



Section 00 01 01
PROJECT MANUAL & TITLE PAGE

**INCLUDING
CONTRACT DOCUMENTS
AND
SPECIFICATIONS**

FOR THE

**PUBLIC IMPROVEMENT
DESCRIBED AS:**

**POLO COMMUNITY PARK
BARK PARK AND
LANDSCAPE IMPROVEMENTS**

Project # POLO-1-2425

11801 Noriega Road
Bakersfield, California

SECTION 00 01 10

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DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

00 01 15 LIST OF DRAWING SHEETS

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NOTICE IS HEREBY GIVEN that NORTH OF THE RIVER RECREATION AND PARK DISTRICT, hereinafter referred to as "NOR," will receive sealed Bids at NOR'S Administrative Complex, 3825 Riverlakes Drive, Bakersfield, Kern County, California, until 2:00pm PST, **Friday, November 8, 2024**, for the public improvements consisting, in general, of the following: **Polo Community Park Bark Park and Landscape Improvements, #POLO-1-2425.**

This Project requires a California Class B – General Building Contractor, C-27 Landscaping, and/or C-61/D-34 – Prefabricated Equipment Contractor's License.

A mandatory pre-bid meeting is scheduled at 9:00am, **Wednesday, October 23, 2024**, in the west parking-lot at Polo Community Park, 11801 Noriega Road, Bakersfield, California 93312.

Bidders are notified of requirements by California Department of Industrial Relations for the registration of contractors and subcontractors; project compliance monitoring and enforcement by the Department of Industrial Relations; posting of job site notices prescribed by regulation; as well as compliance with all prevailing wage and apprenticeship standards pursuant to California Labor Code part 7, Chapter 1, Article 2, Sections 1725.5, 1771.1, 1771.4, and 1777.5, et. Al.

Bidders are further notified that all the above-described Public Work shall be performed pursuant to and in accordance with Contract Documents provided by NOR. Said Contract Documents are available on NOR's website at <http://www.norfun.org>. NOR is not authorized to give oral explanations or interpretations of Contract Documents, and a submission of a Proposal constitutes agreement that the Bidder has placed no reliance on any such oral explanation or interpretation. However, NOR may, upon inquiry by Bidder, orally direct the Bidder's attention to the specific provision of the Contract Documents that cover the subject of the inquiry.

Bidders are further notified that each Bid must be made on the Proposal Form furnished by NOR; Bids must be received on or before the date and hour above specified or such Bid will be rejected; all Bids timely received by NOR will be opened and publicly read at the above address and time.

Each Bid shall be accompanied by a Certified Check or Bidder's Bond in the amount of ten (10) percent of the maximum total Bid. In addition, the successful Bidder shall be required to furnish a Faithful Performance Bond and a Labor and Materials Bond in the amounts set forth in the Specifications and General Conditions. In accordance with the provisions of Government Code Section 4590, securities may be submitted for any monies which NOR may withhold pursuant to the terms of the Contract to insure performance.

Bidders are further notified it shall be mandatory upon the Contractor to whom a Contract is awarded, and upon all Subcontractors under him, to pay not less than the general prevailing rates of per diem wages to all workmen in the execution of the Contract. Pursuant to the provisions of the California State Labor Code, and Local Laws thereto applicable, the said Board of Directors has ascertained the prevailing rate of wages in the locality where this Work is to be performed, for each craft and/or type of workman or mechanic needed to perform the Work of this Contract. General Prevailing Wage Rates shall be those rates pertaining to Kern County as published by the Director of Industrial Relations pursuant to California Labor Code, Part 7, Chapter 1, Article 2, Sections 1770, 1773, 1773.1, and 1777.5. The minimum wage rates applicable for each craft, classification or type of worker needed for the aforesaid Public Work is set forth in a prevailing wage schedule available at California Department of Industrial Relations (www.dir.ca.gov/dlsr/pwd/index.htm) website.

Copies of the Prevailing Wage Schedules may be obtained from the Division of Labor Statistics and Research, P.O. Box 420603, San Francisco, CA. 94142, (415) 703-4774, Statistics@dir.ca.gov.

NOR's Board of Directors reserves the right to accept or reject any and all Bids and to waive any informality or irregularity in any bid.

Dated: 10/17/2024

/s/ Janet Miller

CLERK OF THE BOARD OF DIRECTORS OF NORTH
OF THE RIVER RECREATION AND PARK DISTRICT



TO: Potential Bidder

FROM: Josh Herrboldt, QSP
Administrative Coordinator – Contracts and Procurement
North of the River Recreation & Park District
3825 Riverlakes Drive
Bakersfield, CA 93312
bids@norrecreation.org
(661) 392.2000

DATE: 10/17/2024

SUBJECT: Request for Bids – Polo Community Bark Park and Landscape Improvements, #POLO-1-2425

North of the River Recreation and Park District (NOR) is seeking bids for the construction of the Bark Park and landscaping improvements at Polo Community Park. The work shall be completed March 2025.

A **MANDATORY** pre-bid conference will be held on-site on Wednesday, October 23, at 9:00am PST. Site address is 11801 Noriega Road, Bakersfield, California 93312. Interested Bidders may set up an earlier site visit if needed, but this does not exempt one from the pre-bid walk. All questions and RFIs shall be directed to Bid Administrator at bids@norrecreation.org.

Items specified and directed in attached Specifications are used to describe the quality and craftsmanship required and do not detail the exact work to be completed. Contractor shall be experienced with landscaping which includes but not limited to, trenching and grading, specified plant material, knowledge of booster pumps, retrofitting to existing and large delivery systems, concrete work, chain link fencing and installation of prefabricated site amenities and shall submit a current licensed contractor certificate, liability insurance form to \$2 Million in coverage and workman's compensation forms and additional certifications as required by the District with the Bid Form. Bids submitted without the above forms will not be considered. **BIDS ARE DUE BY FRIDAY, NOVEMBER 8, 2024, at 2:00 PM PST.** Bids may be mailed, emailed or hand delivered. Bids sent by mail or hand delivered shall be sealed and labeled on the envelope: Project #POLO-1-2425. Emailed bids shall be sent as an email attachment in portable document format (PDF) referencing Project #POLO-1-2425 to bids@norrecreation.org. All bids must be submitted on the enclosed form with all required documentation listed in Specifications. Bidder must provide lead time in space provided on the Bid Form.

Contractor shall thoroughly read all attached documents and agree to comply with all notices and documents as contained in this Bid Package. By submitting a Bid, Contractor is agreeing to all terms.

If potential purchase orders are to be made to a company not listed as the Bidding Firm, please provide their information in the designated area on the Bid request form.

Bidders are notified of requirements by California Department of Industrial Relations for the registration of contractors and subcontractors; project compliance monitoring and enforcement by the Department of Industrial Relations; posting of job site notices prescribed by regulation; as well as compliance with all prevailing wage and apprenticeship standards pursuant to California Labor Code part 7, Chapter 1, Article 2, Sections 1725.5, 1771.1, 1771.4, and 1777.5, et. al.

END OF SECTION

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SECTION 00 21 13 INSTRUCTIONS TO BIDDERS

1.01 Introduction

- a. Each proposal shall be in accordance with the Contract Documents prepared by NOR.

1.02 Definition of Terms

- a. Whenever used in any of the Contract Documents, the following terms shall have the meanings hereinafter set forth.

- (1) The words "Contract Documents" shall mean any or all of the following items as applicable:

Notice to Contractors
Instructions to Bidders
The Proposal
Proposal Guarantee (Bidder's Bond)
Bidder's Statement of Experience Qualifications
Bidder's Designation of Subcontractors
Contract Agreement
Non-Collusion Affidavit
Guaranty
Certificate of Exclusion of Asbestos and Lead Products
Certification Regarding Playground Equipment Installation
Faithful Performance Bond
Payment Bond
Certificate(s) of Insurance
Certificates of Compliance
General Conditions of the Contract
Supplementary Conditions of the Contract
Specifications
Drawings
Addenda (if applicable)
Contract Change Orders (if applicable)

Each of these items is to be considered by reference as part of the Contract Agreement.

- (2) **Contract**: The Contract is the written Agreement covering the performance of the Work and the furnishing of labor, materials, tools and equipment in connection with the Work. It includes supplemental agreements amending or extending the Work contemplated and which may be required to complete the Work in a substantial and acceptable manner. Supplemental agreements are written agreements covering alterations, amendments, or extensions to the Contract and include Contract Change Orders.
- (3) **NOR**: NOR is North of the River Recreation and Park District of Kern County, California. NOR is the Owner whenever Owner is used in Specifications or on Plans.
- (4) **Acceptance**: The formal written acceptance of the Work by NOR or its authorized representative.

- (5) Board of Directors or Board: The Board of Directors, or Board, is the Board of Directors of North of the River Recreation and Park District.
- (6) Engineer: The term "Engineer" refers to NOR's designated technical representatives assigned administrative responsibilities during the course of construction to make appropriate inspections, testing or interpretation of work. If no such individual has been designated, "Engineer" shall refer to "NOR" and/or "Owner".
- (7) Surveyor: The term "Surveyor" refers to NOR staff or NOR's properly authorized agents, or when required, a surveyor hired by the Contractor which performs designated survey work.
- (8) Contractor: The term "Contractor" used herein or in other sections of the Contract Documents means the person, firm or corporation with whom the Contract Agreement is made by NOR for the performance of Work herein described.
- (9) Subcontractor: Any person, firm, or corporation other than an employee of the Contractor, supplying, for and under agreement with either the Contractor or any subcontractor of the Contractor, labor or materials or both, on or off the site of the Project in connection with this Contract.
- (10) Bidder: Any individual, firm, partnership, or corporation submitting a Proposal for the Work contemplated acting directly or through a duly authorized representative.
- (11) Proposal: The offer of a Bidder for the Work under any schedule or combination of schedules properly completed and submitted on the prescribed Proposal form, with appropriate signatures and Proposal Guarantee.
- (12) Proposal Guarantee: The Cashier's Check, Certified Check, or Bidder's Bond accompanying the Proposal submitted by the Bidder, as a guarantee that the Bidder will enter into a contract with NOR for the performance of the Work when the Contract is awarded to said Bidder.
- (13) Date of Execution of the Contract: The date on which the Contract is signed by NOR's authorized representative.
- (14) Days: Unless otherwise specifically stated, the term "days" will be understood to mean calendar days.
- (15) Work: The term "Work" shall mean all the work specified under schedules indicated, shown or contemplated in the Contract Documents, including all alterations, amendments or extensions thereto made by Contract Change Orders or other written orders of NOR or its Engineer.
- (16) Specifications: The term "Specifications" refers to terms, provisions and requirements contained herein and referred to as Specifications. Where Standard Specifications, such as those of "ASTM", "AASHO", etc., have been referred to, the applicable portions of such Standard Specifications shall become a part of these Contract Documents.
- (17) Drawings: The term "Drawings" refers to the official plans, profiles, cross sections, evaluations, details, other working drawings and supplementary drawings, or reproductions which show the location, character, dimensions, and details of the Work to be performed. Drawings may be either bound in the same book as in the balance of the Contract Documents or bound in separate sets, and are a part of the Contract Documents regardless of the method of binding.
- (18) Whenever in the Specifications or upon the Drawings, the words DIRECTED, REQUIRED, PERMITTED, ORDERED, DESIGNATED, PRESCRIBED, or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation or prescription shall

be according to NOR's intent and similarly the words APPROVED, ACCEPTABLE, SATISFACTORY, or words of like import, shall mean approved or acceptable to or satisfactory to NOR, unless otherwise expressly stated.

- (19) AASHO: The American Association of State Highway Officials.
- (20) ACI: The American Concrete Institute.
- (21) ADA: The Americans with Disabilities Act of 1990.
- (22) AISC: The American Institute of Steel Construction.
- (23) ISI: The American Iron and Steel Institute.
- (24) ASABE: American Society of Agricultural and Biological Engineers.
- (25) ASME: The American Society for Mechanical Engineers.
- (26) ASTM: The American Society for Testing Materials.
- (27) AWS: The American Welding Society.
- (28) AWWA: The American Water Works Association.
- (29) CCP: Code of Civil Procedure
- (30) IEEE: The Institute of Electrical and Electronics Engineers.
- (31) IPCEA: The Insulated Power Cable Engineers Association.
- (32) NEMA: The National Electrical Manufacturers Association.
- (33) SSPC: The Steel Structures Painting Council.
- (34) USAS: The United States of America Standard Institute.
- (35) County: County of Kern, California.
- (36) City: City of Bakersfield.
- (37) Elevation: The figures given in the Specifications or upon the Drawings after the word ELEVATION or an abbreviation of it, shall mean distances and feet above U.S. Coast and Geodetic Survey sea level data or a referenced fixed point. Actual elevation or relative elevations shall then be established by the Surveyor.
- (38) "Or Equal": Where the phrase "or equal" or "or equal as approved by NOR" occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically so approved for this work by NOR.

1.03 Examination of Site, Drawings, etc.

- a. Each Bidder shall visit the site of the proposed Work and become fully acquainted with local conditions, construction, and labor to ensure a full understanding of the facilities, difficulties, and restrictions attending the execution of the Work under the Contract. Bidders shall thoroughly examine and be familiar with the Drawings and Specifications. The failure of any Bidder to receive or

examine any form, instrument, addendum, or other documents, or to visit the site and become acquainted with existing conditions shall in no way relieve the Bidder from any obligation with respect to a Proposal or to the Contract. The Drawings for the Work show conditions as they are supposed or believed to exist; but it is neither intended nor to be inferred that the conditions as shown thereon constitute a representation by NOR, or its officers or representatives, that such conditions are actually existent, nor shall NOR, or any of its officers or representatives be liable for any loss sustained by the Contractor as a result of a variance between conditions as shown on the Drawings and the actual conditions revealed during the progress of the Work.

- b. The Bidder shall investigate to ensure satisfaction as to the conditions to be encountered, as to the character, quality and quantities of work to be performed and materials to be furnished, and as to the requirements of these Drawings and Specifications, and the Contract.

1.04 Addenda and Explanation to Bidders

- a. Any explanation desired by the Bidders regarding the meaning or interpretation of any of the Contract Documents must be requested in writing, with sufficient allowance of time for receipt of reply before the time set for opening of Proposals. Any such explanations or interpretations will be made in the form of Addenda to the Documents and will be furnished to all Bidders who shall include costs for all Addenda with their Proposals.
- b. NOR is not authorized to give oral explanations or interpretations of Contract Documents, and a submission of a Proposal constitutes agreement that the Bidder has placed no reliance on any such oral explanation or interpretation. However, NOR may, upon inquiry by Bidder, orally direct the Bidder's attention to the specific provision of the Contract Documents that cover the subject of the inquiry.

1.05 Qualifications of Contractors

- a. It is not the intent to restrict or limit the Bidders; however, because of the specialized nature of the Work, each Bidder and Sub-Bidder shall understand the following:
 - (1) The General Contractor must currently be licensed with an appropriate license classification to perform the Work of this Contract; and submit with the Proposal names and locations of at least five (5) projects previously completed or in progress which are of the similar size and difficulty.
 - (2) Each Subcontractor must currently be licensed for their specific classification of work; and must provide evidence, if requested, that they have successfully performed similar work in the past.
 - (3) The Bidders and Sub-Bidders are cautioned against attempting to substitute for specified items that have not been previously approved, and items which may not meet all the requirements of design and quality.
 - (4) It should be understood that close tolerances and conformity to Plans, Specifications, codes and good workmanship will be strictly enforced. Improper, non-conforming, or non-specified work will be immediately rejected, whenever noted, and all such work will be removed and replaced at no additional cost to NOR.

1.06 Designation of Subcontractors

- a. Each Bidder shall set forth in their Proposal on the form provided the following information in accordance with the provisions of Chapter 4, Part 1 of Division 2, of the Public Contract Code.

- (1) The name, address of the place of business, class of license, license number and portion of work to be performed of each Subcontractor who will perform work or labor or render service to the prime Contractor in or about the construction of the work or improvement, or a Subcontractor licensed by the State of California, who, under subcontract to the prime Contractor, specially fabricates and installs a portion of the work or improvement according to detailed Drawings contained in the Plans and Specifications, in any amount in excess of one-half of one percent of the prime Contractor's total Bid.
- (2) The portion of the Work which will be done by each such Contractor. Only one Subcontractor shall be listed for each such portion of the Work as defined in the Bid.
- (3) If the Bidder fails to specify a Subcontractor for any portion of the Work to be performed under the Contract, the prime Contractor agrees to perform that portion of the Work exclusively.

1.07 Contract Bonds

- a. The successful Contractor will be required to furnish both a Performance Bond and Payment Bond. The Performance Bond shall be in the amount of 100% of the total Contract amount. The Payment Bond shall be in the amount required by Section 3247 et seq. of the Civil Code of the State of California (50% of total Contract amount).
- b. Said bonds shall be furnished on the forms enclosed following the Agreement and shall be satisfactory to NOR and shall be obtained from a responsible corporate surety (or sureties) acceptable to NOR, which is licensed by the State of California to act as surety upon bonds and undertakings and which maintains in this state at least one office for conducting business. The surety (or sureties) shall furnish reports as to its financial condition if requested by NOR. NOR will interpret the phrase "reports as to its financial condition" to mean the reports specified in CCP Section 995.660(a)(4). The premiums for said bonds shall be paid by the Contractor.
- c. If any surety becomes unacceptable to NOR or fails to furnish reports as to its financial condition as requested by NOR, the Contractor shall promptly furnish such additional security as may be required to protect the interests of NOR and of persons supplying labor or materials in the prosecution of the work contemplated by this Contract.
- d. In the event of any conflict between the terms of the Contract and the terms of the bonds, the terms of the Contract shall control, and the bonds shall be deemed to be amended thereby.
- e. Without limiting the foregoing, NOR shall be entitled to exercise all rights granted to it by the Contract in the event of the default without control thereof by the surety, provided that NOR gives the surety notice of such default at the time or before the exercise of any such right by NOR, and regardless of the terms of said bonds, the exercise of any such right by NOR shall in no manner affect the liability of the surety under said bonds.
- f. Attorneys-in-fact, who sign Bid Bonds or Contract bonds, must file with each bond, a certified and effectively dated copy of their power of attorney.
- g. The surety company shall familiarize itself with all of the conditions and provisions of this Contract, and it waives the right of special notification of any change or modification of this Contract or of extension of time, or of decreased and increased work, or of the cancellation of the Contract, or of any other act or acts by NOR, or the NOR's authorized agents, under the terms of this Contract; and failure to so notify the aforesaid surety companies of changes shall in no way relieve the surety companies of their obligations under this Contract.

1.08 Proposal Form and Preparation

- a. Bid Proposals shall be submitted using the form attached to and forming a part of the Contract Documents. All bid items shall be properly filled out; numbers shall be stated in figures, and the signatures of all persons signing shall be longhand.
- b. Bidder is to complete and submit with the Agreement all certification forms required under Division 0 of these Specifications.

1.09 Prices

- a. In the case of discrepancy between unit prices and totals, unit prices will prevail. In case of discrepancy between words and figures, words will prevail.

1.10 Proposal Guarantee – Bidder’s Bonds

- a. All Proposals shall be accompanied by Certified Check, Cashier’s Check or Bidder’s Bond made payable to NOR. The Proposal Guarantee must be enclosed in the same envelope with the Proposal. The amount of the Proposal Guarantee shall be not less than 10% of the total amount of the Proposal.

1.11 Address and Marking of Proposals

- a. The envelope containing the Proposal shall be sealed and addressed to NORTH OF THE RIVER RECREATION AND PARK DISTRICT, 3825 Riverlakes Drive, Bakersfield, California 93312. The envelope shall be plainly marked in the upper left-hand corner with the name and address of the Bidder. In the lower left-hand corner the words “PROPOSAL FOR” followed by the name of the Work and the date and hour of opening of bid shall be clearly marked on the envelope. The Certified or Cashier’s Check or Bidder’s Bond shall be enclosed in the same envelope with the Proposal.

1.12 Withdrawals of Proposals

- a. Proposals may be withdrawn by the Bidder prior to the time for opening of Bids.
- b. No Proposal may be withdrawn after the hour affixed for opening Bids without rendering the accompanying Certified or Cashier’s Check or Bidder’s Bond subject to retention. It will be treated as though there is a failure to execute the Contract after it is awarded. Negligence on the part of the Bidder in preparing the Proposal shall not constitute a right to withdraw the Proposal subsequent to the opening of Proposals.

1.13 Lowest Responsible Bidder, Acceptance or Rejection of Proposals

- a. NOR reserves the right to accept or reject any and all Proposals and to waive any informality in any Proposal. No Proposal can be withdrawn during that period.
- b. Before a Proposal is considered for award, NOR may require a Bidder to submit a statement of facts and details as to the business, technical organization, financial resources, and equipment available and to be used in performing the Work. Additionally, NOR may require evidence that the Contractor has performed other work of comparable magnitude and type. NOR expressly reserves the right to reject any Proposal if it determines that the business and technical organization, equipment, financial and other resources of the Bidder are not sufficiently qualified for the Work bid upon and, justifies such rejection.

1.14 Award and Execution of Contract

- a. The Board of Directors and/or General Manager will award the Contract at the prices named in the Proposal to the lowest responsible Bidder no later than during the month following the opening of bids unless all Bids are rejected. Contract documents shall be signed within fifteen (15) calendar days after the Bidder receives notice that the Contract is ready for signatures. The successful Bidder will be required to execute the Agreement and furnish evidence of insurance and contract bonds as specified in the Contract.
- b. If a Bidder to whom the award is made fails or refuses to so perform as required herein, the respective Bid Guarantee shall become the property of NOR and the award will be annulled.

1.15 Return of Proposal Guarantee

- a. Within fifteen (15) calendar days after the awarded Contract is executed, NOR will return the Proposal Guarantees, other than Bidder's Bonds, to all Bidders, whose Proposals are not to be further considered in awarding the Contract.
- b. Retained Proposal Guarantees will be held until the Contract has been fully executed, after which all Proposal Guarantees other than Bidder's Bonds and any guarantees which have been forfeited will be returned to the respective Bidders.

END OF SECTION

SECTION 00 25 13 PRE-BID MEETING

NOTICE TO ALL INTERESTED BIDDERS:

A **MANDATORY** pre-bid conference will be held on-site on Wednesday, October 23, 2024, at 9:00am PST. Site address is 11801 Noriega Road, Bakersfield, California 93312. Interested Bidders may set up an earlier site visit if needed, but this does not exempt one from the pre-bid conference. Bidders shall meet at the south end of the west parking lot adjacent to Old Farm Road. No direct answers to questions will be offered as part of the pre-bid meeting. All questions will be taken, and responses will be issued as addenda. All questions and RFIs shall be directed to Bid Administrator at bids@norrecreation.org.

Any Addenda issued for said Bid Package will be issued under Section 00 91 13-Addenda.

END OF SECTION

SECTION 00 27 00

BID PROTEST PROCEDURE

1.01 Form and Timing of the Bid Protest.

- a. Any bid protest (a "Bid Protest") must be submitted in writing by an eligible Bidder and received by **NORTH OF THE RIVER RECREATION & PARK DISTRICT**, a recreation district operating under California Public Resources Code Section 5781.46 (herein, "District" or "NOR"), and other persons as specified in Section 4 on or before 5:00pm, Pacific Time, on Tuesday, November 12, 2024, i.e., two (2) business days following Bid opening (the "Bid Protest Deadline"). A "business" day is a day that is neither a Saturday, a Sunday, nor a Federal and/or State of California bank holiday.

1.02. Eligibility to Submit a Bid Protest.

- a. Only a Bidder who has actually submitted a Bid Proposal is eligible to submit a Bid Protest against another Bidder. Materialmen, subcontractors, and suppliers of a Bidder are not eligible to submit a Bid Protest. A Bidder may not rely on the Bid Protest submitted by another Bidder, but must timely pursue its own Bid Protest.

1.03. The Contents of a Bid Protest.

- a. A Bid Protest must contain a complete statement of the basis for the protest and all supporting documentation, information, and materials. Documentation, information, and materials submitted by the Protesting Bidder after the Bid Protest Deadline shall not be considered. The Bid Protest must refer to the specific article(s), paragraph(s), portion(s), provision(s), or section(s) of the Contract Documents upon which the Bid Protest is based and/or upon which it relies. The Bid Protest must include the name, address, telephone number, and, if available, e-mail address of the person(s) representing the protesting Bidder if different from the Protesting Bidder.

1.04. Submittal of a Bid Protest.

- a. A copy of a Bid Protest and all supporting documentation, information and materials must also be transmitted by e-mail or personal delivery to NOR, the Protested Bidder, and any other Bidder who has a reasonable prospect of receiving an award depending upon the outcome of the Bid Protest prior to the expiration of the Bid Protest Deadline.

1.05. Response to a Bid Protest.

- a. The Protested Bidder may submit a written response to a Bid Protest (a "Bid Protest Response"). The Bid Protest Response must be received by NOR, the Protesting Bidder, and any other Bidder who has a reasonable prospect of receiving an award depending upon the outcome of the Bid Protest on or before 5:00 p.m., Pacific Time, on Thursday, November 14, 2024, i.e., two (2) business days following after the Bid Protest Deadline or after receipt of the Bid Protest, whichever is sooner (the "Response Deadline"). The Bid Protest Response must include all supporting documentation, information, and materials. Documentation, information, and materials submitted by the Protested Bidder after the Response Deadline shall not be considered. The Bid Protest Response must include the name, address, telephone number, and, if available, e-mail address of the person(s) representing the protested bidder if different from the protested bidder.

1.06. Submittal of a Bid Protest Response.

- a. A copy of a Bid Protest Response and all supporting documentation, information, and materials must also be transmitted by e-mail, personal delivery, or telefax to the District, the protesting bidder, and any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the Bid Protest prior to the expiration of the Response Deadline.

1.07. Strict Compliance with Procedures and Time Limits.

- a. The procedure and time limits set forth in this Bid Protest Procedure are mandatory and are the Bidder's sole and exclusive remedy in the event of a Bid Protest. The Protesting Bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue a Bid Protest, including filing a Government Code Claim or initiation of legal proceedings.

1.08. Determination of the Bid Protest by NOR.

- a. NOR, and more specifically the Board of Directors of NOR (the "Board"), shall review all properly and timely submitted Bid Protests and, if applicable, the properly and timely submitted Bid Protest Responses prior to formal award of the bid. The District shall not be required to hold an administrative hearing to consider a timely protest, but may do so at the option of either the Board or the General Manager of the District (the "Manager"), or if otherwise legally required. The Board shall consider a Bid Protest, the Bid Protest Response, if applicable, and the award of the bid within ten (10) days following bid opening. At the time of the Board's consideration of a Bid Protest, the Bid Protest Response, if applicable, and the award of the Bid, the Board may also consider the merits of any timely protests and the Manager's recommendation thereon. The Board may either accept the Bid Protest and award the Bid to the next lowest responsible Bidder, or reject the Bid Protest and award to the lowest responsible Bidder. Nothing in these Bid Protest Procedures shall be construed as a waiver of the Board's right to reject all bids. Except as provided in Section 9, the Board's decision is final and not subject to further protest or review.

1.09. Appeal.

- a. Judicial review may be available under administrative mandamus, which is available for review of administrative orders where a hearing is given. (California Code of Civil Procedure Section 1094.5.) Review also may be available under a writ of mandate procedure. (California Code of Civil Procedure Section 1085.)

1.10. Note.

- a. NOR must put both construction work and maintenance or repair work costing more than Twenty-Five Thousand Dollars and No Cents (\$25,000.00) out for Bids and award the Contract to the responsible Bidder submitting the lowest responsible Bid or reject all Bids. NOR may perform work estimated to cost less than Twenty-Five Thousand Dollars and No Cents (\$25,000.00) with its own forces or by contract without going out to bid. (California Public Contract Code Sections 20815.1 and 20815.3.)

END OF SECTION

SECTION 00 31 11 PROJECT SUMMARY

North of the River Recreation and Park District is constructing a dog park, referred to as "Bark Park" and landscaping improvements at the existing Polo Community Park located at 11801 Noriega Road. The scope of work shall consist of protect in place of existing elements, selective demolition, trenching and excavation for irrigation installation and retrofitting of existing systems, construction and installation of all amenities associated with the Bark Park, removal of selected plant material, replacement of selected landscaping, and installation of approximately 37,000 square feet of hydroseed. This project includes prevailing wage rates and California Department of Industrial Relations registration by all contractors pursuant to California Labor Code part 7, Chapter 1, Article 2, Sections 1725.5, 1771.1, 1771.4 and 1777.5, et al.

END OF SECTION

SECTION 00 41 00 BID FORM

To: NORTH OF THE RIVER RECREATION AND PARK DISTRICT

Name of Bidder: _____

Business Address: _____

Business Telephone: _____

Place of Residence: _____

The work to be done is in the State of California, County of Kern, and is to be pursuant to and in accordance with the Plans and Specifications, General Conditions, Special Provisions, Contract and other Contract Documents referred to in the notice published by NOR in The Bakersfield Californian newspaper, and shall consist, in general, of: **Polo Community Park Bark Park and Landscape Improvements, #POLO-1-2425.**

The undersigned, as Bidder, declares: That only persons or parties interested in this Proposal as principals are those named herein; the Bidder has no connection with any other parties bidding on the proposed Work (except for a corporate division of the undersigned which may submit an independent bid); that this bid has been prepared and submitted without any collusion, fraud, misrepresentation, or deceit; the Bidder has examined carefully the location of the proposed Work, the proposed form of Agreement and the Plans and Specifications hereinabove referred to; Bidder agrees that if this Proposal is accepted by the NOR's Board of Directors, Bidder will contract with NOR, provide all necessary machinery, tools, apparatus and other means of construction, and do all work and furnish all the materials specified in the above documents in full accordance with the Contract Documents (all within the Contract completion time provided by or agreed to by NOR) and that the Bidder will accept as full payment the amounts set forth in Exhibit "A" attached hereto.

For each item contained in Exhibit "A," the Extension Price has been calculated by multiplying the Estimated Quantity by the Unit Price. The Bid Total is the sum of all Extension Prices. Bidder agrees that in case of any discrepancy between the Unit Price(s) and the respective Extension Prices (s) and/or the Bid Total, the Unit Price(s) shall prevail, and the bid submitted shall be the correctly computed sum of all correctly computed Extension Prices provided. However, if the amount set forth as a Unit Price is unintelligible or omitted, then the amount set forth in the Extension Price column for the item shall be used to determine the correct Unit Price in accordance with the following:

- (1) As to lump sum items, the amount set forth in the Extension Price column shall be the Unit Price.
- (2) As to unit basis item, the amount set forth in the Extension Price column shall be divided by the estimated quantity for the item and the price thus obtained shall be the Unit Price.

If this Proposal is accepted and the undersigned fails to execute the aforesaid Contract and to provide surety bonds and evidence of insurance acceptable to NOR as required within fifteen (15) calendar days after the Bidder receives notice that the Contract is ready for signature, NOR's Board of Directors may, at its option, determine that the Bidder has abandoned the Bid Proposal and the Bidder's security shall be forfeited and shall become the property of NOR. NOR shall then be free to accept the Bid of another Bidder. Should NOR be required to engage the services of an attorney in connection with the enforcement of this Bid, Bidder promises to pay NOR's reasonable attorney's fees, incurred with or without suit.

PROJECT: POLO-1-2425

Accompanying this Proposal is (check one) Bid Bond Certified Check in an amount equal to at least ten percent (10%) of the Bid Total.

The names of all persons interested in the foregoing proposal as principals are as follows:

The bidder is licensed in accordance with an act providing for the registration of Contractors, License

Class _____, License No. _____, Expiration Date _____.

Class _____, License No. _____, Expiration Date _____.

Class _____, License No. _____, Expiration Date _____.

California Department of Industrial Relations # _____ **(required)**.

Document 00 43 36, "Proposed Subcontractors Form," is incorporated herein by this reference.

Bidder acknowledges receipt of addenda numbers: _____

Bidder acknowledges receipt and review of complete bid package: _____ (initial)

Dated: _____

Signature of Bidder

SECTION 00 41 00 BID FORM

**BID – Polo Community Park Bark Park
and Landscape Improvements**

DUE NO LATER THAN: **November 8, 2024**
2:00pm PST

All line-item prices shall include unit cost, tax, freight, and the total.

BID NUMBER: POLO-1-2425

IMPORTANT: Show Due Date & Bid Number on face of sealed envelope or subject line of PDF document.

The items included in this bid can be provided within _____ weeks after bid award.

TERMS: Payment will be made when items are satisfactorily received.
Bids may be awarded on a line-item basis.

Item No.	Quantity	Description	Unit Price	Extension
1	~25,180 sf	Landscaping and Irrigation for Dog Park.	\$_____sqft	\$_____
2	~28,828 sf	Landscaping and Irrigation for Park Perimeter.	\$_____sqft	\$_____
3	34 ea.	Installation of Site Amenities including benches, trash cans, tables, signage, dog park equipment, etc.	N/A	\$_____
4	~782 lf	Installation: 6' Chain Link Fencing.	\$_____ln.ft	\$_____
5	~1,050 sf	Concrete: Sidewalk.	\$_____sqft	\$_____
6	~1,785 lf	Concrete: Header.	\$_____ln.ft	\$_____
6	33 ea.	Replacement Tree Planting in Parking Lot.	\$_____	\$_____
7	~21,395 sf	Hydroseeding: Parking Lot Area.	\$_____sqft	\$_____
8	~10,156 sf	Hydroseeding: Park Area.	\$_____sqft	\$_____
9		Total:		\$_____
Add Alternate #1 – Landscaping Material				
10	3 Months	90 Day Maintenance Period.	\$_____	\$_____
Item No.	Description		Start Date	Days to Completion
11	Anticipated/Earliest Start Date and Days to Complete *Estimated Number of Working Days Will Be Used in Determining Bid; Include Lead Time of Materials as Needed.			

NOTE: The return of a signed copy of this form shall constitute a promise to supply or perform the enumerated items subject to the terms & conditions shown.

NOR reserves the right to accept or reject any or all bids or quotations.

If further information is needed contact:
Bid Administrator at bids@norrecreation.org

Make Purchase Order To (firm & address):

FIRM

FIRM REPRESENTATIVE SIGNATURE

REPRESENTATIVE NAME - **PRINTED**

MAILING ADDRESS

CITY STATE ZIP

PHONE: _____

SECTION 00 43 13 BID SECURITY FORM

KNOW ALL MEN BY THESE PRESENTS,

That we, _____,

as PRINCIPAL, and _____,

as SURETY (with an "AM Best A-VII" rating or better), are held and firmly bound unto NORTH OF THE RIVER RECREATION AND PARK DISTRICT (hereinafter Obligee), a political subdivision of the State of California, in the penal sum of ten percent (10%) of the total amount of the Bid of the Principal above named, submitted by said Principal to Obligee for the Work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. In no case shall the liability of the Surety hereunder exceed the sum of \$_____.

THE CONDITION OF THIS OBLIGATION IS SUCH,

THAT WHEREAS THE PRINCIPAL has submitted the above mentioned Bid to Obligee for that certain construction specifically described as follows, for which Bids are to be opened at Bakersfield, California, on _____ for _____

NOW, THEREFORE, if the aforesaid Principal is awarded the Contract and within the time and manner required under the Specifications, after the prescribed forms are presented to him for signature, enters into a written Contract, in the prescribed form, in accordance with the Bid, and files the two bonds with the Obligee, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, and furnishes the required certifications of insurance, and such other required certificates, then this obligation shall be null and void; otherwise, it shall remain in full force and virtue.

In the event suit is brought upon this Bond by the Obligee and Judgement is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including a reasonable Attorney's fee to be fixed by the Court.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this _____ day of _____, 20____ A.D.

_____ (SEAL)	_____ (SEAL)
_____ (SEAL)	_____ (SEAL)
_____ (SEAL)	_____ (SEAL)
PRINCIPAL	SURETY

PROJECT: POLO-1-2425

Correspondence or claims related to this Bond should be sent to the Surety at the following address:

NOTE: Signatures of those executing for Surety must be properly acknowledged. A certified copy of the surety's power of attorney shall be attached to this form.

COMPLETE AND SUBMIT WITH BID

END OF SECTION

SECTION 00 43 36 PROPOSED SUBCONTRACTORS FORM

Each Bidder shall set forth below: (a) the required information for each Subcontractor who will perform work or labor, fabricate a portion of the Work or improvement according to detailed Drawings in the Project Plans, or render service to the Contractor in or about the construction of the Work in an amount in excess of one-half of one percent (1/2 of 1%) of the Contractor's total Bid; and (b) the portion of the Work which will be done by each such Subcontractor. If the Contractor fails to specify a Subcontractor for any portion of the Work as above stated, said Contractor agrees to perform the Work exclusively. In accordance with Section 4101 to Section 4207, inclusive, of the Government Code of the State of California as amended, the following is submitted concerning Subcontractors:

<u>Name of Subcontractor</u>	<u>Address of Shop/Mill/Office</u>	<u>*License Number</u>	<u>Exp. Date</u>	<u>Portion of Work To be Done</u>

NAME OF CONTRACTOR: _____

(*The license information may be added within 24 hours of bid opening if it was not available at the time the Bid was submitted.)

COMPLETE AND SUBMIT WITH BID
(Attach Additional Pages If Needed to List All Subcontractors)

END OF SECTION

SECTION 00 43 93 BID SUBMITTAL CHECKLIST

Documents to Be Received with Bid Package:

- 00 41 00 Bid Form
- 00 25 13 Pre-Bid Meeting Attendance/Site Visit
- 00 43 00 Bid Security Form
- 00 43 36 Proposed Subcontractors Form
- 00 45 13 Bidder's Qualifications
- 00 45 19 Non-Collusion Affidavit
- 00 45 26 Workers' Compensation Certification
- 00 45 33 Non-Segregated Facilities Certification
- 00 45 36 Equal Employment Opportunity and Prevailing Wage Compliance Certification
- 00 45 37 Certification of Performance on Previous Equal Employment Opportunity Contracts
- 00 91 13 Addenda Received (if applicable)

END OF SECTION

SECTION 00 45 26
WORKERS' COMPENSATION CERTIFICATION

In accordance with Section 1861 of the Labor Code, "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract."

I/We certify to the Owner, North of the River Recreation and Park District (NOR), that our company is in compliance with this requirement:

CONTRACTOR

SIGNATURE

TITLE

DATE: _____

COMPLETE AND SUBMIT WITH BID

END OF SECTION

**SECTION 00 45 33
NON-SEGREGATED FACILITIES CERTIFICATION**

The Contractor certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services in any location, under its control, where segregated facilities are maintained. The Contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this Contract. As used in this certification, the term "segregated facilities" means any waiting room, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex or national origin because of habit, local custom, or any other reason. The Contractor agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause, and that it will retain such certifications in its files.

Project Name and Number: **Polo Community Park Bark Park and Landscape Improvements, #POLO-1-2425**

CONTRACTOR/SUBCONTRACTOR

DATED: _____

BY: _____

TITLE: _____

COMPLETE AND SUBMIT WITH BID

END OF SECTION

**SECTION 00 45 36
EQUAL EMPLOYMENT OPPORTUNITY AND
PREVAILING WAGE COMPLIANCE CERTIFICATION**

I hereby certify that I will comply with all the provisions of the Equal Opportunity Clause of Executive Order 11246 as amended by Executive Order 11375. Contractor agrees that no person, on the grounds of race, color, religion, national origin, sex or age will be subjected to discrimination under this Contract.

I hereby certify further that I will conform to the general prevailing wage determinations made by the Director of Industrial Relations pursuant to California Labor Code part 7, chapter 1, article 2, sections 1770, 1773, and 1773.1 regarding wages, benefits, on-site audits with 48-hour notice, payroll records, submittal of weekly payrolls (when requested) to North of the River Recreation and Park District and apprentice and trainee employment requirements.

I hereby certify further that I have been notified of California Department of Industrial Relations requirements for the registration of contractors and subcontractors; that the Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations; and the posting of job site notices prescribed by regulation. Pursuant to California Labor Code part 7, Chapter 1, Article 2, Sections 1725.5, 1771.1, 1771.4 and 1777.5, et. al.

Project Name and Number: **Polo Community Park Bark Park and Landscape Improvements, #POLO-1-2425**

California Department of Industrial Relations Number: _____

CONTRACTOR/SUBCONTRACTOR

DATED: _____

BY _____
SIGNATURE

TITLE _____

COMPLETE AND SUBMIT WITH BID

END OF SECTION

SECTION 00 45 37
CERTIFICATION OF PERFORMANCE ON PREVIOUS
EQUAL EMPLOYMENT OPPORTUNITY CONTRACTS

The Bidder, _____, and its proposed Subcontractor(s),

hereby certify that they have/have not (circle one), participated in a previous contract or subcontract subject to the Equal Opportunity Clause, as required by Executive Orders 10925, 11114, or 11246, and that they have/have not (circle one), filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Project Name and Number: **Polo Community Park Bark Park and Landscape Improvements, #POLO-1-2425**

CONTRACTOR/SUBCONTRACTOR

DATE _____

BY _____

TITLE _____

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor [41 C.F.R. 60-1.7 (b)(1)], and must be submitted by Bidders and proposed Subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the Equal Opportunity Clause are set forth in 41 C.F.R 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt).

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders of their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and who have not filed the required reports should note that 41 C.F.R. 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

COMPLETE AND SUBMIT WITH BID

END OF SECTION

SECTION 00 52 00 AGREEMENT FOR CONSTRUCTION

THIS AGREEMENT made _____, 20____, between NORTH OF THE RIVER RECREATION AND PARK DISTRICT, a California Special District operating under Public Resource Code Section 5780 (herein, "NOR"), and _____, a _____ (herein, "Contractor"), whose address is _____ registered as # _____ with the California Department of Industrial Relations.

WITNESSETH:

ARTICLE I. In consideration for the promises and payment(s) to be made and performed by NOR, and under the conditions expressed in the incorporated Proposal ("Bid") and Contract Documents, Contractor agrees to do all the Work and furnish all the materials at the expense of Contractor (except such as the Contract Documents state will be furnished by NOR) necessary to construct and complete in a good and workmanlike manner to the satisfaction of NOR, and as further shown and described in the Drawings and Specifications entitled: _____ (the Work).

The Work, for which Contractor submitted and NOR accepted a Proposal total of \$ _____, will be completed within the time limit specified in the Supplementary Conditions, in conformity with Contract Documents incorporated by Article III of this Agreement.

ARTICLE II. Contractor agrees to accept the total amount or the unit prices, as the case may be, listed in the accepted Proposal as full payment for all materials and all work embraced in this Agreement including all loss and damage arising out of the Work or the action of the elements or any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the Work and for all risks of every description connected with the Work and for all expenses incurred by or in consequence of the suspension or discontinuance of Work and for well and faithfully completing the Work in the manner and time and according to the Contract Documents and any changes in the Contract Documents NOR may authorize. NOR employs Contractor to provide the materials and do the Work according to the terms and conditions of this Agreement, for the prices stated, and will pay the agreed price in the manner set out in the General Conditions, Supplementary Conditions and Specifications.

ARTICLE III. The Invitation to Bid, Instruction to Bidders, General Conditions, Supplementary Conditions, Drawings, Specifications, Bid Proposal, Addenda, and Bonds (copies of which are attached to this Agreement and are on file in NOR's Administrative Center) are by these references incorporated in this Agreement and comprise the Contract Documents.

ARTICLE IV. I (Contractor) am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with provisions of that Code, and I will comply with such provisions before commencing the performance of the Work of this Contract.

Signature of Contractor's Authorized Representative Making
the Above-Stated Certification

ARTICLE V. In the event suit is brought to enforce or interpret any part of this Contract, the “prevailing party” shall be entitled to recover as an element of the costs of suit, and not as damages, reimbursement of costs and a reasonable attorney’s fee plus expenses (including the cost of Engineer and NOR’s representatives and experts and investigators) to be fixed in Court. The “prevailing party” shall be the party who is entitled to recover costs of suit, whether or not the suit proceeds to final judgement. A party not entitled to recover costs shall not recover attorney’s fees. No sum for attorney’s fees shall be counted in calculating the amount of a judgement for purposes of determining whether a party is entitled to recover costs or attorney’s fees.

ARTICLE VI. If NOR or its officers, agents, consultants, employees and Engineer are named, or are required to testify, or to contribute time and expense in any other way, in any suit or enforcement action of any kind brought to recover alleged damages or remedy alleged violations resulting from the acts or omissions (including negligent acts or omissions) in connection with, or accidents arising from, the acts, operations, and responsibilities of the Contractor or others associated with or working under Contractor, or others to whom the Contractor is responsible in direct or indirect relation to the performance of the Contract Work, NOR and/or its officers, agents, consultants, employees, and Engineers shall be indemnified, held financially harmless and legally defended (with counsel acceptable to the named party) by the Contractor from any claims for damages and reimbursed for any reasonable costs incurred by them for lost time, expert assistance, and incidental expenses in connection with their need to participate in defending themselves against such claims, or contributing time and expense in any other such way, whether or not the suit or enforcement action proceeds to final judgement. This article shall apply and be enforceable for the full time of any applicable statute of limitations.

ARTICLE VII. The parties do for themselves, their heirs, executors, administrators, successors, and assigns agree to the full performance of all the provisions herein contained. Contractor may not, either voluntarily or by action of law, assign any obligation assumed by Contractor hereunder without the prior written consent of NOR.

IN WITNESS WHEREOF, NOR and Contractor have set their hands on the date first above written.

NORTH OF THE RIVER RECREATION AND PARK DISTRICT

Date: _____ by _____
SIGNATURE

Contractor's Name

Contractor's License Number

Type of Entity (corporation, partnership, individual, etc.)

Date: _____ by _____
Signature

Print Name

Title of Individual Executing Document on Behalf of Firm

NOTICE: Contractors are required by law to be licensed and regulated by the Contractors State License Board. Questions concerning a contractor may be referred to the registrar of that board.

END OF SECTION

SECTION 00 61 13.13 FAITHFUL PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS

THAT, WHEREAS, North of the River Recreation and Park District (NOR) has entered into a Contract dated _____ with _____ hereinafter designated as the "Contractor," for the work described as:

WHEREAS, the said Contractor is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract;

NOW, THEREFORE, WE, the undersigned Contractor, as Principal and _____ (Corporate Surety with an "AM Best A-VII" rating or better), a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business under the laws of the State of California, as SURETY are held and firmly bound unto NOR in the penal sum of \$ _____ lawful money of the United States, said sum being not less than one hundred percent (100%) of the total Contract amount, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT IF the above bounden Contractor or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, well and truly keep and perform the covenants, conditions, and agreements of said Contract and any alterations thereof made as therein provided on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless NOR, its officers and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue. In the event legal action is required to enforce the provisions of this Agreement, the prevailing party shall be entitled to recover reasonable attorney's fees in addition to court costs, necessary disbursements, and other damages.

And the said SURETY, for value received, hereby stipulates and agrees that no charge, extension of time, alteration, or addition to the terms of the Contract or to the Work to be performed thereunder or the Specifications accompanying the same shall in any wise effect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the Work or to the Specifications.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____,
20____.

CONTRACTOR AS PRINCIPAL

BY _____

(Corporate Seal)

TITLE: _____

SURETY

BY: _____

TITLE: _____

Correspondence or claims related to this bond should be sent to the Surety at the following address:

Phone Number: _____

NOTICE: The acknowledgment of an authorized representative of the principal and a certified copy of the surety's power of attorney shall be attached to this form.

SUBMIT WITH AGREEMENT

END OF SECTION

SECTION 00 61 13.16 PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS

THAT, WHEREAS, North of the River Recreation and Park District (NOR) has awarded to: _____, hereinafter designated as the "Contractor," a Contract for the Work described as follows:

WHEREAS, said Contractor is required by the provisions of Division 3, Part 4, Title 15, Chapter 7 of the Civil Code to furnish a bond in connection with said Contract, as hereinafter set forth.

NOW, THEREFORE, WE, the undersigned Contractor as principal and _____ (Corporate Surety with an "AM Best A-VII" rating or better) a corporation organized and existing under the laws of the State of _____ and duly authorized to transact business under the laws of the State of California, as SURETY are held and firmly bound unto NOR under the terms and truly to be made we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents in the penal sum of \$ _____. This being at least fifty percent (50%) of the total Contract amount herein \$ _____, paid in lawful money of the United States.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if said Contractor, or its heirs, executors, administrators, successors, assigns or subcontractors shall fail to pay for any materials, provisions, provender, or other supplies or teams, implements, or machinery used in, upon, for or about the performance of the Work contracted to be done, or for any work or labor thereon of any kind, or fail to pay any of the persons named in California Civil Code Section 3181, or for the amounts due under the Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Contractor and Subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work or labor as required by the provisions of Division 3, Part 4, Title 15, Chapter 7 of the Civil Code; and provided that the claimant shall have complied with the provisions of said Code, the surety or sureties hereon will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, the said Surety will pay a reasonable attorney's fee to be fixed by the Court.

This bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claim under Section 3181 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond. And the said SURETY, for value received, thereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Work to be performed thereunder or the Specifications accompanying the same shall in any wise affect its obligations on this bond and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications.

Principal and SURETY agree that should NOR become a party to any action on this bond that each will also pay NOR's reasonable attorney's fees included therein in addition to the sum above set forth.

PROJECT: POLO-1-2425

IN WITNESS WHEREOF, WE have hereunto set our hands and seals this _____ day of _____, 20__.

CONTRACTOR AS PRINCIPAL

BY _____

(Corporate Seal)

TITLE _____

SURETY

BY _____

TITLE _____

Correspondence or claims related to this bond should be sent to the Surety at the following address:

Phone number: _____

NOTICE: The acknowledgment of an authorized representative of the principal and a certified copy of the surety's power of attorney shall be attached to this form.

SUBMIT WITH AGREEMENT

END OF SECTION

**SECTION 00 62 24
CERTIFICATE OF EXCLUSION OF
ASBESTOS AND LEAD PRODUCTS**

**Project:
Polo Community Park
Bark Park and Landscape Improvements**
11801 Noriega Road
Bakersfield, CA

EXCLUSION OF ASBESTOS and LEAD CONTAINING PRODUCTS
TO BE EXECUTED BY CONTRACTOR

1. The General Contractor agrees that asbestos and lead containing products or materials will not be used in performing work under the Agreement for the above referenced Project.
2. At the completion of Work under the Agreement, the General Contractor will represent to Owner, North of the River Recreation and Park District, that to the best of the Contractor's knowledge, opinion or belief, no asbestos and lead containing products or materials were used in performing work under the Agreement.

Executed at _____, California, on _____, 20_____.

Contractor

Signature

Type Name and Title

SUBMIT WITH AGREEMENT

END OF SECTION

SECTION 00 63 13 REQUEST FOR INFORMATION FORM

Project: Polo Community Park Bark Park and R.F.I. #: _____
Landscape Improvements From: _____
To: North of the River Recreation & Park District Date: _____
Re: _____ Proj. #: POLO-1-2425

Specification Section: _____ Paragraph: _____ Drawing Sheet: _____ Detail: _____
Request: _____

Signed By: _____ Printed Name: _____ Date: _____
Response: _____

Attachments:

Response From: _____ To: _____ Date Open: _____ Date Ret'd: _____

Signed by: _____ Date: _____

Printed Name: _____

END OF SECTION

SECTION 00 65 36 WARRANTY FORM

For a valuable consideration, the receipt of which is hereby acknowledged, we guarantee that the labor and materials which we have supplied and/or furnished and/or constructed and/or installed and/or performed at Bakersfield, California, are in accordance with Specifications and Plans for said Construction Project prepared by North of the River Recreation and Park District (NOR) and conform to the specific requirements, performances, and capacities set forth in all of the Contract Documents, Plans and Specifications for said Project and will fulfill the requirements of the guaranties included in the said Specifications, Plans and Contract Documents.

We further guarantee the same to be free from imperfect workmanship and/or materials, and we agree to repair and/or replace at our own cost and expense any and all such work and/or materials which may prove defective in workmanship or materials within a period of one (1) year from date of acceptance of the above named Construction Project by NOR, ordinary wear and tear, unusual abuse or neglect excepted. We also agree to repair and/or replace at our own cost and expense any work and/or materials that we may disturb or displace in making good such defects.

Within twenty-four (24) hours after being notified in writing by NOR of any defects in said work or materials, we agree to commence and prosecute with due diligence all work necessary to fulfill the terms of this guaranty and to complete the Work within a reasonable period of time and in the event of our failure to so comply we collectively and expressly do hereby authorize NOR to proceed to have such work done at our expense and we will honor and pay the cost and charges therefore upon demand.

This guarantee is made expressly for and runs to the benefit of NOR and shall be enforceable by NOR.

DATED: _____
Contractor

By: _____
Signature

Typed Name and Title

For maintenance, repair, or replacement service contact:

Name: _____

Address: _____ Phone: _____

SUBMIT WITH AGREEMENT

END OF SECTION

SECTION 00 72 00
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SECTION 00 72 00 GENERAL CONDITIONS OF THE CONTRACT

CONTRACT DOCUMENTS, PLANS, SPECIFICATIONS & SITE INVESTIGATION

1.01 Correlation and Intent of Documents

- a. The intent of the Contract Documents is to prescribe the details for the construction and completion of the Work which the Contractor undertakes to perform in accordance with the terms of the Contract Documents and to require a complete and finished piece of work. Where the Plans and Specifications describe portions of the Work in general terms, but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of first quality are to be used. Unless otherwise specified, the Contractor shall furnish all labor, materials, tools, equipment and incidentals, and do all the Work involved in executing the Contract in a satisfactory and workmanlike manner.
- b. The Contract Documents are complementary, and what is required in any one shall be as binding as if specified in all.
- c. The organization of the Specifications into divisions, sections and articles, and the arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of work to be performed by any trade.

1.02 Interpretation of Plans and Specifications

- a. Every part of the Work, as shown on the Drawings and described in the Specifications, must be complete and finished. No deviations are to be made from the Drawings or Specifications without previous written authorization from NOR.
- b. In general, the Drawings show dimensions, positions, and kind of construction and the Specifications define materials, qualities and methods. In the event that work is called for on the Drawings and not in the Specifications, or vice versa, the Contractor shall immediately notify NOR of the omission, and wait for NOR to issue instructions for procedure. Upon receiving such instruction, the Contractor shall be responsible for performing any work originally called for on the Drawings and not in the Specifications or vice versa, as though fully set forth in both.
- c. In the case of difference between the Specifications and Drawings, the Specifications shall govern. However, whenever the Contractor observes an error or conflict in the Drawings or Specifications, or in the work done by others affecting this Work, the Contractor shall immediately notify NOR of the discrepancy and wait for NOR to issue instructions to proceed. If the Contractor proceeds with the affected work without instructions from NOR, any resulting damages or defects shall be made good. This includes typographical errors in the Specifications and notational errors on the Drawings.
- d. The Drawings must accurately be followed as to scale, except where figures are given for dimensions, which shall in all cases be taken in preference to scale measurements. Large scale details take precedence over small drawings in all cases.
- e. Work not particularly detailed, marked or specified shall be the same as similar parts that are detailed, marked, or specified. Where a portion of the Work is detailed on any Drawings and the remainder is indicated in outline, the detailed parts shall apply also to all like portions of the Work. Where ornament or other detail is indicated only partially, the detail shall be continued through the sections or parts in which it occurs and shall also apply to all similar parts in the Work, unless otherwise indicated.

1.03 Site Investigation

- a. The Contractor acknowledges sufficient site investigation to reach satisfaction as to the nature and location of the Work, the general and local conditions, particularly those bearing on transportation, handling and storage of materials, the character of the equipment and facilities needed during the prosecution of the Work and all other matters which can in any way affect the Work or the cost thereof under this Contract. Any failure of the Contractor to be acquainted with all the available information concerning these conditions will not relieve it from the responsibility for estimating properly the difficulties or cost of successfully performing the Work.

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.04 Contractor's Facilities

- a. Before proceeding with the erection of any construction facilities, including machinery, equipment, offices, or warehouses, the Contractor shall, at no expense to NOR, notify and furnish NOR with information and drawings as NOR may request for all such facilities, with capacities and capabilities of the machinery and equipment. Such Contractor's facilities shall be adequate for the uses intended and be fully in accord with the requirements of the Contract.

1.05 Temporary Use of Facilities

- a. Subject to the approval of NOR, the Contractor may be permitted to make temporary use of NOR owned land or storage areas available in the vicinity of the Contract Work for storage of equipment or materials. The Contractor shall obtain approval for use of facilities prior to Bidding. If such permission is not obtained prior to Bidding, there is no guarantee that this can happen, and the Contractor is responsible to pay all additional costs incurred as a result of not properly securing permission prior to Bidding.

1.06 Sanitary Facilities

- a. Furnish and install all required temporary toilet buildings with sanitary toilets for use of all employees. Comply with all minimum requirements of the Health Department or other public agency having jurisdiction. Maintain in a usable sanitary condition at all times.

1.07 Utilities for Construction

- a. The Contractor shall, at no expense to NOR, arrange for, develop, and maintain all utilities necessary for the performance of Work under the Contract, including all interest in land necessary therefore. Such service shall be furnished at the Contractor's expense. At sites where utilities exist NOR may furnish utilities at no expense to the Contractor. Contractor is responsible to determine availability of adequate services and receive approval of NOR to use the same prior to submitting a Bid for the Work. Any misjudgment on the part of the Contractor shall be corrected at the Contractor's expense.

1.08 Fencing of the Construction Area

- a. If fencing is required for the construction, furnish and install a temporary fence around the construction area as indicated on the Drawings. Temporary fencing shall not be less than six feet high, complete with metal or wood posts, a woven wire mesh and all required bracing, truck gates, and pedestrian gates. Where there is existing fencing, it may be utilized in the Project fencing unless the height or condition of the existing fence will not meet the intent of the construction fence.

1.09 Illumination

- a. When any work is performed at night or where daylight is shut off or obscured, the Contractor shall, at no expense to NOR, provide artificial light sufficient to permit work to be carried on efficiently, satisfactorily, and safely, and to permit thorough inspection. The access to the place of work shall also be clearly illuminated.

1.10 Lands for Work, Right of Way Easements, and Access Roads

- a. NOR will provide the lands, easements, and rights of way or other right to enter and work on lands necessary for the performance of the Work. Should the Contractor find it advantageous to use any additional land for any purpose whatever, the Contractor shall provide for the use of such land at its expense. Nothing herein contained and nothing marked on the Drawings, shall be interpreted as giving the Contractor exclusive occupancy of the territory provided by NOR. When two or more contracts are being executed at one time on the same or adjacent land in such a manner that work on one contract may interfere with that of another, NOR shall decide which contractor shall cease work and which shall continue, or whether the work on both contracts shall progress at the same time, and in what manner, and the decision of NOR shall be final and binding.
- b. Lands to be furnished by NOR for construction operations will be specifically shown on the Drawings or provided for in the Supplementary Conditions.
- c. The Contractor, if required, shall construct and maintain all roads necessary to reach the various parts of the Work and for the transportation thereto of construction material and personnel. The cost of constructing and maintaining such roads shall be borne by the Contractor.

1.11 Protection of Work

- a. Until acceptance of the Work by NOR, the Contractor shall continuously maintain adequate protection of all Work from damage. The Contractor shall make good any such damage, injury, or loss, except such as may be caused solely by the negligence or willful misconduct of agents and employees of NOR. Contractor shall adequately protect adjacent property as provided by law and the Contract Documents. Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for protection required by public authority or local conditions.
- b. The Contractor shall be responsible for all damage to any property resulting from trespass by the Contractor or employees of the Contractor in the course of their employment, whether such trespass was committed with or without the consent or knowledge of the Contractor.

1.12 Preservation of Property

- a. The Contractor shall take whatever precautions are necessary to prevent damage to all existing improvements, including aboveground and underground utilities, trees, and shrubbery that are not specifically shown to be removed, fences, signs, mailboxes, survey markers and monuments, buildings and structures, NOR's property, adjacent property, and any other improvements or facilities within or adjacent to the Work. If such improvements or property are injured or damaged by reason of the Contractor's operations, they shall be replaced or restored, at the Contractor's expense, to a condition at least as good as the condition that existed prior to the start of the Contractor's operations.
- b. The Contractor shall examine all bridges, culverts, and other structures over which materials and equipment will be moved, before using them, and shall properly strengthen such structures, where necessary. The Contractor shall be responsible for any and all injury or damage to such structures caused by reason of construction operations.

c. Regional Notification Center Contact:

- (1) Contractor, except in an emergency, shall contact the appropriate regional notification center at least two working days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement which is known, or reasonably should be known, to contain subsurface installations other than any underground facilities owned or operated by NOR, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and/or carried out by the Contractor unless such an inquiry identification number has been assigned to the Contractor or any Subcontractor of the Contractor and NOR has been given the identification number by the Contractor.
- (2) "Emergency" shall be defined as a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to life, health, property, or essential public services. Emergency includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage (Government Code Section 4216).
- (3) "Subsurface installation" means any underground pipeline, conduit, duct, wire, or other structure operated or maintained in or across a public street or public right-of-way (Government Code Section 4216).

1.13 Protection of Roadways from Excess Loadings

- a. The Contractor shall not operate construction equipment of any kind on or across public or private roadways having weights in excess of the maximum limit established by local authorities in charge of maintenance of such facilities unless expressed written permission is granted by such authorities. Each vehicle shall have a sufficient number of pneumatic tires to adequately maintain any vehicle wheel loading below the required limit. Except at authorized public crossings, the Contractor shall not cross roads unless otherwise permitted in writing by the appropriate local authority in charge of the affected facility. In addition to the requirements of this Article, the Contractor's attention is called to 1.12, Preservation of Property of these "General Conditions."

1.14 Responsibility for Repair of Facilities

- a. All existing NOR equipment or other facilities or other public or private facilities, including but not limited to existing canals, structures, telephone cables, roadways, parking lots, private drives, levees and embankments for canals, ponds and reservoirs disturbed by Contract construction shall be repaired and/or replaced to match existing. In addition, the Contractor shall be responsible for any settlement damage to such facilities or adjoining areas, for a period of one year after NOR acceptance of such required facilities. Regarding equipment furnished for Contractor's installation, Contractor shall obtain and bear the cost of any insurance which may be required with respect to meeting its obligations hereunder.

1.15 Traffic Control

- a. The maintaining of public vehicular traffic through the Work to adjacent driveways and intersecting streets shall conform and Contractor shall cooperate with local authorities relative to handling traffic through the area and shall make its own arrangements relative to maintaining uninterrupted access to all residences or businesses in the construction area at all times. Public vehicular traffic within and in the vicinity of Project area, shall be permitted to pass through the Work area safely and with as little inconvenience as possible.

- b. Barricades and warning devices, to be provided by the Contractor, will be required to delineate the edge of traversable road, in such numbers necessary to maintain traffic safety and will conform to the style of the California State Division of Highways, "Traffic Manual," Chapter 5-10, of the "Work Area Traffic Control Handbook," or as directed by the Traffic Engineer.
- c. Barricades or fences shall be installed around all open-trenched areas at all times as required by the provisions of Cal OSHA requirements.
- d. Any flagmen needed shall follow the "Instructions of Flagmen" Figure 5-10, of the "Traffic Manual."
- e. All temporary traffic control signs will be provided and installed by the Contractor. "No Parking" signs shall be posted twenty-four (24) hours in advance of construction and shall state the hours and duration of the construction. It shall be the Contractor's responsibility to maintain said signs as posted during the duration of the Project.
- f. All signs, barricades, warning devices, and flagmen's equipment shall be constructed of the correct materials and shall be of the correct color.
- g. Payment for the traffic control plan, detours, traffic control and accommodating public convenience for the entire length of this Project shall be considered as included in the Contract, and no additional payment will be made therefore. No additional payment will be allowed for night and weekend work necessary to prepare and maintain traffic control and public convenience.

1.16 Public Convenience

- a. It is part of the service required by the Contractor to make whatever provisions are necessary to protect the public. The Contractor shall use foresight and shall take such steps and precautions as operations warrant to protect the public from danger, loss of life or loss of property, which would result from interruption or contamination of a public water supply, interruption of other public service, or from the failure of partly completed work or partially removed facilities. Unusual conditions may arise on the Work which will require that immediate and unusual provisions be made to protect the public from danger or loss, or damage to life and property, due directly or indirectly to prosecution of work under this Contract. Whenever, in the opinion of NOR, an emergency exists against which the Contractor has not taken sufficient precaution for the public safety, protection of utilities and protection of adjacent structures or property, which may be damaged by the Contractor's operations and when, in the opinion of NOR, immediate action shall be considered necessary in order to protect the public or property due to the Contractor's operations under this Contract, NOR will order the Contractor to provide a remedy for the unsafe condition. If the Contractor fails to act on the situation within a reasonable time period, NOR may provide suitable protection to said interests by causing such work to be done and material to be furnished which, in the opinion of NOR, is reasonable and necessary.
- b. The cost of said labor and material, together with the cost and expense of such repairs as deemed necessary, shall be borne by the Contractor. All expenses incurred by NOR for emergency repairs will be deducted from the progress payments and the final payments due to the Contractor. However, if NOR does not take such remedial measures, the Contractor is not relieved of the full responsibility for public safety.

SAFETY

1.17 Safety

- a. The Contractor is hereby informed that work on this Project could be hazardous. The Contractor shall carefully instruct all personnel working in potentially hazardous work areas regarding potential

dangers and provide such necessary safety equipment and instructions as necessary to prevent injury to personnel and damage of property. Special care shall be exercised relative to work underground.

- b. The Contractor shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to all applicable federal, state, county and local laws, ordinances, and codes, and to the rules and regulations established by the California Division of Industrial Safety, and to other rules of law applicable to the Work.
- c. In accordance with Section 6501 of the State Labor Code, the Contractor shall obtain a permit for all work subject to the requirements thereof. This in no way relieves the Contractor from the requirements of maintaining safety in all operations they or their Subcontractors perform.
- d. All equipment furnished shall be grounded and provided with guards and protection as required by safety codes. Where a vapor tight explosion proof electrical installation is required by code, it shall be provided. In accordance with the provisions of Sections 6705 and 6707 of the Labor Code, the Contractor shall retain the services of a registered civil or structural Engineer, to design shoring if applicable. State and include this information in the Proposal as a separate Bid Item. The Contractor shall submit these designs to NOR for review.
- e. Nothing in these Specifications shall be construed to permit work not conforming to governing codes. When Contract Documents differ from governing codes, the Contractor shall furnish and install the higher standards called for without extra charge.
- f. The duty of NOR or designated representative to conduct construction review of the Contractor's performance and the undertaking of inspection by NOR or the giving of instructions as authorized herein is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the construction site and shall not be construed as supervision of the actual construction nor make NOR responsible for providing a safe place for the performance of work by the Contractor, Subcontractors, or suppliers; or for access, visits, use, work, travel, or occupancy by any person.

1.18 Accidents

- a. The Contractor shall provide, at the site, such equipment and medical facilities as necessary to supply first aid service to anyone who may be injured in connection with the Work.
- b. The Contractor shall promptly report in writing to NOR all accidents whatsoever arising out of, or in connection with the performance of the Work, whether on or adjacent to the site, which caused death, personal injury, or property damage, giving full details and statements of witnesses. In addition, if death or serious damage is caused, the accident shall be reported immediately by telephone or messenger to NOR.
- c. If any claim is made by anyone against the Contractor or any Subcontractor on account of an accident, the Contractor shall promptly report the facts in writing to NOR giving full details of the claim.

1.19 Fire Protection

- a. The Contractor shall not permit unauthorized fires either within or adjacent to the limits of the Project and shall be liable for all damage from fire due directly or indirectly to construction activities, or actions of those of the Contractor's employees, or Subcontractors and their employees. The Contractor shall conform to all Federal, State, or Local laws and regulations pertaining to burning, fire prevention, and control within or adjacent to the Project. A copy of each required permit shall be

furnished to NOR. The Contractor's forces or equipment may be required to fight fires in the vicinity, regardless of cause. NOR will not assume any responsibility of payment for fighting fire when such is ordered by Governmental Authority or when such is required for protection of the Work pursuant to the General Conditions.

1.20 Valley Fever – Notice to Employees

- a. A special biological problem of the Project area is presence of tiny organisms living in the soil which can cause Valley Fever (coccidiomycosis) in man. As is typical of many desert areas in southwestern United States, Valley Fever is endemic to Kern County. Although everyone living in the valley has some contact with the disease-causing organisms, the illness is a greater threat to those like construction employees whose work brings them into close contact with the soil. In accordance with the recommendation of the Kern County Health Department, the Contractor and all Subcontractors shall advise all their employees, in writing, to obtain coccidioidin skin tests before commencing work on this Project and at intervals thereafter as recommended by their family physician. The Contractor and all Subcontractors shall also advise all their employees, in writing, to wear dust masks while working under dusty conditions.

INSURANCE AND LIABILITY

1.21 Insurance

- a. The Contractor shall not commence any work until all required insurance is obtained at Contractor's expense. Such insurance must have the approval of NOR as to limit, form, and amount and shall be written by a company with an "AM Best A-VII" rating or higher. The Contractor shall not permit any Subcontractor to commence work on this Project until the same insurance requirements have been complied with by such Subcontractor.
- b. Any insurance bearing on adequacy of performance shall be maintained after completion of the Project for the full guarantee period.
- c. The Contractor at Contractor's expense shall maintain in effect at all times during the performance of the Work under the Contract not less than the required coverage and limits of insurance, which shall be maintained with insurers and under forms of policy satisfactory to NOR which is specified in the Supplementary Conditions of the Contract.
- d. Promptly on execution of the Contract and prior to commencement of any work, the Contractor shall deliver to NOR certificates of insurance issued in triplicate (3) covering all policies providing the required insurance. Such certificates shall make reference to all such provisions and endorsements referred to above and shall be signed on behalf of the insurer by its authorized representative. The Contractor agrees to furnish one copy of each policy to NOR if requested in writing. Said copy shall be certified by an authorized representative of the insurer.
- e. All of the Contractor's policies shall contain an endorsement providing that written notice shall be given to NOR at least ten (10) calendar days prior to termination, cancellation, or reduction of coverage included in the policy.
- f. Any policy or policies of insurance that the Contractor elects to carry as insurance against loss or damage to his construction equipment and tools shall include a provision therein providing a waiver of the insurer's right to subrogation against NOR and its agents.
- g. The foregoing requirements as to the types, limits and NOR's approval of insurance coverage to be maintained by the Contractor are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Contractor under this Contract.

1.22 Indemnity and Litigation Costs

- a. The Contractor is specifically obligated and hereby agrees to protect, hold free and harmless, defend and indemnify NOR and its consultants, and each of its officers, employees and agents from any and all liability, penalties, costs, losses, damages, expenses, causes of action, claims or judgements, including attorney's fees, which arise out of or are in any way connected with the Contractor's performance of work under this Contract whether attributable in whole or in part to the condition of the premises. To the extent legally permissible, this indemnity and hold harmless agreement by the Contractor shall apply to any acts or omissions, whether active or passive, on the part of the Contractor or agents, employees and representatives of the Contractor, or Subcontractors and Subcontractor's agents, employees and representatives resulting in liability irrespective of whether or not any acts or omissions of the parties to be indemnified hereunder may have also been a contributing factor to the liability.
- b. In the event that litigation of any nature between NOR and the Contractor becomes necessary to enforce or interpret all or any portion of this Contract, it is mutually agreed that the prevailing party therein shall receive from the other, in addition to such sums as may be reduced to judgement an amount sufficient to reimburse such prevailing party for reasonable attorney's fees and litigation costs paid or owing as a result of such litigation.
- c. No Personal Liability: Neither NOR, nor any other officer or authorized assistant or agent shall be personally responsible for any liability arising under the Contract, except such obligations as are specifically set fourth herein.

LABOR REQUIREMENTS

1.23 Labor Discrimination Prohibited

- a. Attention is directed to Sections 1735 and 1777.6 of the Labor Code, which read as follows:

Section 1735: "No discrimination shall be made in the employment of persons upon public works because of the race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, or sex of such persons, except as provided in Section 12940 of the Government Code, and every contractor for public works violating this section is subject to all the penalties imposed for a violation of this chapter."

Section 1777.6: "It shall be unlawful for any employer or a labor union to refuse to accept otherwise qualified employees as indentured apprentices on any public works, solely on the ground of the race, religious creed, color, national origin, ancestry, or sex of such employee."

b. Contractor shall cause clauses identical to the above-cited prohibitions to be included in every subcontract for the Project Work and Contractor hereby stipulates that such conditions shall be required of its Subcontractors.

1.24 Mandatory Certification of Contractor and Employment of Apprentices

- a. This Contract shall not prevent the employment of properly indentured apprentices in accordance with the California Labor Code, and no employer or labor union shall refuse to accept otherwise qualified employees as indentured apprentices on the Work performed hereunder solely on the grounds of race, creed, national origin, ancestry, color, or sex. Every qualified apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade in which he/she is employed, and shall be employed only in the craft or trade to which he/she is indentured.

- b. If California Labor Code Section 1777.5 applies to the Contract Work, the Contractor and any Subcontractor hereunder who employ workers in any apprenticeable craft or trade shall apply to the joint apprenticeship council administering applicable standards for a certificate approving the Contractor or Subcontractor for the employment and training of apprentices. Upon issuance of this certificate, the Contractor and any Subcontractor shall employ the number of apprentices provided for therein, as well as contribute to the fund to administer the apprenticeship program in each craft or trade in the area of the Work hereunder.
- c. The parties expressly understand that the responsibility for compliance with this section and with Sections 1777.5, 1776.5 and 1777.7 of the California Labor Code, in regard to all apprenticeable occupations, lies with the Contractor hereunder.
- d. In accordance with Labor Code Section 1773.3, NOR will send notice of the award of this Contract to the Division of Apprenticeship Standards within five days after award if the Contract is awarded to a general contractor in the amount of at least \$30,000 and involves at least 20 working days, or is awarded to a specialty contractor in the amount of \$2,000 and involves at least five working days, if such general or specialty contractor employs workers in an apprenticeable craft or trade.

1.25 Prevailing Rates of Wages and Payroll Records

- a. As suggested in the Notice Inviting Bids, NOR has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which the Contract Work is to be performed for each craft, classification, or type of worker needed to execute the Contract, a copy of which is hereby incorporated by reference. The prevailing rates of per diem wages are available at the California Department of Industrial Relations website (www.dir.ca.gov/dlsr/pwd/index.htm).
- b. Contractor shall forfeit to NOR, as a penalty, \$50.00 for each calendar day, or portion thereof, for each worker paid less than the said per diem wage for any work done under the Contract by it or by any Subcontractor under it in violation of the provisions of the California Labor Code. It is hereby stipulated by and between NOR and Contractor that Contractor will comply with provisions of California Labor Code Section 1775. The term "per diem wages" shall be deemed to include travel and subsistence payments, which are required by California Labor Code Section 1773.8 to be paid to each worker performing work under the Contract.
- c. Contractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice or worker employed. Such records shall be available for inspection at all reasonable hours and a copy shall be made available to any employee or employee's authorized representative, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards in compliance with California Labor Code Section 1776. Upon written notice from NOR or the Division of Labor Standards Enforcement, Contractor shall within ten days file with NOR a certified copy of the payroll records. Contractor shall cause an identical clause to be included in every subcontract for Contract work.

1.26 Eight-Hour Day Limitation

- a. Eight (8) hours constitutes a legal day's work (Labor Code, Section 1810). The time or service of any workman employed on this Project is limited and restricted to eight (8) hours during any one calendar day, and 40 hours during any one calendar week, except as provided for under Section 1815 of the Labor Code (Labor Code, Section 1811).
- b. Every Contractor and Subcontractor shall keep an accurate record showing the names and actual hours worked each calendar day and each calendar week by each workman employed in connection

with the Public Work. The record shall be kept open at all reasonable hours to the inspection of NOR and to the Division of Labor Law Enforcement (Labor Code, Section 1812).

- c. The Contractor shall, as a penalty to NOR, forfeit twenty-five dollars (\$25) for each workman employed in the execution of the Contract by the Contractor or by any Subcontractor for each calendar day during which such workman is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of this article (Labor Code, Section 1813). Any Contractor or Subcontractor who neglects to comply with any provision of Section 1812 is guilty of a misdemeanor (Labor Code, Section 1814).
- d. Work performed by employees of Contractors in excess of eight (8) hours per day, and forty (40) hours during any one week, shall be permitted for Public Work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1½) times the basic rate of pay (Labor Code, Section 1815).

1.27 Worker Benefits

- a. In accordance with Section 1773.1 of the Labor Code, per diem wages shall be deemed to include employer payments for health and welfare, pension, vacation, travel time, and subsistence pay as provided in Section 1773.7, apprenticeship or other training programs authorized by Section 3093, and similar purposes.
- b. In accordance with Section 1773.8 of the Labor Code, the Contractor and Subcontractor must provide travel and subsistence payments to each workman needed to execute the Work, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with this section.

MATERIALS AND EQUIPMENT

1.28 Materials Furnished by the Contractor

- a. General: Unless otherwise specified, the Contractor shall furnish all materials necessary for the execution and completion of the Work. All materials, unless otherwise specified, shall be new, and shall be manufactured, handled and installed in a workmanlike manner to ensure completion of work in accordance with the Contract Documents. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials, including furnishing written manufacturer's certifications of compliance with applicable designated governing reference specifications.
- b. Materials Furnished by NOR: Where materials are to be furnished by NOR, the type, size, quantity and location at which they are available will be stated in the Supplementary Conditions.

1.29 Records of Materials Purchased

- a. If required by NOR, the Contractor shall furnish duplicate invoices to NOR on all Materials furnished to the Project.

1.30 Material Storage and Protection

- a. During the progress of the Work, products and materials shall be neatly stored in accordance with the appropriate manufacturer's recommendations and shall be properly cared for and protected from weather, vandalism, and theft.
- b. All installed products and materials shall be adequately protected until such time that NOR accepts the Project.

1.31 Right to Operate Unsatisfactory Equipment or Facilities

- a. If, following installation of any equipment or facilities furnished by the Contractor, defects requiring correction by the Contract are found, NOR shall have the right to operate such unsatisfactory equipment or facilities and make reasonable use thereof until the equipment can be shut down for correction of defects without injury to NOR.

1.32 Warranty

- a. The Contractor shall guarantee all materials, workmanship and equipment furnished under these Specifications for a period of at least one (1) year from the date of filing the Notice of Completion. Should certain projects or contracts require longer warranty periods, those specified warranty periods shall then supersede the normal one year warranty period. Such other warranty periods will require specific warranty statements required in the Contract Package. Upon receipt of written notice from NOR of the failure of any part during the Guarantee Period, due to defective materials furnished, workmanship or equipment furnished, the affected part, or any other work or property damaged on account thereof, shall be repaired or replaced to the satisfaction of NOR by and at the expense of the Contractor.
- b. Should the Contractor fail to act immediately in making the necessary repairs and replacements, NOR may perform or cause to be performed the necessary replacement and the Contractor shall pay to NOR the actual cost of such replacement. The Contractor and its Sureties shall be responsible for the full expense incidental to satisfying the Guarantee.
- c. Nothing in this section shall be construed to limit, relieve or release the Contractor's liability to NOR for damages sustained as the result of latent defects in the equipment furnished caused by the negligence of the Contractor's agents, employees or Subcontractors. Stated in another manner, the Warranty contained in this section shall not amount to nor shall it be deemed to be a waiver by NOR of any rights or remedies (or time limits in which to enforce such rights or remedies) it may have against the Contractor of the equipment to be furnished under these Specifications for defective workmanship or defective materials under the laws of this State pertaining to acts of negligence.

1.33 Trade Names or Approved Equals

- a. Where shown on the Drawings, or where specified, certain equipment, materials or other items are designated for procurement by a trade name, or the name of a manufacturer and the manufacturer's catalog information, or approved equal. The use of alternate items of equal quality will be allowed only when approved and authorized in writing by NOR. The burden of proof as to comparative quality and suitability of proposed alternates to NOR design applications shall be upon the Contractor who shall furnish, at no expense to NOR, all necessary information required by NOR to make a judgement that the proposal is "equal". Where a given design application utilizing a trade name product is considered to be unique or novel, no alternate item of equipment will be allowed. NOR will be the sole judge as to the acceptability of proposed alternates and this decision shall be final.
- b. "Or Equal": Where the phrase "or equal" or "or equal as approved by NOR" occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically so approved for this Work by NOR prior to submittal of a Bid.
- c. Substitutions will be considered and may be approved if they meet appropriate standards and conditions described herein.

- (1) Reference in the Contract Documents to any material, product, or process by name, make, or catalog number shall be interpreted as establishing a standard of quality and design intent and not construed as prohibiting substitutions of any other such material, product, or process, provided such substitution is acceptable and fulfills the design intent of the Work and is accepted through the judgement of the Engineer.
- (2) Acceptance of substitutions will not relieve the Contractor from responsibility for complying with the requirements of the Contract Documents.
- (3) At the discretion of the Engineer, testing of material samples proposed for substitutions may be required. The testing shall be done by an independent testing laboratory selected by NOR, the costs for which shall be borne by NOR. Costs for retesting failed items shall be paid by the Contractor.
- (4) At the discretion of the Engineer, the Contractor may be required to furnish a written guarantee, in addition to that already required, insuring the satisfactory performance of the proposed substitute.
- (5) All additional labor and materials which may be required for the proper installation of any substitution, or required as a consequence of any substitution, shall be provided at no additional cost to NOR.
- (6) Bids shall be based upon the data given in these Contract Documents, or upon previously approved items or techniques designated as "approved equals" by NOR. Where calculations or shop drawings are required for approval, allowance shall be made for meeting the requirements of the Contract Documents and all applicable codes and ordinances.
- (7) Bidders may, in addition, submit separate bids using materials and equipment of other manufacturers, providing the difference in cost is stated for each item proposed to be substituted.
- (8) Provide to NOR all information necessary and required to evaluate proposed substitutions. Do not base bid on the assumption that a material will be approved as equal by NOR unless the item has been specifically approved for this Work by NOR prior to receipt of Bids.

1.34 Submittals

- a. To ensure that the desired products are furnished and installed in accordance with design intent, certain procedures are established for the advance submittal of design data and its approval or rejection by NOR. See Division 1, Section 01300, for specific requirements.

1.35 Requirements Described Elsewhere

- a. Listing of Submittals required for the various portions of the Work are included in the Sections of these Specifications pertaining to the Work involved and occasionally in the Drawings for miscellaneous items of equipment, materials, or procedures.

1.36 Schedule of Submittals

- a. Compile a complete schedule of Submittals according to the provisions of Division 1, Section 01300 Submittals and Substitutions. Submit such a schedule to NOR for comment and approval. The approved Schedule of Submittals shall be kept current at all times and an updated copy shall be kept at the job for review. All Submittals shall be furnished within thirty-five (35) calendar days after the

award of Contract. Within fourteen (14) calendar days NOR will return appropriately marked copy(ies).

1.37 Samples

- a. Unless otherwise specifically directed by NOR, all samples shall be of the precise article proposed to be furnished.
- b. Submit all samples in the quantity which is required to be returned, plus one (1) which will be retained by NOR.

1.38 Colors

- a. Unless the precise colors and patterns are specifically described in the Contract Documents, whenever a choice of color or pattern is available for a specified product submit accurate color charts to NOR for review and selection.

1.39 Shop and Fabrication Drawings

- a. General: Drawings furnished by NOR shall not be construed as shop or fabrication drawings. The Contractor shall furnish to NOR four (4) copies of all shop and fabrication drawings which are required prior to the fabrication or placement of any or all items. With each shop drawings Submittal, an accompanying letter of transmittal shall be provided. Shop drawings for equipment shall show all installation dimensions and details. All shop drawings must bear the stamp of approval of the Contractor showing evidence that it has checked and approved the drawings. Any drawings submitted without said stamp of approval will not be considered and will be returned to the Contractor for proper resubmission. If the shop drawings show variances from the requirements of the Contract because of standard shop practice or other reasons, the Contractor shall make specific mention of such variation(s), including reasons therefore. This explanation shall be provided in the accompanying letter of transmittal in order that, if acceptable, suitable action may be taken; otherwise, the Contractor will not be relieved of the responsibility for executing the Work in accordance with the Contract Specifications and Drawings. NOR will not review shop drawings until all details are properly provided.
- b. Time for Submission and Review: Shop and fabrication drawings for all items of work to be furnished and installed under this Contract shall be submitted within thirty-five (35) calendar days of the date of the award of Contract for the Work. Within fourteen (14) calendar days after receipt of shop or fabrication drawings, NOR will return one copy of these drawings to the Contractor marked as appropriate. The Contractor shall then revise the shop or fabrication drawings as requested by NOR or submit an alternate to the revision and perform the Work in accordance with the revision or approved alternate therefore. The Contractor shall furnish NOR one transparency plus a blue-line copy of the reviewed and revised shop and fabrication drawings immediately upon furnishing the requested revisions or entering the approved alternate on the shop drawings and prior to delivery or installation of any materials shown thereon.
- c. Effect of NOR's Review: NOR reserves the right to require, at no additional cost over the prices stated in the Bidding Schedule, such modifications or alterations as deemed necessary by NOR to make the equipment conform to the provisions and intent of the Contract. Notwithstanding the above provisions, the Contractor shall be responsible for obtaining proper fit and dimensions, and adequate strength to withstand specified dynamic and static loadings on materials and equipment being furnished; NOR's review will apply only to the general arrangement of the materials or equipment. Fabrication or other work done prior to the Contractor's receipt of the reviewed shop and fabrication drawings will be done entirely at the Contractor's risk. Review of the Contractor's drawings by NOR shall not be held to relieve the Contractor of any obligations to meet all the requirements of the

Contract or relieve the Contractor of the responsibility for the correctness of such drawings. The Contractor shall, at no expense to NOR, make any changes in the design which are necessary to make the equipment conform to the provisions and intent of the Contract.

- d. Line-Out Drawings for Pipework: Prior to fabrication of any pipe materials described in the Specifications, the Contractor shall submit line layout drawings and shop drawings showing all pertinent details for field installation and shop fabrication of pipe, pipefittings, and special requirements for pipelines, including joint details for approval by NOR. Line layout drawings shall indicate, at a minimum, pipe class, type, location and dimensions of fittings and special requirements. Pipe, pipefittings, special applications, and joints therefore either shall be fabricated in accordance with the Specification Drawings or in accordance with the Contractor's shop drawings, at the option of NOR. Delay in submittal of either line layout drawings for field installation work or delay in submittal of shop drawings will be cause for NOR to retain liquidated damages.

1.40 Record Drawings

- a. The Contractor shall continuously maintain required As-Built Drawings as the job progresses. A separate set of prints, for this purpose only, shall be kept at the job site. It shall be required that these Drawings be up to date and so certified at the conclusion of all underground work and at the completion of major phases of the Work. Progress payments may be held if appropriate As-Built are not current.
- b. Upon completion of the Work, submit neatly prepared reproducible Drawings showing all changes to the Work. Drawings shall be stamped "AS-BUILT" with a signature, printed name, and date the Drawings were certified to be correct. Deliver the corrected and completed "As-Built" Drawings to NOR. Delivery of the Drawings will not relieve the Contractor of the responsibility of furnishing further required information should discrepancies be found between site conditions and Drawings.
- c. The following work shall be included in the "As-Built" records: Underground utilities and layout including sewer, gas, water, electric, telephone, cable TV, etc., plumbing, heating, ventilating, air conditioning, irrigation, and other systems as may be specifically requested. All as-built work shall be properly dimensioned on the Plans to assure accurate location.
- d. Final payment will not be made without submittal to NOR of complete As-Built for all Work described.

1.41 Manuals

- a. Where manuals are required to be submitted upon completion of the installation, prepare all such manuals in durable binders approximately 8½" x 11" in size and with at least the following features:
 - (1) Identification readable on the outside of the cover listing Project title and stating general nature of the manual and the Project to which it pertains.
 - (2) Tab index reference to all sections of the manual. Tabs shall be neatly identified with typed or clearly hand lettered headings.
 - (3) Complete instructions regarding operation and maintenance of all equipment shall be included.
 - (4) A listing of replaceable parts, including part numbers, as provided on product specification sheets. Identify suppliers and their addresses and phone numbers.
 - (5) Copies of all guarantees and warranties issued for Project products.

- (6) Copies of the approved shop drawings with all data concerning changes made during construction.
- b. Where contents of manuals include manufacturer's catalog pages, clearly indicate the precise items included in this installation and delete, or otherwise clearly indicate, all manufacturer's data with which this installation is not concerned. Provide names, addresses and phone numbers of local manufacturer's representatives and manufacturer's corporate offices.
- c. All manuals shall be submitted and judged complete and satisfactory by NOR prior to release of the Project final payment.

PROGRESS AND COMPLETION – TERMINATION

1.42 Progress and Completion of Work

- a. General: Unless otherwise directed by NOR, the Contractor shall begin work within ten (10) calendar days after the date of the Notice to Proceed. All Work to be performed under this Contract shall be completed within the time specified in the Supplementary Conditions beginning with the Notice to Proceed date.

1.43 Progress Schedule and Order of Completion

- a. To ensure completion of the Work within the time specified and to assist NOR in the scheduling of other work, the Contractor shall submit to NOR within seven (7) calendar days after receiving the Notice to Proceed a detailed schedule showing the proposed dates of beginning and completion of all significant items of work under the Contract. If the actual progress of the Work varies materially from the proposed program, or the Contractor proposes to change the program for any reason, the revised construction program shall be submitted to NOR. The proposed original and revised program shall be adequate, in the opinion of NOR, to meet the requirements for completion of the Work as herein set forth. If, in the opinion of NOR, the Contractor's proposed program or the actual progress of the Work is insufficient to meet the specified requirements, Contractor shall take such steps as necessary to accomplish the required progress and completion.
- b. When in the judgement of NOR it is necessary to accelerate any part of the Work ahead of schedule, the Contractor shall, when directed, concentrate his efforts on such part of the Work.

1.44 Contractor's Forces, Equipment and Progress

- a. The capacity of the Contractor's construction plant, sequence of operations, methods of operation, and the forces employed shall at all times during the continuance of the Contract be subject to approval of NOR and shall be such as to ensure the completion of the Work within the specified period of time. The Contractor shall furnish sufficient forces, construction plant and equipment, and shall work such hours, including extra shifts and overtime operations, and shall furnish such other necessities so as to assure the prosecution of work in accordance with the Specifications and the time requirements specified herein.

1.45 Failure to Complete the Work in the Time Agreed Upon

- a. Liquidated Damages: It is agreed by the parties to the Contract that time is of the essence; and that in case all the Work is not completed before or upon the expiration of the time as set forth, or within any time extensions that may be granted, damage will be sustained by NOR, and that it may be impracticable to determine the actual amount of damage by reason of such delay; and it is, therefore, agreed that the Contractor will pay to NOR as damages the amount per day as indicated in the Supplementary Conditions section of these Specifications.

- b. In addition, NOR shall have the right to charge to the Contractor and to deduct from the final payment for the Work, the actual cost to NOR for engineering, inspection superintendence, and other overhead expenses which are directly chargeable to the Contract, and which accrue during the period of such delay except that the cost of final inspection and preparation of the final estimate shall not be included in such charges. The expenses and damages described above shall be deducted from any money due to the Contractor under this Contract, and the Contractor and responsible sureties shall be liable for any such excess cost, and expense shall be mutually agreed to as damages suffered by NOR on account of the failure of the Contractor to complete the Work within the time limit of the Contract.

1.46 Use of Completed Portions, Right to Operate Facilities

- a. NOR, at any time, and from time to time, during the performance of the Work, may enter the Work for the purpose of installing any necessary work, NOR labor, or other contracts, and for any other purpose in connection with the installation of facilities.
- b. If, prior to completion and final acceptance of all the Work, NOR takes possession of any structure or work (whether completed or otherwise) comprising a portion of the Work with the intent of retaining possession thereof (as distinguished from temporary possession contemplating the return to the Contract), then, while NOR is in possession of the same, the Contractor shall be relieved of liability for loss and damage to structure other than that resulting from the Contractor's fault or negligence. Such taking of possession by NOR shall not relieve the Contractor from any provisions of this Contract respecting such structure, other than to the extent specified in the preceding sentence, nor constitute a final acceptance of such structure.
- c. The Contractor shall make available, in the areas occupied, any utility, heating and cooling as are in condition to be put in operation at the time of early occupancy. All responsibility for said equipment shall remain with the Contractor while it is so operated. However, an itemized list of each piece of equipment so operated with the date operation commences shall be made and certified by NOR. This list shall be the basis for the commencement of guarantee of NOR's early occupancy. NOR shall pay for all utility costs which arise out of the occupancy by NOR during construction.

1.47 Time of Work – Termination for Delay – Time Extensions

- a. The Contractor shall at all times employ such force, plant materials, and tools as will be sufficient, in the opinion of NOR, to prosecute the work at not less than the rates fixed under the terms of the Contract and to complete the Work or any separable portion thereof within the time limits fixed therein. If the Contractor refuses or fails to prosecute the Work or any separable part thereof, with such diligence as will ensure the completion within the time specified in the Contract, or any extension thereof, or fails to complete said Work within such time, NOR may by written notice to the Contractor terminate his right to proceed with the Work or such part of the Work which has been delayed. In such event, NOR may take over the Work and prosecute the same to completion by contract or otherwise, and may take possession of and utilize in completing the Work such materials, appliances, equipment, and plants as may be on the site of the Work and necessary therefore. Whether or not the Contractor's right to proceed with the Work is terminated, it and its sureties shall be liable for all damages, including attorney's fees, sustained or incurred by NOR by reason of such default and in enforcing the provisions hereof against the Contractor.
- b. On award of the Contract, it is the responsibility of the Contractor to properly and promptly order materials and equipment required for the Work. If evidence presented demonstrates that, in spite of the Contractor's efforts, government-established priority controls delay material deliveries, suitable extension of time will be made.

- c. The Contractor's right to proceed shall not be so terminated nor the Contractor charged with resulting damage if:
 - (1) The delay in the completion of the Work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to acts of God, acts of the public enemy, acts of NOR in either its governmental or contractual capacity, acts of another contractor in the performance of a contract with NOR, fires, floods (excluding site flooding due to groundwater), epidemics, quarantine restrictions, strikes, lockouts, freight embargoes, unusually severe weather, or delays of Subcontractors and Suppliers arising from unforeseeable causes beyond the control and without fault or negligence of either the Contractor or such Subcontractors and Suppliers.
 - (2) The delay caused the Contractor by specific order of NOR to stop Work or by the performance of extra work ordered by NOR or by failure of NOR to provide the necessary site for installation or by unforeseen causes beyond the control of the Contractor such delay will entitle the Contractor to an equivalent extension of time, except as otherwise provided.
 - (3) The Contractor within ten (10) days from the beginning of any such delay (unless NOR grants further period of time before the date of final payment under the Contract) notifies NOR in writing of the causes of delay and requests an extension of time.
- d. NOR shall ascertain the facts and the extent of the delay and extend the time for completing the Work when, in its judgement, the findings of fact justify such an extension, and findings of fact shall be final and conclusive on the parties.
- e. The rights and remedies of NOR provided in this clause are in addition to any of the rights and remedies provided by law or under this Contract.
- f. A request for an extension of time, or the granting of an extension of time shall not constitute a basis for any claim against NOR for additional compensation. The Contractor shall be deemed to have waived any claim for additional compensation and does hereby so waive any such claim.

1.48 Termination for Reasons Other Than Delivery

- a. If the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed for the Contractor on account of his insolvency and when not discharged within ten (10) days after his appointment, or if he should persistently or repeatedly refuse or fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials to diligently pursue the Work, or if he should fail to make prompt payment to Subcontractors or for material or labor, or if he should persistently disregard laws, ordinances, or instructions of NOR, or otherwise be guilty of a substantial violation of any provision of the Contract, then NOR, may without prejudice to any right or remedy, and after giving the Contractor ten (10) days written notice, terminate the employment of the Contractor and take possession of the premises and of all equipment, materials, tools, and other facilities thereon and finish the Work by whatever method NOR may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished. If upon completion of the Work the total cost to NOR, including attorney's fees, in connection therewith shall be less than the amount which would have been paid if the Work had been completed by the Contractor in accordance with the terms of the Contract, then said difference shall be paid to the Contractor in the same manner as the final payment under the Contract. If the expense, including the attorney's fees, incurred by NOR on account of termination of employment of the Contractor and subsequent completion of the Work by NOR by whatever method NOR may deem expedient shall exceed said amount which the Contractor would otherwise have been paid, the Contractor and its sureties shall be liable to NOR for the full amount of such excess expense.

- b. In addition to its rights under subparagraph (a) hereof, if at any time before completion of the Work under the Contract it shall be determined by NOR that reasons beyond the control of the parties will not allow completion of the Work, or if the Work shall be stopped by an injunction of a court of competent jurisdiction or by order of any competent authority, NOR may, upon ten (10) days written notice to the Contractor, discontinue the Work and terminate the Contract. Upon service of such Notice of Termination, the Contractor shall discontinue the Work in such manner, sequence, and at such times as NOR may direct. The Contractor shall have no claim for damages for such discontinuance or termination, nor any claim for anticipated profits on the Work thus dispensed with, nor any other claim except for the Work actually performed up to the time of complete discontinuance including any Extra Work ordered by NOR to be done, for any liquidated damages due hereunder in accordance with the provisions relating to Suspension of Work.

QUALITY CONTROL OF THE WORK

1.49 Assignment

- a. Neither party to the Contract shall assign the Contract or sublet it as a whole or in part without the written consent of the other, nor shall the Contractor assign any monies due, or to become due to him hereafter, without the previous written consent of NOR.

1.50 Superintendence – Personal Attention

- a. The Contractor shall designate, in writing, before starting Work, an authorized representative who shall have complete authority to represent and to act for the Contractor. Said authorized representative shall be present at the site of the Work at all times while Contract Work is actually in progress.
- b. During periods when Work is suspended, arrangements acceptable to NOR shall be made for any emergency work which may be required.
- c. Information shall include the representative's name, street address, town and telephone number, and the mailing address if different from the street address.

1.51 Legal Address of Contractor

- a. The address given in the Contractor's Proposal on which the Contract is founded is hereby designated as the place to which all notices, letters and other communications to the Contractor shall be mailed or delivered. The delivering at the above-named place or the depositing in a postpaid wrapper directed to the above place, in any post office mailbox, regularly maintained by the United States Post Office, of any notice, letter, or other communication to the Contractor, and the date of said service shall be the date of such delivery or mailing. Such address may be changed at any time by written notice signed by the Contractor and delivered to NOR.
- b. Nothing herein contained shall be deemed to preclude or render in-operative the service, letter or other communication served upon the Contractor personally.

1.52 Authority of NOR

- a. NOR has full authority to interpret the Contract Documents, to conduct the construction review and inspection of the Contractor's performance, and to decide questions which arise during the course of the Work, and its decisions on these matters shall be final and binding. NOR has the authority to reject all Work and materials which do not conform to the Contract Documents.

- b. If at any time the Contractor's work force, tools, plants or equipment appear to NOR to be insufficient or inappropriate to secure the required quality of work or the proper rate of progress, NOR may order the Contractor to increase their efficiency, improve their character to augment their number or to substitute other personnel, new tools, plants or equipment, as the case may be, and the Contractor shall comply with such order.
- c. NOR shall have the authority to make minor changes in the Work, not involving extra costs, and not inconsistent with the purposes of the Work.
- d. Any order given by NOR, not otherwise required by the Contract Documents shall, on request of the Contractor, be given or confirmed by NOR in writing.
- e. Whenever work, methods of procedure, or any other matters are made subject to direction or approval, such direction or approval will be given by NOR.

1.53 Inspection of Work

- a. Unless otherwise provided, all equipment, materials, and work shall be subject to inspection and testing by NOR and either Kern County or the City of Bakersfield who permit the Work. NOR will observe the progress and quality of the Work and determine, in general, if the Work is proceeding in accordance with the intent of the Contract Documents. NOR shall not be required to make comprehensive or continuous inspections to check quality of the Work and shall not be responsible for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the Work. Visits and observations made by NOR shall not relieve the Contractor of the obligation to conduct comprehensive inspections of the Work and to furnish proper materials and perform acceptable Work, and to provide adequate safety precautions, in conformance with the intent of the Contract.
- b. Whenever the Contractor varies the period during which Work is carried on each day, notice shall be given to NOR so that proper inspection may be provided. Any Work done in the absence of NOR shall be subject to rejection. Proper facilities for safe access to inspect all parts of the Work, shall at times be maintained for the necessary use of the agency, and agents of the State, NOR, City, or County at all reasonable hours for inspection by such agencies to ascertain compliance with laws and regulations.
- c. One or more inspectors may be assigned to observe the Work and to act in matters of construction under this Contract. It is understood that such inspector shall have the power to issue instructions and make decisions within the limitations of the authority of NOR. Such inspection shall not relieve the Contractor of its obligation to conduct comprehensive inspections of the Work and to furnish proper materials and perform acceptable work, and to provide adequate safety precautions in conformance with the intent of the Contract.
- d. NOR and its representatives shall at all times have access to the Work whether it is in preparation or progress, and the Contractor shall provide safe and convenient facilities for such access and for inspection. If the Specifications, NOR's instructions, laws, ordinances, or any public authority require any material, equipment, or work to be specially tested or approved, the Contractor shall give NOR timely notice of its readiness for inspection, and if the inspection is by an authority other than NOR, of the time fixed for inspection. Inspections by NOR will be made promptly and where practicable at the source of supply.
- e. Work performed without inspection may be required to be removed and replaced under proper inspection and the entire cost of removal, replacing, including the cost of NOR furnished materials used in the Work, shall be borne by the Contractor, regardless of whether or not the Work exposed is found to be defective. Examination of questioned Work that is installed without inspection, may be

ordered by NOR and, if so ordered, the Work must be uncovered by the Contractor. All costs to examine and inspect this Work, including testing, shall be paid by the Contractor.

- f. Inspection of the Work shall not relieve the Contractor's obligation to fulfill the Contract as herein prescribed or in any way alter the standard of performance provided by the Contractor, and defective Work shall be made good, and unusual materials may be rejected, notwithstanding that such work and materials have been previously overlooked by NOR and accepted or estimated for payment. If the Work or any part thereof shall be found defective the Contractor shall within ten (10) calendar days make good such defect in a manner satisfactory to NOR. If the Contractor shall fail or neglect to make ordered repairs of defective Work to remove the condemned materials from the Work within ten (10) calendar days after direction in writing by NOR, NOR may make the ordered repairs or remove the condemned materials, and deduct the cost thereof from any monies due to the Contractor.
- g. The Contractor shall furnish promptly without additional charge, all facilities, labor, and materials reasonably needed by NOR for performing all inspections and tests. The Contractor shall be charged with any additional cost of inspection when material and workmanship are not ready at the time specified by the Contractor for its inspection.
- h. Except as specifically required under the materials specifications, all tests of materials furnished by the Contractor shall be made by NOR in accordance with commonly recognized standards of national organizations. The Contractor shall furnish such samples of materials as required by NOR without charge. No material shall be used unless it has received favorable review by NOR.
- i. Where such inspection and testing are to be conducted by an independent laboratory the sample or samples of materials to be tested shall be selected by such laboratory or NOR and not by the Contractor.
- j. The cost of special inspection and tests of materials made by or at the request of NOR, in addition to those required herein, shall be borne by NOR, except for the costs of retesting rejected materials which shall be borne by the Contractor.
- k. Where any part of the Work is being done under an encroachment permit or building permit, or is subject to Federal, State (including any agency created by interstate contract), County or Municipal codes, laws, ordinances, rules, or regulations, representatives of the governing agency shall have full access to the Work and shall be allowed to make any inspection or test in accordance with such permits, codes, laws, ordinances, rules or regulations. If advance notice of the readiness of the Work for inspection by the governing agency is required, the Contractor shall furnish such notice to the appropriate agency.

1.54 Compliance With Laws – Permits, Regulations, Taxes

- a. The Contractor shall be aware and ensure the Subcontractors are fully informed of all applicable State and National laws, County and Municipal ordinances and regulations which in any manner affect those engaged or employed in the Work, or the materials and equipment used in the Work, or which in any way affect the conduct of the Work and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.
- b. Nothing in the Contract Documents is to be construed to permit work not conforming to governing codes. When Contract Documents differ from governing codes, the Contractor shall furnish and install the higher standards called for without extra charge. If any discrepancy or inconsistency is discovered in the Drawings or Specifications, or in this Contract in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to NOR in writing. The Contractor shall at all times observe and comply with all such applicable laws,

ordinances, regulations, orders, and decrees; and shall protect and indemnify NOR and all of NOR's officers, agents, and servants against any claim or liability arising from or based upon the violation of any such law, ordinance, regulation, order or decree, whether by the Contractor or by the Contractor's employees. Particular attention is called to the following:

- (1) Contractor is an independent Contractor and shall, at its sole cost and expense, comply with all laws, rules, ordinances, and regulations of all governing bodies having jurisdiction over the Work, obtain all necessary permits and licenses therefore, pay all manufacturers taxes, sales taxes, use taxes, processing taxes, and all federal and state taxes, insurance and contributions for social security and unemployment which are measured by wages, salaries or any remuneration paid to Contractor's employees, whether levied under existing or subsequently enacted laws, rules, or regulations. Contractor shall also pay all property tax assessments on materials or equipment used until acceptance by NOR.
- (2) Without limitation, materials furnished and performance by Contractor hereunder shall comply with Safety Orders of the Division of Industrial Safety, State of California, Federal Safety and Regulations of the Bureau of Labor, Department of Labor, and any other applicable Federal regulation.
- (3) The Contractor upon request shall furnish evidence satisfactory to NOR that any and all of the foregoing obligations have been or are being fulfilled. The Contractor warrants to NOR that it is licensed by all applicable governmental bodies to perform this Contract and will remain so licensed throughout the progress of the Work, and that it has and will have, throughout the progress of the Work, the necessary experience, skill, and financial resources to enable it to perform this Contract.
- (4) Federal Safety Standards. Contractors shall comply with provisions of the Contract Work Hours and Safety Standard Act (40USC 327 et seq.) and the regulations. NOR shall not have liability for non-compliance.

1.55 Correction of Work

- a. The Contractor shall promptly remove from the premises all materials rejected by NOR as failing to conform to the Contract Documents whether incorporated in the Work or not. The Contractor shall, at sole expense, promptly replace such materials and perform all work made necessary by such replacement including the making good of all work of others destroyed or damaged by such removal or replacement.
- b. If the Contractor does not remove such rejected work and materials within a reasonable time, fixed by written notice, NOR may remove them or may store the material at the expense of the Contractor. If the Contractor does not pay for the expense of the removal within ten (10) days thereafter, NOR may, upon ten (10) days written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all of the costs and expenses that should have been borne by the Contractor. If the proceeds of the sale are not sufficient to reimburse NOR for costs and expenses that should have been borne by the Contractor, the additional costs and expenses shall be paid by the Contractor and may be deducted by NOR from monies due or to become due the Contractor under this Contract.

1.56 Cleanup

- a. During the progress of the Work, the Contractor shall maintain the site and related structures and equipment in a clean, orderly condition and free from unsightly accumulation of rubbish. Upon completion of Work and before the final estimate is submitted, the Contractor shall at its own cost and expense remove from the vicinity of the Work all discarded plants, temporary buildings, rubbish,

unused work materials, concrete forms, temporary bridging and other like materials, belonging to it or used under its direction during the construction and in the event of its failure to do so, the same may be removed by NOR after ten (10) calendar days notice to the Contractor, such removal to be at the expense of the Contractor. Where the construction has crossed yards or driveways, they shall be restored by the Contractor to the complete satisfaction of NOR, at the Contractor's expense.

MEASUREMENT AND PAYMENT

1.57 Scope of Payment

- a. The Contractor shall accept the compensation as herein provided as full payment for (a) furnishing all labor, materials, tools, equipment, and incidentals necessary to the completed Work, (b) performing all Work contemplated and embraced under the Contract, (c) loss or damage arising from the nature of the Work or from the action of the elements or from any unforeseen difficulties which may be encountered during the prosecution of the Work until the acceptance by NOR, and for all risks of every description connected with the prosecution of the Work, (d) all expenses incurred in consequence of the suspension or discontinuance of the Work as herein specified, and (e) completing the Work according to the Contract Documents. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor's obligation to make good any defective work or material.
- b. No compensation will be made in any case for loss of anticipated profits. Increased or decreased work involving supplemental agreements or Extra Work will be paid for as provided in such agreement.

1.58 Measurement of Quantities

- a. Where the Contract provides for payment on a lump sum price basis, no measurement of quantity will be made. Where the Contract provides for payment on a unit price basis, the quantities of Work performed will be computed by NOR on the basis of measurements by its representative and these measurements shall be final and binding.
- b. All quantities of Work computed under the Contract shall be based upon measurement by NOR according to United States Measurements and Weights.

1.59 Progress Estimates and Payments

- a. For each calendar month of Contract Work, the Contractor will prepare and NOR approve and submit a progress estimate of all Work performed under the Contract. Within the first week of each succeeding calendar month, an estimate of the value of all Work done under the Contract, including any amounts due the Contractor for Extra Work, change orders, or pursuant to approved claims for extra cost incurred during the preceding month will be prepared. In arriving at the value of the Work done, consideration will be given to value of Contractor furnished major items which have been delivered to the job site for incorporation in the Work, provided that a payment in full has been made by the Contractor.
- b. NOR will pay the Contractor ninety percent (90%) of the amount of each progress estimate approximately 2 weeks after receipt of the invoice. Ten percent (10%) of the amount of each estimate shall be retained by NOR until final completion and acceptance of all Work under the Contract. The Contractor may, in accordance with the provisions of Government Code Section 4590, substitute securities for monies which NOR may withhold to insure performance under this Contract. Provided, however, that if NOR at any time after fifty percent (50%) of the Work has been completed, finds that satisfactory progress is being made, NOR may pay any or all of the remaining progress payments in full.

1.60 Payment of Taxes

- a. The Contract price paid for the Work shall include full compensation for payment of all taxes, whether imposed by Federal, State, or local government.

1.61 Warranty of Title

- a. No material, supplies, or equipment for Work under this Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants good title to all material, supplies, and equipment installed or incorporated in the Work and agrees upon completion of all Work to deliver to the premises together with all improvements and appurtenances constructed or placed thereon by it to NOR free from any claim, liens, security interest, or charges and further agrees that neither it nor any persons, firm, or corporation furnishing any material or labor for any work covered by this Contract shall have any right to a lien upon the premises or any improvement or appurtenances thereon.

1.62 Satisfaction of Liens

- a. If any liens or claims remain unsatisfied after final payment to the Contractor, the Contractor shall pay or refund to NOR any money that the latter may be compelled to pay to discharge such liens and costs together with reasonable attorney's fees incurred by NOR in enforcing the Contractor's obligations hereunder.

1.63 Waiver of Interest

- a. NOR shall have no obligation to pay and the Contractor hereby waives the right to recover interest with regard to monies which NOR is required to withhold by reason of judgement, order, statute, or judicial process.

1.64 Disputes

- a. Except as otherwise specifically provided in the Contract Documents, NOR will decide all claims of the Contractor and all disputes arising under and by virtue of the Contract and its decision whether on the merits or as to the timeliness, shall be final and conclusive unless it is fraudulent, capricious, arbitrary, or so grossly erroneous as to necessarily imply bad faith. Such claim or dispute will be processed and decided as soon as practicable upon its submission and availability of additional supportive information necessary to make a decision.

1.65 Right to Withhold Payments

- a. In addition to all other rights and remedies of NOR hereunder and by virtue of the law, NOR may withhold or nullify the whole or any part of any partial or final payment to such extent as may reasonably be necessary to protect NOR from loss on account of:

- (1) Payments which may be past due and payable for just claims against the Contractor or any Subcontractor for labor or materials furnished for the performance of this Contract.
- (2) For defective Work not remedied.
- (3) For failure of the Contractor to make proper payments to Subcontractors.
- (4) A reasonable doubt that the Contract can be completed for the balance then unpaid.

- (5) Damage to Work or to property.
 - (6) Failure of the Contractor to keep his work progressing in accordance with the provided time schedule.
 - (7) NOR's costs for Contractor's failure to complete Work within the allowed time or as required by the Contract.
 - (8) Failure of Contractor and/or Subcontractors to submit in a timely fashion, correctly completed compliance certifications and payroll sheet forms.
 - (9) Cost of Insurance arranged by NOR due to cancellation or reduction of Contractor's insurance.
 - (10) Contractor/Subcontractor prevailing wage underpayments to protect employees.
- b. Whenever NOR shall, in accordance herewith, withhold any monies otherwise due the Contractor, written notice of the amount withheld and the reasons therefore will be given the Contractor. After the Contractor has corrected the enumerated deficiencies, NOR will promptly pay to the Contractor the amount so withheld. When monies are withheld to protect NOR against claims or liens of mechanics, materialmen, subcontractors, etc., NOR may, at its discretion, permit the Contractor to deliver a surety bond in terms and amount satisfactory to NOR, indemnifying NOR against any loss or expense. Upon acceptance thereof, NOR shall release to the Contractor monies so withheld.

1.66 Claims for Extra Work

- a. It is hereby mutually agreed that the Contractor shall not be entitled to the payment of any additional compensation for any cause, including any act or failure to act by NOR or the happening of any event, thing, or occurrence, unless he shall have given NOR due written notice of potential claims within ten (10) days after said occurrence.
- b. The Contractor may submit a claim to NOR concerning any matter for which a protest or a notice of potential claim is filed within sixty (60) days following the submission of said protest or notice, unless due to the nature of the claim or the uncompleted state of the Work, it is impracticable to determine the amount or the extent of the claim within such period, in which case a claim may be submitted at the earliest time thereafter that such determination can be made but in no event later than the Final Release by the Contractor.
- c. It is the intention of this Article that the differences between the parties arising under and by virtue of the Contract be brought to the attention of NOR at the earliest time possible in order that such matters may be settled. The Contractor hereby agrees that there shall be no right to additional compensation for any claim that may be based on any act, failure to act, event, thing, or occurrence for which no written notice of potential claim as herein required was filed.

1.67 Extra Work

- a. New and unforeseen work necessary to complete the Contract will be classified as Extra Work. NOR shall determine when such work is necessary which is not covered by the Contract prices named in the Proposal Bid.
- b. The Contractor shall do such work and furnish labor, material and/or equipment necessary therefore upon receipt of a Change Order. No Extra Work will be paid for unless ordered in writing on an approved Change Order. A verbal approval by NOR's representative may be given prior to issuance of a written formal Change Order. This shall be notice to continue with specific work.

c. Payment for Extra Work shall be determined by one or more of the following methods:

- (1) Lump Sum – By an acceptable lump sum proposal by the Contractor.
- (2) Agreed Unit Prices
- (3) Force Account or Cost-Plus Basis as follows:
 - A. Direct Labor Cost: Charges for all the labor furnished and used by the Contractor shall be made for manual classifications up to and including general foremen. It will not include charges for Assistant Superintendents, Superintendents, Office Personnel, Timekeepers, and Maintenance Mechanics. The time charged to Extra Work shall be subject to the daily approval of NOR and evidence of such daily approval shall be submitted with the billing. Labor rates to calculate the costs shall be those basic wages including current employer contributions for fringe benefits and including applicable subsistence and travel allowances, all as actually paid to workmen under collective bargaining agreements or as a regular practice of the employer. No time or charges will be allowed except when the men are actually engaged in the proper, efficient, and diligent performance or completion of the Extra Work as authorized. Overtime shall not be worked without prior approval of NOR.
 - B. Equipment Cost: Charges for the rental and operation of the equipment furnished and used by the Contractor shall be made for all prime construction and automotive equipment. It shall not include charges for listed equipment or major tools costing \$1,000.00 or less. Equipment time charges shall be subject to the daily approval of NOR and evidence of such daily approval submitted with the billing. The equipment rental and operation rates used shall be those agreed upon by NOR and the Contractor prior to commencement of the Extra Work and shall include an approved allowance for depreciation. No time or charges will be allowed except when equipment is actually being used for the proper and efficient performance or completion of the Extra Work as authorized.
 - C. Material Costs: Charges for the cost of materials furnished by the Contractor shall be made providing such furnishing was specifically authorized in the Extra Work order and the actual use verified by NOR. Charges shall be net cost to the Contractor delivered at the job, including all applicable sales taxes and vendor's invoice must accompany the billing along with verification of use of such materials by NOR.
 - D. Tools, Supplies, Overhead, Supervision and Profit: These items will be allowed in the amount of fifteen percent (15%) of the total direct labor cost, equipment cost, and material cost, as defined above. In addition, for workmen's usage of any or all unlisted small tools having a minute unit cost, each of less than \$1,000, NOR will allow a charge of six percent (6%) of the total cost of total basic labor wages, exclusive of fringe benefits and subsistence allowances.

It is understood that labor, materials, and equipment may be furnished by the Contractor, or by the Subcontractor, or by others on behalf of the Contractor. When the Extra Work is performed by other than the Contractor's organization, the Contractor shall reach an agreement with such other forces as to the distribution of payments. No additional payment therefore will be made by NOR.

In order that a proper determination may be made by NOR of the net cost of labor and materials entering into Extra Work, in accordance with the procedure heretofore stated, the Contractor shall furnish weekly an itemized statement of materials and labor supplied together with the cost of such materials and the wages paid and shall furnish vouchers for

quantities and prices of such labor, materials, or work. In case the Contractor fails to comply with the above provisions, there shall be no claim for compensation against NOR.

NOR reserves the right to contract with any person or firm other than the Contractor for any or all Extra Work. The Contractor's attention is especially called to the fact that there shall be no entitlement to claims for damages or anticipated profits on any portions of Work that may be omitted.

1.68 Final Acceptance and Date of Completion

- a. Upon substantial completion of the Work, the Contractor shall notify NOR and applicable Project Inspector that a Final Inspection of the Project is needed. During this Inspection, which will be arranged as soon as possible, NOR representatives, Contractor, and other parties concerned with the contractual requirements will compile a Final Inspection Correction List, incorporating all items or work and corrections required to complete the Project. In addition, at this time the Contractor shall arrange for the delivery of manufacturers' data, manuals, operating instructions, and keys to NOR.
- b. Whenever the Contractor shall deem all Work under this Contract to be complete in accordance therewith, NOR shall be so notified in writing and NOR shall promptly ascertain and provide in writing a listing of any additional work required. When all the provisions of the Contract have been fully complied with to the satisfaction of NOR a final estimate for the total value of all Work performed by the Contractor will be prepared. The Date of Completion shall be the date of acceptance of the Work by NOR.

1.69 Final Payment

- a. Within ten (10) days after completion, NOR will file in the Office of the County Recorder, a Notice of Completion of the Work done herein by the Contractor. On the expiration of thirty-five (35) days after the recordation of such Notice of Completion, the difference between said final estimate and all payments theretofore made to the Contractor shall be due and payable to the Contractor, subject to any requirement concerning the furnishing of a maintenance bond, and excepting any such sum or sums as may lawfully be withheld in accordance with the provisions of the Contract. Contractor shall invoice for this Final Payment. All prior progress estimates upon which partial payments have been made, being merely estimates shall be subject to correction in the Final Payment.

1.70 Final Release

- a. Acceptance by the Contractor of the Final Payment shall operate as and shall be a release to NOR, its officers, agents and employees from all claims and liability to the Contractor for anything done or furnished or withheld and for anything relating to the Work or any act of neglect of NOR, its officers, agents and employees excepting only claims against NOR for any amounts withheld by NOR at the time of such payment.

END OF SECTION

**SECTION 00 73 00
SUPPLEMENTARY CONDITIONS OF THE CONTRACT**

I N D E X

1.01	Definition
1.02	NOR
1.03	Location of Project
1.04	Specification Drawings
1.05	Materials Furnished by NOR
1.06	Progress of the Work and Time of Completion
1.07	Liquidated Damages
1.08	Insurance
1.09	Licenses

SECTION 00 73 00 SUPPLEMENTARY CONDITIONS OF THE CONTRACT

1.01 Definition

- a. These Supplementary Conditions modify, delete from, and/or add to the General Conditions of the Contract.
- b. All conditions, or portions thereof, which are not specifically modified, deleted, or superseded hereby, remain in full effect.
- c. The General Conditions also may be supplemented elsewhere in the Contract Documents by provisions located in, but not necessarily limited to, Division 1 of the Specifications.

1.02 NOR

- a. The term "NOR" refers to North of the River Recreation and Park District's authorized staff or designated representative retained in a consulting capacity to perform various specialized work such as engineering, architecture, surveying, testing, etc.
- b. The term "NOR" shall be used in conjunction to all references to Owner.

1.03 Location of Project

- a. Address of the Project site is: 11801 Noriega Road, Bakersfield, California 93312
- b. The Project is in Bakersfield, Kern County, California.

1.04 Specification Drawings

- a. The location of the Work, its general nature and extent, and the form and general dimensions of all appurtenant works are shown on the Drawings included and made a part of these Specifications, entitled: Polo Community Bark Park and Landscape Improvements.

1.05 Materials Furnished by NOR

- a. The following equipment and/or materials will be furnished by North of the River Recreation and Park District for use on this project:
 - Landscape Boulders
 - Drinking Fountains, Picnic Tables, Trash Cans and all other Dog Park Amenities
 - Plant Materials, not including seed mix.
- b. The location of the items are:
 - Riverview Community Center, 401 Willow Drive, Bakersfield, CA 93308
 - RiverLakes Community Center, 3825 Riverlakes Drive, Bakersfield, CA 93312
 - Delivery coordinated to the project site.
- c. The Contractor is responsible to arrange for pick-up of the equipment and/or materials and transportation of the same to the Project site unless otherwise noted.

1.06 Progress of the Work and Time of Completion

- a. The Contractor shall begin Work upon receipt of NOR's Notice to Proceed and shall complete all Work under the Contract within one-hundred and twenty (120) consecutive calendar days of the Notice to Proceed.
- b. The Contractor shall give NOR written notice received not less than 72 hours prior to proposed time of construction. The Contractor shall be entirely responsible for any delay in the Work which may be caused by his failure to give such notice.

1.07 Liquidated Damages

- a. General: It is agreed by the parties to the Contract that in case all Work called for under the Contract in any parts and requirements is not completed within the number of days specified for such Work plus time extensions that may be granted, damage will be sustained by NOR; and it is further agreed that it is, and will be, impractical and extremely difficult to ascertain and determine that actual damage which NOR will sustain by reason of such delay. It is therefore agreed that the Contractor will pay to NOR as fixed, agreed, and liquidated damages the amount of \$1,000 per day for each calendar day's delay in completion of such Work. The Contractor agrees to pay said liquidated damages as herein provided for, and further agrees that NOR may deduct the amount thereof from the monies due or to become due the Contractor under this Contract.

1.08 Insurance

- a. The Contractor shall at its sole expense maintain in effect at all times during the performance of the Work and during the full Guarantee Period under the Contract not less than the following coverage and limits of insurance, which shall be maintained with insurers having an "AM Best A-VII" or higher rating and under forms of policy satisfactory to NOR.
- b. Workmen's Compensation and Employer's Liability: In accordance with Section 3700 of the Labor Code, every Contractor will be required to secure the payment of compensation to its employees in one or more of the following ways:
 - (1) By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this state.
 - (2) By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to the employees.
 - (3) For any County, City, City and County, Municipal Corporation, Public District, Public Agency, or any Political Subdivision of the State, including each member of a pooling arrangement under a joint exercise of powers agreement (but not the State itself), by securing from the Director of Industrial Relations a certificate of consent to self-insure against Worker's Compensation claims, which certificate may be given upon furnishing proof satisfactory to the director of ability to administer Worker's Compensation claims properly, and to pay Worker's Compensation claims that may become due to its employees.

- (4) In accordance with Section 1861 of the Labor Code, each Contractor shall sign and file with NOR the following certification prior to performing the Work of the Contract: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract".
- c. Comprehensive General Liability Coverage: Limits of liability shall be at least One Million Dollars and no/100 (\$1,000,000.00) which shall be a Combined Single Limit on Automobile, Bodily Injury and Property Damage and General Liability and Property Damage. A minimum aggregate of Two Million Dollars and no/100 (\$2,000,000.00) is required for this Project. The Bodily Injury and Property Damage Liability policy or policies shall contain the following:
- (1) Provision or endorsement naming North of the River Recreation and Park District, its consultants, its officers, employees, agents, Boards and Commissions as additional insured as respects liabilities arising out of the performance of any Work under the Contract and providing that such insurance is primary insurance as respects the interest of the agency and its agents that any other insurance maintained by NOR and its agents is excess and not contributing insurance with that required hereunder.
 - (2) "Cross Liability" or "Severability of Interest" Clause.
 - (3) Broad Form Property Damage, Contractual Liability. Protective Liability and Completed Operations coverages and elimination of any exclusion regarding loss or damage to property caused by explosion or resulting from collapse of buildings or structures or damage to property underground, commonly referred to by insurers as the "XCU" hazards.
 - (4) Provision or endorsement stating that such insurance, subject to all of its other terms and conditions, applies to the liability assumed by the Contractor under this Contract, including without limitation that set forth in Section 00 72 00 General Conditions, 1.22 "Indemnity and Litigation Costs."

1.09 Licenses

- a. The Contractor shall be a licensed Contractor in the State of California certified to perform the Work of the Project. This Project requires a California Class B – General Building Contractor, C-27 Landscaping, and/or C-61/D-34 – Prefabricated Equipment or approved combination of Contractor's license(s). All contractors and subcontractors shall be registered with the California Department of Industrial Relations (DIR) prior to bid opening.

END OF SECTION

**SECTION 00 91 13
ADDENDA**

THIS SECTION RESERVED FOR ADDENDA ISSUED DURING BID PROCESS.

END OF SECTION

SECTION 01 11 00 SUMMARY OF WORK

PART I - GENERAL

1.01 Application of the Contract and Inclusion of Division 1

- a. The Contract, General and Supplementary Conditions of the Contract and all Sections of Division 1 apply in full to all other Divisions and Sections of these Specifications as though included therein.

1.02 Description

- a. The Work comprises the completed construction required by the Contract Documents and includes all labor necessary to produce such construction and all materials and equipment incorporated or to be incorporated in such construction. The following is only a partial list of the Work required and is not to be construed as binding in any way. The Contractor is responsible for estimating the actual Work required.

(02) Existing Conditions:

- 02 01 00 – Maintenance of Existing Conditions
- 02 01 10 – Existing Plants to Remain
- 02 41 13 – Selective Site Demolition

(03) Concrete:

- 03 10 00 – Concrete Forming and Accessories
- 03 20 00 – Concrete Reinforcing
- 03 30 00 – Cast-In-Place Concrete
- 03 35 00 – Concrete Finishing

(04) Masonry: N/A

(05) Metals: N/A

(06) Wood, Plastics, and Composites: N/A

(07) Thermal & Moisture Protection: N/A

(08) Openings: N/A

(09) Finishes: N/A

(10) Specialties: N/A

(11) Equipment: N/A

(12) Furnishings: N/A

(13) Special Construction: N/A

(14) Conveying Equipment: N/A

(15) Not Used

(16) Not Used

(17) Not Used

(18) Not Used

(19) Not Used

(20) Not Used

(21) Fire Suppression: N/A

(22) Plumbing: N/A

(23) Heating, Venting, and Air Conditioning (HVAC): N/A

(24) Not Used

(25) Integrated Automation: N/A

(26) Electrical: N/A

(27) Communications: N/A

(28) Electronic Safety and Security: N/A

(29) Not Used

(30) Not Used

(31) Earthwork:

- 31 00 00 – Earthwork and Grading
- 31 10 00 – Site Clearing
- 31 13 13 – Selective Tree and Shrub Removal
- 31 31 00 – Soil Treatment
- 31 31 19 – Vegetation Control

(32) Exterior Improvements:

- 32 05 23 – Cement and Concrete for Exterior Improvements
- 32 31 13 – Chain Link Fences and Gates
- 32 33 00 – Site Furnishings
- 32 80 00 – Planting Irrigation
- 32 90 00 – Planting

(33) Utilities: N/A

(34) Transportation: N/A

(35) Waterway and Marine Construction: N/A

(36) Not Used

(37) Not Used

(38) Not Used

(39) Not Used

(40) Process Interconnections: N/A

(41) Material Processing and Handling Equipment: N/A

(42) Process Heating, Cooling, and Drying Equipment: N/A

(43) Process Gas and Liquid Handling, Purification, and Storage Equipment: N/A

(44) Pollution and Waste Control Equipment: N/A

(45) Industry-Specific Manufacturing Equipment: N/A

(46) Water and Wastewater Equipment: N/A

(47) Not Used

(48) Electrical Power Generation: N/A

1.03 Work Provided by Others

- a. The following work or products shall be provided by NOR and coordinated with the Contractor's work: Landscape boulders, Plant material, Irrigation Controller, Picnic tables, Trash cans, and all other Bark Park amenities.

1.04 Permits and Fees

- a. The Contractor shall pickup all permits, licenses, and fees required by all governing entities and necessary for successful completion of the Project (NOR will pay building permit and plan review fees). The Contractor is responsible to abide by governing codes and regulations, obtaining inspections, approvals and tests which may be required. Inspection sign-off cards, notices of non-compliance, field plans or other correspondence with governing agencies are property of NOR and shall be returned to NOR after all County or City inspections and approvals are complete.

PART II – PRODUCTS

2.01 Materials and Equipment

- a. The following is only a partial list of materials and equipment to be provided by the Contractor as components of this Work: Irrigation components, Concrete forms and materials, Chain link fencing components and materials, Construction site security, Hydroseed seed and amendments and Planting amendments.

PART III – EXECUTION

3.01 Site Visitation

- a. The General Contractor shall visit the site to review all existing conditions of the premises that may have a bearing on the performance of the Work. Furthermore, the Contractor will personally inspect the grounds for comparison with pertinent sections of the Drawings and Specifications and will

immediately notify NOR of any discrepancies. No allowance can subsequently be made on behalf of a Contractor for errors due to negligence in failing to be acquainted with the existing site conditions.

3.02 Layout of Work

- a. Field surveys for control of all grading, construction and layout shall be the responsibility of the Contractor. All such surveys, including construction staking, shall be under the supervision of a California licensed surveyor or civil engineer. Staking shall be performed on all items ordinarily requiring grade and alignment at intervals normally accepted by the agencies and trades involved. Payment of construction survey staking shall be considered as included in the various items of work and no additional allowance will be made therefore.

3.03 Installation

- a. The Contractor shall provide and perform skillful craftsmanship using appropriate tools with current and lawful methods to complete the Work according to the Contract, Plans, and Specifications. Knowledge of and compliance with codes, regulations and procedures of governing agencies, as well as attention to manufacturer's recommendations shall be expected of the Contractor and all employees.

END OF SECTION

SECTION 01 23 00 ALTERNATES

PART I – GENERAL

1.01 Description

- a. Work Included: To allow NOR to compare total costs where alternate materials and methods might be used, and to enable NOR's decision prior to awarding the Contract, certain alternatives have been established.
- b. Related Work Described Elsewhere:
 - (1) Pertinent sections of these Specifications describe the materials and methods required for the various alternatives.
 - (2) The method for stating the proposed Contract Sum is described on the Bid Form.

1.02 Submittals

- a. Limit of Alternatives:
 - (1) Do not submit alternatives other than those described in the section of these Specifications.
 - (2) Submit proposed Contract Sums reflecting all alternatives as required on the Bid Form.
- b. Other Submittals:
 - (1) Normal submittals for the various items are described in pertinent sections of these Specifications.
 - (2) No special submittal of materials or methods for the alternatives is required other than as described in the pertinent sections.

PART II – PRODUCTS

2.01 Coordination of Alternatives

- a. Use all means necessary to properly coordinate NOR's ultimate selection of alternatives into the Work and to ensure proper and adequate provision for the installation of all selected materials and methods.

PART III – EXECUTION

3.01 Product Handling

- a. If NOR elects to proceed on the basis of one or more of the alternatives, make all modifications to the Work required in the furnishing and installation of the selected alternatives to the approval of the Engineer and at no additional cost to NOR, except as proposed on the Bid Form.

END OF SECTION

SECTION 01 25 00 SUBMITTAL AND SUBSTITUTION PROCEDURES

PART I – GENERAL

1.01 Description

- a. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined, either by manufacturer's name and catalog number or by compliance with recognized industry standards. All products specified are the standard for this Project. Products proposed to be substituted for those specified on the Project must be submitted for approval prior to use. Follow the process described in this section for all products proposed to be substituted. To ensure that the desired products are furnished and installed in accordance with the design intent, certain procedures are established for the advance submittal of design data and its approval or rejection by the Owner.

1.02 Related Work Described Elsewhere

- a. Submittals required for the various portions of the Work are included in the sections of these Specifications pertaining to the Work involved. Occasionally it is included in the Drawings for miscellaneous items of equipment, materials, or procedures.

1.03 Product Handling

- a. Make all submittals of shop drawings, samples, and requests for substitution in accordance with the provisions of these Specifications.

PART II – PRODUCTS

2.01 Schedule of Submittals

- a. Submittals required by the respective Specifications shall be submitted according to the "General Conditions" Item 1.36.

2.02 Shop Drawings and Product Information Submittals

- a. Unless otherwise specifically directed by the Engineer, make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection and interface to the Work.
- b. Submit all shop drawings in the form of one reproducible sepia and sufficient blue line prints of each shop drawing so that NOR can keep one copy plus the reproducible sepia and the Contractor will have sufficient copies for its needs. In the case of product information, submit sufficient copies so that NOR may keep two (2) copies and the Contractor shall have adequate copies for their needs. Where contents of submitted product information include data not pertinent to the submittal, clearly indicate which portion is being submitted for review.
- c. Copies that are not needed by NOR will be returned to the Contractor for its use.

2.03 Samples

- a. Samples shall be provided according to the provisions of the "General Conditions" Item 1.37 Samples.

2.04 Colors

- a. Prepare color samples for products as described by the "General Conditions" Item 1.38 Colors. Unless the precise color and pattern is specifically described in these Contract Documents, whenever a choice of color or pattern is available in a specified product submit accurate color charts and pattern charts to NOR for its review and selection.

2.05 Manuals

- a. Manuals shall be provided according to Item 1.41 Manuals of the "General Conditions."

2.06 Record Drawings

- a. Record drawings are required according to the provisions of the "General Conditions" Item 1.40 Record Drawings.

2.07 Substitutions

- a. Substitutions may be approved if they meet the requirements of Item 1.33c Substitutions of the "General Conditions."

PART III – EXECUTION

3.01 Coordination

- a. Prior to submittal for Engineer's review:
 - (1) Fully coordinate all submittals by determining and verifying all field dimensions and conditions, materials, catalog numbers, and similar data. Each submittal must bear the General Contractor's approval stamp indicating that it has determined and verified that the submittal data meets the requirements of the Project. The stamp must include the date and initial of the responsible reviewer.
 - (2) Coordinate as required with all other trades and with all public agencies involved.
 - (3) Secure all necessary prior approvals and signify by stamp, or other means, that they have been secured.
 - (4) Clearly indicate all deviations from the Contract Documents.

3.02 Identification of Submittals or Substitutions

- a. Name and address of submitter, plus name and telephone number of individual who may be contacted for further information.
- b. Name of Project.
- c. Drawing Number and Specification Section Number to which the submittal applies.

3.03 Timing of Submittals

- a. Costs of delays occasioned by tardiness of submittals may be back-charged as necessary and shall not be borne by NOR. In general, no submittals of a finish nature will be reviewed until all such submittals are received by the Engineer.

3.04 Engineer's Review

- a. The Engineer's review will be only for conformance with the design concept and with the information given in the Contract Documents. The Engineer's review and approval of shop drawings and samples shall not relieve the Contractor of responsibility for deviation from the requirements of the Contract Documents unless the Contractor has informed the Engineer in writing of such deviation at the time of submittal and the Engineer has given written approval to the specific deviation. The Engineer's approval shall not relieve the Contractor from responsibility for errors and omissions in the shop drawings and samples.

3.05 Compliance with Approvals

- a. Do not commence any portion of the Work requiring approval of shop drawings or samples by the Engineer until the submittal has been approved by the Engineer. All such portions of the Work shall be in accordance with the Engineer approved shop drawings and samples.

END OF SECTION

SECTION 01 31 19 PROJECT MEETINGS

PART I – GENERAL

1.01 Description

- a. **Work Included:** To enable orderly review during progress of the Work, and to provide for systematic discussion of problems, NOR may conduct Project meetings throughout the construction period. The frequency of meetings will be determined based on needs and related to the complexity of the Project.
- b. **Related Work:** The Contractor's relations with his subcontractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility and normally are not included as part of Project meetings.

1.02 Quality Assurance

- a. Persons designated by the Contractor to attend and participate in Project meetings must have sufficient authority to commit the Contractor to solutions agreed upon in the Project meetings.

1.03 Agendas

- a. **Agenda Items:** To the maximum extent practicable, advise NOR at least 24 hours in advance of Project meetings regarding items to be added to the agenda.
- b. **Minutes:** When meetings are held where both the General Contractor and Subcontractors are required to be present, NOR will compile minutes of the Project meeting and furnish a copy to the Contractor. The Contractor is responsible to communicate this information to its Subcontractors employed on the Project.

PART II – PRODUCTS

(No products are required in this Section)

PART III – EXECUTION

3.01 Meeting Schedule

- a. Project meetings will usually be held at a frequency mutually agreed upon with the Contractor.
- b. Coordinate as necessary to establish a mutually acceptable schedule for meetings.

3.02 Meeting Location

- a. NOR will establish the meeting location. To the maximum extent practicable, meetings will be held at the job site.

3.03 Preconstruction Meeting

- a. A preconstruction meeting will be scheduled within fifteen (15) working days after NOR has awarded the Contract.

- (1) The Contractor and major Subcontractors should have authorized representatives in attendance.
- (2) NOR will advise other interested parties and request their attendance.

3.04 Project Meetings

a. Attendance:

- (1) To the maximum extent practicable, assign the same person or persons to represent the Contractor at Project meetings throughout the Project.
- (2) Subcontractors, materials suppliers, and others may be invited to attend Project meetings in which their aspect of the Work is involved.

b. Minimum Agenda:

- (1) Review, revise as necessary, and approve minutes of previous meetings.
- (2) Review progress of the Work since last meeting, including status of submittals for approval.
- (3) Identify problems which impede planned progress.
- (4) Develop corrective measures and procedures to regain planned schedule.
- (5) Complete other current business.

c. Revisions to Minutes:

- (1) Unless published minutes are challenged in writing prior to the next regularly scheduled progress meeting, they will be accepted as properly stating the activities and decisions of the meetings.
- (2) Persons challenging published minutes shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of minutes.
- (3) Challenges to the minutes shall be settled at the next regularly scheduled meeting.

END OF SECTION

SECTION 01 32 33 PHOTOGRAPHIC DOCUMENTATION

PART I - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
- B. See CSI Section 01 78 00, Closeout Submittal, for submitting digital media as Project Record Documents at Project Closeout.

1.03 SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.
 - 1. Digital Images: Submit a complete set of digital image electronic files with each submittal of prints on CD-ROM or USB flash drive (not to be returned). Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.

PART II - PRODUCTS

2.01 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in uncompressed TIFF or JPEG/JPG format, produced by a digital camera with minimum sensor size of 8.0 megapixels, and at an image resolution of not less than 1024 by 768 pixels.
- B. Digital Video: Provide video with minimum specifications 1080p at 60 fps or 720p at 240 fps are acceptable, where- as HDR is preferred.

PART III - EXECUTION

3.01 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
1. Date and Time: Include date and time in filename for each image.
 2. Field Office Images: Maintain one set of images on CD-ROM or USB flash drive in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect.
- C. Preconstruction Photographs: Before starting construction, take, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Owner.
1. Flag construction limits before taking construction photographs.
 2. Take a minimum eight photographs to show existing conditions adjacent to property before starting the Work.
 3. Take a minimum eight photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
- D. Periodic Construction Photographs: Take a minimum 12 digital photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

END OF SECTION

SECTION 01 45 29 TESTING LABORATORY SERVICES

PART I – GENERAL

1.01 Description

a. Work Included:

- (1) From time to time during progress of the Work, NOR may require that testing be performed to determine that materials provided for the Work meet the specified requirements.
- (2) Such testing may include, but is not necessarily limited to: Concrete, structural steel, reinforcing steel, irrigation and plumbing pressure tests, and backflow prevention device operation.
- (3) Cooperate with NOR's selected testing agency and all others responsible for testing and inspecting the Work. Contractor shall coordinate the required tests with the testing entity.
- (4) Provide testing and inspecting specified to be furnished by the Contractor in this Section and/or elsewhere in the Contract Documents.

b. Related Work Described Elsewhere:

- (1) Requirements for testing may be described in various sections of these Specifications and the General Conditions of the Contract.
- (2) Where no testing requirements are described, but NOR decides that testing is required, NOR may require testing to be performed under current recognized standards for testing.

c. Work Not Included:

- (1) Selection of testing laboratory: NOR will select an independent testing laboratory.
- (2) Payment for initial testing services: NOR will pay for all initial services of the testing agency as further described in item 2.01 of this Section or approved equal.

1.02 Quality Assurance

- a. Codes and Standards: Testing, when required, will be in accordance with all pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.
- b. Qualifications of Testing Laboratory: The testing laboratory will be qualified to NOR's approval for the type of testing desired.

1.03 Product Handling

- a. Promptly process and distribute all required copies of test reports and related instructions to ensure all necessary retesting and/or replacement of materials with the least possible delay in progress of the Work.

PART II – PRODUCTS

2.01 Payment for Testing Services

- a. Initial Services: NOR will pay for all initial testing services requested or required by codes or ordinances.
- b. Retesting: When the initial test indicates non-compliance with the Contract Documents, all subsequent retesting occasioned by that non-compliance shall be performed by the same agency and the costs thereof will be deducted by NOR from the Contract Sum.

2.02 Code Compliance Testing

- a. Inspections and tests required by codes or ordinances or by a plan approval authority, and made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

2.03 Contractor's Convenience Testing

- a. Inspection and testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

PART III – EXECUTION

3.01 Cooperation with Testing Agency

- a. Access to the Work:
 - (1) Representatives of the testing laboratory shall have access to the Work at all times.
 - (2) Contractor shall provide all required facilities for such access in order that the agency may properly perform its functions.
 - (3) The soils Engineer shall be provided 48 hours advance notice in order to be present at the site during all earthwork activities related to excavation, stripping, backfill and compaction and filling of the site; and to perform periodic compaction tests so that substantial conformance to these recommendations can be established.

3.02 Test Reports

- a. Test reports and verification of test reports of all tests and inspections shall be sent to the Contractor, Engineer, Structural Engineer, NOR, and Building Inspector.

END OF SECTION

SECTION 01 50 00 TEMPORARY FACILITIES AND CONTROLS

PART I – GENERAL

1.01 Description

- a. Temporary facilities and controls required for this Project include, but are not necessarily limited to: temporary utilities such as water, electricity and telephone; field offices and shed; fencing of the construction area; access roads; enclosures such as tarpaulins, barricades and canopies; sanitary facilities; and scaffolding. All such temporary facilities shall be located for convenience and safety and maintained in a safe and sanitary condition at all times until completion of the Contract, then removed from the site.

1.02 Related Work Described Elsewhere

- a. Utility Hook-Up: Install and hook-up the various utility lines described in pertinent sections of the Specifications and/or on the Drawings.

1.03 Compliance with Codes and Regulations

- a. Compliance with all requirements of pertinent safety regulations is described in the General Conditions of the Contract for Construction and shall include, but shall not necessarily be limited to: Industrial Safety, California Administrative Code, Title 8; Public Safety, California Administrative Code, Title 24 Uniform Building Code.

1.04 Product Handling

- a. Use all means necessary to maintain all temporary facilities and controls in proper and safe condition throughout progress of the Work. In the event of damage or loss, immediately make all repairs and replacements necessary and at no additional cost to NOR.

PART II – PRODUCTS

2.01 Temporary Utilities

- a. General: Provide and pay all costs for all utilities required for performance of the Work. Provide safe distribution of required utilities to the job areas for use of all trades.
- b. Temporary Gas and Water: Furnish and install all necessary temporary piping and, upon completion of the Work, remove all such temporary piping.
- c. Temporary Electricity: Furnish and install all necessary temporary wiring; furnish and install area distribution boxes within 100 feet of each portion of the Work so located that the individual trades may use their own construction type extension cords to obtain adequate power and lighting at all points where required by inspectors and for safety.
- d. Telephone: Maintain in the Contractor's field office or in a protected location on the job site a telephone for the use of the subcontractors; the telephone may be coin operated.

2.02 Fencing of the Construction Area

- a. Fencing of the construction area is at the Contractor's discretion. The Contractor shall take whatever precautions it feels necessary to protect the Project while work is in progress.

2.03 Access Facilities

- a. The General Contractor shall provide such access facilities to the construction area as are necessary and required for carrying on the Work and the same shall be kept passable at all times. It shall be responsible for any damage to streets, curbs, and sidewalks due to the use of such facilities, and such damaged portions shall be repaired as required to place them in as good condition as existed before commencement of the Work. Contractors shall comply in every respect with applicable building codes regarding the use of public streets and sidewalks and the proper barricading and lighting of public thoroughfares surrounding the construction activities.

2.04 Enclosures, Tarpaulins, Barricades and Canopies

- a. Furnish, install and maintain for the duration of construction, all required scaffolds, tarpaulins, barricades, canopies, warning signs, steps, bridges, platforms, and other temporary construction necessary for proper completion of the work in compliance with all pertinent safety regulations. In addition, it is recommended that all existing improvements which are not to be altered or moved be protected by means of temporary barricades or other suitable means.

2.05 Pumping

- a. Keep the site, excavations, and structures free of accumulation of water at all times, whether from underground seepage, rainfall, drainage, or broken utility lines.

2.06 Sanitary Facilities

- a. Temporary toilet arrangements should be made to accommodate construction workers. Sanitary facilities provided on site must comply with the requirements of the "General Conditions" Item 1.06 Sanitary Facilities.

PART III – EXECUTION

3.01 Special Conditions of the Site

- a. The area to be set aside for the use of the Contractor is indicated on the Drawings as "Limit of Work." If work covers an entire site, the limits are the site boundary. Except for subsurface utility work, temporary roads, and other work specifically shown or noted, the Contractor shall confine his exterior operations within the limits of work so indicated.
- b. Work shall not proceed for the site or buildings, if used, until all temporary work such as fences, barricades, job office, and sanitary facilities are furnished and installed.
- c. Parking of vehicles by the construction personnel shall be limited to areas acceptable to NOR.

3.02 Material Storage and Protection

- a. During the progress of the Work, products and materials shall be neatly stored in accordance with the appropriate manufacturer's recommendations and shall be properly cared for and protected from weather, vandalism, and theft.

- b. All installed products and materials shall be adequately protected until such time that NOR accepts the Project.

3.03 Conditions at the Site

- a. The Contractor shall make all necessary inspections of the job site and of the Work to be fully aware of the conditions of all temporary facilities and controls at all times.
- b. Storage of materials during progress of the Work shall be within the "Limits of Work," neatly stacked at points acceptable to NOR. They must be properly cared for and protected from weather, theft, and vandalism.
- c. The Contractor shall make a close inspection of all materials when delivered and shall promptly return all defective materials without waiting for their rejection by the Engineer.

3.04 Removal

- a. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the Work. Remove all such temporary facilities and controls as rapidly as progress of the Work will permit, or as directed by the Engineer.

3.05 Restoration of Area

- a. Upon completion of the Project, all temporary facilities shall be removed from the site and all areas not otherwise improved but which were adversely affected by the Contractor's work shall be returned to their original condition to the satisfaction of NOR.

3.06 Final Site Cleanup

- a. Prior to final inspection, thoroughly clean the entire site and put it into a neat, acceptable condition. Remove from the entire site all construction waste and unused materials, dunnage, loose rock and stones, excess earth, roots, weeds, and all debris of any description resulting from the Work. Hose down and scrub where necessary all new concrete and asphalt pavement dirtied as a result of the Work. Thoroughly remove mortar droppings from concrete walks and other pavements.

END OF SECTION

SECTION 01 71 23 FIELD ENGINEERING

PART I – GENERAL

1.01 Description

- a. Work Included: Provide such field engineering services required for proper completion of the Work including, but not necessarily limited to:
 - (1) Establishing and maintaining grades, lines, and levels.
 - (2) Structural design of shores, forms, and similar items provided by the Contractor as part of the means and methods of construction.
 - (3) Layout of elements of construction.
- b. Related Work:
 - (1) Additional requirements for field engineering also may be described in other Sections of these Specifications.

1.02 Quality Assurance

- a. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

1.03 Submittals

- a. Comply with pertinent provisions of the General Conditions.
- b. Upon request of NOR submit:
 - (1) Data demonstrating qualifications of persons proposed to be engaged for field engineering services.
 - (2) Documentation verifying accuracy of field engineering work.
 - (3) Certification that elevations and locations of improvements are in conformance or nonconformance with requirements of the Contract Documents.

1.04 Procedures

- a. In addition to procedures directed by the Contractor for proper performance of the Contractor's responsibilities:
 - (1) Locate and protect control points before starting work on the site.
 - (2) Preserve permanent reference points during progress of the Work.

- (3) Do not change or relocate reference points or items of the Work without specific approval from NOR.
- (4) Promptly advise NOR when a reference point is lost or destroyed, or requires relocation because of other changes in the Work.
 - A. Reset or replace lost or destroyed reference stakes or markers.
 - B. Locate such replacements according to the original survey control.
 - C. Resetting of grade stakes shall be at Contractor's expense.

END OF SECTION

SECTION 01 73 29 CUTTING AND PATCHING

PART I – GENERAL

1.01 Description

- a. Work Included: This section establishes general requirements pertaining to cutting (including excavating), fitting, and patching of the Work required to:
 - (1) Make the several parts fit properly.
 - (2) Uncover work to provide for installing, inspecting, or both, of ill-timed work.
 - (3) Remove and replace work not conforming to requirements of the Contract Documents.
 - (4) Remove and replace defective work.
- b. Related Work:
 - (1) In addition to other requirements specified, upon NOR's request uncover work to provide for inspection by NOR of covered work, and remove samples of installed materials for testing.
 - (2) Do not cut or alter work performed under separate contracts without NOR's written permission.

1.02 Quality Assurance

- a. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

1.03 Submittals

- a. Request NOR's Consent:
 - (1) Prior to cutting which effects structural safety, submit written request to NOR for permission to proceed with cutting.
 - (2) Should conditions of the Work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify NOR and secure written permission and the required Change Order prior to proceeding.
 - (3) Submit written notice to NOR designating the time the work will be uncovered, to provide for NOR's observation.

PART II – PRODUCTS

2.01 Materials

- a. For replacement of items removed, use materials complying with pertinent Sections of these Specifications.

2.02 Payment for Costs

- a. Perform required cutting and patching needed to comply with the Contract Documents at no additional cost to NOR. NOR will reimburse the Contractor for extra cutting and patching performed pursuant to the written Change Order after claim for such reimbursement is submitted by the Contractor.

PART III – EXECUTION

3.01 Surface Conditions

- a. Inspection:
 - (1) Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, patching, and backfilling.
 - (2) After uncovering the work, inspect conditions affecting installation of new work.
- b. Discrepancies:
 - (1) If uncovered conditions are not as anticipated, immediately notify NOR and secure needed directions.
 - (2) Do not proceed until unsatisfactory conditions are corrected.

3.02 Preparation Prior to Cutting

- a. Provide required protection including, but not necessarily limited to shoring, bracing, and support to maintain structural integrity of the Work.

3.03 Performance

- a. Perform required excavating and backfilling as required under pertinent other Sections of these Specifications.
 - (1) Perform cutting and demolition by methods which will prevent damage to other portions of the Work and provide proper surfaces to receive installation of repair and new work.
 - (2) Perform fitting and adjusting of products to provide finished installation complying with the specified tolerances and finishes.

END OF SECTION

SECTION 01 74 00 CLEANING AND WASTE MANAGEMENT

PART I – GENERAL

1.01 Description

- a. **Work Included:** Throughout the construction period, maintain the buildings and site in a standard of cleanliness as described in this Section.
- b. **Related Work:** In addition to standards described in this Section, comply with requirements for cleaning as described in pertinent other Sections of these Specifications.

1.02 Quality Assurance

- a. Conduct daily inspections, and more often if necessary, to verify that requirements for cleanliness are being met.
- b. In addition to the standards described in this Section, comply with pertinent requirements of governmental agencies having jurisdiction.

PART II – PRODUCTS

2.01 Cleaning Materials and Equipment

- a. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.02 Compatibility

- a. Use only cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

PART III – EXECUTION

3.01 Progress Cleaning

- a. **General:**
 - (1) Retain stored items in an orderly arrangement allowing maximum access. The items should not impede traffic or drainage. Provide required protection of materials.
 - (2) Do not allow accumulation of scrap, debris, waste material, and other items that are not required for construction.
 - (3) At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the job site.
 - (4) Provide adequate storage for all items awaiting removal from the job site. Observe requirements for fire and environmental protection.

b. Project Site Cleaning:

- (1) Daily, and more often, if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
- (2) Weekly, and more often, if necessary, inspect all arrangements of materials stored on the site, repositioning, and cleaning items as needed.
- (3) Maintain the site neat and orderly at all times.

c. Preparatory Cleaning:

- (1) As required, preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree recommended by the manufacturer of the succeeding material. Use equipment and materials recommended by product manufacturers to achieve the necessary cleanliness.
- (2) Following the installation of finish floor materials, clean and protect the finish floor from all sources of damaging elements.

3.02 Final Cleaning

a. General:

- (1) "Clean," for the purpose of this Article, and except as may be specifically provided otherwise, shall mean the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.
- (2) Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Leave all items thoroughly cleaned ready for use.

b. Site:

- (1) Unless otherwise specifically directed by NOR, broom clean and wash paved areas on the site and public paved areas adjacent to the site.
- (2) Completely remove resultant debris.

c. Structures:

- (1) Visually inspect surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.
- (2) Remove all traces of splashed materials from finished and adjacent surfaces.
- (3) If necessary to achieve a uniform degree of cleanliness, hose down the exterior of the structure.
- (4) In the event of stubborn stains not removable with water, light sandblasting or other cleaning may be required at no additional cost.
- (5) Glass - clean inside and outside leaving surfaces free of streaks.

- (6) Polished surfaces - if surfaces require routine application of buffed polish, apply the polish according to manufacturer's recommendations.

3.03 Cleaning During Owner's Occupancy

- a. Should NOR occupy the Work or any portion thereof prior to its completion by the Contractor, the Contractor shall appropriately clean the Project site. Responsibilities for cleaning shall then be accomplished by NOR.

END OF SECTION

SECTION 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART I – GENERAL

1.01 Description

- a. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 Summary

- a. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging non-hazardous demolition waste.
 - 2. Disposing of non-hazardous demolition and construction waste.

1.03 Terminology

- a. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- b. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- c. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- d. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- e. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- f. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 Performance Requirements

- a. General: Facilitate recycling and salvage of materials as required.

1.05 Informational Submittals

- a. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- b. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight, tickets, receipts and invoices.

1.06 Quality Assurance

- a. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

PART II – PRODUCTS

PART III – EXECUTION

3.01 Plan Implementation

- a. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 1. Comply with operation, termination, and removal requirements in CSI, Section 01 50 00, Temporary Facilities and Controls.
- b. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at the Project sites.
- c. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, plant structures and equipment, and other adjacent occupied and used facilities.
 1. Comply with CSI, Section 01 50 00, Temporary Facilities and Controls for controlling dust and dirt, environmental protection, and noise control.

3.02 Salvaging Demolition Waste

- a. Salvaged Items for Sale: Not permitted on Project sites.
- b. Salvaged Items for Owner's Use: Salvage Items for Owner's use and handle as follows:
 1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner
 5. Protect items from damage during transport and storage.
- c. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs; caps and/or plugs shall be sealed in a manner to prevent vandalism. Protect equipment from exposure to weather.

3.03 Recycling Demolition Waste, General

- a. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

- b. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- c. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project sites to the maximum extent practical according to approved construction waste management plan.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project sites. Include list of acceptable and unacceptable materials at each container and bin.
 - A. Inspect containers and bins for contamination and remove contaminated materials if found.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3. Stockpile materials away from construction areas. Do not store within drip line of remaining trees.
 - 4. Store components off the ground and protect from the weather.
 - 5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.04 Disposal of Waste

- a. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project sites and legally dispose of them in a landfill or incinerator acceptable to authority having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjustment surfaces and areas.
- b. Burning: Do not burn waste materials.
- c. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION

SECTION 01 78 00 CLOSEOUT SUBMITTALS AND REQUIREMENTS

PART I – GENERAL

1.01 Description

- a. Work Included: Provide an orderly and efficient transfer of the completed Work to NOR.
- b. Related Work:
 - (1) Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in the Divisions of these Specifications.
 - (2) Activities relative to Contract Closeout are described in, but not necessarily limited to, Items 1.14, 1.40, 1.41, 1.45, 1.56, 1.65, 1.68, 1.69, and 1.70 of the General Conditions of this Contract.

1.02 Quality Assurance

- a. Prior to requesting inspection by NOR, use adequate means to assure that the Work is completed in accordance with the specified requirements and is ready for the requested inspection.

1.03 Procedures

- a. Substantial Completion:
 - (1) Notify NOR of readiness for inspection described by Item 1.68a of the General Conditions of the Contract.
 - (2) Within a reasonable time after the Contractor's notice, NOR will inspect the Project and prepare a correction list.
 - (3) Should NOR determine that the Project is not substantially complete:
 - A. NOR will promptly notify the Contractor, in writing, giving the reasons therefore in accordance with Item 1.68b of the General Conditions of the Contract.
 - B. The Contractor shall remedy the deficiencies and notify NOR when ready for reinspection.
- b. Final Completion: When all Work is complete, NOR will prepare a "Notice of Completion" as defined in Item 1.65, also in accordance with Item 1.69 of the General Conditions of the Contract.
- c. Project Closeout – Provide the following to complete the Work of this Project:
 - (1) Project Record Documents described in Section 01 78 39 and Items 1.40 and 1.41 of the General Conditions of the Contract.
 - (2) Warranties and bonds.
 - (3) Keys and keying schedule
 - (4) Spare parts and materials extra stock.

(5) Evidence of compliance with requirements of governmental agencies having jurisdiction including, but not necessarily limited to:

A. Certificates of Inspection.

B. Certificates of Occupancy.

(6) Lien releases.

(7) List of subcontractors, service organizations and principal vendors, including names, addresses, and telephone numbers where they can be reached for emergency service at all times including nights, weekends, and holidays.

1.04 Instruction

- a. Instruct NOR's personnel in proper operation and maintenance of systems, equipment, and similar items which were provided as part of the Work.

END OF SECTION

SECTION 01 78 23 OPERATION AND MAINTENANCE DATA

PART I - GENERAL

1.01 Description

- a. Work Included: To aid the continued operation and maintenance and to provide a positive source of information regarding the products incorporated into the Work, furnish and deliver the data described in this Section and in pertinent other Sections of these Specifications.
- b. Related Work:
 - (1) Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - (2) Required contents of submittals also may be amplified in pertinent other Sections of these Specifications.

1.02 Quality Assurance

- a. In preparing data required by this Section, use only personnel who are thoroughly trained and experienced in operation and maintenance of the described items, completely familiar with the requirements of this Section, and skilled in technical writing to the extent needed for communicating the essential data.

1.03 Submittals

- a. Comply with pertinent provisions of Section 01 25 00.
- b. Submit a copy of a preliminary draft of the proposed manual(s) to NOR for review and comments.
- c. Unless otherwise directed in other Sections or in writing by NOR, submit two copies of the final manual to NOR prior to training of operation and maintenance personnel.

PART II - PRODUCTS

2.01 Instruction Manuals

- a. Where instruction manuals are required to be submitted under other Sections of these Specifications, prepare in accordance with the provisions of this Section.
- b. Format:
 - (1) Size – 8 ½" x 11".
 - (2) Paper – White bond, at least 20-lb. weight.
 - (3) Text – Neatly written or printed.

- (4) Drawings – 11" in height preferable; bind in with text; foldout acceptable; larger drawings acceptable by fold to fit within the manual and provide a drawing pocket inside rear cover or bind in with text.
 - (5) Fly Sheets – Separate each portion of the manual with neatly prepared fly sheets briefly describing contents of the ensuing portion; fly sheets may be in color.
 - (6) Binding – Use heavy-duty plastic or fiberboard covers with binding mechanism concealed inside the manual; 3 ring binders will be acceptable.
 - (7) Measurements – Provide all measurements in U.S. standard units such as feet and inches, pounds, etc.
- c. On or through the front cover and spine of each manual clearly identify the Project. At least the following information should be provided:

OPERATION AND MAINTENANCE INSTRUCTIONS

Name and Address of Work

Name of Contractor

General Subject of the Manual

Space for Approval Signature of NOR

Approval Date

- d. Contents – include at least the following:
- (1) Neatly typewritten index near the front of the manual giving immediate information as to location within the manual of all emergency information regarding the installation.
 - (2) Complete instructions regarding operation and maintenance of all equipment involved including lubrication, disassembly, and reassembly.
 - (3) Complete nomenclature of all equipment parts.
 - (4) Complete nomenclature and part number of all replaceable parts, name, and address of nearest vendor, and all other data pertinent to procurement procedures.
 - (5) Copy of all guarantees and warranties issued.
 - (6) Manufacturers' bulletins, cuts and descriptive data where pertinent, clearly indicating the precise items included in this installation and deleting or clearly indicating all manufacturers' data that is not pertinent to this installation.

e. Digital Format

PART III - EXECUTION

3.01 Instruction Manuals

a. Preliminary:

- (1) Prepare a draft of each proposed manual.

- (2) Show general arrangement, nature of contents, probable number of drawings and their size, and proposed method of binding and covering.
 - (3) Secure NOR's approval prior to proceeding.
- b. Final: Complete the manuals in strict accordance with the approved preliminary drafts and NOR's review comments.

END OF SECTION

SECTION 01 78 39 PROJECT RECORD DOCUMENTS

PART I – GENERAL

1.01 Description

a. Work Included:

- (1) Throughout the progress of the Work, maintain an accurate record of changes in the Contract Documents, as described in Article 3.01 below.
- (2) Upon completion of the Work, transfer the recorded changes to a set of Record Documents, as described in Article 3.02 below.

b. Related Work:

- (1) Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
- (2) Other requirements affecting Project Record Documents may appear in pertinent other Sections of these Specifications.

1.02 Quality Assurance

a. Accuracy of Records:

- (1) Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to show the change properly.
- (2) Accuracy of records shall be such that future search for items shown in the Contract Documents may rely reasonably on information obtained from the approved Project Record Documents.

b. Make entries within 24 hours after receipt of information that the change has occurred.

1.03 Product Handling

a. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the Work and transfer of all recorded data to the final Project Record Documents.

b. In the event of loss of recorded data, use means necessary to again secure the data to NOR's approval.

- (1) Such means shall include, if necessary in the opinion of NOR, removal and replacement of concealing materials.
- (2) In such case, provide replacements to the standards originally required by the Contract Documents.

PART II - PRODUCTS

2.01 Record Documents

- a. Job Set: Promptly following receipt of the Owner's Notice to Proceed, secure from NOR at no charge to the Contractor one complete set of all Documents comprising the Contract.
- b. Final Record Documents: At a time nearing the completion of the Work, secure from NOR at no charge to the Contractor one complete set of sepia transparencies of all Drawings in the Contract to be prepared as the reproducible "As Built" Drawings.

PART III - EXECUTION

3.01 Maintenance of Job Set

- a. Immediately upon receipt of the job set described in Paragraph 2.01-a above, identify each of the Documents with the title, "Record Documents-Job Set."
- b. Preservation:
 - (1) Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set to the approval of NOR.
 - (2) Do not use the job set for any purpose except entry of new data and for review by NOR, until start of transfer of data to final Project Record Documents.
- c. Making entries on Drawings:
 - (1) Using an erasable colored pencil (not ink or indelible pencil), clearly describe the change by graphic line and note as required.
 - (2) Date all entries.
 - (3) Call attention to the entry by a "cloud" drawn around the area or areas affected.
 - (4) In the event of overlapping changes, use different colors for the overlapping changes.
- d. Make entries on all pertinent Documents.
- e. Conversion of Schematic Layouts:
 - (1) In some cases on the Drawings, arrangement of conduits, circuits, piping, ducts, and similar items are shown schematically and are not intended to portray precise physical layout.
 - A. Final physical arrangement is determined by the Contractor, subject to NOR's approval.
 - B. However, design of future modifications of the facility may require accurate information as to the final physical layout of items which are shown only schematically on the Drawings.
 - (2) Show on the job set of Record Drawings, by dimension accurate to within one inch, the centerline of each run of items such as are described in subparagraph 3.01-e-1 above.

- A. Clearly identify the item by accurate note such as "cast iron drain," "galv. water," and the like.
 - B. Show, by symbol or note, the vertical location of the item ("under slab," "in ceiling plenum," "exposed," and the like).
 - C. Make all identification sufficiently descriptive that it may be related reliably to the Specifications.
- (3) NOR may waive the requirements for conversion of schematic layouts where, in NOR's judgment, conversion serves no useful purpose. However, do not rely upon waivers being issued except as specifically issued in writing by NOR.

3.02 Final Project Record Documents

- a. The purpose of the final Project Record Documents is to provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation and examination.
- b. Approval of recorded data prior to transfer:
 - (1) Following receipt of the transparencies described in Paragraph 2.01-b above, and prior to start of transfer of recorded data thereto, secure NOR's approval of all recorded data.
 - (2) Make required revisions.
- c. Transfer of data to Drawings:
 - (1) Carefully transfer change data shown on the job set of Record Drawings to the corresponding transparencies, coordinating the changes as required.
 - (2) Clearly indicate at each affected detail and Drawing a full description of changes made during construction, and the actual location of items described in subparagraph 3.01-e-1 above.
 - (3) Call attention to each entry by drawing a "cloud" around the area or areas affected.
 - (4) Make changes neatly, consistently, and with the proper media to assure longevity and clear reproduction.
- d. Transfer of data to other Documents:
 - (1) If the Documents, excluding Drawings, are kept clean during progress of the Work, and if entries thereon are approved by NOR and neatly noted, the job set of such Documents may be accepted as final Record Documents.
 - (2) If such Documents are not acceptable to NOR, secure new copies from NOR and carefully transfer the changed data to the new copy to the satisfaction of NOR.
- e. Review and Submittal:
 - (1) Submit the completed set of Project Record Documents to NOR as described in Paragraph 1.03-d above.

(2) Participate in review meetings as required.

(3) Make required changes and promptly deliver the final Project Record Documents to NOR.

3.03 Changes Subsequent to Acceptance

- a. The Contractor has no responsibility for recording changes in the Work subsequent to Final Completion, except for changes resulting from work performed under Warranty.

END OF SECTION

SECTION 02 01 00 MAINTENANCE OF EXISTING CONDITIONS

PART I – GENERAL

1.01 General

- a. The Contractor shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than prior to such damage or temporary relocation, all in accordance with the Contract Documents.
- b. The Contractor shall verify the exact locations and depths of all utilities shown and the Contractor shall make exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of the contract, and in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's work. When such exploratory excavations show the utility location as shown to be in error, the Contractor shall notify NOR/Owner.
- c. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.

1.02 Rights-of-Way

- a. The Contractor shall not do any Work that would affect any oil, gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure, nor shall the Contractor enter upon the rights-of-way involved until notified that NOR/Owner has secured authority therefore from the proper party.
- b. After authority has been obtained, the Contractor shall give said party due notice of its intention to begin work, if required by said party, and shall remove, shore, support or otherwise protect such pipeline, transmission line, ditch, fence, or structure, or replace the same.

1.03 Protection of Survey Markers

- a. The Contractor shall not destroy, remove or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. Survey markers or points disturbed by the Contractor shall be accurately restored after street or roadway resurfacing has been completed.

1.04 Restoration of Pavement

- a. General: All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of NOR/Agency issuing the permit. The pavement restoration requirement to match existing sections shall apply to all components of existing sections, including sub-base, base and pavement. Temporary and permanent pavement shall conform to the requirements of the affected pavement owner. Pavements which are subject to partial removal shall be neatly saw-cut in straight lines.

- b. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the Contractor shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the time fixed by said authorities before proceeding with the final restoration of improvements.
- c. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the Contractor shall saw-cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw-cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement
- d. Restoration of Sidewalks or Driveways: Wherever sidewalks or private roads have been removed for purposes of construction, the Contractor shall place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions. If no such period of time is so fixed, the Contractor shall maintain said temporary sidewalks or roadways until the final restoration thereof has been made.
- e. Restoration of Curb and Gutter: Wherever curb and gutter have been removed for purposes of construction, the Contractor shall place suitable temporary curb and gutter promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions. If no such period of time is so fixed, the Contractor shall maintain said temporary curb and gutter until the final restoration thereof has been made.

1.05 Existing Utilities and Improvements

- a. General: The Contractor shall protect underground utilities and other improvements which may be impaired during construction operations, regardless of whether or not the Utilities are indicated on the Drawings. The Contractor shall take all possible precautions for the protection of unforeseen Utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.
- b. Except where the Drawings indicate Utilities have been field located during design or certain Utility locations shall be exposed as part of the Work, the Contractor shall be responsible for exploratory excavations as it deems necessary to determine the exact locations and depths of Utilities which may interfere with its work. All such exploratory excavations shall be performed as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's progress. When such exploratory excavations show the Utility location as shown on the Drawings to be in error, the Contractor shall notify NOR.
- c. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the Utility.
- d. Utilities to be Moved: In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the Contractor, be notified by the Owner/NOR to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the NOR/Engineer in a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

- e. **Utilities to be Removed:** Where the proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing Utility or other improvement which is indicated, the Contractor shall remove and, without unnecessary delay, temporarily replace or relocate such Utility or improvement in a manner satisfactory to the Engineer/Architect and NOR/Owner of the facility. In all cases of such temporary removal or relocation, restoration to the former location shall be accomplished by the Contractor in a manner that will restore or replace the Utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.
- f. **Owner's Right of Access:** The right is reserved to NOR/Owner and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way or easement for the purpose of making changes in their property made necessary by the Work of this Contract.
- g. **Underground Utilities Indicated:** Existing Utility lines that are indicated or the locations of which are made known to the Contractor prior to excavation and that are to be retained, and all Utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the Contractor, unless otherwise repaired by the owner of the damaged Utility. If NOR/Owner of the damaged facility performs its own repairs, the Contractor shall reimburse said owner for the costs of repair.
- h. **Underground Utilities Not Indicated:** In the event that the Contractor damages existing Utility lines that are not indicated or the locations of which are not made known to the Contractor prior to excavation, a verbal report of such damage shall be made immediately to the Engineer/NOR and a written report thereof shall be made promptly thereafter. The Engineer will immediately notify the Owner/NOR of the damaged Utility. If the Engineer/NOR is not immediately available, the Contractor shall notify the Utility owner of the damage. If directed by the Engineer/NOR, repairs shall be made by the Contractor. Additional compensation for such work will be at the discretion of the Owner/NOR.
- i. **Costs of locating and repairing damage not due to failure to the Contractor to exercise reasonable care, and removing or relocating such Utility facilities not indicated in the Contract Documents with reasonable accuracy, and for equipment on the project which was actually working on that portion of the Work which was interrupted or idled by removal or relocation of such Utility facilities, and which was necessarily idled during such work may be paid for as extra work in accordance with the provisions of the General Conditions. Payment for such work shall be at the discretion of NOR/Owner.**
- j. **Approval of Repairs:** All repairs to damaged Utility or improvement are subject to inspection and approval by an authorized representative of the Utility or improvement owner before being concealed by backfill or other work.
- k. **Maintaining in Service:** Unless indicated otherwise, oil and gasoline pipelines, power, and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the Work shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the Engineer are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, wire or cable. The Contractor shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.06 Trees or Shrubs Within Street Rights-of-Way and Project Limits

- a. General: Except where trees or shrubs or other plantings are indicated to be removed, the Contractor shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs or other plantings, including those lying within street rights-of-way and project limits, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by NOR. Existing trees and shrubs which are damaged during construction shall be trimmed or replaced by the Contractor or a certified tree company under direction and approval from NOR. Tree trimming and replacement shall be accomplished in accordance with the following paragraphs.
- b. Trimming: Symmetry of the tree shall be preserved; no stubs or splits or torn branches left; clean cuts shall be made close to the trunk or large branch. Spikes shall not be used for climbing live trees. Cuts over one and one-half inches (1.5") in diameter shall be coated with a tree paint product that is waterproof, adhesive and elastic, and free from kerosene, coal tar, creosote or other material injurious to the life of the tree.
- c. Replacement: The Contractor shall immediately notify NOR/Owner if any tree or shrub is damaged by the Contractor's operations. If, in the opinion of NOR/Owner, the damage is such that replacement is necessary, the Contractor shall replace the tree or shrub at its own expense. The tree or shrub shall be of a like size and variety as the one damaged, or, if of a smaller size, the Contractor shall pay to NOR/Owner of said tree a compensatory payment acceptable to the tree or shrub owner, subject to the approval of NOR/Owner. The size of the tree or shrub shall be not less than one (1) inch DBH nor less than eight (8) feet in height. Planting of replacement trees and shrubs shall be in accordance with the recommendations of the nursery furnishing the plants. Unless otherwise indicated, the Contractor shall water and maintain the replacement trees and shrubs for six (6) months after planting.
- d. See also Section 02 01 10 and Section 31 13 13.

1.07 Lawn and Open-Turf Areas

- a. Lawn or landscaped areas damaged during construction shall be repaired to match the pre-construction condition to the satisfaction of the land owner and NOR.

1.08 Notification by the Contractor

- a. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products or other pipelines; all buried electric power, communications or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way, the Contractor shall notify the respective authorities representing the Owner/NOR for such facilities not less than three (3) days nor more than seven (7) days prior to excavation so that a representative of said Owner/NOR can be present during such work if they so desire.

PART II – PRODUCTS (NOT USED)

PART III – EXECUTION (NOT USED)

END OF SECTION

SECTION 02 01 10 EXISTING PLANTS TO REMAIN

PART I – GENERAL

1.01 Description

- a. Work Included: Provide protection of all existing plants and planted areas indicated to remain as shown on Drawings.
- b. Related Work Described Elsewhere:
 - (1) Maintenance of Existing Conditions Section 02 01 00
 - (2) Earthwork and Grading Section 31 00 00
 - (3) Selective Tree and Shrub Removal Section 31 13 13

1.02 Project Conditions

- a. Review: the Contractor is responsible for visiting the site, carefully examining the Drawings and Specifications, and clarify scope of work with Architect/Owner.
- b. Documentation: Confirm location of all plant materials designated on Drawings as “Existing to Remain”. Examine existing irrigation system to remain, and report all malfunctioning equipment to be repaired by Owner. Record all discrepancies and all conditions which threaten existing plant material.
- c. Acceptance: Commencing work shall be taken as acceptance by the Contractor of responsibility for the protection of all existing site plantings, with the exception of discrepancies and corrections noted above.

1.03 Definitions

- a. Protection: Provide all barricades as required to prevent all damage to existing plant materials to remain, including but not limited to protection from mechanical damage, and soil compaction, pollution from all sources, and disruption of environmental support which would result in the loss of vigor of said plantings.
- b. Drip Line: An imaginary line on the ground around a tree representing its outermost branch tips. All of the area within the drip line of existing trees to remain is to be protected from damage as specified herein, unless otherwise noted.

1.04 Submittals

- a. Schedule: Watering schedule, where interruption of irrigation systems will exceed one watering period.
- b. Shop Drawings: Construction details for protective barriers and barricades as required.

1.05 Scheduling

- a. As required, construct protective barriers prior to demolition and selective clearing. See section 02 41 19. Construct other barriers as scope of work progresses.

1.06 Warranty

- a. General: During the Warranty Period for new plantings, similarity warrant all existing plant materials against decline resulting from damage during construction. See section 32 90 00 - Planting.
- b. Exclusions: Damage due to vandalism, Acts of Nature, or neglect by Owner.

1.07 Replacements

- a. General: Existing planting to remain which exhibits conditions which are determined as unacceptable due to inadequate protection during construction shall be replaced by Contractor at no expense to Owner.
- b. Quality: Closely match replacements to adjacent specimens of the same species.
- c. Planting, Maintenance, and Warranty of Replanted Materials: See Section 32 90 00 – Planting.

1.08 Acceptance

- a. See Section 32 90 00 - Planting

PART II – PRODUCTS

2.01 Manufacturers

- a. Fertilizers, Herbicides and Pest Control. See Section 32 90 00 – Planting

2.02 Barriers and Barricades

- a. As described in 3.01 A.

2.03 Safety

- a. Provide reflective signage and/or flashers as required by all codes and ordinances affecting barricaded plant material to remain.

PART III – EXECUTION

3.01 Installation

- a. Provide a snow fence or other approved equal barrier at the Tree Protection Zone (TPZ) of all trees designated to remain. Grouping of trees may be enclosed by a single protective fence. Placement of said barrier shall be coordinated with owner prior to placement.

3.02 Operations

- a. Storage: Do not store materials or equipment under the branches of all existing trees nor in lawn or ground cover areas to remain.

- b. Traffic: Do not operate nor park equipment within the drip line of existing trees to remain. Limit foot traffic within drip line of existing trees.

3.03 Excavating and Grading

- a. Cut: Do not permit machine excavation within the drip line of existing trees to remain. All such work shall be hand labor. Do not permit more than two (2) inches of existing soil to be removed within the drip line except as authorized in writing by Landscape Architect.
- b. Fill: Do not permit stockpiling of soil within the drip line of all existing trees nor on existing lawn or groundcover areas. Do not permit more than three (3) inches of fill to be placed within the drip line during grading operations without written acceptance of Landscape Architect.

3.04 Maintenance of Existing Planting

- a. General: During the maintenance period for new planting, similarly maintain all existing plantings to remain. See Section 32 90 00 – Planting.
- b. Fertilizers: Do not use complete fertilizers on existing plant materials unless soils test indicates specific nutrient deficiencies.

3.05 Clean Up

- a. At close of construction in each area, remove all protective barriers at the direction of the Landscape Architect. Transport all barrier materials off site at no additional expense to Owner.
- b. Repair all grades and restore all damaged plant materials
- c. Upon completion of the work of this section, all affected areas must be left clean and safe.

END OF SECTION

SECTION 02 41 13 SELECTIVE SITE DEMOLITION

PART I – GENERAL

1.01 Description

- a. Work Included:
 - (1) Demolition and removal of selected portions of building or structure
 - (2) Demolition and removal of selected site elements.
 - (3) Salvage existing boulders to be reused or recycled.
 - (4) Prior to demolition and site work verify with NOR and Underground Service Alert of Southern California (DigAlert), phone 811, the locations of any underground utilities which are within the project area.
- b. See CSI Section 01 74 00, Cleaning Waste Management for disposal of demolished materials.
- c. See Section 31 10 00, Site Clearing, for site clearing and removal of above-and-belowgrade improvements
- d. Related Work Described Elsewhere:
 - (1) Earthwork and Grading Section 31 00 00
 - (2) Site Clearing Section 31 10 00

1.02 Site Visitation

- a. The Contractor is responsible for visiting the site, carefully examining the Drawings and Specifications, and determining to its satisfaction the methods for removal and storage of materials, the sequencing of operations and problems attendant thereto. No allowance will be made to the Contractor for errors caused by its negligence in observing the site conditions.

1.03 Definitions

- a. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- b. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
- c. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- d. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.04 Submittals

- a. Schedule of Selective Demolition Activities: Indicate detailed sequence of selective demolition and removal work, with starting and ending dates for each activity, interruption of utility services, use of elevator and stairs, and locations of temporary partitions and means of egress.
- b. Pre-demolition Photographs or Videotapes: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Comply with CSI Section 01 32 33, Photographic Documentation. Submit before Work begins.
- c. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility license to accept hazardous wastes. Coordinate with Owner prior to disposal of hazardous wastes.
 - (1) Comply with submittal requirements in CSI Section 01 74 00, Construction Waste Management and Disposal.

1.05 Quality Assurance

- a. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- b. Contractor must have CAL/OSHA lead action level training as outlined in Title 8 CCR 1532.1.
- c. Regulatory Requirements: Comply with governing EPA and Cal/OSHA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- d. Standards: Comply with ANSI A10.6 and NFPA 241
- e. Pre-demolition Conference: Conduct conference at Project Site, to be coordinated with Owner on time, day and on-site location.

1.06 Project Conditions

- a. Areas immediately adjacent to selective demolition area may or may not be occupied during demolition. Contractor shall conduct demolition as to not interfere with normal operations.
- b. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - (1) Before selective demolition, Owner will remove the following items: N/A .
- c. Notify Architect/Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- d. Hazardous Materials:
 - (1) Hazardous materials will be addressed upon encounter. If Contractor locates hazardous materials, Contractor should stop all work and notify the Owner immediately.

- (2) If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect/Engineer and Owner. Owner will remove hazardous materials under a separate contract.
- e. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect/Engineer and Owner. Owner will remove hazardous materials under a separate contract.
- f. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations. Maintain fire-protection facilities in service during selective demolition operations.
- g. Contractor shall comply with Cal/OSHA lead action level training under Title 8 CCR 1532.1.

1.07 Warranty

- a. Existing Warranties: Remove, replace patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART II – PRODUCTS

PART III – EXECUTION

3.01 Examination

- a. Verify that utilities have been disconnected and capped. Utilities that have not been disconnected, capped and/or tied are the Contractor's responsibility to cap, disconnect or tie in.
- b. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- c. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- d. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Owner.
- e. Coordinate with Owner to contract a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.
- f. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs, preconstruction videotapes and templates.
 - (1) Comply with requirements specified in CSI Section 01 32 33, Photographic Documentation.
- g. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.02 Utility Services and Mechanical/Electrical Systems

- a. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
- b. Service/System Requirements: Locate, identify, disconnect and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - (1) Arrange to shut off indicated utilities with utility companies.
 - (2) If services/systems are required to be removed, relocated or abandoned before proceeding with selective demolition, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - (3) Cut off pipe or conduit in wall or partitions to be removed. Cap, valve or plug and seal remaining portion of pipe or conduit after bypassing.

3.03 Preparation

- a. Site Access and Temporary Controls: Conduct selective demolitions and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, park operations and use, and other adjacent occupied and used facilities.
 - (1) Comply with requirements for access and protection specified in CSI Section 01 50 00, Temporary Facilities and Controls.
- b. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- c. Temporary Shoring: Provide and maintain shoring, bracing and structural supports as required to preserve stability and prevent movement, settlement or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.04 Selective Demolition

- a. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - (1) Neatly cut openings and holes plumb, square and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - (2) Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - (3) Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.

- (4) Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - (5) Dispose of demolished items and materials promptly. Comply with requirements in CSI Section 01 74 19, Construction Waste Management and Disposal.
- b. Removed and Salvaged Items:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner.
 5. Protect items from damage during transports and storage.
- c. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- d. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect/Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.05 Treatment of Existing Facilities

- a. Protection: Use necessary procedures, caution and protection to preserve from damage the existing facilities, equipment, and accessories not noted to be replaced or restored. Active utilities traversing the project site shall be maintained in good operating condition.
- b. Replacement: In the event of damage to existing facilities, immediately notify NOR, and make all repairs and replacements necessary to the satisfaction of the Engineer and at no additional cost to NOR.

3.06 Disposal of Demolished Materials

- a. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - (1) Comply with requirements specified in CSI Section 01 74 19, Construction Waste Management and Disposal.

- b. Burning: Do not burn demolished materials
- c. Disposal: Transport demolished materials off Owner's property and legally disposed of them.

3.07 Removal of Debris

- a. All items noted for demolition shall be immediately removed from the site, hauled and dumped in compliance with local codes and regulations, including payment of any fees.

3.08 Safety

- a. Barricades: Provide satisfactory barricades to protect construction areas, open trenches, etc. These barricades must be adequate to eliminate access and give warning to the public.

3.09 Cleanup

- a. Upon completion of the work of this section, all affected areas must be left clean and safe.
- b. Clean adjacent structures and improvements of dust, dirt and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

SECTION 03 10 00 CONCRETE FORMING AND ACCESSORIES

PART I – GENERAL

1.01 Description

- a. Work Included: Provide formwork in accordance with provisions of this section for cast-in-place concrete shown on the Drawings or required by other sections of these Specifications.
- b. Related Work: Documents affecting work of this section include but are not necessarily limited to General Conditions, Supplementary Conditions and Division 1 of these Specifications.

(1) Cast-in-Place Concrete – Section 03 30 00

(2) Concrete Finishing – Section 03 35 00

1.02 Quality Assurance

- a. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
- b. Design of formwork is the Contractor's responsibility.
- c. In addition to complying with pertinent regulations of governmental agencies having jurisdiction, comply with pertinent provisions of ACI 347R-14.

1.03 Submittals

- a. Comply with pertinent provisions of Section 01 25 00.
- b. Within thirty (30) calendar days after the Contractor has received NOR's Notice to Proceed, submit manufacturer's data and installation instructions for proprietary materials including form coatings, ties and accessories, and manufactured form systems if used.

1.04 Product Handling

- a. Comply with pertinent provisions of General and Supplementary Conditions and Division 1 of these Specifications.

PART II – PRODUCTS

2.01 Form Materials

- a. Except for metal forms, use new materials. Materials may be reused during progress of the Work, provided they are completely cleaned, reconditioned and recoated for each use, and capable of producing formwork of the required quality.
- b. For footings and foundations, use Douglas Fir boards or planks secured to wood or steel stakes substantially constructed to shapes indicated and to support the required loads.

- c. For studs, wales and supports use Standard grade or better Douglas Fir, dimensions as required to support the loads, but not less than 2" x 4".
- d. Wall Forms:
 - (1) Exposed concrete surfaces:
 - A. Use ¾" minimum thickness Douglas Fir plywood, grades B/BB, class I or II, exterior, sanded both sides, complying with PS-1.
 - B. Seal edges and coat both faces with colorless coating which will not affect application of applied finishes.
 - (2) Unexposed concrete surfaces – Use 1" x 6" shiplap Douglas Fir boards, surfaced one side and two edges, or ¾" minimum thickness Douglas Fir plywood, grade B/BB plywood class I or II, sanded both sides, mill-oiled.
- e. Column Forms:
 - (1) For square or rectangular columns, use 2" thick Douglas Fir planks or joists, surfaced one side and two edges, or use metal forms.
 - (2) For round columns, use metal forms or patented paper tube forms approved by NOR.
 - (3) Construct column forms with tight joints and securely clamped together with steel clamps.

2.02 Form Ties

- a. Hold inner and outer forms for vertical concrete together with combination steel ties and spreaders approved by NOR.
- b. Space ties symmetrically in tiers and rows, each tier shall be plumb from top to bottom and each row level.
- c. At horizontal pour lines, locate ties not more than 6" below the pour lines. Tighten after concrete has set and before the next pour is made.
- d. For exposed concrete surfaces, provide form ties of removable type with she-bolts equipped with permanent plugs and a system approved by NOR for fixing the plugs in place.

2.03 Design of Formwork

- a. Design, erect, support, brace and maintain formwork so it will safely support vertical and lateral loads that might be applied, until such loads can be supported by the concrete structure.
- b. Carry vertical and lateral loads to ground by formwork system and in place construction that has attained adequate strength for that purpose.
- c. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.
- d. Design forms and waleswork to include assumed values of live load, dead load, weight of moving equipment operated on the formwork, concrete mix height of concrete drop, vibratory frequency, ambient temperature, foundation pressures, stresses, lateral stability, and other factors pertinent to safety of the structure during construction.

- e. Provide shores and struts with positive means of adjustment capable of taking up formwork settlement during concrete placing operations, using wedges or jacks or a combination thereof.
- f. Provide trussed supports when adequate foundations for shores and struts cannot be secured.
- g. Support form materials by structural members spaced sufficiently close to prevent objectionable deflection.
- h. Fit forms placed for successive units so that continuous surfaces have accurate alignment, free from irregularities, and within the allowable tolerances.
- i. Provide formwork sufficiently tight to prevent leakage of cement during concrete placement. Solidly butt joints, and provide backup material at joints as required to prevent leakage and prevent fins.
- j. Provide camber in formwork as required for anticipated deflections due to weight and pressures of fresh concrete and construction loads.

2.04 Earth Forms

- a. Side forms for footing may be omitted, and concrete may be placed directly against excavation, only when requested by the Contractor and approved by NOR.
- b. When omission of forms is accepted, provide additional concrete one inch (1") on each side of the minimum design profiles and dimensions shown on the Drawings.

PART III – EXECUTION

3.01 Surface Conditions

- a. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 Form Construction

- a. General:
 - (1) Construct forms complying with ACI 347R-14 to the exact sizes, shapes, lines, and dimensions shown, and as required to obtain accurate alignment, location, grades, level and plumb required for the finished structure.
 - (2) Provide for openings, offsets, keyways, recesses, moldings, reglets, chamfers, blocking, screeds, bulkheads, anchorages, inserts and other features as required.
- b. Fabrication:
 - (1) Fabricate forms for easy removal without hammering or prying against concrete surfaces.
 - (2) Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.
 - (3) Kerf wood inserts for forming keyways, reglets, recesses, and the like to prevent swelling and assure ease of removal.

- (4) Provide top forms for inclined surfaces where so directed by NOR.
- c. Forms for Exposed Concrete:
- (1) Drill forms to suit ties being used, and to prevent leakage of cement paste around tie holes. Do not splinter forms by driving ties through improperly prepared holes.
 - (2) Provide sharp, clean corners at intersecting planes, without visible edges or offsets. Back the joints with extra studs or girts to maintain true square intersections.
 - (3) Use extra studs, wales and bracing to prevent objectionable bowing of forms between studs, and to avoid bowed appearance in concrete. Do not use narrow strips of form material which will produce bow.
 - (4) Place forming plywood so that the grain of the face ply runs in the same direction as the span.
- d. Corner Treatment:
- (1) Unless shown otherwise, form chamfers with $\frac{3}{4}$ " x $\frac{3}{4}$ " strips, accurately formed and surfaced to produce uniformly straight lines and tight edges.
 - (2) Extend terminal edges to required limit, and miter the chamfer strips at changes in direction.
- e. Control Joints:
- (1) Locate control joints as indicated on the Drawings and, where required but not shown on the Drawings, as approved by NOR.
- f. Provisions for Other Trades:
- (1) Provide openings in concrete formwork to accommodate work of other trades.
 - (2) Verify size and location of openings, recesses and chases with the trade requiring such items.
 - (3) Accurately place and securely support items to be built into the concrete.

3.03 Form Coatings

- a. Coat form contact surfaces with form coating compound before reinforcement is placed.
- (1) Do not allow excess form coating material to accumulate in the forms or to come in contact with surfaces which will bond to fresh concrete.
 - (2) Apply the form coating material in strict accordance with manufacturer's recommendations.

3.04 Removal of Forms

- a. General:
- (1) Do not disturb or remove forms until the concrete has hardened sufficiently to permit form removal with complete safety.
 - (2) Do not remove shoring until the member has acquired sufficient strength to support its own weight, the load upon it and the added load of construction.

- (3) Do not strip floor slabs in less than two days.
 - (4) Do not strip vertical concrete in less than seven days.
- b. Finished Surfaces:
- (1) Exercise care in removing forms from finished concrete surfaces so that surfaces are not marred or gouged, and that corners are true, sharp and unbroken.
 - (2) Release sleeve nuts or clamps and pull the form ties neatly.
 - (3) Do not permit steel spreaders, form ties, or other metal to project from, or be visible on, any concrete surface except where so shown on the Drawings.
 - (4) Solidly pack form tie holes, rod holes, and similar holes in the concrete. For packing, use the cement grout specified in Section 03 30 00 of these Specifications, flushing the holes with water before packing, screeding off flush, and grinding to match adjacent surfaces.

END OF SECTION

SECTION 03 20 00 CONCRETE REINFORCING

PART I – GENERAL

1.01 Description

- a. The Work of this section includes labor, materials, hardware, equipment, transportation and services required to fabricate and place all reinforcement for cast-in-place concrete including bars, welded wire fabrics, ties and supports shown on the drawings and as specified. Pretesting reinforcement is specified in Post-Tensioned Concrete and/or Precast Concrete sections of the specifications.
- b. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections apply to work of this section.
- c. Related work described elsewhere:
 - (1) Cast-in-Place Concrete – Section 03 30 00

1.02 Quality Assurance

- a. The Contractor is responsible for management of quality control on the project, including verification of the compliance of the workmanship and materials furnished by subcontractors and suppliers.
- b. Perform work of this section in accordance with the current governing edition of California Building Code (CBC), American Concrete Institute (ACI) 301, American Concrete Institute (ACI) SP-66, American Concrete Institute (ACI) 318, and American Welding Society (AWS) D1.4 except as modified by the Contract Documents.

1.03 Sampling and Testing

- a. If NOR/Owner's agent, through oversight or otherwise, has accepted material or work which is defective or contrary to specifications, this material or work, regardless of state of completion, may be rejected.
- b. Testing agencies shall meet the requirements of ASTM E329. Testing agencies shall be accepted by Architect/Engineer before performing any work. Use of testing services will not relieve the Contractor of the responsibility to furnish materials and construction in compliance with the Contract Documents.
- c. Cooperate with and notify NOR/Owner at least twenty-four (24) hours in advance of inspections required and shall provide samples, test pieces, and facilities for inspection at no cost to NOR/Owner.
- d. Identify each lot of fabricated reinforcing steel to be shipped to the site by assigning an individual lot number that identifies steel by heat number and shall be tagged in such a manner that each such lot can be accurately identified at the job site.
- e. Remove all unidentified reinforcing steel, anchorage assemblies and bar couplers received at the site.

1.04 Submittals

- a. Comply with pertinent provisions of Section 01 25 00.

- b. Within thirty (30) calendar days after the Contractor has received NOR's Notice to Proceed, submit manufacturer's data and installation instructions for proprietary materials including form coatings, ties and accessories, and manufactured form systems if used.
- c. Mill Certificates: Submit, for record, mill certificates and/or test results signed by Contractor and Producer, for all reinforcement.
- d. Laboratory Test Results: Comply with pertinent provisions of Section 01 45 29
- e. Welder's Certificates and WPS: Submit description of reinforcement weld locations, welding procedures, and welder certification when welding is permitted.

1.05 Storage of Materials

- a. Store reinforcement during fabrication and at site to avoid excessive rusting or coating with grease, oil, soil or other objectionable materials. Epoxy-coated and galvanized reinforcement shall be handled and stored by methods that will not damage the coating. Bundles shall not be dropped or dragged. Reinforcing steel shall be transported and stored in a manner that will not damage any applied coating. Since the epoxy coating is flammable, the coated reinforcement shall not be exposed to any fire or flame.

1.06 Sequencing and Scheduling

- a. Coordinate work with all trades so as not to interfere with the work of other trades. Bring interferences between trades to Architect/NOR's attention and resolve before any concrete is placed.

PART II – PRODUCTS

2.01 Reinforcing Bars

- a. Reinforcing Steel: Bars for reinforcement shall conform to the requirements of ASTM A706, deformed low-alloy steel bars; uncoated steel unless noted otherwise.

2.02 Welding Electrodes

- a. Welding electrodes shall be per Table 5-1 of American Welding Society (AWS) D1.4.

2.03 Mechanical Coupling Devices

- a. Mechanical coupling devices shall develop 125 percent of the minimum yield strength of the bars spliced.

2.04 Reinforcement Accessories

- a. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement. Reinforcement supports shall conform to the requirements of American Concrete Institute (ACI) 301.

2.05 Other Materials

- a. All other materials, not specifically described by these specifications but required for complete and proper placement of reinforcement shall be new, first quality of their respective kinds, and subject to the approval of the Architect/Engineer.

2.06 Fabrication

- a. Welding of reinforcement is permitted only with specific approval of Engineer. Perform welding in accordance with American Welding Society (AWS) D1.4. Do not weld crossing bars (tack welds) for assembly of reinforcement, supports or embedded items. After completing welds on galvanized or epoxy-coated reinforcement, repair coating damage as mentioned in Part 2.01.
- b. Fabricate and handle epoxy-coated reinforcing in accordance with ASTM D3963. Coated reinforcement shall not be field cut, unless permitted by the Engineer. Field cutting of coated reinforcement should be performed using hydraulic-powered or friction cutting tools to minimize coating damage and field touch-up. Flame cutting of coated reinforcement will not be permitted. Field cut coated reinforcement shall be repaired immediately with compatible patching material/coating and suitable for repairs in the field per patching material/coating manufacturer's recommendation.

PART III – EXECUTION

3.01 Existing Conditions

- a. Prior to all work of the section, carefully inspect the installed work of other trades and verify that all work is sufficiently complete to permit the start of work under this section and that the completed work of this section will be in complete accordance with the original design and the reviewed shop drawings. In the event of discrepancy, immediately notify the Architect/Engineer in writing.
- b. In the event conduits, pipes, inserts, sleeves or any other items interfere with placing the reinforcement as indicated on the drawings or approved shop drawings, or as otherwise required, immediately notify Architect/Engineer and NOR to obtain approval on procedure before placement of reinforcement is started.

3.02 Bending

- a. Bends for reinforcing steel shall be made in accordance with American Concrete Institute (ACI) 301 and 318. Bend bar sizes No.3 through 5 cold only one time, provided reinforcing bar temperature is above 32 degrees F. Do not field bend reinforcing steel in a manner that will injure material, cause the bars to be bent on too tight a radius, or that is not indicated as allowed on drawings or permitted by Engineer. Do not straighten bent or kinked bar for use on project without permission of Engineer. Replace bars with kinks or bends not shown on the drawings.

3.03 Placing

- a. All reinforcement shall be placed in strict conformance with the requirements of the Contract Drawings, both as to location, position and spacing of members. It shall be supported and secured against displacement by the use of adequate and proper wire supporting and spacing devices, tie wires, etc. so that it will remain in its proper position in the finished structure. Reinforcement may not be wet set in concrete pours.
- b. Tolerances: Do not exceed the placing tolerances specified in American Concrete Institute (ACI) 318 and 117, whichever is more stringent, before concrete is placed. Placing tolerances shall not reduce cover requirements except as specified in American Concrete Institute (ACI) 117.
- c. Minimum concrete cover for reinforcement and couplers shall be as indicated in the Contract Drawings. Concrete cover is measured from the theoretical excavation line, not the line of any over

excavation. Where less than three (3) inches cover is noted and concrete will be placed against soil, increase the section thickness to attain three (3) inches cover.

- d. Preserve clear space between parallel bars of not less than one and one-half (1.5) times the nominal diameter of round bars and in no case let the clear distance be less than one and one-half (1.5) inches nor less than one and one-third (1.33) times the maximum size of aggregate for concrete. Bars placed in shotcrete shall have a minimum clearance between bars of two and one-half (2.5) inches for No. 5 and smaller and six (6) bar diameters for bars larger than No. 5. When two curtains of steel are provided in shotcrete wall, the curtain nearer the nozzle shall have a minimum spacing of six bar diameters.
- e. For slabs on ground, extend welded wire reinforcement to within two (2) inches of the concrete edge. Reinforcement shall be lapped and tied around the perimeter of each sheet in order to maintain the proper positioning of the reinforcement. Lap splices shall have a minimum of two (2) ties per spliced length. Do not place welded wire reinforcement on grade and subsequently raise into position in concrete.
- f. Furnish and use templates for placement of column dowels unless otherwise permitted by Engineer.
- g. Lap splices shall be contact lap splices in accordance with American Concrete Institute (ACI) 318 unless noted otherwise on the Contract Drawings. Bars shall be wired together at laps. Wherever possible, stagger splices in adjacent bars. Splice bars in members such as spandrels, beams, etc., as follows:
 - i. Top bars at centerline of span, bottom bars at the support. Make all splices in welded wire reinforcement at least one and one-half (1.5) meshes wide or twelve (12) inches, whichever is greater. When splicing in areas to receive shotcrete, lap splices shall be non-contact with at least two (2) inches clearance between bars.
- h. Butt splices shall be accomplished by mechanical anchorage devices. Stagger these devices two (2) feet, unless noted otherwise on the Contract Documents.
- i. Bars shall not be cut by gas torch.

3.04 Cleaning Reinforcement

- a. Take all means necessary to ensure that steel reinforcement, at the time concrete is placed around it, is completely free from rust, soil, loose mill scale, oil, paint and all coatings which will destroy or reduce the bond between steel and concrete.

END OF SECTION

SECTION 03 30 00 CAST-IN-PLACE CONCRETE

PART I – GENERAL

1.01 Description

- a. Work Included: Provide cast-in-place concrete where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including:
 - (1) Identified site flatwork.
 - (2) Provisions of the General and Supplementary Conditions and Division 1 apply here.
- b. Related Work Described Elsewhere:
 - (1) Concrete Formwork - Section 03 10 00
 - (2) Concrete Finishing - Section 03 35 00
 - (3) Earthwork - Section 31 00 00

1.02 Quality Assurance

- a. Test of Materials: When requested by NOR, all concrete materials shall be tested by an approved testing laboratory. Tests will certify that the following criteria are met:
 - (1) Mix Design: The concrete supplier shall submit a mix design for approval by NOR prior to any concrete work. Mix designs shall indicate source of aggregate and brands of cement and admixtures used.
 - (2) Slump: The amount of water in the concrete shall be regulated as required to secure concrete of the proper consistency and to adjust for any variation in the moisture content for grading of the aggregate entering the mixer. The slump of the concrete shall not exceed three (3") inches for slabs that are horizontal and four (4") inches for all other concrete. The slump test shall conform to ASTM C143.

1.03 Concrete Delivery Slips

- a. The method and time of delivery shall be controlled by the concrete plant issuing delivery slips to the transit mix truck drivers.
- b. These slips shall contain the name and locations of the plant, design strength, size of coarse aggregate, proportions, quantity of water, volume of load, the time that the truck was charged at the plant, and the time mixing was started. Upon arrival at the job site, each slip shall be delivered to the foreman and the foreman shall indicate the number of revolutions mixed and the time the concrete is discharged from the truck. Properly affixed signatures with date by the concrete vendor and the foreman will complete the form.
- c. It will be the responsibility of the foreman to submit such concrete delivery slips, in their completed form, to NOR for all concrete used.

PART II – PRODUCTS

2.01 General

- a. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water all mixed and brought to the proper consistency. These mixed proportions shall be determined on the basis of producing concrete having suitable workability, density, impermeability and durability.

2.02 Concrete Materials

- a. Portland cement shall conform to ASTM C150, Type II low alkali. Do not change cement type during progress of work without approval of NOR.
- b. Aggregates shall be non-reactive and conform to "Standard Specifications for Concrete Aggregates," ASTM C33.
 - (1) Coarse aggregate shall be 1" to ¼" washed gravel with fineness modulus, 6.90 to 7.40.
 - (2) Fine aggregate shall be washed natural sand containing no more than 2% by weight of deleterious material and fineness modulus, 2.65 to 3.05.
- c. Water shall be clean, fresh, and free from acid, alkali, organic matter or other impurities likely to be detrimental to the concrete.
- d. Admixtures shall be used only upon approval of NOR and in accordance with the manufacturer's recommendations.
 - (1) Air-entraining admixtures must conform to ASTM C260.
 - (2) Water-reducing admixtures should conform to ASTM C494.

2.03 Forming Materials

- a. Conform with Section 03 10 00 – Formwork.

2.04 Curing Materials

- a. Conform with Section 03 35 00, – Concrete Finishing.

2.05 Miscellaneous Materials

- a. Joint Materials and Devices:
 - (1) Keyed Joint: Provide a compressible, premoulded asphalt keyway that will compress and recover during expansion and contraction cycles, fully capable of accommodating load transfer over keyway area. Incompressible steel keyways will not be permitted. Provide SEALTIGHT Premoulded Tongue & Groove Joint or equal, as manufactured by W. R. Meadows of California (800) 342-5976, or equal.
 - (2) Standard Expansion Joints: Provide non-extruding, premoulded bituminous impregnated fiber expansion joints to the depth of the slabs meeting ASTM D1751. Provided SEALTIGHT Fibre Expansion Joint, by W. R. Meadows of California or equal.

- (3) Non-Bituminous Expansion Joints: Provide one or more of the following non-extruding, non-bituminous joints compatible with polyurethane and polysulfide sealants. Quality assurance: Provide products equal to W. R. Meadows products:
 - "SEALTIGHT Sponge Rubber," ASTM D1752, Type 1
 - "SEALTIGHT Standard Cork," ASTM D1752, Type 2
 - "SEALTIGHT Ceramar," ASTM D1752, Modified
 - (4) Removable Joint Cap for Sealant: "Snap-Cap" by W. R. Meadows of California or equal.
 - (5) Control Joints: Shall be a minimum ½" width x 1 = ½" depth tooled or saw cut joints. Control joints may be plastic such as "Speed-E-Joint" or equal.
 - (6) Joint Sealants: Provide type compatible with joint filler.
- b. Bonding Agent: Provide standard polyvinyl acetate bonding agent with a minimum solids content of 55%. Quality Assurance: "DECK-O-WELD," DFC Company or equal.
 - c. Vapor Barrier: Provide vapor barrier over prepared base where indicated on the Drawings. Vapor barrier shall consist of a seven-ply, asphalt composite membrane having a Water Vapor Transmission Rating (WVT) of 0.000 grains per square foot per hour as measured in accordance with ASTM E96, Method B. Vapor barrier shall be resistant to radon gases, designed to last the life of the structure. Provide SEALTIGHT Premoulded Membrane with Plasmatic Core or equal.
 - d. Termite Protection: Provide chemical termite control under structural slabs according to the provisions of Section 31 31 00, "Soil Treatment" of these specifications.

2.06 Cement Grout and Drypack

- a. Cement Grout: Mix one part by volume of Portland cement, ½ part by volume of water and fine aggregate enough to make a mixture that flows under its own weight.
- b. Drypack: Mix one part by volume of Portland cement, ½ by volume of water and fine aggregate enough to make a stiff mix that will mold into a ball. Mix no more than can be used in 30 minutes.

PART III – EXECUTION

3.01 Inspection

- a. Inspect the actual field conditions and verify with drawings. Report all discrepancies to NOR before proceeding with this work. Ensure that access and safety of the job site are maintained, allowing successful placement of the concrete and minimal disturbance to other work.
- b. Verify the dimensions and positions of required reglets and rebates with trades whose work is related to or contingent upon such dimensions and positions.

3.02 Concrete Mixing

- a. Use fresh ready-mixed concrete complying with other parts of these specifications and conforming to the specification for "Ready Mixed Concrete," ASTM designation C94, subject to the following conditions:
 - (1) The mixers and their operation shall be such that the concrete throughout the mixed batch and from batch to batch is uniform with respect to consistency and grade.

- (2) Each mixer should be equipped with an accurate water meter between supply trough and mixer. The meter shall have an indicating gauge or dial.
 - (3) Each mixer should be equipped with a revolution counter for indicating the amount (not speed) of mixing. The batch should be mixed only 75% of the required number of revolutions at mixing speed prior to inspection of consistency at the point of delivery; then mix the additional revolutions required to obtain the proper slump.
 - (4) Concrete shall be mixed for a period of not less than ten (10) minutes and at least three (3) minutes of the mixing period shall be immediately prior to discharging at the job site.
- b. Addition of Water:
- (1) Normally, do not deliver concrete with total permissible amount of water incorporated therein.
 - (2) Unless otherwise approved by NOR, withhold at least 2½ gallons per cubic yard and add before the concrete is discharged, but only under observation of NOR or designated inspector.
 - (3) After water is added, at least five (5) minutes of mixing time shall occur prior to discharge.
 - (4) Concrete will be rejected if not placed in final position within one (1) hour after water is first added to the batch.
- c. Concrete, at time of placing, shall be in such condition that it can be placed properly. Retempering partially set concrete with additional water will not be permitted.
- d. Cold Weather Requirements: Concrete shall not be placed on frozen ground, nor shall it be mixed or placed while the atmospheric temperature is below 35 degrees F, unless means are employed to heat the aggregates and water so the concrete shall have a minimum temperature of 50 degrees F. The concrete shall then be protected from freezing or frost for a period of five (5) days after placing. Calcium chloride shall not be added to the mix.

3.03 Conveying and Placing Concrete

- a. No concrete shall be placed in any unit of work until all formwork has been completely prepared, all reinforcement has been secured in place, all items to be set into concrete are in place, and form ties at construction joints tightened.
- b. Before placing concrete, mixing and conveying equipment shall be well cleaned, the forms and space to be occupied by concrete shall be thoroughly cleaned, and shall be wetted. Ground water shall be removed until the completion of the work.
- c. Concrete shall be conveyed from mixer to the place of final deposit in such a way to prevent the separation or loss of ingredients. It shall be placed as nearly as practicable in its final position to avoid rehandling or flowing. Concrete shall not be dropped freely where reinforcing bars will cause segregation, nor shall it be dropped freely more than six (6) feet. Use tremies, spouts and dump boxes in deep sections.
- d. Concrete shall be tamped and spaded to ensure maximum density and proper compaction into all voids of forms and around reinforcement. In addition to manual tampers, a mechanical vibrator may be required to thoroughly compact the concrete. Vibration must be by direct action in the concrete and not against forms or reinforcement.

- e. Once concreting is started, it shall be carried on as a continuous operation at such a rate that the concrete surface is at all times plastic and flows readily until the section is completed between predetermined construction joints. Do not place concrete outside of regular working hours unless required inspection authorities have been notified properly and are present.

3.04 Construction Joints

- a. Construction joints to be provided according to normal practices and at locations and in the manner shown on the Drawings.
 - (1) Joints shall meet curves and angles to eliminate narrow pie-shaped pieces that will have a tendency for weakness and easy breaking.
 - (2) Joints in slabs on grade shall be as shown on the plans or shall be spaced a maximum of 24'-0" O.C. for interior reinforced slabs, and 15'-0" for exterior non-reinforced concrete slabs. Joints in exterior reinforced slabs shall be as indicated on the plans. Tool edges of slabs at construction joints and other exposed corners.

3.05 Concrete Slab Placement

- a. Placing and Finishing:
 - (1) Tamp the freshly placed concrete, except slabs to receive separate topping finish or mortar setting bed, using a heavy tamper, until at least 3/8" of mortar is brought to the surface.
 - (2) Use tampers having a face consisting essentially of a grid of parallel metal bars.
 - (3) Tamp with a light tamper and screed with a heavy straightedge, until depressions and irregularities are worked out and the surface is true to finish grades and elevations, keeping in mind the requirement for a positive draining finish surface on all exterior surfaces.
 - (4) Remove excess water and debris worked to the surface in compacting and screeding.
 - (5) For slabs to receive a separate topping finish or mortar setting bed, do not continue tamping to raise the mortar described in subparagraph 3.05-a-3 above.
 - (6) When concrete has hardened sufficiently, float to a compact and smooth surface.
 - (7) Provide the finish surfaces shown on the Drawings and described in Section 03 35 00- Concrete Finishing.

3.06 Grouting and Cement Pointing

- a. After steel columns have been installed and leveled, drypack the space between the bottom of the plate and concrete, using cement grout driven in to completely fill the space and forming solid bearing for the column base plate.

3.07 Protection and Curing

- a. Concrete shall be protected from injurious action of the elements and defacement of any nature during construction, Contractor to provide watchman after each pour.
- b. All forms shall be kept moist to prevent drying out of the concrete, including earth from excavations or backfill.

- c. All concrete surfaces including footings must be kept wet for at least seven (7) days after concrete is placed. Cure and finish concrete in accordance with Section 03 35 00 - Concrete Finishing.
- d. Form removal shall be in accordance with Section 03 10 00 – Concrete Formwork.
- e. After concrete has been placed, forms removed and concrete work finished, cured and approved, backfill the excavations with earth to indicated or required grades. Carry on backfilling simultaneously on each side of walls or grade beams, in accordance with Section 31 00 00 - Earthwork.

3.08 Embedded Items

- a. Cooperate with all trades to assure that all embedded items are properly installed and secured in correct position before placing concrete. All embedded items shall be thoroughly cleaned and free from rust, scale, oil or other foreign matter.

3.09 Defective Concrete

- a. Cut out, remove and replace, or repair to the satisfaction of NOR, concrete not meeting minimum strength, not formed as indicated, not true, plumb or level, not to required elevations, containing cracks detrimental to performance or appearance, and containing shavings, debris, honeycombs or voids.
- b. Promptly perform work required to repair, patch, replace, render properly cleaned surfaces (by sandblasting, if necessary) or otherwise make good any defective concrete, at Contractor's expense, including expense of additional inspection, tests or supervision made necessary as a result of defective concrete.

END OF SECTION

SECTION 03 35 00 CONCRETE FINISHING

PART I – GENERAL

1.01 Description

- a. Work Included: Provide finishes on cast-in-place concrete as called for on the Drawings, specified herein, and needed for a complete and proper installation. The provisions of the General and Supplementary Conditions and Division One apply to this section.
- b. Related Work:
 - (1) Formwork - Section 03 10 00
 - (2) Cast-in-Place Concrete - Section 03 30 00

1.02 Quality Assurance

- a. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
- b. Except as may be modified herein or otherwise directed by NOR, comply with the pertinent recommendations of the American Concrete Institute (ACI) 301 - Specifications for Structural Concrete for Buildings.

PART II – PRODUCTS

2.01 Materials

- a. General: Carefully study the Drawings and these Specifications, and determine the location, extent and type of required concrete finishes.
- b. Concrete Materials: Comply with pertinent provisions of Section 03 30 00, except as may be modified herein.
- c. Curing Materials:
 - (1) Where application of specified finish materials will be inhibited by use of curing agents, cure the surface by water only; do not use chemical cure.
 - (2) The curing compound for site work paving (concrete curb and gutters, streets, parking lots, etc.) shall meet ASTM 309, Type II, Class A or B; limited to a maximum solvent content of 1.00 lbs. per gallon (120g/l). Subject to compliance, provide "Sealtight 1600 WHITE or 1200 WHITE," W. R. Meadows of California (800) 342-5976 or equal.
 - (3) Standard Curing Compound: For interior and exterior concrete surfaces, provide clear dissipating-resin type concrete curing compound meeting ASTM C309, Type I, Class B, limited to a maximum solvent content of 1.00 lbs. per gallon (120 g/l). Subject to compliance, provide "Sealtight 1100 CLEAR," W. R. Meadows of California or equal.

- (4) Curing, Sealing, Hardening and Dustproofing Compound: For interior and exterior concrete surfaces to be left exposed, provide an acrylic-resin curing and sealing compound meeting ASTM C309, Type I, Class B; limited to a maximum solvent content of 0.75 lbs. per gallon (90 g/l). Subject to compliance, provide "Sealtight VOCOMP-20/25 System," W. R. Meadows of California or equal.
 - (5) Final Floor Sealer: The final coat of concrete floor sealer for exposed surfaces shall be an acrylic-resin compatible with the original curing compound; limited to a maximum solvent content of 0.75 lbs. per gallon (90 g/l). Subject to compliance, provide "Sealtight VOCOMP-25," W. R. Meadows of California or equal.
 - (6) Curing and Hardening Compound: Penetrating sodium silicate curing and hardening compound shall be "Sealtight CURE-HARD," W. R. Meadows of California or equal.
 - (7) Hardener/Sealer: The hardener/sealer shall be an aqueous solution containing a blend of magnesium fluosilicate and/or zinc fluosilicate combined with a wetting agent, containing not less than 2 lbs. of fluosilicate per gallon. Provide "Pena-Lith," W. R. Meadows of California or equal.
- d. Waterstops: Provide polyvinylchloride (PVC) waterstops conforming to the Corps of Engineers Specification CRD-572. Contractor shall furnish and install size as shown in the working drawings. Quality assurance: "Sealtight PVC or DUO-PVC WATERSTOPS," W.R. Meadows of California.
 - e. Grouting Materials:
 - (1) Non-shrink, Non-Metallic, Non-Gassing Grout: Provide high-strength, flowable precision grout conforming to Corps of Engineers Specification CRD-621 and ASTM C1107. Subject to compliance, provide products equal to "Sealtight 588 GROUT," W. R. Meadows, Inc.; "Sealtight CG-86 GROUT," W. R. Meadows, Inc.
 - (2) Dry Pack: Provide non-shrink, non-metallic, non-gassing, high-strength precision grouting material specifically formulated to be used in dry pack installations. Subject to compliance, provide "PAC-IT GROUT," W. R. Meadows of California or equal.
 - (3) Epoxy Grout: Provide multi-component, chemical resistant epoxy grouting material specifically designed for anchoring machinery base plates. Subject to compliance, provide "REZI-WELD EPOXY GROUT," W.R. Meadows of California or equal.
 - f. Epoxy Adhesives (bonding, patching, anchoring rebar, dowels, bolts, etc., into concrete): Provide epoxy adhesives conforming to ASTM C881; Types I, II; Grades I, II, III; Class B & C. Use epoxy (grades) applicable to job requirements. Subject to compliance, provide "REZI-WELD 1000, LV, or Gel Past," W. R. Meadows of California or equal.

2.02 Other Materials

- a. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of NOR.

PART III – EXECUTION

3.01 Surface Conditions

- a. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 Finishing Slabs

- a. Definition of Finishing Tolerances:
 - (1) "Class A": True plane within 1/8" in ten (10) feet as determined by a ten (10) foot straightedge placed anywhere on the slab in any direction.
 - (2) "Class B": True plane within 1/4" in ten (10) feet as determined by a ten (10) foot straightedge placed anywhere on the slab in any direction.
 - (3) "Class C": True plane within 1/4" in two (2) feet as determined by a two (2) foot straightedge placed anywhere on the slab in any direction.
- b. Scratched Finish: After the concrete has been placed, consolidated, struck off and leveled to a "Class C" tolerance, roughen the surface with stiff brushes or rakes before the final set.
- c. Floated Finish:
 - (1) After the concrete has been placed, consolidated, struck off and leveled, do not work the concrete further until ready for floating.
 - (2) Begin floating when the water sheen has disappeared and when the surface has stiffened sufficiently to permit the operation.
 - (3) During or after the first floating, check the planeness of the surface with a ten (10) foot straightedge applied at not less than two (2) different angles.
 - (4) Cut down high spots and fill low spots, and produce a surface with a "Class B" tolerance throughout.
 - (5) Refloat the slab immediately to a uniform sandy texture.
- d. Troweled Finish:
 - (1) Provide a floated finish as described above, followed by power troweling and/or hand troweling.
 - A. Produce an initial surface which is relatively free from defects, but which still may show some trowel marks.
 - B. Provide hand troweling when a ringing sound is produced as the trowel is moved over the surface.
 - C. Thoroughly consolidate the surface by hand troweling.

- (2) Provide a finished surface essentially free from trowel marks, uniform in texture and appearance and in a plane of "Class A" tolerance.
- e. Broom Finish:
- (1) Provide a troweled finish as described above.
 - (2) While the surface is still plastic, provide a textured finish by drawing a fiber bristle broom uniformly over the surface.
 - (3) Unless otherwise directed by NOR, provide the texturing in one direction only, perpendicular to the direction of travel for walkways.
 - (4) Provide "light," "medium" or "coarse" broom texturing as directed by NOR or otherwise called for on the Drawings.
- f. Unspecified Finish: If the finish of slab surfaces is not specifically called for elsewhere in the Contract Documents, provide the following finishes as applicable:
- (1) Scratched finish for surfaces scheduled to receive bond-applied cementitious applications.
 - (2) Floated finish for surfaces intended to receive roofing.
 - (3) Troweled finish for interior floors intended as walking surfaces, floors scheduled to receive floor covering or waterproof membrane.
 - (4) Broom finish for exterior pedestrian walkways.
 - (5) Coarse broom finish for platforms, steps, landings and exterior pedestrian ramps.

3.03 Finishing of Formed Surfaces

- a. General:
- (1) After placement of the concrete and removal of formwork, give the concrete surfaces one or more of the finishes specified below where so indicated on the Drawings.
 - (2) Revise the finishes as needed to secure the approval of NOR.
- b. As-Cast Finish:
- (1) Rough Form Finish:
 - A. Leave surfaces with the texture imparted by forms, except patch tie holes and defects.
 - B. Remove fins exceeding ¼" in height.
 - (2) Smooth form finish
 - A. Coordinate as necessary to secure form construction using smooth, hard, uniform surfaces, with number of seams kept to a practical minimum and in a uniform and orderly pattern.
 - B. Patch tie holes and defects.
 - C. Remove fins completely.

- D. Do not use a cement grout other than the cement paste drawn from the concrete itself by the rubbing process.
- c. Rubbed Finishes:
- (1) Provide these finishes only where specifically called for, and then only on a "smooth form finish" base as described above.
 - (2) Smooth Rubbed Finish:
 - A. Produce on newly hardened concrete no later than the day following form removal.
 - B. Wet the surfaces and rub with carborundum brick or other abrasive until a uniform color and texture are produced.
 - C. Do not use a cement grout other than the cement paste drawn from the concrete itself by the rubbing process.
 - (3) Grout Cleaned Finish:
 - A. Do not start cleaning operations until all contiguous surfaces to be cleaned are completed and accessible.
 - B. Do not permit cleaning as the work progresses.
 - C. Mix one part Portland cement and 1½ parts fine sand with sufficient water to produce a grout having the consistency of thick paint.
 - D. Substitute white Portland cement for part of the gray Portland cement as required to produce a color matching the color of surrounding concrete as determined by a trial patch.
 - E. Wet the surface of the concrete sufficiently to prevent absorption of water from the grout, and apply the grout uniformly with brushes or spray gun.
 - F. Immediately after applying the grout, scrub the surface vigorously with a cork float or stones to coat the surface and fill all air bubbles and holes.
 - G. While the grout is still plastic, remove all excess grout by working the surface with a rubber float, sack or other means.
 - H. After the surface whites from drying (about 30 minutes at normal temperatures), rub vigorously with clean burlap.
 - I. Keep the surface damp for at least 36 hours after final rubbing.
- d. Stamped Colored Concrete:
- (1) Rough Form Finish:
 - A. Leave surfaces with the texture imparted by forms, except patch tie holes and defects.
 - B. Remove fins exceeding ¼" in height.
 - C. Dust on colors – Davis color.

- D. Rubber mat stamp.
- e. Unspecified Finish: If the finish of formed surfaces is not specifically called out elsewhere in the Contract Documents, provide the following finishes as applicable.
 - (1) Rough form finish for all concrete surfaces not exposed to public view.
 - (2) Smooth form finish for all concrete surfaces exposed to public view.

3.04 Finish Schedule

- a. Walkway Slab Final Finish: Medium broom finish applied perpendicular to the direction of traffic.
- b. Basketball Slab Final Finish: Steel troweled swirl finish, scalloped pattern, medium texture for sports traction.
- c. Mow curbs Final Finish: Medium broom finish perpendicular to run of the curb.
- d. Play Area Curbing Final Finishing: Concrete surfaces to be left permanently exposed shall be patched and then honed smooth, rubbed and sacked.
- e. Tennis Court: Texture as required by "Cushion Coat" system or approved equal.
- f. Water Play Area Final Finish: Exposed aggregate finish for slip resistance. Aggregate shall be pea gravel type without sharp edges.

3.05 Curing and Protection

- a. Beginning immediately after placement, protect concrete from premature drying, excessively hot and cold temperatures, and mechanical injury.
- b. Preservation of Moisture:
 - (1) Unless otherwise directed by NOR, apply one of the following procedures to concrete not in contact with the forms, immediately after completion of placement and finishing.
 - A. Ponding or continuous sprinkling.
 - B. Application of absorptive mats or fabric kept continuously wet.
 - C. Application of sand kept continuously wet.
 - D. Continuous application of steam (not exceeding 150 degrees F) or mist spray.
 - E. Application of other moisture retaining covering as approved by NOR.
 - F. Application of the curing agent specified in PART II of this section or elsewhere in the Contract Documents.
 - (2) Where forms are exposed to the sun, minimize moisture loss by keeping the forms wet until they can be removed safely.
 - (3) Cure concrete by preserving moisture as specified above for at least seven days.

c. Temperature, wind and humidity:

(1) Cold Weather:

- A. When the mean daily temperature outdoors is less than 40 degrees F, maintain the temperature of the concrete between 50 and 70 degrees F for the required curing period.
- B. When necessary, provide proper and adequate heating system capable of maintaining the required heat without injury due to concentration of heat.
- C. Do not use combustion heaters during the first 24 hours unless precautions are taken to prevent exposure of the concrete to exhaust gases which contain carbon dioxide.

(2) In hot weather, when necessary, provide proper wind breaks, fog spraying, shading, sprinkling, ponding, or wet covering with a light colored material, applying as quickly as concrete hardening and finishing operations will allow.

(3) Rate of Temperature Change. Keep the temperature of the air immediately adjacent to the concrete during and immediately following the curing period as uniform as possible and not exceeding a change of 5 degrees F in any one hour period, or 50 degrees F in any 24 hour period.

d. Protection From Mechanical Injury:

- (1) During the curing period, protect the concrete from damaging mechanical disturbances such as heavy shock, load stresses, and excessive vibration.
- (2) Protect finished concrete surfaces from damage from construction equipment, materials, and methods, by application of curing procedures and by rain and running water.
- (3) Do not load self-supporting structures in such a way as to overstress the concrete.

END OF SECTION

SECTION 31 00 00 EARTHWORK AND GRADING

PART I – GENERAL

1.01 Description

a. Work Included:

- (1) These Specifications and Plans describe earthwork pertaining to site grading, including, but not limited to, furnishing all labor and equipment necessary for clearing and grubbing; stripping; preparation of ground surfaces to receive fill; excavation; placement and compaction of structural and non structural fill; disposal of excess materials and products of clearing, grubbing and stripping; and any other work necessary to bring ground elevations to the lines and grades shown on the Project Plans. The Contractor shall be responsible for survey staking of grades and locating of all site improvements. It is the intent that cut and fill shall balance on the site with no haul off or haul in required. To accommodate minor discrepancies of 10% or less, grades may be so modified as approved by NOR's Planning and Construction Director, to achieve a balanced earthwork project. All new grades shall meet existing grades at streets and property lines. It is essential that all new slopes be established so that smooth transitions are maintained to permit easy mowing by reel type lawn mowers. Grading along walks shall be performed so as to eliminate or greatly reduce erosion of earth onto walks, into the street, etc.
- (2) Trenching, excavations, backfill and compaction as required for utilities, sitework, footings and foundations.
- (3) When grading is considered complete, the Contractor shall sufficiently stake and/or mark location of all future improvements so that NOR's representative can verify grading will accommodate future development. Locations shall at a minimum locate all structures, recreational elements, parking and walkway centerlines.

b. Related Work Described Elsewhere:

- | | |
|-------------------------------|------------------|
| (1) Selective Site Demolition | Section 02 41 19 |
| (2) Cast-in-Place Concrete | Section 03 30 00 |
| (3) Planting | Section 32 90 00 |

1.02 Quality Assurance

- a. Refer to Section 01 45 00 - Testing Laboratory Services.
- b. Requirements of Regulatory Agencies: Conform to the latest addition of the Uniform Building Code, Chapter 70, "Excavation and Grading," as adopted or modified by local jurisdiction.
- c. Testing Agent: The Soils Testing Agency shall be notified 48 hours prior to the commencement of any earthwork which is critical or which requires the use of a testing agency. Earthwork testing shall be performed and reported according to the following outline:
 - (1) Visually approve fill material; perform suitability tests if required.
 - (2) Supervise placement of controlled fills and backfills. Perform field density tests as required.

- (3) Inspect and approve completed and prepared excavations.

1.03 Definitions

- a. Excavation: Excavation shall be defined within the context of these Specifications as earth material excavated for the purpose of construction fill embankment; grading the site to elevations shown on Project Plans; or placing underground pipelines, conduits, or other subsurface utilities or minor structures. Excavations shall be made true to the line shown on Project Plans and to within plus or minus one-tenth (0.1) of a foot, of grades shown on the accepted site grading plans.
- b. Compaction or Compacted: Wherever expressed or implied within the context of these Specifications shall be interpreted as compaction to ninety (90%) percent of the maximum density obtainable by ASTM TEST METHOD D1557-78 (METHOD A), such as subgrade preparation under slabs, walks and baseball infields. Open areas to receive turf and trees shall be compacted eighty to eighty-five (80-85%) percent tested by the same ASTM TEST. Streets and parking lot areas shall be compacted to ninety-five (95%) percent, unless otherwise specified. It shall in any event be in conformance with the encroachment permit requirements.
- c. Grading Plane: The grading plane is the surface of the basement material upon which the lowest layer of subbase, base, pavement, surfacing or other specified layer is placed.

PART II – PRODUCTS

2.01 Materials

- a. Fill and Backfill Materials:
 - (1) Provide soil materials free from organic matter and deleterious substances, containing no rocks or lumps over six (6") inches in greatest dimension, and with not more than fifteen percent (15%) of the rocks or lumps larger than two and three eighths inches (2-3/8") in their greatest dimension.
 - (2) Fill material is that material removed from excavations or imported from off-site borrow areas consisting predominantly of granular, non-expansive soils free from roots and other deleterious matter. Fill material is subject to the approval of the Soils Engineer.
 - (3) Do not permit rocks having a dimension greater than one (1") inch in the upper twelve (12") inches of fill or embankment.
 - (4) Cohesionless material used for structural backfill: Provide sand free from organic material and other foreign matter, and as approved by the Soils Engineer.
 - (5) Where granular base is required under building slabs, pavement, etc., provide aggregate complying with requirements of the appropriate sections of these Specifications.
- b. Engineered Fill: Engineered fill shall be construed within the body of these Specifications as soil or soil-rock mixtures placed to raise the grade of the site or to backfill excavations and upon which the Soils Engineer has performed sufficient tests and has made sufficient observation during placement to issue a written statement confirming substantial conformance with Project Earthwork Specifications.
- c. Topsoil:
 - (1) Where and if shown on the Drawings or otherwise required, provide topsoil consisting of friable, fertile soil of loamy character, containing an amount of organic matter normal to the region,

capable of sustaining healthy plant life, and reasonably free from subsoil, roots, heavy or still clay, stones larger than two (2") inches in greatest dimension, noxious weeds, sticks, brush, litter, and other deleterious matter.

- (2) Obtain topsoil from sources within the project limits, or provide imported topsoil obtained from sources outside the project limits, or from both sources. Soils from outside the project limits must be approved by NOR.
- d. Weed Killer: Where required on the Plans, provide a dry, free-flowing, dust-free chemical compound, soluble in water, capable of inhibiting growth of vegetation, and approved for use on this Work by governmental agencies having jurisdiction.

PART III – EXECUTION

3.01 General

- a. Verify drawing dimensions and elevations with actual field conditions. Inspect related work and adjacent surfaces and report discrepancies and conditions which prevent proper execution of the work to NOR.
- b. Utilities:
 - (1) Unless shown to be removed, protect active utility lines shown on the Drawings or otherwise made known to the Contractor prior to excavating. If damaged, repair or replace at no additional cost to NOR.
 - (2) If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted. Costs for this work will be handled as extra work.
 - (3) If known utility service is interrupted as a result of work under this section, immediately restore service by repairing the damaged utility at no additional cost to NOR.
 - (4) If existing utilities are found to interfere with the permanent facilities being constructed under this section, immediately notify NOR and secure instructions.
 - (5) Do not proceed with permanent relocation of utilities until written instructions are received from NOR.
- c. Dust and Noise Abatement: During the entire period of construction keep the Project area and/or material being loaded or graded sprinkled with water to reduce airborne dust annoyance to premises and surroundings. Equipment or employee generated noise shall be kept to a reasonable level associated with construction.

3.02 Subgrade Improvement

- a. Clearing: Strip site area of any topsoil containing vegetation, trees and roots, organic matter, metal, broken concrete, trash, and other debris, and dispose of it as specified.
- b. Preparation of Areas Receiving Fill: Surfaces to receive fill shall be scarified to a depth of at least twelve (12") inches and, until the surface is free from ruts, hummocks or other uneven features which would tend to prevent uniform compaction by the equipment to be used. After the area to receive fill has been cleared and scarified, it shall be moistened and compacted to a depth of at least twelve (12") inches in accordance with specifications for compacting fill material.

3.03 Excavation

- a. **Checking Layout:** Contractor shall, before commencing the excavation work, check all lines, stakes and levels for dimensions, angles, elevations and grades with its surveyor.
- b. **Dimensions:** Excavate to proper dimensions as shown within a tolerance of 0.1 foot, cut square and smooth through all materials encountered with level firm bottoms. Prepared excavations shall be inspected and approved by Soils Testing Agency. Excavations shall be free of loose or disturbed materials.
- c. **Excess Water Control:** Keep all excavations free from standing water by pumping, draining or providing proper protection against water intrusion. If soil becomes soft, soggy or saturated perform additional excavation to firm soil not affected by water at no additional expense.
- d. **Form Removal:** Make all excavations of sufficient size to permit installation and removal of forms and all other required work.
- e. **Alternate Forming:** Sides of footings may be formed by neat excavations where banks will stand without caving and the neat trenches are cut one inch wider on each side than the footing dimension indicated on the Drawings. If banks cave, form footings and widen trenches to permit forming, bracing and inspection, minimum 1'0" each side. Form all grade beams.
- f. **Satisfactory Excavated Materials:** Transport to, and place in, fill or embankment areas within the limits of work.
- g. **Unsatisfactory Excavated Materials:**
 - (1) Excavate to a distance below grade as directed by the Soils Engineer, and replace with satisfactory materials.
 - (2) Include excavation of unsatisfactory materials, and replacement by satisfactory materials, as parts of the work of this section.
- h. **Surplus Materials:** Dispose of unsatisfactory excavated material, and surplus satisfactory excavated material, away from the site at disposal areas arranged and paid for by the Contractor.
- i. **Excavation of Rock:**
 - (1) Where rocks, boulders, granite, or similar material is encountered, and where such material cannot be removed or excavated by conventional earth moving or ripping equipment, take required steps to proceed with the general grading operations of the Work, and remove or excavate such material by means which will neither cause additional cost to NOR, nor endanger buildings or structures whether on or off the site.
 - (2) Use of explosives is not permitted by NOR.
- j. Excavate and backfill in a manner and sequence that will provide proper drainage at all times.
- k. **Borrow:** Obtain material required for fill or embankment in excess of that produced within the grading limits of the Work from borrow areas selected and paid for by the Contractor and approved by the Soils Engineer.

I. Ditches and Gutters:

- (1) Cut accurately to the cross sections, grades and elevations shown.
- (2) Maintain excavations free from detrimental quantities of leaves, sticks, trash and other debris until completion of the Work.
- (3) Dispose of excavated materials as shown on the Drawings or directed by the Soils Engineer; except do not, in any case, deposit materials less than 3'0" from the edge of a ditch.

m. Unauthorized Excavation:

- (1) Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific instruction from NOR or the Soils Engineer.
- (2) Under footings, foundations or retaining walls:
 - A. Fill unauthorized excavations by extending the indicated bottom elevation of the footing or base to the excavation bottom, without altering the required top elevation.
 - B. When acceptable to the Soils Engineer, lean concrete fill may be used to bring the bottom elevation to proper position.
- (3) Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations, unless otherwise directed by the Soils Engineer.

n. Stability of Excavations:

- (1) Slope sides of excavations to 1:1 or flatter, unless otherwise directed by the Soils Engineer.
- (2) Shore and brace where sloping is not possible because of space restrictions or stability of the materials being excavated.
- (3) Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

o. Shoring and Bracing:

- (1) Provide materials for shoring and bracing as may be necessary for safety of personnel, protection of work and compliance with requirements of governmental agencies having jurisdiction.
- (2) Maintain shoring and bracing in excavations regardless of the time period excavations will be open.
- (3) Carry shoring and bracing down as excavation progresses.

p. Excavating for Pavements: Cut surface under pavements to comply with cross sections, elevations and grades.

q. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F.

3.04 Backfilling

a. General:

- (1) For each classification listed below, place acceptable soil material in layers to required subgrade elevations.
- (2) In excavations use satisfactory excavated or borrow material.
- (3) Under asphalt pavements use subbase material, if required.
- (4) Under building slabs use granular fill, if so called for on the Drawings, complying with aggregate acceptable under Section 03 30 00 of these Specifications.

b. Backfill excavations as promptly as progress of the Work permits, but not until completion of the following:

- (1) Acceptance of construction below finish grade including, where applicable, damp-proofing and waterproofing.
- (2) Inspecting, testing, approving and recording locations of underground utilities.
- (3) Removing concrete formwork.
- (4) Removing shoring and bracing, and backfilling of voids with satisfactory materials.
- (5) Removing trash and debris.
- (6) Placement of horizontal bracing on horizontally supported walls.

c. Material: Use the material from the excavations for backfilling, subject to approval by the Testing Agency. The earth shall be free from debris, large clods or stones.

d. Lifts: Place backfill in six (6") inch loose layers, bring to optimum moisture content and compact to required maximum density, sloping down and away from any building.

- (1) Field density tests shall be made by the Soils Engineer. The compaction of each layer of fill shall be subject to testing. Where sheepfoot rollers are used, the soil may be disturbed to a depth of several inches. Density tests shall be taken in the compacted material below the disturbed surface. When tests indicate the density of any layer of fill or portion thereof is below the required density, the particular layer or portion shall be re-worked until the required density has been obtained.
- (2) The fill operation shall be continued in six (6") inch compacted layers, as specified above, until the fill has been brought to within 0.1 foot, plus or minus of the finished slopes and grades as shown on the accepted plans. The finished surface of fill areas shall be graded or bladed to a smooth and uniform surface and no loose material shall be left on the surface of areas receiving structures, slabs, street improvements or parking lot.
- (3) No fill material shall be placed, spread or compacted while it is frozen or thawing or during unfavorable weather conditions. When work is interrupted by weather conditions, fill operations shall not be resumed until the moisture content and density of previously placed fill are satisfactory.

- (4) Backfill placed in narrow, restricted areas such as utility trenches, may be placed in 12 to 18 inch lifts provided the required compaction is obtained.
- e. Compacting:
- (1) Control soil compaction during construction to provide the minimum percentage of density specified for each area as determined according to ASTM D1557-78 (Method A).
 - (2) Provide not less than the following maximum density of soil material compacted at optimum moisture content for the actual density of each layer of soil material in place, and as approved by the Soils Engineer.
 - (3) Structures: Compact the top eight (8") inches of subgrade and each layer of fill material or backfill material at 90% of maximum density.
 - (4) Lawn and unpaved areas:
 - A. Compact the top eight (8") inches of subgrade and each layer of fill material or backfill material at 90% of maximum density.
 - B. Compact the upper twelve (12") inches of filled areas, or natural soils exposed by excavation, at 85% of maximum density.
 - (5) Walks: Compact the top eight (8") inches of subgrade and each layer of fill material or backfill material at 90% of maximum density.
 - (6) Pavements: Compact the top eight (8") inches of subgrade and each layer of fill material or backfill material at 95% of maximum density.
- f. Moisture:
- (1) Rigidly control the amount of water used to ensure optimum moisture conditions for the type of fill material used. Excessive amounts of water causing saturation of earth will not be permitted. Compaction by flooding or jetting is prohibited.
 - (2) Remove and replace, or scarify and air dry, soil material that is too wet to permit compacting to the specified density.
 - (3) Soil material that has been removed because it is too wet to permit compacting may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value as determined by moisture-density relation tests approved by the Soils Engineer.

3.05 Grading

- a. Slopes: Grade to finish elevations indicated on Drawings, build high at buildings, sloping down and away from building lines at all points, with uniform slopes between all points. Where a change of slope is indicated on the Drawings, construct a rolled transition section having a minimum radius of approximately 8'0", unless adjacent construction will not permit such a transition, or if such a transition defeats positive control of drainage.
- b. Subgrades: Blade to required grade and roll or tamp subgrades for exterior slabs and paving.
- c. Finish Grades: Finish grades of lawn and planted areas shall be as follows: One and one-half (1½") inch below walk grades and four (4") inches below tops of planter walls inside planting areas.

3.06 Trenching

- a. General: Perform all trenching required for installation of items where the trenching is not specifically described elsewhere. Make all trenches open vertical construction with sufficient width to provide free working space on both sides of the trench and around the installed items.
- b. Depths: Trench as required to provide the elevations shown on the Drawings. Where elevations are not indicated on Drawings, trench to sufficient depth to give a minimum of eighteen (18") inches cover.
- c. Bracing: Properly support all trenches in strict accordance with all pertinent rules and regulations. When work is completed remove all required bracing before backfilling.

3.07 Maintenance

- a. Protection of Newly Graded Areas:
 - (1) Protect newly graded areas from traffic and erosion, and keep free from trash and weeds.
 - (2) Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances.
- b. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction.

3.08 Cleanup

- a. Disposal: Haul rubbish, debris and rocks away from site promptly and dispose of legally. Burning rubbish on site is prohibited.

END OF SECTION

SECTION 31 10 00 SITE CLEARING

PART I – GENERAL

1.01 Description

- a. Contractor shall furnish all labor, services, materials, tools, equipment, appliances, trucks and all other appurtenances necessary for the safe demolition and/or removal of site features and for the maintenance of the existing conditions, as shown on Drawings.

1.02 Scope of Work

- a. General: Refer to Drawings for a graphic representation of all areas to be demolished, and/or salvaged.
- b. The demolition consists of saw cutting and removing existing paving and base, gates, posts and footings, planting, concrete and asphalt debris, and all items as designated on the Plans.
- c. The demolition work to be performed under this Contract includes the removal and disposal of all designated items and debris.

1.03 Related Sections

- a. Section 31 00 00 – Earthwork and Grading

1.04 Regulatory Requirements

- a. Conform to City, State and Federal codes for disposal and debris.

PART II – PRODUCTS (NOT USED)

PART III – EXECUTION

3.01 Protection

- a. Protect active sewer, water, gas, electric and other utilities; and drainage system indicated or, when not indicated, found or otherwise made know to the Contractor before or during demolition work. If utility is damaged, immediately notify the City Representative and the utility owner for corrective action.
- b. Protect all trees, plant materials and lawn areas that are to remain. Water trees, plant materials and lawn areas that are to remain for the duration of the contract. The contractor shall replace at his own expense and plant material or existing lawn that is damaged as a result of construction or a lack or irrigation.
- c. Provide temporary fencing, signage and flag persons as necessary for pedestrian traffic control prior to beginning demolition.

3.02 Demolition Requirements

- a. Cease operations immediately if adjacent structures appear to be in danger. Notify Owner and do not resume operation until directed.
- b. Conduct operations with minimum interference to public or private access. Maintain protected egress and access at all times.
- c. Ensure safety of persons and adjacent property against damage by falling debris or other causes in connection with this work.
- d. Demolish any concrete in small sections.
- e. Protect from damage existing parts of work to remain.
- f. Promptly remove from the site all demolished material in a neat, orderly manner.

3.03 Clearing and Grubbing

- a. Perform clearing and grubbing as necessary to remove vegetation, shrubs, small trees and objectionable material from the site. Clear the site within the limits indicated and remove cleared materials and debris from the site.
- b. For small trees and large shrubs remove all root mass and grind stumps to 24" (minimum) below finish grade. Backfill voids with approved backfill and topsoil per the Specifications.
- c. Coordinate any salvaging of materials, construction backfill or planting soils with work in Section 31 00 00 – Earthwork and Grading

3.04 Concrete Removal

- a. Remove all concrete debris
- b. Remove excess topsoil or fill as required to complete finish grades as shown on plans.

3.05 Salvage

- a. Items to be salvaged are indicated on the Plans. Repair or replace to the satisfaction of the Owner, any item damaged due to Contractor's negligence.

3.06 Disposal of Debris

- a. Dispose of all removed material in a legal manner. Burning or burying of material on site is strictly prohibited.

3.07 Restoration and Cleanup

- a. Reuse all site soil to establish finish grades.
- b. Repair and clean adjacent surfaces damaged or soiled by demolition work.
- c. Restore utility service to normal operation
- d. Remove equipment, temporary protection and barriers and debris.

END OF SECTION

3.02 Clean Up

- a. Keep all areas of work clean, neat and orderly at all times.
- b. Clean up and remove all debris from the entire work area prior to final acceptance and execution of the Certificate of Completion.

END OF SECTION

SECTION 31 31 00 SOIL TREATMENT

PART I – GENERAL

1.01 Description

- a. **Work Included:** The work includes, but is not necessarily limited to, the furnishing and application of all materials necessary to provide soil sterilization for both termite and weed control as may apply to this Project as specified herein. The General Conditions and Division 1 are a part of this section and the Contract for this work and apply to this section as fully as if repeated here.

1.02 Product/Application/Guarantee

- a. **Termite:** Provide a chemical barrier of 1% Dursban TC water emulsion under entire surface of floor slabs, entrance platforms, and along all expansion or cold joints in these slabs, to a depth of 12 inches. Apply at the rate of 1 gallon per 10 square feet at critical areas. Alternate products may be used with approval of NOR. A written guarantee will be furnished providing that the building shall be guaranteed against subterranean termite infestation for a period of five years from treatment date and any evidence of infestation within guarantee period shall be treated at no cost to NOR.
- b. evidence of infestation within guarantee period shall be treated at no cost to NOR.
- c. evidence of infestation within guarantee period shall be treated at no cost to NOR.
- d. **Time of Application:** Sufficient notice shall be given to permit the soil poisoning application to be made at least 12 hours prior to the placing of concrete over the treated areas. In order to avoid surface flow of the insecticide from the application site, treatment shall neither be made after heavy rain nor when the soil is excessively wet. The application shall be made after all phases of preparation for the floor slab placement have been completed, and after there will be no further disturbance of the treated area. The application shall be made prior to the placement of the vapor barrier. Application shall be made at the close of a working day or at the beginning of a working day prior to being immediately covered in order to protect the area. Unless the treated areas are to be immediately covered, precautions shall be taken to prevent disturbance of the treatment by human or animal contact with the treated soil. Warning signs shall be posted at the time of application indicating that chemical treatment has taken place, noting type of chemical, date, time, company, and telephone numbers to reach in an emergency. Application shall be made during normal working hours in order to be subject to inspection. The inspector shall be permitted to take samples of the materials being applied, in order to verify the rate of application and the proportions and quantities of materials being used.

END OF SECTION

SECTION 31 31 19 VEGETATION CONTROL

PART I – GENERAL

1.01 Summary

a. Inclusions:

- (1) Provisions set forth in Divisions 00 and 01
- (2) Pre-construction vegetation control
- (3) Clean up

b. Related Work Described Elsewhere:

- (1) Earthwork and Grading – Section 31 00 00
- (2) Cast-in-Place Concrete – Section 03 30 00

c. Performance Requirements

- (1) Sterilization shall prevent seed germination and plant growth, under paving, sidewalks, curbs, gutters, and other areas indicated on the drawings.

1.02 Submittals

a. Product or Material Data

- (1) Submit copies of material data sheets to the Architect/Owner for review prior to application.

1.03 Quality Assurance

a. Qualifications

- (1) Application shall be performed by an applicator approved by the chemical manufacturer.

b. Regulatory Compliance

- (1) Comply with regulations governing the storage and application of these materials.
- (2) Conform to the State of California requirements for licensure and authority to use toxicant chemicals.

c. Delivery, Storage and Handling

- (1) Store materials in strict conformance with the manufacturer's written recommendations and government regulations.

d. Environmental Requirements

- (1) Apply materials only under environmental conditions within the manufacturer's range of recommend conditions.

PART II – PRODUCTS

2.01 Materials

- a. Use one of the following materials in working solution in strict conformance with governmental regulations:

- (1) Type One – Under paving, sidewalks, curbs, gutters, etc.

- i. Dupont Co., Oust; Monobar Clorate; or approved equal.

- (2) Type Two – Under paving, sidewalks, curbs, gutters within five (5) feet of landscape areas.

- i. Dyclomec AG, PBI/Gordon Corporation; Treflan; or approved equal.

PART III – EXECUTION

3.01 Examination

- a. Examine the area upon which work is to be performed.

- (1) Correct detrimental conditions prior to application.

3.02 Installation or Application

- a. Apply in accordance with the manufacturer's recommendation.

- (1) Apply to area receiving paving, sidewalks, curbs and gutters immediately prior to installation.

- (2) Apply Type Two material to bottom of apparatus yards, jump pits and sand areas immediately prior to installation of protective surfacing.

3.03 Protection or Adjustments

- a. Take precautions to protect adjoining property and areas designated for planting.

END OF SECTION

SECTION 32 05 23

CEMENT AND CONCRETE FOR EXTERIOR IMPROVEMENTS

PART I - GENERAL

1.01 Description

- a. Work Included: Provide cast-in-place concrete where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including:
 - (1) Identified site flatwork.
 - (2) Provisions of the General and Supplementary Conditions and Division One apply here.

1.02 Quality Assurance

- a. Test of Materials: When requested by NOR, all concrete materials shall be tested by an approved testing laboratory. Tests will certify that the following criteria are met:
 - (1) Mix Design: The concrete supplier shall submit a mix design for approval by NOR prior to any concrete work. Mix designs shall indicate source of aggregate and brands of cement and admixtures used. Laboratory designed mixes shall be based on the following minimum proportions:

Class "B": 2500 psi, maximum size of aggregate 1 inch minimum 5.5 sacks (94 lb.) cement per cubic yard of concrete; or 2500 psi, maximum size of aggregate 1½ inch, minimum 5.25 (94 lb.) sacks of cement per cubic yard of concrete.

Class "A": 3000 psi, maximum size of aggregate 1 inch, minimum 5.75 sacks (94 lb.) cement per cubic yard of concrete; or 3000 psi, maximum size of aggregate 1½ inch, minimum 5.50 (94 lb.) sacks of cement per cubic yard of concrete.
 - (2) Slump: The amount of water in the concrete shall be regulated as required to secure concrete of the proper consistency and to adjust for any variation in the moisture content for grading of the aggregate entering the mixer. The slump of the concrete shall not exceed three (3") inches for slabs that are horizontal and four (4") inches for all other concrete. The slump test shall conform to ASTM C143.
 - (3) Concrete Cylinders: Make three (3) identical test cylinders from each one hundred (100) cubic yards of concrete. Test cylinders shall be made and stored in accordance with ASTM C31. Test one (1) cylinder at seven (7) days and two (2) cylinders at twenty-eight (28) days per ASTM C39. Tests will be made on all footings, foundations and structural pours without respect to quantity of concrete. NOR may require tests at anytime.

1.03 Concrete Delivery Slips

- a. The method and time of delivery shall be controlled by the concrete plant issuing delivery slips to the transit mix truck drivers.
- b. These slips shall contain the name and locations of the plant, design strength, size of coarse aggregate, proportions, quantity of water, volume of load, the time that the truck was charged at the plant, and the time mixing was started. Upon arrival at the job site, each slip shall be delivered to the foreman and the foreman shall indicate the number of revolutions mixed and the time the

concrete is discharged from the truck. Properly affixed signatures with date by the concrete vendor and the foreman will complete the form.

- c. It will be the responsibility of the foreman to submit such concrete delivery slips, in their completed form, to NOR for all concrete used.

PART II - PRODUCTS

2.01 General

- a. Concrete shall be composed of cement, fine aggregate, coarse aggregate, and water all mixed and brought to the proper consistency. These mixed proportions shall be determined on the basis of producing concrete having suitable workability, density, impermeability, durability, and shall meet the required compressive strengths as follows:
 - (1) All concrete used for footings and structural purposes slabs shall be class "A" concrete having a minimum compressive strength of at least 3000 psi at 28 days, 1800 psi at 7 days.
 - (2) All other concrete slabs, walkways, mow strips, etc., shall be class "B" concrete having a minimum compressive strength of at least 2500 psi at 28 days, 1500 psi at 7 days.

2.02 Concrete Materials

- a. Portland cement shall conform to ASTM C150, Type II low alkali. Do not change cement type during progress of work without approval of NOR.
- b. Aggregates shall be non-reactive and conform to "Standard Specifications for Concrete Aggregates," ASTM C33.
 - (1) Coarse aggregate shall be 1" to 1/4" washed gravel with fineness modulus, 6.90 to 7.40.
 - (2) Fine aggregate shall be washed natural sand containing no more than 2% by weight of deleterious material and fineness modulus, 2.65 to 3.05.
- c. Water shall be clean, fresh, and free from acid, alkali, organic matter or other impurities likely to be detrimental to the concrete.
- d. Admixtures shall be used only upon approval of NOR and in accordance with the manufacturer's recommendations.
 - (1) Air-entraining admixtures must conform to ASTM C260.
 - (2) Water-reducing admixtures should conform to ASTM C494

2.03 Miscellaneous Materials

- a. Joint Materials and Devices:
 - (1) Keyed Joint: Provide a compressible, premoulded asphalt keyway that will compress and recover during expansion and contraction cycles, fully capable of accommodating load transfer over keyway area. Incompressible steel keyways will not be permitted. Provide SEALTIGHT Premoulded Tongue & Groove Joint or equal, as manufactured by W. R. Meadows of California (800) 342-5976, or equal.

- (2) Standard Expansion Joints: Provide non-extruding, premoulded bituminous impregnated fiber expansion joints to the depth of the slabs meeting ASTM D1751. Provided SEALTIGHT Fibre Expansion Joint, by W. R. Meadows of California or equal.
 - (3) Non-Bituminous Expansion Joints: Provide one or more of the following non-extruding, non-bituminous joints compatible with polyurethane and polysulfide sealants. Quality assurance: Provide products equal to W. R. Meadows products:
 - "SEALTIGHT Sponge Rubber," ASTM D1752, Type 1
 - "SEALTIGHT Standard Cork," ASTM D1752, Type 2
 - "SEALTIGHT Ceramar," ASTM D1752, Modified
 - (4) Removable Joint Cap for Sealant: "Snap-Cap" by W. R. Meadows of California or equal.
 - (5) Control Joints: Shall be a minimum ½" width x 1 = ½" depth tooled or saw cut joints. Control joints may be plastic such as "Speed-E-Joint" or equal.
 - (6) Joint Sealants: Provide type compatible with joint filler.
- b. Bonding Agent: Provide standard polyvinyl acetate bonding agent with a minimum solids content of 55%. Quality Assurance: "DECK-O-WELD," DFC Company or equal.
 - c. Vapor Barrier: Provide vapor barrier over prepared base where indicated on the Drawings. Vapor barrier shall consist of a seven-ply, asphalt composite membrane having a Water Vapor Transmission Rating (WVT) of 0.000 grains per square foot per hour as measured in accordance with ASTM E96, Method B. Vapor barrier shall be resistant to radon gases, designed to last the life of the structure. Provide SEALTIGHT Premoulded Membrane with Plasmatic Core or equal.

2.04 Cement Grout and Drypack

- a. Cement Grout: Mix one part by volume of Portland cement, ½ part by volume of water and fine aggregate enough to make a mixture that flows under its own weight.
- b. Drypack: Mix one part by volume of Portland cement, ½ by volume of water and fine aggregate enough to make a stiff mix that will mold into a ball. Mix no more than can be used in 30 minutes.

PART III - EXECUTION

3.01 Inspection

- a. Inspect the actual field conditions and verify with drawings. Report all discrepancies to NOR before proceeding with this work. Insure that access and safety of the job site are maintained, allowing successful placement of the concrete and minimal disturbance to other work.
- b. Verify the dimensions and positions of required reglets and rebates with trades whose work is related to or contingent upon such dimensions and positions.

3.02 Concrete Mixing

- a. Use fresh ready-mixed concrete complying with other parts of these specifications and conforming to the specification for "Ready Mixed Concrete," ASTM designation C94, subject to the following conditions:

- (1) The mixers and their operation shall be such that the concrete throughout the mixed batch and from batch to batch is uniform with respect to consistency and grade.
 - (2) Each mixer should be equipped with an accurate water meter between supply trough and mixer. The meter shall have an indicating gauge or dial.
 - (3) Each mixer should be equipped with a revolution counter for indicating the amount (not speed) of mixing. The batch should be mixed only 75% of the required number of revolutions at mixing speed prior to inspection of consistency at the point of delivery; then mix the additional revolutions required to obtain the proper slump.
 - (4) Concrete shall be mixed for a period of not less than ten (10) minutes and at least three (3) minutes of the mixing period shall be immediately prior to discharging at the job site.
- b. Addition of Water:
- (1) Normally, do not deliver concrete with total permissible amount of water incorporated therein.
 - (2) Unless otherwise approved by NOR, withhold at least 2½ gallons per cubic yard and add before the concrete is discharged, but only under observation of NOR or designated inspector.
 - (3) After water is added, at least five (5) minutes of mixing time shall occur prior to discharge.
 - (4) Concrete will be rejected if not placed in final position within one (1) hour after water is first added to the batch.
- c. Concrete, at time of placing, shall be in such condition that it can be placed properly. Retempering partially set concrete with additional water will not be permitted.
- d. Cold Weather Requirements: Concrete shall not be placed on frozen ground, nor shall it be mixed or placed while the atmospheric temperature is below 35 degrees F, unless means are employed to heat the aggregates and water so the concrete shall have a minimum temperature of 50 degrees F. The concrete shall then be protected from freezing or frost for a period of five (5) days after placing. Calcium chloride shall not be added to the mix.

3.03 Conveying and Placing Concrete

- a. No concrete shall be placed in any unit of work until all formwork has been completely prepared, all reinforcement has been secured in place, all items to be set into concrete are in place, and form ties at construction joints tightened.
- b. Before placing concrete, mixing and conveying equipment shall be well cleaned, the forms and space to be occupied by concrete shall be thoroughly cleaned, and shall be wetted. Ground water shall be removed until the completion of the work.
- c. Concrete shall be conveyed from mixer to the place of final deposit in such a way to prevent the separation or loss of ingredients. It shall be placed as nearly as practicable in its final position to avoid rehandling or flowing. Concrete shall not be dropped freely where reinforcing bars will cause segregation, nor shall it be dropped freely more than six (6) feet. Use tremies, spouts and dump boxes in deep sections.
- d. Concrete shall be tamped and spaded to ensure maximum density and proper compaction into all voids of forms and around reinforcement. In addition to manual tampers, a mechanical vibrator may be required to thoroughly compact the concrete. Vibration must be by direct action in the concrete and not against forms or reinforcement.

- e. Once concreting is started, it shall be carried on as a continuous operation at such a rate that the concrete surface is at all times plastic and flows readily until the section is completed between predetermined construction joints. Do not place concrete outside of regular working hours unless required inspection authorities have been notified properly and are present.

3.04 Construction Joints

- a. Construction joints to be provided according to normal practices and at locations and in the manner shown on the Drawings.
 - (1) Joints shall meet curves and angles to eliminate narrow pie-shaped pieces that will have a tendency for weakness and easy breaking.
 - (2) Joints in slabs on grade shall be as shown on the plans or shall be spaced a maximum of 24'-0" O.C. for interior reinforced slabs, and 15'-0" for exterior non-reinforced concrete slabs. Joints in exterior reinforced slabs shall be as indicated on the plans. Tool edges of slabs at construction joints and other exposed corners.

3.05 Concrete Slab Placement

- a. Placing and Finishing:
 - (1) Tamp the freshly placed concrete, except slabs to receive separate topping finish or mortar setting bed, using a heavy tamper, until at least 3/8" of mortar is brought to the surface.
 - (2) Use tampers having a face consisting essentially of a grid of parallel metal bars.
 - (3) Tamp with a light tamper and screed with a heavy straightedge, until depressions and irregularities are worked out and the surface is true to finish grades and elevations, keeping in mind the requirement for a positive draining finish surface on all exterior surfaces.
 - (4) Remove excess water and debris worked to the surface in compacting and screeding.
 - (5) For slabs to receive a separate topping finish or mortar setting bed, do not continue tamping to raise the mortar described in subparagraph 3.05-a-3 above.
 - (6) When concrete has hardened sufficiently, float to a compact and smooth surface.
 - (7) Provide the finish surfaces shown on the Drawings.

3.06 Grouting and Cement Pointing

- a. After steel columns have been installed and leveled, drypack the space between the bottom of the plate and concrete, using cement grout driven in to completely fill the space and forming solid bearing for the column base plate.

3.07 Protection and Curing

- a. Concrete shall be protected from injurious action of the elements and defacement of any nature during construction, Contractor to provide watchman after each pour.
- b. All forms shall be kept moist to prevent drying out of the concrete, including earth from excavations or backfill.

- c. All concrete surfaces including footings must be kept wet for at least seven (7) days after concrete is placed.
- d. After concrete has been placed, forms removed and concrete work finished, cured and approved, backfill the excavations with earth to indicated or required grades. Carry on backfilling simultaneously on each side of walls or grade beams.

3.08 Embedded Items

- a. Cooperate with all trades to assure that all embedded items are properly installed and secured in correct position before placing concrete. All embedded items shall be thoroughly cleaned and free from rust, scale, oil or other foreign matter.

3.09 Defective Concrete

- a. Cut out, remove and replace, or repair to the satisfaction of NOR, concrete not meeting minimum strength, not formed as indicated, not true, plumb or level, not to required elevations, containing cracks detrimental to performance or appearance, and containing shavings, debris, honeycombs or voids.
- b. Promptly perform work required to repair, patch, replace, render properly cleaned surfaces (by sandblasting, if necessary) or otherwise make good any defective concrete, at Contractor's expense, including expense of additional inspection, tests or supervision made necessary as a result of defective concrete.

END OF SECTION

SECTION 32 31 13 CHAIN LINK FENCES AND GATES

PART I – GENERAL

1.01 Description

- a. Work Included: Provide chain link fences and gates as shown on the Drawings, as specified herein and as needed for a complete and proper installation.
- b. Related Work: Documents affecting work of this section shall include but are not necessarily limited to General Conditions, Supplementary Conditions and Division 1 of these Specifications.

1.02 Submittals

- a. For Submittal requirements, See Section 01 25 00 – Submittal and Substitution Procedures.

1.03 Quality Assurance

- a. Fence framework, fabric and related accessories to be a complete system as specified herein.

PART II – PRODUCTS

2.01 General

- a. Provide fencing and gates with an overall height as specified on the plans.

2.02 Fabric

- a. Two (2) inch diamond weave mesh of extruded nine (9) gauge vinyl (PVC) coated steel wire conforming to Standard Specifications ASTM A-491.

2.03 Framework

- a. Roll formed steel sections with 2.0 ounces of hot-dipped zinc coating conforming to ASTM A-123, or Type I steel pipe, or Type II steel pipe.
 - (1) Type I: Schedule 40 steel pipe with 2.0 ounces of hot-dipped zinc coating conforming to ASTM - 120.
 - (2) Type II: Pipe manufactured from steel conforming to ASTM A-569, cold-formed, high frequency welded and having a minimum yield strength of 50,000 psi. External surface triple coated with 1.0 ounce \pm 0.1 ounce of zinc per square foot, 30 \pm 15 micrograms of chromate per square inch and 0.5 \pm 0.2 mils of clear cross-linked polyurethane. Internal surface coated, after welding, with a zinc-rich based organic coating having a 91% zinc powder loading capable of providing galvanic protection.
- b. Line Posts: 1-5/8-inch x 1-7/8-inch roll formed steel C-section weighing 2.28 pounds per foot, or 2-1/2-inch O.D. Type I steel pipe weighing 3.65 pounds per foot, or 2-1/2-inch O.D. Type II steel pipe weighing 3.12 pounds per foot.

- c. Top and Brace Rails: 1-5/8-inch x 1-1/4-inch roll formed steel C-section weighing 1.37 pounds per foot, or 1-5/8-inch O.D. Type I steel pipe weighing 2.27 pounds per foot, or 1-5/8-inch O.D. Type II steel pipe weighing 1.84 pounds per foot.
- d. Terminal Posts and Gate Posts for Single Swing Gates or One Leaf of Double Gates up to 6-foot Leaf Width: 3-1/2-inch x 3-1/2-inch roll formed steel section weighing 4.85 pounds per foot, or 3-inch O.D. Type I steel pipe weighing 5.79 pounds per foot, or 3-inch O.D. Type II steel pipe weighing 4.64 pounds per foot.
- e. Gate Posts for Single Swing Gates or One Leaf of Double Gates with Leaf Width Over 6-feet to 13-feet 4-inch O.D. Type I steel pipe weighing 9.11 pounds per foot, or 3-1/2-inch O.D. Type II steel pipe weighing 5.71 pounds per foot.
- f. Gate Posts for Single Swing Gates or One Leaf of Double Gates with Leaf Width Over 13-feet to 18-feet: 6-5/8-inch O.D. Type I steel pipe weighing 18.97 pounds per foot.
- g. Gate Posts for Single Swing Gates or One Leaf of Double Gates with Leaf Width Over 18-feet: 8-5/8-inch O.D. Type I steel pipe weighing 28.55 pounds per foot.

2.04 Gates

- a. Frame assembly of two (2) inch O.D. Type I or Type II steel pipe with welded or steel fitted corners. Provide braces and trusses where necessary.
- b. Heavy duty hinges and positive type latching device suitable for padlocking.
- c. Center plunger rod with double latch and catch, and semi-automatic outer catches for drive gates.
- d. Fabric to match fence, as depicted on the plans, if applicable.

2.05 Fittings

- a. Pressed steel, cast iron or cast aluminum post caps to exclude moisture.
- b. Pressed steel, cast iron or cast aluminum rail and brace ends.
- c. Six (6) inch minimum length top rail couplings at maximum 20-feet on centers.
- d. Steel tension bars, tension bands and brace bands.
- e. 3/8-inch steel truss rods with turnbuckles. End, corner, pull and gate posts braced and trussed to line posts.
- f. 7-gauge aluminum coated steel tension wire conforming to Standard Specification ASTM A-824.
- g. 9-gauge aluminum tie wires spaced at maximum of 24-inches or two (2) feet.
- h. 11-gauge steel wire hog rings with minimum zinc coating of 0.80 ounces per square feet of wire surface.
- i. Pressed steel, cast iron or cast aluminum barbed wire arms with clips or slots for attaching three strands of barbed wire. Arms set outward at 45 degrees and capable of supporting a 250-pound load at outer barbed wire connecting point without causing permanent deflection.

PART III – EXECUTION

3.01 Installation

- a. Installation by experienced fence installers.
- b. Conform to ASTM F-567.
- c. Space line posts at even intervals not exceeding ten (10) feet.
- d. Set all posts to a minimum depth of three (3) feet or 36-inches in a concrete foundation.
 - (1) 10-inch diameter foundation for line posts.
 - (2) 12-inch diameter foundation for terminal posts.
- e. Cast steel pipe sleeve recessed in 18-inch x 18-inch x 6-inch thick concrete pad for retaining gate in closed position.

3.02 Clean Up

- a. Keep all areas of work clean, neat and orderly at all times.
- b. Contractor shall not wash out concrete in any planter areas nor leave any concrete spills, slurry or debris in planter areas.
- c. Clean up and remove all debris from the entire work area prior to final acceptance and execution of the Certificate of Completion.

END OF SECTION

SECTION 32 33 00 SITE FURNISHINGS

PART I - GENERAL

1.01 Description

- a. Provide and install all site furnishings items hereinafter identified.
- b. Related Work Described Elsewhere:
 - (1) Cast-in-Place Concrete – Section 03 30 00
 - (2) Earthwork – Section 31 00 00.

1.02 Scope of Work

- a. Furnish all materials, equipment, labor and related items necessary to complete the work shown in the Drawings and/or as specified in the Specifications. The work included in this section must include but is not limited to:
 - (1) Park Rules Sign
 - (2) Bark Park Entry Sign
 - (3) Trash Receptacle
 - (4) ADA Bench
 - (5) Combination Drinking Fountain
 - (6) Doggy Potty Dispenser
 - (7) Picnic Table
 - (8) Dog Grooming Station
 - (9) Boulders
 - (10) Log Tunnel
 - (11) A-Frame Agility Bridge
 - (12) Log Jump Agility Pads
 - (13) Roll Over Bar

1.03 References

- a. This specification section incorporates by reference the last revisions of the following documents.
 - (1) Comply with environmental agencies, building codes and other local requirements.
 - (2) NOR Standards and Ordinances.

1.04 Quality Assurance

- a. Before proceeding with any work, the Contractor must inspect the site, carefully check all grades, and verify all dimensions and conditions affecting the work. The Contractor must immediately notify the Owner's Representative of any discrepancy on line and level.
- b. Site furnishing work must be performed by a company with experience in work or similar scope and quantity.

- c. Adhere to manufacturer's instructions for product storage and handling, assembly, installation and maintenance.
- d. Site Inspections will be made by the Owner's Representative.
 - (1) Request Owner's Representative inspection at least 48 hours prior to the time of inspection is required. Inspections for the following is required:
 - A. Inspection of temporarily marked/staked locations and alignments of site furnishings items and/or footings prior to installation.
 - B. Substantial completion of all work (development of physical punch list items).
 - C. Physical completion of all work (physical punch list items satisfactory completed).

1.05 Submittals

- a. For each product specified, submit the following for approval prior to delivery:
 - (1) Manufacturer's product data including:
 - A. Preparation instructions and recommendations.
 - B. Storage and handling requirements and recommendations.
 - C. Manufacturer's written assembly and installation instructions.
 - D. Maintenance instructions.
 - E. Manufacturer's warranties.
 - (2) Submit manufacturer's shop drawings for the following for approval prior to delivery, if applicable.

1.06 Delivery, Storage, and Handling

- a. Deliver and store site furnishings items in accordance with the manufacturer's written recommendations. Handle all site furnishings with sufficient care to prevent scratches to the finish and other damage.

1.07 Environmental Conditions

- a. Do not install site furnishings items during heavy rain, freezing temperature or snowfall.

1.08 Protection

- a. Protect new work and work-in-progress from vandalism and damage that might be incurred by construction traffic, equipment, property and persons.

1.09 Conduct of Work

- a. The Contractor must continuously maintain a competent superintendent or foreman during the progress of the work, with the authority to act for the Contractor in all matters pertaining to the work. The Contractor must give personal attention to the fulfillment of the Contract and must keep the

work under control. Subcontractors will not be recognized, and all persons engaged in the work will be considered employees of the Contractor. Their work is subject to the provisions of the Contract, Drawings and Specifications.

- b. Confine operations to the working areas allotted by the Owner for operations, including material and equipment storage.
- c. Progressively clean the work site of debris and rubbish as the work proceeds.

1.10 Guarantee Period

- a. Guarantee work of this Specification section for one (1) year against all defects of materials and workmanship. The guarantee period begins after the date of physical completion.
- b. Repair any damage caused by settlement and defects at no cost to the Owner.

PART II - PRODUCTS

2.01 Hardware

- a. All metal hardware not supplied by the manufacturer including bolts, deformed bars for connections, anchor bolts, nuts, and washers must be hot-dipped galvanized steel unless otherwise noted. All bolts, threaded rod, and anchor bolts must conform to ASTM A-307, Grade A, unless otherwise noted. All galvanized bolts must have galvanized nuts and standard cut galvanized washers at each end; sized respectively unless otherwise noted in Drawings. Hardware not noted by size must be sufficient to draw and hold members securely.

PART III - EXECUTION

3.01 General

- a. Verify installation conditions as satisfactory to receive work of this Section. Do not install until unsatisfactory conditions are corrected. Beginning work constitutes acceptance of conditions satisfactory.
- b. Temporarily mark alignment and locations of all site furnishings for review by Owner's Representative prior to installation.
- c. Install site furnishings items rigid, plumb and true to lines and levels shown in Drawings or per manufacturer's written instructions.

3.02 Subgrade Preparation

- a. The Contractor must verify that subgrade has been properly compacted.
- b. Cast-In-Place Concrete for site furnishings footings and foundations must be per Section 03 30 00 of these Specifications. Layout and size per manufacturer's written instructions or as shown in the Drawings. Unless otherwise indicated, exposed concrete must have a light broom finish.

3.03 Concrete Footings

- a. Concrete footings for site furnishings must be per Section 03 30 00 of these Specifications. Layout and size per manufacturer's written instructions or as shown in the Drawings. Unless otherwise indicated, exposed concrete must have a light broom finish.

3.04 Direct Burial Installations

- a. All below-grade steel components scheduled for direct burial installation must be coated in an approved manner prior to installation, typically either factory powder coating or hot-dipped galvanized.
- b. Provide footing excavations sized as shown in the Drawings, manufacturer's written installation instructions, or as directed by the Owner's Representative.
- c. All site furnishings scheduled for direct burial installation with new paved areas are to be installed prior to paving.
 - (1) In the event that paving is installed prior to site furnishings scheduled for direct burial installation, saw-cutting will not be approved as a means of penetrating pavements. Coring, to the specified size of the footing, is the only method that may be considered.
 - (2) Do not core completed work of the Contract to accomplish product installation without prior approval of the Owner's Representative.
 - (3) Where the Owner's Representative has approved coring of pavement installed as part of the work of the Contract, the Contractor must insure an adequate supply of clean water and continuously flush and clean cuttings from pavement surfaces to remain.

3.05 Fabricated Items

- a. Fabricated items must be installed in accordance with Drawings.

3.06 Installation of Manufactured Items

- a. Assemble site furnishings per manufacturer's written instructions.
- b. Locate and orient site furnishings as shown in Drawings for Owner's Representative on-site review and approval.
- c. Site furnishings must be installed plumb and level, as shown on the Drawings, and in accordance with manufacturer's written instructions.

3.07 Clean Up

- a. Clean site furnishings promptly after installation. Remove all residues, stains, scuffs, abrasions and marks from the finished product in accordance with the manufacturer's instructions. Do not use harsh or abrasive cleaning materials or methods that could damage the finishes.
- b. Touch-up and repair minor damages to the finish in accordance with the manufacturer's instructions and as approved by the Owner's Representative.
- c. Remove and replace damaged components that cannot be successfully repaired as determined by the Owner's Representative.

- d. Remove all metal, wood, and concrete slurry and debris, protective wrappings and coverings, and shipping materials from the project site.
- e. Fully restore all areas of the site that were impacted by the installation activities.

3.08 Substantial and Physical Completion

- a. Inspection to determine Substantial and Physical Completion of site furnishings will be made by the Owner's Representative upon the Contractor's request.

END OF SECTION

SECTION 32 80 00 IRRIGATION

PART I - GENERAL

1.01 Description

- a. Work Included: Provide irrigation system where shown on the Drawings, and as specified herein, complete in place, tested and approved, including but not necessarily limited to:
 - (1) Lawn and shrub sprinkler system.
 - (2) Automatic controller, remote control valves and computerized control.
 - (3) Connection to utilities.

- b. Related Work:
 - (1) Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Division 1 of these Specifications.
 - (2) Section 31 00 00 - Earthwork
 - (3) Section 32 90 00 – Planting

1.02 Explanation of Drawings

- a. Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting the work and plan work accordingly, furnishing such fittings, etc., as may be required to meet such conditions. Unless otherwise specified, the Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting and construction improvements. Preliminary adjustments necessary to conform to actual site conditions shall be accomplished. Additions to or deletions or modifications adversely affecting the system design must be approved by NOR prior to installation.

1.03 Submittals

- a. Record and As-Built Drawings:
 - (1) The Contractor shall provide and keep up to date a complete "as-built" record set of blue line ozalid prints which shall be corrected daily and show every change from the original drawings and specifications and exact "as-built" locations, sizes and kinds of equipment. Prints for this purpose will be provided by NOR and shall be used as a record set.
 - (2) The Contractor shall dimension from two (2) permanent points of reference (building corners, sidewalk, or road intersections, etc.) the location of the following items:
 - A. Connection to existing water lines.
 - B. Connection to existing electrical power.
 - C. Gate valves.

- D. Routing of sprinkler pressure main lines (dimension Max. 100' along routing) showing changes in direction and locations of thrust blocks.
 - E. Sprinkler control valves.
 - F. Routing of control wires.
 - G. Quick coupling valves.
 - H. Domestic waterlines.
 - I. Other related equipment as directed by NOR.
- (3) Before the date of the final acceptance, the Contractor shall transfer all information from the "as-built" prints to reproducible sepias procured from NOR. All work shall be neat, clearly reproducible and subject to the approval of NOR.
- b. Controller Charts:
- (1) As-built drawings shall be approved by NOR before controller charts are prepared.
 - (2) Provide three (3) controller charts for each controller connected with this Project.
 - (3) The chart shall show the area controlled by the automatic controller and shall be the maximum size that the controller door will allow.
 - (4) The chart is to be a reduced drawing of the actual as-built system. However, in the event the controller sequence is not legible when the drawing is reduced, it shall be enlarged to a size that will be readable when reduced.
 - (5) The chart shall be a black line or a blue line print. A different color shall be used to indicate the area of coverage for each station.
 - (6) These charts shall be completed and approved prior to final acceptance of the irrigation system.
- c. Operation and Maintenance Manuals:
- (1) Prepare and deliver to NOR a complete operations and maintenance manual in PDF format. Electronic copies can be sent via email, electronic file storage, flash drive or approved method.
 - A. Index sheet stating Contractor's address and telephone number, list of equipment with names and addresses of local manufacturer's representatives.
 - B. Catalog and parts sheet on all material and equipment installed under this Contract.
 - C. Guarantee Statement.
 - D. Complete operating and maintenance instructions on all major equipment.
- d. Equipment to be Furnished:
- (1) Supply as part of this Contract the following items:
 - A. Two (2) sets of any special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on this Project.

- B. Two (2) five-foot valve keys for operation of gate valves.
- C. Two (2) keys for each automatic controller panel.
- D. Four (4) quick coupler keys and matching hose swivels.
- E. All extra parts, nozzles, etc., supplied with new equipment.
- F. Extra stock: Provide 5% extra heads of each type and quantity installed.
- G. Keys for valve boxes, enclosures, etc.

1.04 Guarantee

- a. The guarantee for the sprinkler irrigation system shall be made in accordance with the General and Supplementary Conditions of the Contract.

PART II - PRODUCTS

2.01 General

- a. All materials and fittings shall be new, of the manufacturer's most current design, and shall bear the appropriate National Association seal of approval, for example, NSF, UL, etc. Similar units shall be procured from the same manufacturer and internal parts shall be common and interchangeable. Parts listing and source of supply for replacement parts will be furnished to NOR. Whenever any material is specified by name and number thereof, such specifications shall be used for the purpose of facilitating description of the materials and establishing quality, and is intended to be followed by the words "or approved equal." Approval of substitute materials shall be secured from NOR prior to submission of bids. No substitution will be permitted which is of a different principle of operation or quality of construction than those described in these Plans and Specifications.

2.02 Piping and Fittings

a. Galvanized Steel Pipe:

- (1) Steel Pipe: All steel shall be newly galvanized, welded or seamless, conforming to the requirements of ASTM A-120 or ASTM A-53, standard weight, schedule 40.
- (2) Corrosion Protection: All buried galvanized pipe and fittings shall be protected from corrosion by the application of a tight fitting, extruded or wrapped coating. Coatings shall be not less than 0.030 inches in thickness at any point. Extracoat or equal. Wrapped coatings shall be of polyethylene, polyvinyl chloride, coal tar or asphalt tape, Protecto Wrap No. 200, Saf-t-Clad FOS No. 655, Tapecoat, Trantex VID-10 or E-12, Polyken No. 900, Scotchrap No. 50 or approved equal. Tape shall be edge lapped no less than ¼ inch.
- (3) Fittings: Use 150 psi rated galvanized malleable iron, banded pattern.

b. Plastic Pipe:

- (1) Plastic pipe shall be rigid, unplasticized SDR-PR polyvinyl chloride (PVC) type 1120 or 1220, with an SDR of 21 or less, NSF approved complying with ASTM D1784 and D2241. PVC class 315 IPS plastic pipe (SDR13.5) with solvent-weld joints shall be used for pressurized main lines. Non-pressurized lateral lines on the discharge side of all control valves shall be PVC class 200 (SDR 21).

- (2) All PVC pipe must bear the following markings at five (5) foot intervals:
 - A. Nominal pipe size.
 - B. Type of material.
 - C. Schedule, class, or SDR designation.
 - D. Pressure rating in psi.
 - E. ASTM designation.
 - F. Manufacturer's name.
- (3) Plastic pipefittings and couplings shall be either threaded type or slip fitting tapered socket solvent weld type. Only Schedule 80 PVC pipe meeting ASTM D-1784, D-2464 and D-2467 and NSF approval will be used for threaded joints. Tapered solvent weld fittings may be either Schedule 80 or Schedule 40 meeting ASTM D2467, D2424, D2466 and/or D1784 and NSF approval. Schedule 80 fittings must be used for all continuously pressurized lines (i.e., main line). Schedule 40 fittings may be used for laterals. Tapered fittings shall be sized so that a dry, unsoftened taper cannot be inserted more than halfway into the socket. Plastic saddles and flange fittings are not permitted.
- (4) Solvent Cement: The solvent cement shall be a solution of Type 1, Grade 1, unplasticized, polyvinyl chloride molding or extrusion compound as specified in ASTM D-1784, or an equivalent PVC resin. The cement shall be free flowing and shall not contain lumps, microscopic undissolved particles or any foreign matter that will adversely affect the ultimate joint strength. It shall show no stratification or separation that cannot be removed by stirring. Primer shall be used at all times; it shall be compatible with the solvent cement. Container labeling shall be in accordance with ASTM D-2564.
- (5) Pipes Under Paving:
 - A. All pressure main line piping under paving shall be PVC Schedule 40 or Class 315.
 - B. Non-pressure lateral line piping under paving shall be PVC Schedule 40 placed inside Class 315 or Schedule 40 sleeves.
 - C. Pipe used for control wire shall be electrical conduit as specified.

2.03 Valves

- a. Gate Valve:
 - (1) Provide 125 psi rated valve of size required for the line as shown on the Drawings, with "O" ring and operating nut, adaptable to the pipe without AC adapters.
 - (2) Acceptable manufacturers:
 - A. As specified per plan.
- b. Quick Coupling Valves
 - (1) Provide 1" 150 psi rated valve, one-piece construction, all brass or bronze, locked top, self-closing to fit double lug couplers.

- (2) For each valve installed, deliver to the Owner the following items, all matching the approved quick coupling valve:
 - A. Key for locked top.
 - B. Quick coupler.
 - C. Hose Swivel.

2.04 Electrical Remote Valves

- a. Remote control valves shall be electrically operated designed for a 24 volt, 60-cycle system. They shall be constructed of materials as designated in the irrigation schedule with accurately machined valve seat surfaces, equipped for flow control adjustment, and with the capability for manual operation. They shall be readily disassembled for repair and the internal parts shall be easily accessible for service even when installed in the line. The internal valve shall be normally closed, diaphragm type with slow opening and closing action as protection against surge pressures. Actuation shall be by an encapsulated type solenoid shunt band, tube, and plunger of stainless steel for corrosion protection. A removable and cleanable strainer shall be provided at the control chamber inlet to prevent debris from entering the solenoid operation section. The valve shall be rated at 200 psi.
- b. All gate valves, quick coupling valves and control valves shall be installed in "Ametek" plastic valve boxes with locking cover or approved equal. Valve boxes shall be installed per detail.

2.05 Sprinkler Heads

- a. Sprinkler heads, bubbler heads and spray nozzles shall be of the types and sizes as shown on the Plans. All major components shall be brass, bronze, stainless steel, or high impact plastic.
- b. Equipment of one type with similar flow characteristics shall be from the same manufacturer and shall bear the manufacturer's name and identification code in a position where they can be identified after installation.
- c. Pop-up sprinklers shall be designed to rise at least four (4") inches during operation and shall be as designated on the irrigation schedule of the Drawings.

2.06 Backflow Preventer

- a. The backflow preventer assembly shall consist of pressure type or reduced pressure type backflow preventer unit and associated components conforming to the governing code requirements and as shown on the plans. It shall be equal in quality and performance to those shown on the plans. Provide backflow preventer enclosure as shown on the plans.

2.07 Automatic Irrigation Controller

- a. Controller Unit:
 - (1) The irrigation system controller shall be a microprocessor based/micro electronics solid state type, capable of fully automatic or manual operation of the system. It shall be housed in a 16-gauge, weatherproof steel cabinet with a key-lock door. The controller shall be suitable for wall mounting or for pedestal mounting.
 - (2) The controller shall operate on a minimum of 117 volts AC power input and be capable of operating up to four 5.5 VA 24 volt AC electric remote control valves. The controller shall have a reset circuit breaker to protect it from power overload.

- (3) The controller shall have the prescribed number of independently programmable stations as shown on the plans. Programming schedule shall be based on a variable 8-day cycle capable of being programmed to start on any quarter hour up to 4 times per day. Station timing shall be in one-minute intervals from 1 to 99 or .1 to 9.9 hours in .1 hour increments. Station operation shall be sequential to avoid overlapping operation. A water budgeting mode shall allow modifications of time from 25%-200% in 25% increments.
- (4) During operation a monitoring readout indicating station in operation and remaining time shall be shown. Controller shall have a 12-hour AM/PM or 24 hour clock.
- (5) The controller shall have a master valve/remote pump start circuit for use with a master valve to pressurize system when the irrigation cycle starts, or to activate a remote pump start relay to run the pump during the irrigation cycle.
- (6) It shall be capable of being operated manually at any time. A manual "single station" operation for programmed time or new time setting shall be possible without affecting the original program.
- (7) A factory preset back-up program for standby operation in the event of a program loss and a rechargeable battery back-up to maintain program during power loss shall be included.

2.08 Control Wiring

- a. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire THW 600 volt insulation rating, ASTM D-0734. Pilot wires shall be #12 AWG, a different color coating for each automatic controller. Common wire shall be #10 AWG white coated with a different color stripe for each automatic controller. Install in accordance with valve manufacturer's specifications and wire chart. Wire shall be UL listed.
- b. All splices shall be made with Scotch Lok #3576 connector sealing packs, Pen-Tite wire connector, or approved equal. Use one splice per connector sealing pack.
- c. An expansion coil should be provided within three (3) feet of each wire connection and at least every one hundred (100) feet of wire length on runs more than one hundred (100) feet in length. Expansion coils shall be formed by wrapping at least five (5) turns of wire around a one-inch (1") diameter pipe then withdrawing the pipe.

2.09 Other Materials

- a. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of NOR.

PART III - EXECUTION

3.01 Trenching and Backfilling

- a. Trench, backfill and compact in accordance with pertinent provisions of Section 02200, in addition comply with the following:
 - (1) Trenching:
 - A. Dig trenches straight and support pipe continuously on bottom of trench. Lay pipe to an even grade in trenches free of protruding stones or other debris. Trenching excavation shall follow layout indicated on Drawings and shall be sized to accommodate the irrigation system components with space for installation and inspection.

- B. Provide for a minimum cover of twenty-four (24") inches for all pressure main line piping.
 - C. Provide for a minimum cover of twelve (12") inches for all non-pressure lateral lines.
 - D. Provide for a minimum cover of eighteen (18") inches for all control wiring which cannot be attached to main line.
 - E. No trench shall be left open during evenings or on weekends. Board and barricade all open trenches, and provide necessary signage. If necessary provide security personnel at no additional cost to NOR.
- (2) Backfilling:
- A. The trenches shall not be backfilled until all required tests are performed. Trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand or other approved materials, free from large clods of earth and stones. Backfill shall be mechanically compacted in landscaped areas to a dry density equal to adjacent undisturbed soil in planting area. Backfill will conform to adjacent grades without dips, sunken areas, lumps or other surface irregularities.
 - B. A fine granular material backfill will be initially placed on all lines to a minimum of six (6") inches above and six (6") inches below the pipe. No foreign matter larger than one-half (½") inch in size will be permitted in the initial backfill.
 - C. Flooding of trenches will be permitted only with the approval of NOR.
 - D. If settlement occurs and subsequent adjustments in pipe, valves, sprinkler heads, lawn, plantings or other construction are necessary, the Contractor shall make required adjustments without cost to NOR.
- (3) Trenching and Backfill Under Paving:
- A. Trenches located under areas where paving, asphaltic concrete or concrete will be installed shall be backfilled with sand (a layer six [6"] inches below the pipe and three [3"] inches above the pipe) and compacted in layers to the compaction requirements specified in Section 02200, using manual or mechanical tamping devices. Trenches shall be left flush with the adjoining grade. The sprinkler irrigation contractor shall set in place, cap and pressure test piping under paving prior to the paving work.
 - B. Generally, piping under existing walks is done by jacking, boring or hydraulic driving; but where any cutting or breaking of sidewalks and/or concrete is necessary, it shall be done and replaced by the Contractor as part of the Contract cost. Permission to cut or break sidewalks and/or concrete shall be obtained from NOR. No hydraulic driving will be permitted under concrete paving. Where concrete walks are cut to install lines, concrete shall be removed between two control joints. Do not patch in narrow strips which detracts from the overall aesthetics of the surface.
 - C. Provide for a minimum cover of eighteen (18") inches between the top of the pipe and the bottom of the aggregate base for pressure and non-pressure piping installed under asphaltic concrete paving.
- (4) Where necessary to excavate adjacent to existing trees, the Contractor shall use all possible care to avoid injury to trees and tree roots. Excavation shall be hand done in areas where tree roots are two (2") inches in diameter and larger. All roots two (2") inches and larger in diameter shall be tunneled under and shall be heavily wrapped with burlap to prevent scarring and excessive

drying. Where a ditching machine is run close to trees having roots smaller than two (2") inches in diameter, the wall of the excavation shall be covered to retain moisture. Trenches in areas of tree roots shall be covered as quickly as possible to avoid excessive drying. Dampen the soil if necessary to maintain good tree health.

3.02 Installation of Piping

a. General:

- (1) Lay out the piping system in accordance with the arrangement and details shown on the Drawings.
- (2) Where piping is shown on the Drawings to be under paved areas but running parallel and adjacent to planted areas, the intention is to install the piping in the planted areas.
- (3) All lines shall have a minimum horizontal clearance of six (6") inches from each other and from lines of other trades. Parallel lines shall not be installed over one another.

b. Thrust Blocking:

- (1) Provide thrust blocks at changes in main line direction, and at connections and branches from the main or at other locations subject to movement due to water hammer.
- (2) Size and place the thrust blocks in accordance with the manufacturer's recommendations as approved by NOR (minimum size = 1 cu. ft.).
- (3) Form the thrust blocks by pouring concrete between the pipe and the trench wall, making thrust blocks of equal size and placement to resist thrusts caused by the maximum internal water pressure.

c. Plastic Pipe:

- (1) Exercise care in handling, loading, unloading and storing plastic pipe and fittings.
 - A. Store under cover until ready to install.
 - B. Transport only on a vehicle with a bed long enough to allow the pipe to lay flat to avoid undue bending and concentrated external load.
 - C. Repair dented and damaged pipe by cutting out and discarding the dented or damaged sections and rejoining with a coupling. If there are several damaged portions of a single length of pipe, the entire length shall be discarded.
 - D. Plastic pipe shall be cut square, externally chamfered approximately 10-15 degrees, and all burrs and fins removed. It shall be joined utilizing threaded fittings or socket type solvent welded fittings. Threaded pipe joints shall be made using Teflon tape on the male threads.
- (2) In solvent cement weld jointing, use only the specified primer and cement and make joints in accordance with ASTM D2855 and the manufacturer's recommendations as approved by NOR. Give solvent cement welds at least fifteen (15) minutes set-up time before moving or handling, and twenty-four (24) hours curing time before filling with water.
- (3) Centerload plastic pipe with a small amount of backfill to prevent arching and whipping under pressure.
- (4) For plastic-to-steel connections:

- A. Work the steel connections first.
 - B. Use a non-hardening pipe dope or liquid Teflon on male threaded end for plastic-to-steel connections.
 - C. Use only a light wrench pressure to tighten.
- d. Galvanized Pipe:
- (1) Make cuts square, with cuts thoroughly reamed and rough edges and burrs removed.
 - (2) Make threads sound, clean cut, and well fitting.
 - (3) Use non-hardening pipe dope on male fittings only.
 - (4) Make screwed joints tight with all necessary wrenches but without handle extensions.
 - (5) Provide corrosion protection as specified in item 2.02-a. Wrap pipe after successful completion of pressure tests.

3.03 Installation of Equipment

- a. Install control valves underground in a normal upright position where indicated on the Drawings and in accordance with the manufacturer's recommendations as approved by NOR.
- (1) All valves except remote control valves shall be the full size of the line in which they are installed unless otherwise indicated.
 - (2) Remote control valves shall be adjusted so that the most remote sprinkler heads operate at the pressure recommended by the head manufacturer. Uniform distribution of water shall be applied by the sprinkler heads to the planting areas for each individual valve system.
 - (3) When grouped together, allow at least twelve (12") inches between valves. Install each remote control valve in a separate valve box.
 - (4) Valves shall be installed as shown in details and in accordance with manufacturer's recommendations and specifications.
 - (5) Valve boxes shall be set flush with the finish grade in lawn areas and one half (1/2") inch above finish grade in ground cover areas, except as noted on plans. Fill with pea gravel to bottom of the valve.
 - (6) Valve boxes installed near walks, curbs, headerboards and paving shall abut those items. The top surfaces shall be flush with items listed above.
 - (7) After all new sprinkler pipe lines and risers are in place and connected, all necessary diversion work has been completed and prior to installation of sprinkler heads, the control valves shall be opened and a full head of water used to flush out the system.
 - (8) Sprinkler heads shall be installed only after flushing of the system has been accomplished to the complete satisfaction of NOR.
- b. Quick coupling Valves:

- (1) Install in lawn areas with the top of the quick coupling valve flush or slightly below the bottom of the valve box lid, and eight (8") inches from pavements and heads. Place in round valve boxes that are set flush with finish grade.
 - (2) Install in planting areas with top of the quick coupling valve flush or slightly below the bottom of the valve box lid and eight (8") inches from pavement and heads. Place in round valve boxes set one-half (1/2") inch above planter finish grade.
 - (3) Install on double swing-joint riser assemblies.
- c. Lawn and Shrub Sprinkler Heads:
- (1) Install as indicated on the Drawings and in accordance with the manufacturer's recommendations as approved by NOR. All sprinklers shall be placed flush with finish grade unless the manufacturer designates placement below flush grade.
 - (2) Location, elevation and spacing: Sprinkler head spacing shall be as indicated on the plans and shall never exceed the maximum recommended by the manufacturer. They shall be installed with at least six (6") inches clearance from adjacent vertical elements.
 - (3) Prior to completion of the maintenance period, reset heads flush with the grade and firmly anchored with soil.
 - (4) Sprinkler head adjustment: After all sprinkler heads are installed and the irrigation system is operating, each section or unit shall be adjusted and balanced with section control valves fully open to obtain uniform and adequate coverage. Sprinkler heads having adjustable pin nozzles or orifices shall have the pins adjusted to provide adequate distribution of water over the coverage pattern. The Contractor shall substitute larger or smaller nozzle cores in non-adjustable sprinkler heads as necessary.
- d. Backflow Preventer: Install where indicated on the Drawings and in accordance with all pertinent codes, regulations, and the manufacturer's recommendations as approved by NOR. All backflow preventers shall be assembled with pipefittings and risers of galvanized steel. Include pipe supports and accessories necessary to properly secure the assembly.
- e. Automatic Control System Installation:
- (1) The Contractor shall install a complete automatic irrigation control system including the automatic controller, remote control valves and wiring, and all necessary accessories and utility service connections including the junction box and any work required from the stubout provided by the power company.
 - (2) All service wiring shall be installed in rigid conduit from the service point to the controller at the minimum depth specified. A separate disconnect switch or combination meter socket, as required, shall be installed between the source of power and the controller. The minimum service wire shall be No. 12 AWG copper THW 600 volt type or larger as required by the Contract Documents or controller manufacturer. Wire splices shall be located only in specified pull boxes with locking covers set to proper elevations on a twelve (12") inch layer of crushed rock, washed gravel or pea gravel.
 - (3) All wiring issuing from the controller shall be direct burial installed in main or lateral waterline trenches wherever practicable. The wiring shall be bundled and secured to the lower quadrant of the irrigation pipeline at ten (10') foot intervals with plastic electrical tape. Sufficient slack shall be left in the wiring. Wiring shall be installed a minimum of eighteen (18") inches below finish grade. Note locations on the as-built record drawings.

- (4) Each controller shall have a ground wire independent of all other controllers and all valves shall be connected to the ground wire of their respective controller.
- (5) Splices in control wire shall be made in accordance with the requirements for service wires. Sufficient slack shall be left at each splice and point of connection in pull boxes and valve boxes so that in case of repair the valve bonnet or splice may be brought to the surface without disconnecting the wire. No splices shall be permitted under pavement.
- (6) All wiring shall be tested for continuity, open circuits, and unintentional grounds prior to connecting the equipment.
- (7) Upon completion of the work the control system shall be in operating condition with an operational chart mounted within the controller cabinet.

3.04 Testing and Inspecting

- a. Do not allow or cause any of the work of this section to be covered up or enclosed until it has been inspected, tested, and until approved by NOR. All equipment, materials, and labor necessary to perform the tests shall be furnished by the Contractor and all tests shall be conducted in the presence of the Planning and Construction Director. Furnish a force pump and all other test equipment necessary to complete the tests.
- b. Before backfilling the main line, and with control valves in place but before lateral pipes are connected, completely flush and test the main line.
 - (1) Repair leaks.
 - (2) Flush out each section of lateral pipe (before sprinkler heads are attached) to remove all foreign material.
- c. Testing:
 - (1) Pipeline pressure test: A water pressure test shall be performed on all pressure mains before any couplings, fittings, valves and the like are concealed. Should any of these be covered prior to testing, the Contractor shall uncover the work at its own expense. All open ends shall be capped after the water is turned into the lines in such a manner that all air will be expelled. Pressure mains shall be tested with all control valves to lateral lines closed. Mains shall be pressure tested at 125 psi for a two hour period. Laterals will be inspected under normal operating pressure. All fittings shall remain uncovered for the inspection. Center loading of pipe is allowed.
 - (2) Operational test: The performance of all components of the automatic control system shall be evaluated for manual and automatic operation. During the maintenance period specified and at least fifteen (15) days prior to final acceptance, the Contractor shall set the controller on automatic operation and the system shall operate satisfactorily during this period. All necessary repairs, replacement and adjustment shall be made until all equipment, electrical work, controls, and instrumentation are functioning in accordance with the Contract Documents.
 - (3) Repair leaks and retest until proved watertight and accepted by NOR.
 - (4) Backflow prevention devices shall be tested and approved by a certified testing company. Written certification by the testing entity shall be provided to NOR. Cost of this test is the responsibility of the Contractor.
- d. Adjustment of the System:

- (1) Verify and achieve system working pressure and available water supply through fully opened gate valves. The Contractor shall flush and adjust all sprinkler heads for optimum performance and to prevent overspray onto walks, roadways and buildings.
 - (2) If it is determined that adjustments in the irrigation equipment will be needed to provide proper and adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in nozzle sizes and degrees of arcs and/or radii.
 - (3) All sprinkler heads shall be set perpendicular to finished grades unless otherwise designated on the plans.
 - (4) When the sprinkler irrigation system is complete, perform a coverage test in the presence of NOR to determine if the water coverage for planting areas is complete and adequate. Furnish all materials and perform all work required to correct any inadequacies of coverage. This test shall be accomplished before planting.
- e. Final Inspection: Clean, adjust and balance all systems. Verify that:
- (1) Remote control valves are properly balanced.
 - (2) Heads are properly adjusted for radius and arc of coverage.
 - (3) The installed system is workable, clean and efficient.

3.05 Instructions

- a. Refer to item 1.03 of this section.
- b. Attach a typewritten legend inside each controller door, stating the areas covered by each remote control valve.
- c. After the system has been completed, inspected and approved, instruct NOR's maintenance personnel in the operation and maintenance of the system.

POLO COMMUNITY PARK

CONTROLLER LOG

FIELD INFORMATION FOR DATA BASE INPUT

SCHEDULE # _____ DEVICE MODEL _____

COMMUNICATION TYPE _____ (2-WIRE OR COMMON)

Flow Sensor(s) on Statistics: Gal/Pulse A _____ B _____

Station Number & Description	Landscape Coefficient	Precip. Rate	Flow Rate (GPM per Valve)	Cycle Time Maximum Minutes	Soak Time Minimum Minutes	Flo- Watch Zone (F#) 1-20	Flo-Mng. Zone-(FM#)+ Capacityand POC (A-E)
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2							
3							
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5							
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POLO COMMUNITY PARK

CONTROLLER LOG

FIELD INFORMATION FOR DATA BASE INPUT

SCHEDULE # _____ DEVICE MODEL _____

COMMUNICATION TYPE _____ (2-WIRE OR COMMON)

Flow Sensor(s) Statistics: Gal/Pulse A _____ B _____

Station Number & Description	Landscape Coefficient	Precip. Rate	Flow Rate (GPM per Valve)	Cycle Time Maximum Minutes	Soak Time Minimum Minutes	Flo-Watch Zone (F#) 1-20	Flo-Mng. Zone-(FM#)+ Capacity and POC (A-E)
30							
31							
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END OF SECTION

SECTION 32 90 00 PLANTING

PART I - GENERAL

1.01 Description

- a. Work Included: Plant NOR provided trees and turf seed. Contractor shall off load all delivered materials and be responsible for them upon arrival to the project site. Supply and install other related materials as indicated on the Drawings, specified herein, and needed for a complete and proper installation. The provisions of the General and Supplementary Conditions and Division One apply here.
- b. Related Work Described Elsewhere:
 - (1) Earthwork - Section 31 00 00.
 - (2) Irrigation System - Section 32 84 00.

1.02 Quality Assurance

- a. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper performance of the work of this section.
- b. Standards:
 - (1) Plants and planting material – meet or exceed the specifications of federal, state and county laws regarding inspection for plant disease and insect control.
 - (2) Quality and size – comply with current edition of “Horticultural Standards” for number one nursery stock as adopted by American Association of Nurserymen. All plants shall be true to name, with at least one plant of each bundle or lot tagged with the name and size of the plants in accordance with standards of practice of the American Association of Nurserymen. In all cases, botanical names take precedence over common names.
- c. Inspection: Prior to delivery of any plant materials to the Project site, the Contractor shall make necessary arrangements with NOR for an inspection of the plant material at the offsite location. Any plants found to be unsuitable in growth or condition or which are not true to name shall be removed and replaced with acceptable plants.
- d. Plant Guarantee and Maintenance: The Contractor shall insure that all plant materials remain in a sound, healthy, vigorous condition free from insects, bark abrasions, or other objectionable disfigurements and shall immediately replace any plant which is unacceptable at any time up to and including final acceptance of the Project or completion of the plant establishment period whichever occurs later. Unless otherwise authorized by NOR, the Contractor shall maintain all landscaped areas on a continuous basis as they are completed during the course of work and until final Project acceptance or the termination of the plant establishment period, whichever occurs later.

1.03 Submittals

- a. Comply with pertinent provisions of Section 01 25 00.

b. Prior to job acceptance, written certifications shall be submitted to NOR for the following:

- (1) Quantity and quality of commercial fertilizer and organic fertilizer.
- (2) Quantity and quality of plant materials.

1.04 Product Handling

- a. Comply with pertinent provisions of the General Conditions, Supplementary Conditions and Division One of the Contract.
- b. Immediately remove from the site plants which are not true to name, and materials which do not comply with the specified requirements, and promptly replace with plants and materials meeting the specified requirements.
- c. Plant protection after delivery to the project site: Plants transported to the site shall be planted as soon as possible. During any interim storage period, they shall not be exposed to excessive sun or drying winds. Any stock that, in the opinion of NOR, has deteriorated due to exposure or has been damaged during transporting will be removed and replaced at the Contractor's expense. Regularly water nursery stock in containers, and place them in a cool area protected from sun and drying winds.

PART II - PRODUCTS

2.01 Fertilizer

- a. Soil Fertilizing Material: Fertilizing material shall comply with the applicable requirements of the State Agricultural Code. All fertilizing material shall be packaged, first grade, commercial quality products identified as to source, type of material, weight and manufacturer's guarantee analysis. It shall not contain toxic ingredients or fillers in quantities harmful to human life, animals or plants. It shall be delivered in unopened containers and shall have the chemical analysis as specified in the Plans or Specifications. Material that has become caked or otherwise damaged shall not be used.
- b. Required Products: Best "Turf Supreme" 16-6-8, Woodace Tablets 14-3-3 with IBDU and Minors.

2.02 Soil Amendment

- a. In general, organic soil conditioners shall consist of a ground or processed wood product derived from redwood, composted and nitrogen stabilized. It shall have a nitrogen content of 1%, a pH not exceeding 7.5, and organic matter not less than 85%. Its gradation shall be such that at least 85% passes the ¼ inch screen.
- b. "Gro-Power Plus" shall have a minimum 4% sulfur.
- c. Chemical soil conditioners such as soil sulfur, gypsum, Best "Soil Buster" or iron additives shall be commercially approved brands designated for agricultural use. Material that has become caked or otherwise damaged shall not be used.

2.03 Tree Stakes

- a. Unless otherwise indicated on the Drawings, provide preservative treated Lodgepole Pine stakes, 2" round x 10 ft. long, complete with tree ties and guying as indicated on the Plans.

2.04 Grass Seed

- a. General – provide grass seed which is:
 - (1) As specified under item 3.05, "Hydroseeding."
 - (2) Free from noxious weed seeds and recleaned.
 - (3) Grade A recent crop seed.
 - (4) Delivered to the site in sealed containers with dealer's guaranteed analysis.

2.05 Plant Materials

- a. Provide the plant materials shown on the schedule in the Drawings.
- b. Plant species, sizes, manner in which to be furnished, and the approximate number are shown in the plant list. The quantities, as listed, are approximate and the Contractor shall furnish and install all plant material necessary to complete planting shown on the landscape plan.
- c. Substitutions:
 - (1) All requests for substitutions must be submitted in writing to NOR prior to commencement of work on the Project. The Contractor shall not take any further action concerning his request until a written approval or denial is received from NOR. Plants of kinds other than those indicated on the plant list will be considered by NOR only upon submission of proof that the specified plant is not reasonably procurable in the local region. Substitutions will resemble the specified plant in regards to appearance, ultimate height, shape, habit of growth, climate suitability and general soil requirement.
 - (2) Substitution of a larger size of the same specie may be made by the Contractor without written approval. However, the Contracting Agency will not be responsible for any additional costs incurred by the Contractor, either for the additional cost of the plants or for any additional planting costs.
- d. Conditions:
 - (1) Plants shall be symmetrical, typical of the variety and species, healthy, vigorous, free from plant disease and insect infestations including eggs, and shall have healthy normal branches and root systems, and fill their containers, but not to the point of being root bound. Plants shall not be pruned prior to delivery, except as authorized by NOR or its representative. In no case shall trees be topped before delivery.
 - (2) Flatted plants shall be grown and remain in the flats until transported to the Project site. The soil and spacing of the plants in the flats shall insure the minimum disturbance of the root system at transplanting. Plant shall be well rooted.
 - (3) The height and spread of all plant materials shall be measured with branches in their normal position and scaled from the root crown. The caliper of all trees shall be measured 12" (one foot) above the root crown. Palm tree height is to be measured as trunk height from the ground line to the base of the heart leaf. When caliper or other dimensions of any plant materials are omitted from the "Plant Material Legend," it shall be understood that these plant materials shall be normal stock for varieties listed.

- (4) All stock shall have been grown in pots, cans, tubs, or boxes for a minimum of three (3) months and a maximum of one (1) year. They shall have sufficient roots to hold earth together after removal from the containers. This earth shall be free from noxious weeds including Bermuda grass and nut sedge.

2.06 Other Materials

- a. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of NOR.

PART III - EXECUTION

3.01 Surface Conditions

- a. Examine the areas and conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- b. All scaled dimensions are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and quantities and shall immediately inform NOR of any discrepancy between the Drawings and/or Specifications and actual conditions. No work shall be done in any area where there is such a discrepancy until approval for the same has been given by NOR.
- c. Prior to excavation for planting or placing of stakes, locate all utilities, electric cables, conduits, sprinkler lines, heads, valves and valve control wires and all utility lines so that proper precautions may be taken to protect such improvements. In the event of a conflict between such lines and plant locations, promptly notify NOR and arrange for resolution of the conflict.

3.02 Topsoil Preparation and Finish Grading

- a. All lawns and planting areas shall be scarified to a depth of at least eight (8") inches below grade in two directions approximately at right angles prior to placing soil conditioners and fertilizers. All rocks over one inch (1") in size shall be removed from the site.
- b. The soil shall not be worked when the moisture content is so great that excessive compaction will occur nor when it is so dry that nuisance dust will form in the air or that clods will not break readily. Water shall be applied, if necessary, to provide ideal moisture content for tilling and for planting.
- c. Excess soil shall be removed or redistributed before application of soil conditioners. Where soil is to be replaced by plants, allowance shall be made so that when finish grading has begun, there shall be no deficiency in the specified depth of mulched planting beds.
- d. Weeding:
 - (1) Before and during preliminary and finish grading, all weeds and grasses shall be dug out by the roots and disposed of off the site except those weeds and grasses not of the perennial type, less than two and one half inches (2 ½") high and not bearing seeds, which may be turned under. Perennial weeds and grasses shall be removed from the site.
 - (2) All landscape and planting areas, except those intended for lawns, shall be treated with a pre-emergent control, in accordance with the manufacturer's recommendations.

- e. After clearing, grubbing and earthwork has been completed, all turf areas shall receive Best "Soil Buster" or equal at the rate of 1500 lbs. per acre and Best "Turf Supreme" 16-6-8 at 272 lbs. per acre cultivated evenly in two directions into the top six (6") inches of soil.
- f. When preliminary grading, including weeding and soil conditioning, has been completed and the soil has dried sufficiently to be readily worked, all lawn and planting areas shall be graded to the elevation indicated on the Drawings. Grades not otherwise indicated shall be uniform level planes and slopes between points where elevations are given. Minor adjustments of finish grades shall be made at the direction of NOR. Finish grade shall be a smooth, even and uniform plane without abrupt grade changes. Slope soil areas adjacent to buildings away from the buildings to allow a natural "run-off" of water. Surface drainage shall be directed as indicated on the Drawings by shaping surfaces to facilitate the natural "run-off" of water. Low spots and pockets shall be graded to drain properly. Finish grade of all lawn areas shall be one inch below grade of adjacent pavement of any kind. Grading shall be done when soil is at optimum moisture content for working. Finish grades shall be to within one tenth (1/10) of one (1) foot.
- g. If any trenches are dug after grading and fertilizing is completed, the upper portion of the trench backfill shall be retiled and fertilized to a depth specified for the area as required to conform to the specifications.

3.03 Planting Trees and Shrubs

a. General:

- (1) No planting shall be done until all operations in conjunction with the installation of the sprinkler system have been completed, final grades have been established, the planting areas have been properly graded and prepared as herein specified, and the work approved by NOR.
- (2) Position plants at locations indicated on Drawings and secure NOR acceptance before excavating pits. Make necessary adjustments as required.
- (3) The planting pits for trees and shrubs shall be excavated to a volume twice the diameter and twice the depth of the root ball. After the plant pit has been excavated, it shall be filled with water and allowed to settle. The backfill mix for use around the root ball shall meet the following specifications:
 - A. Backfill mix shall consist of one part organic soil conditioner, two parts native soil creating one cubic yard of mix. To this mix add 15 lbs. "Gro-Power" with 4% sulfur or approved equal.
 - B. The backfill shall be produced by thoroughly combining these components into a homogeneous mixture. The Contractor shall notify NOR prior to mixing prepared soil so they may observe the mixing process. In addition, during backfilling, slow release fertilizer tablets, Woodace 16 gram tablets with a 14-3-3 analysis plus minors, shall be added in the following quantities:

For one-gallon	5 tablets
For five-gallon	9 tablets
For fifteen-gallon	15 tablets
For twenty-four inch or larger box	20 tablets
- (4) While the plant pit is still moist, place a layer of prepared soil mix in the pit and tamp before setting plant into position. All plants shall be carefully removed from their containers and set so that they are at the same elevation they grew at in the container before being transplanted. Each plant shall be planted vertically in the center of the pit and backfilled with the prepared

soil unless otherwise specified. All broken or frayed roots shall be properly cut off. The plant shall be placed so as to present the best appearance with relationship to adjacent plants and structures. It shall be rigidly constrained until backfilling with prepared soil mix and slow release fertilizer tablets is complete. The backfill will be thoroughly settled by tamping and watering so that all voids are filled.

- (5) Plants shall not be allowed to dry out before or while being planted. Keep exposed roots moist at all times during planting by using wet sawdust, peat moss, or burlap. Do not expose roots to the air except while being placed in the ground. Wilted plants, whether in place or not, will not be accepted and shall be replaced at the Contractor's expense.
- (6) As shown on the Drawings, construct a firmly compacted mound of soil around each tree and plant to form a watering basin at the edge of and following the shape of the root ball circumference. Mounds for trees and other plants from five-gallon or larger containers shall be at least two (2") inches high. Excavated earth, if capable of retaining water, may be used. Refill any settlement within the basins after watering with prepared soil and additional nitrogen stabilized sawdust worked into the surface as required to restore the mulched condition. At the end of the maintenance period all watering basins in the lawn areas shall be leveled to the finish grade of the sod. These areas shall be seeded or stolonized with the specified mix.
- (7) Trees shall be supported by tree stakes with a VIT twist brace placed high for maximum support. After planting, the plants shall be pruned according to accepted standards for transplanting materials.

3.04 Planting Ground Cover

- a. Ground Cover Areas: The planting beds shall be brought to finish grade before mixing 2 cubic yards of organic soil conditioner and 150 lbs. Gro-Power per 1000 square feet. Fertilizing and conditioning material shall be mechanically spread and uniformly cultivated into the upper eight (8") inches of soil using suitable equipment. The remaining soil shall be in a friable condition suitable for planting. A pre-emergence control application is required prior to planting.
- b. Rake prepared soil smooth and free from soil lumps, rocks, sticks and other deleterious materials.
- c. Planting:
 - (1) Space the ground cover plants evenly as indicated on the Drawings, staggering the spaces around shrubs and trees as well as in the open areas.
 - (2) Pits for flatted plants shall be sufficient to allow roots to be spread out in the pit. Ground cover areas shall be moistened prior to planting. No flatted plants shall be planted in dry soil. Set plants in center of pits and backfill so that the crown of a plant will be level with the finished grade after the soil settles. Thoroughly water all ground cover areas after planting.
 - (3) If planting in the open on hot days, shorten the time between planting and watering.
 - (4) After planting, rake the planting area to restore an even surface and to provide drainage.

3.05 Sowing Turf Grass

- a. Preparation:
 - (1) Grade seed beds, thoroughly removing ridges and depressions, and making areas smooth continuous firm planes that ensure proper drainage.

- (2) Remove soil lumps, rocks, sticks and other deleterious materials.
- b. Hydroseeding (Turf):
- (1) Application Equipment: Mixing shall be performed in a tank with a built in continuous agitation and recirculation system of sufficient operating capacity to produce a homogeneous slurry of fiber, seed, fertilizer and water in the designated proportions and a discharge system which will apply the slurry to the area to be treated at a continuous and uniform rate.
 - (2) Loading and Mixing: With agitation system operating at part speed, water shall be added to the tank and a good circulation shall be established.
 - A. Materials shall be added to the tank in such a manner that they are uniformly blended into the mixture in the following sequence:
 - 4100 gal water/acre (1500 gal tank - 3 tanks/acre)
 - 1500 lbs./acre conwed fiber
 - 100 lbs./acre Ecology Control M Binder
 - B. Grass Seed shall be applied as follows: Cynoden dactylon-Bermuda grass (hulled), three (3) pounds per 1,000 square feet if planted between April 1 and August 15; four (4) pounds unhulled Bermuda and six (6) pounds Festuca glauca rubra – Creeping Red Fescue per 1,000 square feet after August 15 until April 1.
 - C. Contractor is to indicate square footage of coverage of each tank full of mix so that NOR may verify appropriate product application.
 - (3) The Contractor shall be responsible for maintenance of the lawn areas until they are accepted by the Contracting Agency. This shall include watering, mowing at regular intervals, weeding and removal of all debris.
 - (4) Promptly after seeding, wet the seed bed thoroughly and keep all areas moist throughout the germination period. Watering to commence after completion of seeding and to continue at a rate necessary to keep mulch moist without drying out or puddling. Normally irrigating ONCE AN HOUR for a short duration and continuing this procedure each and every daylight hour, seven days a week will be sufficient. This continual moist condition to prevail each and every day until rooting state is complete. Irrigation should continue on the basis of at least once or twice a day until turf is well established.

3.06 Maintenance

- a. Maintain plantings, starting with the planting operations and continuing for sixty (60) calendar days after the Project is complete and approved by NOR. This period may be extended due to improper maintenance or appreciable plant mortality.
- b. Work Included:
 - (1) Watering, weeding, cultivation, spraying, fertilizing, edging, mowing and pruning as necessary to keep the plant materials in a healthy growing condition and to keep the planted areas neat and attractive throughout the maintenance period.
 - (2) Adjust the irrigation system and/or provide equipment and means for proper application of water to those planted areas not equipped with an irrigation system. Apply water in sufficient quantities and as often as seasonal conditions require to keep the ground wet at all times. Moisture should percolate well below the root system of grass and plantings. Do not cause erosion when watering slopes.

- (3) Protect planted areas against damage, including erosion and trespassing, by providing and maintaining proper safeguards.
- c. Replacements:
- (1) During the maintenance period, should the appearance of any plant indicate weakness and probability of dying immediately replace that plant with a new and healthy plant of the same type and size without additional cost to NOR. Replacement shall be made with plant materials as indicated or specified for the original planting and all such replacement materials shall be guaranteed as specified for the original guaranteed materials.
 - (2) Any lawn areas or ground cover or slope areas that do not show a prompt growth of grass or establishment of plant material shall be reseeded, resodded or replanted at ten (10) day intervals until accepted by NOR.
 - (3) At the end of the maintenance period, all plant material shall be in a healthy growing condition.
- d. Disease and Pest Control: Throughout the maintenance period all plants shall be maintained in a disease and pest free condition. A licensed pest control operator shall be retained by the Contractor to recommend and apply pesticides, herbicides and fungicides.
- e. Pruning: All shrubs and trees shall be pinch pruned as necessary to encourage new growth and to eliminate rank sucker growth. Old flowers and dead foliage and limbs shall be removed. No major pruning shall be done without the approval of NOR.
- f. Lawns:
- (1) Grass shall be mowed, minimum two (2) cuttings, with reel type mowers before it exceeds two (2") inches in height. Bermuda grass shall be cut at a height of not less than three eighths (3/8") of an inch and not more than one (1") inch in height. Grass clippings shall be collected during mowing operations and removed from the site. After each cutting the edge of the grass shall be trimmed to a neat condition until acceptance of work by NOR.
 - (2) The Contractor or his workmen shall not walk unnecessarily on lawn areas before, during or after planting. Damaged or compacted lawn areas shall be recultivated and replanted.
- g. The Contractor will be relieved from landscape maintenance work when the final thirty (30) calendar days work has been completed and NOR is satisfied that the plant material appears in healthy and well established condition.

END OF SECTION