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From: spo
Sent: Thursday, October 07, 2010 7:09 AM
To: spo
Subject: SPO ALERT - FOCUS GROUP for Re-Bid of SCC050004 Sign Sheeting
Attachments: SECTION 1 SPECIFICATIONS.DOC

SPO ALERT

Date: October 7, 2010

To: State Agencies and Cooperative Members

From: SPO on behalf of the Arizona Department of Transportation

Re: FOCUS GROUP for Re-Bid of SCC050004 Sign Sheeting

ADOT Procurement will be holding a focus group for the rebid of SCC050004 Sign Sheeting contract. Attached is the draft scope of work. Please bring any requirements you would like to discuss at this meeting.

The meeting will be held on:

Date: Thursday – October 21, 2010

Time: 1:00 P.M. - 3:00 P.M.

Location: ADOT Procurement - 1739 W. Jackson, Modular A - Procurement Conference Room

Please RSVP before October 19, 2010 for yourself or your alternate agency representative attendance via email to Gary Henry at ghenry@azdot.gov

SPO ALERTS are available
online at http://spo.az.gov

SECTION 1.0 - SPECIFICATIONS

1.1 PURPOSE

The State has a need to purchase various width rolls, colors, and types of engineering grade (EG, ASTM D 4956, Type I) and prismatic high intensity grade (PHIG, ASTM 4956 Type IV) retroreflective sign sheeting materials along with compatible colored opaque non-reflective films, colored transparent or translucent non-reflective films, colored opaque ink, and transparent or translucent colored ink. .

The sign making materials (sheeting, films, and inks) will be used to make highway and general use signs. The materials shall be fully suitable for both daytime and nighttime uses as described herein and as defined by the applicable standards of the Federal Highway Administration and the American Society of Testing of Materials (ASTM).

The ink systems will be used to print signs using manual and automatic printing presses using pre-screening and post-screening processes. Offerors shall be responsible for providing sign printing materials that are compatible with the Department Sign Factory equipment and processes.

The transparent and opaque films along with the EG and PHIG will be used to make signs by applying legend and background materials directly to the sheeting base with a pressure sensitive adhesive.

The PHIG materials will also be used to make large signs. These signs will be made out of aluminum flat sheets or 12-inch aluminum extrusion panels or some combination of these substrates. The Department typically uses demountable copy on large signs; however, direct applied materials may also be used.

The engineering grade (EG) sign making materials will be used primarily to fabricate smaller, non-critical highway signs and general use signs.

Most of these signs will be fabricated using a combination of sign making processes. The Department reserves the right to change the sign sheeting uses indicated herein at anytime.

1.2 GENERAL REQUIREMENTS

All materials are to be supplied as specified and shall be delivered ready for use. The sign making materials offered shall be compatible to the sign making processes and uses indicated herein. These materials are to be rated for outdoor and long-life applications in Arizona's diverse environment. Offerors shall submit specific warranty information on all materials offered.

This contract will is primarily for materials used to make highway grade type of signs. However, the Department also has a need for other non-highway types of inks and films. The non-highway films and inks are clearly identified as such. The highway grade materials shall be all of those colors of materials that are used to make highway signs (white, yellow, green, red, blue, brown and black).

The EG highway sign making materials (sheeting, films and inks) should have a minimum rated and warranted life of seven years unless stated otherwise herein. The PHIG highway sign making materials (sheeting, films and inks) shall have a minimum warranted life of ten years. Orange and orange an white pre-striped barricade sheetings are allowed to have a shorter warranty period (typically 3 years).

The expected life or end-of-life rating should be longer than warranty minimums. Additional definition regarding the expected end-of-life rating is presented later.

The non-highway inks and graphic type films should have a minimum rated and warranted life of three years. Although it is permissible to offer longer warranties for these products. Information on additional availability warranties should be included in an offer.

All items shall be in accordance with the requirements described in the Invitation for Bid (IFB) and as specified herein and detailed on the **Price Sheets**. The bid will be awarded to those who demonstrate by their response to this IFB that they can supply the needed sign making materials that shall perform in accordance to these specifications. A multiple award is possible given the diversity of this contract.

Sign making materials shall be compatible with the Department's or Using Entity's Sign Factory processes. Those materials or products that have not demonstrated compatibility may be required to submit samples for a compatibility evaluation as part of the bid evaluation process. A list of Sign Factory equipment may be obtained by calling the manager at 602-712-6625.

All samples supplied to evaluate compatibility with sign making equipment and processes may also be used on a short- and long-term basis to test the performance and characteristics of the offered materials in the outdoors.

For the Department, all outdoor weathering sample panels will be placed on the exposure test decks located in Phoenix.

Requested samples are to be submitted at no cost and within twenty working days. Failure to submit samples within this time frame may be cause to reject that portion of the bid or cancellation of a portion or all of a contract or non-use of those materials.

Non-listed materials will be considered if evidence and assurances are given that those materials are capable of achieving the same or better performance within the time frames and requirements stated herein. Determinations on non-listed products will be made on a case-by-case basis.

The Federal Highway Administration (FHWA) is due to issue maintained minimum retroreflectivity requirements for highway signs per the MUTCD. The proven ability of a material to perform beyond these proposed FHWA requirements through out its warranted life and longer is an important aspect to both the Department.

Only those highway sign making materials that are known to be able to perform significantly above these minimums for their required warranted life shall be offered and supplied.

The FHWA minimums shall be regarded as the quantitative end-of-life definition. There are other end-of-life conditions that are more subjective or qualitative. These include fading, cracking, and delaminating.

It is preferred that the end-of-life rating of a material be at least two years longer than the warranted life. The Department reserves the right to utilize materials that have a longer end-of-life rating, regardless of cost.

All materials offered and supplied shall be in the process of being tested per an on-going outdoor weathering program. This weather-testing program shall involve NTPEP testing.

The weather testing program requirement is intended to assure that the Department has an empirically based body of data that provides reasonable assurance that the sign making materials have been tested.

Results from the outdoor weathering tests should show a high degree of stability and compliance within the applicable ASTM D 4956-04 requirements.

All offerors shall include specific information about weather testing of their highway sign grade products. Offering an ink system that has little or no history of use with the offered sheeting materials is not acceptable.

All shipments of liquid materials shall be in containers that conform to applicable federal, state, and local requirements. All shipments shall contain the Material Safety Data Sheets.

The price to be filled in on the **Price Sheet** shall be accordingly. The price shall include free-on-board (FOB) shipping statewide.

1.3 ITEM CATEGORIES AND DESCRIPTIONS

Although the Department request price by the square foot and by the roll, typically the Department will order sheeting items by the roll.

Sign Making Materials Requirement Notes:

1. 100-yard rolls can be ordered at twice the 50-yard roll price.
2. The square footage per roll shall be at or beyond the roll width multiplied by the roll length.
3. All sign sheeting and film pricing shall include cutting or slitting a standard roll into two or three smaller width rolls.
4. Standard rolls can be proportioned or divided into square or rectangular precut sheets. The width dimension of the precut sheets is limited from 6 inches to 48 inches in 6-inch increments. The length of the sheets shall be from 6 inches to 96 inches.
5. Inks shall be supplied free of charge. The required highway sign color inks to be supplied shall be translucent red, black (opaque), translucent green, translucent yellow, and translucent blue. Other translucent and/or opaque colors may also be offered. These colors shall meet all the applicable FHWA and MUTCD requirements for traffic sign colors. All ink containers supplied should normally be one-gallon containers with product numbers and descriptions clearly visible. Other compatible ink additives shall be supplied as needed and free of charge.
6. The Department has a need for a number of special color inks for general use signage. These special colors include pantone 512 purple, pantone 3292 teal, and pantone 876 translucent copper. Standard highway green ink and film will be used

on scenic highway signs and sufficient quantities of these inks shall be supplied. These special colors shall be rated for outdoor use and should have a minimum three-year warranty on EG and six years on PHIG.

7. Rolls of slip-sheet that are specifically designed to protect sign faces during handling, storage, and shipment. The minimum amounts of slip-sheet supplied shall be equal to the square footage and widths of the sign sheeting supplied.
8. Any special tools including hand rollers and squeegees.
9. Any specialized washers required for sign mounting. A minimum of two washers for every 9 square feet of sheeting shipped shall be supplied. These special washers shall be rated for a minimum outdoor life of 12 years.
10. At the manufacturer's option different ink systems can be offered; however, the systems shall be compatible to either a pre-screening sign printing process, post-screening sign printing process, or both. The inks shall also be suitable for the screen fabrics used by the Department. It is preferred that one ink system that is compatible for both these printing processes be supplied. The use of a two-part type of ink system (resin/catalyst or resin/hardener) and the use of an overprint clear coat is not the preferred system for the Department. The sign printing for EG sheeting shall be able to be accomplished with a single-part ink with a one-step print and dry process. This one-step process is also preferred for the PHIG sheeting. A multiple award based on ink systems is possible.
11. The ink systems supplied shall be compatible to the ink washing solvent system used by the Department. The Department uses a Northwest Screen Systems NO12500.
12. See the Special Terms and Conditions for additional items, requirements and services which are to be included as a part of the supply contract.

1.4 COMPATIBILITY REQUIREMENTS

All sign making materials and incidentals shall be fully compatible with the equipment and processes used by the Department Sign Factory or other user agency. A list of the Department's sign making equipment is available upon request.

If at anytime during the course of the contract, the Department makes the supplier aware of any problems with their sign making materials, the supplier shall take immediate action to investigate the cause and to develop a solution. The solution must be acceptable to the Department. One of the main goals of the supplier's quarterly service visits shall be to prevent problems before they happen and/or deal with them in a timely and effective fashion.

1.5 SIGN MAKING MATERIAL REQUIREMENTS

The sign making materials shall conform to the following listed requirements and other requirements stated in this contract.

1.5.1 General

All items supplied shall be designed and made of materials that are capable of withstanding the rigors of long-term exposure to a highway environment. The materials as made signs or devices will be used statewide ranging in elevations from 500 feet to 9000 feet and with temperature ranges from -20 degrees to 128 degrees Fahrenheit.

All materials when made into signs or other traffic control type devices shall be capable of withstanding normal shipping and installation practices without scuffing, delaminating, ripping, or other damage that is directly related to a design or material defect. Damaged materials shall be replaced without cost to the Department.

All sheeting shall meet or exceed the applicable requirements of the 2004 ASTM D 4956 Standard Specification for Retroreflective Sheeting for Traffic Control.

The sheetings and films shall be compatible to be plotted and cut on legend cutter/plotter machines commonly used to make highway signs.

All items shall be manufactured in such a manner that they are consistent in size, dimension, thickness, and color.

All sheeting and films shall be supplied with a pre-coated adhesive with an easily removable release paper. Release liners shall be compatible to the plotter, cutter, and squeeze roll applicator machines used by the Department. The pressure-sensitive adhesive shall be suitable for use with small-hand applicators.

All sheeting and films shall be free of bubbling and peeling of the release liner. The release liner on the back of sheeting and films shall not be considered as suitable slip-sheet paper. Slip-sheet paper is to be supplied separately as a part of this contract, see item section for requirements.

The pressure-sensitive adhesive shall be a Class I as defined in ASTM D 4956 unless otherwise requested.

The pressure-sensitive adhesive shall be an aggressive tack type that does not require heat, solvent, or other pre-application preparation. Heat application is allowable to ease the application of sheeting to the 12-inch aluminum extrusion panels. Pretreatment of plastic surfaces is allowable. The adhesive shall have no staining effect on either the sheeting or films.

The adhesive system shall firmly adhere to the intended surface without any discoloration, cracking, folding, rippling, crazing, bubbling, blistering, or dimensional change. The adhesive system shall form a durable bond that will last per the time requirements herein stated.

Once applied and properly dried the adhesives and inks shall not re-wet or become tinder.

The sheeting and films shall be designed so they can be consistently and successfully cut, weeded, lifted, transferred and trimmed using normal sign making processes. Additionally the integrity of these materials should be such that it shall cut cleanly without slipping or excessive cracking, tearing and/or chipping.

The transparent and opaque inks furnished shall be of the needed type, quality and quantity needed to make signs and other devices. Color requirements shall conform to the applicable ASTM D 4956, MUTCD and FHWA requirements. The supplied inks shall be capable of producing, when applied per printing the Department's printing processes, of producing legends of the proper color, shape with sharply defined edges and without blemishes that would negatively impact their intended use, appearance or performance. The inks furnished shall be suitable for offset post- and pre-screening printing.

The minimum coefficient of retroreflectivity of the transparent films produced on white sheeting shall be 90% or more of the corresponding color of retroreflective sheeting of that type.

The minimum coefficient of retroreflectivity of the transparent colors shall be at least 65% of the retroreflective white base sheeting.

The opaque black ink and film shall have a coefficient of retroreflectivity of .80 or less.

1.5.2 Engineering Grade Sheeting & Related Materials

All EG material shall meet or exceed all specifications for ASTM D 4956-04 Type I sheeting. All sign making materials shall have NTPEP testing data.

The published warranty of the sheeting as it is used with its compatible highway color ink, black opaque and colored films systems shall be a minimum of seven years. The warranty period for non-highway films, orange or pre-striped orange and white barricade sheeting are allowed to be three years.

1.5.3 Prismatic High Intensity Grade Sheeting & Related Materials

The PHIG sign sheeting shall be ASTM D 4956-04 Type IV.

The sheeting and ink systems shall be produced by a manufacturer whose materials have been tested by NTPEP. The manufacturer of PHIG shall also be an active member or participate in the ASTM D04.38 Traffic Control Material Subcommittee sheeting task group.

The published warranty of the sheeting as it is used with its compatible highway color ink, black opaque and colored films systems shall be a minimum of 10 years.

1.5.4 ASTM D 4956-04

The following are specific modifications, additions and changes to ASTM D 4956-04 to add requirements that not only involve the retroreflective sheeting, but the related sign making films and inks that are also to be supplied per this contract to make signs and other type of traffic control devices:

> **Page 4:** *"6.1.1 Type I* - Table 5 shall apply to the transparent colored inks and films except the minimum values can be up to 35% less than those indicated. The 24 month outdoor weathering and Table 6 requirements shall also apply to the transparent films and inks. It is preferred that the sheeting, inks and films outdoor weathering test be extended to a total of 42 month weathering test to validate the warranty period and performance typically required for this sheeting type. It is also useful to continue this test until each sheeting, ink and film reach a status which is not consistent with the weathered requirements and the proposed FHWA minimum retroreflectivity guidelines (e.g. end of useful life)."
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> **Page 4:** 6.1.4 Type IV - Table 9 shall apply to the transparent colored inks and films except the minimum values can be up to 35% less than those indicated. The 36 month outdoor weathering and Table 10 requirements shall

also apply to the transparent films and inks. It is preferred that the sheeting, inks and films outdoor weathering test be extended to a total of 60 months weathering test to validate the warranty period and performance typically required for this sheeting type. It is also useful to continue this test until each sheeting, ink and film reach a status which is not consistent with the weathered requirements and the proposed FHWA minimum retroreflectivity guidelines (e.g. end of useful life)."

Page 4: "6.3 *Daytime Color* - The color of the sheeting and applied films and inks shall conform to the requirements of Table 17, and one of the following: Table 6 or Table 10 when tested in accordance with 7.4. Daytime color requirements were developed for a limited set of retroreflective sheetings and a limited set of measurement devices. Measurement techniques appropriate for a wider range of optical technologies and instruments are under development. Some sheetings and applied films and inks may require visual assessment to determine the acceptability of daytime appearance."

Page 4: "6.4 *Accelerated Outdoor Weathering Requirements* – The retroreflective sheeting and applied films and inks shall be weather resistant and show no appreciable cracking, scaling, pitting, blistering, edge lifting, or curling, or more than 1/32 in. (0.8-mm) shrinkage or expansion when tested in accordance with 7.6. The minimum coefficient of retroreflection for weathered samples of transparent or translucent inks and films should not be less than 65% of the value of what is achieved from Table 15. The black ink and film should have a measured retroreflectivity of less than 0.8."

Page 4: "6.5 Colorfastness: The values in these tables shall also apply to inks and films applied on white sheeting."

Page 5: "6.6 *Shrinkage* – The retroreflective sheeting and film shall not shrink in any dimension more than 1/32 in. (0.8 mm) in 10 min or more than 1/8 in. (3.2 mm) in 24 h when tested in accordance with 7.8."

Page 5: "6.7 *Flexibility* – The sheeting and properly applied inks or films shall be sufficiently flexible to show no cracking when tested in accordance with 7.9."

Page 5: "6.8 *Liner Removal* – The liner, when provided, shall be easily removed without soaking in water or other solutions, and shall not break, tear, or remove adhesive from the sheeting or film. (See 7.10)"

Page 5: "6.9 *Adhesion* – When tested in accordance with 7.5, the adhesive backing of the retroreflective sheeting and films shall produce a bond that will support a 1¾-lb weight for adhesive classes 1, 2, and 3 or a 1-lb weight for adhesive class 4 for 5 min, without the bond peeling for a distance of more than 2 inches."

Page 5: "6.10 *Impact Resistance* – Retroreflective sheeting and properly applied and cured films and inks shall show no cracking or delamination

outside of the actual area of impact when subjected to the impact test in accordance with 7.11."

Page 5: "6.11 *Specular Gloss* – The retroreflective sheeting and applied films and properly cured inks shall have a specular gloss of not less than 40 when tested in accordance with 7.12."

Page 5: "7.2 *Panel Preparations*: For workability reasons the test panels for the film and inks may need to be enlarged, however the minimum size should be as indicated. Once the base sheetings have been applied then the films and inks shall be applied to the panels in accordance with the recommendations of the sheeting, film and/or ink manufacturer. All films and inks shall be applied to white sheeting."

It is allowable for the sheeting manufacturer to provide clarification to these requirements. All clarifications should be submitted in writing so the Department can evaluate them. The intent of adding these requirements to ASTM D 4956-04 is to help ensure that the inks and films used and applied by the Department are sufficiently compatible in performance and durability to meet the Department's expectations as herein defined.

1.6 PACKAGING

In addition to the requirements of ASTM D 4956 the roles of sheeting, film, and slip sheeting shall be supplied on three-inch diameter cardboard or plastic tubes. The roll tube shall be supported in the box so no part of the roll of sheeting or film is supporting itself. The roll shall be secured so it does not unravel when shipped or stored. The rolls shall be packed in a manner that protects the sheeting and film. The ends and edges are to be square and straight.

Inks shall be supplied in resealable one-gallon pails.

All sheeting, films, and inks shall have their product names, numbers, and descriptions clearly visible on all packaging. The manufacturing lot number and date of manufacture shall also be marked on the container and in the case of sheeting and films on the core also. The lot numbers on the box and on the core shall match.

All shipments of material shall be in containers that conform to the applicable local, state and federal requirements for the type of material shipped. Every shipment of these materials shall contain the Material Safety Data Sheets.

1.7 CERTIFICATION OF REQUIREMENTS

With the initial offer (report of verification of ASTM D 4956 Type classification) and throughout the life of this contract the Department or other user agency may require the same or similar reports and/or testing lab reports be submitted for all materials and required tests stated in the specifications

1.8 SIGN MAKING COMPATIBILITY EVALUATION TESTS

The Department and/or other user agencies will have the right to conduct tests using samples of offered or contract materials. The tests may involve any processes need to make a sign such as trimming, printing, plotter/cutter and mounting (flat sheet and extrusion). Additional information regarding the required compatibility tests are available from the Department upon request. Sufficient samples to run the tests shall be supplied with out cost upon request. The performance of the sample material on these tests can be considered as an integral part of the specifications and could be used to reject or award a contract or lead to contract nonuse.

1.9 SATISFACTORY PERFORMANCE LIFE

All supplied materials and resulting made or fabricated signs and devices shall be considered as providing satisfactory performance life if they do not deteriorate due natural causes within their warranty period as herein specified.

Unsatisfactory performance conditions shall be cause for immediate material rejection and replacement per the necessary methods and in accordance to Section 3.0 Special Terms and Conditions. Consistent unsatisfactory performance may be grounds for nonuse or cancellation of all or a portion of a contract.

Unsatisfactory performance conditions include, but not limited to, the display of the following:

1. Bubbles, wrinkles, ripples, peeling, cracks or breaks on the any portion of the applied material greater than one to three inches in length. For mounted signs this requirement does not apply regarding minor defects around dents, mounting holes or other imperfections in the substrate.
2. Any shrinkage that is results in an unsightly sign or device.
3. Significant visible delamination of any layer including from the substrate.
4. Significant discoloration, including clouding or chalking of any surface or layer or ink.
5. A loss in transparency of any transparent sheeting, film or ink.
6. A loss in opaqueness of any black opaque ink or film. The R' of the black shall always be less than 1.0 and have a uniform black appearance. The color and/or reflectivity of the background sheeting shall not show through.
7. Cracking, crazing, blistering, ripping, flaking or chipping of any applied sheeting, film or processed ink.
8. Loss of nighttime reflectivity as observed at night under headlights and/or as measured with the Department's RetroSign or similar handheld retroreflectometer.

Subjective and/or objective measures as based on this specification and other nationally accepted standards and practices (including FHWA's proposed minimum sign retroreflective guidelines) will be used by the Department to judge unsatisfactory performance.