TOWN OF SUPERIOR
RESOLUTION NO. R-37
SERIES 2020

A RESOLUTION OF THE BOARD OF TRUSTEES OF THE TOWN OF SUPERIOR APPROVING A CONSTRUCTION CONTRACT WITH GOODLAND CONSTRUCTION, INC. FOR CONSTRUCTION OF 6 PICKLEBALL COURTS

BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF SUPERIOR, COLORADO, as follows:

Section 1. The Construction Contract between the Town of Superior and Goodland Construction, Inc. for the construction of 6 pickleball courts is hereby approved in substantially the same form as attached hereto, subject to final approval by the Town Attorney.

ADOPTED this 11th day of May, 2020.

Clint Folsom

Clint Folsom, Mayor

ATTEST:

THE TOWN OF SUPERIOR SEAL COLORADO

Phyllis L. Hardin

Phyllis L. Hardin, Town Clerk-Treasurer

CONSTRUCTION CONTRACT

THIS CONSTRUCTION CONTRACT (the "Contract") is made and entered into this 11TH day of March, 2020 (the "Effective Date"), by and between the Town of Superior, 124 East Coal Creek Drive, Superior, Colorado 80027, a Colorado municipal corporation (the "Town"), and Goodland Construction, Inc., an independent contractor with a principal place of business at760 Nile Street, Golden, Colorado 80401 ("Contractor") (collectively the "Parties").

For the consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Scope of Work. Contractor shall perform the following described work (the "Work"), in accordance with this Contract and the Contract Documents, attached hereto and incorporated herein by this reference: construction Pickleball Courts located at 1830 Honey Creek Lane in Superior, Colorado.

2. Bonds. Within 10 days of the date of this Contract, Contractor shall provide the payment and performance bond and certificate of insurance required by the Contract Documents.

3. Commencement and Completion of Work. Contractor shall commence the Work within 10 days of date of the Notice to Proceed. Substantial Completion of the Work shall be accomplished by the 26 day of June, 2020, unless the period for completion is extended otherwise in accordance with the Contract Documents. Final Completion of the Work shall be accomplished within 10 work days of the date of Substantial Completion.

4. Compensation/Contract Price. The Town agrees to pay Contractor, subject to all of the terms and conditions of the Contract Documents, for the Work, an amount not to exceed $313,598.50. The Town shall pay Contractor in the manner and at such times as set forth in the General Provisions such amounts as required by the Contract Documents.

5. Illegal Aliens.

A. Certification. By entering into this Contract, Contractor hereby certifies that, at the time of this certification, it does not knowingly employ or contract with an illegal alien who will perform work under this Contract and that Contractor will participate in either the E-Verify Program administered by the United States Department of Homeland Security and Social Security Administration or the Department Program administered by the Colorado Department of Labor and Employment in order to confirm the employment eligibility of all employees who are newly hired for employment to perform work under this Contract.

B. Prohibited Acts. Contractor shall not:

1. Knowingly employ or contract with an illegal alien to perform work under this Contract; or

2. Enter into a contract with a subcontractor that fails to certify to Contractor that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this Contract.

C. Verification.

1. If Contractor has employees, Contractor has confirmed or attempted to confirm the employment eligibility of all employees who are newly hired for employment to perform work under this Contract through participation in either the E-Verify Program or the Department Program.

2. Contractor shall not use the E-Verify or Department Program procedures to undertake pre-employment screening of job applicants while this Contract is being performed.

3. If Contractor obtains actual knowledge that a subcontractor performing work under this Contract knowingly employs or contracts with an illegal alien who is performing work under this Contract, Contractor shall:

a. Notify the subcontractor and the Town within 3 days that Contractor has actual knowledge that the subcontractor is employing or contracting with an illegal alien who is performing work under this Contract; and

b. Terminate the subcontract with the subcontractor if within 3 days of receiving the notice required pursuant to subsection a hereof, the subcontractor does not stop employing or contracting with the illegal alien who is performing work under the contract; except that Contractor shall not terminate the contract with the subcontractor if during such 3 days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien who is performing work under this Contract.

D. Duty to Comply with Investigations. Contractor shall comply with any reasonable request by the Colorado Department of Labor and Employment made in the course of an investigation conducted pursuant to C.R.S. § 8-17.5-102(5)(a) to ensure that Contractor is complying with the terms of this Contract.

E. Affidavits. If Contractor does not have employees, Contractor shall sign the attached "No Employee Affidavit." If Contractor wishes to verify the lawful presence of newly hired employees who perform work under the Contract via the Department Program, Contractor shall sign the "Department Program Affidavit" attached hereto.

6. Governing Law and Venue. This Contract shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in Boulder County, Colorado.

7. No Waiver. Delays in enforcement or the waiver of any one or more defaults or breaches of this Contract by the Town shall not constitute a waiver of any of the other terms or obligation of this Contract.

8. Integration. This Contract and any attached exhibits constitute the entire Contract between Contractor and the Town, superseding all prior oral or written communications.

9. Third Parties. There are no intended third-party beneficiaries to this Contract.

10. Notice. Any notice under this Contract shall be in writing, and shall be deemed sufficient when directly presented or sent pre-paid, first class United States Mail, addressed to:

The Town: Project Manager
Town of Superior
124 East Coal Creek Drive
Superior, Colorado 80027

Contractor: Goodland Construction, Inc.
760 Nile Street
Golden, Colorado 80401

11. Severability. If any provision of this Contract is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

12. Modification. This Contract may only be modified upon written agreement of the Parties.

13. Assignment. Neither this Contract nor any of the rights or obligations of the Parties shall be assigned by either party without the written consent of the other.

14. Governmental Immunity. The Town, its officers, and its employees, are relying on, and do not waive or intend to waive by any provision of this Contract, the monetary limitations or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers or employees.

15. Rights and Remedies. The rights and remedies of the Town under this Contract are in addition to any other rights and remedies provided by law. The expiration of this Contract shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for work negligently or defectively performed.

16. Subject to Annual Appropriation. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year are subject to annual appropriation, and thus any obligations of the Town hereunder shall extend only to monies currently appropriated and shall not constitute a mandatory charge, requirement or liability beyond the current fiscal year.

IN WITNESS WHEREOF, this Construction Contract has been executed by the Parties as of the date first above written.

TOWN OF SUPERIOR, COLORADO

Clint Folsom

Clint Folsom, Mayor

ATTEST:

THE TOWN OF SUPERIOR SEAL COLORADO

Phyllis L. Hardin

Phyllis L. Hardin, Town Clerk

CONTRACTOR

STATE OF COLORADO)
) ss.
COUNTY OF Jefferson)

The foregoing instrument was subscribed, sworn to and acknowledged before me this 11th day of May, 2020, by Matt Worland as President of Goodland Construction

My commission expires: 1/27/24

Paula Harrington-Marcu

(S E A L)

Notary Public

PAULA HARRINGTON-MARCU
NOTARY PUBLIC - STATE OF COLORADO
NOTARY ID 20114082018
MY COMMISSION EXPIRES JAN 27, 2024

NO EMPLOYEE AFFIDAVIT

[To be completed only if Contractor has no employees]

1. Check and complete one:

☐ I, _____, am a sole proprietor doing business as _____. I do not currently employ any individuals. Should I employ any employees during the term of my Contract with the Town of Superior (the "Town"), I certify that I will comply with the lawful presence verification requirements outlined in that Contract.

OR

☐ I, _____, am the sole owner/member/shareholder of _____, a _____ [specify type of entity – *i.e.*, corporation, limited liability company], that does not currently employ any individuals. Should I employ any individuals during the term of my Contract with the Town, I certify that I will comply with the lawful presence verification requirements outlined in that Contract.

2. Check one.

☐ I am a United States citizen or legal permanent resident.

The Town must verify this statement by reviewing one of the following items:

- *A valid Colorado driver's license or a Colorado identification card;*
- *A United States military card or a military dependent's identification card;*
- *A United States Coast Guard Merchant Mariner card;*
- *A Native American tribal document;*
- *In the case of a resident of another state, the driver's license or state-issued identification card from the state of residence, if that state requires the applicant to prove lawful presence prior to the issuance of the identification card; or*
- *Any other documents or combination of documents listed in the Town's "Acceptable Documents for Lawful Presence Verification" chart that prove both Contractor's citizenship/lawful presence and identity.*

OR

☐ I am otherwise lawfully present in the United States pursuant to federal law.

Contractor must verify this statement through the federal Systematic Alien Verification of Entitlement ("SAVE") program, and provide such verification to the Town.

_____ _____

Signature Date

DEPARTMENT PROGRAM AFFIDAVIT

[To be completed only if Contractor participates in the Department of Labor Lawful Presence Verification Program]

I, Goodland Construction as a public contractor under contract with the Town of Superior (the "Town"), hereby affirm that:

1. I have examined or will examine the legal work status of all employees who are newly hired for employment to perform work under this public contract for services ("Contract") with the Town within 20 days after such hiring date;

2. I have retained or will retain file copies of all documents required by 8 U.S.C. § 1324a, which verify the employment eligibility and identity of newly hired employees who perform work under the Contract; and

3. I have not and will not alter or falsify the identification documents for my newly hired employees who perform work under the Contract.

Signature

5/11/20
Date

STATE OF COLORADO)
) ss.
COUNTY OF Jefferson)

The foregoing instrument was subscribed, sworn to and acknowledged before me this 11th day of May, 2020, by Matt Worland as President of Goodland Construction

My commission expires: 1/27/24

(S E A L)

Paula Harrington-Marcu
Notary Public

PAULA HARRINGTON-MARCU
NOTARY PUBLIC - STATE OF COLORADO
NOTARY ID 20114082018
MY COMMISSION EXPIRES JAN 27, 2024

GENERAL PROVISIONS

PART 1. DEFINITIONS

1.01 CONTRACT DOCUMENTS:

A. Bid Form (Including Bid Summary);
B. Bid Schedule;
C. Bidder's Qualification Statement;
D. Construction Contract;
E. General Provisions
F. Special Provisions;
G. Technical Specifications;
H. Construction Drawings;
I. Certificate of Insurance Verification;
J. Notice of Award;
K. Notice to Proceed;
L. Bid Bond;
M. Payment and Performance Bond;
N. Certificate of Final Payment;
O. Final Acceptance Form;
P. Documentation submitted by Contractor prior to Notice of Award; and
Q. Addenda A

1.02 CHANGE ORDER:

A written order issued by the Town after execution of the Contract authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time.

1.03 TOWN:

The Town of Superior, Colorado.

1.04 CONTRACT:

The entire written agreement covering the performance of the Work described in the Contract Documents including all supplemental agreements thereto and all general and special provisions pertaining to the Work and materials therefor.

1.05 CONTRACT PRICE:

The amount set forth in Paragraph 4 of the Construction Contract.

1.06 CONTRACT TIME:

The time for completion of the Work shall be 45 days

1.07 DAY:

Calendar day, unless otherwise specified. When the last day for the occurrence of an event falls on a Sunday or legal holiday as recognized by the Town, the time for performance shall be automatically extended to the next business day.

1.08 FINAL COMPLETION:

The date as certified by the Project Manager when all of the Work is completed and final payment may be made.

1.09 PROJECT MANAGER:

The Town's duly authorized representative in connection with the Work.

1.10 SUBCONTRACTOR:

Any person, firm or corporation with a direct contract with Contractor who acts for or in behalf of Contractor in executing any part of the Contract, excluding one who merely furnishes material.

1.11 SUBSTANTIAL COMPLETION:

The date as certified by the Project Manager when the Town occupies or takes possession of all or substantially all of the Work, or when the Town may occupy or take possession of all or substantially all of the Work and put it to beneficial use for its intended purposes.

1.12 WORK:

All the work specified, indicated, shown or contemplated in the Contract Documents, including all alterations, amendments or extensions thereto made by supplemental agreements or written orders of the Project Manager.

PART 2. TIME

2.01 TIME OF THE ESSENCE:

All times stated in the Contract Documents are of the essence.

2.02 FINAL ACCEPTANCE:

Upon Final Completion, the Project Manager will issue final acceptance.

2.03 CHANGES IN THE WORK:

The Town reserves the right to order changes in the Work, in the nature of additions, deletions or modifications, without invalidating the Contract, and to make corresponding adjustments in the Contract Price and the Contract Time. All changes shall be authorized by a written Change Order signed by the Project Manager. The Change Order shall include appropriate changes in the Contract Documents and the Contract Time. The Work shall be changed and the Contract Price and Contract Time modified only as set forth in the written Change Order. Any adjustment in the Contract Price resulting in a credit or a charge to the Town shall be determined by mutual agreement of the parties before the work set forth in the Change Order is commenced. If a Change Order results in an increase in the Contract Price, approval of the Superior Board of Trustees shall be required, and if such approval is not obtained, the Town shall have no payment obligation regardless of whether the Work pursuant to the Change Order has been performed.

2.04 DELAYS:

A. If Contractor is delayed in the progress of the Work by fire, unusual delay in transportation, unanticipated adverse weather conditions, or other unavoidable casualties beyond Contractor's control other than unanticipated adverse weather conditions, the Contract Time shall be extended for a reasonable period of time. "Weather" means precipitation, temperature, or wind, and an "adverse weather condition" means weather that on any calendar day varies from the average weather conditions for that day by more than 100% as measured by the National Oceanic and Atmospheric Administration. The term "unanticipated adverse weather conditions" means the number of days in excess of the anticipated adverse weather days per month as set forth below:

MONTHLY ANTICIPATED ADVERSE WEATHER DAYS

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
7	4	4	4	6	3	4	2	3	3	2	5

By reason of example only, if in March there are 2 days when the snowfall exceeds the average snowfall for that day by 100%, those 2 days will have experienced an adverse weather condition. However, there will have been no unanticipated adverse weather condition in March, because there are 4 anticipated adverse weather days in March, which should be accounted for in the schedule. If, however, there are 5 days in which the snowfall exceeds the average snowfall by 100%, an unanticipated adverse weather condition will have occurred, and Contractor shall be entitled to request an extension of time.

B. Any request for extension of the Contract Time shall be made in writing to the Project Manager not more than 7 days after commencement of the delay; otherwise it shall be waived. Any such request shall contain an estimate of the probable effect of such delay on the progress of the Work.

C. Contractor shall not be entitled to any increase in the Contract Price, or to damages, or to additional compensation as a consequence of any such delays.

2.05 NO DAMAGES FOR DELAY:

In strict accordance with C.R.S. § 24-91-103.5, the Town shall not amend the Contract Price to provide for additional compensation for any delays in performance which are not the result of acts or omissions of the Town or persons acting on behalf of the Town.

PART 3. CONTRACTOR'S RESPONSIBILITIES

3.01 COMPLETION/SUPERVISION OF WORK:

Contractor hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and licenses in good standing. The services performed by Contractor shall be in accordance with generally accepted professional practices and the level of competency presently maintained by others in the same or similar type of work, and in compliance with applicable laws, ordinances, rules and regulations. Contractor shall be responsible for completion of all Work in a timely and workmanlike manner in accordance with the terms and specifications of the Contract Documents, including the techniques, sequences, procedures and means. Contractor shall be responsible for the coordination of all Work. Contractor shall supervise and direct the Work and give it all attention necessary for proper supervision and direction. Contractor shall maintain a supervisor on site at all times when Contractor or any subcontractor is performing Work.

3.02 DUTY TO INSPECT:

Contractor shall inspect all Contract Documents, tests and reports, including soil tests and engineering tests, if applicable, and shall conduct a site or field review prior to executing the Contract. Contractor assumes the risk of all conditions which are disclosed, or which are reasonably suggested by any such tests or reports, or which would be disclosed by a field or site review. Contractor shall have the affirmative duty to advise the Town of any concerns which Contractor may have regarding construction conditions prior to executing the Contract.

3.03 FURNISHING OF LABOR AND MATERIALS:

A. Contractor shall provide and pay for all labor, materials and equipment, including: tools; construction equipment and machinery; utilities, including water; transportation; and all other facilities and services necessary for the proper completion of the Work.

B. In all purchases of supplies, materials and provisions to be incorporated or otherwise used by Contractor in the Work, Contractor shall use supplies, materials and provisions produced, manufactured or grown in Colorado if such supplies, materials and provisions are not of inferior quality to those offered by competitors outside of Colorado.

C. While engaged in the performance of the Work, Contractor shall maintain employment practices that do not violate the provisions of the Colorado Antidiscrimination Act of 1957, C.R.S. § 24-34-301, *et seq*.

3.04 EMPLOYEES AND SAFETY:

A. Contractor shall maintain at all times strict discipline of its employees, and Contractor shall not employ on the Work any person unfit or without sufficient knowledge, skill, and experience to perform properly the job for which the employee was hired.

B. Contractor shall be responsible to the Town for the acts, negligence and omissions of all direct and indirect employees and subcontractors. The Contract Documents shall not be construed as creating any contractual relation between any subcontractor and the Town.

C. Contractor shall provide for and oversee all safety orders and precautions necessary for the safe performance of the Work. Contractor shall take reasonable precautions for the safety of all employees and others whom the Work might affect, all work and materials incorporated into the Work, and all property and improvements on the work site and adjacent property.

3.05 CLEANUP:

A. Contractor shall keep the work site and adjoining ways free of waste material and rubbish caused by its employees or subcontractors. Contractor shall remove all such waste material and rubbish daily during construction, together with all tools, equipment, machinery and surplus materials. Contractor shall, upon termination of its Work, conduct general cleanup operations on the work site, including the cleaning of all surfaces, paved streets and walks, and steps. Contractor shall also conduct such general cleanup operations on adjacent properties which were disturbed by the Work.

B. If Contractor fails to perform the cleanup required by this Section, after written notice, the Town may cause the cleanup to be performed at Contractor's expense. Upon receipt of a statement for such cleanup, Contractor shall pay to the Town the costs incurred by the Town for such cleanup, or the Town shall have the right to withhold said amount from any final payment due to Contractor.

3.06 PAYMENT OF ROYALTIES AND LICENSE FEES:

Contractor agrees to pay all royalties and license fees necessary for the Work, and to defend against all actions for infringement of copyright or patent rights, and to save and hold the Town harmless from such actions.

3.07 TAXES, LICENSES AND PERMITS:

Contractor shall pay all taxes imposed by law in connection with the Work, except the Town of Superior Sales Tax, for purchases within the Town, and shall procure all permits and licenses necessary for the prosecution of the Work. Contractor shall obtain a Town tax-exempt number for the sales tax exemption.

3.08 SAMPLES AND SHOP DRAWINGS:

Contractor shall furnish, upon the request of the Project Manager, samples and shop drawings to the Project Manager, who shall review them for conformance with the Contract Documents. All Work shall comply with approved samples and drawings.

3.09 COMPLIANCE WITH LAWS AND REGULATIONS:

Contractor shall comply with all federal, state and local laws, ordinances, rules, regulations and orders in any manner relating to the Work. If any provision of the Contract Documents is at variance therewith, Contractor shall notify the Project Manager promptly.

3.10 SUBCONTRACTORS:

A. Contractor shall furnish to the Project Manager at the time the Construction Contract is executed, a list of names of subcontractors to whom Contractor proposes to award the portions of the Work to be subcontracted by Contractor.

B. Contractor shall not employ a subcontractor to whose employment the Town reasonably objects, nor shall Contractor be required to hire a subcontractor to whose employment Contractor reasonably objects.

C. All contracts between Contractor and subcontractor shall conform to the provisions of the Contract Documents, and shall incorporate the relevant provisions of the Contract Documents.

3.11 CORRECTIVE WORK:

When any Work does not conform to the Contract Documents, Contractor shall make the necessary corrections so that the Work will so conform. Such corrections shall be accomplished within the time period approved by the Project Manager. Failure to complete such required corrections within the time period required shall constitute a breach of the Contract. The Town's review, approval or acceptance of, or payment for any work shall not be construed as a waiver of any rights under this Contract or any cause of action arising out of the performance of this Contract.

3.12 OTHER CONTRACTS:

The Town reserves the right to let other contracts in connection with the Work. Contractor shall cooperate with all other contractors so that their work is not impeded by the Work, and Contractor shall give other contractors access to the work site necessary to perform their contracts.

3.13 COMMUNICATION:

Contractor shall direct all communications to the Town regarding the Work to the attention of the Project Manager.

PART 4. TERMINATION

4.01 LABOR DISPUTES:

Notwithstanding any other provision contained in this Contract, in the event of any picket or other form of labor dispute at the construction site, Contractor shall continue to perform the Work without interruption or delay. If Contractor ceases performance of the Work because of such picket or other form of labor dispute, the Town may terminate the services of Contractor after giving 48 hours' written notice of its intent to do so.

4.02 DEFAULT:

The Town may terminate this Contract upon 30 days' written notice to Contractor if Contractor defaults in the timely performance of any provision of the Contract Documents, or otherwise fails to perform the Work, or any part thereof, in accordance with the Contract Documents. Termination of the Contract by the Town shall not be the Town's exclusive remedy, and the Town may pursue such other remedies and actions lawfully available to the Town including without limitation an action at law for damages against Contractor or any bonding agency issuing a bond hereunder, or an action in equity for injunctive relief.

PART 5. WARRANTIES:

5.01 WARRANTY OF FITNESS OF EQUIPMENT AND MATERIALS:

Contractor represents and warrants to the Town that all equipment and materials used in the Work, and made a part of the Work, or placed permanently in the Work, shall be new unless otherwise specified in the Contract Documents. All equipment and materials used shall be of good quality, free of defects and in conformity with the Contract Documents. All equipment and materials not in conformity with the Contract Documents shall be considered defective.

5.02 GENERAL WARRANTY:

Contractor shall warrant and guarantee all material furnished and work performed by Contractor for a period of 2 years from the date of final acceptance of the Work by the Project Manager. Under this warranty, Contractor agrees to repair or replace, at its own expense and under the direction of the Project Manager, any portion of the Work which fails or is defective, unsound, unsatisfactory because of materials or workmanship, or which is not in conformity with the provisions of the Contract. Should Contractor fail to perform any such work within the warranty period after a request by the Town, the Town may withdraw from the Payment and Performance Bond any and all amounts necessary to complete the required work. The expiration of the warranty period shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for work negligently or defectively performed.

PART 6. BONDS, INSURANCE AND INDEMNIFICATION

6.01 INDEMNIFICATION:

A. Contractor agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representatives, agents, employees, heirs and assigns from and against all claims, liability, damages, losses, expenses and demands, including attorney fees, on account of injury, loss, or damage, including, without limitation, claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Contract or the Contract Documents, to the extent that such injury, loss or damage is

attributable to the act, omission, error, professional error, mistake, negligence or other fault of Contractor, any subcontractor of Contractor, or any officer, employee, representative, or agent of Contractor or of any subcontractor of Contractor, or which arise out of any worker's compensation claim of any employee of Contractor or of any employee of any subcontractor of Contractor.

B. Contractor, to the fullest extent permitted by law, shall defend, investigate, handle, respond and provide defense for and defend against any such liability, claims, damages, losses, expenses or demands at the sole expense of Contractor, or at the option of the Town, Contractor agrees to pay the Town or reimburse the Town for defense costs incurred by the Town in connection with any such liability, claims, damages, losses, expenses or demands. Contractor, to the fullest extent permitted by law, shall defend and bear all other costs and expenses related thereto, including court costs and attorney fees, whether or not such liability, claims or demands alleged are groundless, false or fraudulent.

C. This indemnification provision is intended to comply with C.R.S. § 13-21-111.5(6) and shall be read as broadly as permitted to satisfy that intent. Contractor's liability under this provision shall be to the fullest extent of, but shall not exceed, that amount represented by the degree or percentage of negligence or fault attributable to Contractor, any subcontractor of Contractor, or any officer, employee, representative, or agent of Contractor or of any subcontractor of Contractor. If Contractor is providing architectural, engineering, surveying or other design services under this Agreement, the extent of Contractor's obligation to defend, indemnify and hold harmless the Town may be determined only after Contractor's liability or fault has been determined by adjudication, alternative dispute resolution or otherwise resolved by mutual agreement of the Parties, as provided by C.R.S. § 13-50.5-102(8)(c).

6.02 NOTICE OF CLAIM:

If Contractor receives any claim arising from the performance of the Work, Contractor shall notify the Town in writing of the nature of the claim within 24 hours of receipt of the claim by Contractor. In this notice, Contractor shall provide evidence that Contractor has notified Contractor's insurer of the claim. Contractor shall keep the Town apprised of the disposition of the claim, and Contractor shall take all necessary action to resolve the claim and make restitution, if required, as quickly as possible.

6.03 INSURANCE:

A. Contractor agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Contractor pursuant to this Contract. At a minimum, Contractor shall procure and maintain, and shall cause any subcontractor to procure and maintain, the insurance coverages listed below, with forms and insurers acceptable to the Town.

1. Worker's Compensation insurance as required by law.

2. Commercial General Liability insurance with minimum combined single limits of $1,000,000 each occurrence and $2,000,000 general aggregate. The policy shall be applicable to all premises and operations, and shall include coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision, and shall

include the Town and the Town's officers, employees, and contractors as additional insureds. No additional insured endorsement shall contain any exclusion for bodily injury or property damage arising from completed operations.

B. Such insurance shall be in addition to any other insurance requirements imposed by law. The coverages afforded under the policies shall not be canceled, terminated or materially changed without at least 30 days prior written notice to the Town. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Any insurance carried by the Town, its officers, its employees, or its contractors shall be excess and not contributory insurance to that provided by Contractor. Contractor shall be solely responsible for any deductible losses under any policy.

C. Contractor shall provide to the Town a certificate of insurance as evidence that the required policies are in full force and effect. The certificate shall identify this Contract.

6.04 PERFORMANCE AND PAYMENT BOND:

Contractor shall furnish a Payment and Performance Bond in the full amount of the Contract Price, as security for the faithful performance and payment of all Contractor's obligations under the Contract Documents, including the warranty. This bond shall remain in effect at least until 2 years after the date of Final Completion.

PART 7. PAYMENT

7.01 PROGRESS PAYMENTS:

A. The Town shall make periodic progress payments to Contractor within 30 days following the Project Manager's approval of the Work completed. A progress payment shall be made only after Contractor has submitted an application for a progress payment on a form approved by the Project Manager, and if requested by the Project Manager, Contractor shall submit copies of invoices from subcontractors or supplies and partial waivers executed by each.

B. Progress payments shall be in an amount equal to 95% of the Work actually completed. Completed Work shall include materials and equipment not incorporated in the Work but delivered to the work site and suitably stored.

C. If Contractor fails to complete any required Work within the time period agreed between Contractor and the Project Manager, or within any time period set forth in the Contract Documents, as modified or extended, the Town is expressly authorized to withhold any progress payment for such Work until such Work is completed.

7.02 FINAL PAYMENT:

Upon final acceptance of the Work, the Town shall make final payment to Contractor pursuant to C.R.S. § 38-26-107.

7.03 LIQUIDATED DAMAGES:

A. Because time is of the essence and delayed performance constitutes a compensable inconvenience to the Town and its residents, the liquidated damages established in this Section shall be enforced. Such damages are not a penalty. For each day Final Completion is delayed after the Final Completion date stated in the Construction Contract, as modified through approved change orders, Contractor shall be assessed the following amounts:

Contract Price	Amount per day
$0-$50,000	$350
$50,000-$100,000	$380
$100,000-$250,000	$440
$250,000-$500,000	$520
$500,000-$1,000,000	$640
$1,000,000-$2,000,000	$820
$2,000,000-$4,000,000	$1,080
$4,000,000-$8,000,000	$1,450
$8,000,000-$12,000,000	$1,820
$12,000,000 or greater	$2,250

B. Allowing Contractor to continue and finish the Work or any part thereof after the Final Completion date shall not operate as a waiver on the part of the Town of any of its rights under the Contract Documents. Any liquidated damages assessed shall not relieve Contractor from liability for any damages or costs of other contractors caused by a failure of Contractor to complete the Work in the Contract Time. Liquidated damages may be deducted from any payment due Contractor or the retainage. If the liquidated damages exceed the amount owed to Contractor, Contractor shall reimburse the Town.

7.04 ORAL AGREEMENTS PROHIBITED:

This Contract is expressly subject to the provisions of C.R.S. § 29-1-110(1), and Contractor acknowledges that neither the Town nor any employee or agent thereof is authorized to expend or contract for the expenditure of any monies in excess of those appropriated by the Superior Board of Trustees. The Town acknowledges that sufficient funds have been appropriated to pay the Contract Price, but Contractor shall not rely upon the appropriation of any funds in addition to those already appropriated unless and until the same are lawfully appropriated by the Superior Board of Trustees.

7.05 ITEMS NOT INCLUDED IN BID:

No additional compensation shall be paid for any costs or services listed in the Contract Documents but not specifically listed in the Bid as a Bid item.

7.06 CHANGES IN QUANTITY:

A. Except as provided in Section 7.07, the unit Bid price shown in the Bid Schedule shall be used to determine the payment owed Contractor for any changes in quantity.

B. The actual quantity placed, as determined by the Project Manager, shall be used to calculate the payment due to Contractor.

C. Prior to any Work being performed in excess of any of the Bid Schedule quantities, Contractor shall notify the Town, in writing, of every quantity that will exceed 105% of the quantity listed on the Bid Schedule.

D. Except as provided in Section 7.08, Contractor shall not be entitled to compensation for any increased expense, loss of expected reimbursement or loss of anticipated profits, directly or indirectly caused by any changes in quantity.

7.07 BID PRICE ADJUSTMENTS:

A. When a major item is increased to more than 125% or decreased below 75% of the original quantity stated on the Bid Schedule, the unit Bid price shall be modified by written change order. Payment for major items shall be calculated by multiplying the actual quantity placed by the modified Bid price.

B. For purposes of this Section, a major item is any item having a Bid value, determined by multiplying the Bid quantity by the unit Bid price, that exceeds 10% of the original Contract Price.

7.08 ELIMINATED ITEMS:

Should any items contained in the Bid Schedule be found unnecessary for completion of the Work, the items shall be eliminated. The Contract Price shall be modified through written change order, and the amount of the change order shall be the eliminated quantity multiplied by the unit Bid price stated in the Bid Schedule, minus any reasonable costs incurred by Contractor for the eliminated items. Reasonable costs shall be determined by the Project Manager based on information provided by Contractor, and may include mobilization of eliminated materials and equipment mobilization costs, if the sole purpose of the equipment was to place the eliminated material. In no case shall the costs exceed the amount of the eliminated items.

7.09 MATERIALS STORED BUT NOT INCORPORATED:

Payments may be made to Contractor for materials stored on the work site but not incorporated into the Work as evidenced by invoices or cost analyses of material produced, if the material has been fabricated or processed and is ready for installation into the Work and conforms with the Contract Documents. Payments shall not exceed 85% of the price shown in the Bid Schedule or 100% of the certified invoice cost of the stockpiled material, whichever is less. Payment for stockpiled materials shall not relieve Contractor of responsibility for loss or damage to the material. Payment for living plant materials or perishable materials shall not be made until the living or perishable material is made an integral part of the finished Work.

7.10 COST RECORDS:

Contractor shall make cost records available to the Town if the Town deems it necessary to determine the validity and amount of any item claimed.

PART 8. MISCELLANEOUS

8.01 PUBLICATIONS:

Any and all publications relating to the Work and authored by Contractor or any of its subcontractors shall be submitted to the Town for its prior written approval of the content of the publication. If the Town disapproves of the content of the publication, the author shall withdraw it from publication. The term "publication" as used herein shall include articles or letters to be published in any newspaper, magazine, trade journal or other periodical.

8.02 CONFIDENTIALITY:

Any and all reports, information, date, statistics, forms, designs, plans, procedures, systems, studies and any other communication form of knowledge given to or prepared or assembled by Contractor under this Contract shall, to the extent authorized and permitted by law, be kept as confidential and not be made available by Contractor to any individual, company or organization without the prior written consent of the Town. Notwithstanding the foregoing, Contractor shall

not be restricted from releasing information in response to a subpoena, court order, or legal process, but Contractor shall notify the Town in writing before responding.

8.03 INDEPENDENT CONTRACTOR:

Contractor, for all purposes arising out of this Contract, is an independent contractor and not an employee of the Town. It is expressly understood and agreed that Contractor shall not be entitled to any benefits to which the Town's employees are entitled, such as overtime, retirement benefits, worker's compensation, injury leave or other leave benefits.

8.04 CONFLICTS:

Should any conflict arise in the Contract Documents, the order of precedence is as follows:

1. Construction Contract.
2. Special Provisions.
3. General Provisions.
4. Supplemental Specifications.
5. Detailed Plans (Calculated dimensions will govern over scaled dimensions).

SPECIAL PROVISIONS

1. General.

A. All labor, services, material, and other work necessary for the construction of the Work shall be provided by Contractor. Contractor's responsibilities shall include, but not be limited to: managing the budget; scheduling and coordinating work meetings; conducting field tests and geotechnical studies; preparing exhibits and participating in formal and informal public meetings at locations provided by the Town; and timely processing field orders, change orders and notices of substantial completion.

B. Contractor shall carefully examine all Work, and shall be solely responsible for the character, quality, and quantities of Work, materials, and compliance with the Contract Documents.

C. Contractor shall identify any and all necessary easements for construction and maintenance of the Work.

2. Other Regulations.

A. Contractor shall ensure that the Work is in compliance with the Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual, CDOT Specifications, AASHTO Specifications, International Building Code, Uniform Plumbing Code, Uniform Mechanical Code, National Electrical Code, Americans with Disabilities Act, and other applicable codes and specifications.

B. In case of any discrepancy between any of the requirements set forth in the Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual, CDOT Specifications, AASHTO Specifications, International Building Code, Uniform Plumbing Code, Uniform Mechanical Code, National Electrical Code, Americans with Disabilities Act, and these Contract Documents, the more stringent requirement shall apply. If any questions arise as to which requirement is more stringent than another, the Project Manager shall be authorized to determine which is more stringent, and the Project Manager's decision shall be final.

3. Representatives. Contractor shall have at the work site at all times as its agent, a competent superintendent capable of reading and thoroughly understanding the Contract Documents and being thoroughly experienced in the type of work being performed. The Town shall have a representative on the job site to observe work for conformance with the Contract Documents.

4. Work Administration. The Town shall administer the Work, including the finalization of any change orders, pay estimates and payments of such, acceptance of work, and other matters as stipulated in the Contract Documents.

5. Engineer. The Engineer for this Work shall be the Town Engineer.

6. Inspections and Testing.

A. Contractor shall be responsible for performing materials testing. In addition to the materials testing performed by Contractor, the Town may conduct Quality Assurance testing at its own discretion.

B. Contractor shall coordinate its construction schedule with the testing agency and Town so that key inspection points may be observed. If Contractor fails to provide reasonably adequate notice or proceeds without the required inspection, the subject work shall be re-exposed or redone in its entirety, while the inspector is present. No extra compensation shall be awarded to Contractor for extra work due to Contractor's failure to coordinate inspections with the testing agency or the Town. All costs associated with Contractor's failure to coordinate inspections shall be borne by Contractor.

C. Contractor shall perform construction inspections. Contractor shall attend any pre-construction meeting(s) and be available to provide technical assistance during the course of construction as necessary. Contractor shall provide site visits and reviews upon request from the Town during the construction phase to ensure compliance with the intent of the plans and to resolve any potential conflicts. Contractor shall provide a written summary after each site visit.

D. Contractor shall be responsible for scheduling the final inspection with the Town.

7. Construction Schedule.

A. At the time of the Pre-construction Conference, Contractor shall prepare and submit to the Town for review a construction schedule including: proposed daily construction hours; details of all construction items; start and finish dates; confirmation and dates for coordinating all utility relocation and/or interruptions; and the same information for all subcontractor(s). The schedule shall not be changed without prior notification and review by the Town. The schedule shall be in the form of a chart of suitable scale to indicate approximately the percentage of Work scheduled for completion at any time. Contractor shall enter on the chart the actual progress at the end of each 2-week interval as directed by the Town and shall deliver to the Town 3 copies thereof on a biweekly basis.

B. Contractor shall also prepare and submit a schedule of the anticipated manpower by title and duty. The manpower proposed shall be adequate for orderly flow of work and completion within the time specified in the Contract Documents.

C. All construction activities shall be coordinated with the Project Manager.

8. Saturday, Sunday, Holiday and Night Work.

A. Work shall normally not be performed on Saturdays, Sundays, observed holidays, or outside of the daytime working hours of 7:00 a.m. to 7:00 p.m., or as indicated on the construction schedule. Lane closures are restricted to 8:30 a.m. to 3:30 p.m. on arterial and collector streets, except for such work as may be necessary for proper care, maintenance, and protection of Work already completed, or in cases where the Work would be endangered or if hazards to life or property would result.

B. If Contractor believes it necessary to work on Saturdays, Sundays, holidays, or at night, Contractor shall make prior arrangements with the Town and receive written approval at least 48 hours before such time so that inspection and engineering services can be provided. Such approval may be revoked by the Town if Contractor fails to maintain adequate equipment and lighting at night for the proper prosecution, control, and inspection of the work. If Work is performed without the Town's prior approval, and as a result the Town had not assigned inspectors to the work, the Town may declare Work performed during this period of time defective, solely on the grounds that it was not properly inspected.

C. Any Work performed on a Saturday, Sunday, holiday, or night shall be at Contractor's risk in terms of extra costs, extra work, or unforeseen conditions.

9. Progress Reports.

A. Progress reports and progress/manpower schedules shall be updated and submitted to the Project Manager at the end of each 2-week period, or at such other times as the Project Manager may request. Contractor shall also forward to the Project Manager, at the end of each month, an itemized report of the delivery status of major and critical items of purchased equipment and material, including shop drawings and the status of shop and field fabricated work.

B. If the completion of any part of the Work or the delivery of materials is behind the approved schedule, Contractor shall submit a plan acceptable to the Project Manager for bringing the Work up to schedule. The Town shall have the right to withhold progress payments for the work if Contractor fails to update and submit the progress/manpower schedule and reports as specified.

10. Pre-construction Conference.

A. Contractor shall coordinate the Pre-construction Conference. Contractor's designated supervisor(s) assigned to the Work shall attend this meeting.

B. Prior to mobilizing construction equipment, a Pre-construction Conference will be held. Contractor's designated superintendent(s) or supervisor(s) assigned to the Work shall attend this meeting. Contractor shall, at a minimum, provide the following to the Town at the Pre-construction Conference:

(1) The construction schedules;

(2) A detailed estimate of partial payments for the Work;

(3) The traffic control plan;

(4) A detailed plan showing site access and staging areas; and

(5) A subcontractor submittal, including names and contact phone numbers.

11. Fees and Permits.

A. Prior to commencing any Work, Contractor shall secure, at its own expense, all necessary fees and permits required for the performance of the Work, including an Army Corps of Engineers 404 permit, if necessary. The cost of compliance with this Section (including fees) is included in the Contract Price, and no additional compensation shall be provided.

B. All fees for permits issued by the Town shall be waived.

12. Existing Utilities.

A. The Work shall be coordinated with all impacted utility companies, districts, associations, agencies, and residents located in the work site. Contractor shall conduct the meeting and provide summary minutes.

B. Contractor shall determine the actual location of all existing utilities prior to starting any Work. Contractor shall contact utility companies for field locations prior to the start of Construction Work, and shall contact all utilities at least 48 hours prior to beginning

excavation and/or grading. If the exact location and depth of existing underground utilities are unknown, Contractor shall perform all necessary exploratory excavation to locate these facilities which may affect the Work prior to beginning construction. Contractor shall obtain required locates and Contractor shall include the information on the plans. Contractor shall resolve any utility discrepancies. Contractor shall be liable for all damage done to existing utilities in the performance of the Work.

C. If Contractor requests that utility companies relocate utilities for Contractor's convenience, such relocation shall be at Contractor's expense.

D. The time of performance under the Contract shall not be extended to account for repair of utilities which are damaged by Contractor.

13. Water and Electricity. Contractor shall provide and maintain, at its own expense, an adequate supply of water and electricity required for the Work. Contractor shall install and maintain supply connections and lines satisfactory to the Project Manager, and prior to Final Completion, Contractor shall remove the supply lines at its expense.

14. Dust Control. Contractor shall use measures to prevent and control dust within the area affected by the Work. No additional compensation shall be paid to Contractor for dust control. Contractor shall clean any soil, dirt, or debris tracked onto any adjacent streets. Within 24 hours of notification by the Town that any adjacent streets require cleaning, Contractor shall clean such streets or the Town may have the streets cleaned and deduct the cost of such cleaning from the Contract Price.

15. Construction Staging Areas. All construction staging areas shall be located within the work site. The boundaries of construction staging areas shall be approved by the Town. Construction staging areas shall be used for material storage, parking for equipment, and employees' vehicles. A construction trailer shall not be required, but may be used if the location of the trailer is approved by the Town. Upon Final Completion, all staging areas shall be clean and restored to their original condition. No additional compensation shall be provided to Contractor for cleaning of construction staging areas.

16. Sanitary Facilities.

A. Sanitary convenience for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers and in such a manner and at such points as approved by the Town. The contents shall be removed and disposed of in a satisfactory manner.

B. The sanitary conveniences specified above shall be the obligation and responsibility of Contractor. The facilities shall be made available to all other contractors, subcontractors, and inspection personnel in the work site.

C. Contractor shall supply sufficient drinking water from approved sources to all of its employees.

D. Full compensation for compliance with this Section is included in the Contract Price, and no additional compensation shall be provided.

17. Soils Investigations and Foundation Engineering. Contractor shall be responsible for all geotechnical investigations necessary to design and perform the Work.

18. Lines and Grades. Contractor shall lay out the Work and shall be responsible for all measurements in connection therewith. Contractor shall, at its own expense, furnish all stakes, templates, platforms, equipment, and labor, including surveyors, that may be required in setting and cutting or laying out any part of the Work. Contractor shall be responsible for the proper execution of the Work to such lines and grades.

19. Traffic Control.

A. Contractor shall furnish all necessary flagpersons; erect and maintain warning lights, advance warning signs, detour signs, barricades, temporary fence, and sufficient safeguards around all excavations, embankments, obstructions; and perform any other work necessary for the protection of all work being performed, and for the safety of the public and pedestrian traffic, as well as motor vehicles. All signs and barricades shall conform to the current Manual on Uniform Traffic Control Devices.

B. At the Pre-construction Conference, Contractor shall submit 5 copies of a traffic control plan for review by the Town. The plan shall discuss the traffic control measures proposed for the safety of vehicular and pedestrian traffic through the work site.

C. Contractor shall at all times take proper precautions for the protection of and replacement or restoration of landscaping, driveway culverts, street intersection culverts or aprons, irrigation crossings and systems, mailboxes, driveway approaches, signs, existing utilities, and all other public and private installations that may be encountered during the Work.

D. No driveway or private alley shall be blocked without prior written permission from the resident who would be affected by such blocking, with a copy to the Town.

E. No road shall be closed at any time.

F. Contractor shall advise the Police Department, school districts, trash services, and homeowners of any lane closures, including dates and times.

G. It is anticipated that a large number of employees will use automobiles for transportation to and from the work site. It shall be Contractor's responsibility to: maintain, protect, and control traffic in the vicinity of and in the work site; restrict parking on streets near the work site; and provide necessary parking areas for all employees in suitable locations as approved by the Town.

20. Archaeological and Historical Discoveries.

A. Contractor shall inform the Town of any evidence which might suggest to a layperson that archaeological or historical materials may be present in the work site. Upon making such a discovery, Contractor shall do whatever is necessary to avoid disturbing the work site. This may require that Contractor's activities be redirected or stopped until the Town determines how to proceed.

B. As a result of Contractor's efforts to preserve the potential discovery at the work site, if Contractor's activities are delayed for longer than 8 normal work hours, Contractor shall prepare accounting information to support an adjustment to the Contract Price.

21. Water Control.

A. Contractor shall take such precautions as necessary to construct the Work in a dry condition, and Contractor shall provide for drainage, dewatering, and control of all surface

and subsurface water and shall erect any necessary temporary structures or other facilities at its own expense.

B. Contractor, at its own expense, shall furnish all necessary equipment and materials required to control the surface and subsurface water in all the areas from the commencement of Work through Final Completion.

C. Contractor shall be responsible for furnishing, transporting, and installing all materials and equipment, well points, pumping, channelization, diversion, damming, or other means of controlling surface water and ground waters.

22. Disposal Site

A. Contractor shall be responsible for the removal of all excess excavation, debris, deleterious material, muck, asphalt, concrete, trees, stumps, remains from clearing and grubbing, and all other materials not used for the construction of the improvements. Costs of disposal are included in the Contract Price and shall not entitle Contractor to additional compensation. Contractor shall designate in writing a disposal site located outside the Town limits and acceptable to the Town.

B. Contractor's cost for loading, hauling, daily cleaning of streets, disposal of the earthwork (excavation) materials, together with the construction, maintaining and watering of haul roads, and dump fees and permits are included in the Contract Price and shall not entitle Contractor to additional compensation.

23. Video Prior to Construction. Contractor shall provide the Town with a video of the entire work site prior to beginning construction, including all adjacent areas, at Contractor's own expense. One copy of the video shall be provided to the Town and become the property of the Town prior to the commencement of any Work.

24. Existing Improvements and Restoration.

A. Contractor has field inspected the work site and fully understands that existing landscaping and improvements are present within the work site. Such existing improvements shall be protected. Any damage or disruption in the public right-of-way, drainage easements, Town property, or private property related to the Work shall be restored to pre-existing or better condition.

B. Contractor shall be responsible for replacing all existing improvements, including irrigation systems and landscaping, damaged during Contractor's activities, except as otherwise provided in the Contract Documents.

25. Erosion Control. Contractor shall provide an erosion/sediment control plan for use during construction. The plan shall include site specific details showing the type, location, and quantity of best management practices ("BMPs") to be used. The erosion/sediment control plan shall be designed to prevent sediment from leaving the construction area. Special attention shall be given to prevent sediment from entering into any wetland area. .

26. Vandalism. Contractor shall take all necessary steps to protect the work site from vandalism. Contractor shall be solely responsible to repair any damage caused by vandalism, including the removal of graffiti, at Contractor's own cost. The Contract Price shall not be increased to reimburse Contractor for such costs.

SPECIAL PROVISIONS SUPPLEMENT

The *2017 Standard Specifications for Road and Bridge Construction* controls construction of the Work. The following special provisions supplement or modify the Standard Specifications.

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REVISION OF SECTION 101 - DEFINITION AND TERMS

Section 101.28 Department shall be replaced with the Town of Superior.

Section 101.29 Engineer shall be defined as the Town of Superior acting directly or through an authorized representative, who is responsible for engineering and administrative supervision of the project. The terms Project Engineer and Project Manager shall be interchangeable.

Section 101.39 Laboratory shall be defined as the testing laboratory of the Town of Superior or other laboratory designated by Town of Superior.

Section 101.58 Region Transportation Director shall be defined as the Town of Superior.

Section 101.76 State shall be defined as the Town of Superior.

REVISION OF SECTION 203 - EXCAVATION AND EMBANKMENT

Section 203.01 shall include the following: The contract work to be performed under this section consists of furnishing all required labor, materials equipment, implements, parts and supplies necessary for, or appurtenant to the site preparation and grading for tennis courts in accordance with these specifications.

Section 203.04 shall include the following:

Subgrade Requirements. If the soils engineers' report shows favorable soils (non-expansive, stable) conditions, native materials can be used for the sub-base. Should unfavorable soils be shown, the contractor will defer to the engineers' recommendations for sub-grade preparation.

Subgrade Preparation. Subgrade shall be prepared with proper equipment, to plan elevations and slope, to +/- 0.1'. Required slope-for-drainage for play court construction is a minimum of 1" in 10' (0.833%) or no more than a maximum of 1%. Slope shall be in one plane, with no grade break located within the confines of the play court area. Compaction shall be 95% of modified proctor optimum moisture condition.

Section 303.12 shall include the following: The accepted quantities of Unclassified Excavation will be measured and paid for by the volumes of excavated material removed.

PAY ITEM	PAY UNIT
Unclassified Excavation	Cubic Yard

REVISION OF SECTION 207 - TOPSOIL

Section 207.01 shall include the following: All disturbed areas to be landscaped shall be dressed with 6"of topsoil. All topsoil shall be secured from the site and, if deemed necessary by the Project Engineer, amended. It shall also include the placing of topsoil upon constructed cut and fill slopes after grading operations are completed and prior to seeding.

Section 207.03 shall include the following:

Topsoil Removal. After the construction area and its access have been delineated, the vegetation shall be mowed to a maximum height of 4" over the area to be disturbed. If the amount of vegetation exceeds what can be incorporated into the soil without interfering with establishing a proper seedbed, then excess vegetation shall be removed. Any subsoil removed shall be placed separate from the topsoil. Under no circumstances shall subsoil be mixed with topsoil, and subsoil

shall not be placed on top of the topsoil. The topsoil shall be protected from contamination by subsoil material, weeds, etc. and from compaction by construction equipment and vehicles.

Relieving Compaction. Areas that are compacted by heavy equipment shall be ripped or chiseled prior to redistribution of topsoil. Construction areas and other compacted areas will be chiseled to a minimum depth of 10", with no more than a 10" interval between chiseled furrows. Two passes with a chiseler may be necessary, with the second pass chiseling between the first furrows, or perpendicular to original furrows.

Redistribution of Topsoil and Application of Amendments. The salvaged topsoil shall be redistributed uniformly over the disturbed areas, minimizing compaction by equipment. Topsoil redistribution shall not occur under wet soil conditions. If topsoil is contaminated, compacted or otherwise improperly handled, topsoil shall be amended with compost at a rate of 3 cubic yards per 1000 square feet of disturbed area to provide a suitable seedbed. Compost shall consist of at least 40 % organic matter, with a pH not to exceed 8.0, and soluble salts not greater than 10 Mmhos/cm. The carbon to nitrogen ratio of the compost shall be between 10:1 and 20:1. Compost shall be incorporated evenly throughout topsoil.

REVISION OF SECTION 212 - SEEDING AND FERTILIZER

Section 212.04 shall include the following:

Soil Preparation. Following redistribution of topsoil, as described in Section 207.03, the disturbed areas shall be chiseled again to a minimum depth of 10", with no more than a 10" interval between chiseled furrows. On disturbed areas, further seedbed preparation such as discing, harrowing or firming operations will be necessary to reduce soil clods that are greater than 4" in diameter, and to provide a seedbed that is firm and friable.

Seeding. The seed mix and planting rate specifications are shown in the plans. Seed shall be drilled with a drill that is capable of placing the specified seed at the specified rate, at a ½" - 3/4" depth. The drill shall have an 8" or less drill row spacing and be equipped with packer wheels to firm the soil over the drill row. Dragging chains behind the drill to cover seed is not an acceptable substitute. Seeding shall be completed between October 1 and March 31. Seeding outside this period must be approved by the Town in advance. In between these dates a cover crop may be used, until the appropriate time to seed specified mix.

Post-Seeding Weed Control. To prevent damage to young seedlings, no herbicides will be used. Reclaimed areas with slopes not exceeding 3:1 will be mowed to prevent flowering and weed seed development. Hand methods will be implemented on steep slopes. Mowing will be undertaken twice during the first growing season to prevent desiccation of the grass seedlings with a mowing height of 6" to 8".

Section 212.07 Delete the third paragraph and replace with the following: Soil conditioner and soil preparation shall be paid for as Soil Preparation. It will be measured by the actual number of acres in which preparation and conditioner is applied.

Section 212.08 shall be modified to include the following:

Pay Item	**Pay Unit**
Soil Preparation	Acre
Seeding (Rock Creek Native)	Acre

REVISION OF SECTION 213 - MULCHING

Section 213.03 shall include the following: After seeding has been completed, the application of mulch is recommended on the seeded areas to protect the seed and conserve soil moisture which will aid in seedling germination and establishment. The seeded area shall be mulched within 24 hours after seeding. The following types of mulch are recommended for 3:1 slopes or flatter. Wood fiber hydromulch with guara gum tackifier: A standard rate of 3000 lbs. per acre of hydromulch and 80 lbs. per acre of guara gum tackifier will be appropriate for most projects unless otherwise specified on the project plans. The operator shall spray apply the slurry of wood fiber mulch according to the manufacturer's specifications in a uniform manner over the designated seeded areas. Seed shall not be incorporated and applied simultaneously with the hydromulch slurry.

Section 313.05 shall include the following:

PAY ITEM	**PAY UNIT**
Mulching (Hydraulic)	Acre

REVISION OF SECTION 304 AGGREGATE BASE COURSE

Section 304.06 shall include the following: Fine grading shall be accomplished using automatic, laser-guided equipment capable of achieving a tolerance of +/- 3/8". Vapor barrier (15 mil) shall be placed under the entire area of the aggregate base course. If the required compacted depth of the aggregate base course exceeds 6", place course in 2 or more layers of approximately equal thickness. The minimum thickness of any one layer shall be 3".

Section 304.08 shall include the following:

PAY ITEM	**PAY UNIT**
Aggregate Base Course	Cubic Yard
Crusher Fines (6")	Square Yard

Vapor barrier will not be measured and paid for separately but shall be included in the work.

REVISION OF SECTION 607 - FENCING

Replace **Section 607 Fencing** of the Standard Specifications with the following:

Height. Height of fence shall be 10'-0" or 4'-0", where specified on the plans.

Fabric. Chain link fabric shall be 11 gauge galvanized core, finished to 8-gauge when coated. Zinc coating to be minimum of 0.15 oz. per square foot. Extruded polyvinyl chloride coating shall be minimum wall thickness of 0.015". The base metal shall have a minimum breaking strength of 850 pounds. Top and bottom selvage of the fabric shall be knuckled with 1 3/4" fabric mesh.

Method of Manufacturing. Pipe used for fence framework shall be 40-weight, cold rolled and radio frequency welded from steel conforming to ASTM A446 grade D. Exterior and interior surfaces shall receive a hot dip zinc coating of 1.0 oz. per square foot, followed by a chromate conversion coating per ASTM A525. The application of the coating will consist of 3.0 mils of cured thermosetting polyester powder coatings.

Posts. All line, corner, thermal and gate posts shall be 2 7/8" OD, 40-weight, with a wall thickness of 0.160". Posts spacing shall be 10' o.c. post to post and post steel shall have minimum yield strength of 50,000 PSI.

Top, Mid-Rails or Bottom Rail. Top rail and bottom rails shall be 1 5/8" OD pipe with a wall thickness of .111" (11 GA) and minimum yield strength of 50,000 PSI.

Accessories.

Fabric Ties: 9 Ga. coated tie-wires.

Tension Bands: 2 7/8", Non-beveled type.

Brace Bands: 2 7/8", Non-beveled type.

Eye Tops: Pressed steel, 1 5/8" x 2 7/8"

REVISION OF SECTION 607 - FENCING

Dome Tops: 2 7/8" & 4" pressed steel.

Rail ends: 1 5/8" pressed steel.

Line Rail Clamps: 1 5/8" x 2 7/8" for middle rails.

Coating: All fittings to be polyester coated over galvanized finish.

Gates. Construct gate frames with 1 5/8" OD rail material with welded comers. Provide fabric filler same as used in fence and use 180 degree hinges with lockable latches.

Concrete. Concrete shall have 28 day, 4,000 psi compressive strength.

Construction Requirements:

Workmanship. The complete fence shall be plumb, both in line and transverse to the fence, straight and rigid with fabric tightly stretched and held firmly in place. Details of construction not specified shall be performed in keeping with standard good fencing practices. Bottom of chain link shall hang 1" from tennis surf ace.

Posts. Post spacing to be no more than 10' on center. Foundations to be 12" diameter, extending 10" below bottom of perimeter beam.

Rails. Install rails as shown on drawings. Set rails as nearly parallel to the grade as possible and at the specified height.

Gates. Gates shall hang plumb and true, and swing easily either direction with no interference. Use lockable fork latches.

REVISION OF SECTION 607 - FENCING

Fabric. Fabric to be stretched taught to where there is no movement in the mesh when compressed. Top rail and bottom rail ties shall be 12" on center. Posts ties shall be 12" on center.

Basis of Payment:

PAY ITEM	**PAY UNIT**
Chain Link Fence (10') (Coated)	Linear Foot
Chain Link Fence (4') (Coated)	Linear Foot

REVISION OF SECTION 608 - SIDEWALKS AND BIKEWAYS

Add the following to **Section 608** for Concrete (5") (Post-Tension):

Description: The contract work to be performed under this section consists of furnishing all required labor, materials, equipment, implements, parts and supplies necessary for, or appurtenant to, the construction of a 5" thick post-tensioned concrete slab. Work shall be performed by a contractor with a minimum of 6 similar, successfully completed projects within the past 3 years who is a member of the American Sports Builders Association, and has a Certified Tennis Court Builder on staff. Contractor shall be a member of the Post-Tensioning Institute (PTI). Installing foreman shall be a certified by the Post-Tensioning Institute (PTI) as a Level 1 installer and all work to be supervised by a PTI Certified Level 2 Inspector. To eliminate potential liabilities of construction, the contractor or subcontractor for the post- tension slab shall assure single-source responsibility by completing all work with his own forces, to include fine grading, construction, tendon fabrication and placing, concrete placement and tendon stressing. Contractor shall submit its final design and calculations for review 2 weeks prior to the start of construction of the slab. Contractor shall provide the following documentation:

a) Concrete mix design.

b) Cable elongation records following final stress operations.

Fine Grading Materials. Fine grading material to be a free draining, loosely compactable material, such as Structural Fill or Crusher Fines.

REVISION OF SECTION 608 - CONCRETE (5") (POST-TENSION)

Tensioning Cables and Anchors. Post-tensioning strands and anchorages shall conform to the "PTI Guide specifications for Post-Tensioning Materials." The tensioning strands shall consist of ½" diameter, 7-wire, stress relieved strands, having a guaranteed ultimate tensile strength of 270,000 psi (270 ksi). Strands shall conform to ASTM-A416. Cables shall be fabricated to proper length for each slab, coated with a permanent rust preventative lubricant and encased in slippage sheathing. All breaks in the sheathing shall be repaired with tape prior to concrete placement. A maximum of 12" exposed strands is permitted at the dead-end anchor. A maximum horizontal deviation of +/-6" at each cable is allowed, and a maximum vertical deviation of +/-½" is allowed.

Concrete Mix Design. The concrete shall have a compressive strength of not less than 4000 psi after 28 days. Ready-mixed concrete shall be mixed and delivered according to ASTM C-94 specifications for ready-mixed concrete with a 5" maximum slump. Mix design as follows: cement - type I/II, 6 sack unit weight - 142.3 lbs. per cubic foot, air entrainment - 6.0% (+/-1%), water/cement ratio - 0.49/1.

Construction Requirements:

Fine Grading. From a prepared subgrade, fine grading shall be accomplished with the use of laser-guided machinery, capable of providing a true plane to a tolerance of +/-3/8". Average depth of fine grade material shall be approximately 0.1'.

Forming. Forms shall be accurately set to the lines and to plus or minus + 1/4" of finished grades indicated on drawings and be securely staked to prevent settlement or movement during placement of concrete. Forms shall remain until concrete has taken final set.

REVISION OF SECTION 608 - CONCRETE (5") (POST-TENSION)

Tensioning Cables and Anchors. All cables shall be supported on chairs and loosely tied 2" high at all intersections (too tightly tied, tendon friction will increase when tensioning) to prevent vertical and horizontal movement during concrete placement. Strands shall be placed with no

greater spacing than 2' 6" on center, +/-12", for lengths over 100' and 3' 4" on center, +/-12", for lengths under 100'. Tendon spacing is intended to achieve a minimum of 125 psi (P/A) compressive stress in the concrete slab. The perimeter beam cross section is to be 12" x 12". Cable ends are to be anchored approximately 4" below surface of the slab. One continuous #4 grade 60 bar lies longitudinally around the court beam directly inside the cable anchor on the top of the cables. Overlapping shall be a minimum of 30 bar diameters.

Concrete Placement. A full court shall be placed in one continuous operation without intervening joints of any kind. The 4.5" thick slab shall be placed either with a laser-screed device capable of providing a surface tolerance to within +/-1/4" when measured under a 10' straightedge or by the use of a mechanical screed capable of spanning a minimum of 62' width. Contractor shall provide sufficient manpower to ensure the uniform distribution of concrete ahead of the screed and will not allow substantial build-up of concrete on leading edge of screed. Concrete shall be placed in accordance with ACI specifications for Hot Weather and Cold Weather placement. Concrete reaching 90 minutes past batching time prior to placement will be rejected.

Finishing. Following dissipation of bleed water from surface of concrete, finishing operations can begin. Concrete shall be finished by any means to provide for a planar surface, free from ridges and depressions. Concrete shall be textured with a light to medium broom finish. Edges shall be finished with ½" radius edger.

Tensioning Operations. After the forms are removed and the concrete has set to a minimum of 1,700 psi (typically 24 hours) a partial tensioning may be applied to restrict movement and cracking. Following one week of curing, when concrete has attained a minimum strength of 2,700 psi, the final stress procedure may begin. Each tendon shall be tensioned to a maximum of 80% ultimate breaking strength, and anchored at a minimum of 70% ultimate breaking strength.

REVISION OF SECTION 608 CONCRETE (5") (POST-TENSION)

Ultimate Breaking Strength	80%	70%
41,300 lbs	33,000 lbs	28,900 lbs

Cable elongation records shall be accurately kept and provided to the Town. Measured elongation shall be compared to calculated elongation to assure specified tension. Cable elongation to be within +/- 10% of calculated elongation. Following confirmation of elongation, the cable ends shall be cut off and cone holes grouted flush with edge of slab. Grout shall be non-shrink grout.

Curing. Immediately after finishing, the concrete shall be kept moist by covering with polyethylene, by sprinkling, by ponding or by curing compound (must be compatible with acrylic tennis surfacing material).

Basis of Payment:

Pay Item	**Pay Unit**
Concrete (5") (Post Tension)	Square Foot

REVISION OF SECTION 627 - ACRYLIC SURFACING

Replace **Section 627** of the Standard Specifications with the following:

Description of Work. The Work to be performed under this section consists of furnishing all required labor, materials, equipment, implements, parts and supplies necessary for, or appurtenant

to, the colored/textured surfacing of play courts (tennis or basketball) in accordance with these specifications.

Quality Assurance. No Asphalt Emulsion/Resurfacer coatings of any type will be allowed as a substitute filler coat to the specified Acrylic Resurfacer. References for 5 similar, successfully executed projects is required. All bidding subcontractors shall be builder members of the American Sports Builders Association and will have a Certified Tennis Court Builder on staff.

Limitations. Application temperature shall be a minimum of 50°F in direct sunlight and be above 40F at nighttime. The surface temperature shall also not exceed 130°F. Do not apply when surface is wet or if rain is imminent or forecasted. Keep all coatings from freezing. Do not store in direct sunlight for an extended period. Container shall be closed when not in use.

Materials:

RSS Acrylic Concrete Primer. Concrete Primer coat shall be mixed 2 parts clean potable water to one-part RSS Acrylic Latex (2:1)

RSS Rhino Patch Binder. Rhino Patch will be mixed as follows to fill bird baths and fill cracks:

2.5 gallons of Rhino Patch Latex,

2 gallons of Portland Cement

100 lbs. of Silica Sand.

REVISION OF SECTION 627 - ACRYLIC SURFACING

RSS Acrylic Resurfacer. One Acrylic Resurfacer coat shall consist of the following mixture:

55 gals. RSS Acrylic Resurfacer

400-500 lbs. Silica Sand 30-60 mesh 15-23 gals. Water- fresh & potable

RSS Acrylic Color. The acrylic color applications for a slow tennis surface shall consist of 2 coats of the following mixture:

50 gals. RSS Acrylic Color Concentrate

400 lbs. Washed Silica Sand, 40-60 mesh slow speed of play formulation 20 gals. Water -fresh & potable

Playing Lines. Playing lines shall be 2" wide and painted on using RSS Textured White Line paint. Lines shall have one RSS Tape Sealer prime coat applied before line paint is used to ensure crisp edges.

Manufacturer. RSS Acrylic Coatings- 775 Canosa Court, Denver, CO 80204 (800) 738-8106 or approved equal.

Construction Requirements:

1. Surface Preparation

A. Prior to the surfacing applications, the courts shall be thoroughly cleaned by pressure washing to remove all dirt and debris.

B. Existing cracks (if applicable) will be cleaned of debris and filed full depth and level with the playing surface using Rhino Crack Filler. Cracks shall be ground smooth to court surface prior to application of RSS Acrylic Resurfacer coats.

C. After a flood test and then a one hour wait in direct sunlight with temperatures 70 degrees and rising, any areas of standing water remaining that cover a US Nickle shall be patched with Rhino Patch. Areas to receive patches shall be primed first with a mix of water and RSS Rhino Binder Latex mixed 2:1.

REVISION OF SECTION 627 - ACRYLIC SURFACING

RSS Acrylic Concrete Primer. One squeegee applied coat of RSS Acrylic Concrete Primer shall be applied over all the courts to ensure adequate coverage of the concrete. A brush coat shall be applied to concrete outside the fence lines. Care shall be taken not to leave any puddles of material.

RSS Acrylic Resurfacer. One coat will be applied over the entire court. The mixture will be agitated in a 100 gallon paddled mortar mixer to provide a consistent and homogeneous solution. The acrylic resurfacer coat shall provide a uniform surface with no ridges.

RSS Acrylic Color. Two coats of the mixture shall be agitated in a 100 gallon paddled mortar mixer to provide a consistent and homogeneous solution. The mixture shall be applied over the entire court surface using a rubber-tipped squeegee in 2 separate applications with sufficient drying time allowed between coats. The color shall be free of ridges and shall have a uniform appearance.

Playing Lines. One coat of RSS White Textured Line paint shall be applied, 2" wide and will be accurately located and marked by snapping a chalk lines and placing 1" masking tape guides using a line taper to USTA Specifications for doubles play. All lines will be primed first with one coat of RSS Tape Sealer to provide a uniform crisp line.

Method of Measurement:

Acrylic surfacing shall not be measured but shall be paid for at the contract lump sum unit price.

Basis of Payment:

Pay Item	**Pay Unit**
Acrylic Surfacing	Lump Sum

CONSTRUCTION DRAWINGS

SEE ATTACHMENT

TOWN OF SUPERIOR
STATE OF COLORADO

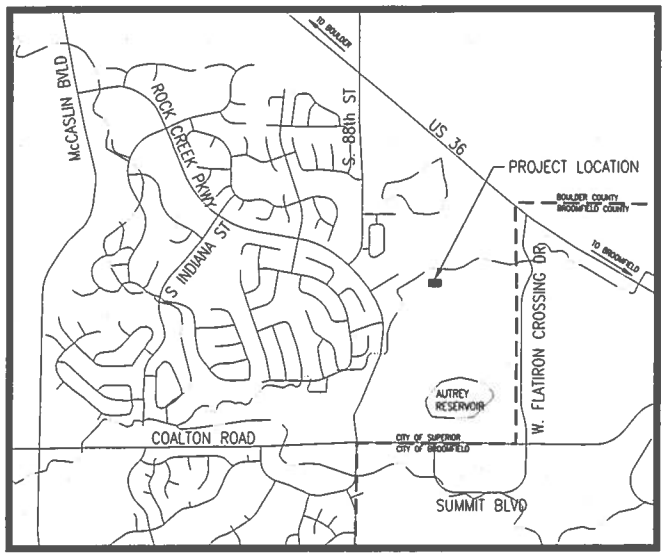
SUPERIOR PICKLEBALL COURTS

TOWN OF SUPERIOR, BOULDER COUNTY, COLORADO

PROJECT CONTACTS

OWNER
TOWN OF SUPERIOR
ALLISON JAMES
124 E. COAL CREEK DRIVE
SUPERIOR, COLORADO 80027
P. (303) 381-2014

LANDSCAPE ARCHITECT
OTAK
ANTHONY PRATT, PLA
100 SUPERIOR PLAZA WAY
SUITE 220
SUPERIOR, COLORADO 80027
P. (303) 444-2073



VICINITY MAP
0 1000 2000
ORIGINAL SCALE: 1" = 2000'
SECTION 13
TOWNSHIP 1 SOUTH
RANGE 70 WEST

N

INDEX OF SHEETS

SHEET NO	DRAWING NO	DESCRIPTION
1		TITLE SHEET
2		GENERAL NOTES
3		CONSTRUCTION DETAILS
4		SITE PLAN
5		GRADING PLAN
6		SURFACING PLAN

100% SUBMITTAL - APRIL 1, 2020

Print Date: Mar 31, 2020		Sheet Revisions			Otak	As Constructed	SUPERIOR PICKLEBALL COURTS TITLE SHEET	Project No./Code
File Name: 18771-(01) Title Sheet.dwg		Date:	Comments	Init.		No Revisions:		
Horiz. Scale: Vert. Scale: As Noted						Revised:	Designer: AJP Structure	
Unit Information Unit Leader Initials						Void:	Detailer: MAW Numbers	Sheet Number 1
							Sheet Subset: Subset Sheets:	

UTILITIES:

U1. UTILITY LINES AS SHOWN ON THE PLAN SHEETS ARE PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 105.10 OF THE CDOT STANDARD SPECIFICATION CONCERNING UTILITIES. FOR UTILITY LOCATES, THE CONTRACTOR SHALL CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811 AT LEAST THREE (3) WORKING DAYS (NOT INCLUDING THE INITIAL DAY OF CONTACT) PRIOR TO DIGGING, GRADING OR EXCAVATING.

U2. THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS HOWEVER THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES PRIOR TO COMMENCING CONSTRUCTION AND TO NOTIFY THE OWNER OF ANY DISCREPANCY. ALL CONFLICTING UTILITIES SHALL BE EXPOSED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND INSPECTED BY THE OWNER TO VERIFY CONFORMANCE WITH THE PLANS. THIS PARTICULARLY APPLIES TO UNDERGROUND WORK TO BE COMPLETED ON THIS PROJECT BY THE CONTRACTOR. RELOCATION OF EXISTING UTILITIES IS NOT A PART OF THIS CONTRACT EXCEPT AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF UTILITY RELOCATIONS BY UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD TOWN OF SUPERIOR HARMLESS FOR DAMAGES ARISING FROM CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES.

U3. THE CONTRACTOR SHALL REFERENCE THE PROJECT TECHNICAL SPECIFICATIONS FOR ADDITIONAL ITEMS THE CONTRACTOR SHALL ADHERE TO IN COOPERATION WITH UTILITIES.

UTILITY CONTACT LIST

ADDITIONAL UTILITIES MAY BE ENCOUNTERED WITHIN THE PROJECT LIMITS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL THE WORK BEING DONE WITH ALL THE UTILITY COMPANIES WITHIN THE PROJECT AREA. CONTRACTOR TO ASK THE OWNERS REPRESENTATIVE FOR A LIST OF CONTACT INFORMATION FOR UTILITIES WITHIN THE TOWN OF SUPERIOR.

CONSTRUCTION:

C1. PICKLEBALL COURT LOCATION MAY BE ADJUSTED BY THE OWNER IN THE FIELD. CONTRACTOR SHALL OBTAIN FORMAL APPROVAL OF THE PROJECT MANAGER PRIOR TO THE PLACEMENT OF THE PICKLEBALL COURT.

C2. THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM WATER AT ALL TIMES. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO COST TO THE OWNER. THIS SHALL INCLUDE REMOVAL OF ANY DEBRIS CAUSED BY FLOODING.

C3. LIMITS OF CONSTRUCTION SHALL BE CONFINED TO PUBLIC RIGHTS-OF-WAY, EASEMENTS, CONSTRUCTION LIMIT AREAS, OR AS DIRECTED BY THE OWNER IN THE FIELD.

C4. REPAIR OF ANY DAMAGE TO EXISTING IMPROVEMENTS, IRRIGATION, ACCESS POINTS OR LANDSCAPING IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL ACCESS ROUTES SHALL BE RETURNED TO PRECONSTRUCTION CONDITION UPON COMPLETION OF THE PROJECT. ALL ASSOCIATED COSTS FOR REPAIR SHALL BE PAID FOR BY THE CONTRACTOR, AT NO EXPENSE TO THE TOWN OF SUPERIOR.

C5. THE CONTRACTOR SHALL NOTIFY THE OWNER 48 HOURS PRIOR TO THE START OF CONSTRUCTION. A PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION.

C6. THE CONTRACTOR SHALL HAVE: ONE (1) COPY OF THE PLANS, ONE (1) COPY OF THE CONSTRUCTION SPECIFICATIONS AND ONE (1) COPY OF THE STORMWATER MANAGEMENT PLAN ON THE PROJECT SITE AT ALL TIMES.

C7. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPES AS SHOWN ON THE PLANS AND CROSS-SECTIONS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. CONSTRUCTION ACTIVITIES IN ADDITION TO NORMAL CONSTRUCTION PROCEDURES SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER, AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS. THE CONTRACTOR SHALL NOT CONDUCT ANY OPERATIONS OR STAGING OUTSIDE THE CONSTRUCTION LIMITS SHOWN ON THE PLANS.

C8. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH IMPACTED UTILITIES TO ASSURE THE TIMELY RELOCATION OF THEIR FACILITIES. THIS COORDINATION SHALL INCLUDE ANTICIPATED IMPACTED UTILITIES AND UNFORESEEN UTILITIES.

C9. CONSTRUCTION STAKING: THE CONTRACTOR SHALL STAKE THE TRAIL ALIGNMENTS AT NO GREATER THAN 20' INCREMENTS PRIOR TO CONSTRUCTION. CONSTRUCTION STAKING SHALL BE BASED UPON THE HORIZONTAL CONTROL AND ALIGNMENT INFORMATION INCLUDED IN THE PLANS. AUTOCAD FILES OF THE PROJECT DESIGN AND ASSOCIATED FEATURES WILL BE PROVIDED TO THE CONTRACTOR UPON REQUEST. ALL STAKING MATERIALS SHALL BE REMOVED FROM THE SITE UPON COMPLETION OF THE PROJECT.

C10. CROSS SLOPE: TRAIL CROSS SLOPES SHALL BE NO GREATER THAN 2.0% UNLESS OTHERWISE SHOWN ON THE PLANS. THE MINIMUM CROSS SLOPE SHALL BE WITHIN INDUSTRY ACCEPTED CONSTRUCTION TOLERANCES OF THE STATED MAXIMUM CROSS SLOPE. THE CONTRACTOR SHALL VERIFY CROSS SLOPE WITH A DIGITAL SMART LEVEL OR OTHER APPROPRIATE MEASURING TOOLS DURING CONSTRUCTION. UNLESS INDICATED ON THE PLANS OR OTHERWISE APPROVED, ANY PORTION OF CONSTRUCTED TRAIL FOUND TO CONTAIN A CROSS-SLOPE GREATER THAN 2.0% SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER.

C11. VEGETATION: THE CONTRACTOR SHALL PROTECT EXISTING VEGETATION NOT SPECIFICALLY IDENTIFIED FOR REMOVAL TO THE GREATEST EXTENT POSSIBLE. REMOVAL OF TREES, UNLESS SPECIFICALLY IDENTIFIED IN THE PLANS SHALL BE APPROVED BY THE OWNER PRIOR TO REMOVAL. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND OFF-SITE DISPOSAL OF ALL PLANT MATERIAL.

C12. CONSTRUCTION EQUIPMENT: THE CONTRACTOR SHALL USE EQUIPMENT APPROPRIATELY SIZED FOR CONSTRUCTION. THE EQUIPMENT MUST BE WITHIN THE EXPECTED AREA OF DISTURBANCE OF THE PROJECT WITHOUT ADDITIONAL CLEARING OR DISTURBANCE NEEDED SOLELY TO ACCOMMODATE THE OPERATION OF EQUIPMENT OR TRANSPORT OF MATERIALS. EQUIPMENT MUST BE POWERWASHED PRIOR TO ENTERING SITE.

C13. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED 2017, AND AS SUBSEQUENTLY REVISED. THE STANDARD PLANS, DATED JULY 2012, AND THE TOWN OF SUPERIOR ROADWAY DESIGN CRITERIA AND STANDARDS, CURRENT EDITION, INSOFAR AS THE SAME MAY APPLY AND IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS INCLUDED HEREIN. IN THE CASE OF ANY CONFLICTS BETWEEN TOWN STANDARDS AND CDOT STANDARDS, TOWN STANDARDS SHALL TAKE PRECEDENCE.

C14. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE TOWN OF SUPERIOR, AND THE TOWN RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THEIR STANDARDS AND SPECIFICATIONS.

C15. ALL ITEMS REMOVED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED, AND SHALL BE DISPOSED OF PROPERLY.

EARTHWORK:

E1. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS ORDERED AND WILL NOT BE PAID FOR SEPARATELY.

E2. PRIOR TO MOISTURE DENSITY CONTROL, THE CONTRACTOR SHALL REMOVE ALL TOPSOIL AND SOFT OR DISTURBED SOILS. DEPTH OF MOISTURE - DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
FULL DEPTH OF ALL EMBANKMENTS
BASES OF CUTS AND FILLS - 12 INCHES

E3. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

E4. THE TYPE OF COMPACTION FOR EARTHWORK ON THIS PROJECT SHALL BE AASHTO T99 (MODIFIED PROCTOR). PROOF ROLLING OF ALL SUBGRADE WILL BE REQUIRED PRIOR TO CONCRETE SLAB POURING OR CRUSHER FINES PATH PLACEMENT AND SHALL BE INCLUDED IN COST OF THE WORK.

E5. FINAL GRADES SHOWN REFLECT A MINIMUM OF SIX(6) INCHES OF TOPSOIL BEING PLACED ON ALL DISTURBED AREAS NOT SURFACED. TOPSOIL TO BE USED IS SUBJECT TO REVIEW AND APPROVAL BY THE OWNER.

E6. ALL ON AND OFF-SITE MATERIAL USED ON THIS PROJECT SHALL HAVE A MINIMUM R VALUE OF 20, AND IS SUBJECT TO REVIEW AND APPROVAL BY THE OWNER PRIOR TO ITS INCORPORATION INTO THE PROJECT. ALL BORROW MATERIAL IMPORTED TO THE SITE SHALL MEET THE RESILIENT MODULUS CRITERIA IN ITS NATURAL STATE - NO MIXING SHALL BE ALLOWED. THE CHANNEL EXCAVATIONS ARE NOT SUITABLE FOR EMBANKMENT ON THIS PROJECT.

SIGNING, STRIPING, TRAFFIC CONTROL NOTES:

SS1. CONSTRUCTION TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) CURRENT EDITION. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A METHOD OF HANDLING TRAFFIC (MHT) TO THE OWNER FOR APPROVAL FOR EACH APPLICABLE PHASE OF WORK.

SS2. THE CONTRACTOR SHALL HAVE 1 HOUR TO RESPOND TO ANY PERMANENT OR TEMPORARY TRAFFIC CONTROL, STRIPING, OR SIGNAL MAINTENANCE THAT MAY BE REQUIRED THROUGHOUT THE DURATION OF THE PROJECT.

EROSION CONTROL NOTES:

ES1. CONTRACTOR TO PROVIDE OWNER WITH EROSION CONTROL PLAN PRIOR TO CONSTRUCTION.

SEEDING:

S1. SOIL PREPARATION, SOIL CONDITIONING OR TOPSOIL, SEEDING (NATIVE), MULCHING (WEED FREE) AND MULCH TACKIFIER WILL BE REQUIRED FOR AN ESTIMATED 0.34 ACRES OF DISTURBED AREA WITHIN THE RIGHT-OF-WAY LIMITS WHICH ARE NOT SURFACED. THE FOLLOWING TYPES AND RATES SHALL BE USED:

SEED MIX

Common Name	Botanical Name	% OF TOTAL	Pounds PLS/Acre
WESTERN WHEATGRASS	AGROPYRON SMITHII VAR. ARRIBA	28%	3.0
BIG BLUESTEM	ANDROPOGON GERARDII VAR. PAWNEE	28%	6.2
SIDE-OATS GRAMA	BOUTELOUA CURTIPENDULA VAR. EL RENO	10%	2.2
BLUE GRAMA	BOUTELOUA GRACILIS VAR. LOVINGTON	6%	1.2
SWITCHGRASS	PANICUM VIRGATUM VAR. PATHFINDER	10%	2.2
INDIANGRASS	SORGHASTRUM NUTANS VAR. CHEYENNE	10%	2.2
LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUS VAR. CIMARON	8%	1.8
	TOTAL	100%	22 LBS/ACRE

DRAINAGE/STORM SEWER NOTES:

D1. THE CONTRACTOR IS REQUIRED TO KEEP ALL DRAINAGE FACILITIES FUNCTIONAL AND MAINTAIN DRAINAGE TO THOSE FACILITIES AT ALL TIMES DURING CONSTRUCTION.

811 Know what's below. Call before you dig.

VEGETATION NOTES:

V1. THE CONTRACTOR SHALL REVIEW THE SITE WITH THE OWNER PRIOR TO CONSTRUCTION. NO TREES SHALL BE REMOVED WITHOUT PRIOR APPROVAL FROM THE OWNER. TREES SHALL BE FALLEN AND REMOVED FROM THE PROJECT ON THE SAME DAY OF REMOVAL. THE CONTRACTOR SHALL SHALL PROTECT EXISTING TREES TO THE GREATEST EXTENT POSSIBLE.

V2. TREES GREATER THAN 6" DIAMETER TO BE PAID FOR AS TREE REMOVALS. TREES SHALL BE MEASURED FROM 4'-6" FROM THE GROUND (AS DEFINED DIAMETER AT BREAST HEIGHT). TREES 6" OR LESS THAN THIS CALIPER TO BE REMOVED SHALL BE PAID FOR UNDER CLEARING AND GRUBBING. ANY TREE LIMB TRIMMING DESIRED BY THE CONTRACTOR SHALL BE REVIEWED WITH THE OWNER AT LEAST ONE WEEK IN ADVANCE OF THE TASK.

ENVIRONMENTAL NOTES:

EN1. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN EXISTING BMPs AND ENSURE THEIR COMPLETE REMOVAL ONCE 70% VEGETATION OF SPECIFIED SPECIES HAS BEEN RE-ESTABLISHED IN DISTURBED AREAS.

EN2. THE CONTRACTOR SHALL PREVENT DEBRIS FROM BEING TRANSPORTED OUTSIDE OF THE SITE DURING CONSTRUCTION. CONSTRUCTION DEBRIS SHALL BE CLEANED FROM THE SITE DAILY AND CONTAINED IN A TRASH ENCLOSURE.

CONCRETE SULFATE EXPOSURE:

CS1. THE CONCRETE SULFATE EXPOSURE FOR THIS PROJECT IS CLASS 0.

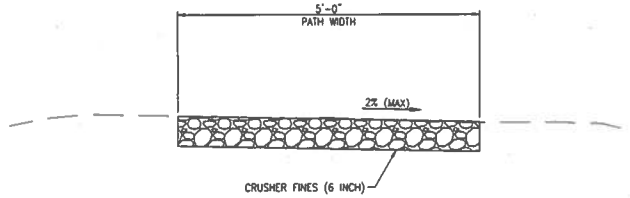
DRIVEWAYS AND SIDEWALKS:

DS1. ALL DRIVEWAYS AND SIDEWALKS IMPACTED BY THE PROJECT SHALL BE MAINTAINED BY THE CONTRACTOR, UNLESS OTHERWISE APPROVED BY THE OWNER. THE CONTRACTOR SHALL PROVIDE AN ALL WEATHER SURFACE TO THE THE SATISFACTION OF THE OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION, IN ORDER TO PROVIDE ACCESS AT ALL TIMES.

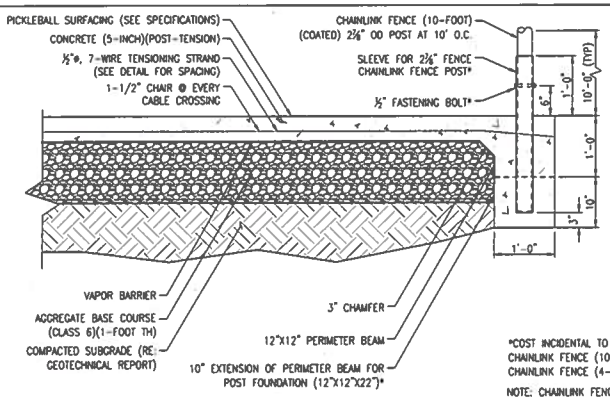
DS2. THROUGHOUT AREAS OF CONSTRUCTION, CLEAR PEDESTRIAN AND BICYCLE DETOURS WILL REPLACE SIDEWALKS/PATHS IMPACTED BY CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A TRAFFIC AND PEDESTRIAN CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL.

ABBREVIATIONS TABLE

AASHTO	ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABAN	ABANDON
ABC	AGGREGATE BASE COURSE
ABUT	ABUTMENT
ALT	ALTERNATE
AMT	AMOUNT
APPROX	APPROXIMATE
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AVG	AVERAGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BF	BACK FACE
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BM	BENCH MARK
BMP	BEST MANAGEMENT PRACTICE
BOC	BACK OF CURB
BOF	BOTTOM OF FOOTING
BOW	BACK OF WALK / BOTTOM OF WALL
BRG	BEARING
BS	BACKSIGHT
C&G	CURB AND GUTTER
C/C	CENTER TO CENTER
CB	CATCH BASIN
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CFS	CUBIC FEET PER SECOND
CJ	CONSTRUCTION JOINT / CONTROL JOINT
CL / ℄	CENTER LINE
CLR	CLEAR
CO	CLEAN OUT
COM	COMMUNICATION
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS(ATION)
COR	CORNER
CP	CONTROL POINT
CY	CUBIC YARDS
DEMO	DEMOLITION
DET	DETAIL
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWG	DRAWING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL/ELEV	ELEVATION
ELEC	ELECTRICAL
ENGR	ENGINEER
EOP	EDGE OF PAVEMENT
EOTW	EDGE OF TRAVELED WAY
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ESMT	EASEMENT
EST	ESTIMATE
EX	EXISTING
FD	FOUNDATION DRAIN
FES	FLARED END SECTION
FF	FINISH FLOOR / FRONT FACE
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FN	FENCE
FPS	FEET PER SECOND
FT	FEET
FTG	FOOTING / FITTING
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GND	GROUND
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GRTG	GRATING
GV	GATE VALVE
HCL	HORIZONTAL CONTROL LINE
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HP	HIGH POINT
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWL	HIGH WATER LINE
HWY	HIGHWAY
ID	INSIDE DIAMETER
INV	INVERT
INV EL	INVERT ELEVATION
IRR	IRRIGATION
LF	LINEAR FOOT
LP	LIGHT POLE
LT	LEFT / LIGHT
MAINT	MAINTENANCE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MAIL BOX
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
NA	NOT APPLICABLE
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
NWL	NORMAL WATER LINE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OHE	OVERHEAD ELECTRIC
PC	POINT OF CURVATURE
PEJF	PREFORMED EXPANSION JOINT FILLER
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PP	POWER POLE
PREFAB	PREFABRICATED
PRELIM	PRELIMINARY
PREP	PREPARATION
PROP	PROPOSED
PRV	PRESSURE REDUCING VALVE / PRESSURE RELIEF VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVE / POLYVINYL CHLORIDE
PVMT	PAVEMENT
QTY	QUANTITY
R/RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RE/REF	REFERENCE
REINF	REINFORCED (D) (ING) (MENT)
REQD	REQUIRED
ROW	RIGHT OF WAY
RT	RIGHT
SAN	SANITARY
SD	STORM DRAIN
SF	SQUARE FOOT
SHT	SHEET
SPA	SPACING/SPACES
SPEC	SPECIFICATION
STA	STATION
STD	STANDARD
STL	STEEL
STM	STEAM
SWMP	STORM WATER MANAGEMENT PLAN
SY	SQUARE YARD
SYM	SYMMETRICAL
T	TELEPHONE
TAN	TANGENT
TBC	TOP BACK OF CURB
TEMP	TEMPORARY
TOC	TOP OF CONCRETE / TOP OF CURB
TOW	TOP OF WALL
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UE	UNDERGROUND ELECTRICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W	WIDE / WIDTH / WATER
w/	WITH
w/o	WITH OUT
WWF	WELDED WIRE FABRIC
X	SECTION
@	AT
(CIP)	COMPLETE (CAST) IN PLACE
N	NORTH
S	SOUTH
E	EAST
W	WEST



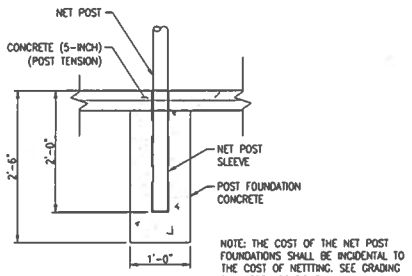
CRUSHER FINES PATH (6 INCH) SECTION



*COST INCIDENTAL TO CHAINLINK FENCE (10-FOOT)(COATED) AND CHAINLINK FENCE (4-FOOT)(COATED)

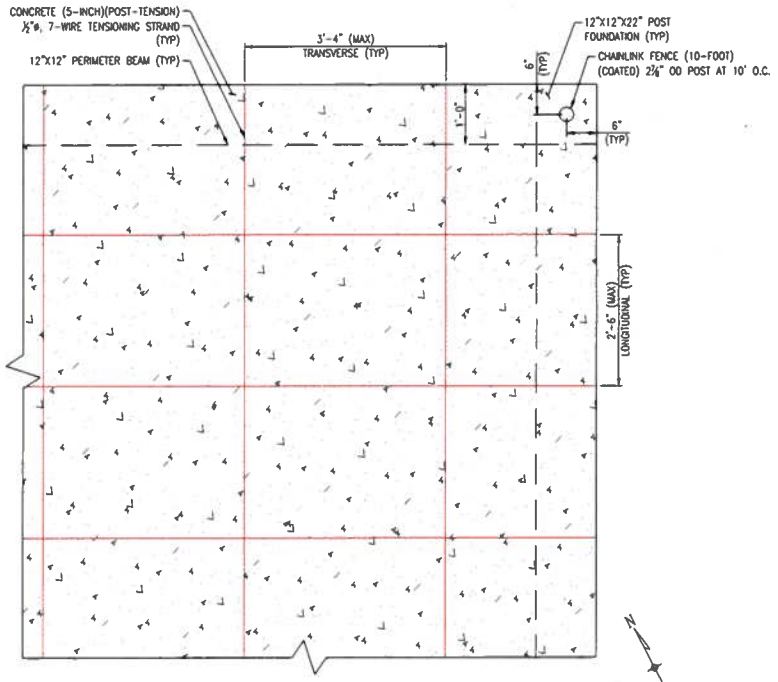
NOTE: CHAINLINK FENCE (4-FOOT)(COATED) SHALL BE SET IN 12"X12"X22" FOUNDATIONS WITH SLEEVE.

TYPICAL PERIMETER BEAM & FENCE SECTION



NOTE: THE COST OF THE NET POST FOUNDATIONS SHALL BE INCIDENTAL TO THE COST OF NETTING. SEE GRADING PLAN FOR LOCATIONS.

TYPICAL NET POST FOUNDATION



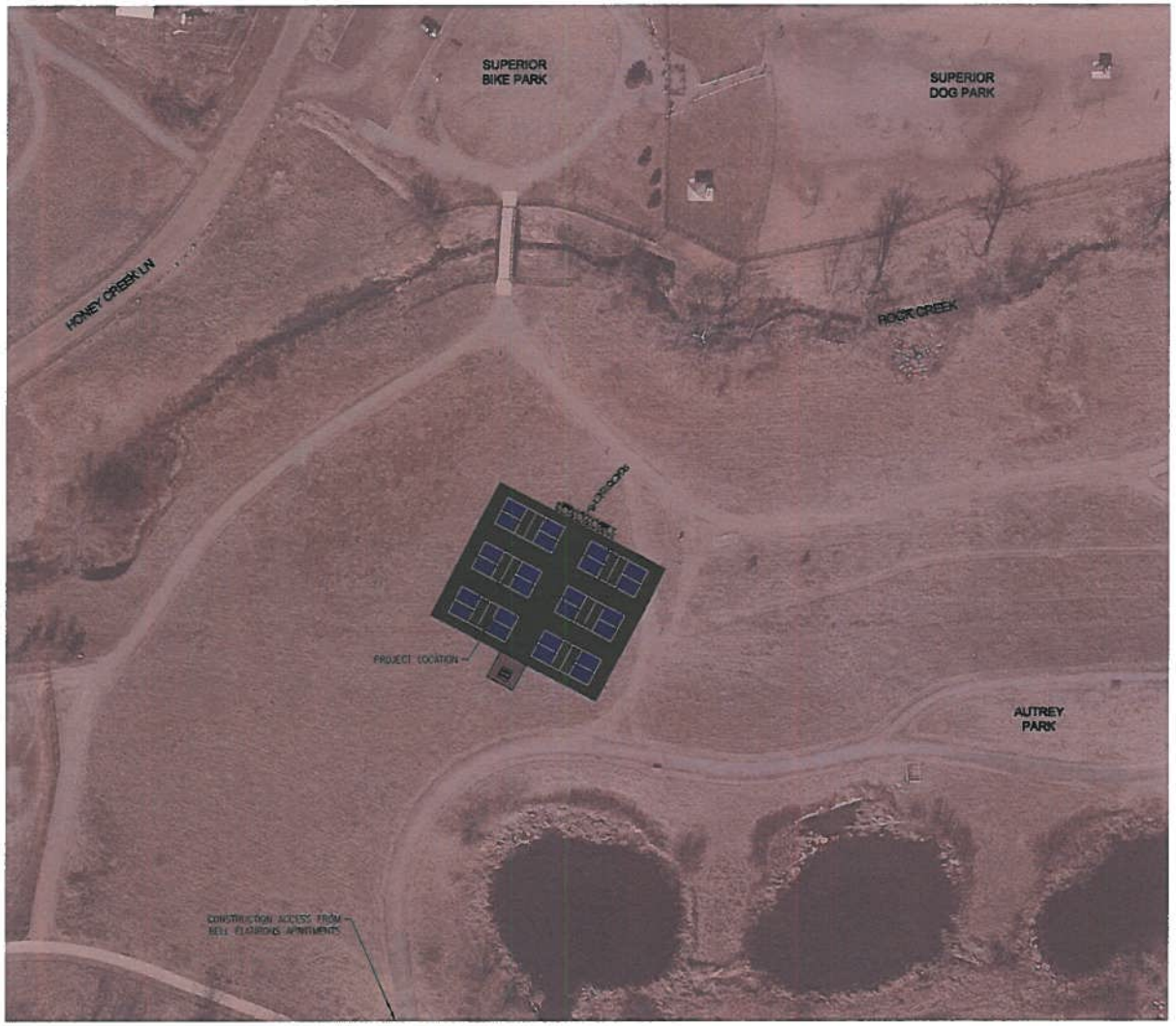
TYPICAL SLAB AND PERIMETER PLAN

NTS

100% SUBMITTAL - APRIL 1, 2020

Y:\shared\Projects\Town of Superior\018771.000 - Pickleball Courts\50 DWG\18771-(03) Details.dwg Mar 31, 2020 - 11:01am

Print Date: Mar 31, 2020	Sheet Revisions			Otak		As Constructed	SUPERIOR PICKLEBALL COURTS CONSTRUCTION DETAILS	Project No./Code
File Name: 18771-(03) Details.dwg	Date:	Comments	Init.			No Revisions:		
Horiz. Scale: Vert. Scale: As Noted						Revised:	Designer: AJP Structure Numbers	
Unit Information Unit Leader Initials						Void:	Detailer: AJP	Sheet Number 3
							Sheet Subset: Subset Sheets:	



N

0 40 80

SCALE: 1" = 80'

100% SUBMITTAL - APRIL 1, 2020

Y:\shared\Projects\Town of Superior\18771.000 - Pickleball Courts\50 DWG\18771-(04) Site Plan.dwg Apr 02, 2020 - 3:43pm

Print Date: Apr 02, 2020		Sheet Revisions			Otak	As Constructed	SUPERIOR PICKLEBALL COURTS OVERALL SITE PLAN	Project No./Code
File Name: 18771-(04) Site Plan.dwg		Date:	Comments	Init.		No Revisions:		
Horiz. Scale: Vert. Scale: As Noted						Revised:	Designer: AJP Structure Numbers	
Unit Information Unit Leader Initials						Void:	Detailer: MAW	Sheet Number 4
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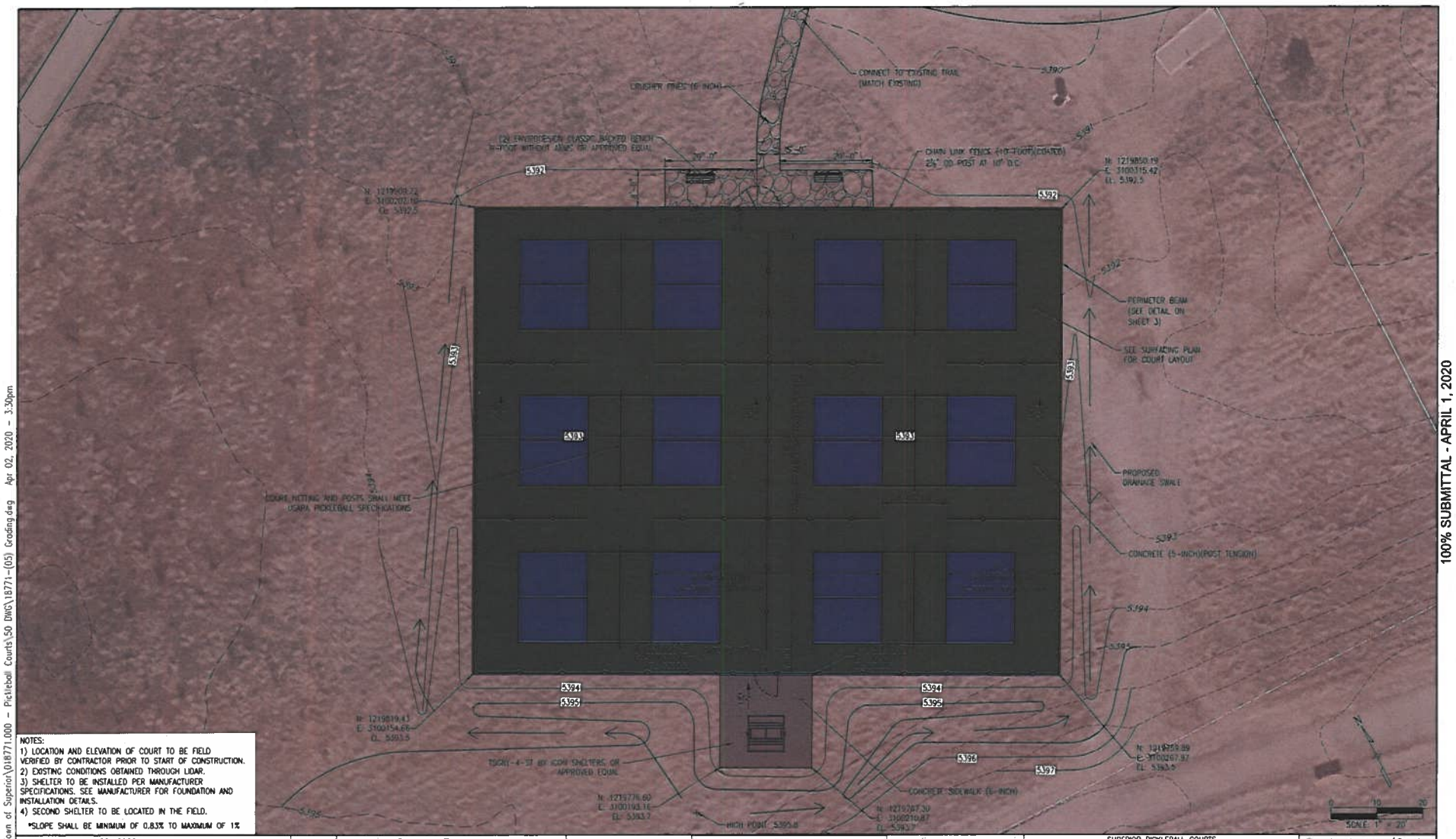

NOTES:
1) LOCATION AND ELEVATION OF COURT TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION.
2) EXISTING CONDITIONS OBTAINED THROUGH LIDAR.
3) SHELTER TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS. SEE MANUFACTURER FOR FOUNDATION AND INSTALLATION DETAILS.
4) SECOND SHELTER TO BE LOCATED IN THE FIELD.
*SLOPE SHALL BE MINIMUM OF 0.83% TO MAXIMUM OF 1%

Y:\shared\Projects\Town of Superior\018771.000 - Pickleball Courts\50 DWG\18771-(05) Grading.dwg Apr 02, 2020 - 3:30pm

100% SUBMITTAL - APRIL 1, 2020

Print Date: Apr 02, 2020	Sheet Revisions			Otak	As Constructed	SUPERIOR PICKLEBALL COURTS	Project No./Code
File Name: 18771-(05) Grading.dwg	Date:	Comments	Init.		No Revisions:	LAYOUT AND GRADING PLAN	
Horiz. Scale: Vert. Scale: As Noted					Revised:	Designer: AJP Structure Numbers	
Unit Information Unit Leader Initials					Detailer: AJP		
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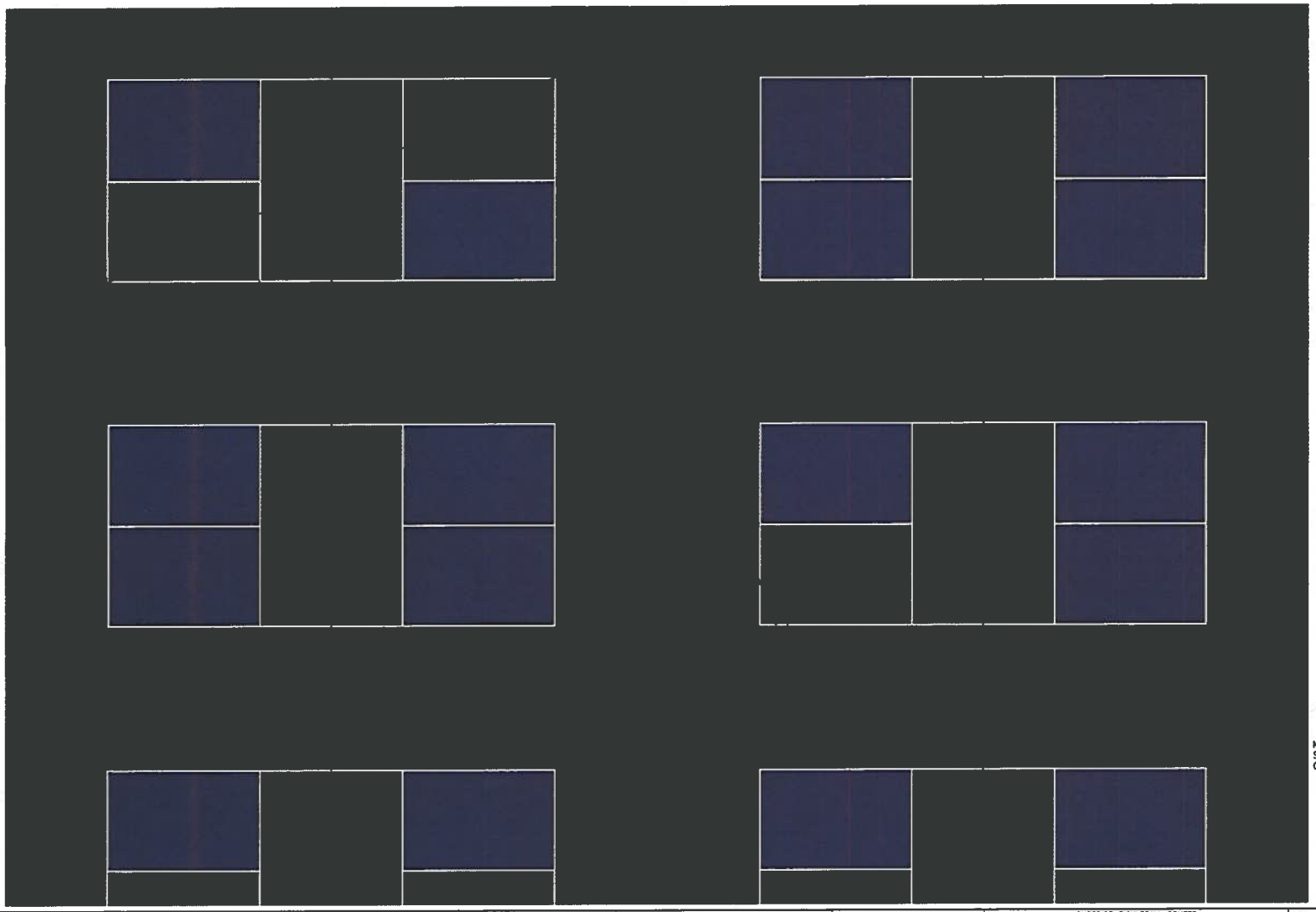

NOTE: NOT ALL COURTS SHOWN ON THIS DRAWING FOR CLARITY OF STRIPING

0 5 10

SCALE: 1" = 10'

100% SUBMITTAL - APRIL 1, 2020

Y:\shared\Projects\Town of Superior\018771.000 - Pickleball Courts\50 DWG\18771-(06) Surfacing.dwg Apr 01, 2020 - 2:10pm

Print Date: Apr 01, 2020	Sheet Revisions	As Constructed	SUPERIOR PICKLEBALL COURTS
File Name: 18771-(06) Surfacing.dwg	Date: Comments Init.	No Revisions:	SURFACING PLAN
Horiz. Scale: Vert. Scale: As Noted		Revised:	Designer: AJP Structure Numbers
Unit Information Unit Leader Initials		Void:	Detailer: AJP
			Sheet Subset: Subset Sheets:

Otak

Project No./Code

Sheet Number 6

ADDENDUM A

GEOTECHNICAL REPORT

SEE ATTACHMENT

CTC-GEOTEK
ENGINEERING TESTING INSPECTION

SOIL AND FOUNDATION INVESTIGATION

Skate Park at Autrey Park
1830 Honey Creek Lane
Superior, Boulder County, Colorado

PREPARED FOR:

Town of Superior – Parks, Recreation and Open Space
124 East Coal Creek Drive
Superior, Colorado 80027
Attention: Ms. Allison James

Project 182013 April 25, 2018

155 SOUTH NAVAJO STREET DENVER, COLORADO 80223 303 698 1050 (FAX) 303 698 1053

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SUMMARY

(1) The subsurface conditions at the site are somewhat variable, particularly with depth. Our borings generally encountered 7 to 11 feet of clay and soil mixtures over sand and gravel. Claystone bedrock was initially encountered at depths of 13 to 17 feet. Water levels are presently at depths of 10 to 12 feet.

(2) In our opinion, straight shaft pier (caissons) foundations and/or shallow footings are suitable for the support of features with significant structural aspects at the site. The piers would be drilled at least 6 feet into bedrock and have shaft lengths of at least 18 feet. Footings would be placed on new structural fill. Footings should be used for features, such as site retaining walls, that are not as structurally critical.

(3) Recommendations for slab on grade construction on new fill and associated risks are presented in the text of this report.

(4) The relatively shallow groundwater levels must be noted when selecting site grade and depths of "bowl" type features.

(5) A representative from our firm should observe the construction operations discussed in this report.

SCOPE OF STUDY

This report represents the results of a soil and foundation investigation at the site of the proposed Skate Park to be located in Autrey Park at 1830 Honey Creek Lane in Superior, Boulder County, Colorado.

The purpose of this study was to explore the subsurface conditions, obtain some data of the pertinent engineering characteristics of the underlying strata, recommend the most appropriate foundation systems, develop foundation design criteria, attempt to evaluate the risks of slab-on-grade construction, provide pavement requirements, and address other geotechnical factors in the proposed development.

It should be understood that economic and practical constraints limit our sampling and laboratory testing to only a minuscule fraction of the total mass of soil and bedrock which

lies within the zone of influence of the proposed construction. Our analyzes, conclusions and recommendations are based upon the assumption that the samples of subsurface strata, which we observed and tested, are representative of the entire subsurface mass.

PROPOSED CONSTRUCTION

As we understand, the proposed construction is to consist of a Skate Park and related utilities, landscaping, etc.

FIELD INVESTIGATION

Four (4) exploratory test borings were drilled on the site, at the locations shown on Plate 1. The borings were drilled with 4-inch diameter, continuous flight, solid-stem augers using a truck-mounted drill rig.

At regular intervals the drilling tools were removed from the boreholes and soil samples were obtained with a 2-inch I.D. California Spoon Sampler. The sampler was driven into the various subsoil strata with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler one foot, or a fraction thereof, constitutes the penetration test. This field test is similar to the standard penetration test described by ASTM Method D-1586. Penetration resistance values, when properly evaluated, are an index to the soil strength and density. The depths at which the samples were taken and the penetration resistance values from the borings are shown on the Logs of Exploratory Borings, Plate 2. Legend and Notes are provided on Plate 3.

LABORATORY TESTING

All samples were carefully inspected and classified in the laboratory by the project consultant. Natural water contents, dry unit weights, Atterberg Limits, full and partial (percents passing the U.S. No. 200) gradations were obtained from relatively undisturbed

drive samples taken from the site (see Plate 4 and Table 1). Two percent water soluble sulfates are being obtained, results will be forwarded when available.

Swell-consolidation tests were performed on typical specimens of potentially swelling and/or consolidating material (see Plates 5 and 6). This is to indicate the behavior of these materials upon wetting and loading. It should be noted that two of the swell tests were performed on specimens that were first allowed to air-dry.

SUBSURFACE CONDITIONS

The overburden soils at the site initially consist of 7 to 11 feet of clay soils and mixtures of sand, clay and silt soil. These soils are stiff to very stiff and medium moist to moist. The clays are low swelling in that condition. However, with drying the swell potential increases greatly. Medium dense sand gravel soils, which are silty and clayey, underlie the upper overburden soils.

The bedrock, which was initially encountered at depths of 13 to 17 feet consists of firm to very hard claystone. The claystone is expansive.

Water was noted during the drilling operations at depths of 11 to 14 feet. Actual water table levels, as noted by readings 9 days later, are at depths of 10 to 12 feet. It should be noted that groundwater levels can vary with changes in precipitation, irrigation, drainage and land use.

FOUNDATIONS

Features with significant structural aspects at the site could be founded on straight shaft piers (caissons) and/or shallow footings.

Piers would be drilled at least 6 feet into the bedrock strata and in all cases at least 18 feet in total length. This will place the bottoms of the piers in a zone of relatively stable moisture content and make it possible to load the piers sufficiently to help resist uplift movements.

Design values are based on the field and laboratory test results and the supporting capacity of the average of the softer materials encountered. For the portion of the pier in bedrock we recommend a maximum allowable end bearing pressure of 15,000 psf and an average side shear value of 1,500 psf. Estimated pier settlements at the site are less than 1/2-inch. Pier end bearing and side shear capacities may be increased by one-third for short term transient loads such as wind and seismic forces.

A minimum dead-load of 20,000 psf times the piers cross sectional area should be utilized. If the minimum dead-load criteria cannot be met, additional bedrock penetration, beyond the minimum 6 feet, utilizing tension side shear should be used along with additional steel reinforcing.

A minimum pier size of 18 inches should be used. The length to diameter ratio of the piers should not exceed 30. To achieve full design pressures, piers should be spaced at least two diameters, edge-to-edge apart. If closer piers must be used, design pressures will need to be adjusted. The allowable design pressures would be a linear relationship from 100 percent at two diameters apart down to 75 (end bearing) and 67 (side shear) percent at no diameters apart, that is with edges touching. If two nearby piers are of different diameters, the spacing ratio should be determined based on the smaller diameter of the two.

Lateral pier design and 'L Pile' parameters are provided in the following Table A.

Table A - Soil Strength Design Parameters (L-Pile)

Soil Desc.	Soil Type	Dry Density (lb/in^3)	Average Undrained Shear Strength (lb/in^2)	Average Friction Angle (Deg)	Strain @ 50% Max. Strength	Modulus of Subgrade Reaction (tcf)
Soil including fill	Soft Clay	0.062	6.0	15	0.015	30
Bedrock	Stiff clay w/o water	0.065	40.0	0	0.005	220

Shallow footings are an alternative foundation for support of elements with significant structural aspects and probably should be used for features such as site retaining walls that are not as structurally critical. These foundations should be placed on at least 3 feet of new fill. The fill should be compacted to 95 percent of the maximum Standard Proctor density (per ASTM D-698) at a moisture content sufficient to minimize any swell potential. A foot of sand fill should be used at the top to insulate any underlying clays and thus prevent their drying after placement and prior to concrete placement.

The footings would be designed using a maximum net allowable soil bearing pressure of 2,500 psf and as high of a dead-load pressure possible. Potential movements would be settlement of up to 3/4 inch and a maximum heave on the order of 1 inch. If the underlying soils were not wetted in the future, the actual movements would be small. The potential maximum heave is dependent upon the depth of swelling material and it's possible expansion.

Any existing fill in footing areas must be removed from below the foundations. Footing excavations should be carefully observed. Any particularly poor subgrade material would need to be removed to a deeper depth and replaced from below footings. A minimum footing width of 18 inches should be used.

The use of frost depth of 3 feet is appropriate in the foundation design. However, grade beams with a void below them are not subject to frost heave and thus only need a depth that is structurally appropriate.

In our opinion, the IBC Site Class is C. The soils at the site are not particularly prone to liquefaction. Site conditions do not require the use of structural ties between individual foundation elements.

SLAB CONSTRUCTION

Provided the owner can accept some risk of slab movement, slab-on-grade construction is suitable. If this alternate is chosen, it is recommended that the following measures be taken to help minimize, but possibly not eliminate, slab movements:

A) Slabs should be placed on a total of at least 3 feet of new fill. The fill should be compacted to 95 percent of the maximum Standard Proctor density (per ASTM D-698) at a moisture content sufficient to minimize any swell potential. A foot of sand fill could be used at the top to insulate any underlying clays and thus prevent their drying after placement and prior to slab pouring. Without the sand, the clay fill must be kept moist with sprinkling as needed. However, if used, later surface drainage must be kept out of the sand. The earthwork section of this report provides additional fill placement criteria.

B) Generally, separate slabs from bearing members to allow their independent movement. However, where significant structural benefits result, slabs could be tied. Joints (construction joints/saw cuts) should be provided in the slabs at no greater than the maximum spacing of ACI requirements. Joints should be kept sealed.

C) Keep any exposed clays moist during construction by occasional sprinkling.

D) Any utility lines should be provided with flexible joints or oversized sleeves where they enter or exit water features to prevent breakage caused by differential movement. All water utility lines throughout the site should be carefully leak tested, in order to minimize future wetting of the underlying clays and claystone once construction is complete.

E) The slabs can be designed using a modulus of subgrade reaction value of 150 pounds per cubic inch.

I) Water infiltration into slab subgrades (wetting of subgrade) could cause subgrade soils to swell and possibly cause damage. It is important that surface water be controlled by designed surface drainage or be collected and carried away by drainage systems.

The proceeding slab-on-grade precautions, with the reworked fill, will generally limit potential movements to less than 1/2 inch. However, greater movements, on the order of up to approximately 1 inch could be possible in some locations. If the owner cannot accept the risks of those potential movements, structurally supported slabs over at least a 10-inch "void" or crawl space should be used.

EARTHWORK

We recommend that permanent cut and fill slopes generally be no steeper than 2-1/2 (horizontal) to 1 (vertical). Steeper slopes may be suitable but would need to be individually considered. Slopes will need to be protected against erosion. Vegetation, benched timber walls, rock walls, rip-rap, etc. would all be suitable measures.

All topsoil and organic materials should be removed from within the proposed new construction areas. Any existing fills on the site are not expected to generally need reworking. However, any existing fills should be observed for suitability during earthwork operations. It should be noted that no existing fill should be left in-place below any footings.

Structural fill may generally consist of materials which can be placed and maintained in such manner that their swell potential is minimized. The clay on-site soils are of this type. Any imported material should be approved prior to its use.

Select import fill materials for use at the top foot below slabs and any footings should have a liquid limit of less than 25, a plasticity index of less than 10, a maximum particle size of 2 inches, and a percent passing the U.S. No. 200 sieve of between 5 and 20 percent. These materials would be placed to minimize drying of moistened clays during the time of construction. However, surface drainage of water into them must be avoided at the edges.

Structural fill should be compacted to at least 95 percent of the maximum Standard Proctor density (per ASTM D-698) at a moisture content appropriate for the particular material. We would expect that the on-site clays will require a moisture content on the order of from the optimum to 3 percent above the optimum to minimize swell potentials.

The specific minimum moisture content of each on-site material encountered will be determined by the geotechnical engineer during construction. The specific minimum moisture content for each clay material would be that at which a maximum swell of 1 percent occurred under a 150-psf loading. The swell tests would be run as each proctor test was performed. The necessary moisture content of any imported material would be determined at the time of approval. The moisture content of essentially granular material such as sand with little or no clay would not be critical.

Please note that the on-site clays will exhibit significantly higher swell potentials if allowed to become drier. This must not be allowed to occur during the construction period below any foundations and slabs-on-grade. Otherwise, the potential heaves would increase significantly.

Typically it is expected that any existing fill materials and the clay soils will be suitable for reuse as new general fill. However, any organics or trash and rubble should not be reused at all. It should also be noted that significantly moist, possibly soft subgrade conditions could be present at shallow depths on the site. Overexcavation and stabilization measures could be needed.

Fill in large landscaped areas may be placed at a minimum of 92 percent of the maximum Standard Proctor density with only nominal moisture control.

GROUNDWATER

A precautionary subsurface drainage system connected to a sump or other suitable outlet should be provided around and below any below-grade space. These systems would consist of peripheral drainage consisting of drainage board on the back side of the walls and a pipe drain surrounded by a granular material at least 18 inches below the slab level.

The pipe should be sloped a minimum of 1 percent to the outlet. Drainage should also be provided at the bottom of any granular backfill.

The present groundwater levels at depths of 10 to 12 feet should be noted when designing site grades and "bowl" type features. We suggest cuts be no deeper than 4 feet above present site water table levels.

DESIGN AND CONSTRUCTION DETAILS

1) Any piers should be reinforced longitudinally, with one No. 6 steel (Grade 60) rod for each 18 inches of pier perimeter (minimum two rods), to help prevent breakage of the piers due to uplift on their sides by any swelling materials. Additional reinforcing may be needed for other structural reasons. The bedrock penetration portion of the pier holes should generally be roughened artificially with a side tooth added to the auger after drilling and prior to cleaning to assure a good bond between the concrete and the bedrock. The roughening should consist of at least 1 inch deep by 1-1/2 inch high grooves at a vertical spacing of no more than 18 inches. The upper portion of the piers should be kept smooth to reduce the adhesion between the swelling materials and the piers. Enlargement of the tops of the piers (mushrooming) must be avoided. To insure a consistent pier diameter, the contractor should be prepared to pour the top of pier with sonatube as needed. A 4-inch minimum void or "air space" should be provided beneath the portions of grade beams or mats that span between piers.

2) Temporary casing of the pier holes is expected to be necessary. Also, excessive water infiltration, greater than 3 inches, is possible within bedrock. Pumping to remove water or to place concrete below the water would then be required. Concrete should be placed immediately after drilling and inspection to minimize water infiltration problems. Failure to place concrete the day of drilling will normally result

in a requirement for additional penetration. Concrete used in the drilled piers should be a fluid mix with a sufficient slump so it will fill the void between reinforcing steel and the drilled pier hole. Typically a slump on the order of 5 to 7 inches is considered adequate.

3) **Precautions should be taken against drying all foundation and slab subgrade soils during construction or wetting thereafter.** Backfill around structures should be moistened and well-compacted (95 percent of Standard Proctor). A minimum slope of 12 inches in the first 10 feet is recommended. Flatter slopes would be acceptable in hard-surfaced areas such as plazas, pavements, sidewalks, etc.

4) Care should be taken in excavating for any footing foundations to avoid disturbing the subsoils. Any soils disturbed during footing excavation or preparation should be removed or recompacted prior to placing concrete.

5) Foundation walls should be well reinforced, both top and bottom and particularly around openings. This is to give them sufficient strength to resist slight differential movements that may occur in the bearing strata below foundation levels.

6) Class 0 or 1 sulfate exposure soils are expected at the site. Therefore, we recommend the use of Type II, I/II, or equivalent per ACI 201.2R in all concrete exposed to the earth. A maximum water-cement ratio of 0.5 should also be used in earth exposed concrete.

LATERAL EARTH PRESSURES

Foundation Walls:

Foundation walls retaining earth, if any, would be expected to be comparatively rigid and should, in our opinion, be designed for 'at rest' lateral soil pressures. If general on-site

soils are to be used as backfill or in shotcrete situations without backfill, the lateral earth pressure design value would be estimated by an equivalent fluid density of 70 pcf. An imported clean granular material with less than 10 percent fines could be used as backfill. The clean granular material, if that alternative is selected, must be present within an area defined by a line extending upward from the base of the wall at an angle of 30 degrees from the wall. The lateral earth pressure may then be estimated by using an equivalent fluid density of 55 pcf. The upper 1 foot of backfill should be fairly impermeable to prevent surface water from entering the backfill, particularly in any soft surfaced areas. Subsurface drainage should be provided for any below-grade space and in any granular backfill situations.

Temporary Excavation Bracing:

No temporary bracing is expected to be necessary for excavated areas if a 1-1/2 (horizontal) to 1 (vertical) slope is maintained. Should bracing be necessary at some critical area or desirable for personnel safety reasons, we recommend that an 'active' earth pressure of 40 x Z-150 psf be used, where Z=depth of excavation (for example, if a 12 foot excavation is planned, the temporary bracing should be designed for a lateral earth pressure of 40 x 12 -150=330 psf per linear foot).

Retaining Walls:

The data presented in the section of foundation walls is also applicable to site retaining walls with the following modifications:

1) The lateral earth pressure may be computed by using an active equivalent fluid density of 40 pcf with clean sand having less than 10 percent fines or 55 pcf with general on-site soils. Any granular backfill must be drained at the bottom.

2) Drainage should be provided to prevent water build-up behind site retaining walls. Generally weep holes would be a suitable drainage provision.

Resistance:

Lateral pressures on walls retaining earth may be resisted by an ultimate passive equivalent fluid density of 240 pcf. An ultimate coefficient of friction of 0.40 may also be used in the design.

It should be noted that the lateral earth pressures provided above do not include any surcharge loadings on the top of retaining walls. Additional earth pressures will be generated depending on the type and location of the surcharge loadings.

PAVEMENT RECOMMENDATIONS

Any pavement subgrade materials are generally expected to be various clayey soils. These materials would typically be rated as poor to fair subgrade soils.

Based on the expected subgrade soils and the assumed traffic loadings, the following minimum pavement sections are recommended:

1) AUTO AND/OR LIGHT TRUCK PARKING AND LIGHT TRAFFIC AREAS

1) 5.0 inches of full-depth asphalt; **OR**
2) 3.0 inches of asphalt and 6.0 inches aggregate base course; **OR**
3) 5.0 inches of concrete

2) HEAVY TRAFFIC, LOADING/UNLOADING AREAS, FIRE LANES:

1) 7.0 inches of full-depth asphalt; **OR**
2) 4.0 inches of asphalt and 9.0 inches granular base course; **OR**
3) 6.0 inches of concrete

It is recommended that the concrete pavements be used in truck loading and unloading areas and areas where truck turning movements are concentrated, including any trash dumpster areas. Concrete pavement sections should have a rough finish to help mask cracking. The asphalt over granular base are the least preferred sections in all areas. The base can spread water over large areas resulting in subgrade softening and/or swelling.

The entire pavement area should be stripped of all topsoil and organic matter. We recommend shortly before placement of pavement sections and any acceptance of new fill, that the subgrade and/or on-site soils be scarified at least 12 inches, moisture conditioned, and compacted to at least 95 percent of the maximum Standard Proctor density (per ASTM D-698) at a moisture content sufficient to minimize any swell potential. The necessary moisture content of any material would be determined at the time of approval. Pavement subgrade should be moist and compact at the time of paving.

Any new fill to be placed in pavement areas should be placed in uniform lifts and compacted to at least 95 percent of the maximum Standard Proctor density (per ASTM D-698) at a moisture content sufficient to minimize swell potential.

The pavement subgrade should be proof rolled with a heavy pneumatic-tired vehicle, such as a loaded dump truck of approximately 25,000 pounds. Any soils which are noted to be

pumping or deforming excessively under the moving wheel loads should be removed and replaced with a properly compacted and approved material. It is recommended that this operation be observed by a geotechnical engineer.

The granular base course should meet Colorado Department of Transportation (CDOT) specifications. The use of Class 6 (3/4 inch nominal maximum size) aggregate is suggested. The base course should be compacted to at least 95 percent of the maximum Modified Proctor density (per ASTM D-1557).

The asphalt (hot plant mix) should meet CDOT specifications. We suggest a specific job mix formula meeting Grading S (3/4 inch nominal maximum size aggregate) be used. Concrete used for pavement should also meet CDOT specifications. We suggest the use of Class P concrete.

Stabilizing the subgrades with granular materials or lime and/or fly ash may be appropriate depending upon conditions during construction. Chemical, i.e. lime/fly ash treated subgrade soils would also minimize the potential of subgrade failure if later wetting of the pavement subgrade takes place. Additional information can be provided if chemical treatment of the subgrade soils is desired for this site.

Adequate surface drainage provisions should be made so as to prevent water flow into the subgrade soils beneath the pavements. The life of any pavement structure is greatly diminished by improper drainage.

The lighter pavement sections are not designed to carry repeated heavy construction traffic. Therefore, construction operations subsequent to paving must be planned to avoid those paved areas.

MISCELLANEOUS

In any geotechnical investigation it is necessary to assume that subsurface conditions do not change greatly from those indicated by our exploratory borings. However, our experience has shown that anomalies do sometimes become apparent during construction. For that reason, we recommend that a representative from our firm who is familiar with the subsurface conditions observe the construction operations discussed in this report.

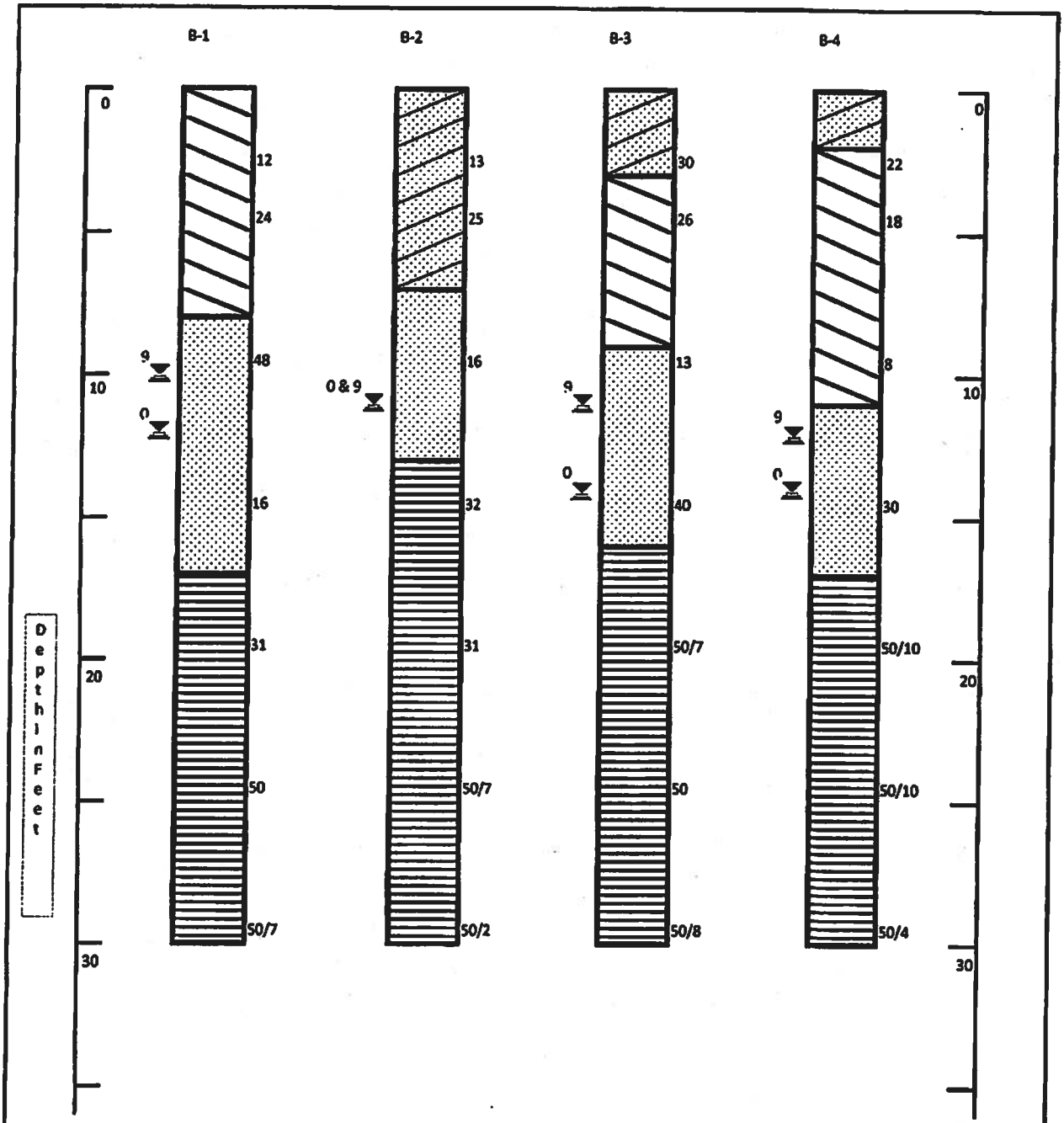
Respectfully submitted,
CTC-Geotek, Inc.

By: Michael T. Bogan
Michael T. Bogan
Sr. Geotechnical Consultant

Reviewed by: Robert Scavuzzo, P. E.
Robert Scavuzzo, P. E.
Senior Engineer

MTB:RS
email to: allisonj@superiorcolorado.gov

Boring Location Plan	**CTC-GEOTEK, INC.**		
	153 S.Navajo Denver, CO 80223 303-698-1050		
Skate Park @ Autrey Park **1830 Honey Creek Lane** **Superior, Boulder County, Colorado** **Project Location**	**Drawn By:** mtb **Checked By:** **Date:** 04/25/18	**SCALE:** **Job No.** 182013	**Plate** 1



Logs of Exploratory Borings

Skate Park @ Autrey Park
1830 Honey Creek Lane
Superior, Boulder County, Colorado
Project Location

CTC-GEOTEK, INC.
ENGINEERING TESTING INSPECTION

155 S.Navajo Denver, CO 80223 303-698-1050

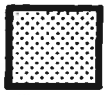
Drawn By: mtb
Checked By:
Date: 4/25/2018

PROJECT NO. 182013

Plate 2

Clay, silty, sandy, stiff to very stiff, medium moist to moist, brown, tan

Sand, clay and silt, very stiff, medium moist, tan, occasional gravel



Sand and gravel, silty, clayey, medium dense, moist to wet

Claystone bedrock, weathered, firm to very hard, medium moist to moist, gray, brown, occasionally sandy

Water noted during drilling (0) 9 days later(9).

NOTES:

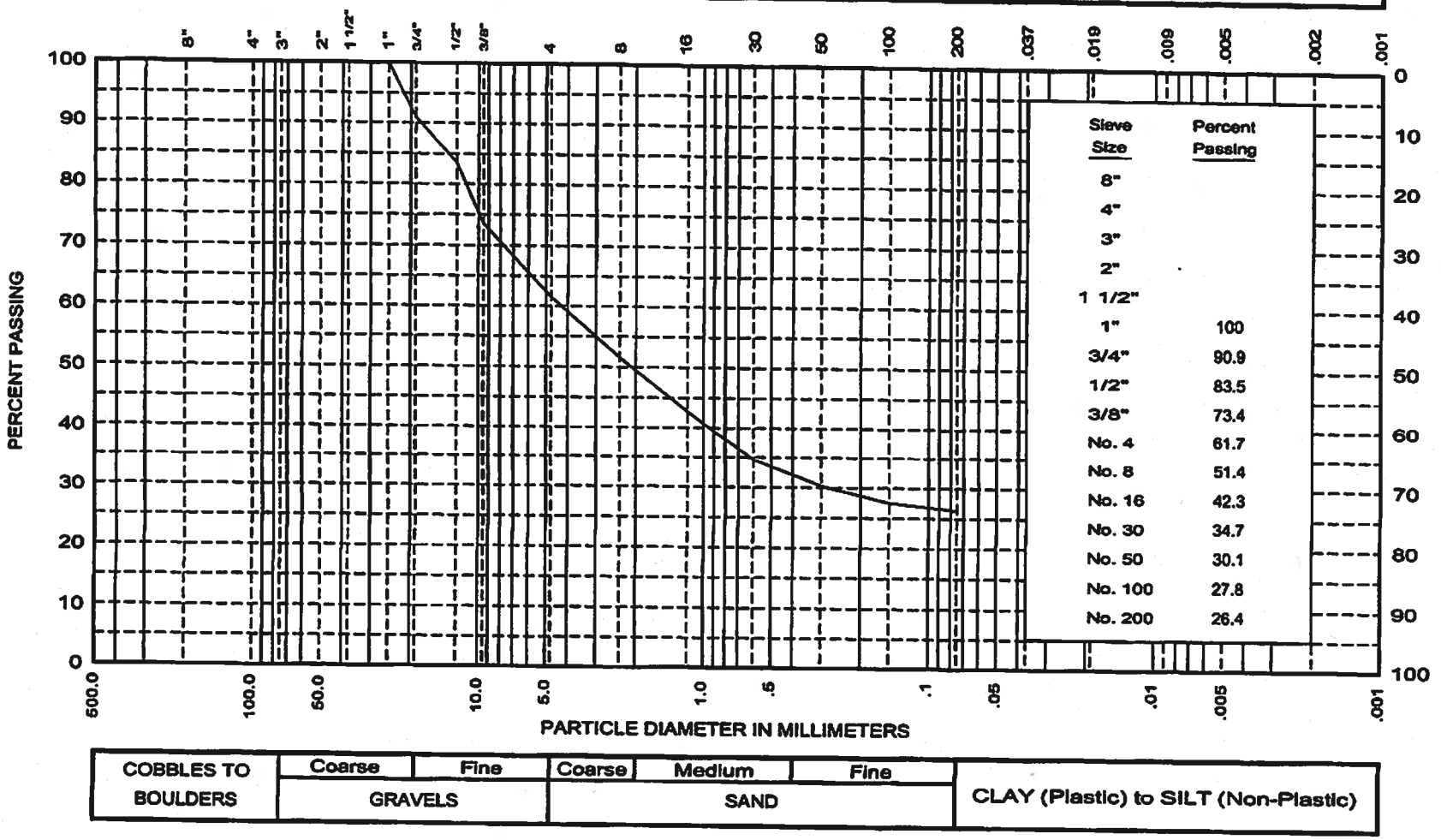
1) Borings drilled on April 4, 2018 with 4-inch, solid-stem augers.

2) Numbers to right of boring logs indicate the number of blows from a 140 pound hammer falling 30 inches required to drive the sampler 12 inches. 50/7 indicates 50 blows for 7 inches.

3) Stratification lines are approximate and transitions may be gradual.

4) The logs only show conditions at the time and locations indicated.

Legend and Notes	CTC-GEOTEK, INC. ENGINEERING TESTING INSPECTION		
Skate Park @ Autrey Park 1830 Honey Creek Lane Superior, Boulder County, Colorado Project Location	155 S.Navajo Denver, CO 80223 303-698-1050		
	Drawn By: mtb Checked By: Date: 04/25/18	PROJECT NO. 182013	Plate 3



BORING NO.	SAMPLE NO.	DEPTH IN FEET	PL	LL	PI	NAT. WC	SOIL DESCRIPTION
B1		14	13	53	40	14.1	Gravel, and sand, some clay A-2-7(1)

CTC-GEOTEK

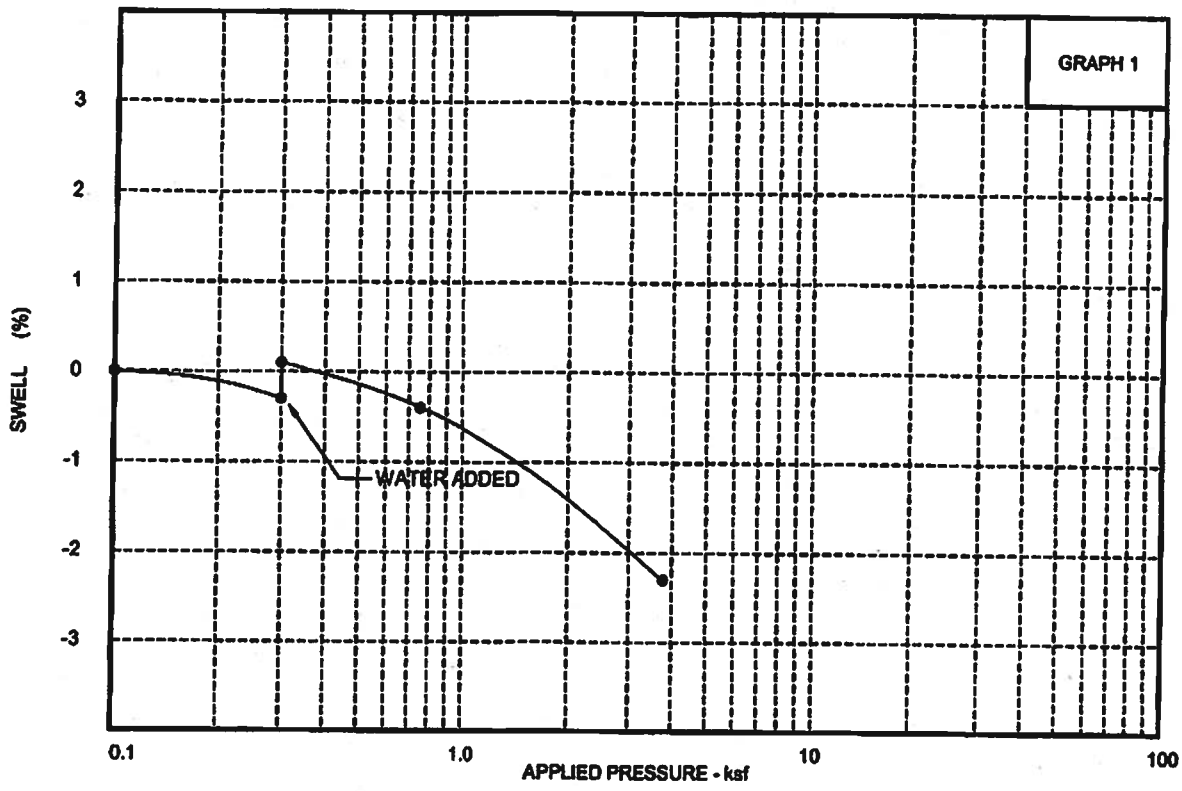
GRADATION ANALYSIS

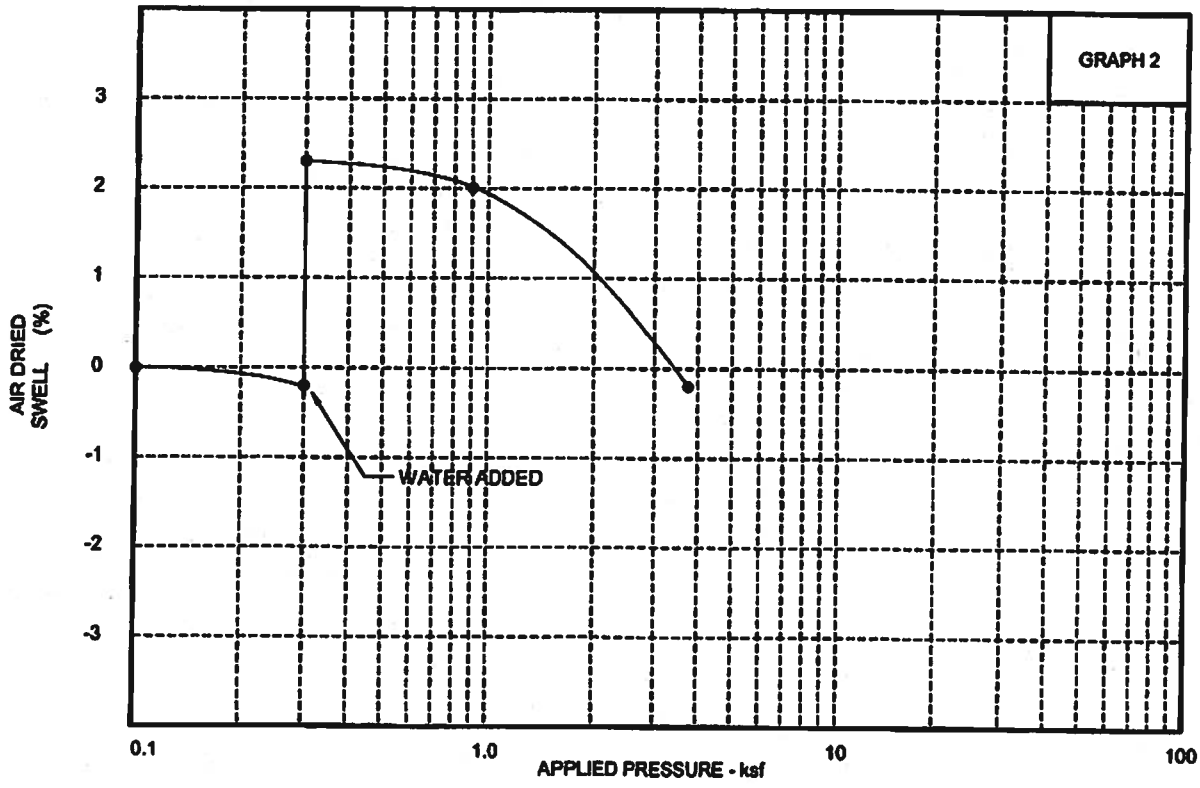
DRAWN BY: JLW

JOB NO. 182013

DATE: 4-19-2018

PLATE 4





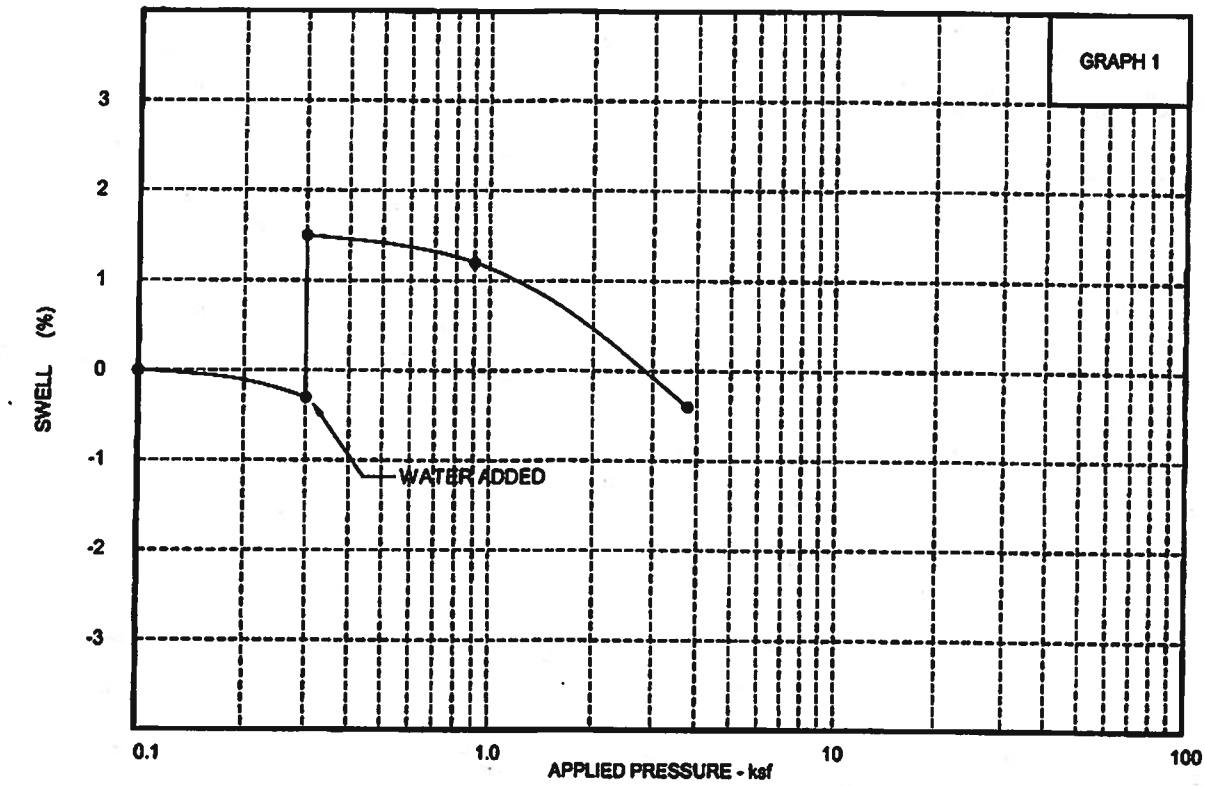
GRAPH NO.	BORING NO.	SAMPLE NO.	DEPTH IN FEET	DRY DENSITY (PCF)	MOISTURE (%)	SOIL DESCRIPTION
1	B1		2	114.9	15.3	Silty Clay, some sand
2	B1		2	114.9	3.7	Silty Clay, some sand

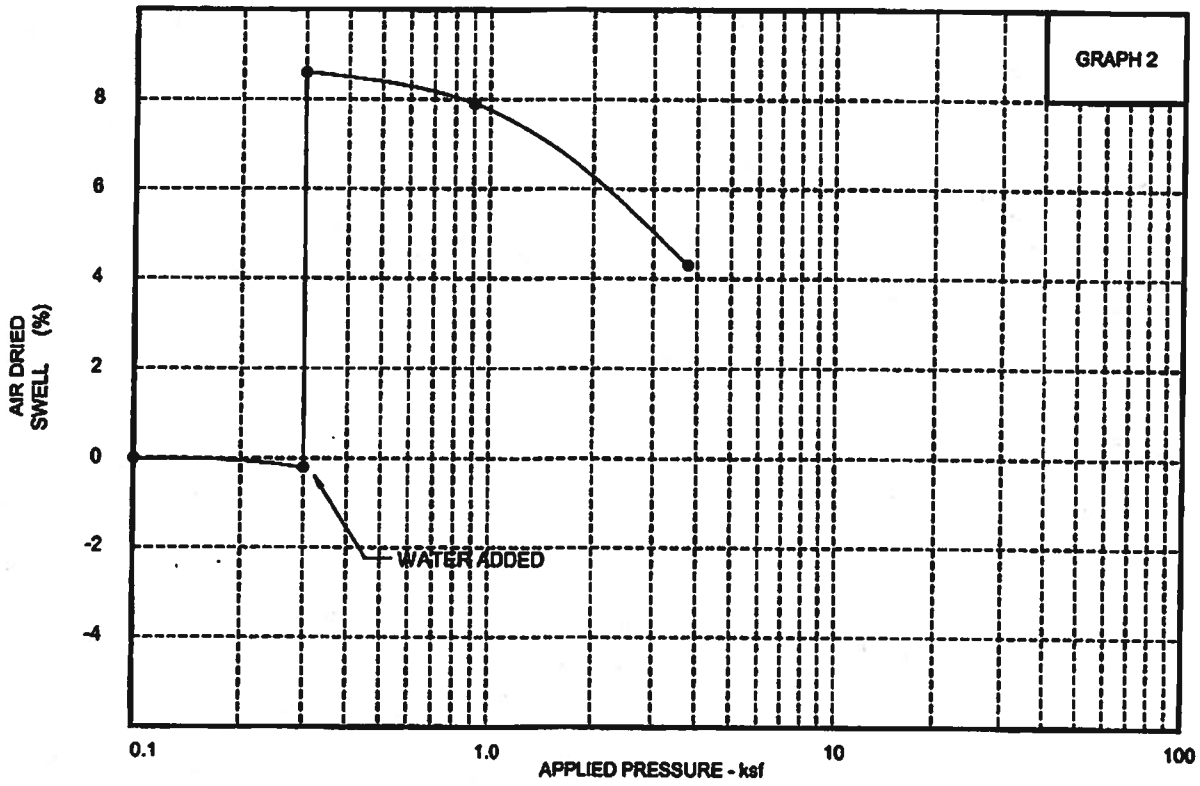
CTC-GEOTEK

SWELL - CONSOLIDATION TEST

DRAWN BY: JLW JOB NO.: 182013

DATE: 4-19-2018 PLATE: 5





GRAPH NO.	BORING NO.	SAMPLE NO.	DEPTH IN FEET	DRY DENSITY (PCF)	MOISTURE (%)	SOIL DESCRIPTION
1	B4		4	116.8	14.9	Silty Clay, some sand
2	B4		4	116.8	3.6	Silty Clay, some sand

CTC-GEOTEK

SWELL - CONSOLIDATION TEST

DRAWN BY: JLW | JOB NO.: 182013

DATE: 4-19-2018 | PLATE: 6

CTC-GEOTEK

ENGINEERING TESTING INSPECTION

SUMMARY OF LABORATORY TEST RESULTS

Project No. 182013

BORING NO.	SAMPLE NO.	DEPTH IN FEET	SAMPLE TYPE (NOTE 1)	DRY DENSITY (PCF)	MOISTURE (%)	ATTERBERG LIMITS			% FINES	WATER SOLUBLE SULFATES (%)	SHEAR STRENGTH (PSF) NOTE 2	ADDITIONAL TEST RESULTS ATTACHED (NOTE 3)		SOIL DESCRIPTION
						LL	PI	PL						
B1		2	CA	114.9	15.3							AD/SW		Silty Clay, some sand
B1		4	CA	112.9	10.2	39	28	11	72.4					Silty Clay, some sand A-6(17) CL
B1		14	CA	123.7	14.1	53	40	13	26.4			GA		Gravel, and sand, some clay A-2-7(1) SC
B2		4	CA	98.6	6.9	33	24	9	35.3					Sand, and silty clay, trace gravel A-6(3) SC
B2		14	CA	109.8	19.4	62	45	17	98.7					Claystone A-7-6(49) CH
B3		4	CA	116.1	12.2	40	29	11	75.2					Silty Clay, some sand A-6(19) CL
B4		4	CA	116.8	14.9							AD/SW		Silty Clay, some sand
B4		9	CA	107.0	20.2	37	26	11	67.1					Silty Clay, some sand, trace gravel A-6(14) CL

NOTE 1 - SAMPLE TYPE

AD - Air Dried
AS - Auger Sample
BS - Bag Sample
CA - California Sample
HD - Hand Drive
RM - Remolded Sample
ST - Shelby Tube Sample

NOTE 2 -SHEAR STRENGTH TEST

C - Unconfined Compression
C - Miniature Vane Shear
C - Pocket Penetrometer
C - Pocket Vane

NOTE 3 - ADDITIONAL TEST RESULTS ATTACHED

CT - Consolidation Test
GA - Gradation Analysis
PT - Proctor
RV - R-Value
SW - Swell-Consolidation Test
TT - Triaxial Test

TABLE 1

CTC-GEOTEK

ENGINEERING TESTING INSPECTION

May 18, 2018

Town of Superior – Parks, Recreation and Open Space
124 East Coal Creek Drive
Superior, Colorado 80027
Attention: Ms. Allison James

Subject: Sulfate Information
Skate Park at Autrey Park
1830 Honey Creek Lane
Superior, Boulder County, Colorado
Project 182013

Gentlemen:

This letter supplements information contained in our **Soil and Foundation Investigation** (Project 182013, report dated April 25, 2018).

A new Laboratory Results (Table 1) page is attached. Two water soluble sulfate test results have been added to the original data. The results indicates Class 2 sulfate exposure in the worst case. This differs from our original cement recommendation. Now, we recommend that Type V or equivalent cement, per ACI 201.2R, be used in concrete exposed to the earth. It can be noted that often the Type I/II cement used in the area is equivalent. A maximum water-cement ratio of 0.45 for concrete exposed to earth is also recommended.

If you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted
CTC-Geotek, Inc.

By: _____ Reviewed by: _____
Michael T. Bogan
Senior Geotechnical Consultant

Robert Scavuzzo, P.E.
Senior Engineer/President

COLORADO REGISTERED ROBERT SCAVUZZO 27065 PROFESSIONAL ENGINEER

MTB:RS
email to: allisonj@superiorcolorado.gov

CTC-GEOTEK

ENGINEERING TESTING INSPECTION

SUMMARY OF LABORATORY TEST RESULTS

Project No. 182013

BORING NO.	SAMPLE NO.	DEPTH IN FEET	SAMPLE TYPE (NOTE 1)	DRY DENSITY (PCF)	MOISTURE (%)	ATTERBERG LIMITS			% FINES	WATER SOLUBLE SULFATES (%)	SHEAR STRENGTH (PSF) NOTE 2	ADDITIONAL TEST RESULTS ATTACHED (NOTE 3)		SOIL DESCRIPTION
						LL	PI	PL						
B1		2	CA	114.9	15.3							AD/SW		Silty Clay, some sand
B1		4	CA	112.9	10.2	39	28	11	72.4	0.059				Silty Clay, some sand A-6(17) CL
B1		14	CA	123.7	14.1	53	40	13	26.4			GA		Gravel, and sand, some clay A-2-7(1) SC
B2		4	CA	98.6	6.9	33	24	9	35.3					Sand, and silty clay, trace gravel A-6(3) SC
B2		14	CA	109.8	19.4	62	45	17	98.7					Claystone A-7-6(49) CH
B3		4	CA	116.1	12.2	40	29	11	75.2	1.732				Silty Clay, some sand A-6(19) CL
B4		4	CA	116.8	14.9							AD/SW		Silty Clay, some sand
B4		9	CA	107.0	20.2	37	26	11	67.1					Silty Clay, some sand, trace gravel A-6(14) CL

NOTE 1 - SAMPLE TYPE

AD - Air Dried
AS - Auger Sample
BS - Bag Sample
CA - California Sample
HD - Hand Drive
RM - Remolded Sample
ST - Shelby Tube Sample

NOTE 2 -SHEAR STRENGTH TEST

C - Unconfined Compression
C - Miniature Vane Sheer
C - Pocket Penetrometer
C - Pocket Vane

NOTE 3 - ADDITIONAL TEST RESULTS ATTACHED

CT - Consolidation Test
GA - Gradation Analysis
PT - Proctor
RV - R-Value
SW - Swell-Consolidation Test
TT - Triaxial Test

TABLE 1