



**Resource Management
Agency
COUNTY OF TULARE
AGENDA ITEM**

BOARD OF SUPERVISORS

KUYLER CROCKER
District One
PETE VANDER POEL
District Two
AMY SHUKLIAN
District Three
EDDIE VALERO
District Four
DENNIS TOWNSEND
District Five

AGENDA DATE: June 9, 2020 – REVISED

Public Hearing Required	Yes	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
Scheduled Public Hearing w/Clerk	Yes	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
Published Notice Required	Yes	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
Advertised Published Notice	Yes	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
Meet & Confer Required	Yes	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
Electronic file(s) has been sent	Yes	<input checked="" type="checkbox"/>	N/A	<input type="checkbox"/>
Budget Transfer (Aud 308) attached	Yes	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
Personnel Resolution attached	Yes	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
Agreements are attached and signature line for Chairman is marked with tab(s)/flag(s)	Yes	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
CONTACT PERSON: Celeste Perez PHONE: (559) 624-7010				

SUBJECT: Authorization to Bid the Harvest Avenue Improvements Project

REQUEST(S):

That the Board of Supervisors:

1. Approve the Plans, Special Provisions, Proposal and Contract (“Bid Documents”) for the construction of the Harvest Avenue Improvements Project, in the community of Goshen; and
2. Authorize the Chair of the Board of Supervisors to sign the Plans; and
3. Approve the advertisement of bids for the Harvest Avenue Improvements Project; and
4. Adopt the Categorical Exemption prepared pursuant to the California Environmental Quality Act (CEQA) and the State CEQA Guidelines General Rule Exemption per Section 15300.4 Application by Public Agencies and Section 15301 Existing Facilities (c), respectively, for the Harvest Avenue Improvements Project; and
5. Authorize the Environmental Assessment Officer, or designee, to sign and file the Notice of Exemption with the County Clerk-Recorder.

SUMMARY:

Tulare County is the lead agency for the Harvest Avenue Improvements Project (“the Project”) to oversee the improvements in the unincorporated community of Goshen. On June 25, 2019, the Project was approved by the Board (Resolution No. 2019-

SUBJECT: Authorization to Bid the Harvest Avenue Improvements Project

DATE: June 9, 2020

0566). The Project will be reimbursed in the amount not to exceed \$1,128,375.01 in Measure R Regional funds.

The Betty Drive Interchange Project, managed by Caltrans, included the realignment of Road 64 between Avenue 304 and Avenue 308. The realignment of Road 64 necessitates the extension of Harvest Avenue approximately 450 feet west from its existing terminus at the existing Road 64 alignment. Harvest Avenue is currently developed with mixed uses including residential, industrial/commercial, and also includes a portion of Goshen Elementary School.

The Project consists of road improvements along Harvest Avenue between Road 64 and Road 68 to provide continuity to the new segment constructed as part of the Betty Drive Interchange Project. The Project includes pavement reconstruction, construction of curb and gutter, sidewalk, driveways, ADA related improvements, storm drain facilities, and related improvements (signing/stripping, etc.).

In accordance with the California Environmental Quality Act (CEQA), the County has also determined that two categorical exemptions are applicable to the proposed action: State CEQA Guidelines (14 Cal. Code Regs.) Section 15300.4 Application by Public Agencies and Section 15301 Existing Facilities (c).

The Plans and Specifications for the Project are complete and ready to be approved by the Board of Supervisors.

Construction is anticipated to begin in summer of 2020.

FISCAL IMPACT/FINANCING:

No Net County Cost to the General Fund.

Funding for the Project includes Measure R Regional and County Road Funds. A summary of the total project cost and funding sources for the Project are as follows:

Engineering Design:	\$111,000
Right of Way:	\$23,000
Estimated Construction (Including Contingency):	\$1,350,000
Construction Engineering:	\$90,000
Total:	\$1,574,000

Funding Sources are as follows:

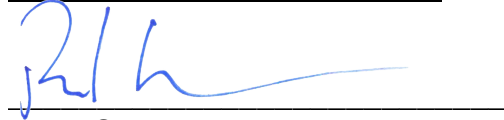
Measure R Regional Funds:	\$1,128,375
County Road Funds:	\$445,625
Total:	\$1,574,000

SUBJECT: Authorization to Bid the Harvest Avenue Improvements Project
DATE: June 9, 2020

LINKAGE TO THE COUNTY OF TULARE STRATEGIC BUSINESS PLAN:

The Project will enhance the safety and security of the public by improving the transportation infrastructure for both the general population in the region and the users of this facility.

ADMINISTRATIVE SIGN-OFF:



Reed Schenke, P.E.
Director

cc: County Administrative Office

Attachment(s) Attachment A – Vicinity Map
Attachment B – Notice of Exemption
Attachment C – Bid Documents

**BEFORE THE BOARD OF SUPERVISORS
COUNTY OF TULARE, STATE OF CALIFORNIA**

**IN THE MATTER OF AUTHORIZATION TO) Resolution No. _____
BID THE HARVEST AVENUE)
IMPROVEMENTS PROJECT)**

UPON MOTION OF SUPERVISOR _____, SECONDED BY
SUPERVISOR _____, THE FOLLOWING WAS ADOPTED BY THE
BOARD OF SUPERVISORS, AT AN OFFICIAL MEETING HELD ON JUNE 9, 2020, BY
THE FOLLOWING VOTE:

AYES:
NOES:
ABSTAIN:
ABSENT:

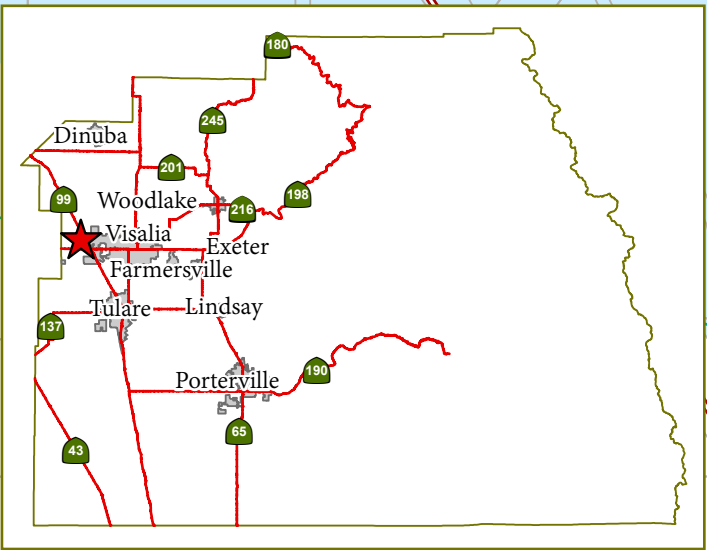
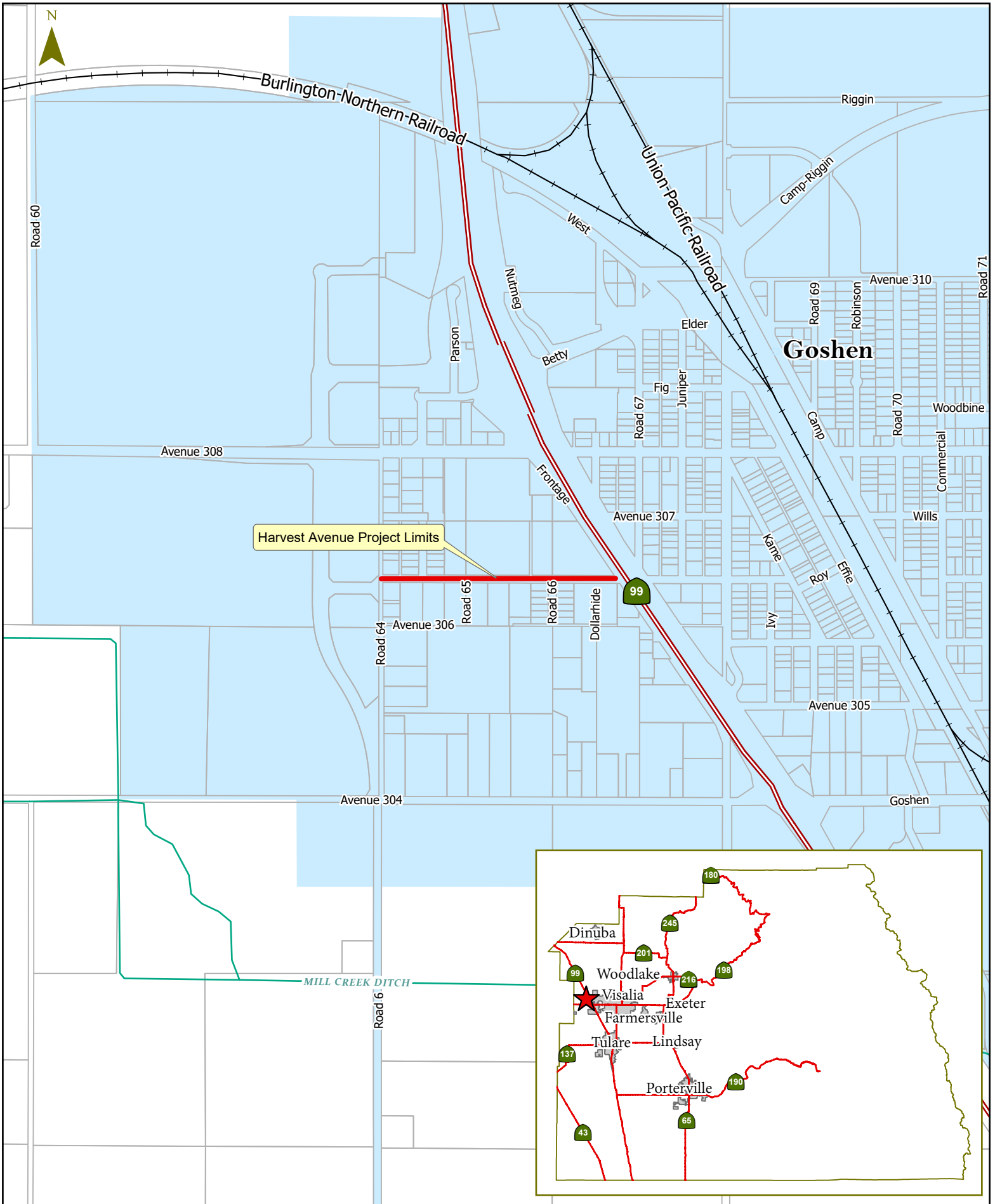
ATTEST: JASON T. BRITT
COUNTY ADMINISTRATIVE OFFICER/
CLERK, BOARD OF SUPERVISORS

BY: _____
Deputy Clerk

* * * * *

1. Approved the Plans, Special Provisions, Proposal and Contract (“Bid Documents”) for the construction of the Harvest Avenue Improvements Project, in the community of Goshen; and
2. Authorized the Chair of the Board of Supervisors to sign the Plans; and
3. Approved the advertisement of bids for the Harvest Avenue Improvements Project; and
4. Adopted the Categorical Exemption prepared pursuant to the California Environmental Quality Act (CEQA) and the State CEQA Guidelines General Rule Exemption per Section 15300.4 Application by Public Agencies and Section 15301 Existing Facilities (c), respectively, for the Harvest Avenue Improvements Project; and
5. Authorized the Environmental Assessment Officer, or designee, to sign and file the Notice of Exemption with the County Clerk-Recorder.

Attachment A
Vicinity Map



Attachment B
Notice of Exemption

Notice of Exemption

Fee Exempt per Government Code Section 6103

To: Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

X Tulare County Clerk
Room 105, Courthouse
221 South Mooney Boulevard
Visalia, CA 93291

Lead Agency: Tulare County Resource Management Agency
5961 South Mooney Blvd.
Visalia, Ca 93277 Ph: (559) 624-7000
Attn: *hguerra@co.tulare.ca.us*

Applicant(s): Tulare County Public Works
5961 South Mooney Boulevard
Visalia, CA 93277 Ph: (559) 624-7000

Dated filed at Tulare County Clerk's Office

Project Title: Harvest Avenue Improvements Project

Project Location - Specific: Goshen, CA – Harvest Avenue between Road 64 and Road 68

Project Location- Section, Township, Range: S. 24 / T. 18S / R. 23E within the Goshen USGS 7.5-minute Quadrangle

Project Location - City: West Goshen, CA **Project Location - County:** Tulare

Description of Nature, Purpose, and Beneficiaries of Project: The project consists of road improvements along Harvest Avenue between Road 64 and Road 68. The project includes pavement reconstruction, construction of curb & gutter, sidewalk, driveways, ADA related improvements, storm drain facilities, and related improvements (signing/stripping, etc.). The project also includes right of way acquisition from two corner parcels to accommodate the installation of two of the ADA curb ramps and one temporary construction easement will be needed from a separate parcel. Construction activities will include roadway excavation, placement of aggregate base and pavement, and signing/stripping installation. Minor utility relocations may be needed to accommodate the project. Construction is anticipated to begin during the 3rd Quarter of 2020.

Exempt Status: *(check one)*

- Ministerial (Sec. 21080(b)(1); 15268);
- Declared Emergency (Sec. 21080(b)(3); 15269(a));
- Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- Common Sense Rule: CEQA guidelines 15061 (b)(3)
- X Categorical Exemption: **CEQA Guidelines Class 1 Section 15301 Existing Facilities (c)**
- Statutory Exemptions:

Reasons why project is exempt: This action is consistent with Class 1 Section 15301, Existing Structures (c), as activities associated with the project will include replacement of existing facilities with negligible or no expansion of capacity. Also, consistent with Section 15300.4, Application by Public Agencies, the County of Tulare Board of Supervisors adopted an exemption for the construction of the aforementioned facilities per the Tulare County Guidelines for the Implementation of California Environmental Quality Act of 1970, Number 300 Section 111. CATEGORICAL EXEMPTIONS Class 1: Existing Facilities (c). As such, Sections 15301 and 15300.4 are applicable and appropriate for this project

Name of Public Agency Approving Project: County of Tulare, Resource Management Agency

Project Planner/Representative: Reed Schenke, Director

Area Code/Telephone: 559-624-7142

Signature: _____
Hector Guerra

Date: _____ Title: Chief Environmental Planner

Signature: _____
Reed Schenke, P.E.

Date: _____ Title: Environmental Assessment Officer
Director

X Signed by Lead Agency

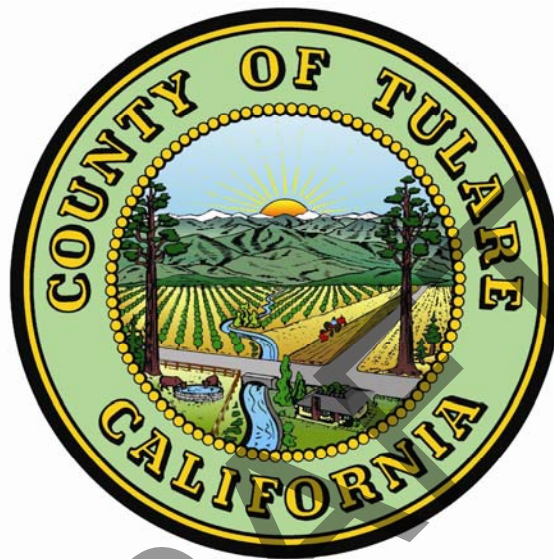
Date received for filing at OPR: N/A

Attachment C
Bid Documents

Book No: H

COUNTY OF TULARE

STATE OF CALIFORNIA



**SPECIAL PROVISIONS,
BID AND CONTRACT
FOR CONSTRUCTION OF
HARVEST AVENUE
IMPROVEMENTS PROJECT**

FUNDED BY:

2006 HALF-CENT TRANSPORTATION SALES TAX MEASURE
(MEASURE R)

This page intentionally left blank

COUNTY OF TULARE
STATE OF CALIFORNIA
**SPECIAL PROVISIONS,
BID AND CONTRACT**
FOR CONSTRUCTION OF
**HARVEST AVENUE
IMPROVEMENTS PROJECT**

FUNDED BY:

2006 HALF-CENT TRANSPORTATION SALES TAX MEASURE

APPROVED: _____ DATE: _____

Reed Schenke, P.E.
Director
Tulare County Resource Management Agency

THE SPECIAL PROVISIONS CONTAINED HEREIN HAVE BEEN PREPARED BY
OR UNDER THE DIRECTION OF THE FOLLOWING REGISTERED ENGINEER:

SIGNED: _____ DATE: _____

Michael J. Winton, P.E.
Project Engineer
Tulare County Resource Management Agency



For use in connection with the 2018 Standard Specifications
of the Department of Transportation of the State of California

This page intentionally left blank

SPECIAL NOTICES

- See Sections 2 and 3 for Contractor's registration requirements.
- For local material from (1) a noncommercial source or (2) a source not regulated under California jurisdiction, you must submit a local material plan and analytical test results for pH, lead, and other constituents for each site. See section 6-1.03B(1) for the specifications.
- This project is exempt from Indirect Source Rule (ISR) and a Dust Control Plan is not required.

DRAFT

This page intentionally left blank

SPECIAL PROVISIONS
FOR CONSTRUCTION OF
HARVEST AVENUE
IMPROVEMENTS PROJECT

TABLE OF CONTENTS

NOTICE TO BIDDERS	1
BID ITEMS AND APPLICABLE SECTIONS.....	4
DIVISION I GENERAL PROVISIONS	5
1 GENERAL	5
2 BIDDING	7
3 CONTRACT AWARD AND EXECUTION.....	9
4 SCOPE OF WORK	13
5 CONTROL OF WORK	14
6 CONTROL OF MATERIALS	17
7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC	20
8 PROSECUTION AND PROGRESS.....	26
9 PAYMENT.....	27
DIVISION II GENERAL CONSTRUCTION.....	28
10 GENERAL	28
12 TEMPORARY TRAFFIC CONTROL	29
13 WATER POLLUTION CONTROL	30
14 ENVIRONMENTAL STEWARDSHIP.....	33
DIVISION III EARTHWORK AND LANDSCAPE	36
19 EARTHWORK.....	36
DIVISION IV SUBBASES AND BASES.....	37
26 AGGREGATE BASES	37
DIVISION V SURFACINGS AND PAVEMENTS.....	38

39 ASPHALT CONCRETE	38
DIVISION VII DRAINAGE.....	61
65 CONCRETE PIPE.....	61
DIVISION VIII MISCELLANEOUS CONSTRUCTION	62
73 CONCRETE CURBS AND SIDEWALKS.....	62
78 INCIDENTAL CONSTRUCTION.....	63
DIVISION IX TRAFFIC CONTROL DEVICES.....	66
82 SIGNS AND MARKERS	66
REVISED STANDARD SPECIFICATIONS 2018.....	67
CALTRANS STANDARD PLANS 2018 EDITION	166
BID PROPOSAL (BID) TO THE BOARD OF SUPERVISORS	B-1
CONTRACT	C-1
PROJECT PLANS (REDUCED SIZE – 11x17).....	ATTACHMENT

DRAFT

COUNTY OF TULARE
STATE OF CALIFORNIA

NOTICE TO BIDDERS

Completed, signed, sealed Bid for the work shown on the plans entitled:

STATE OF CALIFORNIA; COUNTY OF TULARE
PROJECT PLANS FOR CONSTRUCTION OF

HARVEST AVENUE
IMPROVEMENTS PROJECT

will be received at the office of the Clerk of the Board of Supervisors, Administration Building, County Civic Center, 2800 West Burrell Avenue, Visalia, California, 93291, until **4:00 pm on Thursday, July 16, 2020**, at which time they will be publicly opened and read at said location. **COVID-19 ADVISORY:** Due to the ongoing efforts being made to mitigate the spread of COVID-19, bids may be submitted via mail, it shall be bidder's responsibility to ensure bids are received by the Clerk of the Board prior to the time listed above. Bids may also be dropped off at the above listed address, bidders will have to call the front desk at (559) 636-5000 to have staff open the front door to accept the sealed bid packets. The bid opening will be closed to the public but will be broadcasted via Zoom video conferencing. The meeting can be accessed at <https://tularecounty-ca.zoom.us/j/6012410116>, the Meeting ID is 601 241 0116.

General work description: The work to be done consists, in general, of installation of curb & gutter, sidewalk, driveways, pavement reconstruction ADA related improvements, storm drain facilities, and related improvements (signing/stripping, etc.). Other items or details not mentioned herein that are required by the plans, Standard Specifications or these Special Provisions shall be performed, constructed, furnished or installed. Bidders may visit the project site.

This project is off of the Federal Highway System.

This project is a Non-Federal Aid project with an estimated project cost of approximately \$1,350,000.

The contract will be awarded to the lowest responsible bidder submitting a responsive bid.

The Project is to be completed within Fifty (50) working days from the date to be established in the NOTICE TO PROCEED. The Contract includes provisions for Liquidated Damages if the Project is not timely completed.

Plans, Specifications, and Bid forms will be available via email or a CD upon receipt of payment. Payment can be made by mailing a check to Resource Management Agency – Permit Center, 5961 South Mooney Boulevard, Visalia, CA 93277; or by credit card by calling the Permit Center at Telephone (559) 624-7000; Office Hours 9:00 AM – 4:30 PM Mon-Thurs; 9:00 AM – 11:00 AM Fri. There is a non-refundable fee of \$25.00 per set for the documents. An unofficial set of Plans, Specifications, and other project information is available for download at the County's website at the following address:

<https://tularecounty.ca.gov/rma/index.cfm/rma-at-work/request-for-bid-proposals-construction-projects/>

FOLLOW THESE INSTRUCTIONS: Bidder shall print the “Bid” Section from this Special Provisions package, from the official copy obtained through the County, upon being listed on the official Plan Holder List. Complete all required forms and exhibits and submit unbound/unstapled originals at the location described above.

To be considered a plan holder and to receive any addendum, bidders must obtain a set of plans, specifications and Bid forms at the Resource Management Agency, and be listed on the planholders list.

Bidders must be on the planholders list for their bid to be considered responsive. All addendums, prebid meeting minutes, bid clarifications, plan holders list, and relevant information will be available at the County's website as mentioned above. Addendums will also be provided to contractors on the plan holders list via the information provided by the contractor on the plan holders list. Bid results will be posted on the County website within two working days of the bid opening.

Technical questions should be directed in writing to Michael J. Winton, P.E. at the Resource Management Agency, 5961 S. Mooney Blvd, Visalia CA 93277 or at MWinton@co.tulare.ca.us . **No questions shall be accepted within five (5) working days of the bid opening (Questions shall be received by 5:00 pm Wednesday, July 8, 2020).** All questions and responses will be continuously posted on the County website.

Before submitting a bid, bidders shall carefully examine the Plans and Specifications, and related documents, visit the site of the work and fully inform themselves as to all existing conditions and limitations, and shall include in the bid a sum to cover the cost of all items included in the work.

A prebid meeting is scheduled for 2:00 pm Tuesday, July 7, 2020. This meeting will be held via Zoom video conferencing. The meeting can be accessed at <https://tularecounty-ca.zoom.us/j/6012410116>, the Meeting ID is 601 241 0116. The meeting is not mandatory, but bidders are encouraged to attend. The bidder awarded the contract may need to obtain permits, licenses, or enter into other agreements to prosecute the work. Bidders are advised that, unless otherwise stated, the contract price will be full compensation for all required work and no additional compensation will be allowed. If the bidder must obtain permits, licenses, contracts or other services to prosecute the work, the bidder will pay the cost of those items and no other compensation will be paid by the County.

Bids are required for the entire work described herein. Each Bid shall be accompanied by bidder's security in the form of cash, a bidder's bond, or a certified check or cashier's check, in the amount of ten percent (10%) of the amount bid or the bid will be considered nonresponsive.

Contractor shall comply with the Title VI of the Civil Rights Act of 1964, and in accordance with said Act, no person of the grounds of race, color, sex or national origin, shall be excluded from participation in, be denied of benefits of, or be otherwise subject to discrimination under any service or activity in connection with the project.

Contractor shall comply with Title VII of the Civil Rights Act 1964, which prohibits discrimination against any employee or applicant for employment because of race, color, religion, sex or national origin.

At the time the bid is submitted, you shall possess a current valid California Class **A** Contractor's license.

A contractor or subcontractor shall not be qualified to bid on, be listed in a Bid (subject to the requirements of Section 4104 of the Public Contract Code), or engage in the performance of any contract for this project, unless currently registered and qualified to perform public work pursuant to California Labor Code section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Sections 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Labor Code section 1725.5 at the time the contract is awarded.

This project is subject to compliance monitoring and enforcement by the California Department of Industrial Relations.

The successful bidder must provide the performance bond, payment bond, workers compensation certificate, and liability insurance policy required by the Special Provisions and contract. two million dollars (\$2,000,000) liability coverage is required for this project.

Substitution of securities for any moneys withheld shall be permitted pursuant to Public Contract Code section 10263. This project is subject to State contract nondiscrimination and compliance requirements pursuant to Government Code, section 12990.

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county, or counties, in which the work is to be done, have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project, are

on file at Resource Management Agency-Permit Center, 5961 South Mooney Boulevard, Visalia, CA 93277 and will be made available to any interested person on request. Also, the General Prevailing Wage Rates for this project, are made available on the County public works website (see link on the previous page) and the California Department of Industrial Relations' Internet website at <http://www.dir.ca.gov/DLSR/PWD>. Contractor shall be responsible to post the general prevailing wage rates at a prominent place at the job site in accordance to section 7-1.02K(2) of the Caltrans Standard Specifications. Future effective general prevailing wage rates, which have been predetermined and are on file with the California Department of Industrial Relations, are referenced, but not printed in the Special Provisions.

AB 626, approved by the Governor of the State of California on September 29, 2016, created a new Public Contract Code section 9204, which specifies new procedural requirements for claims submitted by a contractor on any public works project. Please review the language of the "Public Contract Code Section 9204 Statement" in the Proposal.

The U.S. Department of Transportation (DOT) provides a toll-free "hotline" service to report bid rigging activities. Bid rigging activities can be reported Mondays through Fridays, between 8:00 a.m. and 5:00 p.m., Eastern time, Telephone No. 1-800-424-9071. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report these activities. The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

You shall be responsible for compliance by all subcontractors with Labor Code section 1776.

All bidders are invited to attend the bid opening per the link provided. The results of the bid opening will be reported to the Board of Supervisors at a scheduled meeting. The contract will be awarded in the manner and within the time periods provided in Section 3 of the Standard Specifications, Department of Transportation of the State of California, 2018 Edition, as amended by the project Special Provisions, unless the Board of Supervisors exercises its right to reject any or all bids. The Board of Supervisors reserves the right to deem any bid as non-responsive for any information crossed out from the bid packet including information completed by the manufacturer.

The Board of Supervisors reserves the right to reject any or all bids, and/or wave any informality in any bid, and/or determine in its discretion the responsibility of any bidder.

The Board of Supervisors further reserves the right to use County Forces, or to negotiate contracts, or both, to the extent authorized by the Public Contract Code.

By order of the Board of Supervisors.

JASON T. BRITT
County Administrative Officer/
Clerk, Board of Supervisors.

By Original Signed
Deputy

BID ITEMS AND APPLICABLE SECTIONS

Item No.	Bees Number	Item Description	Unit	Estimated Quantity
1	999990	Mobilization	LS	1
2	70030	Lead Compliance Plan	LS	1
3	120090	Construction Area Sign	LS	1
4	120100	Traffic Control System	LS	1
5	130200	Prepare Water Pollution Control Program	LS	1
6	170103	Clearing And Grubbing	LS	1
7(F)	190101	Roadway Excavation	CY	3,912
8	220101	Finishing Roadway	LS	1
9(F)	260203	Class 2 Aggregate Base	CY	2,608
10	390132	Hot Mix Asphalt (Type A)	TON	2,958
11	390136	Minor Hot mix Asphalt	TON	4
12	510094	Minor Concrete(Drainage Inlet)	EA	3
13	650409	15" Reinforced Concrete Pipe (Class IV)	LF	79
14	650014	18" Reinforced Concrete Pipe (Class IV)	LF	456
15	707225	48" Precast Concrete Pipe Manhole	EA	2
16	730010	Minor Concrete (Curb & Gutter)	LF	1,800
17	731516	Minor Concrete (Driveway)	SQFT	1,365
18	731521	Minor Concrete (Sidewalk)	SQFT	7,670
19	731623	Minor Concrete (Curb Ramp)	EA	8
20	731502	Minor Concrete (Continuous Gutter)	SQFT	565
21	820250	Remove Roadside Sign	EA	5
22	820840	Roadside Sign One Post	EA	4
23	840515	Thermoplastic Pavement Marking (White)	SQFT	151
24	782120	Remove/Relocate Mailbox	EA	2
25		Construction Staking	LS	1
26	780210	Survey Monument	EA	5

(F)- Final Pay Item

TERM

INTERPRETATION

County	The County of Tulare, including its agencies, departments or divisions whose conduct or action is related to the work.
Transportation Laboratory or METS	Tulare County Resource Management Agency, except when used to identify a State form, document, or testing procedure.

The project plans for this project were approved May 19, 2020, and are entitled:

STATE OF CALIFORNIA; COUNTY OF TULARE
PROJECT PLANS FOR CONSTRUCTION OF

**HARVEST AVENUE
IMPROVEMENTS PROJECT**

The following documents will be supplied to you with the Notice to Proceed:

1. One complete set of full size (24"x36") Project Plans
2. One complete set of half size (11"x17") Project Plans
3. Two complete bid books including:
 - 3.1. Notice to Contractors
 - 3.2. Special Provisions
 - 3.3. Technical Specifications
 - 3.4. Bid
 - 3.5. Contract
4. One Compact Disk (CD) with Adobe PDF versions of full size and half size plans and Special Provisions, Bid and Contract.

No additional copies will be provided. Additional bid books, if available, may be purchased at twenty-five dollars (\$25) per book.

Replace "holiday" and its definition in Section 1-1.07B with:

holiday: County legal holidays and every Sunday. When a holiday falls on a Sunday, it shall be observed on the following Monday.

Replace "South Coast Air Quality Management District" and attributes in Section 1-1.11 with:

Reference or agency or department unit	Website	Address	Telephone no.
San Joaquin Valley Air Pollution Control District (Central)	www.valleyair.org	1990 E. Gettysburg Avenue Fresno, CA 93726-0244	(559) 230-6000

Add to section 1-1.01:

Bid Items and Applicable Sections

Item code	Item description	Applicable section
050126A	CONSTRUCTION STAKING	5

2 BIDDING

Replace Section 2-1.06 with the following:

2-1.06 BID DOCUMENTS

2-1.06A General

The *Special Provisions, Bid and Contract (Bid book)* includes bid forms and certifications.

The *Special Provisions, Bid and Contract* and project plans may be purchased at the Resource Management Agency – Permit Center, 5961 South Mooney Boulevard, Visalia, CA 93277 and viewed at the County’s Website:

<https://tularecounty.ca.gov/rma/index.cfm/rma-at-work/request-for-bid-proposals-construction-projects/>

The *Special Provisions, Bid and Contract* includes the *Notice to Bidders*, revised standard specifications, and Special Provisions.

The *Bid book, Special Provisions, Bid and Contract*, project plans, and any addenda to these documents may be accessed at the County Website.

2-1.06B Supplemental Project Information

The County makes supplemental information available as specified in the Special Provisions.

Logs of test borings are supplemental project information.

If an *Information Handout* or cross sections are available, you may view it at the County Website.

If other supplemental project information is available for inspection, you may view it by phoning in a request. Make your request at least 7 days before viewing. Include in your request:

1. Contract number
2. Viewing date
3. Contact information, including telephone number

As-built drawings may not show existing dimensions and conditions. Where new construction dimensions are dependent on existing dimensions, verify the field dimensions and adjust the dimensions of the work to fit the existing conditions, as approved by the Engineer.

Replace Section 2-1.10 with the following:

2-1.10 SUBCONTRACTOR LIST

On the Subcontractor List form, list each subcontractor to perform work in an amount in excess of 1/2 of 1 percent of the total bid or \$10,000, whichever is greater (Pub Contract Code § 4100 et seq.).

For each subcontractor listed, the Subcontractor List form must show:

1. Business name and the location of its place of business
2. State contractor’s license number
3. Department of Industrial Relations(“DIR”) registration number
4. Portion of work it will perform, demonstrated by:
 - 4.1. Bid item numbers for the subcontracted work
 - 4.2. Percentage of the subcontracted work for each bid item listed

- 4.3. Description of the subcontracted work if the percentage of the bid item listed is less than 100 percent

Replace Section 2-1.33A with the following:

2-1.33A General

Remove the *Bid Proposal (Bid) to the Board of Supervisors* section in the Bid book and complete the forms.

Submit your forms to the Tulare County Board of Supervisors at the front desk before the bid opening time and date. The address to the Board of Supervisors is provided below:

2800 W Burrel Avenue, Visalia, CA 93291

Failure to submit the forms and information as specified may result in a nonresponsive bid.

If an agent other than the authorized corporate officer or a partnership member signs the bid, file a Power of Attorney with the County either before opening bids or with the bid. Otherwise, the bid may be nonresponsive.

The County only accepts paper bid submittals. Place your completed forms inside a sealed paper envelope, and on the cover of the envelope, include:

1. Name of the contractor
2. Project title
3. Marked as a Bid
4. Bid opening date

Submit the enclosed Bid to the Clerk of the Board of Supervisors prior to bid opening.

Delete Section 2-1.33B Bid Form Submittal Schedules

Replace Section 2-1.34 with the following:

2-1.34 BIDDER'S SECURITY

Submit one of the following forms of bidder's security equal to at least 10 percent (10%) of the bid:

1. Cash
2. Cashier's check
3. Certified check
4. Signed bidder's bond by an admitted surety insurer who is licensed in California

If using a bidder's bond, you must use the form in the *Bid*. Failure to do so will render your bid non-responsive.

Submit cash, cashier's check, certified check, or bidder's bond, to the Clerk of the Board of Supervisors before the bid opening time.

Replace Section 2-1.40 with the following:

2-1.40 BID WITHDRAWAL

An authorized agent may withdraw a bid before the bid opening date and time by submitting a written bid withdrawal request at the location where the bid was submitted. Withdrawing a bid does not prevent you from submitting a new bid. After the bid opening, you cannot withdraw a bid.

AA

3 CONTRACT AWARD AND EXECUTION

Replace all of Section 3 with:

3-1.01 AWARD OF CONTRACT

The Tulare County Board of Supervisors reserves the right to reject any or all Bids, or waive any or all discrepancies or failures in a Bid. The decision of the Tulare County Board of Supervisors regarding the amount of a bid, or existence or treatment of a discrepancy or failure in a bid will be final. The award of the contract, if it is awarded, will be to the lowest responsive and responsible bidder whose Bid complies with all the requirements prescribed. Such award, if made, will be made within sixty (60) days after the opening of the Bid. This period may be subject to an extension for such further period as may be agreed upon in writing between the Tulare County Board of Supervisors and the bidder concerned.

All bids will be compared on the basis of the Engineer's Estimate of the quantities of work to be done.

A responsible bidder who submitted the lowest bid as determined by this section shall be awarded the contract, if it is awarded.

The following failures are not waivable and will cause a bid to be considered non-responsive:

1. **Failure to sign the bid**
2. **Failure to furnish the required bid bond or equivalent as specified in 2-1.34 of the Special Provisions**
3. **Failure to include a total amount of the bid**
4. **Failure to submit a completed addenda certification statement**
5. **Failure to be listed on the planholders list**

The above list is not inclusive of all failures that the Tulare County Board of Supervisors will consider non-responsive. However, the Tulare County Board of Supervisors reserves the right to waive other types of discrepancies or failures. The Tulare County Board of Supervisors decision or treatment regarding a bid will be final.

The contract must be signed by the successful bidder and returned together with the contract bonds and insurance certificates within **ten (10) days**, not including Saturday, Sunday or Tulare County legal holidays, after the bidder has received notice from the County that the contract is scheduled for award by the Board of Supervisors.

3-1.02 BID PROTEST PROCEDURES

Bid Protests. Any bid protests must be in writing and received by County's Director – Public Works, Tulare County Resource Management Agency, 5961 S. Mooney Boulevard, Visalia, CA 9327, before 5:00 p.m. no later than two working days following the postage of bid summary (the "Bid Protest Deadline") and must comply with the following requirements:

A. General. Only a bidder who has actually submitted a Bid is eligible to submit a bid protest against another bidder. Subcontractors and material suppliers are not eligible to submit bid protests. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest. A bid protest against the bids of more than one bidder shall be considered as separate protests against each such bidder and will be separately considered. The protesting bidder must submit a non-refundable fee in the amount of \$750.00 per protest, based upon County's reasonable costs to administer the bid protest(s). Any such fees must be submitted to County no later than the Bid Protest Deadline, unless otherwise specified. For

purposes of this Bid Protest Procedure, a “working day” means a day that County is open for normal business, and excludes weekends and holidays observed by County.

B. Protest Contents. Each bid protest must contain a complete statement of the basis for the protest and all supporting documentation. Material submitted after the Bid Protest Deadline will not be considered. The protest must refer to the specific portion or portions of the Contract Documents upon which the protest is based. The protest must include the name, address, email address, and telephone number of the person representing the protesting bidder if different from the protesting bidder’s.

C. Copies to Protested Bidders. A copy of the protest and all supporting documents must be concurrently transmitted by fax or by email, by or before the Bid Protest Deadline, by the protesting bidder to the protested bidder and any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest(s).

D. Response to Protest. The protested bidder may submit a written response to the protest, provided the response is received by County’s Director – Public Works, before 5:00 p.m., within two working days after the Bid Protest Deadline or after actual receipt of the bid protest, whichever is sooner (the “Response Deadline”). The response must include all supporting documentation. Material submitted after the Response Deadline will not be considered. The response must include the name, address, email address, and telephone number of the person representing the protested bidder if different from the protested bidder’s.

E. Copies to Protesting Bidder. A copy of the response and all supporting documents must be concurrently transmitted by fax or by email, by or before the Response Deadline, by the protested bidder to the protesting bidder and any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.

F. Consideration of Protests. The Director – Public Works or his or her designee will inform the protesting and protested bidders in writing of the time and place that the Board of Supervisors will consider the protest(s).

G. Exclusive Remedy. The procedure and time limits set forth in this section are mandatory and are the bidder’s sole and exclusive remedy in the event of a bid protest. A bidder’s failure to comply with these procedures will constitute a waiver of any right to further pursue a bid protest, including filing a Government Code Claim or initiation of legal proceedings.

H. Right to Award. The County Board of Supervisors reserves the right to award the Contract to the bidder it has determined to be the responsible bidder submitting the lowest responsive bid, and to issue a notice to proceed with the Work notwithstanding any pending or continuing challenge to its determination.

3-1.03 TIED BIDS

The County breaks a tied bid with a coin toss except:

1. If a small business bidder and a non–small business bidder request preferences and the reductions result in a tied bid, the County awards the contract to the small business bidder.
2. If a DBE small business bidder and a non-DBE small business bidder request preferences and the reduction results in a tied bid, the County awards the contract to the DBE small business bidder.

3-1.04 CONTRACTOR REGISTRATION

No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

3-1.05 BONDS

The awarded bidder must file with the signed contract, two bonds in the amount and for the purposes specified below. They must be surety bonds and must be issued by corporations duly and legally licensed to transact business in the State of California.

A Performance Bond must be furnished by the awarded bidder in the amount of one hundred percent (100%) of the contract price and must guarantee faithful performance of the contract and must insure the County during the life of the contract and for the term of one (1) year from the date of acceptance of the work against faulty or improper materials or workmanship that may be discovered during that time. The awarded bidder must maintain the Performance Bond at its own expense.

A Payment Bond must be furnished by the awarded bidder in the amount of one hundred percent (100%) of the contract price and must guarantee the payment in full of all claims for labor and material in accordance with the provisions of Sections 9550-9566 of the Civil Code of the State of California. The life of the Payment Bond must extend to thirty (30) days after the notice of completion is recorded. The awarded bidder must maintain the Payment Bond at its own expense.

All bonds required, whether Bid Bonds, Performance, Payment, or other Bonds, must be issued by an admitted surety insurer. All bonds must be issued by the same admitted surety insurer. **All bonds required by these specifications will neither be accepted nor approved by the County unless the bonds are in the form shown in these Special Provisions, and are underwritten by an admitted surety.**

An original or certified copy of the unrevoked appointment of an individual duly and currently designated as an attorney-in-fact for the surety must accompany the bid certifying an agent to issue the Performance Bond and the Payment Bond.

The County further reserves the right to satisfy itself as to the acceptability of the surety and the form of bonds. The bidder may be required to submit the following documents:

1. The original, or a certified copy, of the unrevoked appointment, power of attorney, bylaws, or other instrument authorizing the person who executed the bond to do so.
2. A certified copy of the certificate of authority of the insurer issued by the California Insurance Commissioner.
3. A certificate from the County Clerk that the certificate of authority has not been surrendered, revoked, canceled, annulled, or suspended, or in the event that it has, that renewed authority has been granted.
4. A financial statement of the assets and liabilities of the insurer to the end of the quarter calendar year prior to thirty (30) days next preceding the date of the execution of the bond, in the form of an officers' certificate as defined in Corporations Code section 173.

3-1.06 CONTRACTOR LICENSE

For a federal-aid contract, the Contractor must be properly licensed as a contractor from contract award through Contract acceptance (Pub Contract Code § 20103.5).

For a non-federal-aid contract:

1. The Contractor must be properly licensed as a contractor from bid opening through Contract acceptance (Bus & Prof Code § 7028.15).
2. Joint venture bidders must obtain a joint venture license before contract award (Bus & Prof Code § 7029.1).

The Contractor will have the required license until the project is completed.

3-1.08 CONTRACT EXECUTION

The successful bidder must sign the *Contract* form.

Deliver to the Engineer:

1. Signed *Contract* form (6 signed originals). Each copy of the Contract must be signed by both the company president or vice president and the company secretary or treasurer with the Contractors State License Board number and Federal Employer Identification Number.

2. The statutory Performance Bond pursuant to Public Contract Code section 20129 and the statutory Payment Bond pursuant to Civil Code sections 9550 through 9566, with either County Clerks certificates or copies of power of attorney.
3. Certification concerning Workers' Compensation Insurance.
4. Certificate(s) of Insurance in compliance with the requirements of these Special Provisions including general liability, automobile and workers' compensation.
5. Evidence that you possess a current, valid Contractors State License Board required to perform the work under this Contract. A copy of your license is sufficient.

The Engineer must receive these documents within **ten (10) days**, not including Saturday, Sunday or Tulare County legal holidays, after the bidder has received notice from the County that the contract is scheduled for award by the Board of Supervisors.

The awarded bidder's bond may be forfeited for failure to execute the contract within the time specified (Pub Contract Code 20172).

A copy of the Contract is included in the *Special Provisions, Bid Proposal, and Contract*.

DRAFT

AA

4 SCOPE OF WORK

Replace all references to “Department” in Section 4 Scope of Work with:

Engineer

Add following the last paragraph of Section 4-1.06B:

Except as provided for in Public Contract Code section 7102, you have no claim for damages or compensation for any delay or hindrance.

DRAFT

5 CONTROL OF WORK

Delete Section 5-1.09 PARTNERING

Replace “Department” in Section 5-1.12 with:

Engineer

Replace Section 5-1.20G with:

5-1.20G CALTRANS RELATIONS

An encroachment permit will be issued to the Agency for construction area signs within the Caltrans right of way. A copy of the permit will be provided to the Contractor as soon as the permit is issued. The Contractor shall be fully informed of the permit requirements and shall conduct the work accordingly.

Contractor must obtain an Encroachment permit i.e. “double” permit for work within the Caltrans right of way. Subcontractors will not be required to obtain an encroachment permit.

Full compensation for conforming to the provisions in this section “Caltrans Relations,” shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed.

Replace Section 5-1.24 of the RSS with:

5-1.24 CONSTRUCTION SURVEYS

You must set construction stakes and markers to establish the lines and grades required for the completion of the work on the plans and as specified in the Standard Specifications and these Special Provisions and as necessary for the Engineer to check lines, grades, alignment and elevations.

All procedures, methods, and typical stake markings shall be in accordance with Chapter 12, Construction Surveys, of the Caltrans “Survey Manual.” Copies of the “Survey Manual” may be purchased from Caltrans Publications Unit, 1900 Royal Oaks Drive, Sacramento, and California 95815, (916) 445-3520.

Staking must be performed under the direction of a licensed surveyor or registered civil engineer with the authority to perform land surveying.

Preserve stakes and marks placed. If the stakes or marks are destroyed, replace them at your own cost.

Electronic drawing files in AutoCAD format, containing 2-dimensional linework of horizontal alignments, centerlines and layout lines will be furnished to you for your use in performing construction staking. A Digital Terrain Model (DTM) will not be provided.

In using, modifying, or accessing information from the electronic files, you are responsible for confirmation, accuracy, and checking of the data from the electronic files against the data contained on the contract documents. The County and the Design Engineer hereby disclaim all responsibility from any results obtained in use of electronic files and does not guarantee any accuracy of the information. You assume full responsibility for comparing the electronic file information to the contract documents and immediately notifying the Engineer in writing of any observed discrepancies.

You understand and agree that the electronic files provided pursuant to this Contract are instruments of professional services and shall remain the property of the County and will not be disseminated to others for purposes other than this project.

Because of the possibility that information and data delivered in AutoCAD format may be altered, whether inadvertently or otherwise, the County reserves the right to retain hard copy originals of all electronic files delivered to you, which originals shall be referred to and shall govern in the event of any inconsistency between the two.

In using the electronic information, you understand that the automated conversion of information and data from the system and format used by the Design Engineer to an alternate system or format cannot be accomplished without the possibility of introduction of inexactitudes, anomalies, and errors. In the event the electronic files provided to you in AutoCAD format is so converted, you agree to assume all risks associated therewith, and to the fullest extent permitted by law, to hold harmless and indemnify the County from and against all claims, liabilities, losses, damages, and costs, including but not limited to attorney's fees, arising there from or in connection therewith.

In using the electronic information, you recognize that changes or modifications to electronic media introduced by anyone other than the Design Engineer may result in adverse consequences, which the Design Engineer can neither predict nor control. Therefore, and in consideration of the Design Engineer's agreement to deliver its instruments of professional service in AutoCAD format, Contractor agrees, to fullest extent permitted by laws, to hold harmless and indemnify the County from and against all claims, liabilities, losses, damages, and costs, including but not limited to attorney's fees, arising out of or in any way connected with the modification, misrepresentation, misuse, or reuse by others of the electronic information provided by the Design Engineer. The foregoing indemnification applies, without limitation, to any use of the electronic files on other projects.

All computations necessary to establish the exact position of the work from control points shall be made by you. All computations, survey notes, cut sheets, and other records necessary to accomplish the work shall be neat, legible, and accurate. Copies of such computation, notes, cut sheets, and other records shall be furnished to the Engineer on the same day construction stakes are set.

Upon completion of construction staking and prior to acceptance of the contract, all computations, survey notes, cut sheets, and other data used to accomplish the work shall be furnished to the Engineer and shall become the property of the County.

The contract lump sum price paid for Construction Staking shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work required for construction staking, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

Replace Section 5-1.27E with:

5-1.27E Change Order Bills

Maintain separate records for change order work costs.

Submit change order bills to the Engineer.

Replace "Reserved" in Section 5-1.28 with:

5-1.28 UTILITIES FOR CONTRACTOR'S USE

You must make arrangements to obtain electrical power, water or compressed air or other utilities required for your operations and you must make and maintain the necessary service connections at your own expense.

Replace Section 5-1.32 with:

5-1.32 AREAS FOR CONTRACTOR'S USE

No area is available within the contract limits for your exclusive use. However, temporary storage of equipment and materials on County property may be arranged with the Engineer. Use of work areas and other County-owned property shall be at your own risk. The County shall not be held liable for damage to or loss of materials or equipment located within these areas.

Remove all equipment, materials, and rubbish from the work areas and other County-owned property you occupy and leave the areas in a presentable condition. Comply with Section 4-1.13.

You must secure, at your own expense, areas required for storage of materials and equipment or for other purposes if sufficient area is not available within the contract limits.

The County does not allow temporary residences within the County right-of-way.

Add to the last sentence of the last paragraph in Section 5-1.38:

or defects in workmanship and materials.

Replace "Contract acceptance" in the first paragraph of Section 5-1.47 with:

the date that the Tulare County Board of Supervisors approves the notice of completion.

DRAFT

AA

6 CONTROL OF MATERIALS

Add to the 3rd paragraph of Section 6-1.01:

Materials produced by convict labor may not be used on this project.

Add to section 6-1.03 of the RSS:

6-1.03B Submittals

6-1.03B(1) Work Plan

For local material, such as rock, gravel, earth, structure backfill, pervious backfill, imported borrow, and culvert bedding, obtained from a (1) noncommercial source, or (2) source not regulated under California jurisdiction, submit a local material plan for each material at least sixty (60) days before placing the material. The local material plan must include:

1. Certification signed by you and an engineer who is registered as a civil engineer in the State of California or a professional geologist licensed as a professional geologist by the State of California stating:

I am aware local material from a noncommercial source or a source not regulated under CA jurisdiction must be sampled and analyzed for pH and lead and may require sampling and analysis under section 6-1.03B(3) for other constituents of concern based on the land use history. I am aware that local material sources must not contain ADL at concentrations greater than 80 mg/kg total lead or equal to or greater than 5 mg/L soluble lead as determined by the Waste Extraction Test (WET) Procedures, 22 CA Code of Regs § 66261.24(a)(2) App II. I am aware that a maximum quantity of material may be excavated at the site based on the minimum number of samples taken before excavating at the site under section 6-1.03B(3).

2. Land use history of the local material location and surrounding property
3. Sampling protocol
4. Number of samples per volume of local material
5. QA and QC requirements and procedures
6. Qualifications of sampling personnel
7. Stockpile history
8. Name and address of the analytical laboratory that will perform the chemical analyses
9. Analyses that will be performed for lead and pH
10. Other analyses that will be performed for possible hazardous constituents based on:
 - 10.1. Source property history
 - 10.2. Land use adjacent to source property
 - 10.3. Constituents of concern in the ground water basin where the job site is located

The plan must be sealed and signed by an engineer who is registered as a civil engineer in the State of California or a professional geologist licensed as a professional geologist by the State of California.

If the plan requires revisions, the Engineer provides comments. Submit a revised plan within seven (7) days of receiving comments. Allow seven (7) days for the review.

6-1.03B(2) Analytical Test Results

At least fifteen (15) days before placing local material, submit analytical test results for each local material obtained from a noncommercial source or a source not regulated under CA jurisdiction. The analytical test results must include:

1. Certification signed by an engineer who is registered as a civil engineer in the State of California or a professional geologist licensed as a professional geologist by the State of California stating:

The analytical testing described in the local material plan has been performed. I performed a statistical analysis of the test results using the US EPA's ProUCL software with the applicable 95 percent upper confidence limit. I certify that the material from the local material source is suitable for unrestricted use at the job site, it has a pH above 5.0, does not contain soluble lead in concentrations equal to or greater than 5mg/l as determined by the Waste Extraction Test (WET) Procedures, 22 CA Code of Regs § 66261.24(a)(2) App II, does not contain lead in concentrations above 80 mg/kg total lead, is free from all other contaminants identified in the local material plan, and will comply with the job site's basin plan and water quality objectives of the RWQCB.

2. Chain of custody of samples
3. Analytical results no older than 1 year
4. Statistical analysis of the data using US EPA's ProUCL software with a 95 percent upper confidence limit
5. Comparison of sample results to hazardous waste concentration thresholds and the RWQCB's basin plan requirements and water quality objectives for the job site location

6-1.03B(3) Sample and Analysis

Sample and analyze local material from a (1) noncommercial source or (2) source not regulated under CA jurisdiction:

1. Before bringing the local material to the job site
2. As described in the local material plan
3. Under US EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)

The sample collection must be designed to generate a data set representative of the entire volume of proposed local material.

Before excavating at the (1) noncommercial material source or (2) a source not regulated under CA jurisdiction, collect the minimum number of samples and perform the minimum number of analytical tests for the corresponding maximum volume of local material as shown in the following table:

Minimum Number of Samples and Analytical Tests for Local Material

Maximum volume of imported borrow (cu yd)	Minimum number of samples and analytical tests
< 5,000	8
5,000–10,000	12 for the first 5,000 cu yd plus 1 for each additional 1,000 cu yd or portion thereof
10,000–20,000	17 for the first 10,000 cu yd plus 1 for each additional 2,500 cu yd or portion thereof
20,000-40,000	21 for the first 20,000 cu yd plus 1 for each additional 5,000 cu yd or portion thereof
40,000–80,000	25 for the first 40,000 cu yd plus 1 for each additional 10,000 cu yd or portion thereof
> 80,000	29 for the first 80,000 cu yd plus 1 for each additional 20,000 cu yd or portion thereof

Do not collect composite samples or mix individual samples to form a composite sample.

Analyze the samples using the US EPA's ProUCL software with a 95 percent upper confidence limit. All chemical analysis must be by a laboratory certified by the SWRCB's Environmental Laboratory Accreditation Program (ELAP).

The analytical test results must demonstrate that the local material:

1. Is not a hazardous waste
2. Has a pH above 5.0
3. Has an average total lead concentration, based upon the 95 percent upper confidence limit, at or below 80 mg/kg
4. Is free of possible contaminants identified in the local material plan
5. Complies with the RWQCB's basin plan for the job site location
6. Complies with the RWQCB's water quality objectives for the job site location

6-1.03C Local Material Management

Do not place local material until authorized.

If the Engineer determines the appearance, odor, or texture of any delivered local material suggests possible contamination, sample and analyze the material. The sampling and analysis is change order work unless (1) hazardous waste is discovered or (2) the analytical test results indicate the material does not comply with section 6-1.03B(3).

Dispose of noncompliant local material at an appropriately permitted CA Class I, CA Class II or CA Class III facility. You are the generator of noncompliant local material.

DRAFT

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Add following the last paragraph of Section 7-1.02K(1):

Post job site notices in compliance with Title 8 California Code of Regulations section 16451

Replace 2nd paragraph in Section 7-1.02K(2) with:

The general prevailing wage rates and any applicable changes to these wage rates are available:

1. From the Department of Industrial Relations' website
2. On file at the Resource Management Agency Permit Center, 5961 South Mooney Boulevard Visalia, CA 93277, which shall be made available to any interested person on request.
3. From the County Public Works website (see link in the Notice to Bidder section).

Replace Section 7-1.02K(3) with:

7-1.02K(3) Certified Payroll Records (Labor Code § 1776)

Keep accurate payroll records.

Submit a copy of your certified payroll records, weekly, including those of subcontractors. Include:

1. Each employee's:
 - 1.1. Full name
 - 1.2. Address
 - 1.3. Social security number
 - 1.4. Work classification
 - 1.5. Straight time and overtime hours worked each day and week
 - 1.6. Actual wages paid for each day to each:
 1. Journeyman
 2. Apprentice
 3. Worker
 4. Other employee you employ for the work
 - 1.7. Pay rate
 - 1.8. Itemized deductions made
 - 1.9. Check number issued
2. Apprentices and the apprentice-to-journeyman ratio

Each certified payroll record must include a Statement of Compliance form signed under penalty of perjury that declares:

1. Information contained in the payroll record is true, correct, and complete
2. Employer has complied with the requirements of sections 1771, 1811, and 1815 for any work performed by his or her employees on the public works project
3. Wage rates paid are at least those required by the Contract

The Department allows the use of a form with identical wording as the Statement of Compliance form provided by the Department. Submit all certified payroll directly to the Department of Industrial Relations (DIR) in electronic format and to the Engineer on a weekly basis.

Submitted certified payrolls for hauling and delivering ready-mixed concrete must be accompanied by a written time record. The time record must include:

1. Truck driver's full name and address

2. Name and address of the factory or batching plant
3. Time the concrete was loaded at the factory or batching plant
4. Time the truck returned to the factory or batching plant
5. Truck driver's signature certifying under penalty of perjury that the information contained in this written time record is true and correct

Make certified payroll records available for inspection at all reasonable hours at your main office on the following basis:

1. Upon the employee's request or upon request of the employee's authorized representative, make available for inspection a certified copy of the employee's payroll record.
2. Refer the public's requests for certified payroll records to the Department. Upon the public's request, the Department makes available for inspection or furnishes copies of your certified payroll records. Do not give the public access to the records at your main office.

Make all payroll records available for inspection and copying or furnish a copy upon request of a representative of the:

1. Department
2. Division of Labor Standards Enforcement of the Department of Industrial Relations
3. Division of Apprenticeship Standards of the Department of Industrial Relations

Furnish the Department the location of the records. Include the street address, city, and county. Furnish the Department a notification of a location and address change within five (5) business days of the change.

Comply with a request for the records within ten (10) days after you receive a written request. If you do not comply within this period, the Department withholds from progress payments a one hundred dollar (\$100) penalty for each day or part of a day for each worker until you comply. You are not assessed this penalty for a subcontractor's failure to comply with Labor Code § 1776.

The Department withholds from progress payments for delinquent or inadequate records (Labor Code §1771.5). If you have not submitted an adequate record by the month's 15th day for the period ending on or before the 1st of that month, the Department withholds up to 10 percent (10%) of the monthly progress estimate, exclusive of mobilization. The Department does not withhold more than ten thousand dollars \$10,000 or less than one thousand dollars (\$1,000).

Replace "Reserved" in section 7-1.02K(6)(j)(iii) with:

7-1.02K(6)(j)(iii) Material Containing Lead – Non Hazardous Waste

Section 7-1.02K(6)(j)(iv) includes specifications for handling, removing, and disposing of non-hazardous material containing lead.

Submit a lead compliance plan.

Lead has been previously tested in the surrounding soils and traffic stripes. It was determined that lead is present in material on the job site. Average lead concentrations are below 1,000 mg/kg total lead and below 5 mg/L soluble lead, the material on the job site:

1. Is not a hazardous waste
2. Does not require disposal at a permitted landfill or solid waste disposal facility

Reuse all of the excavated material on the right-of-way. Handle the material under all applicable laws, rules, and regulations, including those of the following agencies:

1. Cal/OSHA
2. CVRWQCB, Region 5 – Central Valley Regional Water Quality Control Board
3. California Department of Toxic Substances Control

Payment for conforming to the requirements of this section is included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefore.

Replace Section 7-1.02K(6)(j)(iv) with:

7-1.02K(6)(j)(iv) Material Containing Lead – Hazardous Waste

If lead testing yields concentrations exceeding the limits described per Title 8 California Code of Regulations and Title 22 California Code of Regulations, the material(s) should be treated as hazardous waste and disposal at a permitted landfill or solid waste disposal facility is required.

Follow the provisions of Section 14-11 and confirm with Engineer that no other Special Provisions are required.

Conforming to the requirements of this section is considered change order work.

Replace "Reserved" in section 7-1.02L(1) with:

According to Public Contract Code section 6109, with respect to subcontractors which are ineligible to perform work on public works projects according to Labor Code section § 1777.1 or 1777.7:

1. The Contractor must not allow any such subcontractor to work on this project.
2. The Contractor must repay to the County any money paid to any such subcontractor allowed to work on this project.
3. The Contractor will pay the wages of the workers of any such subcontractor allowed to work on this project.

Replace Section 7-1.05 with:

7-1.05 INDEMNIFICATION AND DEFENSE

- (a) To the fullest extent permitted by law, CONTRACTOR must indemnify, defend (at CONTRACTOR'S sole cost and expense and with legal counsel approved by COUNTY, which approval may not be unreasonably withheld), protect and hold harmless COUNTY, all subsidiaries, divisions and affiliated agencies of COUNTY, and all of their representatives, partners, designees, officers, directors, employees, consultants, agents, successors and assigns, (each, an "Indemnified Party" and collectively, the "Indemnified Parties"), from and against all claims (including, without limitation, claims for bodily injury, death or damage to property), demands, obligations, damages, actions, causes of action, suits, losses, judgments, fines, penalties, liabilities, costs and expenses (including, without limitation, attorneys' fees, disbursements and court costs, and all other professional expert or consultants' fees and costs and COUNTY general and administrative expenses) of every kind and nature whatsoever (individually, a "Claim"; collectively, "Claims") which may arise out of, pertain to, or relate (directly or indirectly) to the negligence, recklessness, or misconduct of CONTRACTOR with respect to any work performed or services provided under this Contract (including, without limitation, the acts, errors and/or omissions of CONTRACTOR, its principals, officers, agents, employees, vendors, suppliers, consultants, sub-consultants, contractors, anyone employed directly or indirectly by any of them or for whose acts they may be liable or any or all of them). CONTRACTOR'S obligation to indemnify applies unless it is finally adjudicated that the liability was caused by the sole active negligence or sole willful misconduct of an Indemnified Party. If it is finally adjudicated that liability is caused by the comparative active negligence or willful misconduct of an Indemnified Party, then CONTRACTOR'S indemnification obligation shall be reduced in proportion to the established comparative liability.
- (b) The duty to defend is a separate and distinct obligation from CONTRACTOR'S duty to indemnify. CONTRACTOR shall be obligated to defend, in all legal, equitable, administrative, or special proceedings, the Indemnified Parties immediately upon tender to CONTRACTOR of the Claim in any form or at any stage of an action or proceeding, whether or not liability is established. Payment

to CONTRACTOR by any Indemnified Party or the payment or advance of defense costs by any Indemnified Party cannot be a condition precedent to enforcing the Indemnified Party's rights to indemnification under this Contract. An allegation or determination that persons other than CONTRACTOR are responsible for the Claim does not relieve CONTRACTOR from its separate and distinct obligation to defend under this section. The obligation to defend extends through final judgment, including exhaustion of any appeals. The defense obligation includes an obligation to provide independent defense counsel if CONTRACTOR asserts that liability is caused in whole or in part by the negligence or willful misconduct of an Indemnified Party. CONTRACTOR'S indemnification obligations under this Contract will survive the expiration or earlier termination of this Contract until action against the Indemnified Parties for the matter indemnified is fully and finally barred by the applicable statute of limitations or statute of repose. CONTRACTOR'S liability for indemnification under this Contract is in addition to any liability CONTRACTOR may have to COUNTY for a breach by CONTRACTOR of any of the provisions of this Contract. Under no circumstances may the insurance requirements and limits set forth in this Contract be construed to limit CONTRACTOR'S indemnification obligation or other liability under this Contract.

- (c) CONTRACTOR must indemnify and hold COUNTY harmless from all loss and liability, including attorneys' fees, court costs and all other litigation expenses, for any infringement of the patent rights, copyright, trade secret or any other proprietary right or trademark, and all other intellectual property claims of any person or persons in consequence of the use by COUNTY, or any of its officers or agents, of articles or services to be supplied in the performance of this Contract.

Replace Section 7-1.06 with:

7-1.06 INSURANCE

Bidder's and their subcontractors attention are directed to the insurance requirements below. It is highly recommended that Bidders confer with their respective insurance carriers or brokers to determine in advance of bid submission the availability of insurance certificates and endorsements as prescribed and provided herein. If an apparent low bidder fails to comply strictly with the insurance requirements, that Bidder may be disqualified from award of the Contract and forfeit its Bidder's Security.

Contractor and subcontractors shall provide and maintain insurance for the duration of the warranty period against claims for injuries to persons and damage to property, which may arise from, or in connection with, performance under the Contract by the CONTRACTOR, its agents, representatives, employees or subcontractors, if applicable.

A. Minimum Scope & Limits of Insurance

- 1) Coverage at least as broad as Commercial General Liability, Insurance Services Office Commercial General Liability coverage occurrence form GC 00 01, with limits no less than two million dollars (\$2,000,000) per occurrence including products and completed operations, property damage, bodily injury and personal & advertising injury. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.
- 2) Comprehensive Automobile Liability Insurance of one million dollars (\$1,000,000) per occurrence for bodily injury and property damage. If the annual aggregate applies it must be no less than of two million dollars (\$2,000,000).
- 3) Workers' Compensation Insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than of one million dollars (\$1,000,000) per accident for bodily injury or disease.
- 4) Professional Liability of one million dollars (\$1,000,000) per occurrence or claim for design and build.

B. Specific Provisions of the Certificate

- 1) The General Liability and Automobile Liability policies are to be endorsed to contain the following provisions:

1. The County, its officers, agents, officials, employees and volunteers are to be covered as additional insureds as respects: liability arising out of work or operations performed by or on behalf of the Contractor; or automobiles owned, leased, hired or borrowed by the CONTRACTOR.
 2. For any claims related to this project, the CONTRACTOR's insurance coverage shall be primary insurance as respects the COUNTY, its officers, agents, officials, employees and volunteers. Any insurance or self-insurance maintained by the COUNTY, its officers, agents, officials, employees or volunteers shall be excess of the CONTRACTOR's insurance and shall not contribute with it.
 3. Each insurance policy required by this Contract shall be endorsed to state that coverage shall not be canceled, except after thirty (30) days prior written notice has been provided to the County.
 4. CONTRACTOR hereby agrees to waive rights of subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation.
 5. If any of the required insurance is written on a claims made form, the retroactive date must be before the date of contract or the beginning of the contract work and must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract work.
- 2) The workers' compensation policy shall be endorsed with a waiver of subrogation in favor of the COUNTY for all work performed by the CONTRACTOR, its employees, agents and subcontractors. CONTRACTOR waives all rights against the COUNTY and its officers, agents, employees and volunteers for recovery of damages to the extent these damages are covered by the workers compensation and employers liability.

C. Deductibles and Self-Insured Retentions

Deductibles and self-insured retentions must be declared and any deductible or self-insured retention over one hundred thousand dollars (\$100,000) shall be forwarded to the COUNTY Risk Manager for approval.

D. Acceptability of Insurance

Insurance must be placed with insurers with a current rating given by A.M. Best and Company of no less than A(-):VII and a Standard & Poor's Rating (if rated) of at least BBB and from a company approved by the Department of Insurance to conduct business in California. Any waiver of these standards is subject to approval by the County Risk Manager.

E. Verification of Coverage

Prior to approval of this Contract by the COUNTY, the CONTRACTOR shall file with the submitting department, certificates of insurance with original endorsements effecting coverage and a copy of the declarations page from the policy in effect in a form acceptable to the COUNTY. Endorsements must be signed by persons authorized to bind coverage on behalf of the insurer. The COUNTY reserves the right to require certified copies of all required insurance policies at any time.

F. Additional Construction Insurance Requirements

- 1) Payment Bond: For public works projects of more than twenty-five thousand dollars (\$25,000) a "payment bond" is required in the full amount of the Contract price, and shall insure to the benefit of persons performing labor or furnishing materials in connection with the work of the Contract. This bond shall be maintained in full force and effect until all work under the Contract is completed and accepted by the COUNTY, or until all claims for materials and labor have been paid, whichever is longer.
- 2) Performance Bond: For public works projects of more than twenty-five thousand dollars (\$25,000) a "performance bond" is required in the full amount of the Contract price and shall insure the faithful performance by Contractor of all work under the Contract. It shall also insure the replacing of, or making acceptable, any defective materials or faulty workmanship.

- 3) Acceptability of Surety: Only California admitted sureties with current AM Best Rating of no less than VII.

DRAFT

AA

8 PROSECUTION AND PROGRESS

Add to Section 8-1.01:

You must procure all permits, licenses, contracts and other services needed to prosecute the work and secure staging areas, including those on private property. You must pay for all permits, licenses, contracts and other services. Payment is included in the contract price and no additional compensation will be allowed.

The number of working days allowed for completion of the work shall be set forth in Section 8-1.05 of the Standard Specifications as modified by Article XIII of the Contract. In the case of a conflict between the Standard Specifications and the Contract, the Contract shall prevail.

The sum to be paid as liquidated damages shall be set forth in section 8-1.10 of the Standard Specifications as modified by Article XIII of the Contract.

Add to Section 8-1.02:

Any time the Engineer requests a practicable progress schedule in writing, submit the updated schedule within ten (10) working days of the Engineer's written request.

Replace Section 8-1.02C(3) with

Submit a description of your proposed schedule for authorization.

Software must be compatible with the current version of the Microsoft Windows operation system in use by the Engineer. The operation system in use by the Engineer is Microsoft Windows 10 Professional.

The schedule software must be Microsoft Project 2010 or newer.

Any proposed schedule software equal to Microsoft Project must be capable of:

1. Generating files that can be imported into Microsoft Project
2. Comparing two (2) schedules

Replace section 8-1.10A with:

The County specifies liquidated damages (Pub Contract Code § 7203, Gov. Code, § 53069.85). Liquidated damages, if any, accrue starting on the first (1st) day after the expiration of the working days through the day of Contract acceptance except as specified in sections 8-1.10B and 8-1.10C.

The County withholds liquidated damages before the accrual date if the anticipated liquidated damages may exceed the value of the remaining work.

Liquidated damages for all work shall be set at **Fifteen-Hundred Dollars (\$1,500)** per day.

AA

9 PAYMENT

Replace the 12th paragraph beginning with “For these payments, interest starts to accrue...” in Section 9-1.03 with:

For these payments, interest starts to accrue thirty (30) days after the Engineer receives acceptance from you of the progress payment amount determined by the Engineer. Acceptance of the progress payment may be in the form of an invoice matching the progress payment amount or a letter indicating that you accept the amount of the progress payment.

Replace the last paragraph of section 9-1.03 with:

Pay your subcontractors within seven (7) days of receipt of each progress payment under Pub Cont. Code §§ 10262 and 10262.5.

Add the following to Section 9-1.16A with:

9-1.16A General

Submit an invoice matching the progress payment amount or a signed letter indicating that you accept the progress payment amount. The Engineer does not process a progress payment without the matching invoice or the progress payment acceptance letter. Once accepted by the Engineer, submit the invoice to the following email address: RMA-AP@co.tulare.ca.us and include the Engineer’s email as well.

Add to end of first paragraph, section 9-1.16B:

Submit a schedule of values for each lump sum item on the bid list.

Replace section 9-1.17D(1) with:

9-1.17D(1) General

If you accept the proposed final estimate or do not submit a claim statement within thirty (30) days of receiving the estimate, the Engineer furnishes the final estimate to you and the County pays the amount due within ninety (90) days. This final estimate and payment is conclusive except as specified in sections 5-1.27, 6-3.06, and 9-1.21.

If you submit a claim statement within thirty (30) days of receiving the Engineer’s proposed final estimate, the Engineer furnishes a semifinal estimate to the Contractor and the Department pays the amount due within ninety (90) days. The semifinal estimate is conclusive as to the amount of work completed and the amount payable except as affected by the claims or as specified in sections 5-1.27, 6-3.06, and 9-1.21.

AA

DIVISION II GENERAL CONSTRUCTION

AA

10 GENERAL

Add to Section 10-1.01:

Coccidioidomycosis, also known as "Valley Fever" or "cocci", is a disease caused by *Coccidioides* fungi which infect the lungs. When the fungus spores present in soil are disturbed, the spores may become airborne and can be inhaled.

You are hereby notified that the spores which cause Valley Fever are endemic to Tulare County. Activities which disturb soil or expose workers to dust, such as digging, operating earth-moving equipment, driving vehicles, and working in wind-blown areas, may increase the risk of Valley Fever in workers.

Information regarding preventing and recognizing the symptoms of Valley Fever are available from the California Department of Public Health and the California Department of Industrial Relations.

The provisions of this section shall be made a part of every subcontract executed pursuant to this contract.

DRAFT

AA

12 TEMPORARY TRAFFIC CONTROL

Add the following to Section 12-1.01:

Submit a traffic control plan for acceptance by the Engineer. The traffic control plan shall depict the traffic control devices to be used and their location and shall be prepared by a licensed Traffic Engineer or Civil Engineer. Do not install traffic control system on the job site until the Engineer provides written acceptance of the Traffic Control Plan. Payment for the traffic control plan is included in the payment for traffic control system.

Replace Section 12-1.04 with:

You are required to pay for the cost of furnishing all flaggers, including transporting flaggers and furnishing stands and towers for flaggers to provide for the passage of traffic through the work as specified in sections 7-1.03 and 7-1.04.

Add the following to Section 12-3.06 with:

Construction area warning and guide signs must have a black legend on a retroreflective, nonfluorescent-orange background. W10-1 advance warning signs for highway-rail grade crossings must have a black legend on a retroreflective, nonfluorescent-yellow background.

Add the following to Section 12-4.02A:

All detours and closures must comply with the plans and be coordinated with the Engineer and adjacent property owners.

13 WATER POLLUTION CONTROL

Add to Section 13-1.01A:

The following RWQCBs will review the authorized WPCP:

1. Central Valley Regional Water Quality Control Board (CVRWQCB)

You must adhere to the following best management practices (BMPs), where applicable, to reduce erosion during construction:

1. Implementation of the project will require approval of a site-specific Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
2. Protect existing vegetation, where feasible, to provide an effective form of erosion and sediment control;

Implement roughening and terracing to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.

Add to the end of section 13-2.01A:

This project qualifies for an erosivity waiver because the anticipated soil disturbance is at least 1 and less than 5 ac and the R-factor is less than 5.

Schedule all soil-disturbing activities, such as clearing and grubbing, roadway excavation, and embankment construction, to occur from 8/1/2020 to 10/31/2020. Deviation from this schedule may void the erosivity waiver.

Add to Section 13-3.02A:

To conform to water quality requirements, the WPCP must include the following:

1. Vehicle maintenance, refueling and lubrication, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 300 feet from surface waters. Any necessary equipment washing must occur where the water cannot flow into surface waters.
2. You must operate under an approved spill prevention and control plan;
3. Construction equipment will not be operated in flowing water;
4. Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to surface waters;
5. Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life must be prevented from contaminating the soil or entering surface waters;
6. Equipment used in and around surface waters must be in good working order and free of dripping or leaking contaminants; and,
7. Any concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.

Discharges of stormwater from the project must comply with the permit issued by the Central Valley RWQCB for National Pollutant Discharge Elimination System (NPDES) Permit for Region 5, Permit No. CAS0085324. The Central Valley RWQCB permit governs stormwater and nonstormwater discharges from construction activities in the project area. The Central Valley RWQCB permit may be viewed at:

https://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_i_municipal.html#rb5

Add the following to Section 13-4.03B:

Spill response materials must be kept at the site and readily available to allow rapid containment and cleanup of any spilled material.

You must prepare a spill prevention and control plan. Prepare spill prevention and control plan includes developing and implementing the spill prevention and control plan. The spill prevention and control plan must identify the actions that will be taken in the event of a spill of petroleum products, concrete, contaminated soil, or other material harmful to fish, plants, or aquatic life. The plan must also detail the project elements, construction equipment types and location, access, staging and construction sequence.

Within 20 days of Contract approval:

1. Submit 3 copies of your spill prevention and control plan for review. Allow 20 days for the County's review. The Engineer provides comments and specifies the date when the review stopped if revisions are required.
2. Change and resubmit a revised spill prevention and control plan within 15 days of receiving the Engineer's comments. The County's review resumes when a complete spill prevention and control plan has been resubmitted.
3. When the Engineer authorizes the spill prevention and control plan, submit an electronic copy and 4 printed copies of the authorized spill prevention and control plan.
4. The CDFW requires review of the authorized spill prevention and control plan, the Engineer submits the authorized spill prevention and control plan to CDFW for its review and comment.
5. If the Engineer requests changes to the spill prevention and control plan based on CDFW's comments, amend the spill prevention and control plan within 10 days.

Add the following to Section 13-4.03G:

Dewatering must comply with the provisions of the current General Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters of the Central Valley RWQCB. This permit is available at the Central Valley RWQCB's Website.

Add the following to the last paragraph of Section 13-4.03C(1):

Before any materials are stockpiled or equipment parked / stored outside of the right of way, you must first obtain written authorization from the property owner on whose property the materials are to be stockpiled or equipment parked/stored. You must file with the Engineer said authority or a certified copy thereof together with a written release from the property owner absolving the County of Tulare from any and all responsibility in connection with the stockpiling of materials or parking/storage of equipment on said property. Before any material is stockpiled or equipment parked/stored, you must obtain written permission from the Engineer to stockpile materials or park/store equipment at the location designated in said authorization.

Failure to provide written authorization shall result in the withholding of all funds due to you until said authorization is received by the County.

Obtain all permits required by all applicable regulatory agencies and comply with all applicable codes, regulations and zoning ordinances prior to establishing a storage yard for materials and/or equipment.

Provide copies of all permits acquired to the Engineer.

DRAFT

AA

14 ENVIRONMENTAL STEWARDSHIP

Add the following to Section 14-1.01:

In accordance with 14-6.05, prior to arrival and prior to leaving the project site, all construction equipment must be inspected and cleaned of mud, plant material and other debris that may contain invasive plants and/or seeds and inspected to reduce the potential spreading of noxious weeds.

You must comply with all applicable requirements and provisions of the environmental document(s) and the permits obtained for this project.

A delay to the controlling operation due to environmental requirements will be considered a temporary suspension of work under Section 8-1.06. No contract adjustment or additional compensation will be made for delays caused by environmental requirements. The days on which the suspension is in effect shall not be considered working days as defined in Section 8-1.06B.

Replace “Reserved” in Section 14-10.03 with:

14-10.03 RECYCLING AND DIVERSION OF CONSTRUCTION AND DEMOLITION DEBRIS

You must comply with Article 10 of the Tulare County Ordinance Code Chapter 3, Part IV, “Recycling and Diversion of Construction and Demolition Debris,” which requires you to recycle 100% of inert solids (asphalt, concrete, rock, stone, brick, sand, soil and fines) and 50% by weight of the remaining construction and demolition material generated by the work. Submit the required Pre-Plan portion of the Construction and Demolition Waste Recycling and Reuse Plan after the award of the contract to the Engineer with the contract documents identifying the material type, hauler, disposal location and the percentage of material to be reused or recycled. There is no filing fees required for this submission of this plan. A copy of the Ordinance, the form for the Construction and Demolition Waste Recycling and Reuse Plan and other information may be found at:

<https://tularecounty.ca.gov/rma/index.cfm/rma-documents/public-works-documents/c-d-r-r-plan-form/>

Submit to the Engineer the required Final Report of the Construction and Demolition Waste Recycling and Reuse Plan prior to the Engineer’s acceptance of the work.

Full compensation for all labor, tools, equipment and reporting requirements required for compliance with the Recycling and Diversion of Construction and Demolition Debris Ordinance shall be considered as included in the items of work generating this debris and no additional compensation will be allowed therefor.

Replace Section 14-11.04 with:

14-11.04A Indirect Source Review

The San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) has reviewed the Applicability of Indirect Source Review (ISR) Rule 9510 provided by the County and determined that the project would not create a new paved surface that is used for the transportation of motor vehicles or any structure support thereof. Therefore, the project does not meet the definition of a “Transportation Project”, as defined in District Rule 9510 (Indirect Source Review), section 3.35. Therefore, District Rule 9510 requirements and related fees do not apply to the project.

Additional information regarding District Rule 9510 can be found below:

Current SJVUAPCD Rules and Regulations:
<http://www.valleyair.org/rules/currnrules/r9510.pdf>

Indirect Source Review (forms, applications, information):
<http://www.valleyair.org/ISR/ISRHome.htm>

Detailed Fleet reporting template (can be used for compliance with clean fleet reporting requirement):
<http://www.valleyair.org/ISR/ISRFormsAndApplications.htm>

Please be aware that changes to the project such as increases in intensity may exceed an applicability threshold, resulting in the project being subject to District Rule 9510.

If changes are made to the project such that the intensity exceeds the applicability threshold resulting in the project being subject to District Rule 9510, the Contractor will assist the County with preparing an Air Impact Assessment (AIA) application form for submittal no later than applying for a final discretionary approval. The AIA form can be found in the following weblink:

<http://www.valleyair.org/ISR/Documents/Transportation-ISR-Application.pdf>

The Contractor must include the information specified in District Rule 9510, section 5.0.

The Air District recommends the AIA to be submitted as early as possible.

Pursuant to the AIA application, Contractor must use a fleet capable of achieving the emissions reduction requirements identified in Section 6.1.1 of District Rule 9510, and shall keep daily records of the total hours of operation for each piece of equipment greater than 50-horsepower being used on the project site during construction activities. Within 30-days of completing construction, Contractor shall submit a Detailed Fleet Report summarizing total hours of operation by equipment type, equipment model year and horsepower for each piece of construction equipment greater than 50-horsepower to the SJVUAPCD. Contractor shall be responsible for all additional fees or fines that may be incurred upon the final review of the final Clean Fleet Report submitted to the SJVUAPCD pursuant to the clean Construction – Detailed Fleet Mitigation included in the AIA application.

14-11.04B Dust Control Plan

When materials are transported off-site, all material must be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container.

Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

Remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.

Limit traffic speeds on unpaved roads to 15 miles per hour.

The Contractor shall obtain any permits, if required, from the San Joaquin Valley Air Pollution Control District (SJVUAPCD) and comply with all conditions imposed by said permits.

The Contractor shall not be allowed to begin work until copies of the approved permits and conditions have been provided to the Engineer or documentation from the SJVUAPCD is provided stating that permits will not be required for the Contractor's equipment and operations.

The Contractor shall be responsible for payment of fees to the SJVUAPCD under the indirect source rule for emissions of air pollutants from the Contractor's construction equipment. Please see Section 14-11 and the weblinks in this section for additional information.

A Dust Control Plan shall be submitted to the SJVUAPCD, through the Engineer, at least 5 days prior to any earthmoving or construction activities that will cause dust. The Dust Control Plan must be approved by the SJVUAPCD prior to start of any work.

The Contractor shall apply either water or dust palliative, or both, for the alleviation or prevention of dust nuisance. Dust resulting from the Contractor's performance of the work, either inside or outside the right of way, shall be controlled by the Contractor in conformance with the provisions in Section 7 "Legal Relations and Responsibility to the Public."

Water shall be applied as provided in Section 17 of the Standard Specifications, "Watering", and dust palliative shall conform to and be applied as provided in Section 18, "Dust Palliative" of the Standard Specifications.

Additional information can be found at the links below:

Dust Control (forms, applications, information):

http://www.valleyair.org/busind/comply/PM10/compliance_PM10.htm

Sacramento Metropolitan AQMD Construction Mitigation Calculator (provides emissions and reductions based on fleet):

<http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation>

Excavation, transportation, and handling of material containing hazardous waste or contamination must result in no visible dust migration. Have a water truck or tank on the job site at all times while clearing and grubbing and performing earthwork operations in work areas containing hazardous waste or contamination.

Full compensation for dust control including the cost of any permits and water shall be considered as included in the price paid for the various items of work requiring dust control and no additional compensation will be allowed therefore.

The Contractor shall conduct its operations in full compliance with the requirements of the SJVUAPCD and obtain and comply with any or all permits required by the SJVUAPCD.

Replace Section 14-12.04 with:

14-12.04 PERMITS AND LICENSES

Comply with Section 5-1.20B.

Comply with the requirements of the permits acquired by the County for this project located elsewhere in these Special Provisions.

You must comply with all applicable SJVUAPCD regulations and requirements.

Obtain a Demolition Permit Release from SJVUAPCD. Nothing herein or elsewhere within these Special Provisions shall be construed as limiting your responsibility for complying with all applicable rules and regulations. You are responsible for payment of all the fees required to obtain the Demolition Permit Release.

Comply with Section 7-1.02, Section 7-1.07, Section 14-9.02 and Section 14-9.03.

For projects that will result in land disturbance of greater than one acre, file the Notice of Intent and pay the appropriate fee as required by the terms of General Permit No. CSA000002, for the discharge of storm water associated with construction activity.

Payment for conforming to the requirements in these permits shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

AAA

DIVISION IV SUBBASES AND BASES

AAA

26 AGGREGATE BASES

Replace the third paragraph in section 26-1.03E with:

The finish AB surface must not vary more than 0.05 foot from the grade established.

DRAFT

AA

DIVISION V SURFACINGS AND PAVEMENTS

AA

39 ASPHALT CONCRETE

Replace Section 39 with:

39-1.01 GENERAL

39-1.01A Summary

Section 39-1 includes general specifications for producing and placing HMA by mixing aggregate and asphalt binder at a mixing plant and spreading and compacting the HMA mixture.

Produce and place HMA Type A under the Method Construction Process.

39-1.01B Definitions

coarse aggregate: Aggregate retained on a no. 4 sieve.

fine aggregate: Aggregate passing the no. 4 sieve.

supplemental fine aggregate: Aggregate passing the no. 30 sieve, including hydrated lime, Portland cement, and fines from dust collectors.

39-1.02 MATERIALS

39-1.02A Geosynthetic Pavement Interlayer

Geosynthetic pavement interlayer must comply with the specifications for pavement fabric, paving mat, paving grid, paving geocomposite grid, or geocomposite strip membrane.

39-1.02B Tack Coat

Tack coat must comply with the specifications for asphaltic emulsion or asphalts. Choose the type and grade.

Notify the Engineer if you dilute asphaltic emulsion with water. The weight ratio of added water to asphaltic emulsion must not exceed 1 to 1.

Measure added water either by weight or volume in compliance with section 9-1.02 or you may use water meters from water districts, cities, or counties. If you measure water by volume, apply a conversion factor to determine the correct weight.

With each dilution, submit:

1. Weight ratio of water to bituminous material in the original asphaltic emulsion
2. Weight of asphaltic emulsion before diluting
3. Weight of added water
4. Final dilution weight ratio of water to asphaltic emulsion

39-1.02C Asphalt Binder

Asphalt binder in HMA must comply with the specifications for asphalts or section 39-1.02D.

Asphalt binder in HMA Type A must be PG Grade 64-10.

Asphalt binder for geosynthetic pavement interlayer must comply with the specifications for asphalts. Choose from Grades PG 64-10, PG 64-16, or PG 70-10.

39-1.02E Aggregate

Aggregate must be clean and free from deleterious substances.

Aggregate used in HMA Type A must comply with the 3/4-inch HMA Types A and B gradation.

The specified aggregate gradation must be determined before the addition of asphalt binder and includes supplemental fine aggregate. The Department tests for aggregate grading under California Test 202, modified by California Test 105 if there is a difference in specific gravity of 0.2 or more between the coarse and fine parts of different aggregate blends.

Choose sieve size TV within each TV limit presented in the aggregate gradation tables.

The proposed aggregate gradation must be within the TV limits for the specified sieve sizes shown in the following tables:

Aggregate Gradation (Percentage Passing) HMA Types A and B

3/4-inch HMA Types A and B

Sieve sizes	TV limits	Allowable tolerance
1"	100	--
3/4"	90–100	TV ± 5
1/2"	70–90	TV ± 6
No. 4	45–55	TV ± 7
No. 8	32–40	TV ± 5
No. 30	12–21	TV ± 4
No. 200	2.0–7.0	TV ± 2

1/2-inch HMA Types A and B

Sieve sizes	TV limits	Allowable tolerance
3/4"	100	--
1/2"	95–99	TV ± 6
3/8"	75–95	TV ± 6
No. 4	55–66	TV ± 7
No. 8	38–49	TV ± 5
No. 30	15–27	TV ± 4
No. 200	2.0–8.0	TV ± 2

3/8-inch HMA Types A and B

Sieve sizes	TV limits	Allowable tolerance
1/2"	100	--
3/8"	95–100	TV ± 6
No. 4	58–72	TV ± 7
No. 8	34–48	TV ± 6
No. 30	18–32	TV ± 5
No. 200	2.0–9.0	TV ± 2

No. 4 HMA Types A and B

Sieve sizes	TV limits	Allowable tolerance
3/8"	100	--
No. 4	95–100	TV ± 7

**Aggregate Gradation
(Percentage Passing)
HMA Types A and B**

No. 8	72–77	TV ± 7
No. 30	37–43	TV ± 7
No. 200	2.0–12.0	TV ± 4

Before the addition of asphalt binder and lime treatment, aggregate must have the values for the quality characteristics shown in the following table:

Aggregate Quality					
Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Percent of crushed particles	California Test 205				
Coarse aggregate (% min.)					
One fractured face		90	25	--	90
Two fractured faces		75	--	90	75
Fine aggregate (% min.) (Passing no. 4 sieve and retained on no. 8 sieve.)					
One fractured face		70	20	70	90
Los Angeles Rattler (% max.)	California Test 211				
Loss at 100 rev.		12	--	12	12
Loss at 500 rev.		45	50	40	40
Sand equivalent (min.) a	California Test 217	47	42	47	--
Fine aggregate angularity (% min.) b	California Test 234	45	45	45	--
Flat and elongated particles (% max. by weight @ 5:1)	California Test 235	10	10	10	10

^a Reported value must be the average of 3 tests from a single sample.

^b The Engineer waives this specification if HMA contains less than 10 percent of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

39-1.02F Reclaimed Asphalt Pavement

You may produce HMA Type A or B, using RAP. HMA produced using RAP must comply with the specifications for HMA, except aggregate quality specifications do not apply to RAP. You may substitute RAP aggregate for a part of the virgin aggregate in HMA in a quantity not exceeding 15.0 percent of the aggregate blend.

Assign the substitution rate of RAP aggregate for virgin aggregate with the JMF submittal. The JMF must include the percent of RAP used. If you change your assigned RAP aggregate substitution rate by more than 5 percent (within the 15.0 percent limit), submit a new JMF.

Process RAP from asphalt concrete. You may process and stockpile RAP during the entire project. Prevent material contamination and segregation. Store RAP in stockpiles on smooth surfaces free of debris and organic material. Processed RAP stockpiles must be only homogeneous RAP.

39-1.03 HOT MIX ASPHALT MIX DESIGN REQUIREMENTS

39-1.03A General

The mix design process consists of performing California Test 367 and laboratory procedures on combinations of aggregate gradations and asphalt binder contents to determine the OBC and HMA mixture qualities. The results become the proposed JMF.

Use the *Contractor Hot Mix Asphalt Design Data* form to record aggregate quality and mix design data. Use the *Contractor Job Mix Formula Proposal* form to present the JMF.

Laboratories testing aggregate qualities and preparing the mix design and JMF must be qualified under the Department's Independent Assurance Program. Take samples under California Test 125.

The Engineer reviews the aggregate qualities, mix design, and JMF and verifies and authorizes the JMF.

You may change the JMF during production. Do not use the changed JMF until it is authorized. Except if adjusting the JMF as specified in section 39-1.03E, perform a new mix design and submit a new JMF submittal if you change any of the following:

1. Target asphalt binder percentage
2. Asphalt binder supplier
3. Combined aggregate gradation
4. Aggregate sources
5. Substitution rate for RAP aggregate of more than 5 percent
6. Any material in the JMF

39-1.03B Hot Mix Asphalt Mix Design

Perform a mix design that produces HMA with the values for the quality characteristics shown in the following table:

HMA Mix Design Requirements

Quality characteristic	Test method	HMA type		
		A	B	RHMA-G
Air void content (%)	California Test 367	4.0	4.0	Section 39-1.03B
Voids in mineral aggregate (% min.)	California Test 367			
No. 4 grading		17.0	17.0	--
3/8" grading		15.0	15.0	--
1/2" grading		14.0	14.0	18.0–23.0 ^a
3/4" grading		13.0	13.0	18.0–23.0 ^a
Voids filled with asphalt (%)	California Test 367			Note c
No. 4 grading		76.0–80.0	76.0–80.0	
3/8" grading		73.0–76.0	73.0–76.0	
1/2" grading		65.0–75.0	65.0–75.0	
3/4" grading		65.0–75.0	65.0–75.0	
Dust proportion	California Test 367			Note c
No. 4 and 3/8" gradings		0.9–2.0	0.9–2.0	
1/2" and 3/4" gradings		0.6–1.3	0.6–1.3	
Stabilometer value (min.) ^b	California Test 366			
No. 4 and 3/8" gradings		30	30	--
1/2" and 3/4" gradings		37	35	23

^a Voids in mineral aggregate for RHMA-G must be within this range.

^b California Test 304, Part 2.13.

^c Report this value in the JMF submittal.

Report the average of 3 tests. If the range of stability for the 3 briquettes is more than 8 points, prepare new briquettes and test again. The average air void content may vary from the specified air void content by ± 0.5 percent.

39-1.03C Job Mix Formula Submittal

Each JMF submittal must consist of:

1. Proposed JMF on a *Contractor Job Mix Formula Proposal* form

2. Mix design records on a *Contractor Hot Mix Asphalt Design Data* form dated within 12 months of submittal
3. JMF verification on a *Caltrans Hot Mix Asphalt Verification* form, if applicable
4. JMF renewal on a *Caltrans Production Start-Up Evaluation* form, if applicable
5. MSDS for the following:
 - 5.1. Asphalt binder
 - 5.2. Supplemental fine aggregate except fines from dust collectors
 - 5.3. Antistrip additives

If the Engineer requests, sample the following materials in the presence of the Engineer and place in labeled containers weighing no more than 50 lb each:

1. Coarse, fine, and supplemental fine aggregate from stockpiles, cold feed belts, or hot bins. Samples must be at least 120 lb for each coarse aggregate, 80 lb for each fine aggregate, and 10 lb for each type of supplemental fines. The Department combines these aggregate samples to comply with the JMF TVs submitted on a *Contractor Job Mix Formula Proposal* form.
2. RAP from stockpiles or RAP system. Samples must be at least 60 lb.
3. Asphalt binder from the binder supplier. Samples must be in two 1-quart cylindrical-shaped cans with open top and friction lids.

Notify the Engineer at least 2 business days before sampling materials. For aggregate and RAP, split the samples into at least 4 parts. Submit 2 parts to the Engineer and use 1 part for your testing.

39-1.03D Job Mix Formula Review

The Engineer reviews each mix design and proposed JMF within 5 business days from the complete JMF submittal. The review consists of reviewing the mix design procedures and comparing the proposed JMF with the specifications.

The Engineer may verify aggregate quality characteristics during this review period.

39-1.03E Job Mix Formula Verification

If you cannot submit a *Caltrans Hot Mix Asphalt Verification* form dated within 12 months before HMA production, the Engineer verifies the JMF.

Based on your testing and production experience, you may submit an adjusted JMF on a *Contractor Job Mix Formula Proposal* form before verification testing. JMF adjustments may include a change in the:

1. Asphalt binder content TV up to ± 0.6 percent from the OBC value submitted on a *Contractor Hot Mix Asphalt Design Data* form, except for RHMA-G, do not adjust the TV for asphalt rubber binder below 7.0 percent
2. Aggregate gradation TVs within the TV limits specified in the aggregate gradation tables

For HMA Type A and Type B, the Engineer verifies the JMF from samples taken from HMA produced by the plant to be used. Notify the Engineer at least 2 business days before sampling materials.

In the Engineer's presence and from the same production run, take samples of:

1. Aggregate
2. Asphalt binder
3. RAP
4. HMA

Sample aggregate from cold feed belts or hot bins. Sample RAP from the RAP system. Sample HMA under California Test 125, except if you request and if authorized, you may sample from any of the following locations:

1. At the plant from deposited piles or windrows
2. From the truck with an automatic sampling device

3. Windrow
4. Mat behind the paver

You may sample from a different project, including a non-Department project, if you make arrangements for the Engineer to be present during sampling.

For aggregate, RAP, and HMA, split the samples into at least 4 parts and label their containers. Submit 2 split parts and keep 1 part for your testing.

The Engineer verifies each proposed JMF within 20 days of receiving all verification samples and the JMF submittal has been accepted. Verification is testing for compliance with the specifications for:

1. Aggregate quality
2. Aggregate gradation TVs within the TV limits
3. Asphalt binder content TV within the TV limit
4. HMA quality specified in the table HMA Mix Design Requirements except:
 - 4.1. Air void content, design value ± 2.0 percent
 - 4.2. Voids filled with asphalt, report only if an adjustment for asphalt binder content TV is less than ± 0.3 percent from OBC
 - 4.3. Dust proportion, report only if an adjustment for asphalt binder content TV is less than ± 0.3 percent from OBC

The Engineer prepares 3 briquettes from a single split sample. To verify the JMF for stability and air void content, the Engineer tests the 3 briquettes and reports the average of 3 tests. The Engineer prepares new briquettes if the range of stability for the 3 briquettes is more than 8 points.

The Engineer may use the briquettes used for stability testing to determine bulk specific gravity under California Test 308. If the same briquettes are used and the tests using bulk specific gravity fail, the Engineer prepares 3 new briquettes and determines a new bulk specific gravity.

If tests on plant-produced samples do not verify the JMF, the Engineer notifies you and you must submit a new JMF submittal or submit an adjusted JMF based on your testing. JMF adjustments may include a change in:

1. Asphalt binder content TV up to ± 0.6 percent from the OBC value submitted on a *Contractor Hot Mix Asphalt Design Data* form except do not adjust the TV for asphalt rubber binder for RHMA-G below 7.0 percent
2. Aggregate gradation TVs within the TV limits specified in the aggregate gradation tables

You may adjust the JMF only once due to a failed verification test. An adjusted JMF requires a new *Contractor Job Mix Formula Proposal* form and verification of a plant-produced sample.

The Engineer re-verifies the JMF if HMA production has stopped for longer than 30 days and the verified JMF is older than 12 months.

For each HMA type and aggregate size specified, the Engineer verifies at the Department's expense up to 2 proposed JMF, including a JMF adjusted after verification failure. The Engineer deducts \$3,000 from payments for each verification exceeding this limit. This deduction does not apply to verifications initiated by the Engineer or if a JMF expires while HMA production is stopped longer than 30 days.

39-1.03F Job Mix Formula Renewal

You may request a JMF renewal by submitting:

1. Proposed JMF on a *Contractor Job Mix Formula Proposal* form
2. Mix design documentation on a *Contractor Hot Mix Asphalt Design Data* form used for the previously verified JMF

If the Engineer requests, sample the following materials in the presence of the Engineer and place in labeled containers weighing no more than 50 lb each:

1. Coarse, fine, and supplemental fine aggregate from stockpiles, cold feed belts, or hot bins. Samples must include at least 120 lb for each coarse aggregate, 80 lb for each fine aggregate, and 10 lb for each type of supplemental fines. The Department combines these aggregate samples to comply with the JMF TVs submitted on a *Contractor Job Mix Formula Proposal* form.
2. RAP from stockpiles or RAP system. Samples must be at least 60 lb.
3. Asphalt binder from the binder supplier. Samples must be in two 1-quart cylindrical-shaped cans with open top and friction lids.
4. Asphalt rubber binder with the components blended in the proportions to be used. Samples must be in four 1-quart cylindrical-shaped cans with open top and friction lids.

Notify the Engineer at least 2 business days before sampling materials. For aggregate, RAP, and HMA, split samples into at least 4 parts. Submit 2 parts to the Engineer and use 1 part for your testing.

The Engineer reviews each complete JMF renewal submittal within 5 business days.

The Engineer may verify aggregate qualities during this review period.

The Engineer verifies the JMF under section 39-1.03E except:

1. Engineer retains samples until you provide test results for your part on a *Contractor Job Mix Formula Renewal* form.
2. Department tests samples of materials obtained from the HMA production unit after you submit test results that comply with the specifications for the quality characteristics in section 39-1.03E.
3. Engineer verifies each proposed JMF within 30 days of receiving verification samples.
4. You may not adjust the JMF due to a failed verification.
5. For each HMA type and aggregate gradation specified, the Engineer verifies at the Department's expense 1 proposed JMF.

If the Engineer verifies the JMF renewal, the Engineer provides you a *Caltrans Hot Mix Asphalt Verification* form.

39-1.03G Job Mix Formula Acceptance

HMA will be accepted for use on the project when:

1. Engineer's review of the JMF shows compliance with the specifications
2. Engineer verifies the JMF through start-up testing

39-1.04 CONTRACTOR QUALITY CONTROL

39-1.04A General

Establish, maintain, and change a quality control system to ensure materials and work comply with the specifications. Submit quality control test results within 24 hours of sampling.

You must identify the HMA sampling location in your QC plan. During production, take samples under California Test 125, except if you request and if authorized, sample HMA from any of the following locations:

1. At the plant from deposited piles or windrows
2. From the truck with an automatic sampling device
3. Windrow
4. Mat behind the paver

39-1.04B Prepaving Conference

Hold a prepaving conference with the Engineer at a mutually agreed time and place. Discuss methods of performing the production and paving work.

39-1.04D Aggregate

Determine the aggregate moisture content and RAP moisture content in continuous mixing plants at least twice a day during production and adjust the plant controller. Determine the RAP moisture content in batch mixing plants at least twice a day during production and adjust the plant controller.

39-1.04E Reclaimed Asphalt Pavement

Perform RAP quality control testing each day.

For Standard Construction Process – The Contractor may choose to use one of the following methods for the submission of the combined aggregate gradation:

1. Sample RAP once daily and determine the RAP aggregate gradation under California Test 367, appendix B. Results shall be submitted to the Engineer within 24 hours of sampling.
2. Use the mix design RAP values.

For Method construction Process – The combined aggregate gradations shall use the mix design RAP values.

39-1.04F Density Cores

To determine density for Standard Construction process projects, take 4- or 6-inch diameter density cores every 250 tons of hot mix asphalt placed according to part 3, "Section B, "Test site location," of California Test Method 375, "Determining the in-place density and relative compaction of hot mix asphalt pavement using nuclear gages." Take density cores in the Engineer's presence. Backfill and compact holes with authorized material. Before submitting a density core, mark it with, lot, subplot and core number. Each day's cores shall be accompanied by a corresponding Tulare County HMA Density Core Submittal Form and shall be placed in a protective container.

The above mentioned form can be found at: <https://tularecounty.ca.gov/rma/index.cfm/rma-documents/public-works-documents/tulare-county-hma-density-core-submittal-form/>

If a density core is damaged, replace it with a density core taken within 1 foot longitudinally from the original density core. Relocate any density core located within 1 foot of a rumble strip to 1 foot transversely away from the rumble strip.

39-1.04G Briquettes

Prepare 3 briquettes for each stability and air void content determination. Report the average of 3 tests. Prepare new briquettes and test again when the range of stability for the 3 briquettes is more than 8 points.

You may use the same briquettes used for stability testing to determine bulk specific gravity under California Test 308. If you use these briquettes and tests using bulk specific gravity fail, you may prepare 3 new briquettes and determine a new bulk specific gravity.

39-1.05 ACCEPTANCE CRITERIA

HMA acceptance is specified in the sections for each HMA construction process.

Samples materials for testing under California Test 125 and the applicable test method, except samples may be taken:

1. At the plant from a truck with an automatic sampling device
2. At the plant from a deposited pile or windrow
3. From the mat behind the paver

Sampling shall be completed by certified personnel authorized by the approved Quality Control Plan, statistically based, and random.

HMA acceptance is based on:

1. Authorized JMF
2. Accepted QC plan for Standard Construction process projects
3. Compliance with the HMA acceptance tables
4. Visual inspection

The Department prepares 3 briquettes for each stability and air void content determination. The average of 3 tests is reported. If the range of stability for the 3 briquettes is more than 8 points, new briquettes are prepared and tested.

The Department may use the briquettes used for stability testing to determine bulk specific gravity under California Test 308. If the Engineer uses the same briquettes and the tests using that bulk specific gravity fail, the Engineer prepares 3 new briquettes and determines a new bulk specific gravity.

39-1.06 DISPUTE RESOLUTION

Work with the Engineer to avoid potential conflicts and to resolve disputes regarding test result discrepancies. Notify the Engineer within 5 days of receiving a test result if you dispute the test result.

If you or the Engineer dispute each other's test results, submit quality control test results and copies of paperwork including worksheets used to determine the disputed test results. An independent third party performs referee testing. Before the independent third party participates in a dispute resolution, the party must be accredited under the Caltrans Independent Assurance Program. The independent third party must be independent of the project. By mutual agreement, the independent third party is chosen from an independent, non-biased laboratory having the capabilities to perform the necessary test.

If split quality control or acceptance samples are not available, the independent third party uses any available material representing the disputed HMA for evaluation.

39-1.07 PRODUCTION START-UP EVALUATION

The Engineer evaluates HMA production and placement at production start-up.

Within the first 750 tons produced on the 1st day of HMA production, in the Engineer's presence and from the same production run, take samples of:

1. Aggregate
2. Asphalt binder
3. RAP
4. HMA

Sample aggregate from cold feed belts or hot bins. Take RAP samples from the RAP system. Sample HMA under California Test 125, except if you request and if authorized, you may sample HMA from any of the following locations:

1. At the plant from deposited piles or windrows.
2. From trucks with an automatic sampling device.
3. Windrow
4. Mat behind the paver

For aggregate, RAP, and HMA, split the samples into at least 4 parts and label their containers. Submit 2 split parts and keep 1 part.

For Standard Construction process projects, you and the Department must test the split samples and report test results within 3 business days of sampling. If you proceed before receipt of the test results, the Engineer may consider the HMA placed to be represented by these test results.

39-1.08 PRODUCTION

39-1.08A General

A lot shall be defined as material from the same mix design of the same Project.

Sublots shall be defined as material from a lot, up to but not to exceed 750 tons HMA.

Core lots shall be defined as material from a subplot, up to but not to exceed 250 tons HMA.

No subplot shall be carried over to the next day of production and paving

Produce HMA in a batch mixing plant or a continuous mixing plant. Proportion aggregate by hot or cold feed control.

HMA plants must be Department qualified. Before production, the HMA plant must have current qualification under the Department's Materials Plant Quality Program.

During production, you may adjust:

1. Hot or cold feed proportion controls for virgin aggregate and RAP
2. Set point for asphalt binder content

39-1.08B Mixing

Mix HMA ingredients into a homogeneous mixture of coated aggregates.

Asphalt binder must be from 275 to 375 degrees F when mixed with aggregate.

Asphalt rubber binder must be from 350 to 425 degrees F when mixed with aggregate.

When mixed with asphalt binder, aggregate must not be more than 325 degrees F. These aggregate temperature specifications do not apply if you use RAP.

HMA with or without RAP must not be more than 325 degrees F.

39-1.09 SUBGRADE, TACK COAT, AND GEOSYNTHETIC PAVEMENT INTERLAYER

39-1.09A General

Prepare subgrade or apply tack coat to surfaces receiving HMA. If specified, place geosynthetic pavement interlayer over a coat of asphalt binder.

39-1.09B Subgrade

Subgrade to receive HMA must comply with the compaction and elevation tolerance specifications in the sections for the material involved. Subgrade must be free of loose and extraneous material. If HMA is paved on existing base or pavement, remove loose paving particles, dirt, and other extraneous material by any means including flushing and sweeping.

39-1.09C Tack Coat

Apply tack coat:

1. To existing pavement, including planed surfaces
2. Between HMA layers
3. To vertical surfaces of:
 - 3.1. Curbs
 - 3.2. Gutters
 - 3.3. Construction joints
4. Outside of the limits of geosynthetic pavement interlayer between new and existing HMA layers.

Before placing HMA, apply tack coat in 1 application. The application rate must be the minimum residual rate specified for the underlying surface conditions shown in the following tables:

Tack Coat Application Rates for HMA Type A, Type B, and RHMA-G

HMA overlay over:	Minimum residual rates (gal/sq yd)		
	CSS1/CSS1h, SS1/SS1h and QS1h/CQS1h asphaltic emulsion	CRS1/CRS2, RS1/RS2 and QS1/CQS1 asphaltic emulsion	Asphalt binder and PMRS2/PMCRS2 and PMRS2h/PMCRS2h asphaltic emulsion
New HMA (between layers)	0.02	0.03	0.02
PCC and existing HMA (AC) surfaces	0.03	0.04	0.03
Planned PCC and HMA (AC) surfaces	0.05	0.06	0.04

Tack Coat Application Rates for OGFC

OGFC over:	Minimum residual rates (gal/sq yd)		
	CSS1/CSS1h, SS1/SS1h and QS1h/CQS1h asphaltic emulsion	CRS1/CRS2, RS1/RS2 and QS1/CQS1 asphaltic emulsion	Asphalt binder and PMRS2/PMCRS2 and PMRS2h/PMCRS2h asphaltic emulsion
New HMA	0.03	0.04	0.03
PCC and existing HMA (AC) surfaces	0.05	0.06	0.04
Planned PCC and HMA (AC) surfaces	0.06	0.07	0.05

If you dilute asphaltic emulsion, mix until homogeneous before application.

For vertical surfaces, apply a residual tack coat rate that will thoroughly coat the vertical face without running off.

If you request and if authorized, you may:

1. Change tack coat rates
2. Omit tack coat between layers of new HMA during the same work shift if:
 - 2.1. No dust, dirt, or extraneous material is present
 - 2.2. Surface is at least 140 degrees F

Immediately in advance of placing HMA, apply additional tack coat to damaged areas or where loose or extraneous material is removed.

Close areas receiving tack coat to traffic. Do not track tack coat onto pavement surfaces beyond the job site.

Asphalt binder tack coat must be from 285 to 350 degrees F when applied and shall “break” prior to asphalt placement.

Payment for Tack Coat shall be based on minimum residual application rates, as specified in the above tables, and total tonnage shall be based on the Engineer’s calculations.

39-1.09D Geosynthetic Pavement Interlayer

Place geosynthetic pavement interlayer under the manufacturer's instruction.

Before placing the geosynthetic pavement interlayer and asphalt binder:

1. Repair cracks 1/4 inch and wider, spalls, and holes in the pavement. These repairs are change order work.

2. Clean the pavement of loose and extraneous material.

Immediately before placing the interlayer, apply 0.25 ± 0.03 gal of asphalt binder per square yard of interlayer or until the fabric is saturated. Apply asphalt binder the width of the geosynthetic pavement interlayer plus 3 inches on each side. At interlayer overlaps, apply asphalt binder on the lower interlayer the same overlap distance as the upper interlayer.

Asphalt binder must be from 285 to 350 degrees F and below the minimum melting point of the geosynthetic pavement interlayer when applied.

Align and place the interlayer with no folds that result in a triple thickness, except that triple thickness layers less than 1 inch in width may remain if less than 1/2 inch in height. Folds that result in a triple layer greater than a 1 inch width must be slit and overlapped in a double thickness at least 2 inches in width.

The minimum HMA thickness over the interlayer must be 0.12 foot thick, including conform tapers. Do not place the interlayer on a wet or frozen surface.

Overlap the interlayer borders from 2 to 4 inches. In the direction of paving, overlap the following roll with the preceding roll at any break.

You may use rolling equipment to correct distortions or wrinkles in the interlayer.

If asphalt binder tracked onto the interlayer or brought to the surface by construction equipment causes interlayer displacement, cover it with a small quantity of HMA.

Before placing HMA on the interlayer, do not expose the interlayer to:

1. Traffic, except for crossings under traffic control, and only after you place a small HMA quantity
2. Sharp turns from construction equipment
3. Damaging elements

Pave HMA on the interlayer during the same work shift.

39-1.10 SPREADING AND COMPACTING EQUIPMENT

Paving equipment for spreading must be:

1. Self-propelled
2. Mechanical
3. Equipped with a screed or strike-off assembly that can distribute HMA the full width of a traffic lane
4. Equipped with a full-width compacting device
5. Equipped with automatic screed controls and sensing devices that control the thickness, longitudinal grade, and transverse screed slope

Install and maintain grade and slope references.

The screed must produce a uniform HMA surface texture without tearing, shoving, or gouging.

The paver must not leave marks such as ridges and indentations, unless you can eliminate them by rolling.

Rollers must be equipped with a system that prevents HMA from sticking to the wheels. You may use a parting agent that does not damage the HMA or impede the bonding of layers.

In areas inaccessible to spreading and compacting equipment:

1. Spread the HMA by any means to obtain the specified lines, grades, and cross sections.
2. Use a pneumatic tamper, plate compactor, or equivalent to achieve thorough compaction.

Edge of pavement treatment shall be per the 2018 Standard Plan P75, Case B where tapered safety edge is 30 degrees plus or minus 10 degrees. Tapered safety edge shall be extruded, densified edge of uniform grade and consistency as produced with Carlson brand safety attachment. An equivalent extruded, tapered

safety edge will be accepted and approved by the County upon performing an acceptable trial example or demonstration.

39-1.12 SMOOTHNESS

39-1.12A General

Determine HMA smoothness with a profilograph and a straightedge.

If concrete pavement is placed on HMA:

1. Cold plane the HMA finished surface to within specified tolerances if it is higher than the grade ordered.
2. Remove and replace HMA if the finished surface is lower than 0.05 foot below the grade ordered.

39-1.12B Straightedge

The top layer of HMA pavement must not vary from the lower edge of a 12-foot straightedge:

1. More than 0.01 foot when the straightedge is laid parallel with the centerline
2. More than 0.02 foot when the straightedge is laid perpendicular to the centerline and extends from edge to edge of a traffic lane
3. More than 0.02 foot when the straightedge is laid within 24 feet of a pavement conform

39-1.12C Profilograph

For the top layer of HMA Type A pavement, determine the PI_0 and must-grinds under California Test 526. Take 2 profiles within each traffic lane, 3 feet from and parallel with the edge of each lane.

A must-grind is a deviation of 0.3 inch or more in a length of 25 feet. You must correct must-grinds.

Profile the pavement in the Engineer's presence.

On tangents and horizontal curves with a centerline radius of curvature of 2,000 feet, the PI_0 must be at most 3 inches per 0.1-mile section.

On horizontal curves with a centerline radius of curvature from 1,000 to 2,000 feet, including pavement within the superelevation transitions, the PI_0 must be at most 6 inches per 0.1-mile section.

Before the Engineer accepts HMA pavement for smoothness, submit final profilograms.

Submit 1 copy of profile information in Microsoft Excel and 1 copy of longitudinal pavement profiles in ".erd" format or other ProVAL compatible format to the Resident Engineer.

The following HMA pavement areas do not require a PI_0 . You must measure these areas with a 12-foot straightedge and determine must-grinds with a profilograph:

1. New HMA with a total thickness less than 0.25 foot
2. HMA sections of city or county streets and roads, turn lanes, and collector lanes less than 1,500 feet in length

The following HMA pavement areas do not require a PI_0 and you must measure them with a 12-foot straightedge:

1. Horizontal curves with a centerline radius of curvature less than 1,000 feet, including pavement within the superelevation transitions of those curves
2. Within 12 feet of a transverse joint separating the pavement from:
 - 2.1. Existing pavement not constructed under the same project
 - 2.2. A bridge deck or approach slab
3. Exit ramp termini, truck weigh stations, and weigh-in-motion areas
4. If steep grades and superelevation rates greater than 6 percent are present:
 - 4.1. Ramps

- 4.2. Connectors
5. Turn lanes
6. Areas within 15 feet of manholes or drainage transitions
7. Acceleration and deceleration lanes for at-grade intersections
8. Shoulders and miscellaneous areas
9. HMA pavement within 3 feet from and parallel to the construction joints formed between curbs, gutters, or existing pavement

39-1.12D Smoothness Correction

If the top layer of HMA Type A, Type B, or RHMA-G pavement does not comply with the smoothness specifications, grind the pavement to within specified tolerances, remove and replace it, or place an overlay of HMA. Do not start corrective work until your choice of methods is authorized by the Resident Engineer.

Remove and replace areas of OGFC not in compliance with the must-grind and straightedge specifications, except you may grind OGFC for correcting smoothness:

1. At transverse joints separating the OGFC from pavement not constructed under the same project
2. Within 12 feet of a transverse joint separating the OGFC from a bridge deck or approach slab

Corrected HMA pavement areas must be uniform rectangles with edges:

1. Parallel to the nearest HMA pavement edge or lane line
2. Perpendicular to the pavement centerline

Measure the corrected HMA pavement surface with a profilograph and a 12-foot straightedge and correct the pavement to within specified tolerances. If a must-grind area or straightedged pavement cannot be corrected to within specified tolerances, remove and replace the pavement.

On areas ground but not overlaid with OGFC, apply fog seal coat under section 37-2.

39-1.13 HOT MIX ASPHALT ON BRIDGE DECKS

Produce and place HMA on bridge decks under the Method construction process.

Aggregate must comply with the 1/2-inch HMA Types A and B gradation.

If authorized, aggregate may comply with the no. 4 HMA Types A and B gradation for a section or taper at a bridge end that is less than 1 inch in total depth.

If a concrete expansion dam is to be placed at a bridge deck expansion joint, tape oil-resistant construction paper to the deck over the area to be covered by the dam before placing the tack coat and HMA across the joint.

Do not leave a vertical joint more than 0.15 foot high between adjacent lanes open to traffic.

The tack coat application rate must be the minimum residual rate specified in section 39-1.09C. For HMA placed on a deck seal, use the minimum residual rate specified for a PCC underlying surface.

HMA placed on a deck seal must be placed in at least 2 approximately equal layers. The 1st layer must be at least 1 inch thick after compaction. Protect the deck seal throughout all operations.

For placement of the 1st HMA layer on a deck seal:

1. Comply with the HMA application temperature recommended by the deck seal manufacturer.
2. Deliver and place HMA using equipment with pneumatic tires or rubber-faced wheels. Do not operate other vehicles or equipment on the bare deck seal.
3. Deposit HMA on the deck seal in such a way that the deck seal is not damaged. Do not windrow the HMA material on the bridge deck seal.
4. Place HMA in a downhill direction on bridge decks with grades over 2 percent.
5. Spreading equipment need not be self-propelled.

39-1.14 MISCELLANEOUS AREAS AND DIKES

The following specifications in section 39 do not apply to miscellaneous areas and dikes:

1. HMA construction process
2. HMA mix design requirements
3. Contractor quality control
4. Production start-up evaluation

Miscellaneous areas are outside the traveled way and include:

1. Median areas not including inside shoulders
2. Island areas
3. Sidewalks
4. Gutters
5. Gutter flares
6. Ditches
7. Overside drains
8. Aprons at the ends of drainage structures

Spread miscellaneous areas in 1 layer and compact to the specified lines and grades.

For miscellaneous areas and dikes:

1. Do not submit a JMF.
2. Choose the 3/8-inch or 1/2-inch HMA Type A and Type B aggregate gradations.
3. Minimum asphalt binder content must be 6.8 percent for 3/8-inch aggregate and 6.0 percent for 1/2-inch aggregate. If you request and if authorized, you may reduce the minimum asphalt binder content.
4. Choose asphalt binder Grade PG 70-10 or the same grade specified for HMA.

39-1.15 MINOR HOT MIX ASPHALT

39-1.15A GENERAL

39-1.15A(1) Summary

The following specifications in section 39 do not apply to minor HMA:

1. HMA construction process
2. HMA mix design requirements
3. Contractor quality control
4. Production start-up evaluation

39-1.15A(2) Definitions

Reserved

39-1.15A(3) Submittals

Reserved

39-1.15A(4) Quality Control and Assurance

Reserved

39-1.15B MATERIALS

The minimum asphalt binder content must be 6.8 percent for 3/8-inch aggregate gradation and 6.0 percent for 1/2-inch aggregate gradation.

Choose asphalt binder Grade PG 64-10, PG 64-16, or PG 70-10.

If you request and if authorized, you may reduce the minimum asphalt binder content.

Choose the 3/8-inch or 1/2-inch HMA Type A or Type B aggregate gradation.

39-1.15C CONSTRUCTION

Produce HMA at a central mixing plant.

Choose any method and equipment to spread and compact.

The surface must be:

1. Textured uniformly
2. Compacted firmly
3. Without depressions, humps, and irregularities

Smoothness specifications do not apply.

39-1.30 PAYMENT

Section 39-1.30 includes specifications for HMA payment. The weight of each HMA mixture designated in the Bid Item List must be the combined mixture weight.

If recorded batch weights are printed automatically, the bid item for HMA is measured by using the printed batch weights, provided:

1. Total aggregate and supplemental fine aggregate weight per batch is printed. If supplemental fine aggregate is weighed cumulatively with the aggregate, the total aggregate batch weight must include the supplemental fine aggregate weight.
2. Total asphalt binder weight per batch is printed.
3. Each truckload's zero tolerance weight is printed before weighing the 1st batch and after weighing the last batch.
4. Time, date, mix number, load number, and truck identification is correlated with a load slip.
5. Copy of the recorded batch weights is certified by a licensed weighmaster and submitted to the Engineer.

If tack coat, asphalt binder, and asphaltic emulsion are paid with separate contract items, their contract items are measured under section 92 or section 94.

The Department does not adjust the unit price for an increase or decrease in the tack coat quantity. Section 9-1.06 does not apply to tack coat.

Place hot mix asphalt dike of the type specified is measured along the completed length.

Place hot mix asphalt (miscellaneous areas) is measured as the in-place compacted area.

HMA dike is paid for as place hot mix asphalt dike of the type specified in the Bid Item List and by weight for hot mix asphalt.

HMA specified to be placed in miscellaneous areas is paid for as place hot mix asphalt (miscellaneous area) and by weight for hot mix asphalt.

If minor hot mix asphalt is paid by area, it is measured from the dimensions shown; final quantities shall reflect field adjustments made by the Resident Engineer.

Payment for tack coat for minor HMA is included in payment for minor hot mix asphalt or the bid item that requires minor HMA.

Geosynthetic pavement interlayer is measured for the actual pavement area covered.

The Contractor shall, at their expense retain a third-party testing laboratory as described in Section 39-1.06 to complete the testing necessary to prove material suitability. No costs shall be borne by the County as a result of this additional testing unless written approval is provided by the Resident Engineer prior to testing.

39-2 METHOD CONSTRUCTION PROCESS

39-2.01 GENERAL

Section 39-2 includes specifications for HMA produced and constructed under the Method construction process.

39-2.02 ACCEPTANCE CRITERIA

39-2.02A Testing

The Department samples for acceptance testing and tests for the quality characteristics shown in the following table:

HMA Acceptance—Method Construction Process

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Aggregate gradation a	California Test 202	JMF ± tolerance ^b	JMF ± tolerance ^b	JMF ± tolerance ^b	JMF ± tolerance ^b
Sand equivalent (min) c	California Test 217	47	42	47	--
Asphalt binder content (%)	California Test 379 or 382	JMF ± 0.45	JMF ± 0.45	JMF ± 0.50	JMF ± 0.50
HMA moisture content (% max)	California Test 226 or 370	1.0	1.0	1.0	1.0
Stabilometer value (min) c, d No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 366	30	30	--	--
		37	35	23	--
Percent of crushed particles Coarse aggregate (% min) One fractured face Two fractured faces Fine aggregate (% min) (Passing no. 4 sieve and retained on no. 8 sieve.) One fractured face	California Test 205	90	25	--	90
		75	--	90	75
Los Angeles Rattler (% max) Loss at 100 rev. Loss at 500 rev.	California Test 211	12	--	12	12
		45	50	40	40
Air void content (%) c, e	California Test 367	4 ± 2	4 ± 2	TV ± 2	--
Fine aggregate angularity (% min)	California Test 234	45	45	45	--
Flat and elongated particles (% max by weight @ 5:1)	California Test 235	Report only	Report only	Report only	Report only
Voids filled with asphalt (%) f No. 4 grading 3/8" grading	California Test 367	76.0–80.0	76.0–80.0	Report only	--
		73.0–76.0	73.0–76.0		

HMA Acceptance—Method Construction Process

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
1/2" grading 3/4" grading		65.0–75.0 65.0–75.0	65.0–75.0 65.0–75.0		
Voids in mineral aggregate (% min) f No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367	17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 ^g 18.0–23.0 ^g	--
Dust proportion f No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 367	0.9–2.0 0.6–1.3	0.9–2.0 0.6–1.3	Report only	--
Smoothness	Section 39-1.12	12-foot straight-edge and must-grind	12-foot straight-edge and must-grind	12-foot straight-edge and must-grind	12-foot straight-edge and must-grind
Asphalt binder	Various	Section 92	Section 92	Section 92	Section 92
Asphalt rubber binder	Various	--	--	Section 92-1.01D(2) and section 39-1.02D	Section 92-1.01D(2) and section 39-1.02D
Asphalt modifier	Various	--	--	Section 39-1.02D	Section 39-1.02D
CRM	Various	--	--	Section 39-1.02D	Section 39-1.02D

^a The Engineer determines combined aggregate gradations containing RAP under California Test 367.

^b The tolerances must comply with the allowable tolerances in section 39-1.02E.

^c The Engineer reports the average of 3 tests from a single split sample.

^d California Test 304, Part 2.13.

^e The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

^f Report only if the adjustment for the asphalt binder content TV is less than or equal to ±0.3 percent from the OBC value submitted on a *Contractor Hot Mix Asphalt Design Data* form.

^g Voids in mineral aggregate for RHMA-G must be within this range.

No single test result may represent more than 750 tons or 1 day's production, whichever is less.

For any single quality characteristic except smoothness, if 2 consecutive acceptance test results do not comply with the specifications:

1. Stop production.
2. Take corrective action.
3. Take samples and split each sample into 4 parts in the Engineer's presence. Test 1 part for compliance with the specifications and submit 3 parts to the Engineer. The Department tests 1 part for compliance with the specifications and reserves and stores 2 parts.
4. Demonstrate compliance with the specifications before resuming production and placement.

39-2.03 SPREADING AND COMPACTING EQUIPMENT

Each paver spreading HMA Type A and Type B must be followed by 3 rollers as follows:

1. One vibratory roller specifically designed to compact HMA. The roller must be capable of at least 2,500 vibrations per minute and must be equipped with amplitude and frequency controls. The roller's gross static weight must be at least 7.5 tons.

2. One oscillating type pneumatic-tired roller at least 4 feet wide (at the discretion of the Engineer). Pneumatic tires must be of equal size, diameter, type, and ply. The tires must be inflated to 60 psi minimum and maintained so that the air pressure does not vary more than 5 psi.
3. One steel-tired, 2-axle tandem roller. The roller's gross static weight must be at least 7.5 tons.

Each roller must have a separate operator. Rollers must be self-propelled and reversible.

Compact RHMA-G as specified for HMA Type A and Type B except do not use pneumatic-tired rollers.

Compact OGFC with steel-tired, 2-axle tandem rollers. If placing 300 tons or more of OGFC per hour, use at least 3 rollers for each paver. If placing less than 300 tons of OGFC per hour, use at least 2 rollers for each paver. Each roller must weigh from 126 to 172 lb per linear inch of drum width. Turn the vibrator off.

When specified HMA thickness requires placement in multiple lifts, you may place lower lifts using mechanical compaction equipment other than the equipment listed above in areas less than 5- feet wide. The equipment used must produce uniform smoothness and texture and is subject to approval by the Engineer. All final lift paving must be compacted with rollers meeting or exceeding requirements specified above.

39-2.04 TRANSPORTING, SPREADING, AND COMPACTING

Pave HMA in maximum 0.25-foot thick compacted layers.

If the surface to be paved is both in sunlight and shade, pavement surface temperatures must be taken in the shade.

Spread HMA Type A and Type B at the atmospheric and surface temperatures shown in the following table:

Minimum Atmospheric and Surface Temperatures

Compacted layer thickness, feet	Atmospheric, °F		Surface, °F	
	Unmodified asphalt binder	Modified asphalt binder ^a	Unmodified asphalt binder	Modified asphalt binder ^a
	< 0.15	55	50	60
0.15–0.25	45	45	50	50

^a Except asphalt rubber binder.

If the asphalt binder for HMA Type A and Type B is unmodified asphalt binder, complete:

1. First coverage of breakdown compaction before the surface temperature drops below 250 degrees F
2. Breakdown and intermediate compaction before the surface temperature drops below 200 degrees F
3. Finish compaction before the surface temperature drops below 150 degrees F

If the asphalt binder for HMA Type A and Type B is modified asphalt binder, complete:

1. First coverage of breakdown compaction before the surface temperature drops below 240 degrees F
2. Breakdown and intermediate compaction before the surface temperature drops below 180 degrees F
3. Finish compaction before the surface temperature drops below 140 degrees F

For RHMA-G:

1. Only spread and compact if the atmospheric temperature is at least 55 degrees F and the surface temperature is at least 60 degrees F.

2. Complete the 1st coverage of breakdown compaction before the surface temperature drops below 280 degrees F.
3. Complete breakdown and intermediate compaction before the surface temperature drops below 250 degrees F.
4. Complete finish compaction before the surface temperature drops below 200 degrees F.
5. Cover loads in trucks with tarpaulins, if the atmospheric temperature is below 70 degrees F. The tarpaulins must completely cover the exposed load until you transfer the mixture to the paver's hopper or to the pavement surface.

For HMA-O with unmodified asphalt binder:

1. Only spread and compact if the atmospheric temperature is at least 55 degrees F and the surface temperature is at least 60 degrees F.
2. Complete the 1st coverage using 2 rollers before the surface temperature drops below 240 degrees F.
3. Complete all compaction before the surface temperature drops below 200 degrees F.
4. Cover loads in trucks with tarpaulins, if the atmospheric temperature is below 70 degrees F. The tarpaulins must completely cover the exposed load until you transfer the mixture to the paver's hopper or to the pavement surface.

For HMA-O with modified asphalt binder, except asphalt rubber binder:

1. Only spread and compact if the atmospheric temperature is at least 50 degrees F and the surface temperature is at least 50 degrees F.
2. Complete the 1st coverage using 2 rollers before the surface temperature drops below 240 degrees F.
3. Complete all compaction before the surface temperature drops below 180 degrees F.
4. Cover loads in trucks with tarpaulins, if the atmospheric temperature is below 70 degrees F. The tarpaulins must completely cover the exposed load until you transfer the mixture to the paver's hopper or to the pavement surface.

For RHMA-O and RHMA-O-HB:

1. Only spread and compact if the atmospheric temperature is at least 55 degrees F and surface temperature is at least 60 degrees F.
2. Complete the 1st coverage using 2 rollers before the surface temperature drops below 280 degrees F.
3. Complete compaction before the surface temperature drops below 250 degrees F.
4. Cover loads in trucks with tarpaulins, if the atmospheric temperature is below 70 degrees F. The tarpaulins must completely cover the exposed load until you transfer the mixture to the paver's hopper or to the pavement surface.

For RHMA-G and OGFC, tarpaulins are not required if the time from discharging to the truck until transfer to the paver's hopper or the pavement surface is less than 30 minutes.

HMA compaction coverage is the number of passes needed to cover the paving width. A pass is 1 roller's movement parallel to the paving in either direction. Overlapping passes are part of the coverage being made and are not a subsequent coverage. Do not start a coverage until completing the prior coverage.

Start rolling at the lower edge and progress toward the highest part.

Perform breakdown compaction of each layer of HMA Type A, Type B, and RHMA-G with 3 coverages using a vibratory roller. The speed of the vibratory roller in miles per hour must not exceed the vibrations per minute divided by 1,000. If the thickness of the HMA layer is less than 0.08 foot, turn the vibrator off. The Engineer may order fewer coverages if the thickness of the HMA layer is less than 0.15 foot.

Perform intermediate compaction of each layer of HMA Type A and Type B with 3 coverages using a pneumatic-tired roller at a speed not exceeding 5 mph.

Perform finish compaction of HMA Type A, Type B, and RHMA-G with 1 coverage using a steel-tired roller.

Compact OGFC with 2 coverages using steel-tired rollers.

39-3 EXISTING ASPHALT CONCRETE

39-3.01 GENERAL

39-3.01A General

Section 39-3.01 includes general specifications for performing work on existing asphalt concrete facilities.

Work performed on existing asphalt concrete facilities must comply with section 15.

39-3.01B Materials

Not Used

39-3.01C Construction

Before removing a portion of an asphalt concrete facility, make a 2-inch deep saw cut to a true line along the limits of the removal area.

39-3.01D Payment

Not Used

39-3.02 REPLACE ASPHALT CONCRETE SURFACING

39-3.02A General

Section 39-3.02 includes specifications for replacing asphalt concrete surfacing

39-3.02B Materials

HMA to be used for replacing asphalt concrete surfacing must comply with Type A HMA as specified in section 39-2.

The grade of asphalt binder must be PG 64-10.

Tack coat must comply with section 39-1.02B.

39-3.02C Construction

Where replace asphalt concrete surfacing is shown, remove the full depth of the existing asphalt concrete surfacing and replace with HMA. The Engineer determines the exact limits of asphalt concrete surfacing to be replaced.

Replace asphalt concrete in a lane before the lane is specified to be opened to traffic.

Before removing asphalt concrete, outline the replacement area and cut neat lines with a saw or grind to full depth of the existing asphalt concrete. Do not damage asphalt concrete and base remaining in place.

If you excavate the base beyond the specified plane, replace it with HMA.

Do not use a material transfer vehicle for replacing asphalt concrete surfacing.

Before placing HMA, apply a tack coat as specified in section 39-1.09C.

Place HMA using method compaction as specified in section 39-2.

39-3.02D Payment

The payment quantity for replace asphalt concrete surfacing is the volume determined from the dimensions shown.

39-3.03 REMOVE ASPHALT CONCRETE DIKES

39-3.03A General

Section 39-3.03 applies to removing asphalt concrete dikes outside the limits of excavation.

39-3.03B Materials

Not Used

39-3.03C Construction

Reserved

39-3.03D Payment

Not Used

39-3.04 COLD PLANING ASPHALT CONCRETE PAVEMENT

39-3.04A General

Section 39-3.05 includes specifications for cold planing asphalt concrete pavement.

Cold planing asphalt concrete pavement includes the removal of pavement markers, traffic stripes, and pavement markings within the area of cold planing.

39-3.04B Materials

HMA for temporary tapers must be of the same quality that is used for the HMA overlay or comply with the specifications for minor HMA in section 39-1.15.

39-3.04C Construction

39-3.04C(1) General

Do not use a heating device to soften the pavement.

The cold planing machine must be:

1. Equipped with a cutter head width that matches the planing width unless a wider cutter head is authorized.
2. Equipped with automatic controls for the longitudinal grade and transverse slope of the cutter head and:
 - 2.1. If a ski device is used, it must be at least 30 feet long, rigid, and a 1-piece unit. The entire length must be used in activating the sensor.
 - 2.2. If referencing from existing pavement, the cold planing machine must be controlled by a self-contained grade reference system. The system must be used at or near the centerline of the roadway. On the adjacent pass with the cold planing machine, a joint-matching shoe may be used.
3. Equipped to effectively control dust generated by the planing operation
4. Operated such that no fumes or smoke is produced.

Replace broken, missing, or worn machine teeth.

If you do not complete placing the HMA surfacing before opening the area to traffic, you must:

1. Construct a temporary HMA taper to the level of the existing pavement.
2. Place HMA during the next work shift.

3. Submit a corrective action plan that shows you will complete cold planing and placement of HMA in the same work shift. Do not restart cold planing activities until the corrective action plan is authorized.

39-3.04C(2) Grade Control and Surface Smoothness

Install and maintain grade and transverse slope references.

The final cut must result in a neat and uniform surface.

The completed surface of the planed pavement must not vary more than 0.02 foot when measured with a 12-foot straightedge parallel with the centerline. With the straightedge at right angles to the centerline, the transverse slope of the planed surface must not vary more than 0.03 foot.

Where lanes are open to traffic, the drop-off of between adjacent lanes must not be more than 0.15 foot.

39-3.04C(3) Planed Material

Remove cold planed material concurrently with planing activities such that the removal does not lag more than 50 feet behind the planer.

39-3.04C(4) Temporary HMA Tapers

If a drop-off between the existing pavement and the planed area at transverse joints cannot be avoided before opening to traffic, construct a temporary HMA taper. The HMA temporary taper must be:

1. Placed to the level of the existing pavement and tapered on a slope of 30:1 (horizontal:vertical) or flatter to the level of the planed area
2. Compacted by any method that will produce a smooth riding surface

Completely remove temporary tapers before placing permanent surfacing.

39-3.04D Payment

Not Used

39-3.05 REMOVE BASE AND SURFACING

39-3.05A General

Section 39-3.06 includes specifications for removing base and asphalt concrete surfacing.

39-3.05B Materials

Not Used

39-3.05C Construction

Where base and surfacing are described to be removed, remove base and surfacing to a depth of at least 6 inches below the grade of the existing surfacing. Backfill resulting holes and depressions with embankment material under section 19.

39-3.05D Payment

The payment quantity for remove base and surfacing is the volume determined from the dimensions shown.

39-3.06–39-3.08 RESERVED

AA

78 INCIDENTAL CONSTRUCTION

78-2 SURVEY MONUMENTS

Add to section 78-2.01:

78-2.01 GENERAL

78-2.01A Summary

Section 78-2 includes specifications for performing survey monument work.

Work performed on existing monuments must comply with section 15.

You must notify the Engineer at least 2 working days before performing any survey monument work.

Survey monument work must be performed under the direction of a licensed land surveyor or registered civil engineer with the authority to perform land surveying.

Before the start of construction for each survey monument shown on the plans or otherwise identified as being at risk of being disturbed, destroyed, or covered by construction you must recover and prepare a Pre-Construction Corner Record submitted to and accepted by the Tulare County Surveyor's Office. Any work performed that may disturb, destroy, or cover an existing monument before Pre-Construction records have been submitted and accepted will be considered unauthorized work and may be subject to reduction in payment in accordance with Section 5-1.30. If after a diligent search a survey monument is not recovered a Search For and Not Found Narrative summary must be submitted in place of the Pre-Construction Corner Record.

Before the completion of the project each survey monument disturbed, destroyed, or covered by construction must be replaced in the same horizontal position and referenced on a Post-Construction Corner Record submitted to and accepted by the Tulare County Surveyor's Office. The horizontal position must be established using data shown on the Pre-Construction Corner Record. Any alternative method for establishing the position must be authorized.

A separate Corner Record must be prepared for each monument.

Corner Records must comply with this section and the Professional Land Surveyors' Act (§§8700 – 8805 of the Business and Professions Code); Division 5, Title 16 of the California Code of Regulations; and Division 8 of the California Public Resource Code.

78-2.01B Definitions

reference point: A durable and stable object which is uniquely identifiable and from which a distance can reliably be measured to less than 0.01 feet to a survey monument.

tie distance: A measurement taken using a steel measuring tape or total station between a reference point and a survey monument, with calibrated equipment in good repair and a level of care to allow the distance to be reproduced to within 0.02 feet.

monument description: A description of the type, size, markings, tagging, setting, distance in relation to ground surface, of a found or set monument.

78-2.01C Submittals

78-2.01C(1) General

You may be required to submit copies of field notes, photographs, and any data collected related to survey monument work.

78-2.01C(2) Pre-Construction Corner Records

A Pre-Construction Corner Record must include:

1. A monument description as recovered; a surface reference of a buried monument will not be accepted.
2. Tie distances to a minimum of 4 reference points within 150 feet of the recovered monument, distributed evenly around the monument, and not subject to being disturbed by the planned construction.
3. Brief legal description of corner with reference to the map or subdivision it was established to monument.
4. Criteria used for the acceptance of the monument as the legally described corner, including tie distance and record distance to any remaining tie points shown on the latest corner record or corner tie sheet.
5. A sketch of the site showing the monument, the reference points, and enough topographic features to provide context to the location of the monument and the reference points.

78-2.01C(3) Search For and Not Found Narrative

For corner identified as being at risk but searched for and not found, a written narrative summary shall be prepared and must include:

1. Reference to all record evidence used.
2. Description of the remaining physical evidence.
3. Description of the search procedures and search area.
4. A clear statement with an opinion regarding the status of the monument.

78-2.01C(4) Post-Construction Corner Records

Post-Construction Corner Records shall include:

1. A monument description of any monument still existing after construction.
2. A monument description of the monument as set to include the surface and sub-surface component.
3. A written description of the method used to reestablish the position of the corner.
4. Tie distances to a minimum of 4 reference points within 150 feet of the recovered monument, distributed evenly around the monument, and likely to remain undisturbed (nails in roadway surface are not permitted).
5. Tie distances to all remaining reference points measured for the pre-construction corner record.
6. Brief legal description of corner with reference to the map or subdivision it was established to monument.
7. A sketch of the site showing the monument, the reference points, and enough topographic features to provide context to the location of the monument and the reference points.

78-2.01C(5) Coordinates

If coordinates are established for the position of a monument the coordinates and a control scheme must be included on the Corner Record.

If California Coordinate System coordinates are shown on a Corner Record, they must be referenced to a minimum of two California Spatial Reference Network geodetic control stations, meeting the requirements of Division 8 of the California Public Resource Code.

78-2.02 MATERIALS

Use minor concrete with at least 590 pounds of cementitious material per cubic yard.

Concrete must be minor concrete with a maximum 1-inch aggregate.

You must furnish survey marker disk for survey monuments in paved roadway which shall be 2 inch diameter flat brass monument marker. Survey marker shall be a Surv-Kap, product code M/M-B2S or approved equivalent.

You must furnish survey marker disk for survey monuments outside the paved roadway which shall be 1-1/2 inch diameter flat brass monument marker. Survey marker shall be a Surv-Kap, product code M/M-B1 1/2 or approved equivalent.

Granular material must be gravel, crushed gravel, crushed rock, or any combination of these and must not exceed 1-1/2 inches in greatest dimension.

78-2.03 CONSTRUCTION

You may cast the monuments in place in neat holes without the use of forms unless forms are shown.

Thoroughly consolidate the concrete and cure it by the water method.

Locate the monument such that the point being referenced falls within 1/4 inch from the center of the disk when the disk is placed in the center of the monument.

Place the survey marker disk before the concrete reaches its initial set. Firmly embed the disk in the concrete.

Disk must be stamped with the license number of the land surveyor or civil engineer supervising the work, the year of setting, and for a public land corner the stamping as prescribed by the Bureau of Land Management, 2009 Manual of Surveying Instruction must also be included.

Installed survey monuments in paved roadway must conform to the monument detail shown on the plans or if not shown on the plans the detail on Plate No. A-31 of the Improvement Standard of Tulare County.

Installed survey monuments outside the paved roadway must consist of a 1-1/2 inch or 2 inch survey marker disk grouted in a galvanized steel pipe having an inner diameter not less than 1 inch and a minimum length of 24 inches.

Surplus excavated material shall be disposed of by the Contractor.

78-2.04 PAYMENT

Payment for the installation of a survey monument will not be paid until all required submittals are examined and found to be in compliance with the Professional Land Surveyors' Act and section 78-2 by the Tulare County Surveyor's Office.

Partial payment for survey monument searched for and not found will be made provide the required Search For and Not Found Narrative is submitted to and found acceptable by the Tulare County Surveyor's Office..

**REVISED STANDARD SPECIFICATIONS 2018
DATED 4-19-19**

ORGANIZATION

Revised standard specifications are under headings that correspond with the main-section headings of the *Standard Specifications*. A main-section heading is a heading shown in the table of contents of the *Standard Specifications*. A date under a main-section heading is the date of the latest revision to the section.

Each revision to the *Standard Specifications* begins with a revision clause that describes or introduces a revision to the *Standard Specifications*. For a revision clause that describes a revision, the date on the right above the clause is the publication date of the revision. For a revision clause that introduces a revision, the date on the right above a revised term, phrase, clause, paragraph, or section is the publication date of the revised term, phrase, clause, paragraph, or section. For a multiple-paragraph or multiple-section revision, the date on the right above a paragraph or section is the publication date of the paragraphs or sections that follow.

Any paragraph added or deleted by a revision clause does not change the paragraph numbering of the *Standard Specifications* for any other reference to a paragraph of the *Standard Specifications*.

DIVISION I GENERAL PROVISIONS

1 GENERAL

04-19-19

Add between the 1st and 2nd paragraphs of section 1-1.01:

10-19-18

Global revisions are changes to contract documents not specific to a section of the Standard Specifications. In each contract document at each occurrence, interpret the following terms as shown:

Term	Interpretation	Conditions
Fed-Std-595	AMS Std 595	--

Add to the table in the 1st paragraph of section 1-1.06:

04-19-19

CSC	conductor signal cable
-----	------------------------

Replace the 9th row in the table of section 1-1.11 with:

04-19-19

Department of Conservation, Division of Mine Reclamation	http://www.conservation.ca.gov/dmr	--	--
---	---	----	----

Add to the table in section 1-1.11:

04-19-19

Data Interchange for Materials Engineering	https://dime.dot.ca.gov	MATERIALS ENGINEERING AND TESTING SERVICES DEPARTMENT OF TRANSPORTATION 5900 FOLSOM BLVD SACRAMENTO CA 95819-4612	(916) 227-5238
SWRCB, Land Disposal Program	https://www.waterboards.ca.gov/water_issues/programs/land_disposal/walist.html	--	--

AA

2 BIDDING

10-19-18

Replace the 5th paragraph of section 2-1.12B(1) with:

10-19-18

You are responsible to verify at bid opening the DBE firm is certified as a DBE by the California Unified Certification Program and possesses the most specific available NAICS codes or work codes applicable to the type of work the firm will perform on the Contract.

Replace section 2-1.12B(2) with:

10-19-18

2-1.12B(2) DBE Commitment Submittal

Submit DBE information under section 2-1.33.

Submit a copy of the quote from each DBE shown on the DBE Commitment form that describes the type and dollar amount of work shown on the form no later than 4 p.m. on the 5th day after bid opening. If the last day for submitting the quote falls on a Saturday or holiday, it may be submitted on the next business day with the same effect as if it had been submitted on the 5th day.

Submit a DBE Confirmation form for each DBE shown on the DBE Commitment form to establish that it will be participating in the Contract in the type and dollar amount of work shown on the form. If a DBE is participating as a joint venture partner, submit a copy of the joint venture agreement.

Failure to submit a completed DBE Confirmation form and a copy of the quote from each DBE will result in disallowance of the DBE's participation.

Add between the 4th and 5th paragraphs of section 2-1.15B:

10-19-18

Submit a copy of the quote from each DVBE listed on the Certified DVBE Summary form that describes the type and dollar amount of work shown on the form no later than 4 p.m. on the 4th business day after bid opening.

Add between the 3rd and 4th paragraphs of section 2-1.15C(1):

10-19-18

Submit a copy of the quote from each DVBE listed on the Certified DVBE Summary form that describes the type and dollar amount of work shown on the form no later than 4 p.m. on the 4th business day after bid opening.

Add between the 1st and 2nd paragraphs of section 2-1.18C:

10-19-18

Failure to submit a completed Certified Small Business Listing for the Non–Small Business Preference form by 4 p.m. on the 2nd business day after bid opening will result in a nonresponsive bid.

Replace section 2-1.33B with:

10-19-18

2-1.33B Bid Form Submittal Schedules

2-1.33B(1) General

The *Bid* book includes forms specific to the Contract. The deadlines for the submittal of the forms vary depending on the requirements of each Contract. Determine the requirements of the Contract and submit the forms based on the applicable schedule specified in section 2-1.33B.

Bid forms and information on the form that are due after the time of bid may be submitted at the time of bid.

2-1.33B(2) Federal-Aid Contracts

2-1.33B(2)(a) General

Section 2-1.33B(2) applies to a federal-aid contract.

2-1.33B(2)(b) Contracts with a DBE Goal

2-1.33B(2)(b)(i) General

Section 2-1.33B(2)(b) applies if a DBE goal is shown on the *Notice to Bidders*.

2-1.33B(2)(b)(ii) Bid Form Submittal

Submit the bid forms according to the schedule shown in the following table:

**Bid Form Submittal Schedule for a
Federal-Aid Contract with a DBE Goal**

Form	Submittal deadline
Bid to the Department of Transportation	Time of bid except for the public works contractor registration number
Copy of the Bid to the Department of Transportation as submitted at the time of bid with the public works contractor registration number	10 days after bid opening
Subcontractor List	Time of bid except for the public works contractor registration number
Copy of the Subcontractor List as submitted at the time of bid with the public works contractor registration number	10 days after bid opening
Small Business Status	Time of bid
Opt Out of Payment Adjustments for Price Index Fluctuations ^a	Time of bid
DBE Commitment	No later than 4 p.m. on the 5th day after bid opening ^b
DBE Confirmation	No later than 4 p.m. on the 5th day after bid opening ^b
DBE Good Faith Efforts Documentation	No later than 4 p.m. on the 5th day after bid opening ^b

^aSubmit only if you choose the option.

^bIf the last day for submitting the bid form falls on a Saturday or holiday, it may be submitted on the next business day with the same effect as if it had been submitted on the day specified.

2-1.33B(2)(b)(iii) Reserved

2-1.33B(2)(c) Contracts without a DBE Goal

2-1.33B(2)(c)(i) General

Section 2-1.33B(2)(c) applies if a DBE goal is not shown on the *Notice to Bidders*.

2-1.33B(2)(c)(ii) Bid Form Schedule

Submit the bid forms according to the schedule shown in the following table:

**Bid Form Submittal Schedule for a
Federal-Aid Contract without a DBE Goal**

Form	Submittal deadline
Bid to the Department of Transportation	Time of bid except for the public works contractor registration number
Copy of the Bid to the Department of Transportation as submitted at the time of bid with the public works contractor registration number	10 days after bid opening
Subcontractor List	Time of bid except for the public works contractor registration number
Copy of the Subcontractor List as submitted at the time of bid with the public works contractor registration numbers	10 days after bid opening
Small Business Status	Time of bid
Opt Out of Payment Adjustments for Price Index Fluctuations ^a	Time of bid

^aSubmit only if you choose the option.

2-1.33B(2)(c)(iii) Reserved

2-1.33B(2)(d)–2-1.33B(2)(h) Reserved

2-1.33B(3) Non-Federal-Aid Contracts

2-1.33B(3)(a) General

Section 2-1.33B(3) applies to non-federal-aid contracts.

2-1.33B(3)(b) Contracts with a DVBE Goal

2-1.33B(3)(b)(i) General

Section 2-1.33B(3)(b) applies if a DVBE goal is shown on the *Notice to Bidders*.

2-1.33B(3)(b)(ii) Bid Form Submittal

Submit the bid forms according to the schedule shown in the following table:

**Bid Form Submittal Schedule for a
Non-Federal-Aid Contract with a DVBE Goal**

Form	Submittal deadline
Bid to the Department of Transportation	Time of bid except for the public works contractor registration number for a joint-venture contract
For a joint-venture contract, copy of the Bid to the Department of Transportation as submitted at the time of bid with the public works contractor registration number	10 days after bid opening
Subcontractor List	Time of bid
Opt Out of Payment Adjustments for Price Index Fluctuations ^a	Time of bid
Certified DVBE Summary	No later than 4 p.m. on the 4th business day after bid opening
California Company Preference	Time of bid
Request for Small Business Preference or Non-Small Business Preference ^a	Time of bid
Certified Small Business Listing for the Non-Small Business Preference ^a	No later than 4 p.m. on the 2nd business day after bid opening

^aSubmit only if you choose the option or preference.

2-1.33B(3)(b)(iii) Reserved

2-1.33B(3)(c) Contracts without a DVBE Goal

2-1.33B(3)(c)(i) General

Section 2-1.33B(3)(c) applies if a DVBE goal is not shown on the *Notice to Bidders*.

2-1.33B(3)(c)(ii) Bid Form Submittal

Submit the bid forms according to the schedule shown in the following table:

1. Contact with the DVBE advocate from the Department and the Department of Veteran Affairs
2. Search results from the Department of General Services' website of available DVBEs
3. Communication with a DVBE community organization nearest the job site, if applicable
4. Documented communication with DVBEs describing the work to be performed, the percentage of the total bid, the corresponding dollar amount, and the responses to the communication

Replace section 5-1.24 with:

10-19-18

5-1.24 CONSTRUCTION SURVEYS

5-1.24A General

The Department places stakes and marks under chapter 12, "Construction Surveys," of the Department's *Surveys Manual*.

Submit your request for Department-furnished stakes:

1. Once staking area is ready for stakes
2. On a Request for Construction Staking form

After your submittal, the Department starts staking within 2 business days.

Preserve stakes and marks placed by the Department. If the stakes or marks are destroyed, the Department replaces them at the Department's earliest convenience and deducts the cost.

Replace section 5-1.26 with:

10-19-18

5-1.26 RESERVED

Replace item 1.2 in the list in the 1st paragraph of section 5-1.43E(2)(b) with:

10-19-18

- 1.2. Have completed training by the Department

Replace item 1.2 in the list in the 1st paragraph of section 5-1.43E(3)(b) with:

10-19-18

- 1.2. Have completed training by the Department

AA

6 CONTROL OF MATERIALS

04-19-19

Replace section 6-1.03 with:

04-19-19

6-1.03 LOCAL MATERIALS

6-1.03A General

Local material must be rock, sand, gravel, earth, or mineral material other than local borrow, or selected material obtained or produced from a source in the work vicinity, specifically for use on the project. Local borrow must not be a material from an established commercial source.

Upon your request, the Department tests material for quality characteristics from an untested local source. If satisfactory material from that source is used in the work, the Department does not charge you for the tests; otherwise, the Department deducts the test costs.

AA

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

04-19-19

Replace the 6th through 10th paragraphs of section 7-1.02K(3) with:

04-19-19

You may submit certified payroll records electronically using the Department's secure file transfer protocol site. For information on electronic submission of certified payroll records, go to the Department's Division of Construction website.

Submit payroll records electronically in a nonmodifiable PDF file, using the following file-naming convention:

TT-EA-WE-DOCTYPE.PDF

where:

TT = district, leading zero

EA = Contract number, excluding the district identification number, expressed as 6 characters

WE = week ending date entered as month, leading zero; day of month, leading zero; year, last 2 digits

DOCTYPE = labor payroll document type, CP for Certified Payroll, FB for Fringe Benefit Statement, or SC for Statement of Compliance

Before submitting the payroll records electronically, you and your subcontractors must each complete and sign the Request for Electronic Submission of Certified Payroll Records and e-mail it in PDF format to the district Labor Compliance Office. The Department provides you and your subcontractors' assigned representatives the accounts and user identifications by e-mail after each Request for Electronic Submission of Certified Payroll Records is received.

Each electronic submission must:

1. Include certified payroll records in a nonmodifiable PDF file
2. Include a signed Statement of Compliance form with each weekly record as a nonmodifiable PDF file
3. Be received by the Department by close of business on the 15th day of the month for the prior month's work

Replace the 1st sentence in the 5th paragraph of section 7-1.02K(6)(a) with:

10-19-18

Submit copies of your Injury and Illness Prevention Program, Code of Safe Practices, and permits required by Cal/OSHA as informational submittals.

Replace *Reserved* in section 7-1.02M(2) with:

04-19-19

Submit the names and emergency telephone numbers of the nearest fire suppression agencies before the start of job site activities as an informal submittal. Post the names and phone numbers at a prominent place at the job site.

Cooperate with fire prevention authorities in performance of the work.

Immediately report fires occurring within and near the project limits by dialing 911 and to the nearest fire suppression agency by using the emergency phone numbers retained at the job site.

Prevent project personnel from setting open fires that are not part of the work.

Prevent the escape of and extinguish fires caused directly or indirectly by job site activities.

Replace the 2nd paragraph of section 7-1.02M(3) with:

04-19-19

For the list of permitted sites, go to the Department of Conservation, Division of Mine Reclamation website.

AA

8 PROSECUTION AND PROGRESS

04-19-19

Replace the row for Safety in the table in the 2nd paragraph of section 8-1.03 with:

10-19-18

Safety	Injury and Illness Prevention Program, Code of Safe Practices, and job site posters
--------	---

Replace item 3 in the list in the 3rd paragraph of section 8-1.07C with:

04-19-19

- 3. Delay days exclude Saturdays and holidays.

Replace section 8-1.14E with:

04-19-19

8-1.14E Payment Adjustment for Termination

If the Department issues a termination notice, the Engineer determines the payment for termination based on the following:

- 1. Direct cost for the work performed:
 - 1.1. Including:
 - 1.1.1. Mobilization.
 - 1.1.2. Demobilization.
 - 1.1.3. Securing the job site for termination.
 - 1.1.4. Losses from the sale of materials.
 - 1.2. Not including:
 - 1.2.1. Cost of materials you keep.
 - 1.2.2. Profit realized from the sale of materials.
 - 1.2.3. Cost of material damaged by:
 - 1.2.3.1. Act of God.
 - 1.2.3.2. Act of a public enemy.
 - 1.2.3.3. Fire.
 - 1.2.3.4. Flood.
 - 1.2.3.5. Governor-declared state of emergency.
 - 1.2.3.6. Landslide.
 - 1.2.3.7. Tsunami.

- 1.2.4. Other credits.
2. Cost of remedial work, as estimated by the Engineer, is not reimbursed.
 3. Allowance for profit not to exceed 4 percent of the cost of the work performed where a likelihood of having made a profit had the Contract not been terminated is shown.
 4. Material handling costs for material returned to the vendor or disposed of as ordered.
 5. Costs in determining the payment adjustment due to the termination, excluding attorney fees and litigation costs.
 6. Overhead costs.

Termination of the Contract does not relieve the surety of its obligation for any just claims arising out of the work performed.

AA

9 PAYMENT

04-19-19

Replace section 9-1.07B(5) with:

10-19-18

9-1.07B(5) Hot Mix Asphalt Containing Reclaimed Asphalt Pavement

The Engineer calculates the quantity of asphalt in HMA containing RAP using the following formula:

$$Qrap = HMARTT \times Xaa$$

where:

$$Xaa = Xta - [(Xrap \times Xra \times (Xta - 100)) / (100 \times (Xra - 100))]$$

and:

Qrap = quantity in tons of asphalt used in HMA containing RAP

HMARTT = HMA containing RAP, total tons placed

Xaa = asphalt content of HMA containing RAP adjusted to exclude the asphalt content in RAP, expressed as a percentage of the total weight of HMA containing RAP

Xta = total theoretical asphalt content in HMA containing RAP from the job mix formula, expressed as a percentage of the total weight of HMA containing RAP

Xrap = RAP percentage in HMA containing RAP from the job mix formula, expressed as a percentage of the total dry weight of aggregate in HMA containing RAP

Xra = average asphalt content of RAP from the job mix formula, expressed as percentage of total weight of RAP

Replace the 2nd sentence in the 7th paragraph of section 9-1.11E with:

04-19-19

The cost is determined under section 9-1.05 except no markup is allowed.

Replace section 9-1.16C with:

10-19-18

9-1.16C Materials On Hand

A material on hand but not incorporated into the work is eligible for a progress payment if:

1. Compliant with other Contract parts
2. Material cost exceeds either of the following:
 - 2.1. \$50,000
 - 2.2. \$25,000 if the requestor is certified as one or more of the following:

- 2.2.1. DVBE
- 2.2.2. DBE
- 2.2.3. Small business as certified by Department of General Services, Office of Small Business and Disabled Veteran Business Enterprise Services
- 3. Purchased
- 4. Invoice is submitted
- 5. Stored within the State and you submit evidence that the stored material is subject to the Department's control
- 6. Protected from weather and contamination
- 7. Water pollution control measures are established and maintained
- 8. Requested on the Department-furnished form

Replace item 4 in the list in the 4th paragraph of section 9-1.17D(2)(b) with:

04-19-19

- 4. Within 30 days of receiving the proposed final estimate, submit an audit report prepared by an independent CPA for the performance period from contract approval date to contract acceptance date, including:
 - 4.1. Calculations with supporting documentation of actual home office and project field overhead costs
 - 4.2. Calculations specifying the actual daily rates for both field and home office overhead, not including a profit markup, for the entire duration of the project expressed as a rate per working day
 - 4.3. Calculations of your actual field and home office overhead daily rates using the Eichleay Formula calculation based on the performance period, number of working days, overhead cost pools, and all allocation bases from contract and company revenues

Replace the 3rd sentence in the 6th paragraph of section 9-1.17D(2)(b) with:

04-19-19

The attest documentation prepared by the CPA in connection with the audit must be submitted for review with the audit report.

**DIVISION II GENERAL CONSTRUCTION
10 GENERAL**

04-19-19

Replace the 1st sentence in the 4th paragraph of section 10-6 with:

04-19-19

The sources and discharge of recycled water must comply with the water-recycling criteria of the CDPH, SWRCB Order No. WQ 2016-0068-DDW, and the requirements of the appropriate RWQCB.

11 WELDING

04-19-19

Replace the table in the 3rd paragraph of section 11-1.01 with:

04-19-19

AWS code	Year of adoption
D1.1	2015
D1.3	2018
D1.4	2018
D1.5	2015
D1.6	2017
D1.8	2016

Replace the introductory clause in the 1st paragraph of section 11-1.03 with:

04-19-19

Replace clause 6.1.3 of AWS D1.1, the 1st paragraph of clause 9.1.2 of AWS D1.4, and clause 6.1.2 of AWS D1.5 with:

Replace the introductory clause of the 2nd paragraph of section 11-1.04 with:

04-19-19

Replace clause 6.14.6.1 of AWS D1.1, clause 9.8.1 of AWS D1.4, and clause 6.1.3.4 of AWS D1.5 with:

Add before the 1st paragraph of section 11-1.05:

04-19-19

Replace the first sentence of clause 5.21.1.1 of AWS D1.1 with the following:

5.21.1.1. The separation between surfaces of plug and slot welds, and of joints landing on a backing, shall not exceed 1/16 in [2 mm].

Replace clause 3.3.1.1 of AWS D1.5 with the following:

3.3.1.1. The separation between surfaces of plug and slot welds, and of joints landing on a backing, shall not exceed 2 mm [1/16 in].

Replace item 2 in the list in the 2nd paragraph of section 11-1.05 with:

04-19-19

2. Be mechanically and radiographically tested. Mechanical and radiographic testing and acceptance criteria must comply with the applicable AWS codes. The type of mechanical testing must be authorized.

Replace the 1st paragraph of 11-1.06 with:

04-19-19

Replace item 3 of clause 6.26.3.2 of AWS D1.5 with:

3. If indications that exhibit these planar characteristics are present at scanning sensitivity, or other evidence exists to suggest the presence of transverse cracks, a more detailed evaluation of the discontinuity by other means must be performed (e.g., alternate UT techniques, RT, grinding, or gouging for visual inspection or MT of the excavated areas.)

Replace the scanning angle in clause 6.24.2.2 of AWS D1.5 with:

Up to 45 degrees

Replace the 2nd paragraph of section 11-1.06 with:

04-19-19

Clause 6.6.5 of AWS D1.1, clause 9.6.5 of AWS D1.4, and clause 6.6.5 of AWS D1.5 do not apply.

Replace the introductory clause of the 1st paragraph of section 11-2.04 with:

04-19-19

Clauses 6.1.4.1 and 6.1.4.3 of AWS D1.1, the 2nd paragraph of clause 9.1.2 of AWS D1.4, clauses 6.1.3.1 through 6.1.3.3 of AWS D1.5, and clause 7.2.3 of AWS D1.8 are replaced with:

Replace item 2 in the list in the 2nd paragraph of section 11-2.04 with:

04-19-19

2. Structural steel for building construction work is performed at a permanent fabrication or manufacturing plant that is certified under the AISC Quality Certification Program, Category BU, Standard for Steel Building Structures.

Replace section 11-2.06 with:

04-19-19

11-2.06 WELDING PROCEDURES QUALIFICATION

Welding procedures qualification for work welded under AWS D1.5 must comply with clause 5.12 or 5.12.4 of AWS D1.5 and the following:

1. Macroetch tests are required for all WPS qualification tests, and acceptance must comply with clause 5.19.3 of AWS D1.5.
2. If a nonstandard weld joint is to be made using a combination of WPSs, you may conduct a test under figure 5.3, combining the qualified or prequalified WPSs to be used in production, if the essential variables, including weld bead placement, of each process are limited to those established in table 5.4 of AWS D1.5.
3. Before preparing mechanical test specimens, inspect the PQR welds by visual and radiographic tests. The backing bar must be 3 inches in width and must remain in place during NDT. Results of the visual and radiographic tests must comply with clause 6.26.2 of AWS D1.5 excluding clause 6.26.2.2. All other requirements for clause 5.17 are applicable.

When electric resistance welding is used for work welded under AWS D1.1, the welding procedure must be qualified under Clause 4 of AWS D1.1. Welding procedures must be qualified for the thickness and the pole diameter tested. Test samples for tapered poles must be obtained from three locations, each end and the middle of the tapered pole, to qualify for the diameter range tested.

Replace the 3rd paragraph of section 11-3.02 with:

04-19-19

The AISC Certification category for pole structures is Bridge and Highway Metal Component (CPT) or Standard for Steel Building Structures (BU).

AA

12 TEMPORARY TRAFFIC CONTROL

04-19-19

Replace section 12-3.21B with:

04-19-19

Temporary traffic screen panels must be one of the following:

1. CDX grade or better plywood
2. Weather-resistant strand board
3. Plastic

Plastic temporary traffic screen panels must be on the Authorized Material List for temporary traffic screen.

Wale boards for use with plywood or strand board must be Douglas fir, rough sawn, construction grade or better.

Pipe screen supports must be schedule 40, galvanized steel pipe.

Nuts, bolts, and washers must be cadmium plated.

Screws must be black or cadmium-plated flat head, cross-slotted, with full-thread length.

Replace section 12-3.33 with:

04-19-19

12-3.33 TEMPORARY SIGNAL SYSTEMS

12-3.33A General

Section 12-3.33 includes specifications for installing, maintaining, and removing temporary signal systems, including installing lighting and flashing beacons for traffic control.

Temporary signal systems must comply with section 87-20.

12-3.33B Materials

Not Used

12-3.33C Construction

If the temporary signal system is out of operation, provide flaggers to control the traffic until the traffic signals are in operation.

12-3.33D Payment

Not Used

Replace section 12-4.01C with:

10-19-18

Not Used

Replace the 3rd paragraph of section 12-4.02C(2)(a) with:

10-19-18

Within 5 business days after completion of the training, the Department provides LCS accounts and user IDs to your assigned, trained representatives.

Replace item 4 in the list in the 2nd paragraph of section 13-3.01C(2)(a) with:

04-19-19

- 4. Include a schedule showing when:
 - 4.1. Work activities that could cause the discharge of pollutants into stormwater will be performed
 - 4.2. WPC practices, including soil stabilization and sediment control, that will be used in the work for whichever has the longest duration in the first:
 - 4.2.1. 60 days
 - 4.2.2. Construction phase

Replace the 4th paragraph of section 13-3.01C(2)(a) with:

04-19-19

Submit an electronic copy on a read-only CD, DVD, or other Engineer-authorized data-storage device and 4 printed copies of the authorized SWPPP unless fewer quantities are authorized at the preconstruction conference.

Replace the introductory clause in the 7th paragraph of section 13-3.01C(2)(a) with:

04-19-19

Submit a revised SWPPP annually before September 15th and any time:

Add after the 7th paragraph of section 13-3.01C(2)(a):

04-19-19

Revise the SWPPP through amendment. The annual SWPPP amendment must include an annual winterization plan.

The annual winterization plan must describe the preparation for the upcoming rainy season including:

- 1. Updated schedule
- 2. Materials and labor
- 3. Management of stormwater through the job site including:
 - 3.1. Run-on
 - 3.2. Run-off
 - 3.3. Conveyance downslope
- 4. Management of areas within the job site including:
 - 4.1. Areas where work is suspended
 - 4.2. Areas of soil stabilization
 - 4.3. New disturbed soil areas
- 5. Changes to monitoring locations
- 6. Slope stabilization

04-19-19

Delete section 13-3.01C(5).

AA

14 ENVIRONMENTAL STEWARDSHIP

04-19-19

Add between the 3rd and 4th paragraphs of section 14-10.01:

04-19-19

If ordered, remove solid waste from illegal dumping on the project site. This work is change order work. Illegal dumping is:

5. When ordered

Delete section 20-2.01A(4)(e).

10-19-18

Replace the 1st paragraph of section 20-2.01B(5) with:

Pull boxes must comply with section 86-1.02C and be no. 5 or larger. Pull boxes for low voltage conductors must not have side openings.

10-19-18

Replace the 2nd paragraph of section 20-2.01B(5) with:

Pull box covers used for control and neutral conductors for irrigation equipment operated by the irrigation controller must be marked *SPRINKLER CONTROL*.

04-19-19

Add to section 20-2.01B:

20-2.01B(9) Woven Wire Cloth and Gravel

Woven wire cloth must be galvanized and manufactured with a minimum diameter of 19-gauge wire and have square openings from 1/4 to 1/2 inches.

Gravel must be 3/4-inch gravel or crushed rock. Gravel or crushed rock must be clean, washed, dry, and free from clay or organic material.

04-19-19

Replace the 1st paragraph of section 20-2.01C(2) with:

Perform trenching and backfilling under section 87-1.03E(2).

10-19-18

Replace the introductory clause to the list in the 1st paragraph of section 20-2.01C(3) with:

Install pull boxes under section 87-1.03C at the following locations:

10-19-18

Add to section 20-2.01C(4):

Install valve boxes on woven wire cloth and gravel or crushed rock.

04-19-19

Replace the 1st paragraph of section 20-2.04A(4) with:

Perform field tests on control and neutral conductors. Field tests must comply with the specifications in section 87-1.01D(2)(a).

10-19-18

Replace the 1st and 2nd paragraphs of section 20-2.04B with:

10-19-18

Control and neutral conductors must comply with the provisions for conductors and cables in section 86-1.02F.

Electrical conduit and fittings must comply with section 86-1.02(B).

Replace the 1st paragraph of section 20-2.04C(4) with:

04-19-19

Splice conductors with a UL-listed connector manufactured for copper wire, direct burial irrigation systems. Connector must be prefilled with a moisture sealing compound that encapsulates and protects the splice in a waterproof housing. Connector must be sized for the number and gauge of the conductors at the splice.

Replace the introductory clause of the 1st paragraph of section 20-2.06B(3) with:

10-19-18

The irrigation controller enclosure cabinet must comply with section 86-1.02Q and must:

Add to the beginning of section 20-2.06C:

10-19-18

Install the irrigation controller enclosure cabinet under 87-1.03Q(1).

Replace the 3rd paragraph of section 20-2.09B(1) with:

04-19-19

Threaded nipples for swing joints and risers must be schedule 80, PVC 1120 or PVC 1220 pipe, and comply with ASTM D1785.

Replace the table in the 3rd paragraph of section 20-3.01B(2)(a) with:

10-19-18

Plant group designation	Description	Container size (cu in)
A	No. 1 container	152–251
B	No. 5 container	785–1242
C	Balled and burlapped	--
E	Bulb	--
F	In flats	--
H	Cutting	--
I	Pot	--
K	24-inch box	5775–6861
M	Liner ^a	--
O	Acorn	--
P	Plugs ^{a, b}	--
S	Seedling ^c	--
U	No. 15 container	2768–3696
Z	Palm Tree	--

^aDo not use containers made of biodegradable material.

^bGrown in individual container cells.

^cBare root.

Replace the introductory clause of the 1st paragraph of section 20-3.01B(4)(b) with:

10-19-18

Slow-release fertilizer must be a pelleted or granular form with a nutrient release over a 3 to 4 month period and be within the chemical analysis ranges shown in the following table:

Replace section 20-3.01C(3) with:

10-19-18

Water plants as needed to keep the plants in a healthy growing condition.

Replace the 1st paragraph of section 20-4.03G with:

10-19-18

Operate the electric automatic irrigation systems, including external weather and other system data inputs required to operate the system in automatic mode, unless otherwise authorized.

Delete the 3rd paragraph of section 20-4.03G.

10-19-18

Add to the end of section 20-5.03B(3):

10-19-18

If you are ordered to remove existing concrete below ground within the limits of the rock blanket, saw cut the concrete before removal. This work is change order work.

Replace item 1 in the list in the 1st paragraph of section 20-10.03A(3) with:

10-19-18

1. Transplanting trees. The work plan must include methods of lifting, transporting, storing, planting, guying, watering and maintaining each tree to be transplanted. Include the root ball size, method of root ball containment, and a maintenance program for each tree.

Add to the end of section 20-10.03C(3):

10-19-18

Water transplanted trees immediately after planting and as needed to keep it in a healthy growing condition until contract acceptance.

Add to the end of section 20-10.03C(4):

10-19-18

Water existing plants as needed to keep them in a healthy growing condition until contract acceptance.

^^

21 EROSION CONTROL

04-19-19

Replace the 2nd paragraph of section 21-2.03J with:

04-19-19

Do not incorporate materials within 3 feet of the pavement edge.

04-19-19

Delete the 4th paragraph of section 21-2.03J

AA

**DIVISION IV SUBBASES AND BASES
28 CONCRETE BASES**

04-19-19

Replace the 1st paragraph of section 28-2.01D(1)(a) with:

04-19-19

The cylinders for compressive strength testing under ASTM C31 or ASTM C192 must be 6 by 12 inches.

Replace the 1st paragraph of section 28-2.02B with:

04-19-19

The SCM content requirements in the 4th paragraph of section 90-1.02B(3) do not apply to LCB.

AA

**DIVISION V SURFACINGS AND PAVEMENTS
39 ASPHALT CONCRETE**

04-19-19

Replace the 1st and 2nd paragraphs of section 39-2.01A(3)(d) with:

04-19-19

If ordered, submit QC test results within 3 business days of a request.

Add to section 39-2.01A(4)(h)(v):

04-19-19

AASHTO T 324 (modified) and AASHTO T 283 are not required if production start-up evaluation is within 45 days of the date the Hot Mix Asphalt Verification form is signed.

If production stops for more than 60 days, perform a production start-up evaluation. If production stops for more than 30 days but less 60 days, perform a reduced production start-up evaluation. Reduced production start-up evaluation is production start-up evaluation without AASHTO T 324 and AASHTO T 283.

If production start-up evaluation fails, do not begin production.

Add between the 3rd and 4th paragraphs of section 39-2.01A(4)(i)(i):

04-19-19

You must assist in collecting Engineer acceptance samples. Sample in the presence of the Engineer. Split the Engineer acceptance samples into at least 4 parts. Engineer retains 3 parts and you keep 1 part.

Replace the 1st through 3rd paragraphs of section 39-2.01A(4)(i)(iv) with:

04-19-19

You and the Engineer must work together to avoid potential conflicts and to resolve disputes regarding test result discrepancies. You and the Engineer may only dispute each other's test results if one party's test results pass and the other party's test results fail.

If there is a dispute, submit your test results and copies of paperwork including worksheets used to determine the disputed test results within 3 business day of receiving Engineer's test results. An independent third party performs referee testing. Before the third party participates in a dispute resolution, it must be qualified under AASHTO re:source program and the Department's Independent Assurance Program. The independent third party must have no prior direct involvement with this Contract. By mutual agreement, the independent third party is chosen from:

1. Department laboratory in a district or region not in the district or region the project is located
2. Transportation Laboratory
3. Laboratory not currently employed by you or your HMA producer

If the Department's portion of the split acceptance samples are not available, the independent third party uses any available material agreed by you and the Engineer as representing the disputed HMA for evaluation.

Replace the row for *Moisture susceptibility (min, psi, dry strength)* in the table in item 3 in the list in the paragraph of section 39-2.02A(4)(e) with:

04-19-19

For RAP substitution equal to or less than 15% moisture susceptibility (min, psi, dry strength)	AASHTO T 283	100
For RAP substitution greater than 15% moisture susceptibility (psi, dry strength)	AASHTO T 283	100-300 ^h

Add a footnote to the table in item 3 in the list in the paragraph of section 39-2.02A(4)(e):

04-19-19

^hNot required in the following areas:

1. Southern San Luis Obispo or Santa Barbara County in District 5.
2. Kern County in District 6.
3. Kings County in District 6: route 5, post mile 0 to 17; route 33, post mile 0 to 19; route 41, post mile 0 to 16.
4. Tulare County in District 6: route 65, post mile 0 to 10; route 99, post mile 0 to 10; route 43, post mile 0 to 15.

Replace the row for *Moisture susceptibility, dry strength* in the table in the 1st paragraph of section 39-2.02B(2) with:

04-19-19

For RAP substitution equal to or less than 15% moisture susceptibility (min, psi, dry strength)	AASHTO T 283	100
For RAP substitution greater than 15% moisture susceptibility (psi, dry strength)	AASHTO T 283	100-300 ^e

Add a footnote to the table in the 1st paragraph of section 39-2.02B(2):

04-19-19

Not required in the following areas:

1. Southern San Luis Obispo or Santa Barbara County in District 5.
2. Kern County in District 6.
3. Kings County in District 6: route 5, post mile 0 to 17; route 33, post mile 0 to 19; route 41, post mile 0 to 16.
4. Tulare County in District 6: route 65, post mile 0 to 10; route 99, post mile 0 to 10; route 43, post mile 0 to 15.

Replace the 3rd and 4th paragraphs of section 39-2.02B(2) with:

04-19-19

For RAP substitution of 15 percent or less, the grade of the virgin binder must be the specified grade of asphalt binder for Type A HMA.

For RAP substitution greater than 15 percent and not exceeding 25 percent, the grade of the virgin binder must be the specified grade of asphalt binder for Type A HMA with the upper and lower temperature classification reduced by 6 degrees C. Hamburg wheel track requirements are based on the grade of asphalt binder specified for Type A HMA.

Replace the 2nd sentence in the 2nd paragraph of section 39-2.02B(11) with:

04-19-19

For RAP substitution of 15 percent or less, RAP must be within ± 3 of RAP percentage shown in your Contractor Job Mix Formula Proposal form without exceeding 15 percent. For RAP substitution of greater than 15 percent, RAP must be within ± 3 of RAP percentage shown in your Contractor Job Mix Formula Proposal form without exceeding 25 percent.

Replace the 8th and 9th paragraphs of section 39-2.04C with:

04-19-19

For RHMA-O and RHMA-O produced with WMA water injection technology, and RHMA-O-HB and RHMA-O-HB produced with WMA water injection technology:

1. Spread and compact if the ambient air temperature is at least 55 degrees F and the surface temperature is at least 60 degrees F
2. Complete the 1st coverage using 2 rollers before the surface temperature drops below 280 degrees F
3. Complete compaction before the surface temperature drops below 250 degrees F

For RHMA-O produced with WMA additive technology and RHMA-O-HB produced with WMA additives technology:

1. Spread and compact if the ambient air temperature is at least 45 degrees F and the surface temperature is at least 50 degrees F
2. Complete the 1st coverage using 2 rollers before the surface temperature drops below 270 degrees F
3. Complete compaction before the surface temperature drops below 240 degrees F

Spread sand at a rate from 1 to 2 lb/sq yd on RHMA-O and RHMA-O-HB with or without WMA technology pavement after finish rolling activities are complete. Keep traffic off the pavement until spreading of the sand is complete.

AA

40 CONCRETE PAVEMENT

10-19-18

Replace the 2nd paragraph of section 40-1.01C(9) with:

10-19-18

Submit your coefficient of thermal expansion test data at:

<https://dime.dot.ca.gov/>

DIVISION VI STRUCTURES

46 GROUND ANCHORS AND SOIL NAILS

04-19-19

Add to the list in the 1st paragraph of section 46-1.01C(3):

10-19-18

12. Digital photo logs of extracted test soil nails

Replace the 2nd paragraph of section 46-1.01C(3) with:

10-19-18

Submit the test data in electronic and hard copy format within 1 business day after testing is complete. Upon completion of the wall, send an email of the soil nail test results as a tabulated spreadsheet to the Engineer and Geotechnical.Data@dot.ca.gov. Include the contract number and Department's structure number of the wall in the subject line of the email.

Replace *Not Used* in section 46-1.01D(1) with:

10-19-18

Welding must comply with AWS D1.1.

Add to the end of section 46-1.03A:

10-19-18

Shotcrete must comply with section 53-2.

Delete the 3rd paragraph of section 46-1.03B.

10-19-18

Replace the 1st sentence in the 2nd paragraph of section 46-2.02B with:

10-19-18

The anchorage enclosure and the steel tube and bearing plate of the anchorage assembly must be galvanized steel and comply with sections 55-1.02D(1) and 55-1.02E(1).

Replace item 9 in the list in the 3rd paragraph of section 46-2.02D with:

10-19-18

9. Have the physical properties shown in Table 4.1 of *Recommendations for Prestressed Rock and Soil Anchors* published by the Post-Tensioning Institute

Replace the 4th paragraph of section 46-2.03D with:

10-19-18

Immediately after lock-off, perform a lift-off test to verify that the lock-off load has been attained. The lift-off load must be within 10 percent of the specified lock-off load. If necessary adjust the shim thickness to achieve the lock-off load. If the load is not within 10 percent of the specified lock-off load, the anchorage must be reset and another lift-off load reading must be made. Repeat the process until the specified lock-off load is obtained.

Replace the 2nd paragraph of section 46-3.01A with:

10-19-18

A soil nail consists of a solid steel bar with an anchorage assembly that is placed in a drilled hole and then grouted.

Replace section 46-3.01D(2)(b)(ii)(1) with:

10-19-18

46-3.01D(2)(b)(ii)(1) General

Determine the test load using the following equation:

$$T = L_b \times Q_b$$

where:

T = test load, pounds

L_b = soil nail bonded length, feet, 10 feet minimum

Q_b = test load per unit length of bond, pounds/foot

Replace the 8th paragraph of section 46-3.01D(2)(b)(ii)(2) with:

04-19-19

If the Engineer revises soil nail lengths or test load per unit length of bond values, any additional verification test soil nails are change order work.

Replace section 46-3.02A with:

04-19-19

46-3.02A General

Each production soil nail must be either a solid steel bar encapsulated full length in a grouted corrugated plastic sheathing or an epoxy-coated prefabricated solid steel bar partially encapsulated in a grouted corrugated plastic sheathing as shown.

Epoxy-coated prefabricated solid steel bars must comply with the specifications for epoxy-coated prefabricated reinforcement in section 52-2.03, except the average coating thickness after curing must be from 10 to 15 mils.

Solid steel bar for test soil nails is not required to be epoxy coated or encapsulated in grouted plastic sheathing.

Replace the heading of section 46-3.02B with:

10-19-18

Anchorage Assemblies

Replace section 46-3.02C with:

10-19-18

46-3.02C Solid Steel Bars

Solid steel bars must be either:

1. Threaded bars with spirally-deformed, ribbed threads continuous along the entire length of the bar.
2. Deformed reinforcing bars with at least a 6-inch length of thread cut into the bar on the anchorage end. Use coarse threading and the next larger reinforcing bar size.

Solid steel bars must comply with ASTM A615/A615M or A706/A706M, Grade 60 or ASTM A615/A615M, Grade 75.

Splicing must be authorized.

Epoxy coating at the anchorage end of epoxy-coated bars may be omitted for a maximum of 6 inches. Metal surfaces of assembled splices of epoxy-coated bars must be epoxy coated.

Choose the solid steel bar size and grade for test soil nails. Test soil nail bars must not be smaller than the production soil nails they represent.

Replace the 1st paragraph of section 46-3.03A with:

10-19-18

Determine the drilled-hole diameter and installation method required to achieve the test load per unit length of bond values shown.

Replace the introductory clause to the list in the 3rd paragraph of section 46-3.03B with:

10-19-18

Install verification test soil nails by any of the following means:

Replace the 7th and 8th paragraphs of section 46-3.03B with:

10-19-18

Remove each verification and proof test soil nail to 6 inches behind the front face of the shotcrete after testing is complete. Fill the voids with grout.

If ordered, extract verification and proof test soil nails selected by the Engineer. Fill the voids with grout. Photograph the extracted test nails in 5-foot section intervals.

Replace the 3rd paragraph of section 46-3.03C with:

10-19-18

Splice the solid steel bar only where shown on the authorized shop drawings or at the end of a soil nail that is ordered to be lengthened.

Replace the 1st sentence in the 7th paragraph of section 46-3.03C with:

10-19-18

Hand tighten the nut on the end of the production soil nail bar before shotcrete hardening begins. Ensure the bearing plate is fully seated on the shotcrete.

AA

48 TEMPORARY STRUCTURES

10-19-18

Add to the end of section 48-1.01:

10-19-18

Falsework, temporary supports and jacking support systems must comply with any additional requirements of the railroad company involved.

Add to section 48-2.01B:

10-19-18

Falsework release: Lowering of falsework to the point that it no longer supports the loads imposed by the permanent structure, or any element, that the falsework was designed to support during construction.

Falsework removal: Releasing, lowering, and disposing of the falsework.

10-19-18

Delete the 7th paragraph of section 48-2.01C(2).

Replace the 4th paragraph of section 48-2.02B(2) with:

10-19-18

The assumed horizontal load the falsework bracing system must resist must be the sum of the actual horizontal loads due to equipment, construction sequence or other causes, and a wind loading. The assumed horizontal load in any direction must be at least 2 percent of the total dead load.

Replace the table in the 2nd paragraph of section 48-2.02B(3)(b) with:

10-19-18

Quality characteristic	Requirement
Compression perpendicular to the grain (psi)	450
Compression parallel to the grain (psi)	$480,000/(L/d)^2$; 1,600 maximum
Flexural stress	1,800 psi; 1,500 psi maximum for members with a nominal depth of 8 inches or less.
Horizontal shear (psi)	140
Axial tension (psi)	1,200
Deflection due to concrete loading only	1/240 of span length
Modulus of elasticity (E) (psi)	1.6×10^6
Timber piles (tons)	45

NOTES:

L = unsupported length, inches

d = least dimension of a square or rectangular column or the width of a square of equivalent cross-sectional area for round columns, inches

Replace the table in the 3rd paragraph of section 48-2.02B(3)(c) with:

10-19-18

Quality characteristic	Requirement
Compression, flexural (psi)	$12,000,000/[(L \times d)/(b \times t)]^a$
Deflection due to concrete loading only	1/240 of the span
Modulus of elasticity (E) (psi)	30×10^6

NOTES:

L = unsupported length, inches

d = least dimension of rectangular columns or the width of a square of equivalent cross-sectional area for round columns, or the depth of beams, inches

b = width of the compression flange, inches

t = thickness of the compression flange, inches

F_y = specified minimum yield stress in psi

^aNot to exceed (1) 22,000 psi for unidentified steel, (2) 22,000 psi for steel complying with ASTM A36/A36M, or (3) 0.6*F_y* for other identified steel

Add to section 48-2.02:

10-19-18

48-2.02C Falsework Lighting

48-2.02C(1) General

Reserved

48-2.02C(2) Pavement Illumination

Pavement illumination fixture must:

1. Have commercial-type flood lamp holder with protective covers.
2. Be fully adjustable with brackets and locking screws.
3. Mount directly to a standard metal junction box.
4. Have a medium-base PAR-38 quartz-halogen flood lamp or an equivalent energy efficient alternative emitting 1,700 to 2,200 lumens with a correlated color temperature of 3,000 kelvin or less.

48-2.02C(3) Portal Illumination

Portal illumination includes plywood sheet clearance guides 4 feet wide by 8 feet high and fixtures with a PAR reflector floodlamp or equivalent energy efficient alternatives emitting 1,500 to 1,700 lumens with a correlated color temperature of 3,000 kelvin or less.

48-2.02C(4) Pedestrian Walkway Illumination

Pedestrian walkway illumination fixtures must be the flush mounted type equipped with a damage-resistant, clear, polycarbonate diffuser lens, an overhead protection shield, and a standard incandescent lamp or equivalent energy efficient alternatives emitting 1,500 to 2,000 lumens with a correlated color temperature of 3,000 kelvin or less.

Add to section 48-2.03A:

10-19-18

Traffic must be detoured, from the lanes over which falsework is being erected, released, or removed.

Replace the 3rd paragraph of section 48-2.03B with:

10-19-18

Falsework piles must be driven and assessed under section 49. The actual nominal pile resistance must be at least twice the falsework pile design load. For pile acceptance, the required number of hammer blows in the last foot of driving is determined using the formula in 49-2.01A(4)(c).

Add between the 2nd and 3rd paragraphs of section 48-2.03C:

10-19-18

Falsework erection includes adjustments or removal of components that contribute to the horizontal stability of the falsework system.

Replace section 48-2.03D with:

10-19-18

48-2.03D Removal

Remove falsework such that portions of falsework not yet removed remain stable at all times.

Falsework release includes blowing sand from sand jacks, turning screws on screw jacks, and removing wedges.

Except for concrete above the deck, do not release falsework supporting any span of a:

1. Simple span bridge before 10 days after the last concrete has been placed
2. Continuous or rigid frame bridge before 10 days after the last concrete has been placed:
 - 2.1. In that span
 - 2.2. In adjacent portions of each adjoining span for a length equal to one-half of the span where falsework is to be released
3. Simple span, continuous, or rigid frame bridge until the supported concrete has attained a compressive strength of 2,880 psi or 80 percent of the specified strength, whichever is greater

Do not release falsework for prestressed portions of structures until prestressing steel has been tensioned.

Do not release falsework supporting any span of a continuous or rigid frame bridge until all required prestressing is complete (1) in that span and (2) in adjacent portions of each adjoining span for a length equal to at least one half of the span where falsework is to be released.

Release falsework supporting spans of CIP girders, slab bridges, or culverts before constructing or installing railings or barriers on the spans unless authorized.

Release falsework for arch bridges uniformly and gradually. Start at the crown and work toward the springing. Release falsework for adjacent arch spans concurrently.

Do not release falsework that supports overhangs, deck slabs between girders, or girder stems that slope 45 degrees or more from vertical before 7 days after deck concrete has been placed.

You may release falsework supporting the sides of girder stems that slope less than 45 degrees from vertical before placing deck concrete if you install lateral supports. Lateral supports must be:

1. Designed to resist rotational forces on the girder stem, including forces due to concrete deck placement
2. Installed immediately after each form panel is removed
3. Installed before releasing supports for the adjacent form panel

Do not release falsework for bent caps supporting steel or PC concrete girders before 7 days after placing bent cap concrete.

Release falsework for structural members subject to bending as specified for simple span bridges.

Do not release falsework for box culverts and other structures with decks lower than the roadway pavement and span lengths of 14 feet or less until the last placed concrete has attained a compressive strength of 1,600 psi. Curing of the concrete must not be interrupted. Falsework release for other box culverts must comply with the specifications for the release of bridge falsework.

Do not release falsework for arch culverts sooner than 40 hours after concrete has been placed.

Remove falsework piling to at least 2 feet below the original ground or streambed. Remove falsework piling driven within ditch or channel excavation limits to at least 2 feet below the bottom and side slopes of the excavated areas.

Dispose of falsework materials and work debris.

Falsework removal systems employing methods of holding falsework by winches, hydraulic jacks with prestressing steel, HS rods, or cranes must also be supported by an independent support system when the falsework removal system is not actively lowering the falsework at vehicular, pedestrian, or railroad traffic openings.

Bridge deck openings used to facilitate falsework removal activities must be formed with a 6-inch maximum diameter opening. The opening must be located away from the wheel paths.

Clean and roughen openings made in the bridge deck. Fill the deck openings with rapid setting concrete complying with section 60-3.02B(2).

Bridge soffit openings used to facilitate falsework removal activities must be formed with a 5-inch maximum diameter.

Anchor 10-inch-square aluminum or galvanized steel wire, 1/4-inch-mesh hardware cloth with a 0.025-inch minimum wire diameter firmly to the inside of the soffit openings. Construct a 1/2-inch drip groove to the outside of soffit openings.

Falsework removal over roadways with a vertical traffic opening of less than 20 feet must start within 14 days after the falsework is eligible to be released and must be completed within 45 days after it is eligible to be released.

Replace section 48-2.03E with:

10-19-18

48-2.03E Falsework Lighting

48-2.03E(1) General

Provide lighting to illuminate the pavement, portals, and pedestrian walkways at or under openings in the falsework required for traffic.

Install lighting for pedestrian walkway illumination at all pedestrian openings through or under the falsework.

Design falsework lighting such that required maintenance can be performed with a minimum of inconvenience to traffic. Closing of traffic lanes for routine maintenance is not allowed on roadways with posted speed limits greater than 25 mph.

During the hours of darkness, illuminate:

1. Falsework portals
2. Pavement under falsework with portals less than 150 feet apart

Use photoelectric switches to control falsework lighting systems. Pavement under falsework with portals 150 feet or more apart and all pedestrian openings through falsework must be illuminated 24 hours per day.

Aim the lighting fixtures to avoid glare to motorists.

Fasten a Type NMC cable with no. 12 minimum conductors with ground wire to the supporting structure at sufficient intervals to adequately support the cable and within 12 inches from every box or fitting. Use 1/2-inch or larger Type 1 conduit for conductors within 8 feet of ground.

Provide a maximum 20 A fuse for each branch circuit for illumination systems at each bridge location.

Arrange with the service utility to complete service connections for falsework lighting. You pay for energy, line extension, service, and service hookup costs.

48-2.03E(2) Pavement Illumination

Install a continuous row of fixtures beneath falsework structure with the end fixtures not further than 10 feet inside portal faces. Energize the fixtures immediately after the members supporting them have been erected.

Place the fixtures along the sides of the opening not more than 4 feet behind or 2 feet in front of the roadway face of the temporary railing. Mount the fixtures from 12 to 16 feet above the roadway surface without obstructing the light pattern on the pavement.

48-2.03E(3) Portal Illumination

Provide falsework portal illumination on the side facing traffic. Mount fixtures on the structure directly over each vertical support adjacent to the traveled way, as needed, to uniformly illuminate the exterior falsework beam, the clearance guides, and the overhead clearance sign. Each fixture must be supported approximately 16 feet above the pavement and 6 feet in front of the portal face.

Portal illumination clearance guides must:

1. Be fastened vertically, facing traffic, with the bottom of the panel from 3 to 4 feet above the roadway
2. Have the center of the panel located approximately 3 feet horizontally behind the roadway face of the railing
3. Be freshly painted panels for each installation with not less than 2 applications of flat white paint.

Paint testing of painted panels not required.

Portal lighting and clearance guides must be installed on the day the vertical members are erected.

If ordered, repaint the designated areas to improve the general appearance of the painted surfaces. Repainting is change order work.

48-2.03E(4) Pedestrian Walkway Illumination

Provide pedestrian walkway illumination immediately after the overhead protection shield is erected.

Flush mount the fixtures in the overhead protection shield and center them over the passageway at intervals of not more than 15 feet with the end fixtures not more than 7 feet inside the end of the pedestrian openings.

10-19-18

Delete the 4th paragraph of section 48-3.01C(2).

Add between the 9th and 10th paragraphs of section 48-3.02B:

10-19-18

For bridge removal, the temporary support system must resist the design loads and forces shown. As a minimum, the horizontal load to be resisted in any direction for temporary support shoring and temporary bracing must be (1) the sum of actual horizontal loads due to equipment, construction sequence, or other causes plus an allowance for wind and (2) not less than 5 percent of the total dead load of the structure being removed.

Delete the 2nd and 3rd paragraphs of section 48-4.01A.

Replace section 48-4.01C with:

48-4.01C Submittals

Submit shop drawings for temporary decking. Include the following:

1. Description, location, and value of all loads if temporary decking is not shown
2. Details of the connection between the temporary decking and the existing or new structure if temporary decking is not shown
3. Storage location of equipment and materials that allows for 1 shift of work and placement of temporary decking within the time allowed
4. Construction sequence and schedule details
5. Cure time for concrete to be placed under a steel plate system
6. Details for removing temporary decking and restoring the existing structure

If temporary decking is not shown, shop drawings must be signed by an engineer who is registered as a civil engineer in the State.

Replace section 48-4.01D with:

48-4.01D Quality Assurance

If temporary decking is not shown, the temporary decking design must comply with:

1. The unfactored permit loads, braking force, and HL93 loads except lane load from *AASHTO LRFD Bridge Specifications with California Amendments*.
2. Section 48-2.02B(3)
3. Live load deflection must not exceed 1/300 of the temporary decking span for the design load.
4. Temporary decking must have a uniform surface with a coefficient of friction of at least 0.35 when measured under California Test 342.
5. Steel plate systems must be mechanically connected to the existing structure and adjacent approaches. If a steel plate spans a joint, the mechanical connection must accommodate at least 50 percent of the movement rating shown for that joint.
6. Must not overstress, induce permanent forces into, or produce cracking in the existing structure.

Replace section 48-4.03 with:

48-4.03 CONSTRUCTION

Temporary decking must consist of one of the following:

1. Steel plate system that spans the incomplete work.
2. Falsework with an asphalt concrete surface that spans the incomplete work. Do not use falsework with an asphalt concrete surface to cover deck concrete that has not cured or to cover partially installed joint materials.

Construct temporary decking under the specifications for falsework in section 48-2 except the first paragraph of section 48-2.03D does not apply.

If there is an elevation difference of more than 1/2 inch between the temporary decking and the adjacent deck, install temporary tapers up to and away from the temporary decking. Construct tapers under section

7-1.03. If the temporary decking does not extend the entire width of the roadway, taper the sides of the temporary decking at a 12:1 (horizontal: vertical) ratio.

Material for temporary tapers must comply with section 60-3.02B(2) or 60-3.04B(2). Cure temporary tapers at least 3 hours before allowing traffic on the temporary decking.

If unanticipated displacements, cracking, or other damage occurs to the existing structure or to any new components installed in or adjacent to the deck, stop work on the deck and perform corrective measures.

Edges of steel plate systems must be in full contact with the existing deck and the adjacent approach slab. If used, shims must be securely attached to the plate.

For falsework with an asphalt concrete cover, asphalt concrete must be at least 3 inches thick and compacted in place.

Do not allow traffic on deck concrete until it has attained the design compressive strength shown.

When temporary decking is no longer needed, remove temporary decking materials and connections from the existing structure as soon as possible. Remove modifications to the existing structure except where permanent alterations are shown.

Delete the 4th paragraph of section 48-5.01C.

10-19-18

Replace the 1st paragraph of section 48-5.02B with:

10-19-18

The jacking support system must resist the structure dead load and lateral design forces shown, plus any additional loads from jacking equipment and activities. As a minimum, the horizontal load to be resisted in any direction for the jacking support system and temporary bracing must be (1) the sum of actual horizontal loads due to equipment, construction sequence, or other causes plus an allowance for wind as specified in Section 48-2.02B(2) and (2) not less than 2 percent of the total dead load of the structure being jacked. You must determine soil bearing values for support footings. If the jacking support stiffness exceeds the described minimum stiffness, increase the lateral design forces to be compatible with the jacking support lateral stiffness.

Replace the 1st paragraph of section 48-5.03 with:

10-19-18

Construct the jacking support system under the specifications for falsework in section 48-2.03.

AA

49 PILING

04-19-19

Replace the 6th paragraph of section 49-1.01D(4) with:

10-19-18

Except for load test piles and anchor piles, drive the 1st production pile in the control zone. Do not install any additional production piles until dynamic monitoring has been performed, and the Engineer provides you with the bearing acceptance criteria curves for any piles represented by the dynamically monitored piles.

Replace the 3rd paragraph of section 49-2.01D with:

10-19-18

The payment quantity for furnish piling is the length measured along the longest side of the pile from the specified tip elevation shown to the plane of pile cutoff, except for dynamically monitored piles. For dynamically monitored piles, the payment quantity for furnish piling includes an additional length of 2 times the largest cross-sectional dimension of the pile plus 2 feet.

Add to the end of section 49-2.02A(2):

10-19-18

longitudinal weld length: The length of a continuous longitudinal weld.

circumferential weld length: The length of a continuous weld around the circumference of the pipe pile.

spiral weld length: The length of one full 360-degree spiral weld revolution around the circumference of the pipe pile.

Replace the 3rd paragraph of section 49-2.02A(4)(b)(iii)(B) with:

10-19-18

For welding performed under AWS D1.1:

1. Perform NDT on 25 percent of each longitudinal, circumferential, or spiral weld length using RT or UT.
2. If repairs are required in a portion of the tested weld:
 - 2.1. Perform additional NDT on untested areas on each end of the initial portion tested. The length of additional NDT on each end must equal 10 percent of the weld length. If it is not possible to perform 10 percent of the weld length on one end, perform the remaining percentage on the other end.
 - 2.2. After this additional 20 percent of NDT is performed, determine and record the total cumulative repair lengths from all NDT for each weld length. If the cumulative weld repair length is equal to or more than 10 percent of the weld length, then perform NDT on the entire weld length.
 - 2.3. Perform NDT on the repaired portion plus 2 inches on each end of the repaired weld excavation.

Replace the 2nd paragraph of section 49-2.02A(4)(b)(iii)(C) with:

10-19-18

Perform NDT on 25 percent of the weld length performed by each welder, using RT or UT at locations selected by the Engineer. The Engineer may select several locations on a given splice. The cover pass must be ground smooth at locations to be tested.

Replace the 4th paragraph of section 49-2.02A(4)(b)(iii)(C) with:

10-19-18

If repairs are required in a portion of the tested weld:

1. Perform additional NDT on untested areas on each end of the initial portion tested. The length of additional NDT on each end must equal 10 percent of the pipe's outside circumference. If it is not possible to perform 10 percent of the weld length on one end, perform the remaining percentage on the other end.
2. After this additional 20 percent of NDT is performed, determine and record the total cumulative repair lengths from all NDT for each weld length. If the cumulative weld repair length is equal to or more than 10 percent of the pipe's outside circumference, then perform NDT on the entire weld length.
3. Perform NDT on the repaired portion plus 2 inches on each end of the repaired weld excavation.

Replace the 5th paragraph of section 49-2.02B(1)(b) with:

04-19-19

If splicing steel pipe piles using a circumferential weld, the piles must comply with the fit-up requirements of clause 9.24.1 of AWS D1.1.

Replace section 49-3.01B(2) with:

04-19-19

49-3.01B(2) Mass Concrete

Section 49-3.01B(2) applies to CIP concrete piles with a diameter greater than 8 feet.

For piles with a diameter greater than 8 feet and less than or equal to 14 feet:

1. The specifications for SCM content in the 4th paragraph of section 90-1.02B(3) do not apply.
2. The SCM content of the concrete must comply with the following:
 - 2.1. Any combination of portland cement and fly ash satisfying:

Equation 1:

$$(12 \times FM)/MC \geq X$$

where:

FM = fly ash complying with AASHTO M 295, Class F, with a CaO content of up to 10 percent, including the quantity in blended cement, lb/cu yd

MC = minimum quantity of cementitious material specified, lb/cu yd

X = 3.0 for $8 < D \leq 10$, where *D* = pile diameter in feet

X = 4.0 for $10 < D \leq 14$, where *D* = pile diameter in feet

Equation 2:

$$MC - MSCM - PC \geq 0$$

where:

MC = minimum quantity of cementitious material specified, lb/cu yd

MSCM = minimum sum of SCMs that satisfies equation 1, lb/cu yd

PC = quantity of portland cement, including the quantity in blended cement, lb/cu yd

- 2.2. You may replace any portion of the portland cement with any SCM complying with section 90-1.02B(3) if equations 1 and 2 are satisfied as specified above.

For piles with a diameter greater than 14 feet, the concrete must comply with the specifications for mass concrete in section 51-6.

Add to the end of section 49-3.02C(1):

04-19-19

You may construct CIDH concrete piles 24 inches in diameter or larger by excavating and depositing concrete under slurry.

04-19-19

Delete the 2nd paragraph of section 49-3.02C(8).

Replace section 49-4.01 with:

04-19-19

49-4.01 GENERAL

49-4.01A Summary

Section 49-4 includes specifications for drilling holes and installing steel soldier piles in the holes.

Steel soldier piles must comply with section 49-2.03.

49-4.01B Definitions

Reserved

49-4.01C Submittals

Reserved

49-4.01D Quality Assurance

Reserved

AA

51 CONCRETE STRUCTURES

04-19-19

Add to the beginning of section 51-1.01C(1):

04-19-19

If ordered, submit concrete form design and materials data for each forming system.

Add to section 51-1.03:

10-19-18

51-1.03J Temporary Decking

If you are unable to complete bridge reconstruction activities before the bridge is to be opened to traffic, furnish and maintain temporary decking under section 48-4 until that portion of the work is complete.

Replace the 2nd paragraph of section 51-4.01C(1) with:

04-19-19

For PC PS concrete girders and deck panels, submit an erection work plan. The work plan must be signed by an engineer who is registered as a civil engineer in the State and include procedures, details, and sequences for:

- 1. Unloading
- 2. Lifting
- 3. Erecting
- 4. Temporary bracing installation

Replace the 1st paragraph of section 51-4.01C(2)(a) with:

04-19-19

Submit shop drawings for PC concrete members to the OSD Documents Unit unless otherwise specified.

Replace *Reserved* in section 51-4.01C(2)(e) with:

04-19-19

For PC deck panels, shop drawings must include:

1. Panel materials, shapes, and dimensions.
2. Deck panel layout identifying the locations of each panel.
3. Reinforcing, joint, and connection details.
4. Complete details of the methods, materials, and equipment used in prestressing and precasting work.
5. Type of texture and method of forming the textured finish.
6. Methods and details for lifting, bracing, and erection.
7. Method of support and grade adjustment.
8. Methods of sealing against concrete leaks.

Replace the 2nd paragraph of section 51-4.02B with:

04-19-19

Handle, store, transport, and erect PC members in a position such that the points of support and directions of the reactions with respect to the member are approximately the same as when the member is in its final position.

Replace *Reserved* in section 51-4.02D(7) with:

04-19-19

Clearly label the top surface of each panel with the word *TOP* as shown on the deck panel layout using waterproof paint or other authorized means.

Apply a coarse texture to at least 90 percent of the deck panel top surface area by brooming with a stiff bristled broom or by other suitable devices that results in uniform scoring parallel with the prestressing strands. The top surface texture must have a maximum 1/8-inch texture.

Each camber strip must:

1. Consist of high density expanded polystyrene with a minimum compressive strength of 55 psi.
2. Consist of a single layer and extend continuously under each deck panel.
3. Achieve a height that accounts for roadway profile, cross slope, and girder camber.
4. Have 1/4-inch v-notches or 1/2 by 1/2-inch slots cut into the top surface on 4-foot centers.

Camber strip dimensions must comply with the following table:

Polystyrene Camber Strip Dimensions

Height (H) (inches)	Width (W) (inches)
1 to 2.5	1.5
Greater than 2.5 and less than or equal to 3.5	1.75
Greater than 3.5 and less than or equal to 4	2

Chemical adhesive must be suitable for use with concrete and polystyrene.

For the concrete deck pour, the aggregate must comply with the 1/2-inch maximum or the 3/8-inch maximum combined aggregate gradation specified in section 90-1.02C(4)(d).

Add between the 5th and 6th paragraphs of section 51-4.03B:

10-19-18

Erect steel or PC girders onto the supporting concrete, such as bent caps or abutments, after the concrete attains a compressive strength of 2,880 psi or 80 percent of the specified strength, whichever is greater.

Replace *Reserved* in section 51-4.03G with:

04-19-19

Construct the deck panel system in the following sequence:

1. After girders and diaphragms are in place, place each polystyrene camber strip along the top of each girder. Apply a continuous bead of chemical adhesive to the top and bottom of each camber strip to prevent gaps between the camber strip and concrete members.
2. Place each deck panel as shown on the deck panel layout such that each panel bears uniformly on the camber strips.
3. Abrasive blast clean deck panel and girder surfaces before placing deck reinforcement. Remove all surface laitance, curing compound, and other foreign materials. Thoroughly clean under the edges of each panel to ensure removal of construction debris before the stage 1 deck pour.
4. Place deck reinforcement.
5. Place deck concrete in a two-stage continuous pour:
 - 5.1. Place and vibrate stage 1 concrete over the girders by completely filling the area between the camber strips in from 15 to 30 feet longitudinal sections ahead of the stage 2 concrete deck pour. Check slots or holes in camber strips to ensure removal of air voids and full consolidation during concrete placement.
 - 5.2. Place stage 2 concrete deck over stage 1 concrete and deck panels as to not result in a cold joint between the two stages.

If required, install temporary bracing between the ends of each deck panel to prevent transverse panel movement that could lead to loss of bearing on the camber strips.

Loads placed on deck panels during construction must not exceed 50 psf.

Replace the row for Apparent elongation in the table in the 2nd paragraph of section 51-5.02B with:

04-19-19

Apparent elongation (max, percent)	ASTM D4632	35
------------------------------------	------------	----

AA

53 SHOTCRETE

10-19-18

Replace the 1st sentence of section 53-2.01A with:

10-19-18

Section 53-2 includes specifications for placing structural shotcrete using the wet-mix process.

Add between the 1st and 2nd paragraphs of section 53-2.01D(4)(b):

10-19-18

For soil nail walls, do not core through waler bars.

Add to the beginning of section 53-2.02:

10-19-18

Shotcrete must comply with the specifications for concrete in section 90-1.

^^

55 STEEL STRUCTURES

04-19-19

Replace the 3rd paragraph of section 55-1.02E(7)(a) with:

04-19-19

Dimensional details and workmanship for welded joints in tubular and pipe connections must comply with clause 9 of AWS D1.1.

^^

56 OVERHEAD SIGN STRUCTURES, STANDARDS, AND POLES

04-19-19

Replace section 56-1.01D(2)(b)(i) with:

04-19-19

56-1.01D(2)(b)(i) General

Perform NDT of steel members under AWS D1.1 and the requirements shown in the following tables:

Nondestructive Testing for Steel Standards and Poles

Weld location	Weld type	Minimum required NDT
Circumferential splices around the perimeter of tubular sections, poles, and arms	CJP groove weld with backing ring	100% UT or RT
Longitudinal seam	CJP or PJP groove weld	Random 25% MT
Longitudinal seam within 6 inches of a circumferential weld	CJP groove weld	100% UT or RT
Welds attaching base plates, flange plates, pole plates, or mast arm plates to poles or arm tubes	CJP groove weld with backing ring and reinforcing fillet	t ≥ 1/4 inch: 100% UT and 100% MT t < 1/4 inch: 100% MT after final weld pass
	External (top) fillet weld for socket-type connections	100% MT
Hand holes and other appurtenances	Fillet and PJP welds	MT full length on random 25% of all standards and poles
Longitudinal seam on the telescopic female end, designated slip-fit length plus 6 inches	CJP groove weld	100% UT or RT

NOTE: t = pole or arm thickness

Nondestructive Testing for Overhead Sign Structures

Weld location	Weld type	Minimum required NDT
Base plate to post	CJP groove weld with backing ring and reinforcing fillet	100% UT and 100% MT
Base plate to gusset plate	CJP groove weld	100% UT
Circumferential splices of pipe or tubular sections	CJP groove weld with backing ring	100% UT or RT
Split post filler plate welds	CJP groove weld with backing bar	100% UT or RT
Longitudinal seam weld for pipe posts	CJP groove weld	t < 1/4 inch: 25% MT t ≥ 1/4 inch: 25% UT or RT
	PJP groove weld	Random 25% MT
Chord angle splice weld	CJP groove weld with backing bar	100% UT or RT
Truss vertical, diagonal, and wind angles to chord angles	Fillet weld	Random 25% MT
Upper junction plate to chord (cantilever type truss)	Fillet weld	Random 25% MT
Bolted field splice plates (tubular frame type)	CJP groove weld	100% UT and 100% MT
Cross beam connection plates (lightweight extinguishable message sign)	Fillet weld	Random 25% MT
Arm connection angles (lightweight extinguishable message sign)	Fillet weld	100% MT
Mast arm to arm plate (lightweight extinguishable message sign)	CJP groove weld with backing ring	t ≥ 1/4 inch: 100% UT and 100% MT t < 1/4 inch: 100% MT after final weld pass
Post angle to post (lightweight extinguishable message sign)	Fillet weld	100% MT
Hand holes and other appurtenances	Fillet and PJP welds	MT full length on random 25% of all sign structures

NOTE: t = pole or arm thickness

Replace section 56-1.01D(2)(b)(ii) with:

04-19-19

56-1.01D(2)(b)(ii) Ultrasonic Testing

For UT of welded joints with any members less than 5/16-inch thick or tubular sections less than 24 inches in diameter, the acceptance and repair criteria must comply with Clause 9.27.1.1 of AWS D1.1.

When performing UT, use an authorized procedure under AWS D1.1, Annex S.

For UT of other welded joints, the acceptance and repair criteria must comply with Table 6.3 of AWS D1.1 for cyclically loaded nontubular connections.

After galvanization, perform additional inspection for toe cracks along the full length of all CJP groove welds at tube-to-transverse base plate connections using UT.

AA

57 WOOD AND PLASTIC LUMBER STRUCTURES

04-19-19

Add to section 57-2.02B:

04-19-19

HDPE shims must be commercial quality.

Replace section 57-2.02C with:

04-19-19

Install lagging members 4 inches thick or less with a 3/8-inch gap between members. Install lagging members greater than 4 inches thick with a 1/2-inch gap between members.

Replace the table in the 4th paragraph of section 57-3.02C with:

10-19-18

Quality characteristic	Test method	Requirement
Density of concrete core (kg/m ³ , min)	ASTM D792	1,762
28-day compressive strength of concrete core (psi, min)	ASTM C579	5,000
Structural strength of shell: Tensile strength, tensile modulus (percent loss) Flexural strength, flexural modulus (percent loss)	ASTM D638 ASTM D790	Less than 10 after UV deterioration test specified for plastic lumber
Dry film thickness of coating (mils, min)	--	15
Color change of coating	ASTM D4587, Test Cycle 2	No visible color change when tested for 800 hours
Initial adhesion of coating (psi, min)	ASTM D4541, Test Method D, E, or F and Protocol 2	150
Decrease in initial adhesion of coating, decrease (percent)	ASTM D4541, Test Method D, E, or F and Protocol 2 ASTM D1183, Test Condition D ^a	No more than 10 following 2 exposure cycles

^aUse a low temperature phase at 4 ± 5 °F and high temperature phase at 140 ± 5 °F.

^-----^

59 STRUCTURAL STEEL COATINGS

10-19-18

Replace the 2nd paragraph in section 59-1.01D with:

10-19-18

Measure coating adhesion strength with a self-aligning adhesion tester under ASTM D4541, Test Method D, E, or F and Protocol 2.

Replace the 2nd paragraph of section 59-1.02C with:

10-19-18

Coatings selected for use must comply with the volatile organic compound concentration limits specified for the air quality district where the coating is applied. The undercoats and finish or final coats selected for use must be compatible with each other.

Add after the paragraph of section 59-2.01A(3)(a):

10-19-18

If requested by the Engineer, submit documentation from the coating manufacturer verifying the compatibility of the undercoats and finish or final coats selected for use.

AA

60 EXISTING STRUCTURES

04-19-19

Replace section 60-2.02B with:

04-19-19

60-2.02B Materials

Design criteria for temporary support shoring and temporary bracing must comply with section 48-3.02B.

Add to section 60-3.01A:

10-19-18

If you are unable to complete bridge reconstruction activities before the bridge is to be opened to traffic, furnish and maintain temporary decking under section 48-4 until that portion of the work is complete.

Replace the 3rd and 4th paragraphs of section 60-3.02C(3) with:

04-19-19

Remove asphalt concrete surfacing by cold milling under the following conditions:

1. If a membrane seal is shown:
 - 1.1. Remove the seal by cold milling
 - 1.2. Do not remove more than 1/2 inch of the existing concrete slab

2. If a membrane seal is not shown:
 - 2.1. Remove asphalt concrete surfacing until a 1/2-inch minimum of surfacing remains on top of existing concrete slab
 - 2.2. Use other authorized means to remove the remaining asphalt concrete without damage to the concrete slab

Add to section 60-3.02C(3):

04-19-19

Where a portion of the asphalt concrete surfacing is to remain, saw cut a 2-inch-deep true line along the edge to remain in place before removing asphalt concrete. Remove the asphalt concrete without damaging the surfacing to remain in place.

78-4.03A General

78-4.03A(1) Summary

Section 78-4.03 includes specifications for preparing and painting concrete surfaces.

78-4.03A(2) Definitions

Reserved

78-4.03A(3) Submittals

Submit the coating manufacturer's application instructions at least 7 days before use.

78-4.03A(4) Quality Assurance

Reserved

78-4.03B Materials

Coatings for concrete must comply with the specifications for acrylic emulsion paint for exterior masonry in section 91-4.02B.

Coatings must be white.

78-4.03C Construction

78-4.03C(1) General

Reserved

78-4.03C(2) Surface Preparation

Before painting, surfaces must be:

1. At least 28 days old.
2. Prepared under SSPC-SP 13/NACE no. 6. Pressure rinse the prepared surfaces before applying the paint.
3. Thoroughly dry. You may use artificial drying methods if authorized.

78-4.03C(3) Application

Apply at least 2 coats under the manufacturer's instructions and SSPC-PA 7. Protect adjacent surfaces during painting using an authorized method.

78-4.03D Payment

Not Used

Replace section 78-4.04 with:

04-19-19

78-4.04 STAINING CONCRETE AND SHOTCRETE

78-4.04A General

78-4.04A(1) Summary

Section 78-4.04 includes specifications for preparing and staining concrete and shotcrete surfaces.

78-4.04A(2) Definitions

acid stain: non-tintable, transparent stain that contains dilute acid.

water-based stain: semi-transparent or solid water-based coating in an acrylic emulsion vehicle, that can be tinted to match an AMS-STD-595 color.

78-4.04A(3) Submittals

78-4.04A(3)(a) General

Submit the stain and sealer manufacturer's product data and application instructions at least 7 days before starting staining activities.

78-4.04A(3)(b) Contractor Qualifications

Submit the following documentation at least 10 days before the prestaining meeting:

1. Summary of the staining contractor's experience that demonstrates compliance with section 78-4.04A(4)(c).
2. List of at least 3 projects completed in the last 5 years that demonstrate the staining contractor's ability to stain surfaces similar to the surfaces for this project. For each project include:
 - 2.1. Project description
 - 2.2. Name and phone number of the owner
 - 2.3. Staining completion date
 - 2.4. Color photos of the completed stained surface

78-4.04A(3)(c) Staining Quality Work Plan

Submit a staining quality work plan at least 10 days before the prestaining meeting. The work plan must include details for preparing and staining the surfaces to achieve the required color, and for sealing the surfaces, including:

1. Number of applications that will be used to apply the stain
2. For each application of the stain, a description of:
 - 2.1. Manufacturer, color, finish, and percentage strength mixture of the stain that will be applied
 - 2.2. Proposed methods and tools for applying the stain
3. Proposed methods for protecting adjacent surfaces during staining
4. Proposed methods and tools for applying the sealer

For acid stains, the work plan must also include a rinse water collection plan for containing all liquid, effluent, and residue resulting from preparing and staining the surfaces.

78-4.04A(4) Quality Assurance

78-4.04A(4)(a) General

Reserved

78-4.04A(4)(b) Test Panels

Stain the authorized test panel complying with section 51-1.01D(2)(c) or section 53-3.01D(3).

The test panel must be:

1. Stained using the same personnel, materials, equipment, and methods to be used in the work
2. Accessible for viewing
3. Displayed in an upright position near the work
4. Authorized for staining before starting the staining work

If ordered, construct additional test panels until a satisfactory color is attained. The preparing and staining of additional test panels is change order work.

The Engineer uses the authorized stained test panel to determine the acceptability of the stained surface.

Dispose of the test panels after the staining work is complete and authorized. Notify the Engineer before disposing of the test panels.

78-4.04A(4)(c) Contractor Qualifications

The staining contractor must have experience staining surfaces to simulate the appearance of natural rock formations or stone masonry, and must have completed at least 3 projects in the past 5 years involving staining of surfaces similar to the surfaces for this project.

78-4.04A(4)(d) Prestaining Meeting

Before starting staining activities, conduct a meeting to discuss the staining quality work plan. Meeting attendees must include the Engineer and all staining contractors.

78-4.04B Materials

78-4.04B(1) General

Reserved

78-4.04B(2) Stain

78-4.04B(2)(a) General

The stain must be:

1. Commercially available product designed specifically for exterior applications
2. Specifically manufactured for staining concrete surfaces

78-4.04B(2)(b) Acid Stain

Acid stain must:

1. Contain dilute acid that penetrates and etches the surfaces
2. Be a water-based solution of inorganic metallic salts
3. Produce abrasion-resistant color deposits

78-4.04B(2)(c) Water-based Stain

Water-based stain must be:

1. Acrylic emulsion
2. Non-fading and UV resistant
3. Capable of producing irregular, mottled tones

78-4.04B(3) Sealer

The sealer must be as recommended by the stain manufacturer, clear and colorless, and have a matte finish when dry.

78-4.04B(4) Joint Sealing Compound

Reserved

78-4.04C Construction

78-4.04C(1) General

At locations where there is exposed metal adjacent to the surfaces to be stained, seal the joint between the surfaces to be stained and the exposed metal with a joint sealing compound before applying the stain.

78-4.04C(2) Surface Preparation

Test surfaces for acceptance of the stain before applying the stain. Clean surfaces that resist accepting the stain and retest until passing.

Before staining, the surfaces must be:

1. At least 28 days old
2. Prepared under SSPC-SP 13/NACE no. 6
3. Thoroughly dry

78-4.04C(3) Application

78-4.04C(3)(a) General

Apply the stain under the manufacturer's instructions. Protect adjacent surfaces during staining. Drips, puddles, or other irregularities must be worked into the surface.

Apply the sealer under the manufacturer's instructions.

78-4.04C(3)(b) Acid Stain

Work the acid stain into the concrete using a nylon bristle brush in a circular motion.

After the last coat of stain has dried, rinse the stained surfaces with water and wet scrub them with a stiff-bristle nylon brush until the rinse water runs clear. Collect all rinse water.

78-4.04D Payment

Not Used

80 FENCES

10-19-18

Replace the 2nd paragraph of section 80-3.02B with:

Posts and braces must comply with the strength requirements in ASTM F1043 for one of the following: 10-19-18

1. Group IA, regular grade, for round pipes
2. Group IC, 50,000 psi yield, for round pipes
3. Group II-L for roll-formed posts and braces

Replace the list in section 80-4.02B(1)(b) with:

1. Comply with ASTM A1064 and have a Class 1 zinc coating complying with ASTM A641
2. Be welded or woven galvanized steel wire fabric
3. Be made of at least 16-gauge wire
4. Be 36 inches wide

10-19-18

Replace the paragraph in section 80-4.02B(2) with:

The materials for a temporary desert tortoise fence must comply with section 80-4.02B(1).

10-19-18

Letters and numerals on a milepost marker must be made with opaque black paint or film. The paint and film must have an equivalent outdoor weatherability as the retroreflective sheeting specified in ASTM D4956. Nonreflective, opaque, black film must be vinyl or acrylic material.

Film for letters and numerals must be computer cut and have pressure-sensitive adhesive.

Replace the 5th paragraph of section 82-5.03 with:

10-19-18

Use stencils to paint letters and numerals on milepost markers.

^^

83 RAILINGS AND BARRIERS

04-19-19

Replace section 83-2.01A(3) with:

04-19-19

For midwest guardrail systems and thrie beam barrier, install steel foundation tubes and soil plates in soil.

Replace the 4th paragraph of section 83-2.03C with:

04-19-19

If median barrier delineation is shown, match the barrier marker spacing to the raised pavement marker spacing on the adjacent median edge line pavement delineation.

Replace the paragraph of section 83-3.03A(11) with:

04-19-19

Where concrete barrier markers are shown, cement the markers to the barrier under the manufacturer's instructions. Match the barrier marker spacing to the raised pavement marker spacing on the adjacent median edge line pavement delineation.

^^

84 MARKINGS

04-19-19

Replace section 84-2 with:

10-19-18

84-2 TRAFFIC STRIPES AND PAVEMENT MARKINGS

84-2.01 GENERAL

84-2.01A Summary

Section 84-2 includes specifications for applying traffic stripes and pavement markings.

Traffic stripes and pavement markings must comply with ASTM D6628 for daytime and nighttime color.

Retroreflectivity must be measured under ASTM E1710 and the sampling protocol specified in ASTM D7585.

84-2.01B Definitions

pavement marking: Transverse marking such as (1) a limit line, (2) a stop line, or (3) a word, symbol, shoulder, parking stall, or railroad-grade-crossing marking.

traffic stripe: Longitudinal centerline or lane line used for separating traffic lanes in the same direction of travel or in the opposing direction of travel or a longitudinal edge line marking the edge of the traveled way or the edge of a lane at a gore area separating traffic at an exit or entrance ramp. A traffic stripe is shown as a traffic line.

84-2.01C Submittals

For each lot or batch of traffic stripe material, primer, and glass beads, submit:

1. Certificate of compliance, including the material name, lot or batch number, and manufacture date
2. METS notification letter stating that the material is authorized for use, except for thermoplastic and primer
3. SDS
4. Manufacturer's Instructions

For each lot or batch of thermoplastic, submit a manufacturer's certificate of compliance and the following test results from the California Test 423:

1. Brookfield Thermosel viscosity
2. Hardness
3. Yellowness index, white only
4. Daytime luminance factor
5. Yellow color, yellow only
6. Glass bead content
7. Binder content

The date of the test must be within 1 year of use.

Submit test results for each lot of beads specifying the EPA test methods used and tracing the lot to the specific test sample. The testing for lead and arsenic content must be performed by an independent testing laboratory.

Submit the thermoplastic test stripe to the Engineer.

Submit the retroreflectivity test result within 5 days of testing the traffic stripes and pavement markings. The data must include the retroreflectivity, time, date, and GPS coordinates for each measurement.

84-2.01D Quality Assurance

84-2.01D(1) General

Reserved

84-2.01D(2) Quality Control

Before starting permanent application of methyl methacrylate and two component paint traffic stripes and pavement markings, apply a test stripe on roofing felt or other suitable material in the presence of the Engineer. The test stripe section must be at least 50 feet in length.

Upon request, apply a thermoplastic test stripe on suitable material in the presence of the Engineer during the application of thermoplastic traffic stripes or markings. The test stripe must be at least 1 foot in length.

Remove loose glass beads before measuring the retroreflectivity. Obtain authorization to proceed with the application of traffic stripes and pavement markings.

Within 30 days of application, test the traffic stripes and pavement markings under the test methods and frequencies shown in the following table:

Traffic Stripe Testing Frequency

Quality characteristic	Test method	Minimum sampling and testing frequency
Initial retroreflectivity (min, $\text{mcd}\cdot\text{m}^{-2}\cdot\text{lx}^{-1}$)	ASTM E1710	ASTM D7585 ^a
White		
Yellow		

^aUse the referee evaluation protocol for project length less than 10 miles. For project lengths greater than or equal to 10 miles, add one evaluation for every additional mile.

Verify the glass bead application rate by stabbing the glass bead tank with a calibrated rod.

84-2.01D(3) Department Acceptance

The Engineer will perform a nighttime, drive-through, visual inspection of the retroreflectivity of the traffic stripes and pavement markings and notify you of any locations with deficient retroreflectivity. Test the retroreflectivity of the deficient areas to confirm striping and pavement markings meets the requirements.

The thermoplastic test stripe will be tested for yellow color, daytime luminance factor, and yellowness index requirements by METS.

84-2.02 MATERIALS

84-2.02A General

Reserved

84-2.02B Glass Beads

Each lot of glass beads must comply with EPA Test Method 3052 and 6010B or 6010C. Glass beads must contain less than 200 ppm each of arsenic and lead.

Type 1 glass beads must comply with AASHTO M 247.

Type 2 glass beads must comply with AASHTO M 247. At least 75 percent of the beads by count must be true spheres that are colorless and do not exhibit dark spots, air inclusions, or surface scratches when viewed under 20X magnification.

High-performance glass beads must be on the Authorized Material List for high-performance glass beads.

Large-gradation glass beads must be on the Authorized Material List for two component traffic paint.

Glass beads for methyl methacrylate must be on the Authorized Material List for methyl methacrylate traffic striping and pavement marking.

Glass beads for paint must comply with State Specification 8010-004.

Glass beads must be surface treated, according to the bead and the material manufacturer's instructions, to promote adhesion with the specified material.

84-2.02C Thermoplastic

Thermoplastic must comply with State Specification PTH-02HYDRO, or PTH-02ALKYD.

Sprayable thermoplastic must comply with State Specification PTH-02SPRAY.

Each lot or batch of thermoplastic must be tested under California Test 423.

84-2.02D Methyl Methacrylate

Methyl methacrylate traffic paint must:

1. Be on the Authorized Material List for methyl methacrylate traffic striping and pavement marking

2. Be Category 2

84-2.02E Traffic Striping and Pavement Marking Tape

Traffic striping and pavement marking tape must be on the Authorized Material List for signing and delineation materials.

04-19-19

White tape must have an initial retroreflectivity of a minimum 700 mcd/m².

Yellow tape must have an initial retroreflectivity of a minimum 500 mcd/m².

10-19-18

When contrast is required for traffic striping and pavement marking tape, the tape must be pre-formed and retroreflective, consisting of a white film with retroreflective beads and a contrasting black film border. The contrasting black border must be a nonreflective film bonded on each side of the white film to form a continuous roll. Each black border must be a minimum of 2 inches wide. The width of the tape must be at least 4 inches wider than the stripe width.

84-2.02F Two-Component Paint

Two-component traffic paint must be on the Authorized Material List for two component traffic paint.

84-2.02G Paint

Paint must comply with the requirements shown in following table:

Paint Specifications		
Paint type	Color	Specification
Waterborne traffic line	White, yellow, and black	State Specification PTWB-01R2
Waterborne traffic line for the international symbol of accessibility and other curb markings	Blue, red, and green	Federal Specification TT-P-1952E

84-2.02H–84-2.02L Reserved

84-2.03 CONSTRUCTION

84-2.03A General

Establish the alignment for traffic stripes and the layouts for pavement markings with a device or method that will not conflict with other traffic control devices.

Protect existing retroreflective pavement markers during work activities.

Remove existing pavement markers that are coated or damaged by work activities and replace with an equivalent marker on the Authorized Material List for signing and delineation materials.

A completed traffic stripe or pavement marking must:

1. Have well defined edges
2. Be uniform
3. Be free from runs, bubbles, craters, drag marks, stretch marks, and debris

A completed traffic stripe must:

1. Be straight on a tangent alignment
2. Be a true arc on a curved alignment
3. Not deviate from the width shown by more than:
 - 3.1. 1/4 inch on a tangent alignment

3.2. 1/2 inch on a curved alignment

The length of the gaps and individual stripes that form a broken traffic stripe must not deviate by more than 2 inches from the lengths shown. The gaps and stripes must be uniform throughout the entire length of the traffic stripe.

Protect newly placed traffic stripes and pavement markings from traffic and work activities until the traffic stripes and pavement markings are dry or hard enough to bear traffic.

Use mechanical methods to remove dirt, contaminants, and loose material from the pavement surface before applying the traffic stripe or pavement marking.

Use abrasive blast cleaning to remove laitance and curing compound from the surface of new concrete pavement before applying the traffic stripe or pavement marking.

Construct recesses as shown in the following table:

Material	Requirement	
	Depth (mils)	Depth (in)
Thermoplastic	375	3/8
Two component traffic paint	250	1/4
Methyl methacrylate traffic paint	250	1/4

Construct recesses for double traffic stripes in a single pass.

Before applying the traffic stripes and pavement markings:

1. Allow wet ground recesses to dry a minimum of 24 hours
2. Remove all powdery residue from dry recess
3. Keep the recesses dry and free from debris

Apply traffic stripes and pavement markings before the end of the same work shift.

84-2.03B Application of Traffic Stripes and Pavement Markings

84-2.03B(1) General

Apply material for a pavement marking with a stencil or a preformed marking.

Immediately remove drips, overspray, improper markings, or material tracked by traffic, using an authorized method.

Apply a traffic stripe or a pavement marking only to a clean, dry surface during a period when the pavement surface temperature is above 50 degrees F.

Apply traffic stripe or pavement marking and glass beads in a single pass. You may apply the glass beads by hand on pavement markings.

Embed glass beads to a depth of 1/2 their diameters.

Distribute glass beads uniformly on traffic stripe and pavement markings.

Glass beads with integral color must match the color of the stripe or pavement marking.

Apply glass beads with two separate applicator guns when two gradations are specified.

Allow enough overlap distance between new and existing striping patterns to ensure continuity at the start and end of the transition.

The retroreflectivity of applied traffic stripes and pavement markings must comply with the requirements shown in the following table:

Traffic stripe material	White (min, mcd·m ⁻² ·lx ⁻¹)	Yellow (min, mcd·m ⁻² ·lx ⁻¹)
Paint	250	125
Thermoplastic	250	125
Thermoplastic with wet night enhanced visibility	700	500
Two component	250	125
Methyl methacrylate	500	300
Tape	700	500

84-2.03B(2) Thermoplastic

84-2.03B(2)(a) General

Apply primer or surface preparation adhesive under the manufacturer's instructions:

1. To all roadway surfaces except for asphaltic surfaces less than 6 months old
2. At a minimum rate of 1 gallon per 300 square feet
3. To allow time for the thermoplastic primer to dry and become tacky before application of the thermoplastic

Do not thin the primer.

Preheat thermoplastic using preheaters with mixers having a 360-degree rotation.

Apply thermoplastic in a single uniform layer by spray or extrusion methods.

Completely coat and fill voids in the pavement surface with the thermoplastic.

Apply recessed thermoplastic at a thickness so that the top is 0 to 1/16 inch below the pavement surface.

84-2.03B(2)(b) Extruded Thermoplastic

Apply extruded thermoplastic at a temperature of 400 to 425 degrees F or as recommended by the manufacturer.

Apply extruded thermoplastic for a traffic stripe at a rate of at least 0.36 lb of thermoplastic per foot of 6-inch-wide solid stripe. The applied traffic stripe must be at least 0.060 inch thick.

Apply extruded thermoplastic pavement markings at a thickness from 0.100 to 0.150 inch.

Apply Type 2 glass beads to the surface of the molten thermoplastic at a rate of at least 8 lb of beads per 100 sq ft.

84-2.03B(2)(c) Sprayable Thermoplastic

Apply sprayable thermoplastic at a temperature of 350 to 400 degrees F.

Apply sprayable thermoplastic for a traffic stripe at a rate of at least 0.24 lb of thermoplastic per foot of 6-inch-wide solid stripe. The applied stripe must be at least 0.040 inch thick.

84-2.03B(2)(d) Thermoplastic with Enhanced Wet-Night Visibility

Apply a thermoplastic traffic stripe or pavement marking with enhanced wet-night visibility in a single pass and in the following order:

1. Uniform layer of extruded thermoplastic

2. Layer of high-performance glass beads
3. Layer of Type 2 glass beads

Apply thermoplastic with enhanced wet-night visibility at a maximum speed of 8 mph.

Apply thermoplastic with enhanced wet-night visibility for a traffic stripe at a rate of at least 0.47 lb of thermoplastic per foot of 6-inch-wide solid stripe. The applied stripe must be at least 0.090 inch thick.

Apply thermoplastic with enhanced wet-night visibility for a pavement marking at a rate of at least 1.06 lb of thermoplastic per square foot of marking. The applied pavement marking must be at least 0.100 inch thick.

Apply high-performance glass beads at a rate of at least 6 lb of glass beads per 100 sq ft of stripe or marking. Apply Type 2, glass beads at a rate of at least 8 lb of glass beads per 100 sq ft of stripe or marking.

84-2.03B(3) Methyl Methacrylate

Apply the methyl methacrylate when the pavement surface and atmospheric temperatures are from 40 to 104 degrees F.

Apply methyl methacrylate paint at a minimum thickness of 0.090 inch.

Apply recessed methyl methacrylate paint at a minimum thickness of 0.200 inch.

Apply the glass beads recommended by the methyl methacrylate manufacturer.

84-2.03B(4) Traffic Striping and Pavement Marking Tape

Do not use traffic stripe and pavement marking tape on existing open graded friction course or chip seal.

Prepare pavement surface and use primer under the traffic tape manufacturer's written instructions. Apply tape to clean and dry pavement surface. Roll or tamp the traffic tape in place.

84-2.03B(5) Two-Component Paint

Apply a two-component painted traffic stripe or pavement marking in a single pass and in the following order:

1. Coat of two-component paint
2. Application of large gradation glass beads recommended by the two-component paint manufacturer
3. Application of Type 1 glass beads

Apply two-component paint when the pavement surface temperature is above 39 degrees F and the atmospheric temperature is above 36 degrees F. The temperature of the paint must comply with the paint manufacturer's instructions.

Apply two-component paint and glass beads at a maximum speed of 10 mph.

Apply large-gradation glass beads at a minimum rate of 11.7 lb of beads per gallon of paint.

Apply Type 1 glass beads at a minimum rate of 8.3 lb of beads per gallon of paint.

Apply two-component paint for the traffic stripes and pavement markings at the thickness and application rates shown in the following table:

Type of pavement	Stripe thickness (min, inch)	Application rate (min, sq ft/gal)
HMA open graded/chip seal	0.025	64
HMA dense graded	0.020	80
Concrete	0.020	80

Apply recessed two-component paint at a thickness between 0.020 and 0.025 inch.

84-2.03B(6) Paint

Do not apply paint if:

1. Fresh paint could become damaged by rain, fog, or condensation
2. Atmospheric temperature could drop below 50 degrees F during the drying period

Do not thin paint.

Use mechanical means to paint traffic stripes and pavement markings and to apply glass beads for traffic stripes.

The striping machine must be capable of superimposing successive coats of paint on the 1st coat and on existing stripes at a minimum speed of 5 mph.

Where the configuration or location of a traffic stripe is such that the use of a striping machine is not practicable, you may apply the traffic paint and glass beads by other methods and equipment if authorized.

Apply traffic stripes and pavement markings in 1 coat on existing pavement surfaces, at an approximate rate of 107 sq ft/gal.

Apply traffic stripes and pavement markings in 2 coats on a new pavement surface. The 1st coat of paint must be dry before applying the 2nd coat.

Apply 2-coat paint at the approximate rate of 215 sq ft/gal for each coat.

Paint a 1-coat, 3-inch-wide black stripe between the two 6-inch-wide yellow stripes of a double traffic stripe. If the two 6-inch-wide yellow stripes are applied in 2 coats, apply the black stripe concurrently with the 2nd coat of the yellow stripes.

On 2-lane highways:

1. If the 1st coat of the centerline stripe is applied in the same direction as increasing post miles, use the right-hand spray gun of the 3 spray guns to apply a single yellow stripe
2. If the 1st coat of the centerline stripe is applied in the same direction as decreasing post miles, use the left-hand spray gun of the 3 spray guns to apply a single yellow stripe
3. Apply the 2nd coat of centerline striping in the opposite direction of the 1st coat

Apply glass beads at an approximate rate of 5 lb of beads per gallon of paint.

Verify the application rate of paint by stabbing the paint tank with a calibrated rod. If the striping machine has paint gauges, the Engineer may measure the volume of paint using the gauges instead of stabbing the paint tank with a calibrated rod.

84-2.03B(7) Contrast Striping

04-19-19

Contrast striping consists of black striping placed on each side of a white stripe.

10-19-18

You may use permanent tape instead of paint or thermoplastic.

Apply contrast stripe paint in one coat.

Do not use glass beads or other reflective elements in contrast striping material.

04-19-19

84-2.03B(8)–84-2.03B(10) Reserved

10-19-18

84-2.04 PAYMENT

The payment quantity for a traffic stripe is the length measured along the line of the traffic stripe without deductions for gaps in the broken traffic stripe.

The payment quantity for a pavement marking is the area covered.

A double traffic stripe consisting of two 6-inch-wide yellow stripes are measured as 2 traffic stripes except for painted traffic stripes and sprayable thermoplastic traffic stripes. A double sprayable thermoplastic traffic stripe consisting of two 6-inch-wide yellow stripes are measured as single traffic stripe.

A double painted traffic stripe consisting of two 6-inch-wide yellow stripes separated by a 3-inch-wide black stripe is measured as a single traffic stripe.

The payment quantity for contrast striping is the length measured along the line of the traffic stripe without deductions for gaps in the broken traffic stripe.

Replace section 84-9 with:

10-19-18

84-9 EXISTING MARKINGS

84-9.01 GENERAL

84-9.01A Summary

Section 84-9 includes specifications for removing existing markings.

Work performed on existing markings must comply with section 15.

84-9.01B Definitions

Reserved

04-19-19

84-9.01C Submittals

10-19-18

Submit your proposed method for removing traffic stripes and pavement markings at least 7 days before starting the removal work. Allow 2 business days for the review.

84-9.02 MATERIALS

Not Used

84-9.03 CONSTRUCTION

84-9.03A General

Remove existing traffic stripes before making any changes to the traffic pattern.

Remove existing traffic stripes and pavement markings before applying the following materials:

1. Traffic stripe and pavement marking tape
2. Two component traffic stripes and pavement markings
3. Methyl methacrylate traffic stripes and pavement markings

04-19-19

Remove contrast stripes, traffic stripes and pavement markings, including any paint in the gaps, by methods that do not remove pavement to a depth of more than 1/8 inch.

Remove pavement markings such that the old message cannot be identified. Make any area removed by grinding rectangular. Water must not puddle in the ground areas. Fog seal ground areas on asphalt concrete pavement.

Sweep up or vacuum any residue before it can (1) be blown by traffic or wind, (2) migrate across lanes or shoulders, or (3) enter a drainage facility.

84-9.03B Remove Traffic Stripes and Pavement Markings Containing Lead

Reserved

84-9.03C–84-9.03J Reserved

84-9.04 PAYMENT

The payment quantity for remove traffic stripe is the measured length multiplied by:

- 1. 0.67 for a single 4-inch-wide traffic stripe
- 2. 1.34 for a single 8-inch-wide traffic stripe
- 3. 2 for a double traffic stripe

The payment quantity for remove traffic stripe does not include the gaps in broken traffic stripes. Payment for removal of paint evident in a gap is included in the payment for remove traffic stripe of the type involved.

If no bid item is shown on the Bid Item List for remove pavement marking, remove pavement marking is paid for as remove traffic stripe of the types shown in the Bid Item List and the payment quantity for 1 square foot of pavement marking is 3 linear feet.

DIVISION X ELECTRICAL WORK

86 GENERAL

04-19-19

Replace section 86-1.01B with:

86-1.01B Definitions

accessible pedestrian signal: Accessible pedestrian signal as defined in the *California MUTCD*.

accessible walk indication: Activated audible and vibrotactile action during the walk interval.

actuation: Actuation as defined in the *California MUTCD*.

ambient sound level: Background sound level in dB at a given location.

ambient sound sensing microphone: Microphone that measures the ambient sound level in dB and automatically adjusts the accessible pedestrian signal speaker's volume.

audible speech walk message: Audible prerecorded message that communicates to pedestrians which street has the walk interval.

CALiPER: Commercially Available LED Product Evaluation and Reporting. A U.S. Department of Energy program that individually tests and provides unbiased information on the performance of commercially available LED luminaires and lights.

controller assembly: Assembly for controlling a system's operations, consisting of a controller unit and auxiliary equipment housed in a waterproof cabinet.

controller unit: Part of the controller assembly performing the basic timing and logic functions.

correlated color temperature: Absolute temperature in kelvin of a blackbody whose chromaticity most nearly resembles that of the light source.

detector: Detector as defined in the *California MUTCD*.

electrolier: Assembly of a lighting standard and luminaire.

flasher: Device for opening and closing signal circuits at a repetitive rate.

illuminance gradient: Ratio of the minimum illuminance on a 1-foot square of sign panel to that on an adjacent 1-foot square of sign panel.

inductive loop detector: Detector capable of being actuated by an inductance change caused by a vehicle passing or standing over the loop. An inductive loop detector includes a loop or group of loops installed in the roadway and a lead-in cable installed and connected inside a controller cabinet.

junction temperature: Temperature of the electronic junction of the LED device. The junction temperature is critical in determining photometric performance, estimating operational life, and preventing catastrophic failure of the LED.

L70: Extrapolated life in hours of the luminaire when the luminous output depreciates 30 percent from the initial values.

lighting standard: Pole and mast arm supporting the luminaire.

link: Part of a system which provides a data connection between a transmitter and receiver.

LM-79: Test method from the Illumination Engineering Society of North America specifying the test conditions, measurements, and report format for testing solid state lighting devices, including LED luminaires.

LM-80: Test method from the Illumination Engineering Society of North America specifying the test conditions, measurements, and report format for testing and estimating the long-term performance of LEDs for general lighting purposes.

luminaire: Assembly that houses the light source and controls the light emitted from the light source.

mid-span access method: Procedure in which fibers from a single buffer tube are accessed and spliced to a multi buffer tube cable without cutting the unused fibers in the buffer tube, or disturbing the remaining buffer tubes in the cable.

National Voluntary Laboratory Accreditation Program: U.S. Department of Energy program that accredits independent testing laboratories.

optical time domain reflectometer: Fiber optic test equipment that is used to measure the total amount of power loss between two points and over the corresponding distance. It provides a visual and printed display of the relative location of system components such as fiber sections, splices and connectors as well as the losses that are attributed to each component and or defects in the fiber.

pedestrian change interval: Pedestrian change interval as defined in the *California MUTCD*.

powder coating: Coating applied electrostatically using exterior-grade, UV-stable, polymer powder.

power factor: Ratio of the real power component to the complex power component.

power meter: Portable fiber optic test equipment that, when coupled with a light source, is used to perform end-to-end attenuation testing. Its display indicates the amount of power injected by the light source at the designed wavelength of the system under testing that arrives at the receiving end of the link.

pretimed controller assembly: Assembly operating traffic signals under a predetermined cycle length.

programming mechanism: Device to program the accessible pedestrian signal operation.

pull box: Box with a cover that is installed in an accessible place in a conduit run to facilitate the pulling in of wires or cables.

push button information message: Push button information message as defined in the *California MUTCD*.

push button locator tone: Push button locator tone as defined in the *California MUTCD*.

segment: Continuous cable terminated by 2 splices, 2 connectors or 1 splice and 1 connector.

signal face: Signal face as defined in the *California MUTCD*.

signal head: Signal head as defined in the *California MUTCD*.

signal indication: Signal indication as defined in the *California MUTCD*.

signal section: Signal section as defined in the *California MUTCD*.

signal standard: Pole with or without mast arms carrying 1 or more signal faces.

street side lumens: Lumens from a luminaire directed to light up areas between the fixture and the roadway, such as traveled ways and freeway lanes.

surge protection device: Subsystem or component that protects equipment against short-duration voltage transients in power line.

total harmonic distortion: Ratio of the rms value of the sum of the squared individual harmonic amplitudes to the rms value of the fundamental frequency of a complex waveform.

traffic-actuated controller assembly: Assembly for operating traffic signals under the varying demands of traffic as registered by detector actuation.

traffic phase: Traffic phase as defined in the *California MUTCD*.

vehicle: Vehicle as defined in the *California Vehicle Code*.

vibrotactile pedestrian device: Vibrotactile pedestrian device as defined in the *California MUTCD*.

Delete the 9th and 10th paragraphs of section 86-1.01C(1).

10-19-18

Replace section 86-1.01C(3) with:

86-1.01C(3) Luminaires

10-19-18

Submit for a luminaire:

1. Maximum power in watts
2. Maximum designed junction temperature
3. Heat sink area in square inches

4. Designed junction-to-ambient thermal resistance calculation with thermal resistance components clearly defined
5. L70 in hours when extrapolated for the average nighttime operating temperature
6. Life expectancy based on the junction temperature
7. Manufacturer's data sheet for the power supply, including the rated life

Submit the manufacturer's QC test data for luminaires as an informational submittal.

Replace section 86-1.01C(4) with:

10-19-18

86-1.01C(4) Reserved

Replace the 3rd paragraph of section 86-1.02B(1) with:

04-19-19

Conduit used for horizontal directional drilling must be high density polyethylene Type IPS, SDR 9 and comply with ASTM F2160.

Replace the 8th paragraph of section 86-1.02B(1) with:

10-19-18

High density polyethylene for innerduct must:

1. Comply with ASTM D3485, D3035, D2239, and D2447, and NEMA TC7 and TC2
2. Have a minimum tensile yield strength of 3300 psi under ASTM D638
3. Have a density of $59.6187 \text{ lb/ft}^3 \pm 0.3121 \text{ lb/ft}^3$ under ASTM D1505

04-19-19

Replace the 9th paragraph of section 86-1.02B(1) with:

04-19-19

Tracer wire must be a minimum no. 12 solid copper conductor with orange insulation Type TW, THW, RHW, or USE. For direct burial, the tracer wire insulation must be Type UF.

Replace the 4th paragraph of section 86-1.02C(1) with:

10-19-18

The cover marking must include CALTRANS and one of the following:

1. *SERVICE* for service circuits between a service point and service disconnect
2. *SERVICE IRRIGATION* for circuits from a service equipment enclosure to an irrigation controller
3. *SERVICE BOOSTER PUMP* for circuits from a service equipment enclosure to the booster pump
4. *TDC POWER* for circuits from a service equipment enclosure to telephone demarcation cabinet
5. *LIGHTING* for a lighting system
6. *SIGN ILLUMINATION* for a sign illumination system
7. *SIGNAL AND LIGHTING* for a signal and lighting system
8. *RAMP METER* for a ramp metering system
9. *TMS* for a traffic monitoring station
10. *FLASHING BEACON* for a flashing beacon system
11. *CMS* for a changeable message sign system
12. *INTERCONNECT* for an interconnect conduit and cable system
13. *FIBER OPTIC* for fiber optic cable system
14. *ELECTRICAL SYSTEMS* if more than one system is shared in the same pull box

Delete the 3rd paragraph of section 86-1.02C(2).

Replace the 1st and 2nd paragraphs of section 86-1.02C(3) with:

10-19-18

A traffic pull box and cover must comply with AASHTO HS20-44 and load tested under AASHTO M 306.

The frame must be anchored to the box with 2-1/4-inch-long concrete anchors with a 1/4 inch diameter. A no. 3-1/2(T) pull box must have 4 concrete anchors, one placed in each corner. No. 5(T) and no. 6(T) pull boxes must have 6 concrete anchors, one placed in each corner and one near the middle of each of the longer sides.

Replace section 86-1.02C(4)(b) with:

10-19-18

86-1.02C(4)(b) Tamper-Resistant Nontraffic Pull Box

86-1.02C(4)(b)(i) General

A tamper resistant nontraffic pull box must include a pull box with one of the following:

1. Anchored cover
2. Lockable cover
3. Pull box insert

86-1.02C(4)(b)(ii) Anchored Cover

The anchored cover must:

1. Be of 1/2-inch-thick mild steel, hot dip galvanized, post fabrication.
2. Be hot dip galvanized after manufacturing with spikes removed from the galvanized surfaces.
3. Have a center space for a top lock nut that must be torqued to 200 ft-lb.
4. Have a center opening for a stainless steel threaded cap to cover the lock nut.
5. Weigh a minimum of 85 lb.
6. Include an all-around security skirt of 1/4-inch thick steel. The skirt must be sized to encase a nontraffic pull box or sized to fit within a traffic pull box.
7. Be welded to the skirt.

86-1.02C(4)(b)(iii) Lockable Cover

The lockable cover must:

1. Be manufactured from minimum 3/16-inch-thick galvanized steel or a polymer of minimum strength equal to 3/16 inch steel.
2. Be secured to the pull box with a locking mechanism of equal or greater strength than the manufactured material.
3. Have 1/2-by-2-inch slot holes for lifting.
4. Have dimensions complying with one of the following:
 - 4.1. Department's standards for pull box covers as shown if the lockable cover is secured to the inside lip of the pull box.
 - 4.2. Department's standards for the length and width as shown for pull box covers if the lockable cover is secured to the top of the pull box.

86-1.02C(4)(b)(iv) Pull Box Insert

The pull box insert must:

1. Be made of minimum 3/16-inch-thick or 10 gauge mild hot-dipped galvanized steel
2. Have a minimum of 2 mounting brackets that rest under the side or end wall
3. Be lockable with a padlock having a minimum 3/8-inch shackle

4. Have dimensions complying with the Department's standards for the length and width as shown for pull box covers

Delete section 86-1.02C(4)(d).

10-19-18

Delete section 86-1.02C(4)(e).

10-19-18

Delete section 86-1.02C(4)(f).

10-19-18

Replace section 86-1.02D(3) with:

10-19-18

86-1.02D(3) Warning Tape

Warning tape must be orange color polyolefin film, minimum elongation of 500 percent before breakage, water and corrosion resistant, and comply with requirements shown in the following table:

Warning Tape Requirements

Quality characteristic	Requirement
Thickness (min, mil)	4
Width (in)	4
Tensile strength of material (min, psi)	2800
Message spacing intervals (ft)	3

The warning tape must have a printed message that reads: CAUTION: CALTRANS FACILITIES BELOW.

The printed text height and color must be 1 inch, black color text over bright orange background.

Replace the 2nd paragraph of section 86-1.02E with:

10-19-18

Each sensor must:

1. Have a dissipation factor less than 0.04 nF when measured in the 20 nF range
2. Have resistance greater than 20 Megaohms
3. Be 1/4 inch wide by 6 feet long by 1/16 inch thick
4. Have a RG-58C/U coaxial screen transmission cable, jacketed with high-density polyethylene, rated for direct burial and resistant to nicks and cuts
5. Operate over a temperature range from -40 to 160 degrees F
6. Have a signal to noise ratio equal to or greater than 10 to 1
7. Have an output signal of a minimum 250 mV ± 20 percent for a wheel load of 400 lb at 55 mph and 70 degrees F
8. Have an insulation resistance greater than 500 MΩ
9. Have a life cycle of a minimum 25 million equivalent single axle loadings

Replace section 86-1.02F(1) with:

10-19-18

86-1.02F(1) General

Conductors and cables must be clearly and permanently marked the entire length of their outer surface with:

1. Manufacturer's name or trademark
2. Insulation-type letter designation
3. Conductor size
4. Voltage
5. Number of conductors for a cable

The minimum insulation thickness and color code requirements must comply with NEC.

Replace the 2nd paragraph of section 86-1.02F(2)(a) with:

10-19-18

Conductors must be identified as shown in the following table:

Conductor Identification

Circuit	Signal phase or function	Identification			Copper size
		Insulation color		Band symbols	
		Base	Stripe ^a		

DRAFT

Signals (vehicle) ^{a,b}	2, 6	Red, yellow, brown	Black	2, 6	14
	4, 8	Red, yellow, brown	Orange	4, 8	14
	1, 5	Red, yellow, brown	None	1, 5	14
	3, 7	Red, yellow, brown	Purple	3, 7	14
	Ramp meter 1	Red, yellow, brown	None	No band required	14
	Ramp meter 2	Red, yellow, brown	Black	No band required	14
Pedestrian signals	2p, 6p	Red, brown	Black	2p, 6p	14
	4p, 8p	Red, brown	Orange	4p, 8p	14
	1p, 5p	Red, brown	None	1p, 5p	14
	3p, 7p	Red, brown	Purple	3p, 7p	14
Push button assembly or accessible pedestrian signal	2p, 6p	Blue	Black	P-2, P-6	14
	4p, 8p	Blue	Orange	P-4, P-8	14
	1p, 5p	Blue	None	P-1, P-5	14
	3p, 7p	Blue	Purple	P-3, P-7	14
Traffic signal controller cabinet	Ungrounded circuit conductor	Black	None	CON-1	6
	Grounded circuit conductor	White	None	CON-2	6
Highway lighting pull box to luminaire	Ungrounded - line 1	Black	None	No band required	14
	Ungrounded - line 2	Red	None	No band required	14
	Grounded	White	None	No band required	14
Multiple highway lighting	Ungrounded - line 1	Black	None	ML1	10
	Ungrounded - line 2	Red	None	ML2	10
	Ungrounded - line 3	White	None	ML3	10
Lighting control	Ungrounded - Photoelectric unit	Black	None	C1	14
	Switching leg from Photoelectric unit or SM transformer	Red	None	C2	14
Service	Ungrounded - line 1 (signals)	Black	None	No band required	6
	Ungrounded - line 2 (lighting)	Red	None	No band required	8
Sign lighting	Ungrounded - line 1	Black	None	SL-1	10
	Ungrounded - line 2	Red	None	SL-2	10
Flashing beacons	Ungrounded between flasher and beacons	Red or yellow	None	FB-Location. ^c	14
Grounded circuit conductor	Push button assembly or accessible pedestrian signal	White	Black	No band required	14
	Signals and multiple lighting	White	None	No band required	10
	Flashing beacons and sign lighting	White	None	No band required	12
	Lighting control	White	None	C-3	14

	Service	White	None	No band required	14
Railroad preemption		Black	None	R	14
Spares		Black	None	No band required	14

Notes:

^aOn overlaps, the insulation is striped for the 1st phase in the designation, e.g., phase (2+3) conductor is striped as for phase 2.

^bBand for overlap and special phases as required

^cFlashing beacons having separate service do not require banding.

Delete the 4th paragraph of section 86-1.02F(2)(a).

10-19-18

Replace the 2nd paragraph of section 86-1.02F(2)(c)(ii) with:

An equipment grounding conductor must be insulated.

10-19-18

Replace the 3rd paragraph of section 86-1.02F(3)(d)(ii) with:

Cable must comply with the requirements shown in the following table:

10-19-18

Cable type	Conductor quantity and type	Cable jacket thickness (mils)		Maximum nominal outside diameter (inch)	Conductor color code
		Average	Minimum		

3CSC	3 no. 14	44	36	0.40	Blue/black stripe, blue/orange stripe, white/black stripe
5CSC	5 no. 14	44	36	0.50	Red, yellow, brown, black, white
9CSC	1 no. 12 8 no. 14	60	48	0.65	No. 12 - white, No. 14 - red, yellow, brown, black, red/black stripe, yellow/black stripe, brown/black stripe, white/black stripe
12CSC	1 no. 12 11 no. 14	60	48	0.80	No. 12 - white No. 14 - red, yellow, brown, black, red/black stripe, yellow/black stripe, brown/black stripe, black/red stripe, black/white stripe, red/white stripe, brown/white stripe
28CSC	1 no. 10 27 no. 14	80	64	0.90	No. 10 - white No. 14 - red/black stripe, yellow/black stripe, brown/black stripe, red/orange stripe, yellow/orange stripe, brown/orange stripe, red/silver stripe, yellow/silver stripe, brown/silver stripe, red/purple stripe, yellow/purple stripe, brown/purple stripe, red/2 black stripes, brown/2 black stripes, red/2 orange stripes, brown/2 orange stripes, red/2 silver stripes, brown/2 silver stripes, red/2 purple stripes, brown/2 purple stripes, blue/black stripe, blue/orange stripe, blue/silver stripe, blue/purple stripe, white/black stripe, black/red stripe, black

Replace the 3rd paragraph of section 86-1.02G with:

10-19-18

The self-adhesive reflective labels must:

1. Be from 3 to 5 mils thick
2. Have all black capital characters on a white background
3. Extend beyond the character by a minimum of 1/4 inch

Replace the 4th paragraph of section 86-1.02H with:

10-19-18

PVC electrical tape must have a minimum thickness of 6 mils.

Replace section 86-1.02K with:

10-19-18

86-1.02K Luminaires

86-1.02K(1) General

A luminaire must:

1. Be self-contained, not requiring assembly.
2. Comply with UL 1598 for luminaires in wet locations.
3. Have a power supply with ANSI/IEC rating of at least IP65.
4. Weigh less than 35 lb.
5. Have a minimum operating life of 100,000 hours when operated for an average time of 11.5 hours at an average temperature of 70 degrees F.
6. Operate over a temperature range from -40 to 130 degrees F.
7. Be operationally compatible with photoelectric controls.
8. Have a correlated color temperature range from 2700 to 3500 K and a color rendering index of 70 or greater.
9. Have a maximum-effective projected area of 1.4 sq ft when viewed from either side or end.
10. Comply with California Test 611.
11. Have a power factor of 0.90 or greater. The total harmonic distortion, current, and voltage induced into a power line by a luminaire must not exceed 20 percent.
12. Comply with the maximum power consumption and isofotocandle curves as shown.
13. Be on the Authorized Material List for LED luminaires or must be submitted for testing and addition to the AML.

A luminaire must include a surge protection device to withstand high-repetition noise transients caused by utility line switching, nearby lightning strikes, and other interferences. The device must protect the luminaire from damage and failure due to transient voltages and currents as defined in Tables 1 and 4 of ANSI/IEEE C64.41.2 for location category C-High. The surge protection device must comply with UL 1449 and ANSI/IEEE C62.45 based on ANSI/IEEE C62.41.2 definitions for standard and optional waveforms for location category C-High.

The luminaire must operate over the entire voltage range from 120 to 480 V(ac), 60 ± 3 Hz or one of the following:

1. From 95 to 277 V(ac) for luminaires rated 120 V(ac) or 240 V(ac)
2. From 347 to 480 V(ac) for luminaires rated 480 V(ac)

The fluctuations of line voltage must have no visible effect on the luminous output.

The L70 of the luminaire must be the minimum operating life or greater. Illuminance measurements must be calibrated to standard photopic calibrations.

The luminaire's housing must withstand a 1008 hour cyclic salt fog spray/UV test under ASTM D5894 and an evaluation under ASTM D714 with a blister size of 8 or greater and no more than medium density.

The luminaire's housing must be marine-grade alloy with less than 0.2 percent copper or die cast aluminum. All exposed aluminum must be anodized. A chromate conversion undercoating must be used underneath a thermoplastic polyester powder coat.

External bolts, screws, hinges, hinge pins, and door closure devices must be corrosion resistant.

The housing must be designed to prevent the buildup of water on its top surface. Exposed heat sink fins must be oriented to allow water to run off the luminaire and carry dust and other accumulated debris away from the unit. The optical assembly of the luminaire must be protected against dust and moisture intrusion to at least an UL 60529 rating of IP66. The power supply enclosure must be protected to at least an UL 60529 rating of IP43.

If the components are mounted on a down-opening door, the door must be hinged and secured to the luminaire's housing separately from other components. The door must be secured to the housing to prevent accidental opening. A safety cable must mechanically connect the door to the housing.

A luminaire must have a barrier-type terminal block secured to the housing to connect field wires. The terminal screws must be captive and equipped with wire grips for conductors up to no. 6.

The conductors and terminals must be identified and marked.

If needed, each refractor or lens must be made of UV-inhibiting high-impact plastic, such as acrylic or polycarbonate, or heat and impact-resistant glass. The refractor or lens must be resistant to scratching. Polymeric materials, except for the lenses of enclosures containing either the power supply or electronic components of the luminaire, must be made of UL94 V-0 flame-retardant materials.

The luminaire must be permanently marked inside the unit and outside of its packaging box. Marking consists of:

1. Manufacturer's name or trademark
2. Month and year of manufacture
3. Model, serial, and lot numbers
4. Rated voltage, wattage, and power in VA

An LED luminaire must:

1. Comply with Class A emission limits under 47 CFR 15(B) for the emission of electronic noise.
2. Have a power supply with:
 - 2.1. 2 leads to accept standard 0-10 V(dc).
 - 2.2. Dimming control compatible with IEC 60929, Annex E. If the control leads are open or the analog control signal is lost, the circuit must default to 100-percent power.
 - 2.3. Case temperature self rise of 77 degrees F or less above ambient temperature in free air with no additional heat sinks.
3. Have passive thermal management with enough capacity to ensure proper heat dissipation and functioning of the luminaire over its minimum operating life. The maximum junction temperature for the minimum operating life must not exceed 221 degrees F.
4. Have a junction-to-ambient thermal resistance of 95 degrees F per watt or less.
5. Contain circuitry that automatically reduces the power to the LEDs so the maximum junction temperature is not exceeded when the ambient temperature is 100 degrees F or greater.
6. Have a heat sink made of aluminum or other material of equal or lower thermal resistance. The use of fans or other mechanical devices is not allowed for cooling the luminaire.

The catastrophic loss or failure of 1 LED must not result in the loss of more than 20 percent of the total luminous output of the LED luminaire.

86-1.02K(2) Roadway Luminaires

A roadway luminaire must:

1. Have a housing color that matches a color no. 26152 to 26440, 36231 to 36375, or 36440 of AMS-STD-595
2. Have an ANSI C136.41-compliant, locking-type, photocontrol receptacle with dimming connections and a watertight shorting cap
3. Not allow more than 2.5 percent of the rated lumens to project above 80 degrees measured up from the vertical plane in the direction of the roadway
4. Have equipment identification character labels outside the unit on the side that will face the road. Equipment identification characters consist of:
 - 4.1. R1 for Roadway 1, R2 for Roadway 2, R3 for Roadway 3, and R4 for Roadway 4
 - 4.2. Rated wattage

The luminaire's housing must have a slip fitter that must:

1. Fit on mast arms with outside diameters from 1-5/8 to 2-3/8 inches
2. Be adjustable to a minimum of ± 5 degrees from the axis of the tenon in a minimum of 5 steps: +5, +2.5, 0, -2.5, -5
3. Have clamping brackets that:
 - 3.1. Are made of corrosion-resistant materials or treated to prevent galvanic reactions
 - 3.2. Do not bottom out on the housing bosses when adjusted within the designed angular range
 - 3.3. Do not permanently set in excess of 1/32 inch when tightened

86-1.02K(3) Overhead Sign Luminaires

An overhead sign luminaire must:

1. Have a uniformity average to minimum ratio of 10:1 for the distribution of light reflected on a 16' wide by 10' high sign panel
2. Not allow more than 2.5 percent of the rated lumens to project above 65 degrees measured up from the horizontal plane in the direction of the sign panel
3. Mount at a maximum height of 12 inches above the top of the mounting rails
4. Mount directly to the sign structure as shown or with a mounting adapter that meets the material requirements of the luminaire's housing

Replace section 86-1.02M with:

10-19-18

86-1.02M Photoelectric Controls

Photoelectric control types are as shown in the following table:

Photoelectric Control Types	
Control type	Description
I	Pole-mounted photoelectric unit. Test switch and a 15-A circuit breaker per ungrounded conductor, housed in an enclosure.
II	Pole-mounted photoelectric unit. Contactor, a 15-A circuit breaker per ungrounded conductor, and test switch located in a service equipment enclosure.
III	Pole-mounted photoelectric unit. Contactor, a 15-A circuit breaker per ungrounded conductor, and a test switch housed in an enclosure.
IV	A photoelectric unit that plugs into a NEMA twist-lock receptacle, integral with the luminaire.
V	A photoelectric unit, contactor, a 15-A circuit breaker per ungrounded conductor, and test switch located in a service equipment enclosure.

The pole-mounted adaptor for Type I, II, and III photoelectric controls must include a terminal block and cable supports or clamps to support the wires.

Photoelectric unit must:

1. Have a screen to prevent artificial light from causing cycling.
2. Have a rating of 60 Hz, 105-130 V(ac), 210-240 V(ac), or 105-240 V(ac).
3. Operate at a temperature range from -20 to 55 degrees C.
4. Consume less than 10 W.
5. Be a 3-prong, twist-lock type with a NEMA IP 65 rating, ANSI C136.10-compliant.
6. Have a fail-on state.
7. Fit into a NEMA-type receptacle.
8. Turn on from 1 to 5 footcandles and turn off from 1.5 to 5 times the turn-on level. Measurements must be made by procedures in *EEI-NEMA Standards for Physical and Electrical Interchangeability of Light-Sensitive Control Devices Used in the Control of Roadway Lighting*.

Type I, II, III, and V photoelectric controls must have a test switch to allow manual operation of the lighting circuit. Switch must be:

1. Single-hole mounting, toggle type
2. 15 A, single pole and single throw
3. Labeled *Auto-Test* on a nameplate

Photoelectric control's contactor must be:

1. Normally open
2. Mechanical-armature type with contacts of fine silver, silver alloy, or equal or better material
3. Installed to provide a minimum space of 2-1/2 inches between the contactor terminals and the enclosure's sides

The terminal blocks must be rated at 25 A, 600 V(ac), molded from phenolic or nylon material, and be the barrier type with plated-brass screw terminals and integral marking strips.

Replace section 86-1.02N with:

10-19-18

86-1.02N Fused Splice Connectors

The fused splice connector for 240 and 480 V(ac) circuits must simultaneously disconnect both ungrounded conductors. The connector must not have exposed metal parts except for the head of the stainless steel assembly screw. The head of the assembly screw must be recessed a minimum of 1/32 inch below the top of the plastic boss that surrounds the head.

The connector must protect the fuse from water or weather damage. Contact between the fuse and fuse holder must be spring loaded.

Fuses must:

1. Be standard, midget, ferrule type
2. Have a nontime-delay feature
3. Be 13/32 by 1-1/2 inches

Fuse ratings for luminaires are shown in the following table:

Fuse Current Rating Requirements		
Circuit voltage	Fuse voltage rating	Soffit and roadway luminaires
120 V(ac)	250 V(ac)	5 A
240 V(ac)	250 V(ac)	5 A
480 V(ac)	500-600 V(ac)	5 A

Fuse ratings for transformers are shown in the following table:

Fuse Current Rating Requirements

Circuit voltage	Fuse voltage rating	Fuse current rating for		
		Single phase (two wires)	Transformers (primary side)	
		1 kVA	2 kVA	3 kVA
120 V(ac)	250 V(ac)	10 A	20 A	30 A
240 V(ac)	250 V(ac)	6 A	10 A	20 A
480 V(ac)	500-600 V(ac)	3 A	6 A	10 A

Replace section 86-1.02P(1) with:

10-19-18

86-1.02P(1) General

The enclosures must be rated NEMA 3R and include a dead front panel and a hasp with a 7/16-inch-diameter hole for a padlock.

Except for a service equipment enclosure, an enclosure must:

1. Be manufactured from steel and either galvanized, cadmium plated, or powder coated
2. Mount to a standard, pole, post, or sign structural frame
3. Provide a minimum space of 2-1/2 inches between the internal components and the enclosure's sides

The enclosure's machine screws and bolts must not protrude outside the cabinet wall.

The fasteners on the exterior of an enclosure must be vandal resistant and not be removable. The exterior screws, nuts, bolts, and washers must be stainless steel.

Replace the 1st paragraph of section 86-1.02P(2) with:

04-19-19

Service equipment enclosure must:

1. Comply with the Electric Utility Service Equipment Requirements Committee
2. Meet the requirements of the service utility
3. Be watertight
4. Be factory wired and manufactured from steel and galvanized or have factory-applied, rust-resistant prime and finish coats, except Types II and III
5. Be marked as specified in NEC to warn of potential electric-arc flash hazards

04-19-19

Delete the 5th paragraph of 86-1.02P(2).

Add between 6th and 7th paragraphs of section 86-1.02P(2):

10-19-18

Service equipment enclosure must have the meter view windows located on the front side of the enclosure for Types III-AF, BF, CF and DF.

Service equipment enclosure must have the meter view windows located on the back side of the enclosure for Types III-AR, BR, CR and DR.

Replace the 7th paragraph of section 86-1.02P(2) with:

04-19-19

The meter area must have a sealable, lockable, weather-tight cover that can be removed without the use of tools.

Delete the 2nd sentence of the 9th paragraph of section 86-1.02P(2).

04-19-19

Delete section 86-1.02P(3).

10-19-18

Replace section 86-1.02Q(4)(a) with:

10-19-18

86-1.02Q(4)(a) General

The doors of a telephone demarcation cabinet must be attached using continuous aluminum steel piano hinges.

Add between the 2nd and 3rd paragraphs of section 86-1.02R(2):

10-19-18

Bracket arms must be long enough to allow proper alignment of signals and backplate installation.

Replace item 2 in the list in the 5th paragraph of section 86-1.02R(4)(a)(iii) with:

10-19-18

2. Be a black color throughout, including the door, matching color no. 17038, 27038, or 37038 of AMS-STD-595

Add to the beginning of section 86-1.02T:

04-19-19

Accessible pedestrian signal must be on the Authorized Material List for Accessible Pedestrian Signals.

Replace the 5th and 6th paragraphs of section 86-1.02T with:

10-19-18

The color of a metallic housing must match color no. 33538 of AMS-STD-595.

The color of a plastic housing must match color no. 17038, 27038, or 37038 of AMS-STD-595.

Replace the 7th paragraph of section 86-1.02T with:

04-19-19

Accessible pedestrian signal must:

1. Have controllable and programmable volume level and messaging
2. Be weatherproof and shockproof

Replace the 11th paragraph of section 86-1.02T with:

10-19-18

The cable between the accessible pedestrian signal assembly and the pedestrian signal head must be rated for outdoor use and have a:

1. Minimum four no. 18 stranded or larger tinned copper conductors with a minimum insulation thickness of 15 mils
2. Cable jacket with a minimum thickness of 20 mils and rated for a minimum:
 - 2.1. 300 V(ac)
 - 2.2. 80 degrees C
3. Nominal outside diameter less than 350 mils
4. Conductor color code of black, white, red and green

Replace the 1st paragraph of section 86-1.02U with:

10-19-18

The housing for a push button assembly must be made of die-cast aluminum, permanent mold-cast aluminum, or UV-stabilized self-extinguishing structural plastic.

The housing must have a uniform color that matches color no. 17038, 27038, or 37038 of AMS-STD-595.

Replace the 2nd paragraph of section 86-1.02W(4) with:

10-19-18

The cured hot-melt rubberized asphalt sealant must comply with the requirements shown in the following table:

Cured Hot-Melt Rubberized Asphalt Sealant Requirements

Quality characteristic	Test method	Requirement
Cone penetration, 25 °C, 150 g, 5 s (max, 1/10 mm)	ASTM D5329	35
Flow, 60 °C, 5 hr (max, mm)		5
Resilience, 25 °C (min, %)		25
Softening point (min, °C)	ASTM D36	82
Ductility, 25 °C, 5 cm/min (min, cm)	ASTM D113	30
Flash point, Cleveland Open Cup (min, °C)	ASTM D92	288
Viscosity, no. 27 spindle, 20 rpm, 190 °C (Pa•s)	ASTM D4402	2.5–3.5

Replace the 2nd paragraph of section 86-1.02Y with:

10-19-18

A transformer must be a dry type designed for operation on a 60 Hz supply. The transformer must have a decal showing a connection diagram. The diagram must show either color coding or wire tagging with primary (H1, H2) or secondary (X1, X2) markers and the primary and secondary voltage and volt-ampere rating. A transformer must comply with the electrical requirements shown in the following table:

Transformer Electrical Requirements

Quality characteristic	Requirement
Rating (V(ac))	120/240, 120/480, 240/120, 240/480, 480/120, or 480/240
Efficiency (%)	> 95
Secondary voltage regulation and tolerance from half load to full load (%)	±3

AA

87 ELECTRICAL SYSTEMS

04-19-19

Replace *Reserved* in section 87-1.01C with:

10-19-18

Submit a digital file for geographic information system mapping for:

1. Conduit
2. Pull boxes
3. Cabinets
4. Service equipment enclosures
5. Standards

The digital file must consist of:

1. Longitudinal and latitude coordinates, under the WGS84 reference coordinate system. The coordinates must be in decimal format having 6 significant figures after the decimal point. Coordinates must be read at the center of pull boxes, cabinet, standards, and service equipment enclosures; and on top of conduit at 20-foot intervals before backfill.
2. Type, depth and size for conduits.
3. Type for pull boxes, standards, cabinets, and service equipment enclosures.

Replace item 4 in the list in the 1st paragraph of section 87-1.01D(2)(a) with:

10-19-18

4. Luminaires

Replace section 87-1.01D(2)(d) with:

10-19-18

87-1.01D(2)(d) Piezoelectric Axle Sensors

Piezoelectric axle sensors test consists of:

1. Demonstrating for each sensor:
 - 1.1. Capacitance is within 20 percent of the value shown on the sensor's data sheet
 - 1.2. Dissipation factor is less than 0.04 nF when measured in the 20 nF range
 - 1.3. Resistance is greater than 20 Megaohms
2. Collecting a minimum of 100 vehicle records for each lane and demonstrating:
 - 2.1. Volume is within ± 3 percent accuracy
 - 2.2. Vehicle classification is within 95 percent accuracy by type

Replace the 7th paragraph of section 87-1.03A with:

10-19-18

Notify the Engineer immediately if an existing facility is damaged by your activities:

1. Damaged existing traffic signal systems must be repaired or replaced within 24 hours. If the system cannot be fixed within 24 hours or it is located on a structure, provide a temporary system until the system can be fixed.
2. Damaged existing lighting systems must be repaired or replaced by nightfall. If the system cannot be fixed by nightfall, provide a temporary system until the system can be fixed.

Add to the end of section 87-1.03A:

10-19-18

Collect the geographic information system mapping data.

Replace the 12th paragraph of section 87-1.03B(1) with:

10-19-18

For Type 1, 2, and 5 conduits, use threaded bushings and bond them using a jumper. For other types of conduit, use nonmetallic bushings or end bell.

Replace the 3rd paragraph of section 87-1.03B(3)(a) with:

10-19-18

Place a minimum of 2 inches of sand bedding in a trench before installing the conduit and 18 inches of slurry cement over the conduit before placing additional backfill material.

The slurry must be pigmented to match AMS-STD-595.

Replace the 1st sentence in the 6th paragraph of section 87-1.03B(3)(c) with:

10-19-18

Backfill trench with slurry concrete under section 19-3.02E.

Replace the 9th paragraph of section 87-1.03B(3)(c) with:

10-19-18

Install innerducts as one continuous unit between vaults. Innerducts may be interrupted inside pull boxes located between vaults and cabinets.

Replace section 87-1.03D with:

10-19-18

87-1.03D Reserved

Replace section 87-1.03E(2) with:

04-19-19

Dig a trench for the electrical conduits or direct burial cables. Do not excavate until the installation of the conduit or direct burial cables.

Place excavated material in a location that will not interfere with traffic or surface drainage.

After placing the conduit or direct burial cable, backfill the trench.

Compact the backfill to a minimum relative compaction of:

1. 95 percent when placed within the hinge points and in areas where pavement is to be constructed
2. 90 percent when placed outside the hinge points and not under pavement

Restore the sidewalks, pavement, and landscaping at a location before starting excavation at another location.

Replace section 87-1.03E(3) with:

10-19-18

87-1.03E(3) Concrete Pads, Foundations, and Pedestals

Construct foundations for standards, poles, metal pedestals, and posts under section 56-3.

Construct concrete pads, foundations, and pedestals for controller cabinets, telephone demarcation cabinets, and service equipment enclosures on firm ground.

Install anchor bolts using a template to provide proper spacing and alignment. Moisten the forms and ground before placing the concrete. Keep the forms in place until the concrete sets for at least 24 hours to prevent damage to the surface.

Use minor concrete for pads, foundations, and pedestals.

Construct a pad in front of a Type III service equipment enclosure. The pad must be 24 inches in length, 4 inches in thickness, and must match the width of the foundation.

In unpaved areas, place the top of the foundation 6 inches above the surrounding grade, except place the top:

1. 1 foot 6 inches above the grade for 336L cabinets
2. 1 foot 8 inches above the grade for Type C telephone demarcation cabinets
3. 2 inches above the grade for Type III service equipment enclosures

The pad must be 2 inches above the surrounding grade in unpaved areas.

In and adjacent to the sidewalk and other paved areas, place the top of the foundation 4 inches above the surrounding grade, except place the top:

1. 1 foot 6 inches above the grade for 336L cabinets
2. 1 foot 8 inches above the grade for Type C telephone demarcation cabinets
3. Level with the finished grade for Type G and Type A cabinets and Type III service equipment enclosures

The pad must be level with the finished grade in paved areas.

Apply an ordinary surface finish under section 51-1.03F.

Allow the foundation to cure for at least 7 days before installing any equipment.

Replace the last paragraph of section 87-1.03F(1) with:

04-19-19

Install a tracer wire.

Replace the 1st paragraph of section 87-1.03F(3)(c)(ii) with:

10-19-18

Install a Type 1 or 2 inductive loop conductor except use Type 2 for Type E and F loop detectors.

Delete the last paragraph of section 87-1.03G.

10-19-18

Replace the 4th paragraph of section 87-1.03H(2) with:

10-19-18

Use Method B as follows:

1. Cover the splice area completely with an electrical insulating coating and allow it to dry.
2. Apply 3 layers of half-lapped, PVC electrical tape.
3. Apply 2 layers of butyl-rubber, stretchable tape with liner.
4. Apply 3 layers of half-lapped, PVC, pressure-sensitive, adhesive tape.
5. Cover the entire splice with an electrical insulating coating and allow it to dry.

Replace section 87-1.03N with:

10-19-18

87-1.03N Fused Splice Connectors

Install a fuse splice connector with a fuse in each ungrounded conductor for luminaires, except for overhead sign luminaires. The connector must be located in the pull box adjacent to the luminaires.

If the pull box for the roadway luminaire is tamper resistant, install a fuse splice connector with 10 A fuse in the pull box and an additional fuse splice connector with a 5 A fuse in the handhole.

Install a fuse splice connector with a fuse on primary side of transformer.

Crimp the connector terminals onto the ungrounded conductors using a tool under the manufacturer's instructions. Insulate the terminals and make them watertight.

Add to the end of section 87-1.03T:

10-19-18

When replacing an existing accessible pedestrian signal, the housing color must match the color of the existing housing.

Add to the end of section 87-1.03U:

10-19-18

When replacing an existing push button assembly, the housing color must match the color of the existing housing.

Add between the 1st and 2nd paragraphs of section 87-1.03Y:

04-19-19

Use a submersible type transformer inside pull boxes.

Replace the 2nd paragraph of section 87-2.03A with:

10-19-18

Tighten the cap screws of the luminaire's clamping bracket to 10 ft-lb for roadway luminaires.

Replace section 87-3 with:

10-19-18

87-3 SIGN ILLUMINATION SYSTEMS

87-3.01 GENERAL

Section 87-3 includes specifications for constructing sign illumination systems.

Sign illumination system includes:

1. Foundations

2. Pull boxes
3. Conduit
4. Conductors
5. Overhead sign luminaires
6. Service equipment enclosure
7. Photoelectric control

The components of a sign illumination system are shown on the project plans.

87-3.02 MATERIALS

Reserved

87-3.03 CONSTRUCTION

Perform the conductor test.

Install overhead sign luminaires under the manufacturer's instructions.

Do not modify the sign structure or mounting channels.

Perform the operational tests for the system.

87-3.04 PAYMENT

Not Used

Replace section 87-4.01D with:

87-4.01D Quality Assurance

10-19-18

Reserved

Replace section 87-4.02B with:

87-4.02B Battery Backup System

10-19-18

A battery backup system includes the cabinet, batteries, and the Department-furnished electronics assembly.

The electronics assembly includes the inverter/charger unit, power transfer relay, manually-operated bypass switch, battery harness, utility interconnect wires, battery temperature probe, and relay contact wires.

Replace the 2nd sentence in the 15th paragraph of section 87-4.02C with:

The background must comply with color no. 14109 of AMS-STD-595.

10-19-18

Replace section 87-4.03B with:

87-4.03B Battery Backup System Cabinets

10-19-18

Install the battery backup system cabinet to the right of the controller cabinet.

If installation on the right side is not possible, obtain authorization for installation on the left side.

Provide access for power conductors between the cabinets using:

1. 2-inch nylon-insulated, steel chase nipple
2. 2-inch steel sealing locknut
3. 2-inch nylon-insulated, steel bushing

Remove the jumper between the terminals labeled *BBS-1* and *BBS-2* in the 5 position terminal block in the controller cabinet before connecting the Department-furnished electronics assembly.

Replace section 87-7.02 with:

10-19-18

87-7.02 MATERIALS

Flashing beacon control assembly includes:

1. Enclosure.
2. Barrier-type terminal blocks rated for 25 A, 600 V(ac), made of molded phenolic or nylon material and have plated-brass screw terminals and integral marking strips.
3. Solid state flasher complying with section 8 of NEMA standards publication no. TS 1 for 10 A, dual circuits.
4. 15-A, circuit breaker per ungrounded conductor.
5. Single-hole-mounting toggle type, single-pole, single-throw switches rated at 12-A, 120 V(ac). Switches must be furnished with an indicating nameplate reading *Auto - Test*. A 15-A circuit breaker may be used in place of the toggle switch.

Replace 87-8 with:

10-19-18

87-8 PEDESTRIAN HYBRID BEACON SYSTEMS

87-8.01 GENERAL

87-8.01A Summary

Section 87-8 includes specifications for constructing pedestrian hybrid beacon system.

A pedestrian hybrid beacon system includes:

1. Foundations
2. Pull boxes
3. Conduit
4. Conductors and cables
5. Standards
6. Pedestrian hybrid beacon face
7. Pedestrian signal heads
8. Service equipment enclosure
9. Department-furnished controller assembly
10. Accessible pedestrian signals
11. Push button assemblies
12. Luminaires
13. Fuse splice connectors
14. Battery backup system

The components of a pedestrian hybrid beacon system are shown on the project plans.

87-8.01B Definitions

Reserved

87-8.01C Submittals

Reserved

87-8.01D Quality Assurance

87-8.01D(1) General

Reserved

87-8.01D(2) Quality Control

Verify the sequence for the pedestrian hybrid beacon system per California Chapter 4F, Figure 3F-3 "Sequence for a Pedestrian Hybrid Beacon" during the operational test.

Test the battery backup system under section 87-1.01D(2)(c).

87-8.02 MATERIALS

87-8.02A General

The system must comply with California *MUTCD*, Chapter 4F.

The battery backup system must comply with section 87-4.02B.

87-8.02B Pedestrian Hybrid Beacon Face

A pedestrian hybrid beacon face consists of three 12-inch signal heads.

87-8.03 CONSTRUCTION

Install pedestrian hybrid beacon system under sections 87-4.03A and 87-4.03B.

87-8.04 PAYMENT

Not Used

Replace the 1st paragraph of section 87-12.03 with:

Install changeable message sign on sign structure under section 56-2.

10-19-18

Replace section 87-14.02 with:

87-14.02 MATERIALS

10-19-18

87-14.02A General

Vehicle speed feedback sign consists of a housing, display window, and radar unit.

Sign must:

1. Comply with the California *MUTCD*, Chapter 2B
2. Have an operating voltage of 120 V(ac) for permanent installations
3. Have a maximum weight of 45 lb
4. Have a wind load rating of 90 mph
5. Have an operating temperature range from -34 to 165 degrees F

6. Have a retroreflective white sheeting background

87-14.02B Housings

Housing must:

1. Be weatherproof (NEMA 3R or better) and vandal resistant
2. Be made of 0.09-inch-gauge welded aluminum with the outer surfaces being UV resistant
3. Have the manufacturer's name, model number, serial number, date of manufacture, rated voltage and rated current marked inside
4. Have the internal components easily accessible for field repair without removal of the sign

87-14.02C Display Windows

Display window consists of a cover, LED character display, and dimming control. Character display and cover must deflect together without damage to the internal electronics and speed detection components.

Cover must be:

1. Vandal resistant and shock absorbent
2. Field replaceable with the removal of external stainless-steel, tamper proof fasteners

Cover must be made of a minimum 0.25-inch-thick, shatter-resistant polycarbonate.

LED character display must:

1. Consist of two 7-segment, solid-state, numeric characters, which must:
 - 1.1. Be a minimum 15 inches in height
 - 1.2. Be visible and legible from a minimum distance of 1500 feet and legible from a minimum distance of 750 feet
 - 1.3. Consist of a minimum 16 LEDs, which must:
 - 1.3.1. Be amber and have a wavelength from 590 to 600 nm and rated for minimum 100,000 hours
 - 1.3.2. Must maintain a minimum 85 percent of the initial light output after 48 months of continuous use over the temperature range
2. Be capable of displaying the detected vehicle speed within 1 second
3. Remain blank when no vehicles are detected within the radar detection zone
4. Have the option to flash the pre-set speed limit when the detected vehicle speed is 5 miles higher than the pre-set speed
5. Be viewable only by the approaching traffic

Dimming control must:

1. Automatically adjust the character light intensity to provide optimum character visibility and legibility under all ambient lighting conditions
2. Have minimum 3 manual dimming modes of different intensities

87-14.02D Radar Units

Radar unit must:

1. Be able to detect up to 3 lanes of approaching traffic
2. Operate with an internal, low power, 24.159 GHz (K-band)
3. Be FCC approved Part 15 certified
4. Have a speed accuracy of ± 1 mph
5. Have a maximum 15 W power consumption

Replace 87-19 with:

10-19-18

87-19 FIBER OPTIC CABLE SYSTEMS

87-19.01 GENERAL

87-19.01A Summary

Section 87-19 includes specifications for constructing fiber optic cable systems.

A fiber optic cable system includes:

1. Conduit and accessories
2. Vaults
3. Warning tape
4. Fiber optic cables
5. Fiber optic splice enclosures
6. Fiber distribution units
7. Fiber optic markers
8. Fiber optic connectors and couplers

The components of a fiber optic system are shown on the project plans.

87-19.01B Definitions

Reserved

87-19.01C Submittals

At least 15 days before cable installation, submit:

1. Manufacturer's procedures for pulling fiber optic cable
2. Test reports from a laboratory accredited to International Standards Organization/International Electrotechnical Commission 17025 by the American Association for Laboratory Accreditation (A2LA) or the ANSI-ASQ National Accreditation Board (ANAB) for:
 - 2.1. Water penetration
 - 2.2. Cable temperature cycling
 - 2.3. Cable impact
 - 2.4. Cable tensile loading and fiber strain
 - 2.5. Cable compressive loading
 - 2.6. Compound flow
 - 2.7. Cyclic flexing
3. Proof of calibration for the test equipment including:
 - 3.1. Name of calibration facility
 - 3.2. Date of calibration
 - 3.3. Type of equipment, model number and serial number
 - 3.4. Calibration result

Submit optical time-domain reflectometer data files for each test in a Microsoft Excel format.

After performing the optical time-domain reflectometer test and the power meter and light source test, submit within 4 business days a hard copy and electronic format:

1. Cable Verification Worksheet
2. Segment Verification Worksheet
3. Link Loss Budget Worksheet

The worksheets are available at the Division of Construction website.

87-19.01D Quality Assurance

87-19.01D(1) General

Reserved

87-19.01D(2) Quality Control

Notify the Engineer 4 business days before performing field tests. Include exact location of the system or components to be tested. Do not proceed with the testing until authorized. Perform each test in the presence of the Engineer.

The optical time-domain reflectometer test consists of:

1. Inspecting the cable segment for physical damage.
2. Measuring the attenuation levels for wavelengths of 1310 and 1550 nm in both directions for each fiber using the optical time-domain reflectometer.
3. Comparing the test results with the data sheet provided with the shipment. If there are attenuation deviations greater than 5 percent, the test will be considered unsatisfactory and the cable segment will be rejected. The failure of any single fiber is a cause for rejection of the entire segment. Replace any rejected cable segments and repeat the test.

The power meter and light source test consists of:

1. Testing each fiber in a link using a light source at one end of the link and a power meter at the other end
2. Measuring and recording the power loss for wavelengths of 1310 and 1550 nm in both directions

Index matching gel is not allowed.

Installation and splicing of the fiber optic cable system must be performed by a certified fiber optic installer.

The optical time-domain reflectometer test and the power meter and light source test must be performed by a certified fiber optic technician.

The certification for the fiber optic installer and fiber optic technician must be from an organization recognized by the International Certification Accreditations Council and must be current throughout the duration of the project.

87-19.02 MATERIALS

87-19.02A General

All metal components of the fiber optic cable system must be corrosion resistant.

All connectors must be factory-installed and tested.

Patch cords, pigtails, and connectors must comply with ANSI/TIA-568.

Pigtails must have a minimum 80 N pull out strength.

A splice cassette may be used in place of a pigtail and a splice tray.

Each cable reel must have a weatherproof label or tag with information specified in ANSI/ICEA S-87-640 including:

1. Contractor's name
2. Contract number
3. Number of fibers
4. Cable attenuation loss per fiber at 1310 and 1550 nm

The labeled or tagged information must also be in a shipping record in a weatherproof envelope. The envelope must be removed only by the Engineer.

87-19.02B Vaults

A vault must:

1. Comply with section 86-1.02C and AASHTO HS 20-44, and load tested under AASHTO M 306.
2. Be a minimum:
 - 2.1. 4 feet wide by 4 feet high by 4 feet long nominal inside dimensions for box type.
 - 2.2. 4 feet high by 4 feet outside diameter for round type.
3. Have a minimum access of:
 - 3.1. 30 inches diameter for round type.
 - 3.2. 3 feet wide by 3 feet long for box type.
4. Be precast either modular or monolithic.
5. Have cable racks installed on the interior sides. A rack must:
 - 5.1. Be fabricated from ASTM A36 steel plate.
 - 5.2. Support a minimum of 100 pounds per rack arm.
 - 5.3. Support a minimum of 4 splice enclosures and a minimum of 4 cables with a minimum slack of 50 feet each.
 - 5.4. Be hot-dip galvanized after manufacturing.
 - 5.5. Be bonded and grounded.
6. Have a minimum:
 - 6.1. Two 4-inch diameter knockouts on each side for box type.
 - 6.2. Two 4-inch diameter knockouts placed every 90 degrees for round type.
7. Have a minimum 2-inch-diameter drain hole at the center of base.

Entry points for knockouts must not cause the cable to exceed its maximum bend radius.

The access cover must:

1. Be a two-piece torsion-assisted sections or a minimum 30-inch-diameter cast iron.
2. Have inset lifting pull slots.
3. Have markings *CALTRANS* and *FIBER OPTIC*.

87-19.02C Fiber Optic Cable

The fiber optic cable must:

1. Comply with 7 CFR parts 1755.900, 1755.901, and 1755.902, and ANSI/ICEA S-87-640
2. Be a singlemode, zero-dispersion, and have non-gel loose type buffer tubes
3. Have no splices
4. Have a Type H or Type M outer jacket
5. Be shipped on a reel
6. Have 10 feet of length on each end of the cable accessible for testing

87-19.02D Fiber Optic Splice Enclosures

A fiber optic splice enclosure must:

1. Not exceed 36 inches in length, 8 inches in width, and 8 inches in height
2. Be made of thermoplastic material, weather proof, chemical and UV resistant, and re-sealable
3. Accommodate a minimum of 8 internal splice trays
4. Have from 1/4 to 1 inch in diameter cable entry ports
5. Have brackets, clips and cable ties
6. Have means to anchor the dielectric member of the fiber optic cable
7. Include grounding hardware

87-19.02E Fiber Distribution Units

The fiber distribution unit consists of a housing, a patch panel, a 12-multicolor pigtail, and a splice tray.

The fiber distribution unit must be self-contained and pre-assembled.

The housing must:

1. Be a 19-inch rack-mountable modular-metal enclosure
2. Be a one rack unit
3. Have cable clamps to secure buffer tube to the chassis
4. Have cable accesses with rubber grommets or similar material to prevent the cable from coming in contact with the bare metal
5. Be weatherproof
6. Have a hinged top door with a latch or thumbscrew to hold it in the closed position

A patch panel must have a minimum of 12-singlefiber type connector sleeves.

A pigtail must:

1. Be a simplex single mode fiber in a 900 μm tight buffer with a 12-inch-outer-diameter PVC jacket
2. Have a fiber optic connector attached on one end and bare fiber on the other end
3. Be at least 3 feet in length
4. Have the manufacturer's part number on the jacket

Pigtails must be single-fiber or ribbon type.

87-19.02F Patch Cords

Patch cords must:

1. Be a singlemode fiber in a 900 μm tight buffer with a 0.12-inch-outer-diameter PVC jacket
2. Have fiber optic connectors attached on both ends
3. Be at least 6 feet in length
4. Have manufacturer's part number on the jacket

Duplex patch cords must be of round cable structure, and not have zip-cord structure.

87-19.02G Splice Trays

Splice trays must:

1. Have brackets to spool incoming fibers a minimum of 2 turns.
2. Have means to secure and protect incoming buffer tubes, pigtails, and a minimum of 12 heat shrink fusion splices.
3. Be stackable.
4. Have a snap-on or hinged cover. The cover may be transparent.

87-19.02H Fiber Optic Markers

Fiber optic markers must be:

1. Type K-2 (CA) object markers for vaults or pull boxes.
2. Disk markers for paved areas and transition points from unpaved to paved areas. The disk marker must be metallic, lead free and 4 inches in diameter, and must have a mounting stem at the center of the disk. The mounting stem must be a minimum 3 inches long and a minimum 0.70 inch in diameter.
3. Non-reflective Class 1, Type F, flexible post delineators for unpaved areas.

87-19.02I Fiber Optic Connectors and Couplers

Connectors must be:

1. 0.1-inch ceramic ferrule pre-radiused type
2. Capped when not used

Couplers must be made of the same material as the connector's housing and have ceramic sleeves.

Singlemode fiber optic connectors must have a yellow strain relief boot or a yellow base.

87-19.03 CONSTRUCTION

87-19.03A General

Perform the optical time-domain reflectometer test:

1. On the fiber optic cable upon its arrival to the job site and before its installation. Complete the Cable Verification Worksheet. Do not install the fiber optic cable until the Engineer's written approval is received.
2. After the fiber optic cable segments have been pulled, but before breakout and termination. Complete the Segment Verification Worksheet.
3. Once the passive cabling system has been installed and is ready for activation. If the measured individual fusion splice losses exceed -0.30 dB, re-splice and retest. At the conclusion of the optical time-domain reflectometer test, perform the power meter and light source test. If the measured link loss exceeds the calculated link loss, replace the unsatisfactory cable segments or splices and retest. Complete the Link Loss Budget Worksheet.

87-19.03B Vaults Installation

Install a vault as shown and with the side facing the roadway a minimum of 2 feet from the edge of pavement or back of dike, away from traffic.

Install the top of the vault flush with surrounding grade in paved areas and 2 inches above the surrounding grade in unpaved areas.

Place 6 inches of minor concrete around vaults. In unpaved areas, finish top of concrete at a 2 percent slope away from cover. In paved areas, finish top of concrete to match existing slope.

Bolt the steel cover to the vault when not working in it.

87-19.03C Fiber Optic Cable Installation

Install fiber optic cable by a certified installer or a representative from the fiber optic cable manufacturer during installation.

When using mechanical aids to install fiber optic cable:

1. Maintain a cable bend radius at least twenty times the outside diameter of the cable
2. Use cable grips having a ball bearing swivel
3. Use a pulling force on a cable not to exceed 500 pound-foot or manufacturer's recommended pulling tension, whichever is less

When installing the cable using the air blown method, the cable must withstand a static air pressure of 110 psi.

Lubricate the cable using a lubricant recommended by the cable manufacturer.

Install fiber optic cable without splices except where shown.

Provide a minimum of 65 feet of slack for each fiber optic cable at each vault. Divide the slack equally on each side of the splice enclosure.

Install tracer wires in the fiber optic conduits and innerducts as shown. Provide a minimum 5 feet of slack tracer wire in each pull box and vault from each direction. You may splice tracer wire at intervals of not less than 500 feet and only inside vaults or pull boxes.

If a fiber optic cable and tracer wire is installed in an innerduct, pulling a separate fiber optic cable into a spare duct to replace damaged fiber will not be allowed.

Apply a non-hygroscopic filling compound to fiber optic cable openings.

Seal the ends of conduit and innerducts after cables are installed.

Install strain relief for fiber optic cable entering a fiber optic enclosure.

Identify fibers and cables by direct labeling, metal tags, or bands fastened in such a way that they will not move. Use mechanical methods for labeling.

Provide identification on each fiber optic cable or each group of fiber optic cables in each vault and at the end of terminated fibers. Fiber optic cable must be identified as shown in the following table:

Cable Identification^a

Sequence order	Description	Code	Numbers of characters
1	Fiber type	S: Singlemode	1
2	Fiber count	###: Example 048	3
3	Begin point	T: TMC H: Hub V: Video Node D: Data Node C: Cable Node TV: Camera CM: CMS E: Traffic Signal RM: Ramp Meter TM: Traffic Monitoring/ Count Station/Vehicle Count Station (VDS, TMS) HA: Highway Advisory Radio EM: Extinguishable Message Sign RW: Roadway Weather Information System WM: Weigh In Motion WS: Weigh-Station Bypass System SV: Vault SC: Splice Cabinet	1 or 2
4	Begin point county abbreviation	AA or AAA: Examples: Orange (ORA), San Mateo (SM)	2 or 3
5	Begin point route number	###: Examples: 005, 082, 114	3
6	Begin point post mile	#####: 02470 (example 024.70): Actual PM value to the 1/100 value	5
7	End Point	In the same way as for Begin Point	1 or 2
8	End point county abbreviation	In the same way as for Begin Point County Abbreviation	2 or 3
9	End point route number	In the same way as Begin Point Route Number	3
10	End point post mile	In the same way as Begin Point Post Mile	5

^aCable identification example: The cable code S 048 SV SM 084 02470 SV SC 082 02510 describes a singlemode, 48 strand, cable starting at a fiber optic vault in San Mateo County on Route 84 at post mile 24.70, and ending at another fiber optic vault in Santa Clara County on Route 82 at post mile 25.10.

Place labels on the cables at the following points:

1. Fiber optic vault and pull box entrances and exits
2. Splice enclosures entrance and exit
3. Fiber distribution unit entrance

Lace fiber optic cable inside controller cabinets and secure to the cage.

Support the fiber optic cable within 6 inches from a termination and every 2 feet.

Secure fiber optic cables to the cable racks. Store excess cable in a figure 8 fashion.

87-19.03D Fiber Optic Cable Splices

Use fusion splicing for fiber optic cables.

Splice single-buffer tube cable to multi-buffer tube cable using the mid-span access method under manufacturer's instructions. Any mid-span access splice or fiber distribution unit termination must involve only those fibers being spliced as shown.

Place fiber splices in the splice enclosures installed in the vaults.

87-19.03E Splice Enclosures Installation

Maintain an equal amount of slack on each side of the splice enclosure.

Secure the fiber optic splices in splice tray.

Secure the splice trays to the inner enclosure.

Label cables and buffer tubes.

Do not seal fiber splice enclosure until authorized and the power meter and light source test is performed. Seal the enclosure under manufacturer's instructions.

Flash test the outer enclosure under manufacturer's instructions in the presence of the Engineer. Visually inspect the enclosure. If bubbles are present, identify the locations where the bubbles are present, take corrective actions and repeat the flash test until no bubbles are present.

Attach the splice enclosure to the side wall of a vault or hub with a minimum 2 feet distance between the ground and the bottom of the enclosure.

Secure fiber optic cables to the chassis using cable clamps for fiber optic units.

Connect a minimum of one bonding conductor to a grounding electrode after mounting the fiber optic enclosure to the wall. If there are multiple bonding conductors, organize the conductors in a neat way.

87-19.03F Fiber Optic Distribution Unit Installation

Spool incoming buffer tubes 2 feet in the splice tray and expose 1 foot of individual fibers.

Maintain a minimum 2-inch-bend radius during and after installation in the splice tray.

Splice incoming fibers in the splice tray.

Restrain each fiber in the splice tray. Do not apply stress on the fiber when located in its final position.

Secure buffer tubes near the entrance of the splice tray.

Secure splice trays under manufacturer's instructions.

Label splice tray after splicing is completed.

Install patch cords in fiber distribution units and patch panels. Permanently label each cord and each connector in the panel with the system as shown.

87-19.03G Fiber Optic Markers Installation

Install fiber optic markers at 12-inch offset on the side furthest away from the edge of travel way:

1. For fiber optic cable at 500 feet apart in areas where the distance between vaults or pull boxes is greater than 500 feet
2. Adjacent to vaults and pull boxes
3. For fiber optic cable turns at:
 - 3.1. Beginning of the turn
 - 3.2. Middle of the arc
 - 3.3. End of the turn

When a fiber optic cable crosses a roadway or ramp, install a disk marker over the conduit trench on:

1. Every shoulder within 6 inches from the edge of pavement
2. Delineated median
3. Each side of a barrier

Install markers under section 81 except each retroreflective face must be parallel to the road centerline and facing away from traffic.

87-19.04 PAYMENT

Not Used

Replace section 87-20 with:

04-19-19

87-20.01 GENERAL

Section 87-20 includes specifications for providing, maintaining, and removing temporary electrical systems.

Obtain the Department's authorization for the type of temporary electrical system and its installation method.

A temporary system must operate on a continuous, 24-hour basis.

A temporary electrical system must have a primary power source and a back-up power source from:

1. Commercial power from a utility company
2. Generator system
3. Photovoltaic system

87-20.02 MATERIALS

87-20.02A General

Material and equipment may be new or used.

Temporary wood poles must comply with section 48-6.

The components of a temporary system are shown on the project plans.

If you use Type UF-B cable, the minimum conductor size must be no. 12.

A back-up power source must:

1. Have an automatic transfer switch

2. Start automatically and transfer the system load upon reaching the operating voltage in the event of a power source failure

87-20.02B Temporary Flashing Beacon Systems

A temporary flashing beacon system consists of a flashing beacon system, wood post, and a power source.

The system must comply with the specifications for a flashing beacon system in section 87-7, except it may be mounted on a wood post or a trailer.

87-20.02C Temporary Lighting Systems

A temporary lighting system consists of a lighting system, a power source, and wood poles.

The system must comply with the specifications for a lighting system in section 87-2, except it may be mounted on a wood pole or a trailer.

87-20.02D Temporary Signal Systems

A temporary signal system consists of a signal and lighting system, wood poles and posts, and a power source.

The system must comply with the specifications for a signal and lighting system in section 87-4, except:

1. Signal heads may be mounted on a wood pole, mast arm, tether wire, or a trailer
2. Flashing beacons may be mounted on a wood post, or a trailer

87-20.02E Generators

A generator must:

1. Be 120 V(ac) or 120/240 V(ac), 60 Hz, 2.5 kW minimum, continuous-duty type
2. Be powered by a gasoline, LPG, or diesel engine operating at approximately 1,800 rpm with an automatic oil feed
3. Be equipped to provide automatic start-stop operation with a 12 V starting system
4. Have generator output circuits that have overcurrent protection with a maximum setting of 15 A
5. Have enough fuel storage to operate when it is unattended
6. Have a spark arrester complying with Pub Cont Code § 4442

87-20.02F Automatic Transfer Switches

An automatic transfer switch must provide:

1. Line voltage monitoring in the event of a power outage that signals the back-up power source to start
2. Start delay, adjustable from 0 to 6 seconds, to prevent starting if the power outage is only momentary and a stop delay, adjustable from 0 to 8 minutes, to allow the back-up power source to unload
3. Transfer delay from 0 to 120 seconds to allow the back-up power source to stabilize before connecting to the load and retransfer delay from 0 to 32 minutes to allow the line voltage to stabilize
4. Mechanical interlock to prevent an application of power to the load from both sources and to prevent backfeeding from the back-up power source to the primary power source

87-20.03 CONSTRUCTION

87-20.03A General

Provide electrical and telecommunication services for temporary systems. Do not use existing services unless authorized.

Provide power for the temporary electrical systems.

Commercial power must be 120 V(ac) or 120/240 V(ac) single phase. Make arrangements with the utility company for providing service. Protect the power source in a locked enclosure. Provide keys to all locks to the Engineer.

Install conductors and cables in a conduit, suspended from wood poles at least 25 feet above the roadway, or use direct burial conductors and cables.

You may saw slots across paved areas for burial conductors and cables.

Install conduit outside the paved area at a minimum of 12 inches below grade for Type 1 and 2 conduit and at a minimum of 18 inches below grade for Type 3 conduit.

Install direct burial conductors and cables outside the paved area at a minimum depth of 24 inches below grade.

Place the portions of the conductors installed on the face of wood poles in either Type 1, 2, or 3 conduit between the point 10 feet above grade at the pole and the pull box. The conduit between the pole and the pull box must be buried at a depth of at least 18 inches below grade.

Place conductors across structures in a Type 1, 2, or 3 conduit. Attach the conduit to the outside face of the railing.

Mount the photoelectric unit at the top of the standard or wood post.

You may abandon in place conductors and cables in sawed slots or in conduit installed below the ground surface.

87-20.03B Temporary Flashing Beacon Systems

Protect each flashing beacon with a fused splice connector on the line side. Wherever conductors are run overhead, install the splice connector in the line side outside of the control assembly.

87-20.03C Temporary Lighting Systems

Protect each luminaire with a fused splice connector on the line side. Wherever conductors are run overhead, install the fuse splice connectors in the line side before entering the mast arm.

87-20.03D Temporary Signal Systems

You may splice conductors that run to a terminal compartment or a signal head on a pole to the through conductors of the same phase in a pull box adjacent to the pole. Do not splice conductors or cables except in a pull box or in a NEMA 3R enclosure.

The Department provides the timing for the temporary signal.

Maintain the temporary signal except for the Department-furnished controller assembly.

87-20.04 PAYMENT

Not Used

Replace item 7 in the list in the 2nd paragraph of section 87-21.03B(2) with:

- 7. Camera system

10-19-18

AA

DIVISION XI MATERIALS

90 CONCRETE

04-19-19

Add to section 90-1.01B:

04-19-19

CIP structural concrete members: Components of bridge structures, piling, retaining walls, sound walls, box culverts, approach slabs, bridge railing, and bridge barriers.

Add to the end of section 90-1.01C(6):

04-19-19

For CIP structural concrete members, submit with your mix design results from the tests specified in 90-1.01D(10)(d) and the results from the tests shown in the following table:

Quality characteristic	Test method
Specific gravity and absorption of coarse aggregate	ASTM C127
Specific gravity and absorption of fine aggregate	ASTM C128
Durability index for fine aggregate	California Test 229
Soundness	California Test 214
Resistance to degradation	ASTM C131
Organic impurities	California Test 213
Chloride concentration of water for washing aggregates and mixing concrete	California Test 422
Sulfate concentration of water for washing aggregates and mixing concrete	California Test 417
Impurities in water for washing aggregates and mixing concrete	ASTM C191 or ASTM C266 and ASTM C109

Add to the end of section 90-1.01C(8):

04-19-19

For CIP structural concrete members, submit test results within 3 business days after completing each QC test. For submittal, go to:

<http://dime.dot.ca.gov/>

For CIP structural concrete members, include the following with the test results:

1. Contract number
2. Mix design number
3. Test sample identification number
4. Date and time of test
5. Batch plant
6. Batch number
7. Bridge number and description of element
8. Supporting data and calculations
9. Name, certification number, and signature of the QC tester

If additional compressive strength test results are needed for CIP structural concrete members to facilitate your schedule, submit a plot of the strength projection curve.

Add to section 90-1.01C:

04-19-19

90-1.01C(11) Quality Control Plan

Section 90-1.01C(11) applies to CIP structural concrete members.

Submit 3 copies of the QC plan for review.

Submit an amended QC plan or an addendum to the QC plan when there are any changes to:

1. Concrete plants
2. Testing laboratories
3. Plant certification or laboratory accreditation status
4. Tester or inspector qualification status
5. QC personnel
6. Procedures and equipment
7. Material sources
8. Material testing

Allow the Department 5 business days to review an amended QC plan or an addendum to the QC plan.

90-1.01C(12) Concrete Materials Quality Control Summary Report

Section 90-1.01C(12) applies to CIP structural concrete members.

During concrete production for CIP structural concrete members, submit a concrete materials QC summary report at least once a month. The report must include:

1. Inspection reports.
2. Test results.
3. Documentation of:
 - 3.1. Test result evaluation by the QC manager.
 - 3.2. Any discovered problems or deficiencies and the corrective actions taken.
 - 3.3. Any testing of repair work performed.
 - 3.4. Any deviations from the specifications or regular practices with explanation.
4. Certificate of compliance for the structural concrete material signed by the QC manager. The certificate must state that the information contained in the report is accurate, the minimum testing frequencies specified in section 90-1.01D(10)(d) are met, and the materials comply with the Contract.

Add to section 90-1.01D:

04-19-19

90-1.01D(7) Qualifications

Section 90-1.01D(7) applies to CIP structural concrete members.

QC laboratory testing personnel must have an ACI Concrete Laboratory Testing Technician, Level 1 certification or an ACI Aggregate Testing Technician, Level 2 certification, whichever certification includes the test being performed.

QC field testing personnel and field and plant inspection personnel must have an ACI Concrete Field Testing Technician, Grade I certification.

90-1.01D(8) Certifications

Section 90-1.01D(8) applies to CIP structural concrete members.

Each concrete plant used for CIP structural concrete members must:

1. Have a current certification for ready mixed concrete production facilities from the National Ready Mixed Concrete Association. Plant Certification Checklist and supporting documentation must be available upon request.
2. Be tested and authorized under the Department's *MPQP*.

Each QC testing laboratory must be an authorized laboratory with current accreditation from the AASHTO Accreditation Program for the tests performed.

90-1.01D(9) Preconstruction Meeting for CIP Structural Concrete

Section 90-1.01D(9) applies to CIP structural concrete members.

Before concrete placement, hold a meeting to discuss the requirements for structural concrete QC. The meeting attendees must include the Engineer, the QC manager, and at least 1 representative from each concrete plant performing CIP structural concrete activities for the Contract.

90-1.01D(10) Quality Control

90-1.01D(10)(a) General

Section 90-1.01D(10) applies to CIP structural concrete members.

Develop, implement, and maintain a QC program that includes inspection, sampling, and testing of structural concrete materials for CIP structural concrete members.

Perform all sampling, testing, and inspecting required to control the process and to demonstrate compliance with the Contract and the authorized QC plan.

Provide a QC field inspector at the concrete delivery point while placement activities are in progress.

Provide a testing laboratory and the testing personnel for QC testing.

The QC inspector and the QC manager must be fully authorized by the Contractor to reject material.

QC testers and inspectors must be your employees or must be hired by a subcontractor providing only QC services. QC testers and inspectors must not be employed or compensated by a subcontractor or by other persons or entities hired by subcontractors who will provide other services or materials for the project.

If lightweight concrete, RSC or SCC is used as structural concrete, you must also comply with the sampling and testing specifications of that section.

90-1.01D(10)(b) Quality Control Plan

The QC plan must detail the methods used to ensure the quality of the work and provide the controls to produce concrete. The QC plan must include:

1. Names and documentation of certification or accreditation of the concrete plants and testing laboratories to be used
2. Names, qualifications, and copies of certifications for the QC manager and all QC testing and inspection personnel to be used
3. Organization chart showing QC personnel and their assigned QC responsibilities
4. Example forms, including forms for certificates of compliance, hard copy test result submittals, and inspection reports
5. Methods and frequencies for performing QC procedures, including inspections and material testing
6. Procedures to control quality characteristics, including standard procedures to address properties outside of the specified operating range or limits, and example reports to document nonconformances and corrective actions taken
7. Procedures for verifying:
 - 7.1. Materials are properly stored during concrete batching operations
 - 7.2. Batch plants have the ability to maintain the concrete consistency during periods of extreme heat and cold
 - 7.3. Admixture dispensers deliver the correct dosage within the accuracy requirements specified
 - 7.4. Delivery trucks have a valid National Ready Mixed Concrete Association certification card
8. Procedures for verifying that the weighmaster certificate for each load of concrete shows:
 - 8.1. Concrete as batched complies with the authorized concrete mix design weights
 - 8.2. Moisture corrections are being accurately applied to the aggregates

- 8.3. Cementitious materials are from authorized sources
- 8.4. Any water that is added after batching at the plant
- 9. Procedures for visually inspecting the concrete during discharge operations

Allow the Department 5 business days to review an amended QC plan or an addendum to the QC plan.

90-1.01D(10)(c) Quality Control Manager

Assign a QC manager. The QC manager must have one of the following qualifications:

- 1. Civil engineering license in the State
- 2. ACI Concrete Laboratory Testing Technician, Level 1 certification
- 3. NICET Level II concrete certification
- 4. ICC Reinforced Concrete Special Inspector certification
- 5. ASQ Certified Manager of Quality/Organizational Excellence with the qualifying 10 years of experience and body of knowledge in the field of concrete

During concrete placement, the QC manager must be at the plant or job site within 3 hours of receiving notification from the Engineer.

90-1.01D(10)(d) Quality Control Testing Frequencies

For each mix design used to produce CIP structural concrete, perform sampling and testing in compliance with the following tables:

Aggregate QC Tests

Quality characteristic	Test method	Minimum testing frequency
Aggregate gradation	California Test 202	Once per each day of pour
Sand equivalent	California Test 217	
Cleanness value	California Test 227	
Moisture content of fine aggregate	California Test 226	1–2 times per each day of pour, depending on conditions

Concrete QC Tests

Quality characteristic	Test method	Minimum testing frequency
Slump	ASTM C143/C143M	Once per 100 CY or each day of pour, whichever is more frequent, and when requested by the Engineer
Uniformity ^a	ASTM C143/C143M, California Test 533, and California Test 529	When ordered by the Engineer
Air content, (freeze-thaw area)	California Test 504 ^b	If concrete is air entrained, once per 30 CY or each day of pour, whichever is more frequent
Air content, (non-freeze-thaw area)	California Test 504 ^b	If concrete is air entrained, once per 100 CY or each day of pour, whichever is more frequent
Temperature	California Test 557	Once per 100 CY or each day of pour, whichever is more frequent
Density	California Test 518	
Compressive strength ^{c,d}	California Test 521	

^aAs specified in section 90-1.01D(4)

^bUse ASTM C173/C173M for lightweight concrete.

^cMark each cylinder with the Contract number, the date and time of sampling, and the weighmaster certificate number.

^dYou may need additional test samples to facilitate your schedule.

90-1.01D(10)(e) Inspection Reports

Document each inspection performed by a QC inspector in an inspection report that includes:

1. Contract number
2. Mix design number
3. Date and time of inspection
4. Plant location
5. Concrete placement location
6. Batch number
7. Reviewed copies of weighmaster certificates
8. Description of the inspection performed
9. Name, certification number, and signature of the QC inspector

90-1.01D(10)(f) Rejection of Material

If any of the QC concrete test results fail to comply with the specified requirements, the batch of concrete must not be incorporated in the work. Notify the Engineer. Repeat the QC concrete tests on each subsequent batch until the test results comply with the specified requirements.

If 3 consecutive batches fail to comply with the specified requirements, (1) revise concrete operations as necessary to bring the concrete into compliance and (2) increase the frequency of QC testing. The revisions must be authorized before resuming production. After production resumes, you must receive authorization before returning to the QC testing frequency authorized in the QC plan.

90-1.01D(11) Department Acceptance

The Department accepts concrete incorporated into CIP structural concrete members based on only the Department's test results. QC test results will not be used for Department acceptance.

Replace the table in section 90-1.02G(6) with:

04-19-19

Type of work	Nominal		Maximum	
	Penetration (in)	Slump (in)	Penetration (in)	Slump (in)
Concrete pavement	0-1	--	1.5	--
Nonreinforced concrete members	0-1.5	--	2	--
Reinforced concrete structures with:				
Sections over 12 inches thick	0-1.5	1-3	2.5	5
Sections 12 inches thick or less	0-2	1-4	3	6
Concrete placed under water	--	6-8	--	9
CIP concrete piles	2.5-3.5	5-7	4	8

Replace the introductory clause of the 6th paragraph of section 90-1.02H with:

04-19-19

For pavement, the total cementitious material must be composed of one of the following options, by weight:

Add after the 6th paragraph of section 90-1.02H:

04-19-19

For structures, the total cementitious material must be composed of one of the following options, by weight:

1. 25 percent natural pozzolan or fly ash with a CaO content of up to 10 percent and 75 percent portland cement.
2. 20 percent natural pozzolan or fly ash with a CaO content of up to 10 percent, 5 percent silica fume, and 75 percent portland cement.

3. 12 percent silica fume, metakaolin, or UFFA, and 88 percent portland cement.
4. 50 percent GGBFS and 50 percent portland cement.
5. 25 to 50 percent fly ash with a CaO content of up to 10 percent, and no natural pozzolan. The remaining portion of the cementitious material must be portland cement or a combination of portland cement and UFFA, metakaolin, GGBFS, or silica fume.

Replace section 90-1.03B(2) with:

04-19-19

90-1.03B(2) Water Method

The water method must consist of keeping the concrete continuously wet by applying water for a curing period of at least 7 days after the concrete is placed.

Keep the concrete surface wet by applying water with an atomizing nozzle that forms a mist until the surface is covered with curing media. Do not allow the water to flow over or wash the concrete surface. At the end of the curing period, remove curing media.

Use any of the following curing media to retain moisture:

1. Mats, rugs, or carpets
2. Earth or sand blankets
3. Sheeting materials complying with the durability and water vapor transmission rate specified in section 5 of ASTM C171

To ensure proper coverage during curing:

1. Cover the entire concrete surface with the curing media
2. Secure the curing media joints to retain moisture
3. Keep the curing media within 3 inches of the concrete at all points along the surface being cured

Monitor concrete surface temperature during curing. Ensure that surface temperature is maintained at 140 degrees F or below. If the surface temperature exceeds 140 degrees F, determine cause and provide alternative curing methods to the Engineer for authorization.

10-19-18

Delete the 2nd paragraph of section 90-3.02A.

Add to section 90-4.01C(1):

04-19-19

Submit your QC test results for the tests performed under section 90-4.01D as an informational submittal. The QC test results must be submitted electronically through the Data Interchange for Materials Engineering website within 3 business days of completion of each QC test and must include the concrete mix design number.

AA

96 GEOSYNTHETICS

10-19-18

Replace the 3rd table in the 3rd paragraph of section 96-1.02R with:

10-19-18

Cushion Fabric

Quality characteristic	Test method	Requirement					
		Class 10	Class 12	Class 16	Class 24	Class 32	Class 60
Mass per unit area (oz/sq yd)	ASTM D5261	10	12	16	24	32	60
Grab tensile break strength (min, lb)	ASTM D4632	230	300	370	450	500	630
Grab tensile break elongation (min, %)	ASTM D4632	50					
Puncture strength (min, lb)	ASTM D6241	700	800	900	1100	1700	2400
Trapezoidal tear strength (min, lb)	ASTM D4533	95	115	145	200	215	290
UV resistance (min, %)	ASTM D7238	70					

DRAFT

CALTRANS STANDARD PLANS

2018 EDITION

STANDARD PLANS LIST

Project Plans shall be supplemented with applicable 2018 Caltrans Standard Plans including updates made by the following Revised Standard Plans (RSPs):

ABBREVIATIONS, LINES, SYMBOLS AND LEGEND

A3A	Abbreviations (Sheet 1 of 3)
A3B	Abbreviations (Sheet 2 of 3)
A3C	Abbreviations (Sheet 3 of 3)
A10A	Lines and Symbols (Sheet 1 of 5)
A10B	Lines and Symbols (Sheet 2 of 5)
A10C	Lines and Symbols (Sheet 3 of 5)
A10D	Lines and Symbols (Sheet 4 of 5)
A10E	Lines and Symbols (Sheet 5 of 5)

PAVEMENT MARKERS, TRAFFIC LINES, AND PAVEMENT MARKINGS

A24D	Pavement Markings – Word
A24F	Pavement Markings – Crosswalks

DRAINAGE INLETS, PIPE INLETS AND GRATES

D77A	Grate Details No.1
D77B	Grate Details No.2

COUNTY OF TULARE
STATE OF CALIFORNIA

BID PROPOSAL (BID) TO THE BOARD OF SUPERVISORS

**FOR CONSTRUCTING: HARVEST AVENUE
IMPROVEMENTS PROJECT**

Name of Bidder _____

Telephone Number _____

Business Mailing Address _____

Place of Business _____

TO THE BOARD OF SUPERVISORS OF THE COUNTY OF TULARE:

The undersigned, as bidder, declares that the only persons or parties interested in this Bid as principals are those named herein, that this Bid is made without collusion with any other person, firm or corporation; that the bidder has carefully examined the location of the proposed work and the annexed proposed form of contract; and the bidder proposes and agrees if this Bid is accepted, that the bidder will contract with the County of Tulare, in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the material specified in the contract, in the manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and the bidder will take in full payment therefore the following unit prices, to wit:

TULARE COUNTY RESOURCE MANAGEMENT AGENCY

HARVEST AVENUE IMPROVEMENTS PROJECT

No.	Items with Unit Price Written in Words	Unit	Quantity	Unit Price	Amount
1	Mobilization _____per lump sum	LS	1		
2	Lead Compliance Plan _____per lump sum	LS	1		
3	Construction Area Sign _____per lump sum	LS	1		
4	Traffic Control System _____per lump sum	LS	1		
5	Prepare Water Pollution Control Program _____per lump sum	LS	1		
6	Clearing And Grubbing _____per lump sum	LS	1		
7(F)	Roadway Excavation _____per cubic yard	CY	3,912		
8	Finishing Roadway _____per lump sum	LS	1		
9(F)	Class 2 Aggregate Base _____per cubic yard	CY	2,608		
10	Hot Mix Asphalt (Type A) _____per ton	TON	2,958		
11	Minor Hot mix Asphalt _____per ton	TON	4		
12	Minor Concrete(Drainage Inlet) _____per each	EA	3		
13	15" Reinforced Concrete Pipe (Class IV) _____per linear feet	LF	79		
14	18" Reinforced Concrete Pipe (Class IV) _____per linear feet	LF	456		

No.	Items with Unit Price Written in Words	Unit	Quantity	Unit Price	Amount
15	48" Precast Concrete Pipe Manhole _____ per each	EA	2		
16	Minor Concrete (Curb & Gutter) _____ per linear feet	LF	1,800		
17	Minor Concrete (Driveway) _____ per square feet	SQFT	1,365		
18	Minor Concrete (Sidewalk) _____ per square feet	SQFT	7,670		
19	Minor Concrete (Curb Ramp) _____ per each	EA	8		
20	Minor Concrete (Continuous Gutter) _____ per square feet	SQFT	565		
21	Remove Roadside Sign _____ per each	EA	5		
22	Roadside Sign One Post _____ per each	EA	4		
23	Thermoplastic Pavement Marking (White) _____ per square feet	SQFT	151		
24	Remove/Relocate Mailbox _____ per each	EA	2		
25	Construction Staking _____ per lump sum	LS	1		
26	Survey Monument _____ per each	EA	5		

(F)- Final Pay Item

TOTAL (In words and numbers) _____

In case of a discrepancy between words and figures, the words shall prevail. In case of a discrepancy between unit prices and total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

- (a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount as the entry in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;
- (b) (Decimal Errors) If the product of the entered unit and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentagewise the unit price or item total in the County's estimate of cost.

If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed non-responsive. Likewise if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed non-responsive unless the project being bid has only a single item and a clear, readable total bid is provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placements. Cents symbols also have no significance in establishing any unit price or item total since all such figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific discrepancies cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity which may occur in a bid. **Any situation not specifically provided for will be determined in the discretion of the Board of Supervisors, and such discretion will be exercised in the manner deemed by the Board of Supervisors to best carry out its duty to award only to the lowest responsive, responsible bidder. The decision of the Board of Supervisors respecting the amount of a bid, or the existence or treatment of a discrepancy in a bid shall be final.**

If this Bid is accepted and the undersigned is awarded the Contract, given notice of the award and presented with the Contract for signature as provided in the Special Provisions, and shall fail, within the time and manner required under the Special Provisions, to sign and deliver the Contract to the Clerk of the Board of Supervisors, together with all required insurance certificates, bonds, powers of attorney, certificate of authority, insurance rating, financial statements, proofs of licensing, and any other documents required by the Special Provisions to be filed with the signed Contract, then the Board of Supervisors may, in its sole discretion, determine that the bidder has abandoned its bid, whereupon the Board's acceptance of this Bid shall be deemed frustrated, and such bid security as may accompany this Bid shall become due and owing to the County of Tulare as liquidated damages.

Accompanying this Bid is a _____ for

\$_____. (Insert the words "Cash", "Cashier's Check", "Certified Check" or "Bidders Bond", as the case may be, and an amount equal to at least ten percent (10%) of the total bid).

The undersigned understands that the Board of Supervisors retains the option to reject any or all bids.

Further, as part of the Bid, the Contractor provides the following information and representations:

ADDENDA CERTIFICATION STATEMENT

This Bid is submitted with respect to the changes in the contract documents included in Addendum Number(s) _____.

Name of Contractor _____

Warning. If an addendum or addenda have been issued by the County and not noted as being received by the bidder, then this Bid will be rejected.

The above Addenda Certification Statement is part of the Bid. Signing the Bid on the signature portion thereof shall also constitute signature of this Addenda Certification Statement.

BIDDER DISQUALIFICATION QUESTIONNAIRE

In accordance with Public Contract Code Section 10162, the Bidder hereby completes, under penalty of perjury, the following questionnaire:

Has the bidder, or any officer of the bidder, or any employee who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No _____

If the answer is yes, explain the circumstances in the following space:

Note: The above Questionnaire and Statement are part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature under penalty of perjury of this Questionnaire and Statement.

PUBLIC CONTRACT CODE SECTION 9204 STATEMENT

AB 626, approved by the Governor of the State of California on September 29, 2016, created a new Public Contract Code section 9204, which specifies new procedural requirements for claims submitted by a contractor on any public works project.

The full text of the current legislation is set forth below:

§ 9204. Legislative findings and declarations regarding timely and complete payment of contractors for public works projects; claims process

(a) The Legislature finds and declares that it is in the best interests of the state and its citizens to ensure that all construction business performed on a public works project in the state that is complete and not in dispute is paid in full and in a timely manner.

(b) Notwithstanding any other law, including, but not limited to, Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2, Chapter 10 (commencing with Section 19100) of Part 2, and Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3, this section shall apply to any claim by a contractor in connection with a public works project.

(c) For purposes of this section:

(1) "Claim" means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

(A) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by a public entity under a contract for a public works project.

(B) Payment by the public entity of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public works project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.

(C) Payment of an amount that is disputed by the public entity.

(2) "Contractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who has entered into a direct contract with a public entity for a public works project.

(3)(A) "Public entity" means, without limitation, except as provided in subparagraph (B), a state agency, department, office, division, bureau, board, or commission, the California State University, the University of California, a city, including a charter city, county, including a charter county, city and county, including a charter city and county, district, special district, public authority, political subdivision, public corporation, or nonprofit transit corporation wholly owned by a public agency and formed to carry out the purposes of the public agency.

(B) "Public entity" shall not include the following:

(i) The Department of Water Resources as to any project under the jurisdiction of that department.

(ii) The Department of Transportation as to any project under the jurisdiction of that department.

(iii) The Department of Parks and Recreation as to any project under the jurisdiction of that department.

(iv) The Department of Corrections and Rehabilitation with respect to any project under its jurisdiction pursuant to Chapter 11 (commencing with Section 7000) of Title 7 of Part 3 of the Penal Code.

(v) The Military Department as to any project under the jurisdiction of that department.

(vi) The Department of General Services as to all other projects.

(vii) The High-Speed Rail Authority.

(4) "Public works project" means the erection, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement of any kind.

(5) "Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with a contractor or is a lower tier subcontractor.

(d)(1)(A) Upon receipt of a claim pursuant to this section, the public entity to which the claim applies shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, a public entity and a contractor may, by mutual agreement, extend the time period provided in this subdivision.

(B) The claimant shall furnish reasonable documentation to support the claim.

(C) If the public entity needs approval from its governing body to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion.

(D) Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.

(2)(A) If the claimant disputes the public entity's written response, or if the public entity fails to respond to a claim issued pursuant to this section within the time prescribed, the claimant may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(B) Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the public entity shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the claimant sharing the associated costs equally. The public entity and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

(C) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

(D) Unless otherwise agreed to by the public entity and the contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

(E) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.

(3) Failure by the public entity to respond to a claim from a contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the public entity's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.

(4) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.

(5) If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a public entity because privity of contract does not exist, the contractor may present to the public entity a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on their own behalf or on behalf of a lower tier subcontractor, that the contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the contractor shall notify the subcontractor in writing as to whether the contractor presented the claim to the public entity and, if the original contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.

(e) The text of this section or a summary of it shall be set forth in the plans or specifications for any public works project that may give rise to a claim under this section.

(f) A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) a public entity may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.

(g) This section applies to contracts entered into on or after January 1, 2017.

(h) Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

(i) This section shall remain in effect only until January 1, 2027, and as of that date is repealed, unless a later enacted statute that is enacted before January 1, 2027, deletes or extends that date.

BIDDER DISQUALIFICATION ACKNOWLEDGMENT

In accordance with Public Contract Code section 10232, the Contractor hereby states under penalty of perjury that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Note: The above Questionnaire and Statement are a part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature, under penalty of perjury, of this Questionnaire and Statement.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

BIDDER DISQUALIFICATION QUESTIONNAIRE

In conformance with Public Contract Code section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder has ____, has not ____ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code section 1101, with any public entity, as defined in Public Contract Code section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

NON-COLLUSION AFFIDAVIT

(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

NON-COLLUSION DECLARATION TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and

correct and that this declaration is executed on _____ [date],

at _____ [city], _____ [state]

(Signature)

(THE BIDDER'S EXECUTION ON THE SIGNATURE PORTION OF THIS BID SHALL ALSO CONSTITUTE AN ENDORSEMENT AND EXECUTION OF THOSE CERTIFICATIONS WHICH ARE A PART OF THIS BID)

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

The bidder _____, proposed subcontractor _____, hereby certifies that

he has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clauses, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

Signing this Bid on the signature portion thereof shall also constitute signing this certificate.

DEBARMENT AND SUSPENSION CERTIFICATION

TITLE 2, CODE OF FEDERAL REGULATIONS, PART 180

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, manager:

- is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- does not have a proposed debarment pending; and
 - has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions. The above certification is part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Certification.

SUBCONTRACTOR LIST

In accordance with the provisions of Section 2-1.10 of the Standard Specifications, Public Contract Code section 4104, and Labor Code section 1771 et seq., each bidder shall list below the name and location of place of business of each subcontractor who will perform a portion of the contract work in an amount in excess of one-half of one percent of the total bid or ten thousand dollars (\$10,000), whichever is greater, as well as the subcontractor's Department of Industrial Relations' ("DIR") registration number, and State contractor's license number. In each instance, the nature and extent of the work to be sublet shall be described. On the Subcontractor List (next page), you must submit each subcontracted bid item number and corresponding percentage with your bid. **Failure to submit a properly completed Subcontractor List form may result in a nonresponsive bid.** Note: (1) pursuant to Public Contract Code section 4104(a)(2), an inadvertent error in listing the California contractor license number provided pursuant to this paragraph shall not be grounds for filing a bid protest or grounds for considering the bid non-responsive if the corrected contractor's license number is submitted to the County by the prime contractor within twenty-four (24) hours after the bid opening and provided the corrected contractor's license number corresponds to the submitted name and location for that subcontractor; (2) pursuant to Labor Code Section 1771.1(c), an inadvertent error in listing a subcontractor who is not registered with the DIR in a Bid shall not be grounds for filing a bid protest or grounds for considering the bid non-responsive, provided that any of the following apply:

- (1) The subcontractor is registered prior to the bid opening.
- (2) Within twenty-four (24) hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in subparagraph (E) of paragraph (2) of subdivision (a) of Labor Code section 1725.5.

The General Contractor to whom the contract is awarded will not be permitted, without the written consent of the Tulare County Director of the Resource Management Agency or designee, to substitute any person as subcontractor in place of the subcontractor designated in the original bid, or to permit any subcontract to be assigned or transferred, or to allow it to be performed by anyone other than the original subcontractor. Consent to the substitution of another person as subcontractor shall only be permitted in accordance with Public Contract Code section 4107.

The failure of the Contractor to specify a subcontractor for any portion of the contract work in excess of one-half of one percent of the total contract price shall be deemed to indicate that the Contractor intends to perform such portion himself. The subletting or subcontracting of work for which no subcontractor was designated in the original bid and which is in excess of one-half of one percent of the total contract price, will be allowed only in accordance with Public Contract Code section 4109.

<u>Subcontractor Information</u>				<u>Work Portion</u>		
<u>Name</u>	<u>Address</u>	<u>Lic. No.</u>	<u>DIR Registration No.</u>	<u>Bid Item No.</u>	<u>Description</u>	<u>% of Bid Item</u>
				a)		
				b)		
				c)		
				d)		
				a)		
				b)		
				c)		
				d)		
				a)		
				b)		
				c)		
				d)		
				a)		
				b)		
				c)		
				d)		
				a)		
				b)		
				c)		
				d)		
				a)		
				b)		
				c)		
				d)		

DRAFT

Further, as part of this Bid, the contractor agrees to the terms, and supplies the information required in the attached "Bidders Bond" or other security instruments (if such bond or instrument is required). Such Bond or instrument is considered part of the bid.

The names of all persons interested in the foregoing Bid as principals are as follows:

IMPORTANT NOTICE

If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, vice-president, secretary, and treasurer thereof; if a co-partnership, state true name of firm, also names of all individual copartners composing firm; if bidder or other interested person is an individual, state first and last names in full.

Licensed in conformance with an act providing for the registration of Contractors,

License No. _____ Classification(s) _____

Federal Employer Identification Number By my signature on this bid I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code sections 10162, 10232 and 10285.1 are true and correct and that the bidder has complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature on this Bid, I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Noncollusion Affidavit required by title 23 United States Code section 112 and Public Contract Code section 7106; and the title 2 Code of Federal Regulations part 180 Debarment and Suspension Certification, are true and correct.

Date: _____

Signature of bidder

NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officers authorized to sign contracts on behalf of the corporation; if bidder is a co-partnership, the true name of the partner or partners authorized to sign contracts on behalf of the co-partnership; and if bidder is an individual, his or her signature shall be placed above. If signature is by an agent, other than an officer of the corporation or a member of a partnership, a Power of Attorney must be on file with the Board of Supervisors prior to opening bids or submitted with the bid; otherwise, the bid will be disregarded as non-responsive and unauthorized.

Business Address _____

Place of Business _____

Date: _____

COUNTY OF TULARE
STATE OF CALIFORNIA

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENT:

That we _____

_____, AS PRINCIPAL, and

_____ as SURETY,

are held and firmly bound unto the County of Tulare, hereinafter called the Obligee, in the sum of TEN PERCENT (10%) OF THE TOTAL AMOUNT OF THE BID of the Principal above named, submitted by said Principal to the Board of Supervisors, County of Tulare, for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. In no case shall the liability of the surety hereunder exceed the sum of \$ _____

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the above-mentioned bid to the Board of Supervisors, County of Tulare, for certain construction specifically described as follows, for which bids are to be opened at Visalia, California, on _____, _____, for construction of HARVEST AVENUE IMPROVEMENTS PROJECT.

NOW, THEREFORE, if the aforesaid Principal is awarded the Contract, given the required notice of award and presented with the Contract for signature and, within the time and manner required under the Special Provisions, executes and files it with the Clerk of the Board of Supervisors in the prescribed form and in accordance with the bid, together with all insurance certificates, bonds, powers of attorney, certificates of authority and financial statements, proofs of licensing, and any other documents required by the Special Provisions to be filed with the executed Contract, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the surety shall pay all costs incurred by the Obligee in such suit, including a reasonable attorney's fee to be fixed by the Court.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this _____ day of _____, _____.

Principal

Surety

Note - Signature of those executing for the surety must be properly acknowledged or notarized.

COUNTY OF TULARE
STATE OF CALIFORNIA

CONTRACT

THIS CONTRACT, entered into as of this _____ day of _____, by and between the COUNTY OF TULARE, a political subdivision of the State of California hereinafter referred to as "County", and _____, hereinafter referred to as "Contractor";

WITNESSETH:

WHEREAS, County desires to carry out a project of constructing of HARVEST AVENUE IMPROVEMENTS PROJECT, (hereinafter referred to as the "Work") in Tulare County.

WHEREAS, Contractor currently holds a Class A license from the State of California and must maintain the license from contract award through Contract acceptance (Public Contract Code § 20103.5) and is willing and able to perform the Work on the terms and conditions set forth herein.

WHEREAS, County publicly opens and reads bids at the time and place shown on the *Notice to Bidders*.

WHEREAS, County has offered this project through the statutorily prescribed bidding process, and through such process awarded this Contract to the lowest responsible and responsive bidder.

WHEREAS, should bid rigging, bidder collusion, and other fraudulent activities occur, Contractor shall call the U.S. Department of Transportation (DOT) toll-free hotline number (800) 424-9071. The service is available twenty-four (24) hours a day, seven (7) days a week and is confidential and anonymous. The hotline is part of the DOT's effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General.

NOW, THEREFORE, BE IT AGREED as follows:

ARTICLE I. For and in consideration of the terms, conditions and covenants hereinafter contained, Contractor will, at its own cost and expense, do all the work and furnish all the materials, except such work or material, if any, which the terms herein specifically provide will be furnished by County, necessary to construct and complete in good workmanlike and substantial manner and to the satisfaction of County's Assistant Director of Public Works or designee, installation of curb & gutter, sidewalk, driveways, pavement reconstruction ADA related improvements, storm drain facilities, and related improvements (signing/stripping, etc.)..

Contractor will furnish such work and material in accordance with the terms and conditions set forth in County's Special Provisions (hereinafter referred to as the "Special Provisions") issued for this contract and project, which Special Provisions are incorporated herein by reference as if set out in full. Further, Contractor will furnish such work and material in accordance with the Standard Specifications dated 2018 (hereinafter referred to as the "Standard Specifications") and the Standard Plans dated 2018 (hereinafter referred to as the "Standard Plans"), issued by the Department of Transportation of the State of California, and the project plans described below, which the accepted Bid Proposal (Bid) to the Board of Supervisors by the Contractor, including all statements, bonds, and certificates required to be submitted thereunder, Standard Specifications, Standard Plans, and project plans are incorporated herein by reference as if set out in full.

The project plans for this project were approved May 19, 2020 and are entitled:

STATE OF CALIFORNIA; COUNTY OF TULARE

PROJECT PLANS FOR CONSTRUCTION OF
HARVEST AVENUE
IMPROVEMENTS PROJECT

ARTICLE II. Contractor agrees to receive and accept the following prices as full compensation from County, for furnishing all materials, for doing all the work contemplated and embraced in this Contract, for all costs, losses, or damages arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by the Board of Supervisors of the County of Tulare, and for all risks of every description connected with the work; also for all expenses incurred by or in consequence of the suspension or discontinuance of work and for well and faithfully completing the work, and the whole thereof in the manner and according to the Contract Documents as defined in Article XI, and the requirements of the Engineer under them, and in accordance with the bid of Contractor, the terms, conditions, and representations of which bid are incorporated herein by reference as if set out in full:

Item No.	Items with unit price written in words	Unit of Measure	Estimated Quantity	Unit Price	Amount
----------	--	-----------------	--------------------	------------	--------

(ITEMS IN CONTRACT WILL BE THE SAME AS THOSE IN THE BID)

ARTICLE III. Contractor will be licensed as required by law and will be in compliance with the regulations of the Contractors' State License Board. Contractor will possess a Class A license from Contract award through Contract acceptance (Public Contract Code §20103.5). Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, 9835 Goethe Road, Sacramento, California. Mailing Address: P.O. Box 26000, Sacramento, California 95826. Contractor will also comply with the licensing requirements specified in the "Notice to Bidders" which is specifically incorporated herein by this reference as if set out in full.

ARTICLE IV. Contractor agrees to comply with the prevailing wage laws as set forth in Labor Code sections 1770-1780 unless an applicable federal labor law imposes a higher wage or stricter requirement, in which case the higher wage or stricter requirement will apply, and Contractor agrees to be responsible for the compliance by all subcontractors with Labor Code section 1776 in accordance with Public Contract Code section 6109, with respect to subcontractors which are ineligible to perform work on public works projects pursuant to Labor Code section 1777.1 or 1777.7:

1. The Contractor must not allow any such subcontractor to work on this project.
2. Contractor will repay to County any money paid to any such subcontractor allowed to work on this project.
3. Contractor will pay the wages of the workers of any such subcontractor allowed to work on this project.

The general prevailing wage rates and any applicable changes to these wage rates are available:

1. From the Department of Industrial Relations' website
2. On file at the Resource Management Agency Permit Center, 5961 South Mooney Boulevard, Visalia, Ca 93277, which shall be made available to any interested person on request.
3. From the County Public Works website (see link in the Notice to Bidder section).

Contractor shall be responsible to post the general prevailing wage rates at a prominent place at each job site in accordance to section 7-1.02K(2) of the Caltrans Standard Specifications and Labor Code section 1773.2.

ARTICLE V. County does hereby engage Contractor as an independent contractor to provide the materials and to do the work according to the terms and conditions herein contained and referred to, for the prices aforesaid, and hereby contracts to pay the same at the time, in the manner and upon the conditions in the Special Provisions which are a part of this contract.

ARTICLE VI. Contractor will neither sell, assign, transfer, convey or encumber this Contract or any right or interest therein or thereunder, or suffer or permit any such sale, assignment, transfer, conveyance or encumbrance to occur by operation of law, without the prior written consent of County.

ARTICLE VII. This Contract may only be amended or modified, as permitted by the Public Contract Code, by written consent to such amendment or modification by each party.

ARTICLE VIII. The termination provisions of the Standard Specifications are incorporated by reference.

ARTICLE IX. Any and all notices or other matters required or permitted by this Contract or by law to be served on, given to, or delivered to either party hereto shall be in writing and shall be deemed duly served, given or delivered when personally delivered to the party to whom addressed, or in lieu of such personal service, when deposited in the United States mail, certified return receipt requested, addressed as follows:

Engineer: Hernan Beltran, P.E.
 Chief Engineer
 Resources Management Agency
 County of Tulare
 5961 South Mooney Boulevard
 Visalia, CA 93277

Contractor: _____

ARTICLE X. Before approval of a Contract by County, Contractor must file with the Clerk of the Board of Supervisors evidence of insurance as set forth in 7-1.06 of the Special Conditions which outlines the minimum scope, specifications, and limits of insurance required under this Contract. Additional insured endorsements required as outlined below cannot be used to reduce limits available to County as an additional insured from Contractor's full policy limits. Insurance policies cannot be used to limit liability or to limit the indemnification provisions and requirements of this Contract or act in any way to reduce the policy coverage and limits available from the insurer(s). If Contractor fails to maintain or renew coverage, or to provide evidence of renewal, then County may consider that failure a material breach of this Contract. County may also withhold any payment otherwise due to Contractor for failure to provide evidence of renewal until Contractor provides such evidence.

ARTICLE XI. The Complete Contract between the parties shall consist of this Contract, Notice to Bidders, the Special Provisions, the 2018 Caltrans Standard Specifications, the project plans, the 2018 Caltrans Standard Plans, the Technical Specifications, all Addenda, and the accepted Bid to the Board of Supervisors by the Contractor, including all statements, bonds, and certificates required to be submitted thereunder. Any prior agreements, promises, negotiations, or representations not expressly set forth in the Complete Contract shall be of no force or effect.

ARTICLE XII. Should there be any conflict between the terms of this Contract and the Bid of the Contractor, then this Contract shall control and nothing herein shall be considered as an acceptance of any conflicting terms.

ARTICLE XIII. In lieu of the attorney's notice of approval provided for in Section 8-1.04 of the Standard Specifications, the Engineer will deliver a written Notice to Proceed to the Contractor following execution of the Contract on behalf of the Board of Supervisors. Contractor shall begin work within fifteen (15) calendar days from the date the Notice to Proceed is issued, in full compliance with said Section 8-1.04 of the Standard Specifications.

Complete all work within Fifty (50) working days beginning on the fifteenth (15th) calendar day after the date shown on the Notice to Proceed. Contractor agrees to pay as liquidated damages and not as a penalty, the amount established pursuant to Section 8-1.10A of the Special Provisions, County and Contractor agree that if the Work is not completed within the Contract Time, then County's damages would be extremely difficult or impracticable to determine and that the amount specified is a reasonable estimate of the reasonable sum for such damages. Liquidated damages for all work shall be set to Fifteen-Hundred Dollars(\$1,500) per day, for each and every calendar days' delay in finishing the work in excess of the number of working days prescribed above. County may deduct any liquidated damages due from Contractor from any amounts otherwise due to Contractor under the Contract Documents. This provision shall not limit any right or remedy of County in the event of any other default of Contractor other than failing to complete the Work within the Contract Time.

ARTICLE XIV. This Contract reflects the contributions of both parties and accordingly the provisions of Civil Code section 1654 shall not apply to address and interpret any uncertainty.

ARTICLE XV. Unless specifically set forth, the parties to this Contract do not intend to provide any other party with any benefit or enforceable legal or equitable right or remedy.

ARTICLE XVI. This Contract shall be interpreted and governed under the laws of the State of California without reference to California conflicts of law principles. The parties agree that this contract is made in and shall be performed in Tulare County, California.

ARTICLE XVII. The failure of either party to insist on strict compliance with any provision of this Contract shall not be considered a waiver of any right to do so, whether for that breach or any subsequent breach. The acceptance by either party of either performance or payment shall not be considered to be a waiver of any preceding breach of the Contract by the other party.

ARTICLE XVIII. The Recitals and the Exhibits to this Contract are fully incorporated into and are integral parts of this Contract.

ARTICLE XIX. This Contract is subject to all applicable laws and regulations. If any provision of this Contract is found by any court or other legal authority, or is agreed by the parties, to be in conflict with any code or regulation governing its subject, the conflicting provision shall be considered null and void. If the effect of nullifying any conflicting provision is such that a material benefit of the Contract to either party is lost, the Contract may be terminated at the option of the affected party. In all other cases the remainder of the Contract shall continue in full force and effect.

ARTICLE XX. Each party will execute any additional documents and perform any further acts which may be reasonably required to effect the purposes of this Contract.

ARTICLE XXI. If a dispute arises out of or relating to this Contract, or the breach thereof, and if said dispute cannot be settled through negotiation, the parties agree first to try in good faith to settle the dispute by non-binding mediation before resorting to litigation or some other dispute resolution procedure, unless the parties mutually agree otherwise. The mediator shall be mutually selected by the parties, but in case of disagreement, the mediator shall be selected by lot from among two nominations provided by each party. All costs and fees required by the mediator shall be split equally by the parties, otherwise each party shall bear its own costs of mediation. Contractor shall continue with its responsibilities under this Contract during any such dispute.

ARTICLE XXII. Contractor acknowledges that this Contract is subject to filing obligations pursuant to Unemployment Insurance Code section 1088.8. Accordingly, County has an obligation to file a report with the Employment Development Department, which report will include the Contractor's full name, social security number, address, the date this contract was executed, the total amount of the contract, the contract's expiration date or whether it is ongoing. Contractor agrees to cooperate with County to make such information available and to complete DE Form 542. Failure to provide the required information may, at County's option, prevent approval of this Contract, or be grounds for termination by County.

ARTICLE XXIII. This Contract represents the entire Contract between Contractor, and County as to its subject matter and no prior oral or written understanding shall be of any force or effect. No part of this Contract may be modified without the written consent of both parties.

ARTICLE XXIV. Contractor expressly understands and agrees that County is dependent upon certain Federal and/or State and/or local funding to pay the services provided in this Contract. If such Federal and/or State and/or local funding is discontinued and/or reduced, County shall have the right to terminate the Contract. In either event, County shall provide Contractor with at least thirty (30) days prior written notice of such termination.

ARTICLE XXV. Quality Assurance - The County uses a Quality Assurance Program (QAP) to ensure a material is produced to comply with the Contract. Contractor may examine the records and reports of tests the County and/or the Materials Testing Consultant performs, if available.

Schedule work to allow time for QAP review and compliance.

DRAFT

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hand the year and date first above written.

BOARD OF SUPERVISORS
COUNTY OF TULARE
STATE OF CALIFORNIA

By _____
Chair of the Board
of Supervisors
"County"

Attest: Jason T. Britt, County Administrative Officer/
Clerk of the Board of Supervisors

By _____
Deputy

Pursuant to Corporations Code section 313, County policy requires that contracts with a corporation shall be signed by both (1) the chair of the Board of Directors, the president or any vice-president (or another officer having general, operational responsibilities), and (2) the secretary, any assistant secretary, the chief financial officer, or any assistant treasurer (or another officer having recordkeeping or financial responsibilities), unless the contract is accompanied by a certified copy of a resolution of the corporation's Board of Directors authorizing the execution of the contract. Similarly, pursuant to California Corporations Code section 17703.01, County policy requires that contracts with a Limited Liability Company be signed by at least two managers, unless the contract is accompanied by a certified copy of the articles of organization stating that the LLC is managed by only one manager.

"Contractor"

Licensed in accordance with an act
providing for the registration of contractors.

License No. _____

Federal Employer Identification

Number _____

Dated: _____
APPROVED AS TO FORM,
County Counsel

By: _____
Deputy County Counsel

STATUTORY PERFORMANCE BOND PURSUANT TO

California Public Contract Code
Section 20129

KNOW ALL MEN BY THESE PRESENTS:

That _____ (Hereinafter called the Principal), as Principal and _____, a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____, (hereinafter called the Surety), as Surety, are held and firmly bound unto the County of Tulare, (hereinafter called the Obligee) in the amount of _____ (\$ _____), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the Obligee, dated the ___th day of _____, _____ for construction of HARVEST AVENUE IMPROVEMENTS PROJECT which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THE OBLIGATION IS SUCH, that if said Principal shall faithfully perform and fulfill all the undertakings, covenants, terms, and conditions of said Contract during the original term of the Contract and any extension thereof, with or without notice to the Surety, and during the life of any guarantee required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized extensions or modifications of said contract that may hereafter be made, notice of said extensions or modifications to the Surety being hereby waived; then the above obligation shall be void. Otherwise, said obligation shall remain in full force and effect.

Whenever Obligee declares Principal to be in default under the Contract, then the Surety will remedy the default pursuant to the Contract, or will promptly do one of the following, at the Obligee's option:

(1) Undertake through its agents or independent contractors reasonably acceptable to the Obligee, to complete the Project in accordance with all terms and conditions in the Contract, including without limitation, all obligations with respect to payments, warranties, guarantees, and liquidated damages, and with no requirement for a "take-over" or similar agreement"; or

(2) Permit the Obligee to complete the Project in any manner consistent with California law and reimburse the Obligee for all costs it incurs in completing the Project, and in correcting, repairing, or replacing any defects in materials, equipment or workmanship, which do not conform to the Contract.

Surety expressly agrees that the Obligee may reject any contractor or subcontractor that Surety may propose in fulfillment of its obligations in the event of default by the Principal. Surety will not utilize Principal in completing the Project or accept a bid from the Principal for completion of the Work if the Obligee, when declaring the Principal in default, notifies Surety of the Obligee's objection to Principal's further participation in the completion of the Project.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the construction work on this Project, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing the Obligee's rights against the others.

No right of action will accrue on this bond to or for the use of any person or corporation other than the Obligee or its successors or assigns. If Obligee sues upon this bond, then Surety will pay reasonable attorney's fees and costs incurred by the Obligee in such suit, irrespective of the amount of this bond.

Witness our hands this _____ day of _____, _____.

Principal Seal

By

Surety Seal

By

Agency of Record

Note: Bond surety must be admitted to transact surety insurance in the State of California.

DRAFT

STATUTORY PAYMENT BOND PURSUANT TO

California Civil Code
Sections 9550 through 9566

KNOW ALL MEN BY THESE PRESENTS:

That, _____.(hereinafter called the Principal), as Principal, and _____ a corporation organized and existing under the laws of the State of _____, with its principal office in the City of _____, (hereinafter called the Surety), as Surety, are held and firmly bound unto the County of Tulare (hereinafter called the Obligee), in the amount of _____ (\$_____), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the ___th day of _____, _____ for construction of HARVEST AVENUE IMPROVEMENTS PROJECT, to which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, its heirs, executors, administrators, successors, or assigns, or subcontractor, shall fail to pay any person or persons named in Civil Code section 9100; or fail to pay for any materials, provisions, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind; or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by Unemployment Insurance Code section 13020 with respect to work and labor thereon of any kind, then said Surety will pay for the same, in an amount not exceeding the amount herein above set forth, and in the event suit is brought upon this bond, also will pay such reasonable attorneys' fees as shall be fixed by the court, awarded and taxed as provided in California Civil Code section 9550 et. seq.

This bond shall inure to the benefit of any person named in California Civil Code section 9100 giving such person or his/her assigns a right of action in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of the bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, or specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described; or pertaining or relating to the furnishing of labor, materials, or equipment therefor; nor by any change or modification of any terms of payment or extension of time for payment pertaining or relating to any scheme or work of improvement herein above described; nor by any rescission or attempted rescission of the contract, agreement or bond; nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond; nor by any fraud practiced by any person other than the claimant seeking to recover on the bond; and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given; and under no circumstances shall the Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the Obligee and the Principal or on the part of any obligee named in such bond; that the sole condition of recovery shall be that the claimant is a person described in California Civil Code section 9100, and who has not been paid the full amount of his or her claim; and that the Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

Witness our hands this _____ day of _____, _____.

Principal Seal

By

Surety Seal

By

Agency of Record

Agency Address

Note: Bond surety must be admitted to transact surety insurance in the State of California

DRAFT

CERTIFICATION CONCERNING WORKERS' COMPENSATION INSURANCE

STATE OF CALIFORNIA)
) SS
COUNTY OF TULARE)

I am aware of the provisions of Labor Code section 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract.

Date _____

CONTRACTOR

DRAFT

CONSTRUCTION OF HARVEST AVENUE IMPROVEMENTS PROJECT

CONTRACT DOCUMENT CHECKLIST

The Contractor must deliver to the County with the Contract the following items:

1. The signed Contract (six copies). Each copy of the Contract must be signed by both the company president or vice president and the company secretary or treasurer with the Contractors State License Board number and Federal Employer Identification Number.
2. The Statutory Performance Bond Pursuant to California Public Contract Code section 20129 and the Statutory Payment Bond Pursuant to California Civil Code Sections 9550 through 9566 (forms included herein), with either County Clerk's certificates or copies of power of attorney.
3. Certification Concerning Workers' Compensation Insurance.
4. Certificate(s) of Insurance in compliance with the requirements of section 7-1.06 of the Special Provisions including general liability, automobile and workers' compensation (a sample form is included).
5. Evidence that the Contractor possesses a current, valid Contractors State License Board required to perform the work under this Contract. A copy of the Contractor's license is sufficient.

DRAFT

STATE OF CALIFORNIA
COUNTY OF TULARE

PROJECT PLANS FOR CONSTRUCTION OF
HARVEST AVENUE
IMPROVEMENTS PROJECT
2006 HALF-CENT TRANSPORTATION
SALES TAX MEASURE (MEASURE R)

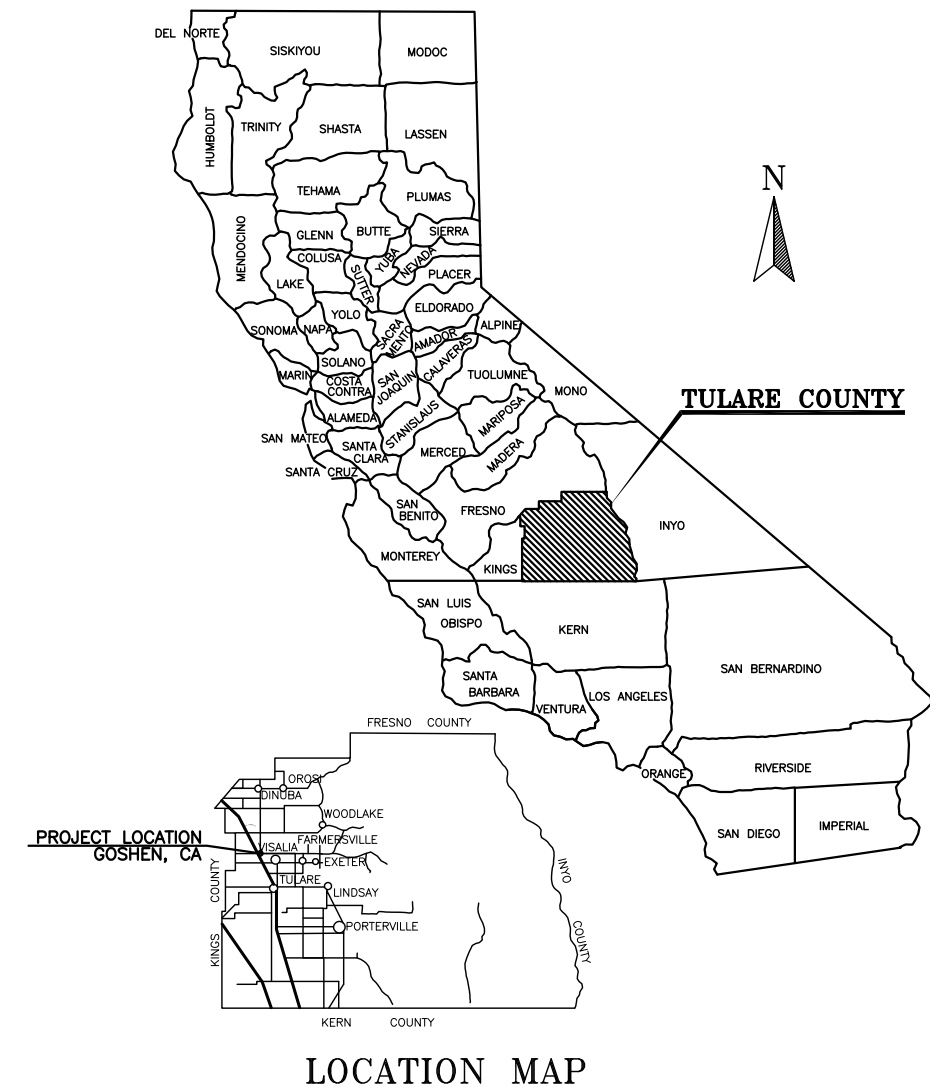
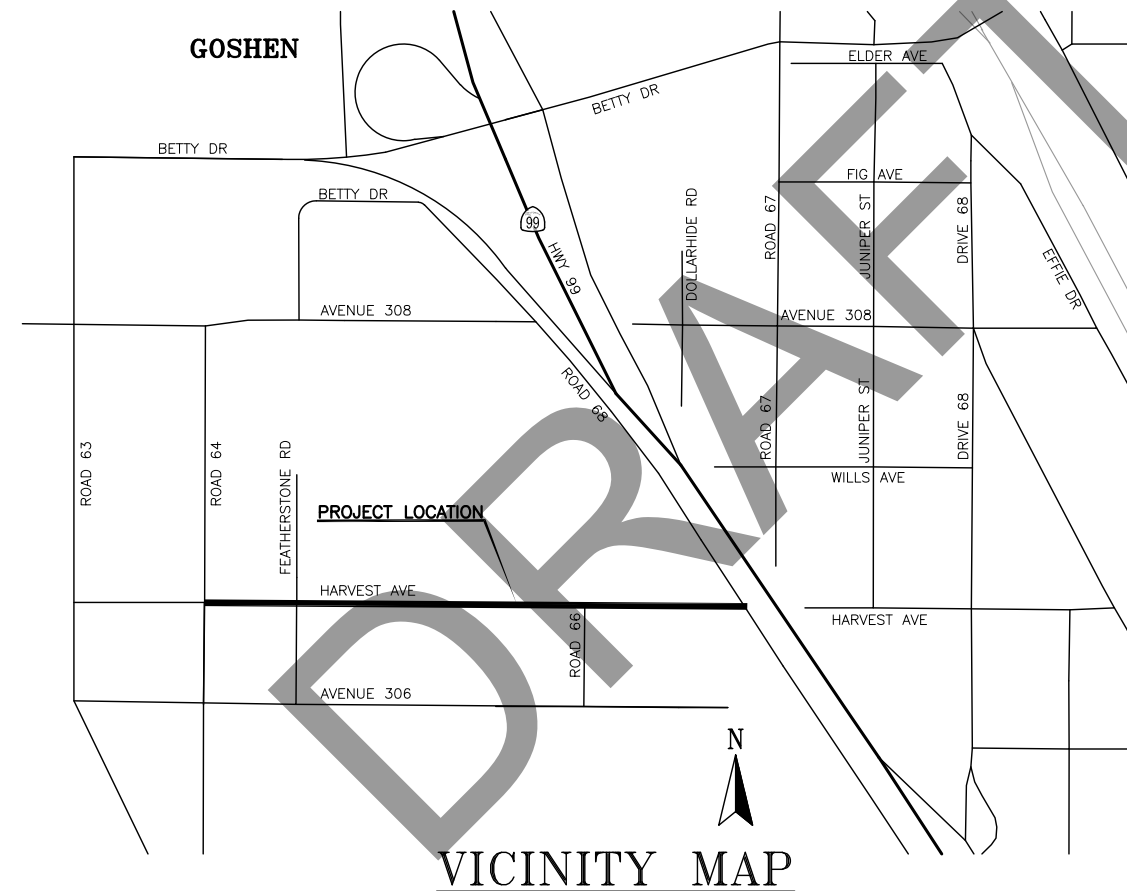
TO BE SUPPLEMENTED BY STANDARD PLANS AND STANDARD SPECIFICATIONS OF
THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DATED 2018

INDEX OF SHEETS

SHEET NO.	PAGE NO.	DESCRIPTION
T1	1	TITLE SHEET
X1	2	TYPICAL CROSS SECTIONS
C1-C5	3-7	CONSTRUCTION DETAILS
L1-L2	8-9	PLAN SHEETS
G1-G2	10-11	GRADING PLANS
DP1	12	DRAINAGE PLAN
CAS1	13	CONSTRUCTION AREA SIGN PLAN

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AP	ANGLE POINT
AVE	AVENUE
BC	BEGIN HORIZONTAL CURVE
C&G	CURB AND GUTTER
CL, C	CENTER LINE
CONC	CONCRETE
CONST	CONSTRUCTION
CT	COURT
DI	DROP INLET
DR	DRIVE
DWY	DRIVEWAY
EC	END OF HORIZONTAL CURVE
EG	EXISTING GROUND
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FG	FINISH GRADE
FL	FLOW LINE
HCR	HANDICAP RAMP
HMA	HOT MIX ASPHALT
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
PE	PROFESSIONAL ENGINEER
PI	POINT OF INTERSECTION
PROP	PROPOSED
R	RADIUS
RD	ROAD
RE	RESIDENT ENGINEER
R/W	RIGHT OF WAY
RP	RADIUS POINT
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
STA	STATION
STD	STANDARD
ST	STREET
SW	SIDEWALK
TFC	TOP FACE OF CURB
TC	TOP OF CURB



APPROVED BY: _____ DATE: _____

PETE VANDER POEL, CHAIR
COUNTY OF TULARE BOARD OF SUPERVISORS

APPROVED BY: _____ DATE: _____

REED SCHENKE, P.E., DIRECTOR
COUNTY OF TULARE RESOURCE MANAGEMENT AGENCY

SIGNED BY: _____ DATE: _____

MICHAEL J. WINTON, P.E., PROJECT MANAGER
COUNTY OF TULARE RESOURCE MANAGEMENT AGENCY



PROJECT CONTROL

PROJECT COORDINATES AND BEARINGS ARE BASED ON THE POINT TABLE SHOWN BELOW

PROJECT ELEVATIONS SHOWN ARE BASED CONTROL POINT NO. 40, SHOWN BELOW.

POINT NO.	NORTHING USFT	EASTING USFT	ELEV. USFT	DESCRIPTION & LOCATION
39	2009484.23	6436241.56	282.07	MAG IN TOP OF CURB WEST OF CATCH BASIN, NORTH SIDE OF HARVEST & ROAD 66.
40	2009443.51	6435743.46	282.37	SCRIBED "X" IN TOP OF CONCRETE MOW STRIP AT WEST END LOT FOR VITA CLEAN.
41	2009491.68	6435195.76	279.99	"X" IN CHISELED BOX WEST END OF RETURN, NORTHWEST CORNER OF FEATHERSTONE & HARVEST
44	2009483.70	6436672.16	282.93	LEAD PLUG WITH BRASS CALTRANS WASHER IN SIDEWALK.



Know what's below.
Call before you dig.

Contractor shall call
Underground Service Alert at
811 two working days prior
to excavation

REVISIONS

No.	DATE	DESCRIPTION

COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD.
VISALIA, CA 93277
(559)624-7000
WWW.TULARECOUNTY.CA.GOV/RMA

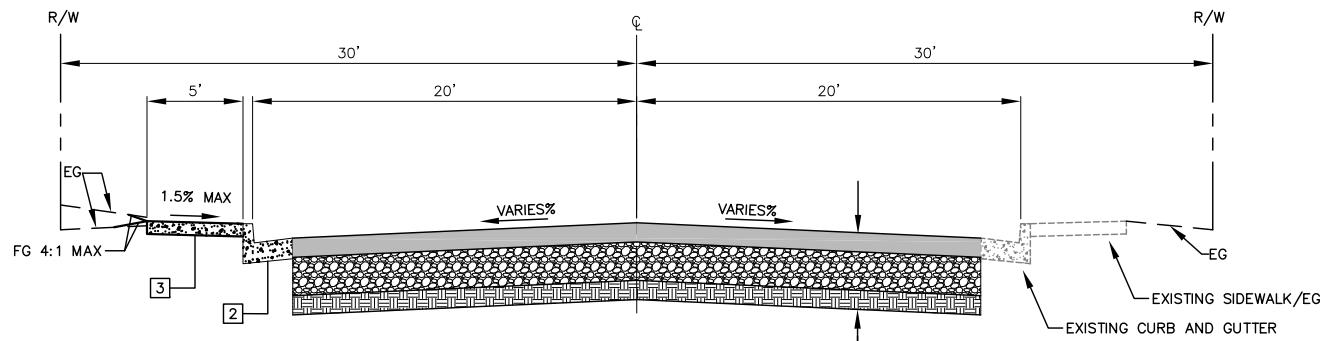


TITLE SHEET
HARVEST AVENUE IMPROVEMENTS PROJECT
TULARE COUNTY

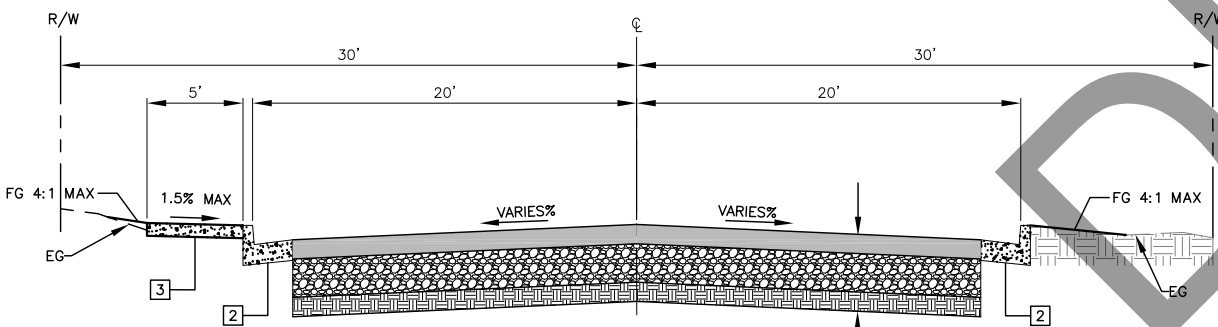
SCALE	NTS
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	IG
DRAWN	IG
CHECKED	PAO
FILE	17012-1T001.DWG
DATE	06/9/2020
SHEET No.	T1

1 of 13

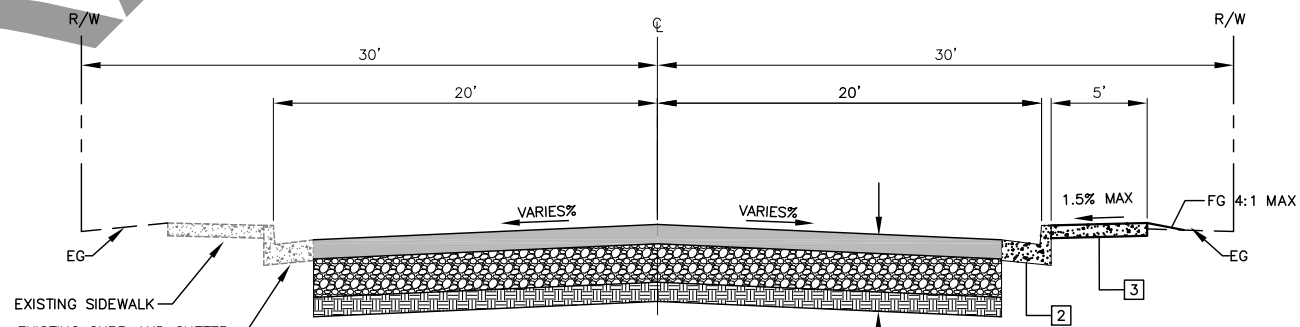
CA\BERS\JUNICHEZ\BEG\PROJECTS\17012-1\17012-1T001.DWG 5/19/2020 5:08 PM



HARVEST AVE
 STA 11+65.55 TO STA 12+93.59
 STA 13+73.59 TO STA 23+25.84



HARVEST AVE
 STA 10+52.08 TO STA 11+64.55



HARVEST AVE
 STA 23+58.68 TO STA 28+10.94

LEGEND

- HOT MIX ASPHALT
- AGGREGATE BASE
- PROPOSED CONCRETE
- EXISTING CONCRETE
- EXISTING GROUND

NOTES

1. ALL CONSTRUCTION SHALL BE INSIDE OF COUNTY RIGHT OF WAY AND VERIFIED BY RE.
2. GRADE AREA BEHIND SIDEWALK TO PROVIDE SMOOTH TRANSITION WITHIN R/W. THIS IS INCLUDED IN THE PAYMENT FOR FINISHING ROADWAY.
3. SEE LAYOUT SHEETS FOR LOCATIONS OF DRIVEWAYS AND CONFORM LIMITS

**TYPICAL STRUCTURAL SECTIONS
 LOCATION 4**

- 1. 20-YEAR DESIGN
 0.5' HOT MIX ASPHALT (TYPE A)
 1.00' CLASS 2 AGGREGATE BASE, 95% COMPACTION
 0.5' COMPACTED NATIVE 95% COMPACTION
- 2. MINOR CONCRETE (CURB AND GUTTER), BARRIER TYPE,
 SEE CONSTRUCTION DETAILS ON SHEET C3
 0.5' COMPACTED NATIVE 95% COMPACTION
- 3. MINOR CONCRETE (SIDEWALK), 4" THICK TYPICAL

NO.	REVISIONS	DATE	BY

COUNTY OF TULARE
 RESOURCE MANAGEMENT AGENCY
 5961 SOUTH MOONEY BLVD.
 VISALIA, CA 93277
 (559)624-7000
 WWW.TULARECOUNTY.CA.GOV/RMA



TYPICAL CROSS SECTIONS
**HARVEST AVENUE IMPROVEMENTS
 PROJECT**
 TULARE COUNTY

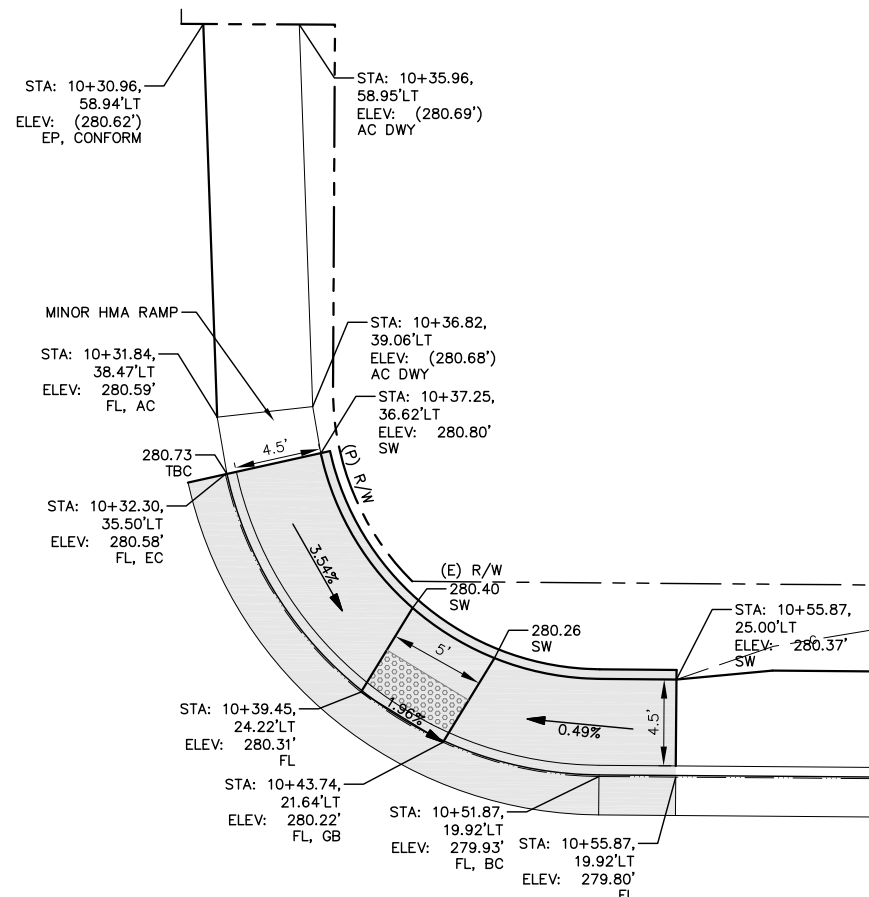
SCALE	H: 1"=5' V: 1"=2.5'
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	IG
DRAWN	IG
CHECKED	JS
FILE	17012-1X001.DWG
DATE	06/9/2020

SHEET No.
X1
 2 OF 13

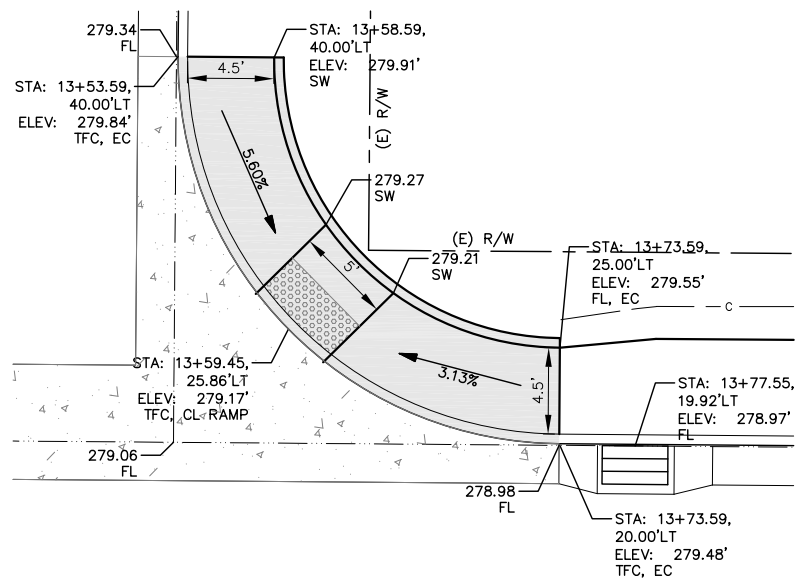
DRAFT

11/21/2020

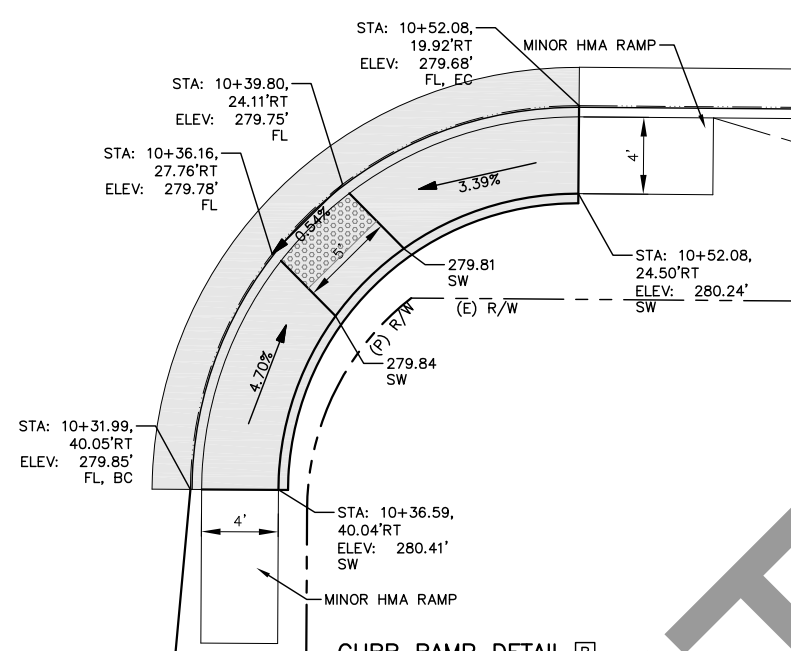
CALBERSUSAN@TULARECOUNTY.CA.GOV



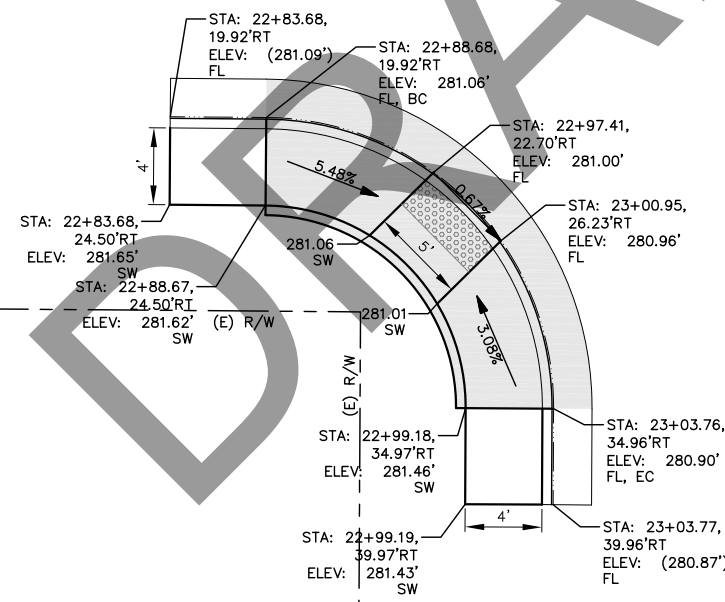
CURB RAMP DETAIL A
SCALE: 1"=5'



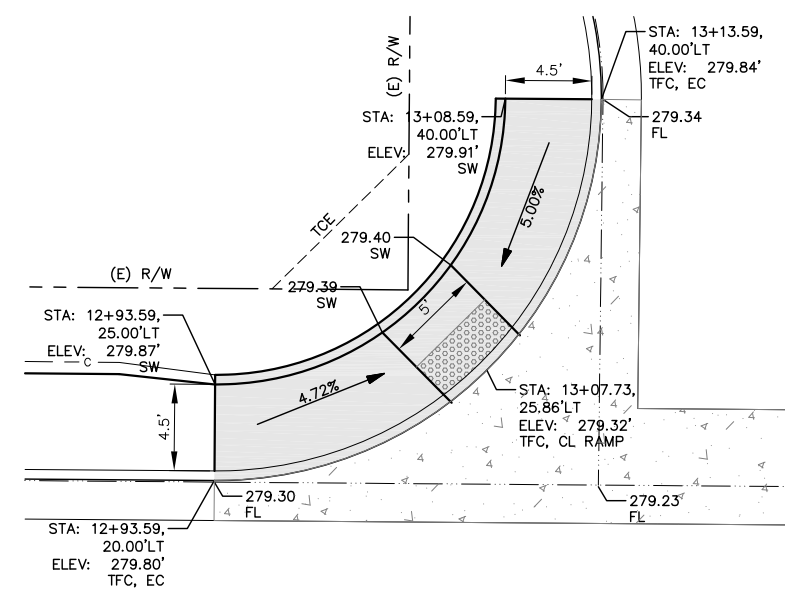
CURB RAMP DETAIL B
SCALE: 1"=5'



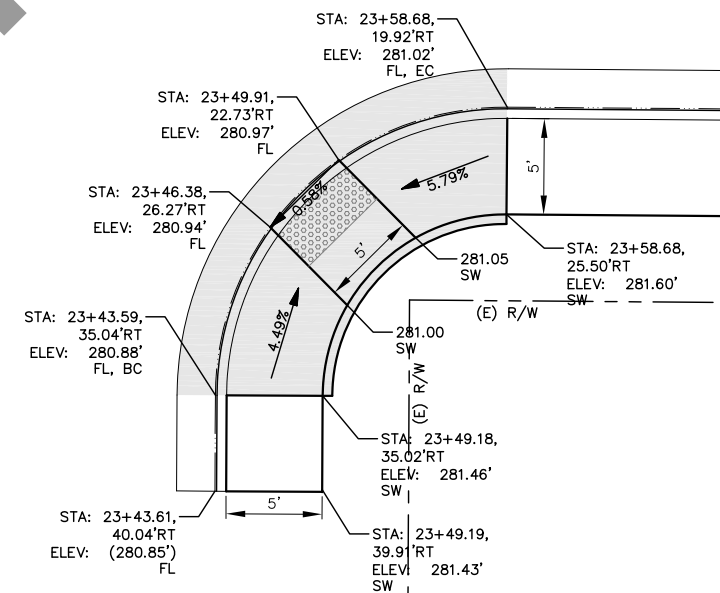
CURB RAMP DETAIL C
SCALE: 1"=5'



CURB RAMP DETAIL D
SCALE: 1"=5'



CURB RAMP DETAIL E
SCALE: 1"=5'



CURB RAMP DETAIL F
SCALE: 1"=5'

LEGEND (C1-C4):

- DETECTABLE WARNING SURFACE.
- MINOR CONC (RAMP) LIMITS OF PAYMENT.
- MINOR CONCRETE (CONTINUOUS GUTTER)
- MINOR CONC (RAMP)

GENERAL NOTES (C1-C4):

1. TRANSITIONS FROM RAMPS AND LANDING TO WALKS, GUTTERS OR STREETS SHALL BE FLUSH (NO LIP) AND FREE OF ABRUPT CHANGES.
2. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO AND WITHIN 24" OF THE CURB RAMP SHALL NOT BE STEEPER THAN 1:20 (5.0%). GUTTER PAN SLOPE SHALL NOT EXCEED 1" OF DEPTH FOR EACH 2'-0" OF WIDTH.
3. CURB RAMP LANDING SHALL HAVE A DETECTABLE WARNING SURFACE THAT EXTENDS THE FULL WIDTH AND 3'-0" DEPTH OF THE RAMP. DETECTABLE WARNING SURFACES SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. PAYMENT FOR DETECTABLE WARNING SURFACE IS INCLUDED IN THE PAYMENT FOR MINOR CONCRETE (RAMP).
4. ALL CURB RAMPS AND DRIVEWAYS SHALL BE CONSTRUCTED PER DIMENSIONS, STATIONS, OFFSETS AND ELEVATIONS ON THIS SHEET.

5. PAYMENT FOR MINOR HMA RAMP SHALL BE PAID FOR AS MINOR HOT MIX ASPHALT, LIMITS WILL BE DETERMINED BY RE FOR SMOOTH TRANSITION.
6. MINOR CONCRETE RETAINING CURB DETAIL PER SHEET C3. PAYMENT FOR INSTALLING MINOR CONCRETE RETAINING CURB WITHIN LIMIT OF PAYMENT IS INCLUDED IN THE UNIT PRICE FOR MINOR CONCRETE (RAMP).
7. PAYMENT FOR INSTALLING CURB & GUTTER WITHIN LIMIT OF PAYMENT FOR RAMP IS INCLUDED IN THE UNIT PRICE FOR MINOR CONCRETE (RAMP).
8. DOWELS SHALL BE PROVIDED IN EXISTING CONCRETE WHERE PROPOSED ABUTTING CONCRETE WORK IS CONSTRUCTED TO PREVENT SEPARATION OR UNEVEN CONSOLIDATION AS DIRECTED BY THE ENGINEER. DOWELS SHALL BE #4 REBAR, 12" ON CENTER, 12" MIN. LENGTH WITH 6" MIN PENETRATION INTO EXISTING CONCRETE AND EPOXY GLUED IN PLACE PLUS 3" MIN COVER.

NO.	REVISIONS	DATE	BY

COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD.
VISALIA, CA 93277
(559)624-7000
WWW.TULARECOUNTY.CA.GOV/RMA



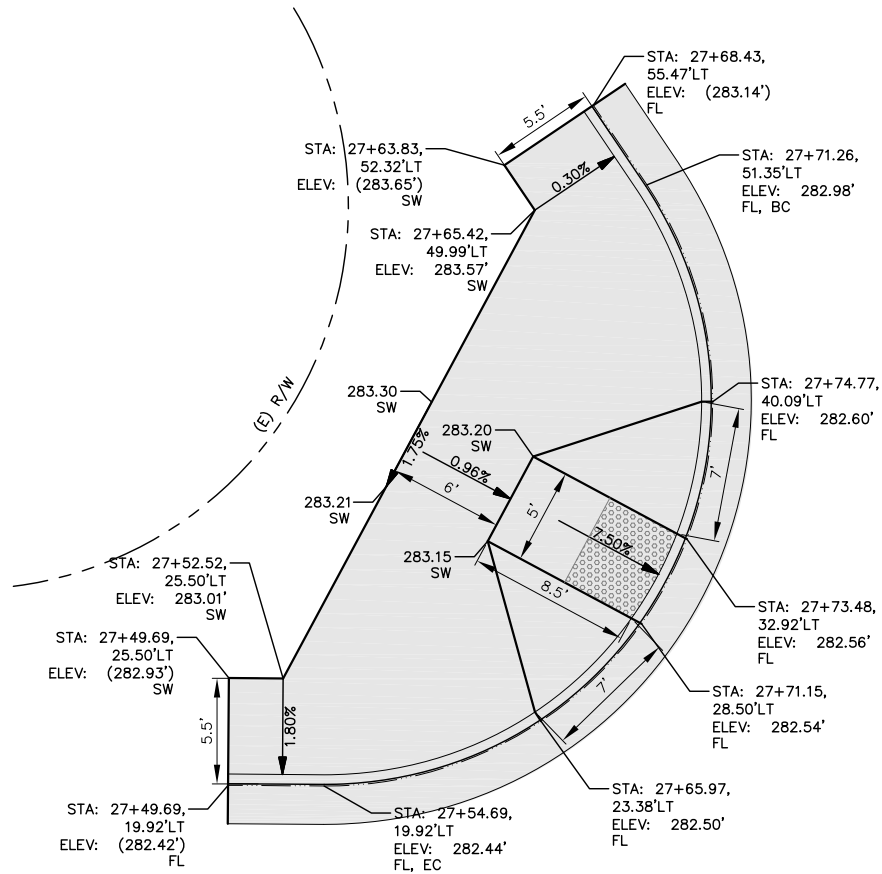
CONSTRUCTION DETAILS
HARVEST AVENUE IMPROVEMENTS PROJECT
TULARE COUNTY

SCALE	PER DETAIL
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	IG
DRAWN	IG
CHECKED	PAO
FILE	17012-1C001.DWG
DATE	06/9/2020

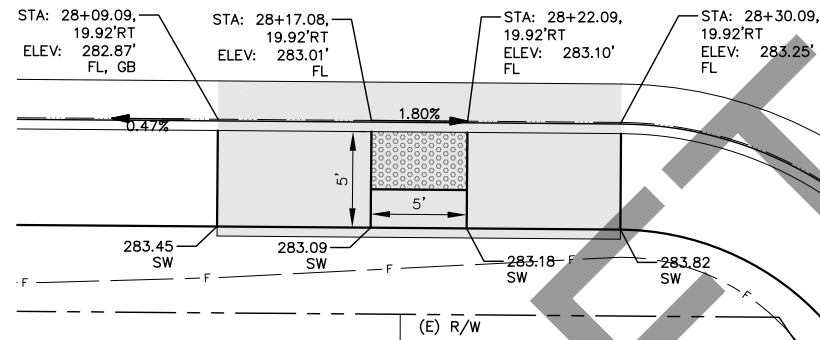


SHEET No.
C1
3 OF 13

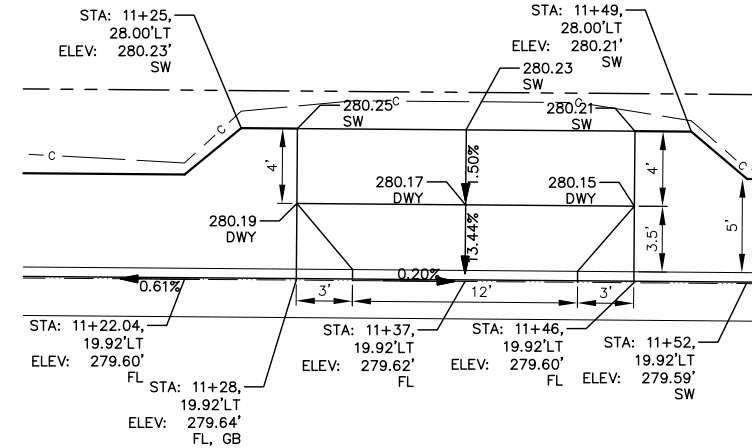
CALBERSUSAN@CH2MHILL.COM\PROJECTS\17012-1\17012-1C001.DWG 5/19/2020 5:07 PM



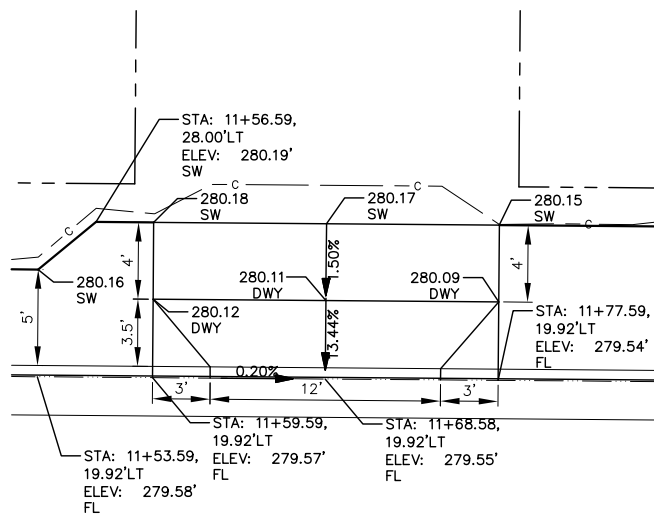
CURB RAMP DETAIL G
SCALE: 1"=5'



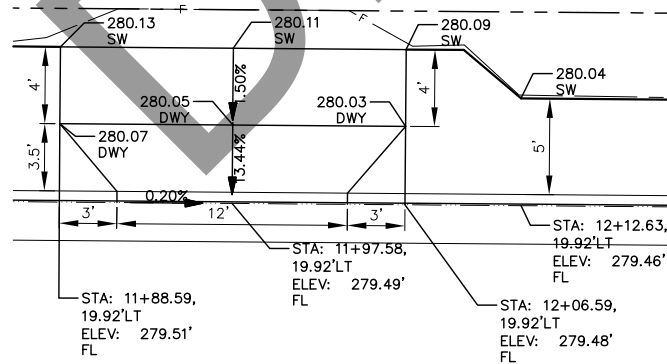
CURB RAMP DETAIL H
SCALE: 1"=5'



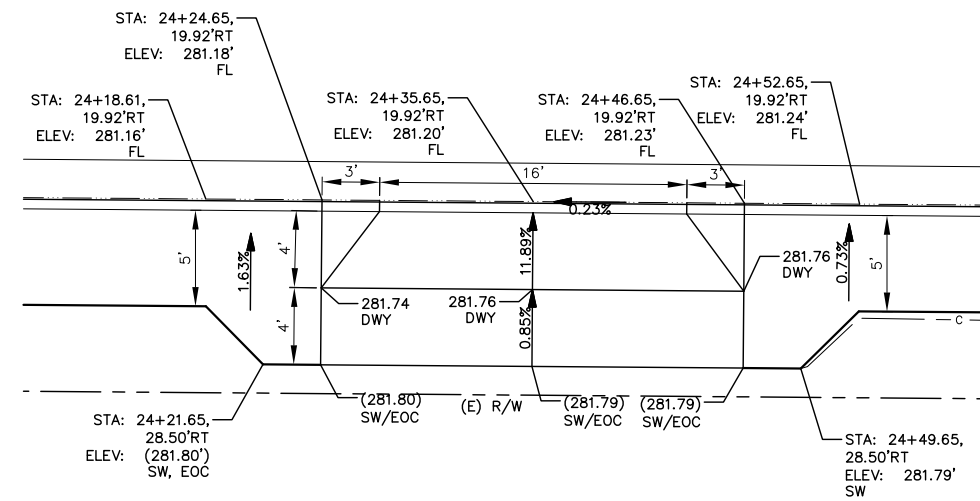
DRIVEWAY DETAIL A
SCALE: 1"=5'



DRIVEWAY DETAIL B
SCALE: 1"=5'



DRIVEWAY DETAIL C
SCALE: 1"=5'



DRIVEWAY DETAIL D
SCALE: 1"=5'

NO.	REVISIONS	DESCRIPTION	DATE	BY

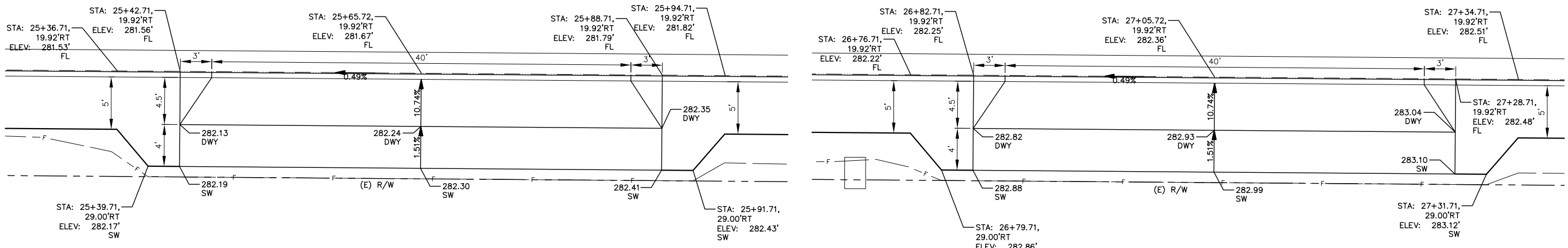
COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD.
VISALIA, CA 93277
(559) 624-7000
WWW.TULARECOUNTY.CA.GOV/RMA



CONSTRUCTION DETAILS
HARVEST AVENUE IMPROVEMENTS PROJECT
TULARE COUNTY

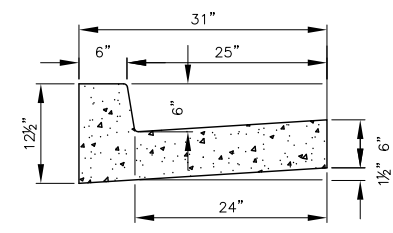
SCALE	PER DETAIL
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	PAO
DRAWN	IG
CHECKED	PAO
FILE	17012-1C001.DWG
DATE	06/9/2020
SHEET No.	



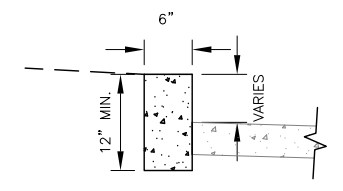


DRIVEWAY DETAIL E
SCALE: 1"=5'

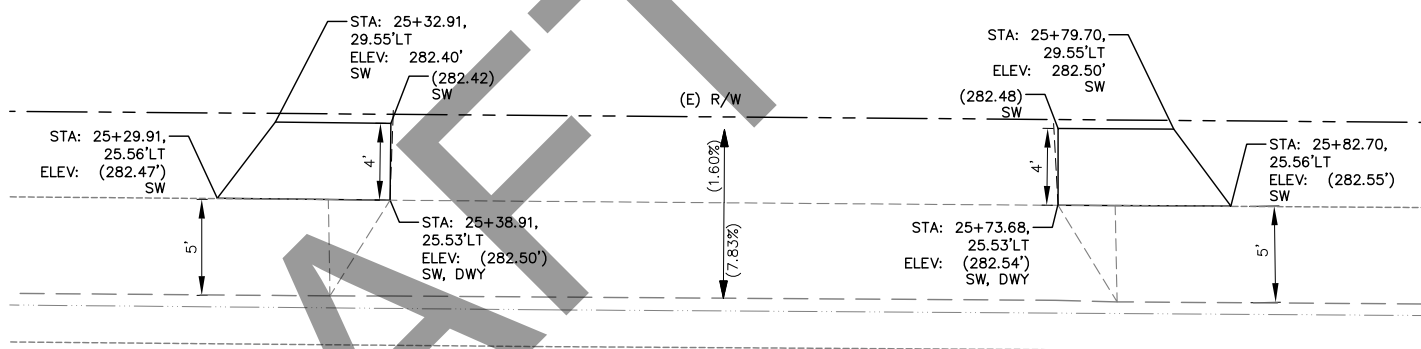
DRIVEWAY DETAIL F
SCALE: 1"=5'



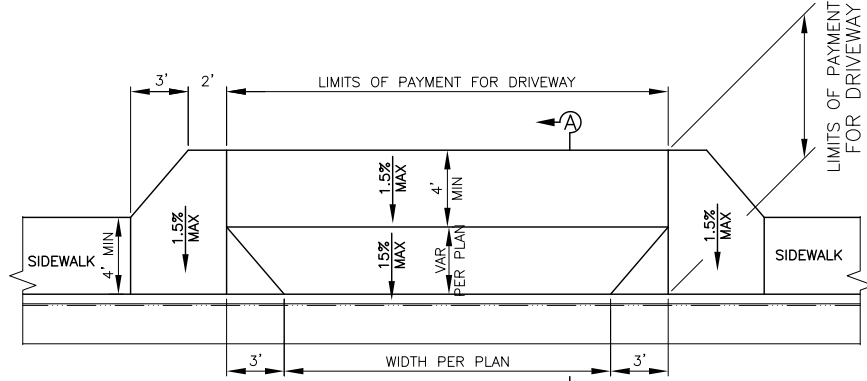
MINOR CONCRETE (CURB AND GUTTER) DETAIL
SCALE: 1"=1'



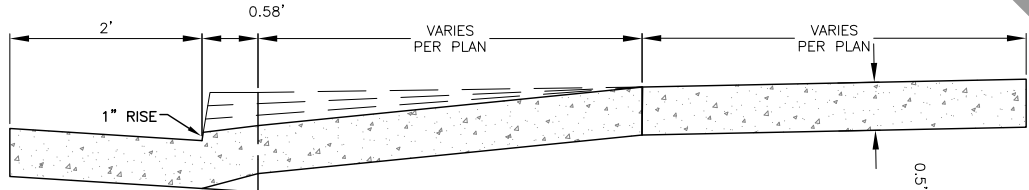
MINOR CONCRETE RETAINING CURB DETAIL
SCALE: 1"=1'



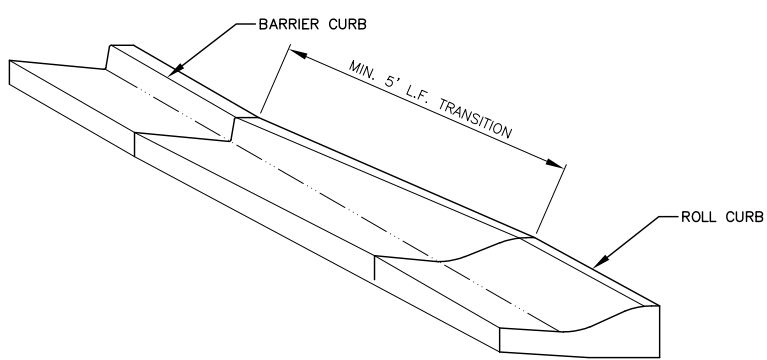
EXIST DWY SIDEWALK DETAIL
SCALE: 1"=5'



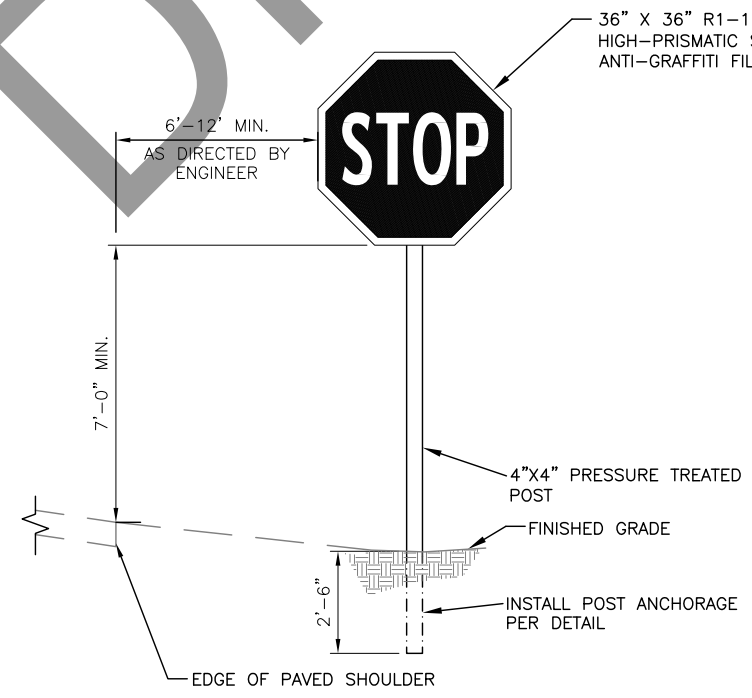
DRIVEWAY DETAIL
SCALE: 1"=5'



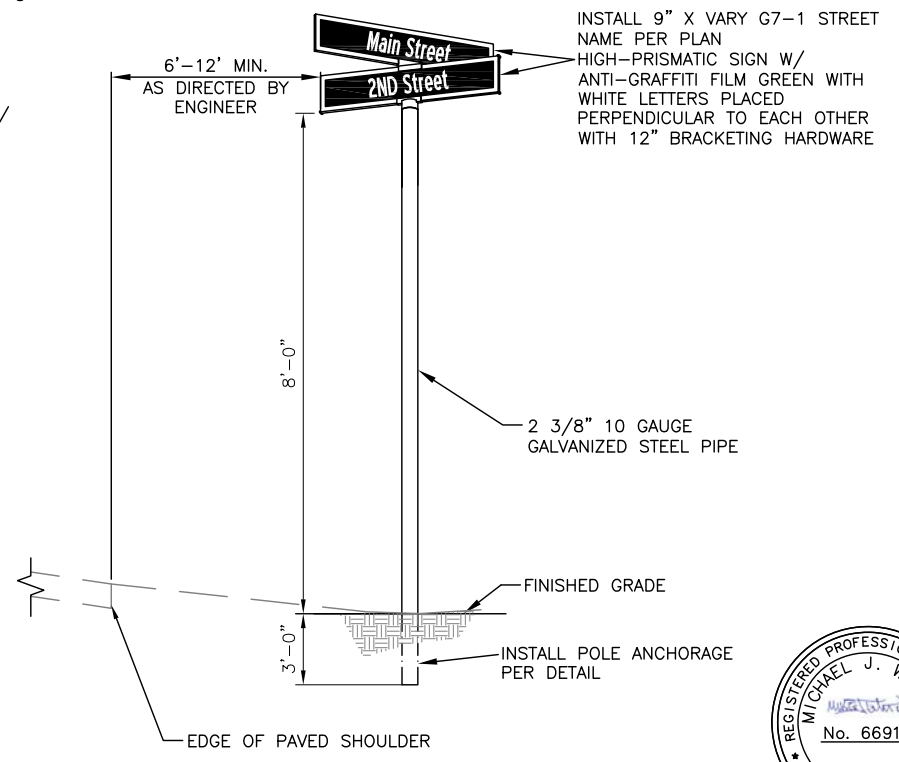
SECTION A-A
SCALE: 1"=1'



ROLL CURB TRANSITION DETAIL
SCALE: 1"=2'



R1-1 & W4-4P
SCALE: NTS



G7-1 SIGN
SCALE: NTS

DRAFT

NO.	REVISIONS	DATE	BY

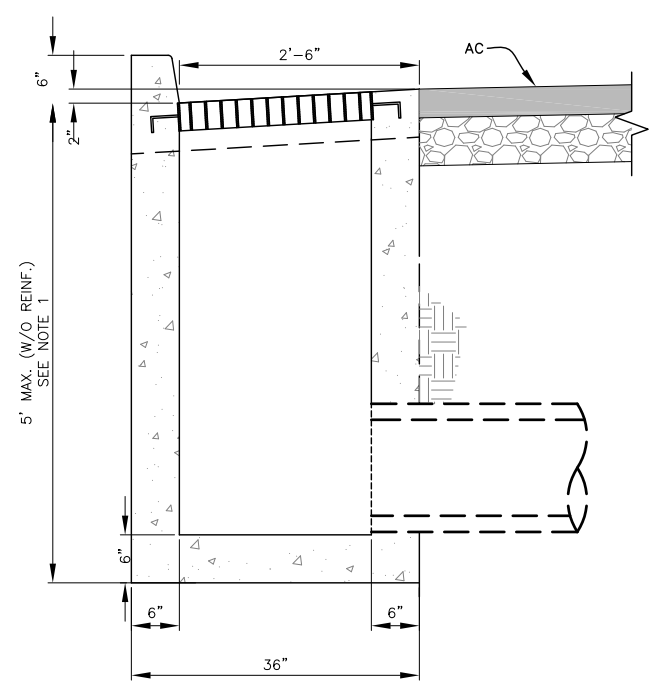
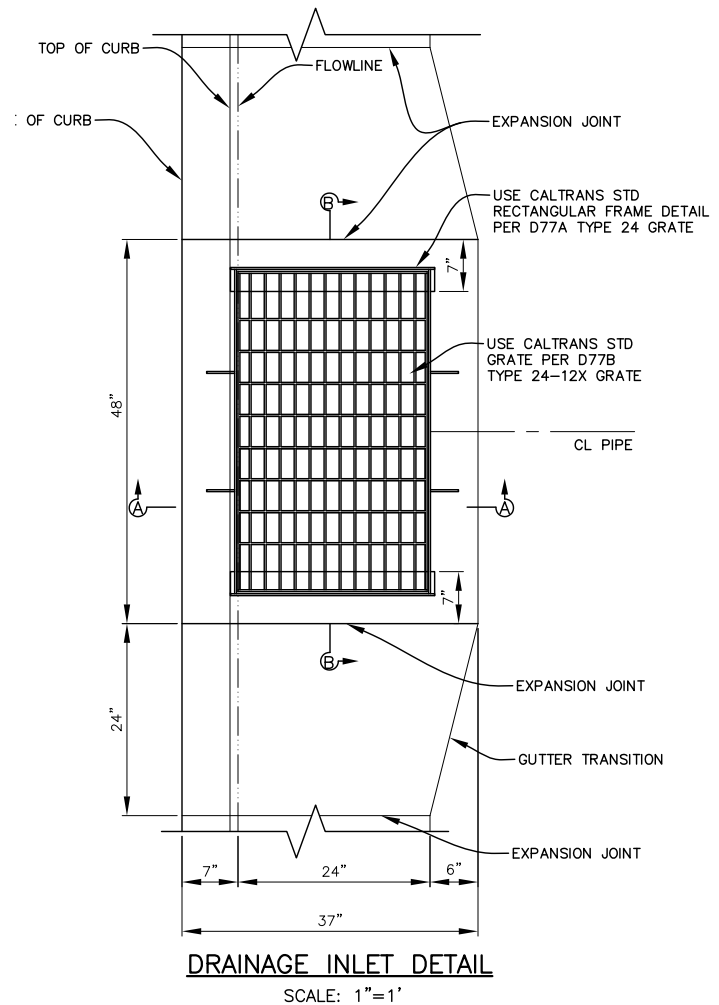
COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD.
VISALIA, CA 93277
(559)624-7000
WWW.TULARECOUNTY.CA.GOV/RMA



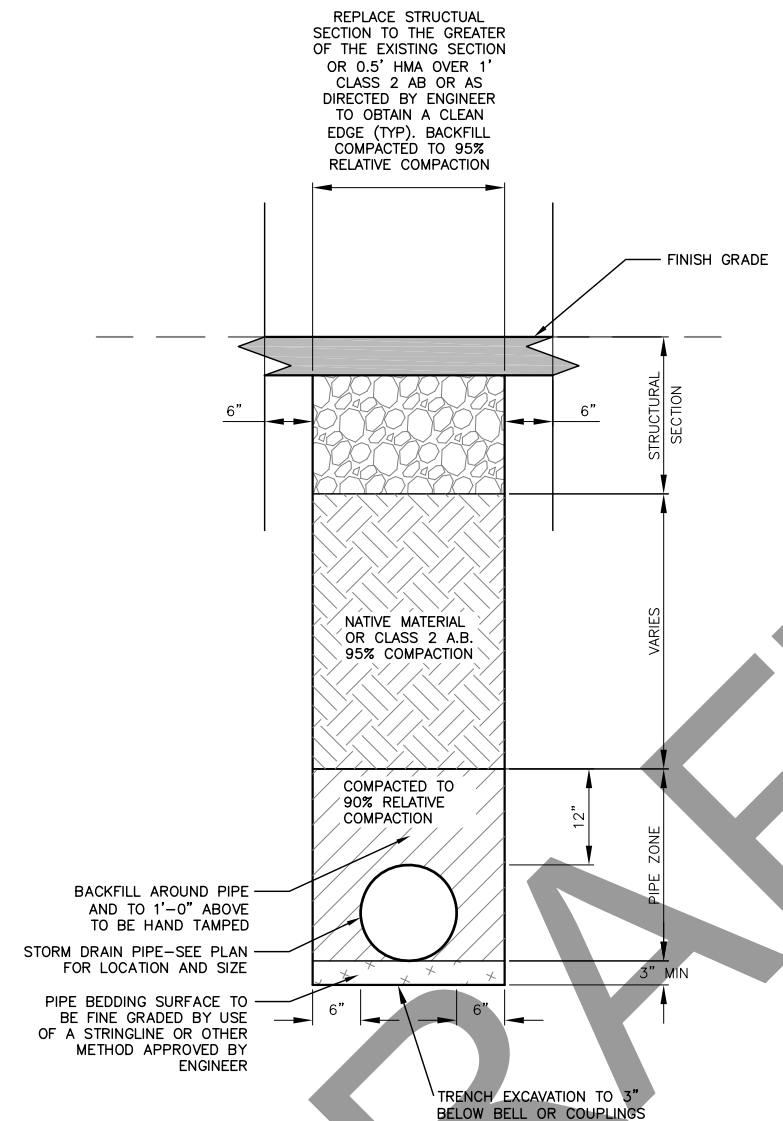
CONSTRUCTION DETAILS
HARVEST AVENUE IMPROVEMENTS PROJECT
TULARE COUNTY

SCALE	PER DETAIL
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	PAO
DRAWN	IG
CHECKED	PAO
FILE	17012-1C001.DWG
DATE	06/9/2020
SHEET No.	

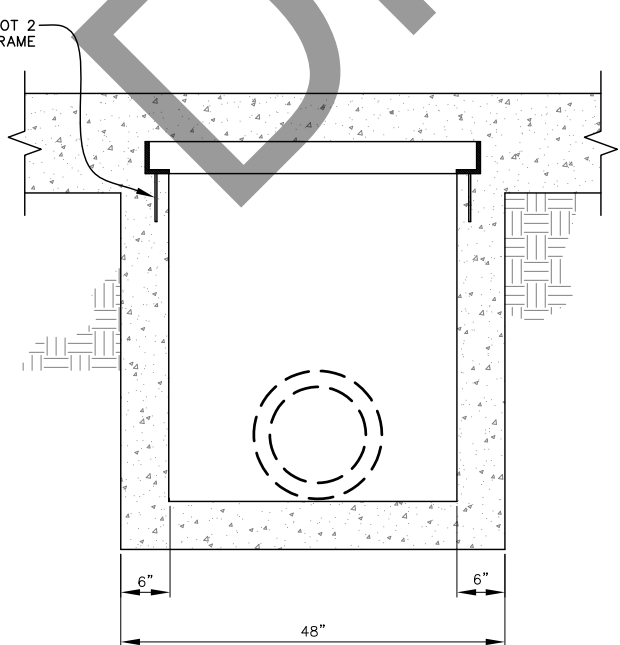




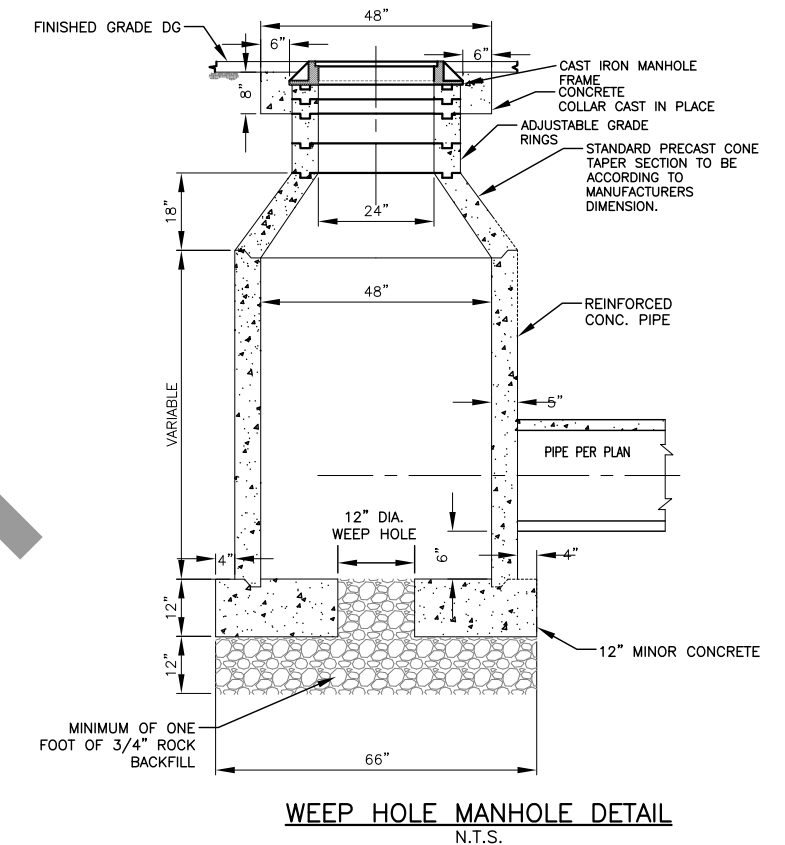
SECTION A-A



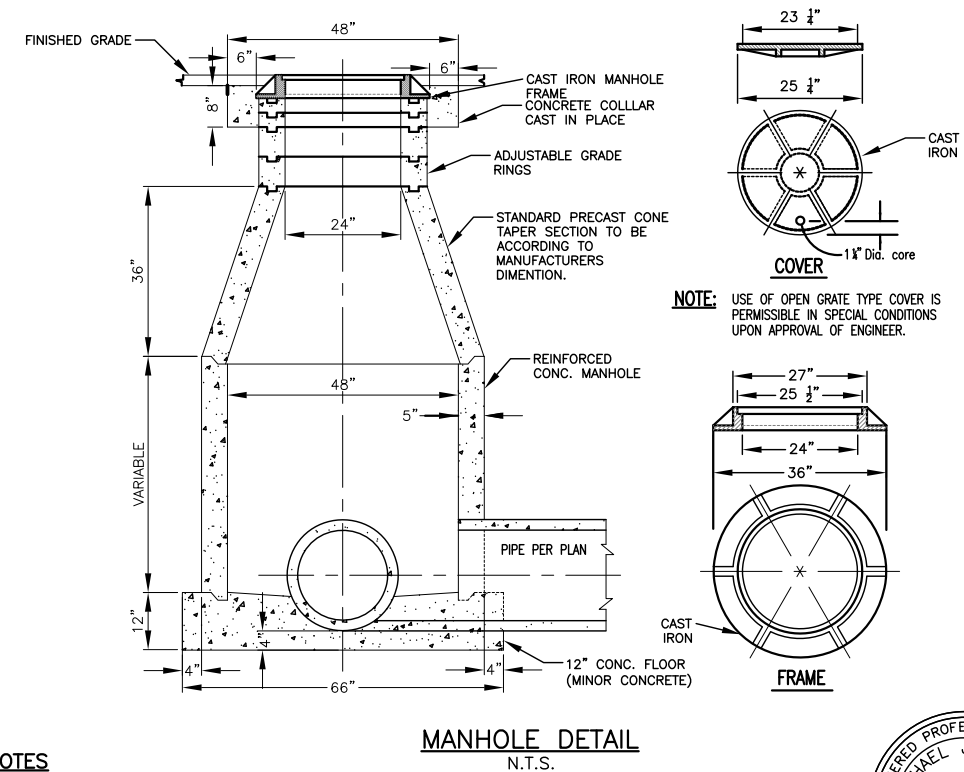
CULVERT TRENCH DETAIL
SCALE: 1"=1'



SECTION B-B



WEEP HOLE MANHOLE DETAIL
N.T.S.



MANHOLE DETAIL
N.T.S.

CONSTRUCTION NOTES

1. DI'S DEEPER THAN 5', REBAR SHOULD BE #4 AT 18" O.C. BOTH DIRECTIONS.



NO.	DATE	BY	DESCRIPTION

REVISIONS



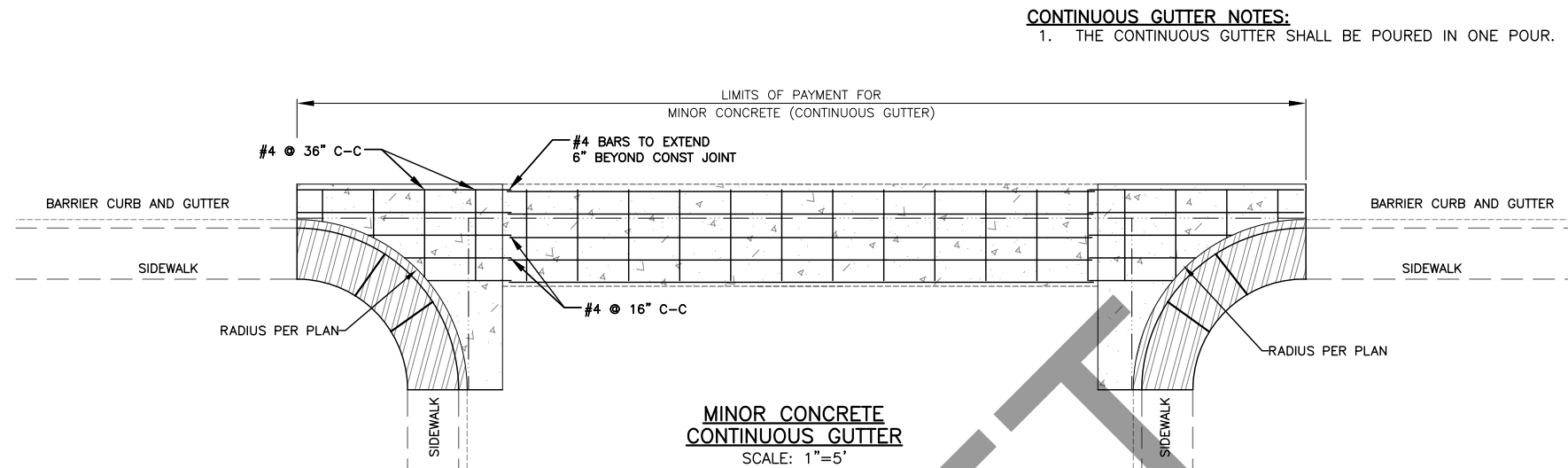
COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD.
VISALIA, CA 93277
(559)624-7000
WWW.TULARECOUNTY.CA.GOV/RMA

CONSTRUCTION DETAILS
HARVEST AVENUE IMPROVEMENTS PROJECT
TULARE COUNTY

SCALE	PER DETAIL
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	PAO
DRAWN	IG
CHECKED	PAO
FILE	17012-1C001.DWG
DATE	06/9/2020
SHEET No.	

C4
6 of 13

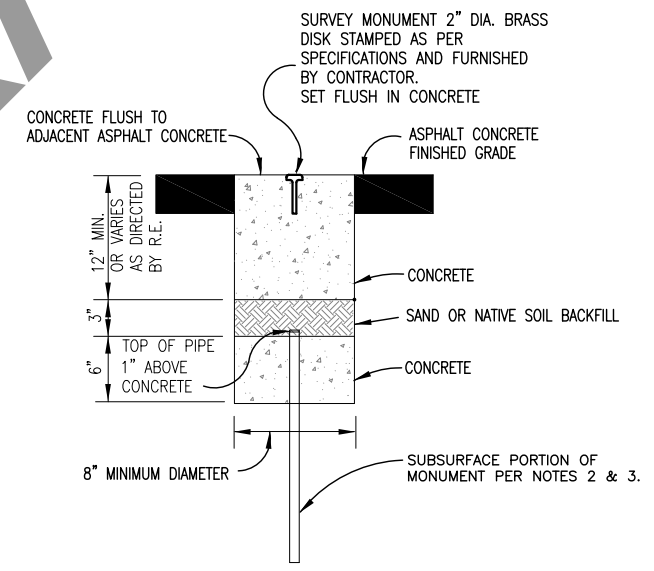
CA\BERSUS\NCH\Z\B\PROJ\17012-1\17012-1C001.DWG 5/19/2020 5:07 PM



CONTINUOUS GUTTER NOTES:
 1. THE CONTINUOUS GUTTER SHALL BE POURED IN ONE POUR.

MINOR CONCRETE CONTINUOUS GUTTER
 SCALE: 1"=5'

DRAFT



SURVEY MONUMENT DETAIL IN ROADWAY DETAIL
 SCALE: 1"=1'

- SURVEY MONUMENT NOTES:**
- ALL MONUMENTS AND REFERENCES SHALL BE PERMANENTLY STAMPED PURSUANT TO BUSINESS AND PROFESSIONS CODE SECTION 8772.
 - THE SUBSURFACE PORTION OF THE MONUMENT SHALL BE A GALVANIZED IRON PIPE 1" IN DIAMETER X 24" IN LENGTH MINIMUM, TAGGED PER NOTE 1.
 - IF A SUBSURFACE MONUMENT EXIST AND IS NOT DISTURBED IT MAY REMAIN IF AFTER BEING DRIVEN TO A DEPTH OF 15" BELOW FINISHED GRADE IT REMAINS IN GOOD CONDITION, OTHERWISE REMOVE EXISTING AND SET PER NOTE 2.
 - A CIRCULAR HOLE SHALL BE CLEANLY CUT IN THE ASPHALT CONCRETE FOR PLACEMENT OF THE MONUMENT.



NO.	REVISIONS	DATE	BY

COUNTY OF TULARE
 RESOURCE MANAGEMENT AGENCY
 5961 SOUTH MOONEY BLVD.
 VISALIA, CA 93277
 (559)624-7000
 WWW.TULARECOUNTY.CA.GOV/RMA



CONSTRUCTION DETAILS
HARVEST AVENUE IMPROVEMENTS PROJECT
 TULARE COUNTY

SCALE	PER DETAIL
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	JS
DRAWN	JS
CHECKED	MJW
FILE	17012-1C001.DWG
DATE	06/9/2020

SHEET No.
C5
 7 of 13

CALBERSUSAN@CHEZDESIGNPROF.COM | 7012-117012-1C001.DWG | 6/9/2020 5:07 PM

CONSTRUCTION NOTES (SHEETS L1 & L2):

- 1 MINOR CONCRETE (CURB & GUTTER) PER DETAIL ON SHEET C3
- 2 MINOR CONCRETE (ROLL CURB TRANSITION) PER DETAIL ON SHEET C3
- 3 MINOR CONCRETE (SIDEWALK) WIDTH PER PLAN
- 4 MINOR CONCRETE (CURB RAMP) PER CURB RAMP [X] DETAIL ON SHEET C1-C2
- 5 MINOR CONCRETE (DRIVEWAY) PER DRIVEWAY DETAIL [X] ON SHEET C2-C3
- 6 EXISTING UTILITY, PROTECT IN PLACE
- 7 REMOVE MAILBOX AND SALVAGE TO ENGINEER
- 8 RELOCATE MAILBOX
- 9 MINOR HMA RAMP
- 10 MINOR HMA DRIVEWAY (0.4' HMA, 0.5' AB)

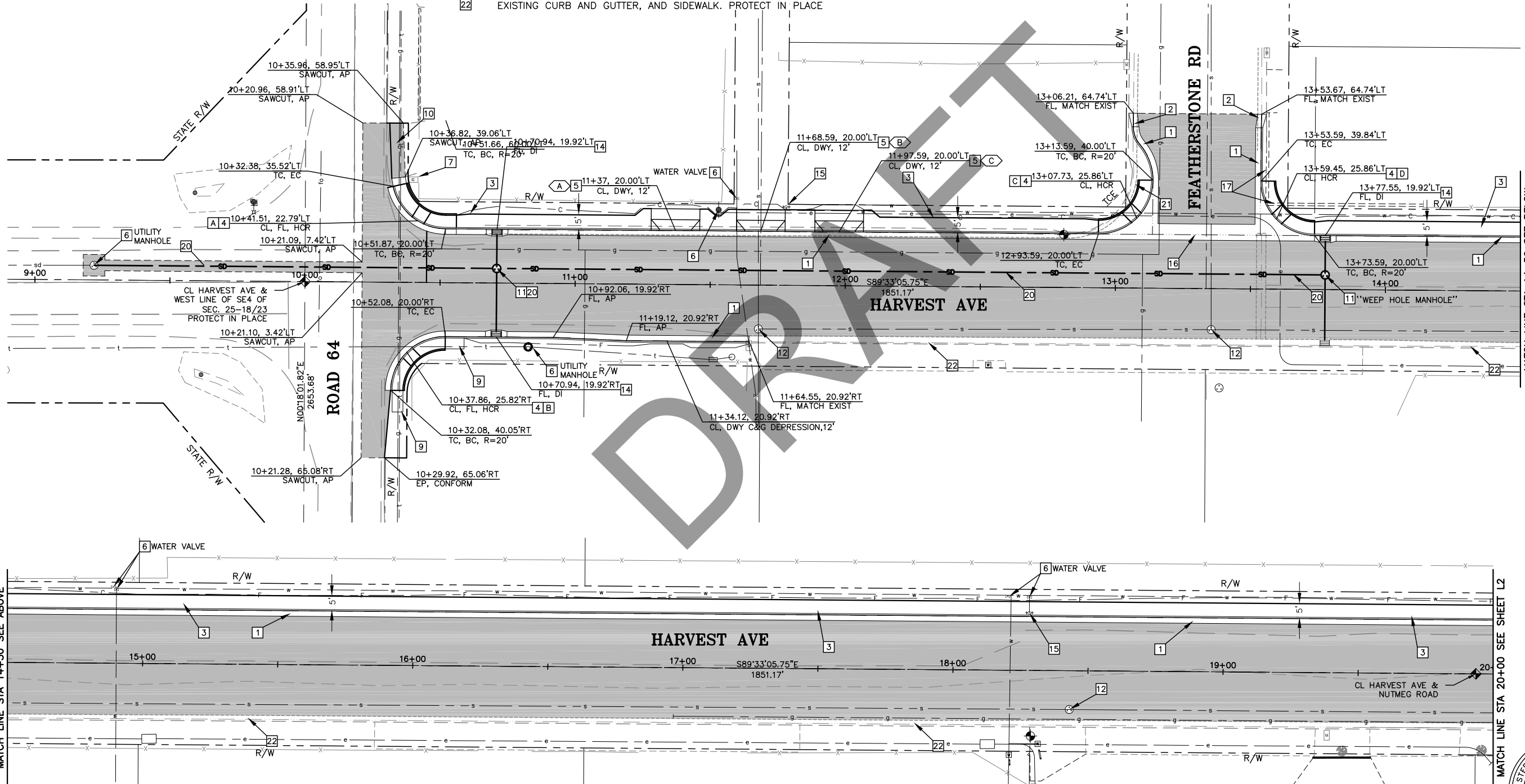
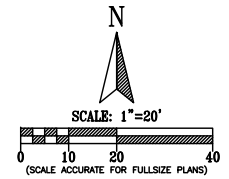
- 11 48" SDMH PER MANHOLE DETAIL ON SHEET C4
- 12 ADJUST MANHOLE TO GRADE BY OTHERS (GOSHEN CSD)
- 13 ADJUST UTILITY TO GRADE BY OTHERS (CALWATER)
- 14 DRAINAGE INLET PER DRAINAGE INLET DETAIL ON SHEET C4
- 15 RELOCATE FIRE HYDRANT BY OTHERS (CALWATER)
- 16 MINOR CONCRETE (CONTINUOUS GUTTER) PER DETAIL ON SHEET C3
- 17 REMOVE CONCRETE CURB TO R/W (N)
- 18 REMOVE SHRUBS (N)
- 19 EXIST FENCE, PROTECT IN PLACE
- 20 REFER TO DP SHEET FOR DRAINAGE INFORMATION
- 21 REMOVE EXISTING CURB & GUTTER (N)
- 22 EXISTING CURB AND GUTTER, AND SIDEWALK. PROTECT IN PLACE

LEGEND

- [Symbol] PROP. STRUCTURAL SECTION
- [Symbol] EXIST FENCE
- [Symbol] EXIST MANHOLE
- [Symbol] EXIST ELECTRICAL POLE
- [Symbol] EXIST TREE
- [Symbol] EXIST FIRE HYDRANT
- [Symbol] EXIST WATER METER
- [Symbol] EXIST WATER VALVE
- [Symbol] EXIST LIGHT POLE
- [Symbol] EXIST SIGN
- [Symbol] EXIST MAILBOX
- [Symbol] EXIST DI
- [Symbol] SURVEY MONUMENT ADJUST TO GRADE
- [Symbol] CONTROL POINT

GENERAL NOTES:

1. SAWCUT BOUNDARIES ARE APPROXIMATED FOR THE CONSTRUCTION LIMITS AND SHALL BE DEFINED IN THE FIELD BY THE ENGINEER.
2. THE LOCATION OF ALL UNDERGROUND FACILITIES SHOWN ON THIS PLAN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL EXISTING FACILITIES AND IMMEDIATELY NOTIFY THE ENGINEER IF ANY SUCH FACILITIES INTERFERE WITH THE CONSTRUCTION OF IMPROVEMENTS.
3. SEE SHEET X1 FOR TYPICAL CROSS SECTIONS.
4. FOR EXISTING AND PROPOSED SIGN LOCATION DETAILS SEE GRADING PLANS G1-G2.
5. (N) INCLUDED IN THE PAYMENT FOR CLEARING AND GRUBBING.



NO.	REVISIONS	DATE	BY

COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD.
VISALIA, CA 93277
(559)624-7000
WWW.TULARECOUNTY.CA.GOV/RMA

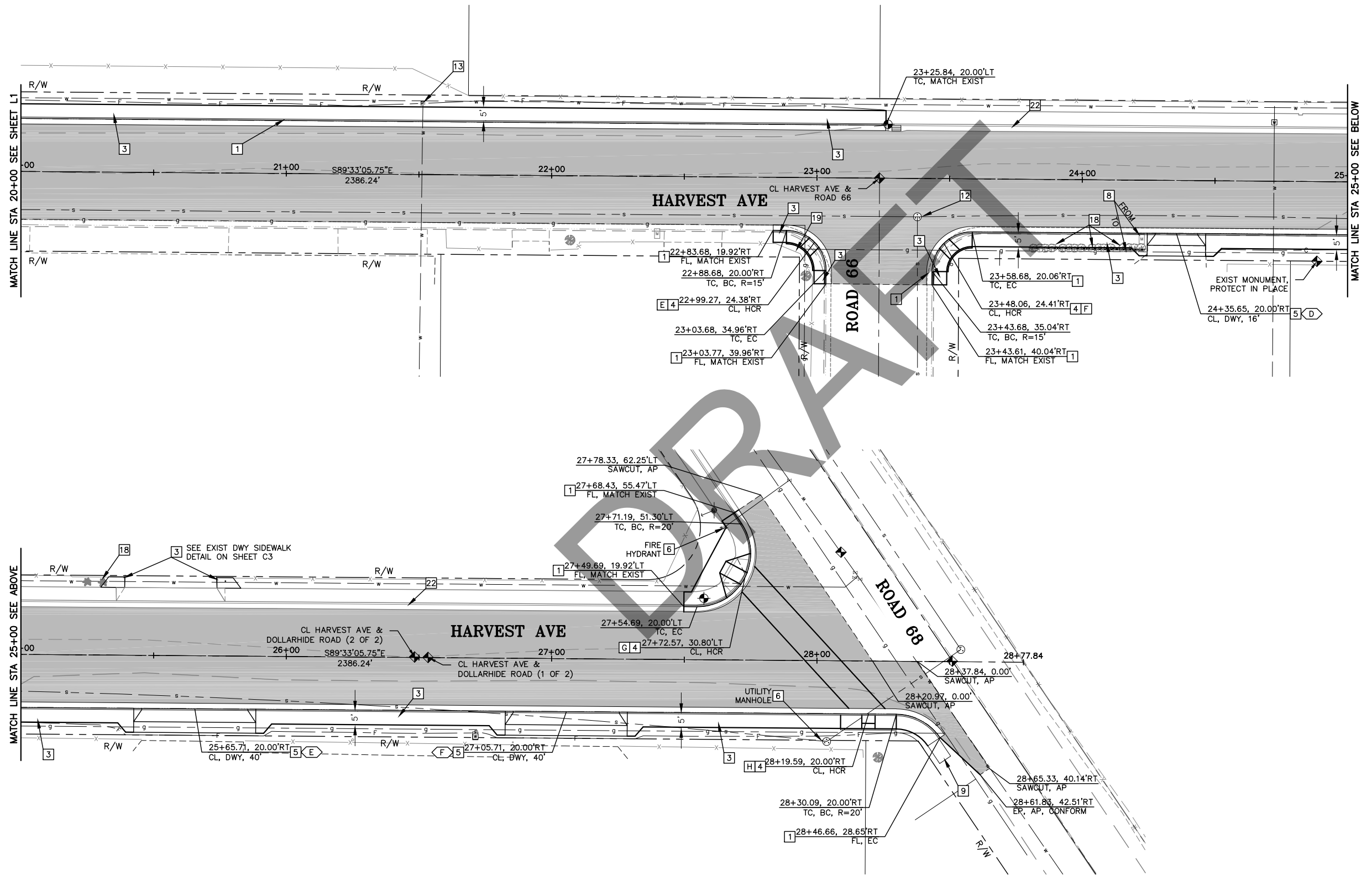
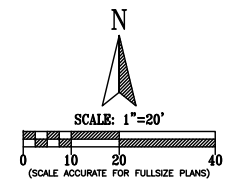
PLAN SHEET

HARVEST AVENUE IMPROVEMENTS PROJECT

TULARE COUNTY

SCALE	1"=20'
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	JS
DRAWN	IG
CHECKED	MJW
FILE	17012-1L001.DWG
DATE	06/9/2020
SHEET No.	L1





No.	DESCRIPTION	DATE	BY

COUNTY OF TULARE
 RESOURCE MANAGEMENT AGENCY
 5961 SOUTH MOONEY BLVD.
 VISALIA, CA 93277
 (559)624-7000
 WWW.TULARECOUNTY.CA.GOV/RMA



PLAN SHEET
HARVEST AVENUE IMPROVEMENTS PROJECT
 TULARE COUNTY

SCALE	1"=20'
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	JS
DRAWN	JS
CHECKED	MJW
FILE	17012-1L001.DWG
DATE	06/9/2020

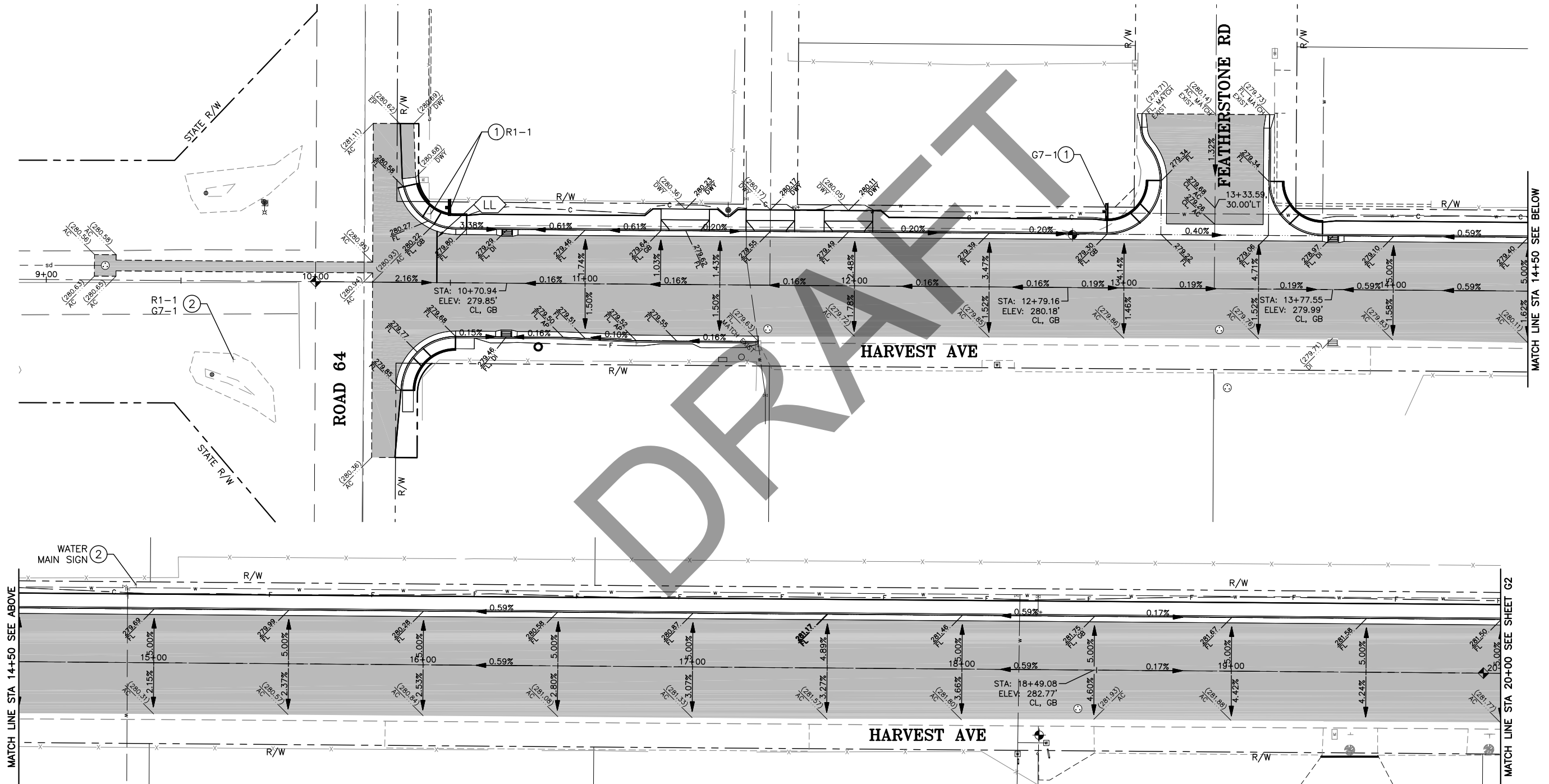
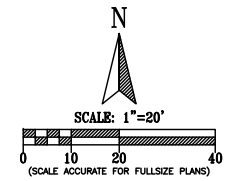


LEGEND

- (266.30)
EP EXIST ELEVATION
- 266.30
EP PROP ELEVATION
- █ STRUCTURAL SECTION PER SHEET X1
- ⊥ EXIST SIGN
- █ PROPOSED SIGN
- CW CROSSWALK PER 2018 CALTRANS STANDARD PLANS (WHITE)
- LL LIMIT LINE PER 2018 CALTRANS STANDARD PLANS

SIGN NOTES

- ① REMOVE AND REPLACE, SIGN NUMBER
- ② SIGN TO REMAIN, SIGN NUMBER
- ③ REMOVE, SIGN NUMBER



No.	REVISIONS	DESCRIPTION	DATE	BY

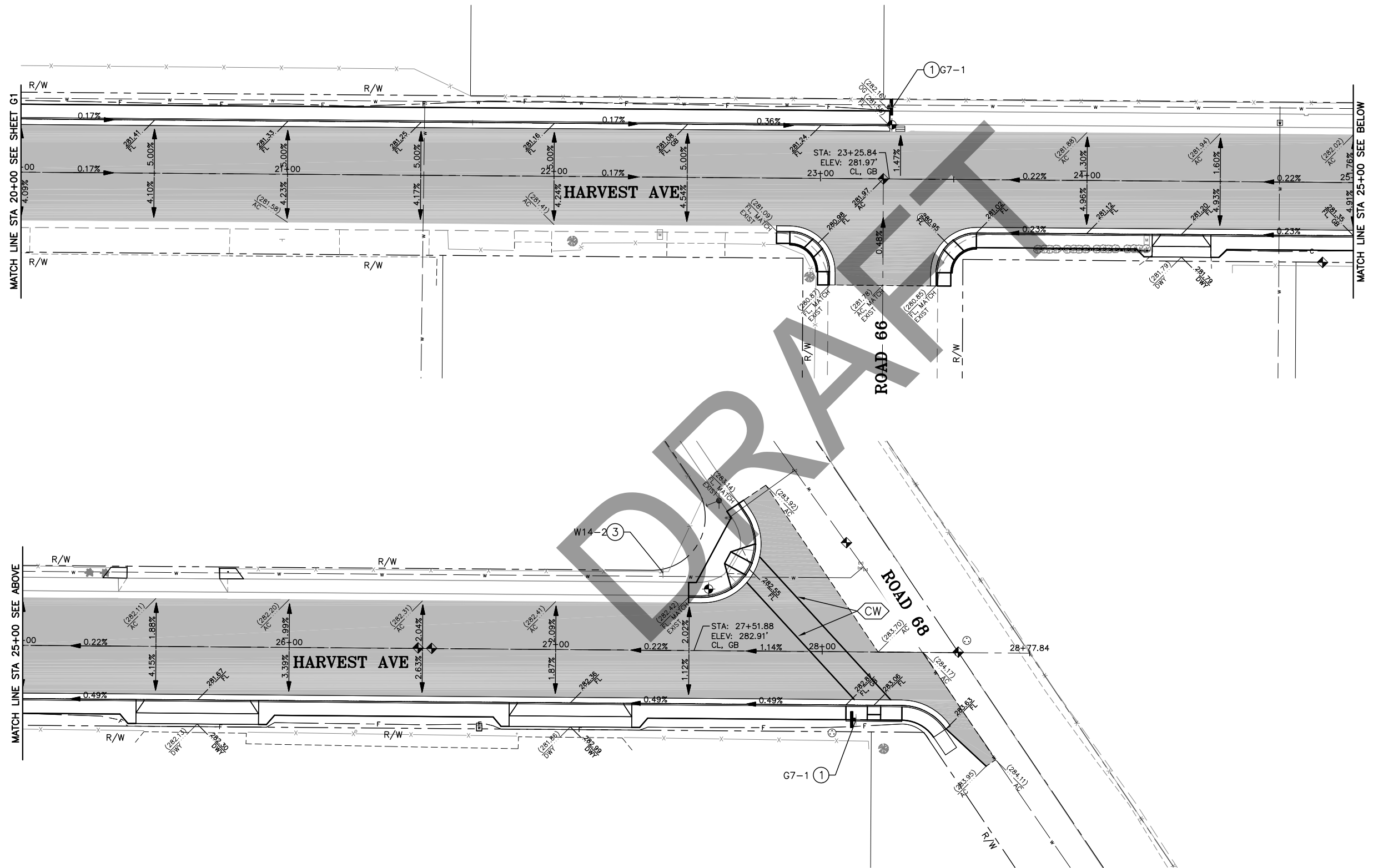
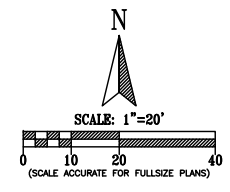
COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD.
VISALIA, CA 93277
(559)624-7000
WWW.TULARECOUNTY.CA.GOV/RMA

GRADING PLAN
HARVEST AVENUE IMPROVEMENTS
PROJECT
TULARE COUNTY

SCALE	1"=20'
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	JS
DRAWN	JS
CHECKED	MJW
FILE	17012-1G001.DWG
DATE	06/9/2020



CALBERSUSINCHIEF\DESIGN\PROJECTS\17012-1\17012-1G001.DWG 01/19/2020 5:08 PM



MATCH LINE STA 20+00 SEE SHEET G1

MATCH LINE STA 25+00 SEE BELOW

MATCH LINE STA 25+00 SEE ABOVE



SCALE	1"=20'
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	JS
DRAWN	JS
CHECKED	MJW
FILE	17012-1G001.DWG
DATE	06/9/2020

SHEET No.
G2
11 of 13

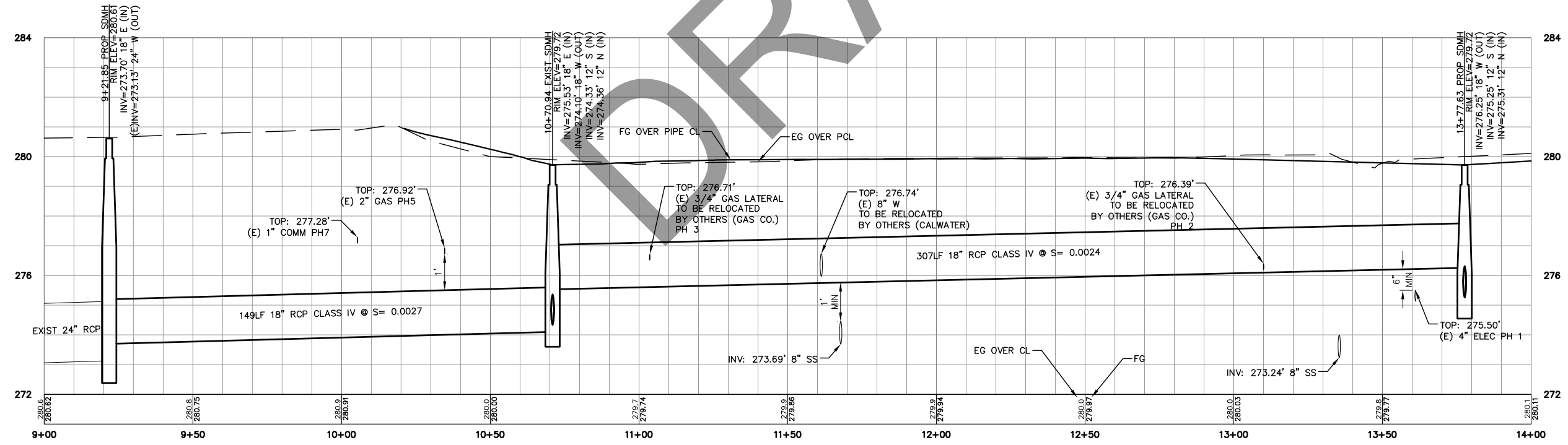
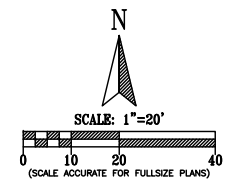
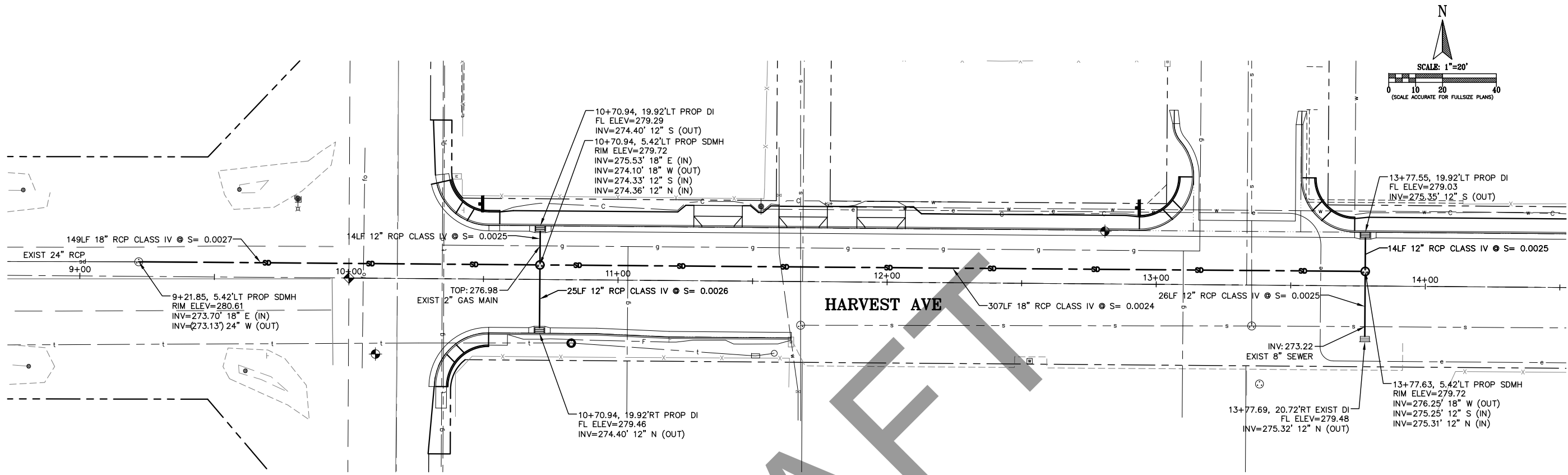
REVISIONS	
No.	DESCRIPTION

COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD.
VISALIA, CA 93277
(559)624-7000
WWW.TULARECOUNTY.CA.GOV/RMA



GRADING PLAN
HARVEST AVENUE IMPROVEMENTS PROJECT
TULARE COUNTY

CA:\BRS\JUNICHEZ\DESKTOP\PROJECTS\17012-1\17012-1G001.DWG 07/19/2020 5:08 PM



DRAINAGE PROFILE

H: 1"=20' V: 1"=2'

NO.	REVISIONS	DATE	BY

COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD.
VISALIA, CA 93277
(559)624-7000
WWW.TULARECOUNTY.CA.GOV/RMA



DRAINAGE PROFILE

HARVEST AVENUE IMPROVEMENTS
PROJECT

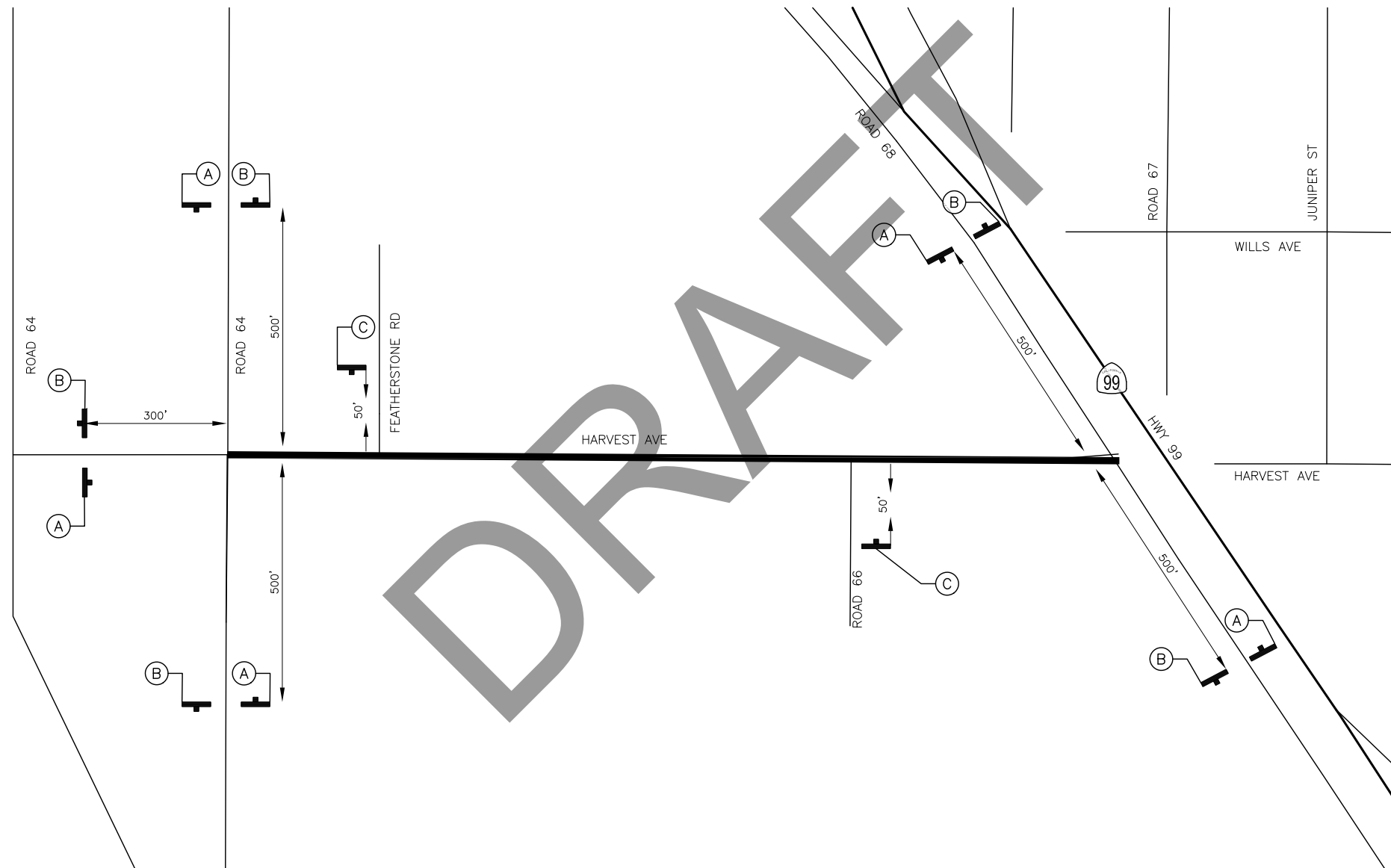
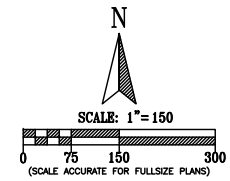
TULARE COUNTY

SCALE	1"=20'
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	JS
DRAWN	PAO
CHECKED	MJW
FILE	17012-1DP001.DWG
DATE	06/9/2020
SHEET No.	DP1



CONSTRUCTION AREA SIGNS					
TYPE	CODE	MESSAGE	PANEL SIZE (IN X IN)	POST SIZE (IN X IN)	NO. SIGNS
(A)	C-23(CA)	ROAD WORK AHEAD	48 X 48	4 X 4	5
(B)	G20-2	END ROAD WORK	48 X 24	4 X 4	5
(C)	C-23(CA)	ROAD WORK AHEAD	36 X 36	4 X 4	2

1. LOCATIONS TO BE APPROVED BY THE ENGINEER.
2. SIGNS SHALL BE FIELD ADJUSTED AS NECESSARY.



NO.	REVISIONS	DATE	BY

COUNTY OF TULARE
 RESOURCE MANAGEMENT AGENCY
 5961 SOUTH MOONEY BLVD.
 VISALIA, CA 93277
 (559)624-7000
 WWW.TULARECOUNTY.CA.GOV/RMA



CONSTRUCTION AREA SIGN PLAN
HARVEST AVENUE IMPROVEMENTS PROJECT
 TULARE COUNTY

SCALE	1"=100'
DIVISION	DESIGN
JOB NO.	17012-1
DESIGNED	IG
DRAWN	IG
CHECKED	PAO
FILE	17012-1CAS001.DWG
DATE	06/9/2020



SHEET No.
CAS1
 13 of 13