

Golden Gate Highway District No. 3

Commissioners: Corby Garrett, David Lincoln Fred Sarceda

HOMEDALE ROAD REBUILD PHASE 1

NOTICE OF ADDENDUM #1

The Bid Documents are hereby revised as follows in **bold print**:

Bid opening date is hereby revised to April 12, 2021, at 11:00am (MST).
Location remains the same.

Delete all references to “cement and CRABS” and substitute with “RABS” throughout all bid & contract documents and specifically Special Provisions SP-3002 subsection E.2 and within ITD Section 308.

ADD: ITD SECTION 308 (attached). This specification is written for CRABS but applies to both CRABS and RABS. This project is RABS.

- **“Type I Grade Control” shall be per ITD Section 308 “Class I work”.**
- **“Type II Grade Control” shall be per ITD Section 308 “Class II work”.**

For clarification:

Special Provisions SP-3002 subsection F.1 says “...compaction is achieved and the surface is primed.” However, there is not pay item for Prime Coat. Prime coat is NOT required.

Sheet C1.0 says “Construction Staking will be provided by T-O Engineers...” This is an error/conflict. Elsewhere the Bid Documents, survey is correctly note to be provided by the Contractor as a pay item.

Bidders shall write in acknowledge of Addendum #1 on their Bid Submittal Form.

The right is reserved to reject any or all Bids.

Dated this 6th day of April, 2021.



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SECTION 308 – CEMENT RECYCLED ASPHALT BASE STABILIZATION (CRABS)

308.01 Description. Recycle the existing roadway pavement and a portion of the base layer to the lines, grades, and thicknesses of the typical sections. Accomplish the CRABS work in 4 steps:

1. Prepare roadbed.
2. Pulverizing the existing pavement.
3. CRABS (adding cement and mixing).
4. Shaping and compacting.

Follow the specified grade control class.

1. Class I CRABS: use field-established elevations.
2. Class II CRABS: use prescribed elevations.

308.02 Materials. Use materials conforming to the following requirements:

1. Portland Cement. Use cement as specified in 701.
2. Water. Use water that is reasonably clear and free from oil and other contaminants.
3. Testing. Perform quality control density testing using an uncorrected nuclear gauge in accordance with FOP for AASHTO T 310 Method A. Conduct a minimum of 1 compaction test for every 7,200 square yards of CRABS work.

308.03 Construction Requirements. Before mobilization, submit a plan of operations for CRABS processing, including traffic control.

A. General.

1. Weather Limitations. Construct the CRABS while the existing pavement temperature is above and is expected to remain above 40 °F for 24 hours after final completion.

Do not spread portland cement over puddled water, during rain, when rain is imminent, or when wind will not allow uniform spread on the roadway.
2. Operational Restriction. Add cement and process no more of the roadway than can be repaved in 2 days of paving production.
3. Traffic Control. Unless the approved traffic control plan requires traffic to be detoured to an alternate roadway, open the roadway to traffic at the end of each working day by either re-laying the unprocessed pulverized material and compacting firmly or adding cement and processing for a finished product.
4. Grade Control Requirements.
 - a. On Class I work, establish the final CRABS surface elevation in the field. Finish the CRABS surface to within 0.03 foot of the field-established elevation and provide the field-established or specified cross slope at 12 feet from centerline and at the edge of the CRABS surface.
 - b. On Class II work, obtain a grade book from the Department establishing grade elevations for the top of the CRABS layer. Finish the CRABS surface to within 0.03 foot plus of the elevations provided.

Do not waste material before approval of the final elevation for either class.

B. Initial Pulverization.

1. Preparation of Roadbed. Before pulverization, strip and waste any vegetation encountered inside the typical CRABS section.
2. Pulverize Existing Surface. Pulverize the pavement to the widths and depths as specified and at a minimum, to the full depth of the existing pavement. Reduce the material to a minus 3-inch size.
 - a. Document the existing pavement thickness every 0.1 mile in each lane. Submit this documentation to the Department. Ensure that the full thickness of the pavement is being pulverized.
 - b. Notify the Engineer of any poor quality subbase materials (e.g., soft spots, clays, silts, organic materials) as they are encountered.
 - c. Shape and compact the pulverized material before the CRABS mixing process.

3. CRABS Process.

- a. Proportioning. Furnish portland cement in bulk. Add the cement to the pulverized material using a mechanical spreader at the specified rate within 5 percent for the full width of the typical section. Synchronize the application rate with the machine speed to provide uniform application. Spread the cement in a dry state and do not allow blowing of the cement.

After spreading the portland cement, mix the cement with the pulverized material to obtain the required depth and width. Distribute only as much portland cement as can be mixed and compacted within the same working day.

- b. Mixing. Use a road mixing machine (pugmill, auger, or cross-shaft mixer) capable of providing a uniform homogeneous mixture. Introduce the water through the mixing machine using a metering device. Add the correct quantity of water to produce a mixture between 4 and 7 percent by weight of mixed and compacted material. Do not allow water leakage from equipment. Do not add excessive water. Mix the existing pulverized pavement, base, and cement to the full depth as specified. Shape and roll where necessary to allow the roadway to be open to traffic (i.e., approaches to businesses and residencies).

More than 1 pass of the mixer may be required. Introduce water with the final mixing pass.

Ensure and document the mixing thickness every 0.3 mile in each lane.

In superelevated curve sections, shape the material before the application of portland cement.

4. Shaping and Grade Control. Provide continuous grade and cross-slope control including surveying (blue topping or wire line control) depending on CRABS Class.

It is expected that the pulverized material will swell 15 to 30 percent before compaction. Use the centerline of the existing roadway as the typical section control line. Construct the cross slope as shown. Adjustments may be required to the existing roadway profile to provide a consistent grade and to avoid adding new material or wasting existing material. If necessary, reestablish the roadway profile and cross slopes to provide a roadway section which is consistent with the typical section. Obtain approval for transverse grades. For CRABS Class II work, the grades in the Department-provided gradebook may be adjusted to avoid adding new material or wasting existing material upon approval.

Use equipment for shaping and setting grade capable of automated (mechanical or electronic) setting of grade and cross slope angle. Account for swell in the grading operation which may leave the processed surface above the adjacent surface. Incorporate all pulverized material into the CRABS layer. Shape and finish the CRABS surface without adding new material or wasting existing material. Do not waste or use pulverized material as shoulder material.

Grade designated shoulder material to a location and elevation on the shoulder that is below the top of the CRABS layer. Do not use cement-treated material for shoulder material.

Place windrow material designated for removal adjacent to, but outside the limits of pulverization. Dispose of material following final shaping and before application of cement.

5. Compacting and Finishing. Use a motor grader, mechanical spreader, paver, or grade trimmer to shape the mixture.

For the compaction train, include at least 1 rubber-tired roller, 1 vibratory roller, and 1 vibratory pad-foot soil compactor. Use compaction equipment and/or rolling methods to produce the required compaction without damaging the work.

The vibratory soil compactor will have a minimum centrifugal force of 15 tons, minimum drum width of 60 inches, and minimum pad height of 3½ inches. Use the vibratory pad-foot soil compactor after the cement has been mixed. Cover the material with a minimum of 3 complete passes. Additional passes may be required to achieve compaction.

Perform all other final process rolling and blading after completion of the vibratory pad foot operation.

Establish a roller pattern using in-place density from an uncorrected nuclear gauge. Use the roller pattern as a standard from which to measure compaction. Compaction is achieved when additional roller passes add no more than 0.5 pound per cubic feet to the previous in-place density. Ensure a "false break" or leveling-off point is not used for compaction density. Reestablish a new roller pattern when mixture properties change and at a minimum of every 7,200 square yards of finished surface.

Perform grading and rolling without wasting material.

Accomplish all shaping, final process rolling and associated blading within 1½ hours of the initial blending of the cement and water. Do not use vibratory rollers on the CRABS surface beyond the 1½ hours after the addition of water and cement.

6. Protection. Keep the processed and compacted material visibly moist at all times until the initial lift of plant mix is applied. Use equipment that will apply the water in a fog or mist type application free of pressure on the surface being treated.
7. Paving. Pave over the CRABS as soon as possible following compaction and within 48 hours after the introduction of cement and water to the CRABS.

When the approved traffic control plan requires traffic to be detoured to an alternate roadway, the 48-hour paving requirement may be waived provided the CRABS surface is kept sufficiently moist.

Tight-blading and static rolling may be required before applying the initial lift of plant mix due to surface deformation, raveling, or other irregularities created by traffic. Ensure there is no loose material on the CRABS surface at the time of plant mix paving. After paving, dress the roadway shoulders to provide a uniform appearance.

8. Prime Coat. Immediately before placement of the initial lift of plant mix pavement, apply a prime coat full width at the rate specified or as directed. Do not apply a prime coat to the CRABS if standing water is on the surface. Apply the prime coat as specified in 402.

308.04 Method of Measurement. Pulverized existing surface and CRABS will be measured by the square yard.

Portland cement will be measured by the ton using certified weights indicating the truck and trailer number, tare weight, gross weight, net weight, and date. When the measurement of Portland cement is based on certified weight certificates, the following will apply:

1. An occasional loaded transporting vehicle will be weighed on a local certified scale and a copy of the weight certificate will be submitted before the discharge of material. The Engineer will determine when loaded transporting vehicles will be weighed.
2. Each empty transporting vehicle will be weighed before the vehicle leaves the project site.

For discrepancies between the weight certificates and weights obtained at the project site, the Engineer will be the sole judge in determining the quantity of portland cement used.

308.05 Basis of Payment. The Department will pay for acceptable quantities as follows:

Pay Item	Pay Unit
Cement Recycled Asphalt Base Stabilization Class ____.....	SY
Portland Cement	Ton
Pulverize Existing Surface	SY

The following work is incidental and the cost included in the CRABS contract pay items including:

1. Stripping and disposing of unsuitable materials.
2. Grade control work.
3. Additional required pulverization and mixing passes.
4. Brooming.
5. Grading, rolling, and shaping.
6. Mixing water and water required to keep the CRABS surface moist for shoulder dressing.
7. Blade the shoulders to be smooth and at a uniform slope leaving no clumps or debris.