

PAHRUMP TOWN BOARD MEETING
BOB RUUD COMMUNITY CENTER
150 NORTH HIGHWAY 160
TUESDAY – 7:00 P.M.
NOVEMBER 9, 2010

AGENDA

1. **Call to Order and Pledge of Allegiance.**
2. **Discussion and Possible Decision** regarding moving the order of, or deleting an agenda item(s). (Action)
3. **Announcements** (Non-Action)
4. **Advisory Board Reports** from Advisory Board Chairpersons and/or Town Board Liaisons on the status of Advisory Boards. (Non-Action)
5. **Economic Development Report.** (Non-Action)
6. **Discussion and Possible Decision:** on approving of a lease/option to purchase agreement between the Town of Pahrump and Growponics Nevada LLC, a Nevada limited liability company, for up to 60 acres of property and appurtenant water rights (assessor's parcel numbers 045-191-15 and 045-191-16 commonly referred to as Kellogg Park Property) for the development of a series of hydroponic green houses and related facilities. (Action)
7. **Discussion and Possible Decision:** to approve a Proclamation declaring November 7th through November 13th, 2010 as Drug-Free Work Awareness Week. (Action)
8. **Presentation** only from the Pahrump Disability Outreach Program. (Non-Action)
9. **Discussion and Possible Decision:** to Consider the Pahrump Incorporation Advisory Board recommendation to place the Question of Incorporation on the 2012 General Ballot as an "Advisory Question" for the Town of Pahrump. (Action)
10. **Discussion and Possible Decision:** to approve the Language of the Bill Draft Request (BDR) to be submitted to the Nevada Legislation for the 2011 Legislative Session for the Option of the Town of Pahrump to Control Planning and Zoning. (Action)
11. **Discussion and Possible Decision:** to accept the detailed/itemized budget report pertaining to the re-designated grant funds that the Town of Pahrump gave PAVED to utilize for the Pahrump Fair and Festival and to close-out the grant. (Action)
12. **Discussion and Possible Decision:** Consent agenda items: (Action)
 - a. Action – Approval of Town Vouchers.
 - b. Action – Approval of Town Board meeting minutes of October 26, 2010
 - c. Action – Approval of resignation of Karen Williams from the Nuclear Waste and Environmental Advisory Board.

13. Future Meetings/Workshops: Date, Time and Location: (Non-Action)

14. Public Comment: Action may not be taken on matters considered during this period until specifically included on an agenda as an action item – NRS241.020 (2) (c) (3). (Non-Action)

15. Town Managers Report:

16. Town Board Member's Comments: (Non-Action)

17. Adjournment.

A quorum of Advisory Board members may be present at any Town Board meeting but they will not take any formal action.

Any member of the public, who wishes to speak during public comment or on an agenda item, at the appropriate time, will be limited to three (03) minutes.

Any member of the public who is disabled and requires accommodations or assistance at this meeting is requested to notify the Pahrump Town Office in writing, or call (775) 727-5107 prior to the meeting. Assisted listening devices are available at Town Board Meetings upon request.

This notice and agenda has been posted on or before 9:00 a.m. on the third working day before the meeting at the following locations;

PAHRUMP TOWN OFFICE, COMMUNITY CENTER, TOWN ANNEX, COUNTY COMPLEX, FLOYD'S ACE HARDWARE, and CHAMBER OF COMMERCE.

Town's Economic Development Report

11/09/10

- 1) Staff is working on outlined Economic Development Incentive guidelines for the Town Board to consider in attracting new & expanding companies. Terms and Conditions to be reviewed by legal department.
- 2) Staff is meeting with prospective on securing 75,000SQ manufacturing site/facility in community. Discussing financing venues.
- 3) Staff has been spending many hours with Growponics Nevada on negotiating land lease, terms and entitlement process on first facility. (See 11/09/10 Town Board Agenda Item #6)
- 4) Staff will be meeting with county to discuss potential incentives in attracting new enterprises to Pahrump.
- 5) Staff has been contacted by a new potential energy company on locating facility in Pahrump. Following up with requested info.
- 6) Staff is currently working with numerous other businesses on the possibility of relocating to Pahrump.
- 7) Staff has attended three meetings with EDEN and Nye County discussing Economic Development ventures and prospective businesses.

AGENDA ITEM REQUEST

Requests and backup **must** be in the Town Office by **Noon, Wednesday** of the week **preceding the Town Board meeting** you wish the item presented. Town Board meetings are held on the second and fourth Tuesday of each month at 7:00 p.m. in the Bob Ruud Community Center.

DATE AGENDA ITEM SUBMITTED
11/2/2010

DATE OF DESIRED BOARD MEETING
11/9/2010

CIRCLE ONE: Discussion, Action, Decision or Discussion Only

ITEM REQUESTED FOR CONSIDERATION:

Discussion and Possible Decision on Approving of a lease/option to purchase agreement between the Town of Pahrump and Growponics LLC, a Nevada Limited Liability Company, for up to 60 acres of property and appurtenant water rights (assessor's parcel numbers 045-191-15 and 045-191-16 commonly referred to as Kellogg Park Property) for the development of a series of hydroponic green houses and related facilities.

If request for funding is approved by the Town Board, an invoice or letter from the requestor to Town of Pahrump/Accounts Payable is required to receive funding.

BRIEF SUMMARY OF ITEM:

See attached Memo from staff as well as back up paperwork.

BACKUP ATTACHED: YES NO

SPONSORED BY: Town Manager

NAME OF PRESENTER(S) OF ITEM: Town Manager

William A. Kohbarger
Print Name

William A. Kohbarger 11/02/10
Signature

Town Office
Mailing Address

(775) 727-5107 ext. 305
Telephone Number

MEMO
TOWN OF PAHRUMP
TOWN BOARD MEETING AGENDA ITEM
MEETING DATE: 11-09-2010

TO: Town Board

FROM: William A. Kohbarger, Pahrump Town Manager

DATE: November 3, 2010

RE: **Discussion and Possible Decision:** on approving of a lease/option to purchase agreement between the Town of Pahrump and Growponics Nevada LLC, a Nevada limited-liability company, for up to 60 acres of property and appurtenant water rights (assessor's parcel numbers 045-191-15 and 045-191-16 commonly referred to as Kellogg Park Property) for the development of a series of hydroponic green houses and related facilities. (Action)

1.) BACKGROUND

The Staff is bringing this Lease/Option to Purchase for the following reason(s):

1. This project upon build out will create 120 to 150 jobs
2. This project upon build out will be valued at between \$70 to \$120 million
3. This project will create revenue for the Town of Pahrump through the lease agreement (Land & Water Rights) and Option to Purchase (Water Rights & Land sale).
4. This project will be the first of its kind in Nevada and the United States.
5. This project will create tax revenue for the Town of Pahrump and Nye County (See attached Lease/Option to Purchase Agreement).

Staff has been working with the developer (See attached Jack Kashani, BIO) on this development for approximately 5-months. The development is called Growponics Nevada LLC and will consist of building hydroponic greenhouses to grow fresh fruits and vegetables. (See attached Growponics Executive Summary + Power Point Presentation) As stated above this development will create between 120 to 150 jobs and is between a \$70 to \$120 million project based on build out. The developer wants to build 10 (4-single and 3-double) greenhouse units that will occupy 4.5 to 9 acres each and will be 130,000 sq ft (single unit) & 260,000 sq ft (double unit) in size.

The staff is respectfully requesting that this development be located on Town owned property located at E. Kellogg Road and S. Squaw Valley Road. The reason staff chose this location is because it is the only location owned by the Town large enough to accommodate this size of project. This property contains two contiguous parcels (45-191-15 & 45-191-16) owned by the Town and combined equal 74 acres. (See attached Town Owned Property List Dated: November 08, 2010) NOTE: Staff understands that the property in question was put aside to be a Park. For this reason staff is approaching the BLM about obtaining 40+ acres of BLM disposal property located at the SW corner of Homestead and Kellogg Roads in an attempt to build a 40+ acre Park at this location to replace the Kellogg property that the Town is utilizing for the Growponics development.

MEMO
TOWN OF PAHRUMP
TOWN BOARD MEETING AGENDA ITEM
MEETING DATE: 11-09-2010

The general terms of the deal is that Growponics Nevada can lease property and water rights for construction of greenhouse facilities in phases. After the completion of each phase, Growponics Nevada has the option to lease additional land and purchase the land where construction was completed. There are also constraints in the deal that mandate a timeline for construction, build out and operation. The purchase options will be at 75% of the appraised value, which is the incentive to attract this development. (See attached Appraisal Executive Summary)

The Town has worked in conjunction with Nye County staff (County Manager, Planning/Public Works) on this project and they are aware that this project is coming forth. Town staff does not anticipate any issues and/or roadblocks in seeing this project to completion.

The Town Board upon approving the Lease/Option to Purchase Agreement must also have to make a significant finding under NRS 533.550 (See attached NRS) pursuant to the Water Rights lease/sale that:

- a) The sale or lease of the water right is consistent with the prudent, long-term management of the water resources within the jurisdiction of the public body;
- b) The sale or lease of the water right will not deprive residents and businesses within the jurisdiction of the public body of reasonable access to water resources for growth and development;
- c) The sale or lease of the water right is a reasonable means of promoting development and use of the water right; and
- d) The means by which the water right is sold or leased reasonably ensures that the public body will receive the actual value of the water right or comparable economic benefits."

2.) Fiscal Impact

There is no negative fiscal impact on the Town. The Town will see an increase in revenue from the lease of the land and lease/sale of water rights. Once the property is sold, the Town will see an increase in the Ad Valorem and CTX taxes. NOTE: A Community Economic Impact assessment will be completed upon execution of the Agreement and submittal of Master Plan.

3.) Town Manager Recommendation and Board Action Requested

Staff's recommendation is for the *Town Board to approve the Lease/Option to Purchase Agreement as written and make a significant finding that the Sale/Lease of the Water Rights contained within the agreement meets the standards as set forth in NRS 533.550.*

If you have any additional questions, I would be happy to answer them.

LEASE WITH OPTION TO PURCHASE

THIS LEASE ("Lease") is made as of this _____, by and between TOWN OF PAHRUMP ("Lessor"), and GROWPONICS NEVADA, LLC ("Lessee"), who hereby agree as follows:

1. **PREMISES.** Subject to the covenants and conditions of this Lease, Lessor leases to Lessee, and Lessee leases from Lessor, the Premises (the "Premises"), which comprise approximately five (5) acres in the Town of Pahrump, County of Nye, State of Nevada, and legally described as set forth on **Exhibit "A"** hereto.

The Premises also include thirty (30) acre feet of water rights appurtenant to the land described in Exhibit "A", legally described as set forth on **Exhibit "B"** hereto.

The Premises may be enlarged in accordance with, and this paragraph is expressly made subject to, paragraphs 4 and 5 concerning Lessee's option to lease or lease and purchase additional land legally described as set forth on **Exhibit "C"** or any part thereof that is contiguous to the land described as set forth on Exhibit "A". Once enlarged, Lessee cannot reduce the size of the Premises.

2. **USE OF PREMISES.** The Premises shall be used for the operation of greenhouses for the production of fruits and vegetables (the "Permitted Use"). Lessee shall continuously operate the entire Premises for the duration of the Term.

3. **TERM.** The term of this Lease (the "Term") is for ninety-nine (99) years, commencing immediately as of the date first set forth above.

Should Lessee elect to exercise its rights under paragraph 5 and lease additional land, the Term for the lease for the additional land is the same as the Term for the Premises leased upon execution of this Lease for the Premises. The exercise of the option in paragraph 5 shall not operate to extend the Term of the Lease.

Should Lessee fail to commence and/or complete construction according to the timetable in paragraph 5, this Lease may be terminated, including but not limited to the options set forth in paragraphs 4 and 5, at the sole discretion of Lessor. Notwithstanding the foregoing, Lessee may continue to lease that portion of the Premises upon which it completed construction.

4. **OPTION TO PURCHASE.**

(a) Option Granted. So long as Lessee is not in default under any provision of this Lease, Lessor/Seller hereby grants to Lessee/Purchaser an option (the "Purchase Option"), exercisable by Lessee, in Lessee's sole and absolute discretion, to purchase the Premises at anytime during the Term of this Lease, provided Lessor is able to convey clear and marketable title. Lessor/Seller shall use its best effort to convey clear title. The Purchase Option Price includes all land and improvements on the Premises, water rights appurtenant to the Premises, and other appurtenances, fixtures and equipment, at the time of Closing.

(b) Premises May be Enlarged by Option to Lease. If Lessee elects to exercise the Lease Option pursuant to paragraph 5, the Purchase Option shall extend to those lands and water rights leased by Lessee pursuant to the Lease Option.

(c) Notice of Exercise. In order to exercise the Purchase Option, Lessee shall give written notice to Lessor/Seller of Lessee's election to exercise the Option (the "Notice") by January 1, 2021.

(d) Option Price. Except for the four (4) acres described in subsection (e) below, the price to be paid by Lessee/Purchaser to acquire the Premises set forth on **Exhibit "A"**, **Exhibit "B"** and **Exhibit "C"** upon exercise of the Purchase Option ("Purchase Option Price") shall be five thousand five hundred sixty-three dollars (\$5,563) per acre for the land and four thousand five hundred dollars (\$4,500) per acre foot for the water rights.

The Purchase Option Price will be reduced by ninety percent (90%) of the rent payments made pursuant to this Lease. The reduction of the Purchase Option Price only applies to the purchase of the specific property—the phase—for which Lessee originally paid the rent.

(e) After Phase IIB is completed pursuant to paragraph 5 and if Lessee exercised its Purchase Option for Phases I through IIB, the Town will deed four (4) additional, contiguous acres to Lessee/Purchaser at no cost. The location of the four (4) acres on the Premises will be at mutually agreed upon at the time that Lessee/Purchaser notifies Lessor/Seller that it exercises its right under this subsection. The four (4) acres must be used for community facilities and the deed for the four (4) acres will be subject to a restrictive covenant pursuant to the land's intended use as a site for community facilities. The cost of building the community facilities shall be borne by Lessee/Purchaser.

(f) Closing Costs & Closing Date. Lessee/Purchaser agrees that Lessee/Purchaser shall be responsible for and shall pay all costs for a title insurance policy and survey as hereafter required.

Lessor/Seller shall deliver to Lessee/Purchaser, at Lessee/Purchaser's expense, a preliminary title report on the Premises, together with copies of all exceptions in the report. Lessee/Purchaser shall have thirty (30) days after receipt of the report to notify Lessor/Seller of Lessee/Purchaser's reasonable disapproval of any such exceptions. Failure of Lessee/Purchaser to disapprove in writing any exceptions within the aforementioned time limit shall be deemed to be an approval of the preliminary title report, including the conditions and exceptions identified therein. In the event that Lessee/Purchaser disapproves of any exemption(s) in the report, Lessor/Seller shall have until forty-five (45) days before the date of closing to eliminate any disapproved exceptions to the report. If such exceptions are not eliminated, the purchase agreement shall be null and void.

Closing shall be consummated on an agreed upon date, following satisfaction and waiver of all contingencies as contained in this paragraph 4, unless delayed by reason of Seller's failure to comply with this Lease.

(g) Conditions To Option Sales Contract. This Purchase Option is subject to Lessee/Purchaser obtaining at Lessee/Purchaser's expense, a title commitment for a current form

policy of title insurance insuring clear marketable title to the Premises, in the amount of the Purchase Option Price paid hereunder.

(h) Restrictive Covenant. This Purchase Option is subject to a restrictive covenant limiting the use of the property to the use identified in paragraph 2.

(i) Right of Entry. Lessee/Purchaser and his duly authorized consultants shall have the right to enter the Premises for purposes of investigation prior to close of escrow.

(j) Lessor/Seller's Deliveries at Closing. Lessor/Seller shall deliver to Lessee/Purchaser at closing a properly executed Grant Bargain Sale Deed, in recordable form, conveying marketable title to the Premises to Lessee/Purchaser. Lessee/Purchaser takes the Premises as is and where is.

(k) Lessee/Purchaser's Deliveries at Closing. Lessee/Purchaser shall deliver to Lessor/Seller at Closing:

(1) Such certificates, powers of attorney, resolutions and evidences of qualification as may be reasonably requested by title company to evidence that Lessee/Purchaser has the necessary power and authority to purchase the Premises.

(2) Lessee/Purchaser's closing statement as prepared by title company.

(3) Purchase Option Price, in certified funds, adjusted pursuant to the closing statement.

(l) Assignability. This Purchase Option is fully assignable by Lessee/Purchaser only with the written permission by Lessor/Seller to said assignment but Lessee/Purchaser shall remain liable for its performance. Said permission shall not be unreasonably withheld.

(m) Representations. As of the Closing Date, Seller shall make the following representations and warranties:

(1) As of the date first written above and to the best of Lessor/Seller's knowledge, there are no, nor has Lessor/Seller received by notice of violations of or deficiencies from the Environmental Protection Agency (or any similar state or local agency) applicable to the Premises.

(2) As of the date first written above and to the best of Lessor/Seller's knowledge, there is no current or threatened action, suit or proceeding pending against the Premises, or any portion thereof, or arising out of the condition, use or operation of the Premises, in any court or before any federal, state, county or municipal department, commission, board, bureau, or agency or other governmental instrumentality which affects the Premises or will prevent Lessor/Seller's performance of this Option. Should any liens or encumbrance of any type or nature, other than those caused by or under Lessee/Purchaser arise between the date of Lessee/Purchaser's approval of title to the Premises and date

of closing, then, in that event, Lessor/Seller does agree to cause the same to be either discharged of record by closing.

(n) Defaults and Remedies. In addition to any rights and remedies set forth in paragraph 18 of this Lease, in the event either party breaches any of the covenants, terms or conditions of this Purchase Option then they shall be entitled to seek any and all remedies available at law or in equity then available to them including, but not limited to specific performance of this Purchase Option.

5. OPTION TO LEASE & PURCHASE ADDITIONAL LAND.

(a) Option Granted. So long as Lessee is not in default under any provision of this Lease, Lessor hereby grants to Lessee an option (the "Lease Option"), exercisable by Lessee, in Lessee's sole and absolute discretion, to lease the land and water rights appurtenant thereto described in Exhibit "C" or any part thereof that is contiguous to the land described as set forth on Exhibit "A". Should Lessee elect to exercise its option for part, but not the whole, of the land set forth in Exhibit "C", Lessee must lease the property in one acre and one acre foot increments and locate the chosen land so as not to encircle the remainder of the land described in Exhibit "C" or interfere with immediate street access thereto. Should Lessee exercise its option, Lessee may purchase the additionally-leased land and water rights pursuant to paragraph 4.

(b) Subsequent Phases. Lessee may exercise its Lease Option in phases.

(c) Time, Construction & Activity Constraints.

(i) In no case shall Lessee have the right to exercise the Lease Option after January 1, 2021.

(ii) Lessee must commence construction of the greenhouse system, complete construction, and begin operations and employment according to the following schedule:

(1) Phase IA. Construction must commence on or before June 1, 2011. Phase IA is the greenhouse system on the Premises defined in Exhibit "A." Lessee must complete construction and begin operations by December 1, 2011. At completion of construction and thereafter, Lessee must continuously employ at least twelve (12) full-time employees for the greenhouse unit(s) on this phase.

(2) Phase IB. Construction must commence on or before January 1, 2012. Phase IB must include at least four (4) but no more than seven (7) additional acres that are contiguous to the land in Phase I for the construction of an additional greenhouse system. Lessee must complete construction and begin operations by December 1, 2012. At completion of construction and thereafter, Lessee must continuously employ at least twelve (12) full-time employees for the greenhouse unit(s) on this phase.

- (3) Phase IIA. Construction must commence on or before June 1, 2013. Phase IIA must include at least four (4) but no more than seven (7) additional acres that are contiguous to the land in any previous phase for the construction of an additional greenhouse system. Lessee must complete construction and begin operations by July 1, 2013. At completion of construction and thereafter, Lessee must continuously employ at least twelve (12) full-time employees for the greenhouse unit(s) on this phase.
- (4) Phase IIB. Construction must commence on or before September 1, 2013. Phase IIB must include at least five (5) but no more than eight (8) additional acres that are contiguous to the land in any previous phase for the construction of an additional greenhouse system. Lessee must complete construction and begin operations by October 1, 2014. At completion of construction and thereafter, Lessee must continuously employ at least fifteen (15) full-time employees for the greenhouse unit(s) on this phase.
- (5) Phase IIIA. Construction must commence on or before December 1, 2016. Phase IIIA must include at least four (4) but no more than seven (7) additional acres that are contiguous to the land in any previous phase for the construction of an additional greenhouse system. Lessee must complete construction and begin operations by December 1, 2017. At completion of construction and thereafter, Lessee must continuously employ at least twelve (12) full-time employees for the greenhouse unit(s) on this phase.
- (6) Phase IIIB. Construction must commence on or before November 1, 2018. Phase IIIB must include at least five (5) but no more than eight (8) additional acres that are contiguous to the land in any previous phase for the construction of an additional greenhouse system. Lessee must complete construction and begin operations by March 1, 2019. At completion of construction and thereafter, Lessee must continuously employ at least thirty (30) full-time employees for the greenhouse unit(s) on this phase.
- (7) Phase IV. Construction must commence on or before January 1, 2021. Phase IV must include the remainder of the real property identified on Exhibit "C" for the construction of an additional greenhouse system. Lessee must complete construction and begin operations by July 1, 2021. At completion of construction and thereafter, Lessee must continuously employ at least thirty (30) full-time employees for the greenhouse unit(s) on this phase.

(d) Exercise Subject to Lease Agreement. By exercising this Lease Option, Lessee agrees that the Lease's provisions govern all of the Premises, including the additional land leased pursuant to this paragraph.

6. **RENT PAYMENTS.** Lessee shall pay to Lessor monthly installments of thirty-seven dollars (\$37) per acre for the land and thirty dollars (\$30) per acre foot for the water rights as rent for the Premises described in Exhibit "A", Exhibit "B" and Exhibit "C". Rent is due and payable in advance without notice or demand at Lessor's address or at any other place Lessor designates in writing. The first monthly rent installment shall be paid on July 1, 2011, and all subsequent monthly rent installments shall be due and payable on the 1st day of each succeeding month during the Term. Beginning on January 1, 2021, and then every five years thereafter, the rent payments shall be adjusted according to the Consumer Price Index of the United States Department of Labor, Bureau of Labor Statistics, using the average Consumer Price Index for a given calendar year, but the adjustment may not exceed ten and forty-one hundredths percent (10.41%), which limits the increase to two percent (2%) per year for five (5) years compounded annually.

7. **PROPERTY INSURANCE.** Lessee shall keep any improvement which Lessee constructs on the Premises insured at its expense with property insurance in the full replacement cost thereof with the customary coverages and not less than the coverages required by Lessee's lenders, if any.

8. **INDEMNITY AND LIABILITY INSURANCE.** Lessee shall at all times indemnify, defend and hold Lessor harmless from all loss, liability, costs, damages and expenses that may occur or be claimed with respect to any person or persons, or property on or about the Premises or to the Premises resulting from any negligent or intentionally wrongful act or omission by or through Lessee, its agents, employees, invitees or any person on the Premises by reason of Lessee's use or occupancy or resulting from Lessee's non-use or possession of said property and any and all loss, cost, liability or expense resulting therefrom. Lessee shall maintain, at all times during the Term, comprehensive general liability insurance in a responsible insurance company, licensed to do business in Nevada and satisfactory to Lessor, properly protecting and indemnifying Lessor with single-limit coverage of not less than one million dollars (\$1,000,000) for injury to or death of persons and for property damage, adjusted every ten years based upon the Consumer Price Index of the United States Department of Labor, Bureau of Labor Statistics, using the average Consumer Price Index for a given calendar year. Upon request, Lessee shall furnish Lessor with a certificate or certificates of insurance, in a form acceptable to Lessor, covering such insurance so maintained by Lessee and naming Lessor as an additional insured.

9. **ASSIGNMENT.** This Lease is fully assignable by Lessee only with the written permission by Lessor/Seller to said assignment after a reasonable amount of time for Lessor to conduct due diligence on the assignee. Said permission shall not be unreasonably withheld.

10. **CONDITION OF PREMISES.** Lessee acknowledges that it has inspected the Premises and except as may be provided otherwise in this Lease, Lessee accepts the Premises in its present condition. Currently there are no buildings or improvements on the Premises (or if there are any, Lessor hereby consents to Lessee's removal thereof). It is Lessee's intent to construct buildings and improvements on the Premises for commercial purposes. At the end of the Term, except for damage caused by fire or other perils, Lessee, at its expense, shall, at Lessor's option, either: (a) surrender the Premises in the same or similar condition as existed at the time the Premises were accepted and possession taken by Lessee, and have removed all of

Lessee's property (including buildings and improvements placed on the Premises by Lessee), from the Premises; or (b) have removed from the Premises all of Lessee's personal property and have repaired any damage to the Premises, buildings and improvements caused by the removal of Lessee's personal property and leave the Premises, buildings and improvements, free of trash and debris.

11. **CONSTRUCTION, AND ALL MAINTENANCE AND REPAIR BY LESSEE.** At Lessee's sole cost and expense during the Term, Lessee may remove any buildings and improvements existing on the Premises at the date hereof and may construct any new buildings and improvements on the Premises. Furthermore, Lessee shall maintain and keep in good order, repair and condition the Premises and all buildings and improvements hereafter constructed thereon. Lessee shall police and keep the driveways, approaches, sidewalks, parking areas, and adjacent alleys that are a part of the Premises clean, orderly, sightly, and unobstructed.

12. **LESSOR'S RIGHT OF ENTRY.** Lessor or Lessor's agent may enter at reasonable hours to inspect the Premises and to do anything Lessor may be required to do hereunder or which Lessor may deem necessary for the good of the Premises. Lessee or Lessee's agent may accompany Lessor or Lessor's agent on the Premises.

13. **IMPROVEMENTS, UTILITIES AND SERVICES.** Lessee shall be responsible for making all necessary improvements to the Premises, including but not limited to those improvements necessary for on-site utilities and access, and shall furnish and pay for all electricity, gas, water, fuel, trash removal, and any services or utilities used in or assessed against the Premises.

14. **LEGAL REQUIREMENTS.** Lessee agrees to comply with all Laws during the Term.

15. **TAXES, ZONING & NECESSARY IMPROVEMENTS.** Lessee is responsible for paying all taxes related to the Lease; Lessor makes no representations about the taxing scheme applied to the Premises by Nye County. Lessee is responsible for zoning issues related its intended use of the Premises; Lessor makes no representations about the zoning of the Premises. Lessee is responsible for making any necessary improvements to the Premises for its intended use, including on-site and off-site improvements and improvements necessary to obtain access.

16. **EMINENT DOMAIN.** Should all of the Premises be taken under the power of eminent domain or a conveyance in lieu thereof by any authority having the right of condemnation, or if a portion thereof is taken so that the Premises are unsuitable, in Lessee's reasonable opinion, for Lessee's use, then the parties shall be entitled to their respective interests in the land from the proceeds of the condemnation award made to Lessor for taking of the land.

17. **WAIVER OF SUBROGATION.** As part of the consideration for this Lease, each of the parties hereby releases the other party from all liability for damage due to any act or neglect of the other party occasioned to property owned by said parties which is or might be incident to or the result of a fire or other casualty against loss for which either of the parties is now carrying or hereafter may carry insurance; provided, however, that the releases herein

contained shall not apply to any loss or damage occasioned by intentional acts of either of the parties, and the parties further covenant that any insurance they obtain on their respective properties shall contain an appropriate provision whereby the insurance company, or companies, consent to the mutual release of liability contained in this paragraph.

18. **DEFAULT AND REMEDIES.** If: (a) Lessee fails to comply with any term, provision, condition or covenant of this Lease for over ten (10) days following Lessor's written notice to Lessee thereof, except for failure to pay rent in which case no notice is required; (b) Lessee abandons, deserts or vacates the Premises; (c) any petition is filed by or against Lessee under any section or chapter of the Federal Bankruptcy Act, as amended, or under any similar law or statute of the United States or any state thereof; (d) Lessee becomes insolvent or makes a transfer in fraud of creditors; (e) Lessee makes an assignment for benefit of creditors; or (f) a receiver is appointed for Lessee or any of the assets of Lessee, then in any of such events, Lessee shall be in default and Lessor shall have the option to do any one or more of the following: upon ten (10) days prior written notice, except for failure to pay rent in which case no notice is required and in addition to and not in limitation of any other remedy permitted by law, to peacefully and lawfully enter upon the Premises either with or without process of law, and to expel, remove and put out Lessee or any other persons thereon, together with all personal property; and, Lessor may terminate this Lease or it may from time to time, without terminating this Lease, rent said Premises or any part thereof for such term or terms (which may be for a term extending beyond the Term) and at such rental or rentals and upon such other terms and conditions as Lessor in its sole discretion may deem advisable, with the right to repair, renovate, remodel, redecorate, alter and change said Premises. At the option of Lessor, rents received by Lessor from such reletting shall be applied first to the payment of any indebtedness from Lessee to Lessor other than rent and additional rent due hereunder; second, to payment of any costs and expenses of such reletting, including, but not limited, attorney's fees, advertising fees and brokerage fees, and to the payment of any repairs, renovation, remodeling, redecorations, alterations and changes in the Premises; third, to the payment of rent and additional rent due and payable hereunder and interest thereon; and, if after applying said rentals there is any deficiency in the rent and additional rent and interest to be paid by Lessee under this Lease, Lessee shall pay any such deficiency to Lessor and such deficiency shall be calculated and collected by Lessor monthly. No such re-entry or taking possession of said Premises shall be construed as an election on Lessor's part to terminate this Lease unless a written notice of such intention is given to Lessee. Notwithstanding any such reletting without termination, Lessor may at any time terminate this Lease by reason of any default, in addition to any other remedy it may have, it may recover from Lessee the worth at the time of such termination of the excess of the amount of rent and additional rent reserved in this Lease for the balance of the Term over the then reasonable rental value of the Premises for the same period. Either Lessor or Lessee shall have the right and remedy to seek redress in the courts at any time to correct or remedy any default of the other party by injunction or otherwise, without such resulting or being deemed a termination of this Lease. If either party shall bring any action under this Lease, for the enforcement of any of its rights, then the losing party agrees in each and any such case to pay the prevailing party's reasonable attorney's fees.

19. **WATER RIGHTS.** Lessor makes no representations that the water rights appurtenant to the Premises and described in the exhibits to the Lease are either sufficient or

suitable for Lessee's intended use, but Lessor will actively participate in any proceeding before the State Engineer to assist in any necessary filings or proceedings if required.

20. **METERED WATER USE.** The water rights described in Exhibit "B" shall be delivered to Lessee from Lessor's existing well on Lessor's adjacent property. At Lessor's sole discretion, the water may be provided on a metered basis for purposes of determining the amount of water used by Lessee. Should Lessee use water in excess of its leased amount, Lessee shall be responsible to Lessor on January 1 and July 1 of each year for additional rent on a pro rata basis at the rate as set forth in paragraph 6. If Lessor provides water on a metered basis and Lessee uses less than its leased amount, Lessee shall be entitled to a pro rata reduction on January 1 and July 1 of each year at the rate as set forth in paragraph 6. Changes for water use will commence upon obtaining a certificate of occupancy for the first greenhouse.

21. **WAIVER.** The rights and remedies of the parties under this Lease, as well as those provided by law, shall be cumulative, and none shall be exclusive of any other rights or remedies. A waiver by either party of any breach or default of the other shall not be deemed or construed to be a continuing waiver of such breach or default nor as a waiver of or permission, expressed or implied, for any subsequent breach or default.

22. **TOXIC OR HAZARDOUS MATERIALS.** Lessee shall not store, use or dispose of any toxic or hazardous materials in, on or about the Premises, except in compliance with applicable laws. Lessee shall be solely responsible for and shall defend, indemnify and hold Lessor, its agents and employees, harmless from and against all claims, costs and liabilities, including attorney's fees and costs, arising out of or in connection with the Lessee's storage, use or disposal of any toxic or hazardous material in, on or about the Premises including, but not limited to, removal, clean-up and restoration work and materials necessary to return the Premises, and any other property of whatever nature located on the Premises, to their condition existing prior to the date hereof. Lessee's obligations under this paragraph shall survive the termination of this Lease. If Lessee fails to comply with this paragraph, Lessee shall be in immediate default and Lessor shall have the option, without notice and without delay, to exercise its available remedies.

23. **REAL ESTATE COMMISSION.** Lessor and Lessee covenant and agree with one another that no brokers, finders or other persons were involved in procuring this Lease. Each party hereby indemnifies the other party from and against any claims for a broker's or finder's fee by, through or under such party.

24. **NOTICES.** Any notice hereunder shall be sufficient if sent by certified mail, addressed to Lessee at the Premises, and to Lessor where rent is payable, or as either party may otherwise designate in writing to the other party.

25. **SUBORDINATION.** This Lease shall be subordinate and inferior at all times to the lien of any mortgage and to the lien of any deed of trust or other method of financing or refinancing now or hereafter existing against all or a part of the real property upon which the premises are located, and to all renewals, modifications, replacements, consolidations and extensions thereof. Upon receipt of a reasonable non-disturbance agreement from such lender acceptable in form to Lessee, Lessee shall execute and deliver all documents requested by any

mortgagee or security holder to effect such subordination. In the event of a sale or assignment of this Lease, or of Lessor's interest in the Premises, or the building in which the Premises are a part are transferred to any other person because of a mortgage foreclosure, exercise of a power of sale under a mortgage or otherwise, Lessee shall attorn to the purchaser or such mortgagee or other person and recognize the same as Lessor hereunder.

26. **SUCCESSORS.** The provisions, covenants and conditions of this Lease shall bind and inure to the benefit of the legal representatives, heirs, successors and assigns of each of the parties hereto.

27. **GROWPONICS NEVADA, LLC IS A LIMITED-LIABILITY COMPANY IN GOOD STANDING.** Lessee represents and warrants that now and for the entire Term, Growponics Nevada, LLC is a limited-liability company duly formed, validly existing and in good standing under the laws of the State of Nevada, its jurisdiction of formation and organization and the only jurisdiction in which the nature of its business or character of its properties require such qualification.

28. **QUIET POSSESSION.** Lessor agrees, so long as Lessee fully complies with all of the terms, covenants and conditions herein contained on Lessee's part to be kept and performed, Lessee shall and may peaceably and quietly have, hold and enjoy the Premises for the Term aforesaid, it being expressly understood and agreed that the aforesaid covenant of quiet enjoyment shall be binding upon Lessor, its heirs, successors or assigns, but only during such party's ownership of the Premises. Lessor and Lessee further covenant and represent that each has full right, title, power and authority to make, execute and deliver this Lease.

Title in the leasehold is subject to all exceptions, easements, and rights of way that exist as of the date first set forth above.

29. **BANKRUPTCY.** Neither this Lease nor any interest therein nor any estate hereby created shall pass to any trustee or receiver in bankruptcy or to any other receiver or assignee for the benefit of creditors by operation of law or otherwise during the Term or any renewal thereof.

30. **ENTIRE AGREEMENT.** This Lease contains the entire agreement between the parties, and no modification of this Lease shall be binding upon the parties unless evidenced by an agreement in writing signed by Lessor and Lessee after the date hereof. If there be more than one Lessee named herein, the provisions of this Lease shall be applicable to and binding upon such Lessees, jointly and severally.

31. **ESTOPPEL CERTIFICATES.** Either Lessor or Lessee shall at any time upon not less than ten (10) days' prior written notice from the other, execute, acknowledge and deliver to the requesting party or to any lender of such party a statement in writing certifying that this Lease is unmodified and in full force and effect (or if modified stating the nature of such modification) and the date to which the rent and other charges are paid in advance, if any, and acknowledging that there are not, to such party's knowledge, any uncured defaults on the part of either party or specifying such defaults if any are claimed. Any such statement may be

conclusively relied upon by any prospective encumbrancer of the Premises or of the business of Lessee.

(a) IN WITNESS WHEREOF, the parties hereto have hereunto subscribed their names. Executed in _____ originals.

LESSOR:
TOWN OF PAHRUMP

LESSEE:
GROWPONICS NEVADA, LLC

BY: _____

BY: [Signature]

NAME: _____

NAME: JACK KASIMIRI

TITLE: _____

TITLE: _____

STATE OF NEVADA)
) ss.
COUNTY OF NYE)

This instrument was acknowledged before me on _____,
2010, by _____ as _____,
TOWN OF PAHRUMP, an unincorporated town.

Notary Public

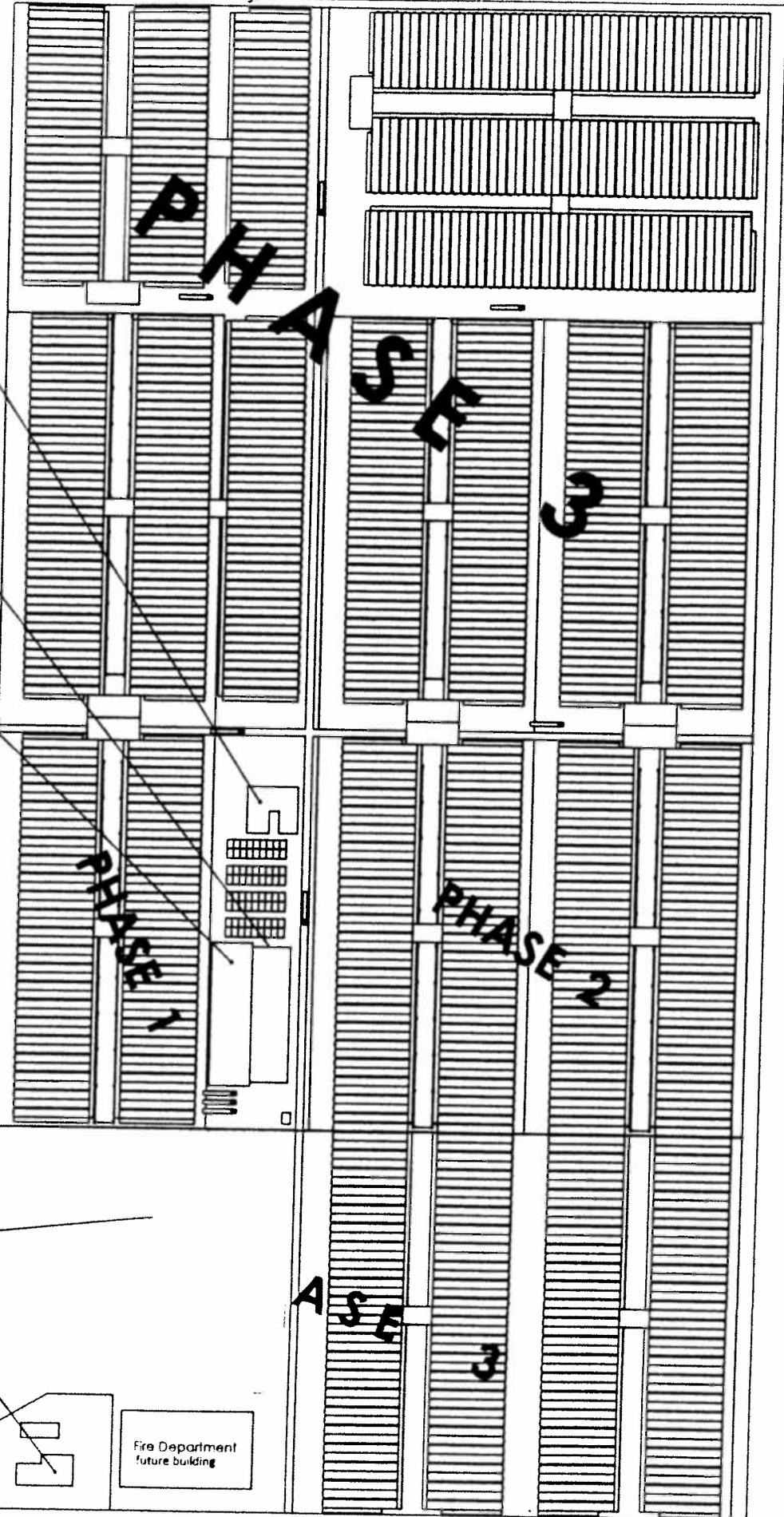
STATE OF NEVADA)
) ss
COUNTY OF NYE)

This instrument was acknowledged before me on _____,
2010, by _____, as _____,
GROWPONICS NEVADA, a limited liability corporation.

Notary Public

PROPOSED SITE PLAN

EXHIBIT "A"



This document is the property of Growponics Ltd and contains proprietary information of Growponics Ltd. It is exclusively supplied to those concerned with the project covered herein and may not be disclosed in part or whole to others without the expressed written permission Growponics Ltd.

UNITS OTHERWISE SPECIFIED: DIMENSIONS ARE IN METERS.		DO NOT SCALE DRAWING		PROJECT NAME HYDROPONICS CITY NEVADA	
DATE	SCALE	SCALE	SCALE	P.N./D.W.	REV.
Drawn by	Checked by	Checked by	Checked by	D.W. No.	
Drawn by	Checked by	Checked by	Checked by		
Drawn by	Checked by	Checked by	Checked by		
Drawn by	Checked by	Checked by	Checked by		
Drawn by	Checked by	Checked by	Checked by		

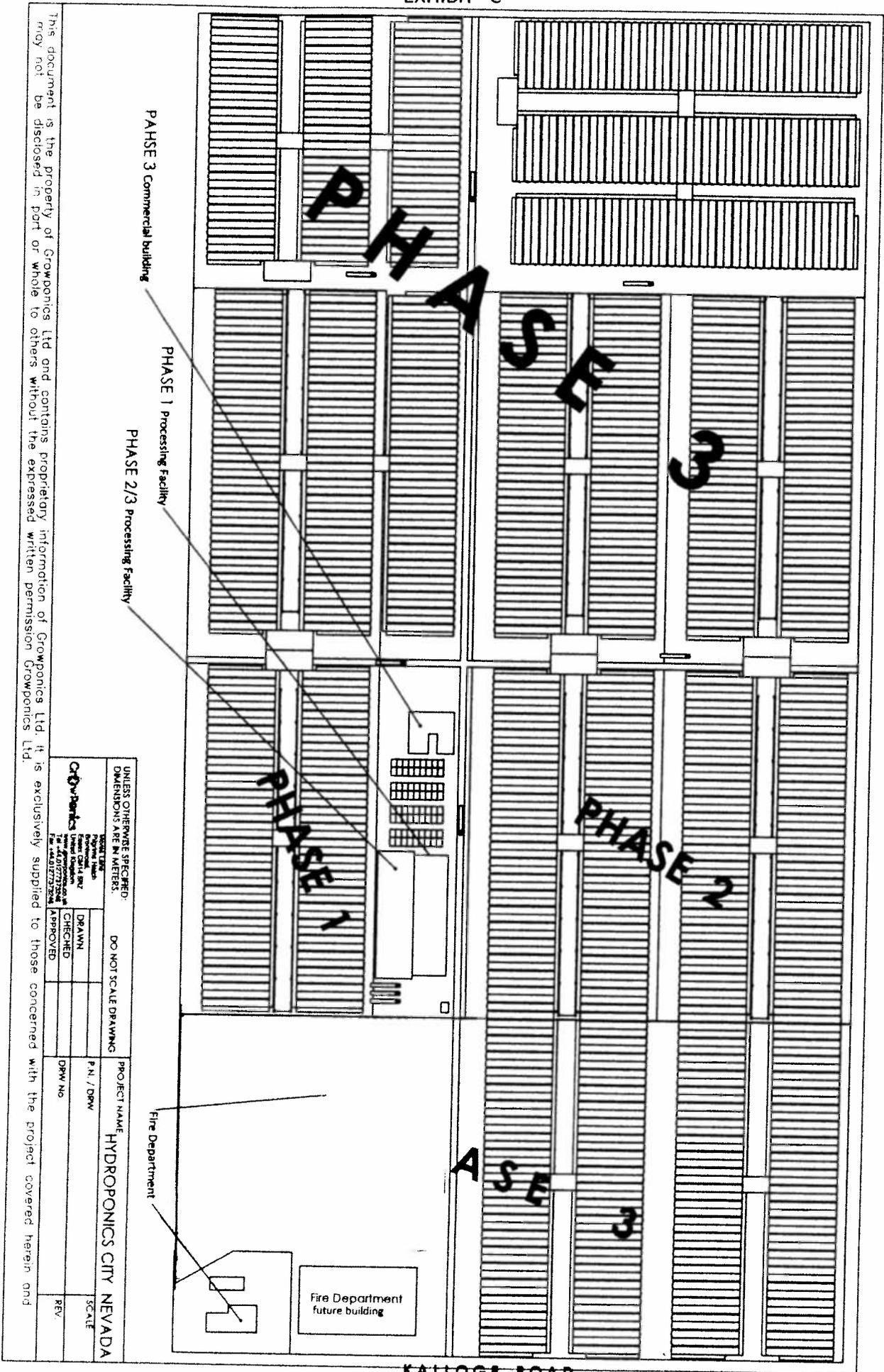
KALLOFF ROAD

**WATER RIGHTS
KELLOGG PROPERTY**

Exhibit "B"

New Permit #	Old Permit #	Purchased From	Location	Acre Feet	Cert #	Cert Date	Permit Date	Proof of Completion	Proof of Beneficial Use	Cultural Map	Point of Diversion Filed	Extension Filed Date	Due Date
54852	66616		Kellogg	4	ABR		12/10/1990	2/9/1993	1/10/2008		Wally Boundy	1/30/2005	1/10/2007
72171	54852		Kellogg	2.3			9/12/2007	6/30/2009	9/12/2010				
75281	48221	Mapes	Kellogg	5			10/24/2007	10/24/2009	10/24/2010				
76355	43478	L2P Investments	Kellogg	8			3/12/2008	3/12/2010	3/12/2011			4/3/2009	3/12/2010
76588	56277	Couch	Kellogg	33.5			5/29/2008	5/29/2009	5/29/2013				
77078	68891	Gardea	Kellogg	2			10/30/2008	5/29/2009	5/29/2013				
77659	63653	McCoy	Kellogg	2			4/20/2009	4/20/2010	4/20/2012				
78096	29208	Pahrump Valley Real Estate	Kellogg	3			11/12/2009		11/12/2020				
78097	29471	Pahrump Valley Real Estate	Kellogg	7.88			11/12/2009		11/12/2014				

EXHIBIT "C"



This document is the property of Growponics Ltd and contains proprietary information of Growponics Ltd. It is exclusively supplied to those concerned with the project covered herein and may not be disclosed in part or whole to others without the expressed written permission Growponics Ltd.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN METERS.		DO NOT SCALE DRAWING		PROJECT NAME: HYDROPONICS CITY NEVADA	
DATE	SCALE	DRAWN	CHECKED	P.N. / DRW	SCALE
18/07/2024	1:100	[Signature]	[Signature]	[Signature]	[Signature]
C/O Growponics Ltd 10000 KALLOGG RD SUITE 100 LAS VEGAS, NV 89135 TEL: 702.735.1234 FAX: 702.735.1234				APPROVED	REV
					1

KALLOGG ROAD

Jack Kashani, Growponics Nevada
BIO

Mr. Kashani is the founder, originator and managing partner of World Market Center, Las Vegas, and has brought the project to an unprecedented level of industry recognition. After working on the project for 3 years and after the 1,300,000 SF Phase 1 was designed and pre-leased to the Home Furnishings industry in 2004 Mr. Kashani admitted Related Companies of New York who joined the project as a partner and co-developer.

World Market Center, Las Vegas, (www.LasVegasMarket.com) is a 3 Billion Dollar trade show complex being built in 8 phases in downtown Las Vegas, on a 57 acre parcel of land. Phase 1 which has 1,300,000 SF of showroom space at a total cost of \$250,000,000 was fully leased when construction was completed in July 2005. In January 2007 Phase 2 opened comprising of 1,600,000 SF, fully leased at a cost \$350 million and in July 2008 Phase 3 comprising of 2,100,000 SF over 70% pre-leased opened at a cost \$550,000,000. Currently, with over 5,000,000 SF of permanent showroom space, WMC is the largest trade show in size in Las Vegas and top 3 trade show in attracting new visitors to the city of Las Vegas.

Upon completion of all 8 phases, at 12 million square feet, World Market Center will be the largest permanent trade show facility in the world. In addition, Mr. Kashani is partner in project that owns 100 acre parcel of land close to the strip, to develop a similar concept to World Market Center for other industries. This project will be over 17,000,000 SF of permanent showroom space leased to non-home furnishings trade. Mr. Kashani developed the business plan for this project.

Before starting WMC, Mr. Kashani was developing land through out Southern California and Las Vegas. Mr. Kashani has successfully developed over 5,000 acres of residential land between 1979 to 2000. During this time, Mr. Kashani also purchased many large retail shopping malls and office buildings through out the country.

Currently Mr. Kashani is in the process of forming an accomplished team of professional consultants for the development of the Sports City USA, the largest Sports and Entertainment complex in USA.

Growponics Nevada, LLC

Executive Summary

Growponics Nevada, LLC is a turnkey, hydroponic greenhouse business bringing "Grown Local" produce throughout the State of Nevada. The management company, Growponics Americas, LLC and Growponics, Ltd., designs and builds fully-automated hydroponic greenhouses that use modern, proprietary Israeli agronomics technology, to maximize food/plant production and profitability by managing the sales of crop yields that are grown 365 days a year. Currently eleven facilities around the world are using our technology and have provided actual greenhouse production and projections that are represented in this business plan.

Company History

Growponics Nevada, LLC is a newly registered limited liability corporation (LLC) owned by Mr. Ariel Kashani and Ms. Gabriella Kashani. The technology and business know-how being provided by Growponics Americas, LLC. and Growponics Ltd. has been developed by combining technology from the United Kingdom and Israel, going back over 25 years. The Nevada greenhouse consultants, developers and managers have been successfully growing leafy vegetables and vine plants in a highly economic, clean, hydro-organic, and automated method, making optimal use of resources such as water, energy, labor and land on a commercial scale for over 10 years.

Hydroponic City: The Master Plan and Products

The Growponics Nevada facility will be located in Pahrump, Nevada on the 60-acre Water Lily Ranch. The first of 10 facilities will break ground in April 2011, with a 4.5-acre greenhouse (5-acre footprint) for leafy greens (e.g., romaine, Boston, green/red leaf, etc.) and herbs greenhouse. Each leafy green greenhouse system can produce over 4.83 million heads of lettuce per year, or 13,243 heads harvested per day. The Master Building Plan is scheduled on the following plan:

Phase I – Start April 2011:	4.5-acres Leafy Green & Herb Test Market (4200 sq ft.)
	4.5-acres Berries
Phase II – Start June 2013:	4.5-acres Herbs
	9-acres of Vine Plants
Phase III – Start December 2016:	4.5-acres Leafy Greens & Herbs
	9-acres Berries
Phase IV – Start June 2021:	9-acres Vine Plants.

* Each 4.5 acre greenhouse has a 5 acre footprint
* Schedule Subject to produce chain based on market demands

The \$90 million Growponics Nevada project will employ 30+ workers during the building development of the 60-acre hydroponic farm, using local contractors when possible. Once the first greenhouse is complete, it will take 15 full time employees to operate at the highest efficiency. Each additional 4.5-acre facility built will employ 12-20 additional full-time local workers; depending on the produce grown. Once the Growponics Nevada project is complete, it will employ over 150+ full-time workers in high quality jobs.

Objectives:

The objectives for the next ten years include:

1. Build the most advanced 60-acre, hydroponic, greenhouse facility in Pahrump, NV.
2. Provide premium quality produce to the State of Nevada 365 days a year.
3. Reduce the Carbon Footprint and "food miles" by growing fruits and vegetables locally.
4. Use technology to produce maximum yields with minimum resources.
5. Conserve water, land and energy, which are precious commodities.
6. R&D with UNLV and UN (Reno) in commercial hydroponics

Mission:

Growponics' hydroponic technology provides efficient, automated, climate-controlled, sustainable, hydro-organic food growing systems to Nevada. Growponics maximizes food yields, flavor and nutrition, extends shelf life, and produces herbicide-free, pesticide-free, and pathogen-free produce. Growponics is the future of agriculture today, bringing high-yield production to the local market, reducing the carbon footprint and saving water and carbon miles, while providing healthier and tastier food to the local community.

Growponics Nevada will set aside facility space for the University of Nevada – Reno and University of Nevada - Las Vegas for research and development in the area of commercial hydroponic agriculture, with the option of working with a major University in Israel that specializes in Desert Farming using

hydroponics. Trainings will be held to educate consumers on the benefits of "Grown Local" and the safest, freshest and cleanest produce on the market, hydroponic produce. In addition to the research area, there will be a Public/Private Partnership (3P) with the Town of Pahump as a cultural, agro- tourism designation. There will also be a Saturday's Farmers Market for citizens to buy farm direct.

Why Hydroponics?

Hydroponics is a method of growing plants using mineral nutrients in water, without soil, which is the cleanest, most cost effective, environmentally friendly, fastest and safest way to grow fruits and vegetables. Growponics technology monitors the environment and maintains the optimum conditions for maximum plant production/yields. With the environmental conditions closely controlled, there is no need for harmful pesticides and herbicides, and reverse osmosis (RO) filtration insures the water used is free of pathogenic bacteria, all of which are current major health issues with field-grown crops.

Environmentally-Friendly Technology:

Growponics greenhouse facilities can be built anywhere, because soil quality and climate are not growing factors, as is the case of "field-grown" vegetables. This means that produce can be grown near wholesaler and retailer distribution points, or outside major metropolitan areas, to drastically reduce the carbon footprint and insure a short supply line, (i.e., 6-24 hours from greenhouse to market shelves or institutional buyers), providing the freshest, best-tasting produce, of the highest quality, nutrient and color, with a longer shelf life and no pathogens, or herbicide, pesticide, dust residue or weather damage. Growponics is "Grown Local," which is growing in demand by consumers.

Growponics is clean technology and can eventually be energy-independent, using some solar, geothermal, wind and bio-fuel energy, to make our facility even more environmentally-friendly, while producing premium produce. Renewable, sustainable and environmentally-friendly; maximizing food production, using less resources, less land, and following the lead of the Government to support Green industry, we could possibly attract Government grants, subsidies, and tax-breaks, "*Growponics is the Future of Agriculture Now.*"

Competitive Advantage:

Growponics technology is proprietary, and is the most advanced and efficient hydroponic growing method in the industry with regard to investment cost, cost of production and yields generated per acre of land. Growponics is "grown-local" and the closest direct competition to Nevada is located in Mexico, Canada, California, and Tennessee requiring major additional cost in transportation and fuel miles. The competition will not be able to compete with our local market prices and the freshness of our produce.

With hydroponics, especially the proprietary and unique Growponics technology which can be located and built anywhere, while others cannot, leafy greens and vine vegetables and fruits can be grown almost anywhere, and our products are pesticide-free, herbicide-free, chemical-free, bug-free, dirt-free, and pathogen-free. In addition, we can grow close to the market, reducing carbon-miles, and reduce the consumption of water and energy by 70-90%. "*Growponics is the Future of Agriculture Now.*"

Environmental Benefits to Growponics Hydroponics:

- Water is recycled and reused within the system
- No land cultivation is required
- Grown Local – Major reduction in food miles
- No weeds or pests
- No chemical herbicides or pesticides
- No washing necessary – Ready-to-eat
- Dirt, sand, grit and dust free
- Uniform quality, quantities and yields
- Larger yields – Crops grow 3-times faster using hydroponics
- Extended shelf-life due to a shorter supply chain and fresher product
- 70% to 90% reductions in water, land, fossil fuels and labor
- Can be operated using alternative energy sources, such as solar, wind and bio fuels.
- Greenhouse technology can be built anywhere.

For more information: Sales@growponicsamericas.com
918-859-0478

Growponics Nevada, LLC

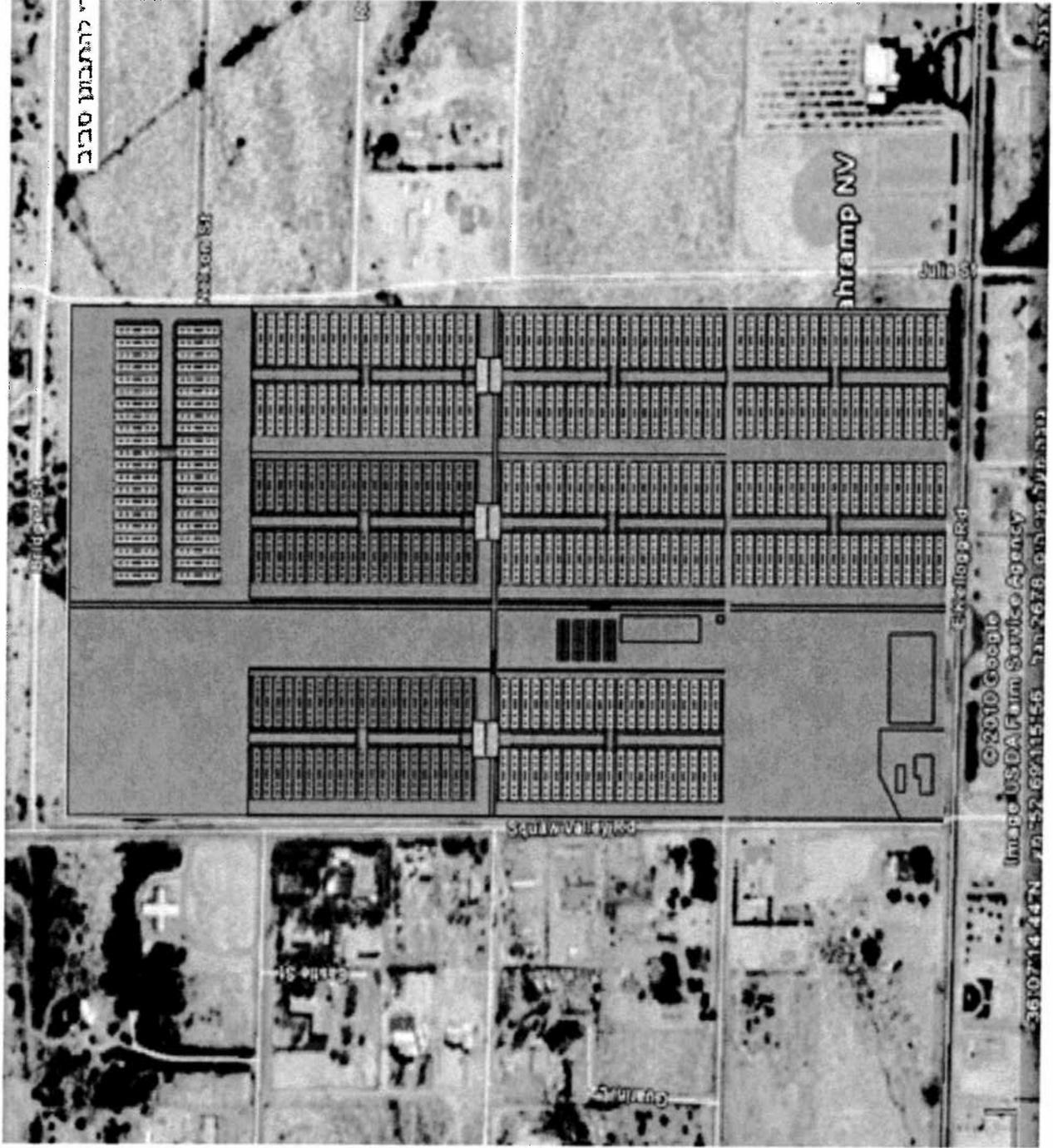
Building - Hydroponic City™

Located on Water Lily Ranch

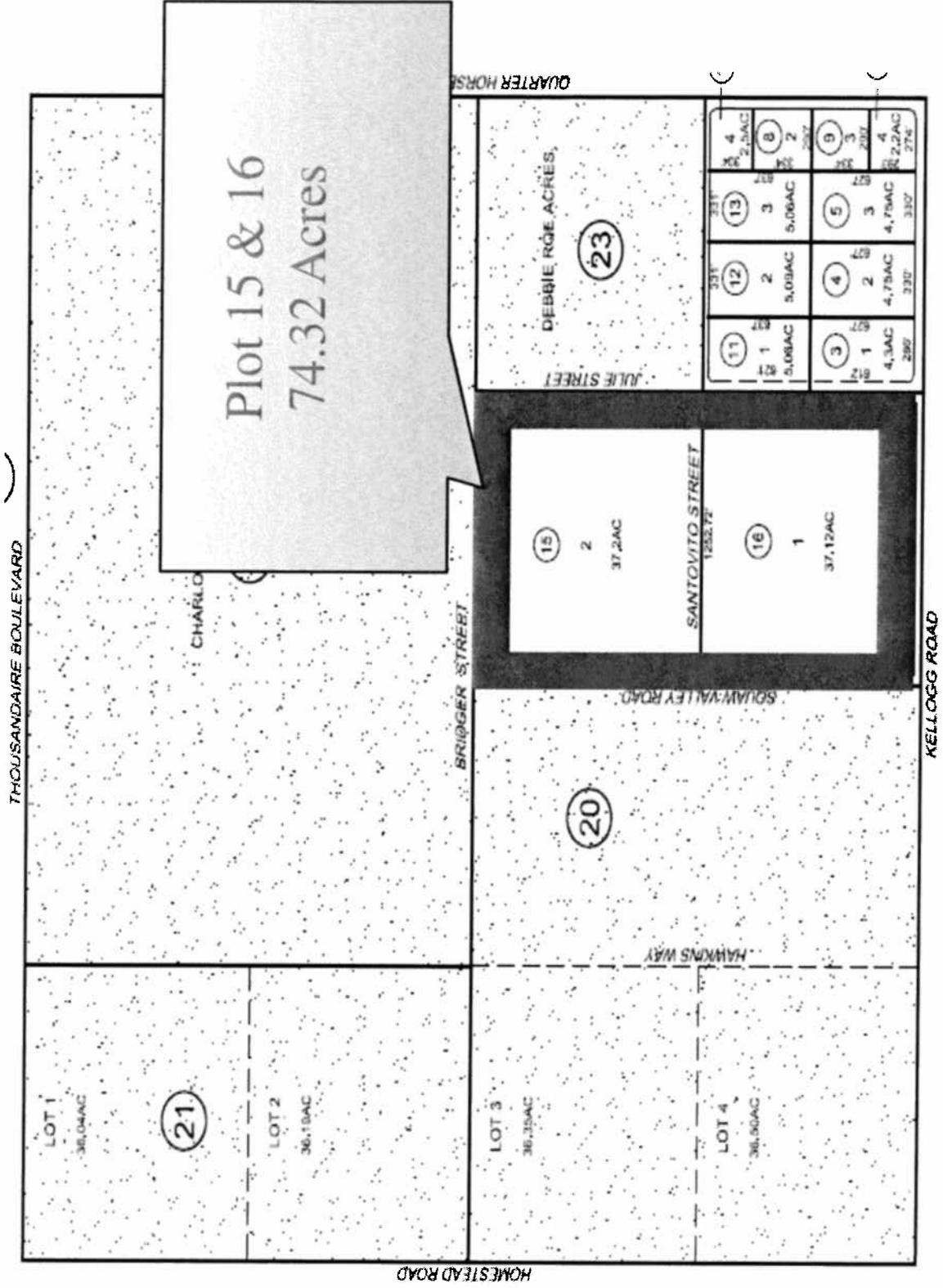
60-acres

Pahrump, NV

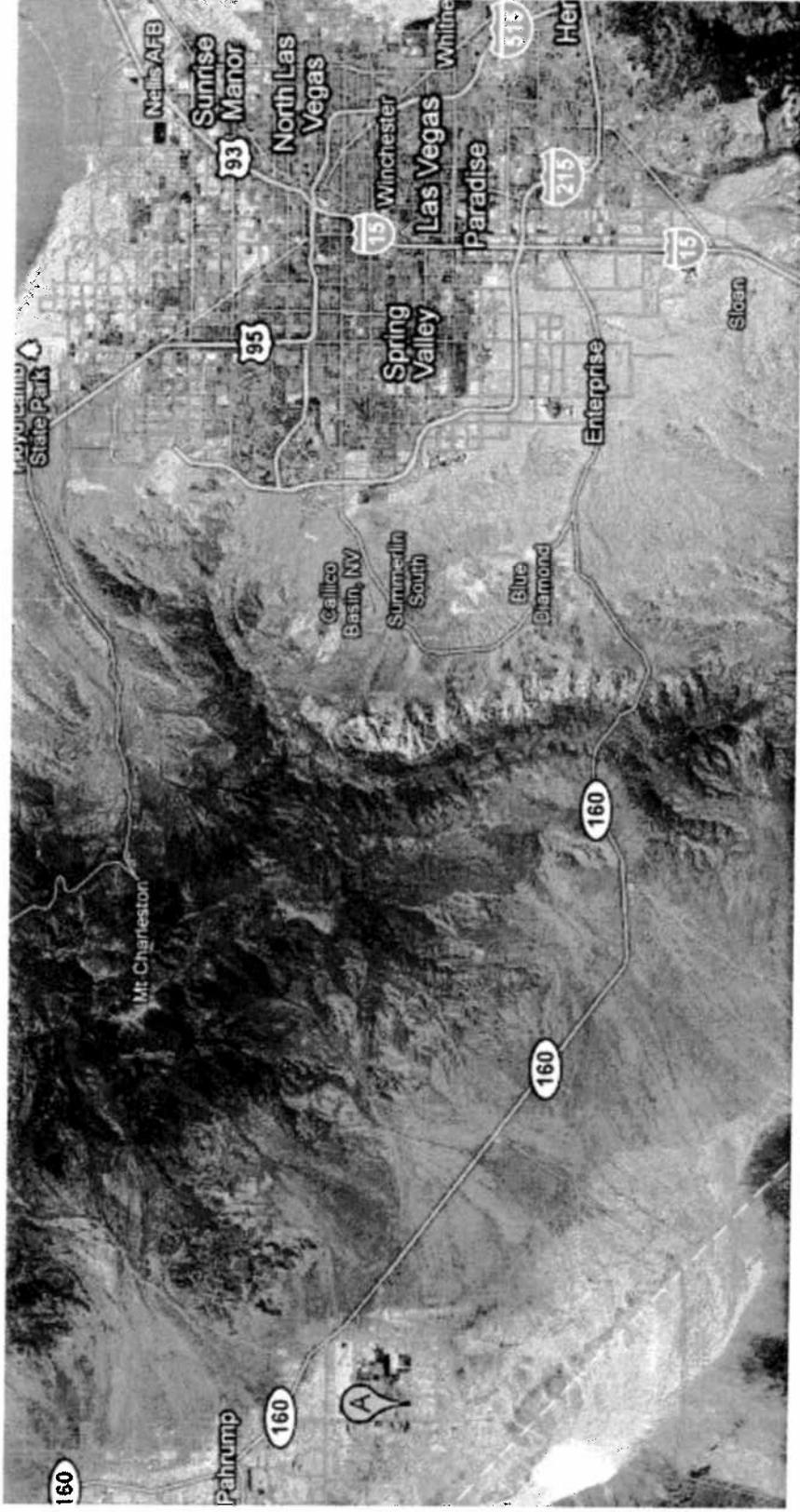
As seen on Google Earth



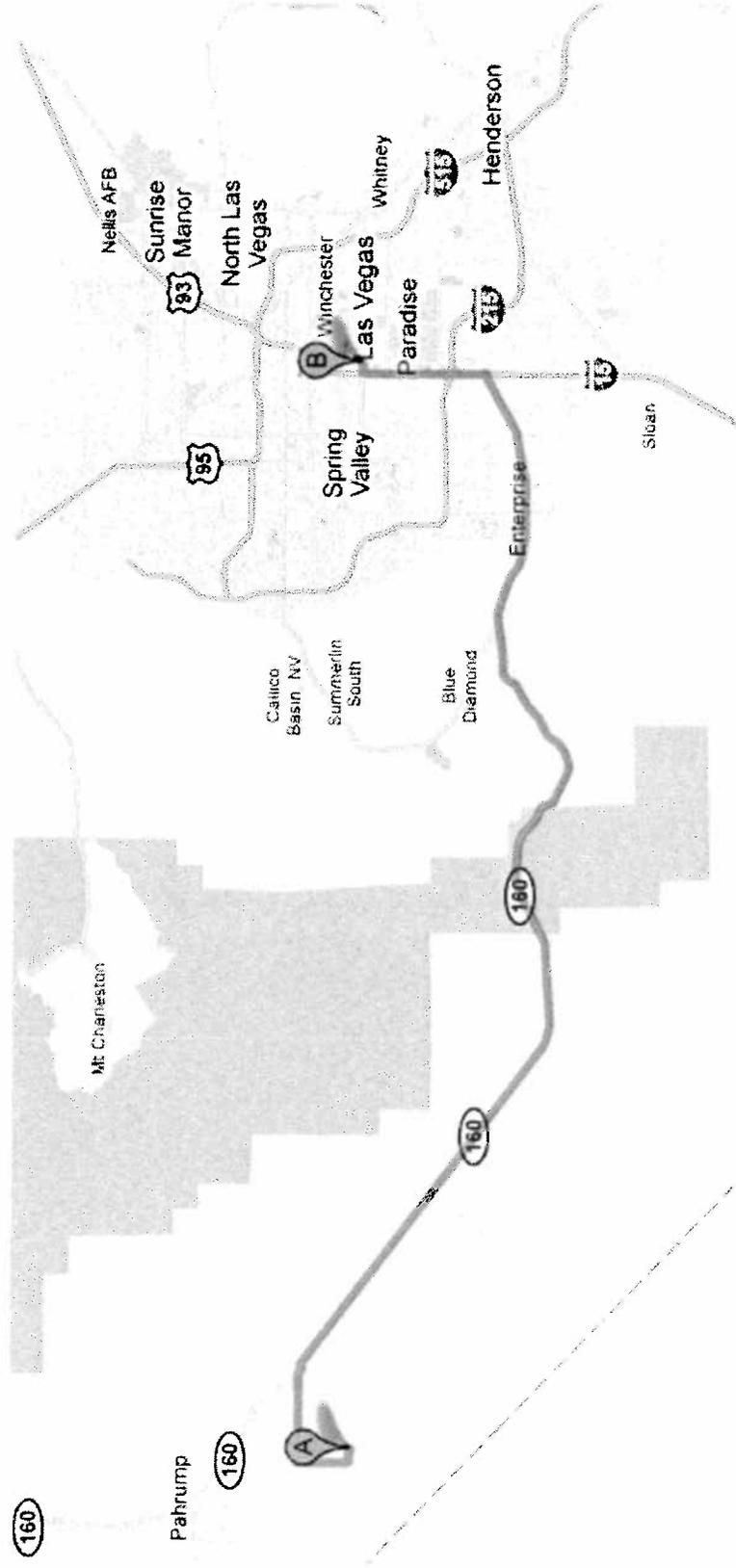
City Plan - Pahrump, NV



45 minutes from LV



High quality road connecting to LV



Growponics:

Designs, builds and manages automated **hydroponic greenhouses** that use modern, proprietary Israeli / European technology to maximize production and profitability of crop yields, grown 365 days a year in any location.

Management Experience

35 years of experience in commercial hydroponics greenhouse building and operation.

Facilities in Europe and Asia use the Growponics proven technology and proprietary operational and business knowhow.

Master Plan:

Hydroponic City™ - 60-acres of hydroponic greenhouses, processing facilities, and commercial buildings.

- 2011 – 9 acres - leafy greens and herbs
- 2013 – 13.5 acres - tomatoes, peppers, cucumbers.
- 2016 – 13.5 acres - configuration mixed
- 2021 – 9 acres – Vine Plants

Hydroponics:

- Hydroponics comes from the Latin language and it means working water.
- "hydro" means "water"
- "ponos" means "labor".

Totally Soil less growing!

Hydroponics is: a method of growing plants using natural mineral nutrients in water, without soil, which is the cleanest, most cost effective, environmentally friendly, fastest and safest way to grow fruits and vegetables.

What do plants need to grow?

- Water
- Sunlight
- CO₂ - Carbon Dioxide
- Nutrients

16 Essential Nutrients

Sixteen plant food nutrients are essential for proper crop development. Each is equally important to the plant, yet each is required in vastly different amounts. These differences have led to the grouping of these essential elements into three categories; primary (macro) nutrients, secondary nutrients, and micronutrients.

16 Essential Nutrients

Primary Macro Nutrients

PRIMARY (MACRO) NUTRIENTS

Primary (macro) nutrients are nitrogen, phosphorus, and potassium. They are the most frequently required in all crop fertilization (nutrient) programs.

- **NITROGEN**
- **PHOSPHORUS**
- **POTASSIUM**

16 Essential Nutrients

Secondary Nutrients

SECONDARY NUTRIENTS

The secondary nutrients are calcium, magnesium, and sulphur. For most crops, these three are needed in lesser amounts than the primary nutrients. They are growing in importance in crop fertilization programs, due to more stringent clean air standards and efforts to improve the environment.

- **CALCIUM**
- **MAGNESIUM**
- **SULPHUR**

16 Essential Nutrients

Micro Nutrients

MICRO NUTRIENTS

The micronutrients are boron, chlorine, copper, iron, manganese, molybdenum, and zinc. These plant food elements are used in very small amounts, but they are just as important to plant development and profitable crop production as the major nutrients. Especially, they work "behind the scene" as activators of many plant functions.

- BORON
- CHLORINE
- COPPER
- IRON
- MAGANESE
- MOLYBDENUM
- ZINC

16 Essential Nutrients

Micro Nutrients

In addition to the 13 nutrients listed above, plants require carbon, hydrogen, and oxygen, which are extracted from air and water to make up the bulk of plant weight.

History of Hydroponics

The process of hydroponics growing in our oceans goes back to about the time the earth was created. Hydroponic growing preceded soil growing.

History (Continued)

Hydroponics is hardly a new method of growing plants. However, giant strides have been made over the years in this innovative area of agriculture.

Commercial hydroponic production is a very young industry and Growponics technology is the most technology advanced system on the market.

Advantages of Hydroponics

- Water is recycled/reused within the system.
- No land cultivation required.
- Grown local – Major reduction in food miles in transportation.
- No weeds or pests.
- No herbicides, pesticides or other chemical residue. NO PATHOGENS.
- Dirt, sand and dust free.
- No washing necessary – Ready to eat.
- Uniform quality, quantities and yields.

Advantages (Continued)

- Larger yields – Crops grow 3-times faster using hydroponics.
- Extended shelf-life due to shorter delivery time, supply chain and fresher product.
- 70% to 90% reductions in water, land, fossil fuels and labor.
- Can be operated using alternative energy sources, such as solar, wind and bio fuels.
- Greenhouse technology can be built anywhere.

Advantages (Continued)

Growponics greenhouse facilities can be put anywhere, because soil quality and climate are not growing factors, as is the case of "field-grown" vegetables.

Growponics is "Grown Local" and environmentally friendly.

Growponics 4.5-acre Leafy Green Greenhouse - specification

- **Greenhouse Unit Size:** 4.5-acre Facility
- **Greenhouse Type:** Leafy Greens & Herbs
- **Greenhouse Structure:** Polycarbonate
- **Office & Packing House:** Metal building
- **Production Level:**
4.01 million heads of leafy greens per year
11,000 heads harvested per day

Growponics vs. Field Grown

	Growponics	Field-Grown
Land Requirements	5-Acres	30-Acres
Leafy Green Production Yields	4 Million Head	4 Million Heads
Fossil Fuel Used During Growth Cycle	0	450 Gallon Diesel
Food Miles	57.8 Miles	800 to 1000 Miles
53' Truck Loads to Transport 4 Million to Las Vegas	183	183
Fossil Fuel Used During Transport 4 Million heads from farm to Las Vegas - "Fuel Miles"	1,300 Gallons Diesel	27,000 Gallons Diesel
Carbon Footprint (Metric Ton Co2)	2.8	330
Water used during "Growth Cycle"	2 Gallons/head	20 Gallons/head
Water used to wash lettuce for market	No Washing	1+ Gallon/head
Total Water Used	8 million gallons	84 million gallons
Time from harvest to market	6 to 12 hours	5 to 7 days

Growponics vs. Field Grown

	Field Grown Produce	Organic Field Grown Produce	Growponics Hydroponics Produce
Proper land and climate	Yes	Yes	No
Soil Cultivation and cover crops	Yes	Yes	No
Fossil fuel used during cultivation	Yes	Yes	No
Average Food Miles	1,500	1,500	60
Chemical herbicides or pesticides	Yes	No	No
Organic Fertilizers Used	No	Yes	Yes
Water used during growth and cleaning	22 Gallon	22 Gallons	2 Gallons
Risk of parthenogenesis contamination	Yes	Yes	No
Grown in clean and safe environment	No	No	Yes
Consistent yields/quality each years	No	No	Yes
Water recycled and reused	No	No	Yes
Weeds & Pest	Yes	Yes	No
Multiple Washing Necessary	Yes	Yes	No
Dirt, dust, pollutions and acid rain	Yes	Yes	No
Grown local 365 day per year	Yes	No	Yes
Extended shelf life	No	No	Yes

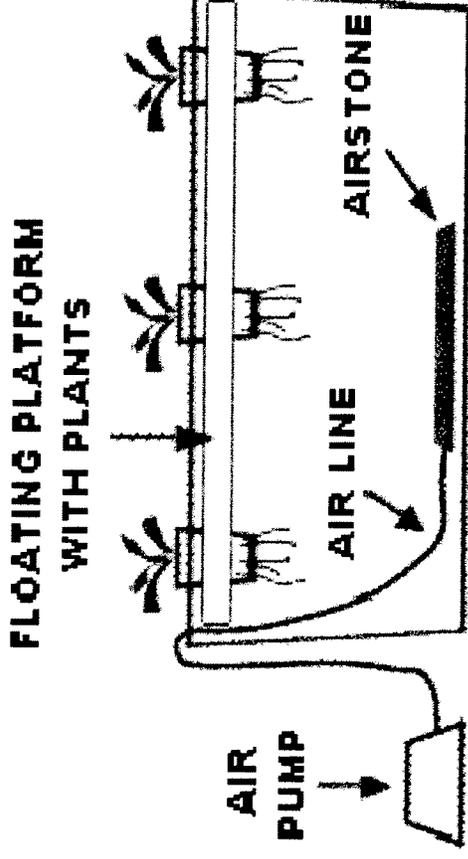
Hydroponic Systems :

There are many types of hydroponic systems used in commercial leafy green and herb production. The most used are:

- Deep Water Culture (DWC)
- Nutrient Film Technique (NFT)
- **Growponics Rotating Field System (RFS)**

Deep Water Culture (DWC)

Hydroponic method of plant production by means of suspending the plant roots in a solution of nutrient rich, oxygenated water.



DWC Post & Negative

Positive:

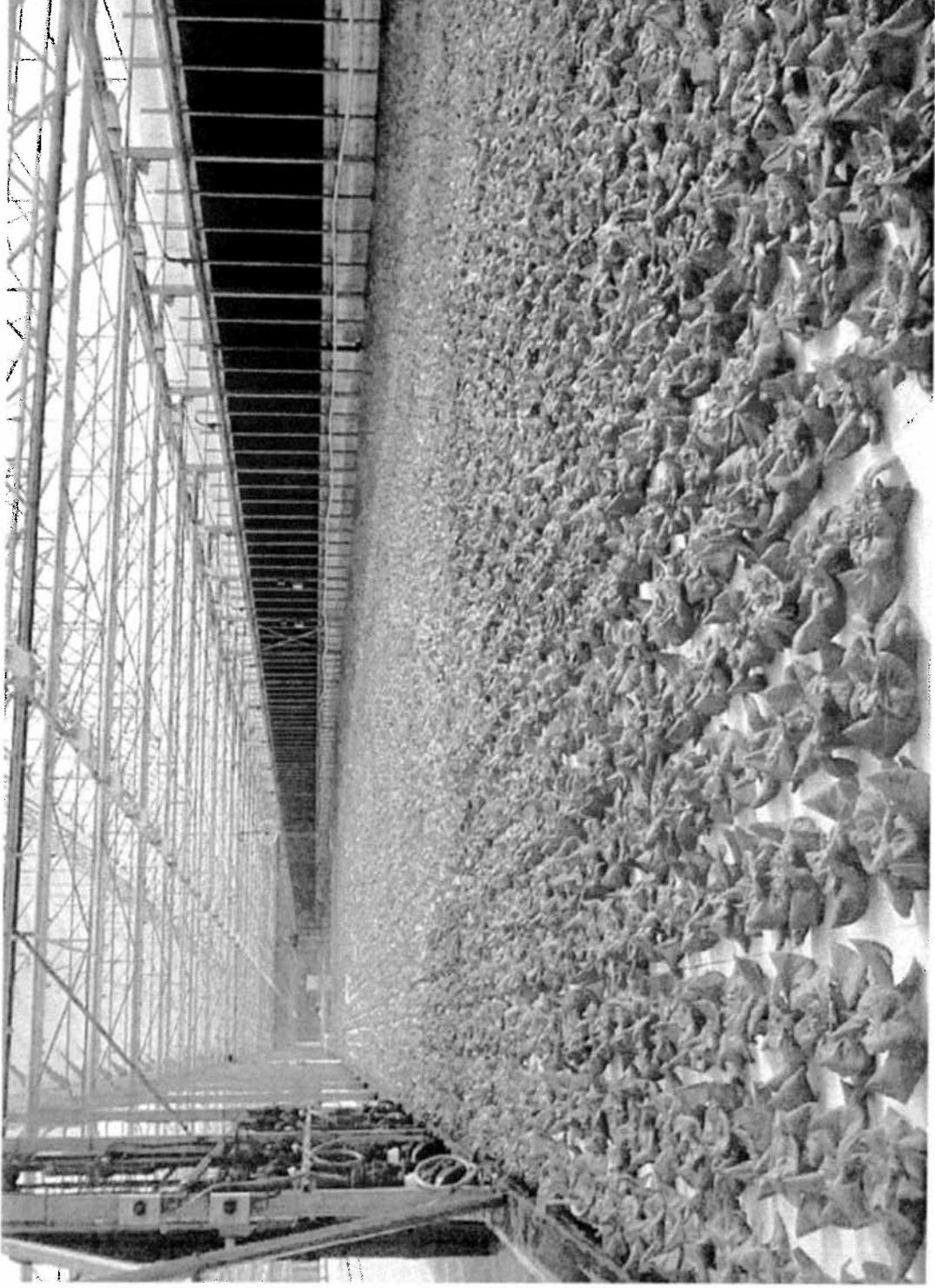
- High yields
- Water beds maintains root temperature
- Labor reduction as compared to traditional farming
- Environmentally friendly - minimal potential for localized groundwater contamination.

DWC Post & Negative

Negatives:

- Very Expensive technology at Startup
- High nutrient consumption / costs.
- Major issues with dissolved oxygen, which causes plant stress and root disease.
- Floating trays are flat an unable to grow tall leafy greens (i.e. Romaine, Chard, Bok Choy, curly red and green leaf lettuce, spinach, etc.)
- All major competitors use this system and grow 95% Boston Bibb lettuce.
 - **Tanimura & Antle**
 - **HydroSerre Mirabel**
 - **Hollandia Produce**

Example DWC



Nutrient Film Technique (NFT)

The NFT systems provide a constant film of water and nutrients along the bottom of a channel. In effect, part of the roots grow down in the water/nutrients and parts of the roots above the water line getting fresh air and oxygen

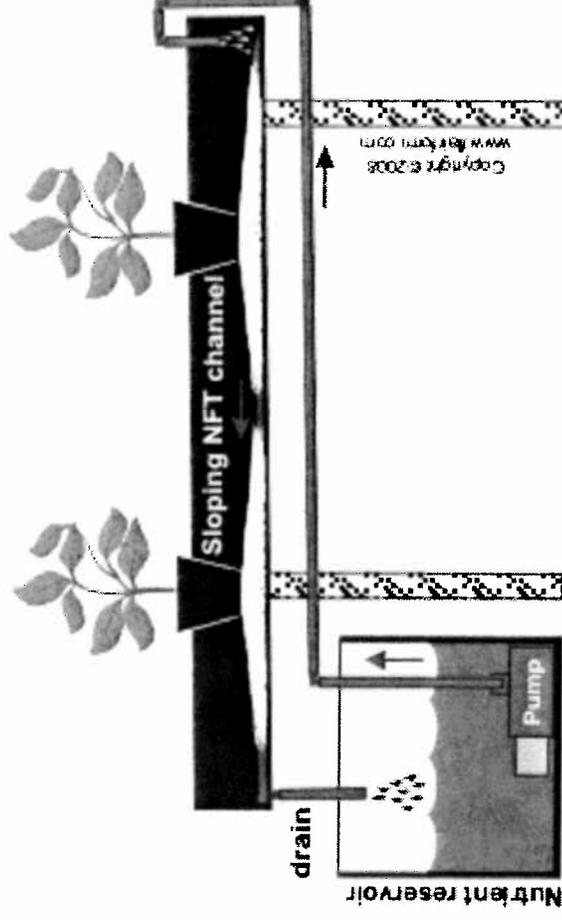


Fig 5.1 NFT system: Basic layout.

NFT Positives & Negatives

Positives:

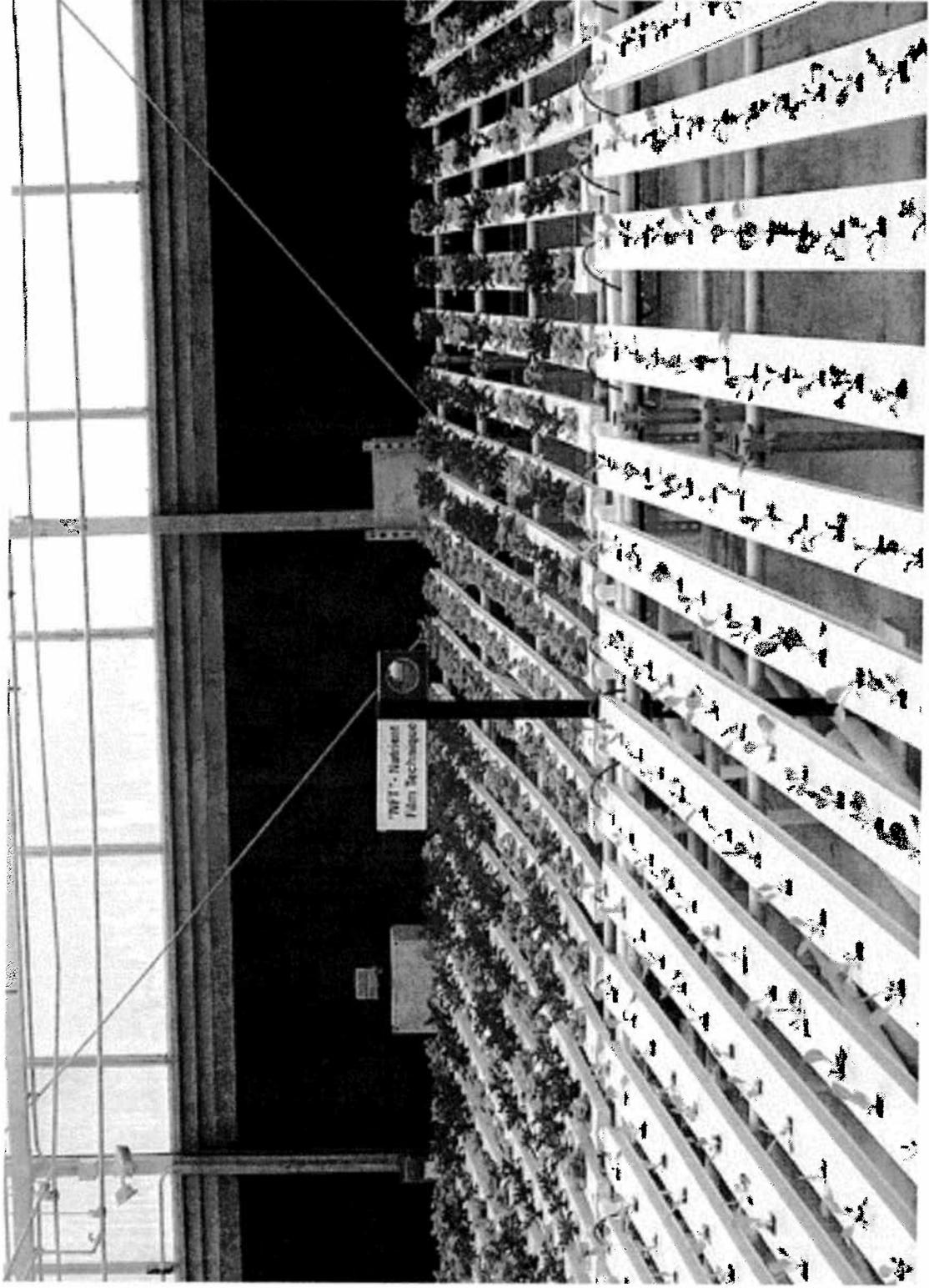
- Technology is very inexpensive
- Lower water and nutrient consumption / costs.
- Environmentally friendly - minimal potential for localized groundwater contamination.

NFT Positives & Negatives

Negatives:

- Pump failure or electric outage can result in plant death within a few hours, especially in hot weather.
- Roots are exposed to air temperature and temperature fluctuation cause stress. When plants are stressed, they are at higher risk of disease and growth will slow or stop.
- NFT is not efficient in growing lettuce or leafy green on a commercial scale, as compared to DWC or Growponics Rotating Field System

Nutrient Film Technique



Growponics Rotating Field System

The Growponics hydroponic technique combines all the benefits of deep-water culture and nutrient film technique (NFT), while eliminating almost all the negatives. Growponics technology is proprietary and is the most advanced hydroponic growing method in the industry with regard to investment costs, cost of production, and yields generated per acre of land.

Growponics RFS

Positives:

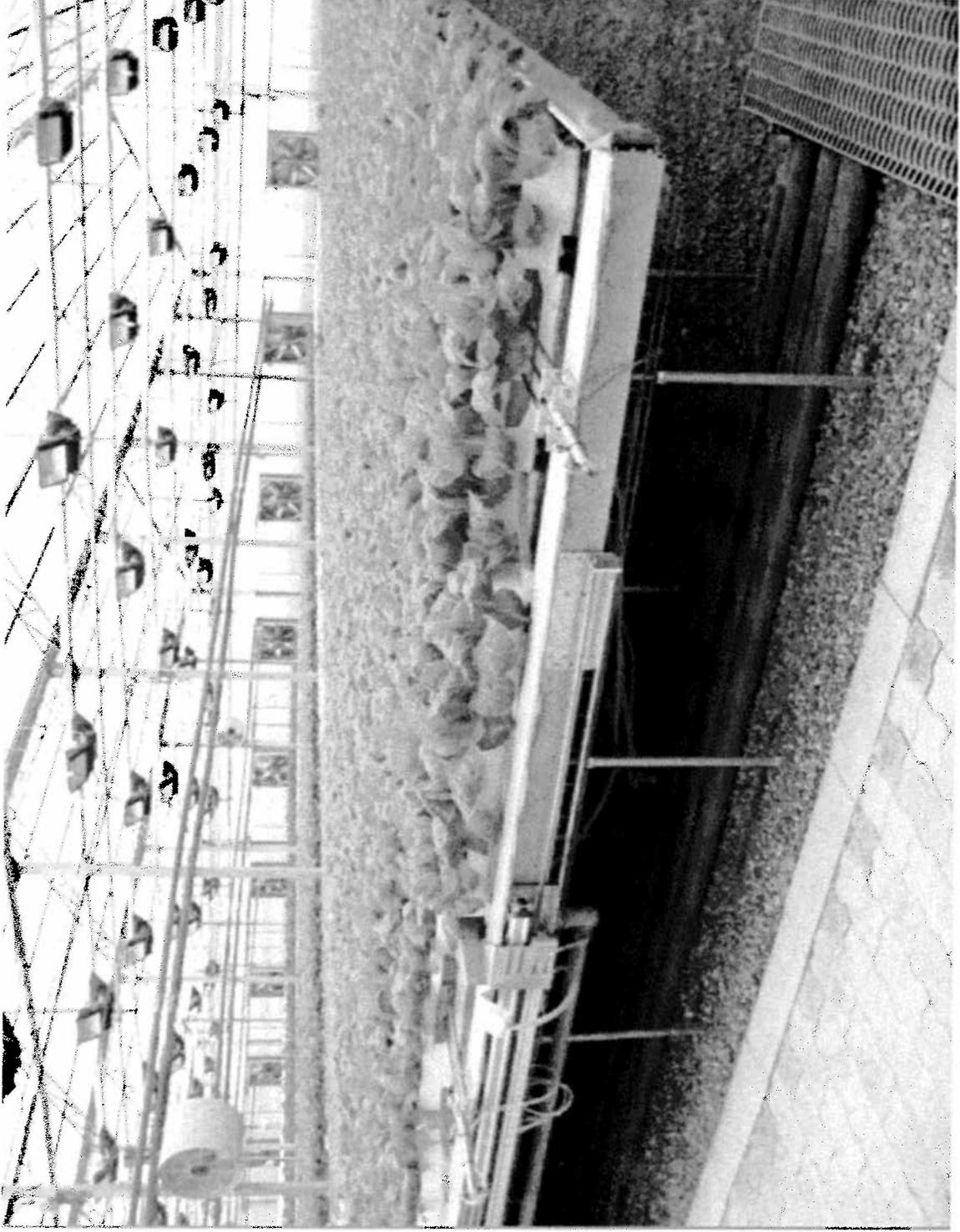
- Novel technology and proprietary business knowhow is the most affordable in the industry with regard to initial cost of investment and ongoing production costs.
- Can grow all leafy greens and herbs.
- 4.5-acre facility has a maximum greenhouse capacity of 4.01 million heads per year, 11k heads harvested daily.

Growponics RFS

Positives (Cont.):

- Low cost of technology allows for greenhouse facilities to be built next to metropolitan areas or distributor center.
- Designed for drought and desert climates.
- Robotics reduces the cost of labor.
- Floating trays are design allows our system to grow tall leafy greens.

Growponics RFS



Growponics RFS

