### Specifications Subcommittee
#### Meeting Schedule

<table>
<thead>
<tr>
<th>Meeting Date</th>
<th>Deadline to Call Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2018</strong></td>
<td></td>
</tr>
<tr>
<td>January 17, 2018</td>
<td>December 21, 2017</td>
</tr>
<tr>
<td>February 14, 2018</td>
<td>Scheduled Meeting</td>
</tr>
<tr>
<td>March 14, 2018</td>
<td>February 21, 2018</td>
</tr>
<tr>
<td>April 11, 2018</td>
<td>Scheduled Meeting</td>
</tr>
<tr>
<td>May 09, 2018</td>
<td>April 18, 2018</td>
</tr>
<tr>
<td>June 13, 2018</td>
<td>Scheduled Meeting</td>
</tr>
<tr>
<td>July 11, 2018</td>
<td>June 20, 2018</td>
</tr>
<tr>
<td>August 8, 2018</td>
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</tr>
<tr>
<td>September 12, 2018</td>
<td>August 22, 2018</td>
</tr>
<tr>
<td>October 10, 2018</td>
<td>Scheduled Meeting</td>
</tr>
<tr>
<td>November 14, 2018</td>
<td>October 24, 2018</td>
</tr>
<tr>
<td>December 12, 2018</td>
<td>Scheduled Meeting</td>
</tr>
</tbody>
</table>
Items 2 through 5 are items for possible action. Items 1, 6, and 7 are discussion items and no action can be taken. Please be advised that the Specifications Subcommittee has the discretion to take items on the agenda out of order, combine two or more agenda items for consideration, remove an item from the agenda or delay discussion relating to an item on the agenda any time.

1. **CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION:** No action can be taken on any matter discussed under this item, although the Subcommittee can direct that it be placed on a future agenda.

2. **APPROVAL OF THE MINUTES:** Meeting of February 14, 2018 (FOR POSSIBLE ACTION)

3. **RECEIVE A PRESENTATION FROM SOUTHWEST LIQUID ASPHALT & EMULSIONS ON LIQUID ASPHALT TESTING SPECIFICATIONS** (FOR POSSIBLE ACTION)

4. **APPROVE REVISIONS TO DRAWING 501 “TYPICAL UNDERGROUND UTILITY LOCATIONS IN RESIDENTIAL STREETS WITH 60 FT. OR LESS RIGHT-OF-WAY” AND NO. 501.1 “TYPICAL UNDERGROUND UTILITY LOCATIONS IN STREETS WITH GREATER THAN 60 FT. RIGHT-OF-WAY” OF THE UNIFORM STANDARD DRAWINGS TO DIMENSION UTILITY LOCATIONS OFF OF THE CENTERLINE** (FOR POSSIBLE ACTION)

5. **APPROVE A REVISION TO SECTION 401.03.06.D “PREPARATION OF EXISTING SURFACE” TO REQUIRE THE USE OF TACK COAT BETWEEN COURSES REGARDLESS OF TIME BETWEEN PLACEMENT** (FOR POSSIBLE ACTION)

6. **DISCUSS TOPICS OF INTEREST**

7. **CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION:** No action can be taken on any matter discussed under this item, although the Subcommittee can direct that it be placed on a future agenda.

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**During the initial Citizens Participation,** any citizen in the audience may address the Subcommittee on an item featured on the agenda. During the final Citizens Participation, any citizens in the audience may address the Subcommittee on matters within the Subcommittee’s jurisdiction, but not necessarily featured on the agenda. No vote can be taken on a matter not listed on the posted agenda; however, the Subcommittee can direct that the matter be placed on a future agenda.

Each citizen must be recognized by the Chair. The citizen is then asked to approach the microphone at the podium, to state his or her name, and to spell the last name for the record. The Chair may limit remarks to three minutes’ duration, if such remarks are disruptive to the meeting or not within the Subcommittee’s jurisdiction.

The Regional Transportation Commission keeps the official record of all proceedings of the meeting. In order to maintain a complete and accurate record, copies of documents used during presentations should be submitted to the Recording Secretary.

The Regional Transportation Commission appreciates the time citizens devote to be involved in this important process.

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In compliance with Nevada Revised Statute 241.035(4), the Regional Transportation Commission of Southern Nevada shall create an audio and/or video recording of the meeting and retain such recording(s) for the required period of time.

The Regional Transportation Commission Meeting Room and Conference Room are accessible to the disabled. Assistive listening devices are available for the hearing impaired. A sign language interpreter for the deaf will be made available with a forty-eight hour advance request to the Regional Transportation Commission offices. Phone: 702-676-1500 TDD: 702-676-1834

*Any action taken on these items is an advisory to the Regional Transportation Commission.*
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

SUBJECT: INITIAL CITIZENS PARTICIPATION

PETITIONER TINA QUIGLEY, GENERAL MANAGER
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

RECOMMENDATION BY PETITIONER:
THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA SPECIFICATIONS SUBCOMMITTEE CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION

GOAL: E. ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM

FISCAL IMPACT:
None

BACKGROUND:
In accordance with State of Nevada Open Meeting Law, the Regional Transportation Commission of Southern Nevada Specifications Subcommittee shall invite interested persons to make comments. For the initial Citizens Participation, the public should address items on the current agenda. For the final Citizens Participation, interested persons may make comments on matters within the Specifications Subcommittee's jurisdiction, but not necessarily on the current agenda.

No action can be taken on any matter discussed under this item, although the Specifications Subcommittee can direct that it be placed on a future agenda.

Respectfully submitted,

JOHN R. PEÑUELAS, JR., P.E.
Director of Engineering Services
Streets and Highways

SPECS Item #1
April 11, 2018
MINUTES
SPECIFICATIONS SUBCOMMITTEE
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA
FEBRUARY 14, 2018

These minutes are prepared in compliance with NRS 241.035. Text is in summarized rather than verbatim format. For complete contents, please refer to meeting recordings on file at the Regional Transportation Commission.

THIS MEETING WAS PROPERLY NOTICED AND POSTED IN THE FOLLOWING LOCATIONS ON FEBRUARY 7, 2018

CALL TO ORDER

Mr. Jim Keane, Chair, called the meeting to order at 1:30 p.m. in Meeting Room 108 of the Regional Transportation Commission Administration Building.

MEMBERS PRESENT:
Jim Keane, City of Boulder City, Chair
Michael Dunning, Clark County Public Works, Vice-Chair
Dale Daffern, City of North Las Vegas
Jeremy Leavitt, City of Las Vegas
Abi Mayrena, Clark County Regional Flood Control District (Alternate) (non-voting)

MEMBER ABSENT:
Lance Olson, City of Henderson
Jill Sims, Nevada Department of Transportation (non-voting)

RTC STAFF:
John Penuelas, Director of Engineering Services-Streets and Highways
Joe Damiani, Manager of Engineering
Dante Bongolan, Project Engineer
Tammy McMahan, Management Analyst
David Gloria, Administrative Specialist

INTERESTED PARTIES:
Samih Ahlwayek, Nevada Department of Transportation
Gene Chrisenbery, Southwest Liquid Asphalt
Richard Robinson, Clark County Public Works (NOTE: Mr. Robinson is an alternate for Vice-Chair Dunning and he participated in the meeting. The entity they represent is afforded one vote.)

SPECS Item #2
April 11, 2018
### Item:
1. **CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION**

**Comments:**
No one made comment.

**Motion:**
No motion was necessary.

**Vote/Summary:**
No vote was taken.

### Item:
2. **APPROVAL OF THE MINUTES: Meeting of December 13, 2017 (FOR POSSIBLE ACTION)**

**Comments:**
No comments were made.

**Motion:**
Vice-Chair Michael Dunning, Clark County Public Works, made a motion to approve.

**Vote/Summary:**
4 Ayes. 0 Nays. The motion carried.
Ayes: Chair Jim Keane, Vice-Chair Michael Dunning, Dale Daffern, and Jeremy Leavitt
Nays: None
Absent: Lance Olson

### Item:
3. **APPROVE A REVISION TO SECTION 401.03.06 D “PREPARATION OF EXISTING SURFACE” TO REQUIRE THE USE OF TACK COAT BETWEEN COURSES REGARDLESS OF TIME BETWEEN PLACEMENT (FOR POSSIBLE ACTION)**

**Comments:**
Reading from the item’s background, Mr. John Penuelas, Director of Engineering Services-Streets and Highways, Regional Transportation Commission of Southern Nevada (RTC), set forth as follows: “This item comes at the request of Clark County Public Works (CCPW). CCPW has experienced pavement cracking due to tack coat not being applied early enough between the placement of successive courses of bituminous material during the paving process. Approval of this item will remove the current 24-hour threshold and require the application of tack coat between courses regardless of time between the placement of those courses. CCPW proposes that paragraph D be modified to say, ‘A similar tack coat shall be applied to the surface of any previous course even if the course is placed the same day. Also, if as determined by the Engineer, the surface is such that a satisfactory bond cannot be obtained between it and a succeeding course.’”

Vice-Chair Michael Dunning, Clark County Public Works, shared that CCPW staff had noticed that the application of tack coat worked well or even better when placed on the same day than waiting longer to place it. He informed the Specifications Subcommittee (Subcommittee) that research findings presented in construction literature supported same-day placement of tack coat.

Mr. Jeremy Leavitt, City of Las Vegas, asked if developers had made comment on this matter. In light of Mr. Leavitt’s question, Mr. Penuelas suggested that the proposed revision be submitted for industry review and the item would be once more presented to the Subcommittee after the review period had concluded. The members agreed with this suggestion.

**Motion:**
Vice-Chair Michael Dunning, Clark County Public Works, made a motion to submit the matter of a revision to Uniform Standard Specification Section 401.03.06 D “Preparation Of Existing Surface” to
require the use of tack coat between courses regardless of time between placement for industry review.

**Vote/Summary:**
4 Ayes. 0 Nays. The motion carried.
Ayes: Chair Jim Keane, Vice-Chair Michael Dunning, Dale Daffern, and Jeremy Leavitt
Nays: None
Absent: Lance Olson

**Item:**
4. DISCUSS THE CURRENT STATE OF PRACTICE AND THE ADDITION TO THE REGIONAL SPECIFICATIONS AND DRAWINGS A SECTION ON HORIZONTAL DIRECTIONAL DRILLING OPERATIONS WITHIN PUBLIC RIGHTS-OF-WAY (FOR POSSIBLE ACTION)

**Comments:**
Mr. John Penuelas, Director of Engineering Services-Streets and Highways, Regional Transportation Commission of Southern Nevada (RTC), informed the Specifications Subcommittee (Subcommittee) that this item had been proposed by the City of Las Vegas (Las Vegas).

Mr. Jeremy Leavitt, City of Las Vegas, recounted that he had talked about the feasibility of adding a specification regarding horizontal directional drilling (HDD) operations within public rights-of-way at the Subcommittee’s December 13, 2017 meeting. He went on to say that all member agencies currently allowed HDD to minimize disruption to roadway users caused by the installation, maintenance, and repair of underground utilities and communication infrastructure. However, Mr. Leavitt pointed out that each agency had different requirements governing HDD operations within its jurisdictions. He believed that this item afforded an opportunity for the Subcommittee to discuss the possibility of establishing a regional standard. In Mr. Leavitt’s opinion, such a standard was needed since horizontal directional drilling that did not follow protocol presented significant dangers to roadway users, could cause major damage to underground infrastructure, and might result in liability and other financial loss.

Mr. Richard Robinson, Clark County Public Works, shared that Clark County was amenable to the development of a regional HDD standard, but Clark County wanted to review certain information and clarification on a matter. He detailed that Clark County would like the State of Nevada requirements for potholing and the Public Utility Commission of Nevada mandates regarding HDD, and elucidation regarding the intended uses of any HDD specification.

Referring to the item’s backup and directing the Subcommittee’s attention to “XXX.01 DESCRIPTION,” Mr. Robinson noted that language in the section set forth: “…All installations shall be in accordance with the approved HDD Consortium’s ‘Horizontal Directional Drilling Good Practices Guideline, Third Edition’ and updates thereof.” He requested a copy of the guideline.

Mr. Robinson continued, moving to section “XXX.05 CONSTRUCTION.” He noted the differences between the “walkover” and “non-walkover” methods that contractors could use and asked if the Subcommittee’s entity representatives had a preference. He shared that Clark County usually preferred the walkover method as the process involved the creation of a public log. Mr. Dale Daffern, City of North Las Vegas, commented that the walkover method may result in problematic issues if a major right-of-way is situated in the project site.

Noting Mr. Leavitt’s assertion that HDD that does not follow protocol could result in financial losses, Mr. Penuelas posed that the creation of a specification could be seen as a cost-effective measure when considering potential road user costs were assessed in the absence of a standard.
Next, Mr. Joseph Damiani, Manager of Engineering, Regional Transportation Commission of Southern Nevada suggested that the Subcommittee members submit comments to the RTC and the agency’s staff would review them and create a draft specification which would be presented to the Specifications Subcommittee. Mr. Damiani also explained that if a specification is developed and eventually approved by RTC Board of Commissioners, the standard would be effective upon that approval. He said that the specification would not be published in the printed Uniform Standard Specifications until July 2018 or January 2019, depending upon the date of approval. Mr. Penuelas concurred with Mr. Damiani’s statements, adding that the entity representatives should individually email their comments to him and not send the statements to the Subcommittee as a whole. Also, Mr. Penuelas stated that RTC staff members would provide information on the State of Nevada requirements for potholing and the Public Utility Commission of Nevada mandates regarding HDD and clarify the intended uses of any future specification.

**Motion:**
No motion was necessary.

**Vote/Summary:**
No vote was taken.

| Item: | DISCUSS SUBSCRIPTION BASED REGIONAL ACCESS TO ASTM INTERNATIONAL AND OTHER ORGANIZATIONS RESPONSIBLE FOR ESTABLISHING NATIONAL CODES AND STANDARDS (FOR POSSIBLE ACTION) |
| Comments: | Mr. John Penuelas, Director of Engineering Services-Streets and Highways, Regional Transportation Commission of Southern Nevada (RTC), provided background on the item. He recounted that Mr. Jeremy Leavitt, City of Las Vegas, had inquired as to whether there was interest in a region-based subscription to ASTM International codes and other organizations responsible for establishing national codes and standards at the Specifications Subcommittee (Subcommittee) December 13, 2017 meeting. At that meeting, the RTC had asked that the representatives of the local government entities research what, if any, subscriptions of this nature they had and determine their subscription needs and share that information at the next Subcommittee meeting. Mr. Joe Damiani, Manager of Engineering, Regional Transportation Commission of Southern Nevada, provided details on the ASTM subscription packages. He stated that a discounted, region-based subscription, including construction and building codes for all six local government entities, would be $15,100. Mr. Damiani mentioned that the discount would be valid through July 31, 2018. The RTC Manager of Engineering explained how the information would be accessed, noting that the agencies’ Information Technology Departments would have to provide the entities’ public IP address to ASTM International. He further stated that an unlimited number of users could simultaneously access the information. Also, Mr. Damiani provided the costs for codes without discounts, listing a price of $12,000 for construction codes and $7,800 for building codes. The Manager of Engineering informed the group that the subscription costs would be assessed annually. Mr. Jeremy Leavitt, City of Las Vegas, expressed support for a region-based subscription to the aforementioned ASTM International codes. The Subcommittee followed this statement by discussing the advantages and disadvantages of such an arrangement. The members ultimately concluded that having a region-based package would afford benefits in terms of pricing and wider access among entity staff members. Mr. Penuelas mentioned that if the RTC purchased the region-based subscription, the costs could possibly... |
be covered by the share of the Motor Vehicle Fuel Tax funds that the entities received. He went on to say that such a cost-sharing arrangement would have to be set forth in an interlocal contract.

Mr. Richard Robinson, Clark County Public Works, asked if it would be possible to purchase a region-based subscription of the American Association of State Highway and Transportation Officials (AASHTO) standards in addition to the ASTM International codes. Vice-Chair Michael Dunning, Clark County Public Works, Mr. Dale Daffern, City of North Las Vegas, and Mr. Leavitt noted that their respective agencies looked to AASHTO standards in addition to ASTM International codes. In light of these comments, the members asked that RTC research region-based AASHTO standards packages.

Mr. Penuelas then summarized the Specifications Subcommittee’s direction to the RTC as he understood it: the RTC would research how the costs for the local government entities’ share of a region-based ASTM International subscription might be covered and the elements of and costs for a region-based AASHTO standards package. The RTC Director of Engineering Services advised the Specifications Subcommittee that the RTC staff members would have to eventually present this matter to the Executive Advisory Committee in the form of an agenda item and the support materials would have to detail the funding model.

**Motion:**
Vice-Chair Michael Dunning, Clark County Public Works, made a motion directing the Regional Transportation Commission of Southern Nevada staff to research how the costs for the individual local government entities’ share of a region-based ASTM International package might be covered and the elements of and costs for a region-based AASHTO standards package.

**Vote/Summary:**
4 Ayes. 0 Nays. The motion carried.
Ayes: Chair Jim Keane, Vice-Chair Michael Dunning, Dale Daffern, and Jeremy Leavitt
Nays: None
Absent: Lance Olson

**Item:**
6. DISCUSS TOPICS OF INTEREST

**Comments:**
Mr. Jeremy Leavitt, City of Las Vegas, asked if Fuel Revenue Indexing (FRI) 1 requirement for training and public outreach applied to FRI 2. Mr. John Penuelas, Director of Engineering Services-Streets and Highways, Regional Transportation Commission of Southern Nevada (RTC), responded that all of the FRI 1 conditions still applied with the exception that public rights-of-way could be purchased with FRI 2 monies.

Ms. Abi Mayrena, Clark County Regional Flood Control District (CCRFCD), shared that manufacturers of precast reinforced contract arches (RCAs) and reinforced concrete boxes (RCBs) had asked CCRFCD if they could make a presentation to the Specifications Subcommittee (Subcommittee) regarding RCAs and RCBs. She understood that the manufacturers wanted to propose that RCA/RCB-related specifications be included in the Uniform Standard Specifications. Mr. Penuelas explained that the manufacturers could make an informational presentation to the Subcommittee, but an entity would have to propose specifications. Regarding the presentation, he asked that Ms. Mayrena send him information on this matter and the RTC and CCRFCD could aim to have an agenda item regarding the presentation on the next Specifications Subcommittee agenda.

**Motion:**
No motion was necessary.

**Vote/Summary:**
No vote was taken.

**Item:**
7. **CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION**

**Comments:**
Ms. Tammy McMahan, Management Analyst, Regional Transportation Commission of Southern Nevada (RTC), introduced Mr. David Gloria, Administrative Specialist, a new RTC staff member with Government Affairs, Media and Marketing.

Mr. Gene Chrisenbery, Southwest Liquid Asphalt, made the following comment: *I wanted to introduce myself, my name is Gene Chrisenbery. We’re building a new liquid asphalt storage plant in North Las Vegas. I’ve met Mr. Dunning. I just wanted to introduce myself to the committee. We’ve been talking about specifications for Clark County. I would also like to talk with the other agencies about the products we’re supplying. We’re ready to start our plant up. We’ll be supplying liquid asphalt to the hot mix plants and emulsion products beginning this summer.*

Directing a question to Mr. Chrisenbery, Vice-Chair Michael Dunning, Clark County Public Works, asked: *Are you with Las Vegas Paving?*

Mr. Chrisenbery replied: *It’s an independent company called “Southwest Liquid Asphalt and Emulsion.” We’re a new company, a new startup. I myself have been running an asphalt plant up in the Salt Lake City area for the last ten years, and we’re opening another location here.*

Vice-Chair Dunning inquired: *Is the company going through the appropriate authorization process with North Las Vegas?*

Mr. Chrisenbery answered: *We’re in the authorization process now; the plan is not fully operational yet. All of the tanks in the departments have been completed except for the last one, so we’re still under construction as far as insulating some of the final things. But we’re very close to being able to put out product.*

Mr. Joe Damiani, RTC Manager of Engineering, asked: *Is the company on the Inter-Agency Quality Assurance Committee list?*

Vice-Chair Dunning replied: *Not yet.*

Mr. John Penuelas, RTC Director of Engineering Services-Streets and Highways, said: *You should make a formal presentation to the group.*

Mr. Chrisenbery replied: *I think that would be good. Any specific things you’re interested in?*

Mr. Damiani suggested: *Talk about what you do, what you provide, and the benefits to the community from your product.* The Specifications Subcommittee agreed with Mr. Damiani’s suggestion.

Mr. Chrisenbery then stated: *I also wanted to bring up—we have been discussing supplying the performance grade [PG] binder instead of the asphalt concrete [AC] binder. Performance grade just means it’s tested in cold and hot weather and to make sure that it performs well, versus an asphalt grade.*

Vice-Chair Dunning commented: *Clark County was in favor of that. AC binder is outdated.*
subcommittee has discussed PG and AC binders. This topic would be good to discuss.

Mr. Penuelas asked that Mr. Chrisenbery provide information for a presentation approximately two weeks prior to the next Specifications Subcommittee meeting which was currently scheduled for April 11, 2018.

Motion:
No motion was necessary.

Vote/Summary:
No vote was taken.

ADJOURNMENT

The meeting adjourned at 2:17 p.m.

Respectfully submitted,

Tammy McMahan, Recording Secretary

Marek Biernacinski, Transcription Secretary
# REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

## AGENDA ITEM

<table>
<thead>
<tr>
<th>Metropolitan Planning Organization [X]</th>
<th>Transit [ ]</th>
<th>Administration and Finance [ ]</th>
</tr>
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</table>

**SUBJECT:** PRESENTATION

**PETITIONER**
TINA QUIGLEY, GENERAL MANAGER
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

**RECOMMENDATION BY PETITIONER:**

THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA SPECIFICATIONS SUBCOMMITTEE RECEIVE A PRESENTATION FROM SOUTHWEST LIQUID ASPHALT & EMULSIONS ON LIQUID ASPHALT TESTING SPECIFICATIONS (FOR POSSIBLE ACTION)

**GOAL:** MAINTAIN AND IMPROVE TRANSPORTATION SYSTEM INFRASTRUCTURE

**FISCAL IMPACT:**

Undetermined

**BACKGROUND:**

At the Specifications Subcommittee (Subcommittee) meeting held on February 14, 2018, Mr. Gene Chrisenbery of Southwest Liquid Asphalt & Emulsions addressed the Subcommittee during the final public comment period. The Subcommittee asked that Mr. Chrisenbery deliver a presentation at a future meeting on the topic of liquid asphalt testing specifications. This item satisfies that request and will allow the Subcommittee to discuss the topic of Performance Grade (PG) asphalt binder specifications and its use in the Las Vegas Valley.

Respectfully submitted,

JOHN R. PEÑUELAS, JR., P.E.
Director of Engineering Services
Streets and Highways

tde

SPECS Item #3
April 11, 2018
L I Q U I D  A S P H A L T  T E S T I N G  S P E C I F I C A T I O N S

A BRIEF HISTORY & OVERVIEW

EARLY ASPHALT TESTING

- Penetration Grade (PEN). Developed in early 1900's.
- The softer the asphalt the higher the penetration number.
- Viscosity Grading (AC Grade). Developed in the 1960's adds three different viscosity tests, medium, high and aged, along with the PEN test.
PENETRATION TEST

VISCOSITY TESTS

Absolute Viscosity Test
140°F

Kinematic Viscosity Test
275°F
PREDICTING ASPHALT PERFORMANCE

Strategic Highway Research Program (SHRP)

• **SHRP**, consisted of research in four key areas:
  - **Asphalt**. Develop a completely new approach to HMA mix design.
  - **Concrete and structures**. Research mix design and assessing, protecting and rehabilitating concrete pavements and structures.
  - **Highway operations**. This area consists of pavement preservation, work zone safety and snow and ice control research.
  - **Pavement performance**. A 20-year study of test sections of in-service U.S. and Canadian pavements to improve guidelines for building and maintaining pavements.

THE SHRP ASPHALT RESEARCH PROGRAM, HAD THREE PRIMARY OBJECTIVES:

• Investigate why some pavements were perform well, while others were not.

• Develop tests and specifications for materials that will out-perform and outlast the pavements being constructed today.

• Work with highway agencies and industry to have the new specifications implemented.
SHRP

- The final product of this research program is a new system referred to as “Superpave”, in its final form consists of three basic components:
  - The Performance Graded (PG) asphalt binder specification.
  - A design and analysis system based on the volumetric properties of the asphalt mix.
  - Mix analysis tests and performance prediction models.
  - All 50 states have adopted the Superpave PG asphalt binder specification.

SUPERPAVE PERFORMANCE GRADING CONCLUSIONS

Penetration grading and viscosity grading are limited in their ability to fully characterize the asphalt binder.

Superpave performance grading (PG); is based on the idea that an HMA asphalt binder’s properties should be related to the conditions under which it is used.
### PG Grades Typically Produced by Refineries

<table>
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<tr>
<th>PG Grade</th>
<th>AC Grade</th>
<th>Pavement Temperature</th>
<th>Temperature Spread</th>
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<tbody>
<tr>
<td>PG 58-28</td>
<td>= AC 10</td>
<td>136.4 F to -18.4 F</td>
<td>86 C</td>
</tr>
<tr>
<td>PG 64-22</td>
<td>= AC 20</td>
<td>147.2 F to -7.6 F</td>
<td>86 C</td>
</tr>
<tr>
<td>PG 70-16</td>
<td>= AC 30</td>
<td>158.0 F to +3.2</td>
<td>86 C</td>
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### Examples of Modified Asphalt PG Grades

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<tr>
<th>PG Grade</th>
<th>Pavement Temperature</th>
<th>Temperature Spread</th>
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<tbody>
<tr>
<td>PG 70 -22</td>
<td>158.0 F to -7.6 F</td>
<td>92 C</td>
</tr>
<tr>
<td>PG 70 -28</td>
<td>158.0 F to -18.4 F</td>
<td>98 C</td>
</tr>
<tr>
<td>PG 76 -22</td>
<td>168.8 F to -7.6 F</td>
<td>98 C</td>
</tr>
<tr>
<td>PG 76 -28</td>
<td>168.8 F to -18.4 F</td>
<td>104 C</td>
</tr>
<tr>
<td>PG 82 -28</td>
<td>179.6 F to -18.4 F</td>
<td>110 C</td>
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SHRP PLUS TESTING

- Many agencies add requirements above and beyond the normal SHRP tests.
- NDOT PG 76-22NV is a SHRP binder, plus MSCR (JNR & % Recovery), Ductility, Solubility, Sieve and increases the original DSR from 1.0 to 1.3.
- This makes the NDOT 76-22NV jump to nearly a SHRP PG82-22.

ELASTIC RECOVERY AASHTO T-301 (SHRP PLUS) MEASURES REBOUND AFTER DEFORMATION
PATH FORWARD

1. Develop specifications that drive asphalt binder performance.
2. Implement a process to review, update and communicate procedures on a regular basis.

Questions?
# Regional Transportation Commission of Southern Nevada

## Agenda Item

<table>
<thead>
<tr>
<th>Metropolitan Planning Organization [X]</th>
<th>Transit [ ]</th>
<th>Administration and Finance [ ]</th>
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<tbody>
<tr>
<td><strong>Subject:</strong> Standard Drawings and Specifications</td>
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<td><strong>Petitioner</strong> Tina Quigley, General Manager</td>
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<td>Regional Transportation Commission of Southern Nevada</td>
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**Recommendation by Petitioner:**

That the Regional Transportation Commission of Southern Nevada Specifications Subcommittee approve revisions to Drawing 501 "Typical Underground Utility Locations in Residential Streets with 60 Ft. or Less Right-Of-Way" and No. 501.1 "Typical Underground Utility Locations in Streets with Greater Than 60 Ft. Right-Of-Way" of the Uniform Standard Drawings to dimension utility locations off of the centerline (for possible action)

**Goal:** Maintain and improve transportation system infrastructure

**Fiscal Impact:**

None

**Background:**

This item comes to the Specifications Subcommittee at the request of the City of Las Vegas (Las Vegas) and the Las Vegas Valley Water District (LVVWD). During discussions between Las Vegas, LVVWD, and the Clark County Health District about the horizontal separation requirement between water line and sewer line, the agencies determined that dimensioning the water line, sewer line, and gas line off of the right-of-way centerline would eliminate potential problems caused by reduced or varying right-of-way and/or sidewalk widths.

Respectfully submitted,

John R. Peñuelas, Jr., P.E.
Director of Engineering Services
Streets and Highways

tde

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SPECS Item #4
April 11, 2018
A. STREETLIGHT CONDUIT
B. POWER COMPANY SECONDARY
C. POWER COMPANY PRIMARY
D. TELEPHONE CONDUITS
E. CABLE T.V. CONDUIT
F. TRAFFIC SIGNAL CONDUIT
G. OTHER COMMUNICATIONS CONDUIT
H. POWER MARKING TAPE
I. TELEPHONE MARKING TAPE

NOTES:
1. STORM/SANITARY SEWER MAY BE LOCATED ON OTHER SIDE OF CENTERLINE AS TERRAIN AND/OR SEPARATIONS DICTATES.
2. STREETLIGHT FOUNDATIONS SHALL BE LOCATED BEHIND SIDEWALK FOR SIDEWALK WIDTHS LESS THAN 5 FEET PER STANDARD DRAWING NO. 320.
3. SEPARATION DISTANCE SHALL CONFORM TO UTILITY STANDARDS ADOPTED BY THE GOVERNING AGENCY FOR SEWER AND WATER FACILITIES.
4. STREET CONSTRUCTION SHALL CONFORM TO THE DESIGNED PLANS.
5. UTILITY CONSTRUCTION BACKFILL SHALL CONFORM TO SECTION 208.
6. UTILITY LINES SHALL BE RE-ROUTED IF DROP INLET IS IN CONFLICT.
7. WATER TRANSMISSION MAIN SEPARATION SHALL BE REFERRED TO WATER PURVEYOR GUIDELINES.
5'-0" CLR.
3'-0" CLR.
4'-0"
STREETLIGHT FOUNDATION
36"
30"
32"
34"
36"
FINISHED GRADE
VARIANCE
FINISHED GRADE
STORM/SANITARY SEWER
S. STREETLIGHT CONDUIT
B. POWER COMPANY SECONDARY
C. POWER COMPANY PRIMARY
D. TELEPHONE CONDUITS
E. CABLE T.V. CONDUIT
F. TRAFFIC SIGNAL CONDUIT
G. OTHER COMMUNICATIONS CONDUIT
H. FAST ITS COMMUNICATIONS CONDUIT
NOTE:
STORM/SANITARY SEWER MAY BE OTHER SIDE OF CENTERLINE AS TERRAIN AND/OR SEPARATIONS DICTATES.
42" MIN. COVER FOR PIPE 8" DIA. AND SMALLER
48" MIN. COVER FOR PIPE GREATER THAN 8" DIA.
60" MIN. COVER FOR PIPE 24" AND GREATER.
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STORM/SANITARY SEWER MAY BE OTHER SIDE OF CENTERLINE AS TERRAIN AND/OR SEPARATIONS DICTATES.
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

SUBJECT: STANDARD SPECIFICATIONS AND DRAWINGS

PETITIONER: TINA QUIGLEY, GENERAL MANAGER
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

RECOMMENDATION BY PETITIONER:
THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA SPECIFICATIONS SUBCOMMITTEE APPROVE A REVISION TO SECTION 401.03.06.D "PREPARATION OF EXISTING SURFACE" TO REQUIRE THE USE OF TACK COAT BETWEEN COURSES REGARDLESS OF TIME BETWEEN PLACEMENT (FOR POSSIBLE ACTION)

GOAL: MAINTAIN AND IMPROVE TRANSPORTATION SYSTEM INFRASTRUCTURE

FISCAL IMPACT:
Increase cost due to use of additional material offset by increased useful pavement life

BACKGROUND:
This item comes at the request of Clark County Public Works (CCPW). CCPW has experienced pavement cracking due to tack coat not being applied early enough between the placement of successive courses of bituminous material during the paving process. Approval of this item will remove the current 24-hour threshold and require the application of tack coat between courses regardless of time between the placement of those courses.

CCPW proposes that paragraph D be modified to say, "A similar tack coat shall be applied to the surface of any previous course even if the course is placed the same day. Also if, as determined by the Engineer, the surface is such that a satisfactory bond cannot be obtained between it and a succeeding course."

Respectfully submitted,

JOHN R. PEÑUELAS, JR., P.E.
Director of Engineering Services
Streets and Highways

SPECS Item #5
April 11, 2018
PLANTMIX BITUMINOUS PAVEMENTS – GENERAL

d. The tires on the rear axle shall be so spaced that the entire gap between adjacent tires on the front axle will be covered by 1 tread of the following tires.

e. The tires shall be uniformly inflated so that the air pressure in the several tires will not vary more than 5 pounds per square inch. Inflation pressure in pounds per square inch shall be the tire manufacturer’s recommendation.

f. Minimum tire size shall be 7.50 x 15 inches, 4 ply.

3. The use of pneumatic-tired rollers with fewer wheels and a greater maximum operating weight per tire than that specified herein will be permitted subject to the following requirements:

a. The minimum width between the outer edge of the outside tires on a given axle shall be 60 inches.

b. The weight of the roller and the tire pressure can be varied to produce a ground contact pressure between 50 and 70 psi.

4. The finish roller shall be a 2-axle tandem weighing not less than 8 tons.

401.03.05 WEATHER LIMITATIONS

A. The bituminous mixture shall not be placed upon any wet surface or when the surface temperatures of the underlying course is less than specified in Table 1. The temperature requirements may be modified, but only when so directed by the Engineer.

<table>
<thead>
<tr>
<th>TABLE 1 - BASE TEMPERATURE LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mat Thickness</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>3 Inches or Greater</td>
</tr>
<tr>
<td>Greater than 1 Inch but Less than 3 Inches</td>
</tr>
<tr>
<td>1 Inch or Less</td>
</tr>
</tbody>
</table>

B. The open-graded plantmix surface shall be placed only when the pavement surface temperature is above 60 degrees F.

401.03.06 PREPARATION OF EXISTING SURFACE

A. When the surface of the existing pavement or old base is irregular, it shall be brought to a uniform grade and cross section as shown on the plans.

B. The subgrade to receive asphalt concrete, or asphalt concrete base immediately prior to applying prime coat, shall conform to the compaction and elevation tolerance specified for the material involved and shall be free of loose or extraneous material.

C. If the plantmix bituminous surface is being constructed directly upon an existing hard-surfaced pavement, a tack coat of grade CSS-1h or SS-1h emulsified asphalt, diluted 50/50 at an approximate rate of 0.05 to 0.10 gallons per square yard, shall be uniformly applied upon the existing pavement preceding the placement of the asphalt concrete. Comply with Section 405, “Tack Coat.”

1. The surface shall be free of water, foreign material, or dust when the tack coat is applied.
2. To minimize public inconvenience, no greater area shall be treated in any one day than is planned to be covered by plantmix during the same day, unless otherwise authorized by the Engineer.

D. A similar tack coat shall be applied to the surface of any previous course placed longer than 24 hours, or if a satisfactory bond cannot be obtained between the surface and a succeeding course, as determined by the Engineer. A similar tack coat shall be applied to the surface of any previous course even if the course is placed the same day. Also, if as determined by the Engineer, the surface is such that a satisfactory bond cannot be obtained between it and a succeeding course.

E. The contact surfaces of all cold pavement joints, curbs, gutters, manholes, and similar structures shall be painted with grade CSS-1h or SS-1h emulsified asphalt immediately before the new asphalt concrete is placed. Comply with Section 405, "Tack Coat."

F. When specified in the contract, longitudinal and transverse joints and cracks shall be sealed by the application of an approved joint sealing compound before spreading the mixture upon a Portland cement concrete surface. Excess bituminous material shall be removed from joints and cracks prior to spreading the mixture.

**401.03.07 PREPARATION OF BITUMINOUS MATERIALS**

A. The bituminous material shall be heated to the specified temperature in a manner that will avoid local overheating and provide a continuous supply of the bituminous material to the mixer at a uniform temperature at all times.

**401.03.08 PREPARATION OF AGGREGATES**

A. Aggregates proportioned prior to the heating and drying process shall be separated into at least two general sizes:

1. That portion of the material having a minimum of 80 percent passing No. 4 sieve.
2. That portion of the material having a minimum of 80 percent retained on a No. 4 sieve.

B. The material shall be maintained within the limits above with a uniformity of plus or minus 5 percent. Each portion of the material shall be stored separately.

C. When moving the aggregate from storage to compartment bins, any method may be used which will not cause segregation, degradation, or combinations of aggregate which fail to meet the specified gradation requirement. Plantmix operations shall not commence until sufficient aggregate material is stockpiled to ensure one day's run.

D. Aggregate proportioned immediately after the heating and drying process shall be screened into a minimum of 2 fractions when minus 1/2-inch aggregate is used, and into a minimum of 3 fractions when larger sized aggregate is used. The screened material shall be conveyed to separate compartments ready for proportioning and mixing with bituminous material.

E. If the Contractor elects to introduce baghouse fines into the mix, the material shall be drawn from a storage facility in which the material is kept in a uniform free flowing condition.

1. The baghouse fines for delivery to the plant shall be from a vane type metering device which is interlocked (electrical driven feeders shall be activated from the same circuit) to the flow of each aggregate feeder.

2. The drive shaft on the baghouse fines vane feeder shall be equipped with a revolution counter accurate to 1/10 of a revolution, and a means for varying the rate.
INDUSTRY COMMENTS ON UNIFORM STANDARD SPECIFICATIONS
SECTION 401” PLANTMIX BITUMINOUS PAVEMENTS – GENERAL”

Jimmy S. Benoit
Associate Engineer
Clark County Public Works
Traffic Management

- The type of tack coat is specified in Section 405 and should not be repeated on this section. Should just reference the type per sub-section 405.02.01.
d. The tires on the rear axle shall be so spaced that the entire gap between adjacent tires on the front axle will be covered by 1 tread of the following tires.

e. The tires shall be uniformly inflated so that the air pressure in the several tires will not vary more than 5 pounds per square inch. Inflation pressure in pounds per square inch shall be the tire manufacturer's recommendation.

f. Minimum tire size shall be 7.50 x 15 inches, 4 ply.

3. The use of pneumatic-tired rollers with fewer wheels and a greater maximum operating weight per tire than that specified herein will be permitted subject to the following requirements:

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A. The bituminous mixture shall not be placed upon any wet surface or when the surface temperatures of the underlying course is less than specified in Table 1. The temperature requirements may be modified, but only when so directed by the Engineer.

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<tr>
<th>Mat Thickness</th>
<th>Base Temperature (Minimum °F)</th>
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<tbody>
<tr>
<td>1 Half inch</td>
<td>40</td>
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<tr>
<td>Less than 3 Inches</td>
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The type of tack coat is specified in section 405 and should not be repeated here. Otherwise changes will need to be made in multiple locations. Should just reference that type can be found in section 405.02.01.

401.03.06 PREPARATION OF EXISTING SURFACE

A. When the surface of the existing pavement or old base is irregular, it shall be brought to a uniform grade and cross section as shown on the plans.

B. The subgrade to receive asphalt concrete, or asphalt concrete base immediately prior to applying prime coat, shall conform to the compaction and elevation tolerance specified for the material involved and shall be free of loose or extraneous material.

C. If the plantmix bituminous surface is being constructed directly upon an existing hard-surfaced pavement, a tack coat of grade CSS-1h or SS-1h emulsified asphalt, diluted 50/50 at an approximate rate of 0.05 to 0.10 gallons per square yard, shall be uniformly applied upon the existing pavement preceding the placement of the asphalt concrete.

1. The surface shall be free of water, foreign material, or dust when the tack coat is applied.
2. To minimize public inconvenience, no greater area shall be treated in any one day than is planned to be covered by plantmix during the same day, unless otherwise authorized by the Engineer.

D. A similar tack coat shall be applied to the surface of any previous course placed longer than 24 hours, or if a satisfactory bond cannot be obtained between the surface and a succeeding course, as determined by the Engineer. A similar tack coat shall be applied to the surface of any previous course even if the course is placed the same day. Also, if as determined by the Engineer, the surface is such that a satisfactory bond cannot be obtained between it and a succeeding course.

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Bituminous Materials

A. Aggregates proportioned prior to the heating and drying process shall be separated into at least two general sizes:
   1. That portion of the material having a minimum of 80 percent passing No. 4 sieve.
   2. That portion of the material having a minimum of 80 percent retained on a No. 4 sieve.

B. The material shall be maintained within the limits above with a uniformity of plus or minus 5 percent. Each portion of the material shall be stored separately.

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### Agenda Item

<table>
<thead>
<tr>
<th>Metropolitan Planning Organization [X]</th>
<th>Transit [ ]</th>
<th>Administration and Finance [ ]</th>
</tr>
</thead>
</table>

**SUBJECT:** TOPICS OF INTEREST

**PETITIONER**  TINA QUIGLEY, GENERAL MANAGER  
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

**RECOMMENDATION BY PETITIONER:**  
THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA SPECIFICATIONS SUBCOMMITTEE DISCUSS TOPICS OF INTEREST

**GOAL:** E. ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM

**FISCAL IMPACT:**  
None

**BACKGROUND:**

The Specifications Subcommittee members can share information about activities, meetings, news and other topics of interest in an informal manner.

While no action may be taken on the subjects discussed, this item provides an opportunity for the exchange of information and may serve as the forum to recommend future Specifications Subcommittee agenda items.

Respectfully submitted,

JOHN R. PEÑUELAS, JR., P.E.  
Director of Engineering Services  
Streets and Highways

tde

*SPECS       Item #6*  
April 11, 2018
REGIONAL TRANSPORTATION COMMISSION
OF
SOUTHERN NEVADA

AGENDA ITEM

Metropolitan Planning Organization [X] Transit [ ] Administration and Finance [ ]

SUBJECT: FINAL CITIZENS PARTICIPATION

PETITIONER  TINA QUIGLEY, GENERAL MANAGER
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

RECOMMENDATION BY PETITIONER:
THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA
SPECIFICATIONS SUBCOMMITTEE CONDUCT A COMMENT PERIOD FOR CITIZENS
PARTICIPATION

GOAL: E. ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL
TRANSPORTATION SYSTEM

FISCAL IMPACT:
None

BACKGROUND:
In accordance with State of Nevada Open Meeting Law, the Regional Transportation Commission of
Southern Nevada Specifications Subcommittee shall invite interested persons to make comments. For
the initial Citizens Participation, the public should address items on the current agenda. For the final
Citizens Participation, interested persons may make comments on matters within the Specifications
Subcommittee's jurisdiction, but not necessarily on the current agenda.

No action can be taken on any matter discussed under this item, although the Specifications
Subcommittee can direct that it be placed on a future agenda.

Respectfully submitted,

JOHN R. PEÑUELAS, JR., P.E.
Director of Engineering Services
Streets and Highways

tde

SPECS  Item #7
April 11, 2018