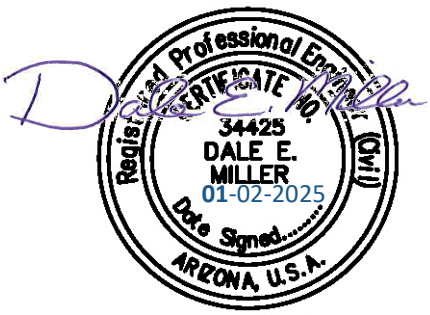
TOWN OF WINKELMAN

QUARELLI STREET-GOLF COURSE ROAD PROJECT

BID-CONTRACT DOCUMENTS
&
TECHNICAL SPECIFICATIONS

02 JANUARY 2025



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QUARELLI STREET-GOLF COURSE ROAD PROJECT

INVITATION TO SUBMIT BIDS

QUARELLI STREET-GOLF COURSE ROAD PROJECT

NOTICE IS HEREBY GIVEN that the Town Council of the Town of Winkelman, Gila County and Pinal County, Arizona, will receive sealed bids from qualified firms registered with the Arizona Registrar of Contractors for the **QUARELLI STREET-GOLF COURSE ROAD PROJECT**.

Sealed bids will be accepted until 1:30 pm (local time), on Wednesday, February 19, 2025, at the Office of the Town Clerk, located at 206 Giffin Avenue, Winkelman, Arizona 85192, at which time the bids will be opened, read aloud, and verified. It is the responsibility of the Bidder to ensure timely delivery of the bid. Any bid received after the bid closing time will not be accepted and will be returned unopened. Unsigned bids will be considered unresponsive and will be rejected. All information and bids submitted by bidders will be made available for public inspection following award of a Contract.

Each Bid shall be accompanied by a Certified Check, Cashier's Check, or Bid Bond in the amount of ten percent (10%) of the total bid amount, and made payable to the Town of Winkelman. Such Check or Bid Bond will be given as a guarantee that Bidder will enter into a Contract, if awarded, and will provide a satisfactory Performance Bond and Labor and Material Payment Bond; and shall be declared forfeited as Liquidated Damages if the successful Bidder refuses to enter into said Contract after being requested to do so by the Town of Winkelman.

Bidders are hereby notified that a pre-bid conference shall be held at 10:00 am on Wednesday, February 5, 2025, at Town Hall, 206 Giffin Avenue. The deadline for submittal of Questions from Bidders for formal response by the Town of Winkelman is 5:00 pm, Wednesday, February 12, 2025.

Bid/contract documents, plans, and any supporting information, in PDF format only, will be available from the Town of Winkelman located at 206 Giffin Avenue, Winkelman, Arizona 85192, Monday through Friday, 8:00 am to 5:00 pm. Electronic copies of the Plans and Bid/Contract Documents in PDF format will be provided by email at no charge by contacting Gloria Ruiz, Town Clerk, (520) 356-7854, gruiz@townofwinkelman.com. To receive a set of bid/contract documents and plans, you must register as a plan holder with the Town Clerk in order to receive addenda and other project-related information.

The Town of Winkelman reserves the right to reject any or all bids, to waive informalities or irregularities in the bidding, and to withhold the award for any reason the Town determines to be in the best interests of the Town of Winkelman.

Minority, woman-owned, and disadvantaged businesses are encouraged to submit bids.

All questions and/or correspondence regarding the project documents shall be directed to Mr. Dale E. Miller, Project Engineer for the Town of Winkelman, at (480) 522-0330, or by email at dmiller@rickengineering.com.

_____	_____
Louis Bracamonte	Gloria Ruiz
Mayor	Town Clerk

End of Invitation to Submit Bids

INFORMATION FOR BIDDERS

QUARELLI STREET-GOLF COURSE ROAD PROJECT

Sealed bids will be accepted until 1:30 pm (local time), on Wednesday, February 19, 2025, at the Office of the Town Clerk, located at 206 Giffin Avenue, Winkelman, Arizona 85192. Bids must be mailed or delivered to Town of Winkelman Town Clerk, 206 Giffin Avenue, Winkelman, Arizona 85192. Late bids will not be considered.

Each bidder, before submitting their bid, shall become fully informed as to the extent, nature, and character of work required. All questions relating to the bid must be submitted in writing to Gloria Ruiz, Town Clerk, by mail or by email (gruiz@townofwinkelman.com), referencing this project prior to the 5:00 pm, Wednesday, February 12, 2025 bidder questions deadline indicated on the Bidding Procedure Timetable. The bidder shall bear all risks associated with delays in the US mail or other delivery service. Any requests received after the stated deadline may not be considered. All requests received prior to the deadline will be responded to in writing by the Town in the form of an addendum addressed and sent to all registered plan holders. If any addenda are issued, the bidder must acknowledge receipt of any and all addenda on the bid form in order to submit a qualifying bid.

Each Bid Form must be submitted in a sealed envelope addressed to Town of Winkelman Town Clerk. Each sealed envelope containing a completed Bid Form and Bid Schedule must be plainly marked on the outside with the name of the project:

QUARELLI STREET-GOLF COURSE ROAD PROJECT

The envelope should also bear on the outside:

- **the name of the Bidder,**
- **the Bidder's address, and the**
- **bid opening date and time.**

All Bids must be made on the required Bid Form and Bid Schedule. All blank spaces for Bid Prices must be filled in, in ink or typewritten. The Bid Form and Bid Schedule must be fully completed, and the Bid Form executed, when submitted. Two copies of the Bid Form, Bid Schedule, and accompanying documents are required. Any improperly completed bids will not be accepted. All Bids must include a proposed project schedule.

Bid Security in the amount of not less than ten percent (10%) of the total Bid amount must accompany each Bid Form in the type and form specified in these Bid/Contract Documents. Such Check or Bid Bond will be returned to the respective unsuccessful Bidders on their request upon award of the Contract, and to the successful Bidder on execution and delivery of a satisfactory Surety Company Performance Bond and Labor and Material Payment Bond each in the amount of one hundred percent (100%) of the total Contract Price.

The Town reserves the right to reject any and all Bids, to waive any informalities and minor irregularities in any of the bids, and to accept the Bid deemed in the opinion of the Town of Winkelman to be in the best interest of the Town. A conditional or qualified Bid may be cause for rejection.

Any Bid may be withdrawn prior to the above scheduled date and time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered and will be returned unopened. No Bidder may withdraw a Bid within ninety (90) calendar days after the actual date of the opening thereof. Should there be reasons why the Contract cannot be awarded within the specified period of time, the time may be extended by mutual agreement between the Town and the Bidder.

Bidders are hereby notified that a pre-bid conference shall be held at 10:00 am on Wednesday, February 5, 2025, at Town Hall, 206 Giffin Avenue. The deadline for submittal of Questions from Bidders for formal response by the Town of Winkelman is 5:00 pm, Wednesday, February 12, 2025.

Bidders must satisfy themselves as to the extent and accuracy of the estimated quantities in the Bid Schedule by examination of the project site, review of the project limits shown on the plans, these bid/contract documents, and the technical specifications, including any issued Addenda. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the approximate quantities of the work or the nature of the work to be done and satisfactorily completed.

Each Bidder shall demonstrate their experience in the construction of asphalt pavements, concrete pavements, aggregate bases, earthwork, and other related improvements as shown on the plans, detailed herein, and under local traffic conditions.

Each Bid submittal must include:

- Bid Form and Bid Schedule
- Bid Security
- Project Schedule
- Schedule of Major Subcontractors and Suppliers
- List of at least three (3) recent relevant complete projects of a similar nature and magnitude with reference contact information (current phone number and email address). For the each of the referenced projects, the Bidder shall include the construction cost and a general description of the project.

The Bid-Contract Documents, Technical Specifications, and any Addenda issued, contain the provisions required for the construction of the Project. Information otherwise obtained from an officer, agent, or employee of the Town, or any other person, shall not affect the risks or obligations assumed by the Contractor or relieve them from fulfilling any of the conditions of the construction contract.

The Party to whom the Contract is awarded will be required to furnish the bonds and certificate of insurance to the Town and execute the Agreement within fourteen (14) calendar days from the date when Notice of Award is delivered to the Bidder. In case the Bidder fails to execute the Agreement, the Town reserves the right to exercise its option to consider the Bidder in default and the Bid Security forfeited, in which case, another Bidder may be awarded the project.

A Performance Bond and a Labor and Material Payment Bond, each in the amount of 100 percent (100%) of the Contract Price, with a corporate surety approved by the Contracting Agency, will be required for the faithful performance of the Contract. Attorneys-in-Fact who sign Bid Bonds and/or Performance Bonds or Labor and Material Payment Bonds must file with each Bond a certified and effective dated copy of their Power of Attorney.

INSURANCE REQUIREMENTS

The Contractor, at Contractor's own expense, shall purchase and maintain the herein stipulated minimum insurance with companies duly licensed, possessing a current A.M. Best, Inc. Rating of A- or better, and approved and licensed to do business in the State of Arizona with policies and forms satisfactory to the Town.

All insurance required herein shall be maintained in full force and effect until all work required to be performed under the terms of the Contract is satisfactorily completed and formally accepted. Failure to do so may, at the sole direction of the Town, constitute a material breach of this Contract. The Contractor's insurance shall be primary insurance, and any insurance or self-insurance maintained by the Town shall not contribute to it. Any failure to comply with the claim reporting provisions of the policies or any breach of an insurance policy warranty shall not affect coverage afforded under the policy to protect the Town.

The insurance policies, except Workers' Compensation, shall contain a waiver of transfer rights of recovery (subrogation) against the Town, its agents, representatives, directors, officers, and employees for any claims arising out of the Contractor's work or service.

The insurance policies may provide coverage which contains deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to the Town under such policies. The Contractor shall be solely responsible for deductible and/or self-insured retention and the Town, at its option, may require the Contractor to secure the payment of such deductible or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit.

The Town requires receipt, within 14 calendar days of the Notice of Award, certified copies of any or all of the herein required insurance policies and/or endorsements. The Town shall not be obligated, however, to review the same or to advise the Contractor of any deficiencies in such policies and endorsements, and such receipt shall not relieve Contractor from, or be deemed a waiver of the Town's right to insist on, strict fulfillment of Contractor's obligations under this Contract.

The insurance policies, except Workers' Compensation, required by this Contract shall name the Town, its agents, representatives, officers, directors, officials and employees as Additional Insureds.

REQUIRED INSURANCE COVERAGE:

a. General Liability

Contractor shall maintain Commercial General Liability insurance with a limit of not less than $1,000,000 for each occurrence with a $2,000,000 Products and Completed Operations Aggregate and $2,000,000 General Aggregate Limit. The policy shall include coverage for bodily injury, broad form property damage, personal injury, products/completed operations and blanket contractual coverage including, but not limited to, the liability assumed under the indemnification provisions of this Contract, which coverage will be at least as broad as Insurance Service Office, Inc. Policy Form CG 000211093 or any replacement thereof. The coverage shall not exclude X, C, U.

Such policy shall contain a severability of interest provision, and shall not contain a sunset provision or commutation clause, nor any provision which would serve to limit third party action over claims.

The Commercial General Liability additional insured endorsement shall be at least as broad as the Insurance Service Office, Inc.'s, Additional Insured, Form B, CG20101185, and shall include coverage for Contractor's operations and products and completed operations.

Any Contractor subletting any part of the work, services, or operations awarded to the Contractor shall purchase and maintain, at all times during prosecution of the work, services, or operations under this Contract, a Town's and Contractor's Protective Liability insurance policy for bodily injury and property damage, including death, which may arise in the prosecution of the Work or Contractor's operations under this Contract. Coverage shall be on an occurrence basis with a limit not less than $1,000,000 per occurrence, and the policy shall be issued by the same insurance company that issues the Contractor's Commercial General Liability insurance.

b. Automobile Liability

Contractor shall maintain Commercial/Business Automobile Liability insurance with a combined single limit for bodily injury and property damage of not less than $1,000,000 each occurrence with respect to the Contractor's any owned, hired, and non-owned vehicles assigned to or used in performance of the Contractor's work. Coverage will be at least as broad as coverage code 1, "any auto", (Insurance Service Office, Inc. Policy Form CA 00011293, or any replacements thereof). Such insurance shall include coverage for loading and off-loading hazards. If hazardous substances, materials or wastes are to be transported, MCS 90 endorsement shall be included and $5,000,000 per accident limits for bodily injury and property damage shall apply.

c. Workers' Compensation

The Contractor shall carry Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor's employees engaged in the performance of the work; and, Employer's Liability insurance of not less than $100,000 for each accident, $100,000 disease for each employee, and $500,000 disease policy limit.

In case any work is subcontracted, the Contractor will require the Subcontractor to provide Workers' Compensation and Employer's Liability to at least the same extent as required of the Contractor.

CERTIFICATES OF INSURANCE

Prior to commencing Services under this Contract, Contractor shall furnish the Town with Certificates of Insurance (naming the Town and their Engineer as additionally insured), or formal endorsements as required by the Contract, issued by Contractor's insurer(s), as evidence that policies providing the required coverages, conditions and limits required by this Contract are in full force and effect.

In the event any insurance policy(ies) required by this contract is(are) written on a "claims made" basis, coverage shall extend for two years past completion and acceptance of the Contractor's work or services and as evidenced by annual Certificates of Insurance.

If a policy does expire during the life of the contract, a renewal certificate must be sent to the Town fourteen (14) calendar days prior to the expiration date.

All Certificates of Insurance required by this Contract shall be identified with a bid serial number and title. A $25.00 administrative fee shall be assessed for all Certificates received without the appropriate bid serial number and title.

INSURANCE CANCELLATION AND EXPIRATION NOTICE

Insurance required herein shall not expire, be canceled, or materially changed without fourteen (14) calendar days prior written notice to the Town.

End of Insurance Provisions

Within fourteen (14) calendar days of receipt of acceptable proof of insurance, a W-9 form, Payment and Performance Bonds, Certificate of Insurance, any other required documents, and an Agreement signed by the party to whom the Agreement was awarded, the Town shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the Town not execute the Agreement within such period, the Bidder may, by Written Notice, withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Town.

The Town shall issue the Notice to Proceed within fourteen (14) calendar days of the execution of the Agreement. Should there be reasons why the Notice to Proceed cannot be issued within such period of time, the time may be extended by mutual agreement between the Town and Contractor. If the Notice to Proceed has not been issued within the fourteen (14) calendar day period, or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project, shall apply to the Contract throughout the term of the Contract.

Bidders shall be qualified firms registered with the Arizona Registrar of Contractors and a licensed and bonded contractor in the State of Arizona.

The Selected Contractor shall, in all hiring or employment made possible or resulting from this project, take affirmative action to ensure that there shall be no unlawful discrimination against any employee or applicant for employment because of sex, race, age, color, creed, national origin, marital status, sexual orientation, or the presence of any sensory, mental, or physical handicap, unless based upon a bona fide occupational qualification, and this requirement shall apply to, but not be limited to, the following: employment, advertising, layoff, termination, rates of pay, or other forms of compensation, and selection for training, including apprenticeships.

No person shall be denied or subjected to discrimination in receipt of the benefit of any services or activities made possible by or resulting from this project on the grounds of sex, race, color, creed, national origin, age (except minimum age and retirement provisions), marital status, sexual orientation, or the presence of any sensory, mental, or physical handicap.

In addition, the Town of Winkelman will ensure that disadvantaged business enterprises (DBEs) will be afforded full opportunity to submit bids and proposals to all invitations.

This project is being bid in accordance with the Town of Winkelman policies.

Protest Procedure – bid protests shall be submitted in writing to:

Gloria Ruiz, Town Clerk
Town of Winkelman
206 Giffin Avenue, Winkelman, Arizona 85192
Phone: (520) 356-7854

Bid protests must be received within 72 hours of the notification of award. Protests must contain, at a minimum:

- the name, address, and telephone number of the protester
- the signature of the protester or its representative and evidence of authority to sign
- a detailed statement of the legal and factual grounds of the protest including copes of relevant data
- the form of relief requested

Within 5 business days of receipt, and after consultation with legal counsel or others, the Town will respond in writing to the protest.

The Town of Winkelman reserves the right to reject any or all bids; to waive irregularities of information in any bid; to re-advertise the bid; and/or take any steps determined prudent in order to resolve the protest.

End of Information for Bidders

BIDDING PROCEDURE TIMETABLE

QUARELLI STREET-GOLF COURSE ROAD PROJECT
TOWN OF WINKELMAN

Invitation to Submit Bids Advertisement Date	**Copper Basin News** **01/15/2025 (Wednesday)**
Pre-Bid Conference (non-mandatory)	**02/05/2025 (Wednesday) @ 10:00 am**
Deadline for Bidders Questions	**02/12/2025 (Wednesday) @ 5:00 pm**
Final Addendum Issued (if necessary)	**02/13/2025 (Thursday)**
Bid Submittal Deadline / Bid Opening	**02/19/2025 (Wednesday) @ 1:30 pm** **Town Clerk's Office, Town Hall** **206 Giffin Avenue** **Winkelman, AZ 85131**
Town Council Approval of Award	**03/10/2025 (2nd Monday) @ 06:00 pm**
Notice of Award	**03/11/2025 (Tuesday)**
Pre-Construction Meeting Notice to Proceed Issued	**03/31/2025 (Monday) @ 10:00 am**
Project Commences (tentative)	**04/01/2025 (Tuesday)**
Number of Construction Days	**120 Calendar Days**
Project Completion (tentative)	**O7/30/2025 (Wednesday)**

Note: All dates are subject to change by the Town of Winkelman.

BID FORM

QUARELLI STREET-GOLF COURSE ROAD PROJECT

Proposal of _____ (hereinafter called "Bidder"),

organized and existing under the laws of the State of _____, doing business as

_____,* to the Town of Winkelman (hereinafter called

"Contracting Agency").

(* Insert “a Corporation”, a Partnership”, “an Individual”, as applicable)

In compliance with your Invitation to Submit Bids, the Bidder hereby proposes to perform all work for the complete construction of the Quarelli Street-Golf Course Road Project in strict accordance with these Bid/Contract Documents, within the time set forth therein, and at the prices stated in the following Bid Schedule. **The Bid Schedule must accompany this Bid Form.**

By submission of this Bid, the Bidder certifies, and in the case of joint Bid, each party thereto certifies as to his own organization, that this Bid has been arrived at independently, without consultation, communication, collusion, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the Notice to Proceed, and to **complete the Project within one hundred twenty (120) calendar days** thereafter.

Bidder further agrees to pay as liquidated damages, and not as penalty, the sum of one thousand dollars ($1,000.00) for each consecutive calendar day thereafter as provided in the General Conditions.

Bidder acknowledges receipt of the following Addenda:

ADDENDUM NUMBER	ISSUE DATE	ACKNOWLEDGEMENT
Addendum 1		
Addendum 2		
Addendum 3		
Addendum 4		

Bidder agrees to perform all work described herein, as shown on the plans, and in accordance with these Bid-Contract Documents and the Technical Specifications for the unit prices or lump sum amounts shown on the accompanying Bid Schedule.

Bidder acknowledges that quantities shown in the accompanying Bid Schedule are estimated and approximate, and are only for the purpose of comparing bids and determining the low bid.

Bidder acknowledges that payment will be based on the unit prices set forth in the Bid Schedule for the actual quantities furnished, installed, or constructed, as provided for in the Technical Specifications and these Bid-Contract Documents.

Bidder acknowledges that the cost of a 100% Performance and a 100% Labor and Payment Bond have been included in the Bid, and agrees that the Bidder will, at the time of execution of the Agreement or a suitable Letter of Intent, furnish said Bonds, in the amount of the 100% of the Contract amount, with a Surety Company satisfactory to the Town of Winkelman.

Respectfully Submitted:

Contractor-Firm Name (Bidder)	Signed by (Typed or Printed Name)
	Title
Address	Doing Business As
City or Town/State/Zip Code	Contact Phone Number
	Contact Email Address
Signature	Date

The BID SCHEDULE must accompany this BID FORM.

BID SCHEDULE

QUARELLI STREET-GOLF COURSE ROAD PROJECT

Bidders Name: _____

NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	ITEM BID TOTAL
1	CLEARING & GRUBBING	2.5	AC	$	$
2	EARTHWORK	1	LS	$	$
3	MILL ASPHALT PAVEMENT, 2.25" AVE DEPTH	12,711	SY	$	$
4	REMOVE CURB & GUTTER	140	LF	$	$
5	REMOVE CONCRETE PAVEMENT	689	SF	$	$
6	REMOVE & REINSTALL FENCE & GATES	263	LF	$	$
7	CONSTRUCT RIPRAP EROSION CONTROL SWALE	20	TN	$	$
8	CONSTRUCT GROUTED RIPRAP SLOPE PROTECTION	1,940	SF	$	$
9	PREPARE EXISTING & CONSTRUCT NEW AGGREGATE BASE COURSE, 4.5"-5" DEPTH	8,924	SY	$	$
10	CONSTRUCT ASPHALT CONCRETE PAVEMENT	4,063	TN	$	$
11	CONSTRUCT SPEED TABLE WITH CROSSWALK & SIGNS	2	EA	$	$
12	CONSTRUCT SPEED HUMP	3	EA	$	$
13	CONSTRUCT RAP BASE FOR MULTIUSE PATH, 5" DEPTH	34,632	SF	$	$
14	CONSTRUCT PCC PATH PAVEMENT, 5" DEPTH	1,745	SF	$	$
15	CONSTRUCT VERTICAL CURB & GUTTER	1,535	LF	$	$

NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	ITEM BID TOTAL
16	SPREAD & COMPACT RAP OR AB MATERIAL ON DRIVEWAYS TO MATCH AC	204	SY	$	$
17	ADJUST MANHOLE TO FINISHED GRADE	4	EA	$	$
18	ADJUST WATER VALVE TO FINISHED GRADE	2	EA	$	$
19	ADJUST WATER METER BOX TO FINISHED GRADE	4	EA	$	$
20	RELOCATE BACKFLOW PREVENTER	1	EA	$	$
21	HYDRAULIC SEEDING OF DISTURBED AREAS	1.5	AC	$	$
22	APPLY DOUBLE YELLOW THERMOPLASTIC CENTERLINE STRIPING, 4" WIDTH	4,379	LF	$	$
23	APPLY WHITE THERMOPLASTIC EDGE LINE STRIPING, 6” WIDTH	6,395	LF	$	$
24	APPLY WHITE THERMOPLASTIC STOP BAR STRIPING, 24" WIDTH	26	LF	$	$
25	APPLY WHITE THERMOPLASTIC ARROW SYMBOL	4	EA	$	$
26	APPLY WHITE THERMOPLACTIC ONLY LEGEND	1	EA	$	$
27	RELOCATE TRAFFIC SIGN ASSEMBLY	4	EA	$	$
28	INSTALL TRAFFIC SIGN ASSEMBLY	1	EA	$	$
29	TRAFFIC CONTROL	1	LS	$	$
30	MOBILIZATION	1	LS	$	$
				TOTAL BID AMOUNT	**$**

ADJUSTMENT OF PROJECT SCOPE BASED ON FUNDING LIMITS

The total bid price for this project is for all construction work denoted in the Bid Schedule above, shown on the plans, and describe in the technical specifications contained herein. The Bidder is advised that the Town of Winkelman has a fixed budget for the project based on grant funding received. The Town's intent is to keep the total project cost within the available funding amount. Therefore, the Town of Winkelman reserves the right to decrease (or increase) the scope of the project, at the bid unit prices, with the awarded Contractor, if and as deemed necessary, to adjust the overall construction cost of the project to use, but not exceed, the available funds for the project. By submitting a bid, the Bidder agrees to this scope adjustment and overall change in the total contract amount for award of the project.

QUANTITIES

The estimated quantities are approximate only and the actual quantities may vary from these totals.

BASIS FOR BID

The Bidder is required to bid each and every item in each and every bid schedule.

The total bid price will be used to compare bids received for the purpose of selecting a Contractor for the Quarelli Street-Golf Course Road Project for the Town of Winkelman.

Award of the contract shall be to the bidder with the lowest total bid price based on the estimated quantities of work for each bid item set forth in the Bid Schedule.

BIDDER ACKNOWLEDGEMENT

The undersigned hereby declares that representatives of the Bidder have visited the project site and have carefully examined the plans, the Bid-Contract Documents, and the Technical Specifications relating to the work covered by the above bid.

The undersigned understands that any quantities stated or implied in the specifications or elsewhere in the Contract Documents are approximate only, and are subject to increase or decrease, and hereby proposes to perform all quantities of work, as either increased or decreased, in accordance with the provisions of the technical specifications for the unit bid prices stipulated in the Bid Schedule.

The undersigned understands that all work associated with Quarelli Street-Golf Course Road Project as specified for this contract shall be in accordance with the contract documents, technical specifications, all applicable MAG Standard Specifications, MAG Standard Details, ADOT Standard Specifications, ADOT Traffic Details, and all applicable requirements of the Manual on Uniform Traffic Control Devices (latest revision of each), except as otherwise required by the Project Bid/Contract Documents and the Technical Specifications.

The undersigned understands that the Bid Proposal Form and Bid Schedule shall be submitted with a Proposal Guarantee of Certified Check, Cashier's Check, or Surety (Bid) Bond for an amount not less than 10 percent of the amount bid, along with other required documents as set forth herein.

The undersigned agrees that upon receipt of the Notice of Award from the Town of Winkelman, the Bidder/Contractor will execute the contract documents and furnish the required bonds and certificates of insurance prior to commencement of work.

All work shall be completed within one hundred twenty (120) 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 all necessary materials, supplies, and/or equipment needed to complete the work in its entirety.

CONSTRUCTION SCHEDULE

The bidder shall submit with the bid a proposed construction schedule for the project.

Upon award of the project, once the final size and scope of the project has been established, the Contractor shall submit a detailed construction schedule prior to or at the preconstruction conference that will be scheduled for the project.

BID SUBMITTAL PACKAGE

All Bids must include:

- Bid Form with Bid Schedule
- Bid Security-Bid Bond (10% Bid Amount)
- Project Schedule
- Schedule of Major Subcontractors to be assisting in the project
- List of at least three (3) successfully completed projects of a similar nature to this project with reference contact information

End of Bid Form with Bid Schedule

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned,

_____, as Principal, and

_____ , as Surety, are hereby held and firmly bound unto THE TOWN OF WINKELMAN, ARIZONA, as Contracting Agency in the penal sum of $_____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed this _____ day of _____, 2025

The Condition of the above obligation is such that whereas the Principal has submitted to the Town of Winkelman, Arizona, a certain Bid, attached hereto and hereby made a part hereof, to enter into a contract, in writing, for the construction of the Project:

QUARELLI STREET-GOLF COURSE ROAD PROJECT, TOWN OF WINKELMAN

NOW, THEREFORE,

(A) If said Bid shall be rejected, or

(B) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the form of an Agreement attached hereto (properly completed in accordance with said Bid) and shall furnish a Bond for his faithful performance of said Agreement, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated. The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its Bond shall in no way be impaired or affected by an extension of the time within which the Contracting Agency may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed, and these present to be signed by their proper officers, the day and the year first set forth above.

Principal (printed)	Principal (signature)
Surety (printed)	Surety (signature)
Witness	

IMPORTANT: Surety companies executing Bonds must appear on the U.S. Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Arizona.

End of Bid Bond

SCHEDULE OF MAJOR SUBCONTRACTORS & SUPPLIERS

QUARELLI STREET-GOLF COURSE ROAD PROJECT

Contractor: _____

1	Subcontractor	Specialty	Telephone
	Address	Percentage of Contract	Fax
	DBE/MBE?		E-mail
2	Subcontractor	Specialty	Telephone
	Address	Percentage of Contract	Fax
	DBE/MBE?		E-mail
3	Subcontractor	Specialty	Telephone
	Address	Percentage of Contract	Fax
	DBE/MBE?		E-mail
4	Subcontractor	Specialty	Telephone
	Address	Percentage of Contract	Fax
	DBE/MBE?		E-mail
5	Subcontractor	Specialty	Telephone
	Address	Percentage of Contract	Fax
	DBE/MBE?		E-mail
6	Subcontractor	Specialty	Telephone
	Address	Percentage of Contract	Fax
	DBE/MBE?		E-mail

Attach additional pages as needed. ***Submit with bid proposal form.***

End of Schedule of Major Subcontractors & Suppliers

TECHNICAL SPECIFICATIONS

These Technical Specifications supplement the Maricopa Association of Governments Uniform Standards and Details for Public Works Construction, and more fully describe the respective line items of construction work involved with the project. All provisions that are not supplemented remain in full force and effect.

REFERENCED STANDARDS

The construction of the project shall be in accordance with the following standards:

- Uniform Standard Specifications and Details for Public Works Construction, 2024 Revision to the 2025 Edition, Maricopa Association of Governments (MAG).
- Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2021 Edition, latest revision.
- Manual on Uniform Traffic Control Devices (MUTCD), latest revision.
- Arizona Supplement to the MUTCD, ADOT, latest revision.
- Maricopa County Traffic Control Manual, September 2015, latest revision.
- Maricopa County Pavement Marking Manual, April 28, 2025, latest revision.

GEOTECHNICAL EVALUATION & REPORT

A geotechnical investigation and evaluation was conducted for this project by the firm Alpha Geotechnical & Materials, Inc. A report entitled 'Geotechnical Engineering Report, Quarelli Street/Golf Course Road Project' dated April 22, 2024, was issued to the RICK Engineering Company and the Town of Winkelman. This report sets forth existing asphalt thickness, base thickness, concrete location, and subgrade conditions. The report includes a project description, discussions of the subsurface conditions encountered at the Site, flexible pavement design for Quarelli Street/Golf Course Road, and recommendations for excavation and other aspects of the project where geotechnical recommendations are appropriate.

The report is included as Appendix 1 to these bid-contract documents.

COMPLIANCE WITH NOISE ORDINANCE

Construction work shall be scheduled to comply with the Town's Noise Ordinance and other applicable ordinances, rules, and regulations pertaining to construction activities.

LINE ITEMS OF WORK

The various line items of construction work involved with the project, including the measurement and payment provisions, are set forth in the Bid Schedule, and are hereby described and defined starting on the next page.

PROJECT DESCRIPTION

The Towns of Hayden and Winkelman own South Golf Course Boulevard and Quarelli Street, respectively. These roadways provide access to an area central to recreational and outdoor activities including the Hayden Public Golf Course, Bobby Bracamonte Little League Field, Hastings Park, and Winkelman Flats Park which serve Hayden, Winkelman and the Copper Basin Community.

The project consists of improvements to approximately 4,490 feet of pavement on Quarelli Street and Golf Course Road. A close inspection of the existing road identified PCCP beneath portions of the existing AC pavement. The PCCP appeared to be located between Giffin Avenue and the Golf Course at the north end of the project. The planned improvements include removing the existing AC over the PCCP and replacing it with new AC pavement and widening the roadway beyond the PCCP with an AC pavement section. The new pavement section will be approximately 3 inches higher than the existing pavement section.

The project will also include the construction of a PCC multiuse path on the easterly side of Quarelli Street-Golf Course Road for the northern section and on the westerly side of the Quarelli Street on the southern section of the project (considers the project to run north-south for its entire length).

Streetlights light poles are planned for the east side to light the road and the path.

The limits of the project are shown on the aerial map below with a blue line labeled "Propose Paving Project."

MAG Standard Specifications & Details

The following listing identifies MAG Standard Specification sections and Standard Details applicable and pertinent to this project.

Spec. Section	*Section Title*
201	Clearing and Grubbing
205	Roadway Excavation
211	Fill Construction
220	Riprap Construction
301	Subgrade Preparation
310	Placement and Compaction of Aggregate Base Course
317	Asphalt Milling
321	Placement and Construction of Asphalt Concrete Pavement
324	Portland Cement Concrete Pavement (PCCP)
329	Tack Coat
336	Pavement Matching and Surfacing Replacement
337	Asphalt Pavement Crack Sealing and Crack Filling
340	Concrete Curb, Gutter, Sidewalk, Curb Ramps, Driveway and Alley Entrances
345	Adjusting Frames, Covers and Valve Boxes
350	Removal of Existing Improvements
401	Traffic Control
610	Water Line Construction
702	Base Materials
703	Riprap
710	Asphalt Concrete
711	Paving Asphalt
712	Liquid Asphalt
725	Portland Cement Concrete
726	Concrete Curing Materials
727	Steel Reinforcement
728	Controlled Low Strength Material
729	Expansion Joint Filler
796	Geosynthetics
Detail No.	*Standard Detail Title*
131	Street Sign Base
220-1	Curb and Gutter Types A, B, C, and D
220-2	Curb and Gutter Types E and F
221	Curb & Gutter Transition and Integral Roll Curb, Gutter, and Sidewalk
222	Single Curb – Types A, B and Termination
230	Sidewalks
270	Round Frame and Cover (And Grade Adjustments)
310	Steel Water Meter Box Cover
315	Polymer Concrete Water Meter Box Cover
319	Traffic Rated Box And Cover

Spec. Section	*Section Title*
320	Non Traffic Rated Water Meter Boxes
422	Manhole Frame And Cover Adjustment

Abbreviations

AB	Aggregate Base
ABC	Aggregate Base Course
AC	Asphalt Concrete Pavement
PC	Portland Cement
PCC	Portland Cement Concrete
PCCP	Portland Cement Concrete Pavement
RAP	Recycled Asphalt Pavement (milled asphalt pavement materials

1. CLEARING & GRUBBING

Description: The work involves the removal and disposal of any existing trees, brush, grasses, weeds, and other vegetation that are within 5-feet of the proposed asphalt road and concrete path. These deleterious and objectionable materials shall be cleared from the project site and properly disposed of at a landfill or other legal waste disposal site for this type of material. The vegetation removal shall include grubbing out roots to a depth of 2 feet.

The Contractor shall perform clearing and grubbing work needed on the site prior to conducting grading and earthwork operations for the proposed improvements. Clearing and grubbing work shall be completed in accordance with Section 201, Clearing and Grubbing, of the MAG Standard Specifications.

The total estimated area to be cleared and grubbed shown on the bid schedule is based on clearing and grubbing 5 feet on each side of the road pavement outside the developed area, on a 20 foot wide corridor for the path pavement, and including cut or fill slope areas. The Contractor is responsible for completing their own tree inventory and for confirming the clearing and grubbing area for bid proposal purposes.

The work shall include all materials, equipment, hauling, disposal fees, and labor costs involved in performing clearing and grubbing and tree removal and disposal as required per MAG Section 201, Clearing and Grubbing, and as specified herein.

Measurement: Clearing and Grubbing will be measured by the acre, measured to the nearest tenth acre, measured along the ground surface for the areas that have been satisfactorily cleared and grubbed, as determined by the Town Inspector.

Payment: The accepted quantity of clearing and grubbing, measured as provided above, will be paid for at the contract price per acre for the full performance of the work herein described, which price shall be full compensation for all work completed including all equipment, labor and materials required.

2. EARTHWORK

Description: Excavation consists of all cut excavation and embankment fills involved in the grading and construction of the new widened roadway, multiuse path, and roadside and path side finish grading work.

Contractor shall perform all roadway excavation and embankment construction where shown on the plans and in accordance with MAG Section 205, Roadway Excavation and Section 211, Fill Construction. Roadway excavation and embankment construction shall be to the:

- subgrade of the roadway base course in road widening areas where no base material currently exists,
- subgrade of the path base course,
- subgrade of the riprap slope protection on 1:1 cut slopes, and
- finished grade of the road and path pavement foreslopes.

Embankment fills shall be compacted to a minimum of 95% of the maximum dry density for the material and within the range of plus or minus 2% of the optimum moisture content in accordance with ASTM D698C (Standard Proctor Density) requirements.

Excess excavated material (waste) and any unsuitable material may be disposed onsite in locations approved by the Town Inspector.

The Contractor shall provide the required grading, compaction, and shaping of the excavation areas and fill embankment areas to the extents, lines, slopes, and cross-sections shown on the plans. Finished grading shall be completed to ensure positive drainage throughout the project site.

The approximate estimated quantities for excavation, embankment, and waste are shown on the plans for information and reference only. The Contractor shall make an independent determination of the earthwork quantities for the project for bid proposal purposes.

Earthwork shall include all materials, equipment, and labor costs to complete the excavations, embankment construction, proper disposal of excess and unsuitable excavated materials, and finished grading of all disturbed areas.

Measurement: Measurement for earthwork shall be made on a lump sum (LS) basis for all earthwork (excavation, embankment, waste disposal, grading, and compaction) performed and as required to complete the project.

Payment: Payment shall be made on the established lump sum (LS) amount set forth in the bid schedule for the earthwork completed to the lines, grades, and sections shown on the plans.

3. MILL ASPHALT PAVEMENT, 2.25" AVE DEPTH

Description: Prior to commencing asphalt pavement milling work, the contractor shall sawcut the existing asphalt pavement at the termini end of the proposed asphalt pavement sections. This is to provide a clean cut vertical edge for the subsequent asphalt overlay construction to pave against.

The Contractor shall mill the existing asphalt pavement to completely remove the asphalt throughout the project to the limits shown on the plans. The asphalt milling work shall be conducted by using an appropriate pavement milling machine. The work shall be completed for the full width and length as shown on the plans and in accordance with MAG Section 317 for asphalt milling construction work.

The existing aggregate base course material shall be left in place.

The milled asphalt material (recycled asphalt pavement – RAP) shall be temporarily stockpiled onsite at locations approved by the Town inspector.

Under separate construction line items of work, the RAP shall be used by the contractor to:

- Construct a 5" +/- deep base course for the multiuse path pavement section.
- Construct a 5" +/- deep base course for the new roadway asphalt pavement section in the widening sections where no existing base material is present.

Any excess RAP material may be wasted onsite and used for resurfacing of existing rock driveways in lieu of furnishing and placing aggregate base material.

The asphalt milling work shall include all materials, equipment, and labor costs to sawcut the match lines, mill the complete depth of the existing asphalt pavement, and temporarily stockpile the RAP material as needed.

Measurement: Measurement will be based on the square yards (SY) of existing asphalt roadway surface milled and prepared to the required extent and depth as established by the plans and the specifications.

Payment: Payment will be made on the bid unit price per square yard (SY) based on the measured quantity.

4. REMOVE CURB & GUTTER

Description: The existing concrete curb and gutter sections (regardless of curb and gutter type) shall be removed where shown on the plans, or as may be marked in the field by the Town Inspector. Curb and gutter removal shall be made to the nearest construction joint (when within 5 feet), or to a full depth sawcut line.

The removed concrete materials shall be hauled off site and properly disposed of at a landfill or other legal and approved site for this type of material.

Adjacent sections of curb and gutter shall be protected in place and not disturbed. Any sections outside the designated removal areas that may be damaged by the contractor's actions shall be removed and replaced at the contractor's sole expense.

The work shall include all materials, equipment, and labor costs to remove and dispose of the existing curb and gutter sections. Sawcut lines, where required, are included and incidental to this construction item.

Measurement: Measurement will be based on the linear feet (LF) of existing curb and gutter sections satisfactorily removed as measured on the ground by the Town Inspector.

Payment: Payment will be made at the bid unit price per linear feet (LF) based on the measured quantity.

5. REMOVE CONCRETE PAVEMENT

Description: The existing concrete pavement sections (sidewalk, driveway, and/or roadway) shall be removed for the full width, depth, and length where shown on the plans and as needed to construct the proposed improvements. Concrete pavement removal shall be made to the nearest construction joint or sawcut line.

The removed concrete materials shall be hauled off site and properly disposed of at a landfill or other legal and approved site for this type of material.

Adjacent sections of concrete pavements shall be protected in place and not disturbed. Any sections outside the designated removal areas that may be damaged by the contractor's actions shall be removed and replaced at the contractor's sole expense.

The concrete pavement (sidewalk, driveway, and/or roadway) removal work shall include all materials, equipment, and labor costs to remove and dispose of the existing concrete sidewalk, driveway, and/or roadway pavement sections. Sawcut lines, where needed, are included and incidental to this construction item.

Measurement: Measurement will be based on the square feet (SF) of concrete pavement surface area satisfactorily removed as measured on the ground by the Town Inspector.

Payment: Payment will be made at the bid unit price per square feet (SF) based on the measured quantity.

6. REMOVE & REINSTALL FENCE & GATES

Description: The existing fencing and gates (regardless of the type) shall be removed within the limits shown on the plans, or as may be identified in the field by the Town Inspector. Fencing and gate removal shall be made to the nearest post.

The removed fence posts, wire fabric (or fence rails, panels, or sections), gates, and associated materials and hardware shall be salvaged and stored onsite.

Fence post holes shall be backfilled with suitable earth or crushed rock material. The backfill shall be compacted to the greatest extent possible. Restore the backfilled post holes to match the surrounding ground surface.

Adjacent sections of fencing shall be protected in place and not disturbed. Any sections outside the designated removal areas that may be damaged by the contractor's actions shall be removed and replaced at the contractor's sole expense.

Contractor shall reinstall the fence and gates where shown on the plans after the earthwork and pavement construction has been completed. The reinstalled fence and gates shall be completed to match the existing fencing construction and appearance. Contractor shall furnish and use any new fencing materials, supplies, and hardware that may be required to complete the reinstalled fence and gates so that they are fully functional for their intended purpose and to the satisfaction of the Town and the property owner.

The fencing and gate removal and reinstallation work shall include all materials, equipment, and labor costs to remove, salvage, store, and protect the removed materials onsite and for the subsequent reinstallation work after completion of the earthwork and pavement construction to restore the fence to its preexisting condition and at the location shown on the plans.

Measurement: Measurement will be based on the linear feet (LF) of existing fence and gate sections satisfactorily removed and reinstalled as measured on the ground by the Town Inspector.

Payment: Payment will be made at the bid unit price per linear feet (LF) based on the measured quantity.

7. CONSTRUCT RIPRAP EROSION CONTROL SWALE

Description: The Contractor shall construct a riprap erosion control swale on geotextile filter fabric at the wash crossing location to the dimensions and depth shown on the plans.

The embankment fill slope adjacent to the path pavement shall be left 18" lower than the pavement surface and prepared to receive the geotextile filter fabric and riprap. The required depth of the riprap is 18".

The receiving riprap subgrade and its vertical edges shall be lined with geosynthetic filter fabric. Erosion control filter fabric used below areas to receive riprap shall meet the requirements of MAG Section 796.2.3, Erosion Control and Table 796-3 Erosion Control Geosynthetic Properties. Installation of the geotextile filter fabric shall be per the manufacturer's guidelines.

Riprap material shall be angular and have a D_{50} = 6-inches with stone sizes ranging from 3" to 9". The riprap materials shall meet the requirements of MAG Section 703, Riprap, and of MAG Section 220, Riprap Construction. Contractor may also salvage any large rocks unearthed during the excavation work for use as riprap at this location.

Place riprap on the fabric to a minimum 18" depth exercising care not to damage or puncture the fabric underlayment. Riprap shall be placed to present a dense uniform mass of durable angular stone with no apparent voids or pockets.

The Contractor shall grade and shape the ground surface adjacent to the riprap erosion control swale as necessary to present a uniform grade and slope with positive drainage to the constructed riprap swale.

The Contractor shall provide all tools, equipment, supplies, materials, and labor to complete the work per the plans and specifications, and to the satisfaction of the Town Inspector.

Measurement: Measurement will be based on the tons (TN) of riprap placed on geotextile erosion control fabric to the required extent and depth as established by the plans, specifications, and details. Certified weight tickets for all aggregate riprap materials delivered to the project site and placed on the prepared subgrade surface shall be provided to the Town Inspector to document the tons provided and place on the project.

Payment: Payment will be made on the bid unit price per ton (TN) based on the measured quantity.

8. CONSTRUCT GROUTED RIPRAP SLOPE PROTECTION

Description: The work involves construction of grouted riprap slope protection on the steep cut slopes at the locations where shown on the plans.

The Contractor shall construct the grouted riprap slope protection per MAG Standard Specification Sections 220, 703, and 796.

Riprap material shall be angular and have a D_{50} = 6-inches with stone sizes ranging from 3" to 9". The riprap materials shall meet the requirements of MAG Section 703, Riprap, and of MAG Section 220, Riprap Construction. The riprap may be angular or rounded.

Place riprap on the cut slope to a depth of 12-inches. Riprap shall be placed to present a dense uniform mass of durable stone with no apparent voids or pockets.

Grout material shall meet the requirements of MAG Section 220, Riprap Construction, and Table 220-1.

After the riprap has been placed, secure the riprap in place on the slope with Portland Cement grout for the full depth of the riprap slope lining. Consolidate the grout into place to provide a dense stone and mortar layer with all voids and interstices filled full.

After grout has been placed, the rocks shall be thoroughly brushed so that their top surfaces are exposed. If required, use water pressure to clean stone faces after the mortar has achieved sufficient strength. The outer rocks shall project 1/4 their diameter above the grouted surface.

The Contractor shall provide all tools, equipment, supplies, materials, and labor to complete the grouted riprap slope protection work to the satisfaction of the Town Inspector.

Measurement: Measurement shall be based on the square feet (SF) of grouted riprap slope protection satisfactorily constructed.

Payment: Payment will be made at the bid unit price per square feet (SF) based on the measured quantity.

9. PREPARE EXISTING & CONSTRUCT NEW AGGREGATE BASE COURSE, 4.5”-5” DEPTH

Description: After the asphalt pavement milling had been completed, per the geotechnical report there should be an average depth of 4.5-inches of existing aggregate base material in place.

The exception is where the new pavement section has been widened beyond the limits of the existing aggregate base material. In those areas, the contractor shall scarify and recompact the earth subgrade. Subgrade preparation shall be in accordance with the requirements of MAG Section 301, Subgrade Preparation. The subgrade shall be scarified to a depth of 6-inches and then moisture conditioned and compacted to at least 95% of the maximum dry density for the material and within the range of plus or minus 2% of the optimum moisture content per ASTM D698C (Standard Proctor Density).

Contractor shall then place on the prepared subgrade a depth of 5” of RAP material or aggregate base material. Compaction of the base material shall be to 100% of the maximum dry density for the material and within the range of plus or minus 2% of the optimum moisture content per ASTM D698C (Standard Proctor Density). When completed there will be either existing PCC pavement or base material for the full width of the roadway cross-section.

For the existing base material exposed after the milling has been completed, the contractor shall scarify, rework, and recompact the full 4.5” average depth of the existing aggregate base incorporating recycled asphalt pavement material where and as needed. Compact the reworked aggregate base to 100% Standard Proctor Density (ASTM D698).

Estimated areas (the exact area of existing concrete is not known with any certainty):

- Area of existing asphalt pavement 13,818 SY
- Area of new asphalt pavement 15,565 SY
- Area of existing PCCP under asphalt 6,389 SY (approximate only)
- Area with existing aggregate base 7,429 SY (approximate only)
- Widening area to construct new base 1,747 SY (approximate only)
- Total estimated area for this construction line item 9,176 SY (approximate only)

Fine grade and trim the surface of the new and the reworked and compacted aggregate base material to match the surface of the existing PCCP section and to provide the 1.5% crown cross-slope shown on the typical road section.

Apply an asphalt prime to the full width of the aggregate base material using MC-30 or MC-70 cutback liquid asphalt. The prime coat application rate shall be 0.62 to 0.65 gallons per square yard. Allow the prime to penetrate into the aggregate base material and to cure out.

The work under this construction line item shall include all materials, equipment, and labor costs to construct new aggregate base course in the pavement widening areas, to scarify and recompact the existing aggregate base course, to fine grade smooth the full base course surface, and to apply a prime coat on the base course material in accordance with the plans and specifications.

Measurement: Measurement will be based on the square yards (SY) of existing aggregate base course scarified and recompacted and new aggregate base course constructed in the pavement widening areas that extends beyond the existing ABC, as established by the plan quantity.

Payment: Payment will be made on the total line item bid price based on the unit price bid per square yard (SY) basis.

10. CONSTRUCT ASPHALT CONCRETE PAVEMENT

Description: Furnish, place, compact, and construct asphalt pavement where shown on the plans. The asphalt pavement shall be constructed on the prepared surface of the existing aggregate base.

PCCP Surface Preparation: Prior to overlaying the existing PCCP, prepare its surface as follows:

- Power broom the milled concrete surface to thoroughly clean.
- Fill and seal cracks 3/4" wide or greater with joint sealant, hot-applied, elastomeric-type, for PCC pavements (ASTM D3406).
- Apply a tack coat prior to placing the asphalt overlay.

Crack sealing shall consist of cleaning, filling, and sealing of pavement cracks and joints measuring greater than 3/4-inches in width per MAG Standard Specifications Section 337, Asphalt Pavement Crack Sealing and Crack Filling. All labor, equipment, and material costs associated with the PCCP surface preparation shall be incorporated into the bid unit price for construction of the asphalt concrete pavement.

AC Pavement Construction: For asphalt pavement thickness greater than 3-inches, construct a 2-inch thick base course from the beginning of the project at Station 34+10 to Station 74+64. Transition the asphalt base course thickness from 5” at Station 74+64 to 0” thickness at Station 75+14.

For the entire length of the roadway portion of the project, construct a 3-inch thick asphalt surface course.

For the asphalt pavement portion of the multiuse path, construct a 2-inch thick asphalt surface course on the prepared and compacted 5” deep RAP base. RAP base construction is measured and paid for under a separate line item of construction work.

The asphalt pavement material shall be 1/2” asphalt concrete mix designation, Marshall mix design for high traffic areas, per MAG Specification Section 710, Asphalt Concrete.

The construction of the asphalt pavement section shall be in accordance with MAG Specification Section 321, Placement and Construction of Asphalt Concrete Pavement.

The asphalt concrete pavement work shall include all materials, equipment, and labor costs to furnish, place, compact, and construct the required depths of asphalt pavement section per the plans, details, and specifications.

Smoothness Requirements: The asphaltic concrete pavement shall be placed and finished by means of self-propelled paving machines. Pavers shall be equipped with automatic screed controls with sensors for both sides of the paver, capable of sensing grade from an outside reference line, sensing the transverse slope of the screed, and providing the automatic signals which operate the screed to maintain the desired profile grade and transverse slope.

The completed surfacing shall be smooth and true to grade and cross-section and free from ruts, humps, depressions, bumps, or other irregularities. The ride at speed limit on the new pavement shall be free of any noticeable bumps, waviness, or roughness.

Pavement smoothness shall also meet the requirements of ADOT Standard Specifications Section 406-7.06 – Smoothness and Surface Tolerances. The surface of the surface lift of asphaltic concrete placed under this section of the specifications shall be tested and shall not vary by more than 1/8-inch from the lower edge of a ten-foot straightedge when it is placed in the longitudinal direction (including across transverse joints), and when it is placed in the transverse direction across longitudinal joints. All deviations exceeding the specified tolerances above shall be corrected by the contractor, to the satisfaction of the Town Inspector.

The Contractor shall make straightedge tests witnessed by the Town Inspector at a minimum of two longitudinal and one transverse test per 100-foot station intervals at locations specified by the Town Inspector.

The surface of the asphalt pavement shall meet all smoothness requirements and the ride shall feel smooth to vehicle occupants.

Measurement: Measurement will be based on the tons (TN) of asphalt pavement constructed to the required extents and depths as measured on the ground by the Town Inspector. Certified weight tickets for all asphalt delivered to the project site and placed on the prepared ABC surface shall be provided to the Town Inspector to document the tons of asphalt in place.

Payment: Payment will be made at the bid unit price per ton (TN) based on the measured quantity.

11. CONSTRUCT SPEED TABLE WITH CROSSWALK & SIGNS

Description: The work involves construction of an asphalt concrete speed table with crosswalk striping and approach/departure markings at the locations shown on the plans.

The crosswalk speed table shall be constructed in accordance with the following standards and details shown on the plans:

- City of Scottsdale Standard Detail No. 2292-1, Speed Table Details.
- City of Scottsdale Standard Detail No. 2292-2, Speed Table Details.
- Ladder Crosswalk Marking Detail, shown on the Crosswalk Details plans sheet.

The City of Scottsdale Speed Table Details shall be modified as follows:

- Add a departure chevron marking on each lane as shown on the Ladder Crosswalk Marking Detail.

  Crosswalk and chevron markings shall be white thermoplastic striping and chevron markings meeting the requirement set forth in the Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2025 Edition, Section 704 – Thermoplastic Pavement Markings, and related sections.

- Add a post mounted Pedestrian Crossing Sign (W11-2) with a Down Arrow Placard Sign (W16-7P) on the approach side of the speed table on each side of the road.
- In lieu of the post mounted Traffic Calming Ahead Sign and 20 MPH Placard (W13-1), install a Pedestrian Crossing Sign (W11-2) with an Ahead Placard Sign (W16-P) 50 feet in advance of the speed table on the approach side of the speed table on each side of the road.

The Contractor shall furnish and install new traffic sign posts, foundations, slip bases, and sign panels in accordance with ADOT Standard Specifications Sections 607, Roadside Sign Supports, and 608, Sign Panels, and the construction plans.

The construction of the speed table for the marked crosswalk work shall include all materials, equipment, and labor costs to construct the asphalt speed table, apply the speed table chevron markings, apply the ladder crosswalk markings, install the two pedestrian crossings with down arrow placards at the crosswalk, and install the two advance pedestrian crossings with the ahead placard at the locations and in accordance with the plans, details, and specifications.

Measurement: Measurement will be based on each (EA) speed table for crosswalk, including all associated markings and post mounted signs, as confirmed by the Town Inspector.

Payment: Payment will be made at the bid unit price per each (EA) based on the measured quantity.

12. CONSTRUCT SPEED HUMP

Description: The work involves construction of an asphalt concrete speed hump with approach and departure markings at the locations shown on the plans.

The speed hump shall be constructed in accordance with MAG Standard Detail No. 210, Residential Speed Hump.

The MAG Residential Speed Hump detail shall be modified as follows:

- At speed hump locations with 2' wide asphalt shoulders, the speed hump section shall be constructed between the edges of the full width asphalt pavement section including the shoulders.

The construction of the speed hump work shall include all materials, equipment, and labor costs to construct the asphalt speed humps and apply the speed hump chevron markings at the locations and in accordance with the plans, details, and specifications.

Measurement: Measurement will be based on each (EA) speed hump, including all associated markings, as confirmed by the Town Inspector.

Payment: Payment will be made at the bid unit price per each (EA) based on the measured quantity.

13. CONSTRUCT RAP BASE FOR MULTIUSE PATH, 5" DEPTH

Description: The contractor shall prepare the subgrade and place and compact the 5" layer of aggregate base course for the proposed multiuse path where shown on the plans. Aggregate base material to be used shall be the Recycled Asphalt Pavement (RAP) materials obtained from the milling of the existing roadway asphalt pavement material.

Subgrade Preparation: In advance of the placement and compaction of the RAP base course material, the Contractor shall prepare the excavated subgrade. To prepare the subgrade, the Contractor shall scarify the existing subgrade surface to a minimum depth of 6 inches, moisture condition the soil material, and compact the subgrade to 95 percent of the maximum dry density and within a range of plus three percent and to minus three percent of the optimum moisture content as determined by ASTM D698 (Standard Proctor Density). Subgrade preparation shall be performed in accordance with MAG Standard Specification 301, Subgrade Preparation. Subgrade preparation work shall be subsidiary and incidental to the construction of the RAP base course.

RAP Base Course Construction: The Contractor shall place and compact the required 5" thickness of RAP base course on the prepared subgrade in accordance with the Multiuse Path pavement structural section shown on the plans. Compaction of the ABC shall be to 100 percent of the maximum dry density and within a range of plus three percent and to minus three percent of the optimum moisture content as determined by ASTM D698 (Standard Proctor Density). The RAP base course shall be constructed in accordance with MAG Section 310 – Placement and Construction of Aggregate Base Course.

The work shall include all materials, equipment, and labor costs to perform the subgrade preparation work and to furnish, place, compact, and construct the RAP base course per the plans and specifications.

Measurement: Measurement will be based on the square feet (SF) of 5" deep RAP base course for the mulituse path constructed as measured on the ground by the Town Inspector.

Payment: Payment will be made on the bid unit price per square feet (SF) based on the measured quantity.

14. CONSTRUCT PATH PAVEMENT, 5” DEPTH

Description: The contractor shall construct the 5” deep PCCP path on the completed RAP base course to the length, width, configuration, and locations shown on the plans.

Construction shall be in accordance with MAG Standard Specification Section 340, Concrete Curb, Gutter, Sidewalk, Curb Ramps, Driveway and Alley Entrances, MAG Standard Detail 230, Sidewalks, and the typical multiuse path pavement section shown on the plans.

PC concrete furnished for the construction of the PCCP path shall be Class AA, 4,000 psi 28-day strength, per MAG Standard Specification Section 725, Portland Cement Concrete.

The new PCCP path pavement shall be finished with a transverse broomed finish. Construct the expansion and contraction joints and apply concrete curing compound as specified.

The finished concrete path shall be backfilled to the satisfaction of the Town Inspector.

Hot weather protection measures and cold weather protection measures shall be employed when needed per ACI standards. When daytime ambient temperatures are expected to exceed 100 degrees F, concrete shall be placed only between the hours of 8:00 p.m. and 8:00 a.m. Concrete shall not be placed on frozen subgrade or when overnight temperatures are expected to be below 40 degrees F.

The work shall include all materials, equipment, and labor costs to furnish, place, install, and construct the 5” concrete path section on the completed 5” RAP base course.

Measurement: Measurement will be based on the square feet (SF) of new 5” thick PC concrete path pavement constructed on the RAP base course as measured on the ground by the Town Inspector.

Payment: Payment will be made at the bid unit price per square feet (SF) based on the measured quantity.

15. CONSTRUCT VERTICAL CURB & GUTTER

Description: Vertical curb and gutter sections shall be constructed where shown on the plans.

Subgrade Preparation: The contractor shall scarify and recompact the earth subgrade beneath the proposed 2' wide curb and gutter sections. Subgrade preparation shall be in accordance with the requirements of MAG Section 301, Subgrade Preparation. The subgrade shall be scarified to a depth of 6-inches and then moisture conditioned and compacted to at least 95% of the maximum dry density for the material and within the range of plus or minus 2% of the optimum moisture content per ASTM D698C (Standard Proctor Density).

Vertical Curb & Gutter Construction: Construction of the vertical curb and gutter on the prepared subgrade shall be in accordance with MAG Standard Specifications Section 340, Concrete Curb, Gutter, Sidewalk, Curb Ramps, Driveway And Alley Entrance, and Standard Detail 220-1, Curb And Gutter, Type A, Vertical Curb & Gutter.

Vertical curb and gutter shall be constructed with a 6" curb height, except in the vicinity of the power pole at STA 64+78 where the curb height is to be 12" high for a length of 20'. The adjacent sections of curb and gutter shall transition from the 12" height to the typical 6" height over a distance of 20' on the east side and 50' on the west side, where shown on the plans.

The work shall include all materials, equipment, and labor costs to furnish, place, install, and construct the vertical curb and gutter sections per the plans and specifications, including subgrade preparation. Subgrade preparation is not measured separately as it is considered incidental to this bid item per MAG Specification Sections 301 and 340.

Measurement: Measurement will be based on the linear feet (LF) of new Type A vertical curb and gutter sections constructed as measured on the ground by the Town Inspector.

Payment: Payment will be made at the bid unit price per linear feet (LF) based on the measured quantity.

16. SPREAD & COMPACT RAP OR AB MATERIAL ON DRIVEWAYS TO MATCH AC

Description: Restoration of intersecting rock surfaced or unsurfaced driveways made by spreading and compacting RAP or AB materials to match the edge of the new asphalt pavement.

The construction work for the new asphalt road pavement and concrete path will generally result in the edge of the new road or path pavement being at a higher elevation (typically 3") than what existed prior to construction. The Contractor shall regrade the driveway surface for its full width for a typical distance of 25' more or less from the edge of the new pavement, leaving room above this surface for the placement of new RAP or aggregate base course material. The newly graded transition surface of the driveways shall be resurfaced with a 2" to 3" thick layer of RAP or new aggregate base material. The repair and resurfacing of the driveway intersections shall be completed to the satisfaction and approval of the Town Inspector.

The work shall include all materials, equipment, and labor costs to complete grading work and furnishing, placing, and compacting RAP or AB material on driveways to match the constructed road and path pavements.

Measurement: Measurement will be based on the square yards (SY) of completed spreading and compacting RAP or AB material on graded driveway surfaces to transition to and match the new road or path pavement as constructed and as measured on the ground by the Town Inspector.

Payment: Payment will be made on the bid unit price per square yard (SY) based on the measured quantity.

17. ADJUST MANHOLE TO FINISHED GRADE

Description: The contractor shall adjust manhole frames and covers to match and be flush with the new finished grade of the concrete or asphalt pavement surface in accordance with MAG Standard Specification Section 345 and MAG Standard Detail 422, Manhole Frame And Cover Adjustment, and to the lines, grades, and elevations shown on the plans.

The work shall include all materials, equipment, and labor costs to adjust the manhole frame and cover to finished grade as required including any materials and supplies needed to complete the adjustments.

Measurement: Measurement will be based on each (EA) manhole frame and cover adjusted to match and be flush with the new finished grade pavement surface as confirmed by the Town Inspector.

Payment: Payment will be made at the bid unit price per each (EA) based on the measured quantity.

18. ADJUST WATER VALVE TO FINISHED GRADE

Description: The contractor shall adjust water valve boxes as needed to match and be flush with the new asphalt or concrete pavement surface in accordance with MAG Standard Specification Section 345, Adjusting Frames, Covers, And Valve Boxes, Standard Detail 270, Round Frame And Cover and Grade Adjustments, and Standard Details 391-1 and 391-2, Valve Box Installation And Grade Adjustment, as applicable, and to the lines, grades, and elevations matching the surrounding pavement surface.

The work shall include all materials, equipment, and labor costs to adjust the existing water valve box to finished grade, as required, including any and all materials and supplies needed to complete the adjustments.

Measurement: Measurement will be based on each (EA) existing water valve box adjusted to match and be flush with the new pavement surface, as confirmed and accepted by the Town Inspector.

Payment: Payment will be made at the bid unit price per each (EA) based on the measured quantity.

19. ADJUST WATER METER BOX TO FINISHED GRADE

Description: The Contractor shall adjust existing water meter box frames and covers to match and be flush with the new pavement surface (asphalt or concrete) or finished ground surface in accordance with MAG Standard Specification Section 345, Adjusting Frames, Covers, And Valve Boxes, and MAG Standard Details 310, Steel Water Meter Box Cover, 315 – Polymer Concrete Water Meter Box Cover, 319 – Traffic Rated Box And Cover, And 320 – Non Traffic Rated Water Meter Boxes, as applicable, and to the lines, grades, and elevations matching the abutting and surrounding pavement or finished grade ground surfaces.

The work shall include all materials, equipment, and labor costs to adjust the water meter box, as required, including any and all materials and supplies needed to complete the adjustments. The work shall also include lowering or raising the water meter and associated service line and valves if necessary due to the amount of vertical adjustment.

Measurement: Measurement will be based on each (EA) existing water meter box frame and cover adjusted to match and be flush with the new pavement surface or finished ground surface as confirmed by the Town Inspector.

Payment: Payment will be made at the bid unit price per each (EA) based on the measured quantity.

20. RELOCATE BACKFLOW PREVENTER

Description: The contractor shall remove, temporarily store, and reinstall the potable water backflow preventer in the existing water service line where shown on the plans. The backflow preventer work shall be in accordance with MAG Standard Specification Section 610, Water Line Construction, and in accordance with applicable plumbing codes and standards.

The construction work includes, but is not limited to:

- Removing the backflow preventer and lengths of the existing water service line necessary to relocate the backflow preventer.
- Reinstalling the backflow preventer at the location designated on the plans to move it outside the proposed pavement construction area.
- Reconnecting the relocated backflow preventer to the existing water service line on each side with new water service line pipe of a size and type matching or compatible with the existing pipe size and material and furnishing and installing couplings and other fittings and supplies as needed to complete the installation.
- Backfilling the excavated area with native soil material and compacting the backfill as specified in the earthwork section of these specifications.

Contractor to coordinate with Arizona Water Company (Jason Linden 928-240-6470) and the property owner for the temporary shutoff of the water service required to relocate the existing water meter. A minimum of 48-hours' notice shall be provided to the property owner for the time and expected duration of the shutoff of water supply.

The work involved shall include all labor, materials, and equipment necessary for the proper relocation of the existing backflow preventer completed to the satisfaction of the Arizona Water company and the property owner. The Contractor shall also include the cost of new water service line piping and fittings as needed to make a complete and fully functional installation connecting the relocated backflow preventer to the existing water service line.

Measurement: Measurement will be based on each (EA) backflow preventer, properly relocated, as measured by the Town Inspector.

Payment: Payment will be made at the bid unit price per each (EA) based on the measured quantity**.**

21. HYDRAULIC SEEDING OF DISTURBED AREAS

Description: Seeding for the restoration of the roadway construction right of way and disturbed areas shall be completed in accordance with MAG Standard Specification Section 430, Landscaping. Seeding method shall be hydraulic seeding.

Seeding consists of furnishing and applying chemical fertilizer, furnishing and planting seed by hydraulic seeding, and furnishing, applying and affixing mulch. The areas to be seeded are disturbed or un-vegetated areas within the construction limits.

Application rates of seed as specified are for Pure Live Seed (PLS). PLS is determined by multiplying the sum of the germination and hard or dormant seed by purity. Weed content of seed shall not exceed 0.5 percent. No substitution of species, strain or origin of seed will be allowed unless evidence is submitted in writing by the Contractor showing that the specified materials are not reasonably available during the contract period. The substitution of species, strains or origins shall be made only with the written approval of the Engineer, prior to making said substitution.

The seed shall be delivered to the project site in standard, sealed, undamaged containers. Each container shall be labeled in accordance with A.R.S. § 3-231 through 3-243 and the US Department of Agriculture rules and regulations under the Federal Seed Act. Labels shall indicate the variety or strain of seed, the percentage of germination, purity and weed content, and the date of analysis, which shall not be more than 9 months prior to the delivery date.

Seed Mix

Botanical Name	*Common Name*	*Seed/lb*	*Rate/Acre- PLS*
Agropyron dasystachym	Thickspike Wheatgrass	154,000	3.0
Bouteloua gracilis	Blue Gramma	825,000	2.0
Koeleria crisata	Prairie Junegrass	825,000	1.0
Mulenbergia wrightii	Spike Muhly	1,000,000	1.5
Festuca arizonica	Arizona Fescue	500,000	2.0
Elymus elymoides	Squirrel Tail	192,000	4.0
Sporobolus cryptandrus	Sand Dropseed	5,298,000	0.75

The slurry for the hydroseed process shall be as follows:

Slurry Mix	*Rate*
Hydrofiber: Silva, Conwed or Spray mulch x-100 wood fiber or equivalent	800 lbs/acre
Tackifier	80 lbs active ingredient/acre
Starter fertilizer: Ammonium Phosphate	16-20-0 200 lbs/acre
Seed mix	As specified
Soil conditioner	1000 lbs/acre

The seed shall be applied within 30 minutes after being combined with the slurry mix.

Ingredients for Slurry Application	*Percentages (Minimum)*
Nitrogen	5
Phosphoric Acid	3
Water Soluble Potash	1
Humas	50
Humic Acids	15
Soluble Metallic Iron	1

Wood Cellulose Fibers: Wood fiber mulch shall consist of a specially prepared wood fiber processed to contain no growth germination inhibiting factors. The mulch shall be virgin wood and be manufactured and processed so the fibers will remain in uniform suspension in water under agitation to form a homogenous slurry. The mulch shall have a pH range between 4.5 to 6.5.

When hydraulically sprayed on the ground, the material will form a blotter-like cover impregnated uniformly with seed. The cover will allow the absorption of moisture and allow rainfall to percolate to the underlying area.

Tacking Agent: Binder shall be free flowing, non-corrosive powder produced from natural plant gum marketed under M-Binder, M145 Binder, AZ-TAC or approved equal. It shall have gelling properties to inhibit the tendency of water and fiber to move downhill as they are sprayed on steep slopes.

Construction Requirements:

Seeding: Seeding shall be done immediately following the final grading or disking of each cut slope and each fill slope. The soil surface shall be loose. The Contractor will be required to mobilize frequently to accomplish this goal. No seeding shall be carried out under wind conditions exceeding 5 mph.

If measurable rain falls prior to seeding, or if the surface of the graded area has formed a crust or slightly hardened surface, the Contractor shall be responsible for ripping, blading or loosening the ground surface, or otherwise repairing and/or preparing the affected areas for seed, after they adequately dry out and prior to seeding, at no cost to the Town. The use of specialized equipment or manual methods may be required to prepare the surface for seeding, if seeding is not accomplished immediately after grading or disking.

All areas disturbed by construction are to be seeded. All areas are to be approved by the Town Inspector. The Contractor shall coordinate seeding operations with slope construction so that the tops of cuts and toes of fills can be reached with hydroseed equipment. Hoses may be used where heavy equipment cannot access.

Tillage: All slopes steeper than 3:1 shall either have a loose, friable soil depth of 2 inches or more or be tilled a minimum of 4 inches in depth as they are constructed. Tillage shall be accomplished with a ripper bar, chisel plow or harrow tool or with other equipment which will provide thorough soil cultivation. Tillage shall be performed along the contour. The slopes behind guardrail and in the ditch line in cut shall be left with roughened surface to aid in water absorption. Seeded areas which are not behind guardrail or between the ditch line and the roadway on a cut shall be left in a firm surface free of foreign material that would interfere in the seeding operation.

No work shall be done when the moisture content of the soil is unfavorable or the ground is otherwise in a condition not conducive to tillage.

Planting: After the tillage is complete and accepted by the Town Inspector, seed shall be planted by slurry mix (cut slopes steeper than 3:1).

All areas to be seeded shall have a starter fertilizer of ammonium phosphate 16-20-0 applied at a rate of 200 pounds per acre and soil condition at the rate of 1,000 pounds per acre. Any material sprayed on non-designated areas shall be immediately removed by the Contractor at the Contractor's expense. Non-designated areas include pavement, guardrails, signs, plants and existing vegetation.

Anchorage by Tacking: Mulch shall be anchored by tacking using a slurry consisting of a minimum of 150 pounds of binder, 400 pounds of wood fiber mulch and 700 gallons of water per acre.

Preservation of Seeded Areas: Any material sprayed on non-designated areas shall be immediately removed by the Contractor at the Contractor's expense. Non-designated areas include pavement, guard rails, signs, plants, and existing vegetation.

Warranty: The Contractor shall guarantee that 75 percent of the applied tackifier remains in place for a period of 30 days after acceptance of the seeding application. Any areas that have less than 75 percent of the tackifier remaining shall be reseeded, re-mulched and re-tacked at the Contractor's expense. Areas that require reseeding and re-mulching under the warranty shall be done at no additional cost to the Town. The 30 day period(s) shall be within the allotted contract time.

Measurement: Seeding will be measured by the acre, to the nearest tenth acre, measured along the ground surface for the areas which have been planted and mulched, as determined by the Town Inspector.

Payment: The accepted quantities of seeding, measured as provided above, will be paid for at the contract price per acre for the full performance of the work herein described, which price shall be full compensation for the work completed including all equipment, labor and materials required.

22. APPLY DOUBLE YELLOW THERMOPLASTIC CENTERLINE STRIPING, 4” WIDTH

Specifications: Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2025 Edition, Section 704, Thermoplastic Pavement Markings, and related sections.

Description: The Contractor shall furnish and apply approved thermoplastic pavement markings, yellow centerline striping, solid and broken lines, to the required 4” width, length, and configurations as shown on the striping plan and as may be directed by the Town Inspector.

Yellow striping: Two solid double yellow lines to delineate the centerline, 4” line widths separated by a 4” wide space.

The thermoplastic lines shall be 0.060-inch thick (60 mils) striping.

Apply thermoplastic striping from 30 to 45 days after asphalt pavement construction has been completed.

The work shall include all materials, equipment, and labor costs to properly apply the thermoplastic pavement markings, double yellow centerline striping, 4” width, in accordance with Section 704, Thermoplastic Pavement Markings, of the ADOT Standard Specifications.

Measurement: Measurement will be based on the linear feet (LF) of the double 4” wide thermoplastic yellow centerline striping (both 4” lines separated by a 4” space are measured as one linear foot) properly applied and as measured by the Town Inspector. Gaps or spaces in lines will not be included in the measurement.

Payment: Payment will be made at the bid unit price per linear feet (LF) of the double thermoplastic stripes installed based on the measured quantity.

23. APPLY WHITE THERMOPLASTIC EDGE LINE STRIPING, 6” WIDTH

Specifications: Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2025 Edition, Section 704, Thermoplastic Pavement Markings, and related sections.

Description: The Contractor shall furnish and apply approved thermoplastic pavement markings, white edge line striping, to the required 6” width, length, and configurations at all locations shown on the striping plan.

White striping: Solid white edge lines each side of the pavement to delineate the outside edge of the 12’ travel lane, 6” width.

This line item of construction work also includes the chevrons in the striped area with the stop sign on the east side of the Giffin Avenue intersection.

The thermoplastic lines shall be 0.060-inch thick (60 mils) striping.

Apply thermoplastic striping from 30 to 45 days after asphalt pavement construction.

The work shall include all materials, equipment, and labor costs to properly apply the thermoplastic pavement markings, white edge line striping, 6” width, in accordance with Section 704, Thermoplastic Pavement Markings, of the ADOT Standard Specifications.

Measurement: Measurement will be based on the linear feet (LF) of each 6” wide thermoplastic white edge line striping properly applied and as measured by the Town Inspector. Gaps or spaces in lines will not be included in the measurement.

Payment: Payment will be made at the bid unit price per linear feet (LF) of edge line striping properly installed based on the measured quantity.

24. APPLY WHITE THERMOPLASTIC STOP BAR STRIPING, 24” WIDTH

Specifications: Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2025 Edition, Section 704, Thermoplastic Pavement Markings, and related sections.

Description: The Contractor shall furnish and apply approved thermoplastic pavement markings, white stop bar striping, to the required 24” width, length, and configuration shown on the striping plan and as may be directed by the Town Inspector.

The thermoplastic stop bar shall be 0.060-inch thick (60 mils) striping.

Apply thermoplastic striping from 30 to 45 days after asphalt pavement construction.

The work shall include all materials, equipment, and labor costs to properly apply the thermoplastic pavement markings, white stop bar striping, 24” width, in accordance with Section 704, Thermoplastic Pavement Markings, of the ADOT Standard Specifications.

Measurement: Measurement will be based on the linear feet (LF) of 24” wide thermoplastic stop bar striping properly applied and as measured by the Town Inspector.

Payment: Payment will be made at the bid unit price per linear feet (LF) of stop bar marking installed based on the measured quantity.

25. APPLY WHITE THERMOPLASTIC ARROW SYMBOL

Specifications: Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2021 Edition, Section 705 – Preformed Pavement Marking, and related sections.

Description: The work under this item consists of applying thermoplastic symbol markings at the locations shown on the plans and in conformance with the details on the plans and requirements of the specifications.

Materials: All materials shall conform to the requirements on the project plans and the applicable portions of Section 704, Thermoplastic Pavement Markings, of the ADOT Standard Specifications.

Thermoplastic pavement marking thickness shall be 0.060-inch thick (60 mils). Color shall be white.

Construction Requirements: The work under this section shall conform to the requirements of Section 704, Thermoplastic Pavement Markings, of the ADOT Standard Specifications for Road and Bridge Construction.

Symbols include, but are not limited to, thru arrows and turn arrows.

Application of the new thermoplastic pavement arrow symbols consists of cleaning and preparing pavement surfaces and furnishing and applying white thermoplastic reflectorized pavement symbols (created using extrusion or ribbon dispensing devices of the required shape and thickness) to the prepared pavement surface at the locations and in accordance with the layout details shown on the project plans, the manufacturer's specifications, and the requirements of the specifications.

Measurement: Apply white thermoplastic pavement arrow symbol will be measured by each (EA) symbol properly installed, as measured on the ground by the Town Inspector. Only the actual number of applied thermoplastic pavement symbols will be measured for payment.

Payment: The accepted quantities of white thermoplastic pavement symbol, measured as provided for above, will be paid for at the contract unit price per each (EA) satisfactorily applied and completed in place symbol.

26. APPLY WHTE THERMOPLASTIC ONLY LEGEND

Specifications: Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, 2021 Edition, Section 705 – Preformed Pavement Marking, and related sections.

Description: The work under this item consists of applying thermoplastic legend markings at the locations shown on the plans and in conformance with the details on the plans and requirements of the specifications.

Materials: All materials shall conform to the requirements on the project plans and the applicable portions of Section 704, Thermoplastic Pavement Markings, of the ADOT Standard Specifications.

Thermoplastic pavement marking thickness shall be 0.060-inch thick (60 mils). Color shall be white.

Construction Requirements: The work under this section shall conform to the requirements of Section 704, Thermoplastic Pavement Markings, of the ADOT Standard Specifications for Road and Bridge Construction.

Legends include, but are not limited to, an “ONLY” legend.

Application of the new thermoplastic pavement ONLY legend consists of cleaning and preparing pavement surface and furnishing and applying white thermoplastic reflectorized pavement legends (created using extrusion or ribbon dispensing devices of the required shape and thickness) to the prepared pavement surface at the locations and in accordance with the layout details shown on the project plans, the manufacturer’s specifications, and the requirements of the specifications.

Measurement: Apply white thermoplastic pavement ONLY legend will be measured by each (EA) word legend properly installed, as measured on the ground by the Town Inspector. Only the actual number of applied thermoplastic pavement legends will be measured for payment.

Payment: The accepted quantities of white thermoplastic pavement legend, measured as provided for above, will be paid for at the contract unit price per each (EA) satisfactorily applied and completed in place legend.

27. RELOCATE TRAFFIC SIGN ASSEMBLY

Specifications: ADOT Standard Specifications for Road and Bridge Construction, Section 607 Roadside Sign Support, Section 608 Sign Panels, Manual on Uniform Traffic Control Devices, and other related specifications and details.

Description: Relocate existing traffic sign assembly includes all materials, supplies, equipment, and labor needed to provide the following construction work:

- Remove the existing sign panel, post, base, and foundation.
- Salvage the sign panel and post for reuse without causing damage to their existing condition.
- Properly dispose of the existing and non-salvageable sign base/foundation.
- Install the salvaged sign post with a new sign base and foundation where shown on the plans.
- Reattach the existing sign panel.
- All other related and incidental work to make a complete relocated sign installation.

The work shall be completed in accordance with applicable ADOT Standard Specifications and Details, and with the MUTCD. Damaged or non-useable sign panels or sign posts shall be replaced with new comparable signs or posts as needed at no additional cost to the Town. All work, supplies, materials, and labor related to the relocation of existing signs as described herein shall be included in the bid unit price for this construction item.

Measurement: Measurement shall be based on each (EA) relocated traffic sign assembly, complete, as accepted by the Town Inspector.

Payment: Payment will be made at the bid unit price per each (EA) based on the measured quantity.

28. INSTALL TRAFFIC SIGN ASSEMBLY

Specifications: ADOT Standard Specifications for Road and Bridge Construction, Section 607 Roadside Sign Support, Section 608 Sign Panels, Manual on Uniform Traffic Control Devices, and other related specifications and details.

Description: The Contractor shall furnish and install new traffic sign post, concrete foundations, slip bases, and sign panels in accordance with ADOT Standard Specifications Sections 607 and 608 and the construction plans. Construction includes installation the 2" square perforated sign post with a new sign slip base and foundation where shown on the plans.

Traffic signs associated with the speed table crosswalks are measured and paid for under that separate line item of construction work.

The work shall be completed in accordance with applicable ADOT Standard Specifications and Details and with the MUTCD. All work, supplies, materials, and labor related to constructing and installing the sign assembly as described herein shall be included in the bid unit price for this construction item.

Measurement: Measurement shall be based on each (EA) traffic sign assembly installed complete, as accepted by the Town Inspector.

Payment: Payment will be made at the bid unit price per each (EA) based on the measured quantity.

29. TRAFFIC CONTROL

Description: Quarelli Street and Golf Course Road within the project limits may be closed to public through traffic for the duration of the project. However, the Contractor shall make provisions to provide access to and from abutting properties for all property owners, residents, visitors, and public safety officials for the entire project duration. This may require providing temporary access routes, aggregate material ramps at driveways, and flagging for one-way traffic during intervals throughout the construction operations period. Access routes to and from the properties must be well maintained, suitable, and safe for use by the users.

The Contractor is expected to employ good public relations and work closely with these parties to be sure they are satisfied with the extent and condition of ingress, egress, and access routes and advise the parties in advance of the duration of any temporary closures that may be needed at any time during the course of construction operations. In addition, the public should be provided a safe access route across Quarelli Street to access the pedestrian bridge over the San Pedro River to the greatest extent possible.

Traffic control applies to pedestrians and bicycle traffic in addition to vehicular traffic.

Traffic control for the construction of this project shall comply with the requirements set forth in MAG Section 401, Traffic Control, as appended and modified by the requirements set forth herein.

Where and when needed, the Contractor shall use flagging to allow traffic to safely pass through the construction site single file and in one direction only at a time. Signals or a pilot car may be employed if and as needed.

Subsection MAG 401.2, Traffic Control Devices

Supplement the subsection with the following:

(C) All traffic control devices and their application shall conform to the MUTCD, these specifications, and any field modifications made by the Town.

(D) Traffic cones shall only be used during daylight hours and shall be a minimum of twenty-eight (28) inches high. Daylight hours are defined as 1/2 hour after sunrise to 1/2 hour before sunset. All traffic cones shall have retroreflective bands installed per MUTCD guidelines.

(E) It shall be the responsibility of the Contractor to provide, erect, maintain, remove, and/or relocate all temporary and existing traffic control devices necessary to properly mark and control the construction area(s) for the safe and efficient movement of all roadway users through and around the work zone(s).

(F) The Contractor shall provide all additional traffic control devices as determined by the Town and its Engineer and Inspector to safely control traffic through and around the work zones.

(G) The Contractor shall install temporary traffic control warning signs and related devices prior to the start of any work in accordance with the approved Traffic Control Plan.

(H) All temporary traffic control devices shall be ballasted with sandbags or other approved ballast. The number of sandbags used shall be enough to withstand the range of wind gust expected to provide adequate safety for the traveling public.

(I) The Contractor shall place standard warning flags above all construction zone traffic control signs. Additionally, the Contractor shall use flashing yellow warning lights to mark traffic control devices at night.

Subsection MAG 401.3, Flagmen or Pilot Cars

Supplement with the following:

Traffic Control shall include providing pilot cars and drivers as needed and required. All pilot cars shall be vehicles registered and licensed to operate on public roadways in the State of Arizona. The time necessary for pilot car turnaround shall not exceed ten (10) minutes.

At the Contractor's option, the Contractor may use uniformed off-duty law enforcement officers to assist with traffic control for this project during work activity hours. All requests for off-duty officers will be made through the Town's Police Department. The Contractor must provide evidence of workmen's compensation coverage before any officer will be permitted to work on the project.

Subsection MAG 401.4, Traffic Control Measures

Supplement with the following:

All traffic control personnel shall be knowledgeable of MAG's, ADOT's, and Town traffic control requirements.

Construction shall not commence without an approved Traffic Control Plan (TCP).

A soon as possible, but no later than at the time of the pre-construction meeting, the Contractor shall submit preliminary traffic control plans for review by the Town. The Contractor shall design the traffic control plan using the posted speed limit existing prior to the start of work as the design speed.

The Traffic Control Plan shall show all striping, signing, and barricading along with the locations and distances for all traffic control devices for all movements of the roadway users during the construction period, including all detour routes. The Traffic Control Plan shall also show the duration of each construction phase with the start and end dates.

The Town shall, within ten (10) working days, review the plan and notify the Contractor of approval of the TCP or note the changes determined to be needed to the plan.

The Contractor shall designate a Traffic Control Technician, who has been properly trained and certified in the application of work zone traffic control, to maintain all necessary traffic control devices during the entire construction period. At the beginning and end of each workday, and periodically throughout the day, the Traffic Control Technician shall inspect the construction work site and all traffic control signs, barricades and related devices. A diary shall be maintained documenting the traffic control in place and the required inspection reconnaissance site visits.

The Traffic Control Technician shall ensure that all construction signs and barricades are standing upright in accordance with the approved traffic control plan, free of dirt and debris, and visible to the intended traffic. At the end of the workday, all non-essential traffic control devices shall be removed and stored.

The Contractor shall immediately correct all deficiencies noted by the Town. The Contractor shall provide after-hours contact information for the Traffic Control Technician prior to or during the pre-construction meeting for the project.

The Contractor shall provide and maintain all necessary traffic control devices until acceptance of the project by the Town.

Traffic Control shall include providing flagging and flaggers as needed and required. All flaggers shall be properly trained and certified by a recognized source, such as the International Municipal Signal Association (IMSA) and shall always carry proof of training with them.

It is acceptable for the Contractor to use Automated Flagger Assistance Devices (AFADs) on this project as a safety enhancement. AFADs utilized on this project shall comply with the specific standards set forth in the MUTCD Section 6E.04 for the application.

If the Contractor fails to provide adequate traffic control measures, the Town and its Engineer may have the work accomplished by other sources. The cost of having this work accomplished through other sources shall be computed in accordance with MAG Standard Specifications Section 109.5, Actual Cost Work. The total cost shall be deducted from monies due, or to become due, to the Contractor. The Town shall make the final determination on the need and cost related to the outsourcing the traffic control work.

Subsection MAG 401.5, General Traffic Regulations

Supplement with the following:

The Town Public Works and Police Departments shall be provided with the name and cell/mobile phone number of the designated Traffic Control Technician responsible for twenty-four (24) hour maintenance of all traffic control devices.

The Contractor shall post signs on the project site starting one week in advance of construction requiring lane restrictions or closures. The advisory signage will advise the public of the project and duration. A copy of the messaging shall be provided to the Town for approval prior to its use. This signage shall be included in the Traffic Control Plan.

The Contractor shall supply adequate notification signs for the purpose of informing the public concerning the project and the scheduled dates of construction and times of day for the work. Notification signs shall be posted seventy-two (72) hours prior to construction operations. For Monday work, signs shall be up by 6:00 a.m. the Friday before. Signs shall be four (4) feet x eight (8) feet with an orange background and black legend.

Message to read:

ROAD RECONSTRUCTION RESTRICTIONS

SCHEDULED FOR *(insert Month & Days)*

USE ALTERNATE ROUTE

A road closure for the convenience of the Contractor is not authorized without a signed and maintained detour route.

Measurement: Measurement shall be on a lump sum (LS) basis for all labor, equipment, materials, rentals, and supplies involved in full time traffic control for the total duration of construction activities as required (all construction work includes the application of painted and thermoplastic striping and markings).

Payment: Payment shall be a partial lump sum (LS) amount for the previous month based on the prorated percentage completion of the total contract amount and schedule duration (e.g. for a 120-calendar day/4-month project, payment will be made for 1/4 the lump sum amount each month for the 4 months).

The total lump sum amount shall be considered full compensation for the work as described herein and necessary for safe and effective traffic control for the full duration for the project and for all work associated with this bid item, whether specifically stated or not.

30. MOBILIZATION

Specifications: Maricopa Association of Governments Uniform Standard Specifications and Details for Public Works Construction, Part 100, and other related sections.

Description: The work under this item shall consist of preparatory work and operations, including but not limited to, the movement of personnel, equipment, materials, supplies, and incidentals to the project site; the establishment of restroom facilities; and storage/staging facilities necessary for work on the project; and for all other work and operations that must be performed and costs incurred prior to beginning work on the various construction items at the project site. The mobilization/demobilization work shall also include the movement of personnel, equipment, materials, supplies, tools, and other items from the site following completion of construction activities and restoration of any site(s) used for Contractor storage and staging.

Storage and Staging Facilities: The Contractor is responsible for locating a suitable storage and staging area for the project.

The Contractor shall obtain approval of the property owner and the Town when using vacant private property to park and service equipment, and/or to store materials for use on this project.

1. The Contractor shall notify adjacent property owners/residents of this proposed use.
2. Any use of vacant property adjacent to or near the project for parking or servicing equipment and/or storing of material will require the Contractor to obtain written approval from the property owner. This approval shall contain any requirements which are a condition of this approval.
3. A copy of the property owner's approval shall be submitted along with the Contractor's request to the Town's Inspector for approval for the use of the marshaling yard in connection with the project. An appropriate distance from adjacent properties will be set by the Town on a case-by-case basis based on the size and type of equipment to be used on the project.
4. The yard shall be fenced and adequately dust-proofed in a manner such as to preclude dirt and dust blowing off the site and tracking of mud onto paved or unpaved Town streets.
5. Work in the yard shall be scheduled to comply with the Town's Noise Ordinance and other applicable ordinances, rules, and regulations pertaining to construction activities.
6. Equipment, materials, supplies, etc., shall be located to minimize impact on adjacent properties.
7. The Contractor shall clean up the staging/storage area site promptly upon completion of use and shall provide a signed property release as a condition of final acceptance.
8. Contractor's request for approval shall specify in detail how they propose to comply with the above requirements.

Site Use and Clean-up: Fine grading of disturbed surfaces, returning staging areas and surrounding disturbed areas to their original condition (or better), and including reseeding, if necessary. Bid/Contract price shall include all costs associated with implementation of street sweeping as necessary to eliminate tracked dirt, mud, and debris from the project site onto paved surfaces via construction vehicle traffic and local access traffic as a storm water management, pollution, and sediment control mitigation measure.

Sweeping and dust control shall be monitored and performed daily as needed and as may be directed by the Town Inspector. Staging areas shall be provided with security fencing, scrubber pad to keep from tracking dirt/mud onto street surfaces, frequent housekeeping cleanup, and restoration of site to a condition as good if not better than found prior to construction. Dust control measures (including spraying water and/or dust palliatives on disturbed ground surfaces) are to be employed as needed to minimize fugitive dust from project activities.

Measurement: Mobilization will be measured as a complete lump sum (LS) item of work.

Payment: Payment will be made in two equal portions:

1. The first payment shall be made with the Contractor's initial billing invoice and shall be 70% of the contract lump sum amount for mobilization.
2. The second and final payment for mobilization shall be made as part of the Contractor's final close-out billing invoice once the project has been fully completed and accepted by the Town and shall be 30% of the contract lump sum amount for mobilization and site restoration. The second and final payment for mobilization shall only be paid once the thermoplastic markings have been applied and the project is 100% complete and accepted by the Town.

The lump sum amount shall be considered full compensation for the work described herein and necessary for complete mobilization to the site and demobilization and clean-up when leaving the site. The lump sum amount shall be considered full compensation for all work associated with this bid item, whether specifically stated or not. Include in the lump sum price all costs to mobilize for the project such as moving equipment, trucks, and personnel, both to the site and off the site upon completion of the work. Also include expenses for bonds, licenses, permits, project insurance, project coordination, materials, quality control testing, testing coordination, submittals, storage of materials, removal and disposal of construction debris, and the temporary restroom facilities, supplies, power, and telephone, all necessary for the execution of the work.

INCIDENTAL ITEMS

Any and all items of work to be provided by the Contractor that are not specifically listed in the Bid Schedule will NOT be measured or paid for separately as they are considered "incidental" and "subsidiary" to the overall project. The cost associated with each incidental item of work shall be applied to its associated bid schedule line item, to Mobilization, or spread across all applicable bid schedule line items as most appropriate in the judgment of the Contractor.

The following is a list of some, but not all, construction items that are considered "incidental" to the construction project that shall be provided, but will not be measured or paid for separately:

Water Used by the Contractor for Construction Purposes

- The Contractor shall establish an account with ARIZONA WATER to purchase water used at a nominal rate for construction purposes, so there is a record of the water usage. Arizona water will designate a hydrant to use and will provide a meter for this purpose. The Contractor shall reimburse the ARIZONA WATER for the cost of water used for this project. The cost of associated work and the cost of water used are incidental to the overall project.

Construction Surveying and Staking for all Improvements

- The total cost for all labor, materials, and equipment associated with construction surveying and staking including, but not limited to, elevations and the staking of the improvements, fixtures, and appurtenances, utilities, removals, new paving, signage, striping/markings, and other associated improvements for construction purposes. Any survey monuments that are disturbed during construction activities shall be replaced by a registered land surveyor at the Contractor's expense.

Quality Control Testing

- The Contractor is responsible for quality control testing. The Contractor shall provide the testing and inspection services required by the Contract Documents and other such test necessary to assure the quality of the work.
- Contractor shall provide all pre-construction, during-construction, and post-construction testing required by the MAG standards, ADOT testing guidelines, and the project's contract documents.
- When not specifically called out in the MAG Standard Specifications, testing frequency minimums are governed by the Arizona Department of Transportation Materials Quality Assurance Program manual, Appendix C, Sampling Guide Schedule, latest edition (June 19, 2019).
- The Contractor shall provide all test results to the Town, the Engineer of Record, and the Town Inspector within 48 hours of completion of the testing.
- Be advised the Town may provide quality assurance testing as needed to verify the quality of the work and to satisfy themselves that the work has been constructed in compliance with the plans, specifications, and bid/contract documents.

Record Drawings

- Accurate red-lined "as-built" drawings of all pavements, street reconstruction, sidewalks, driveway construction, installed and constructed water lines, fixtures (including valves, meter boxes, and fittings), appurtenances, signs, markings, utilities, services, other improvements, and any

encountered existing utility, whether shown on the plans or not, shall be provided to the Town and the Engineer of Record upon completion of the construction.

- The location of all installed and constructed features shall be dimensioned, with the location based on identifiable surface features.
- Two weeks prior to final contract settlement, full record (as-built) drawings and data will be required.

Other Items

- There may be other items of work shown and called for on the plans.

End of Technical Specifications Section

STANDARD FORM OF AGREEMENT

BETWEEN

TOWN AND CONTRACTOR

FOR

CONSTRUCTION SERVICES

AGREEMENT

Made as of the _____ day of _____ in the year **2025**

BETWEEN the: **TOWN OF WINKELMAN**
206 Giffin Avenue
Winkelman, Arizona 85192

And the Contractor: _____

For the following Project:

QUARELLI STREET-GOLF COURSE ROAD PROJECT

PART 1
CONTRACT DOCUMENTS

1.1 The Contract Documents consist of the following:

(a) This Agreement;
(b) The Invitation to Submit Bids;
(c) The Contractor's Bid;
(d) Information for Bidders;
(e) Special Provisions;
(f) Plans (construction drawings) and other documents listed in the Invitation for Bids;
(g) Bid Bond;
(h) Performance Bond and Labor and Material Payment Bond;
(i) Notice of Award;
(j) Acceptance of Notice of Award;
(k) Notice to Proceed;
(l) Change Orders;
(m) Addenda; and
(n) Modifications/Change Orders issued after execution of the Agreement

1.2 All of the above-listed Contract Documents are incorporated by reference as though set forth in full herein, whether or not attached hereto, and shall form an integral part of this Agreement. If there is any conflict between this Agreement and the other Contract Documents, the terms and conditions of this Agreement shall control.

1.3 The Contract Documents represent the entire and integrated agreement between the parties hereto and supersede any and all prior negotiations, representations or agreements, either written or oral. Except as provided herein, this Contract may not be modified or amended except by written agreement signed by the parties.

1.4 The Agreement is this executed Standard Form of Agreement between Town and Contractor.

PART 2
CONTRACT SUM

2.1 The Town shall pay the Contractor, in current funds, for the Contractor's performance of the

Contract in the total amount of $_____
subject to additions and deductions as provided for in the Contract Documents.

2.2 Based upon Invoices submitted by the Contractor, the Town shall make payments to the Contractor for actual work performed. Invoices shall indicate a description of the work performed and percentage completion, as specified in the Contract Documents.

2.3 Retainage. The amount to be retained from payments shall be ten (10) percent of the value of the completed work, exclusive of payments for materials on hand, but not greater than five (5) percent of the amount of the contract. When the retainage has reached five (5) percent of the amount of the contract, no further retainage will be withheld and this amount will be retained until such time as final payment is made. If applicable, the Contractor shall make payments to its subcontractors in accordance with Arizona Revised Statute Title 34-221

2.4 The appropriated funds for this project are equal to or exceed the amount of the contract stated in Paragraph 4. Any change order or change directive requiring additional compensable work to be performed, which work causes the aggregate amount available under the contract to exceed the amount appropriated for the original contract shall be agreed to in writing, signed by both parties and shall assure that the Town has made lawful appropriations to cover the costs of the additional work. Any change order or directive made by the Town requiring additional compensable work to be performed shall be performed at the hourly rates and/or unit pricing set forth in the contractor's bid and shall be reimbursed at the contractor's costs on a monthly basis for all additional directed work performed until a change order is finalized. However, in no instance shall the periodic reimbursement be required before the contractor has submitted an estimate of cost to the Town for the additional compensable work to be performed.

PART 3
SCOPE OF SERVICES

3.1 The Contractor shall execute the entire Scope of Work described in the **Bid-Contract Documents dated 11/01/2024**, any Addenda issued, and the **Contractor's Bid, submitted 02/19/2025,** except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

PART 4
TOWN'S RESPONSIBILITIES

4.1 The Town shall provide full information regarding requirements for Work to be performed.

4.2 The Town shall designate, when necessary, a representative authorized to act in the Town's behalf with respect to the Project or Project Documents.

4.3 The Town shall furnish required information as expeditiously as necessary for the orderly progress of the Work, and the Contractor shall be entitled to rely upon the accuracy and completeness thereof.

PART 5
DATE OF COMMENCEMENT

5.1 The date of commencement is the date of this Agreement, as first written above, unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Town.

PART 6
TIME FOR COMPLETION AND LIQUIDATED DAMAGES

6.1 The date of beginning and the time for completion of the work are essential conditions of the Contract Documents and the work embraced shall be commenced on the date specified in the Notice to Proceed.

6.2 The Contractor will proceed with the work at such a rate or progress to insure full completion within the Contract time. It is expressly understood and agreed, by and between the Contractor and the Contracting Agency, that the contract time for the completion of the work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work.

6.3 Should the Contractor fail to complete the work within the Contract time, or extension of time granted by the Contracting Agency, the Contractor shall pay the Contracting Agency the amount of liquidated damages specified in the Bid, or $1,000 per day if not specified in the Bid, for each calendar day the Contractor may be in default of the time stipulated in the Contract Documents.

6.3.1 The Contractor shall not be charged with liquidated damages provided the delay in completion of the work is due to the following and the Contractor has promptly given written notice of such delay to the Contracting Agency or Engineer.

6.3.1.1 Delay due to any preference, priority or allocation order duly assigned by the Contracting Agency.

6.3.1.2 To unforeseeable causes beyond the control, and without the fault or negligence, of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of omission of the Contracting Agency, floods, epidemics, quarantine restrictions, strikes, material or fuel shortages due to governmental regulations or allocations, freight embargoes, and abnormal or unusually severe weather.

6.3.1.3 Permitting the Contractor to continue and finish the work, or any part of it, after the time fixed for its completion, or after the date to which the time fixed for its completion may have been extended, will in no way operate as a waiver on the part of the Contracting Agency of any of its rights under the Contract.

PART 7
FINAL INSPECTION AND FINAL PAYMENT

7.1 Final Inspection. The Contractor shall notify the Town when the Work is complete and ready for final inspection by means of a letter of completion. Within ten (10) working days thereafter, the Town shall make a final inspection to determine whether the Work has been completed in accordance with the Contract Documents and shall submit a written list of any defects to the Contractor. The Contractor shall promptly correct any defects without additional cost to the Town within ten (10) working days after receipt of the list of defects. If any defects cannot be

corrected within ten (10) working days, the Contractor shall initiate corrective measures within said period of ten (10) working days, and shall thereafter pursue correction of such defects promptly and with due diligence. The Contractor shall also deliver to the Town all guarantees and warranties, all statements to support state sales and use tax refunds or payments, final plan set, record sets, as-constructed plans, geotechnical reports, documentations and calculations, approved shop drawings, and material testing records as a complete package. The Contractor shall provide the Town with a letter of approval for contract closure from any surety furnishing bonds for the Work provided on AIA Form G707 (Consent of Surety Letter).

7.2 Final Acceptance and Final Payment. If the Contractor has completed the Work in a manner finally acceptable to the Town ("Final Acceptance"), the Town may authorize final payment ("Final Payment") from the Retained Amount upon written request by invoice of the Contractor and completion of the following conditions:

(a) The Town shall determine that satisfactory and substantial reasons exist for the Final Payment;

(b) The Town shall require written approval from any surety furnishing bonds for the Work;

(c) The Town may require the Contractor to provide evidence that payment has been made to all subcontractors, consultants, and suppliers;

(d) A notice of contractor's settlement shall have been published in accordance with Town and State Regulations.

PART 8
TOWN'S RIGHT TO STOP THE WORK

8.1 If the Contractor fails to correct defective Work or fails to carry out the Work in accordance with the Contract Documents, the Town, by a written order, may order the Contractor to stop the Work or any portion thereof, until the cause for such order has been eliminated.

8.2 The Town may order the Contractor in writing to suspend all or any part of the Work for such period of time as the Town may determine to be appropriate for the Town's convenience.

8.3 Upon receipt of any such suspension order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize incurring costs allocable to the Work covered by the order during the period of Work suspension.

8.4 If the Town, pursuant to paragraph 8.2, suspends the performance of all or any part of the Work, the Contractor may make application for an adjustment in Contract Time and/or Contract Price, as applicable.

PART 9
TOWN'S RIGHT TO CARRY OUT THE WORK

9.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within seven (7) days after receipt of written notice from the Town to

commence and continue correction of such default or neglect with diligence and promptness, the Town may, without prejudice to any other remedies it may have, initiate and complete the necessary work to cure such deficiencies. In such case, an appropriate Change Order shall be issued deducting from payments then or thereafter due to Contractor, the cost of correcting such deficiencies, including compensation for the any additional services of the Town's consultant's made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Town by way of reimbursement.

PART 10
UNCOVERING THE WORK

10.1 If any portion of the Work should be covered contrary to the request of the Town or contrary to requirements specifically expressed in the Contract Documents relative to inspection by the Town, it must, if required in writing by the Town, be uncovered for its observation and inspection and shall be replaced at the Contractor's expense.

10.2 If any other portion of the Work has been covered, the Town may request to see such Work and the Contractor shall uncover it. If such Work is found to be in accordance with the Contract Documents, the cost of uncovering and replacement shall be charged to the Town by appropriate Change Order. If such Work is found not to be in accordance with the Contract Documents, the Contractor shall pay such costs unless it is found that the Town caused this condition, in which event the Town shall be responsible for the payment of such costs.

PART 11
CORRECTION OF WORK

11.1 The Contractor shall be responsible for the professional quality, technical accuracy, timely completion, and the coordination of all designs, plans, reports, drawings, and other services rendered by the Contractor; and shall, without additional compensation, promptly remedy and correct any errors, omissions, or other deficiencies that occur.

11.2 The Contractor shall promptly correct all Work rejected by the Town as defective or as failing to conform to the Contract Documents observed before Final Acceptance and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for the Town's additional services made necessary thereby. This obligation shall survive termination of the Contract. The Town shall give such notice promptly after discovery of the condition.

11.3 The Contractor shall remove from the site all portions of the Work which are defective or non-conforming and which have not been corrected, unless the Town waives such removal, in writing.

11.4 If the Contractor fails to correct defective or non-conforming Work, the Town may correct it in accordance with Part 9 (Town's Right to Carry Out the Work).

11.5 If the Contractor does not proceed with the correction of such defective or non-conforming Work within a reasonable time fixed by written notice from the Town, the Town may remove such work and may store the materials or equipment at the expense of the Contractor. If the Contractor does not pay the cost of such removal and storage within ten (10) days after billing from the Town for such costs, the Town, upon ten (10) additional days' written notice, may sell such Work (materials and equipment) at auction or at private sale and shall account to the Contractor for the net proceeds thereof, after deducting all the costs that should have been borne by the Contractor, including compensation for the Town's additional services made necessary thereby. If such proceeds of sale do not cover all costs that the Contractor should have borne, the difference shall be charged to the Contractor and an appropriate Change Order shall be issued. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Town by way of reimbursement.

11.6 The Contractor shall bear the cost of making good all work of the Town or separate contractors destroyed or damaged by such correction or removal, unless in the Town's sole discretion, the Town agrees to a percentage deduction of the total contract payment, in lieu of said correction or removal of Work.

PART 12
CHANGES IN THE WORK

12.1 The Town may from time to time, by written notice to the Contractor, extend the Start or Completion Dates or make changes in the Work necessary or convenient to accomplish the purpose intended by the Contract Documents. The Town shall have such further authority, if any, as may be specifically granted or authorized by the Town to initiate or process administrative Change Orders affecting the price or quantity of the Work to be performed.

A Change Order is a written order to the Contractor signed by the Town, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Completion Date or Contract Price. By signing the Change Order, the Contractor indicates agreement with the Change Order, including, without limitation, the adjustment in the Contract Price or the Period of Performance set forth within such Change Order. The Contractor agrees to minimize the cost of all Change Order to the extent possible.

12.2 The cost or credit to the Town resulting from a change in the Work shall be determined in one or more of the following ways:

(a) by mutual acceptance of a lump sum, properly itemized and supported by sufficient substantiating data to permit evaluation;

(b) by unit prices stated in the Contract Documents or subsequently agreed upon; or

(c) by cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee.

PART 13
TERMINATION OF AGREEMENT

13.1 This Agreement may be terminated by either party upon seven (7) days written notice should the other party fail substantially to perform in accordance with its terms through no fault of the party initiating the termination.

13.2 This Agreement may be terminated by the Town upon at least seven (7) days written notice to the Contractor in the event that the Project is permanently abandoned.

PART 14
NONDISCRIMINATION

14.1 The Contractor shall, in all hiring or employment made possible or resulting from this agreement, take affirmative action to ensure that there shall be no unlawful discrimination against any employee or applicant for employment because of sex, race, age, color, creed, national origin, marital status or the presence of any sensory, mental or physical handicap, unless based upon a bona-fide occupational qualification, and this requirement shall apply to but not be limited to the following: employment, advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship.

14.2 No person shall be denied or subjected to discrimination in receipt of the benefit of any services or activities made possible by or resulting from this Agreement on the grounds of sex, race, color, creed, national origin, age except minimum age and retirement provisions, marital status, or the presence of any sensory, mental or physical handicap.

PART 15
HOLD HARMLESS/INDEMNIFICATION

15.1 To the fullest extent permitted by law, the Contractor agrees to indemnify and hold harmless the TOWN OF WINKELMAN, and its officers and its employees, from and against all liability, claims, and demands, on account of any injury, loss, or damage, which arise out of or are connected with the Work, if such injury, loss, or damage, or any portion thereof, is caused by, or claimed to be caused by, the negligent act, omission, or other fault of the Contractor or any subcontractor, or any other person for whom the Contractor is responsible.

15.2 The Contractor shall investigate, handle, respond to, and provide defense for and defend against any such liability, claims, and demands, and to bear all other costs and expenses related thereto, including court costs and attorneys' fees. The Contractor's indemnification obligation shall not be construed to extend to any injury, loss, or damage which is caused by the act, omission, or other fault of the TOWN OF WINKELMAN.

PART 16
INDEMNIFICATION, BONDS, INSURANCE, AND WARRANTIES

16.1 Indemnification. To the fullest extent permitted by law, the Contractor agrees to indemnify and hold harmless the Town, and its officers and its employees, from and against all liability, claims, and demands, on account of any injury, loss, or damage, which arise out of or are connected with the Work, if such injury, loss, or damage, or any portion thereof, is caused by, or claimed to be caused by, the negligent act, omission, or other fault of the Contractor or any subcontractor of the Contractor, or any officer, employee, or agent of the Contractor or any subcontractor, or any other person for whom Contractor is responsible. The Contractor shall investigate, handle, respond to, and provide defense for and defend against any such liability, claims, and demands, and shall bear all other costs and expenses related thereto, including court costs and attorneys' fees. The Contractor's indemnification obligation shall not be construed to extend to any injury, loss, or damage which is caused by the act, omission, or other fault of the Town.

16.2 Performance and Payment Bonds. For the construction portion of the Work, the Contractor shall furnish, at the Contractor's expense, a performance bond and a separate labor and materials payment bond, each for an amount not less than 100% of the Contract Price. The bonds shall be issued by a qualified corporate surety licensed to transact business in Arizona. If at any time during performance of the Work, the surety on the bonds shall be disqualified from doing business in Arizona, or shall become insolvent or otherwise impaired, the Contractor shall furnish bonds from an alternate surety acceptable to the Town. The bonds shall be delivered to the Town's Purchasing Agent prior to the commencement of the Work and shall remain in effect until two years from completion of the Work. The Contractor shall secure an increase in the bonds in an amount equal to the cost of any additional work authorized pursuant to a duly executed Change Order or contract amendment.

16.3 Insurance. The Contractor and any subcontractors or sub-consultants shall purchase and maintain insurance coverage in a company or companies licensed to do business in the State of Arizona in not less than the minimum limits set forth in the Information for Bidders. Certificates evidencing such coverage shall be delivered to the Town Clerk prior to the start of Work. Such certificates shall name the TOWN OF WINKELMAN as an additional insured and which shall further provide that coverage may not be discontinued or materially modified without at least 15 days prior written notice to the TOWN OF WINKELMAN.

16.4 Warranty. The Contractor warrants the construction portion of the Work against defects in workmanship and materials for a period of two (2) years commencing on the date of Final Acceptance (the "Warranty Period"). The Contractor shall also assign to the Town any longer term warranty of materials used by the Contractor as may be provided by the manufacturer. The Contractor shall promptly replace any materials or re-perform any portion of the Work found to be defective within the Warranty Period in accordance with the Contract Documents and without expense to the Town. If the Contractor fails to proceed promptly in accordance with these warranties, the Town may have the work performed, at the expense of the Contractor.

PART 17
COMPLIANCE WITH LAWS

17.1 It is assumed that Contractor is familiar with all federal, state, and local laws, codes, ordinances, and regulations which in any manner affect those engaged or employed in the Work or the material or equipment used in or upon the site or in any way affect the conduct of the work or construction of the project. No pleas or claims of misunderstanding or ignorance by Contractor shall in any way serve to modify the provisions of the Agreement. Contractor shall at all times observe and comply with all federal, state, county, local, and municipal laws, codes, ordinances, and regulations in any manner affecting the conduct of the Work or the project. It is not the responsibility of Contractor to determine that this Agreement and the contract documents are in accordance with applicable laws, statutes, building codes, and regulations; however, if Contractor knows, or should have reason to know, that any of the contract documents are at variance therewith in any respect, Contractor shall promptly notify the Town of Winkelman in writing, and any necessary changes shall be made as provided herein.

PART 18
FUTURE SUPPORT

18.1 The Town makes no commitment and assumes no obligations for the support of Contractor's activities except as set forth in this Agreement.

PART 19
INDEPENDENT CONTRACTOR

19.1 There is no employment relationship created pursuant to this Agreement and the Contractor is and shall remain an independent contractor for all purposes hereunder.

PART 20
MISCELLANEOUS PROVISIONS

20.1 This Agreement shall be governed by the laws of the State of Arizona.

20.2 The Town and the Contractor respectively bind themselves, their partners, agents, successors, assigns and legal representatives to the other party to this Agreement and to the partners, agents, successors, assigns and legal representatives of such other party with respect to all covenants of this Agreement. Neither the Town nor the Contractor shall assign, sublet or transfer any interest in this Agreement without the prior written consent of the other.

20.3 Contractor shall be required to comply with applicable safety regulations.

20.4 This project is being conducted in accordance with the Town of Winkelman Purchasing Policy.

20.5 Prior to start of any phase of Work, the following documents must be on file in the Town Clerk's Office.

20.5.1 Certificates of Insurance, as required by the Contract Documents

20.5.2 Completed W-9 Form

20.5.3 Town of Winkelman Business License

20.5.4 Town of Winkelman Sales Tax License, as required

20.5.5 Illegal Alien Certification Form

20.5.6 Performance Bond

20.5.7 Labor and Material Payment Bond

PART 21
TOWN OWNERSHIP

21.1 Regardless of the future services retained by the successful contractor, all of the products of this project, including recommendations, drawings, artwork, photos, and similar materials used to produce the required submittals, shall become the property of the Town of Winkelman. Any furnished materials shall remain the property of the Town of Winkelman. All such items shall be delivered to the Town of Winkelman in usable condition after completion of the work, and prior to submission of the invoice for payment.

21.2 Any materials excavated from the project site shall be used on the project where possible. The Town reserves the right to maintain possession of any unused excavated materials at the Town's discretion.

PART 22
SEVERABILITY

22.1 If any provision in the Contract shall be declared by a court of competent jurisdiction to be invalid, such decision shall not invalidate any other part of provision hereof.

THIS AGREEMENT is entered into as of the date and year first written above and is executed in at least two original copies of which one is to be delivered to the Contractor and one to the Town.

TOWN OF WINKELMAN

By:_____
Mayor Louis Bracamonte
206 Giffin Avenue
Winkelman, Arizona 85192

(SEAL)

ATTEST:

_____
Gloria Ruiz
Town Clerk

CONTRACTOR:
(NAME OF FIRM OR CONTRACTOR)

Firm Name: _____
(Insert name of Corporation, Limited Liability Company, Partnership or sole proprietorship)

Doing business as _____
(insert trade name or name under which corporation, company, partnership or proprietorship is doing business, if different from legal name of entity or proprietor)

By:_____
Signature

_____
Title

_____
Date

End of Standard Form of Agreement

NOTICE TO PROCEED

(DATE)

(CONTRACTOR)

RE: QUARELLI STREET-GOLF COURSE ROAD PROJECT

Dear (CONTRACTOR):

The date of Notice to Proceed for the above project is _____, 2025.

In accordance with the Agreement dated _____, 2025, you are hereby notified to commence work within ten calendar days after the Notice to Proceed, hence on or before _____, 2025.

Before you begin work on the project, we will need the following, as necessary, for Town approval:

- Materials and Equipment Submittals
- List of key Project Personnel contact names, telephone numbers, and email addresses
- Detailed and Updated Construction Schedule
- Traffic Control Plan
- Pre-Construction Meeting – Please call to set this up with the Engineer in charge of this project.

You are to complete the work within **one hundred twenty (120) consecutive calendar days after the Notice to Proceed**.

Therefore, the date of completion of all work is _____, 2025.

Sincerely,
TOWN OF WINKELMAN

Gloria Ruiz
Town Clerk

End of Notice to Proceed

ACCEPTANCE OF NOTICE TO PROCEED

(DATE)

(CONTRACTOR)

RE: QUARELLI STREET-GOLF COURSE ROAD PROJECT

Receipt of the Notice to Proceed is hereby acknowledged on this _____day of _____, 2025.

By _____

Title _____

Company _____

Please complete and return this form within three days to:

TOWN OF WINKELMAN
Attn: Gloria Ruiz, Town Clerk
206 Giffin Avenue
Winkelman, Arizona 85192

End of Acceptance of Notice to Proceed

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That

_____
(Full name and address of legal title of Contractor)

_____, a

_____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

_____
(Full name and address of Surety)

_____,

hereinafter called Surety, are held and firmly bound unto

_____
(Full name and address or legal title of Contracting Agency)

_____,

hereinafter called Town, in the penal sum of _____

_____ Dollars $(_____)
(insert sum equal to Contract Price) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors and assigns, jointly and severally, firmly by these present.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal entered into a certain

contract with the Contracting Agency, dated the _____ day of _____, 2025, a copy of which is hereto attached and made a part hereof for the construction of:

QUARELLI STREET-GOLF COURSE ROAD PROJECT

in accordance with the:

Plans, Bid/Contract Documents and Technical Specifications prepared by RICK Engineering Company, 2401 W Peoria Ave, Ste 130, Phoenix, AZ 85029 [Attention: Dale E. Miller, PE, (480) 522-0330, dmiller@rickengineering.com].

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the Contracting Agency, with or without notice to the Surety and during the two-year warranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the TOWN OF WINKELMAN from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Contracting Agency all outlay and expense which the Contracting Agency may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or Work to be performed thereunder of the Specifications accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications.

Any suit under this Bond must be instituted before the expiration or two (2) years from the date on which final payment under the Contract falls due. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Contracting Agency named herein or the heirs, executors, administrators, or successors of the Contracting Agency.

PROVIDED, FURTHER, that no final settlement between the Contracting Agency and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF this instrument is executed in _____ (number) counterparts, each one of

which shall be deemed an original, on this the _____ day of _____, 2025.

ATTEST:

_____
(Principal)

By: _____ (SEAL)
Secretary

_____ _____
(Witness as to Principal)

_____ _____
(Address) (Address)

ATTEST:

_____
(Surety)

By: _____ (SEAL)
(Surety) Secretary

_____ _____
(Witness as to Surety) Attorney-in-Fact

_____ _____
(Address) (Address)

NOTES: Date of Bond must not be prior to date of Contract.
If Contractor is a Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing Bonds must appear on the US Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Arizona.

End of Performance Bond

LABOR AND MATERIAL PAYMENT BOND

This Bond is issued simultaneously with the Performance Bond in favor of the Town conditioned on the full and faithful performance of the Contract.

KNOW ALL MEN BY THESE PRESENTS:

That _____
(Full name and address or legal title of Contractor)

as Principal, herein called "Principal", and

_____

_____,
(Full name and address of Surety)

a corporation duly organized under the laws of the State of Arizona, as surety, herein called Surety, are

held and firmly bound unto

_____,
(Full name and address or legal title of Contracting Agency)

as Obligee, hereinafter called Contracting Agency, for the use and benefit of claimants as here in below defined in the penal sum of

_____ Dollars ($_____),
for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____, 2025, entered into a contract with the Contracting Agency for the construction of the following project:

QUARELLI STREET-GOLF COURSE ROAD PROJECT

in accordance with the:

Plans, Bid/Contract Documents and Technical Specifications prepared by RICK Engineering Company, 2401 W Peoria Ave, Ste 130, Phoenix, AZ 85029 [Attention: Dale E. Miller, PE, (480) 522-0330, dmiller@rickengineering.com].

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payments to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contact with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

2. The above named Principal and Surety hereby jointly and severally agree with the Contracting Agency that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Contracting Agency shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:

    a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the Contracting Agency, or the Surety above named, within ninety (90) days after such claimant performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Contracting Agency or Surety at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

    b) After the expiration of one (1) year following the date on which Principal ceased Work on said Contract, it being understood, however, that any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be the minimum period of limitation permitted by such law.

    c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

IN WITNESS WHEREOF, this instrument is executed in_____ (number) counterparts, each one of which shall be deemed an original, this _____ day of _____, 2025.

ATTEST:

_____
(Principal)

(SEAL)

_____
(Principal Secretary)

By: _____

_____

_____
(Address)

By: _____
Witness as to Principal

_____
(Address)

_____

ATTEST:

_____
(Surety)

By: _____
(Attorney-in-fact)

By: _____
(Witness as to Surety)

_____
(Address)

_____

NOTE: Date of Bond must not be prior to date of Contract.
If Contractor is a Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing Bonds must appear on the US Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Arizona.

End of Labor and Material Payment Bond

CHANGE ORDER

RE: QUARELLI STREET-GOLF COURSE ROAD PROJECT

Contractor: _____

Acct. #
Department: Staff Contact:
Contractor Name:
Address:

Original Contract Date: Change Order Number:

THE CONTRACT SHALL BE MODIFIED AS FOLLOWS:

JUSTIFICATION:

COST BREAKDOWN:

Contractor agrees to the specific costs herein and waives all rights to any future impact costs directly or indirectly related to or arising from the additional work. The appropriated funds for this project are equal to or exceed the amount of the contract. Pursuant to C.R.S. § 24-91-103.6(2), any change order or change directive requiring additional compensable work to be performed which work causes the aggregate amount available under the contract to exceed the amount appropriated for the original contract shall be agreed to in writing, signed by both parties and shall assure that the Town has made lawful appropriations to cover the costs of the additional work. Any change order or directive made by the Town requiring additional compensable work to be performed shall be performed at the hourly rates and/or unit pricing set forth in the contractor's bid and shall be reimbursed at the contractor's costs on a monthly basis for all additional directed work performed until a change order is finalized. However, in no instance shall the periodic reimbursement be required before the contractor has submitted an estimate of cost to the Town for the additional compensable work to be performed.

Original Contract Amount ..... $

Net change by previous Change Orders/Contract Modifications ..... $

Contract Sum prior to this Contract Modification ..... $

The Contract Sum will be (increased) (decreased) (unchanged) by ..... $

The new Contract Sum including this Contract Modification will be ..... $

The original completion date for the Contract was..... Month/Day/Year

The Contract Time will be (increased) (decreased) (remain the same)

The Date of Completion for the Contract therefore is ..... Month/Day/Year

IN WITNESS WHEREOF, the Parties have executed this Change Order on:

_____, 2025.

CONTRACTOR

By: _____

Print Name: _____

Title: _____

TOWN OF WINKELMAN

By: _____
Louis Bracamonte
Mayor

_____
Dale Miller, PE
Project Engineer for the Town Of Winkelman

ATTEST (required for change orders over $10,000 only):

_____
Gloria Ruiz, Town Clerk

End of Change Order Form

GENERAL CONDITIONS

1. ABBREVIATIONS AND DEFINITIONS

1.1 SCOPE: Many commonly used abbreviations appear in these specifications and the project drawings. These abbreviations normally require no explanation of definition beyond that contained in standard dictionaries and many technical handbooks.

Abbreviations of technical and construction terms used in these specifications and the project drawings are explained or defined in Section 1.2.

Technical and construction terms used in these specifications and the project drawings are defined in Section 1.3.

1.2 ABBREVIATIONS: Wherever the following abbreviations are used in these specifications, standard details or on the plans, they are to be construed the same as the respective expressions represented.

Abbreviations of technical or construction terms not defined herein shall be construed as defined in the most recent addition of CONSTRUCTION DICTIONARY, published by Greater Phoenix, Arizona Chapter #98 of the National Association of Women in Construction.

AASHTO American Association of State Highway & Transportation Officials
ACI American Concrete Institute
ACPA American Concrete Pipe Association
ADOT Arizona Department of Transportation
AGC Associated General Contractors of America, Inc.
AIA American Institute of Architects
AIEE American Institute of Electrical Engineers
AISC American Institute of Steel Construction
ANSI American National Standards Institute
APA American Plywood Association
APHA American Public Health Association
APWA American Public Works Association
ASCE American Society of Civil Engineers
ASME American Society of Mechanical Engineers
ASTM American Society for Testing Materials
AWSC American Welding Society Code
AWWA American Water Works Association
IEEE Institute of Electrical and Electronic Engineers
NBS National Bureau of Standards
NCPI National Clay Pipe Institute
NEC National Electrical Code
NEMA National Electrical Manufacturer's Association
NFPA National Fire Protection Association
NIC Not in Contract

SAE Society of Automotive Engineers
USC&GS United States Coast and Geodetic Survey
USGS United State Geological Survey

1.3 DEFINITIONS: Technical and construction terms used in these specifications and the Project drawings shall have the meanings indicated, applicable to both the singular and plural thereof. The technical and construction terms that are not defined in this section shall have the meanings set forth in the most recent addition of GLOSSARY, WATER AND WASTEWATER CONTROL ENGINEERING, prepared by AIWA, AWWA and WPCE; or CONSTRUCTION DICTIONARY, published by Greater Phoenix, Arizona Chapter #98 of the National Association of Women in Construction.

ADDENDA: Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Drawings and Specifications, by additions, deletions, clarifications or corrections.

AGREEMENT OR CONTRACT: The formal or written agreement or contract executed by the authorized representatives of the Contracting Agency and the Contractor for the complete performance of the Project in accordance with the Contract Documents.

AWARD: The formal action of the Contracting Agency in accepting a proposal.

BID: The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the work to be performed.

BIDDER: Any qualified individual, firm partnership, corporation or combination thereof, acting directly or through a duly authorized agent submitting a bid for the work.

BONDS: Bid, Performance and Labor or Material Payment Bonds and other instruments of security furnished by the contractor and his surety in accordance with the contract documents.

CHANGE ORDER: A written order to the contractor authorizing an addition, deletion or revision in the work within the general scope of the contract documents, or authorizing an adjustment in the contract price or contract time.

CONTRACT DOCUMENTS: All of the integral documents of the contract, including but not limited to, Advertisement for Bids, Information for Bidders, Plans, Drawings, Construction Standards and Standard Details, Special Provisions, Proposal/Bid, Bid Bond, Agreement, Labor and Material Payment Bond, Performance Bond, Notice of Award, Notice to Proceed, Certificates of Insurance, Change Order, and Addenda or other documents incorporated therein.

CONTRACT PRICE: The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

CONTRACT TIME: The number of calendar days stated in the Contract Documents for the completion of the work.

CONTRACTOR: The individual firm, partnership, corporation or combination thereof with whom the Contracting Agency has executed the agreement.

CONTRACTING AGENCY (TOWN): The legal entity that has contracted for the performance of the work, or for whom the work is being performed.

DRAWINGS (PLANS): The part of the contract documents which show the characteristics and scope of the work to be performed and which have been prepared or approved by the engineer.

ENGINEER: The person, firm or corporation named as such in the contract documents and licensed to perform such services in the State of Arizona.

FIELD ORDER: A written order effecting a change in the work not involving an adjustment in the contract price or an extension of the contract time, issued by the Engineer to the contractor during construction.

NOTICE OF AWARD: The written notice of the acceptance of the bid from the contracting agency to the successful bidder.

NOTICE TO PROCEED: Written communication issued by the contracting agency to the contractor authorizing and directing him to proceed with the work and establishing the date of commencement of the work.

TOWN (CONTRACTING AGENCY): A public or quasi-public body or authority, corporation, association, partnership or individual for whom the work is to be performed.

PROJECT: The undertaking to be performed as provided in the Contract Documents.

RESIDENT PROJECT REPRESENTATIVE: The authorized representative of the contracting agency who is assigned to the project site or any part thereof.

SHOP DRAWINGS: All drawings, diagrams, illustrations, brochures, schedules and other data, which are prepared by the contractor, a subcontractor, manufacturer, supplier, or distributor, which illustrate how specific portions of the work shall be fabricated or installed.

SPECIAL PROVISIONS: The special conditions, requirements, additions and/or revisions to the construction standards, applicable to the work, to cover conditions or requirements peculiar to the project under consideration.

SPECIFICATIONS (CONSTRUCTION STANDARDS): A part of the contract documents consisting of these General Conditions, special conditions and written descriptions of a technical nature relating to materials, equipment, construction systems, standards and workmanship.

SUBCONTRACTOR: An individual firm or corporation having a direct contact with the contractor or with any other subcontractor for the performance of a part of the work at the site.

SUBSTANTIAL COMPLETION: The date as certified by the engineer when the construction project or a specified part thereof is sufficiently completed, in accordance with the contract documents, so that the project or specified part can be utilized for the purposes for which it is intended.

SUPPLIER: An individual, firm or corporation having a direct contract with the contractor or with any subcontractor for the manufacture or furnishing of any part of the supplies and/or materials to be used at or incorporated in part of the work at the site.

WORK: All labor necessary to produce the construction required by the contract documents, and all materials and equipment incorporated in the project.

WRITTEN NOTICE: Any written notice from one party of the agreement to any other party of the agreement relative to any part of the contract documents, which notice shall be deemed to have been properly served and delivered when posted by the sending party by Certified or Registered Mail to the receiving party at the receiving party's last given address or when delivered in person to the receiving party or to his or its authorized representative.

2. BIDDING REQUIREMENTS AND CONDITIONS

2.1 ELIGIBILITY AND PREFERENCE

The employment of contractors and subcontractors on this work shall be governed by these General Conditions and Specifications and any applicable provisions included in the Special Provisions.

2.2 CONTENTS OF PROPOSAL

The prospective bidder may examine and/or obtain plans, specifications, and proposal documents at the location specified in the advertisement.

The proposal document will state the location of the contemplated construction; give the description of the various quantities of work to be performed or materials to be furnished, and have a Bid Schedule of pay items for which unit bid prices are invited. The proposal documents shall also state the form and amount of the proposal guarantee, the time in which the work shall be completed and may include additional instructions not included in these specifications.

The Plans, Construction Standards, Standard Details, Special Provisions, and all supplementary documents are essential parts of the contract documents and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy or conflict, Plans shall govern over both Standard Details and Construction Standards. Special Provisions will govern over standard specifications, standard details and plans.

Each and every provision of law and clause required by law to be inserted in the Contract Documents shall be deemed to be inserted herein, and the Contract Documents shall be read and enforced as though they were included herein.

2.3 INTERPRETATION OF QUANTITIES IN PROPOSAL

The quantities appearing in the proposal are approximate only and are to be used for the comparison of bids. Payment to the contractor will be made only for the actual quantities of work performed and accepted, or for materials furnished in accordance with the Contract Documents at the unit bid price in the Proposal.

Any or all items in the signed agreement may be increased or decreased not more than 20% at the discretion of the Contracting Agency without invalidating the unit price in any way. Changes greater than 20% shall be considered to be an alteration to the work and shall be paid for in accordance with the provisions of Section 9.4.

2.4 EXAMINATION OF PLANS, SPECIAL PROVISIONS AND SITE OF WORK

The Contracting Agency shall prepare plans and special provisions in accordance with acceptable engineering standards, giving such direction as will enable the contractor to carry them out.

The Bidder shall examine the site of the proposed work and all documents pertaining to the work. It is mutually agreed that the submission of a proposal shall constitute an acknowledgement that the Bidder has made such examination and is familiar with the character, quality and quantity of the work to be performed and material to be furnished.

If a part of the Contract Documents, logs of test holes, ground water levels and accompanying soil reports furnished by the Contracting Agency are furnished for their general information only. Field conditions so set forth shall not constitute a representation or warranty, expressed or implied, that such conditions are actually existent. Bidders shall make their own investigations and form their own estimates of the site conditions.

No complaint or claim that there was any misunderstanding as to the quantities, conditions or nature of the work will be entertained after submission of the proposal, except as set forth in Section 004.2.

2.5 PREPARATION OF PROPOSAL

The Bidder shall submit his proposal on the forms provided by the Contracting Agency. The Bidder shall specify a unit bid price for each pay item where units and approximate quantities are given.

The Bidder shall specify a lump sum price for each pay item where a lump sum price is requested by the Contracting Agency.

The total proposal will be obtained by adding the amount bid on the individual pay items. All information shall be in ink or typewritten. In case of a conflict between unit prices and total prices, unit prices shall govern.

The following shall also become a part of the Bidder's proposal:

(A) Acknowledge receipt of the agreement that the proposal is based on, list addenda received with and/or after the receipt of the proposal documents.

(B) Complete all portions of the bid proposal and bid schedule documents.

(C) Bidders' signatures will be in ink on the Bid Form.

2.6 SUBCONTRACTORS' LIST

A list of Subcontractors shall be attached to the proposal. The Bidder shall submit this list showing each specialty Subcontractor to whom he proposes to subcontract any portion of the work.

2.7 IRREGULAR PROPOSALS

Proposals shall be considered irregular and may be rejected for any one of the following reasons:

(A) If the proposal is on a form other than that furnished by the Contracting Agency; or if the form is altered or any part thereof is detached.

(B) If there are unauthorized additions, statements, conditional or alternate bids, or irregularities of any kind.

(C) If the Bidder adds any provisions reserving the right to accept or reject an award, or to enter into a Contract pursuant to an award.

(D) If the proposal does not contain a unit price for each pay item listed except in the case of authorized alternate pay items.

(E) If the Bidder fails to submit the List of Subcontractors.

(F) If more than one proposal for the same work is submitted by an individual, partnership or corporation under the same or different names.

(G) If there is evidence of collusion among Bidders or assistance from any officer of the Contracting Agency or of any department thereof.

2.8 BID BONDS

No proposal will be considered unless accompanied by Bid Bond or certified check in the form and amount stated in the Advertisement for Bids. The bond or certified check shall be made payable to and shall be acceptable to the Contracting Agency as a guarantee that the Bidder shall execute the contract documents upon award of the Contract.

2.9 SUBMISSION OF PROPOSAL

The proposal and Bid bond or certified check shall be submitted in a sealed envelope. The outside, lower left hand corner of which shall be marked as follows:

Bid of _____,
(Contractor)
For: _____
(Project)
Bids Due: _____

Contracting Agency: Town of Winkelman, Arizona

Envelopes shall be mailed or delivered to the office of the Contracting Agency and must be received before the time and date specified in the Information for Bidders or any Addenda.

Proposals received after the time and date specified will be returned, unopened, to the Bidder.

2.10 WITHDRAWAL OR REVISION OF PROPOSAL

Any Bidder may withdraw or revise a proposal after it has been deposited with the Contracting Agency, provided his request is received by the Contracting Agency, in writing or by telegram, before the time specified for opening proposals as stipulated herein.

2.11 PUBLIC OPENING OF PROPOSALS

Proposals will be opened and read publicly at the time and place specified in the Advertisement for Bids, or any Addenda. Bidders, their authorized agents and other interested parties are invited to be present.

Should proposals for more than one project be scheduled to be opened at the same time, and Bidder may, after the time set for opening proposals, request to withdraw his second or succeeding proposal prior to the opening of proposals for that project. Should this occur, there will be a brief delay in the opening of Proposals for the second project to permit the Bidder to submit his request. The Contracting Agency shall return the unopened Proposal for the second project of any Bidder submitting a personal or written request.

3. AWARD AND EXECUTION OF CONTRACT

3.1 CONSIDERATION OF PROPOSALS

All proposals received shall be publicly opened and read, as provided for in these specifications. After reading, the respective totals shall be checked and compared by the Contracting Agency. The accuracy of the total proposal shall be checked by verifying the extensions and additions. The Unit Bid Price shall govern in all cases. The results of such comparison shall be considered public information. The right is reserved to award the Contract to the lowest responsible Bidder, or to reject all proposals and re-advertise for any reason the Contracting Agency determines.

Should all proposals be rejected, any and all subsequent changes, additions, addenda, or new sets of plans and Special Provisions shall be provided to all purchasers of the first issue of the plans and Special Provisions at no additional charge, except that out of Town bidders will pay shipping charges.

3.2 RETURN OF BID BONDS

Bid Bonds or certified checks submitted by the three lowest responsible Bidders shall be retained by the Contracting Agency until the Contract has been executed by all parties. Retained Bid Bonds or certified checks shall be returned to Bidders upon execution of the Agreement.

All other Bid Bonds or certified checks shall be returned to Bidders immediately following the Bid opening and the checking of the proposals submitted has been completed.

3.3 AWARD OF CONTRACT

The Contracting Agency shall award the Contract or all proposals will be rejected within 90 days after bid opening. The Contracting Agency's award of Contract shall be considered an acknowledgement that funding appropriations exist.

No proposal shall be withdrawn for a period of 90 days after opening without consent of the Contracting Agency.

The successful Bidder shall execute and deliver the prescribed Agreement to the Contracting Agency within 15 days after receipt of notice of award, provided that acceptance of the proposal is delivered to the Bidder within the time limit prescribed and prior to withdrawal of the proposal. Required Bonds shall be delivered with the executed Contract. Otherwise the Bidder's Bid Bond or certified check shall be forfeited.

3.4 REVOCATION OF AWARD

The Contracting Agency reserves the right to revoke the Award at any time prior to execution of the Contract without liability to the Contracting Agency.

3.5 CONTRACT SECURITY

The Contractor shall furnish the Contracting Agency a Performance Bond and a Labor and Material Payment Bond, each in penal sums equal to the amount of the Contract. Bonds shall be furnished with the executed Contract. The expense of the Bonds shall be borne by the Contractor.

Bonds shall be executed by the Contractor and a Corporate Bonding Company licensed to transact such business in the State of Arizona and named on the current "Surety Companies Acceptable on Federal Bonds" as published in the U.S. Treasury Department Circular #570. Bonds acceptable to the Contracting Agency shall be substituted in the event the original surety loses its right to transact business in the State of Arizona, is declared bankrupt, or is removed from U.S. Treasury Department Circular #570. Substitute Bonds shall be furnished within 10 days after notice from the Contracting Agency. Substitute Bonds shall conform to all requirements and sums established for the original Bonds. All premiums for the substitute Bonds shall be borne by the Contractor.

All payments due the Contractor may be deferred until the substitute bonds have been delivered to the Contracting Agency.

3.6 CONTRACTOR'S INSURANCE

(A) The Contractor agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by the Contractor pursuant to Section 7.15 of this Contract. Such insurance shall be in addition to any other insurance requirements imposed by this Contract or by law. The Contractor shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to Section 7.15 of this Contract by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

(B) Contractor shall procure and maintain, and shall cause any subcontractor of the Contractor to procure and maintain, the minimum insurance coverages listed herein. Such coverages shall be procured and maintained with forms and from insurers licensed by the State of Arizona and acceptable to the Contracting Agency. All coverages shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by the Contractor pursuant to Section 007.15 of this Contract. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

INSURANCE COVERAGE LIMITS ARE SET FORTH IN THE INFORMATION FOR BIDDERS SECTION OF THESE BID/CONTRACT DOCUMENTS

(C) The policy required by this Section shall be endorsed to include the Contracting Agency and its officers and employees as additional insureds. Every policy required shall be primary insurance, and any insurance carried by the Contracting Agency, its officers, and its employees, or carried by or provided through any insurance pool of the Contracting Agency, shall be excess and not contributory insurance to that provided by Contractor. No additional insured endorsement to the policy required by this Section shall contain any exclusion for bodily injury or property damage arising from completed operations. The Contractor shall be solely responsible for any deductible losses under any policy required.

(D) The Certificate of Insurance shall be provided to the Contracting Agency and completed by the Contractor's insurance agent as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be reviewed and approved by the Contracting Agency prior to commencement of the contract. The certificate shall identify this contract and shall provide that the coverages afforded under the policies shall not be cancelled, terminated, or materially changed until at least 30 days prior written notice has been given to the Contracting Agency. The completed certificate of insurance shall be sent to the Town Clerk, 628 North Main Street, Winkelman, Arizona 85131

(E) Failure on the part of the Contractor to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of contract upon which the Contracting Agency may immediately terminate this contract or, at its discretion, the Contracting Agency may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the Contracting Agency shall be repaid by the Contractor to the Contracting Agency upon demand, or the Contracting Agency may offset the cost of the premiums against any monies due to the Contractor from the Contracting Agency.

(F) The Contracting Agency reserves the right to request and receive a certified copy of any policy and any endorsement thereto.

(G) The parties hereto understand and agree that the Contracting Agency is relying on, and does not waive or intend to waive by any provision of this contract, the monetary limitations or any other rights, immunities, and protections provided by Arizona Revised Statute, as from time to time amended, or otherwise available to the Contracting Agency, its officers, or its employees.

3.7 EXECUTION AND APPROVAL OF CONTRACT

The Contractor shall execute and deliver the Agreement to the Contracting Agency within 15 calendar days following receipt of the Notice of Award from the Contracting Agency.

The Contracting Agency shall approve and execute the Agreement within fifteen (15) calendar days following receipt of signed Agreement and acceptable Bonds and Certificates of Insurance.

No Contract shall be considered in effect until the Agreement has been fully executed by all parties concerned.

3.8 FORFEITURE OF PROPOSAL GUARANTEES

Failure of the Contractor to execute the Agreement, within the time stated, shall be just cause for revocation of the Award and the forfeiture of the proposal guarantee which shall become property of the Contracting Agency, not as a penalty, but as liquidation of damages sustained.

4. SCOPE OF WORK

4.1 WORK TO BE DONE

The Contractor shall perform all work as may be necessary to complete the Contract in a satisfactory and acceptable manner in full compliance with the plans, specifications and terms of the Contract.

The Contractor shall furnish any and all labor, materials, equipment, transportation, utilities, services and facilities required to perform all work for the construction of the project within the time specified.

4.2 ALTERATION OF WORK

The Contracting Agency may order changes within the scope of the work without invalidating the Contract. Such changes may be made without notice to the Surety and the Surety shall not be released therefrom. An increase or decrease in the unit cost or completion time requiring an equitable adjustment and a Change Order shall be authorized by the Engineer.

Payment for work occasioned by these changes shall be made in accordance with provisions of Section 009. Completion time adjustment required by these changes shall be made in accordance with the provisions of Section 8.

4.2.1 SUBSURFACE CONDITIONS

4.2.1.1 The Contractor shall promptly notify the Contracting Agency or the Engineer in writing of any subsurface or latent physical condition at the site that differs materially from that indicated in the Contract Documents. Notification shall precede disturbing such conditions.

4.2.1.2 The Contractor shall promptly notify the Contracting Agency in writing of any unusual physical conditions at the site which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided

for in the Contract Documents. Notification shall precede disturbing such Conditions.

4.2.1.3 The Contracting Agency shall promptly investigate the conditions. An equitable adjustment shall be made and the Contract Documents modified by a Change Order should the investigation reveal that the conditions do differ materially and cause an increase or decrease in the cost or time required for performance of the work.

4.2.1.4 Adjustment in compensation because of a change or changes resulting from one or more of the conditions described shall be made in accordance with the provisions of Section 009. Adjustment in Contract time because of such change or changes shall be made in accordance with the provisions of Section 008.

4.3 EXTRA WORK

The Contractor shall perform unforeseen work, for which there is no unit price included in the Contract, whenever it is deemed necessary or desirable in order to fully complete the work as contemplated. Such work shall be governed by all applicable provisions of the Contract documents and payment shall be made in accordance with the provisions of Section 9.5.

The Contractor may claim that instructions received involve extra work under the Contract. If so, he shall give the Contracting Agency written notice thereof within 48 hours after receipt of such instructions. In any event, written notice shall precede execution of the work, except in emergencies endangering life or property. No claim shall be valid unless such written notice is given.

4.4 CHANGES AT CONTRACTOR'S REQUEST

The Contractor may request changes in the plans or specifications which do not materially affect the work or the interests of the Contracting Agency. Requests shall be in writing and submitted to the Contracting Agency for approval. Such requests may be granted to facilitate the work. The Contracting Agency reserves the right to receive an equitable adjustment in the contract price or contract time for authorizing change.

4.5 MAINTENANCE OF TRAFFIC

The Contractor shall insure the only portion of the project being used by the public be maintained in such condition that vehicular and pedestrian traffic shall be adequately accommodated. He shall also provide and maintain safe temporary approaches, crossings and intersections with Agencies and facilities that provide emergency services to the public.

The Contractor shall not interfere with traffic on streets adjacent to off-street projects. Traffic upon street projects shall be maintained in accordance with the Special Provisions. Detours to by-pass traffic shall be used only after approval by the Contracting Agency.

4.6 CLEAN UP AND DUST CONTROL

Throughout all phases of construction, and until final acceptance of the project, the Contractor shall keep the work area clean and free from rubbish, excess materials and debris.

Failure of the Contractor to comply with the Engineer's cleanup orders may result in an order to suspend work until the condition is corrected. No additional compensation or time will be allowed as a result of such suspension.

The Contractor shall take whatever steps, procedures or means are required to prevent abnormal dust conditions due to his construction operations. The dust control measures shall be maintained at all times, to the satisfaction of the Engineer.

4.7 FINAL CLEANING UP

All private or public property and grounds occupied by the Contractor in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures and equipment, and, all parts of the work area shall be left in a condition acceptable to the Contracting Agency.

5. CONTROL OF WORK

The Contractor will be held strictly to the intent of the Contract Documents in regard to the quality of materials, workmanship and execution of the work.

5.1 AUTHORITY AND RESPONSIBILITY OF THE ENGINEER

The Engineer shall be the Contracting Agency's representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and work performed. He shall interpret the intent of the Contract Documents in a fair and unbiased manner. The Engineer shall make visits to the site and determine if the work is proceeding in accordance with the Contract Documents.

The Engineer shall not be responsible for the construction means, controls, techniques, sequences, procedures or construction safety nor shall he direct the Contractor's operations in any manner.

The Contractor shall be furnished additional instructions and detail drawings, by the Engineer, as necessary to carry out the work required by the Contract Documents.

The additional drawings and instructions thus supplied shall become a part of the Contract Documents. The Contractor shall carry out the work in accordance with the additional detail drawings and instructions.

The Engineer may suspend the work, wholly or in part, for any of the following reasons:

(A) For such period of time deemed necessary due to unsuitable weather conditions.

(B) Contractor's failure to perform according to the provisions of the Contract.

(C) Contractor's failure to provide safe working conditions.

(D) For reasons deemed to be in the public interest.

5.2 DRAWINGS AND SPECIFICATIONS

Drawings will show details of all structures, utilities, lines, elevations, grades, typical cross sections and location and design of all work.

The intent of the specifications and drawings is that the Contractor shall furnish all labor, materials, tools, equipment and transportation necessary for the proper execution of the work in accordance with the Contract Documents and all incidental work necessary to complete the project in an acceptable manner, ready for use, occupancy or operation by the Contracting Agency.

In case of conflict between the drawings and Specifications, the drawings shall govern. Figure dimensions on drawings shall govern over scale dimensions and detailed drawings shall govern over general drawings.

Discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported, in writing, to the Engineer. The Engineer shall promptly correct such inconsistencies or ambiguities in writing. Any work performed by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk, until or unless authorized by the Engineer.

5.3 SHOP DRAWINGS

The Contractor shall provide shop drawings as may be necessary for the prosecution of the work as required by the Contract Documents. The engineer shall promptly review all shop drawings. The engineer's approval of any shop drawing shall not release the Contractor from responsibility for deviations from the Contract Documents. The approval of any shop drawing which substantially deviates from the requirements of the Contract Documents shall be evidenced by a Change Order.

When submitted for the Engineer's review, Shop Drawings shall bear the Contractor's certification that he has reviewed, checked, and approved the Shop Drawings and that they are in conformance with the requirements of the Contract Documents.

Portions of the work requiring a shop drawing or sample submission shall not begin until the shop drawing or submission has been approved by the Engineer. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Engineer.

The number of shop drawings required by the Contracting Agency will be six (6) unless otherwise specified in the special provisions. The cost of furnishing all shop drawings shall be considered as included in the amount bid for one or more of the pay items.

5.4 CONFORMITY WITH DRAWINGS AND SPECIFICATIONS

All work performed and all materials furnished shall comply with the lines, elevations, grades, cross sections, dimensions and material requirements, including tolerances, shown on the plans or indicated in the specifications.

Materials or finished products incorporated in the work that do not conform to the plans and specifications may be accepted and remain in place. However, the engineer shall determine if reasonably acceptable work has been produced or that the finished product substantially complies with the Contract Documents. Acceptance shall be documented by a Change Order providing for an appropriate adjustment in the Contract price.

5.5 COOPERATION OF CONTRACTOR

The Contractor shall be supplied with two (2) sets of Contract Documents. The Contractor shall keep one set available at the work site at all times.

The Contractor shall have on the work site at all times his agent, a competent superintendent capable of reading and understanding the plans and specifications. The superintendent shall have full authority to stop or delay work as directed by the Engineer for testing or inspection or for any reason as specified in Section 5.1.

Emergencies may arise during the progress of the work which may require special effort or require extra shifts of men to continue the work beyond normal working hours. The Contractor shall be prepared to do all such work promptly in case of such emergencies arising. If such emergencies arise out of or as a result of any improper or negligent act or omission of the Contracting Agency, the Contractor shall not be paid for all of his work costs actually incurred in excess of normal working hours and normal equipment use.

5.6 COOPERATION WITH UTILITIES

The Contracting Agency will notify all municipal agencies, utility companies, all pipeline Towns, or other affected parties, and have all necessary adjustments made of the public or private utility fixtures, pipelines, and other appurtenances within or adjacent to the limits of construction as soon as practical.

Water lines, gas lines, wire lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cable ways, signals and all other utility appurtenances within the limits of the proposed construction which are to be relocated or adjusted are to be moved by their Towns at their expense, except as otherwise provided for in the Special Provisions or as noted on the plans. Existing services found to be in a location different than shown on the plans which require additional cost on the part of the Contractor, shall require issuance of a Change Order in accordance with the proposal Section 009.5

It is understood and agreed that the Contractor has considered in his proposal all of the permanent and temporary utility appurtenances in their present or relocated positions as shown on the plans and that no additional compensation will be allowed for any delays, inconvenience or damage sustained by him due to any interference from the said utility appurtenance or the operation of moving them. If delays are encountered because utility Towns fail in their responsibility to relocate or adjust their facilities, the contract time will be adjusted in accordance with Section 8.

The Contractor has considered the location of all permanent and temporary utilities and has included allowance for any delay, inconvenience or damage sustained by the operation of moving of said utility.

Delays encountered due to utility Town's failure to relocate or adjust their facilities shall result in an extension of the Contract time in accordance with Section 008.7.

5.7 SEPARATE CONTRACTS

The Contracting Agency reserves the right to let other contracts in connection with this project. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work with his. If the proper execution or results of any part of the Contractor's work depends upon the work of any other Contractor, the Contractor shall inspect and promptly report to the engineer any defects in such work that render it unsuitable for such proper execution and results.

The Contracting Agency may perform additional work related to the project itself. The Contractor will afford the Contracting Agency reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly coordinate his work with theirs.

The Contracting Agency will not honor any claim for extra compensation due to delays, extra work or extensions of time caused by any other contractors working within the limits of the same project.

Performance of additional work by other Contractors or the Contracting Agency that was not noted in the Contract Documents prior to the execution of the Contract shall be subject to written notice to the Contractor prior to starting any such additional work.

The Contractor shall give all utility companies, all pipeline Towns and other parties affected the maximum notice possible when their underground or overhead services interfere with his work. The Contractor shall resolve all problems with the utility Towns concerned.

5.8 SURVEYS

The engineer shall establish all base lines for locating the principal component parts of the work, together with a suitable number of bench marks adjacent to the work. The contractor shall develop and make all detail surveys needed for construction, such as staking all proposed improvements for construction, slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

The Contractor shall carefully preserve bench marks, reference points and stakes and in case of willful or careless destruction, shall be charged with the replacement expense.

5.9 INSPECTION OF WORK

Inspection of the work by the Engineer or his authorized representative shall not be considered as direct control of the work. The direct control of the work shall be the sole responsibility of the Contractor's supervisor.

All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in

the Contract Documents.

The Contractor shall provide the testing and inspection services required by the Contract Documents and other such tests necessary to assure the quality of the work. The Contracting Agency will provide independent inspection of the work, and the Contractor shall provide 24 hour notice for required witness testing and prior to covering work to be inspected.

Any law, ordinance, rule, regulation or order of a public authority having jurisdiction may require inspections or tests by someone other than the Contractor. If so, the Contractor will give the Engineer timely notice of readiness for such inspections or tests. The Contractor will furnish the Engineer copies of certificates of inspection, testing or approval resulting from such inspections or tests within 24 hours of completion when practical, or as soon as they are available.

Inspections, tests or approvals by the Engineer shall not relieve the Contractor from his obligations to perform the work in accordance with the requirements of the Contract Documents.

The Engineer and his representatives will at all times have access to the work.

Authorized representatives or agents of a participating local, federal or state agency shall be permitted to inspect the work. The Contractor will provide access to the work for inspection or testing thereof.

The Engineer may order that portions of the work be uncovered, exposed or made available for observation, inspection or testing. The Contractor shall provide all necessary labor, materials, tools and equipment to comply with the Engineer's order. If such portion of the work is determined to be defective, the Contractor shall bear all costs involved, including the cost of reconstruction. If such portion of the work is determined to be in substantial compliance with the Contract Documents, the Contractor shall be compensated in accordance with Section 9.5(B). The Contract time shall be extended in accordance with Section 8.6.

5.10 DUTIES OF INSPECTOR

Inspectors employed by the Contracting Agency will be authorized to inspect all work done and materials furnished. Such inspection may extend to all or any part of the work and the preparation, fabrication or manufacture of the materials to be used.

The inspector will not be authorized to alter or waive the provisions of the Contract. The inspector will not be authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

The inspector will have authority to suspend acceptance of work or materials until any disagreement between the Contractor and the inspector can be referred to and decided upon by the Engineer.

5.11 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK

The Contractor shall remove from the premises all work rejected by the Engineer for failure to comply with the Contract Documents, whether incorporated in the construction or not. The Contractor shall promptly replace or re-execute the work in accordance with the Contract Documents and without expense to the Contracting Agency. The Contractor shall also bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

All removal and replacement work shall be done at the Contractor's expense within the Contract period.

Work done contrary to the instructions of the Engineer, work done beyond the lines shown on the plans, or any extra work done without authority, will be considered as unauthorized work to be removed and to deduct the costs for any monies due or to become due the Contractor.

5.12 MAINTENANCE OF PUBLIC ROADWAYS DURING CONSTRUCTION

The Contractor shall maintain the work during construction and until the project is accepted. This maintenance shall require continuous and effective work prosecuted day by day, with adequate equipment and forces so that the roadway or structures are kept in satisfactory condition at all times.

The Contractor shall maintain the previous course or subgrade during all construction operations. All cost of maintenance work during construction and before the project is accepted shall be included in the unit bid price on the various pay items.

5.13 FAILURE TO MAINTAIN PUBLIC ROADWAY OR STRUCTURE

If the contractor fails to perform maintenance during construction, the Engineer will immediately notify the Contractor of such noncompliance. If the Contractor fails to comply within 24 hours after receipt of such notice the Engineer may immediately proceed to maintain the project at the expense of the Contractor. The entire cost of this maintenance will be deducted from monies due to the Contractor on this or other contracts with the Contracting Agency.

5.14 PARTIAL USE OR OCCUPANCY

Should an urgent or unforeseen need occur, the Contractor agrees to let the Contracting Agency use or occupy a unit or portion of the project, such as a structure, utility service or a section of road or pavement prior to final acceptance.

The Contracting Agency will prepare a written agreement with the Contractor and accomplish a partial acceptance inspection. The written agreement will include a revised construction schedule; responsibilities for maintenance of the portion of the project partially accepted and continued construction of the original project to final acceptance, payments, and insurance and bond requirements.

5.15 ACCEPTANCE

(A) PARTIAL ACCEPTANCE: During the prosecution of the project, the Contractor may substantially complete a unit or portion of the Project. The Contractor may request the Engineer to make final inspection of that portion of the work. If the Engineer finds, upon inspection, that the work has been satisfactorily completed in compliance with the Contract, he shall accept the work as being completed and the Contractor shall be relieved of further responsibility for that work. Such partial acceptance shall in no way void or alter terms of the Contract.

(B) FINAL ACCEPTANCE: Upon due notice from the Contractor of presumptive completion of the entire project, the Engineer shall make an inspection. If all construction provided for by the Contract is found completed, that inspection shall constitute the final inspection and the Engineer shall make the final acceptance. The Contractor shall be notified in writing of acceptance as of the date of the final inspection.

If the inspection discloses any work, in whole or in part, as being unsatisfactory, the Engineer shall give the Contractor the necessary instructions for correction of same, and the Contractor shall comply with and execute such instructions within the same contract period. Upon correction of the work, another inspection shall be made which shall constitute the final inspection provided the work has been completed. In such event, the Engineer shall make the final acceptance and notify the Contractor in writing of acceptance as of the date of the final inspection.

6. CONTROL OF MATERIALS

6.1 SOURCE OF MATERIALS AND QUALITY

All construction materials to be used on the work or incorporated into the work shall be subject to the inspection and approval or rejection of the Engineer.

The materials shall meet all quality requirements of these specifications. The Contractor shall notify the Engineer of his proposed source of materials prior to delivery. The Engineer may approve materials at the source of supply or point of manufacture prior to movement to the job site. Such approval does not waive the Engineer's right to inspect the materials at the job site or to reject materials that do not conform to specifications.

6.2 MATERIALS, SERVICES AND FACILITIES

The Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction and all other services and facilities necessary to execute, complete and deliver the work within the specified time.

Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as recommended by the manufacturer.

Materials, supplies and equipment shall be substantially equal to samples submitted by the Contractor and approved by the Engineer.

Materials, supplies or equipment to be incorporated into the work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

6.3 SAMPLES AND TESTS OF MATERIALS

All materials to be incorporated into the work may be subject to sampling, testing and approval. Samples furnished shall be representative of the materials to be used. The Engineer may select samples, or may require that samples be delivered by the Contractor to a certified laboratory.

The procedures and methods used to sample and test materials will be determined by the Engineer. Unless otherwise specified samples and tests will be made in accordance with the standard methods of Quality Standards which were in effect and published at the time of advertising for Bids. Copies of tests accomplished by the Contracting Agency will be furnished the Contractor at his request.

The Engineer may permit the use of some manufactured materials prior to sampling and testing provided they are delivered with either a Certificate of Compliance or a Physical and Chemical Analysis conforming to Quality Standards requirements, stating that the materials comply with the requirements of the specifications. The certificates shall clearly identify each delivery of materials to the work area. The certificates shall be signed by a person having legal authority to bind the supplier or manufacturer. Copies of the certificate shall be delivered to the Engineer.

6.4 PLANT INSPECTION

The Engineer may authorize inspection of materials at the source, point of storage or point of manufacture. The following conditions shall apply in all cases:

(A) The Contractor shall submit a written request for the plant inspection. The request shall include a list of the materials to be inspected, detailed locations of inspection point and listing of responsible persons at location of inspection.

(B) The Contractor shall also insure that the Engineer shall have access to any part of the plant engaged in the manufacturing, production or assembly of the material to be inspected. Access shall be subject to normal work schedules, safety procedures and security of the plant.

Materials delivered to job site that have been damaged or altered subsequent to the plant inspection may be rejected by the Engineer.

6.5 TRADE NAMES AND SUBSTITUTIONS

Plans and specifications may contain references to equipment, materials or patented processes by manufacturer, trade name, make or catalog number. Such references shall be regarded as establishing a standard of quality, finish, appearance, performance or as indicating a selection based upon compatibility with existing equipment or materials. Such reference shall not be construed as limiting the selection to a specified item or source, unless specifically designated.

The use of an alternate item or source may be permitted, subject to the following:

(A) No consideration will be given a request for an alternate prior to bid opening.

(B) The Contractor may submit a written request for approval of an alternate item or source after Notification of Award of Contract. The request shall include all information necessary for evaluation of quality and suitability for purpose intended. The Contractor shall submit samples when required.

(C) The Engineer shall evaluate the information, perform tests when necessary and make a final decision as to the acceptability of the proposed alternatives. The Engineer shall give the Contractor written notification of his decision within 10 days after receipt of request.

6.6 PATENTS

The Contractor shall pay all applicable royalties and license fees. He shall defend all lawsuits or claims for infringement of any patent rights and save the Contracting Agency harmless from loss on account thereof. The Contracting Agency shall be responsible for any loss when a particular manufacturer or manufacturers is specified in the Contract documents.

6.7 STORAGE OF MATERIALS

The Contractor shall provide storage facilities and exercise such measures as will insure the preservation of the quality and fitness of all materials and/or equipment approved for storage. Stored items shall be located so as to facilitate their prompt inspection. Portions of the right-of-way easements not required for public travel may be used for storage purposes when approved by the Engineer. Any additional storage area required must be provided by the Contractor. Private property shall not be used for storage purposes without written permission of the Town or lessee. The Engineer may request copies of such written permission. All storage sites shall be restored to their original condition by the Contractor at his expense.

6.8 HANDLING MATERIALS

Materials and/or equipment shall be handled in such a manner as to preserve their quality and fitness for the work. Manufacturers' written requirements shall be followed if different than accepted local practice.

6.9 UNACCEPTABLE MATERIALS

All materials and/or equipment not conforming to the requirements of the specifications, in place or not, may be rejected. Rejected materials and/or equipment shall be removed immediately from the site of the work otherwise permitted by the Engineer. No rejected materials and/or equipment, the defects of which have been subsequently corrected, shall be used until approved in writing by the Engineer.

Materials which may have been rejected for failure to comply with accepted national standards on any other project shall not be incorporated into this project without written approval of the Contracting Agency.

6.10 CONTRACTING AGENCY FURNISHED MATERIALS

Materials and/or equipment furnished by the Contracting Agency will be delivered to the Contractor as indicated in the Special Provisions. The cost of handling and placing shall be included in the appropriate Contract pay sum. The Contractor shall be held responsible for any shortages, deficiencies and damages which may occur after his acceptance.

7. LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

7.1 PROTECTION OF WORK, PROPERTY AND PERSONS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. He shall take precautions necessary to provide for the safety of the employees on the work. He shall protect materials and equipment that are to be incorporated into the work. He shall provide protection to prevent damage to other property at or adjacent to the site.

Property to be protected shall include pavements, roadways, structures, utilities, trees, lawns, shrubs and walks designated to be incorporated into the completed project.

The Contractor shall comply with all legally applicable laws, orders, ordinance, rules or regulations enacted by the public body having jurisdiction over the work. He will erect and maintain all necessary safeguards for safety and protection as required by the progress of the work. He shall notify Towns of adjacent utilities at such time as progress of the work may directly affect them. The Contractor shall remedy all damage, injury or loss to any property caused directly, in whole or in part, by the Contractor, his Subcontractors, or anyone directly employed by any of them.

The Contractor shall act promptly in emergencies to prevent threatened damage, injury or loss to the work or persons or property at, or immediately adjacent to the site. The Contractor is expected to act promptly and without special instruction or authorization from the Contracting Agency or Engineer. The Contractor shall submit prompt written notice to the Engineer defining significant changes to the work or to the Contract Documents that resulted from the emergency. The Engineer shall promptly issue a change order covering the changes and deviations involved.

7.2 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 shall give the work the constant attention necessary to facilitate the progress thereof, and shall cooperate with the Engineer, his inspectors and other Contractors in every way possible.

All phases of the Project such as concrete work, pipe work, etc. shall be under the direct supervision of a foreman or the superintendent's designated representative on the site who shall have authority to accept instructions with respect to that particular phase of the project, and take action required to properly carry out the work.

The Engineer may require the Contractor to stop work on a specific part of the project until the required supervision is present.

The Contractor shall file with the Engineer the names, addresses and telephone numbers of representatives who can be contacted at any time in case of emergency. These representatives must be fully authorized and equipped to correct unsafe or excessively inconvenient conditions on short notice.

7.3 PERMITS

Permits and licenses of a temporary nature and necessary for the prosecution of the work shall be secured and paid for by the Contractor unless otherwise stated in Special Provisions. Easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Contracting Agency.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in Section 009.4.

The Contractor shall notify the appropriate permit agencies of actions undertaken as required by the permit.

7.4 TAXES

The contractor is responsible for any and all taxes due for materials incorporated into the work, as well as any sales or use taxes. All taxes and fees are to be included in the bid prices.

7.5 ARCHAEOLOGICAL REQUIREMENTS

When the Contractor's excavating operations encounter remains of prehistoric people's dwelling sites or artifacts of historical or archaeological significance, the operations shall be temporarily discontinued. The Engineer will contact archaeological authorities to determine the disposition thereof. When directed, the contractor shall excavate the site in such manner as to preserve the artifacts encountered and shall remove them for delivery to the custody of the proper state authorities. Such excavation will be considered and paid for as extra work.

7.6 RESERVED -- ARCHAEOLOGICAL REPORTS

7.7 SAFETY, HEALTH AND SANITATION PROVISIONS

The Contractor shall provide and maintain neat, sanitary accommodations for his employees' use as may be necessary to comply with the requirements and regulations of the Arizona Department of Environmental Quality. Full use of the Contractor's accommodations shall be provided to the employees of the Contracting Agency or the Engineer who might be assigned to the project.

The Contractor shall provide all safeguards, safety devices and protective equipment and take any other actions reasonably necessary to protect the life and health of employees on the job, the safety of the public and to protect property in connection with the performance of the work covered by the Contract.

Precautions shall be exercised by the Contractor at all times for the protection of persons (including employees) and property. The Contractor shall comply with the provisions of all applicable laws pertaining to such protection, including all Federal and State occupational safety and health acts, standards and regulations promulgated thereunder.

7.8 PUBLIC CONVENIENCE AND SAFETY

The Contractor shall at all times conduct his work so as to assure the least possible obstruction to traffic and adjacent residents. The safety and the protection of persons and property of the general public and residents along the street, highway and areas adjacent to the work shall be provided for by the Contractor.

7.9 BARRICADES AND WARNING SIGNS

The Contractor shall provide, erect and maintain all necessary barricades, sufficient lights, danger signals and other traffic control devices and shall take all necessary precautions for the protection of the work and safety of the public. Roads partially or fully closed to traffic shall be protected by effective barricades. Obstructions shall be illuminated during hours of darkness. Suitable warning signs shall be provided to properly control and direct traffic.

The Contractor shall erect warning signs in advance of any place where operations may interfere with the use of the road by traffic. Warning signs shall be placed at all intermediate points where the new work crosses or coincides with an existing road.

All barricades, lights, control devices, signs and warning devices shall conform in all respects to the provisions of the Manual on Uniform Traffic Control Devices for Streets and Highways, which is hereby made a part of these Specifications.

7.10 USE OF EXPLOSIVES

The use of explosives will be permitted only when authorized in writing by the Engineer and after the Contractor has obtained the necessary permit from the Contracting Agency.

The Contracting Agency reserves the right to order the discontinuance of blasting operations at any time.

Explosives shall be transported, stored, handled and used in accordance with the provisions and requirements of all applicable laws, ordinance and regulations. Work shall be done in accordance with the recommendations of the AGC Manual of Accident Prevention in Construction and Institute Makers of Explosives.

The approval by the Engineer for the use of explosives shall not relieve the Contractor from his responsibilities. When explosives are used the Contractor will:

(A) Exercise the utmost care not to endanger life or damage property.

(B) Be responsible for any and all damages resulting from their use.

(C) Furnish and erect special signs to warn the public of his blasting operations. They shall be located and maintained so as to be clearly evident to the public during all critical periods of blasting operations.

(D) Notify each public utility company having structures adjacent to the work of his intention to use explosives. Such notice shall be given sufficiently in advance to enable the companies to advise the Contractor of any precautions that should be taken to protect their structures from damage.

(E) Make a survey of adjacent properties, before commencing blasting operations, locating on drawings and by photographs all existing cracks and damages to structures. A copy shall be filed with the Engineer, including a report of any property Towns who refused to cooperate and permit entry and inspection.

7.11 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE

The Contractor shall be responsible for the preservation of all public and private property within the limits of the work. He shall protect and prevent disturbance or damage to all land monuments and property marks until the Engineer has witnessed, or otherwise referenced their location, and shall not move them until directed.

Access to private property shall be maintained to minimize inconvenience to the property Town or lessee. The Contractor shall notify the property occupant 24 hours in advance of any construction across driveways and sidewalks shall be minimized by restoring serviceability as quickly as possible.

7.12 CONTRACTOR'S RESPONSIBILITY FOR WORK

The Contractor shall protect and take all necessary precautions against injury or damage to all finished or partially finished work, including protection against action of the elements or from any other cause until the entire project is completed and accepted by the Engineer. Partial payment for completed portions of the work shall not release the Contractor from such responsibility.

The Contractor shall be responsible for the project in case the work is suspended. The Contractor shall take appropriate precautions to prevent or minimize damage to the project. Erection of temporary structures, signs or other facilities may be required to provide the necessary protection.

7.13 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES

The Contractor shall cooperate with the Towns of underground or overhead utilities in order that the work may progress in a reasonable manner and that duplication of work may be minimized. The Contractor shall not commence work at points adjacent to the property, equipment or service facilities of utilities until arrangements for protection, removal or movement thereof have been made. The Contractor shall not undertake work adjacent to fire hydrants until the local fire authority

has approved provisions for continued use and service.

The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any action, omission, neglect or misconduct in his manner or method of executing the work, or at any time due to defective work or materials, and said responsibility will not be released until the project shall have been completed and accepted

The Contractor shall immediately notify the proper authority if any utility service is interrupted as a result of the Contractor's operations. The Contractor shall assist and cooperate with the utility in the restoration of the service.

Utility service interruptions caused by the Contractor's negligence, carelessness or failure to utilize the utility's capabilities in locating services shall be the sole responsibility of the Contractor. If water service is interrupted, repair work shall be continuous until the service is restored.

In case of utility service interruptions caused by the failure or refusal of the utility to identify and/or locate existing utilities, the Contractor shall immediately provide the Engineer written notification of the utility's non-cooperation and proceed only as instructed by the Engineer.

7.14 RIGHT-OF-WAY

Prior to issuance of Notice to Proceed, the Contracting Agency shall obtain all land and rights-of-way necessary for carrying out and for the completion of the work to be performed pursuant to the Contract Documents.

7.15 INDEMNIFICATION

The Contractor agrees to indemnify and hold harmless the Contracting Agency, its officers, employees, insurers, and self-insurance pool, from and against all liability, claims, and demands, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this contract, if such injury, loss, or damage is caused in whole or in part by, or is claimed to be caused in whole or in part by, the act, omission, error, professional error, mistake, negligence, or other fault of the Contractor, any subcontractor of the Contractor, or any officer, employee, representative, or agent of the Contractor, or which arise out of any worker's compensation claim of any employee of the Contractor or of any employee of any subcontractor of the Contractor. The Contractor agrees to investigate, handle, respond to, and to provide defense for and defend against, any such liability, claims, or demands at the sole expense of the Contractor. The Contractor also agrees to bear all other costs and expenses related thereto, including court costs and attorney fees, whether or not any such liability, claims, or demands alleged are groundless, false, or fraudulent.

7.16 NO WAIVER OF LEGAL RIGHTS

The Contracting Agency will expeditiously make a final inspection and notify the Contractor of acceptance, upon completion of the work. Such final acceptance shall not preclude or prevent the Contracting Agency from correcting any measurement, estimate or certificate made before or after completion of the work. Nor shall the Contacting Agency be precluded or prevented from recovering

from the Contractor, his surety, or both, any overpayment made or for a failure by the Contractor to fulfill his obligations under the Contract. A Contracting Agency waiver on a single part of the work shall not be deemed to be a waiver on any other part of the work

The Contractor shall be liable to the Contracting Agency for any fraud or latent defects or gross mistakes as may amount to fraud and the Contracting Agency's rights under any warranty or guaranty.

8. COMMENCEMENT, PROSECUTION AND PROGRESS

8.1 NOTICE TO PROCEED

Neither the Contractor nor any Subcontractor shall commence work on the project prior to receipt of the written Notice to Proceed issued by the Contracting Agency. The Contractor shall commence work as soon as practicable after the starting date specified in the Notice to Proceed. All work under the Contract shall be completed within the number of calendar days stated in the proposal, plus extensions stipulated in Change Orders, beginning with the day following the starting date specified in the Notice to Proceed.

The Contractor shall notify the Engineer 24 hours in advance of the time and place where work will begin. Two working days advance notice is required for surveying and staking.

8.2 SUBLETTING OR ASSIGNMENT OF CONTRACT

The Contractor shall not sublet, sell, transfer, assign or otherwise dispose of all or any part of the Contract or Contracts, or of his right, title or interest therein, without prior written consent of the Contracting Agency.

The Contractor may utilize the services of specialty Subcontractors on those parts of the work, which under normal contracting practices, are performed by specialty Subcontractors.

The Contractor shall not award work to Subcontractor(s), in excess of fifty (50) percent of the Contract Price, without prior written approval of the Contracting Agency.

The Contractor shall be fully responsible to the Contracting Agency for the acts and omissions of his Subcontractors, and of persons directly employed by them, as he is for the acts and omission of persons directly employed by him.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind Subcontractors to the Contractor by the terms of the Contract Documents and to give the Contractor the same power as regards terminating any subcontract that the Contracting Agency may exercise over the Contractor under any provision of the Contract Documents. All subcontracts shall be in writing.

8.3 SCHEDULES, REPORTS AND RECORDS

The Contractor shall submit information on the work to be performed to the Contracting Agency relating to quantities, progress schedules, payrolls, reports, estimates, records and other data as are required by the Contract Documents.

Prior to the commencement of construction, the Contractor shall submit construction progress schedules showing the order in which he proposes to carry on the work.

The progress schedules shall include starting and completion dates of the various parts of this project.

The Special Provisions shall detail requirements for submission of schedules and reports relating to Special Detail Drawings, Shop Drawings, manufacturing schedules, testing and/or inspection of materials purchased for the project and any other specific schedule, report or record.

8.4 LIMITATION OF OPERATIONS

The Contractor shall not perform any work after regular working hours, on weekends or legal holidays without written permission from the Engineer, except for emergencies. The Contractor and the Engineer shall arrange for continuous or periodic inspection of the work, surveys and tests when such work is necessary.

The Engineer may require the Contractor to increase his operations to insure that the construction schedule is attained, should the rate of construction fall behind schedule. The Contractor may be required to increase personnel, shifts and/or overtime operations as well as quantity of equipment until such time as the work is back on schedule. Increased operations required shall be at the Contractor's expense unless such increased operations arise out of or are as a result of any improper or negligent act or omission of the Contracting Agency in which latter event, the Contractor shall be paid for all of his or its costs actually incurred in excess of normal working hours.

8.5 CHARACTER OF WORKMEN: METHODS AND EQUIPMENT

The Contractor shall, at all times employ sufficient labor and equipment, for prosecuting the work to full completion in the manner and time required by the Contract Documents.

All workmen shall be competent and have sufficient skill, knowledge and experience their class of work and operation of equipment, to perform all work properly and satisfactorily.

The Engineer may provide the Contractor a written opinion that a specific person or persons are not performing in a proper and skillful manner. Further, the Engineer may request that such person or persons be removed from the work by the Contractor or Subcontractor. The request may also require that persons so removed shall not again be employed in any portion of the work without written approval of the Engineer. The Contractor shall hold the Contracting Agency harmless from damages or claims for compensation that may occur in the enforcement of this paragraph.

Should the Contractor fail to remove such person as required above, or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Engineer may suspend the work by written notice until such orders are complied with.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the project shall be such that it will not damage property adjacent to the work area.

The Contractor shall be responsible for the construction means, methods, controls, techniques, scheduling, sequences, procedures, construction safety and operations throughout the term of the Contract. Should work so produced not conform to the Specifications, the Contractor shall remove the defective work and replace it with work of the specified quality or take such corrective action as approved by the Engineer. No change in basis of payment or Contract Time shall be authorized for defective work replaced or corrective work required.

When the Contract specifies that construction be performed by the use of certain methods and equipment, should work so provided not conform to the Specifications, the Contractor may be required to remove the defective work and replace it with work of the specified quality or take such corrective action as approved by the Engineer.

8.6 DETERMINATION AND EXTENSION OF CONTRACT TIME

The number of calendar days allowed for the completion of the work included in the Contract will be as stated in the proposal. The Contract time shall consist of the number of calendar days specified, including all weekends and legal holidays. All calendar days elapsing between the effective dates of any written notice from the Engineer to suspend work and to resume work following suspension shall be excluded. Completion date of the project shall be determined as the date of final inspection on which all deficiencies have been corrected.

The Contractor may submit a written request for an extension to the completion time. The request must set forth specific reasons or conditions beyond the control of or through no fault of the Contractor. The Engineer shall evaluate the request and may extend the time for completion as the conditions justify. If granted, the extended time for completion shall be in full effect the same as though it were the original time for completion.

8.7 WARRANTY

The Contractor shall warrant all materials and equipment furnished or installed, and work performed for a period of two (2) years from the date of final acceptance. The Contractor warrants that the completed system is free from all defects due to faulty materials or workmanship. The Contractor shall promptly make such corrections as may be necessary by reason of such defects, including the repair of any damage resulting from such defects. The Contracting Agency will give notice of observed defects with reasonable promptness. The Performance Bond shall remain in full force and effect through the warranty period.

Should any defects develop within two years from the date of final acceptance due to faults in workmanship or materials, the Contractor shall, within 14 calendar days of receipt of written notice from the Contracting Agency, begin making the necessary repairs to the satisfaction of the Engineer. Such work shall include the repair or replacement of other work or materials damaged or affected by making the above repairs or corrective work, all at no additional cost to the Contracting Agency.

In case of work, materials or equipment for which written warranties are required by the special provisions, the Contractor shall provide or secure from the appropriate Subcontractor or supplier such warranties addressed to and in favor of the Contracting Agency and deliver same to the Engineer prior to final acceptance of the work. Delivery of such warranties shall not relieve the Contractor

from any obligation assumed under any other provisions of the Contract.

8.8 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

The date of beginning and the time for completion of the work are essential conditions of the Contract Documents and the work embraced shall be commenced on the date specified in the Notice to Proceed.

The Contractor will proceed with the work at such a rate or progress to insure full completion within the Contract time. It is expressly understood and agreed, by and between the Contractor and the Contracting Agency, that the contract time for the completion of the work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work.

Should the Contractor fail to complete the work within the Contract time, or extension of time granted by the Contracting Agency, the Contractor shall pay the Contracting Agency the amount of liquidated damages specified in the Bid or $500 per day if not specified in the Bid for each calendar day the Contractor may be in default of the time stipulated in the Contract Documents.

8.8.1 The Contractor shall not be charged with liquidated damages provided the delay in completion of the work is due to the following and the Contractor has promptly given written notice of such delay to the Contracting Agency or Engineer.

(A) To any preference, priority or allocation order duly assigned by the Contracting Agency.

(B) To unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of omission of the Contracting Agency, floods, epidemics, quarantine restrictions, strikes, material or fuel shortages due to governmental regulations or allocations, freight embargoes and abnormal or unusually severe weather.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time fixed for its completion may have been extended, will in no way operate as a waiver on the part of the Contracting Agency of any of its rights under the Contract.

8.9 SUSPENSION OF WORK, TERMINATION AND DELAY

8.9.1 The Contracting Agency may suspend all or any portion of the work for not more than 90 days by written notice to the Contractor. The notice shall include the date on which work shall be resumed, and the contractor, shall resume work on that date. The Contractor shall be allowed an increase in the Contract Price or an extension in time of completion, or both, directly attributable to any suspension.

8.9.2 The Contracting Agency may terminate the services of the Contractor, and take possession of the project and all materials, equipment, tools, construction equipment and machinery thereon that may be owned by the Contractor. The termination shall be effective ten days after the Contracting Agency has delivered written notice to the Contractor. The termination

may be initiated for any of the following reasons and shall not prejudice any other right or remedy available to the Contracting Agency:

(A) The Contractor is adjudged bankrupt or insolvent.

(B) The Contractor makes a general assignment for the benefit of his creditors.

(C) A trustee or receiver is appointed for the Contractor or for any of his property.

(D) The Contractor files a petition to take advantage of any debtor's act or to reorganize under any bankruptcy law.

(E) The Contractor repeatedly fails to supply sufficient skilled workmen, materials or equipment to maintain the construction schedule.

(F) The Contractor repeatedly fails to make prompt payments to Subcontractors, or for labor, materials or equipment.

(G) The Contractor disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the work.

(H) The Contractor disregards the authority of the Engineer.

(I) The Contractor violates any provision of the Contract Documents.

After termination notice is served, the Contracting Agency may proceed to finish the work by whatever method it deems most expedient.

The Contractor shall not be entitled to receive any payment from time of termination until the work is finished. All direct and indirect costs incurred in completing the project shall be assessed against the Contract Price. Any residue shall be paid the Contractor. Any unpaid balance shall be immediately paid to the Contracting Agency by the Contractor.

8.9.3 The Contracting Agency may elect to suspend or abandon the project and terminate the Contract. The action shall be effective ten days after the Contracting Agency has delivered written notice to the Contractor. This action may be initiated for any reason, without cause, and shall not prejudice any other right or remedy available to the Contracting Agency. The Contractor shall be paid for all work executed. No claim for loss of profits will be considered.

8.9.4 The Contractor may terminate the Contract for any of the following reasons. The termination shall be effective ten days after the Contractor has delivered written notice to the Contracting Agency.

(A) The Contracting Agency has suspended the work for more than 90 days.

(B) The work is suspended for more than 90 days under the order of the court or other public authority.

(C) The Engineer fails to act on any request for payment within 30 days after its submittal.

(D) The Contracting Agency fails to pay the Contractor within 30 days the sum approved by the Engineer or awarded by arbitrators.

The Contractor shall be entitled to payment for all work executed. The Contract will be terminated by the Contractor ten days after receipt of the Contractor's written notification.

9. MEASUREMENTS AND PAYMENTS

9.1 MEASUREMENT OF QUANTITIES

Measurement for pay items in the Bid Schedule and the Contract shall be defined in the Technical Specifications.

All work completed under the Contract will be measured by the Engineer according to United States standard measures. The methods of measurement and computation to be used in determination of quantities of materials furnished and of work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

Longitudinal and transverse measurement for area computations will be made horizontally, and no deductions will be made for individual fixtures having an area of one square yard or less. The neat dimensions shown on the plans or ordered in writing by the Engineer shall be used for area computation.

The term "lump sum," when used as a pay item, will mean complete payment for the work described.

Sundry items which are incidental to or required in the construction of the work but are not included as items in the bid schedule shall be considered an integral part of the Contract, and all labor, materials, etc. required for such items shall be furnished by the Contractor and included in the appropriate unit price bid.

9.2 SCOPE OF PAYMENT

Payment for pay items in the Contract shall be as indicated in the Technical Specifications.

Payment for the various items in the Contract shall be made at the unit price Bid in the proposal. Payment shall be compensation in full for furnishing all labor, materials, equipment, and appurtenances necessary to complete the work as shown on the plans and as required in the Specifications. Each item, fixture, piece of equipment, etc., shall be complete with all necessary connections and appurtenances, for the satisfactory use and operation of said item. No additional payment will be made for work related to any item unless specifically called for in the Contract.

Payment may be specified to be made on the basis of weight. The weighing shall be done on certified platform scales sealed by the State Inspector. The Contractor shall furnish the Engineer with duplicate Weigh master’s Certificates showing the actual net weights. The Contracting Agency will accept the certificates as evidence of the weight delivered.

The Engineer and Contractor may agree to use a weight/volume factor in computing payment for materials to be measured by the cubic yard. An acceptable method of computing volumes of excavation is to determine a weight/volume factor and convert weights to volumes by means of the factor. The weight/volume factor shall be determined by test methods agreed upon by the Engineer and Contractor. The number of tests used to determine the material weight/volume factor shall be determined by the Engineer. The locations where the tests are taken shall be those locations specified in the "Method of Measurement" for the particular Bid item, i.e., Unclassified Excavation - in its original position: Fill Construction - in its final compacted position, or as agreed upon by the Engineer and the Contractor.

9.3 ASSIGNMENTS

Neither the Contractor nor the Contracting Agency shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest therein, or his obligations thereunder, without written consent of the other party.

9.4 COMPENSATION FOR ALTERATION OF WORK

When the total quantity of the original Contract or the total quantity of any item increases or decreases more than 20 percent, either party may require an adjustment in payment as follows:

(A) A quantity decrease in an item that is in excess of 20% of the quantity bid may require an adjustment when a reasonable cost analysis supports an increase in the unit cost of the fixed costs chargeable to that item.

(B) A quantity increase in an item that is in excess of 20% of the quantity bid may be considered and will apply only to that quantity in excess of 120% of the Bid schedule quantity. Adjustment shall be made when a reasonable cost analysis supports a change in the pro rata share of the fixed costs chargeable to that item. The Engineer reserves the right to require increases in excess of 120% of the bid schedule quantity to be performed on the basis of extra work.

Adjusted unit prices shall include fixed costs as determined above an allowance of 15% of the fixed costs to cover applicable overhead and profit. No claim shall be made by the Contractor for any loss of anticipated profits because of such alterations. No claim shall be made for any variations between the approximate quantities and the quantities of work as completed.

9.5 EXTRA, ALTERED, OR FORCE ACCOUNT WORK

The value of Extra, Altered or Force Account work performed in accordance with the requirements and provisions of Section 4 shall be determined by the Engineer in one or more of the following ways:

(A) By unit Bid prices or lump sum, either as set forth in the original proposal or as agreed upon by both the Contractor and the Engineer and stipulated in the Change Orders authorizing the work. Should both parties fail to agree on a basis of payment, the Engineer may order the work done on an actual cost basis.

(B) By actual cost for which reimbursement will be based in the following manner:

(1) Labor. For all labor and foremen in direct charge of the specific operations, the contractor shall receive the rate of pay (or scale) agreed upon in writing before beginning work for each and every hour that said labor and foremen are actually engaged in such work.

An amount equal to 67% of the above rates will also be paid the Contractor to cover overhead, additional bond, property damage and liability insurance, workmen's compensation insurance premiums, unemployment insurance contributions and social security taxes

In addition to the wage plus 67% of the wage, the actual amount of fringe benefits will be paid to the Contractor for those work classifications which carry fringe benefits resulting from collective bargaining agreements or as required by U.S. Department of Labor Wage Schedules. (Fringe benefits are those payments made by the Contractor to a third party or trustee to cover such things as, but not limited to health and welfare, pensions, vacations, apprenticeship programs and industry advancement funds). Also, the Contractor shall receive the actual costs paid to or in behalf of workmen by reason of subsistence and travel allowances which are the result of a collective bargaining agreement or other employment contract generally applicable to the classes of labor employed by the work. The 67% factor shall not apply to fringe benefits, subsistence and travel allowances paid to the workmen, to a third party, or to a trustee.

(2) Materials. For materials accepted by the Engineer and used, the Contractor shall receive the actual cost of such materials delivered on the Work, including transportation charges by him (excluding machinery rentals as hereinafter set forth), to which cost 15% will be added.

(3) When extra work on a force account basis is performed on the project by a Subcontractor or specialty firm including utilities and railroads, in accordance with the provisions, an extra work order on a percentage based on the following table will be allowed as additional to the total compensation due as calculated under this Subsection. This additional percentage is to reimburse the prime Contractor for the administrative expenses incurred in connection with the work. Bid items and any other work in the original Contract are not to be considered.
Percentages allowed will be applied to each individual billing for extra work not to exceed one billing per month.

To $1,000	10%
Over $1,000 to $10,000	$100 plus 5% of excess over $1,000
Over $10,000	$550 plus 3% of excess over $10,000

Approval of this additional percentage will be made after certified invoices are furnished by the Contractor.

(4) Equipment. For use of equipment which has been authorized by the Engineer, the Contractor shall be paid in accordance with rental rates specified in the most current issue of the Arizona Department of Transportation Construction Equipment Rental Rate Schedule or as agreed upon in writing before the work is commenced. Such rental rates shall exclude labor but shall include fuel and lubricants, to which will be added the cost of transporting such special equipment to the job site.

(5) Miscellaneous. Additional allowance will not be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

(6) Compensation. The Contractor's representative and the Engineer shall compare records and agree upon the payment for work done as ordered on a force account basis.

(7) Statements. Payment will not be made for work performed until the Contractor has furnished the Engineer with an itemized statement of the cost of such Extra, Altered or Force Account Work. Statements shall be accompanied and supported by certified invoices for all materials used. However, if materials used on the Extra, Altered or Force Account Work are not specifically purchased for such work but are taken from the Contractor's stock, then, in lieu of the invoices, the Contractor shall furnish a written statement certifying that such materials were taken from his stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

9.6 ELIMINATED ITEMS

Should any items contained in the proposal be found unnecessary for the proper completion of the work, the Engineer shall notify the Contractor in writing to eliminate the item. Such action will not invalidate the Contract. The Contractor, by Change Order, will be reimbursed for actual work done and all costs incurred, including mobilization of materials and equipment prior to the elimination of such items.

9.7 CHANGE ORDERS

The Contract Price may be changed only by a Change Order. 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 procedure set forth in Subsection 9.5.

9.8 PAYMENTS TO THE CONTRACTOR

Payments will be made in the manner and at such times as set forth in the Special Provisions of the Contract Documents.

The Contractor will indemnify and save the Contracting Agency, its agents and employees harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, suppliers and furnishers of machinery, parts, equipment, tools and all supplies incurred in the furtherance of the performance of the work. The Contractor shall, at the Contracting Agency's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged or waived (lien waiver). If the Contractor fails to do so, the Contracting Agency may, after having notified the Contractor, either pay undisputed unpaid bills or withhold from the

Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged, whereupon payment to the Contractor shall be resumed in accordance with the terms of the Contract Documents. In paying undisputed bills of the Contractor, any payment so made by the Contracting Agency shall be considered as payment made under the Contract Documents by the Contracting Agency to the Contractor and the Contracting Agency shall not be liable to the Contractor for any such payments made in good faith.

9.9 ARBITRATION

Unless prohibited by local charter, ordinance or other law, all claims, disputes and other matters in question arising out of, or relating to, the Contract Documents or the breach thereof, and aggregating not more than $50,000 or 10% of the original contract price, whichever is greater, except for claims which have been waived by the making and acceptance of final payment as provided by Section 9.8, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This provision to arbitrate shall be specifically enforceable under applicable statutes or laws. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

Claims, disputes or other matters in question and aggregating more than $50,000 or 10% of the original contract price may be decided by arbitration, as defined above, provided both parties mutually agree in writing to submit such claims, disputes or other matters to arbitration.

Notice of the demand for arbitration shall be filed in writing with the other party to the Contract Documents and with the American Arbitration Association, and a copy shall be filed with the Engineer. Demand for arbitration shall in no event be made on any claim, dispute or other matter in question which would be barred by an applicable statute of limitations.

The Contractor will carry on the Work and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

9.10 ACCEPTANCE OF FINAL PAYMENT AS RELEASE

The acceptance by the Contractor of final payment shall be and shall operate as a release to the Contracting Agency of all claims and all liability to the Contractor other than claims in stated amounts as may be specifically excepted by the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Contracting Agency and others relating to or arising out of this work. Any payment, however, final or otherwise, shall not release the Contractor or his sureties from any obligations under the Contract Documents or the Performance Bond and Labor and Material Payment Bonds, as hereinabove more fully described.

End of General Conditions Section

APPENDIX 1 – GEOTECHNICAL ENGINEERING REPORT

Alpha
Geotechnical & Materials, Inc.

April 22, 2024
Alpha Project No. 24-G-14412

Rick Engineering Company
22415 North 16th Street
Phoenix, Arizona 85024

Attention: Dale E. Miller, P.E.

Regarding: Geotechnical Engineering Report
Quarelli Street/Golf Course Road Project
Quarelli Street/Golf Course Road West of SR 77
Hayden-Winkelman, Arizona

In accordance with your request, Alpha Geotechnical & Materials, Inc. has completed Geotechnical Engineering Services on the referenced Site. This report includes a project description, discussions of the subsurface conditions encountered at the Site, flexible pavement design for Quarelli Street/Golf Course Road, and recommendations for excavation and other aspects of the project where geotechnical recommendations are appropriate.

We appreciate this opportunity to be of service. If you have any questions concerning our report, or if we can be of further service, please contact us at (602) 453-3265.

Sincerely,
Alpha Geotechnical & Materials, Inc.

/s/ Joshua Svatora

Joshua Svatora, E.I.T.
Geotechnical Staff Professional

/s/ Garrett Clatanoff

Garrett Clatanoff, P.E.
Geotechnical Engineer

GEOTECHNICAL ENGINEERING REPORT

QUARELLI STREET/GOLF COURSE ROAD PROJECT

QUARELLI STREET/GOLF COURSE ROAD WEST OF SR 77

HAYDEN-WINKELMAN, ARIZONA

DATED: APRIL 22, 2024

PREPARED FOR:

RICK ENGINEERING COMPANY

22415 NORTH 16TH STREET

PHOENIX, ARIZONA 85024

PREPARED BY:

ALPHA GEOTECHNICAL & MATERIALS, INC.

2504 WEST SOUTHERN AVENUE

TEMPE, ARIZONA 85282

ALPHA PROJECT NO. 24-G-14412

BY: _____ AND BY: _____

JOSHUA SVATORA, E.I.T.
Geotechnical Staff Professional

GARRETT CLATANOFF, P.E.
Geotechnical Engineer

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APPENDICES

1.0 INTRODUCTION

1.1 GENERAL

Alpha Geotechnical & Materials, Inc. (Alpha) was retained by Rick Engineering Company (Rick) to conduct Geotechnical Engineering Services on the Quarelli Street and Golf Course Road roadway west of the State Route 77 (SR 77) located in both Hayden and Winkelman, Arizona (Site). Our scope of services included a subsurface exploration, laboratory testing, engineering analyses, and preparation of this report to provide recommendations for improvements of the Site including flexible pavement sections and site grading, as well as determine limits of the existing Portland cement concrete pavement (PCCP) and asphaltic concrete (AC) pavement, as detailed in our Proposal 24-G-14412, dated February 14, 2024.

This geotechnical engineering report was prepared based on the information provided to us regarding planned improvements, the results of our explorations, and our engineering analyses. If the information concerning the proposed improvements are not correct, or if different subsurface conditions are identified, this report shall not be considered valid unless the new information is reviewed, and any appropriate modifications are made to this report by Alpha.

1.2 SITE LOCATION

The Site is located within portions of Sections 14, 23, and 24 of Township 5 South, Range 15 East of the Gila and Salt River Baseline and Meridian System. The Site consists of Quarelli Street/Golf Course Road starting at the SR 77 extending north for approximately 4,940 feet along the roadway, ending near the Hayden Public Golf Course. For the purposes of this report, the end of the Site at the SR 77 will be considered the southern end of the project, and the end of the Site near the Hayden Public Golf Course will be considered the northern end. The southern portion of the Site, known as Quarelli Street within the jurisdiction of Winkelman, has not been assigned a Gila County Assessor's Parcel Number (APN). The northern portion of the Site, known as Golf Course Road within the jurisdiction of Hayden, is within portions of Gila County APN's 101-06-001E and 101-05-014. The estimated center of the Site was located at a latitude of approximately 32.987° North and a longitude of approximately -110.777° West. The approximate Site location is shown on the attached **Figure 1**.

1.3 PROJECT DESCRIPTION

The Towns of Hayden and Winkelman own South Golf Course Boulevard and Quarelli Street, respectively. These roadways provide access to an area central to recreational

and outdoor activities including the Hayden Public Golf Course, Bobby Bracamonte Little League Field, Hastings Park and Winkelman Flats Park which serve Hayden, Winkelman and the Copper Basin Community. The Towns identified the need for street improvements due to the condition of the existing facility and rising safety concerns. The existing pavement is in visibly poor condition with cracking and deterioration of roadway edges along both South Golf Course Road and Quarelli Street for the extents of the project limits.

The project consists of improvements to approximately 4,490 feet of pavement on Quarelli Street/Golf Course Road. Rick Engineering Company identified PCCP beneath portions of the existing AC pavement during a site visit prior to our subsurface exploration. The PCCP appeared to be located between Giffin Avenue and the Golf Course at the north end of the project. The planned improvements include removing the existing AC over the PCCP and replacing it with new AC pavement then widening the roadway beyond the PCCP with an AC pavement section. If possible, the Town of Winkelman would prefer to resurface the existing pavement section east of Giffin Avenue instead of a full removal and replacement. The new pavement section will be 3 to 6 inches higher than the existing pavement section. The project will avoid the large drainage issues at the northern end and avoid the railroad tracks. However, several culverts up to 3 feet in diameter may be installed in several unknown locations beneath Quarelli Street/Golf Course Road. In addition, the project will include the construction of a multiuse path on the east side of Quarelli Street/Golf Course Road and the installation of dual luminaire light poles on the east side to light the road and the path. Foundations for the light poles will be typical so recommendations for these foundations have not been included in our scope and fee. A site plan showing the limits of the Site is shown on **Figure 2**.

1.4 PREVIOUS REPORTS

Alpha had requested any geotechnical reports regarding the Site and none were provided.

2.0 FIELD AND LABORATORY SERVICES

2.1 FIELD EXPLORATION

Alpha contacted Arizona 811 to clear public utilities at the Site prior to our field exploration. No conflicts were identified at the Site. No access agreements or permits were required for the project. Alpha notified Rick Engineering Company via email who notified each Town with our scheduled field exploration date.

The field exploration for the Site was conducted on March 27, 2024. RC's Drilling, Inc. (RC's) was subcontracted to complete the drilling services. RC's utilized a truck-mounted CME-75 drill rig with an 8-inch outside diameter hollow-stem augers to complete the test borings. Five Test Borings, B-01 through B-05, were advanced to depths of approximately 5 feet below the ground surface (bgs). Alpha originally planned to complete Test Borings B-01 through B-04 at the edge of the existing pavement where PCCP was not beneath the AC so we could determine the existing AC and ABC thickness. However, these test borings could not be completed in these locations because of underground and overhead utility conflicts. Test Borings B-01 through B-04 were completed in native material off of the existing roadway to avoid utility conflicts. The existing AC pavement section was determined in three other locations and Test Boring B-05 as discussed later in this report. Approximate locations of the test borings are shown on **Figures 3 & 4**. Photographs of the Site and field exploration are shown in **Appendix A**.

Soil samples, using undisturbed ring-lined soil sampling methods were obtained about 1 feet to 3 feet bgs in each boring. Representative bulk samples of the subsurface material were collected from each test boring for visual classification and possible laboratory testing, not including material from the pavement section. Completed test borings were backfilled with auger cuttings and surrounding surface soil and the surface was patched with cold patch for Test Boring B-05.

Encountered materials were visually observed and classified in the field, and these materials were logged in general accordance with ASTM D2488. Field direction and borehole logging was performed by Joshua Svatora, E.I.T. of Alpha. The field test boring logs were reviewed after completion of the laboratory testing, and the final test boring logs are included in **Appendix B**. No groundwater was encountered in the test borings.

2.2 LABORATORY TESTING

Selected soil samples from the test borings were tested in the laboratory for classification purposes and to evaluate their engineering properties. The laboratory tests included:

- Sieve Analysis (ASTM C117/C136) – Soil gradation for classification and general engineering characteristics of the soil on samples excluding cobbles and boulders;

- Plasticity Index / Atterberg Limits (ASTM D4318) – Soil classification and general engineering characteristics related to plasticity and expansion;

- Moisture-Density Relationship / Standard Proctor (ASTM D698) – Engineering characteristics of compacted soil;

- In-Place Density – Determination of in-place density and moisture at depth (ASTM D2937); and,

- Swell Potential (ASTM D4546) – Swell or expansion potential of undisturbed or remolded soil samples inundated with water while under as surcharge load for engineering characteristics of the soil.

The laboratory test results are summarized in **Table C-1** along with individual laboratory sheets presented in **Appendix C**.

3.0 SITE CONDITIONS

3.1 GENERAL SITE HISTORY

Based on a review of historical records, Winkelman was founded as a town in the late 1890s. According to a 1949 United States Geological Survey (USGS) map, Quarelli Street/Golf Course Road was originally a state highway. This is likely when the existing PCCP was placed. The current State Route 177 was built sometime between 1966 and 1973 according to USGS topographic maps. The earliest available historical aerial photographs from 1983 show the Site and general Site vicinity in relatively the same condition as it is today. Improvements, including brick sidewalk and curbing, were made to the southern end of Quarelli Street between Giffin Avenue and SR 77 and were first visible in an aerial photograph from 2019.

3.2 SURFACE CONDITIONS

The Site is currently an asphalt paved, two-lane roadway. A mix of small retail and residential structures are located west of Quarelli Street near the southern end of the Site within the Winkelman jurisdiction. Some of these structures appeared to have been abandoned. The Hayden Public Golf Course is located west of the northern portion of the Site within the Hayden Jurisdiction. The eastern side of the Site along the entire length typically contains no structures and slopes up to a railroad track north of Giffin Avenue. Native vegetation consisting of bushes and trees were located on the east and west sides of Quarelli Street/Golf Course Road. Overhead utility lines were located on the west side of Quarelli Street and on the east side of Golf Course Road. An open pit mine was located just northwest of the Site.

3.3 EXISTING PAVEMENT DATA

As previously discussed, Rick Engineering Company identified PCCP beneath portions of the existing AC pavement during a site visit prior to our subsurface exploration. After this site visit, Rick Engineering Company contacted Alpha and asked if we could determine the northern and southern limits of the PCCP and the width of the existing PCCP and AC at three locations during our subsurface exploration. These results along with the pavement thicknesses are discussed in this section.

The northern and southern limits of the PCCP were determined using the truck-mounted CME-75 drill rig with a hollow-stem auger. This drill rig can advance through AC but will refuse on concrete slabs and pavement. Test borings were drilled near the center of the existing roadway to see if PCCP would be encountered. These locations are separate from Test Borings B-01 through B-05. Auger refusal on concrete was encountered at the northern limit of the project so we assumed the PCCP extends to the northern boundary of the project. Several test borings were completed just south of Giffin Avenue. Auger refusal was encountered 25 feet south of Giffin Avenue but not 75 feet south of Giffin Avenue. Therefore, we estimate that the PCCP stops somewhere between 25 feet and 75 feet south of Giffin Avenue. The approximate northern and southern limits of the PCCP are shown on **Figure 2**. These PCCP limits are based on the test borings we completed during our subsurface exploration but the PCCP limits should be confirmed by the contractor prior to or during construction.

The width of the existing AC and PCCP were determined using hand tools at 3 locations along Quarelli Street/Golf Course Road. These locations have been identified as 1, 2, and 3 and the approximate locations are shown on **Figures 3 & 4**. Hand tools were utilized to excavate through the existing AC and ABC adjacent to the PCCP to obtain these measurements. The AC and ABC thicknesses were also measured in these locations as well as Test Boring B-05. A summary of the data is provided in **Table 3.1**.

Table 3.1: Existing AC and PCCP Roadway Width

Location	PCCP Width (ft)	AC Width (ft)	AC East of PCCP Edge[1]			AC West of PCCP Edge		
			Distance Beyond PCCP (ft)	AC Thickness (in)	ABC Thickness (in)	Distance Beyond PCCP (ft)	AC Thickness (in)	ABC Thickness (in)
1	17.9	22.5	4.6	2.5	4.5	0.0	0.0	0.0
2	13.0	16.0	2.0	2.0	4.0	1.0	2.0	5.5
3	13.0	19.0	1.0	2.5	5.0	5.0	2.5	4.5
B-05	N/A	N/A	N/A	2.0	4.0	N/A	N/A	N/A

[1] AC and ABC thickness for Test Boring B-05 were determined at the test boring because PCCP was not beneath the AC in this location.

In addition, we measured the AC thickness in several AC potholes over the PCCP and the AC thickness ranged from 1 to 2 inches thick which is similar to the thicknesses at Locations 1, 2, and 3 and Test Boring B-05.

3.4 PAVEMENT CONDITION

The existing pavement at the Site has been described under two different sections, the section under Hayden Jurisdiction (Golf Course Road) and the section under Winkelman jurisdiction (Quarelli Street). Golf Course Road was generally in poor condition. The northern portion of Golf Course Road has portions covered with dirt from adjacent runoff. Medium to high severity block and alligator cracking were seen across the entire length of Golf Course Road. Low to medium severity joint reflection cracking was seen generally along the length of Golf Course Road, with some medium to high severity joint reflection cracking being seen across the roadway, often times exposing the joint in the underlying PCCP. Medium to high severity transverse cracking was seen across the entire length of the roadway, with medium severity longitudinal cracking being seen along the centerline of the roadway. Multiple patches were observed on the pavement but were more common on the northern portion of Golf Course Road. Deterioration was observed around most of the patches but the patches themselves were in fair condition. Medium to high severity potholes were seen in various locations along the roadway, exposing the underlying PCCP. Medium to high severity raveling and weathering was observed along the entire length of the roadway, with loose aggregate and material filling in cracks from other pavement distresses.

Quarelli Street was generally in poor to fair condition. Low to medium severity alligator, block, transverse, and longitudinal cracking were observed across the entire length of Quarelli Street. The pavement east of Giffin Avenue had curbs on both sides with a paver sidewalk on the west side. Medium severity potholes were observed along the curb of this section of Quarelli Street. Low severity patching and low severity raveling and weathering were observed along Quarelli Street near and east of Giffin Avenue. The pavement extending approximately 300 feet north of Giffin Avenue was approximately 7 feet wider on the eastern side than the rest of the pavement continuing north along Quarelli Street. There was not a clear distinct line between the private and public right of way line west of the roadway. The northern portion of Quarelli Street was in worse condition, with edge cracking, medium severity raveling and weathering of the pavement, and portions of the pavement covered with soil and loose aggregate on the surface due to weathering and runoff of adjacent soil.

3.5 SUBSURFACE CONDITIONS

Test Boring B-05 was completed within the AC roadway in the southern end where underlying concrete pavement was not encountered. The existing pavement section at Test Boring B-05 consisted of 2 inches of AC over 4 inches of ABC.

The subsurface soils encountered, including those beneath the pavement section not including AC or ABC material, at the Site consisted primarily of Silty Sand with Gravel (SM). The subsurface soils tested in the upper 4.5 feet bgs, not including the AC or ABC material, contained 12 to 40 percent fines (material passing the No. 200 sieve) and 1 to 37 percent gravel (material retained on the No. 4 sieve). The soil samples exhibited plasticity indices of non-plastic, considered negligible to low plasticity. The subsurface soils were typically characterized as loose to dense for coarse-grained soil types.

3.5.1 Expansion Potential

The subgrade soil samples tested in the upper 4.5 feet bgs, not including the AC or ABC material, contained from 12 to 40 percent fines (material passing the No. 200 sieve). The soils exhibited plasticity index of non-plastic. Swell potential testing (performed on the soils passing the No. 4 sieve) indicated a swell potential of 0.2 to 0.7 percent, considered low.

In arid regions, the expansion potential of compacted soils can be increased by lower moisture contents and over-compaction of these soils. Therefore, site grading and drainage recommendations presented herein are intended to reduce the potential for pavement movements due to expansion potentials.

3.6 SURFACE WATER CONDITIONS

The Site was located within the coverage area of the Winkelman, Arizona 7.5 Minute Quadrangle United States Geological Service (USGS) map. The Site was on relatively hilly terrain with a natural elevation of approximately 1,925 feet above mean sea level (MSL). Based on surface contours on this map, the natural terrain in the Site vicinity sloped down to the south towards the nearby Gila River and San Pedro River. However, grading activities and roadway improvements on and near the Site can locally alter surface water flow directions. The project's civil engineer should evaluate the potential for flooding at the Site. We have assumed that the project will be designed and graded to prevent ponding of water or flooding of roadways.

3.7 GROUNDWATER CONDITIONS

Groundwater was not encountered during the field exploration. A map showing approximate locations of wells registered with the Arizona Department of Water Resources (ADWR) was reviewed on the ADWR web page (https://azwatermaps.azwater.gov/WellReg) to identify wells on and in the vicinity of the Site. Several domestic water wells are registered near the Site. The imaged well records indicated groundwater depths from 3 to 114 feet below the ground surface in wells near the Site drilled from 1918 to 2013.

Seasonal variations could cause fluctuations in the surrounding groundwater depths. In addition, perched water tables may be encountered, especially after flood events, sustained flows in the nearby Gila River and San Pedro River, and in areas with shallow bedrock or cemented soils near mountains.

4.0 ENGINEERING DESIGN RECOMMENDATIONS

Geotechnical engineering recommendations for the proposed improvements are presented in the following sections. These recommendations are based upon our present understanding of the project and the results of the field and laboratory testing presented in Appendices B and C of this report. Alternative recommendations may be possible and will be considered upon request. The proposed improvements should be designed and constructed in accordance with Maricopa Association of Governments (MAG) Specifications and the guidelines contained herein.

The recommendations presented herein should be incorporated into the final design, grading, and construction phases of the proposed improvements. The engineering analyses performed concerning site preparation and the recommendations presented below have been developed using the information provided to us regarding site improvements. In the event that the information concerning proposed improvements is not correct, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed, and this report is modified or approved in writing by Alpha.

4.1 QUARELLI STREET/GOLF COURSE ROAD FLEXIBLE PAVEMENT DESIGN

4.1.1 General

The pavement recommendations contained in this report are based on our understanding of the project and the assumptions that the soil and subsurface conditions are similar to

the soil conditions encountered during our field exploration. The pavement recommendations were determined utilizing the Maricopa County Department of Transportation (MCDOT) Roadway Design Manual.

We understand that the existing PCCP will remain in place and a portion of the new AC pavement section will be constructed over the PCCP and the remainder of the new AC pavement section will be supported by the subgrade soils adjacent to the PCCP. Therefore, the flexible pavement design is for the new pavement over the existing PCCP, the new pavement for the widening adjacent to the existing PCCP, and the new pavement south of Giffin Avenue that does not have PCCP beneath the AC.

The soils at the Site should provide suitable support for pavement, provided it is prepared as recommended in Section 5.0 of this report. For design, we assumed that the pavement would be supported by compacted subgrade of the existing soils or imported soils with comparable properties.

4.1.2 Traffic Analysis

Traffic design parameters were not provided. The traffic equivalency factors (TEFs) for Method 2 presented in Table 10.2.2 of the MCDOT Roadway Design Manual were used. For design, the values presented in **Table 4.1** were estimated to determine 18-kip equivalent single axle loads (ESALs).

Table 4.1: ESAL Calculation Parameters

Design Parameter	New Pavement
2-Way Traffic Volume	500 Vehicles per Day
Growth Rate	1%
Percent Trucks	5%
Percent Cars	95%
Car-Load Equivalency Factor	0.0008
Truck-Load Equivalency Factor	1.2
Directional Distribution	50%
Lane Distribution	100%
Design Period	20 years

Utilizing the design parameters in **Table 4.1**, the design ESALs for the new pavement were computed. The design ESALs are presented in the **Table 4.2** below:

Table 4.2: Calculated Design ESALs

Roadway	Total Two-Way Traffic ESALs	Design ESALs
Quarelli Street/ Golf Course Road	244,162	122,081

4.1.3 Pavement Design Parameters

Table 4.3 presents a summary of laboratory test results including the percent passing the #200 sieve and plasticity index values as well as correlated R-Values, calculated using the MCDOT R-Value correlation table. The laboratory test results are included in **Appendices C and D**.

Table 4.3: Subgrade Sample Summary

Test Boring No.	Sample Depth (ft)	USCS Classification	Plasticity Index	Passing the #200 Sieve	Correlated R-Value
B-01	0 – 4.5	SM	0	12	99
B-03	0 – 4.5	SM	0	35	74
B-05	0.5 – 4.5	SM	0	40	69

The correlated R-Values were averaged to determine a mean R-Value for design. The standard deviation of the correlated R-Values was greater than 10 so the average correlated R-Value was reduced from 81 to 74, in accordance with the MCDOT procedure.

Table 4.4 presents the range of material passing the No. #200 sieve, the range of plasticity indices, the average correlated R-Value, and the Design R-Value.

Table 4.4: R-Value Summary

Range of Minus #200 Sieve (%)	Range of Plasticity Indices	Average Correlated R-Value	Design R-Value
12 to 40	0 to 0	74	74

The subgrade resilient modulus used in the pavement design was calculated using the design R-Value instead of the mean R-Value and is expressed by **Equation 4.1**.

$$M_R = \frac{1815 + 225R_{mean} + 2.4R_{mean}^2}{0.6SVF^{0.6}} \quad (\boldsymbol{Equation\ 4.1})$$

Where:

M_R = Subgrade Soil Resilient Modulus
R_{mean} = Mean (Design) R-Value
SVF = Seasonal Variation Factor (SVF=1.0)

Soil Resilient Modulus Value (MR) of 52,679 pounds per square inch (psi) was determined. This value is above the maximum allowable MR of 26,000 psi according to the MCDOT Roadway Design Manual so a MR of 26,000 psi was used for the new pavement design.

The procedures outlined in the MCDOT Roadway Design Manual were used to develop asphaltic concrete pavement sections for the proposed new pavement. The design was completed assuming a collector roadway function classification. The design parameters used in determining the required structural capacity of the asphaltic concrete pavements are presented in **Table 4.5**:

Table 4.5: Flexible Pavement Design Parameters

Design Parameter	New Pavement
Standard Error	0.45
Level of Reliability	90%
Standard Normal Deviate (Z_r)	-1.282
Terminal Serviceability Index (P_t)	2.3
Change in Serviceability Index (Δ_{psi})	2.1
Design R-Value	74
Resilient Modulus (psi)	26,000
Drainage Coefficient (base material)	1.00

The MCDOT structural coefficients are presented in **Table 4.6**:

Table 4.6: MCDOT Structural Coefficient Values

Layer Type	Coefficient Value
Asphaltic Concrete, a_1	0.42
Aggregate Base Course/ Recycled Asphalt Pavement, a_2	0.12
Drainage Coefficient, m_2	1.0

The thickness and condition of the of the PCCP is unknown. Therefore, a structural coefficient of zero was used for the PCCP.

4.1.4 Flexible Pavement Design

Based on the pavement design parameters and projected traffic data, the following equation calculates the required structural number (SN) based on the subgrade conditions:

$$\log_{10}(W_{18}) = Z_R S_o + 9.36\log_{10}(SN+1) - 0.2 + \log_{10}\left(\frac{\frac{\Delta PSI}{4.2-1.5}}{0.4+\left(\frac{1094}{(SN+1)^{5.19}}\right)}\right) + 2.32\log_{10}(M_R) - 8.07 \quad (\boldsymbol{Equation\ 4.4})$$

The required SN using **Equation 4.4** resulted in a value of 1.49 for the Quarelli Street/Golf Course Road. Using the structural coefficients, the SN for the design pavement section can be calculated utilizing **Equation 4.5**:

$$SN = a_1 D_1 + a_2 D_2 m_2 \quad (\boldsymbol{Equation\ 4.5})$$

There are recommendations for three flexible pavement sections for the different existing conditions along Quarelli Street/Golf Course Road. The first is new pavement over the existing PCCP, the second is new pavement for the widening adjacent to the existing PCCP, and the third is new pavement south of Giffin Avenue that does not have PCCP beneath the AC. **Table 4.7** summarizes the recommended pavement sections for Quarelli Street/Golf Course Road:

Table 4.7: Pavement Section

Roadway	Asphaltic Concrete (inches)		Recycled Asphalt Pavement (inches)	Aggregate Base Course (inches)	Design SN
	½" Mix	¾" Mix			
Quarelli Street/ Golf Course Road (over existing PCCP)	2	3	0	0	2.10
Quarelli Street/ Golf Course Road (widening adjacent to PCCP)	2	3	2	6	3.06
Quarelli Street (south of Giffin Avenue without PCCP)	2.5	0	0	4	1.53

4.1.5 Flexible Pavement Discussion

The existing AC along Quarelli Street/Golf Course Road should be milled and stockpiled for use as recycled asphalt pavement (RAP). A representative of the geotechnical engineer of record should inspect the PCCP after that AC has been milled to verify the recommendations in this report are suitable. The PCCP surface where new AC will be placed should be power broomed and cracks in the PCCP greater than 1 inch should be sealed then a bituminous tack coat should be applied prior to placing the new AC pavement. The 5-inch-thick AC pavement section should help reduce reflective cracking from the PCCP through the AC.

The areas for widening adjacent to the PCCP should be excavated to a depth of 8 inches below the top of the adjacent PCCP. The RAP should consist of milled asphalt from the Site. Based on the coefficient values, 1 inch of RAP may be substituted for 1 inch of ABC but a minimum of 2 inches of RAP should be utilized. The top of the RAP should be at the same elevation as the top of the PCCP.

Pavement rehabilitation recommendations were not provided for the pavement south of Giffin Avenue based on the poor condition of the existing pavement. The AC in this area was too thin for a mill and overlay and we would anticipate reflection cracking from the existing alligator cracking if a surface treatment was completed. Therefore, we

recommend removing all the existing AC, scarifying and compacting the existing ABC, and placing new AC pavement.

The pavement materials and construction should conform to MAG requirements and any applicable supplements. The pavement sections are expected to function with periodic maintenance and overlays if positive drainage is provided and maintained over the life of the pavement. Some pavement damage may occur in localized areas during periods of abnormally heavy traffic loads, such as from repeated passage of construction equipment. Therefore, consideration should be given to a staged construction program or alternative access routes during construction to limit damage to the pavement sections. Locally, 2- to 3-inch asphaltic concrete pavement sections often become brittle and experience cracking before the design life is attained. Therefore, the bituminous surface should be sealed after an initial summer of use (and routinely thereafter) to minimize water infiltration directly through the pavement section and to retard premature oxidation of the surfacing.

4.2 MULTIUSE PATH RECOMMENDATIONS

The multiuse path recommendations contained in this report are based on our understanding of the project and the assumptions that the soil and subsurface conditions are those disclosed by the field exploration and the on-site soils are used as the compacted subgrade beneath all pavements. Traffic information was not provided to us for the planned multiuse path, but we anticipate that the path will mainly be used by pedestrians and bicycles, and periodically used by small- to medium-sized trucks for maintenance and landscaping. Based on the subgrade conditions, Alpha has recommended an AC pavement section of 2 inches of AC over 4 inches of ABC for the multiuse path.

4.3 ROADWAY DRAINAGE

Positive drainage is a key to the successful performance of any pavements and paths at the Site. The usual source of increasing moisture in soils is from infiltrating surface water. Therefore, providing positive drainage away from pavements/paths and preventing the ponding of water near the pavements/paths must be completed during the design, construction, and over the life of pavements at the Site.

These recommendations should help reduce the potential for soil movements from water infiltration, but they may not eliminate soil movements or structural or pavement distress.

4.4 SLOPE STABILITY

No significantly high (greater than 5 feet) slopes exist or are anticipated to be constructed on the Site. All slopes should be designed at gradients of 3 to 1 (Horizontal to Vertical) or flatter. All slopes should be constructed in accordance with the minimum requirements of MAG and International Building Code (IBC). Cut and fill slopes are anticipated to perform adequately in the future with respect to gross and surficial stability if the soil materials are maintained and are limited to the heights prescribed herein. The slopes should be adequately protected from erosion. Alpha should be contacted for recommendations on higher or steeper slopes.

5.0 CONSTRUCTION RECOMMENDATIONS

The design recommendations presented in this report are contingent upon the earthwork and site grading being conducted and maintained as recommended in this report and verified by Alpha's geotechnical engineer through construction inspections and materials testing. If others provide the inspections and testing, they should review and approve of the recommendations in this report and will become the geotechnical engineer of record.

If contractors should have any questions regarding site conditions, excavation conditions, site preparation, or the recommendations provided in this report, they should contact Alpha for any necessary clarifications prior to submitting bids.

All applicable requirements of local and national construction and general industry safety orders, the Occupational Safety and Health Act, and the Construction Safety Act should be met during construction at the Site.

5.1 CLEARING AND GRUBBING

Prior to site grading, clearing and grubbing of the area will likely be required to remove debris, existing vegetation, existing asphaltic concrete, utilities, undocumented fill materials, disturbed soils, and other undesirable materials. If excavated materials are intended to be used for engineered fill materials, special care should be taken to remove roots and foreign objects from the soils and boulders or large rock fragments as much as practical.

The geotechnical engineer of record should approve all excavated areas resulting from the removal of vegetation and other undesirable materials to confirm removal of remnants and disturbed soils prior to preparation for engineered fill material placement.

5.2 GENERAL EXCAVATION

Based on subsurface conditions identified by our work, we believe that conventional excavation equipment may be used to excavate the subsurface materials in the upper 3 to 5 feet bgs. The speed and ease of excavation is dependent on the nature of the soils, the type of equipment used, and the skill and experience of the equipment operator. More accurate information regarding the excavation conditions should be evaluated by contractors from test excavations using the intended equipment and extending to the required depths.

5.3 EXCAVATION AND TEMPORARY SLOPES

Instability in the form of slope raveling, caving, and sloughing should be expected in the excavations and trenches at the Site due to the granular and dry nature of the on-site soils. This should be taken into consideration for trench excavation for the irrigation pipeline. Excavations and trenches at the Site should be braced, sloped, and/or designed as required to provide personnel safety and satisfy safety code regulations. Construction site safety is the sole responsibility of the contractor. Under no circumstances should the information in this report be interpreted to mean that Alpha is assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

Temporary excavation slopes should conform to Occupational Safety and Health Administration and Arizona Division of Occupational Safety and Health regulations. Within this system, the classification of the on-site soils is considered to be Type C. Unsupported temporary cut slopes in these soils be made no steeper than 1.5H:1V (Horizontal:Vertical) for excavations less than 10 feet deep. Deeper excavations or taller temporary slopes should be evaluated on an individual basis by Alpha.

Soil piles should be located no closer than 6 feet from the crest of the slopes. Large particles, including cobbles, boulders, and soil clods, should be kept away from the crest of the slopes. Moisture increases in the soils will weaken them and could cause slope failures. Some localized raveling could occur as the exposed soils dry. The excavations should be protected from stormwater runoff or other sources of moisture. Small berms may be necessary to protect the excavations from storm water runoff. If the soils are subjected to moisture increases, the stability of the slopes should be reevaluated.

Heavy construction equipment, building materials, and vehicular traffic should not be allowed within one-third of the slope height from the top of any excavation. Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning may be required

to provide structural stability and to protect personnel working within the excavation. Shoring, bracing, or underpinning required for the project (if any) should be designed by a professional engineer registered in the State of Arizona.

5.4 SITE GRADING AND AC MILLING

All site grading and AC milling in pavement areas should conform to MAG specifications and the requirements in this report. During earthwork construction, all removals, subgrade preparation, and the general grading procedures of the contractor should be observed, and the fill selectively tested by a representative of the geotechnical engineer of record.

All the existing AC along Quarelli Street/Golf Course Road should be milled and stockpiled for use as RAP in new pavement sections. The AC milling should be completed in accordance with MAG *Uniform Standard Specifications and Details for Public Works Constructions* Section 317 (2024).

The PCCP surface where new AC will be placed should be power broomed and cracks in the PCCP greater than 1 inch should be sealed then a bituminous tack coat should be applied prior to placing the new AC pavement. A representative of the geotechnical engineer of record should inspect the PCCP after that AC has been milled to verify the recommendations in this report are suitable.

The areas for widening adjacent to the PCCP should be excavated to a depth of 8 inches below the top of the adjacent PCCP. The subgrade surface should be scarified a minimum of 8 inches, moisture conditioned, and compacted.

The AC pavement south of Giffin Avenue should be removed and the ABC surface should be scarified a minimum of 8 inches, moisture conditioned, and compacted.

For general site grading, excavated on-site soils may be placed in relatively thin lifts, cleaned of vegetation and debris, brought to at least optimum moisture content, and compacted to a minimum relative compaction of 95 percent of the laboratory standard ASTM D698 maximum dry density. The maximum lift thickness to meet both the compaction and moisture content requirements is a function of several variables including the type of soil, the moisture content of the soil, the type and size of compaction equipment, the number of passes of the compaction equipment, and the support characteristics of the underlying materials. Therefore, the maximum lift thickness can vary considerably and still achieve proper moisture content and relative compaction of engineered fill materials. If compaction is not achieved, changes to lift thickness, equipment, or other processes may be required.

A sufficient number of field density tests shall be performed to provide an opinion to the degree of moisture conditioning and compaction achieved in subgrade preparation areas and in engineered fill materials. Field density tests should be performed at a minimum rate of one test for every 1,000 cubic yards of material placed, one for every 2 feet of material placed, whichever is greater, or where there is a significant change of soil type. In general, field density tests should be performed during fill placement to avoid the use of potholes to expose untested fill materials.

5.5 EARTHWORK FACTORS

Based on the laboratory testing and Alpha's experience with similar site conditions, we estimated a ground height loss of 0.05 to 0.10 foot for compaction of the top 1 foot of soil at the Site. We also estimated an earthwork factor of about 10 to 20 percent shrinkage for native soils compacted to 95 percent of the maximum dry density as determined by ASTM D698. Compaction to greater than 95 percent of the maximum dry density will increase the total shrinkage. Final earthwork factors could vary significantly depending upon soil type and compactive effort. Therefore, we recommend that the grading contractor periodically check the shrinkage estimates and reserve some areas where the grades can be adjusted up or down near the completion of grading in order to accommodate differences in the earthwork balance for the project.

5.6 FILL MATERIALS

The following sections present our recommendations for fill materials to be used for the planned pavements. Since materials characteristics are dependent upon a variety of parameters, and some characteristics can be mitigated by other procedures, the final decision on acceptance of a construction material should be the Alpha geotechnical engineer in consultation with the owner/developer and other design professionals.

5.6.1 On-Site Soils

The on-site soils that are cleaned of organic material and debris may be utilized as engineered fill materials in pavement areas subject to the limitations of this report. Soils with significant quantities of organics should not be used as fill material in pavement areas.

5.6.2 Imported Soils

Imported soils may also be used as engineered fill material if it meets the requirements presented in **Table 5.1**. Representative sampling and testing of the imported soils should be completed at a frequency of one test per 5,000 cubic yards of imported soil or minimum

of two tests per source, whichever is greater. The geotechnical engineer of record should be contacted if imported soil is to be used at the Site to confirm the testing frequency is sufficient, evaluate the variability of the import source, and determine if the import impacts any improvement designs.

Table 5.1: Imported Soils Requirements

Sieve Size	Percent Passing	Required Test
6 inches	100	ASTM C117/136
No. 200	50 or Less	ASTM C117/136

Characteristic	Recommendation	Required Test
Plasticity Index	15 or Less	ASTM D4318
Swell Potential	1.5 percent or Less	ASTM D4546*
Sulfates Content	1,000 ppm or Less	ARIZ 733
Chloride Content	500 ppm or Less	ARIZ 736

* Sample remolded to 95 percent of the ASTM D698 maximum dry density at a moisture content of 2 percent below optimum moisture content, confined with a 100 psf load, and inundated with water.

The intent of these specifications is to provide general requirements for imported materials and fill materials. Since soil characteristics are dependent upon a variety of parameters, and some characteristics can be mitigated by other procedures, the final decision on acceptance of the soil for use as fill materials should be geotechnical engineer in consultation with the owner/developer and other design professionals.

5.6.3 Engineered Fill Material Placement

Engineered fill material should be utilized to provide support for future pavement improvements and to establish finished grades. Areas to receive engineered fill should be approved by the geotechnical engineer of record to verify the removal of undocumented fill materials and other undesirable materials prior to any engineered fill material placement. Final excavation areas should be proof rolled prior to fill placement to identify any soft or loose soils. The engineered fill material thickness can include up to 12 inches of subgrade soils processed in place. Any additional engineered fill materials must be placed in open excavations.

Excavation areas should be widened to accommodate the construction equipment and to provide a level base for placing engineered fill materials. Slopes should be benched on a regular basis (cutting back into the natural soil slopes or the sides of the existing pavement) to provide a level area for placing fill. Fill materials should be placed and

compacted in horizontal lifts of thicknesses compatible with the compaction equipment used. Compaction of subgrade soil, fill material, backfill, subgrade fill, and trench backfill should be completed to the following density criteria using the maximum dry density determined by ASTM D698 and optimum moisture content (opt.) for each fill soil type. Engineered fill placement should be conducted under observation and materials testing directed by the geotechnical engineer of record. Compaction and moisture requirements for fill materials are provided in **Table 5.2**.

Table 5.2: Engineered Fill Material Requirements

Design Element or Placement Area[1]	Required Compaction	Required Moisture Content
Below Asphalt Pavement	Minimum 95%	Opt. -2% to Opt. +2%
General Site Fill (no structure or pavement areas)	Minimum 90%	Opt. -3% to Opt. +3%

1 - Depth of soil improvement or fill thicknesses should follow the recommendations in this report for the given design element or area of placement.

Engineered fill materials removed or disturbed (by weed growth, erosion, repeated construction traffic, etc.) should be replaced with compacted engineered fill materials placed under observation and testing by the geotechnical engineer of record. In the arid environment at the Site, compacted engineered fill materials will lose moisture over time. Engineered fill materials in structure and concrete slab or curb/gutter areas should be maintained in a moist condition until placement of base course and concrete pavements. If crushed asphalt pavement is used as a subgrade fill material, rock corrections will likely be needed for these materials or for soils mixed with these materials. We have found that some asphalt particles can exhibit lower specific gravities than our typical gravel, so rock corrections may need to be modified for fill materials containing processed asphalt pavement materials.

5.7 AGGREGATE BASE COURSE AND RECLAIMED ASPHALT PAVEMENT

ABC for use beneath pavements and as bedding material for utilities should meet the requirements of aggregate base material as listed in MAG Section 702 (2024) and any applicable supplements.

RAP for use beneath pavements should meet the requirements for sieve analysis of aggregate base material as listed in MAG Section 702 (2024) and any applicable supplements. The top of the compacted RAP should be at the same elevation as the top of the adjacent PCCP.

ABC and RAP should be placed on compacted engineered fill materials. ABC and RAP shall be compacted per MAG Section 310 (2024) and any applicable supplements.

5.8 PIPE BACKFILL AND BEDDING

Based on our sampling and testing, it should be anticipated that materials would need to be imported to the Site for use as pipe bedding and pipe zone material. Utility trench backfill should be placed in accordance with the appropriate MAG standards. Generally, on-site soils would not meet specifications for select and granular trench backfill. Pipes should be placed on pipe bedding material meeting the requirements of aggregate base as discussed in this report. In general, pipe bedding should be placed from the bottom of the trench to approximately springline of the pipe.

On-site soils may be utilized as backfill for non-metallic pipe trenches where applicable, provided the soil is free from broken concrete, broken pavement, wood, or other deleterious material and with no piece/clods larger than 4 inches.

Metal pipe trenches should be backfilled with material that meets the manufacturer's requirements or the design engineer's requirements. All backfill of utility trenches outside of structure areas should be in accordance with MAG or local supplements, if applicable.

As an alternative to backfill directly above the pipe, Alpha recommends that all utility trenches may be backfilled with ½-sack Controlled Low-Strength Material (CLSM) meeting the requirements of MAG Section 604 (2024). The CLSM should extend from springline to 12 inches above the pipe. The remainder of the trench should be backfilled with engineered fill material as recommended in this report.

The remainder of the trench should be backfilled in general accordance MAG Section 601 or local supplements, if applicable.

5.9 ASPHALT PAVEMENT

The pavement materials and construction should conform to MAG Section 710 and any applicable supplements. Placement requirements for the asphaltic concrete pavement should be in accordance with the requirements presented in the MAG Section 321 and any applicable supplements. Asphalt pavement should be placed on the compacted base course or PCCP in accordance with the design requirements. The tack coat should be placed in general accordance with MAG Section 329.

All pavement section changes should be properly transitioned. If adverse conditions are encountered during the preparation of subgrade materials, special construction methods may be needed. All subgrade materials should be compacted to a minimum relative compaction of 95 percent of AASHTO T-99, Standard Proctor. All aggregate bases should be compacted to a minimum relative compaction of 100 percent of AASHTO T-99, Standard Proctor. Pavement installation should be carried out under applicable portions of MAG Section 321 and any applicable supplements.

Engineering observation and testing should be performed as necessary to verify conformance with these recommended specifications, especially compaction requirements for asphaltic concrete surfacing. The subgrade should be prepared by removing undesirable materials, scarified, moistened, and compacted for a minimum depth of 8 inches prior to placement of pavement materials. Material and compaction requirements should conform to recommendations presented in this report, MAG, and any applicable supplements.

6.0 PLAN REVIEW

Final plans should be submitted to this office for review and comment as they become available, to reduce the potential for misunderstandings between the plans and the intent of the recommendations presented in this report. In addition, excavations and earthwork construction performed on the Site should be observed and tested by Alpha. If conditions are found to differ substantially from those stated, appropriate modifications and recommendations would be provided at that time. If Alpha does not conduct engineering observation and testing during the earthwork and site grading, the geotechnical engineer observing and documenting these construction activities should review and approve the recommendations in this report prior to construction.

7.0 LIMITATIONS

Alpha has performed the services for this project in general conformance with Alpha's Proposal No. 24-G-14412 dated February 14, 2024, and the contract terms and conditions. No other guarantees or warranties are expressed or implied. Our professional services have been performed using that degree and skill ordinarily exercised, under similar circumstances, by reputable Geotechnical Engineers practicing in this or similar localities. The opinions in this report have been derived in accordance with current standards of practice, and no warranty is expressed or implied. Standards of practice are subject to change with time.

The recommendations contained in this report are based on our field exploration, laboratory test results, engineering analyses, and our understanding of the proposed construction. The subsurface data used in the preparation of this report was obtained from the field exploration. It is anticipated that some variations in the soil conditions and existing pavement conditions will exist on the Site. The nature and extent of variations may not be evident until construction occurs. If any conditions are encountered at this Site that are different from those described in this report, we should be immediately notified so that we may make any necessary revisions to the recommendations contained in this report. In addition, if the scope of the proposed construction changes from that described in this report, Alpha should also be notified.

It is the Client's responsibility to see that all parties to the project including the owner, designer, contractor, subcontractor, etc. are made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the contractor's option and risk.

This report is for the exclusive purpose of providing Geotechnical Engineering and/or testing information and recommendations. The scope of services for this project does not include, either specifically or by implication, any environmental assessment of the site or identification of contaminated or hazardous materials or conditions. If the owner is concerned about the potential for such contamination, other studies should be undertaken. This report has also not addressed the site geology and the possible presence of geologic hazards other than those discussed in the report.

This report may be used only by the Client and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both on and off the Site), or other factors may change over time, and additional work may be required with the passage of time. Any party, other than the Client, who wishes to use this report, should notify Alpha of such intended use. Based on the intended use of this report, Alpha may require that additional work be performed and that an updated report be issued.

This document and the information contained herein are applicable for one year from the date of this report and have been prepared solely for the use of Rick Engineering Company, and their authorized representatives. Any entity's receipt, review, and/or use of this report constitutes its acknowledgment to be bound the same as Rick Engineering Company by the terms and conditions in our contract and this report. Any reliance on this report by other parties shall be at such party's sole risk. Third party reliance letters may be issued upon request and upon the payment of the fee for such letters. All third parties relying on this report, by such reliance, agree to be bound by Alpha's standard terms and

conditions. No reliance by any party is permitted without such agreement, regardless of the content of the reliance letter.

8.0 ADDITIONAL SERVICES

This report is a **Geotechnical Engineering Report** completed to provide design and construction recommendations for improvements at the Site. The recommendations provided in this report are based on the assumption that an adequate program of construction inspections and materials testing will be performed by Alpha during the construction. These inspections and tests should be performed by the Alpha's geotechnical engineer or the geotechnical engineer of record and should include, but are not necessarily be limited to, the following:

- Observe that any existing surficial vegetation, loose or disturbed soils, and other undesirable materials have been removed from the Site as required in the clearing and grubbing and site grading sections.

- Approve any material used as engineered fill in pavement areas to document that it meets the requirements outlined above before placement. A representative of the geotechnical engineer of record should inspect the PCCP after that AC has been milled to verify the recommendations in this report are suitable.

- Monitor the scarification, moisture conditioning, and compaction operations of the exposed subgrade in pavement areas.

- Perform field density tests, as needed, to verify compaction compliance. The representative should monitor the progress of compaction and filling operations.

- Keep records of on-site activity and progress, and document these activities in a construction oversight report detailing the site grading and earthwork activities.

9.0 REFERENCES

ADWR, 2024. Registry of Wells in Arizona (Wells 55) accessed at https://azwatermaps.azwater.gov/wellreg in April.

American Concrete Institute (ACI), 2014. *Building Code Requirements for Structural Concrete* (ACI 318-14) *and Commentary*. Reported by ACI Committee 318.

Euge, KM, BA Schell, and IP Lam. 1992. *Development of Seismic Acceleration Contour Maps for Arizona, Final Report. Report No. FHWA-AZ92-344.* Prepared for the Arizona Department of Transportation, Phoenix, Arizona.

International Building Code (IBC), 2018. 2018 International Building Code. Reported by International Code Council, Inc.

Maricopa Association of Governments (MAG), 2024. 2024 Revisions to the 2020 Edition, Uniform Standard Specifications and Details for Public Works Construction.

Maricopa County Department of Transportation (MCDOT), *2024. Roadway Design Manual*, March 27.

FIGURES

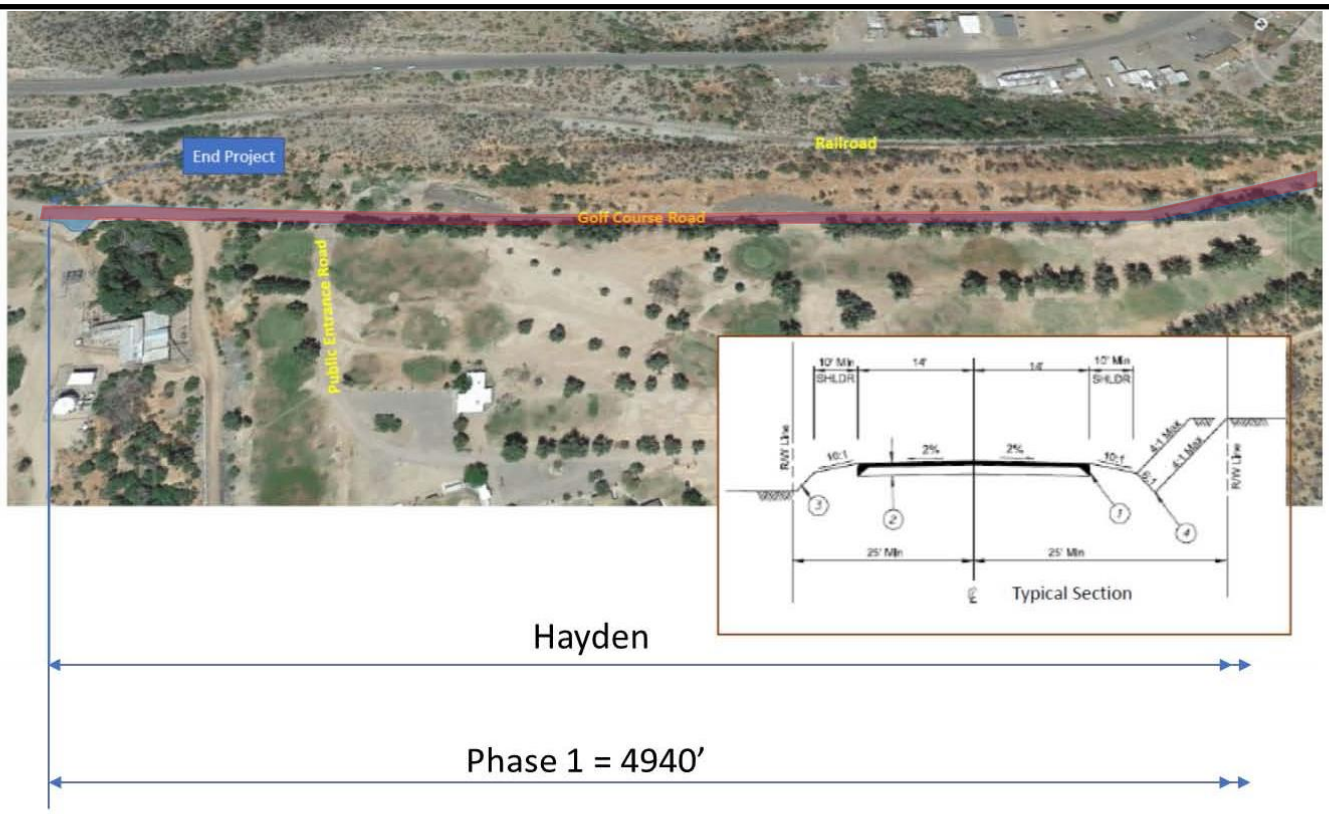
Quarelli Street/
Golf Course Road Project
Quarelli Street/Golf Course Road
West of SR 77
Hayden-Winkleman, Arizona

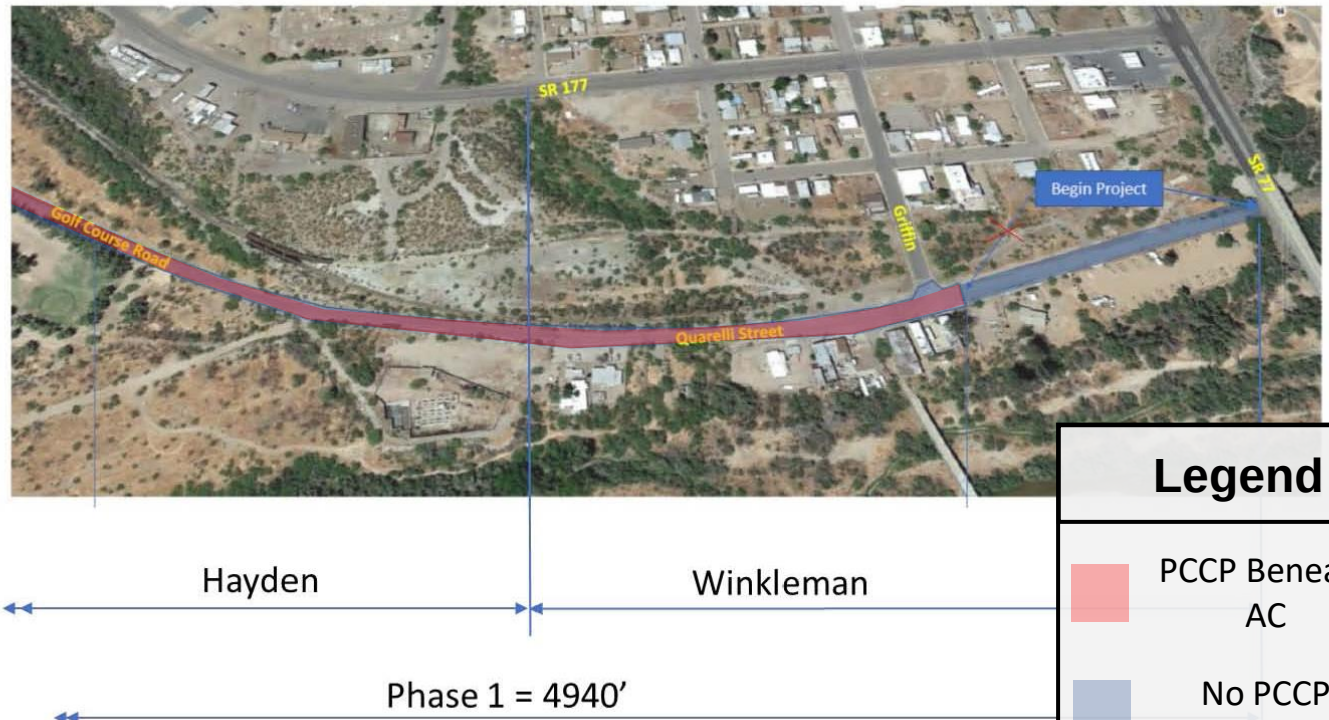
Figure 1
Site Vicinity Map

Site Visit Date: 3/27/2024

Alpha
Geotechnical & Materials, Inc.

Project No.: 24-G-14412





Legend

PCCP Beneath AC

No PCCP Beneath AC

These PCCP limits are based on the test borings and hand digging we completed during our subsurface exploration and should be confirmed by the contractor prior to or during construction.

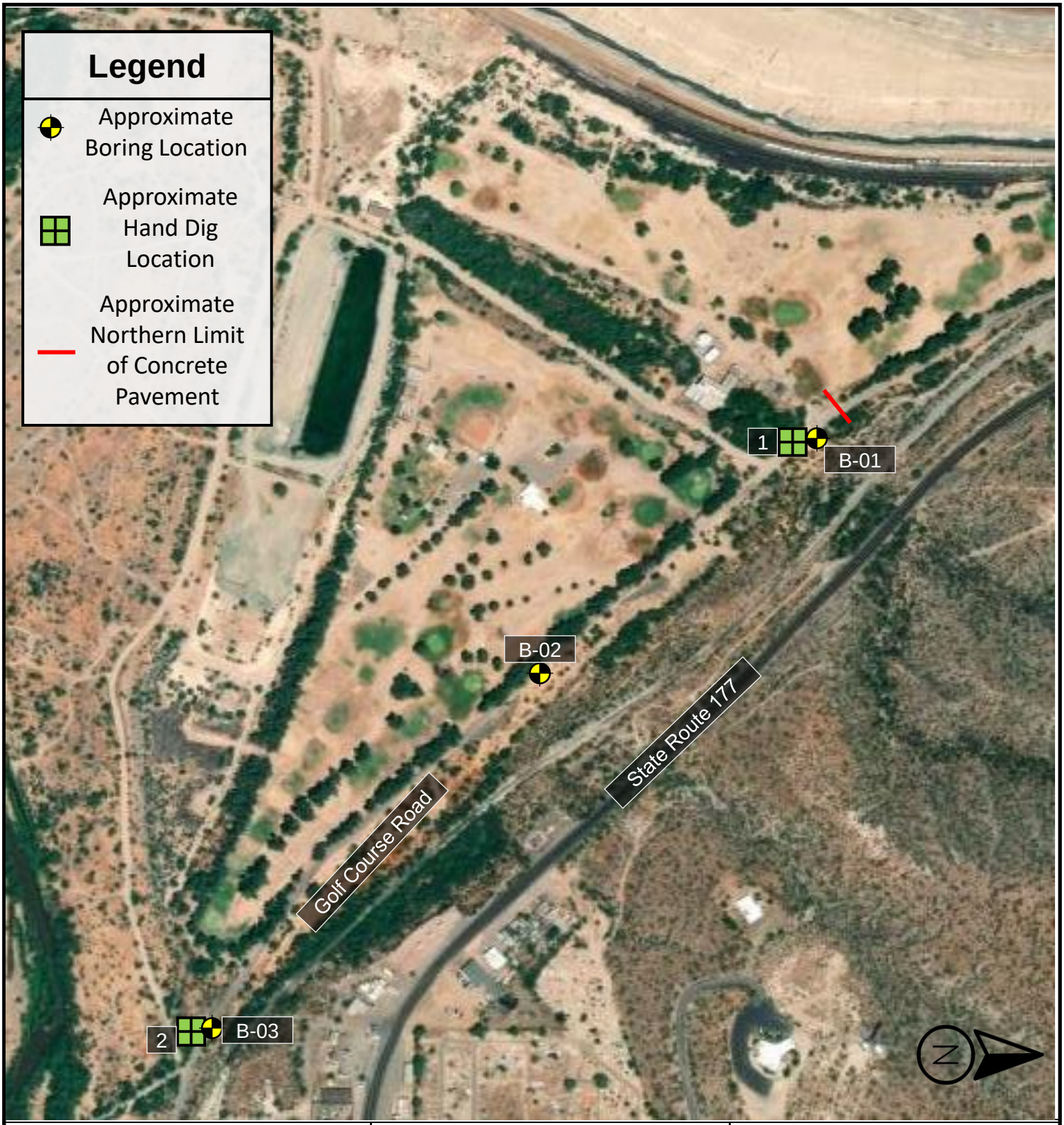
Quarelli Street/
Golf Course Road Project
Quarelli Street/Golf Course Road
West of SR 77
Hayden-Winkleman, Arizona

Figure 2
Site Plan

Site Visit Date: 3/27/2024

Alpha Geotechnical & Materials, Inc.

Project No.: 24-G-14412



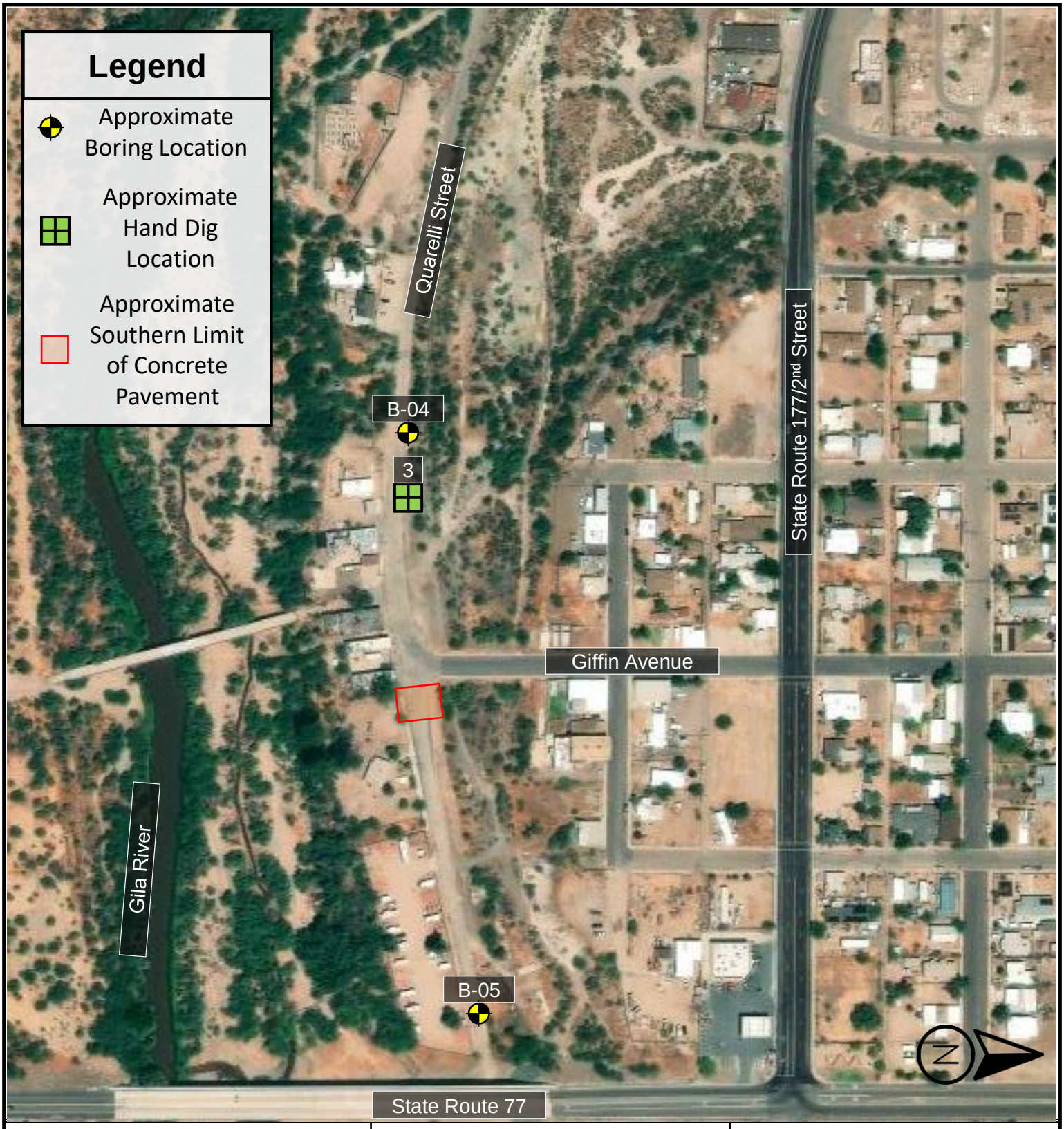
Quarelli Street/
Golf Course Road Project
Quarelli Street/Golf Course Road
West of SR 77
Hayden-Winkleman, Arizona

Figure 3
North Geotechnical Map

Site Visit Date: 3/27/2024

Alpha Geotechnical & Materials, Inc.

Project No.: 24-G-14412



Quarelli Street/
Golf Course Road Project
Quarelli Street/Golf Course Road
West of SR 77
Hayden-Winkleman, Arizona

Figure 4
South Geotechnical Map

Site Visit Date: 3/27/2024

Alpha Geotechnical & Materials, Inc.

Project No.: 24-G-14412

APPENDIX A

PHOTOGRAPHIC LOG

Photograph No. 1
View of the northern end of Golf Course Road, showing the dirt covered road with the pavement barely visible, facing northwest.

Photograph No. 2
View of the pavement near the north end of Golf Course Road showing the weathering and block cracking distresses, facing west.

Photograph No. 3
View of the roadway near Test Boring B-02, showing the block cracking and patching pavement distresses, facing northeast.

Photograph No. 4
View of a pothole with the underlying concrete visible in the roadway south of Test Boring B-02.

Photograph No. 5
View of the pavement about halfway between Test Borings B-03 and B-04, showing transverse and block cracking, as well as a pothole, facing southeast.

Photograph No. 6
View of the pavement about halfway between Test Borings B-03 and B-04, showing longitudinal cracking, as well as some potholes with exposed concrete pavement, facing southeast.

Photograph No. 7
Close up view of the underlying concrete beneath the asphaltic pavement.

Photograph No. 8
Close up view of the thickness of asphaltic concrete pavement above the underlying concrete pavement.

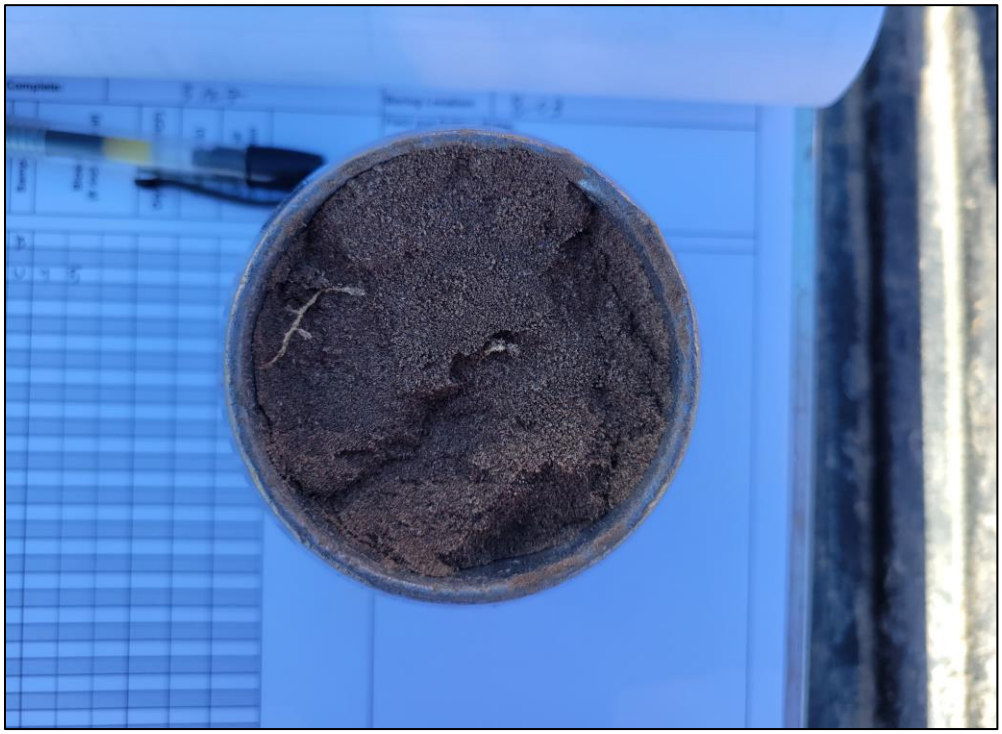
Photograph No. 9
View of the pavement near Test Boring B-04, showing the block cracking and alligator cracking, facing east.

Photograph No. 10
View of the pavement west of the Giffin Avenue and Quarelli Street intersection, showing alligator, longitudinal, and block cracking, facing west.

Photograph No. 11
View of the pavement east of Giffin Street, showing patching of the pavement, facing east.

Photograph No. 12
View of the pavement at the southern end of the Site, showing alligator cracking and weathering, facing west.

Photograph No. 13
View of the soil sample collected from Test Boring B-01 at a depth of 2.5 feet.



Photograph No. 14
View of soil sample in shoe of ring sampler collected from Test Boring B-03 at a depth of 2 feet.

Photograph No. 15
View of soil sample in shoe of ring sampler collected from Test Boring B-04 at a depth of 2.5 feet.

Photograph No. 16
View of the soil sample collected from Test Boring B-01 at a depth of 2 feet.

APPENDIX B

TEST BORING LOGS

UNIFIED SOIL CLASSIFICATION SYSTEM					CONSISTENCY OR RELATIVE DENSITY	
Major Divisions			Group Symbols	Typical Names	Criteria	
Coarse-Grained Soils (More than 50% retained on No. 4 sieve)	Gravels (50% or more of coarse fraction retained on No. 4 sieve)	Clean Gravels	GW	Well-graded gravels and gravel-sand mixtures, little or no fines	**Standard Penetration Test** Density of Granular Soils	
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines	Penetration Resistance N (blows/ft)	Relative Density
		Gravels With Fines	GM	Silty gravels, gravel-sand-silt mixtures		
			GC	Clayey gravels, gravel-sand-clay mixtures	0-4	Very Loose
	Sands (More than 50% of coarse fraction passes No. 4 sieve)	Clean Sands	SW	Well-graded sands and sand-gravel mixtures, little or no fines	5-10	Loose
			SP	Poorly graded sands and sand-gravel mixtures, little or no fines	11-30	Medium Dense
		Sands With Fines	SM	Silty sands, sand-gravel-silt mixtures	31-50	Dense
			SC	Clayey sands, sand-gravel-clay mixtures	>50	Very Dense
Fine-Grained Soils (50% or more passes No. 200 sieve)	Silts and Clays (Liquid Limit 50% or less)		ML	inorganic silts, very fine sands, silty or clayey fine sands, clayey silts with slight plasticity	**Standard Penetration Test** Consistency of Fine-Grained Soils	
			CL	Inorganic clays of low to medium plasticity, gravelly clays, silty clays, sandy clays lean clays	Penetration Resistance N (blows/ft)	Consistency
			OL	Organic silts and organic silty clays of low plasticity	<2	Very Soft
	Silts and Clays (Liquid Limit greater than 50%)		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts	2-4	Soft
			CH	Inorganic clays of high plasticity, fat clays	5-8	Firm
			OH	Organic clays and organic silts of medium to high plasticity	9-15	Stiff
Highly Organic Soils			PT	Peat, humus, and swamp soils with high organic content	16-30	Very Stiff
					>30	Hard

	3"	3/4"	#4	#10	#40	#200 U.S. Standard Sieve
Unified Soil Classification	Cobbles	Gravel		Sand		Silt or Clay
		coarse	fine	coarse	medium	fine

MOISTURE CONDITIONS

Slightly Damp	Absence of moisture, dusty, dry to the touch
Damp	Below optimum moisture content
Moist	Near or above optimum moisture content
Wet	Visible free water; usually is below water table

MATERIAL MODIFIERS

trace	<5%
few	5% - 14%
little	15% - 25%

OTHER SYMBOLS

☒	U	Rel. Undisturbed Sample
☒	S	SPT Sample
■	B	Bulk Sample

BASIC LOG FORMAT:
USCS Soil Type, Other Soil Types Present (if present), Color, Plasticity, Cementation, Odor (if present), Additional Descriptions. Moisture and Relative Density/Consistency in the remark's column.

UNIFIED SOIL CLASSIFICATION SYSTEM

Alpha Geotechnical & Materials, Inc.

Alpha Project Number:	24-G-14412	**Log of Boring No.**	B-01
Project Name:	Quarelli Street/Golf Course Road Project	**Rig Type:**	CME-75
Project Location:	Hayden-Winkleman, Arizona	**Boring Type:**	Hollow Stem Auger
Date(s) Complete:	3/27/2024	**Boring Location:**	See Figure 3 - Geotechnical Map

Depth (Feet)	Sample	Sample Type	Blow Count (6 inch Interval)			Dry Density (PCF)	Moisture (%)	Unified Soil Classification	Remarks	Field and Drilling Notes: / Visual Classification
0										**Weather:** Clear
1		B						SM	slightlt damp to damp	**SILTY SAND WITH GRAVEL** brown, non-plastic
2		U	15	18		113	4		dense	
3										
4										
5										**Stopped auger at 4'6"** **Sampled to 4'6"** **Backfilled with soil**
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										

The stratification lines represent the approximate boundary between soil and rock types: the actual in-situ transition may be gradual.

Sample Type Key:
B = Bulk Sample, S = Split Spoon, U = Relatively Undisturbed Ring

Alpha Geotechnical & Materials, Inc.

GROUNDWATER

DEPTH	DATE	TIME
Not Encountered	N/A	N/A

Alpha Project Number:	24-G-14412	**Log of Boring No.**	B-02
Project Name:	Quarelli Street/Golf Course Road Project	**Rig Type:**	CME-75
Project Location:	Hayden-Winkleman, Arizona	**Boring Type:**	Hollow Stem Auger
Date(s) Complete:	3/27/2024	**Boring Location:**	See Figure 3 - Geotechnical Map

Depth (Feet)	Sample	Sample Type	Blow Count (6 inch Interval)			Dry Density (PCF)	Moisture (%)	Unified Soil Classification	Remarks
0									
		B						**SM**	
1									damp
2		U	4	5		92	10		loose
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

Field and Drilling Notes:

Weather: Clear

Visual Classification

SILTY SAND
trace gravel, brown, non-plastic

Stopped auger at 4'6"
Sampled to 4'6"
Backfilled with soil

The stratification lines represent the approximate boundary between soil and rock types: the actual in-situ transition may be gradual.

Sample Type Key:
B = Bulk Sample, S = Split Spoon, U = Relatively Undisturbed Ring

Alpha Geotechnical & Materials, Inc.

GROUNDWATER

DEPTH	DATE	TIME
Not Encountered	N/A	N/A

Alpha Project Number:	24-G-14412	**Log of Boring No.**	B-03
Project Name:	Quarelli Street/Golf Course Road Project	**Rig Type:**	CME-75
Project Location:	Hayden-Winkleman, Arizona	**Boring Type:**	Hollow Stem Auger
Date(s) Complete:	3/27/2024	**Boring Location:**	See Figure 3 - Geotechnical Map

Depth (Feet)	Sample	Sample Type	Blow Count (6 inch Interval)			Dry Density (PCF)	Moisture (%)	Unified Soil Classification	Remarks
0									
1		B						**SM**	damp
2		U	4	5		93	8		loose
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

Field and Drilling Notes:

Weather: Clear

Visual Classification

SILTY SAND
trace gravel, brown, non-plastic

Stopped auger at 4'6"
Sampled to 4'6"
Backfilled with soil

The stratification lines represent the approximate boundary between soil and rock types: the actual in-situ transition may be gradual.

Sample Type Key:
B = Bulk Sample, S = Split Spoon, U = Relatively Undisturbed Ring

Alpha Geotechnical & Materials, Inc.

GROUNDWATER

DEPTH	DATE	TIME
Not Encountered	N/A	N/A

Alpha Project Number:	24-G-14412	**Log of Boring No.**	B-04
Project Name:	Quarelli Street/Golf Course Road Project	**Rig Type:**	CME-75
Project Location:	Hayden-Winkleman, Arizona	**Boring Type:**	Hollow Stem Auger
Date(s) Complete:	3/27/2024	**Boring Location:**	See Figure 4 - Geotechnical Map

Depth (Feet)	Sample	Sample Type	Blow Count (6 inch Interval)			Dry Density (PCF)	Moisture (%)	Unified Soil Classification	Remarks	Field and Drilling Notes: / Visual Classification
0										**Weather:** Clear **Visual Classification**
1		B						SM	damp	**SILTY SAND WITH GRAVEL** dark brown, non-plastic
2		U	6	7		104	8		medium dense	
3										
4										increase in gravel content below 3'
5										**Stopped auger at 4'6"**
6										**Sampled to 4'6"**
7										**Backfilled with soil**
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										

The stratification lines represent the approximate boundary between soil and rock types: the actual in-situ transition may be gradual.

Sample Type Key:
B = Bulk Sample, S = Split Spoon, U = Relatively Undisturbed Ring

Alpha Geotechnical & Materials, Inc.

GROUNDWATER

DEPTH	DATE	TIME
Not Encountered	N/A	N/A

Alpha Project Number:	24-G-14412	**Log of Boring No.**	B-05
Project Name:	Quarelli Street/Golf Course Road Project	**Rig Type:**	CME-75
Project Location:	Hayden-Winkleman, Arizona	**Boring Type:**	Hollow Stem Auger
Date(s) Complete:	3/27/2024	**Boring Location:**	See Figure 4 - Geotechnical Map

Depth (Feet)	Sample	Sample Type	Blow Count (6 inch Interval)	Dry Density (PCF)	Moisture (%)	Unified Soil Classification	Remarks	Field and Drilling Notes: / Visual Classification
0								**Weather:** Clear **2" ASPHALT CONCRETE OVER 4" AGGREGATE BASE**
1		U	5 6	100	11	**SM**	damp to moist medium dense	**SILTY SAND WITH GRAVEL** dark brown, non-plastic
		B						
2								
3								increase in gravel content below 3'
4								
5								**Stopped auger at 4'6"** **Sampled to 4'6"** **Backfilled with soil**
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								

The stratification lines represent the approximate boundary between soil and rock types: the actual in-situ transition may be gradual.

Sample Type Key:
B = Bulk Sample, S = Split Spoon, U = Relatively Undisturbed Ring

Alpha Geotechnical & Materials, Inc.

GROUNDWATER

DEPTH	DATE	TIME
Not Encountered	N/A	N/A

APPENDIX C

LABORATORY RESULTS

Table C-1 - Summary of Laboratory Test Results

Boring Number	Depth (ft[1])		USCS/Group Symbol[2] (ASTM D2487)	Percent Fines (minus No. 200) (ASTM C136/C117)	Percent Sand (Retained Between the No. 4 and No. 200 Sieves)	Percent Gravel (Retained Above No. 4 Sieve)	Liquid Limit (ASTM D4318)	Plasticity Index (ASTM D4318)	In-Place Dry Density (pcf[3]) (ASTM D2937)	Moisture Content (%[4]) (ASTM D2216)	Swell Potential (%[4]) (ASTM D4546)	Maximum Dry Density (pcf[3]) (ASTM D698A)	Optimum Moisture Content (%[4]) (ASTM D698A)
	Begin	End											
B-01	0.0	4.5	SM	12	51	37	NV	NP					
B-03	0.0	4.5	SM	35	64	1	NV	NP			0.2		
B-05	0.5	4.5	SM	40	40	20	NV	NP			0.7	123.3	11.1
B-01	1.5	2.5							113	4			
B-02	2.0	3.0							92	10			
B-03	1.0	2.0							93	8			
B-04	1.5	2.5							104	8			
B-05	0.5	1.5							100	11			
			Average	**29**	**52**	**19**	**---**	**---**	**100**	**8**	**0.5**	**---**	**---**
			Standard Deviation	**15**	**12**	**18**	**---**	**---**	**9**	**3**	**0.4**	**---**	**---**
			Minimum	**12**	**40**	**1**	**NV**	**NP**	**92**	**4**	**0.2**	**123.3**	**11.1**
			Maximum	**40**	**64**	**37**	**NV**	**NP**	**113**	**11**	**0.7**	**123.3**	**11.1**
			Count	**3**	**3**	**3**	**3**	**3**	**5**	**5**	**2**	**1**	**1**

Notes:

[1] ft = feet

[2] USCS group symbol as determined by laboratory testing (ASTM D2487).

[3] pcf = pounds per cubic foot

[4] % = percent

Alpha

Project:	Hayden-Winkelman Golf Course Road Paving Project Phase 1	**Project Number:**	24-G-14412
Location:	Hayden-Winkelman, Arizona	**Sample Number:**	S34
Material Desc:	Native	**Sample Date:**	3/27/2024
Sample Source:	B-01 @ 0 - 4.5'	**Sampled By:**	Josh J. Svatora

Gradation of Soil or Aggregate
ASTM C136 & C117

Sieve Size	Percent Passing
3"-76.2mm	100
2"-50.8mm	100
1-1/2"-38.1mm	100
1-1/4"-31.75mm	100
1"-25.4mm	98
3/4"-19.05mm	92
1/2"-12.7mm	82
3/8"-9.525mm	76
1/4"-6.35mm	69
No. 4-4.75mm	63
No. 8-2.36mm	50
No. 10-2mm	48
No. 16-1.18mm	43
No. 30-0.6mm	36
No. 40-0.425mm	32
No. 50-0.3mm	28
No. 100-0.15mm	18
No. 200-0.075mm	12

Plasticity Index (Dry Preparation)
ASTM D4318

LL:	NV
PI:	Non-Plastic
Material Class:	SM

Tested By: Adriel G. Huerta

Manager: Juan C. Valenciano

Alpha

Project:	Hayden-Winkelman Golf Course Road Paving Project Phase 1	**Project Number:**	24-G-14412
Location:	Hayden-Winkelman, Arizona	**Sample Number:**	S37
Material Desc:	Native	**Sample Date:**	3/27/2024
Sample Source:	B-03 @ 0 - 4.5'	**Sampled By:**	Josh J. Svatora

Gradation of Soil or Aggregate
ASTM C136 & C117

Sieve Size	Percent Passing
3"-76.2mm	100
2"-50.8mm	100
1-1/2"-38.1mm	100
1-1/4"-31.75mm	100
1"-25.4mm	100
3/4"-19.05mm	100
1/2"-12.7mm	100
3/8"-9.525mm	100
1/4"-6.35mm	100
No. 4-4.75mm	99
No. 8-2.36mm	99
No. 10-2mm	98
No. 16-1.18mm	98
No. 30-0.6mm	97
No. 40-0.425mm	95
No. 50-0.3mm	89
No. 100-0.15mm	60
No. 200-0.075mm	35

Plasticity Index (Dry Preparation)
ASTM D4318

LL:	NV
PI:	Non-Plastic
Material Class:	SM

Swell Test
ASTM D4546

Percent Swell: 0.2%

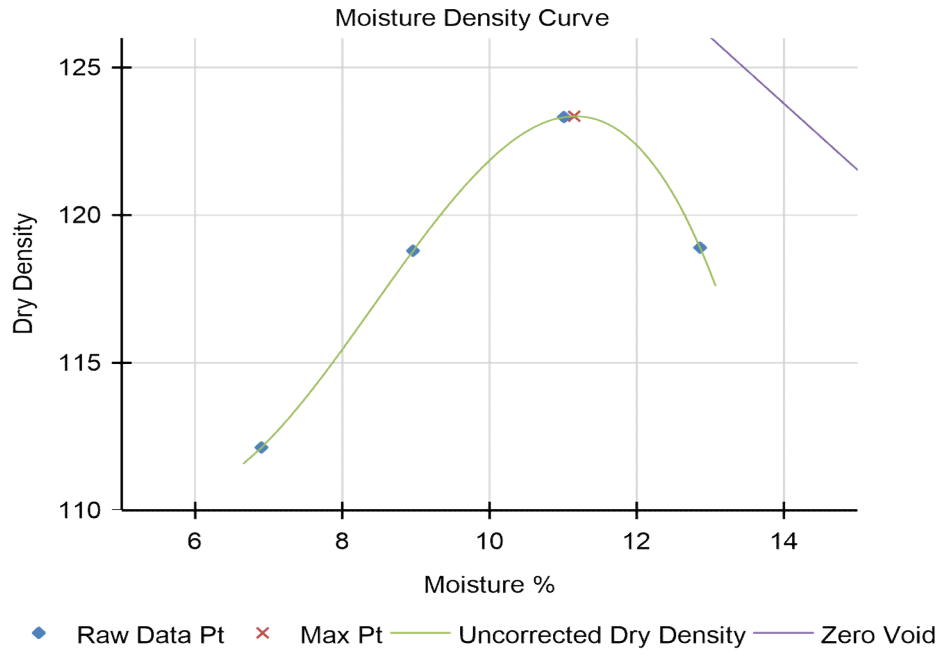
Tested By: Adriel G. Huerta

Manager: Juan C. Valenciano

Project:	Hayden-Winkelman Golf Course Road Paving Project Phase 1	**Project Number:**	24-G-14412
Location:	Hayden-Winkelman, Arizona	**Sample Number:**	S39
Material:	Subgrade	**Sample Date:**	3/27/2024
Sample Source:	B-05 @ 0.5 - 4.5'	**Sampled By:**	Josh J. Svatora

Standard Proctor
ASTM D698 A

Maximum Dry Density (pcf): 123.3
Optimum Moisture(%): 11.1



Gradation of Soil or Aggregate
ASTM C136 & C117

Sieve Size	Percent Passing
3"-76.2mm	100
2"-50.8mm	100
1-1/2"-38.1mm	100
1-1/4"-31.75mm	98
1"-25.4mm	95
3/4"-19.05mm	93
1/2"-12.7mm	90
3/8"-9.525mm	87
1/4"-6.35mm	83
No. 4-4.75mm	80
No. 8-2.36mm	73
No. 10-2mm	71
No. 16-1.18mm	66
No. 30-0.6mm	59
No. 40-0.425mm	56
No. 50-0.3mm	53
No. 100-0.15mm	47
No. 200-0.075mm	40

Material Class: SM

Swell Test
ASTM D4546

Percent Swell: 0.7%

Plasticity Index (Dry Preparation)
ASTM D4318

LL: NV
PI: Non-Plastic

Tested By: Mark W. Herr
Manager: Juan C. Valenciano

Notes: - The Zero Air Voids Curve represents a specific gravity of 2.65.
- This is a summarized report of the referenced procedures and does not include all reporting requirements. Additional data can be provided at the client's request.
-Test results relate only to the sample tested. This test report shall not reproduced, except in full, without the prior written approval of Alpha Geotechnical & Materials, Inc..

Alpha Geotechnical & Materials, Inc.

Project: Hayden-Winkelman Golf Course Road Paving Project Phase 1
Project Location: Winkelman, Arizona
Client: RICK Engineering Company
Material: Native
Sample Source: See Below

Project Number: 24-G-14412
Sample Number: See Below
Date Sampled: 03/27/24

Density of Soil in Place by the Drive-Cylinder Method (ASTM D2937)

Sample Number	Sample Location	Moisture Content			In-Place Density		
		Wet Wt (g)	Dry Wt (g)	**% Moisture**	# Rings	Total Wet Wt (g)	**Dry Density (pcf)**
S3B	**Boring B-01 @ 1.5-2.5'**	217.8	208.8	**4%**	4	790.7	**113**
S3B	**Boring B-02 @ 2-3'**	256.4	233.0	**10%**	4	710.0	**92**
S3B	**Boring B-03 @ 1-2'**	263.0	242.9	**8%**	4	711.2	**93**
S3B	**Boring B-04 @ 1.5-2.5'**	427.2	393.8	**8%**	3	588.3	**104**
S3B	**Boring B-05 @ 0.5-1.5'**	222.6	200.7	**11%**	4	758.4	**100**

Reviewed by: **RJ**

APPENDIX D

FLEXIBLE PAVEMENT DESIGN

Calculate Equivalent Single Axle Loads (ESALs)

Average Daily Traffic based on Traffic Counts	ADT =	500
Traffic Count Year	Year =	2024
First Design Year	Year =	2024
Estimated Average Daily Traffic in first design year (two-way)	ADT =	500
Percent Trucks ≥ Class 4 [Load Equivalent Factor = 1.2]	% Heavy Trucks =	5%
Cars [Load Equivalent Factor = 0.0008]	% Cars =	95%
Initial two-way daily 18-kip ESALs	$W_{0(2\text{-}18)}$ =	30

Annual growth rate as a percent	g =	1%
Number of years in analysis period	n =	20
Overall Growth Factor	OGF =	22.02
Two way 18-kip ESALs for the analysis period	$W_{2\text{-}18}$ =	244,162

Number of Lanes	# =	1
Directional distribution factor	D_D =	50%
Lane distribution factor	D_L =	1.00
Cumulative 18-kip ESALs for design lane	**W_{18} =**	**122,081**

Design Year	Start Year	End Year	Annual ESALs	Cumulative ESALs
1	2024	2025	5,544	5,544
2	2025	2026	5,600	11,144
3	2026	2027	5,656	16,800
4	2027	2028	5,712	22,512
5	2028	2029	5,769	28,282
6	2029	2030	5,827	34,109
7	2030	2031	5,885	39,994
8	2031	2032	5,944	45,939
9	2032	2033	6,004	51,942
10	2033	2034	6,064	58,006
11	2034	2035	6,124	64,131
12	2035	2036	6,186	70,316
13	2036	2037	6,248	76,564
14	2037	2038	6,310	82,874
15	2038	2039	6,373	89,247
16	2039	2040	6,437	95,684
17	2040	2041	6,501	102,185
18	2041	2042	6,566	108,751
19	2042	2043	6,632	115,383
20	2043	2044	6,698	122,081

Pavement Design (Maricopa County Department of Transportaion - Chapter 10)

Roadway Functional Classification Collectors

Effective Roadbed Soil Resilient Modulus (Subgrade Support)

R-Test Values

Correlated R-Values

Plasticity Index	% Passing No. 200	Correlated R-Value	Plasticity Index	% Passing No. 200	Correlated R-Value
0	12	99			
0	35	74			
0	40	69			

Total R-Value Tests	0	Total Correlated R- Value Tests	3	Mean R-Value	74
Mean of R-value tests		Mean of Correlated R-Value tests	74	Design R-Value	74
td. Dev of R Value Tests		Std. Dev of correlated R-Value Tests	16.38	easonal Variation Factor	1.00

Calculated Resilient Modulus (M_R) 52,679 pounds per square inch (psi)

Design Resilient Modulus 26,000 psi **[Maximum M_R 26,000 psi]**

Reliability

Level of Reliability	90%
ndard Normal Random Variable (Z_R)	-1.282
Overall Standard Deviation (S_0)	0.45

Performance Criteria (Serviceability)

Initial Serviceability (P_0)	4.4
Terminal Serviceabilty (P_t)	2.3
Change in Serviceability (ΔPSI)	2.1

Traffic Loading

Equivalent Single Axle Loads (from ESAL calculation) 122,081

Performance Criteria (Serviceability)

Strucutral Number (SN) **1.49**

Roadway Section

	Coefficients			
Material Type	**Material**	**Drainage**	**Thickness**	**Structural Number**
Asphalt Rubber AC	0.42	1.00		
Asphalt Concrete (AC)	0.42	1.00	5	2.10
Cement Treated Base (CTB)	0.28	1.00		
Aggregate Base (AB)	0.12	1.00		
Recycled Asphalt Pavement	0.12	1.00		
Stabilized Subgrade**	0.16	1.00		
			Design Structural Number	**2.10**
			Required Structural Number	**1.49**

**The coefficient for stabilized subgrade is to be determined using a non-soaked 7-day compressive strength, using ASTM D1633 Method A, and the following formula: ai = 0.15+0.0001*(CSCLS).

CSCLS = Compressive strength of cement or lime stabilized subgrade (psi).


TOWN OF
RE-INCORPORATED
1879
JUNE 8, 1946
WINKELMAN · AZ