OS

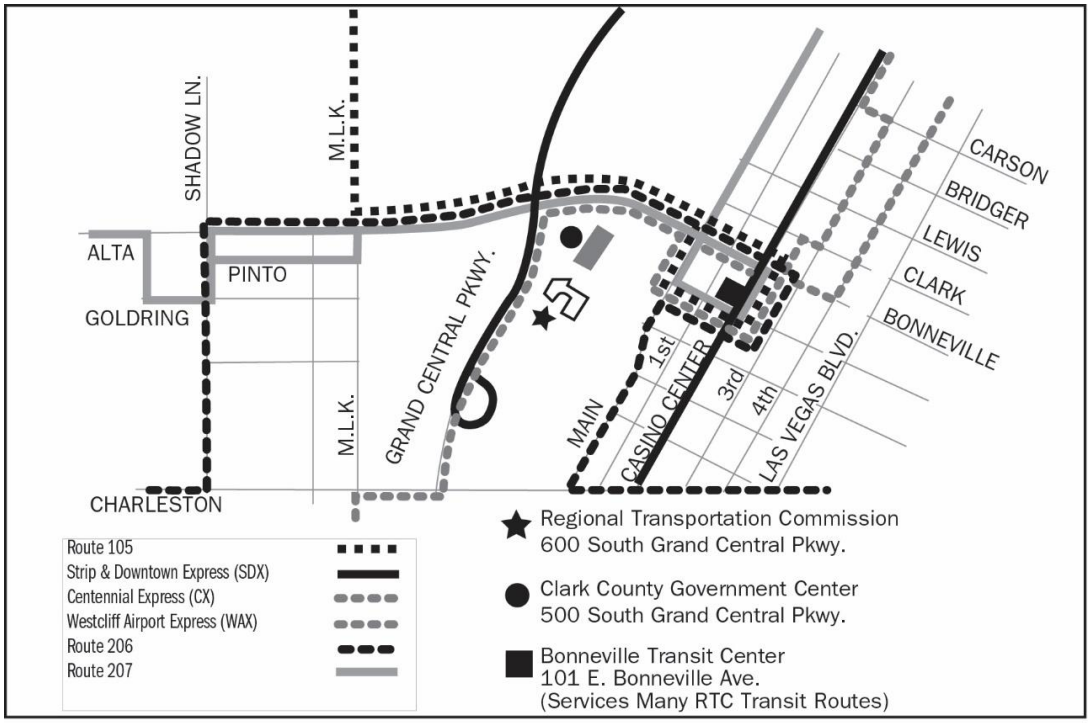
REGIONAL TRANSPORTATION COMMISSION
RTC
OF SOUTHERN NEVADA

NOTICE AND AGENDA OF PUBLIC MEETING

SPECIFICATIONS SUBCOMMITTEE

1:30 P.M. AUGUST 14, 2019

RTC/RFCD ADMINISTRATION BUILDING
600 S. GRAND CENTRAL PARKWAY, ROOM 108
LAS VEGAS, NV 89106
(702) 676-1500



This agenda with full backup is available at the Regional Transportation Commission Administration Building, 600 S. Grand Central Pkwy, Las Vegas, Nevada; the Regional Transportation Commission's website, http://www.rtcsnv.com; or by contacting David Gloria at 702-676-1623.

THIS MEETING HAS BEEN PROPERLY NOTICED AND POSTED IN THE FOLLOWING LOCATIONS:

Clark County Government Center
500 S. Grand Central Pkwy.
Las Vegas, NV 89155

City of Henderson
Office of the City Clerk
240 Water Street
Henderson, NV 89015

CC Regional Justice Center
200 Lewis Ave.
Las Vegas, NV 89155

RTC
600 S. Grand Central Pkwy.
Las Vegas, NV 89106

RTC website
www.rtcsnv.com

Nevada Public Notice website
https://notice.nv.gov

BY: DocuSigned by: David Gloria 506E9A3EFE50461...

Specifications Subcommittee
Meeting Schedule

Meeting Date	Deadline to Call Meeting
2019	
January 09, 2019	December 19, 2018
February 13, 2019	Scheduled Meeting
March 13, 2019	February 20, 2019
April 10, 2019	Scheduled Meeting
May 08, 2019	April 17, 2019
June 12, 2019	Scheduled Meeting
July 10, 2019	June 19, 2019
August 14, 2019	Scheduled Meeting
September 11, 2019	August 21, 2019
October 09, 2019	Scheduled Meeting
November 13, 2019	October 16, 2019
December 11, 2019	Scheduled Meeting

Items 2 through 7 are items for possible action. Items 1, 8, and 9 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

2. DESIGNATE OFFICERS FOR 2019/2020 (FOR POSSIBLE ACTION)

3. APPROVAL OF THE MINUTES: June 12, 2019 (FOR POSSIBLE ACTION)

4. APPROVE THE ADDITION OF SECTION 509 "PRE-CAST REINFORCED CONCRETE BOX CULVERTS" TO THE UNIFORM STANDARD SPECIFICATIONS (FOR POSSIBLE ACTION)

5. APPROVE REVISIONS TO UNIFORM STANDARD DRAWINGS WITH RESPECT TO CURRENT ACCESSIBILITY BEST PRACTICES WITHIN THE RIGHT-OF-WAY (FOR POSSIBLE ACTION)

6. APPROVE REVISIONS TO UNIFORM STANDARD DRAWINGS 223, "RESIDENTIAL DRIVEWAY;" 224, "COMMERCIAL AND INDUSTRIAL DRIVEWAY (OPTION A);" AND 226.S1, "COMMERCIAL AND INDUSTRIAL DRIVEWAY (OPTION C)" (FOR POSSIBLE ACTION)

7. DISCUSS THE FREQUENCY OF THE SPECIFICATIONS SUBCOMMITTEE MEETINGS AND DIRECT STAFF ACCORDINGLY (FOR POSSIBLE ACTION)

8. DISCUSS TOPICS OF INTEREST

9. CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION

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.

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.

5060

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

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

SUBJECT: INITIAL CITIZENS PARTICIPATION

PETITIONER: TINA QUIGLEY, CHIEF EXECUTIVE OFFICER
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: MAINTAIN AND IMPROVE TRANSPORTATION SYSTEM INFRASTRUCTURE

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 Specification Subcommittee can direct that it be placed on a future agenda.

Respectfully submitted,

DocuSigned by:
Joseph Damiani
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for

JOHN R. PEÑUELAS, JR., P.E.
Senior Director of Engineering

SPECS Item #1
August 14, 2019

ssf

6671

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

Metropolitan Planning Organization [X]	Transit [ ]	Administration and Finance [ ]
SUBJECT: DESIGNATE OFFICERS FOR 2019/2020		
PETITIONER: TINA QUIGLEY, CHIEF EXECUTIVE OFFICER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA SPECIFICATIONS SUBCOMMITTEE DESIGNATE OFFICERS FOR 2019/2020 (FOR POSSIBLE ACTION)		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		

FISCAL IMPACT:

None

BACKGROUND:

The Regional Transportation Commission of Southern Nevada Policies and Procedures provide that the Chair and Vice-Chair of the Specifications Subcommittee be rotated alphabetically by entity and designated annually every July. The current Chair is the member from Clark County and the current Vice-Chair is the member from the City of Henderson.

The new Chair would be the member from the City of Henderson and the new Vice-Chair would be the member from the City of Las Vegas.

Respectfully submitted,

DocuSigned by:
Joseph Damiani
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for

JOHN R. PEÑUELAS, JR., P.E.
Senior Director of Engineering

SPECS Item #2
August 14, 2019

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14 POLICIES AND PROCEDURES GOVERNING THE SPECIFICATIONS SUBCOMMITTEE

15.2 MEMBERSHIP

15.2.1 The membership of the Specifications Subcommittee shall consist of the following:

A. The Public Works Director or other designated individual, from each RTCSNV member entity (Clark County, City of Las Vegas, City of North Las Vegas, City of Henderson and City of Boulder City).

B. The Public Works Director or other designated individual, from the City of Mesquite and any other subsequently incorporated city that is a member of the RTCSNV, upon written request to the RTCSNV General Manager or designee.

C. An individual from the Clark County Regional Flood Control District and the Nevada Department of Transportation District Materials Laboratory or other designated individual shall be non-voting advisory members.

15.2.2 Each Specifications Subcommittee member, except advisory members, shall have one vote.

15.2.3 The term of the members of the Specifications Subcommittee shall be indefinite.

15.2.4 For each member provided for in Paragraphs (A), one alternate member may be appointed. Such alternate members will exercise all functions of the member in the member's absence. All members and alternates must be designated, in writing, to the RTCSNV General Manager or designee.

15.3 OFFICERS AND DUTIES

15.3.1 Depending upon the meeting scheduled of the Specifications Subcommittee, the members of the Subcommittee shall elect a chair and a vice-chair annually at the first meeting in July or August. The chair and vice chair shall be rotated alphabetically by entity.

15.3.2 Depending upon the meeting schedule of the Specifications Subcommittee, the succeeding chair will officiate at the July or August meeting and will serve for 12 months.

15.3.3 The chair shall preside at all Specifications Subcommittee meetings, call the meetings, and represent the Specifications Subcommittee at all meetings. The chair may choose to present a monthly progress report covering the Specifications Subcommittee's recommendations to the Executive Advisory Committee.

15.3.4 In the event that the chair is unavailable to perform these duties, the vice-chair shall act in the place of the chair.

MINUTES
SPECIFICATIONS SUBCOMMITTEE
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA
JUNE 12, 2019

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 JUNE 6, 2019

Clark County Government Center 500 S. Grand Central Pkwy. Las Vegas, NV 89155	City of Henderson Office of the City Clerk 240 Water Street Henderson, NV 89015	CC Regional Justice Center 200 Lewis Ave. Las Vegas, NV 89155	RTC 600 S. Grand Central Pkwy. Las Vegas, NV 89106	RTC Website www.rtcsnv.com Nevada Public Notice https://notice.nv.gov

CALL TO ORDER

Mr. Jimmy Floyd, Chair, called the meeting to order at 1:35 p.m. in Meeting Room 108 of the Regional Transportation Commission Administration Building.

MEMBERS PRESENT:
Jimmy Floyd, Chair, Clark County Public Works
Lance Olson, Vice-Chair, City of Henderson
Tom Brady, City of North Las Vegas
Jeremy Leavitt, City of Las Vegas
Todd Myers, Clark County Regional Flood Control District (Non-voting)

MEMBERS ABSENT:
Mario Gomez, Nevada Department of Transportation (non-voting)
Jim Keane, City of Boulder City
Bill Tanner, City of Mesquite

RTC STAFF:
Joe Damiani, Manager of Engineering
Julia Uravich, Project Engineer
David Gloria, Administrative Specialist
Tamika Davis-Edwards, Administrative Specialist
Salma Flores, Office Specialist

INTERESTED PARTIES:
Gene Chrisenbery, Southwest Liquid Asphalt & Emulsions
Lex Lindholm, Rinker Materials
Steve Nilforoushan, Rinker Materials

Item:
1. CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION

Comments:
Chair Jimmy Floyd, Clark County Public Works, opened the first comment period for citizens participation. He called on Mr. Gene Chrisenbery, who made the following comment:

"Gene Chrisenbery with Southwest Asphalt. Yeah, I have two or three comments I wanted to make on the discussion. First off, the, what would be addressed on AC grades and questioning why there would only be one grade change and the rest of them wouldn't be in Section 400 and 401. And then, some of the discussion on price increase and difference in cost were not accurate, and also the proposed temperature of the performance grading is certainly, needs to be debated about moving AC 30 to a 70 minus 10 or 70 minus 16 which would be equivalent to an AC 40, and 70 minus 10 would be tested at a 32 degrees Fahrenheit and that would be its low temperature failing property. That's most likely not the best product for Clark County. Just wanted to comment on those few things."

Chair Floyd stated that the comments proved the need for further discussion in order to update the asphalt specifications. He also discussed some of the tests conducted by Clark County on asphalt performance.

Mr. Chrisenbery: *"The resolution at the last meeting was that it was going to be brought up again in another meeting. I wonder if that's, if some outside discussion meeting should be had prior to that. That's the desire, that's great. That was it. Thank you."*

Motion:
No motion was necessary.

Vote/Summary:
No vote was taken.

Item:
2. APPROVAL OF THE MINUTES: Meeting of February 13, 2019 (FOR POSSIBLE ACTION)

Comments:
Mr. David Gloria, Administrative Specialist for the Regional Transportation Commission of Southern Nevada (RTC), informed the Specifications Subcommittee (Subcommittee) that the revisions requested at the previous Subcommittee meeting were incorporated into the current draft of the minutes.

Motion:
Mr. Tom Brady, City of North Las Vegas, made a motion to approve the minutes.

Vote/Summary:
4 Ayes. 0 Nays. The motion carried.
Ayes: Tom Brady, Jimmy Floyd, Jeremy Leavitt, Lance Olson
Nays: None
Absent: Jim Keane, Bill Tanner

Item:
3. APPROVAL OF THE MINUTES: Meeting of April 10, 2019 (FOR POSSIBLE ACTION)

Comments:
No comments were made.

Motion:
Mr. Tom Brady, City of North Las Vegas, made a motion to approve the minutes.

Vote/Summary:
4 Ayes. 0 Nays. The motion carried.

Ayes: Tom Brady, Jimmy Floyd, Jeremy Leavitt, Lance Olson
Nays: None
Absent: Jim Keane, Bill Tanner

Item:

4. DISCUSS THE FREQUENCY OF THE SPECIFICATIONS SUBCOMMITTEE MEETINGS AND DIRECT STAFF ACCORDINGLY (FOR POSSIBLE ACTION)

Comments:

Mr. Joe Damiani, Manager of Engineering for the Regional Transportation Commission of Southern Nevada (RTC), presented the staff recommendation to amend the Specifications Subcommittee (Subcommittee) regular meeting schedule from bimonthly to meeting every month. He explained that the change is needed to streamline the review process of the Uniform Standard Specifications and Drawings, which also involves the Operations Subcommittee. The current schedule of both the Specifications and Operations Subcommittees is to meet every other month, which causes delays in the review process. Given the upcoming potential items for review in the next few months, including a number of Public Rights-of-Way Accessibility Guidelines (PROWAG) drawings, increasing the meeting frequency would help expedite the process.

Mr. Tom Brady, City of North Las Vegas, asked whether a formal legal recommendation on the change to PROWAG had been made. Mr. Damiani responded that recommendations would be presented to the respective subcommittees as each item is brought for review.

Chair Jimmy Floyd, Clark County Public Works, stated his preference to maintain the current Subcommittee meeting schedule. Vice-Chair Lance Olson, City of Henderson, agreed, adding that the length of meeting agendas thus far did not warrant monthly meetings. Mr. Olson asked for more information regarding the scheduling conflicts with the Operations Subcommittee. Mr. Damiani responded that the monthly meetings between the Specifications and Operations Subcommittees were staggered and that changing the Operations Subcommittee schedule would not help expedite the review process. Ms. Julia Uravich, Project Engineer for the RTC, clarified that it was because the Specifications Subcommittee must review all of the items approved by the Operations Subcommittee and not vice versa.

Mr. Jeremy Leavitt, City of Las Vegas, proposed scheduling additional meetings on an as-needed basis instead of changing the schedule since tentative special meeting dates were already included in the Subcommittee meeting schedule. Mr. Damiani remarked that special meetings would be possible, but added that the number of PROWAG drawings beginning the review process in the Operations Subcommittee would make monthly meetings unavoidable.

Mr. Leavitt suggested revisiting the topic at the August 14, 2019 Subcommittee meeting once the PROWAG drawings were brought for review.

Motion:

Mr. Tom Brady, City of North Las Vegas, made a motion to hold the item until the next scheduled meeting.

Vote/Summary:

4 Ayes. 0 Nays. The motion carried.
Ayes: Tom Brady, Jimmy Floyd, Jeremy Leavitt, Lance Olson
Nays: None
Absent: Jim Keane, Bill Tanner

Item:

5. APPROVE REVISIONS TO UNIFORM STANDARD DRAWINGS 331 "SERVICE PEDESTAL SETBACK", 332.S1 "SERVICE PEDESTAL FOUNDATION", 332.S2 "SERVICE PEDESTAL FOUNDATION", AND 726 "SERVICE PEDESTAL FOUNDATION" (FOR POSSIBLE ACTION)

Comments:

Mr. Joe Damiani, Manager of Engineering for the Regional Transportation Commission of Southern Nevada (RTC), reviewed door orientation revisions made to Uniform Standard Drawings 331, 332.S1, 332.S2, and 726. He said that due to additional revisions requested at the Operations Subcommittee meeting, the drawings would be brought back for additional revisions and approval at a future Specifications Subcommittee (Subcommittee) meeting. Staff recommended for approval of the item and that it be sent to the Executive Advisory Committee.

Vice-Chair Lance Olson, City of Henderson, recommended adding to the drawings a requirement for a walkable surface surrounding the pedestal. He based his recommendation on past safety issues where maintenance workers injured themselves while working on posts. Mr. Damiani recommend having the surface grounding issue addressed at the design plan approval phase versus amending the standard drawing.

Mr. Jeremy Leavitt, City of Las Vegas, asked about the 48-inch minimum from the pedestal to the face of curb included in the drawings. Mr. Damiani responded that it was part of the original drawings. Mr. Tom Brady, City of North Las Vegas, asked if the minimum was intended to meet Public Rights-of-Way Accessibility Guidelines (PROWAG) requirements. Mr. Damiani responded that it was a landscape zone. Mr. Brady followed up by inquiring why the face of curb was referenced and not the back of curb. Ms. Julia Uravich, Project Engineer for the RTC, remarked that the face of curb would act as the edge of the travel way.

Chair Jimmy Floyd, Clark County Public Works, asked if a note regarding the pedestal grounding should be included. Mr. Damiani responded that the change would require a formal revision and review. He suggested addressing it as part of the upcoming additional revisions to the service pedestal foundation drawings. The door orientation revision was only brought for approval because it was a time-sensitive request from the City of North Las Vegas. He added that each entity would have an opportunity to address additional issues on the drawings.

Motion:

Mr. Tom Brady, City of North Las Vegas, made a motion to approve.

Vote/Summary:

4 Ayes. 0 Nays. The motion carried.
Ayes: Tom Brady, Jimmy Floyd, Jeremy Leavitt, Lance Olson
Nays: None
Absent: Jim Keane, Bill Tanner

Item:

6. APPROVE REVISIONS TO UNIFORM STANDARD DRAWINGS 223 "RESIDENTIAL DRIVEWAY" AND 223.1 "RESIDENTIAL DRIVEWAY WITHOUT ADJACENT SIDEWALK" (FOR POSSIBLE ACTION)

Comments:

Mr. Joe Damiani, Manager of Engineering for the Regional Transportation Commission of Southern Nevada (RTC), presented the revisions made to Uniform Standard Drawings (Drawing) 223 and 223.1

at the request of the City of Henderson, which wanted to be removed as an approving agency. Staff recommended approval of the item and that it be sent to the Executive Advisory Committee.

Vice-Chair Olson stated that the City of Henderson would no longer be an approving agency for Drawing 223 "Residential Driveway," but would still be an approving agency for Drawing 223.1 "Residential Driveway Without Adjacent Sidewalk". He requested that the City of Henderson be left as an approving agency for Drawing 223.1.

Mr. Jeremy Leavitt, City of Las Vegas, asked if the drawings would be brought back for future review because he may remove the City of Las Vegas as an approving agency from Drawing 223. Mr. Damiani affirmed that there would be an opportunity for further revisions.

Motion:
Vice-Chair Lance Olson made a motion to approve the item with changes as discussed.

Vote/Summary:
4 Ayes. 0 Nays. The motion carried.
Ayes: Tom Brady, Jimmy Floyd, Jeremy Leavitt, Lance Olson
Nays: None
Absent: Jim Keane, Bill Tanner

Item:
7. APPROVE REVISIONS TO UNIFORM STANDARD DRAWING 228 "CROSS GUTTER" (FOR POSSIBLE ACTION)

Comments:
Mr. Joe Damiani, Manager of Engineering for the Regional Transportation Commission of Southern Nevada (RTC), presented the revision made to Uniform Standard Drawing 228, which entailed changing the standard half-inch galvanized pipe to a half-inch PVC pipe. Staff recommended for approval of the item and that it be sent to the Executive Advisory Committee.

Motion:
Vice-Chair Lance Olson, City of Henderson, made a motion to approve.

Vote/Summary:
4 Ayes. 0 Nays. The motion carried.
Ayes: Tom Brady, Jimmy Floyd, Jeremy Leavitt, Lance Olson
Nays: None
Absent: Jim Keane, Bill Tanner

Item:
8. DISCUSS TOPICS OF INTEREST

Comments:
Mr. Joe Damiani, Manager of Engineering for the Regional Transportation Commission of Southern Nevada (RTC), provided a status update on pending items to the Specifications Subcommittee (Subcommittee). Proposed revisions for pre-cast box specifications requested by the Clark County Regional Flood Control District are in industry review. He stated that comments and revisions will be available at the next Subcommittee meeting. There are no new submissions received thus far for the pre-cast arch culverts and non-reinforced cast-in-place concrete pipe specifications. The 100-foot Arterial Lane Delineation for rural roadways will be presented for approval at the next Executive Advisory Committee (EAC) meeting. The 80-foot and 60-foot Arterial Lane Delineation for rural roadways were held for further discussion. The Recycled Material specification will be presented for approval at the next RTC Board of Commissioners meeting.

Ms. Julia Uravich, Project Engineer for the RTC, asked agencies to send any AutoCAD drawings for the arterial lane delineation standards.

Mr. Tom Brady, City of North Las Vegas, inquired about the review process for the Public Rights-of-Way Accessibility Guidelines (PROWAG) drawings. Mr. Damiani responded that the PROWAG drawings would not be presented to the Subcommittee until they have been approved by the Operations Subcommittee.

Mr. Brady asked when the asphalt binders specifications would be brought back for discussion. Chair Jimmy Floyd, Clark County Public Works, said the next step would be a meeting with industry and suppliers. Chair Floyd added that Clark County Public Works staff would facilitate this meeting.

Mr. Damiani remarked that requests were sent to the Southern Nevada Homebuilders Association, Nevada Contractors Association, and the Commercial Real Estate Development Association (NAIOP) to become members of the Subcommittee. Mr. Jeremy Leavitt, City of Las Vegas, recommended that the industry representatives be added as non-voting members. Mr. Damiani said their status would be addressed when changes to the Subcommittee policy and procedures are presented for approval at EAC.

Motion:
No motion was necessary.

Vote/Summary:
No vote was taken.

Item:
9. CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION

Comments:
No comments were made.

Motion:
No motion was necessary.

Vote/Summary:
No vote was taken.

ADJOURNMENT

The meeting adjourned at 2:10 p.m.

Respectfully submitted,

DocuSigned by:
David Gloria
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David Gloria, Recording Secretary

DocuSigned by:
Marek Biernacinski
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Marek Biernacinski, Transcription Secretary

6454

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

Metropolitan Planning Organization [X]	Transit [ ]	Administration and Finance [ ]
SUBJECT: STANDARD SPECIFICATIONS AND DRAWINGS		
PETITIONER: TINA QUIGLEY, CHIEF EXECUTIVE OFFICER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA APPROVE THE ADDITION OF SECTION 509 "PRE-CAST REINFORCED CONCRETE BOX CULVERTS" TO THE UNIFORM STANDARD SPECIFICATIONS (FOR POSSIBLE ACTION)		
GOAL: MAINTAIN AND IMPROVE TRANSPORTATION SYSTEM INFRASTRUCTURE		

FISCAL IMPACT:

Undetermined

BACKGROUND:

This item was requested by the Clark County Regional Flood Control District (CCRFCD). Currently, these specifications are added to supplemental specifications when they apply. The CCRFCD is requesting that they be added to the Standard Specifications, so they can be applied consistently throughout the Clark County area.

Respectfully submitted,

DocuSigned by:
Joseph Damiani
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for

JOHN R. PEÑUELAS, JR., P.E.
Senior Director of Engineering

SPECS Item #4
August 14, 2019

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Regional Transportation Commission

AGENDA ITEM DEVELOPMENT REPORT

Agenda Item Recommendation (as submitted):
APPROVE THE ADDITION OF SECTION 509 "PRE-CAST REINFORCED CONCRETE BOX CULVERTS" TO THE UNIFORM STANDARD SPECIFICATIONS (FOR POSSIBLE ACTION)

Agenda Item Requestor: Regional Transportation Commission

Meeting Date: 4/10/2019	Specifications Subcommittee

Discussion:
Chair Jimmy Floyd, Clark County Public Works, opened the floor to public comments. He called on Mr. Michael Mula, Rinker Materials, who noted the discrepancy in the notification required for casting operations in sections 509.02.01G and 509.03.03 B1. One required a 28-day written advance notification and the other a two-week advance notification.

Chair Floyd asked for comments from the committee members. Mr. Todd Myers, Clark County Regional Flood Control District, stated he preferred making the requirement a two-week notification. The other members agreed. Mr. Jeremy Leavitt, City of Las Vegas stated that the change should be made to 509.03 paragraph B number 1, asking for written notification two weeks in advance of casting operations and once the revision was made to send to industry review.

Advisory Action (check one): ***Approval** ☑ **Disapproval** ☐ **Item Held** ☐

***Conditions (if applicable):**

Meeting Date: 2/13/2019	Specifications Subcommittee

Discussion:

Send to Industry reviewComments:
Mr. Joe Damiani, Manager of Engineering, Regional Transportation Commission of Southern Nevada (RTC), remarked that this specification had been submitted for review and comments, noting that Mr. Todd Myers, Clark County Regional Flood Control District, would provide more details.

Mr. Myers explained that many of the comments brought forth for this specification were minor and that the specification for the reinforced concrete box (RCB) were ready for industry review. Mr. Damiani asked to clarify that the section in the backup was the specification ready for industry review. Mr. Myers confirmed that it was. From there, the floor was opened for comments. Mr. Mike Mula, Rinker Materials, made the following comment:

"Mike Mula with Rinker Materials. Only a couple comments on the pre-cast box specification. Last meeting, I submitted some comments to the committee, and we talked about possibly eliminating the section in .01.01 paragraph D, which requires a design for less than 10ft of cover to cover the whole range of zero to 10ft of cover, and then design, if the actual design of the plans is greater than 10ft of cover, to add 5ft to that. It's your money, but you're adding costs, probably unnecessarily, this comes out of NDOT, and NDOT put that in in case they're doing future wraps, so I suggest we eliminate that from the box specification, and if there's a special consideration in a county project or a city project where you think you might be changing the height later, to just put that in the special provisions and say design this section for this amount of cover. I think it would save you money in the long run.

Second, under same section .01.01 paragraph E, we're asking that the calculations of working drawings be prepared by a Nevada PE. We think that if the design comes right out of C1577, say 6x4 box, 4x3 box where there's no changes, it's right out of C1577, we shouldn't have to do a Nevada PE stamp submittal on that, it's coming right out of the specified specifications, so why are we spending additional money and charging you more money to have somebody stamp something that's a national specification? So we think that should be, I made a recommendation last time to that sentence, comma, unless designs are directly from C1577 design tables, in which case neither calculations nor stamp designs are required. And then in the specification itself, there was a section added to page 509-2, B1, that included either ACPA certification, NPCA certification, those are QC requirements, or PCI Precast Prestressed Concrete Institute, I do not believe that PCI covers a full QC program for the actual products, I think it covers concrete, but I don't believe they have QC in there for pipe and box, so they're not checking, they don't have a program to check physical variations and allowance and tolerances of the actual product itself. So I'd recommend going back and removing the PCI, you already have a provision in there that anybody can submit their full QC program and be qualified to do a project, so I think PCI should be eliminated, which was the main change where that's red on that page.

On page 509-5 of the specification, in 509.03.03, I, it says the box culvert shall be laid with a three-inch space between multiple box culverts, that should be nominal three inches, we don't want contractors to try and hold line and grade based on a three-inch gap between multiple cells, there are manufacturing tolerances on the outside of the box which could cause that three inches to be two or two and a half inches, so we don't want an inspector to say no you have to do that and the guide's offline and grade, so it's more important to hold the line and grade, and if the gap varies a little bit, that's okay, as long as you can get material in there to provide some support on the sidewalls of the box. So I think the word nominal should be added to the three inches.

Finally, in Item K of the same section, it talks about bevels and elbows; we think that should be revisited and default to the flood control manual where bevels are five degrees and elbows are 22.5 degrees. Right now for some reason it says elbows at 10 degrees there, that's sometimes impossible, it can't be manufactured because your legs on your elbows then get too short, so that should follow the flood control specification, 22.5 degrees, and bevels of five degrees, and don't limit the drop to 12 inches, just five degrees for bevels, and 22.5 for elbows, which is exactly what the flood control manual says. Any questions about any of that that I could possibly address?"

Chair Jimmy Floyd, Clark County Public Works: "What do you think is a suitable tolerance on the three-inch gap, plus or minus?"

Mr. Mula: "I think two to three inches is good, or even two to four, I mean, if they get bigger is fine, you're just trying to be able to get some material of that between the multiple barrels there, but if you go down to two inches, you'd normally can get flowable fill down in there."

Chair Floyd asked about the committee protocol for implementing suggested changes. Mr. Damiani replied that they could discuss the changes under this item and then make a motion to implement the changes accordingly.

Vice-Chair Lance Olson, City of Henderson, brought up an issue on page 509-4, 509.03.03 E, noting the line describing the need for inner services to be flushed and procedures for submitting approvals to engineers. Vice-Chair Olson believed that there should be a tolerance listed. Mr. Myers replied that for box tolerances, anything with interior

dimensions under four feet has a tolerance of a quarter inch, and anything over four feet has a tolerance of a half inch. He described cases where this could be an issue, noting that he believed they were covered on that issue, but Mr. Olson noted that he would prefer to have the option to reject the box design altogether. With that in mind, Mr. Myers said it might make more sense to leave it out of the specifications, with fixes determined on an as-needed basis. He stated he was hesitant to add a tolerance due to the complications it could create.

The members spent a few minutes discussing the logistics of the box design and possible tolerances based on the size of each box. Mr. Mula said that a half-inch tolerance could be acceptable, but Mr. Myers said that this would be problematic, again stating his preference to avoid noting a specific tolerance. However, Mr. Olson was adamant that he needed a tolerance for the management side of things, stating that the need for the boxes to be flush was not an acceptable solution. After further deliberation, the committee members decided that the best course of action would be to make the changes as noted in the discussion and prepare for the industry review.

Vice-Chair Olson stated that he agreed with all of Mr. Mula's comments except the comment about the engineer stamp. He said he could think of a few situations where it could be helpful to have an engineer review the design. Overall, the members agreed that they would make the changes reflected in the comments today and send the document out for industry review. Per Vice-Chair Olson's comment, Mr. Damiani agreed that the changes would be made minus the stamp requirement.

Advisory Action (check one): ***Approval** ☑ **Disapproval** ☐ **Item Held** ☐

***Conditions (if applicable):**

Meeting Date: 12/12/2018	Specifications Subcommittee

Discussion:

Vice-Chair Lance Olson, City of Henderson, proposed discussion of the addition of Section 509 on pre-cast reinforced concrete box to the regional specifications and drawings.

Mr. John Peñuelas, Director of Engineering Services-Streets and Highways for the Regional Transportation Commission of Southern Nevada (RTC), mentioned that this item was previously brought to the Specifications Subcommittee in conjunction with another item. However, due to the public comments received at the previous meeting, the original item was split into two separate items and brought for further discussion. He then introduced Ms. Abi Mayrena from the Clark County Regional Flood Control District, who requested that any additional comments be sent to her directly since she is managing the revision process.

Comments:

Vice-Chair Lance Olson, City of Henderson, proposed discussion of the addition of Section 509 on pre-cast reinforced concrete box to the regional specifications and drawings.

Mr. John Peñuelas, Director of Engineering Services-Streets and Highways for the Regional Transportation Commission of Southern Nevada (RTC), mentioned that this item was previously brought to the Specifications Subcommittee in conjunction with another item. However, due to the public comments received at the previous meeting, the original item was split into two separate items and brought for further discussion. He then introduced Ms. Abi Mayrena from the Clark County Regional Flood Control District, who requested that any additional comments be sent to her directly since she is managing the revision process.

Mr. Joe Damiani, Manager of Engineering for the RTC requested a draft redline document at the next meeting so the Subcommittee members could begin tracking the changes. Vice-Chair Olson inquired if there was any mention of vertical tolerance on the boxes because issues had come up in the past. He requested more detail including what is acceptable and what are possible alternatives if the specifications are not met. From there, Vice-Chair Olson opened the floor to public comments. He first called on Mr. Bob Leuck, Clark County Public Works, who made the following comment:

"Hi, I am Bob Leuck, with Clark County Public Works. I was going to tell you that we do have comments that we want to provide. Our staff has been working on them, but it's probably going to be at least another week or two especially with the holidays coming up, before we get them together. We're going to put them together in writing on both of these. I wanted to make sure that we should be reviewing what was sent out in the agenda packet, or is there something else." Ms. Mayrena confirmed it was the appropriate draft, and that she would provide a template to use to submit comments. Mr. Leuck continued: "Do you have a template that maybe you could maybe? Ok, cool. Then we will do that, and we will try to get something. We're going to try to get it through the whole department and stuff, to get everything together. Will you then try to include those in whatever you send out that Joe's wanting before the next meeting?" Ms. Mayrena and Mr. Damiani confirmed that the comments would be included. Mr. Jim Keane asked if the comments were addition to previous comments submitted by Jim Floyd. Mr. Leuck responded: "Some of them are. Jimmy said that he had. I know he had said that. He had some that he had given, but since then they were discussing it internally, and then they talked to me about it the other day, and that's how I. And so, I told him that I would come over here and let everybody know. So yeah, it's going to be a combination, more than what he had before. There's some thing coming from design that some of the staff had also in addition to what Jimmy came up with. And then, some of Jimmy's staff also were commenting yesterday and this morning on it. Just different suggestions and stuff, but some questions we have, and I think then at the next meeting we're going to want to discuss more about this because there are some things we have questions on."Ms. Mayrena asked that they review other entities' comments to avoid duplicates. Mr. Leuck asked: "Do we have a copy, I swear I haven't been to the meeting here before, but do we have copies of the other comments. Do you know?"

Ms. Mayrena said she did and would provide themMr. Leuck asked: "Are you going to share those? Ok."Mr. Damiani asked that Ms. Mayrena include the matrix of all the comments with the redline draft document in the next agenda packet in order to ensure all comments were discussed and reviewed. After the discussion, changes would be incorporated into the document, brought for Subcommittee review, then sent for industry review and brought back to the Subcommittee for review and possible approval.

Next, Mr. Michael Mula, Rinker Materials, made the following comment:

"I'm Mike Mula with Rinker Materials. With regard to RCB specification discussion on the what we call step between the tongue and the groove on the boxes, there are manufacturing tolerances that are in ASTM C1577 that allow, so that step could vary from box to box depending upon what the rise of the box is. A three-foot rise would have a different tolerance allowable than a 10 ft rise. Uh, so just as a caution, a quarter inch may be okay in some cases, may not be in others. Typically, if the, if the step, because you put these in tongue downstream of course, so if the step is going down by a little bit, generally it's not an issue from a flow, waterflow standpoint, hydraulic standpoint. If it's going the other way and you're running into something, then that could be an issue. But, just be, umm, you may have to make a tolerance depending upon rise of the box. So, you have to look at ASTM tolerances and I don't know those off the top of my head. We have a couple of other comments that we wanted to have the committee consider with regard to the pre-cast box specification. So, the comments, they're basically three with the regard to the specification that we were taking a look at. We did not see anything go out for industry review, so now I understand that it did not go out for industry review, so we just looked at the spec that was in the last, minutes from the last meeting, for this meeting. A couple of things and the first one has to do in combination with Item 6. What's required right now comes out of NDOT, so that if

the cover on the plans is 5ft for example, you require the RCB, pre-cast RCBs, to be 0 to 10 ft of cover. If it's 11 ft say or something on the plan, something over ten, you require us to add 5 ft in addition to for design purposes, in case there is a future build or something like that I guess is what it's for. Then a 0 to 10, even if it's 5 ft would be so that on our designs from 0 to 2 ft of cover, we have distribution steel that we have to add in the box which basically allows traffic on it at that 0 to 2 ft of cover.We feel that, if it's not, if that requirement is not going to be included in the arch specification, we feel it's an undue burden to put it in the box specification, okay. This comes from NDOT. They're looking at ramps and things like that for future. So, just for your consideration, we think that to keep at a level playing field between those two products, that should be there. The second part of Item 01.01 in paragraph D, is, it says that each run of box should be one design, or some words to that effect. Some of these long runs of boxes can range from 2 ft of cover on one end to 20 ft of cover on the other end. It's not economical to design, I mean we could do it, but then you'd be would be looking at, especially in consideration of that first paragraph here, you'd have a design for 0-20 ft of cover. So, it would have a whole lot of steel in there, that's, and possibly thicker slabs, that's unnecessary for certain things. So, what we would like to do is, and we stop it at an intelligent place, but if a thing is at 2-5 ft of cover we design that. Then if it jumps up to 15 ft of cover, to 20, then we do a separate design for 15 -20 ft of cover. So, we would like to eliminate that sentence there. And then, finally, the last sentence says prepared and stamped by Nevada P.E. Understood. However, a lot of, some of the designs that we do for like smaller boxes in particular, 4 x 3, 5 x 6, they come right out of the ASTM standard. If they are coming right out of the design tables, we don't see a need to for those to, for us to basically submit on those. It's costly for us to go out and get a right of design, have an engineer stamp it, etc., and then submit that. And, if it's called it's designed as per ASTM C1577, if it comes right out of C1577 same wall thickness, right out of the table, there is not more than a 30-degree scoot to the rode, that's a special design. If we're not modifying walls and things like that. There's no special loading cases, then we feel that should just come out of C1577. We shouldn't have to submit on those. So, we wanted you to consider those three items for the box specifications."
Mr. Peñuelas recommend to hold the item until the comment matrix that is going to be provided by Regional Flood District could be incorporated into the next draft.

Mr. Jim Keane made a motion to follow staff recommendation.

Advisory Action (check one):	***Approval** ☑	**Disapproval** ☐	**Item Held** ☐

***Conditions (if applicable):**

Meeting Date: 11/15/2018	Staff

Discussion:

Advisory Action (check one):	***Approval** ☑	**Disapproval** ☐	**Item Held** ☐

***Conditions (if applicable):**

SECTION 509

PRECAST REINFORCED CONCRETE BOX CULVERTS

DESCRIPTION

509.01.01 GENERAL

A. This work shall consist of furnishing and placing Precast Reinforced Concrete Box (RCB) Culvert of the size and dimensions and at locations shown on the plans.

B. The precast RCB culvert shall be constructed to the lines and grades given by the Engineer and in accordance with the design shown on the plans.

C. Precast RCB culvert sections shall be monolithic.

D. Square or rectangular precast RCB sections shall be designed and constructed conforming to ASTM C1577, as controlled by the height of cover shown on the plans and specified herein. The design cover and loading calculations shall be included in the working drawing submittal.

E. Design calculations and working drawings shall be submitted for precast RCB sections for review and approval according to ***Subsection 105.02 "Plans and Working Drawings"***. Working drawings shall include the contract number, the jobsite name of the structure as shown on the plans, bridge number (if applicable), material designations, bill of materials, complete fabrication details, and guidelines for handling and assembly. Calculations and working drawings shall be prepared and stamped by a Nevada Registered Professional Civil Engineer.

MATERIALS

509.02.01 GENERAL

A. The materials used shall conform to the requirements in the following subsections:

Materials	Section/Subsection
Structure Excavation	***206***
Structure Backfill	***207***
Trench Excavation and Backfill	***208***
Selected Material Subbase	***301***
Portland Cement Concrete	***501***
Reinforcing Steel	***505***
Hydraulic Cement	***701***
Concrete Curing Materials and Admixtures	***702***
Grout and Mortar Sand	***706.03.04***
Joint Material	***707***

B. Manufacturer Certification and Qualification. The manufacturer of the precast RCB shall

submit for approval, substantial evidence of qualification to produce the product. Such evidence of qualification shall include the following:

1. Plant produced concrete products proposed for use will require either National Precast Concrete Association (NPCA) or American Concrete Pipe Association (ACPA) certification.
2. Written evidence of successful completion of at least three (3) projects of size and scope similar to the project for which the manufacturer wishes to be pre-qualified. The projects shall have been performed within the previous three (3) years. Such evidence shall include references for said work.
3. A written document detailing the manufacturer's Quality Control Program that demonstrates conformance to the requirements of these specifications.

C. Concrete. Concrete shall be as specified in ***Section 501, "Portland Cement Concrete"***. A copy of the concrete mix design which will be used in the manufacture of the precast RCB shall be submitted for review and approval. The mix design shall identify the type of casting process (wet or dry casting), in addition to the requirements of ***Section 501***.

1. When a wet cast manufacturing process is used, concrete shall be Class A Modified or Class AA Modified. A wet cast manufacturing process is defined as one in which forms are removed after 6 hours or more.
2. When a dry cast manufacturing process is used, concrete shall be Class A Modified. A dry cast manufacturing process is defined as one in which the concrete is densified by continuous vibration, and forms are removed immediately. If approved, alternative aggregate gradations from those specified in ***Section 501*** and ***Section 706*** may be allowed.

D. Product Certification. A certificate of compliance issued by the manufacturer of the precast RCB shall be submitted at the time of shipment. The certificate shall include the following:

1. The specification under which the box sections were manufactured.
2. All project identification information as noted for working drawings above.
3. The number of box sections of each size which are being shipped.
4. A statement that the construction of the box sections, and all materials used therein, are in compliance with the requirements of the applicable ASTM or AASHTO specifications.
5. Copies of the Quality Control test results, and compressive strength for that lot shall be kept at the plant and available for review.

E. The Engineer may, at their option, inspect the precast facility operations including, but not limited to, the reinforcing assembly, forming equipment, concrete batching equipment; placement, curing, and handling equipment; and testing and inspection equipment and procedures.

F. The manufacturer of the precast RCB shall maintain, for a period of seven (7) years following shipment, a copy of the appropriate test reports and other documentation, including compressive strength tests, necessary to support the certificates of compliance.

G. If the RCB culverts have not been cast prior to the notice to proceed date, written notification shall be given two (2) weeks in advance of performing casting operations for the project.

H. All materials will be subject to inspection for acceptance as to condition at the latest practicable time the Engineer has the opportunity to check for compliance prior to or during incorporation of materials in the work.

I. Reinforcement shall conform to the requirements of ***Section 505, "Reinforcing Steel",***

unless otherwise noted.

J. All joints of the precast boxes shall be sealed with a flexible, butyl-blend, watertight, preformed joint material with a minimum cross-section width of 1 ¼ square inches, installed according to the manufacturer's recommendations. Joint material shall conform to ASTM C990.

1. Joint surfaces of the precast box shall be clean, dry and free of any foreign material, including mud, aggregate base, and leveling course. Apply primer in accordance with manufacturer's recommendations. Install sealant to form a continuous seal around the perimeter of the joint. The sealant may be placed on the lower portion of the groove of the downstream box and upper portion of the tongue of the upstream box, provided there are three (3) inches of overlap of the sealant on each side of the box.

CONSTRUCTION

509.03.01 EARTHWORK

A. Excavation and backfill shall conform to the requirements of ***Section 206, "Structure Excavation,"*** and ***Section 207, "Structure Backfill,"*** or ***Section 208, "Trench Excavation and Backfill,"*** when the precast RCB is constructed in a trench.

1. The precast RCB shall be bedded as shown in the plans or as specified in the Special Provisions.
2. When no bedding class is specified, the requirements for normal bedding as shown in the Uniform Standard Drawings 503 or 503.2 shall apply.
3. The lines and grades shall be established by the Engineer or as designated in the contract documents.

B. Where precast RCB sections are to be installed in new embankments on a steep slope or in a difficult location, the height of new embankments may be varied as directed by the Engineer.

C. When headwalls are not required and granular materials are used for backfilling, the fill at the ends of the structure shall be sealed against the infiltration of water by bedding the ends of the structure using Class II CLSM or concrete.

D. Subgrade preparation shall conform to the requirements of ***Section 301, "Selected Material Subbase"***.

509.03.02 HEADWALLS

A. Where shown on the plans, inlet and outlet headwalls shall be constructed or installed in connection with precast box sections.

B. Where headwalls are constructed or installed, the ends of precast RCB sections shall be placed flush or cut off flush with the headwall face, unless otherwise permitted by the Engineer.

C. Headwalls shall be constructed to conform to ***Section 501, "Portland Cement Concrete"*** and ***Section 502, "Concrete Structures."***

509.03.03 LAYING PRECAST REINFORCED CONCRETE BOX CULVERTS

A. Construction installation shall comply with AASHTO LRFD Bridge Design Specifications, most current edition, ***Section 208***, ***"Trench Excavation and Backfill"***, and these specifications.

B. Inspection of precast RCBs prior to laying:

1. Written notification shall be given two (2) weeks in advance of performing casting operations.
2. No precast box shall be laid which is excessively cracked per ***Subsection 509.03.04***, (i.e., cracked, spalled, or damaged) and shall be removed from the work. Precast RCB culverts which show defects due to handling will be rejected at the site of installation regardless of prior acceptance.
3. Fine cracks and checks on the surface of the member which do not extend to the plane of the nearest reinforcement will not be cause for rejection unless they are numerous and extensive. Cracks which extend into the plane of the reinforcing steel shall be repaired in a manner approved by the Engineer.
4. Small damaged or honeycombed areas which are purely surface defects in nature shall be repaired in an approved manner. Excessive damage, honeycomb, or cracking will be subject to structural review at the Contractor's expense. All repairs shall be made sound, properly finished, and cured according to the pertinent specifications. When fine cracks or hair checks on the surface indicate poor curing practices, the production of precast boxes shall be discontinued until corrections are made and proper curing is provided.

C. All precast boxes shall be carefully handled during loading, unloading, transporting, and laying.

D. Precast box laying shall begin at the downstream end of the box except for extensions of existing boxes. Place the bottom of the box in contact with the bedding throughout its full length. The first section of box to be laid shall be firmly placed to the designated line and grade at the outlet end with the groove end pointing upstream. Construction loads shall be considered by the design engineer. Design loads shall not be exceeded at any time. Boxes shall be inspected before any backfill is placed. Contractor shall ensure that no rocks greater than three (3) inches or other rigid or jagged material is present in the bedding material where box will be laid directly on the material.

E. The box segments shall be joined in such a manner that the ends are fully entered and the inner surfaces are flush and even. The maximum tolerable nominal horizontal gap between joints is 0.75 inch, or the manufacturer's maximum joint gap tolerance, whichever is less. This gap shall be checked immediately after laying each section. Any annular space existing in the invert and wall portion of the joint shall be filled with an approved mortar and finished flush with the interior surfaces of the box units. Any annular space existing in the top slab portion of the joint shall be filled with an approved mortar, and shall be extended down the exterior wall joint to the point where it meets interior grout limits. If the inner surfaces are not flush or there is an adverse slope, a procedure to repair the vertical gap must be submitted to the Engineer for approval.

F. After laying, the box culvert segments shall be checked for alignment and grade. The culvert shall be installed within the tolerances for horizontal and vertical location and gradient as follows:

1. Horizontal location within 0.05 feet of location shown on plans.
2. Vertical location within 0.05 feet of elevation shown on plans.
3. Gradient shall not vary by more than ten percent (10%) of slope shown on plans.

G. The Contractor shall remove and relay or replace box that is out of alignment, damaged, or has unduly settled at no cost to the Contracting Agency.

H. The interior of the precast box sections shall be kept free of dirt and other foreign material as the box laying progresses and be left clean at the completion of the work. Boxes which are not in true alignment, which show any undue settlement, or are damaged shall be taken up and re-laid at the Contractor's expense. The bottom of the trench shall be graded and

prepared to provide a firm and uniform bearing throughout the entire length of the box for the leveling course to be placed on. Blocking shall not be used to bring the box to grade. Box sections shall be checked for alignment and grade at the time of joining the sections.

I. The box culverts shall be laid with nominal three (3) inch space between multiple box culverts. The annular space shall be grouted. The grout shall be a workable mix suitable for pumping without segregation and shall conform to the requirements of ***Section 706.03.04, "Grout and Mortar Sand."*** The grout shall be placed by pumping or an approved alternate method and consolidated by mechanical vibration or rodding during placement. The grouting shall be performed by a continuous placement in lifts not exceeding six (6) feet. Vertical grout barriers may be used to control the flow of grout horizontally. The grout shall attain a minimum compressive strength of 2,500 psi in 28 days when tested according to ASTM C39.

J. The backfill material shall comply with the requirements of ***Section 208***. If the Contractor cannot fit compaction equipment between the box and the trench wall, or the conditions are unsafe for compaction and/or testing, CLSM must be used.

K. The Contractor shall provide box culverts with beveled ends where the radius of the center line alignment exceeds the manufacturer's minimum radius of curvature allowed using pulled joints. The maximum bevel angle shall not exceed 5 degrees. The Contractor may provide elbows, with a maximum deflection angle of 22 ½ degrees, where the radius of the center line alignments is less than the manufacturer's minimum radius of curvature for a 5-degree bevel.

509.03.04 INSPECTION

A. All precast RCB joints and lengths shall be 100 percent inspected.

B. Inspection and Testing shall be performed by the contractor during and after installation to ensure proper performance.

C. Installation of bedding and backfill materials, as well as their placement and compaction, shall adhere to the requirements of this section and other applicable sections.

D. Errors in line and grade, as well as any improper placement or backfill techniques, shall be corrected prior to placing significant backfill or trench fill.

E. Joints shall be properly assembled to prevent the infiltration of soil fines. Flexible joint material shall be properly placed to prevent groundwater infiltration and shall be uniformly oriented around the precast RCB.

F. Shallow cover installations shall be checked to ensure the minimum cover level is provided.

G. The Contractor shall complete an internal quality inspection a minimum of thirty (30) days after final backfill has been placed and prior to final acceptance by the Contracting Agency. The culvert shall be cleaned and inspected for cracks and joint gaps using visual physical measurement or other devices, including but not limited to calibrated television or video cameras, subject to approval by the Engineer.

H. Cracks in precast RCB culverts (both longitudinal and circumferential) that are less than 0.10 inch in width are generally considered non-structural flaws and need not be repaired. Cracks that are equal to or exceed 0.10 inch in width shall require an evaluation by a Nevada licensed professional engineer. The Contractor's engineer shall provide a recommendation regarding removal or repair in accordance with ASTM C1577 standards and subject to approval by the Contracting Agency.

I. Precast RCB joints and lengths that do not meet the specification shall be repaired or replaced at the Contractor's expense. Any replacement precast RCB shall also be subject to the same testing.

J. All inspection and testing results shall be submitted and approved by the Contracting Agency before final payment. The Agency Engineer shall be allowed access to randomly inspect at least 10 percent of the total number of precast RCB runs.

509.03.05 BACKFILL

A. Precast RCB culvert section backfill shall conform to the requirements of ***Section 207, "Structure Backfill",*** unless otherwise noted.

B. Prior to placing backfill material, all handling holes in RCB culverts shall be completely filled with grout or other acceptable methods, and subject to the approval of the Contracting Agency.

509.03.06 EXTENDING EXISTING CULVERTS

A. Where shown on the plans or directed by the Engineer, existing culverts shall be extended in accordance with the provisions for installing new culverts and the following additional provisions.

B. Existing headwalls shall be demolished, removed, and disposed of per ***Section 202, "Removal of Structures and Obstructions",*** or moved to the extended location as indicated on the plans or ordered by the Engineer.

C. A headwall that is not to be reset shall be demolished without injury to the existing culvert and removed and disposed of in accordance with the provisions of ***Section 202, "Removal of Structures and Obstructions."*** If shown on the plans or ordered by the Engineer, a new concrete headwall shall be constructed in accordance with the provisions of ***Section 501, "Portland Cement Concrete,"*** of these specifications or a flared end section shall be attached thereto.

METHOD OF MEASUREMENT

509.04.01 MEASUREMENT

A. The materials to be paid for under these specifications will be listed in the contract items by size, class, type, gauge, or whatever information is necessary for identification.

B. The quantity of precast RCB culvert to be measured for payment will be the actual number of linear feet of culvert, complete and in place.

C. Precast RCB culvert bends, wyes, tees, and other branches will be measured and paid for by the linear foot for the sizes of culvert involved. Wyes, tees, and other branches will be measured along centerlines to the point of intersection.

D. All measurements will be made in accordance with ***Subsection 109.01, "Measurement of Quantities."***

BASIS OF PAYMENT

509.05.01 PAYMENT

A. The accepted quantities of precast RCB culvert measured as specified in ***Subsection 509.04.01, "Measurement",*** will be listed under the respective sections of precast RCB.

B. The accepted quantity of [X]-FT X [X]-FT precast RCB culvert will be paid for at the contract unit price per linear foot shall include all labor, equipment and materials necessary to complete the work.

C. Full compensation for furnishing precast RCB culvert with end finish, including distortion if required, will be considered as included in the price paid per linear foot for the

precast RCB involved and no additional compensation will be allowed therefor.

D. Unless otherwise specified in the Special Provisions, full compensation for trench excavation, structure excavation, subgrade preparation, bedding, leveling course, trench backfill (selected, granular, CLSM), shoring, quality inspection, utility potholing, installation and/or removal of temporary pavement patching, compaction, dewatering, disposal of all excess or unsuitable material, protection and restoration, and related items of work not otherwise provided for, will be considered included in the price paid per linear foot of RCB. Such payment shall include compensation for all the materials, labor, tools, equipment, and incidentals necessary to complete the work as shown on the Plans, as specified herein, and as directed by the Engineer.

E. All payments will be made in accordance with ***Subsection 109.02, "Scope of Payment."***

PAY ITEM	**PAY UNIT**
(Size) Precast Reinforced Concrete Box Culvert	.Linear Foot

From: Tull, Jonathan
To: ccstandards
Subject: Comments
Date: Friday, May 3, 2019 1:48:02 PM
Attachments: image001.png
6454_Section_509_Precast_reinforced_concrete_box_-_Draft_for_IR.pdf

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Cordially,

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SECTION 509

PRECAST REINFORCED CONCRETE BOX CULVERTS

DESCRIPTION

509.01.01 GENERAL

A. This work shall consist of furnishing and placing Precast Reinforced Concrete Box (RCB) Culvert of the size and dimensions and at locations shown on the plans.

B. The precast RCB culvert shall be constructed to the lines and grades given by the Engineer and in accordance with the design shown on the plans.

C. Precast RCB culvert sections shall be monolithic.

Has consideration been given to arched concrete culverts?

D. Square or rectangular precast RCB sections shall be designed and constructed conforming to ASTM C1577, as controlled by the height of cover shown on the plans and specified herein. The design cover and loading calculations shall be included in the working drawing submittal.

E. Design calculations and working drawings shall be submitted for precast RCB sections for review and approval according to ***Subsection 105.02 "Plans and Working Drawings"***. Working drawings shall include the contract number, the jobsite name of the structure as shown on the plans, bridge number (if applicable), material designations, bill of materials, complete fabrication details, and guidelines for handling and assembly. Calculations and working drawings shall be prepared and stamped by a Nevada Registered Professional Civil Engineer.

MATERIALS

509.02.01 GENERAL

A. The materials used shall conform to the requirements in the following subsections:

Materials	Section/Subsection
Structure Excavation	***206***
Structure Backfill	***207***
Trench Excavation and Backfill	***208***
Selected Material Subbase	***301***
Portland Cement Concrete	***501***
Reinforcing Steel	***505***
Hydraulic Cement	***701***
Concrete Curing Materials and Admixtures	***702***
Grout and Mortar Sand	***706.03.04***
Joint Material	***707***

B. Manufacturer Certification and Qualification. The manufacturer of the precast RCB shall

submit for approval, substantial evidence of qualification to produce the product. Such evidence of qualification shall include the following:

1. Plant produced concrete products proposed for use will require either National Precast Concrete Association (NPCA) or American Concrete Pipe Association (ACPA) certification.
2. Written evidence of successful completion of at least three (3) projects of size and scope similar to the project for which the manufacturer wishes to be pre-qualified. The projects shall have been performed within the previous three (3) years. Such evidence shall include references for said work.
3. A written document detailing the manufacturer's Quality Control Program that demonstrates conformance to the requirements of these specifications.

C. Concrete. Concrete shall be as specified in ***Section 501, "Portland Cement Concrete"***. A copy of the concrete mix design which will be used in the manufacture of the precast RCB shall be submitted for review and approval. The mix design shall identify the type of casting process (wet or dry casting), in addition to the requirements of ***Section 501***.

1. When a wet cast manufacturing process is used, concrete shall be Class A Modified or Class AA Modified. A wet cast manufacturing process is defined as one in which forms are removed after 6 hours or more.
2. When a dry cast manufacturing process is used, concrete shall be Class A Modified. A dry cast manufacturing process is defined as one in which the concrete is densified by continuous vibration, and forms are removed immediately. If approved, alternative aggregate gradations from those specified in ***Section 501*** and ***Section 706*** may be allowed.

D. Product Certification. A certificate of compliance issued by the manufacturer of the precast RCB shall be submitted at the time of shipment. The certificate shall include the following:

1. The specification under which the box sections were manufactured.
2. All project identification information as noted for working drawings above.
3. The number of box sections of each size which are being shipped.
4. A statement that the construction of the box sections, and all materials used therein, are in compliance with the requirements of the applicable ASTM or AASHTO specifications.
5. Copies of the Quality Control test results, and compressive strength for that lot shall be kept at the plant and available for review.

E. The Engineer may, at their option, inspect the precast facility operations including, but not limited to, the reinforcing assembly, forming equipment, concrete batching equipment; placement, curing, and handling equipment; and testing and inspection equipment and procedures.

F. The manufacturer of the precast RCB shall maintain, for a period of seven (7) years following shipment, a copy of the appropriate test reports and other documentation, including compressive strength tests, necessary to support the certificates of compliance.

G. If the RCB culverts have not been cast prior to the notice to proceed date, written notification shall be given two (2) weeks in advance of performing casting operations for the project.

H. All materials will be subject to inspection for acceptance as to condition at the latest practicable time the Engineer has the opportunity to check for compliance prior to or during incorporation of materials in the work.

I. Reinforcement shall conform to the requirements of ***Section 505, "Reinforcing Steel",***

unless otherwise noted.

J. All joints of the precast boxes shall be sealed with a flexible, butyl-blend, watertight, preformed joint material with a minimum cross-section width of 1 ¼ square inches, installed according to the manufacturer's recommendations. Joint material shall conform to ASTM C990.

1. Joint surfaces of the precast box shall be clean, dry and free of any foreign material, including mud, aggregate base, and leveling course. Apply primer in accordance with manufacturer's recommendations. Install sealant to form a continuous seal around the perimeter of the joint. The sealant may be placed on the lower portion of the groove of the downstream box and upper portion of the tongue of the upstream box, provided there are three (3) inches of overlap of the sealant on each side of the box.

CONSTRUCTION

509.03.01 EARTHWORK

A. Excavation and backfill shall conform to the requirements of ***Section 206, "Structure Excavation,"*** and ***Section 207, "Structure Backfill,"*** or ***Section 208, "Trench Excavation and Backfill,"*** when the precast RCB is constructed in a trench.

1. The precast RCB shall be bedded as shown in the plans or as specified in the Special Provisions.
2. When no bedding class is specified, the requirements for normal bedding as shown in the Uniform Standard Drawings 503 or 503.2 shall apply.
3. The lines and grades shall be established by the Engineer or as designated in the contract documents.

B. Where precast RCB sections are to be installed in new embankments on a steep slope or in a difficult location, the height of new embankments may be varied as directed by the Engineer.

C. When headwalls are not required and granular materials are used for backfilling, the fill at the ends of the structure shall be sealed against the infiltration of water by bedding the ends of the structure using Class II CLSM or concrete.

D. Subgrade preparation shall conform to the requirements of ***Section 301, "Selected Material Subbase"***.

509.03.02 HEADWALLS

A. Where shown on the plans, inlet and outlet headwalls shall be constructed or installed in connection with precast box sections.

B. Where headwalls are constructed or installed, the ends of precast RCB sections shall be placed flush or cut off flush with the headwall face, unless otherwise permitted by the Engineer.

C. Headwalls shall be constructed to conform to ***Section 501, "Portland Cement Concrete"*** and ***Section 502, "Concrete Structures."***

509.03.03 LAYING PRECAST REINFORCED CONCRETE BOX CULVERTS

A. Construction installation shall comply with AASHTO LRFD Bridge Design Specifications, most current edition, ***Section 208***, ***"Trench Excavation and Backfill"***, and these specifications.

B. Inspection of precast RCBs prior to laying:

1. Written notification shall be given two (2) weeks in advance of performing casting operations.

2. No precast box shall be laid which is excessively cracked per ***Subsection 509.03.04***, (i.e., cracked, spalled, or damaged) and shall be removed from the work. Precast RCB culverts which show defects due to handling will be rejected at the site of installation regardless of prior acceptance.

3. Fine cracks and checks on the surface of the member which do not extend to the plane of the nearest reinforcement will not be cause for rejection unless numerous and extensive. Cracks which extend into the plane of steel shall be repaired in an approved manner.

   a manner approved by the engineer? or according to specifications herein?

4. Small damaged or honeycombed areas which are purely surface defects in nature shall be repaired in an approved manner. Excessive damage, honeycomb, or cracking will be subject to structural review at the Contractor's expense. All repairs shall be made sound, properly finished, and cured according to the pertinent specifications. When fine cracks or hair checks on the surface indicate poor curing practices, the production of precast boxes shall be discontinued until corrections are made and proper curing is provided.

C. All precast boxes shall be carefully handled durir nsporting, and laying.

   does carefully need to be defined?

D. Precast box laying shall begin at the downstream end of the box except for extensions of existing boxes. Place the bottom of the box in contact with the bedding throughout its full length. The first section of box to be laid shall be firmly placed to the designated line and grade at the outlet end with the groove end pointing upstream. Construction loads shall be considered by the design engineer. Design loads shall not be exceeded at any time. Boxes shall be inspected before any backfill is placed. Contractor shall ensure that no rocks greater than three (3) inches or other rigid or jagged material is present in the bedding material where box will be laid directly on the material.

   horizontal

E. The box segments shall be joined in such a manner that the ends are fully entered and the inner surfaces are flush and even. The maximum tolerable nominal horizonal gap between joints is 0.75 inch, or the manufacturer's maximum joint gap tolerance, whichever is less. This gap shall be checked immediately after laying each section. Any annular space existing in the interior portion of the joint shall be filled with an approved mortar and finished flush with the interior surfaces of the box units. If the inner surfaces are not flush or there is an adverse slope, a procedure to repair the vertical gap must be submitted to the Engineer for approval.

F. After laying, the box culvert segments shall be checked for alignment and grade. The culvert shall be installed within the tolerances for horizontal and vertical location and gradient as follows:

   1. Horizontal location within 0.05 feet of location shown on plans.

   2. Vertical location within 0.05 feet of elevation shown on plans.

   3. Gradient shall not vary by more than ten percent (10%) of slope shown on plans.

G. The Contractor shall remove and relay or replace box that is out of alignment, damaged, or has unduly settled at no cost to the Contracting Agency.

H. The interior of the precast box sections shall be kept free of dirt and other foreign material as the box laying progresses and be left clean at the completion of the work. Boxes which are not in true alignment, which show any undue settlement, or are damaged shall be taken up and re-laid at the Contractor's expense. The bottom of the trench shall be graded and prepared to provide a firm and uniform bearing throughout the entire length of the box for the leveling course to be placed on. Blocking shall not be used to bring the box to grade.

Box sections shall be checked for alignment and grade at the time of joining the sections.

I. The box culverts shall be laid with nominal three (3) inch space between multiple box culverts. The annular space shall be grouted. The grout shall be a workable mix suitable for pumping without segregation and shall conform to the requirements of ***Section 706.03.04, "Grout and Mortar Sand."*** The grout shall be placed by pumping or an approved alternate method and consolidated by mechanical vibration or rodding during placement. The grouting shall be performed by a continuous placement in lifts not exceeding six (6) feet. Vertical grout barriers may be used to control the flow of grout horizontally. The grout shall attain a minimum compressive strength of 2,500 psi in 28 days when tested according to ASTM C39.

J. The backfill material shall comply with the requirements of ***Section 208***. If the Contractor cannot fit compaction equipment between the box and the trench wall, or the conditions are unsafe for compaction and/or testing, CLSM must be used.

K. The Contractor shall provide box culverts with beveled ends where the radius of the center line alignment exceeds the manufacturer's minimum radius of curvature allowed using pulled joints. The maximum bevel angle shall not exceed 5 degrees. The Contractor may provide elbows, with a maximum deflection angle of 22 ½ degrees, where the radius of the center line alignments is less than the manufacturer's minimum radius of curvature for a 5-degree bevel.

509.03.04 INSPECTION

A. All precast RCB joints and lengths shall be 100 percent inspected.

B. Inspection and Testing shall be performed by the contractor during and after installation to ensure proper performance.

C. Installation of bedding and backfill materials, as well as their placement and compaction, shall adhere to the requirements of this section and other applicable sections.

D. Errors in line and grade, as well as any improper placement or backfill techniques, shall be corrected prior to placing significant backfill or trench fill.

E. Joints shall be properly assembled to prevent the infiltration of soil fines. Flexible joint material shall be properly placed to prevent groundwater infiltration and shall be uniformly oriented around the precast RCB.

F. Shallow cover installations shall be checked to ensure the minimum cover level is provided.

G. The Contractor shall complete an internal quality inspection a minimum of thirty (30) days after final backfill has been placed and prior to final acceptance by the Contracting Agency. The culvert shall be cleaned and inspected for cracks and joint gaps using visual physical measurement or other devices, including but not limited to calibrated television or video cameras, subject to approval by the Engineer.

H. Cracks in precast RCB culverts (both longitudinal and circumferential) that are less than 0.10 inch in width are generally considered non-structural flaws and need not be repaired. Cracks that are equal to or exceed 0.10 inch in width shall require an evaluation by a Nevada licensed professional engineer. The Contractor's engineer shall provide a recommendation regarding removal or repair in accordance with ASTM C1577 standards and subject to approval by the Contracting Agency.

I. Precast RCB joints and lengths that do not meet the specification shall be repaired or replaced at the Contractor's expense. Any replacement precast RCB shall also be subject to the same testing.

J. All inspection and testing results shall be submitted and approved by the Contracting Agency before final payment. The Agency Engineer shall be allowed access to randomly inspect at least 10 percent of the total number of precast RCB runs.

509.03.05 BACKFILL

A. Precast RCB culvert section backfill shall conform to the requirements of ***Section 207, "Structure Backfill"***, unless otherwise noted.

B. Prior to placing backfill material, all handing holes in RCB culverts shall be completely filled with grout or other acceptable methods.

is this the correct word? handling holes?

509.03.06 EXTENDING EXISTING CULVERTS

A. Where shown on the plans or directed by the Engineer, existing culverts shall be extended in accordance with the provisions for installing new culverts and the following additional provisions.

B. Existing headwalls shall be demolished, removed, and disposed of per ***Section 202, "Removal of Structures and Obstructions",*** or moved to the extended location as indicated on the plans or ordered by the Engineer.

C. A headwall that is not to be reset shall be demolished without injury to the existing culvert and removed and disposed of in accordance with the provisions of ***Section 202, "Removal of Structures and Obstructions."*** If shown on the plans or ordered by the Engineer, a new concrete headwall shall be constructed in accordance with the provisions of ***Section 501, "Portland Cement Concrete,"*** of these specifications or a flared end section shall be attached thereto.

METHOD OF MEASUREMENT

509.04.01 MEASUREMENT

A. The materials to be paid for under these specifications will be listed in the contract items by size, class, type, gauge, or whatever information is necessary for identification.

B. The quantity of precast RCB culvert to be measured for payment will be the actual number of linear feet of culvert, complete and in place.

C. Precast RCB culvert bends, wyes, tees, and other branches will be measured and paid for by the linear foot for the sizes of culvert involved. Wyes, tees, and other branches will be measured along centerlines to the point of intersection.

D. All measurements will be made in accordance with ***Subsection 109.01, "Measurement of Quantities."***

BASIS OF PAYMENT

509.05.01 PAYMENT

A. The accepted quantities of precast RCB culvert measured as specified in ***Subsection 509.04.01, "Measurement",*** will be listed under the respective sections of precast RCB.

B. The accepted quantity of [X]-FT X [X]-FT precast RCB culvert will be paid for at the contract unit price per linear foot shall include all labor, equipment and materials necessary to complete the work.

C. Full compensation for furnishing precast RCB culvert with end finish, including distortion if required, will be considered as included in the price paid per linear foot for the precast RCB involved and no additional compensation will be allowed therefor. Full

compensation for bedding will be considered included in the price paid per cubic yard for backfill or granular backfill as the case may be and such payment shall include compensation for all the materials, labor, tools, and incidentals necessary to complete the work.

D. All payments will be made in accordance with ***Subsection 109.02, "Scope of Payment."***

PAY ITEM	**PAY UNIT**
(Size) Precast Reinforced Concrete Box Culvert	.Linear Foot

From: Dan Erickson
To: ccstandards
Subject: Comments on Section 509 "PRECAST REINFORCED CONCRETE BOX CULVERTS"
Date: Wednesday, April 24, 2019 6:51:43 AM

After reviewing the new section I have one comment. Paragraph C of Section 509.05.01 Payment states, the bedding will be paid for as part of the backfill. I think this should all be part of the price paid per lineal foot of RCB. It is much easier to measure in the filed as opposed to the cubic yards of backfill.

C. Full compensation for furnishing precast RCB culvert with end finish, including distortion if required, will be considered as included in the price paid per linear foot for the precast RCB involved and no additional compensation will be allowed therefor. Full compensation for bedding will be considered included in the price paid per cubic yard for backfill or granular backfill as the case may be and such payment shall include compensation for all the materials, labor, tools, and incidentals necessary to complete the work.

Daniel Erickson
Clark County Public Works
Construction Management
702-249-7154 Cell
702-455-6046 Office

From: Tommy C. Caviglia
To: ccstandards
Subject: FW: Precast Reinforced Concrete Box Culverts
Date: Monday, May 13, 2019 4:12:01 PM
Attachments: 6454_Section_509_Precast_reinforced_concrete_box_-_Draft_for_IR.docx
6454_Section_509_Precast_reinforced_concrete_box_-_Draft_for_IR.pdf

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To Whom It May Concern,

Contri Construction Company has a couple comments regarding the proposed section 509, see below:

- Proposed section 509.03.03-F.1 & 2 discussed the allowed horizontal and vertical tolerances in the RCB. The pre-cast RCB's themselves have tolerances in thickness, which is the nature of pre-cast. With a tolerance of only 0.05 horizontal and vertically, once you take into account the variance in the pre-cast, you may effectively have 0 tolerance in the field. Contri proposes increasing the allowed tolerance to allow for the variance in the RCB thicknesses.
- Proposed section 509.03.03-E sentence 3 states "Any annular space existing in the interior portion of the joint shall be filled with an approved mortar and finished flush with the interior surfaces of the box units". In the past, all entities in town have allowed contractors to grout the floor and interior walls from within the RCB, then grout the top joint from the top of the RCB and 1/3" down the exterior walls. That is in lieu of having to grout the top of the RCB joint from the interior. Contri recommends adding this allowance within the section.
- Proposed section 509.003.05 – B states "Prior to placing backfill material, all handing holes in RCB culverts shall be completely filled with grout or other acceptable methods." On recent projects within Clark County with various entities this has been an item of contention. We have utilized grouted cups, grout, Popit plugs, and grouted pop-its. Contri recommends providing more detailed allowable methods then strictly filling with grout to prevent future issues in the field.

Thank you.

Tommy Caviglia
Vice President
CONTRI CONSTRUCTION COMPANY
(702) 458-6004 office
(702) 458-7746 fax
(702) 289-3375 cell
tcaviglia@contrinv.com

From: RTC Southern Nevada <nvrtc@public.govdelivery.com>
Sent: Tuesday, April 23, 2019 1:55 PM
To: Tommy C. Caviglia <tcaviglia@contrinv.com>
Subject: Precast Reinforced Concrete Box Culverts

REQUEST FOR COMMENTS

SECTION 509, "PRECAST REINFORCED CONCRETE BOX CULVERTS"

The Specifications Subcommittee of the Regional Transportation Commission of Southern Nevada has approved Section 509, "Precast Reinforced Concrete Box Culverts" for incorporation into the Uniform

Standard Specifications for Public Works Construction Offsite Improvements, Clark County, Nevada.

Please submit comments on the proposed section to ccstandards@rtcsnv.com by Monday, May 13, 2019. The comments will be placed on the agenda of the Executive Advisory Committee for its meeting on Thursday, May 30, 2019 at 9:15 a.m. in RTC Room 108. You are welcome to attend this meeting and discuss your concerns.

For questions, please contact Julia Uravich, RTC Streets and Highways, at (702) 676-1958.

- 6454 Section 509 Precast reinforced concrete box - Draft for IR.docx
- 6454 Section 509 Precast reinforced concrete box - Draft for IR.pdf

6458

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

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

SUBJECT: STANDARD SPECIFICATIONS AND DRAWINGS

PETITIONER: TINA QUIGLEY, CHIEF EXECUTIVE OFFICER
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

RECOMMENDATION BY PETITIONER:
THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA APPROVE REVISIONS TO UNIFORM STANDARD DRAWINGS WITH RESPECT TO CURRENT ACCESSIBILITY BEST PRACTICES WITHIN THE RIGHT-OF-WAY (FOR POSSIBLE ACTION)

GOAL: MAINTAIN AND IMPROVE TRANSPORTATION SYSTEM INFRASTRUCTURE

FISCAL IMPACT:

Undetermined

BACKGROUND:

Kimley-Horn and Associates (Kimley-Horn) recently completed an audit of the regional standard drawings to determine the extent to which they reflect and adhere to current accessibility law and guidelines. The Americans with Disabilities Act (ADA) and the proposed Public Right-Of-Way Accessibility Guidelines (PROWAG) both give direction and guidance on how to provide safe and effective infrastructure for all road users regardless of physical or mental capabilities. The drawing revisions suggested by Kimley-Horn, based on the audit, were presented in the form of redlined drawings at the March 19, 2019 Operations Subcommittee (Subcommittee) meeting, and members were asked to provide comments on the suggested revisions. Following review of the comments, staff refined Kimley-Horn's redlines and prepared a set of drawings that depict the proposed revisions for the Subcommittee to consider at its July 16, 2019 meeting.

Uniform Standard Drawings 706.1 "Reinforced Plastic Mortar Service Box Assembly No. 5" and 707.1 "Reinforced Plastic Mortar Service Box Assembly No. 7" were discussed at the July 16, 2019 Operations Subcommittee meeting, and Clark County requested to be removed from the drawings. It was suggested that construction of the plastic mortar service box designs may be out of practice in the Las Vegas Valley, and Subcommittee members were asked to review the drawings to determine if the designs are still in use amongst the jurisdictions. It was determined that the drawings would be brought to the Specifications Subcommittee agenda for further discussion.

Respectfully submitted,

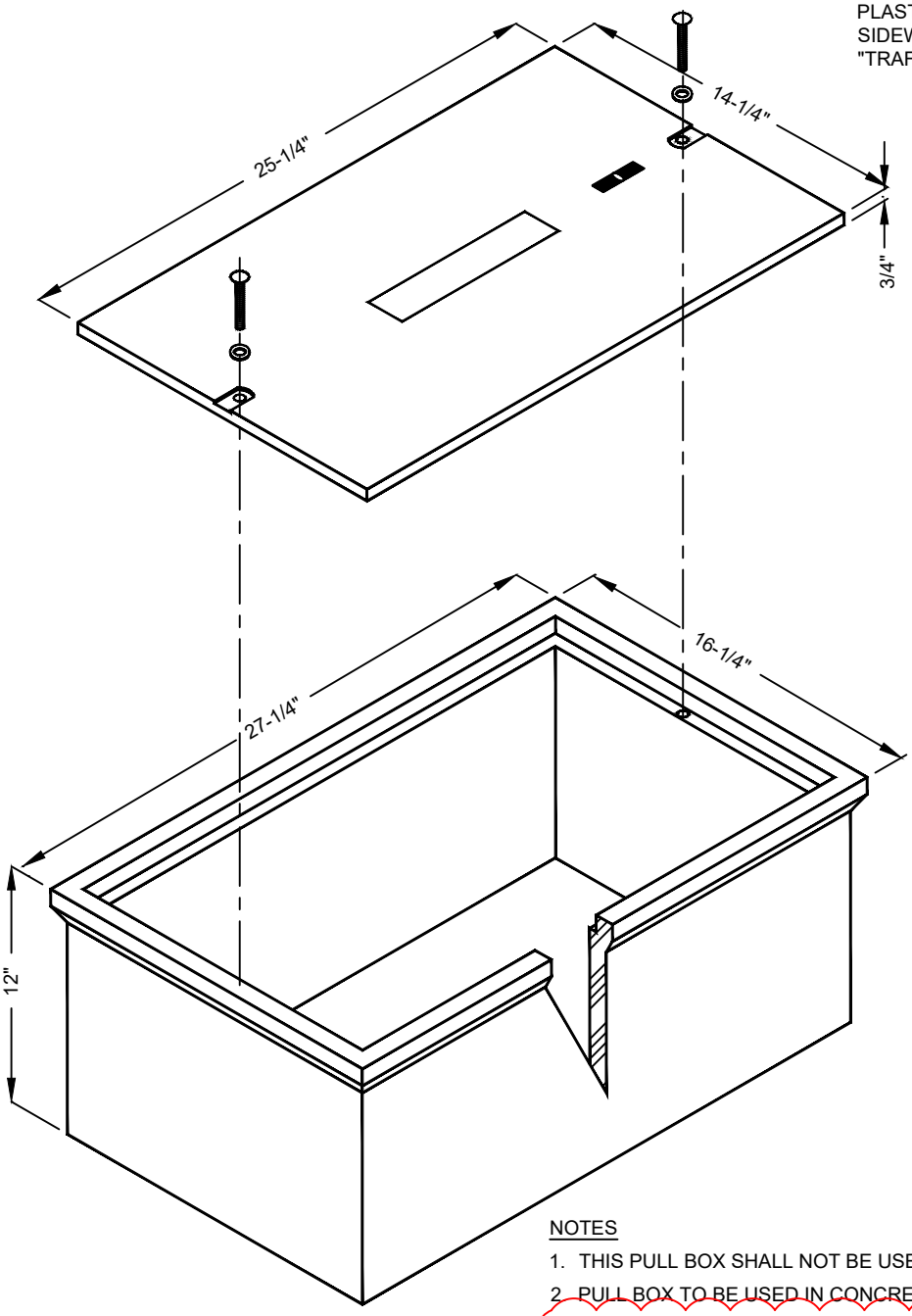
DocuSigned by:
Joseph Damiani
1296E0A5F05745F...

for

JOHN R. PEÑUELAS, JR., P.E.
Senior Director of Engineering

ssf

SPECS Item #5
August 14, 2019
OPS Item #10
July 16, 2019

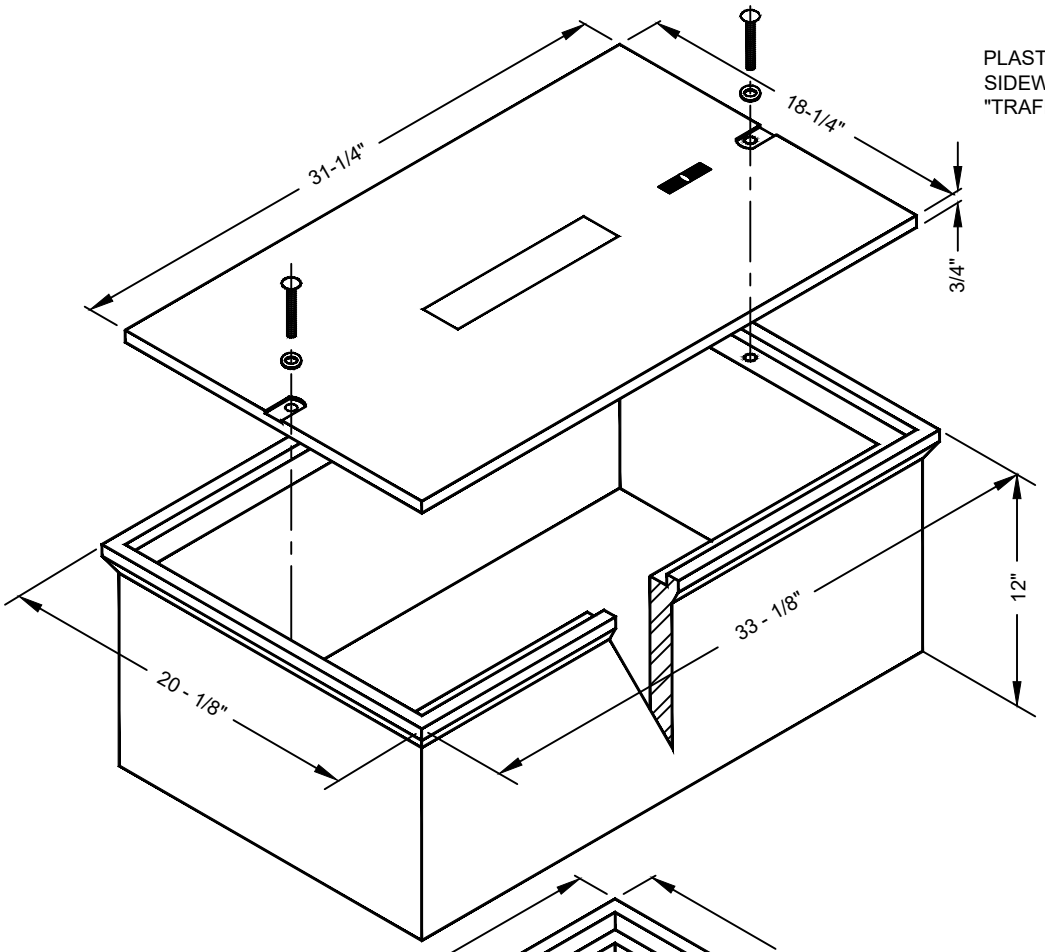


NOTES

1. THIS PULL BOX SHALL NOT BE USED IN VEHICLE TRAVEL AREAS.
2. PULL BOX TO BE USED IN CONCRETE SIDEWALKS ONLY.
3. TOP OF UTILITY BOXES INSTALLED IN SIDEWALK SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SIDEWALK, HAVE NO GAPS GREATER THAN 1/2", REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.

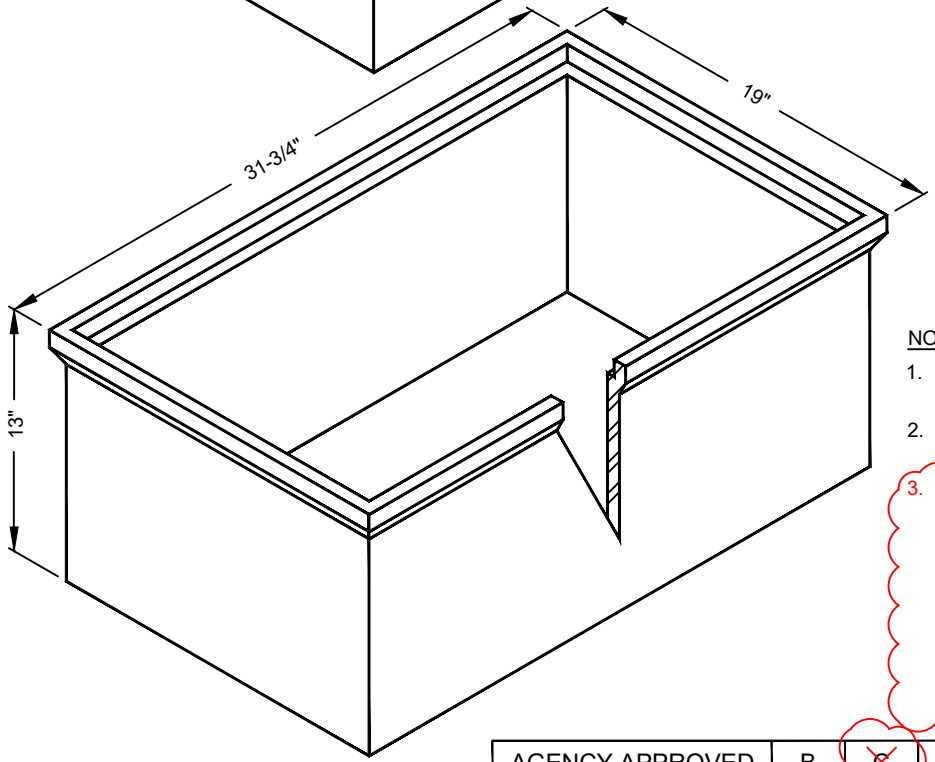
AGENCY APPROVED	B	C	H	L	M	N	R

SPECIFICATION REFERENCE	UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA
	REINFORCED PLASTIC MORTAR SERVICE BOX ASSEMBLY NO. 5
	DATE / DWG. NO. 706.1



PLASTIC MORTAR REINFORCED SIDEWALK COVER MARKED "TRAFFIC SIGNAL"

REINFORCED PLASTIC MORTAR BODY.



REINFORCED PLASTIC MORTAR EXTENSION.

NOTES

1. THIS PULL BOX SHALL NOT BE USED IN VEHICLE TRAVEL AREAS.
2. PULL BOX TO BE USED IN CONCRETE SIDEWALKS ONLY.
3. TOP OF UTILITY BOXES INSTALLED IN SIDEWALK SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SIDEWALK, HAVE NO GAPS GREATER THAN 1/2", REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.

AGENCY APPROVED	B	C	H	L	M	N	R

SPECIFICATION REFERENCE	

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

REINFORCED PLASTIC MORTAR SERVICE BOX ASSEMBLY NO. 7

DATE	DWG. NO. 707.1	

6694

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

Metropolitan Planning Organization [X]	Transit [ ]	Administration and Finance [ ]
SUBJECT: STANDARD DRAWINGS AND SPECIFICATIONS		
PETITIONER: TINA QUIGLEY, CHIEF EXECUTIVE OFFICER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA APPROVE REVISIONS TO UNIFORM STANDARD DRAWINGS 223, "RESIDENTIAL DRIVEWAY;" 224, "COMMERCIAL AND INDUSTRIAL DRIVEWAY (OPTION A);" AND 226.S1, "COMMERCIAL AND INDUSTRIAL DRIVEWAY (OPTION C)" (FOR POSSIBLE ACTION)		
GOAL: MAINTAIN AND IMPROVE TRANSPORTATION SYSTEM INFRASTRUCTURE		

FISCAL IMPACT:

None

BACKGROUND:

The City of Las Vegas submitted a request to be removed from Uniform Standard Drawings 223 and 224 and added to Uniform Standard Drawing 226.S1.

Respectfully submitted,

DocuSigned by:
Joseph Damiani
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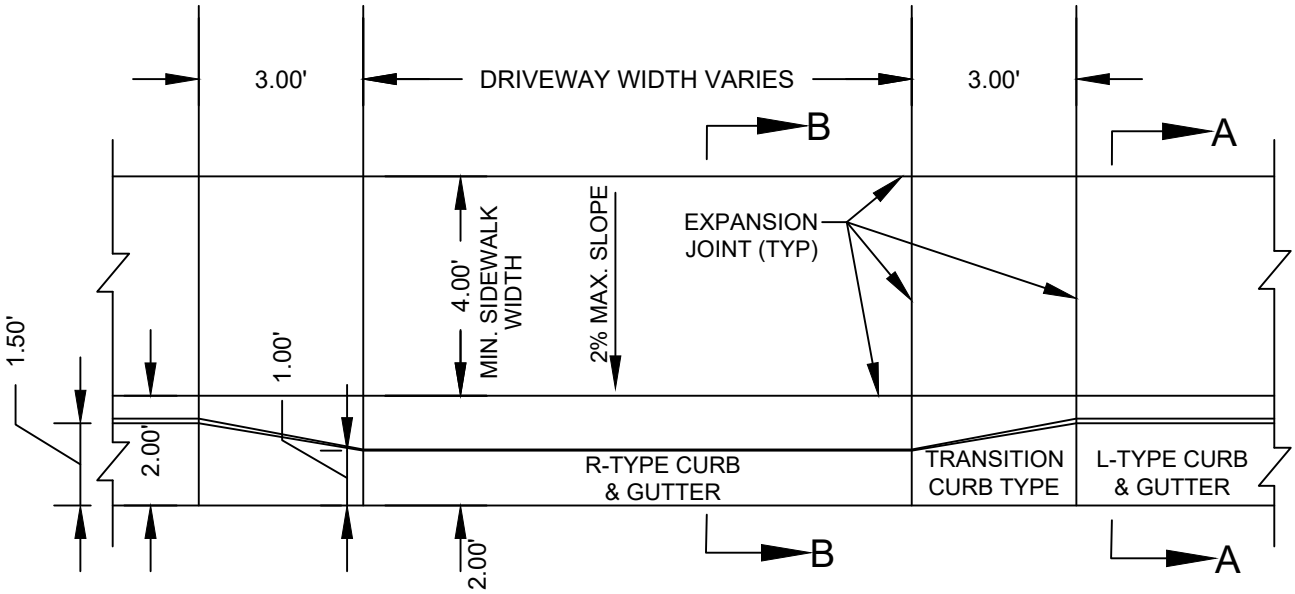
for

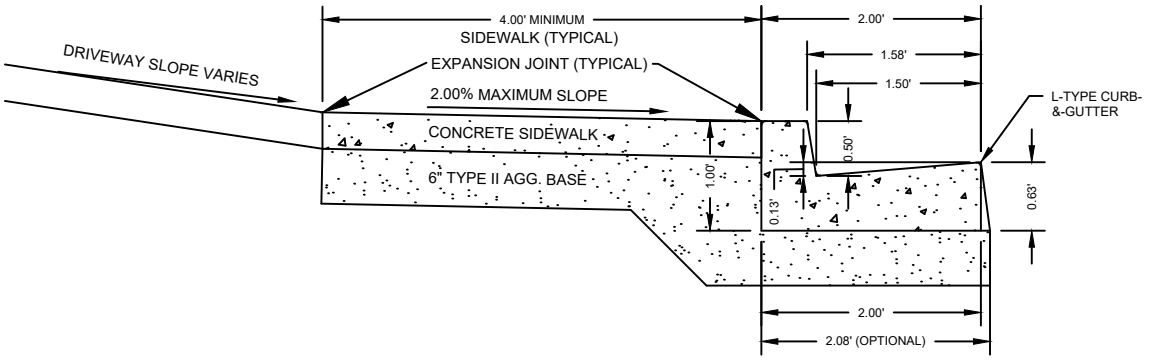
JOHN R. PEÑUELAS, JR., P.E.
Senior Director of Engineering

SPECS Item #6
August 14, 2019

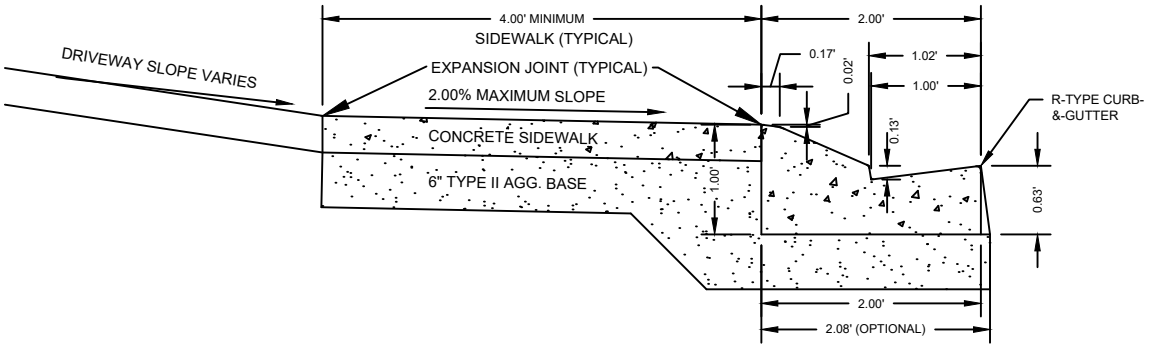
ssf



PLAN VIEW



SECTION A-A



SECTION B-B

NOTES:

1. WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXISTS, COMPLETELY REMOVE INTERFERING PORTIONS OF EXISTING CURB AND GUTTER. DRIVEWAYS MAY BE MONOLITHIC TO A.C. LINE.

2. WEAKENED PLANE JOINTS SHALL BE UNIFORMLY PLACED BETWEEN 5' AND 7' INTERVALS, SEE STANDARD DRAWING 234.

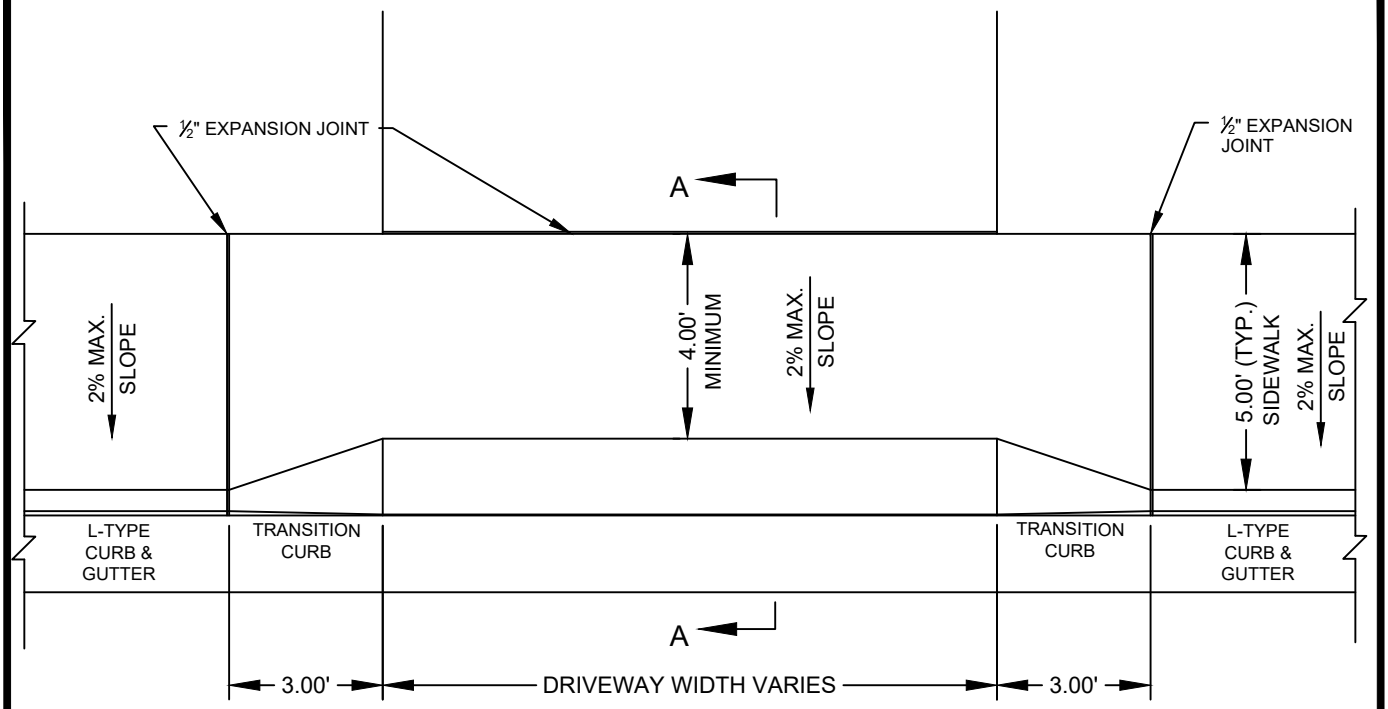
AGENCY APPROVED	B	C		L	M	N	R

SPECIFICATION REFERENCE	
302	AGGREGATE BASE
501	CONCRETE
502	CONCRETE STRUCTURES
707	JOINT MATERIAL

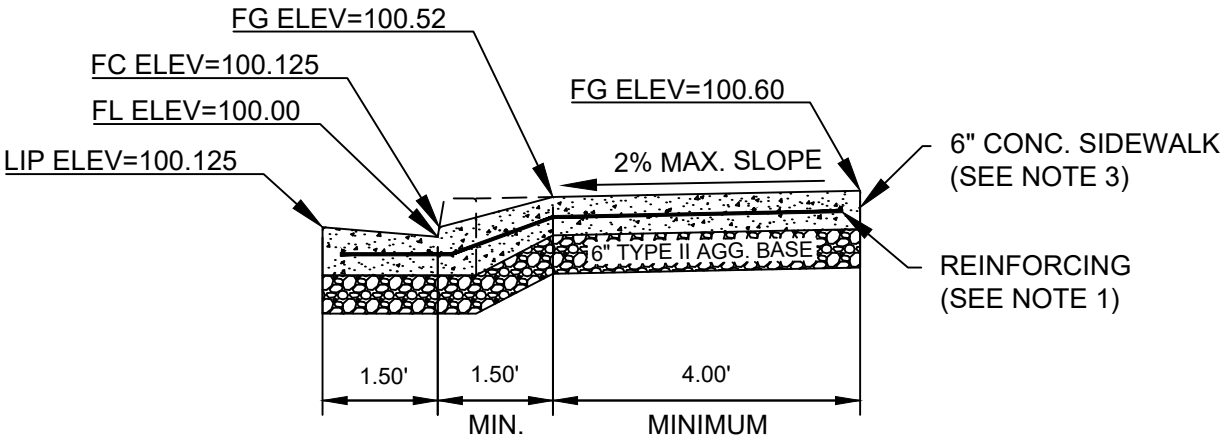
UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

RESIDENTIAL DRIVEWAY

DATE XX-XX-XX	DWG. NO. 223	



PLAN VIEW



SECTION A-A

NOTES

NOTE: ELEVATIONS SHOWN ARE TYPICAL

1. NO. 4 BARS AT 16" O.C. BOTH WAYS EXTENDING INTO GUTTER. NO. 4 BARS SHALL BE PLACED 3" ABOVE BOTTOM OF CONCRETE SUPPORTED BY NON-FERROUS CHAIRS APPROVED BY THE ENGINEER.
2. WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXISTS, COMPLETELY REMOVE INTERFERING PORTIONS OF EXISTING CURB AND GUTTER. DRIVEWAY SHALL BE MONOLITHIC TO A.C. LINE.
3. DRIVEWAY THICKNESS FOR INDUSTRIAL USE SHALL BE 8" MIN.
4. WEAKENED PLANE JOINTS SHALL BE EQUALLY SPACED AT 15' MAX. INTERVALS, SEE STANDARD DRAWING NO. 234.
5. NO UTILITY BOXES AND COVERS ADJACENT TO R-TYPE CURB SHALL BE ALLOWED AT DRIVEWAY LOCATIONS.

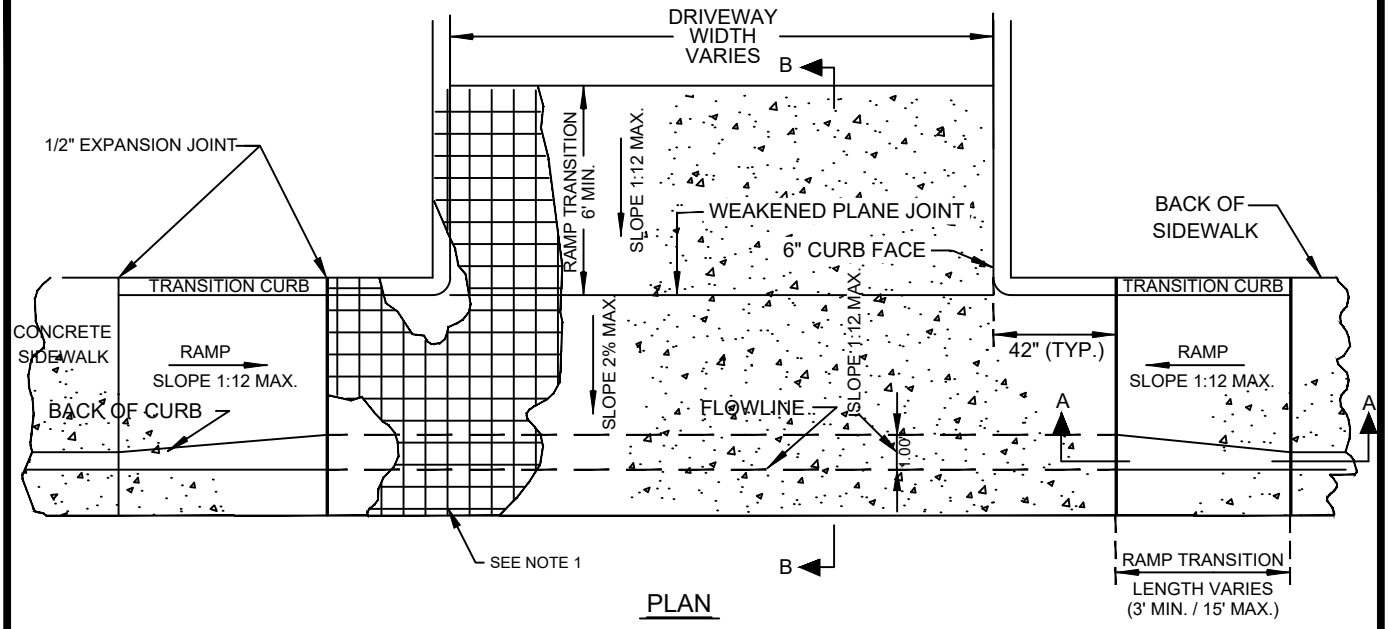
AGENCY APPROVED	B	C	H	L	M	N	R

SPECIFICATION REFERENCE	
302	AGGREGATE BASE
501	CONCRETE
502	CONCRETE STRUCTURES
505	REINFORCING STEEL
707	JOINT MATERIAL
-	

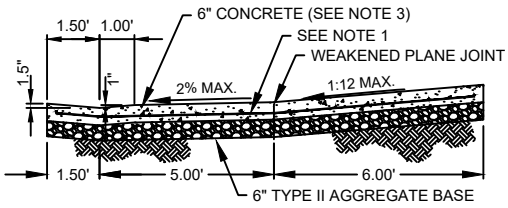
UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

COMMERCIAL AND INDUSTRIAL DRIVEWAY (OPTION A)

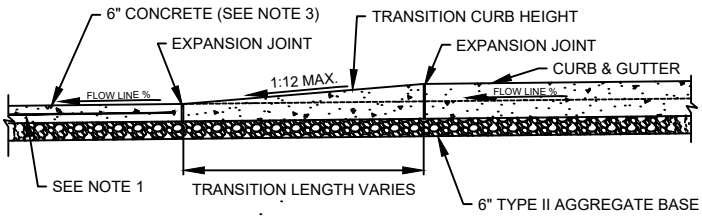
DATE 01-01-17 | DWG. NO. 224



PLAN



SECTION B-B



SECTION A-A

1. NO. 4 BARS AT 16" O.C. BOTH WAYS EXTENDING INTO GUTTER. NO. 4 BARS SHALL BE PLACED 3" ABOVE BOTTOM OF CONCRETE SUPPORTED BY NON-FERROUS CHAIRS APPROVED BY THE ENGINEER.
2. WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXISTS, COMPLETELY REMOVE INTERFERING PORTIONS OF EXISTING CURB AND GUTTER. DRIVEWAY SHALL BE MONOLITHIC TO A.C. LINE.
3. DRIVEWAY THICKNESS FOR INDUSTRIAL USE SHALL BE 8" MIN.
4. WEAKENED PLANE JOINTS SHALL BE EQUALLY SPACED AT 15' MAX. INTERVALS.
5. THIS DRIVEWAY DESIGN SHALL ALSO BE USED FOR ALLEY INTERSECTIONS, 8" MIN. THICKNESS.
6. SPECIAL DESIGNS SUBJECT TO APPROVAL OF THE ENGINEER.

AGENCY APPROVED			H	L		N	

SPECIFICATION REFERENCE	
302	AGGREGATE BASE
501	CONCRETE
502	CONCRETE STRUCTURES
505	REINFORCING STEEL
707	JOINT MATERIAL
.	

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

COMMERCIAL AND INDUSTRIAL DRIVEWAY (OPTION C)

DATE 07-01-15	DWG. NO. 226.S1	

6657

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

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

SUBJECT: SPECIFICATIONS SUBCOMMITTEE MEETING FREQUENCY

PETITIONER: TINA QUIGLEY, CHIEF EXECUTIVE OFFICER
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

RECOMMENDATION BY PETITIONER:
THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA SPECIFICATIONS SUBCOMMITTEE DISCUSS THE FREQUENCY OF THE SPECIFICATIONS SUBCOMMITTEE MEETINGS AND DIRECT STAFF ACCORDINGLY (FOR POSSIBLE ACTION)

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

FISCAL IMPACT:

None

BACKGROUND:

Currently, the Specifications Subcommittee meets on the second Wednesday of even-numbered months. Staff recommends changing the meeting frequency to a monthly basis beginning September 2019. This will allow for a comprehensive review of the Uniform Standard Specifications and Drawings.

Respectfully submitted,

DocuSigned by:
Joseph Damiani
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for

JOHN R. PEÑUELAS, JR., P.E.
Senior Director of Engineering

SPECS Item #7
August 14, 2019

ssf

5409

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

Metropolitan Planning Organization [X]	Transit [ ]	Administration and Finance [ ]
SUBJECT: TOPICS OF INTEREST		
PETITIONER: TINA QUIGLEY, CHIEF EXECUTIVE OFFICER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA SPECIFICATIONS SUBCOMMITTEE DISCUSS TOPICS OF INTEREST		
GOAL: MAINTAIN AND IMPROVE TRANSPORTATION SYSTEM INFRASTRUCTURE		

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,

DocuSigned by:
Joseph Damiani
1296E0A5F05745F...

for

JOHN R. PEÑUELAS, JR., P.E.
Senior Director of Engineering

SPECS Item #8
August 14, 2019

ssf

5062

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

AGENDA ITEM

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

SUBJECT: FINAL CITIZENS PARTICIPATION

PETITIONER: TINA QUIGLEY, CHIEF EXECUTIVE OFFICER
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: MAINTAIN AND IMPROVE TRANSPORTATION SYSTEM INFRASTRUCTURE

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,

DocuSigned by:
Joseph Damiani
1296E0A5F05745F...

for

JOHN R. PEÑUELAS, JR., P.E.
Senior Director of Engineering

SPECS Item #9
August 14, 2019

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