

SPECIFICATIONS AND
CONTRACT DOCUMENTS
FOR

SCOTTSDALE MUNICIPAL AIRPORT
DETENTION BASIN AND DRAINAGE IMPROVEMENTS
SCOTTSDALE, ARIZONA

BID NO. 90-25

ENGINEERING DIVISION
LIBRARY

Property of
District of MC Library
return to
Durango
AZ, AZ 85009

Property of
District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009



Gilbertson Associates, Inc.
Consulting Civil Engineers

(602) 951-8131

SPECIFICATIONS AND
CONTRACT DOCUMENTS
FOR

SCOTTSDALE MUNICIPAL AIRPORT
DETENTION BASIN AND DRAINAGE IMPROVEMENTS
SCOTTSDALE, ARIZONA

BID NO. 90-25

PROJECT: F5008

DESCRIPTION: See Call for Bids

OWNER: The City of Scottsdale

ENGINEER: Gilbertson Associates, Inc.
(602) 951-8131

BID OPENING TIME:

BID OPENING DATE:

BID OPENING LOCATION: Purchasing Department
9191 East San Salvador Drive
Scottsdale, Arizona 85258

Set No. _____

December, 1989



SPECIFICATIONS AND
CONTRACT DOCUMENTS
FOR
SCOTTSDALE MUNICIPAL AIRPORT
DETENTION BASIN AND DRAINAGE IMPROVEMENTS
SCOTTSDALE, ARIZONA



Prepared by:

Gilbertson Associates, Inc.
Consulting Civil Engineers
15100 North 78th Way, Suite 100
Scottsdale, Arizona 85260-2485

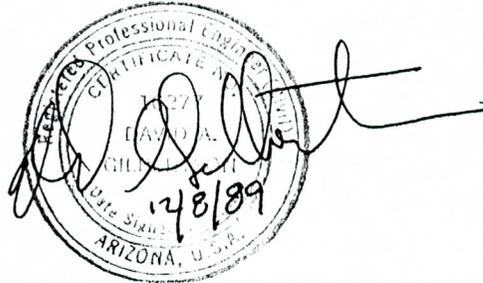
BID CALL NO. 90-25
PROJECT NO. F5008

CITY OF SCOTTSDALE - INVITATION TO BIDS

TABLE OF CONTENTS

PROJECT: Scottsdale Municipal Airport
DETENTION BASIN AND DRAINAGE
IMPROVEMENTS
SCOPE: Paving and Drainage Improvements

<u>Contents</u>	<u>No. of Pages</u>
Notice Inviting Bids	1
Information for Bidders	5
General Conditions	9
Special Provisions	5
Bid Form	2
Schedule of Bid Items	3
Bid Bond	1
Notice of Award	1
Contract	2
Contract (Performance) Bond	1
Labor and Materials (Payment) Bond	1
Certificate of Insurance	1
Notice to Proceed	1
Affidavit Regarding Settlement of Claims	1
Final Pay Estimate	1
Final Acceptance	1
Assignment of Time Certificates	2
FAA AC150/5370-2C	10





December 21 1989

D.E. Sagramoso, P.E.
Chief Engineer and General Manager
Flood Control District of Maricopa County
3335 West Durango Street
Phoenix, Arizona 85009

Attention: Edward A. Raleigh, P.E.
Project Manager

Re: P.V.S.P.- Scottsdale Airport Detention Basin

Dear Ed,

Enclosed please find a copy of the construction plans, specifications, engineers cost estimate, a construction project budget, a copy of our tentative project schedule and a copy of a proposal by Gilbertson Associates, Inc. to provide construction surveys and as-builts for the Scottsdale Airport Detention Basin project.

In accordance with the P.V.S.P. agreement, we hereby request the use of P.V.S.P. funds in the amount of \$ 550,000.00 to be spent as detailed in the enclosed Project Budget.

If you have any questions please feel free to call me at your convenience.

Sincerely,

Sal Misseri
Salvatore K. Misseri, P.E.
Senior Project Coordinator

COST ESTIMATE
SCOTTSDALE AIRPORT DETENTION BASIN
 November, 1989
 JOB #23003

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL COST
BASE BID - DETENTION BASIN EXCAVATION AND OUTLET CHANNEL IMPROVEMENTS					
1	REMOVE EXISTING A.C. PAVEMENT	2,652	SY	\$2.00	\$5,304.00
2	REMOVE EXISTING CATCH BASIN AND PLUG PIPES	1	LS	200.00	200.00
3	REMOVE EXISTING PIPES	1	LS	200.00	200.00
4	REMOVE EXISTING FENCE	740	LF	2.00	1,480.00
5	REMOVE EXISTING GABIONS	1	LS	1,000.00	1,000.00
6	CLEAR AND GRUBB	1	LS	5,000.00	5,000.00
7	EARTHWORK	1	LS	230,000.00	230,000.00
8	LINED CHANNEL (SLOPE PROTECTION)	3,735	SY	15.00	56,025.00
9	PLAIN RIPRAP WITH FABRIC AND CUTOFF WALL	19	SY	35.00	665.00
10	GABIONS	105	SY	40.00	4,200.00
11	6" CONCRETE CUTOFF WALL	50	LF	10.00	500.00
12	6' CHAIN LINK FENCE	2,785	LF	9.00	25,065.00
13	SEEDED RIPRAP	85	SY	40.00	3,400.00
TOTAL					\$333,039.00
ALTERNATE I - DETENTION BASIN INLET IMPROVEMENTS					
14	CATCH BASIN STRUCTURE	1	EA	6,000.00	\$6,000.00
15	36" STORM DRAIN	440	LF	55.00	24,200.00
16	36" END SECTION	2	EA	450.00	900.00
17	LINED CHANNEL	1,440	SY	15.00	21,600.00
18	SEEDED RIPRAP	78	SY	40.00	3,120.00
TOTAL					\$55,820.00
ALTERNATE II - 73rd STREET AND THUNDERBIRD ROAD INTERSECTION IMPROVEMENTS					
19	REMOVE EXISTING A.C. PAVEMENT	1,215	SY	\$2.00	\$2,430.00
20	REMOVE EXISTING 6" VERTICAL CURB AND GUTTER	406	LF	2.00	812.00
21	SAWCUT, REMOVE, AND REPLACE ASPHALT CONCRETE	21	SY	30.00	630.00
22	REMOVE EXISTING CONCRETE BIKEPATH	781	SF	0.50	390.50
23	REMOVE EXISTING CONCRETE VALLEY GUTTER AND APRON	882	SF	0.50	441.00
24	REMOVE EXISTING CONCRETE DRIVEWAY AND APRON	1,020	SF	0.75	765.00
25	REMOVE EXISTING BOMANITE CONCRETE	55	SF	3.00	165.00
26	REMOVE EXISTING CONCRETE SLOPE PROTECTION	34	LF	2.00	68.00
27	SUBGRADE PREPARATION	1,327	SY	1.50	1,990.50
28	2" AC/10" ABC PAVEMENT	1,226	SY	10.00	12,260.00
29	2" AC/6" ABC PAVEMENT (MIN.)	101	SY	10.00	1,010.00
30	6" VERTICAL CURB AND GUTTER	427	LF	6.00	2,562.00
31	8' BIKE PATH	851	SF	2.00	1,702.00
32	CONCRETE DRIVEWAY ENTRANCE	440	SF	3.50	1,540.00
33	SURVEY MARKER	1	EA	100.00	100.00
34	ADJUST MANHOLE FRAME TO GRADE	1	EA	275.00	275.00
35	WATERLINE VERTICAL REALIGNMENT WITH VALVES (2 EA)	1	LS	6,000.00	6,000.00
36	ADJUST VALVE BOX TO GRADE	3	EA	100.00	300.00
37	CATCH BASIN C.O.P. TYPE "M-1" WITH 17' WING	1	EA	3,000.00	3,000.00
38	CATCH BASIN C.O.P. TYPE "M-1" WITH 6' WING	1	EA	1,400.00	1,400.00
39	CATCH BASIN C.O.P. TYPE "M-1" WITH 6' WING, MODIFIED	1	EA	2,000.00	2,000.00
40	CATCH BASIN C.O.P. TYPE "M-2" WITH 17' AND 10' WING	1	EA	3,200.00	3,200.00
41	CATCH BASIN C.O.P. TYPE "M-1" WITH 10' WING	1	EA	2,200.00	2,200.00
42	42" STORM DRAIN	321	LF	70.00	22,470.00
43	30" STORM DRAIN	206	LF	55.00	11,330.00
44	24" STORM DRAIN	48	LF	50.00	2,400.00
45	18" STORM DRAIN	36	LF	50.00	1,800.00
46	BOMANITE CONCRETE	45	SF	5.00	225.00
TOTAL					\$83,466.00
BASE BID TOTAL					\$333,039.00
ALTERNATE I TOTAL					55,820.00
ALTERNATE II TOTAL					83,466.00
GRAND TOTAL					\$472,325.00

**PROJECT BUDGET
SCOTTSDALE AIRPORT DETENTION BASIN
CONSTRUCTION PHASE**

1) CONSTRUCTION COST	\$ 472,325.00
2) SURVEYS AND ASBUILTS	23,000.00
3) CONSTRUCTION MONITORING, INSPECTION AND TESTING	21,225.00
4) CONTINGENCY	<u>33,450.00</u>
<u>TOTAL</u>	550,000.00

CURRENT PROJECT SCHEDULE
 CAPITAL PROJECT MANAGEMENT DIVISION
 THROUGH November 1989

Title: Scottsdale Airport Detention Basin Project No.: F-5008 Coordinator: Sal Misseri
 Limits/Scope: Construct detention basin at Southwest end of airport with twin box culverts under Thunderbird Rd. and a lined channel to the existing channel on the east side of Scottsdale Road.

Milestones	Status		DUE NEXT MONTH	Comments
	Projected	ACTUAL		
DESIGN PHASE				
Complete Preliminary Plans	06/09/89	06/26/89		
Complete final plans and specification	9/4/89(a,c,d)		12/26/89	Delayed 112days due to ADOT project and priority work for another City project.
BIDDING PHASE				
Advertisement for bids	1/8/90(b,c,d)			
Pre-bid conference	1/18/90			
Receive and open bids	2/2/90			Delayed 90 days due to late submittal of final plans and priority work required for another City project.
AWARD OF BID				
City Council award of bid	02/19/90			
CONSTRUCTION PHASE				
Notice of award	02/21/90			
Pre-construction conference	02/27/90			
Notice to proceed-begin construction	03/05/90			
Complete construction	08/03/90			

- (a) 08/01/89 Schedule revised
- (b) 10/02/89 Schedule revised
- (c) 10/31/89 Schedule revised
- (d) 11/30/89 Schedule revised



December 15, 1989

Mr. Salvatore K. Misseri, P.E.
Contract Coordinator
City of Scottsdale
7447 East Indian School Road
Scottsdale, Arizona 85251

RE: Scottsdale Municipal Airport Detention Basin

Dear Sal:

Gilbertson Associates, Inc. is pleased to submit this proposal for construction surveying services for the above noted project. We will provide on set of stakes for the items listed for the fees stated herein. The following fees include travel time, calculations, and coordination time to accomplish each item.

SCOPE OF SERVICES

Base Bid

- A. Rough Grade - Set stakes at 100 foot intervals with cuts or fills to finished grade for detention basins, mass grading areas, and channelization. Delineate stock pile areas for placement of excess material.

For a Lump Sum Fee of \$6,000.00

- B. Final Grade - Set stakes at 100 foot intervals at grade (bluetops) for mass grading areas. Set stakes at 50 foot intervals for channel construction referencing top of bank and toe of slope for both sides.

For a Lump Sum Fee of \$10,000.00

Total Base Bid \$16,000.00

Alternate I

- A. Storm Drain - Stake storm drain pipe for alignment and grade at 50 foot intervals. Stake cut-off walls and grading for outlet and inlet structures.

For a Lump Sum Fee of \$1,200.00

B. Channel

1. Rough Grade - Set cut of fill stakes at 100 foot intervals referencing top of bank and toe of slope for each side.
2. Final Grade - Set stakes at 50 foot intervals referencing top of bank and toe of slope for each side.

For a Lump Sum Fee of \$1,200.00

Total Alternate I \$2,400.00

Alternate II

A. 73rd Street and Thunderbird Intersection Improvements

1. Mark existing curb and pavement for removal.
2. Stake new curb and catch basins.
3. Subgrade bluetops.
4. ABC bluetops.
5. Survey Monuments.

For a Lump Sum Fee of \$2,500.00

B. Storm Drain - Stake pipes for alignment and grade at 50 foot intervals.

For a Lump Sum Fee of \$750.00

Total Alternate II \$3,250.00

As-builts

Prepare record drawings of project construction and provide original plans to City of Scottsdale.

For a Lump Sum Fee of \$1,350.00

Total Base Bid, Alternates I and II \$23,000.00

This proposal is subject to the enclosed general provisions. Any additional work requested will be addressed through a separate contract or on a time and material basis per the enclosed Fee Schedule.

Please call if you have any questions or if we can be of further assistance.

Very truly yours,



David A. Gilbertson, P.E.
President

Notice Inviting Bids

BID CALL NO. 90-25
PROJECT NO. F5008

NOTICE INVITING BIDS

NOTICE IS HEREBY GIVEN that the Council of Scottsdale, Maricopa County, State of Arizona, ordered: construction of Scottsdale Municipal Airport taxiway and apron pavement preservation and drainage improvements.

SEALED BIDS WILL BE RECEIVED until 3:00 p.m., M.S.T. October 6, 1989 by the Purchasing director at 9191 East San Salvador Drive, Scottsdale, Arizona 85258. At this time, the bids will be publicly opened and read aloud. Each bid shall be accompanied by a cashier's check or a bid bond acceptable to the City of Scottsdale for a sum of not less than five percent (5%) of the amount of bid, made payable to the order of the City of Scottsdale.

No bid shall be considered unless it is submitted on the bid form provided by the City of Scottsdale.

Contact Salvatore K. Misseri, 994-7869, Contract Administrator for additional information.

Plans, specifications, and bid forms may be obtained from the Purchasing Division at 9191 East San Salvador Drive, Scottsdale, Arizona for the sum of \$25.00. This fee is non-refundable.

For those interested in purchasing plans and specifications by mail, there will be an additional advance charge of \$10.00 to cover postage and handling. Therefore, a check made payable to the City of Scottsdale in the amount of \$35.00 should accompany the request.

All bids received in response to this Invitation For Bid shall, where applicable, be in conformance with the City of Scottsdale Standard Bid, Contract and Purchase Commitment Terms and Conditions as incorporated in Scottsdale Revised Code, Section 2-198.

Pre-bid Conference

1. A pre-bid conference to discuss questions that may have arisen regarding this project will be held on September 1, 1989 at 9:30 A.M. at the at 7447 East Indian School Road, Suite 205, Scottsdale, Arizona. All bidders are invited to attend.
2. The purpose of the conference is only for the clarification of the plans and/or specifications. Neither the Engineer nor the City of Scottsdale shall be held responsible for any oral instructions. Any changes in the plans and/or specifications will be in the form of an addendum, which will be forwarded to all bidders.

CITY OF SCOTTSDALE, ARIZONA

By: _____
Larry Franklin
Purchasing Manager

Information for Bidders

INFORMATION FOR BIDDERS

1. SUBMITTING BIDS

- 1.1 No bid will be considered unless it is submitted on the bid forms contained herein and presented, sealed, in the envelope provided herein.
- 1.2 **BIDDERS MUST ENTER THEIR NAME AND ADDRESS IN THE UPPER LEFT CORNER OF THE ENVELOPE PROVIDED AND THE TIME AND DATE OF THE BID OPENING IN THE SPACE PROVIDED IN THE LOWER LEFT CORNER OF THE ENVELOPE.**
- 1.3 Bids received after the time and date specified above will be returned unopened to the bidder. A bid may be withdrawn prior to the time set for opening bids. No bid may be withdrawn for a period of sixty (60) days after the date set for the receipt of bids.
- 1.4 Bids accepted by the City constitute a legally binding offer. In addition, the successful bidder will be required to sign the City of Scottsdale standard construction contract.

2. BONDS REQUIRED

- 2.1 Each bid must be accompanied by a cashier's check made payable to the order of City of Scottsdale in the sum of not less than 5% of the total bid, or a bond with sufficient sureties to be approved by the City in the sum equal to 5% of the total bid, and naming the City of Scottsdale as obligee. Such security shall be returned to all except the three lowest responsible bidders within twelve (12) days after the opening of bids, and the three (3) remaining securities returned within three (3) days after the bidder to whom the City Council has awarded the contract has executed the contract.
- 2.2 Bonds in the following amount will be required at the time of executing the formal contract:
 - 1) Contract (Performance) Bond - One Hundred (100%) percent of the contract price.
 - 2) Labor and Materials (Payment) Bond - One Hundred (100%) percent of the Contract Price.
- 2.3 At the time of approval of any additional work by CHANGE ORDER the Contractor may be required to provide an additional amount for Contract (Performance) Bond and/or Labor and Materials (Payment) Bond as deemed appropriate by the Contract Administrator or designee.
- 2.4 Performance and Payment Bonds must be provided on Statutory forms included in these documents.

3. INTERPRETATIONS, ADDENDA

- 3.1 **THE CITY OF SCOTTSDALE WILL NOT BE RESPONSIBLE FOR BIDDERS ADJUSTING THEIR BIDS BASED ON ORAL INSTRUCTIONS BY ANY MEMBER OF THE CITY STAFF OR BY THE CITY'S CONTRACTED CONSULTANT OR AGENT. BIDS DEVIATING FROM THE SPECIFICATIONS CONTAINED HEREIN BY ANY**

MEANS OTHER THAN AN AUTHORIZED ADDENDUM BY THE PURCHASING DIVISION WILL BE SUBJECT TO REJECTION.

- 3.2 Should a bidder find an ambiguity, inconsistency or error in the drawings or project manual, or should he be in doubt about their meaning, he shall at once notify the Engineer, who will prepare a written addendum. Neither the City nor the Engineer will be responsible for oral instructions or information. In the event questions are received less than four (4) days before the bid opening, a determination will be made by the Purchasing Manager concerning the sending of a written addendum which may result in the establishment of a new bid opening date.
- 3.3 Questions or interpretations required by contractors, suppliers, dealers, and other participants bidding shall be directed to the Engineer. Each bidder shall designate a specific individual from their organization to communicate with the Engineer.
- 3.4 Any Addenda issued by the City during the time of bidding are to be included in the Bid, and will become a part of the Contract. Bidders must acknowledge receipt of all Addenda on the Bid in the space provided.
- 3.5 Addenda will be mailed to each person or firm recorded as having received the Bidding Documents or will be available wherever the Bidding Documents are kept.

4. AWARD/REJECTION OF BIDS

The City Council reserves the right, as the interest of the City requires, to reject any or all bids, to waive any informality in bids received, to award a contract by accepting or rejecting any alternate bid(s) (additive or subtractive) and reserves the right to reject the bids(s) of any bidder who has previously failed to perform competently in any contract with the City.

5. EXECUTION OF CONTRACT

The Contractor shall execute the contract with the City of Scottsdale within ten (10) days after receiving the Notice of Award for the contract.

6. START AND COMPLETION OF WORK

Work shall start as specified within the NOTICE TO PROCEED and shall be completed within 90 calendar days after such issuance.

7. MEASUREMENT AND PAYMENT

Final payment shall be made within forty (40) days after approval of the final invoice by the City Inspector and a Contractor's Affidavit Regarding Settlement of Claims is received. The above affidavit shall be submitted on forms provided in this specifications book.

8. PLANS AND SPECIFICATIONS TO SUCCESSFUL BIDDER

The successful bidder may obtain five (5) sets of Plans and Specifications for this project from the City, or its designee, at no cost. Additional sets will be furnished at cost.

9. CONTRACTOR'S INSURANCE COVERAGE

9.1 Compensation Insurance

The Contractor shall secure and maintain during the life of his contract, Workmen's Compensation Insurance for all his employees at the site of the project, and in case any of the work is sublet, the Contractor shall require each subcontractor similarly to provide Workmen's Compensation Insurance for his employees unless such employees engaged are covered by the Contractor. In the event any class of employees engaged in the work under this contract at the site of the project is not protected by Workmen's Compensation Statute, the Contractor shall provide and similarly shall cause each Subcontractor to provide special insurance for the protection of such employees not otherwise protected.

9.2 Public Liability and Property Damage Insurance

The Contractor shall secure, and maintain during the life of this Contract, such public liability and property damage insurance, both general and automobile liability, as shall protect him, any Subcontractor performing work under this contract, and the City of Scottsdale from all claims for bodily injury, including accidental death, as well as for all claims for property damage arising from operations under this contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. The Contractor agrees to include the City of Scottsdale as an additional insured in all the insurance policies required under this contract and such insurance shall be primary.

9.3 The Minimum Limits Required Are:

Workmen's Compensation Insurance shall be secured and maintained in accordance with the Workmen's Compensation Laws of Arizona, as revised.

Comprehensive General Liability Insurance including broad form property damage, premises-operations, independent contractors, contractual, and automobile liability shall be secured and maintained in an amount not less than \$5,000,000 combined single limit.

The General Contractor subletting any part of the work awarded to him shall provide a contingent liability policy in the same amount as provided for in his public liability insurance.

9.4 Policy Shall Include Coverage For:

- 1) Damage caused by collapse or structural injury.
- 2) Damage to underground utilities.
- 3) Liability assumed in construction agreements and other types of contracts or agreements in effect in connection with the subject insured operations.
- 4) All owned, hired, or non-owned automotive equipment used in connection with the insured operation.

When the project included construction of a new, or modification of an existing building (in addition to the above types):

Fire and Extended Coverage plus Vandalism and Malicious Mischief for the Full Amount of the Contract, less costs for any foundation, underground utilities and/or landscaping, with the City of Scottsdale named as an additional insured.

9.5 Certificate and Cancellation

The Contractor shall submit a Certificate of Insurance evidencing the required coverage and limits stated above, within ten (10) days of receiving the Notice of Award.

Insurance evidenced by this Certificate shall not expire, be cancelled, or be materially changed without fifteen (15) days prior written notice to the City, and that statement must appear on the Certificate.

If a policy does expire during the life of the Contract, a renewal Certificate of the required coverage must be sent to the City of Scottsdale fifteen (15) days prior to the expiration date.

9.6 Indemnification

The Contractor shall defend, indemnify, and hold harmless the City of Scottsdale and any jurisdiction or agency issuing permits for any work included in the project, their officers, agents, and representatives from all damages, claims or liabilities and expenses (including attorney fees) of any character or nature brought on account of any injuries or damage sustained by any person or property arising out of the work done in fulfillment of the construction of the improvement under the terms of this agreement, on account of any act of omission by the Contractor or his agents, or from any claims or amounts arising or recovered under Workmen's Compensation Laws or any other law, by-law, ordinance, or order or decree.

10. PERMITS

Permits shall be obtained from the City of Scottsdale at no cost to the Contractor.

10.1 City of Scottsdale code, as revised, Sections 11-211 through 11-224 outlines the requirement for Encroachment Permits. Permits when required must be acquired from Development Services.

10.2 Field Engineering must be notified prior to the commencement of work and Field Engineering will represent the City for the purpose of inspecting the work within the right-of-way for conformance to Plans, Specifications and detail as well as public safety requirements as authorized by City code.

10.3 The Contractor shall secure and maintain during the life of the contract, State of Arizona, and City of Scottsdale transaction privilege (sales) tax permits.

10.4 The Contractor shall state his Arizona Contractor's License Number and classification as evidence that he is qualified to contract the work as indicated in the specifications.

11. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

11.1 It is the responsibility of each bidder before submitting a bid to, (a) examine the contract documents thoroughly, (b) visit the site to become familiar with local conditions that may

affect cost, progress, performance, or furnishing of the work, (c) consider federal, state, and local laws and regulations that may affect cost, progress, performance, or furnishing of the work, (d) study and carefully correlate bidder's observations with the contract documents, and (e) notify the Engineer of all conflicts, errors, or discrepancies in the contract documents.

The successful bidder shall not be allowed any extra compensation by reason of any matter or thing which could have been determined by undertaking any of the foregoing actions.

11.2 Information and data reflected in the contract documents with respect to underground facilities at or contiguous to the site is based upon information and data furnished to the Owner and the Engineer by owners of such underground facilities or others, and the Owner does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.

11.3 Before submitting a bid, each bidder will, at bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests, and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface, and underground facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing of the work and any and all difficulties or restrictions relating to the performance of the work and which bidder deems necessary to determine its bid for performance and furnishing of the work in accordance with the time, price and other terms and conditions of the contract documents..

Failure of the successful bidder to examine the conditions of the work will not relieve the successful bidder of his obligation to furnish all materials and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in his bid.

11.4 On request in advance, the Owner will provide each bidder access to the site to conduct such explorations and tests as each bidder deems necessary for submission of a bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.

11.5 The submission of a bid will constitute an incontrovertible representation by bidder that the bidder has complied with every requirement of this Article 11, that he has carefully examined and understands the contract documents, that he has carefully read and understands the bidding documents, that without exception the bid is premised upon performing and furnishing the work required by the contract documents and such means, methods, techniques, sequences, or procedures of construction as may be indicated in or required by the contract documents, and that the contract documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the work. The failure of any successful bidder to examine the contract documents or to visit the project site and to acquaint himself with the conditions relating to the work shall not relieve the successful bidder from the obligations as to his bid in any manner.

12. REGISTERED/LICENSED

To be considered responsive, the Contractor must be registered/licensed in the State of Arizona if such registration/license is normally a requirement.

General Conditions

GENERAL CONDITIONS

1. SCOPE

The work covered by these specifications consists of furnishing all labor, equipment and materials for construction of: Scottsdale Municipal Airport Detention Basin and drainage improvements in accordance with "THE GENERAL CONDITIONS", the "SPECIAL PROVISIONS", and Drawing Number F5008 consisting of twelve (12) plan sheets, dated September, 1989, herein designated as the "PLANS".

2. STANDARD SPECIFICATIONS AND DETAILS

Except as otherwise noted, construction of this project and all work done under this contract shall be in accordance with these specifications and all applicable ARIZONA DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, STANDARD SPECIFICATIONS for ROAD AND BRIDGE CONSTRUCTION, and STANDARD DETAILS (A.D.O.T.), MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF PHOENIX STANDARD DETAILS AND LATEST SUPPLEMENTS, and UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION sponsored and distributed by Maricopa Association of Governments (MAG) and MAG STANDARD DETAILS including the latest approved revisions and City of Scottsdale supplements thereto in force at the time of bid advertisement, which shall be referred to hereinafter as the "STANDARD SPECIFICATIONS". In all cases where accepted standards (AWWA, ANSI, AASHTO, ADOT, ASTM, etc.) are referred to in the "STANDARD SPECIFICATION", the latest revisions as of bid advertisement shall prevail. Copies of the STANDARD SPECIFICATIONS and supplements may be obtained at the MAG Office at 1820 West Washington, Phoenix, Arizona. Copies of City supplements may be obtained from Development Services at 7447 East Indian School Road.

City of Scottsdale Supplements as revised and the "GENERAL CONDITIONS AND SPECIAL PROVISIONS" of these specifications provide for the supplementation, modification and/or amendments to the "STANDARD SPECIFICATIONS".

In the event of any conflict between the "GENERAL CONDITIONS" and "SPECIAL PROVISIONS" and the requirements of the "STANDARD SPECIFICATION AND DETAILS" or "PLANS", these "GENERAL CONDITIONS AND SPECIAL PROVISIONS" shall prevail.

3. DEFINITIONS

Definitions shall be as stated in Section 101.2 of the "MAG STANDARD SPECIFICATIONS" with the following additions:

City: CITY OF SCOTTSDALE

Contract Administrator: SALVATORE K. MISSERI
Design Engineer: GILBERTSON ASSOCIATES, INC.
Owner: CITY OF SCOTTSDALE

4. CONSTRUCTION PRACTICE

All construction practices and procedures shall conform to Section 107 of the Contract Works Hours and Safety Standards Act, (US Stat. 96, 40 USC 327) the latest revisions shall prevail.

5. TRAFFIC CONTROL

- a. Complete street closures will not be permitted unless specified in the Special Provisions Section of this bid document.
- b. Adequate barricades and lighted warning signs shall be installed and maintained by the Contractor throughout the duration of the project. All traffic control shall be in accordance with the "City of Phoenix Traffic Control Manual" unless otherwise specified in the Special Provisions section of this bid document.
- c. The City Traffic Engineering Manager shall stipulate the traffic restrictions and/or minimum requirements throughout the construction period.
- d. The Contractor shall submit a construction schedule and traffic supplement for "Street Barricading and Channelization" to the City Traffic Engineer for approval and/or modification before construction is initiated.

6. RESPONSIBILITY FOR PRIVILEGE (SALES) TAXES

The Contractor shall be responsible for payment of all State of Arizona and City of Scottsdale transactions privilege (sales) taxes due on construction income, whether or not such taxes are specifically separated in the bid amount.

7. INSPECTION

- a. Inspectors may be stationed on the work to report to the Contract Administrator or his Designee as to the progress of the work, the manner in which it is being performed, and also to report whenever it appears that materials furnished or work performed by the Contractor fails to fulfill the requirements of the specifications and contract. The Inspector may direct the attention of the Contractor to such failure or infringement but such inspection shall not relieve the Contractor from any obligation to furnish acceptable materials or to provide completed construction that is satisfactory in every particular.
- b. In case of any dispute arising between the Inspector and the Contractor as to material furnished or the manner of performing the work, the Inspector shall have the authority to reject materials or suspend the work until the question and issues can be referred to and decided by the City. Inspectors are not authorized to revoke, alter, enlarge, relax, or release any requirements of the specifications. Inspectors shall in no case act as foremen or perform other duties for the Contractor or interfere with the management of the work by the Contractor.
- c. Inspection or supervision by the Contract Administrator or Designee shall not be considered as direct control of the individual workman and his work. The direct control shall be solely the responsibility of the Contractor.

8. HINDRANCES AND DELAYS

In the event that the Contractor sustains damages as a result of expenses incurred by a delay for which the City is responsible, the Contractor and the City shall negotiate to determine the amount of such damages. This provision is made pursuant to Arizona Revised Statutes Section 34-221 (C) and is effective only if the delay caused by the City is unreasonable under the

circumstances and was not within the contemplation of the parties. This provision shall not be construed to void any provision of this contract pertaining to notice of delays, arbitration or other settlement provisions applicable to disputes, or provisions relating to liquidated damages.

9. LIQUIDATED DAMAGES

The Contractor shall pay as liquidated damages the sum of 500.00 Dollars for each consecutive calendar day of work after the date established as the contract completion date. This amount replaces amounts specified in Section 108.9 of the MAG Standard Specifications.

10. LOSS AND DAMAGES

All losses or damage arising out of the nature of the work to be done or from the action of the elements, or from any foreseen circumstances, in the prosecution of the same, or from any unusual obstructions or difficulties which may be encountered in and/or during the prosecution of the work, or from any casualty whatsoever of every description, shall be sustained and borne by the Contractor at his own cost and expense.

11. PROTECTION OF FINISHED OR PARTIALLY FINISHED WORK

The Contractor shall properly guard and protect all finished or partially finished work, and shall be responsible for the same until the entire contract is completed and accepted by the City.

Any payment for completed portions of the work shall not release the Contractor from such responsibility, however, he shall turn over the entire work in full accordance with these specifications before final settlement shall be made.

In case of suspension of the work for any cause whatever, the Contractor shall be responsible for the project and shall take such precautions as may be necessary to prevent damage to the project and shall erect any necessary temporary structures, signs, or other facilities at no cost to the City.

12. CLEAN UP

After all work under the Contract is completed, the Contractor shall remove all loose concrete, lumber, wire, reinforcing, debris, and other materials not incorporated in the work from the site of the work. Clean up shall include the removal of all excess pointing mortar materials within pipes.

13. FINAL ACCEPTANCE

"Final Acceptance" shall mean a written final acceptance of the work by the Contract Administrator in the form of the Notice of Final Acceptance. The Contract Administrator or his Designee shall make the final acceptance promptly after all work under the contract has been completed in accordance with the contract documents and after final inspection.

14. RIGHTS-OF-WAY

The MAG Standard Specifications 107.12 shall hereby be modified to read as follows: The Contractor, at his own expense, is responsible for the acquisition of any necessary temporary easements for construction purposes, storage and maintenance purposes, which are required in

addition to existing easements and/or rights-of-way secured by the City as indicated upon the plans.

15. DUST PREVENTION

The Contractor shall take whatever steps, procedures, or means required to prevent abnormal dust conditions due to his construction operations in connection with this contract. The dust control measures shall be maintained at all times during the construction of the project, to the satisfaction of the City, in accordance with the requirements of the Maricopa County Health Department Air Pollution Control Regulations. This is not a pay item. MAG Subsection 104.2.5 shall apply.

16. EXISTING UTILITIES TO BE RELOCATED

If any utility is relocated or rebuilt to accommodate the Contractor's construction methods and available equipment, the expense shall be borne by the Contractor.

17. DAMAGED DOMESTIC WATER LINES

Any water lines damaged during construction shall be replaced at the Contractor's expense as per the requirements of the MAG Standard Specifications.

18. DAMAGED SEWER LINES

Any sanitary sewer line damaged during construction shall be replaced by a Contractor properly licensed to install sanitary sewers. All work shall be done as per MAG Standard Specifications.

19. EXISTING TRAFFIC AND STREET SIGNS AND TRAFFIC SIGNAL EQUIPMENT

The Contractor shall use due care when excavating at or near intersections where traffic signal underground conduit is located. The Contractor shall notify the Traffic Engineering Office twenty-four (24) hours in advance of any work at such intersections. The Contractor shall be responsible for the installation and maintenance of temporary overhead traffic signal cable as specified by the Traffic Engineering Manager when underground conduit is to be severed by excavations at the intersection. At no charge, the Traffic Engineering Manager shall have all traffic signal underground conduit located, and he shall provide the necessary City technicians to assist the Contractor in the transfer of the wiring to the temporary cables installed by the Contractor. The Contractor shall provide an off-duty uniformed Police Officer to direct traffic while the traffic signal is turned off and the wiring is transferred. The Contractor shall be responsible as specified by the Traffic Engineering Manager for the repair and restoration of all traffic signal overhead and underground items that have been damaged or modified.

The City does not permit the splicing of Magnetic Detector Loops.

20. DUMPING AND DISPOSAL OF WASTE

The Contractor is responsible for the cost to dispose of all waste products including excess earth material which will not be incorporated into the work under this contract. The waste product referred to herein shall become the property of the Contractor.

21. EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this contract, the Contractor will follow the Federal Government's Affirmative Action guidelines to ensure that employees or applicants applying for employment will not be discriminated against because of race, color, religion, sex, or national origin.

22. SUPERVISION BY CONTRACTOR

The Contractor will supervise and direct the work. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor will employ and maintain on the work a qualified supervisor or superintendent who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The representative shall have full authority to act on behalf of the Contractor and all communications given to the representative as shall be as binding as if given to the Contractor. The representative shall be present on the site at all times as required to perform adequate supervision and coordination of the work. Where appropriate, all Provisions of MAG Section 105.5 will be applicable.

23. CHANGES IN THE WORK

The City may at any time, as the need arises, delete items or order changes within the scope of the WORK without invalidating the contract. If such changes increase or decrease the amount due under the contract documents, or in the time required for performance of the work, an equitable adjustment shall be authorized by written Change Order.

The City will execute a formal Change Order based on detailed written quotations from the Contractor for work related changes and/or a time of completion variance. All Change Orders are subject to approval by the City.

The City, also, may at any time, by issuing a written Field Order, make changes in the details of the work not affecting contract price or time. The Contractor shall proceed with the performance of any changes in the work so ordered unless the Contractor believes that such written Field Order entitles him to a change in contract price or time, or both, in which event he shall give the Owner written notice thereof within one (1) day after the receipt of the Field Order, and the Contractor shall not execute such changes pending the receipt of an executed Change Order. If the Contractor performs work authorized under a Field Order and subsequently requests a change order for that work, the City shall not be obligated to issue a Change Order.

24. CHANGES IN CONTRACT PRICE

The Contract Price may be changed only by a written Change Order issued by the City and approved by Flood Control District of Maricopa County. The Engineer shall not be permitted to issue change orders. The value of any work covered by a Change Order or of any claim for increase or decrease in the Contract Price shall be determined by one or more of the following methods in the order of precedence listed below:

- a. Unit prices previously approved.
- b. An agreed lump sum.
- c. The Provision of MAG 109.5.

25. CONSTRUCTION STAKES

Construction Staking shall be furnished by the City.

Construction stakes shall be provided in conformance with the Provisions of MAG 105.8 unless specified otherwise within the Special Provisions.

26. TESTING OF MATERIALS

All tests shall be made and results certified by an independent laboratory approved by the City. The Contractor shall pay for all tests required to certify the suitability of materials. The City of Scottsdale will arrange and pay for required construction tests on a one time basis. Additional tests or retests required as a result of initial test rejections or failures will be paid for by the Contractor.

Rejected materials shall be immediately removed from the site and shall not be used in any form for any other part of the work.

27. SOURCE OF MATERIALS

Material source shall be detention basin excavation area.

MAG Specification, Section 106, shall apply as will ADOT Standard Specifications 1982, Section 106.01, .03, and .11 which outline controls and Section 1001-1, -2, and -4, concerning approval of Contractor-Furnished Source and supplemental agreements in regards to environmental analysis and the liability for materials testing costs.

Contractor-Furnished material sources situated in the 100-year flood plain of any stream or watercourse, and located within 1.0 mile upstream and 2.0 miles downstream of any highway structure or surfaced roadway crossing, shall not be allowed.

A Contractor-furnished source shall be defined as a material source which is neither an ADOT-furnished source nor a commercial source as herein defined.

A commercial source shall be defined as a material source in which the owner or producer has been for at least one year regularly engaged during regular business hours on a regular basis in the processing and selling of sand, rock, ready-mix portland cement concrete, asphaltic concrete and other similar products normally produced and sold to all parties. The company shall have an Arizona retail sales tax license.

The location of any new material source or existing non-commercial material source proposed for use on this project shall be reviewed by the appropriate agency having flood plain management jurisdiction over the area of proposed source location. Contractor shall obtain a letter from the agency addressed to the City Public Engineering Manager certifying that the proposed source location conforms to the conditions herein and such applicable Standard Specifications as referenced.

28. METHOD OF MEASUREMENT AND PAYMENT FOR PAY ITEMS

Except as noted in the Special Provisions, measurement and payment for all bid items in the Bid Form shall be as described in the MAG Standard Specifications, subject to the following:

- a. Payment for each item shall constitute payment in full for the furnishing of all excavation, back filling, materials, equipment, appurtenances, labor, plant and tools, necessary to provide a completely finished, and serviceable project, as shown by the plans and described in the specifications. Each item shall be complete with all necessary connections, testing, and related work accomplished to provide for the satisfactory use and/or operation of the total project.
- b. No additional payments will be made for incidental work related to any items unless specifically noted and called for in the bid. Payment will be made at the unit price or lump sum price bid in the bid. Unit prices in writing will control in event of any dispute.
- c. Measurements of the completed work will be made in place, with no allowance for waste, and as may be more particularly described in the description of the various items of work. Ten percent (10%) of the amount of each progress pay estimate shall be retained or securities shall be posted in accordance with ARS 34-221 until final acceptance by the City of all work.

29. APPROVED EQUALS

Plans and specifications may contain references to equipment and/or materials (patented or unpatented) or "approved equal(s)". Such references shall be regarded as establishing a standard of equality, finish, appearance, performance, or as indicating a selection or design based upon compatibility with existing equipment, materials or details of construction inherent to the project design. Such reference shall not be construed as limiting the selection to a specified item, source or design detail. The use of an alternate or substitute, item or source as an approved equal will be permitted, subject to the following procedure pursuant to ARS 34-104.

- a. The bidder shall submit a written proposal for substitution to the Purchasing Director at least eight (8) days prior to the original deadline. The proposal shall include all information necessary for proof of equality and suitability for substitution including benefits, engineering design and data (calculations) and/or detailed plan modifications which may be required by the substitution. The bidder shall submit additional information and/or samples when required.
- b. The Contract Administrator or his representative, will evaluate the information submitted, perform tests when necessary and make comparisons in order to approve or reject the proposal. If rejected, the Contract Administrator shall give notice of rejection to the City and the Bidder submitting the proposal.
- c. The City, if the proposal is accepted, shall issue a written addendum to the Invitation for Bid specifying the approved equals and publish the modification in the same manner as the original bidding documents.

30. LOCAL CONDITIONS, RULES AND REGULATIONS

The bidder shall familiarize himself with the nature and extent of the Contract documents, work to be performed, all local conditions, and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the work.

31. WORKMANSHIP

Where not more specifically described, workmanship shall conform to all of the methods and operations of best standards and accepted practices of the trade or trades involved and shall include all items of fabrication, construction, or installation regularly furnished or required for completion.

All work shall be executed by tradesmen skilled in their respective lines of work.

When completed, all work shall have been durably and substantially built and shall present a neat, workmanlike appearance.

32. RECORDS AND AUDIT RIGHTS

Contractor's and Subcontractor's books, records, correspondence, accounting procedures and practices, and any other supporting evidence relating to the contract (all the foregoing hereinafter referred to as "Records") shall be open to inspection and subject to audit and/or reproduction during normal working hours by the City of Scottsdale, or its authorized representative, to the extent necessary to adequately permit evaluation and verification of any invoices, payments, or claims based on Contractor's or Subcontractor's actual costs (including direct and indirect costs and overhead allocations) incurred, or units expended directly in the performance of work under this Contract. For the purpose of evaluating or verifying such actual or claimed costs or units expended, the City of Scottsdale or its authorized representative shall have access to said records from the effective date of this Contract for the duration of the work until three (3) years after the date of final payment by the City of Scottsdale to Contractor pursuant to this Contract.

The City of Scottsdale or its authorized representative shall have access, during normal working hours, to all necessary Contractor and Subcontractor facilities, and shall be provided adequate and appropriate work space, in order to conduct audits in compliance with the provisions of this Article. The City of Scottsdale shall give Contractor or Subcontractor reasonable advance notice of intended audits.

Contractor shall require Subcontractors to comply with the provisions of this Article by insertion of the requirements hereof in any subcontract pursuant to this Contract.

33. NATIVE PLANTS

The Contractor shall take whatever steps, procedures, or means necessary to remove, move, displace, and save all native plants within the contract work area in accordance with the City of Scottsdale's Ordinance No. 1438, Native Plants, and all applicable state and county statutes, ordinances, codes, and other policy requirements and recognized methods, procedures, techniques, and equipment for protection, salvage, and handling of all plants to be moved from the construction area. This is a no pay item unless specified upon the Schedule of Bid Items.

34. GUARANTEE - WARRANTY

The provisions of MAG Section 108.8 shall apply with the following additional requirements:(a)

- a. Should the Contractor fail to begin repairs or corrective work within fourteen (14) calendar days after receipt of written notice from the City, the City may perform the necessary work and the Contractor hereby agrees to reimburse the City for actual cost.

- b. The warranty period on any part of the work so repaired or replaced shall be extended for a period of twelve (12) months from the date of such repair or replacement.
- c. This guarantee will not apply to damage caused by normal wear and tear or by acts beyond the Contractor's control.

35. CANCELLATION OF CITY CONTRACTS

The City may cancel any contract or agreement, without penalty or obligation, if any person significantly involved in initiating, negotiating, securing, drafting or creating the contract on behalf of the City's departments or agencies is, at any time while the contract or any extension of the contract is in effect, an employee of any other party of the contract with respect to the subject matter of the contract. The cancellation shall be effective when written notice from the City is received by all parties to the contract, unless the notice specifies a later time (A.R.S. 38-511).

Special Provisions

SPECIAL PROVISIONS

1. OVERTIME COMPENSATION - CONSTRUCTION OBSERVATION SERVICES

In the event the Contractor schedules work beyond the hours of a standard 8-hour work day or 40-hour work week, the Engineer shall be notified 48 hours in advance to make necessary arrangements to provide construction observation services. The Contractor shall reimburse the Engineer for such services at a rate of Forty-Five Dollars (\$45.00) per hour plus reimbursable expenses.

2. CONSTRUCTION SCHEDULING

A. General

The purpose of this section is to promote safety at Scottsdale Municipal Airport during construction of this project.

The Contractor shall be responsible for delineating the limits of the runway and taxiway operations areas to preclude inadvertent entry into these locations by Contractor's forces. The Contractor shall install and maintain cones or other similar devices acceptable to the Engineer 40 feet from taxiway centerline or 40 feet from edge of any apron and 150 feet from the centerline of the runway when working or hauling near these air operations areas.

The Contractor's equipment and personnel are not permitted within 500 feet of the end of the runway without approval of the Airport Director and airport control tower.

In addition, the Contractor will be required to conduct grading and storm drain construction within 150 feet of the runway centerlines and 500 feet from runway end. The Contractor may work in these areas only upon control tower approval, and shall schedule his operations to minimize the time he is working on those areas. At all times the Contractor is working in these areas he shall be in contact with the airport control tower by two-way radio. Radios shall be provided by the Contractor. At the end of each working day or when the Contractor is not actively engaged in work in these areas, the Contractor shall remove all construction equipment and eliminate any rough grades from within this area. Any work in these areas must be approved ten (10) days in advance by the Airport Director.

B. Construction Schedule

The Contractor shall provide a detailed construction schedule to the Engineer before or during the preconstruction conference. Scheduling must be acceptable to the Owner prior to the start of construction.

3. ADDITIONAL LIMITATIONS, RESTRICTIONS, AND REQUIREMENTS

A. Limitations on Construction

- 1) Open-flame welding or torch cutting operations shall be prohibited.

- 2) Open-trenches, excavations, and stockpiled material at the construction site shall be prominently marked with red flags and lighted by light units during hours of restricted visibility and/or darkness.
- 3) Stockpiled material shall be constrained in a manner to prevent movement resulting from aircraft blast or wind conditions in excess of 10 knots.

B. Motorized Vehicles

- 1) When any vehicle other than those routinely used on the apron, taxiways, runways, and runway approach area is required to travel over any portion of that area, it shall be escorted by a vehicle properly identified to operate in the area or provided with a flag on a staff so attached to the vehicle so that the flag will be readily visible. The flag shall be not less than 3 feet square consisting of a checkered pattern of international orange and white squares of not less than 1 foot on each side and displayed in full view above the vehicle. A flag or escort vehicle is not required for vehicles which have been painted, marked, and lighted for routine use on aircraft movement areas. Any vehicle operation on the movement area during the hours of darkness shall be equipped with a flashing yellow dome-type light.
- 2) Vehicular traffic crossing active movement areas must be controlled by two-way radio with the control tower, by escort or flagman. The clearance shall be confirmed by the driver's personal observation that no aircraft is approaching his position. Aircraft have the right-of-way at all times.
- 3) Specific vehicular crossing points across active aircraft movement areas will be designated by the Airport Director, and the Contractor's vehicles may cross the active movement areas only at those locations so designated. Flagman should be posted and check for debris after crossing.
- 4) Any unauthorized intrusion into an active aircraft movement area by the Contractor's (or any subcontractor's) personnel or equipment will result in immediate suspension of the project until such time that the Owner is satisfied that no further intrusions will occur.

C. Construction Activity

Details on necessary procedures for marking and lighting taxiway and apron closures may be found in Federal Aviation Administration Advisory Circular 150/5340-1E. Warning signs shall have flashing yellow lights and be located in taxi areas in advance of the construction site.

D. Debris

Waste and loose material capable of causing damage to aircraft landing gears, propellers, or being ingested in jet engines shall not be placed on active aircraft movement areas. Material tracked on these areas shall be removed continuously during the work project by means of power vacuum sweepers.

4. ELECTRICAL POWER, TELEPHONE AND WATER

Unless specified otherwise, the Contractor shall make his own arrangements for electrical energy, telephone and water services. Subject to the convenience of the utility, he may be permitted to connect to existing facilities where available, but he shall meter and bear the cost of such as required by the utility companies. If any utility is relocated for Contractor's convenience, cost shall be borne by the Contractor.

5. CONTRACTOR'S STORAGE AREA AND ACCESS

Contractor shall make his own provisions for storage of equipment and materials outside airport property prior to notice to proceed being issued. Access to the construction will be at location approved by airport manager. All Contractor's forces must enter and exit the airport at this point only.

6. REMOVAL OF EXISTING IMPROVEMENTS

Sawcutting of existing improvements shall be included in the per unit price bid. All sawcutting shall conform to M.A.G. Specification 336 and meet the approval of the Engineer.

7. SEEDED RIPRAP

Payment for seeded riprap shall be made at the per unit price bid and shall include all excavation and compaction necessary to meet lines and grades shown on the plans and shall conform to M.A.G. Specification 220 for grouted riprap with the following additions:

Rip-rap which will be exposed on the surface shall be hand placed such that all rip-rap is securely embedded in mortar. Immediately upon completion of placement, all excess mortar shall be removed from the exposed surfaces by brushing or other approved method. Prior to final acceptance, all mortar shall be removed from exposed rock surfaces by sandblasting or other approved method. The finished surface shall be even and tight and shall not vary from finish grades depicted on plans by more than 3". Rock size shall be 4" to 10" and waste concrete will not be permitted.

Coloring agent shall be added to mortar per the requirements of the City of Scottsdale.

8. LINED CHANNEL AND SLOPE PROTECTION

Payment for lined channel and slope protection shall be made at the per unit price bid and shall include all excavation and compaction necessary to meet lines and grades shown on the plans.

9. CONCRETE STRUCTURES

All concrete structures, except reinforced box culverts, shall conform to M.A.G. Specification 505 and shall be paid for at the per unit price bid and shall include, but not necessarily be limited to excavation, backfill, compaction, and any incidental work necessary for the complete construction of the structure.

10. SURVEY AND AS-BUILTS

All surveys and as-builts shall be provided by the City.

11. TRAFFIC CONTROL

Traffic control for construction shall conform to Section 5 of the General Conditions and the following requirements:

Contractor shall provide two drawings, one indicating construction equipment and material delivery access routes to and from the construction site. The second shall indicate barricading of Thunderbird Road and 73rd Street for storm drain improvement construction, providing access to the fire department driveways at all times.

Payment for this bid item shall include all barricades, signs, lights, police officers, flagmen, etc. needed to keep traffic moving at a minimum of one 10' lane in each direction through the work sites. All traffic control signing, haul routes and barricading plans will be submitted to the Inspector for approval prior to starting the work and all changes to the plans will be approved before being made. All traffic control will be in accordance with the City of Phoenix Traffic Control Manual.

Striping of new AC pavement shall be included in this item. The striping and pavement legend markings shall be hot-sprayed thermoplastic material conforming to all requirements of ADOT Standard Specification Section 704, Edition 1982, as revised July 13, 1983. All unsuitable striping shall be covered with slurry seal meeting the requirements of MAG Section 322 before painted taper striping is done. The approximate L.F. quantity of 1' wide slurry seal over existing stripes shall be included in the bid proposal.

The Contractor shall notify the Inspector seven (7) days in advance of the time work will be started in areas requiring the rerouting of traffic, traffic lane striping, and removal of street signs. The foregoing shall apply to progressive modifications of traffic routing within an area in which work is in progress.

Whenever the Contractor's operations create a condition hazardous to the public, he shall furnish such flagmen and guards as are necessary to give adequate warning to the public of any dangerous conditions. Flagmen and guards, while on duty and assigned to give warning and safety devices shall conform to applicable City, County, and State requirements. Should the contractor appear to be neglectful or negligent in furnishing adequate warning and protection measures, the Inspector may direct attention to the existence of a hazard and the necessary warning and protective measures shall be furnished and installed by the contractor without additional cost to the City. Should the Inspector point out the inadequacy of warning and protective measure, such action of the Inspector shall not relieve the Contractor from any responsibility for public safety or abrogate his obligation to furnish any pay for those devices. The installation of any general illumination shall not relieve the Contractor of his responsibility for furnishing and maintaining any protective facility. Contractor will develop routes for haul trucks on public streets which will be submitted in writing through the Inspector to the City of Scottsdale, and City Traffic Engineering Manager, for review and approval action. The submittal shall include, but not be limited to, the proposed travel direction, turn movements, hours of use, street sweeping, watering and clean-up. All signs to be used on the job during periods of darkness shall be reflectorized. Traffic control shall conform to the MAG Specification Part 400, Scottsdale Traffic Department Requirements, and the Phoenix Barricade Manual.

12. EXCAVATION

Payment for all excavation shall be included in the per unit price bid for each item requiring excavation. All excess excavation or spoil material shall be disposed of in accordance with the plans or off-site by the Contractor at no additional cost to the City. Where appropriate, clean excess material may be used on site if approved by the Contract Administrator.

13. STORM DRAIN CONSTRUCTION

All pipe under asphalt concrete pavement shall be rubber gasket reinforced concrete pipe Class III. For the remaining storm drains the Contractor shall have the option of installing rubber gasket reinforced concrete pipe, reinforced concrete pipe, cast-in-place concrete pipe, Advanced Drainage Systems Inc. N-12 pipe, or approved equal, subject to the provisions of MAG Specification 618, 620, and 735, and the requirements of these Special Provisions. Cast-in-place concrete pipe, Advanced Drainage Systems Inc. N-12 pipe, or approved equal, must have backfill and compaction method approved by Inspector. Pull mandrel through pipe to test for roundness of entire length of pipe within 20 days of installation. This cost to be included in the cost of the pipe installation. Approved equals shall be submitted per the general conditions and pipe material shall meet appropriate City standards. Backfill for all pipe shall be Type I.

The unit bid prices shall include all costs for installing the storm drains, including excavation, backfill, compaction, collars, removing pavements, curb and gutter, regrading and restoring ground cover, and any other work not included in other Bid Items.

A. Design Criteria For All Pipes

Conduit used in this project shall be designed in accordance with accepted structural design methods and procedures. All conduit under pavement shall be designed to the minimum equivalent round pipe D-load, using an H20 highway live loading. Under pavement criteria applies to conduit under the City streets and future pavement widths. Equivalent round pipe D-load using a dead load calculated at 130 lbs. cu. ft. shall be used for the strength criteria for conduit not under pavement. If pre-cast concrete pipe is used, Class III strength shall be required unless shown otherwise on the plans.

The various conduit materials may require minor changes in details other than indicated on the drawings. It shall be the responsibility of the Contractor, at no cost to the City, to prepare shop drawings of details of construction, should the conduit material proposed by the Contractor require modifications of details shown on the plans. The shop drawings shall be submitted to the Contract Administrator for approval at the preconstruction conference or two weeks prior to the start of construction of the pipelines.

All tests required to comply with these specifications will be at Contractor's expense.

B. Catch Basins

The unit price will include the cost for the removal and replacement of curb, gutter, and sidewalk. Catch basins shall conform to City of Phoenix Standard Detail P-1569, Type M-1 and M-2, wing lengths per plan.

C. Cost In-Place Concrete Pipe

Shall conform to City of Phoenix Supplement to M.A.G. Section 620 except as amended herein. Section 620.2.4 should read "Concrete shall be Class A except minimum strength at 28 days to be 3,500 psi and minimum cement content to be 560 lbs. per cubic yard. The slump shall not be less than 1½ inches nor more than 3 inches." Section 620.3.2 amend paragraph (B)-(2) to read "1/12 of the I.D. plus ½ inch." Bid price shall include the cost of a certified lab technician and testing. Five cylinders shall be taken for every 50 c.y.. Slump tests shall be required by the inspector. The contractor shall provide detailed design calculations supporting the minimum design criteria called for in these special provisions. The design shall follow the requirements of A.C.I. 346-81, except section 9.6 which shall be deleted.

14. MODIFICATIONS TO MARICOPA ASSOCIATION OF GOVERNMENTS STANDARD SPECIFICATIONS:

A. Trench Excavation, Backfilling, and Compaction - Section 601

601.2.1 Excavation (General) - Add the following:

For those storm drain pipes to be located in existing drainage ditches, the existing ditches must be filled and compacted (per M.A.G. Specification 211) to an elevation of not less than one foot above the elevation of the top of the proposed storm drain pipe prior to the excavation of the trench for the storm drain pipe.

601.3 Protection of Existing Utilities - Add the following:

601.3.5 Existing Storm Drains: Prior to the construction of any new catch basins, manholes, or storm drain pipe, the existing storm drains connecting to the new structures shall be cleaned of existing silt and debris a minimum of 5' by a means acceptable to the engineer.

601.4.2 Foundation, Bedding, Backfilling, and Compaction (Bedding) - Add the following:

Bedding for all pipes may consist of native material providing that the native material contains no pieces larger than 1½ inches and is free of broken concrete, broken pavement, wood, or other deleterious material. See Detail on Sheet 12 of plans.

601.4.5 Foundation, Bedding, Backfilling, and Compaction (Compaction Methods) - Delete the first five subparagraphs and add the following:

Water consolidation will not be permitted.

15. FENCING

Unit price bid shall include all hardware, box culvert attachments, and handrails to provide a complete and in place fence with required FAA warning signs attached at required spacing. Fence shall be constructed with post tops being level or on a gradual slope and in a straight

alignment. Dips or misaligned posts will not be allowed unless otherwise approved by City Inspector.

If construction mandates removal at existing airport perimeter fence prior to new fence being in place, Contractor shall provide temporary fencing to enclose airport property until new fencing is constructed. Prior to temporary fence installation, approval shall be obtained from Airport Director.

Prior to removal of existing fencing, contractor shall verify with City Inspector if fabric may be reused with a subsequent and appropriate reduction in fence cost.

All handrail paint color and type shall be approved by the City Inspector.

16. EARTHWORK

Unit price bid shall include, but not necessarily be limited to, all excavation, loading, hauling, embankment, compaction, grading, berming, stockpiling of material, removal of deleterious material, reloading and respiling, and any incidental work necessary to meet lines and grades shown on plans.

17. SIMULTANEOUS PROJECTS

This project may conflict with possibly on-going Arizona Department of Transportation (A.D.O.T.) Airfield Construction Project A.D.O.T. TRACS A5912/5010 N 913.

18. DESIGN CHANGES

The City reserves the right to adjust design grades or the location of drainage structures prior to construction at the direction of the Engineer, without additional cost to the City.

19. SURVEY MONUMENTS

Locations will be staked when requested by the inspector. Adjustments required to survey monuments will be included in the unit price bid.

20. POT-HOLE WATERLINE DEPTH

The plans show locations for possible waterline conflicts. Pot-holes at all possible waterline conflict locations will be required within two weeks after the notice to proceed.

21. CATCH BASIN CONSTRUCTION

If pot-hole data indicates changes in pipe elevations are required, slope changes may be adjusted in the field with the approval of the Contract Administrator. The unit price bid for catch basins shall include any field changes where required, grates, removal of concrete curb, gutter and sidewalk, and repair of adjacent concrete where catch basins are placed in existing sidewalk. All catch basins shall be per City of Phoenix Standard Detail P-1569.

22. VERTICAL CURB AND GUTTER

All curb and gutter will be replaced in kind except as shown on plans. All other curb to be constructed or replaced shall be paid for under vertical curb and gutter, regardless of type.

23. BIKE PATH

Unit bid price does not include the area of driveways or sidewalks for new catch basins.

24. ASPHALT CONCRETE PAVEMENT

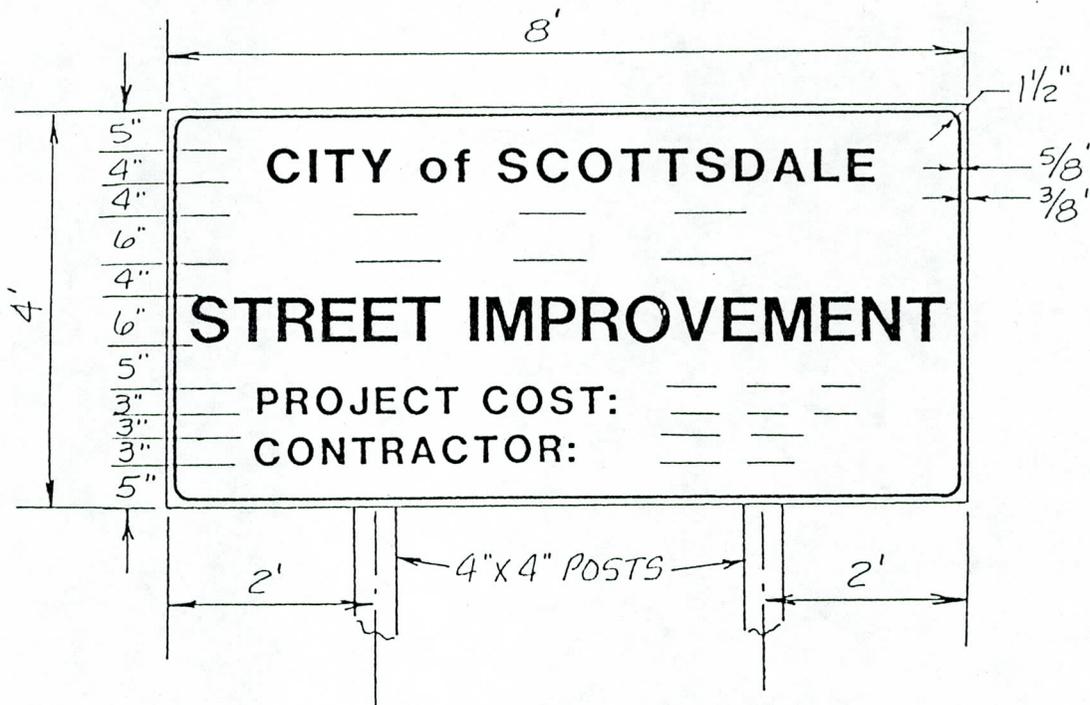
The Contractor shall submit for approval a mix design analysis to the Contract Administrator at pre-construction meeting or prior to commencement of the project.

25. PROJECT SIGN

The Contractor shall install project signs per the following page at the east and west end of the project on Thunderbird Road. The inspector will approve the locations of the signs. Cost is to be included in bid items for traffic control. Contents of sign shall be approved by Contract Administrator.

PROJECT SIGN

THE CONTRACTOR SHALL INSTALL PROJECT SIGNS AT THE EAST AND WEST END OF THE PROJECT ON THUNDERBIRD ROAD PER CONSTRUCTION PLANS. THE INSPECTOR WILL APPROVE THE LOCATIONS OF THE SIGNS. DETAILS OF THE SIGNS ARE INCLUDED BELOW. COST IS TO BE INCLUDED IN BID ITEM FOR TRAFFIC CONTROL. CONTENTS SHALL BE APPROVED BY CONTRACT ADMINISTRATOR.



1. SIGNS SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE IN PLACE PRIOR TO THE START OF WORK.
2. POSTS SHALL BE ANCHORED AT LEAST TWO FEET INTO THE GROUND WITH THE BOTTOM OF THE SIGN A MINIMUM OF FOUR FEET ABOVE GROUND.
3. SIGNS SHALL BE PLACED SO AS TO BE VISIBLE TO MOTORISTS AND SHALL BE KEPT CLEAN AT ALL TIMES.
4. SIGN COLORS SHALL BE WHITE LETTERS ON BLUE GROUND, PER FHWA STANDARDS.
5. ALL LETTERS AND NUMBERS SHALL BE SERIES "C". ALL LETTERS AND NUMBERS AND ALL SPACING SHALL CONFORM TO FHWA STANDARDS.

Bid Form

CITY OF SCOTTSDALE, ARIZONA

In compliance with the Advertisement for Bids, by the City of Scottsdale Purchasing Division, the undersigned bidder:

Having examined the Contract Documents, work site, and being familiar with the conditions to be met, hereby submits the following bid for all labor, materials, and equipment, for completion of the work listed and agrees to execute the contract documents and furnish the required bonds and certificates of insurance for the completion of said work, at the locations and for the prices set forth hereinafter.

Understands that construction of the project shall be in accordance with all applicable MAG Standard Specifications, Details, Uniform Codes, Ordinances, and Regulations as otherwise required by the project plans and special provisions.

Understands that the bid shall be submitted with a bid guarantee of cashier's check or surety bond for an amount not less than five percent (5%) of the amount bid.

Agrees that upon receipt of Notice of Award, from the City of Scottsdale, to execute the contract documents.

Work shall be completed within ninety (90) calendar days, beginning with the day following the starting date specified in the Notice to Proceed. The time allowed for completion of the work includes lead time for obtaining the necessary material and/or equipment. No additional time will be awarded the contract if any additional alternates are accepted.

The bidder hereby acknowledges receipt of and agrees his bid is based on the following addenda:

ADDENDUM: _____ DATED: _____

ADDENDUM: _____ DATED: _____

Only bids responding to all items contained in the proposal will be considered.

The undersigned agrees to construct this project at the prices shown on the Schedule of Bid Items, totaling:

BASE BID: _____ Dollars (\$ _____).

This amount constitutes the Base Bid.

ADDITIONAL ALTERNATE I: _____ Dollars (\$ _____).

This amount constitutes the Additional Alternate I

ADDITIONAL ALTERNATE II: _____ Dollars (\$ _____).

This amount constitutes the Additional Alternate II

TOTAL BID: _____ Dollars (_____).

This amount constitutes the Total of Base Bid & Additional Alternates I and II.

Amounts shall be shown in words and figures. In case of discrepancy, the amount in words shall govern.

The City reserves the right to reject any or all bids.

Contractor's License Number and classification: _____

THIS BID IS SUBMITTED BY: _____

a corporation organized under the laws of the State of _____,

a partnership consisting of _____

or individual trading as _____

of the City of _____.

By submitting this bid (I), (WE) hereby agree to enter into the contract included in the bid documents and (I), (WE) further agree that this bid incorporates by reference to the same extent as if set forth herein in full, all of the terms and conditions contained in said bid documents identified as BID NO. 90-25, including Plans, Standard Specifications and Details, Project Manuals, Special Provisions, Addenda (if any), Performance Bond, Payment Bond, and Certificate of Insurance.

Respectfully submitted,

DATE: _____

FIRM: _____

ADDRESS: _____

TELEPHONE NO.: _____

BY: _____

OFFICER AND TITLE (SEAL)

WITNESS: If bidder is an individual.

Schedule of Bid Items

SCHEDULE OF BID ITEMS

BID NO. 90-25

PROJECT: PAVEMENT PRESERVATION AND DRAINAGE

Item No.	Quantity and Unit	Description	Unit Bid Price: Dollars and Cents	Amount Bid: Dollars and Cents
BASE BID				
1	2,652 SY	REMOVE EXISTING A.C. PAVEMENT		
2	1 LS	REMOVE EXISTING CATCH BASIN AND PLUG PIPES		
3	1 LS	REMOVE EXISTING PIPES		
4	740 LF	REMOVE EXISTING FENCE		
5	1 LS	REMOVE EXISTING GABIONS		
6	1 LS	CLEAR AND GRUBB		
7	1 LS	EARTHWORK		
8	3,735 SY	LINED CHANNEL (SLOPE PROTECTION)		
9	19 SY	PLAIN RIPRAP WITH FABRIC AND CUTOFF WALL		
10	105 SY	GABIONS		
11	50 LF	6" CONCRETE CUTOFF WALL		
12	2,785 LF	6' CHAIN LINK FENCE		
13	85 SY	SEEDED RIPRAP		
ADDITIONAL ALTERNATE I				
14	1 EA	CATCH BASIN STRUCTURE		
15	440 LF	36" STORM DRAIN		
16	2 EA	36" END SECTION		
17	1,440 SY	LINED CHANNEL		
18	78 SY	SEEDED RIPRAP		
ADDITIONAL ALTERNATE II				
19	1,215 SY	REMOVE EXISTING A.C. PAVEMENT		
20	406 LF	REMOVE EXISTING 6" VERTICAL CURB AND GUTTER		
21	21 SY	SAWCUT, REMOVE, AND REPLACE ASPHALT CONCRETE		
22	781 SF	REMOVE EXISTING CONCRETE BIKEPATH		
23	882 SF	REMOVE EXISTING CONCRETE VALLEY GUTTER AND APRON		
24	1,020 SF	REMOVE EXISTING CONCRETE DRIVEWAY AND APRON		

SCHEDULE OF BID ITEMS

BID NO. 90-25
PROJECT: PAVEMENT PRESERVATION AND DRAINAGE

Item No.	Quantity and Unit	Description	Unit Bid Price: Dollars and Cents	Amount Bid: Dollars and Cents
ADDITIONAL ALTERNATE II (CONTINUED)				
25	55 SF	REMOVE EXISTING BOMANITE CONCRETE		
26	34 LF	REMOVE EXISTING CONCRETE SLOPE PROTECTION		
27	1,327 SY	SUBGRADE PREPARATION		
28	1,226 SY	2" AC/10" ABC PAVEMENT		
29	101 SY	2" AC/6" ABC PAVEMENT (MIN.)		
30	427 LF	6" VERTICAL CURB AND GUTTER		
31	851 SF	8' BIKE PATH		
32	440 SF	CONCRETE DRIVEWAY ENTRANCE		
33	1 EA	SURVEY MARKER		
34	1 EA	ADJUST MANHOLE FAME TO GRADE		
35	1 LS	WATERLINE VERTICAL REALIGNMENT WITH VALVES (2 EA)		
36	3 EA	ADJUST VALVE BOX TO GRADE		
37	1 EA	CATCH BASIN C.O.P. TYPE "M-1" WITH 17' WING		
38	1 EA	CATCH BASIN C.O.P. TYPE "M-1" WITH 6' WING		
39	1 EA	CATCH BASIN C.O.P. TYPE "M-1" WITH 6' WING, MODIFIED		
40	1 EA	CATCH BASIN C.O.P. TYPE "M-2" WITH 17' AND 10' WING		
41	1 EA	CATCH BASIN C.O.P. TYPE "M-1" WITH 10' WING,		
42	321 LF	42" STORM DRAIN		
43	206 LF	30" STORM DRAIN		
44	48 LF	24" STORM DRAIN		
45	36 LF	18" STORM DRAIN		
46	45 SF	BOMANITE CONCRETE		

Bid Bond

KNOW ALL MEN BY THESE PRESENTS: That we _____,
as Principal, and _____, as Surety,
are held and firmly bound unto the City of Scottsdale in the penal sum of five percent (5%) of Bid
Amount, Dollars (\$_____) lawful money of the United States of America, to be
paid to the order of the City of Scottsdale, for which payment, well and truly to be made, we bind
ourselves, our successors and assigns, signed with our seals and dated _____, 19____.

The conditions of the above obligation are such that whereas the City Council of The City of Scottsdale,
did order the following works to be done, to wit:

PROJECT NO.: F5008

WHEREAS, _____, the principal herein in answer
to the Notice Inviting Proposals or bids issued by the City of Scottsdale, put in its bid for the making of
said improvements.

NOW THEREFORE, of the bid of _____, as aforesaid to be accepted by
the City Council of the City of Scottsdale, and

_____ shall enter into a contract to make said
improvements at the price specified in its bid, then this obligation to be void of no effect, otherwise to
remain in full force and virtue.

ATTEST

ATTORNEY IN FACT

PRINCIPAL (SEAL)

BY: _____

SURETY

BY: _____

AGENCY OF RECORD

AGENCY ADDRESS

Notice of Award

NOTICE OF AWARD

TO: _____

PROJECT DESCRIPTION: Detention Basin and Drainage Improvements

The City of Scottsdale has considered the BID submitted by you for the above described WORK in response to the Advertisement for Bids dated _____, 1989.

You are hereby notified that you were awarded this Bid by the Scottsdale City Council on _____ in the amount of \$ _____. You are required by the Terms and Conditions of this bid to execute the Construction Contract and to furnish Contractor's Performance and Payment Bonds and submit the appropriate Certificate(s) of Insurance within ten (10) days from the date of this Notice.

If you fail to execute the Construction Contract, furnish the required bonds, and submit Insurance Certification(s) within ten (10) days from the date of this Notice, the City will consider this as a forfeiture of your Bid Bond. The City will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of the NOTICE OF AWARD to the City of Scottsdale.

Dated this _____ day of _____, 1989.

CITY OF SCOTTSDALE

BY: _____

TITLE: _____

ACCEPTANCE OF NOTICE:

Receipt of the above NOTICE OF AWARD is hereby acknowledged.

BY: _____

TITLE: _____

Subscribed and sworn to before me this ____ day of _____ 19____.

NOTARY PUBLIC

My Commission Expires

Contract

**CITY OF SCOTTSDALE
CONSTRUCTION CONTRACT**

BID NO.: 90-25
PROJECT NO.: F5008
PROJECT NAME: Detention Basin and Drainage Improvements

THIS CONTRACT, made and entered into this _____ day of _____, 19____ by and between _____, herein after designated "Contractor" and the City of Scottsdale, County of Maricopa, and State of Arizona, a municipal corporation, organized and existing under and by virtue of the laws of the State of Arizona, hereinafter designated "OWNER".

WITNESSETH: That the said Contractor, for and in consideration of the sum to be paid him by the said Owner, in the manner and at the time hereinafter provided, and of the other covenants and agreements herein contained and under the penalties expressed in the bonds provided, hereby agrees, for himself, his heirs, executors, administrators, successors, and assigns as follows:

ARTICLE I - SCOPE OF WORK: The Contractor shall furnish any and all labor, materials, equipment, transportation, utilities, services and facilities required to perform all work for Bid No. 90-25, Project No. F5008 and to completely and totally construct the same and install the material therein for the Owner, in a good workmanlike and substantial manner to the satisfaction of the Owner and under the direction and supervision of the Owner, or other properly authorized agents and strictly pursuant to and in conformity with the Plans and Specifications prepared for the Owner, and with such modifications of the same and other documents that may be made by the Owner or other properly authorized agents, as provided herein.

The Contractor agrees that this Contract, as awarded, is for _____, in the amount of \$ _____, and understands that payment for the total work will be made on the basis of the indicated amount(s), as bid in the Bid Form.

ARTICLE II - CONTRACT DOCUMENTS: Bid No. 90-25, Plans, Standard Specifications and Details, Project Manuals, General and Special Provisions, Addenda, if any, and Contractor's Bid, as accepted by the Mayor and Council. Performance Bond, Payment Bond, Certificates of Insurance, and Change Orders, if any, are by this reference made a part of this Contract to the same extent as if set forth herein in full.

ARTICLE III - TIME OF COMPLETION: The Contractor further covenants and agrees at his own proper cost and expense, to do all work as aforesaid for the construction of said improvements and to completely construct the same and install the material therein, as called for by this agreement free and clear of all claims, liens, and charges whatsoever, in the manner and under the conditions specified within the time, or times, stated in the bid form.

ARTICLE IV - PAYMENTS: For and in consideration of the faithful performance of the work herein embraced as set forth in the Contract Documents, which are a part hereof and in accordance with the directions of the Owner, through its Engineer or other properly authorized agent and to Owner's satisfaction, the Owner agrees to pay the said Contractor the amount earned, computed from actual quantities of work performed and accepted or materials furnished at the unit bid and/or lump sum price on the Bid Form and made a part hereof. Any progress payments made shall be in accordance with the

BID NO.: 90-25
PROJECT NO.: F5008
PROJECT NAME: Detention Basin and Drainage Improvements

General Conditions as set forth in the Contract Documents which are a part hereof and final payment shall be made within forty (40) days after final inspection and acceptance of the work.

ARTICLE V - CONTRACTOR ADMINISTRATOR: shall be Salvatore Misseri, P.E. or designee.

IN WITNESS WHEREOF, three (3) identical counterparts of this contract each of which shall for all purposes be deemed an original thereof, have been duly executed by the parties herein above named, on the date and year first above written.

ATTEST:

CITY OF SCOTTSDALE

Mark G. Mazzie
City Clerk

By: _____
Mayor Herbert R. Drinkwater
Mayor

By: _____
Deputy City Clerk

Reviewed:

Contractor:

(Company Name)

Sandy Spain
Purchasing Director

(Individual Name/Title)

George Wendt
Risk Management Director

(Signature)

Thomas J. Wilson
City Attorney

CORPORATE SEAL

Contract (Performance) Bond

CONTRACT BOND

STATUTORY PERFORMANCE BOND PURSUANT TO TITLE 34,
CHAPTER 2, ARTICLE 2, OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Contract Amount)

KNOW ALL MEN BY THESE PRESENTS:

That, _____
(hereinafter called the Principal), as Principal and

_____ ,
a corporation organized and existing under the laws of the State of _____ with its principal
office in the City of _____, (hereinafter called the Surety), as Surety, are held and firmly
bound unto the City of _____, County of Maricopa, State of Arizona in the amount of
_____ Dollars (\$ _____), for the payment whereof, the said Principal and
Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and
severally, firmly by these presents.

WHEREAS, The Principal has entered into a certain written contract with the City of
_____, dated the _____ day of _____, 19____ for _____
which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied
at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if said
Principal shall faithfully perform and fulfill all the undertakings, covenants, terms, conditions and
agreements of said contract during the original term of said contract any extension thereof, with or
without notice to the Surety, and during the life of any guaranty required under the contract and shall
also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all
duly authorized modifications of said contract that may hereafter be made, notice of which modifications
to the Surety being hereby waived; then the above obligation shall be void, otherwise to remain in full
force and effect.

The prevailing party in a suit on this bond shall be entitled to such reasonable attorney's fees as
may be fixed by a judge of the Court.

WITNESS our hands this _____ day of _____, 19____.

Principal Seal

By: _____

Surety Seal

Agency of Record

Agency Address

Labor and Materials
(Payment) Bond

LABOR AND MATERIALS BOND

STATUTORY PAYMENT BOND PURSUANT TO TITLE 34,
CHAPTER 2, ARTICLE 2, OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Contract Amount)

KNOW ALL MEN BY THESE PRESENTS:

That, _____
(hereinafter called the Principal), as Principal and _____,
a corporation organized and existing under the laws of the State of _____ with its principal
office in the City of _____, (hereinafter called the Surety), as Surety, are held and firmly
bound unto the City of _____, County of Maricopa, State of Arizona (hereinafter called the
Obligee), in the amount of _____ Dollars (\$_____), for the payment whereof;
the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and
assigns, jointly and severally, firmly by these presents.

WHEREAS, The Principal has entered into a certain written contract with the Obligee, dated
the _____ day of _____, 19_____, for _____
which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied
at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if said
Principal shall promptly pay all monies due to all persons supplying labor or materials to him or his
subcontractors in the prosecution of the work provided for in said Contract, then this obligation shall be
void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34,
Chapter 2, Article 2, of the Arizona Revised Statutes, and all liabilities on this bond shall be determined
in accordance with the provisions of said Title, Chapter and Article, to the extent as if it were copied at
length herein.

The prevailing party in a suit on this bond shall be entitled to such reasonable attorney's fees as
may be fixed by the judge of the Court.

WITNESS our hands this _____ day of _____, 19_____.

Principal Seal

By: _____

Surety Seal

Agency of Record

Agency Address

Certificate of Insurance

CERTIFICATE OF INSURANCE

BID CALL #90-04 PROJECT #

PROJECT TITLE

NAME AND ADDRESS OF INS AGENCY	INS. COMPANIES AFFORDING COVERAGES Company Letter A
NAME AND ADDRESS OF INSURED	Company Letter B Company Letter D Company Letter E

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUE TO THE INSURED NAMED ABOVE AND ARE IN FORCE AT THIS TIME.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	EFFECTIVE DATE	EXPIRE DATE	ALL LIMITS IN THOUSANDS
	<input type="checkbox"/> GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> OWNER'S & CONTRACTORS PROTECTIVE <input type="checkbox"/> OCCURENCE				GENERAL, AGGREGATE PRODUCTS COMP/ OPS AGGREGATE PERSONAL & ADVERTISING INJURY EACH OCCURENCE FIRE DAMAGE (ANY ONE FIRE) MEDICAL EXPENSE (ANY ONE PERSON) \$ 5,000
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> GARAGE LIABILITY EXCESS LIABILITY <input type="checkbox"/> OTHER THAN UMBRELLA FORM				CSL BODILY INJURY (PER PERSON) BODILY INJURY (PER ACCIDENT) PROPERTY DAMAGE EACH OCCURENCE AGGREGATE SAME AS ABOVE
	WORKERS COMPENSATION AND EMPLOYERS LIABILITY				STATUTORY (\$100) \$ EACH ACCIDENT \$ DISEASE POLICY LIMIT \$ DISEASE EACH EMPLOYEE

When the project includes construction of a new or modifications of existing City building or structure a course of construction policy covering the perils of fire extended coverage and vandalism and malicious mischief in the amount of the contract (less landscaping) shall be provided with the City of Scottsdale named therein as a "Loss Payee" and the insurer shall waive subrogation rights against the City of Scottsdale.

The City of Scottsdale is added as an additional insured as respects work done for City by the named insured or if required by City Ordinance. It is agreed that any insurance maintained by the City of Scottsdale may only apply in excess of the coverages and limits of insurance available from other sources. It is further agreed that no policy shall expire, be canceled or materially changed without (30) thirty days written notice to the City. THIS CERTIFICATE IS NOT VALID UNLESS COUNTERSIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE INSURANCE COMPANY.

NAME AND ADDRESS OF CERTIFICATE HOLDER
 CITY OF SCOTTSDALE
 9191 E. SAN SALVADOR DRIVE
 SCOTTSDALE, ARIZONA 85258

DATE ISSUED _____
 AUTHORIZED REPRESENTATIVE _____

Notice to Proceed

NOTICE TO PROCEED

TO: _____ DATE: _____

PROJECT NAME/DESCRIPTION: _____

In accordance with the Contract dated _____, 19____,
you are hereby notified to commence work on _____, 19____
and you are to complete the WORK within _____ consecutive calendar days thereafter. The date
of completion of all WORK is therefore _____, 19____.
Official time extensions thereto shall be considered and authorized in strict conformance with General
Condition or M.A.G. Standard Specifications.

CITY OF SCOTTSDALE

BY: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged.

BY: _____

TITLE: _____

Subscribed and sworn to before me this ____ day of _____, 19____

NOTARY PUBLIC

My Commission Expires

**Affidavit Regarding
Settlement of Claims**

**CONTRACTOR'S AFFIDAVIT
REGARDING
SETTLEMENT OF CLAIMS**

BID NO.: 90-25
PROJECT NO.: F5008
PROJECT NAME: Detention Basin and Drainage Improvements

Date: _____

To the City of Scottsdale, Arizona:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of \$ _____, as set out in the final pay estimate, as full and complete payment under the terms of the contract, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the City of Scottsdale against any and all liens, claims of liens, suits, action, damages, charges and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performances and materials furnished for the performance of said project construction items and/or services.

Signed and dated this ____ day of _____, 19____.

CONTRACTOR

BY

STATE OF ARIZONA)
) ss
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to before me this ____ day of _____, 19____.

Notary Public

My Commission Expires

Final Pay Estimate

CONTRACTOR'S NOTICE OF
FINAL PAY ESTIMATE

BID NO.: 90-25
PROJECT NO.: F5008
PROJECT NAME: Detention Basin and Drainage Improvements

Date: _____

To the City of Scottsdale, Arizona:

The final pay estimate of \$ _____, which represents total and complete payment under the terms of the contract, fully and completely reflects the actual quantities of work performed. Said final quantities were mutually measured and agreed upon by authorized representatives of the undersigned and the City of Scottsdale.

Signed and dated this ____ day of _____, 19____.

BY: _____

TITLE: _____

FOR: _____

STATE OF ARIZONA)
) ss
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to before me this ____ day of _____, 19____.

Notary Public

My Commission Expires

Final Acceptance

**CONTRACTOR'S NOTICE OF
FINAL ACCEPTANCE**

BID NO.: 90-25
PROJECT NO.: F5008
PROJECT NAME: Detention Basin and Drainage Improvements

TO: _____ DATE: _____

Construction on the above project was completed on _____
and on _____ a final inspection was made of the
subject improvements by this office. The work substantially conforms to the approved plans and
specifications. We, therefore, accept those portions within the public R/W into our system for
maintenance.

Approved By:

Contract Administrator

Recommended By:

Field Engineering Manager

cc: City Clerk
Accounting Director
Risk Management Director
Audit Director
Purchasing Director
Other:

Assignment of
Time Certificates

ASSIGNMENT OF TIME CERTIFICATES OF DEPOSIT
IN LIEU OF TEN PERCENT RETENTION

TIME CERTIFICATE NO. _____

TIME DEPOSIT RECEIPT ACCOUNT _____

_____, hereinafter referred to as "Assignor", having been awarded a construction contract to build the _____ for the City of Scottsdale, and desiring to take advantage of A.R.S. 34-221 (A) (3), and assign certain time certificates of deposit in lieu of ten percent (10%) retention of the contract proceeds as required by said statute, hereby assigns to the City of Scottsdale, hereinafter referred to as "Assignee", all of Assignor's right, title and interest in and to the above identified time certificate of deposit up to the sum of \$ _____.

This assignment shall remain in full force and effect until the construction project identified above is completed and accepted by "Assignee", at which time the "Assignee" will release all of its interest in the assignment.

BY: _____

ITS: _____

RECEIPT AND WAIVER

The undersigned financial institution hereby acknowledges to the City of Scottsdale that it has received written notice from Assignor _____, of the assignment to the City of Scottsdale of time certificates of deposit in the amount of \$ _____, account no. _____, time certificate no. _____.

Undersigned financial institution further hereby waives any and all rights or powers of setoff of said financial institution against either the City of Scottsdale or _____, in relation to the above listed deposits or certificates. The undersigned financial institution further warrants to the City of Scottsdale that it has on deposit the time certificates described in the foregoing assignment and in the amount assigned. Undersigned further warrants that the certificates described in the assignment do not contain any prohibition against such assignment and that undersigned is not aware of any assignment, lien, encumbrance, hold, claim or other obligation against the above identified account other than the assignment thereof to the City of Scottsdale and that it will not pay said funds to any party other than the City of Scottsdale until such time as the City has released the foregoing assignment.

Date this ____ day of _____, 19____.

BY: _____

ITS: _____

STATE OF ARIZONA)
) ss
COUNTY OF MARICOPA)

Acknowledged before me this ____ day of _____, 19____ by _____.

Notary Public

My Commission Expires



U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: OPERATIONAL SAFETY ON AIRPORTS
DURING CONSTRUCTION

Date: 5/31/84
Initiated by: AAS-300

AC No: 150/5370-2C
Change:

1. PURPOSE. This advisory circular (AC) sets forth guidelines concerning the operational safety on airports during construction, to assist airport operators in complying with Part 139, Certification and Operation: Land Airports Serving Certain Air Carriers, of the Federal Aviation Regulations (FAR), and with the requirements of Federally-funded construction projects. Construction activity is defined as the presence and movement of personnel, equipment, and materials in any location which could infringe upon the movement of aircraft. For noncertificated airports and airports with no grant agreements, application of these provisions will help maintain the desired level of operational safety during periods of construction.

2. CANCELLATION. AC 150/5370-2B, Operational Safety on Airports With Emphasis on Safety During Construction, dated October 9, 1981, is canceled.

3. RELATED READING MATERIAL. All references cited herein are available for inspection in any Federal Aviation Administration (FAA) regional office.

a. The Federal Aviation Regulations are sold by the Superintendent of Documents (AC 00-44, Status of Federal Aviation Regulations, current edition, contains a price list and ordering instructions).

b. AC 150/5370-10, Standards for Specifying Construction of Airports, is also sold by the Superintendent of Documents (AC 00-2, Advisory Circular Checklist, current edition, contains ordering instructions).

4. BACKGROUND. Various AC's which detail all major elements of safe, efficient airport design and construction are available. However, operational safety on airports may be degraded by construction hazards or marginal conditions that develop after an airport has been opened or approved for operation. This AC addresses that problem. NOTE: Airports which have received Federal assistance (grants, real or personal property) and airports certificated under FAR Part 139 have mandatory requirements related to this subject.

AC 150/5370-2C

5. GENERAL.

a. The airport operator is responsible for full compliance with the requirements of FAR Part 139 for certificated airports and with the provisions of Federal grant agreements when applicable. Adherence to the following provisions will materially assist the airport operator in providing the level of safety required. Local FAA Airports offices have technical expertise to assist airport operators in all safety matters on airports. (See AC 150/5000-3, Address List for Regional Airports Divisions and Airports District/Field Offices, current edition.)

b. Each bidding document (construction plans and/or specifications) for airport development work or air navigation facility (NAVAID) installation involving aircraft operational areas should incorporate a section on safety on airports during the construction activity. The section, as a minimum, should contain the appropriate provisions outlined in appendix 1 to this AC.

c. The airport operator should pay particular attention to the pullback distances and clearances for any maintenance activities and emergencies that occur on airports. These include activities which involve maintenance equipment--such as mowing machines, snowplows, lighting equipment--as well as emergency standbys for firefighting and rescue equipment.

d. Where feasible and where operational safety is not affected, the airport operator may choose to keep open operational areas adjacent to construction activity during construction rather than close them to aircraft activity.

e. At airports that are undergoing a multi-year major redevelopment, a comprehensive construction safety plan should be developed. This safety plan may contain deviations from the criteria outlined in appendix 1 of this AC so long as they are based upon a commitment by the airport operator and the users to provide the maximum clearances possible between construction activities and aircraft within the limits imposed by local conditions.

6. COORDINATION OF AIRPORT CONSTRUCTION ACTIVITIES. Construction activities on an airport, in proximity to, or affecting aircraft operational areas or navigable airspace, should be coordinated with the FAA and airport users prior to initiating such activities. In addition, basic responsibilities and procedures should be developed and disseminated to instruct construction personnel in airport procedures and for monitoring construction activities for conformance with safety requirements. These and other safety considerations should be addressed in the earliest stages of project formulation and incorporated in the contract specifications. Construction areas located within safety areas requiring special attention by the contractor should be clearly delineated on the project plans. The airport operator should closely monitor construction activity throughout its duration to ensure continual compliance with safety requirements.

a. Formal Notification. A formal notification to the FAA is required by regulation for certain airport projects. For instance, FAR Part 157, Notice of Construction, Alteration, Activation, and Deactivation of Airports, requires that FAA be notified in writing whenever a non-Federally funded project involves the

construction of a new airport; the construction, realigning, altering, activating, or abandoning of a runway, landing strip, or associated taxiway; and the deactivating or abandoning of an entire airport. Formal notification is made by submitting FAA Form 7480-1, Notice of Landing Area Proposal, to the nearest FAA district office or FAA regional office. (See AC 70-2, Airspace Utilization Considerations in the Proposed Construction, Alteration, Activation and Deactivation of Airports, current edition.) Also, any person proposing any kind of construction or alteration of objects that affect navigable airspace, as defined in FAR Part 77, Objects Affecting Navigable Airspace, is required to notify the FAA. FAA Form 7460-1, Notice of Proposed Construction or Alteration, should be used for this purpose. (See AC 70/7460-2, Proposed Construction or Alteration of Objects That May Affect the Navigable Airspace, current edition.)

b. Work Scheduling and Accomplishment. Predesign, preconstruction, and prebid conferences provide excellent opportunities to introduce the subject of airport operational safety during construction. All parties involved, including the sponsor's engineer and contractors, should integrate operational safety requirements into their planning and work schedules as early as practical. Also, responsibilities should be clearly established for continuous monitoring and compliance with the requirements assigned and for vigilance to detect areas needing attention due to oversight or altered construction activity. When construction is being planned on FAR Part 139 certificated airports, the responsible airport safety (certification) inspector should be directly involved at all stages, from pre-design through final inspection.

c. Safety Considerations. The following is a partial list of safety considerations which experience indicates will need attention during airport construction.

- (1) Minimum disruption of standard operating procedures for aeronautical activity.
- (2) Clear routes from firefighting and rescue stations to active airport operations areas and safety areas.
- (3) Chain of notification and authority to change safety-oriented aspects of the construction plan.
- (4) Initiation, currency, and cancellation of Notice to Airmen (NOTAM's).
- (5) Suspension or restriction of aircraft activity on airport operations areas.
- (6) Threshold displacement and appropriate temporary lighting and marking.
- (7) Installation and maintenance of temporary lighting and marking for closed or diverted aircraft routes on airport operations areas.
- (8) Revised vehicular control procedures or additional equipment and manpower.
- (9) Marking/lighting of construction equipment.

- (10) Storage of construction equipment and materials when not in use.
- (11) Designation of responsible representatives of all involved parties and their availability.
- (12) Location of construction personnel parking and transportation to and from the work site.
- (13) Marking/lighting of construction areas.
- (14) Location of construction offices.
- (15) Location of contractor's plants.
- (16) Designation of waste areas and disposal.
- (17) Debris cleanup responsibilities and schedule.
- (18) Identification of construction personnel and equipment.
- (19) Location of haul roads.
- (20) Security control on temporary gates and relocated fencing.
- (21) Noise pollution.
- (22) Blasting regulation and control.
- (23) Dust control.
- (24) Location of utilities.
- (25) Provision for temporary utilities and/or immediate repairs in the event of disruption.
- (26) Location of power and control lines for electronic/visual navigational aids.
- (27) Additional security measures required if FAR Part 107, Airport Security, is involved.
- (28) Marking and lighting of closed airfield pavement areas.
- (29) Coordination of construction activities during the winter with airport snow removal plan.
- (30) Phasing of work.
- (31) Shutdown and/or protection of airport electronic/visual navigational aids.

- (32) Smoke, steam, and vapor controls.
- (33) Notify crash/fire/rescue personnel when working on water lines.
- (34) Provide traffic directors/wing walkers, etc., as needed to assure clearance in construction areas.

d. Guidelines for Proximity of Construction Activity to Airport Operations Areas. The guidelines contained in appendix 1 are for use in the preparation of plans and specifications when construction activities are to be conducted in locations which may interfere with aircraft operations. They should be adapted to the needs of a particular project and should not be incorporated verbatim into project specifications.

7. EXAMPLES OF HAZARDOUS AND MARGINAL CONDITIONS. Analyses of past accidents and incidents have identified many contributory hazards and conditions. A representative list follows:

- a. Excavation adjacent to runways, taxiways, and aprons.
- b. Mounds or stockpiles of earth, construction material, temporary structures, and other obstacles in proximity to airport operations areas and approach zones.
- c. Runway surfacing projects resulting in excessive lips greater than 1 inch (2.54 cm) for runways and 3 inches (7.62 cm) for edges between old and new surfaces at runway edges and ends.
- d. Heavy equipment, stationary or mobile, operating or idle near airport operations areas or in safety areas.
- e. Proximity of equipment or material which may degrade radiated signals or impair monitoring of navigational aids.
- f. Tall but relatively low visibility units such as cranes, drills, and the like in critical areas such as safety areas and approach zones.
- g. Improper or malfunctioning lights or unlighted airport hazards.
- h. Holes, obstacles, loose pavement, trash, and other debris on or near airport operations areas.
- i. Failure to maintain fencing during construction to deter human and animal intrusions into the airport operation areas.
- j. Open trenches along side pavement.
- k. Improper marking or lighting of runways, taxiways, and displaced thresholds.
- l. Attractions for birds such as trash, grass seeding, or ponded water on or near airports.

m. Inadequate or improper methods of marking temporarily closed airport operations areas including improper and unsecured barricades.

n. Obliterated markings on active operational areas.

NOTE: Safety area encroachments, improper ground vehicle operations, and unmarked or uncovered holes and trenches in the vicinity of aircraft operating surfaces are the three most recurring threats to safety during construction.

8. ASSURING OPERATIONAL SAFETY. The airport operator is responsible for establishing and using procedures for the immediate notification of airport users and the FAA of any conditions adversely affecting operational safety at the airport. If construction operations require shutdown of a navigational aid from service for more than 24 hours or in excess of 4 hours daily on consecutive days, a 45-day minimum notice is desirable prior to the facility shutdown. Notification of construction, rough pavement, weather-caused effects, bird hazards, and other conditions affecting the use of the airport is usually made by NOTAM issued by Flight Service Stations. FAA Air Traffic facilities and Airports district/field offices will assist in the notification process. Airmen or other persons engaged in aviation activities are encouraged to report safety-related airport conditions to airport management, the FAA or through the use of the National Aeronautics and Space Administration's Aviation Safety Reporting System.

9. VEHICLES ON AIRPORTS. Vehicular activity on airport movement areas should be kept to a minimum. Where vehicular traffic on airport operation areas cannot be avoided, it should be carefully controlled. A basic guiding principle is that the aircraft always has the right-of-way. Some aspects of vehicle control and identification are discussed below. It should be recognized, however, that every airport presents different vehicle requirements and problems and therefore needs individualized solutions so that vehicle traffic does not endanger aircraft operations.

a. Visibility. Vehicles which routinely operate on airport operations areas should be marked/flagged for high daytime visibility and, if appropriate, lighted for nighttime operations. Vehicles which are not marked and lighted should be escorted by one that is equipped with temporary marking and lighting devices. (See AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport, current edition.)

b. Identification. It is usually desirable to be able to identify visually specific vehicles from a distance. It is recommended that radio equipped vehicles which routinely operate on airport operations areas be permanently marked with identifying characters on the sides and roof. (See AC 150/5210-5.) Vehicles needing intermittent identification could be marked with tape or with magnetically attached markers which are commercially available. Whenever possible, vehicles should be purchased with the recommended markings and lighting.

c. Noticeability. Construction vehicles/equipment should have automatic signalling devices to sound an alarm when moving in reverse.

d. Movement. The control of vehicular activity on airport operations areas is of the highest importance. Airport management is responsible for developing procedures, procuring equipment, and providing training regarding vehicle operations to ensure aircraft safety during construction. This requires coordination with airport users and air traffic control. Consideration should be given to the use of two-way radio, signal lights, traffic signs, flagmen, escorts, or other means suitable for the particular airport. The selection of a frequency for two-way radio communications between construction contractor vehicles and the air traffic control (ATC) tower must be coordinated with the ATC tower chief. At nontower airports, two-way radio control between contractor vehicles and fixed-base operators or other airport users should avoid frequencies used by aircraft. It should be remembered that even with the most sophisticated procedures and equipment, systematic training of vehicle operators is necessary to achieve safety. Special consideration should be given to training intermittent operators, such as construction workers, even if escort service is being provided.

10. INSPECTION. Frequent inspections should be made by the airport operator or a representative during critical phases of the work to ensure that the contractor is following the prescribed safety procedures and that there is an effective litter control program.

11. FAA SAFETY RESPONSIBILITIES. FAA Airports engineers and certification inspectors have specific responsibilities regarding operational safety on certificated airports before and during periods of construction activity. Their particular area of concern will be directed towards construction within safety areas, and they will be involved in the following functions:

- a. Review of plans to determine limits of work and possible safety problem areas.
- b. Give special attention to the development of the safety plan which is a part of the plans and specifications.
- c. Advise FAA elements such as regional Flight Standards, Air Traffic, and Airway Facilities of the construction activities and the safety plan.
- d. Ensure that users of the facilities have ample warning of the proposed construction so that they may make advanced plans to change their operations.
- e. FAA Airports engineers and certification inspectors should participate in the predesign and preconstruction conferences if the project involves a complex safety plan. Also, they should participate in construction inspections and in the inspection of the finished work to determine that there are no safety violations to FAR Part 139.



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APPENDIX 1. SPECIAL SAFETY REQUIREMENTS DURING CONSTRUCTION

1. RUNWAY ENDS. Construction equipment normally should not penetrate the 20:1 approach surface.
2. RUNWAY EDGES. Construction activities normally should not be permitted within 200 feet of the runway centerline. However, construction may be permitted within 200 feet of the runway centerline on a case-by-case basis with approval of the airport operator, the FAA and the users.
3. TAXIWAYS AND APRONS. Normally, construction activity set-back lines should be located at a distance of 25 feet plus one-half the wingspan of the largest predominant aircraft from the centerline of an active taxiway or apron. However, construction activity may be permitted up to the taxiway and aprons in use provided that the activity is first coordinated with the airport operator, the FAA and the users; NOTAM's are issued; marking and lighting provisions are implemented; and it is determined the height of equipment and materials is safely below any part of the aircraft using the airport operations areas which might overhang those areas. An occasional passage of an aircraft with wingspan greater than 165 feet should be dealt with on a case-by-case basis.
4. EXCAVATION AND TRENCHES.
 - a. Runways. Excavations and open trenches may be permitted up to 200 feet from the centerline of an active runway, provided they are adequately signed, lighted and marked. In addition, excavation and open trenches may be permitted within 200 feet of the runway centerline on a case-by-case basis, i.e., cable trenches, pavement tie-ins, etc., with the approval of the airport operator, the FAA and the users.
 - b. Taxiways and Aprons. Excavation and open trenches may be permitted up to the edge of structural taxiway and apron pavements provided the drop-off is adequately signed, lighted and marked.
5. STOCKPILED MATERIAL. Extensive stockpiled materials should not be permitted within the construction activity areas defined in the preceding four sections.
6. MAXIMUM EQUIPMENT HEIGHT. Notice of proposed construction shall be submitted to the appropriate Airports district office for review prior to the placement of construction equipment on airports. The guiding criteria involving FAR Part 139 certificated airports and grant agreement airports is that all construction plans and specifications require direct coordination with the appropriate Airports district, field, or regional office. In addition, airports should file FAA Form 7460-1 when equipment is expected to penetrate any of the surfaces defined above in paragraphs 1, 2, and 3. Airport operators are reminded that FAR Part 157 requires prior notice to construct, realign, alter, or activate any runway/landing area or associated taxiway for any project which is non-Federally funded.
7. PROXIMITY OF CONSTRUCTION ACTIVITY TO NAVIGATIONAL AIDS. Construction activity in the vicinity of navigational aids requires special consideration. The effect of the activity and its permissible distance and direction from the aid must be evaluated in each instance. A coordinated evaluation by the airport operator and the

FAA is necessary. Technical involvement by FAA regional Airports, Air Traffic, Flight Standards, and Airway Facilities Specialists is needed as well as construction engineering and management input. Particular attention needs to be given to stockpiling materials as well as to the movement and parking of equipment which may interfere with line-of-sight from the tower or interfere with electronic emissions. (See AC 150/5300-2D, Airport Design Standards--Site Requirements for Terminal Navigational Facilities, current edition, for critical areas of NAVAIDS.)

8. CONSTRUCTION VEHICLE TRAFFIC. With respect to vehicular traffic, aircraft safety during construction is likely to be endangered by four principle causes: increased traffic volume, nonstandard traffic patterns, vehicles without radio communication and marking, and operators untrained in the airport's procedures. Because each construction situation differs, airport management must develop and coordinate a construction vehicle traffic plan with airport users, air traffic control and the appropriate construction engineers and contractors. This plan, when signed by all participants becomes a part of the contract. The airport operator is responsible for coordinating and enforcing the plan.

9. LIMITATION ON CONSTRUCTION.

a. Open-flame welding or torch-cutting operations should be prohibited unless adequate fire and safety precautions are provided and have been approved by the airport operator. All vehicles are to be parked and serviced behind the construction restriction line and/or in an area designated by the airport operator.

b. Open trenches, excavations, and stockpiled material at the construction site should be prominently marked with orange flags and lighted with flashing yellow light units (acceptable to the airport operator and the FAA) during hours of restricted visibility and/or darkness. Under no circumstances are flare pots to be near aircraft turning areas.

c. Stockpiled material should be constrained in a manner to prevent movement result of aircraft blast or wind. Material should not be stored near aircraft turning areas or movement areas.

10. MARKING AND LIGHTING OF CLOSED OR HAZARDOUS AREAS ON AIRPORTS. The construction specifications should include a provision requiring the contractor to have a man on call 24 hours per day for emergency maintenance of airport hazard lighting and barricades.

a. Permanently Closed Runways and Taxiways. For runways and taxiways which have been permanently closed, the lighting circuits should be disconnected. With runways, the threshold markings, runway designation marking, and touchdown zone markings should be obliterated, and crosses should be placed at each end at 1,000-foot (300 m) intervals. With taxiways, a cross is placed at each entrance of the closed taxiway.

b. Temporarily Closed Runways and Taxiways. Temporarily closed runways are treated in the same manner as in paragraph 10a. except runway markings are not obliterated. Rather, crosses are usually of the temporary type (constructed of

5/31/84

AC 150/5370-2C
Appendix 1

material such as fabric or plywood), and they are required only at runway ends. The crosses should be located on top of the runway numerals. For temporary marking, the dimensions of the crosses may be reduced to permit use of standard sheets of 4-by-8-foot (1.22 by 2.44 m) plywood. Temporarily closed taxiways are usually treated as an unusable area as explained in paragraph 10d.

c. Closed Airports. When all runways are closed temporarily, the runways are marked as in paragraph 10b, and the airport beacon is turned off. When all runways are closed permanently, the runways are marked as in paragraph 10a, the airport beacon is disconnected, and a cross is placed in the segmented circle or at central location if no segmented circle exists.

d. Hazardous Areas. Hazardous areas, in which no part of an aircraft may enter, are indicated by use of barricades with alternate orange and white markings. The barricades are supplemented with orange flags at least 20 by 20 inches (50 by 50 cm) square and made and installed so that they are always in the extended position and properly oriented. For nighttime use, the barricades are supplemented with flashing yellow lights. The intensity of the lights and spacing for barricades, flags, and lights must be such to delineate adequately the hazardous area.

e. Notices to Airmen (NOTAM's). The airport operator should provide information on closed or hazardous conditions to the local air traffic control facility (control tower, approach control, center, flight service station) so that a NOTAM can be issued.

f. Stabilized Areas. Holding bays, aprons, and taxiways are sometimes provided with shoulder stabilization to prevent blast and water erosion. This stabilization may have the appearance of a full strength pavement but is not intended for aircraft use. Usually the taxiway edge marking will define this area, but conditions may exist such as stabilized islands or taxiway curves where confusion may exist as to which side of the edge stripe is the full strength pavement. Where such a condition exists, the stabilized area should be marked with 3-foot (1 m) stripes perpendicular to the edge stripes. On straight sections, the marks should be placed at a maximum of 100-foot (30 m) spacing. On curves, the marks should be placed a maximum of 50 feet (15 m) apart between the curve tangents. The stripes should be extended to 5 feet (1.5 m) from the edge of stabilized area or to 25 feet (7.5 m) in length, whichever is less.

g. Runway Shoulder Marking. Usually the runway side stripes will indicate the edges of the full strength pavement. However, conditions may exist, such as exceptionally wide runways, where there is a need to indicate the area not intended for use by aircraft. In such cases, chevrons should be used.

11. TEMPORARY RUNWAY THRESHOLD DISPLACEMENTS. Identification of temporary runway threshold displacements should be located outboard of the runway surface. These could include outboard lights, Runway End Identification Lights (REILS), and markings. The extent of the marking and lighting should be directly related to the duration of the displacement as well as the type and level of aircraft activity.