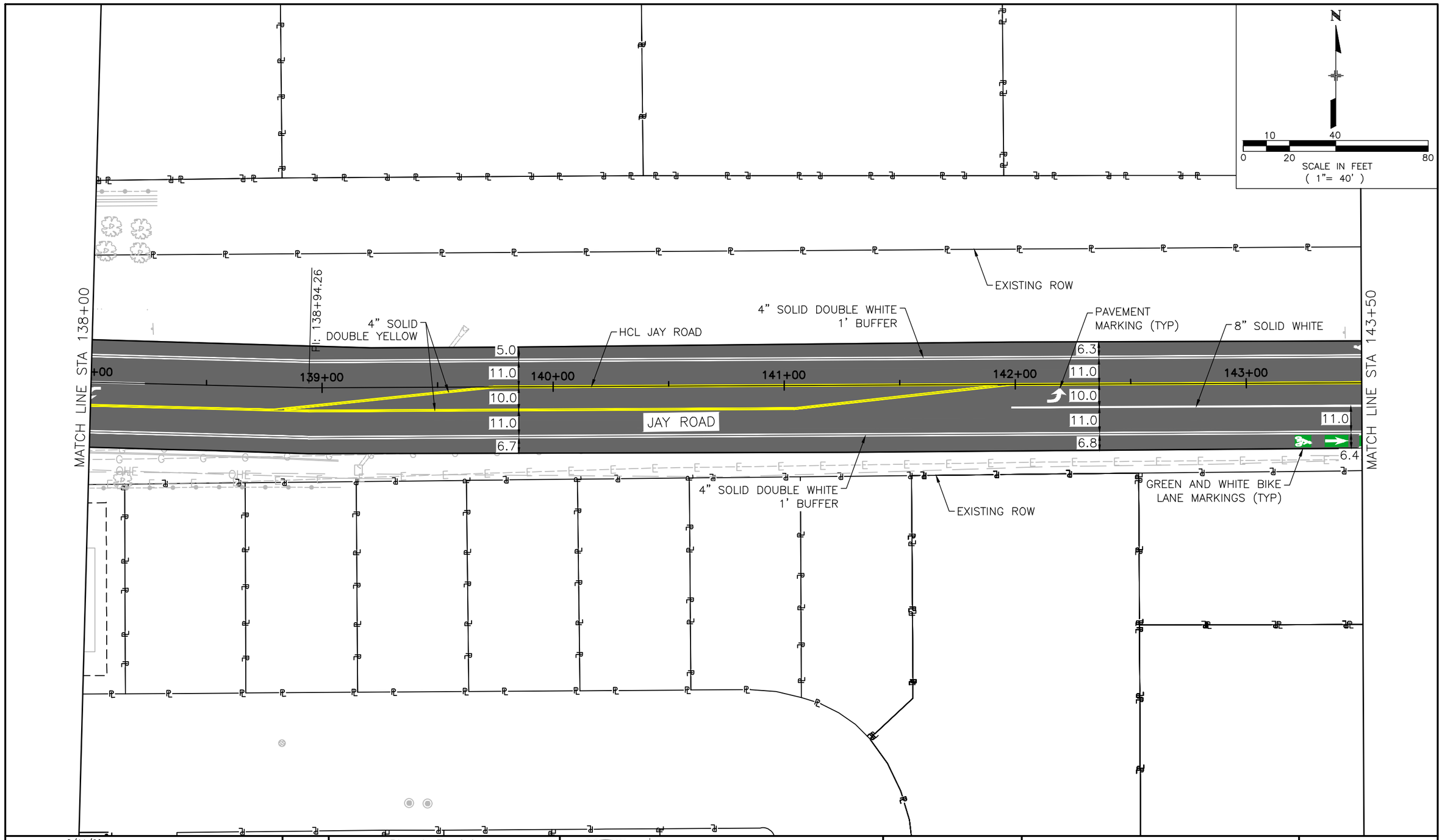
BOULDER COUNTY PUBLIC WORKS
2525 13TH STREET, SUITE 203
BOULDER, CO 80304
PHONE: (303) 413-7039
FAX: (303) 441-4594

As Constructed
No Revisions:
Revised:
Void:

Jay Road and 47th Street
Signing and Striping Plan

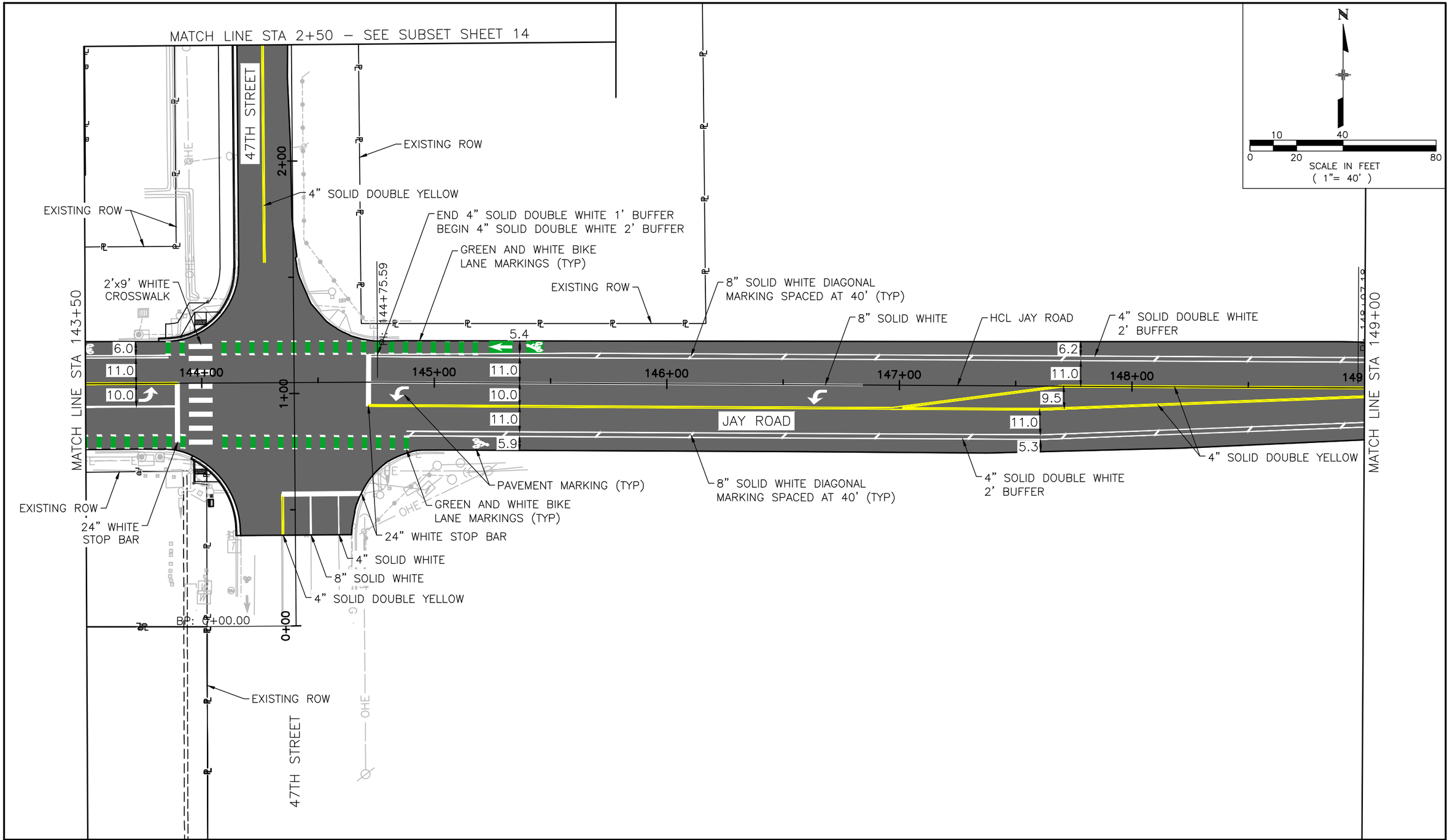
Designer: LDL
Detailer: BJK
Sheet Subset: SS
Structure Numbers
Subset Sheets: 7 of 14

Project Number
100070613
RS-044-0118
Sheet Number 56



Print Date: 8/11/20		Sheet Revisions			BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd–SSPL.dwg		Date:	Comments	Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:					BOULDER, CO 80304	Revised:
City Project Manager					PHONE: (303) 413–7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276					FAX: (303) 441–4594	

Jay Road and 47th Street Signing and Striping Plan			Project Number
Designer: LDL	Structure Numbers		100070613
Detailer: BJK			RS–044–0118
Sheet Subset: SS	Subset Sheets: 8 of 14		Sheet Number 57



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File Name: Jay Rd–SSPL.dwg			
Horiz. Scale: 1" = 20'	Vert. Scale:		
City Project Manager			
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276			

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Sheet Revisions

Date:	Comments	Init.

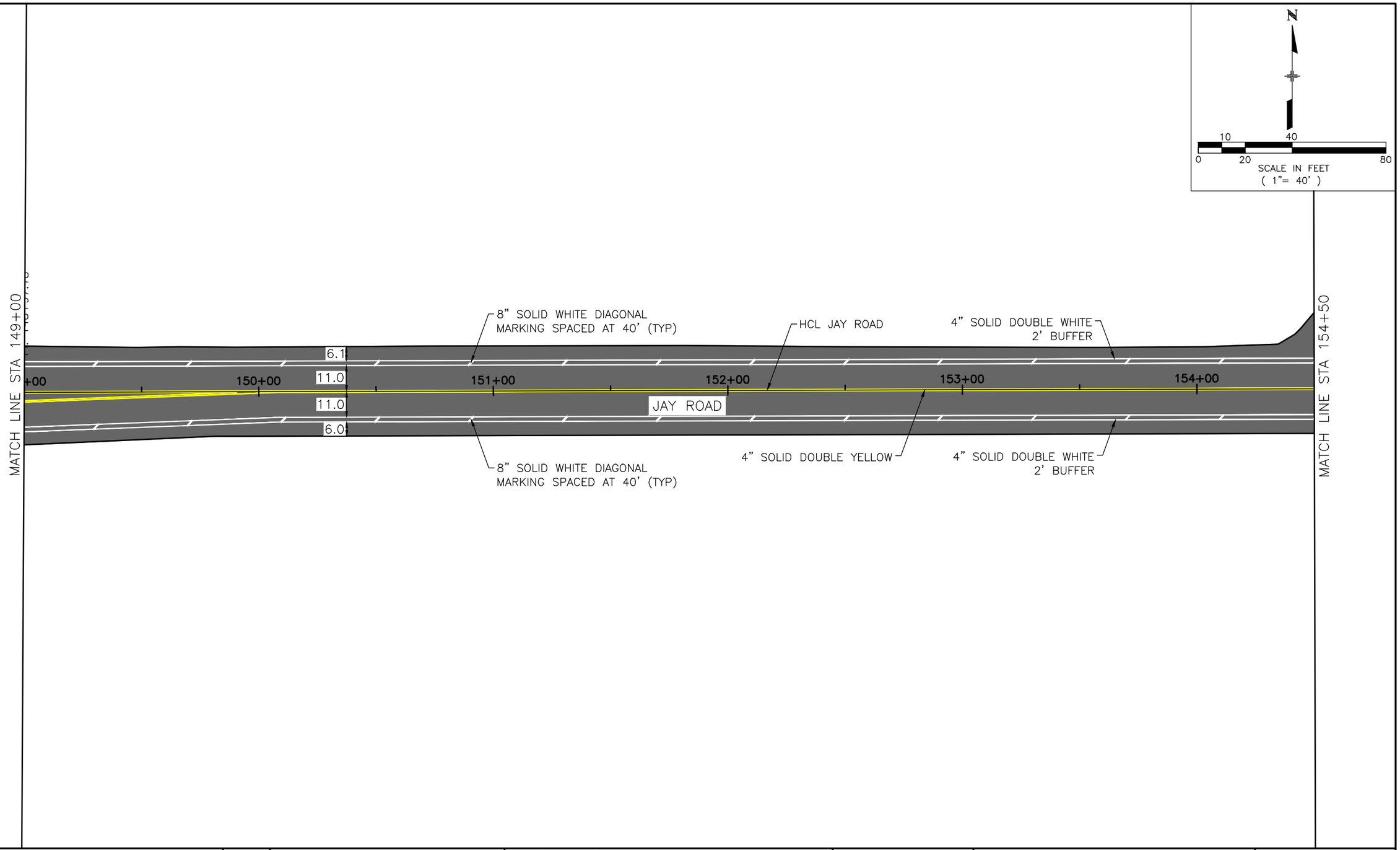
BOULDER COUNTY PUBLIC WORKS
2525 13TH STREET, SUITE 203
BOULDER, CO 80304
PHONE: (303) 413–7039
FAX: (303) 441–4594

As Constructed
No Revisions:
Revised:
Void:

Jay Road and 47th Street
Signing and Striping Plan

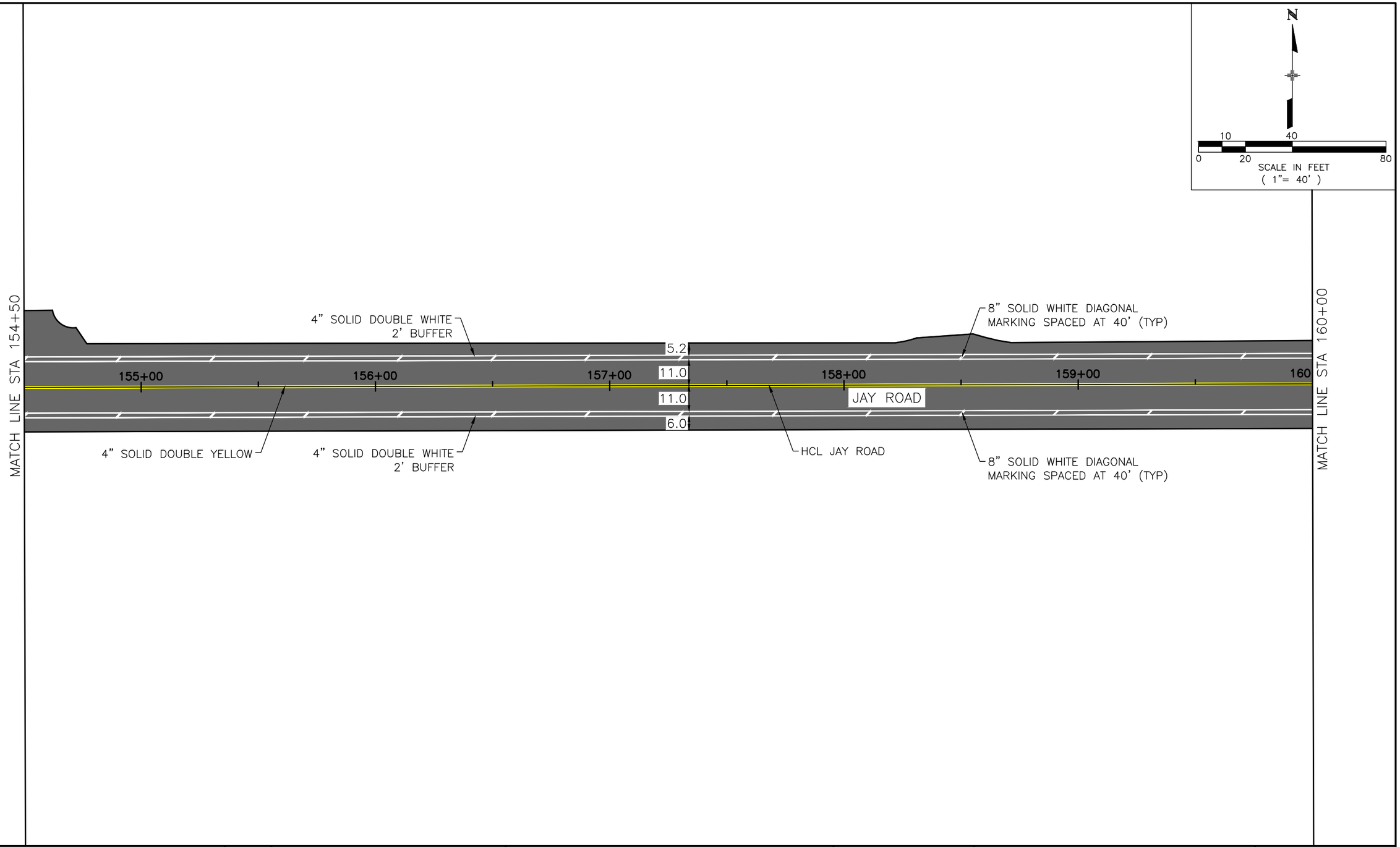
Designer:	LDL	Structure Numbers	
Detailer:	BJK		
Sheet Subset:	SS	Subset Sheets:	9 of 14

Project Number
100070613
RS–044–0118
Sheet Number 58



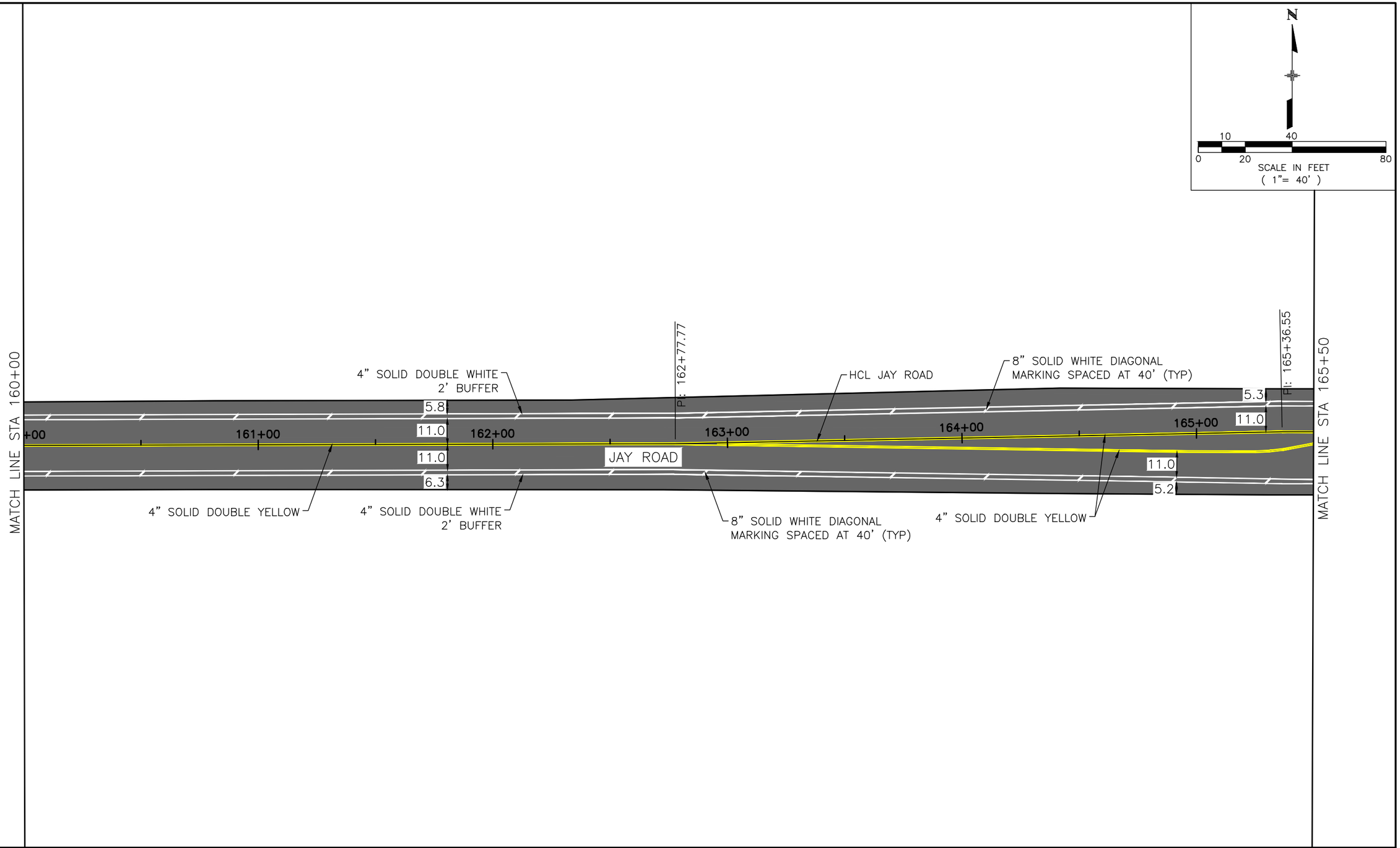
Print Date: 8/11/20	Sheet Revisions	BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd–SSPL.dwg	Date: / Comments / Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:		BOULDER, CO 80304	Revised:
City Project Manager		PHONE: (303) 413–7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276		FAX: (303) 441–4594	

Jay Road and 47th Street Signing and Striping Plan			Project Number
Designer: LDL	Structure Numbers		100070613
Detailer: BJK			RS–044–0118
Sheet Subset: SS	Subset Sheets: 10 of 14		Sheet Number 59



Print Date: 8/11/20	Sheet Revisions	BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd–SSPL.dwg	Date: / Comments / Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:		BOULDER, CO 80304	Revised:
City Project Manager		PHONE: (303) 413–7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276		FAX: (303) 441–4594	

Jay Road and 47th Street Signing and Striping Plan			Project Number
Designer: LDL	Structure Numbers		100070613
Detailer: BJK			RS–044–0118
Sheet Subset: SS	Subset Sheets: 11 of 14		Sheet Number 60



Print Date: 8/11/20	Sheet Revisions		
File Name: Jay Rd-SSPL.dwg	Date:	Comments	Init.
Horiz. Scale: 1" = 20' Vert. Scale:			
City Project Manager			
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221-7275, Fax: 303/221-7276			

BOULDER COUNTY PUBLIC WORKS
2525 13TH STREET, SUITE 203
BOULDER, CO 80304
PHONE: (303) 413-7039
FAX: (303) 441-4594

As Constructed	Jay Road and 47th Street Signing and Striping Plan			Project Number
No Revisions:				100070613
Revised:	Designer: LDL	Structure Numbers		RS-044-0118
Void:	Detailer: BJK			Sheet Number 61
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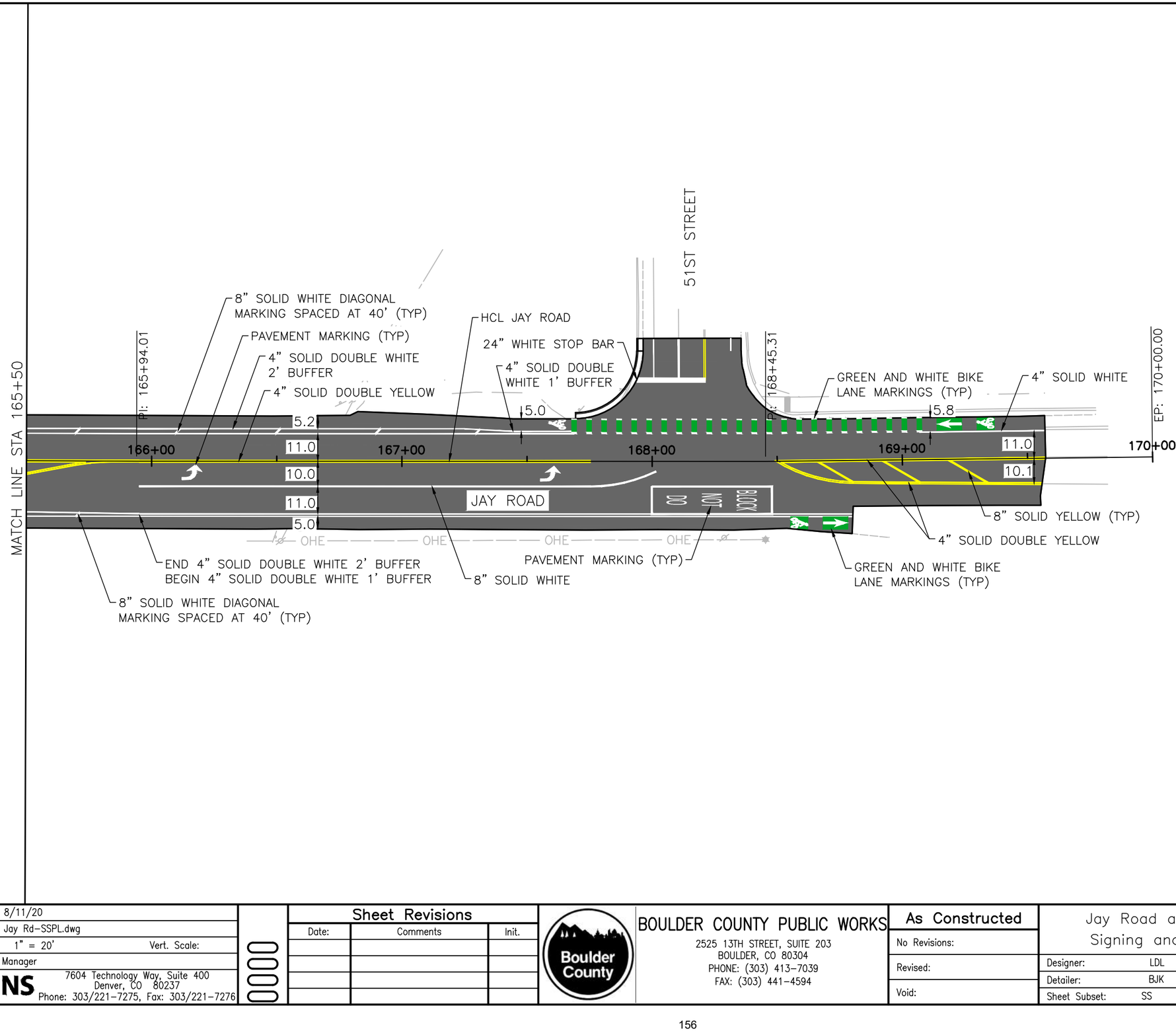
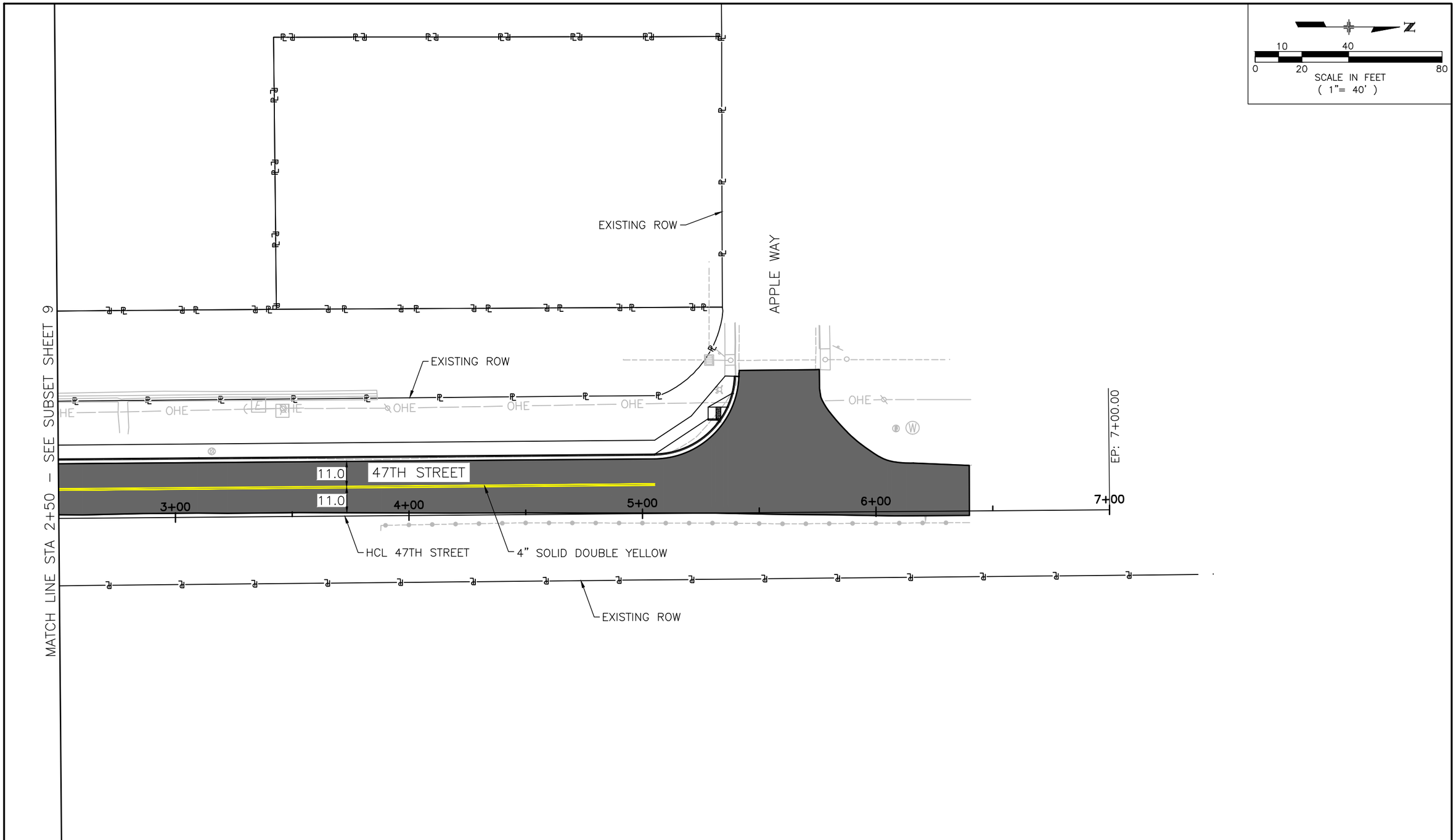


Print Date: 8/11/20		Sheet Revisions			BOULDER COUNTY PUBLIC WORKS	As Constructed	Jay Road and 47th Street Signing and Striping Plan	Project Number
File Name: Jay Rd–SSPL.dwg		Date:	Comments	Init.	2525 13TH STREET, SUITE 203 BOULDER, CO 80304 PHONE: (303) 413–7039 FAX: (303) 441–4594	No Revisions:		100070613
Horiz. Scale: 1" = 20' Vert. Scale:						Revised:	Designer: LDL / Detailer: BJK / Sheet Subset: SS	RS–044–0118
City Project Manager						Void:	Structure Numbers / Subset Sheets: 13 of 14	Sheet Number 62
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276								



Print Date: 8/11/20	Sheet Revisions			BOULDER COUNTY PUBLIC WORKS	As Constructed
File Name: Jay Rd–SSPL.dwg	Date:	Comments	Init.	2525 13TH STREET, SUITE 203	No Revisions:
Horiz. Scale: 1" = 20' Vert. Scale:				BOULDER, CO 80304	Revised:
City Project Manager				PHONE: (303) 413–7039	Void:
ATKINS 7604 Technology Way, Suite 400 Denver, CO 80237 Phone: 303/221–7275, Fax: 303/221–7276				FAX: (303) 441–4594	

Jay Road and 47th Street Signing and Striping Plan			Project Number
			100070613
Designer: LDL	Structure Numbers		RS–044–0118
Detailer: BJK			
Sheet Subset: SS	Subset Sheets: 14 of 14		Sheet Number 63

Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
purchasing@bouldercounty.org

INSURANCE AND W-9 REQUIREMENTS

PAYMENT & PERFORMANCE BONDS

Both a payment and a performance bond are required for this project and must each equal 100% of the proposed cost. Please include the cost of this bonding into the total proposed cost.

INSURANCE REQUIREMENTS

General Liability	$1,000,000 Each Occurrence $2,000,000 General Aggregate $2,000,000 Products Completed Operations Aggregate 3 years Products/Completed Operations
Excess or Umbrella	$3,000,000
Automobile Liability	$1,000,000 Each Accident *Including Hired & Non-Owned Auto
Worker's Compensation and Employer's Liability	Statutory limits
Pollution Liability	$1,000,000 Per Loss $1,000,000 Aggregate Coverage maintained or extended discovery period for 3 years

***In regards to General Liability, Umbrella/Excess Liability, and Pollution Liability:**
If any or all of these coverages are required above, additional insured status will be required at the time a contract is executed.

Note that the above insurance amounts are the minimum required for this project. Proof of current insurance must be provided with your proposal in the form of a sample certificate. You are NOT required to include additional insured status until the time a contract is executed.

If you require a waiver of insurance requirements you may request one in your response with an explanation.

W-9 REQUIREMENT

Provide a copy of your business's W-9 with your proposal.

Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
purchasing@bouldercounty.org

SUBMITTAL SECTION

The bidder's attention is especially called to the items listed below, which must be submitted in full as part of the BID. Failure to submit any of the documents listed below as a part of your BID, or failure to acknowledge any addendum in writing with your BID, or submitting a bid on any condition, limitation or provision not officially invited in this Invitation to Bid (BID) may be cause for rejection of the BID.

THIS CHECKLIST MUST BE SUBMITTED AS PART OF YOUR BID PACKAGE: Bidder will check each box indicating compliance:

INCLUDED	ITEM
	Name and Address of the Partners and Subcontractors if applicable
	A detailed project schedule with an all-inclusive total cost
	Information on the relevant experience of key personnel
	State your compliance with the Terms and Conditions in the Sample Contract contained in this BID. Specifically list any deviations and provide justification for each deviation.
	Submit three references for similar projects your company has completed within the last three years and contact information
	Insurance Certificate
	W-9
	Signature Page
	Addendum Acknowledgement(s) (If Applicable)

JAY ROAD OVERLAY
(US 36 TO SH 119)
BID TABULATION
RD-044-0118 (102025-50)

BID ITEM	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT PRICE	COST
1	202-00019	REMOVAL OF INLET	EA	1		
2	202-00035	REMOVAL OF PIPE	LF	77		
3	202-00037	REMOVAL OF END SECTION	EA	2		
4	202-00200	REMOVAL OF SIDEWALK	SY	266		
5	202-00201	REMOVAL OF CURB	LF	66		
6	202-00203	REMOVAL OF CURB AND GUTTER	LF	363		
7	202-00206	REMOVAL OF CONCRETE CURB RAMP	SY	173		
8	202-00210	REMOVAL OF CONCRETE PAVEMENT	SY	47		
9	202-00220	REMOVAL OF ASPHALT MAT	SY	510		
10	202-00240	REMOVAL OF ASPHALT MAT (PLANING)	SY	35,347		
11	202-04002	CLEAN CULVERT	EA	5		
12	202-00828	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	LS	1		
13	203-01598	POTHOLING	EA	6		
14	207-00700	TOPSOIL (ONSITE)	CY	60		
15	208-00002	EROSION LOG TYPE 1 (12 INCH)	LF	186		
16	208-00020	SILT FENCE	LF	847		
17	208-00035	AGGREGATE BAG	LF	78		
18	208-00045	CONCRETE WASHOUT STRUCTURE	EA	2		
19	208-00053	STORM DRAIN INLET PROTECTION (TYPE I)(84 INCH)	EA	6		
20	208-00057	STORM DRAIN INLET PROTECTION (TYPE I)(144 INCH)	EA	2		
21	208-00075	PRE-FABRICATED VEHICLE TRACKING PAD	EA	1		
22	208-00103	REMOVAL AND DISPOSAL OF SEDIMENT (LABOR)	HR	15		
23	208-00105	REMOVAL AND DISPOSAL OF SEDIMENT (EQUIPMENT)	HR	15		
24	208-00106	SWEEPING (SEDIMENT REMOVAL)	HR	10		
25	208-00107	REMOVAL OF TRASH	HR	10		
26	208-00207	EROSION CONTROL MANAGEMENT (ECM)	DAY	60		
27	210-00050	RESET FIRE HYDRANT	EA	1		
28	210-00810	RESET GROUND SIGN	EA	4		
29	210-00827	RESET PULL BOX	EA	1		
30	210-04010	ADJUST MANHOLE	EA	1		
31	210-04050	ADJUST VALVE BOX	EA	1		
32	212-00009	SEEDING (TEMPORARY)	AC	0.05		
33	212-00701	COMPOST (MECHANICALLY APPLIED)	CY	15		
34	212-00706	SEEDING (NATIVE) DRILL	AC	0.11		
35	212-01210	LANDSCAPE RESTORATION	SF	100		
36	213-00004	MULCHING (WEED FREE STRAW)	AC	0.16		
37	213-00061	MULCH TACKIFIER	LB	21		
38	403-00720	HOT MIX ASPHALT (PATCHING) (ASPHALT)	TON	191		
39	403-34741	HOT MIX ASPHALT (GRADING SX) (75) PG 64-22	TON	3,931		
40	412-00800	CONCRETE PAVEMENT (8 INCH)	SY	120		
41	503-00012	DRILLED CAISSON (12 INCH)	LF	6		
42	603-01185	18 INCH REINFORCED CONCRETE PIPE (CIP)	LF	166		
43	603-05018	18 INCH REINFORCED CONCRETE END SECTION	EA	1		
44	604-00305	INLET TYPE C (5 FOOT)	EA	1		
45	604-19105	INLET TYPE R L 5 (5 FOOT)	EA	1		
46	607-11525	FENCE (PLASTIC)	LF	76		
47	608-00006	CONCRETE SIDEWALK (6 INCH)	SY	669		
48	608-00010	CONCRETE CURB RAMP	SY	198		
49	609-20010	CURB TYPE 2 (SECTION B)	LF	58		
50	609-21020	CURB AND GUTTER TYPE 2 (SECTION II-B)	LF	898		
51	613-00200	2 INCH ELECTRICAL CONDUIT	LF	22		
52	613-10000	WIRING	LS	1		
53	614-72860	PEDESTRIAN PUSH BUTTON	EA	2		
54	614-72872	LOOP DETECTOR (MICRO TYPE)	EA	2		
55	614-84106	PEDESTRIAN PUSH BUTTON POST ASSEMBLY	EA	2		
56	620-00020	SANITARY FACILITY	EA	1		
57	625-00000	CONSTRUCTION SURVEYING	LS	1		
58	626-00000	MOBILIZATION	LS	1		
59	627-00008	MODIFIED EPOXY PAVEMENT MARKING	GAL	178		
60	627-30205	THERMOPLASTIC PAVEMENT MARKING (WORD-SYMBOL)	SF	1,514		
61	627-30210	THERMOPLASTIC PAVEMENT MARKING (XWALK-STOP LINE)	SF	4,056		
62	629-01005	SURVEY MONUMENT (TYPE 5)	EA	4		
63	630	TRAFFIC CONTROL MANAGEMENT	LS	1		
64	700-70010	F/A MINOR CONTRACT REVISIONS	FA	1	$ 50,000.00	$ 50,000.00
65	700-70380	F/A EROSION CONTROL	FA	1	$ 20,000.00	$ 20,000.00
66	700-90026	F/A LANDSCAPING	FA	1	$ 5,000.00	$ 5,000.00

SUBTOTAL OF CONSTRUCTION ITEMS	
SUBTOTAL OF FORCE ACCOUNT ITEMS	$75,000
TOTAL	

Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
purchasing@bouldercounty.org

SIGNATURE PAGE

Contact Information	Response
Company Name including DBA	
List Type of Organization (Corporation, Partnership, etc.)	
Name, Title, and Email Address of Person Authorized to Contract with Boulder County	
Company Address	
Company Phone Number	
Company Website	

By signing below I certify that:
I am authorized to bid on my company's behalf.
I am not currently an employee of Boulder County.
None of my employees or agents is currently an employee of Boulder County.
I am not related to any Boulder County employee or Elected Official.
(Sole Proprietorships Only) I am not a Public Employees' Retirement Association (PERA) retiree.

_____ _____

Signature of Person Authorized to Bid on Company's Behalf **Date**

Note: If you cannot certify the above statements, please explain in a statement of explanation.

BOULDER COUNTY SAMPLE CONTRACT

THIS CONTRACT ("Contract") is entered into by and between the Board of County Commissioners on behalf of the County of Boulder, State of Colorado, a body corporate and politic, for the benefit of the Public Works Department ("County") and [Supplier] ("Contractor"). County and Contractor are each a "Party," and collectively the "Parties."

In consideration of the mutual covenants contained in this Contract, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Incorporation into Contract: The **Details Summary** is incorporated into this Contract. The **Contract Documents** are incorporated into this Contract by reference, except to the extent that the Proposal, if any is incorporated, contains any obligations placed upon County and not otherwise contained in this Contract.

2. Work to be Performed: Contractor will provide all labor and equipment and do all tasks necessary and incidental to performing the work as described in the **Details Summary** and **Contract Documents** (the "Work"). Contractor will perform the Work (i) in a good and workmanlike manner, (ii) at its own cost and expense, (iii) in accordance with recognized industry standards of care, skill and diligence for the type of work being performed, and (iv) in strict accordance with the Contract. County and its representatives shall have access to the Work at all times.

a. Contractor shall supervise and direct the Work and shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract.

b. Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services necessary for the proper execution and completion of the Work. Contractor warrants that all materials incorporated into the Work will be new unless otherwise specified.

c. Contractor shall at all times enforce good order among its employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to such person. Contractor shall initiate, maintain, and supervise all safety precautions and programs in connection with the Work to ensure safe conditions on the premises at all times. Contractor shall comply with all laws, regulations, ordinances, rules, and orders of any public authority bearing on the safety of persons and property. In the event that County notifies Contractor of any unsafe conditions or practices, Contractor shall immediately take all actions required to remediate them at no expense to County. County reserves the right to immediately suspend the Work in the event of imminent hazard, as determined by County.

d. At all times, Contractor shall keep the premises free from accumulation of waste materials or rubbish caused by Contractor's operations. Upon completion of the Work, Contractor shall remove all of its waste materials and rubbish from the premises, as well as its tools, construction equipment, machinery and surplus materials.

e. Contractor shall confine operations on the premises to areas permitted by law, ordinances, permits, this Contract, and as directed by County, including storage of any materials or equipment.

f. Any claim for an increase in the **Contract Amount** shall be made and generally described by Contractor in writing and delivered to County promptly, in no event later than thirty (30) days after the

occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered to County within sixty (60) days after such occurrence and shall be accompanied by Contractor's written statement that the amount claimed covers all known amounts to which Contractor is entitled as a result of the occurrence of said event. All claims for increase in the **Contract Amount** shall be determined by County if the Parties are unable to otherwise reach agreement on the claim.

g. Before ordering any materials or doing any Work, Contractor shall verify all measurements for the Work and shall be responsible for the correctness of same.

3. Term of Contract: The **Contract Term** begins on the **Start Date** and expires on the **Expiration Date**, unless terminated sooner. All the Work must be performed during the **Contract Term**.

4. Payment for Work Performed: In consideration of the Work performed by Contractor, and subject to conditions contained in this Contract, County will pay an amount not to exceed the **Contract Amount** to Contractor in accordance with the **Contract Documents**.

5. Invoicing: Contractor will promptly provide a copy of its Form W-9 and invoice template to County upon request. Contractor must submit an invoice to the County by the fifteenth (15th) day of the month for completion of any Work performed in the prior calendar month. All invoices submitted require the following components: Contractor's name and address (submitted W-9 address must match remit address), detailed description of services, dates of services, itemization of labor and materials costs, "Bill to: Boulder County" language, payment remittance address, payer, name and address, date of invoice, unique invoice number, and total amount due. Contractor must send all completed invoices to the **Invoice Contact** in the **Details Summary**. County may require delivery of invoices by email. Failure to submit invoices in a timely manner and in accordance with the terms of this Contract may cause a delay in payment. County may recoup any damages incurred because of Contractor's failure to submit invoices pursuant to the terms of this paragraph. County's acceptance or payment of an invoice will not constitute acceptance of any Work performed under this Contract.

6. Extra Time to Complete the Work (Additional Time only): If Contractor cannot complete the Work by the **Expiration Date**, Contractor may request extra time to complete the Work. County, in its sole discretion, may grant Contractor additional time to complete the Work by sending a written notice of extension to Contractor. An extension of time to complete the Work will not entitle Contractor to additional compensation from County.

7. Extension of Contract Term (Additional Time and Work): Upon mutual agreement of the Parties, this Contract may be extended until the **Final End Date**. During any extended **Contract Term**, the terms of this Contract will remain in full force and effect, unless otherwise amended in writing by the Parties. Where the Contractor will provide additional services for additional compensation beyond the initial **Contract Amount**, the Parties must execute a written amendment before the then-current **Expiration Date**. If necessary, the written amendment will incorporate an updated Scope of Work and updated Fee Schedule as exhibits. Contractor must provide a current Certificate of Insurance to the County that complies with the **Insurance Requirements** of this Contract, if any, prior to any extended **Contract Term**.

8. Schedule of Work: County may designate the hours (on a daily or weekly basis) during which Contractor may perform the Work, strictly for the purposes of minimizing inconvenience to the County and interference with County operations. Contractor will otherwise set its own work schedule. Contractor shall promptly notify County of any aspect of the Work that will not be delivered or accomplished according to the initial schedule.

9. Indemnity: Contractor will be liable for any damages to persons or property caused by or arising out of the actions, obligations, or omissions of Contractor, its employees, agents, representatives or other persons acting under Contractor's direction or control in performing or failing to perform the Work under this Contract. Contractor will indemnify and hold harmless County, its elected officials and appointed department heads, and its employees, agents and representatives (the "indemnified parties"), from any and all liability, claims, demands, actions, damages, losses, judgments, costs or expenses, including attorneys' fees, which may be made or brought or which may result against any of the indemnified parties as a result or on account of the actions or omissions of Contractor, its employees, agents or representatives, or other persons acting

under Contractor's direction or control. This indemnification obligation will extend to claims based on Contractor's unauthorized use or disclosure of confidential information and intellectual property infringement. County will not be obligated to indemnify or defend Contractor under any circumstances. Contractor's obligations under this provision shall survive expiration or termination of this Contract. Nothing contained in this Contract or the **Contract Documents** is intended to limit or restrict the indemnification rights or obligations of any Party under this provision, or damages available for breaches of the obligations herein.

10. Nondiscrimination: Contractor will comply with the Colorado Anti-Discrimination Act, C.R.S. § 24-34-401, et seq., as amended, and all applicable local, State and Federal laws concerning discrimination and unfair employment practices. County prohibits unlawful discrimination on the basis of race, color, religion, gender, gender identity, national origin, age 40 and over, disability, socio-economic status, sexual orientation, genetic information, or any other status protected by applicable Federal, State or local law. Contractor must require that its subcontractors, if any, similarly comply with all applicable laws concerning discrimination and unfair employment practices.

11. Information and Reports: Contractor will provide to authorized County, State, and Federal government representatives all information and reports that may be required for any purpose authorized by law. Contractor will permit access to such representatives to Contractor's facilities, books, records, accounts, and any other relevant sources of information. Where information required by a representative is in the exclusive possession of a person or entity other than Contractor, Contractor must so certify to the County and explain what efforts it has made to obtain the information.

12. Independent Contractor: Contractor is an independent contractor for all purposes in performing the Work. None of Contractor, its agents, personnel or subcontractors are employees of the County for any purpose, including the Federal Insurance Contribution Act, the Social Security Act, the Federal Unemployment Tax Act, the provisions of the Internal Revenue Code, the Colorado Workers' Compensation Act, the Colorado Unemployment Insurance Act, and the Public Employees Retirement Association. Accordingly, County will not withhold or pay any income tax, payroll tax, or retirement contribution of any kind on behalf of Contractor or Contractor's employees. As an independent contractor, Contractor is responsible for employing and directing such personnel and agents as it requires to perform the Work. Contractor will exercise complete authority over its personnel and agents and will be fully responsible for their actions.

13. Termination

a. Breach: Either Party's failure to perform any of its material obligations under this Contract, in whole or in part or in a timely or satisfactory manner, will be a breach. The institution of proceedings under any bankruptcy, insolvency, reorganization or similar law, by or against Contractor, or the appointment of a receiver or similar officer for Contractor or any of its property, which is not vacated or fully stayed within thirty (30) days after the institution of such proceeding, will also constitute a breach. In the event of a breach, the non-breaching Party may provide written notice of the breach to the other Party. If the breaching Party does not cure the breach, at its sole expense, as reasonably determined by the non-breaching Party in its sole discretion, within thirty (30) days after delivery of notice, the non-breaching Party may exercise any of its remedies provided under this Contract or at law, including immediate termination of this Contract.

b. Non-Appropriation: The other provisions of this Contract notwithstanding, County is prohibited by law from making commitments beyond the current fiscal year. Payment to Contractor beyond the current fiscal year is contingent on the appropriation and continuing availability of funding in any subsequent year. County has reason to believe that sufficient funds will be available for the full **Contract Term**. Where, however, funds are not allocated for any fiscal period beyond the current fiscal year, County may terminate this Contract without penalty by providing seven (7) days' written notice to Contractor.

c. Convenience: In addition to any other right to terminate under this Section 13, County may terminate this Contract, in whole or in part, for any or no reason, upon seven (7) days' advance written notice to Contractor.

14. Contractor Obligations upon Termination or Expiration: By the **Expiration Date** or effective date of termination, if earlier, Contractor must (1) remove from County property all of its personnel, equipment, supplies, trash and any hazards created by Contractor, (2) protect any serviceable materials belonging to the County, and (3) take any other action necessary to leave a safe and healthful worksite. Any items remaining on County property after the Expiration Date or the effective date of termination, if earlier, will be deemed abandoned by Contractor.

15. Payable Costs in Event of Early Termination: If County terminates this Contract before the **Expiration Date**, Contractor's payments (and any damages associated with any lawsuit brought by Contractor) are limited to only (1) payment for Work satisfactorily executed and fully and finally completed, as determined by County in its sole discretion, prior to delivery of the notice to terminate, and (2) the reasonable and actual costs Contractor incurred in connection with performing the Work prior to delivery of the notice to terminate. Contractor explicitly waives all claims it may have against the County for any other compensation, such as anticipatory profits or any other consequential, special, incidental, punitive or indirect damages.

16. Remedies for Non-Performance: If Contractor fails to perform any of its obligations under this Contract, County may, at its sole discretion, exercise one or more of the following remedies (in addition to any other remedies provided by law or in this Contract), which shall survive expiration or termination of this Contract:

a. Suspend Performance: County may require that Contractor suspend performance of all or any portion of the Work pending necessary corrective action specified by the County and without entitling Contractor to an increase in compensation or extension of the performance schedule. Contractor must promptly stop performance and incurring costs upon delivery of a notice of suspension by the County.

b. Withhold Payment Pending Corrections: County may permit Contractor to correct any rejected Work at the County 's discretion. Upon County 's request, Contractor must correct rejected work at Contractor's sole expense within the time frame established by the County. Upon full and final completion of the corrections satisfactory to the County, County will remit payment to Contractor.

c. Deny Payment: County may deny payment for any Work that does not comply with the requirements of the Contract or that Contractor otherwise fails to provide or fully and finally complete, as determined by the County in its sole discretion. Upon County request, Contractor will promptly refund any amounts prepaid by the County with respect to such non-compliant Work.

d. Removal: Upon County 's request, Contractor will remove any of its employees or agents from performance of the Work, if County, in its sole discretion, deems any such person to be incompetent, careless, unsuitable, or otherwise unacceptable.

17. Binding Arbitration Prohibited: County does not agree to binding arbitration by any extra-judicial body or person.

18. Conflicts of Interest: Contractor may not engage in any business or personal activities or practices or maintain any relationships that conflict in any way with the full performance of Contractor's obligations.

19. Notices: All notices provided under this Contract must be in writing and sent by Certified U.S. Mail (Return Receipt Requested), electronic mail, or hand-delivery to the other Party's **Contact** at the address specified in the **Details Summary**. For certified mailings, notice periods will begin to run on the day after the postmarked date of mailing. For electronic mail or hand-delivery, notice periods will begin to run on the date of delivery.

20. Statutory Requirements: This Contract is subject to all statutory requirements that are or may become applicable to counties or political subdivisions of the State of Colorado generally, including but not limited to: C.R.S. § 38-26-107, which requires withholding funds where the County receives a claim for payment from a supplier or subcontractor of Contractor upon notice of final settlement (required for public

works contracts that exceed $150,000); C.R.S. § 8-17-101 et seq.; C.R.S. § 18-8-301, et seq.; and C.R.S. § 18-8-401, et seq.

21. Public Contracts for Services (C.R.S. §§ 8-17.5-101, et seq.): *The phrase "unauthorized worker" as used in this provision shall have the same and intended meaning as "illegal alien" as such phrase is used in C.R.S. §§ 8-17.5-101, et seq.* Contractor hereby certifies, warrants, and agrees that it does not knowingly employ or contract with an unauthorized worker who will perform work under this Contract and further certifies that it will confirm the employment eligibility of all employees who are newly hired for employment to perform work under this Contract by participating in the E-Verify Program established under Pub. L. 104-28 or the department verification program established under C.R.S. § 8-17.5-102(5)(c). Contractor (i) shall not knowingly employ or contract with an unauthorized worker to perform work under this Contract; (ii) shall not enter into a contract with a subcontractor that fails to certify to the contractor that the subcontractor shall not knowingly employ or contract with an unauthorized worker to perform work under this Contract; (iii) has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Contract through participation in the E-Verify program or department program; (iv) is prohibited from using either the E-Verify program or department program procedures to undertake preemployment screening of job applicants while this Contract is being performed; and (v) shall comply with any reasonable request by the department made in the course of an investigation that the Colorado Department of Labor and Employment is undertaking pursuant to the authority established in C.R.S. § 8-17.5-102(5). If Contractor obtains actual knowledge that a subcontractor performing work under this Contract knowingly employs or contracts with an unauthorized worker, Contractor shall (a) notify the subcontractor and County within three (3) days that Contractor has actual knowledge that subcontractor is employing or contracting with an unauthorized worker; and (b) terminate the subcontract if, within three (3) days of receiving notice hereunder, subcontractor does not stop employing or contracting with the unauthorized worker; except that Contractor shall not terminate the contract with the subcontractor if during such three (3) days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an unauthorized worker. Contractor's violation of this provision will constitute a material breach of this Contract, entitling the County to terminate the contract for breach. If this Contract is so terminated, Contractor shall be liable for actual and consequential damages to the County.

22. Entire Agreement/Binding Effect/Amendments: This Contract represents the complete agreement between the Parties and is fully binding upon them and their successors, heirs, and assigns, if any. This Contract terminates any prior agreements, whether written or oral in whole or in part, between the Parties relating to the Work. This Contract may be amended only by a written agreement signed by both Parties.

23. Assignment/Subcontractors: This Contract may not be assigned or subcontracted by Contractor without the prior written consent of the County. If Contractor subcontracts any of its obligations under this Contract, Contractor will remain liable to the County for those obligations and will also be responsible for subcontractor's performance under, and compliance with, this Contract. Contractor shall not contract with a person or entity to whom County has made a reasonable objection.

24. Governing Law/Venue: The laws of the State of Colorado govern the construction, interpretation, performance, and enforcement of this Contract. Any claim relating to this Contract or breach thereof may only be brought exclusively in the Courts of the 20th Judicial District of the State of Colorado and the applicable Colorado Appellate Courts.

25. Breach: The failure of either Party to exercise any of its rights under this Contract will not be deemed to be a waiver of such rights or a waiver of any breach of the Contract. All remedies available to a Party in this Contract are cumulative and in addition to every other remedy provided by law.

26. Severability: If any provision of this Contract becomes inoperable for any reason but the fundamental terms and conditions continue to be legal and enforceable, then the remainder of the Contract will continue to be operative and binding on the Parties.

27. Third-Party Beneficiary: Enforcement of the terms and conditions and all rights and obligations of this Contract are reserved to the Parties. Any other person receiving services or benefits under this Contract is an incidental beneficiary only and has no rights under this Contract. Notwithstanding, where the

beneficiary **Department** is led by an Elected Official, such Elected Official shall be considered a third-party beneficiary.

28. Colorado Open Records Act: County may disclose any records that are subject to public release under the Colorado Open Records Act, C.R.S. § 24-72-200.1, et seq.

29. Conflict of Provisions: If there is any conflict between the terms of the main body of this Contract and the terms of any of the **Contract Documents**, the terms of the main body of the Contract will control.

30. Governmental Immunity: Nothing in this Contract shall be construed in any way to be a waiver of the County's immunity protection under the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, et seq., as amended.

31. Representations and Warranties: Contractor represents and warrants the following:

a. Execution of this Contract and performance thereof is within Contractor's duly authorized powers;

b. The individual executing this Contract is authorized to do so by Contractor;

c. Contractor is authorized to do business in the State of Colorado and is properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over the Work and the Contractor; and

d. Contractor and its subcontractors, if any, are financially solvent, able to pay all debts as they mature, and have sufficient working capital to complete the Work and perform all obligations under the Contract.

32. Legal Compliance: Contractor assumes full responsibility for obtaining and maintaining any permits and licenses required to perform the Work. Contractor is soley responsible for insuring that its performance under this Contract and the Work itself will comply with all Federal, State, and local laws, regulations, ordinances and codes. Contractor shall promptly notify County if any drawings or specifications are at variance with any laws, regulations, ordinances, or codes. If Contractor performs any Work contrary to such laws, regulations, ordinances, or codes, Contractor shall bear all costs arising therefrom. County approval of the Work or any aspect of Contractor's performance, such as drawings, specifications, plans, designs, or other Contractor-drafted documents, shall not be interpreted to mean that Contractor has satisfied its obligations under this Section.

33. Litigation Reporting: Contractor is not currently involved in any action before a court or other administrative decision-making body that could affect Contractor's ability to perform the Work. Contractor will promptly notify the County if Contractor is served with a pleading or other document in connection with any such action.

34. Tax Exemption: County is exempt from payment of Federal, State, and local government taxes. Contractor shall collect no tax from the County, and the County shall not be liable to pay any taxes imposed on Contractor. County shall provide its tax exemption status information to Contractor upon request.

35. Delegation of Authority: The Parties acknowledge that the Board of County Commissioners has delegated authority to the Department Head or Elected Official that leads the beneficiary **Department** and their designees to act on behalf of the County under the terms of this Contract, including but not limited to the authority to terminate this Contract.

36. Ownership of Work Product: All work product, property, data, documentation, information or materials conceived, discovered, developed or created by Contractor pursuant to this Contract ("Work Product") will be owned exclusively by the County. To the extent possible, any Work Product will be deemed to be a work made for hire. Contractor unconditionally and irrevocably transfers and assigns to the County all right, title and interest in and to any Work Product.

37. Publicity Releases: Contractor will not refer to this Contract or the County in commercial advertising without prior written consent of the County. This provision shall survive expiration or termination of this Contract.

38. Execution by Counterparts; Electronic Signatures: This Contract may be executed in multiple counterparts, each of which will be deemed an original, but all of which will constitute one agreement. The Parties approve the use of electronic signatures, governed by the Uniform Electronic Transactions Act, C.R.S. §§ 24 71.3 101 to 121. The Parties will not deny the legal effect or enforceability of this Contract solely because it is in electronic form or because an electronic record was used in its creation. The Parties will not object to the admissibility of this Contract in the form of electronic record, or paper copy of an electronic document, or paper copy of a document bearing an electronic signature, because it is not in its original form or is not an original.

39. Limitation on Public Statements and Lobbying Activity. During the term of this Contract, Contractor may receive from the County its confidential data, work product, or other privileged or confidential information that is protected by law. To maintain the fact and appearance of absolute objectively, Contractor shall not, without the prior written consent of the County, which shall not be unreasonably withheld, do any of the following: (a) disclose information obtained because of this contractual relationship to any third party; (b) lobby any State or Federal agency on any pending matter while this Contract is effective; or (c) make any public statements or appear at any time to give testimony at any public meeting on the subject matters regarding which Contractor is or was retained by the County. County may set reasonable conditions on any disclosure authorized by the County under this provision. Notwithstanding, Contractor may make disclosures as required by law, and to law enforcement officials in connection with any criminal justice investigation.

40. Sustainability: All construction, deconstruction, remodel, and office move projects are required to follow construction waste procedure modeled off of Boulder County BuildSmart Code, International Green Construction Code (IGCC), International Energy Conservation Code (IECC), and Leadership in Energy and Environmental Design (LEED) certification, as an effort to achieve maximum jobsite waste diversion, energy efficiency, and water conservation. All 'demolition projects' are to follow deconstruction procedures. Instead of demolition project materials being crushed and primarily sent to the landfill, these projects should be systematically dismantled, typically in the opposite order they were constructed, in order to maximize the salvage of materials. Any hazardous materials encountered should follow state and federal standards, and contractor shall leverage the Boulder County Hazardous Materials Management facility for hazardous materials. The development of a project diversion plan is encouraged to include material types and volume/weight estimations as well as planned destinations. Projects must track all jobsite waste.

41. Limitation of Liability: COUNTY SHALL NOT BE LIABLE TO CONTRACTOR FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR INDIRECT DAMAGES ARISING FROM OR RELATING TO THIS CONTRACT, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. COUNTY'S AGGREGATE LIABILITY, IF ANY, ARISING FROM OR RELATED TO THIS CONTRACT, WHETHER IN CONTRACT, OR IN TORT, OR OTHERWISE, IS LIMITED TO, AND SHALL NOT EXCEED, THE AMOUNTS PAID OR PAYABLE HEREUNDER BY COUNTY TO CONTRACTOR. ANY CONTRACTUAL LANGUAGE LIMITING CONTRACTOR'S LIABILITY SHALL BE VOID.

42. County Opportunity to Review: Contractor shall provide County with the opportunity to review and approve or take other appropriate action upon the Contractor's submittals, such as Shop Drawings, Product Data, and Samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents.

43. Notice to Proceed: The Parties agree that time is of the essence and work will begin after a "Notice to Proceed" has been issued by the County and in accordance with the terms therein.

44. Retainage: County may retain partial payment pending completion and County acceptance of the Work as satisfactory and fully and finally complete. For contracts that exceed $150,000, the retention rate shall not exceed five percent (5%). C.R.S. § 24-91-103. Contractor is responsible for submitting a final invoice for any retainage held by County. If It becomes necessary for County to take over completion of the Work, all of the amounts owing to Contractor, including the withheld percentage, shall be applied: First, towards completion of the Work; second, towards performance of the withholding requirement set forth in C.R.S. § 38-26-107; third, to the surety furnishing bonds for the Work, to the extent such surety has incurred liability or expense in competing the Work or made payments pursuant to C.R.S. § 38-26-106; then, to

Contractor. Such retained percentage as may be due to Contractor shall be due and payable as provided by C.R.S. § 38-26-107.

45. Bonds: Upon County's request, Contractor shall obtain and deliver to County payment and performance bonds each equal to 100% of the total Contract. Bonds shall be executed by a qualified corporate surety and must be acceptable to County. County reserves the right to accept other acceptable forms of surety in lieu of a bond, and to reduce the bond requirements set forth herein consistent with C.R.S. § 38-26-106.

46. Change Orders: If unforeseen modifications or changes are required, Contractor may submit a Change Order request to County, which must include a complete description, timeline, and fee schedule for the proposed work. Change Orders are not effective until approved by County in writing.

47. No Suspension or Debarment: Contractor certifies, and warrants for the duration of this Contract, that neither it nor its principals nor any of its subcontractors are debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this Contract by any Federal or State department or agency. Contractor shall comply, and shall require its subcontractors to comply, with subpart C of 2 C.F.R. § 180.

48. Permits/Licenses/Code Compliance: Prior to starting the Work, Contractor will identify and obtain, and maintain during this Contract, all permits and licenses necessary to perform the Work. Contractor shall comply with all State and local codes. Contractor is responsible for locating all public utilities, as necessary. Contractor shall require its subcontractors to comply with this provision. HVAC, roofing, and general contractors must be licensed through Boulder County Land Use. Electricians and plumbers must be licensed through the State and registered with Boulder County Land Use Building Safety and Inspection Division. Architects, Professional Engineers and Professional Land Surveyors must be fully-licensed through the State. All required permits and licenses must be provided to County prior to Contractor beginning the Work.

49. Stormwater Quality Protection Requirements: Contractor will take all measures necessary to prevent pollutants from entering storm drains and watercourses. To eliminate stormwater pollution, Contractor shall implement effective Best Management Practices (BMPs). BMPs include general good housekeeping practices, appropriate scheduling of activities, operational practices, maintenance procedures and other measures to prevent the discharge of pollutants directly or indirectly to the storm drain system. These BMPs shall be maintained for the duration of this Contract. Contractor shall also be responsible for proper disposal of all waste materials, including wastes generated by the implementation of BMPs. Contractor shall otherwise comply with the Federal Clean Water Act, Colorado Water Quality Control Act, and Boulder County's local Clean Water Act, Illegal Discharge Ordinance (No. 2012-4). For work performed in urbanized areas, Contractor must comply with the requirements of MS4 permit (COR090000), which is available through the Colorado Department of Public Health and Environment.

50. Guaranties and Warranties: Upon completion of the Work, Contractor will provide County with a written guaranty covering all labor, materials and workmanship incorporated into the Work for one (1) year, or within any such longer period of time as may be prescribed by law, the specifications, or any other applicable special warranty required by the **Contract Documents**. Final payment upon full and final completion of the Work will not relieve Contractor of responsibility for faulty material or workmanship, which County may require Contractor to fix at Contractor's sole expense, in addition to County's other remedies. This provision shall apply to Work completed by Contractor's employees and subcontractors.

51. Final Payment: A final inspection of the Work shall be conducted by County. If a list of deficiencies results from such final inspection, Contractor shall promptly rectify all items appearing thereon before final payment will be made. When County indicates acceptance of the Work, Contractor may request final payment from County, including any retained amounts. Final payment shall be subject to C.R.S. § 38-26-107.

52. Notice of Final Settlement: Prior to remitting final payment to Contractor, County shall publish a Notice of Final Settlement in accordance with C.R.S. § 38-26-107. Final payment will be rendered in accordance with the statute and the other terms of this Contract. Final payment will not be rendered until County, in its sole discretion, determines full and final completion of the Work.

53. Geographic Information System (GIS) Data: Contractors agree that the following, specified data formats, shall be used and/or adhered to when submitting required data to the County:

a. All GIS data must be ArcGIS 10.x compatible. Shapefiles may be accepted with written, pre-approval, from the County.

b. All GIS data must have complete metadata, following Boulder County GIS Metadata Standards located at: https://assets.bouldercounty.org/wpcontent/uploads/2018/03/metadata-standards-contractors.pdf

c. All Computer Aided Design (CAD) files must have an assigned real world coordinate system to ensure compatible conversion into the County's GIS system, if necessary.

d. All spatial or georeferenced data will be provided to the county in the following coordinate system:

i. Name:
NAD 1983 HARN State Plane Colorado
North FIPS 0501 Feet

ii. Unit:
Foot US

iii. Projection:
Lambert Conformal Conic

iv. Horizontal Datum:
North American Datum 1983 HARN

v. Vertical Datum:
North American Vertical Datum 1988

vi. Spheroid:
GRS 1980

e. Contractors are responsible for capturing section corners or quarter corners for specific projects to be added into the Public Land Survey System (PLSS) project for updating the section corners, Contractors shall provide high-accuracy PLSS monument coordinates for each corner section or quarter corner section monument used as control points or that occur within the project area ("putting it on the cap") as is reasonable, depending on the difficulty to access the point. All positions to be collected shall be required to use (at a minimum) the Real-Time Kinematic (RTK) method.

54. State Specifications: The Standard Specifications for Road and Bridge Construction 2017, either in whole or as set forth in the Bid Documents, are expressly incorporated into this Contract by reference.

55. Determination of Unit Prices: County will determine the actual quantities and classifications of Unit Price Work performed by Contractor. The Parties will review the County's preliminary determinations before County renders a written decision thereon (by recommendation of an Application for Payment or otherwise), which shall be final and binding upon Contractor. The value of any Unit Price Work covered by a Change Order or claim for an increase or decrease in the Contract Amount shall be determined by applying the unit prices to the quantities of items.

a. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, the Parties agree that the Contract Amount includes the total cost of Unit Price Work, determined by multiplying the quantity of each item by its unit price. Initial quantity determinations are estimates, which must be adjusted to reflect actual quantities. Contractor shall make a claim in writing to County for any additional amounts owed where actual quantities exceed estimated quantities. Contractor shall provide such written claim within twenty (20) days of providing the items and shall be accompanied by supporting documentation. The written claim shall include a statement that the claimed amount covers all known amounts (direct, indirect and consequential) to which Contractor is owed. County shall only pay Contractor for actual quantities of items provided hereunder.

b. The Parties agree that each unit price adequately covers Contractor's overhead and profit for each item.

56. Records Retention/Access/Audits: Contractor shall maintain all records and documents pertaining to this Contract in accordance with the requirements prescribed by County. Such records shall be maintained for a period of five (5) calendar years after the date of Contractor's final payment from County under this Contract. Contractor agrees that County or their designated representative shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Contract as necessary and upon request, throughout the term of this Contract, and for five (5) calendar years after the date of the final payment hereunder. Contractor agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. County and Contractor acknowledge that protected information is exempt from this requirement without proper client release.

57. Legal Interpretation. Each Party recognizes that this Contract is legally binding and acknowledges that it has had the opportunity to consult with legal counsel of its choice about this Contract. The rule of construction providing that any ambiguities are resolved against the drafting Party will not apply in interpreting the terms of this Contract.

58. Insurance: Prior to commencing the Work, Contractor will provide a Certificate of Insurance to the County demonstrating adequate insurance coverage as required by this paragraph. All policies evidencing coverage required by the Contract will be issued by insurance companies satisfactory to the County. Contractor will forward Certificates of Insurance directly to the **County Department** and **Contact** listed in the **Details Summary**.

a. Boulder County as Additional Insured: Boulder County shall be named as an additional insured for General Liability, Umbrella/Excess Liability, and Pollution Liability, as designated in this Contract. Additional insured shall be endorsed to the policy.

THE ADDITIONAL INSURED WORDING SHOULD BE AS FOLLOWS*: County of Boulder, State of Colorado, a body corporate and politic, is named as Additional Insured*.

b. Notice of Cancellation: Each insurance policy required by this Contract shall provide the required coverage and shall not be suspended, voided or canceled except after thirty (30) days' prior written notice has been given to the County except when cancellation is for non-payment of premium, then ten (10) days' prior notice may be given. If any insurance company refuses to provide the required notice, Contractor or its insurance broker shall notify the County any cancellation, suspension, or nonrenewal of any insurance policy within seven (7) days of receipt of insurers' notification to that effect.

c. Insurance Obligations of County: County is not required to maintain or procure any insurance coverage beyond the coverage maintained by the County in its standard course of business. Any insurance obligations placed on the County in any of the **Contract Documents** shall be null and void.

d. Deductible: Any and all deductibles contained in any insurance policy shall be assumed by and at the sole risk of Contractor.

e. Primacy of Coverage: Coverage required of Contractor and its subcontractors, if any, shall be primary over any insurance or self-insurance program carried by the County.

f. Subrogation Waiver: All insurance policies in any way related to this Contract secured or maintained by Contractor as required herein shall include clauses stating that each carrier shall waive all rights of recovery, under subrogation or otherwise, against County, its organizations, officers, agents, employees, and volunteers.

g. Requirements. For the entire duration of this Contract including any extended or renewed terms, and longer as may be required by this Contract, Contractor shall procure and maintain at its own expense, and without cost to the County, the following kinds and minimum amounts of insurance to insure the liability risks that Contractor has assumed under this Contract:

i. **Commercial General Liability**

Coverage should be provided on an Occurrence form, ISO CG0001 or equivalent. The policy shall be endorsed to include Additional Insured Owners, Lessees or Contractors endorsements CG 2038 (or equivalent), Designated Construction Project(s) General Aggregate Endorsement CG2503 (or equivalent) and Additional Insured Completed Operations for Owners, Lessees or Contractors CG 2037 (or equivalent). Minimum limits required of $1,000,000 Each Occurrence, $2,000,000 General Aggregate and $2,000,000 Products/Completed Operations Aggregate. The County requires the Products/Completed Operations coverage to be provided 3 years after completion of construction. An endorsement must be included with the certificate.

ii. **Automobile Liability**

Bodily Injury and Property Damage for any owned, hired, and non-owned vehicles used in the performance of the Contract. Minimum limits $1,000,000 Each Accident.

iii. **Workers' Compensation and Employer's Liability**

Workers' Compensation must be maintained with the statutory limits. Employer's Liability is required for minimum limits of $100,000 Each Accident/$500,000 Disease-Policy Limit/$100,000 Disease-Each Employee.

iv. **Umbrella / Excess Insurance**

Umbrella/Excess Liability insurance in the amount $3,000,000.00, following form.

v. **Pollution Liability**

Coverage pay for those sums the Contractor becomes legally obligated to pay as damages because of Bodily Injury, Property Damage or environmental Damage arising out of a pollution incident caused by the Contractor's work including Completed Operations. Coverage shall include emergency response expenses, pollution liability during transportation (if applicable) and at Non-Owned Waste Disposal Site (if applicable). The Minimum limits required are $1,000,000 Per Occurrence/Loss and $1,000,000 Policy Aggregate. If the coverage is written on a claims-made basis, the Contractor warrants that any retroactive date applicable to coverage under the policy precedes the effective date of this Contract; and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of three (3) years beginning from the time that work under this contract is completed. County shall be named as an additional insured for ongoing operations and completed operations.

[Signature Page to Follow]

IN WITNESS WHEREOF, the Parties have executed and entered into this Contract as of the latter day and year indicated below.

SIGNED for and on behalf of Boulder County	**SIGNED for and on behalf of Contractor**
Signature:	Signature:
Name:	Name:
Title:	Title:
Date:	Date:

↓↓*For Board-signed documents only*↓↓	
Attest:	*Initials*
Attestor Name:	
Attestor Title:	