104 SCOPE OF WORK

104.01 Intent of Contract

(A) Covenant of Good Faith and Fair Dealing

The intent of this subsection is to recognize that the Department will deal with the contractor in a professional and businesslike manner. Resident Engineers, Project Supervisors, and Inspectors are expected to be honest, fair, and impartial in their dealings with the contractor. It is not the Department's intention to take unfair advantage of the contractor or exploit a predicament of the contractor's to the Department's advantage.

The second paragraph of Subsection 104.01(A) does a good job of defining good faith. It means to proceed diligently, avoid hindering, stay within the law and delegated authority, and cooperate.

What may seem fair to you may not seem fair to another. Webster's defines fairness as "marked by impartiality and honesty: free from self-interest, prejudice or favoritism . . . conforming with the established rules." This last part is most important since the construction contract is the set of established rules by which your fairness should be measured.

Inspectors have often been called unfair by the contractor when they enforce certain contract specifications. It may not be that the Inspector is unfair; it may be that the specification itself is unfair. This is no fault of the Inspector. Sometimes Inspectors are accused of being unfair by enforcing a contract specification too rigidly. In this case the Inspector's fairness is not being measured by the contract specifications, but by the past performance of other Inspectors. In either case, having frequent discussions with the contractor and ADOT management concerning fairness can go a long way to improve the contractor's perception of your impartiality.

(B) Win/Win Solutions and Doing What is Best for the Project

A dilemma that many Resident Engineers and Project Supervisors face is how to remain impartial and be fair to both the Department and the contractor. The best solutions to project issues are the ones that meet the needs of all stakeholders. Win/Win solutions should always be explored first.

Sometimes contractors may not perceive that the solutions you propose are win/win. On the other hand, their solutions may not be perceived by you as win/win either. As an alternative, look at each project issue separately and then do what is best for the project, rather than what is best for either the contractor or the Department. This is a key step in maintaining successful partnerships. This means that sometimes the contractor will have to do more work than expected, and other times the Department will have to pay more than expected.

If you are continually doing what is best for the project, it is difficult to be perceived as biased and unfair when a win/win solution cannot be reached. Experienced Resident Engineers and Project Supervisors have a clear sense of what is best for the overall project in terms of quality, schedule, and costs. By doing their best to balance these needs between the contractor and the Department, they can help achieve good faith and fair dealing with the contractor.

(C) Partnering

An ADOT construction project is a partnership. Fundamentally, the construction contractor provides the necessary:

- Labor
- Materials
- Equipment
- Management expertise

while the owner (ADOT) provides the necessary:

- Construction plans and requirements
- Environmental clearances
- Initial utility clearances
- Money
- Inspection and oversight staff
- Time
- Right-of-way

It is these resources that are combined together to build the project. Each party controls how they apply their resources to the project and uses other organizations (subcontractors, Material Suppliers, Designers, local governments, and others) to help provide these resources.

Obviously the success of a project depends on how well these groups work together in combining their various resources. Working together is the key because these resources cannot be combined separately.

ADOT Standard Specification Section 104.01 (A) contains the Covenant of Good Faith and Fair Dealing. This section imposes the obligation on ADOT and the contractor to perform their contractual duties in an honest, diligent, and cooperative manner. Section 104.01 (B), Partnering, provides a framework for creating the working relationship by requiring a partnering workshop prior to start of work in accordance with the requirements of Subsection 108.02 and prior to the preconstruction conference.

One of the primary functions of ADOT's Partnering Office is to facilitate the partnering meeting between ADOT's construction field office and the contractor. This is done so that important lines of communication can be established as well as roles and responsibilities for the major stakeholders.

The ADOT Partnering Office web site contains partnering process manuals and guides, regarding partnering such as the Partnering Evaluation Program (PEP), Education and outreach Partnerships, Forms, Links, and Contact Information.

The Partnering website includes the following information:

- General Partnering Overview
- Types of Partnerships
- Building a Partnership
- Construction Partnering Workshop
- Issue Resolution
- Partnering Evaluation Program (PEP)
- Role of the Facilitator
- Education
- Partnering Outreach
- Partnering Process Continuous Improvement

Everyone has their own ideas about how to partner and what partnering techniques work the best. Different styles of partnering can and do work. Find one that works for you and adjust it to the needs of your other partners. As long as there is trust, mutual respect, open communication, cooperation and a commitment to continuous improvement, successful partnering can be achieved.

The Resident Engineer as a Partner:

- Champions partnering and sets an example for everyone on what a partner should be

- Ensures everyone is following the “Four C’s” of partnering - Communication, Cooperation, Commitment and Continuous Improvement
- Periodically evaluates the partnering process and makes improvements
- Is proactive in looking for below-the-surface conflicts between partners
- Says the things that need to be said to maintain the harmony of the group
- Listens to the other partners
- Always recognizes the contractor’s good work

The Project Supervisor as a Partner:

- Looks ahead at upcoming construction work for possible conflicts with the Special Provisions, Standard Specifications and Project Plans
- Helps the contractor’s staff interpret plans and specifications
- Is flexible in staffing the project to accommodate the contractor’s needs when possible
- Provides the contractor with timely feedback on noncompliance issues
- Communicates frequently with the contractor’s foreperson and superintendent
- Always recognizes the contractor’s good work

The Inspector as a Partner:

- Uses knowledge of the Project Plans, Special Provisions, Standard Specifications and other contract documents to warn the contractor early about potential problems
- Escalates unresolved issues quickly
- Doesn’t waive contract requirements just to get along
- Anticipates noncompliance issues and brings concerns to the contractor’s attention as soon as possible
- When rejecting work, remains fair and sensitive to the contractor’s predicament, and works with contractor in correcting deficiencies
- Continually reviews contract documents to make sure the contractor’s operations do not accidentally fall into noncompliance
- Appreciates the work the contractor is doing for the Department and the taxpayers, and both praises and encourages good performance

Partnering works best when team members are proactive, anticipating and resolving issues before they affect their partner’s performance. Any known conflicts or issues should be resolved in a meeting room before the work begins; however, issues will inevitably occur on the project and that is when true partnering begins.

104.02 Revisions to the Contract

A contract change is merely something different than what the contract requires. On a highway construction project of any appreciable size, contract changes are inevitable and occur for several reasons. The Department, as the project owner, has the right to make changes that it deems necessary for the satisfactory completion of the project, and the contractor has the right to receive an equitable adjustment in payment or contract time. When the contractor perceives a change to the contract, notification in accordance with Subsection 104.03 must be provided.

The changes to the contract are specified in a supplemental agreement contract. A supplemental agreement must be issued to accomplish extra work, for differing site condition work, for suspended work by the Engineer, or for significant change in the character of the work.

Significant change requires that the character of the work be considerably altered or that the quantities of a major item of work be increased in excess of 125 percent or decreased below 75 percent of the original contract quantity.

When the quantity of a major item is not significantly changed a supplemental agreement should not be issued because contract prices should not be changed.

A supplemental agreement can be processed in three different ways. It can be processed as a letter of agreement, a change order, or a force account. Subsection 109.04 provides instructions on supplemental agreement processing.

The Department tracks and monitors the cost of supplemental agreements by categorizing them into types. The types were chosen to enable selecting areas or procedures within the department for possible improvement. The Resident Engineer specifies the type of Supplemental Agreement from the list below when the supplemental agreement is processed. The Resident Engineer should make a conscious effort not to lump types of contract changes within one change order.

General Supplemental Agreement Types:

- Value Engineering
- Work out of Scope (ADOT)
- Work out of Scope (Other Jurisdiction)
- Quantity Omissions
- Plans Revisions/Oversights
- Changed Condition
- Penalties - Bonuses
- Other

Value Engineering

This is a contract change in which both the owner and the contractor agree to alter the contract in some way in order to reduce the total contract amount. Both split the savings 50/50. The contractor usually proposes this change, and the owner accepts or rejects it.

These changes are examined so that future designs will include the value-engineered improvements.

This is discussed in more detail in Section 104.13.

Work out of Scope

This is for work not required nor included in the original contract, but has later been deemed desirable for satisfactory completion of the contract.

Scope refers to the project limits and the major design elements required to meet the project purpose and needs. The scope of the project was developed in the Scoping Phase and refined in the Design Phase. Changes in scope during the Construction Phase should not normally be necessary.

In general, the addition or deletion of designated elements such as a passing or turning lane would be a change in project scope. This also includes enhancements or special products requested by other ADOT departments, or outside agencies such as BIA, CAP, SRP, local governments, etc. The extending or shortening of a pipe to meet field conditions would not be a scope change. When there is doubt as to whether a contract modification constitutes a scope change, the Construction Project Manager or Resident Engineer should consult with the Design Project Manager and jointly make the determination.

Supplemental Agreements for additions or deletions which change the scope as defined in the contract documents require notification to the Design Project Manager.

The cost of these improvements may compete with funds for new projects and should only be done with a very good reason.

Quantity Omissions

Use this type when an item was shown on the plans, but was not included on the bid tab or when a major item quantity is increased or decreased more than 25 percent of the plan quantity.

These changes should be examined to determine if improvements could be made to the estimating process.

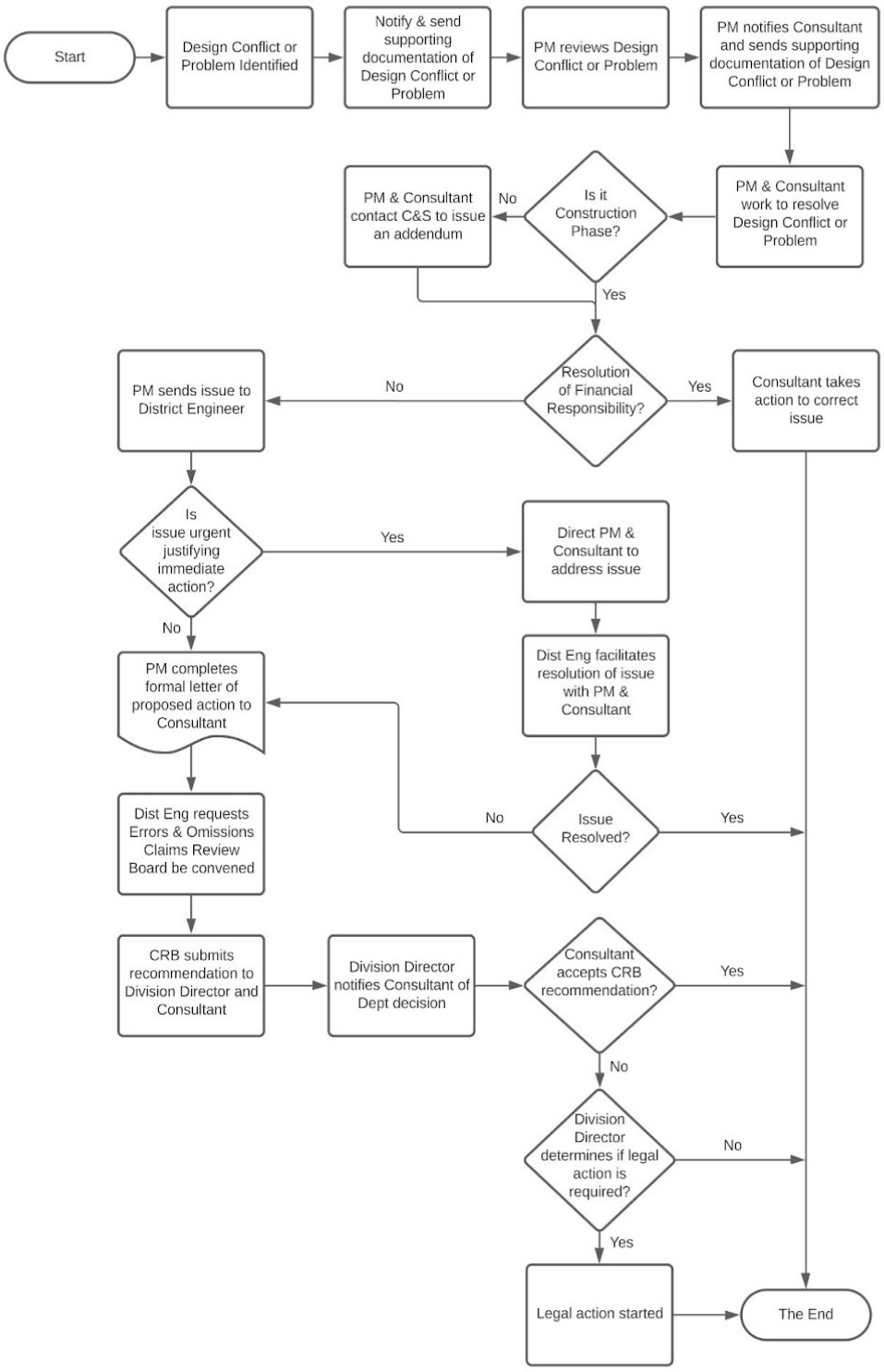
Plans Revisions and Oversights

Use this type when the plans did not accommodate existing visible field conditions, at the time of construction, and a change to the design is desirable.

Examples: Obvious design oversight or omissions.

These changes are within the original scope and should have been on the original plans. These changes should be examined to determine if improvements could be made to the design process.

Errors and Omissions Process



Changed Condition

Use this type when an unusual and unknown condition occurs on the project after award of the contract.

Examples: Unknown utility conflicts or other subsurface conditions, unknown or unusual material characteristics, unusual acts of nature, vandalism.

This type is a hidden condition that could not be known at contract award. This change cannot be controlled, estimated, or decreased. This category will allow us to explain that a certain percentage of our construction budget must be spent to fix construction conditions that cannot be predicted.

Penalty or Bonus

Use this type when paying for items where construction quality or time was modified and the change was not included in the contract documents.

Examples: ADOT chooses to accept a substandard product at a reduced price or wants to accelerate the contractor's schedule with a bonus, or accepts a different product at a penalty or bonus when the plans materials are unavailable.

Other

Used only when no other reason applies and explain in detail as to why.

Examples: Negotiated settlements should be included in any of the above categories that the change order fits if there is agreement that a contract change has occurred and the price is being negotiated. When a contract change is debated and a settlement is reached as an outcome of escalation, the change order should be included in this category and the negotiated settlement should be explained in detail. A change in the project’s scope is not to be included in this category.

Partnering workshop expenses split in accordance with the contract are always “Other”.

Selecting the proper Type of Supplemental Agreement

With any system, overlap and redundancy may occur. Exhibit 104.02-1 Choosing Supplemental Agreement Type is a flow diagram that demonstrates the proper logic for choosing the supplemental agreement type. Use the flow diagram to determine the type of change order.

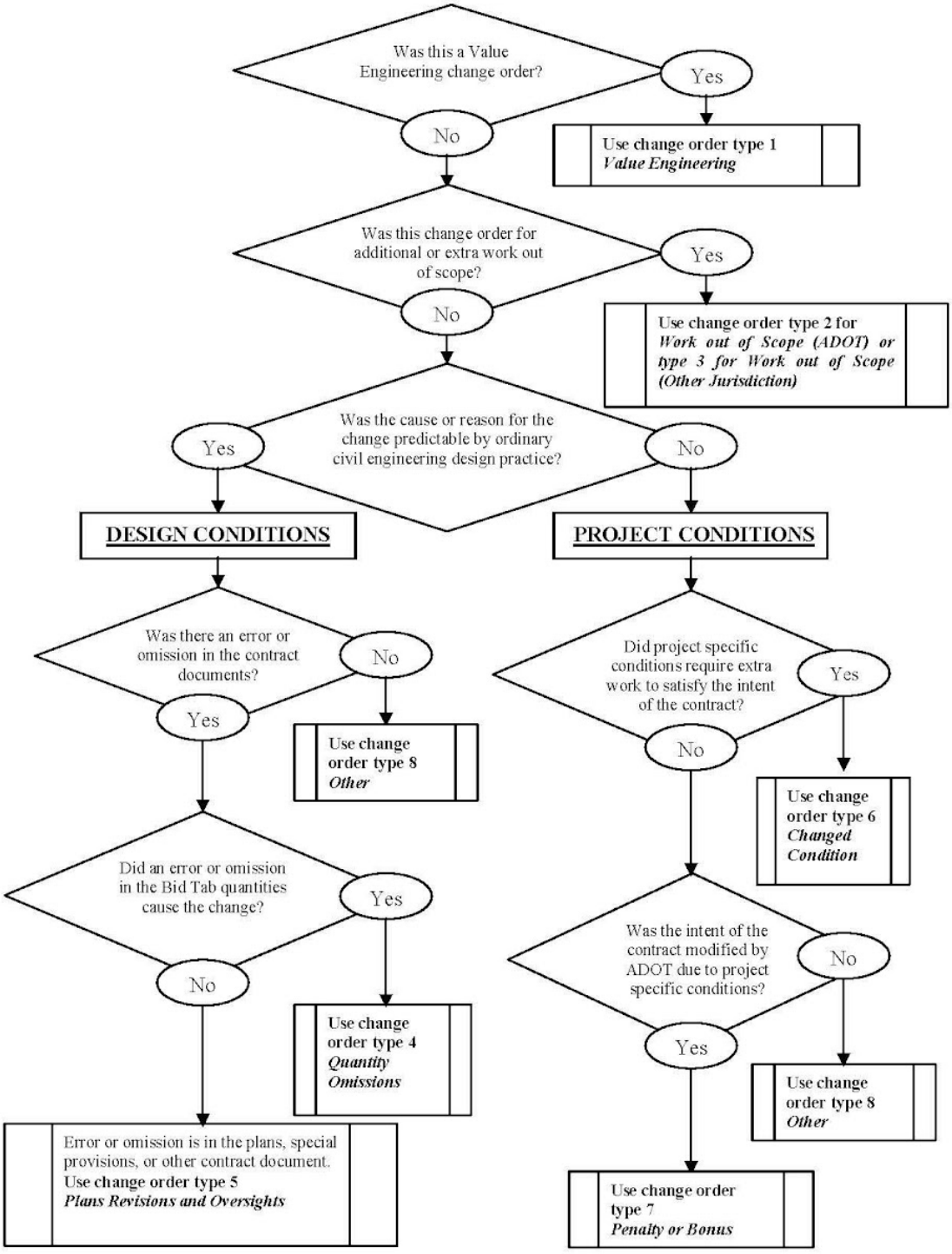


Exhibit 104.02-1 Choosing Supplemental Agreement Type

The following Subsections in the Standard Specifications reference 104.02 directly, or indirectly, and can be used for obtaining more information on the type of contract changes.

- 101.02 Delay
- 104.13 Value Engineering Proposals by the Contractor
- 105.04 Conformity with Plans and Specifications
- 105.06 Coordination of Plans, Specifications, and Special Provisions
- 105.08 Cooperation with Utility Companies
- 105.10 Construction Stakes, Lines, and Grades
- 105.16 Failure to Maintain Roadway or Structure
- 105.18 Opening Sections of Project to Traffic
- 107.05 Archeological Features
- 107.06 Historical Preservation
- 107.07 Sanitary, Health, and Safety Provisions
- 107.15 Contractor's Responsibility for Utility Property and Services
- 108.08 Determination and Extension of Contract Time
- 108.10 Termination of Contract for Default
- 108.11 Termination of Contract for Convenience of the Department
- 109.02 Scope of Payment
- 109.03 Compensation for Altered Quantities
- 109.04 Adjustment in the Contract Price
- 109.05 Eliminated Items
- 109.10 Lump Sum Payment for Structures

104.03 Notification

This specification formalizes the notice requirements a contractor must give the Department when there is a perceived contract change. It is intended to integrate the partnering process with the claims resolution process so that issues can be resolved in a win-win, cooperative atmosphere.

The contractor has a duty to notify the Department of any changes they perceive in the contract. The contractor shall use the Department's certification form. This allows the Department to take early preventative measures to mitigate any damages to the contractor that the Department may be held liable. It is very difficult for the Department to mitigate damages if it didn't even know about a contract change to begin with. Furthermore, it's unfair to the Department to have to pay for damages it was unaware of and consequently had no control over. The notice requirement puts back some of the fairness into contract changes.

Any potential "changed condition" should be well documented as soon as it becomes apparent. Unforeseen work that has to be performed is often an area of uneasiness and uncertainty for project partners. Whenever possible, the financial responsibility for the work should be resolved before the work begins. If an agreement cannot be reached, the work should still proceed to avoid any adverse impacts to the project. Daily records should be kept in sufficient detail so that the cost of doing the work can be reconstructed accurately.

It is recommended that force account daily reports be used as a means of tracking labor and equipment time as well as material quantities. The work should be treated like a force account in which there is daily agreement on time and materials.

Issue Resolution Process

To expedite the issue resolution process, a formal review process has been created within the Department with definite deadlines for reviews at each level. The contractors often complain that it takes too long to get issues resolved within the Department. This process is designed to streamline the internal review process and get decisions returned to the contractor promptly. The whole process begins when one of the partners has either a

technical or relationship issue. Examples of perceived changes (or changed conditions, see Subsection 104.02) include:

- Damages due to weather conditions
- Work performed out of sequence
- Unavailable specialty items
- Lack of free access to the work
- Time restrictions on when work can be performed
- Work stoppages
- Unexpected underground conditions
- Inspections performed to a higher standard than required by the contract
- Interference by adjacent contractors

There is a seven-step procedure the Department follows to resolve a contract issue. The goal is to try to resolve the issue at the field operations level and use litigation or arbitration only as a last resort.

1. Verbal Notice to the Resident Engineer

As soon as the contractor perceives a changed condition, the Resident Engineer should be notified about the issue. The intent is to warn the RE as quickly as possible that current project conditions are not what the contractor anticipated. At this point, there should be a complete understanding concerning the contractor's perceived issue. The Resident Engineer should not be quick to judge the merits of the issue. More importantly, the Resident Engineer should do everything to gain as much understanding as possible about the issue. This means meeting with the contractor, subcontractors, and other concerned partners to discuss the issue at length. In most cases, this discussion will help contractors clarify in their own minds. When some of the more proactive Resident Engineers perceive a situation that may lead to a contract change, they will ask the contractor up front, "Is there an issue here that needs to be resolved?" If the RE perceives that there is an issue with the contractor or project team, the RE must take action to resolve the issue immediately.

2. The Resident Engineer Verbally Responds to the Issue Notice Within Two Working Days

How the RE responds to this will usually set the tone and atmosphere for the rest of the issue resolution process. The RE needs to think carefully before responding (refer to the section on communication in Subsection 100 of this manual). The RE should go back to the office and thoroughly review the Project Plans, Special Provisions, Standard Specifications, Standard Drawings and other contract documents. Everyone, including the contractor, expects the Resident Engineer to do at least that much before responding.

The Resident Engineer should also consult any related documents such as the Materials Testing Manual, the Construction Manual, and any other industry publications that may help resolve the issue. Talk to the Inspectors, the contractor's field staff, the project management team (PM, designer, technical leaders), and one of ADOT's technical experts on the subject to help broaden your perspective. This up-front research is very important and shows that you are taking the contractor's notice seriously.

In responding to the contractor's notice, demonstrate that you have indeed listened to the contractor and describe the issue as he or she described it to you. If you are denying any contract change try to be conciliatory rather than confrontational. Sometimes a one-on-on frank discussion can be helpful in uncovering the real issues. But don't let emotions run to the point where you set yourself up for a win-lose scenario. Instead, leave the contractor an out. Suggest what approaches could be used to improve the merits of this issue and describe the next step the contractor should take.

3. Written Notification by the Contractor

If the contractor and Resident Engineer cannot resolve the issue within two working days a written notice is required by the end of the second working day. The idea behind a prompt written notice is twofold. The first

reason is to keep the issue from stagnating and poisoning the atmosphere of trust and cooperation developed through partnering. The second reason is to get an agreement at the project level of what the issues really are. Some issues raised at the project level are the result of misunderstandings or unmet expectations. Often an issue presented in writing clears up any miscommunication and results in a quicker resolution.

On projects which are not partnered, the written notice should meet the requirements of both Subsections 104.03 and 105.21. The rest of the issue resolution process follows the procedures described in Subsections 105.21 and 105.22. When this occurs it will be necessary for ADOT's field personnel to keep force account records on the work under dispute in order to substantiate the contractor's claim.

4. Issue Escalation Through Partnering

If the issue remains unresolved after the RE's review of the contractor's written notice, the issue is immediately escalated to:

- District Engineer's office, then if unresolved, to the
- State Engineer's office.

A "Routing Form for Construction Issue Resolution" and an "Issue Escalation Documentation Binder" are required for all escalations. Good documentation is important. Forms are found on the Partnering website. The State Engineer's office is the final escalation level for all issue resolution through partnering. This whole process shouldn't take more than seven working days. However, what usually happens at some point during the escalation is that additional documentation or analysis is usually needed to clarify the issue. This causes a delay in the proceedings, and before you know it seven days have already passed. If this is the case, as it will be for most issue escalations the contractor should start to submit some of the items listed in Subsection 104.03(B). This will preserve the contractor's entitlement to damages under 104.03(C).

5. Dispute Resolution Submittal

If the contractor is dissatisfied with the outcome of the escalation hearing at the State Engineer's office, the contractor must then submit the documentation required by 104.03(B) and 105.21 to the Resident Engineer. At this point, the partnering process has ended and a more formal process described in Subsection 105.21 takes over. Usually the RE and District Engineer will informally review the contractor's submittal in a final attempt to resolve the issue. To be in compliance with 104.03 (D), the RE must respond to the contractor's submittal within 10 calendar days. The response should state that the issue is still unresolved and that a formal hearing is scheduled at the State Engineer's office (indicate the date). Basically the Department is exercising its option under 104.03(D) for additional information so a decision can be rendered.

6. State Engineer's Review of the Contractor's Submittal

Instead of an informal review of the issue in the State Engineer's office, a formal presentation of the issue is made by the contractor to the State Engineer. Typically the State Engineer will assemble a panel of unbiased ADOT professionals to hear and decide the issue on behalf of the State Engineer. The RE, with the help of the District Engineer, will represent the Department's side of the issue. The panel functions much like a dispute review board: both parties in the dispute present their side and the board makes a recommendation.

This is the same as Step III in Subsection 105.21. It is unnecessary to cover Steps I and II in 105.21 since the issue has already been addressed and left unresolved at the Resident Engineer's and the District Engineer's level. Section 105.21 of this manual should be consulted by the Resident Engineer in preparation for the State Engineer's review.

7. Arbitration, Litigation, or Mediation

After the State Engineer's review, the only options left to the contractor of resolving a contract change issue are:

- Binding arbitration if costs are under $200,000
- Litigation in court if costs are over $200,000
- Non-binding mediation (then arbitration or litigation if necessary)

See Subsection 105.21 and 105.22 of this manual for further information.

104.04 Maintenance of Traffic

It is the contractor's obligation to maintain a safe, smooth, and stable road for the traffic and to install and maintain required traffic control devices. It is the Resident Engineer's responsibility to verify that the design of the traffic control plan is appropriate and that the plan is being followed. Traffic must be able to quickly distinguish the correct path when traveling at reasonable speed. Pedestrian traffic safety and access is included in traffic control.

Construction zones require special considerations in traffic control design because many drivers are inexperienced in what to expect. Unpredictable maneuvers can result when objects are too close to the traveled way. Some drivers may veer away, while others may slow down. Loose material can be particularly hazardous and must be kept to a minimum. Positive dust control can assist in improving visibility both day and night. Such factors as road width, shoulder area, relation of curves, height of the driver's eye, and night-time visibility should be considered when placing signs, barriers, barricades, and other traffic control devices.

ADOT will pay (usually a supplemental agreement) for the maintenance of existing roadways under construction up until such time when the contractor's equipment (haul units, earthmovers, etc.) uses the road for construction purposes. The contractor should not be responsible for maintaining an existing road that deteriorates due only to normal wear and tear from ordinary traffic (detours and temporary roadways excluded).

On federal aid projects, the FHWA will not participate in any costs for roadway maintenance done by supplemental agreement. An exception does occur when a roadway is overlaid or sealed to allow higher volumes of traffic when used as a temporary detour or crossover.

The Resident Engineer should review the Special Provisions to see if the traffic control plan, including temporary detours will require approval by the county, or other agencies in order to meet air quality standards. The Special Provisions may also deduct money due the contractor when portions of the roadway remain closed outside the allowable closure period.

(A) Detours

In some cases the Project Plans will provide a designed detour; in other cases it may be necessary for the contractor to produce a design. In the latter event, the contractor prepares a drawing of the detour to a proper scale showing the transition zones, the proposed horizontal and vertical alignment, super elevation, width, base, and surface. The drawing should show proposed signs, striping, barricades, and delineators. The Resident Engineer should submit the design to the Regional Traffic Engineer for review and approval of the traffic aspects of the design.

A complete record (including plans and photographs) must be kept showing all installations and any changes in the detour or traffic control devices. Photographs should be taken in a sequence showing the detour from beginning to end. (Videotaping of the work zone traffic control is an acceptable alternative to photographs.) If possible, all construction personnel should be alerted to the problems involved in the handling of traffic by means of detours. Surprise situations should be avoided because they contribute to accidents. Detours should be drivable at night

under varying traffic and weather conditions. The State Highway Patrol (DPS) and local police can often be helpful in locating problem areas.

If it becomes necessary or desirable to use a county road or city street as a detour for an extended period of time, the Resident Engineer should discuss the matter with the appropriate local government official. The Resident Engineer should make certain that there is a complete understanding as to who will pay the cost of maintenance or any reconditioning that may be necessary. The contractor may need a permit for the detour from the local government. After the permit is obtained, the contractor should photograph all existing roadway surfaces along the detour route.

(B) Winter Work Suspension

The Resident Engineer should arrange for the district maintenance staff or the responsible superintendent to review the site prior to release of the contractor for the winter season. This should help in gaining a "meeting of the minds" as to the condition of the roadway at the time when the contractor is released from responsibility and the work that the maintenance crew needs to perform during the winter period. Where feasible, the ADOT crew should leave the project in a condition as close as possible to that when the suspension started.

See Chapter 7 for additional information about traffic control.

104.08 Prevention of Air and Noise Pollution

During the design process, each ADOT project is evaluated by the Environmental Planning Group. This evaluation will yield environmental mitigation requirements that identify federal, state, and local environmental requirements applicable to the project and mitigation measures to minimize project caused environmental impacts. These requirements are incorporated into the project contract.

These environmental clearances, mitigation measures, and commitments are implemented through contract documents containing standard, stored specifications, special provisions, and plan sheet details. Any questions regarding these requirements can be directed to your District Environmental Coordinator.

Pursuant to the Federal Clean Air Act, as implemented and enforced by the county, the Special Provisions may require the contractor to prepare a fugitive dust control plan, and may restrict burning of trash, plant materials, or other waste. The Special Provisions may also require the contractor to discontinue all current work activities if the Governor declares an air pollution emergency. If the project is located in the area covered by the Governor’s declaration, then the Resident Engineer must notify the contractor immediately. The contractor must stop work as soon as possible, but no later than four hours after notification. The contractor is entitled to compensation and time extension in accordance with the Special Provisions.

Air Pollution

The U.S. Environmental Protection Agency (EPA), the Arizona Department of Environmental Quality (ADEQ), and the respective county enforce statutes and rules covering air pollution emissions. Each county has different levels of enforcement based on the historical exceedance of emission limits to the point where human health can be impacted. A county that can not reduce emissions of harmful pollutants is considered a non-attainment area. For information about if your county is designated nonattainment, you can visit ADEQ Nonattainment Areas Website.

Environmental Permits

It is the responsibility of the contractor to obtain the following permits when required by pollution control agencies.

Air Quality Equipment Permits

This category of permits covers construction equipment used for crushing and screening operations, asphalt batch or drum dryer plants, heater-scarifiers, hot or cold recycling, and concrete batch plants.

ADEQ administers the permits at the state level and issues equipment-source permits for those counties that do not have an air pollution permit program. Maricopa, Pima, and Pinal Counties have their own permit process.

A specific air quality permit applies to each designated piece of equipment and can be used on multiple sites. It is recommended that contractors obtain a permit for each piece of equipment and keep it active. These permits can take up to four months to obtain.

Site or Project Earth Moving Permits

Maricopa County and Pima County both require a site earth moving permit that covers fugitive dust generated by such operations as grading or excavating. This is covered under their Regulation III–Control of Air Contaminants, Rule 310, Open Fugitive Dust Sources. Some cities and Native Nations require contractors to have site and haul permits. The contractor should be encouraged to call and verify permit requirements at the start of each project.

Projects located in non-attainment areas for dust may include a stored specification modifying Subsection 107.14. The contractor must prepare a dust control plan and obtain a site earth moving permit. Some of the measures which the contractor may use to control or minimize fugitive dust include:

- Increase use of water or chemical dust suppressants
- Cease work temporarily during high winds
- Reduce vehicle speeds and number of trips
- Maintain freeboard of at least three inches or cover hauling equipment
- Cover or stabilize stockpiles

The contractor will be required to cover haul trucks with tarps or other suitable enclosures in some areas.

Where possible, efforts should be made to use chemicals to conserve water.

If additional information is required about air pollution requirements and the location of non-attainment areas, call ADOT's Office of Environmental Planning or reach out to your District Environmental Coordinator.

Noise Control

In areas where construction noise may be a potential issue, the Resident Engineer and the contractor should discuss noise restriction requirements with local officials prior to construction. Generally the standard maximum allowable noise level is 67 decibels.

104.09 Prevention of Landscape Defacement; Protection of Streams, Lakes and Reservoirs

NOTE: This section contains terms that may be new to the reader. A glossary is listed at the end of this section defining these terms.

Highway construction has been identified as a primary source of stormwater pollutants through soil erosion and sediment loss. All Arizona Department of Transportation (ADOT) construction projects must comply with federal, state and local water quality regulations and permit requirements. The National Pollutant Discharge Elimination System (NPDES) is a program administered by the Environmental Protection Agency (EPA), designed to control the discharge of pollutants in stormwater. The program in Arizona is referred to as the Arizona Pollutant Discharge

Elimination System (AZPDES). The Arizona Department of Environmental Quality (ADEQ) was given the authority by EPA to administer this program in Arizona. The EPA has retained the right to issue CGP permits on federal and Native lands.

Both the AZPDES and NPDES Program's require the owner (ADOT) to obtain a permit before allowing any construction discharges into protected surface waters or stormwater systems.

Construction General Permits (CGP)

For projects that are not located on Native Nations, an Arizona Construction General Permit (AZCGP, Permit No. AZG2003-001) (AZPDES CGP, Permit No. AZG2020-001) is issued by ADEQ to authorize the discharge of stormwater from a construction project to protected surface water. The current general permit was issued by ADEQ in September of 2021.

For projects that are located on Native Nations, a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) is required for stormwater discharges from construction projects to a WOTUS. The current permit was issued by the EPA in February of 2022.

Some projects are located both on and off Tribal Lands and therefore must obtain coverage for and comply with both permits.

The two General Construction Permits are similar in that they both require:

- Preparation of a plan depicting how ADOT and the contractor intend to comply with the requirements of the permit. This plan is called a Stormwater Pollution Prevention Plan (SWPPP)
- Notification to the appropriate agency (ADEQ or EPA) that ADOT and the contractor are electing coverage under one of the permits. This notice is called a Notice of Intent (NOI)
- Periodic monitoring of the controls established in the SWPPP to ensure they are operating as intended.
- Modification of the SWPPP to keep it up-to-date
- Notification to the appropriate agency (ADEQ or EPA) when construction is complete and/or final stabilization is achieved. This notice is called a Notice of Termination (NOT)

Additional information on the elements of the permits and compliance requirements can be found in the Construction Requirements of this subsection.

Other Permits

Municipal Separate Storm Sewer System (MS4) Permit

Runoff from ADOT projects located in municipalities may enter into local storm sewer systems, or into ADOT's own storm sewer systemThese municipalities operate under a Municipal Separate Storm Sewer System (MS4) permit and must ensure that their storm systems comply with regulations to prevent pollution. Prior to developing the SWPPP, the contractor and the ADOT Construction office should familiarize themselves with any local stormwater infrastructure and the applicable erosion control, stormwater quality or grading ordinances. The local jurisdictions may require separate permits or copies of the SWPPP for these activities. This requirement is not always shown in the special provisions. Therefore, the topic should be discussed at the preconstruction conference / partnering workshop. For more information about ADOT Stormwater infrastructure and MS4 permit, contact your District Environmental Coordinator.

Arizona Pollutant Discharge Elimination System (AZPDES) De Minimis General Permit (DMGP)

The DMGP permit (see AZDEQ website for latest permit) is administered by ADEQ and allows for short-term, low volume nuisance discharges that occur on construction projects located anywhere in the state. It can include subterranean dewatering, waterline flushing, and/or drilling activities. Separate coverage for activities outside the

Construction General Permit may be required under the Arizona DMGP through a separately filed NOI with ADEQ. The contractor and the Resident Engineer (RE) should determine what is required for any proposed De Minimis discharges prior to the start of construction. Any requirements must be reflected in the SWPPP and the separate NOI must be filed at least from 5 to 30 days in advance of the discharge, depending on the receiving waters. Monitoring may be required.

Multi-Sector General Permit (MSGP)

If the contractor is using a Department-furnished material source that is also used on other projects, the material source is required to have permit coverage under the MSGP. The contractor should contact ADOT Materials Group to determine that the material source is currently permitted. This permit is not required if the material source is dedicated for use on one project and the source is restored when the project is complete. In this case, the material source will be included in the SWPPP prepared under the CGP.

Commercial asphalt and concrete plants (regardless of the size of area disturbed) also fall under different sectors of the MSGP if they produce material for multiple projects. The contractor should ensure that all off-site material sources and industrial facilities have the necessary MSGP coverage.

Administrative Requirements

The RE is responsible for ensuring the following steps have been taken prior to ground-disturbing activities:

- Approve the contractor's proposed Erosion Control Coordinator (ECC)
- Review, amend and finalize the SWPPP
- Approve, certify and sign the SWPPP (submit SWPPP to ADEQ for approval on projects with impaired or unique waters)
- Prepare and file NOI (ensure the contractor does the same)
- Verify approval of the SWPPP and/or NOIs
- Fully implement the SWPPP

A flowchart (see Exhibit 104.09-1 Administrative Requirements Prior to Project Work Proceeding) has been provided illustrating the required steps to follow prior to beginning any soil disturbing activities.

Contractor's Erosion Control Coordinator (ECC)

The contractor is required to submit ECC documentation for approval by the RE prior to the start of the project. The RE should consult the 104.09 Stored Specifications for specific qualifications and certification of the ECC. Additional qualifications are required of the ECC on projects located within ¼ mile of impaired or unique waters.

Stormwater Pollution Prevention Plan (SWPPP)

The SWPPP is a management document that details what control measures the contractor and ADOT will implement to ensure that construction operations prevent or control the discharge of pollutants in stormwater runoff. This includes what Best Management Practices (BMPs) will be used, inspected and maintained to prevent erosion and to minimize the discharge of sediment and non–stormwater pollutants. The BMPs can be administrative practices such as periodic inspections, or structural such as a silt fence or track out protection.

SWPPP Development

The contractor's ECC should use the applicable Stored Specifications, project-specific Sediment and Erosion Control Plan sheets, and the ADOT Erosion and Pollution Control Manual to complete the SWPPP for the project. The Sediment and Erosion Control Plan sheets will not be considered a complete SWPPP, since they are prepared assuming standard construction practices. They also do not reflect the contractor's actual methods of construction,

access requirements, office location, materials storage locations or project phasing. A SWPPP is a site-specific living document that will be updated throughout the construction process.

The Construction Stormwater Pollution Prevention Plan (SWPPP) template is provided to assist those unfamiliar with the preparation of a SWPPP. The template serves as guidance only for the development of a site-specific SWPPP. Portions of the template may be completed in advance by ADOT Roadside Development and provided to the contractor. The template allows the user to input appropriate information after viewing instructions for each section. The template has been formatted to address all items in the ADEQ Construction SWPPP Checklist.

The contractor or the RE may contact ADOT Water Resources or the District Environmental Coordinator for assistance in the development of the SWPPP.

The ECC is responsible for preparing and finalizing the SWPPP, in a timely manner, with the support and direction of the RE before submittal of the NOI. The RE is responsible for reviewing the SWPPP and verifying its completeness. The RE is also responsible to ensure that the contractor does not perform any earth-disturbing activities prior to fully implementing the approved SWPPP and receiving permit coverage authorization. On larger projects, each 750,000 square feet sub-area must be identified in the SWPPP, along with the sequence of construction and installation plan for erosion control measures for each sub-area. The ADOT Erosion and Pollution Control Manual contains step-by-step guidance for preparing the SWPPP.

In addition, the SWPPP for non-tribal projects must address all requirements of the ADEQ SWPPP Checklist or Appendix A.1 of the ADOT Erosion and Pollution Control Manual and the requirements of the CGP. A copy of the CGP must be included with the SWPPP. A copy of the SWPPP must be kept on the project site.

On non-Tribal Land projects that are located within ¼ mile of impaired or outstanding Arizona waters (OAW), the SWPPP and NOI must be submitted to ADEQ for review and approval. On all other projects, the RE's signature will constitute approval of the SWPPP.

SWPPP Approval for Projects within ¼ Mile of Impaired or Unique Waters (Non-Tribal Lands)

Although SWPPPs must be prepared for all construction projects that will disturb one or more acres, SWPPPs must be submitted to ADEQ for review and approval if the project site is located within ¼ mile of impaired or unique waters. To determine whether any portion of the project lies within the ¼ mile buffer zone for impaired or unique waters, consult the project specifications, special provisions, and the Impaired, Unique and Not Attaining Waters Site Map via the Arizona Department of Environmental Quality webpage. A stormwater monitoring plan, prepared by the contractor, must be included as a component of the SWPPP when required by the Special Provisions. The contractor's stormwater monitoring plan shall comply with the current edition of the ADOT's Stormwater Monitoring Guidance Manual for Construction Activities Ground disturbing activities cannot commence until receipt of an authorization letter from ADEQ accepting the SWPPP and monitoring plan, or until the 32 business day review period has expired.

Stormwater Monitoring Plan Components

Monitoring may consist of visual, photographic, turbidity, and impairment parameter monitoring, depending on the classification of the impaired or unique water body and other factors. ADOT Roadside Development will determine the monitoring points and monitoring parameters within the contract documents and plans. ADEQ will make the final determination on the adequacy of the program. Special training will be necessary for ADOT construction personnel involved in the inspection and verification of the contractor's monitoring plan.

Notice of Intent

After the project SWPPP has been approved, the RE and contractor will each complete separate NOI forms for the project. On projects within ¼ mile of impaired or unique waters, the NOI and the SWPPP are submitted together for ADEQ's approval. Both NOIs must include a certification statement signed and dated by a responsible corporate

officer. The RE will act as the corporate officer for ADOT, and this responsibility cannot be delegated. The ADOT Construction Office and the contractor will submit the NOIs to ADEQ or EPA (both if the project is located on Tribal and Non-Tribal lands). Copies of the NOI and SWPPP will be maintained at the construction office and provided to the District office to be stored by the District Environmental Coordinator. The District Environmental Coordinator will be responsible for the transfer of all SWPPP documents from construction to ADOT maintenance at the end of construction.

Ground disturbing activities cannot be performed until the time frames defined by the CGP have been met and after the NOIs have been submitted. If the project has the potential to discharge into a MS4, the applicant must also forward a copy of the completed NOIs to the local municipality with jurisdiction (at the time it is submitted to ADEQ and/or EPA).

On projects with impaired or unique waters, coverage may not be authorized under this permit for 32 business days following receipt of the NOI and SWPPP. ADEQ or EPA may notify the contractor and ADOT within this time frame that there is cause for SWPPP amendment, or denial of coverage. If notification is not received in the 32 business day time frame, the contractor and ADOT may assume coverage under the CGP.

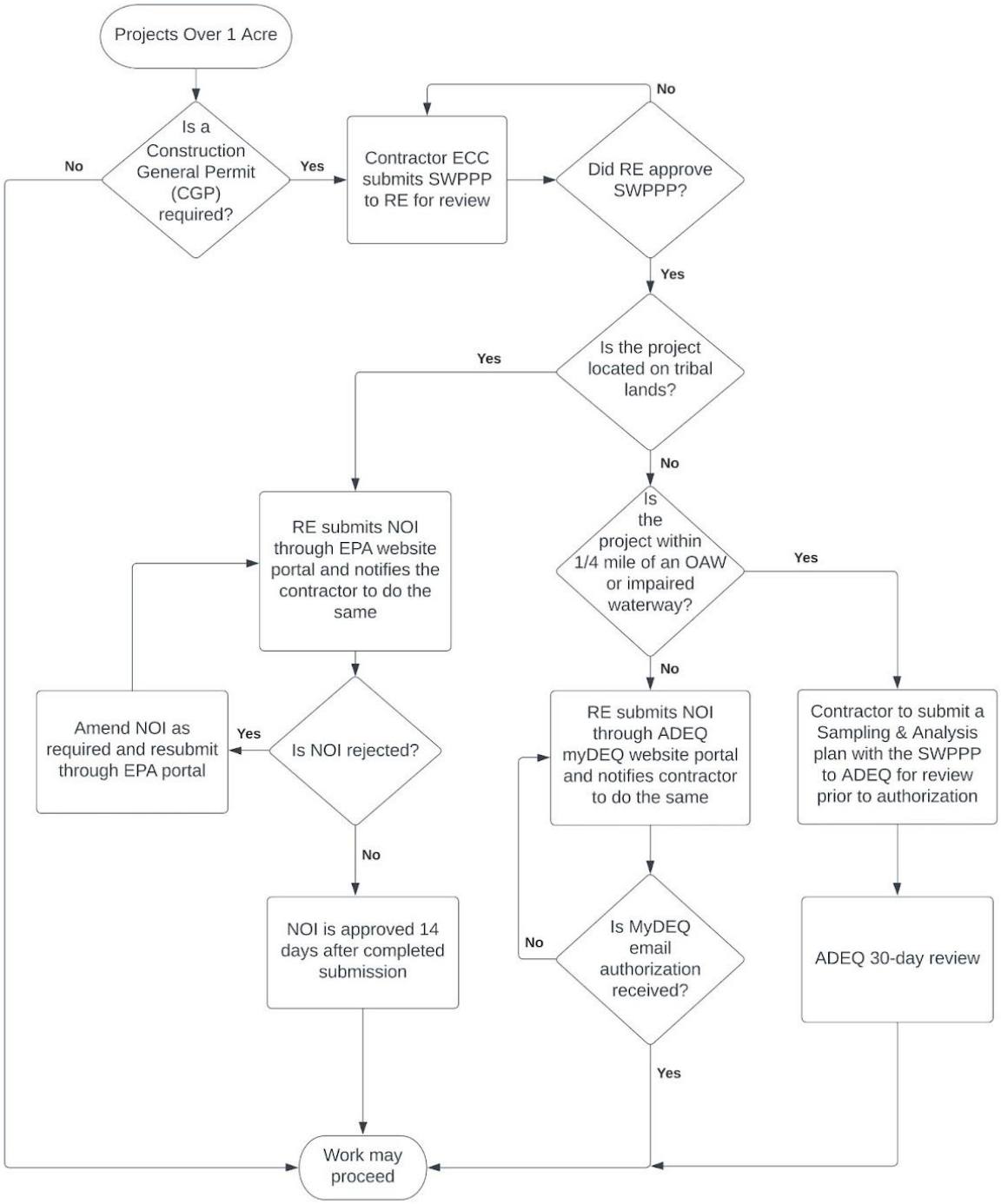


Exhibit 104.09-1 Administrative Requirements Prior To Project Work Proceeding

Construction Requirements

SWPPP Implementation

Upon receipt of the authorization letter or NOI authorization number (or expiration of the review period without notice), the SWPPP may be implemented. The contractor is responsible to ensure that:

- Installation of any Control Measures (CMs) that are required to be placed prior to ground disturbing activities. (Sediment control berms, silt fence, run-on diversions, etc.)
- Surface areas exceeding 750,000 square feet are not exposed to erosion until temporary or permanent erosion control devices have been installed and accepted by the RE. Any exceptions allowing more than one sub-area to be disturbed (such as excavation from one area and hauling to fill in another), must be approved by the RE
- Erosion protection (rock mulch, inlet and outlet riprap, and velocity dissipation) is placed immediately after the drainage structure is complete and functional
- Installation of permanent erosion control measures are given priority over reliance on temporary measures
- Stabilization measures are installed within 14 calendar days in portions of the site where construction activities have temporarily or permanently ceased, unless ground disturbing activities will resume in that area within 14 days (see exceptions in Part IV, D.4.b. of the CGP)

Inspections

The RE and the contractor's ECC are responsible for jointly inspecting the project regularly to ensure that CMs are being maintained in accordance with the CGP and associated SWPPP. During construction the RE and the ECC shall inspect the project at the frequency specified in the approved SWPPP (normally every 14 calendar days, and within 24 hours after any storm event of 0.50 inches or more).

Compliance Evaluation Report (CER)

ADOT should verify that the ECC is conducting thorough inspections and providing a timely copy of each CER. The CER can be found in Appendix F-3 of the Construction Stormwater Pollution Prevention Plan (SWPPP) template. The CER must be signed by the ECC. It is required that the ECC document these inspections and keep all documents related to the project SWPPP at the contractor's Field Office. Corrections of any deficiencies noted during inspections should also be documented and kept in the SWPPP.

The RE is advised to work closely with the contractor's ECC to make field adjustments as necessary: add CMs, maintain or repair CMs, and redesign deficient CMs. The SWPPP is intended to be an evolving plan, which should be revised as a result of changing conditions in the field. It is also the RE's responsibility to verify the use of certified erosion and pollution control materials in CMs, as specified in Section 810 of the Standard Specifications.

Construction Site Inspection Log

The Construction Site Inspection Log is a comprehensive field log that serves as the basis for completion of the CER. The ECC and ADOT Inspector should use this log during their required joint inspections. The SWPPP template includes a Construction Site Inspection Log, which may be tailored to specific projects. Deficiencies noted during inspections must be corrected within four calendar days or by the next anticipated storm event (whichever is sooner).

Construction Inspection Checklists

ADOT has implemented a process to evaluate conformance on each project. Two construction inspection checklists have been developed for stormwater discharge activities:

- Stormwater Administrative Checklist: Intended to be used by the RE and/or assistant, to ensure that submittals and documentation required by Subsection 104.09 of the Special Provisions are processed timely. One checklist per project is required
- Stormwater Erosion/Sediment Control Checklist: required to allow ADOT inspectors to document BMP conformance in the field on a monthly basis. It may be completed from the data collected during joint inspections utilizing the Construction Site Inspection Log

Additional construction inspection checklists are available for Landscape Construction, Landscaping Establishment and Class II Seeding. The checklists are required to be used by the ADOT personnel to aid in evaluating compliance. Performance evaluation statistics are collected on all projects to track overall conformity and to target areas for improvement.

SWPPP Amendments

SWPPPs must be amended within seven calendar days whenever:

- There is a change in design, construction, operation or maintenance at the construction site not previously addressed
- It is determined by regulatory officials that discharges are causing or contributing to water quality exceedance or that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges

Stabilization Record

The RE must verify that stabilization efforts are in place. These measures must be installed within 14 calendar days after construction activity has temporarily or permanently ceased for the affected sub-area. The ADOT SWPPP template provides forms for recording the following activity dates:

- When major grading activities occur
- When construction activities temporarily or permanently cease on a portion of the project
- When stabilization measures are initiated and completed (include reasons for delay, when applicable)

The contractor and ADOT must maintain the SWPPP and all associated documents for at least three years from the time that permit coverage is terminated as part of the permit requirement. ADOT is required to maintain all construction documents/records for 10 years after the FHWA acceptance date. All documentation should be made readily available to the public upon request, all such requests should be made through ADOT Risk Management. Visit the ADOT Record Retention Information and Policy Resources website for guidance and standard work.

Non-Compliance

The contractor’s ECC shall be rejected if, in the opinion of the RE, the conditions of the AZPDES General Permit or the approved SWPPP are not being fulfilled. The contractor’s ECC shall be rejected for any of the following:

- Failure to properly implement the SWPPP within three working days after written notification
- Failure to complete corrective measures within two calendar days after written notification. (24 hours if sediment flows directly into a body of water)
- Failure to perform routine maintenance within three working days after written notification

In the event of the ECC’s failure to comply with any of the above requirements, the RE will direct the contractor to stop all affected work and propose a new ECC as soon as possible. However, all erosion and pollution control items specified in the SWPPP shall be maintained at all times. No additional work on construction items affected by the SWPPP will be allowed until the RE has approved a new ECC and all corrective measures have been completed. The contractor will not be allowed compensation or an extension of contract time for any delays to the work.

Termination of Permit Coverage

Should final stabilization be achieved and the contractor has satisfactorily completed work, both ADOT (RE) and the contractor submit their NOTs to ADEQ/EPA. Final stabilization occurs when all of the following applicable events have taken place:

- For any areas that were disturbed during construction, are not covered over by permanent structures, and over which the operator had control during the construction activities, the operator has met the requirements for final vegetative or non-vegetative stabilization in Part 3.4 of CGP
- The operator has removed and properly disposed of all construction materials, waste and waste handling devices, and has removed all equipment and vehicles that were used during construction
- The operator has removed all temporary stormwater controls that were installed and maintained during construction
- The operator has removed all fuel storage, stockpiles, or other pollutant-generating activities associated with construction. If needed for long term use by ADOT maintenance, that will be included in the meeting when transferring the SWPPP to maintenance
- A uniform perennial vegetative cover with a density of 70 percent of the native background cover for the area has been established. A Registered Landscape Architect (RLA) must verify coverage compliance
    - On an individual project basis, there are some alternatives allowed under the 2020 CGP for final stabilization. Both the RE and the contractor should review Section 3.4 of the permit and include appropriate documentation in the SWPPP before using these alternatives as a condition of termination
- Permanent stabilization measures shown in the project plans or SWPPP (such as riprap, granite mulch, gabions or geotextiles) have been employed

There are instances when final stabilization has not occurred, but the contractor has satisfactorily completed work:

Seeding Projects

Seeding may not successfully germinate, grow and become established until after the next rainy season. When drought conditions occur, it may take a year or longer to achieve final stabilization.

The RE and RLA will jointly conduct a thorough inspection of the seeding, including CMs. This will take place approximately two weeks prior to the completion of the 45 calendar day maintenance period on projects with Class II Seeding as part of the SWPPP. If this work is accepted by the RE and RLA, the contractor may file a NOT at the end of the 45 day maintenance period. ADOT assumes responsibility for all stormwater protection and cannot submit its NOT until the seeding is established as described above. (See “Procedure for Assumption of the SWPPP by ADOT” below).

Future Landscape Projects

There are some cases where the final landscaping will occur on a separate project in the future. Two weeks prior to the final walk through, the RE will inspect all temporary CM’s and verify that they comply with the project plans and SWPPP. Upon final acceptance by the RE, the contractor may file a NOT. ADOT assumes responsibility for all stormwater protection and cannot submit its NOT until final stabilization of the future landscape project. (See “Procedure for Assumption of the SWPPP by ADOT” below).

In either case (one or two above), items listed on the Construction Inspection Log, the Construction Performance Evaluation Checklist, and the CER shall be checked for conformance. Any deficiencies, including those noted on the final walk-through, will be corrected to the satisfaction of the RE. All critical or major items on the Construction Inspection Checklist shall be in 100% conformance prior to acceptance of the project. Critical or major items are those “Conforming Attributes” rated 8 or 4, respectively.

Also, prior to final acceptance, a weatherproof sign or other notice must be erected near the main entrance of the construction site. This will be done via Supplemental Agreement. This notice must contain the following information:

- The current NOI, and the NPDES or AZPDES authorization number
- A brief description of the project, and the location of the SWPPP and the contact name and telephone number if the site is inactive or does not have an on-site location to store the plan

If the project is located within a MS4, the contractor must also forward a copy of the completed NOT to the municipality at the time it is submitted to ADEQ/EPA.

Procedure for Assumption of the SWPPP by ADOT

In the case that the contractor submits a NOT, ADOT will operate the CGP. The existing SWPPP will be provided to the District, and will be their responsibility going forward. Following acceptance of the project by ADOT, the Resident Engineer will set up a meeting with the District Environmental Coordinator, the project site's responsible Maintenance Supervisor (and possibly the Maintenance Superintendent) to hand over the SWPPP responsibilities to the DEC and Maintenance. This meeting should take place at the project site so that the RE can walk the DEC and others through the site to identify installed mitigation measures and turn over the SWPPP book to the DEC for future record keeping. At this time, a conversation should take place on any landscape establishment practices or concerns that will need to continue beyond the active project.

The District Environmental Coordinator, or another person who assumes responsibility for the SWPPP, will file the updated NOI, perform the mandatory routine inspections, maintain Control Measures, complete all required reports, and file a NOT when final stabilization is achieved and all temporary CMs have been removed. The SWPPP is an original record of the construction project and should be maintained and kept in accordance with Federal Highway and ADOT Guidelines.

A flowchart (see Exhibit 104.09-2 Administrative Requirements after Construction Completion) has been provided illustrating the required administrative steps to follow after construction has been completed.

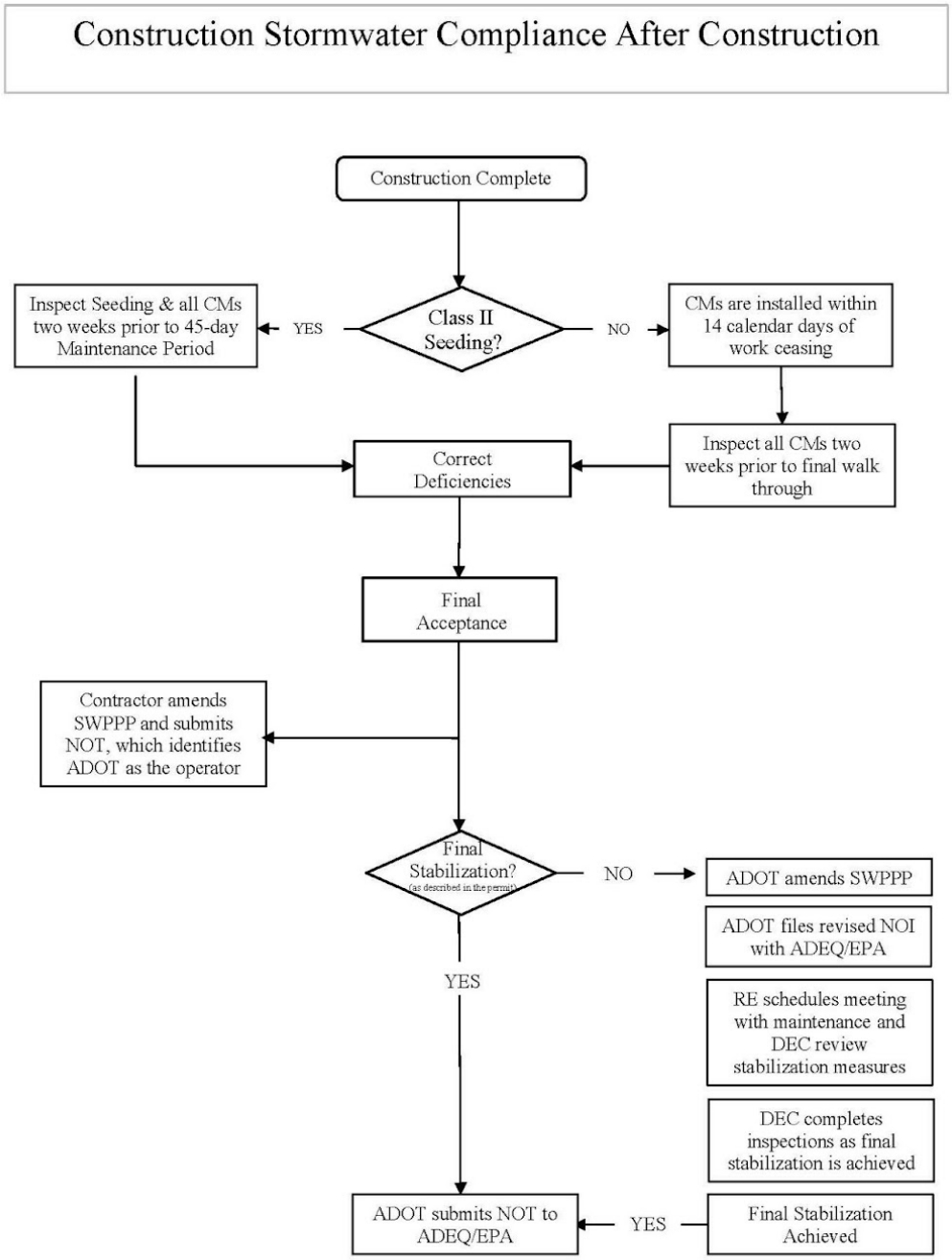


Exhibit 104.09-2 Administrative Requirements after Construction Completion

GLOSSARY OF SOIL EROSION TERMINOLOGY

Arizona Construction General Permit (AZCGP): ADEQ permit provides authorization to discharge under the Arizona Pollutant Discharge Elimination System program, in compliance with the provisions of the Arizona Revised Statutes, Title 49, Chapter 2, Article 3.1; the Arizona Administrative Code, Title 18 Chapter 9, Articles 9 and 10; and the Clean Water Act as amended (33 U.S.C. 1251 et seq.).

Arizona Department of Environmental Quality (ADEQ): state agency with primary responsibility for implementation of environmental statutes, including the AZCGP.

Arizona Pollutant Discharge Elimination System (AZPDES): ADEQ program for administering the requirements of the AZCGP (issuing, modifying, revoking, reissuing, terminating, monitoring, enforcing permits, and imposing and enforcing pretreatment requirements), incorporated by reference under Arizona Administrative Code (AAC) R18-9-A905.

Control Measures (CM): schedule of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the U.S.

Clean Water Act (CWA): an act passed by the U.S. Congress to control water pollution.

Compliance Evaluation Report (CER): inspection report that documents compliance of BMPs identified in the SWPPP.

Control Measures (CM): Formerly known as BMP's. These are the physical erosion control methods eg. wattles, berms, sediment logs, track out pads, silt fence, etc.

De Minimis General Permit (DMGP): issued by ADEQ that allows for discharges associated with potable and reclaimed water systems, subterranean dewatering, well development, aquifer testing, hydrostatic testing of specific pipelines, residential cooling water, charitable car washes, building and street washing, and swimming pool water.

Erosion Control Coordinator (ECC): person knowledgeable in the principles and practice of erosion and sediment controls, who is appointed by the contractor and approved by ADOT.

Environmental Protection Agency (EPA): federal agency with primary responsibility for implementation of federal environmental statutes.

Federal Construction General Permit (FCGP): issued by EPA that provides authorization to discharge under the National Pollutant Discharge Elimination System program, in compliance with 40 Code of Federal Regulations §122.26(a)(1)(v).

Impaired Water: waterway failing to meet water quality standards as defined by ADEQ/EPA. A list of these can be found on the Impaired, Unique and Not Attaining Waters State Map on the Arizona Department of Environmental Quality webpage.

Municipal Separate Storm Sewer Systems (MS4): municipal stormwater system that drains urban areas(including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains).

Multi-Sector General Permit (MSGP): federal permit given to a state under which certain industries may be granted a permit to discharge stormwater.

National Pollutant Discharge Elimination System (NPDES): EPA program for administering the FCGP (issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing

pretreatment requirements), under Sections 307, 318, 402, and 405 of the CWA.

Notice of Intent (NOI): forms completed and signed by construction site operators (contractor and ADOT) notifying ADEQ/EPA that the operators will comply with Arizona's or EPA's applicable stormwater general permits.

Notice of Termination (NOT): form that notifies the permitting authority (ADEQ/EPA) of an operator's intention to terminate coverage under the CGP.

Sediment and Erosion Control Plan Sheets: preliminary project plans prepared by ADOT that provide suggestions for types of structural temporary and permanent BMPs.

Stormwater Management Plan (SWMP): ADOT's statewide comprehensive plan for the implementation of the AZPDES permit requirements for MS4s.

Stormwater Pollution Prevention Plan (SWPPP): identifies construction/contractor activities that could cause pollutants in stormwater and a description of measures or practices to control these pollutants.

Total Maximum Daily Load (TMDL): The calculation of the maximum amount of an offending pollutant the stream can receive from all sources (land and air) and still meet water quality standards.

Unique Water: An unpolluted surface water classified as outstanding state resource water under Arizona Administrative Code R18-11-112. The Arizona Department of Environmental Quality and the EPA provide these waters on a registry.

104.10 Contractor's Responsibility for Work

Projects constructed in washes, creeks, rivers, and other streambeds are susceptible to flood damage. Other projects under construction may affect the drainage of adjacent properties and existing roadways. The preparation of a well thought-out temporary drainage and stormwater management plan can go a long way in both preventing unnecessary rework at the site and avoiding unwarranted conflicts with neighboring businesses and residences.

The intent of Subsection 104.10 is not to require an elaborate drainage plan, but to get the contractor to think about how to handle water flowing through the project. The plan should be integrated with the Storm Water Pollution Prevention Plan (SWPPP) discussed in the previous subsection.

Often there is confusion about the need for both a SWPPP and storm water management plan. The SWPPP discusses how to prevent erosions and spills at the job site. It may show all drainage channels (whether temporary or permanent) within the site and what erosion control measures are to be taken in those channels. On the other hand, the storm water management plan decides in a strategic sense how the site will be drained in order to minimize damage to the work and adjacent properties. It may require the contractor to construct temporary channels and berms, and phase the drainage work through the life of the project.

The storm water management plan looks at site drainage from an overall perspective. The SWPPP gets into the details of how erosion will be controlled when the storm water management plan is implemented. In some cases the storm water management plan may need to precede the SWPPP when existing or permanently constructed drainage facilities cannot be used for temporary drainage.

104.11 Damage by Storm, Flood or Earthquake

This subsection is known as the "acts of nature" provision which is common in most state DOT contracts. Acts of nature are basically natural occurrences of an unusual or extraordinary nature. The intent is to compensate the contractor for damages to the work caused by the forces of nature that ordinary foresight could not have prevented. The acts of nature provision is similar to the differing site condition in that it protects the Department

from unwanted contingencies in the contractors' bid that drive up the costs of construction. In this respect, the Department is acting as the contractor's insurer against the unusual and unforeseeable events of nature.

Of course what is unusual and unforeseeable have been open to interpretation over the years. As a result, this subsection attempts to narrowly define the types of occurrences that qualify as acts of nature. Occurrences are limited to tornadoes, strong earthquakes, storms and floods in which a state of emergency is declared and other natural events having all of the characteristics listed below:

- Catastrophic
- Unusual
- Sudden
- Unforeseeable
- Effects of the occurrence are not preventable or minimized by reasonable human foresight

To pass the test, the occurrence must meet all five conditions. If it fails to meet even one of the conditions, then it does not qualify as an act of nature.

For example, a 4-inch rain in August that washes away a partially constructed box culvert would not qualify as an occurrence. In Arizona, 4-inch rains are sudden and can be catastrophic, but are certainly not unusual or unforeseeable. Early winter shutdowns and late spring starts are not considered occurrences either. Although it may be unusual and unforeseeable, a prolonged winter could hardly be classified as sudden and catastrophic.

Subsection 104.11 also identifies the types of damages the contractor can or cannot claim.

Damages that can be claimed include:

- Idle equipment that cannot be placed elsewhere (get an agreement with the contractor for what equipment should be included)
- Repair work needed to restore the project to its condition before the occurrence,
- remobilization costs
- Direct project overhead
- Ripple effects that affect both this project and other projects (some of these costs, like lost profit, are excluded as noted below)
- Lost contract time

Damages that cannot be claimed include:

- Ripple effects from another project where an act of nature has occurred (damages need to be included in that project)
- Idle equipment and remobilization costs on federal aid projects (see the project's Special Provisions)
- Lost profit
- Home office overhead or other types of non-project overhead

To accurately determine the costs due to an act of nature, the Field Office should carefully document on a daily basis all labor, materials, and equipment used to repair damaged work and idle time for the contractor's equipment. It is suggested that the force account daily reports be completed and signed by both the contractor and the Department.

Most acts of nature are done on a force account basis and then converted to a change order once costs are agreed upon.

Ripple effects are more difficult to track and document. The best thing to do is meet with the contractor and discuss the impact an act of nature may have had on other work as well as other projects. Since the Department may be paying for these effects, the contractor has a duty to minimize these additional costs as much as possible.

The Resident Engineer has the right to be notified about ripple effects and can change the contractor's sequence and review the contractor's cost reports in order to control these costs.

104.12 Environmental Analysis

The contractor shall provide an EA for any material used on the project in accordance with Section 1001. If it is a new source that hasn't been previously approved the contractor shall prepare the document for review and approval by ADOT EPG. The contractor is to allow 60 calendar days for ADOT's review of the submittal and any subsequent submittals.

The Engineer may issue a time extension if the Department is delayed in their review AND it delays a controlling activity as shown on the contractor's schedule. It is important to make sure this review time is shown on the contractor's CPM.

104.13 Value Engineering Proposals by the Contractor

What is a Value Engineering Proposal (VEP)? Put simply, a VEP is an innovative and original proposal submitted by the contractor that delivers to the owner the intended scope of work under the original contract at a lower cost. This does not mean that work was unnecessarily deleted or a cheaper, lower quality material was used in the construction. The ultimate purpose of the VEP is to deliver the same or better product at lower overall cost to the owner. Further information is available on the Construction Group webpage regarding the VEP process, as well as previously completed VEP's on past projects.

VEP Concept

Prior to the submission of the formal VEP, the contractor shall submit a written concept of what the VEP will entail, ranging from concept of design, all proposed changes, potential cost savings, schedule impacts for both construction of the project or review of the VEP, and any other information which would aid the Department in its evaluation of concept.

When the contractor submits the initial VEP concept, the Resident Engineer, in consultation with the Designer(s), the Project Manager, State Construction Engineer, and the appropriate ADOT technical section, will need to evaluate the merits of the contractor's concept and inform the contractor, in writing, of the chance of the VEP concept succeeding. Any shortcomings will need to be discussed, including what submittals will be required to make a complete evaluation. The letter should clearly describe what the Department will want to see in the proposal. Being specific is key, the Department's response should provide more than quoting the requirements of the Standard Specifications.

It is important for the Resident Engineer to review and respond to the submittal within 10 calendar days. If the contractor is given approval to pursue the VEP, it should also be specified if some information does not need to be submitted due to the simplicity of the VEP. The submittal process should be as streamlined and expeditious as possible while still meeting the intent of the Standard Specifications.

Formal VEP Submittal

When the Department has agreed to allow the contractor to pursue the VEP, the Resident Engineer should be mindful of the time being taken on the development process. Per specification, the contractor is allowed 30 days to complete the formal submittal; therefore, the Resident Engineer should keep track of the design progress and whether the 30-day deadline is going to be met. If the VEP development process is at risk of eclipsing the deadline, the Resident Engineer should notify the contractor, in writing, of the impending deadline and for an update on the VEP's status. The Department is under no compulsion to accept a VEP. The rejection or termination of a VEP by the

Department should have no monetary or temporal ill effects on the contractor, as the contractor shall not bid a project anticipating approval of their VEP.

Once the contractor has formally submitted their VEP, the Department will need to begin their review of the VEP. Per specification, the Department has 30 days to review. During this time, the Resident Engineer will need to identify the parties needing to review the formal VEP and provide them with the contractor's documents. Once the review has been completed and a consensus has been reached, the Resident Engineer will need to respond, in writing, as to whether the Department accepts or rejects the contractor's VEP. If the Department elects to reject the VEP, the Resident Engineer should be thoroughly detailed in the response, noting the issues with the proposal, which lead the Department's decision to reject it.

Administrative costs that can be included in a VEP:

Contractor	ADOT
engineering time	engineering review time
plans preparation	technical meetings and reviews
Estimating	additional inspections and testing
clerical work	additional maintenance and operating costs
reproduction expenses	

Administrative costs that cannot be included in a VEP:

Contractor	ADOT
Project Manager's time	Resident Engineer's analysis and review
home office or corporate reviews	management review
overhead savings or lost overhead	CE cost savings
lost profit	

When setting up a VEP change order, it is important to clearly show the savings to both the Department and contractor. The Resident Engineer needs to keep in mind that the contractor's portion of the savings is added back into the change order as a separate item. All bid item deletions, quantity adjustments, and new pay items are listed first, and then a new item called "VEP savings" is created to pay for the contractor's half of the savings. Separate pay items should be created for any administrative expenses the Department may have. However, the contractor's administrative expenses are usually included in any new items of work. VEP change orders shall utilize pay items 9248001 through 9248031 to memorialize the non-item specific costs/savings. Finally, any documents used to develop the VEP should also be referenced in the specifications section of the change order, along with any other stipulations that were agreed to as part of the VEP.