

# INVITATION TO BID AND INSTRUCTIONS TO BIDDERS

FY2019-028

# CENTENNIAL GOLF COURSE CLUBHOUSE – ROOF REPLACEMENT

NOTE: PRE-BID CONFERENCE AUGUST 7, 2018 AT 10:00
A.M., LOCAL TIME, AT THE CENTRAL SERVICES
COMPLEX MULTIPURPOSE ROOM

# **BID OPENING**

August 14, 2018 2:00 p.m., Local Time

at the
Central Services Complex Multipurpose Room
City of Oak Ridge
100 Woodbury Lane
P. O. Box 1
Oak Ridge, Tennessee 37831-0001

Telephone: (865) 425-1819 Email: Imajeski@oakridgetn.gov Attn: Lyn Majeski

# CITY OF OAK RIDGE, TENNESSEE Invitation to Bid and Instructions to Bidders

FY2019-028 July 27, 2018

Project: Centennial Golf Course Clubhouse - Roof Replacement

#### Invitation

Bids will be received by the City of Oak Ridge until 2:00 p.m. local time, August 14, 2018, then publicly opened in the Central Services Complex Multipurpose Room at 100 Woodbury Lane, Oak Ridge, Tennessee 37830, for furnishing all labor, materials, supplies, tools, and equipment necessary to perform all work and services described in the Contract attached hereto, in strict accordance with the terms and provisions of said Contract and any attachments thereto. (See attached Specifications / Scope of Work)

All bids must be completed and submitted on the Bid Form provided. All options must be bid unless the Bid Form provides otherwise. The bids shall be submitted on or before the time set for the opening of bids. Bids received after the time so set are late bids and will not be considered. Late bids, unmarked envelopes, and incorrectly marked envelopes will not be opened. Electronic bids are not accepted.

#### **Suggested Pre-Bid Conference**

A pre-bid conference will be held on August 7, 2018, at 10:00 a.m., local time, at the Central Services Complex Multipurpose Room located at 100 Woodbury Lane, Oak Ridge, Tennessee 37830. Prospective Bidders are not required to attend in order to submit a bid, however, attendance is strongly suggested. Please contact Lyn Majeski at (865) 425-1819 if directions to the pre-bid conference are needed.

#### **Discrepancies**

Should the Bidder find any discrepancies in, or omission from, the bid documents, or should the Bidder be in doubt as to their meaning, the Bidder shall at once notify Lyn Majeski at (865) 425-1819 or <a href="majeski@oakridgetn.gov">lmajeski@oakridgetn.gov</a> and obtain an interpretation or clarification prior to submitting a bid. Any interpretation or clarification given in accordance with this provision shall be in writing and will be distributed to all known Bidders. Only questions answered in writing will be binding. Oral and other interpretations or clarifications will be without legal effect. All questions must be submitted to Lyn Majeski no later than 8:00 a.m., local time, on August 10, 2018 in order to give sufficient time for responses to be sent to all prospective bidders.

#### **Prices**

The Bidder shall submit LUMP SUM bid prices as specified on Bid Form. The Bid Form contains additional repairs that may be needed as part of the project, with those items bid as unit bid prices. It is agreed that this bid document in its entirety is included in and made a part of the contract between the City and the successful Bidder.

Discrepancies between the multiplication of units of work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

#### **Withdrawal of Bids**

Bids may be withdrawn on written or telegraphic request <u>received</u> from Bidders <u>prior to</u> the time fixed for opening the bids. Such written request must be on company letterhead signed by a company official and must indicate the specific bid project and bid price to be withdrawn in order to verify the identity of the bidder.

#### Rejection of Bids

The City reserves the right to reject any and all bids when such rejection is in the interest of the City of Oak Ridge; to reject the bid of a Bidder who has previously failed to perform properly or complete on time jobs of a similar nature; to reject the bid of a Bidder who is not, in the opinion of the City, in a position to perform the Contract, and to reject the bid of a Bidder not submitted in accordance with this Invitation to Bid.

#### References

With the bid, each Bidder shall furnish at least three (3) references for whom work similar to that covered by the specifications herein was performed.

#### **Equipment**

The Bidder shall have available under Bidder's control, tools and equipment of the type, character and amount required to complete the proposed work within the specified time. Each Bidder shall furnish a list of the tools and equipment proposed for use on the work if requested.

#### Personnel

Each Bidder shall have available or shall agree to have available under Bidder's control sufficient equipment and personnel to complete the proposed work within the specified time.

#### **Method of Work**

Upon request, each Bidder shall describe the method or methods to be used in the performance of the required work.

#### **Bidders Interested in More than One Bid**

A party who has quoted prices to a Bidder is not thereby disqualified from quoting prices to other Bidders or from submitting a bid directly for the work; however, more than one bid for the same work from an individual or entity under the same or different name will not be considered.

#### Insurance

The successful Bidder will be required to maintain Worker's Compensation, Comprehensive General Liability, and Comprehensive Automobile Liability and Property Damage Insurance in accordance with the provisions of the Contract Documents. The City of Oak Ridge, Tennessee shall be named as an additional insured.

#### **Bid Surety**

Each bid shall be accompanied by a bid guarantee payable to the City in the amount of ten percent (10%) of the total bid amount. The form of the bid guarantee shall be a bid bond or other suitable instrument (i.e. cashier's check, certified check, or Letter of Credit). The bid guarantees of unsuccessful Bidders shall be return to them by the City within fifteen (15) consecutive calendar days after execution of the Contract.

#### **Drug-Free Workplace Affidavit Form**

A Drug-Free Workplace Affidavit form is included in this bid package and must be submitted with the bid.

#### Completion and Performance Bond, and Labor and Material Bond

The Contractor agrees to furnish a Completion and Performance Bond in the amount of one hundred percent (100%) of the Contract price with good and sufficient surety or sureties acceptable to the City in connection with the performance of the work under this Contract. The form and conditions of said Completion and Performance Bond shall be as prescribed by the City.

The Contractor agrees to furnish a Labor and Material Bond in the amount of one hundred percent (100%) of the Contract price with good and sufficient surety or sureties acceptable to the City, for the protection of persons furnishing labor and material in connection with the performance of the work under this Contract. The form and conditions of this bond shall be as prescribed by the City.

#### **Award of Contract**

The City will make the award as soon as practicable to the lowest responsible Bidder, price and other factors considered, provided it is reasonable and in the best interest of the City. The City reserves the right to award the contract to more than one bidder if in the best interest of the City. The successful Bidder(s) shall be required to execute the Contract attached hereto.

#### **Timeframe for Completion**

Work shall commence after the City's issuance of a Notice to Proceed and shall be completed within forty-five (45) calendar days of such notice, unless an alternate schedule is approved by the parties in writing.

#### City Officers and Employees Not To Have Financial Interest

No contract shall be made with any officer or employee of the City or any firm or corporation in which any officer or employee of the City has financial interest.

#### Compliance with All Laws, Ordinances, Statutes, and Regulations

The Contractor shall comply with all federal, state, county and local laws, ordinances, statutes, and regulations. Pursuant to City Code § 5-413, the City may not accept bids from Bidders in default of any payment of any nature due to the City, including but not limited to taxes, licenses and fees.

#### **Tobacco Products**

The selected Bidder and its employees/subcontractors shall comply with all building policies, regulations, schedules and rules as set out and required by the City. Please note smoking (including e-cigarettes) and the use of tobacco products (chewing) is prohibited in City-owned facilities. For any work done at City facilities, any smoking occurring outside of the buildings must occur at least twenty (20) feet away from any entrance, open window or other opening into which smoke could infiltrate into the building. Spent smoking materials are to be properly discarded and not littered on the grounds.

#### **Anti-Discrimination**

The selected Bidder, in performing the work or furnishing the services covered by this project, shall not discriminate against any person because of race, creed, color, national origin, age, sex, sexual orientation, disability, religion or other legally protected status. The City of Oak Ridge encourages the utilization of minority and women-owned businesses in its contracting and subcontracting projects.

#### Competency of Workers / Background Checks

The selected Bidder shall only furnish employees who are competent and skilled for work under this contract. If, in the opinion of the City, an employee of the selected contractor is incompetent or disorderly, refuses to perform in accordance with the terms and conditions of the contract, threatens or uses abusive language while on City property, or is otherwise unsatisfactory, that employee shall be removed from all work under this contract. The selected contractor's employees working on this project may be subject to police background checks at the sole discretion of the City prior to commencement of the work.

#### **Bid Submittal Instructions**

Each bid must be submitted in an opaque sealed envelope marked and addressed on the outside as follows:

From: Bidder's Name

Bidder's Address

\*General Contractor's State of Tennessee License Number

\*Bidder's License Date of Registration \*Bidder's License Category or Classification

\*Bidder's License Expiration Date

\*If bid equals or exceeds \$25,000, include this information if a contractor's license is required for this project per the State of Tennessee's Contractors Licensing Board. (The same information must also be provided for major

subcontractors.)

To: <u>In Person or By Overnight Delivery</u> <u>Regular Mail</u>

Attn: Lyn Majeski
Finance Department
City of Oak Ridge
City of Oak Ridge
City of Oak Ridge

100 Woodbury Lane P.O. Box 1

Oak Ridge, TN 37830 Oak Ridge, TN 37831-0001

If the bid is submitted by mail rather than hand-delivery, the sealed envelope containing the bid must be enclosed in another envelope addressed as stated above. Bids submitted by mail should indicate on the outside envelope, lower left corner, the following: "Sealed bid for FY2019-028: Centennial Golf Course Clubhouse – Roof Replacement to be opened August 14, 2018, at 2:00 p.m., local time" to ensure the bid is delivered to the appropriate person at the City in a timely fashion. Late bids are not accepted and will not be opened.

#### **BID FORM**

# Project: <u>Centennial Golf Course Clubhouse - Roof Replacement</u>

In compliance wit	h the Invitation for Bids	s, dated July 27, 2018, the unde	ersigned Bidder:
* a corpo	oration organized and	existing under the laws of the S	State of:
* a partn	ership consisting of: _		
*an indiv	idual trading as:		
(*fill in as	s appropriate)		
necessary to per	ed as hereinafter prov form all work and serv		terials, supplies, tools, and equipment for Bid and Instructions to Bidders, in strict
	of said Notice of Awar		e City of Oak Ridge, within ten (10) working cates naming the City of Oak Ridge as an
BIDDER ACKNO	WLEDGES RECEIPT	OF THE FOLLOWING ADDEN	IDA:
Addendum No	Dated	Addendum No	Dated
Addendum No	Dated	Addendum No	Dated
Bidder understar bidding.	nds that the City reserv	es the right to reject any or all	bids and to waive any informality in the

Bidder agrees that this bid shall be good for a period of ninety (90) days from the date of opening. The successful bidder shall sign and return the contract for this project within ten (10) days of receipt from the City at which time this Bid Form will be incorporated by reference and said unit prices will be the unit prices used for payment under

the contract.

# Schedule of Prices

			Dolla	ars and	_ Cents
					_
Unit	Bid Prices:				
		in accordance with Specifica	ations		
	Item No	Description	Unit	Unit Bid Price	
	1.	Replace sheathing	Sq. ft.		
	2.	Replace Fascia Board	LF.		
	3.	Replace Trim Boards	LF.		
	4.	Replace Soffit	LF.		
	s that no officer mitting this bid	rs or employees of the City of	Oak Ridge are	members of, or have finance	cial inte
/: <u> </u>		· 	Telephone #:		
/: Signature			•		
/: Signature ame:			Fax #		
/:Signature ame:tle:			Fax #		
Signature  ame: tle: usiness ame:			Fax # Email: Date:		

NOTE: In accordance with the Invitation to Bid, the following attachments are required: a Bid Bond in the amount of ten percent (10%) of the total bid prices, at least three (3) references, and the Drug-Free Workplace Affidavit.

KNOW ALL MEN BY THESE	PRESENTS,		
That we,			,
(hereinafter called the "Princi	pal"), as Principa	al, and the	, of
			a
corporation duly organized u	nder the laws of t	the State of	
(hereinafter called the "Oblig which sum well and truly to b	ee"), as Obligee, be made, the said	e held and firmly bound unto the City of in the sum of ten percent (10%) of the b Principal and the said Surety, bind ours y and severally, firmly by these presents	pid price for the payment of selves, our heirs, executors,
WHEREAS, the Principal has	s submitted a bid	for:	
with the Obligee in accordant the Invitation to Bid and Instrontract, or in the event of the shall pay to the Obligee the cand such larger amount for well as the cand such as the	ce with the terms uctions to Bidders e failure of the Pr difference not to evhich the Obligee	pt the bid of the Principal and the Principal of such bid, and give such bond or bond is with good and sufficient surety for the rincipal to enter such contract and give sexceed the penalty hereof between the amay in good faith contract with another be null and void, otherwise to remain in	ds as may be specified in faithful performance of such such bond, if the Principal amount specified in said bid party to perform the work
Signed and sealed this	day of	A.D. 2018.	
IN THE PRESENCE OF:			
		 Principal	(Seal)
		Тіпыра	
Witness		Title	<u></u>
NACHARA		Contact	(Seal)
Witness		Surety	
		Title	

# DRUG-FREE WORKPLACE AFFIDAVIT

	OF)	
COUNT	Y OF)	
five (5)	lersigned principal officer of	, an employer of provide construction
1.	That the undersigned is a principal officer of	
	referred to as the "Company") and is duly authorized to execute this Affida Company.	(hereinafter avit on behalf of the
	The Company submits this Affidavit pursuant to Tennessee Code Annotar requires each employer with no less than five (5) employees receiving pay state or any local government to provide construction services or who is a provide construction services or who provides construction services to the government to submit an affidavit stating that such employer has a drug-fithat complies with Title 50, Chapter 9 of the Tennessee Code.	y who contracts with the warded a contract to estate or local
3.	The Company is in compliance with Tennessee Code Annotated § 50-9-1	13.
	Further affiant saith not.	
	Principal Officer	
State of	)	
	)ss. of)	
	Before me personally appeared	with whom I am
persona	lly acquainted (or proved to me on the basis of satisfactory evidence) and	who acknowledged that
such pe	rson executed the foregoing affidavit for the purposes therein contained.	
	Witness my hand and official seal this day of	, 2018.
Notary F	Public	
-		
iviy Coff	mission Expires:	

#### **CONTRACT**

This Contract entered into this	day of	, 2018, by and between the
City of Oak Ridge, Tennessee, a municipal	corporation, hereir	nafter called the "City," and
		,
a		, hereinafter called the "Contractor."

#### WITNESSETH

In consideration of the mutual promises of the parties hereto, the parties do hereby agree as follows:

#### ARTICLE 1 – Scope of This Contract

The work to be done consists of furnishing all labor, materials, supplies, tools, equipment and other incidentals necessary to perform all work and services required for the Centennial Golf Course Clubhouse – Roof Replacement project, at 101 Centennial Boulevard, Oak Ridge, Tennessee 37830, for the City of Oak Ridge, in strict accordance with the terms and provisions of this Contract, the Specifications, and the bid of the Contractor attached hereto.

In performance of this Contract, the Contractor binds himself to the City to comply fully with all provisions, undertakings, and obligations hereinafter set forth.

#### ARTICLE 2 - Term

This Contract shall become effective upon its execution and shall continue in full force and effect through December 31, 2018. Work shall commence after the City's issuance of a Notice to Proceed and shall be completed within forty-five (45) calendar days of said notice, unless an alternate schedule is approved by the parties in writing.

#### ARTICLE 3 – Changes

- A. City may, by written order, and without notice to the Sureties, make changes in the specifications of this Contract within the general scope thereof. If any such changes cause an increase or decrease in the scope of this Contract or in the time required for its performance, an equitable adjustment shall be made and this Contract shall be modified in writing accordingly.
- B. Should the Contractor encounter conditions materially different from those shown in the specifications, the City shall be notified in writing immediately of such conditions before they are disturbed. The City shall thereupon promptly investigate the conditions and if it finds that they do so materially differ from those specified, this Contract shall be modified to provide for any increase or decrease of cost and difference in time resulting from the conditions so found.

C. Except as otherwise herein provided, no charge for any extra work or material will be allotted unless the same has been approved in writing by the City, and the price stated.

#### ARTICLE 4 – <u>Inspections and Defective Work</u>

All workmanship and services shall be subject to inspections, examinations and tests by the City at any and all times during the performance of this Contract. The City shall have the right to reject defective workmanship and to require correction. Rejected workmanship shall be satisfactorily corrected without charge therefore. If the Contractor fails to proceed at once to correct such defective workmanship, the City may proceed with such corrective work and the Contractor shall be liable for all direct cost occasioned in the performance therefore.

This provision does not negate, modify or replace any warranties contained elsewhere in this Contract. This provision shall survive the termination or suspension of this Contract.

Neither payment nor any provisions in the Contract document shall relieve the Contractor of responsibility for faulty materials or defective workmanship. The City shall give notice of observed defects with reasonable promptness. The deterioration due to ordinary use and normal wear is excepted from this guarantee.

The Contractor shall reimburse the City for the cost of damage, if any, as well as the cost of replacing defective materials or workmanship. If replacements are not made within ten (10) days after notice is given of such defect in workmanship, or thirty (30) days in case of materials, then the City shall have the right to make replacements and charge the cost of same to Contractor or the Contractor's surety.

#### ARTICLE 5 - Site Investigation

The Contractor represents that it has visited the site and determined the nature of the work and the difficulties and facilities attending execution of the work, and all other matters, which can in any way affect the work under this Contract.

#### ARTICLE 6 - Delays, Damages

If the Contractor refuses or fails to prosecute the work with such diligence as will ensure its completion within the time specified in Article 2, or fails to complete the work within such time, the City may terminate this Contract. In such event, the City may take over the work and prosecute the same to completion by contract or otherwise, and the Contractor shall be liable to the City for any excess cost occasioned thereby. If this Contract is so terminated, the City may take possession of and utilize in completing the work such materials, appliances, tools and equipment as may be on the site of the work and necessary therefore.

#### ARTICLE 7 – Payment

#### ARTICLE 8 - Final Payment

Upon completion of the work and services covered by this Contract and before final payment, the Contractor must furnish evidence to satisfy the City that all suppliers of materials used and all labor and other employees working for the Contractor pursuant to this Contract have been fully paid. Upon final payment, the City is to be released from all liability whatsoever growing out of this Contract.

#### ARTICLE 9 – Indemnification by Contractor

To the fullest extent permitted by all applicable laws and regulations, the Contractor hereby agrees to protect, indemnify and hold harmless the City and their consultants, agents and employees from and against any and all claims, loss, expense, damage, charges and costs direct, indirect or consequential (including but not limited to fees and charges of engineers, architects, attorneys and other professional and court costs), collectively referred to as "claims," for injury to or death of persons and injury to or destruction of property suffered or alleged to have been suffered as a result of any act or omission on the part of the Contractor, any of the Contractor's subcontractors, anyone for whose acts any of them may be liable, or others whose services are engaged by the Contractor or anyone directly or indirectly employed or controlled by either of them in the course of the performance of the work provided for in the Contract, except such injury, destruction or death as may be caused by the sole negligence or fault of the City.

When the City submits notice, the Contractor shall promptly defend any aforementioned action. In any and all claims against the City or any of their consultants, agents or employees by any employee of the Contractor, any of the Contractor's subcontractors, anyone for whose acts any of them may be liable, or others whose services are engaged by the Contractor or anyone directly or indirectly employed or controlled by either of them in the course of the performance of the work provided for in the Contract, the indemnification obligation described herein shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts. The limits of insurance required in this Contract shall not limit the Contractor's obligations under this article.

The terms of this article shall survive the termination or suspension of this Contract.

#### ARTICLE 10 - Completion and Performance Bond and Labor and Material Bond

#### A. Completion and Performance Bond

Prior to commencing work under this Contract, the Contractor agrees to furnish and to maintain during the term of this Contract a Completion and Performance Bond in the amount of one hundred percent (100%) of the Contract price with good and sufficient surety or sureties acceptable to the City in connection with the performance of the work under this Contract, including any amendments or extensions hereof. The form and conditions of said Performance Bond shall be as prescribed by the City. The bond will be required at the beginning of each contract term and will be in an amount equal to the contract price for that year.

In lieu of a Performance Bond, the City will accept other suitable Securities agreed upon by both parties. At all times during the term of this Contract, the Contractor shall provide the City with evidence that the Contractor has obtained such Performance Bond or Securities. A certificate from the surety showing that the bond premiums have been paid by the Contractor shall accompany the bond.

#### B. Labor and Material Bond

Prior to commencing work under this Contract, the Contractor agrees to furnish and to maintain during the term of this Contract a Labor and Material Bond in the amount of one hundred percent (100%) of the Contract price with good and sufficient surety or sureties acceptable to the City, conditioned that the Contractor shall promptly make payments to the persons supplying labor, material, or supplies to the Contractor or subcontractors in the performance of the work under this Contract and any amendment or extension thereof. The form and conditions of this bond shall be as prescribed by the City. The bond will be required at the beginning of each contract term and will be in an amount equal to the contract price for that year.

#### ARTICLE 11 – Rate of Progress

Notwithstanding any other provisions in this Contract, the Contractor shall furnish sufficient labor, materials, supplies, tools, and equipment, and shall work such hours, including overtime, Sundays, and/or Holidays, as may be necessary to carry out the work in accordance with the approved schedules for its completion not later than the respective times allowed for completion set forth in these Contract Documents. Should the Contractor refuse or fail to comply with its obligations set forth in the preceding sentence after receipt of any written directive or request by the City that the Contractor furnish additional labor, materials, supplies, tools, and equipment, and/or work additional hours, including overtime, Sundays, and/or Holidays, the City may terminate the Contractor's right to proceed with the whole or any part of the work under this Contract.

#### ARTICLE 12 - Compliance with All Laws, Ordinances, Statutes, and Regulations

The Contractor shall comply with all federal, state, county and local laws, ordinances, statutes, and regulations.

#### ARTICLE 13 – Insurance

The Contractor shall at all times during the Contract maintain in full force and effect Comprehensive General Liability, Workers' Compensation and Property Damage Insurance in the amounts set forth below and naming the City of Oak Ridge, Tennessee as an *additional insured*.

The Contractor shall maintain policies providing the following insurance protection, each policy containing a requirement that, in the event of change or cancellation, thirty (30) days' prior written notice be sent by mail to the City. Certificates of Insurance describing the coverage shall be furnished by the Contractor and shall contain the following express obligation:

"This is to certify that the policies of insurance described herein have been issued to the insured for whom this certificate is issued and are in force at this time. In the event of cancellation or material change in a policy affecting the certificate holder, thirty (30) days' prior written notice will be given the certificate holder."

#### 1. Comprehensive General Liability:

Bodily Injury	\$300,000 \$700,000	each occurrence aggregate
Property Damage	\$100,000	each occurrence
Or Combined Single Limit of	\$1,000,000	

- 2. Workers' Compensation and Employer's Liability as provided for in applicable statutes.
- 3. Comprehensive Automobile Liability (Including all owned, non-owned and hired vehicles)

Bodily Injury	\$300,000 \$700,000	each person each occurrence
Property Damage	\$100,000	each occurrence
Or Combined Single Limit of	\$1,000,000	

The Contractor may purchase at its own expense such additional or other insurance protection as it may deem necessary. Maintenance of the required minimum insurance protection does not relieve the Contractor of responsibility for any losses not covered by the above-required policies.

Before commencement of work hereunder, the Contractor agrees to furnish to the City of Oak Ridge (Legal Department, P.O. Box 1, Oak Ridge, Tennessee 37831-0001) a Certificate of Insurance or other evidence satisfactory to the City to the effect that such insurance has been procured and is in force.

#### ARTICLE 14 – Permits and Licenses

The Contractor shall obtain, at the Contractor's expense, all permits, licenses and bonds required by law or ordinance and maintain the same in full force and effect.

#### ARTICLE 15 - Subcontracting and Assignment

- A. 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.
- B. The Contractor shall not award, assign, transfer or pledge any work to any subcontractor without prior written approval of the City, which approval will not be given until the Contractor submits to the city a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the City may require.
- C. The Contractor shall be as fully responsible to the City for the acts and omissions of subcontractors, and of persons either directly or indirectly employed by said subcontractors, as the Contractor is for the acts and omissions of persons directly employed by the Contractor.
- D. The Contractor shall make a condition of all subcontracts and/or cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and other Contract Documents insofar as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that the City may exercise over the Contractor under any provision of the Contract Documents.
- E. Nothing contained in this Contract shall create any contractual relation between any subcontractor and the City.

#### ARTICLE 16 – Superintendence by the Contractor

The Contractor shall give its personal superintendence to the work or have a competent foreman or superintendent satisfactory to the City on the site at all times during the progress of the work, with authority to act on behalf of the Contractor.

#### ARTICLE 17 – Termination

Notwithstanding any other provisions in this Contract, the Contractor shall furnish all labor, materials, supplies, tools and equipment necessary to perform the work and services within allowed times for completion as set forth in these Contract Documents. Should the Contractor refuse or fail to comply with its obligations, or in the event the Contractor shall violate any of the provisions of this Contract, or the quality or quantity of the work performed is, in the judgment of the City, below standard and therefore unsatisfactory, the City shall have the right to cancel this Contract upon thirty (30) days written notice to the Contractor and to complete the work undertaken by the Contractor without incurring any liability to the Contractor except to pay the Contractor the fair value to the City of the work satisfactorily performed by the Contractor.

#### ARTICLE 18 – Termination of Contract for Cause

If, through any cause, the Contractor shall fail to fulfill in timely and proper manner the obligations under this Contract, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this Contract, the City shall thereupon have the right to terminate this Contract by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least five (5) days before the effective date of such termination. In such event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports prepared by the Contractor under this Contract shall, at the option of the City, become the City's property and the Contractor shall be entitled to receive just and equitable compensation for any work satisfactorily completed hereunder.

Notwithstanding the above, the Contractor shall not be relieved of liability to the City for damages sustained by the City by virtue of any breach of the Contract by the Contractor, and the City may withhold any payments to the Contractor for the purpose of set-off until such time as the exact amount of damages due the City from the Contractor is determined.

#### ARTICLE 19 – Anti-Discrimination

The Contractor, in performing the work or furnishing the services covered by this Contract, shall not discriminate against any person because of race, creed, color, national origin, age, sex, sexual orientation, disability, religion or other legally protected status. The City of Oak Ridge encourages the utilization of minority and women-owned businesses in its contracting and subcontracting projects and the Contractor is encouraged to actively solicit the participation of these businesses. The Contractor shall inform all of its subcontractors and vendors providing work or services under this Contract of this requirement and shall ensure compliance therewith.

#### ARTICLE 20 – Personnel

- A. The Contractor represents that it has, or will, secure at the Contractor's expense, all personnel required to perform the work and services outlined in this Contract. Such personnel shall not be employees of or have any contractual relationship with the City.
- B. All of the services required hereunder will be performed by the Contractor or under the Contractor's supervision, and all personnel engaged in the work shall be fully qualified and shall be authorized or permitted under state and local laws to perform such services.

#### ARTICLE 21 – Reports and Information

At such times and in such forms as the City may require, the Contractor shall furnish to the City such periodic reports as are requested by the City pertaining to the work and services covered by this Contract, the costs and obligations incurred or to be incurred in connection herewith, and any other matters covered by this Contract. The City can audit the Contractor's and the Contractor's subcontractors' financial records pertaining to this project.

#### ARTICLE 22 - Governing Law

This Contract is governed by the laws of the State of Tennessee.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the day and year first above written, the City of Oak Ridge, by its Mayor, by authority duly given.

APPROVED AS TO FORM AND LEGALITY:		CITY OF OAK RIDGE, TENNESSEE
City Attorney		Mayor
		(CONTRACTOR)
		Signature
		(Printed or Typed Name and Title)
Attachments:	Specifications/Scope of Work Bid Documents Contractor's Bid	
Approved by E	Posolution	

#### LABOR AND MATERIAL BOND

FY2019-028

Know all men by these presents
That We
AS PRINCIPAL, and
AS SURETY are held firmly bound unto the
hereinafter called the Obligee, in the penal sum of
Dollars (\$
lawful money of the United States, for payment of which sum well and truly to be made, we bind ourselves, our heirs, personal representatives, successors and assigns, jointly and severally, firmly by these presents.
WHEREAS: Said Principal has entered into a certain Contract with said Obligee dated
complete performance of

which Contract and the specifications for said work shall be deemed a part hereof as fully as if set out herein.

NOW, THEREFORE, the condition of this obligation is such that if said Principal and all contractors to whom any portion of the work provided for in said Contract is sublet and all assignees of said Principal and of such contractors shall promptly make payments to the persons supplying him, or them, with labor, material, fuel or supplies, for or in the prosecution of the work provided for in said Contract, or in any amendment or extension of or addition to said Contract, and for payment of reasonable attorney's fees, incurred by the Claimant or Claimants in suits on said Bond, then the above obligation shall be void; otherwise to remain in full force and effect. Provided, however, that this Bond is subject to the following conditions and limitations:

(a) Any person, firm or corporation that has furnished labor, materials, fuel or supplies for or in the prosecution of the work provided for in said Contract shall have a direct right of action against the Principal and Surety of this Bond which right of action shall be asserted in a proceeding, instituted in the county in which the Principal does business. Such right of action shall be asserted in a proceeding instituted in the name of the Claimant or Claimants for his or their use and benefit against said Principal and Surety or either of them, (but not later than one year after the final

# Labor and Material Bond (continued)

settlement of said Contract) in which action such claim or claims shall be adjudicated and judgment rendered thereon.

- (b) The Principal and Surety hereby designate and appoint the City Manager of the City of Oak Ridge, Tennessee, as the agent of each of them to receive and accept service of process or other pleading issued or filed in any proceeding instituted on this Bond and hereby consent that such service shall be the same as personal service on the Principal and/or Surety.
- (c) The Surety shall not be liable hereunder for any damages or compensation recoverable under any worker's compensation or employers' liability statute.
- (d) This bond is furnished in compliance with <u>Tennessee Code Annotated</u> Section 12-4-201 et seq.

In Witness whereof the parties hereto have executed this agreement on the day and date first above written in two counterparts, each of which shall without proof or accounting for the other counterpart, be deemed an original contract.

SIGNED, SEALED AND DELIVERED this	day of	, 20	·
Attest:	Ву:	Principal	(Seal)
Attest:	By:		(Seal

# **COMPLETION AND PERFORMANCE BOND**

KNOW AL	L MEN BY THESE PR	ESENTS:		FY2019-028
THAT				
		(Name and address	of legal title of Contractor)	
as Princip SURETY, the amour		ety, and held and firm	ly bound unto the City of Oak Rid	dge, as Obligee, in)
	yment whereof Contracts and assigns, jointly a		nemselves, their heirs, executors y these presents.	, administrators,
	S, Contractor has by w to a Contract with the		ed, 20	
	amendments, which C	ontract is by referenc	in accordance with the spee e made a part hereof, including a act.	
perform sa		all the obligations the	s such that, if Contractor shall pro reunder, then this obligation sha	
thereof, th		ed the City's obligation	be, in default under the Contract thereunder, the Surety may pro	
(1)	Complete the Contra	act in accordance with	n its terms and conditions; OR	
(2)	the terms and condit bidder, arrange for a progresses (even the Contract or contracts	ions, and upon deter contract between su ough there shall be a	City for completing the Contract mination by Owner and Surety of ch bidder and the City and make default or a succession of defaulged under this paragraph) sufficiently sufficiently and the contract of the	lowest responsible available as work ts under the
	nder this bond must be under the Contract falls		expiration of two years from the	date on which final
	AND SEALED THIS RESENCE OF:	DAY OF	A.D., 20	
Witness		By Princ	sipal	(Seal)
Witness		_ By Sure	tv	(Seal)
		3410	7	(334.)

#### SPECIFICATIONS / SCOPE OF WORK

#### 1.0 SCOPE OF WORK – CONTRACTOR RESPONSIBILITIES

The scope of this Contract is generally:

- A. CONTRACTOR to supply all labor, equipment, and materials to install a new roofing system on the Centennial Golf Course Clubhouse, located at 101 Centennial Boulevard in Oak Ridge, TN.
- B. CONTRACTOR must abide by all regulations and requirements of Occupational Safety and Health Administration (OSHA).
- C. CONTRACTOR shall provide adequate fall protection.
- D. CONTRACTOR is solely responsible for maintaining a safe work environment for his/her employees, and for public safety relating to the project.
- E. CONTRACTOR shall be responsible for any damage resulting from his/her activities.
- F. CONTRACTOR shall be responsible for restoration of surfaces damaged caused by operating his/her equipment.

#### 2.0 CONTRACT

- A. This Contract will become effective when the notice to proceed is issued and will remain in effect until complete. Anticipated completion to be within forty-five (45) calendar days.
- B. Due to short duration of project, progress payments will not be provided. The CONTRACTOR will submit one (1) invoice upon completion of project.
- C. The pay request should be a summary sheet showing each pay item, the unit cost per item, number of items, extended cost per item, and total cost of work completed during period. Submit applications typed on an *Application for Payment* form with itemized data typed on 8-1/2" x 11" white paper. Application should display the contractor's letterhead and reference the City's contract number.

# 3.0 INFORMATION FOR BIDDERS

- A. CITY shall mean the City of Oak Ridge, Tennessee. The word CITY and OWNER may be used interchangeably.
- B. Included in the bid documents is the Roof Asset Evaluation Report completed for the Club House Roof by Roof Connect (see Exhibit A) for use in preparing bids. Inclusion of this report in the bid documents does not relieve the CONTRACTOR from visiting the site to determine conditions and quantities of materials needed. The quantities in the report should be considered estimates only.
- C. The basis of bid shall be lump sum and shall include all items noted in 5.0 through 5.1.4.

- D. Unit prices shall be provided for additional repair items noted in 5.2 and shall be used to estimate additional costs associated additional repair work that is not include in the base bid. Costs associated with the additional repairs shall be paid for using the miscellaneous allowance per section 6.0.
- E. The CITY reserves the right to decrease or increase quantities.
- F. CONTRACTOR to submit their bid color chart(s) depicting the color and type of architectural shingle available from the manufacture that most closely matches existing.
- G. CONTRACTOR shall be responsible for proper storage and security of materials and equipment on job site.
- H. By submitting a bid, CONTRACTOR represents that they have visited the site, and has familiarized themselves with local conditions under which the work will be performed.

#### 4.0 QUALITY ASSURANCE

- A. Adequate numbers of skilled workmen, who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specific requirements and the methods needed for the proper performance of the Work in this Section, shall be provided and used to complete the Work.
- B. Equipment adequate in size, capacity, and numbers to accomplish the Work in a timely manner shall be provided and used to complete the Work.
- C. CONTRACTOR shall provide adequate on-the-job supervision of all Work and workmen to ensure that the Work meets all requirements of the Contract.

#### 5.0 WORK INSTRUCTIONS

- A. CONTRACTOR to schedule his/her activities, and construct project in a manner such that the Club House structure will remain in the dry during inclement weather.
- B. Once mobilized the CONTRACTOR shall remain on site until the work is completed.
- C. Coordinate all work with the OWNER to ensure a successful Project. The schedule and actual construction operations must be approved by the OWNER.
- D. Prior to ordering material, CONTRACTOR shall provide OWNER shop drawings for all items called for in the specifications.
- E. Prior to ordering material, CONTRACTOR to submit a sample of proposed shingle in the color and style. An addendum will be issued to the contractor to document the OWNER's choice of shingle.
- F. CONTRACTOR to install roofing per manufacture instructions.

#### 5.1 New Roof System

New roof system shall include but is not limited to the following:

#### 5.1.1 Demolition of Roof

- A. Contractor to remove existing:
  - 1. Cupola (1 approximately 240 sq. ft.)
  - 2. Dormers (7 approximately 1,030 sq. ft.)
  - 3. Drip edge approximately 870 feet
  - 4. Flashing approximately 143 feet
  - 5. Step Flashing approximately 306 feet
  - 6. Soffit (only in damaged areas approximately 36 feet)
- B. Cupola and dormers will not be reinstalled. CONTRACTOR to properly dispose of material from demolition of these items.
- C. CONTRACTOR shall not overlay existing roof. Existing asphalt shingles and underlayment shall be removed and disposed of by CONTRACTOR. Site shall be left free of nails and other debris.

#### 5.1.2 Inspection of Roof

Contractor to inspect:

- A. ALL sheathing.
- B. ALL fascia and trim boards.
- C. Costs associated with the inspection shall be included in the lump sum base bid cost for the new roof system.
- D. After inspection, CONTRACTOR to provide recommendation on replacement of any deteriorated or rotted wood not included in base bid. Costs associated with additional material found after the demolish work shall be included in the unit bid prices provided as noted in Section 5.2.

#### 5.1.3 Installation of New Roof

A. CONTRACTOR to furnish all materials, equipment and labor for the installation of new sheathing where necessary in areas disturbed by the removal of the cupola and dormers. Sheathing shall match existing sheathing thickness.

- B. CONTRACTOR to furnish all materials, equipment and labor for the installation a new roof system consisting of:
  - 1. New felt underlayment (#30) per shingle manufacture. Underlayment shall be lapped minimum six (6) inches on horizontal seam and four (4) inches on vertical seams.
  - 2. New eight (8) inch aluminum flashing where necessary.
  - 3. New three (3) feet minimum ice and water dam along eaves and rakes and six (6) feet along valleys.
  - New ridge vent and ridge vent cap adequate to meet existing codes.
  - 5. New eight (8) inch aluminum drip edge along eaves and rakes.
  - 6. New starter strip.
  - 7. New soffits to match existing as noted in 5.1.1.
  - 8. New roof boots for all roof penetrations.
  - 9. New architectural shingles. Shingles shall be warranted by manufacture for thirty (30) years. CONTRACTOR will provide five (5) year warranty on all workmanship. Shingles shall provide 120 mph (Class G ASTM 3462) wind resistance. Shingle shall meet ASTM standards D228 and D1079. Shingle shall be self-sealing with factory applied adhesive. Nails shall be galvanized steel (annular threads) or aluminum (screw threads) with flat heads three eights (3/8) inch diameter and shall be of sufficient length to fully penetrate sheathing. Minimum of four (4) nails per shingle or install per manufacture recommendation.

#### 5.1.4 Clean Up

At completion of project, CONTRACTOR shall completely clean site for any debris from demolition, and remove any nails that have fallen to ground. Site shall be cleaned up to meet or exceed pre-construction conditions.

#### 5.1.5 Compensation

Compensation for the new roof system items 5.1 through 5.1.4 shall include all the furnishing of all materials, equipment, labor and appurtenances needed for the completion of the new roof in accordance with industry standards. All costs associated with the new roof system shall be included in the lump sum bid price that shall be the basis of bid award.

#### 5.2 Additional Repair Items

- A. After the demolition and inspection (5.1.1. and 5.1.2) the CONTRACTOR shall provide qualities for materials potentially needed to repair additional sheathing, fascia boards, trim boards and soffits that are not included in the lump sum base bid price since they are not readily seen and may be discovered after demolition. Contractor shall supply unit prices for materials needed to make these repairs. Costs associated with the furnishing of materials, equipment and labor needed to complete the additional repairs shall be included in the unit bid prices and paid for using the miscellaneous allowances noted in Section 6.0.
- B. Fascia board(s) shall be replaced in kind with new material painted with one (1) coat of white primer.
- C. Trim board(s) shall be replaced in kind with new material painted with one (1) coat of white primer.
- D. Soffits to be replaced in kind with new material painted with one (1) coat of white primer.
- E. Sheathing shall be replaced in kind.

#### 5.3 Warranty

Warranty period shall be one (1) year for fascia boards, trim work and soffits; 30 years for new roof system, and five (5) years on workmanship on new roof system.

#### 6.0 MISCELLANEOUS ALLOWANCE

- A. Use of allowances shall be approved by OWNER.
- B. Include a not to exceed allowance of \$6,000.
- C. The allowance is provided to cover the cost of unspecified but necessary repairs associated with additional sheathing, fascia board, trim board and soffit repairs not readily seen but discovered after the demolish phase of work.

# EXHIBIT A

Roof Evaluation Report by Roof Connect (see 22-page attachment).



# **ROOF EVALUATION REPORT**

Centennial Golf Clubhouse & Centennial Golf Training Center

100 Centennial Boulevard & 101 Centennial Boulevard Oak Ridge, TN 37830

Inspection Date: October 18, 2017







# **General Info:**

Site Information:

Centennial Golf Clubhouse

Name:

& Training Center

Address:

100 & 101 Centennial Blvd.

Oak Ridge, TN 37830

Site

Contact:

Phone:

**Owner/Client Information:** 

Name:

City of Oak Ridge

Address:

200 South Tulane Avenue

Oak Ridge, TN 37830

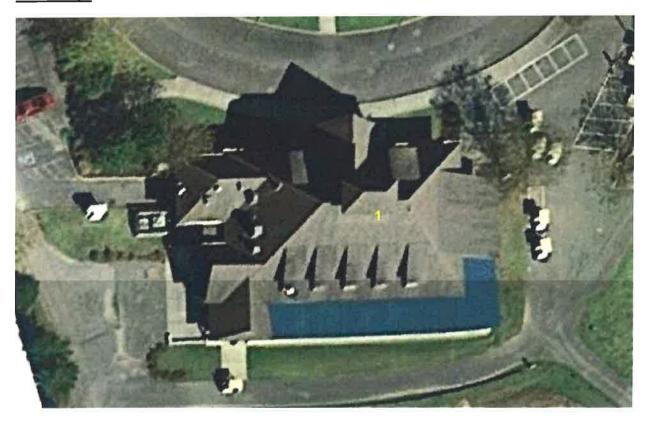
Contact:

Phone:

# **Site Overview:**

<u>Map #</u>	Roof Type, Manufacturer, Attachment	<u>Size</u>	Est. Remaing Life
1	Architectural Shingles	10,000 sqft.	0 -2 years
2	Architectural Shingles	4,000 sqft.	0 -2 years

# **Roof Map:**









# **Condition Summary:**

# Clubhouse:

Roof	
Shingle Type:	Architectural Shingle (unknown manufacturer)
Estimated # of layers:	1
Physical condition:	Shingles are in poor condition
- granule loss	Moderate granule loss noted
- splitting/cracking	No
- nail pops	None noted
- vegetation growth/staining	Minor staining and some moss growth
- exposed fiberglass	Moderate at shingle edges
- broken shingles	Yes, several noted throughout the roof
- hail damage	None found
- notes	Shingles are extremely brittle with moderate to severe curling at edges
Hip and Ridge Shingles:	Fair to poor condition with granule loss, tears noted
Decking	
Type:	Plywood
Soft/Deflected decking:	Some deflection noted
Ventilation	
Type:	Soffit vent; no static vents or ridge vent
Adequate amount:	Ventilation is inadequate
Notes:	
Eaves/Edge	
Type:	Gutter edge – metal drip edge
Attachment	Secure
Condition:	Drip edge is in fair condition; shingles are damaged along gutter edge
Flashing	
Type:	Step flashing behind wood siding
Metal type:	Step flashing - aluminum
Condition:	Fair condition where visible
Gutters/Drainage	
Metal Type:	24-gauge "kynar" steel – residential style gutter/downspout
Attachment:	Gutter spikes into fascia
Physical Condition:	Fair condition, some dents noted
Valleys	
Open/Closed:	Open with valley metal
Metal type (if applicable):	Aluminum
Penetrations	
Type:	Vent stacks (4), curbed vents (3), pipe boots (5)
Condition:	Painted, fair condition



# **Training Center:**

Roof	
Shingle Type:	Architectural Shingle (unknown manufacturer)
Estimated # of layers:	1
Physical condition:	Shingles are in poor condition
- granule loss	Moderate granule loss noted
- splitting/cracking	No
- nail pops	None noted
- vegetation growth/staining	Minor staining and some moss growth
- exposed fiberglass	Moderate at shingle edges
- broken shingles	Yes, several noted throughout the roof
- hail damage	None found
- notes	Shingles are extremely brittle with moderate to severe curling at edges
Hip and Ridge Shingles:	Fair to poor condition with granule loss, tears noted
Decking	
Type:	Plywood
Soft/Deflected decking:	Some deflection noted
Ventilation	
Type:	Soffit vent; 2 static vents or ridge vent
Adequate amount:	Ventilation is inadequate
Notes:	
Eaves/Edge	
Type:	Gutter edge – metal drip edge
Attachment	Secure
Condition:	Drip edge is in fair condition; shingles are damaged along gutter edge
Flashing	
Type:	Step flashing behind wood siding
Metal type:	Step flashing - aluminum
Condition:	Fair condition where visible
Gutters/Drainage	
Metal Type:	24-gauge "kynar" steel – residential style gutter/downspout
Attachment:	Gutter spikes into fascia
Physical Condition:	Fair condition, some dents noted
Valleys	
Open/Closed:	Open with valley metal
Metal type (if applicable):	Aluminum
Penetrations	
Type:	Vent stacks (2), static vents (2), pipe boots (2)
Condition:	Painted, fair condition



# **Photos:**











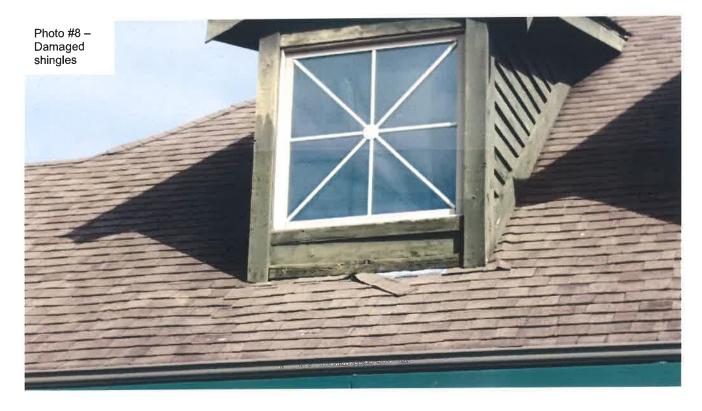
























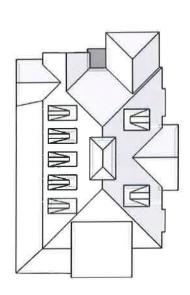








Report: 21420523



In this 3D model, facets appear as semi-transparent to reveal overhangs.

**Building:** 

Clubhouse

#### PREPARED FOR

Contact: Company: Will Ray

RoofConnect

Address:

Phone:

#### **TABLE OF CONTENTS**

Images	1
Length Diagram	4
Pitch Diagram	
Area Diagram	6
Notes Diagram	7
Penetrations Diagram	
Report Summary	9

#### **MEASUREMENTS**

Total Roof Area =9,759 sq ft
Total Roof Facets =50
Predominant Pitch =10/12
Number of Stories >1
Total Ridges/Hips =495 ft
Total Valleys =311 ft
Total Rakes =419 ft
Total Eaves =451 ft
Total Penetrations =12
Total Penetrations Perimeter = 86 ft
Total Penetrations Area = 46 sq ft

Measurements provided by www.eagleview.com







Report: 21420523

### **IMAGES**

The following aerial images show different angles of this structure for your reference.

Top View





Report: 21420523

### **IMAGES**





South Side





Report: 21420523

### **IMAGES**





West Side





Report: 21420523

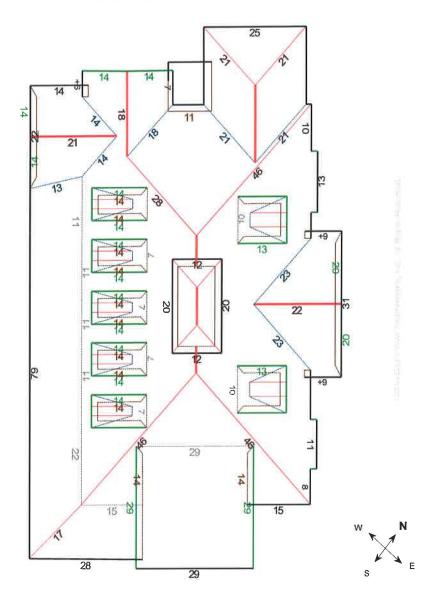
### LENGTH DIAGRAM

Total Line Lengths:

Ridges = 98 ft

Hips = 397 ft

Valleys = 311 ft Rakes = 419 ft Eaves = 451 ft Flashing = 143 ft Step flashing = 306 ft Parapets = 0 ft



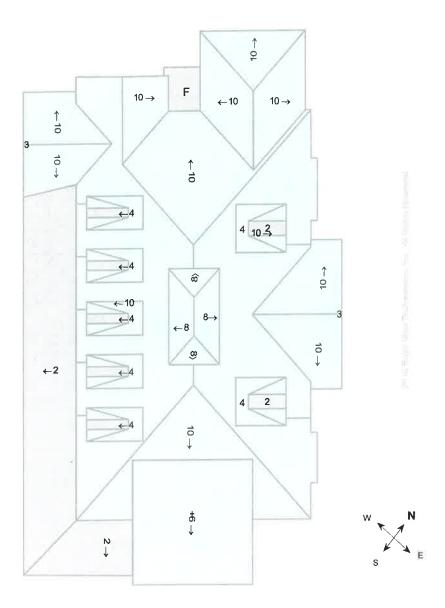
Note: This diagram contains segment lengths (rounded to the nearest whole number) over 5.0 Feet. In some cases, segment labels have been removed for readability. Plus signs preface some numbers to avoid confusion when rotated (e.g. +6 and +9).



Report: 21420523

# PITCH DIAGRAM

Pitch values are shown in inches per foot, and arrows indicate slope direction. The predominant pitch on this roof is 10/12



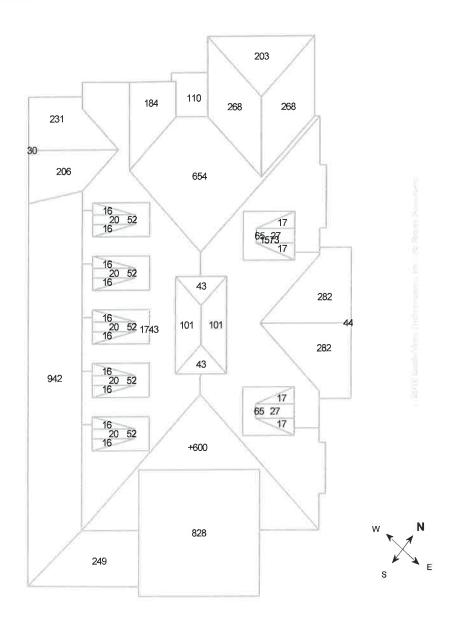
Note: This diagram contains labeled pitches for facet areas larger than 20.0 square feet. In some cases, pitch labels have been removed for readability. Blue shading indicates a pitch of 3/12 and greater. Gray shading indicates flat, 1/12 or 2/12 pitches. If present, a value of "F" indicates a flat facet (no pitch).



Report: 21420523

# **AREA DIAGRAM**

Total Area = 9,759 sq ft, with 50 facets.



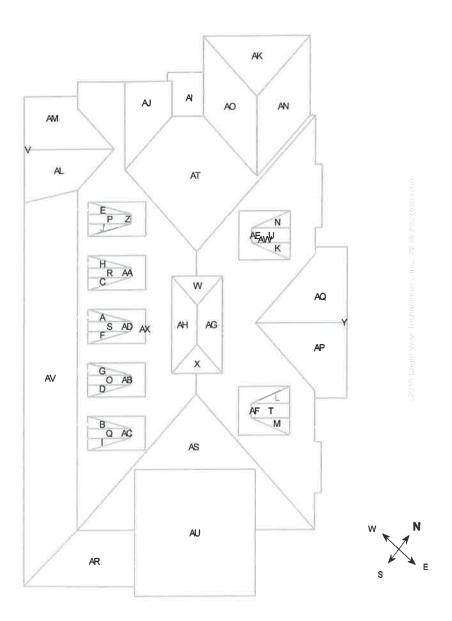
Note: This diagram shows the square feet of each roof facet (rounded to the nearest Foot). The total area in square feet, at the top of this page, is based on the non-rounded values of each roof facet (rounded to the nearest square foot after being totaled).



Report: 21420523

### **NOTES DIAGRAM**

Roof facets are labeled from smallest to largest (A to Z) for easy reference.



Note: This diagram also appears in the Property Owner Report.

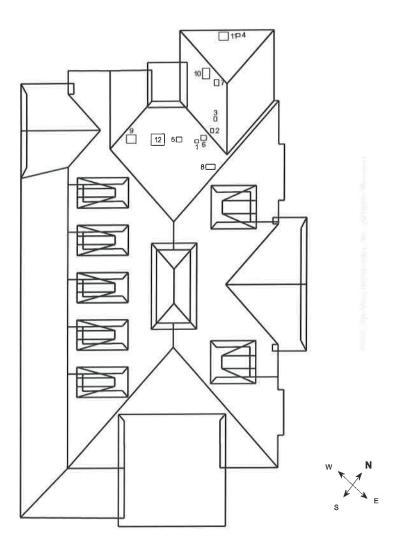


Report: 21420523

# PENETRATIONS NOTES DIAGRAM

Penetrations are labeled from smallest to largest for easy reference.

Total Penetrations = 12 Total Penetrations Perimeter = 86 ft Total Penetrations Area = 46 sq ft
Total Roof Area Less Penetrations = 9,713 sq ft





Report: 21420523

#### REPORT SUMMARY

Areas per Pitch	N. 3 P. T. P.							17.2
Roof Pitches	0/12	2/12	3/12	4/12	6/12	8/12	9/12	10/12
Area (sq ft)	110.2	1346.6	74.3	390.6	897.7	288.6	156.0	6494.8
% of Roof	1.1%	13.8%	0.8%	4%	9.2%	3%	1.6%	66.6%

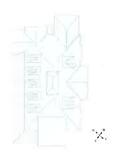
The table above lists each pitch on this roof and the total area and percent (both rounded) of the roof with that pitch.

Waste Calculation Table									
Waste %	0%	10%	12%	15%	17%	20%	22%		
Area (sq ft)	9,759	10,735	10,930	11,223	11,418	11,711	11,906		
Squares	97.6	107.3	109.3	112.2	114.2	117.1	119.1		

This table shows the total roof area and squares (rounded up to the nearest decimal) based upon different waste percentages. The waste factor is subject to the complexity of the roof, individual roofing techniques and your experience. Please consider this when calculating appropriate waste percentages. Note that only roof area is included in these waste calculations. Additional materials needed for ridge, hip, valley, and starter lengths are not included.

Penetrations	1-4	5-7	8	9	10-11	12		
Area (sq ft)	1	2.3	3.7	6.2	6.3	12.2		
Perimeter (ft)	4	6	8	10	10	14		

Any measured penetration smaller than 3.0x3.0 Feet may need field verification. Accuracy is not guaranteed. The total penetration area is not subtracted from the total roof area.



Total Roof Facets = 50 Total Penetrations = 12

#### **Lengths, Areas and Pitches**

Ridges = 98 ft (7 Ridges) Hips = 397 ft (25 Hips).Valleys = 311 ft (29 Valleys)  $Rakes^* = 419 ft (47 Rakes)$ Eaves/Starter\*\* = 451 ft (30 Eaves) Drip Edge (Eaves + Rakes) = 870 ft (77 Lengths) Parapet Walls = 0 (0 Lengths). Flashing = 143 ft (17 Lengths) Step flashing = 306 ft (44 Lengths) Total Area = 9,759 sq ft Total Penetrations Area = 46 sq ft Total Roof Area Less Penetrations = 9,713 sq ft

Total Penetrations Perimeter = 86 ft

Predominant Pitch = 10/12

#### **Property Location**

Longitude = -84.1733809Latitude = 36.0164859

This was ordered as a commercial property. There were no changes to the structure in the past four years.

Rakes are defined as roof edges that are sloped (not level).

Eaves are defined as roof edges that are not sloped and level.