

**CITY OF COSTA MESA
PUBLIC WORKS AGREEMENT FOR
CITY PROJECT NO. 20-15**

THIS PUBLIC WORKS AGREEMENT (“Agreement”), dated September 15, 2020 (“Effective Date”), is made by the CITY OF COSTA MESA, a political subdivision of the State of California (“CITY”), and HANDY INDUSTRIAL, INC. a California corporation (“CONTRACTOR”).

CITY desires to construct the public work and improvements described below under Scope of Work, Paragraph 1 (“Work”).

ACCORDINGLY, the parties hereto agree as follows:

1. SCOPE OF WORK.

The Work consists of the following work in accordance with CITY’s plans and specifications: demolition of existing restroom building and installation of prefabricated restroom building at CITY’s Lions Park, located at 570 West 18th Street, Costa Mesa; grading that area and placing sod, site hardscape improvements and pathways, site utilities (water, sewer, electrical) and drainage infrastructure, panther jet refurbishment, new playground equipment, site sod improvements as needed, landscape and irrigation improvements needed to conform new layout to existing, and play area perimeter grading and transitions as needed; and such other work described in CITY’s plans and specifications.

The Work is further described in the “Contract Documents” referred to below.

The Project is known as the Lions Park Playground Improvements (570 West 18th Street, Costa Mesa) Project, City Project No. 20-15 (“Project”).

2. CONTRACT DOCUMENTS.

The complete Agreement consists of the following documents relating to the

Project:

- a. This Agreement;
- b. CONTRACTOR's bid (Exhibit A);
- c. Bid package, including notice inviting bids, and complete plans, profiles, detailed drawings and specifications, including general provisions and special provisions (Exhibit B);
- d. All addenda to the bid package (Exhibit C);
- e. Faithful Performance Bond and Labor and Material Bond, including agent's Power of Attorney for each bond (Exhibit D);
- f. Drug-Free Workplace Policy (Exhibit E); and
- g. Provisions of the most current edition of The Greenbook: Standard Specifications for Public Works Construction ("The Greenbook").

The documents attached hereto are incorporated herein by this reference. The Greenbook is incorporated by reference as if fully set forth herein. The documents comprising the complete Agreement will be referred to as the "Contract Documents."

All of the Contract Documents are intended to complement one another, so that any Work called for in one and not mentioned in another is to be performed as if mentioned in all documents.

In the event of an inconsistency in the Contract Documents, the terms of this Agreement shall prevail over all other Contract Documents. The order of precedence between the remaining Contract Documents shall be as set forth in The Greenbook.

The Contract Documents constitute the entire agreement between the parties and supersede any and all other writings and oral negotiations.

3. CITY'S REPRESENTATIVE.

The CITY's Representative is Arash Rahimian, referred to herein as the Project Manager ("Project Manager").

4. CONTRACTOR'S PROJECT MANAGER; PERSONNEL.

(a) Project Manager. CONTRACTOR's Project Manager must be approved by City. Such approval shall be at CITY's sole discretion.

(b) Personnel. CITY has the right to review and approve any personnel who are assigned to perform work under this Agreement. CONTRACTOR shall remove personnel from performing work under this Agreement if requested to do so by CITY.

This Paragraph 4 is a material provision of the Agreement.

5. SCHEDULE.

All Work shall be performed in accordance with the schedule approved on behalf of CITY by the Project Manager, and in accordance with the time of performance set forth in Paragraph 11 (Time of Performance).

6. EQUIPMENT - PERFORMANCE OF WORK.

CONTRACTOR shall furnish all tools, equipment, apparatus, facilities, labor and materials necessary to perform and complete the Work of construction in a good and workmanlike manner in strict conformity with the Contract Documents.

The equipment, apparatus, facilities, labor and material shall be furnished and such Work performed and completed as required in the plans and specifications to the satisfaction of the Project Manager or his or her designee, and subject to his or her approval.

7. CONTRACT PRICE.

One Million Seven Hundred Eighty Thousand Dollars (\$1,780,000.00).

8. ADDITIONAL SERVICES.

CONTRACTOR shall not receive compensation for any services provided outside the scope of the Contract Documents unless such additional services, including change orders, are approved in writing by CITY prior to CONTRACTOR performing the additional services.

It is specifically understood that oral requests or approvals of such additional services, change orders or additional compensation and any approvals from CITY shall be barred and are unenforceable.

9. PAYMENTS TO CONTRACTOR.

On or before the last Monday of each and every month during the performance of the Work, CONTRACTOR shall meet with the Project Manager or his or her designee to determine the quantity of pay items incorporated into the improvement during that month. A "Progress Payment Order" will then be jointly prepared, approved, and signed by the Project Manager and the CONTRACTOR setting forth the amount to be paid and providing for a five percent (5%) retention. Upon approval of the progress payment order by the Project Manager, or his or her designee, it shall be submitted to CITY's Finance Department and processed for payment by obtaining approval from the City Council to issue a warrant.

Within three (3) days following City Council's approval to issue a warrant, CITY shall mail to CONTRACTOR a warrant for the amount specified in the progress payment order as the amount to be paid. The retained five percent (5%) shall be paid to CONTRACTOR thirty-five (35) days after the recording of the Notice of Completion of the Work by the COUNTY and after CONTRACTOR shall have furnished releases of all claims against CITY by persons who furnished labor or materials for the Work, if required

by CITY.

Upon the request of CONTRACTOR and at its expense, securities equivalent to the amount withheld pursuant to the foregoing provisions may be presented to CITY for substitution for the retained funds. If CITY approves the form and amount of the offered securities it will release the retained funds and will hold the securities in lieu thereof. CONTRACTOR shall be entitled to any interest earned on the securities.

In the event that claims for property damage or bodily injury are presented to CITY arising out of CONTRACTOR's or any subcontractor's Work under this Agreement; CITY shall give notice thereof to CONTRACTOR, and CONTRACTOR shall have thirty-five (35) days from the mailing of any such notice to evaluate the claim and to settle it by whole or partial payment, or to reject it, and to give notice of settlement or rejection to CITY. If CITY does not receive notice within the above-mentioned 35-day period that the claim has been settled, and if the Project Manager, after consultation with the City Attorney, determines that the claim is meritorious, CITY may pay the claim or a portion of it in exchange for an appropriate release from the claimant, and may deduct the amount of the payment from the retained funds that would otherwise be paid to CONTRACTOR upon completion of the Work; provided, however, that the maximum amount paid for any one claim pursuant to this provision shall be One Thousand Dollars (\$1,000.00), and the maximum amount for all such claims in the aggregate paid pursuant to this provision shall be Five Thousand Dollars (\$5,000.00).

10. PROMPT PAYMENT OF SUBCONTRACTORS.

The CONTRACTOR agrees to pay each subcontractor under this Agreement for satisfactory performance of its contract no later than seven (7) days from the receipt of each payment the CONTRACTOR receives from CITY.

The CONTRACTOR agrees further to release retainage payments to each subcontractor within thirty (30) days after the subcontractor's work is satisfactorily completed.

Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the CITY.

11. TIME OF PERFORMANCE.

CONTRACTOR shall commence Work by the date specified in CITY's Notice to Proceed, unless a later date is agreed upon in writing by the parties. The Work shall be completed within one hundred forty (140) calendar days from the first day of commencement of the Work.

12. TERMINATION.

(a) Termination for Convenience.

CITY may terminate this Agreement at any time, with or without cause, by providing thirty (30) days' written notice to CONTRACTOR.

(b) Termination for Breach of Contract.

(i) If CONTRACTOR refuses or fails to prosecute the Work or any severable part of it with such diligence as will ensure its timely completion, or if CONTRACTOR fails to complete the Work on time, or if CONTRACTOR, or any subcontractor, violates any of the provisions of the Contract Documents, the Project Manager may give written notice to CONTRACTOR and CONTRACTOR's sureties of the CITY's intention to terminate this Agreement; and, unless within five (5) days after the serving of that notice, such conduct shall cease and arrangements for the correction thereof be made to the satisfaction of the CITY, this Agreement may be terminated at the option of CITY effective upon CONTRACTOR's receipt of a second notice sent by the

CITY indicating that the CITY has exercised its option to terminate.

(ii) If CONTRACTOR is adjudged bankrupt or files for any relief under the Federal Bankruptcy Code or State insolvency laws, this Agreement shall automatically terminate without any further action or notice by CITY.

(iii) If CONTRACTOR is in breach of any material provision of this Agreement, CITY may immediately terminate this Agreement by providing written notice to CONTRACTOR of same.

13. LIQUIDATED DAMAGES.

In the event the Work is not completed, for any reason, within the time required including any approved extensions of time, and to the satisfaction of the Project Manager, CITY may, in addition to any other remedies, equitable and legal, including remedies authorized by Paragraph 12 (Termination) of this Agreement, charge to CONTRACTOR or its sureties, or deduct from payments or credits due CONTRACTOR, a sum equal to One Thousand Eight Hundred Dollars (\$1,800.00) as liquidated damages for each day beyond the date provided for the completion of such Work.

The parties hereto agree that the amount set forth above, as liquidated damages constitutes a fair and reasonable estimate of the costs the CITY would suffer for each day that the CONTRACTOR fails to meet the performance schedule. The parties hereby agree and acknowledge that the delays in the performance schedule will cause CITY to incur costs and expenses not contemplated by this Agreement.

14. PERFORMANCE BY SURETIES.

In the event CONTRACTOR fails or refuses to perform the Work, CITY may provide CONTRACTOR with a notice of intent to terminate as provided in Paragraph 12 (Termination), of this Agreement. The CITY shall immediately give written notice of such

intent to terminate to CONTRACTOR and CONTRACTOR's surety or sureties, and the sureties shall have the right to take over and perform this Agreement; provided, however, that the sureties must, within five (5) days after CITY's giving notice of termination, (a) give the CITY written notice of their intention to take over the performance of this Agreement; (b) provide adequate assurances, to the satisfaction of the CITY that the Work shall be performed diligently and in a timely manner; and (c) must commence performance thereof within five (5) days after providing notice to the CITY of their intention to take over the Work. Upon the failure of the sureties to comply with the provisions set forth above, CITY may take over the Work and complete it, at the expense of CONTRACTOR, and the CONTRACTOR and the sureties shall be liable to CITY for any excess costs or damages including those referred to in Paragraph 13 (Liquidated Damages), incurred by CITY. In such event, CITY may, without liability for so doing, take possession of such materials, equipment, tools, appliances, Contract Documents and other property belonging to CONTRACTOR as may be on the site of the Work and reasonably necessary therefor and may use them to complete the Work.

15. DISPUTES PERTAINING TO PAYMENT FOR WORK.

Should any dispute arise respecting whether any delay is excusable, or its duration, or the value of the Work done, or of any Work omitted, or of any extra Work which CONTRACTOR may be required to do, or respecting any payment to CONTRACTOR during the performance of this Agreement, such dispute shall be decided by the Project Manager, and his or her decisions shall be final and binding upon CONTRACTOR and its sureties.

16. SUPERINTENDENCE BY CONTRACTOR.

At all times during performance of the Work, CONTRACTOR shall give personal

superintendence or have a competent foreman or superintendent on the worksite, with authority to act for CONTRACTOR.

17. INSPECTION BY CITY.

CONTRACTOR shall at all times maintain proper facilities and provide safe access for inspection by CITY to all parts of the Work and to all shops on or off-site where the Work or portions of the Work, are in preparation. CITY shall have the right of access to the premises for inspection at all times. However, CITY shall, at all times, comply with CONTRACTOR's safety requirements on the job site.

18. CARE OF THE WORK AND OFF-SITE AUTHORIZATION.

CONTRACTOR warrants that it has examined the site of the Work and is familiar with its topography and condition, location of property lines, easements, building lines and other physical factors and limitations affecting the performance of this Agreement. CONTRACTOR, at CONTRACTOR's sole cost and expense, shall obtain any permission, and all approvals, licenses, or easements necessary for any operations conducted off the premises owned or controlled by CITY. CONTRACTOR shall be responsible for the proper care and protection of all materials delivered to the site or stored off-site and for the Work performed until completion and final inspection and acceptance by CITY. The risk, damage or destruction of materials delivered to the site or to Work performed shall be borne by CONTRACTOR.

19. CONTRACT SECURITY AND GUARANTEE.

Unless previously provided by CONTRACTOR to CITY, CONTRACTOR shall furnish, concurrently with the execution of this Agreement, the following: (1) a surety bond in an amount equal to one hundred percent (100%) of the contract price as security for the faithful performance of this Agreement, and (2) a separate surety bond in an amount

equal to at least one hundred percent (100%) of the contract price as security for the payment of all persons furnishing labor or materials in connection with the Work under this Agreement. Sureties for each of the bonds and the forms thereof shall be satisfactory to CITY. In addition, such sureties must be authorized to issue bonds in California; sureties must be listed on the latest revision to the U.S. Department of the Treasury Circular 570; and must be shown to have sufficient bonding capacity to provide the bonds required by the Contract Documents.

CONTRACTOR shall provide a certified copy of the certificate of authority of the surety issued by the Insurance Commissioner; a certificate from the clerk of the county in which the court or officer is located that the certificate of authority of the surety has not been surrendered, revoked, canceled, annulled, or suspended or, in the event that it has, that renewed authority has been granted; and copies of the surety's most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code.

CONTRACTOR guarantees that all materials used in the Work and all labor performed shall be in conformity with the Contract Documents including, but not limited to, the standards and specifications set forth in the most current edition of The Greenbook. CONTRACTOR shall, at its own expense, make any and all repairs and replacements that shall become necessary as the result of any failure of the Work to conform to the aforementioned Contract Documents, and standard specifications; provided, however, that CONTRACTOR shall be obligated under this provision only to the extent of those failures or defects of which he is given notice within a period of twelve (12) months from the date that the Notice of Completion is recorded.

The rights and remedies available to CITY pursuant to this provision shall be cumulative with all rights and remedies available to CITY pursuant to statutory and common law, which rights and remedies are hereby expressly reserved, and neither the foregoing guarantee by CONTRACTOR nor its furnishing of the Bonds, nor acceptance thereof by CITY, shall constitute a waiver of any rights or remedies available to CITY against CONTRACTOR.

20. INDEMNIFICATION.

CONTRACTOR agrees to protect, defend, indemnify and hold harmless CITY and its elected and appointed boards, officers, agents, and employees from any and all claims, liabilities, expenses, or damages of any nature, including attorney fees, for injury to or death of any person, and for injury or damage to any property, including consequential damages of any nature resulting therefrom, arising out of or in any way connected with the performance of this Agreement. The defense obligation provided for hereunder shall apply without any advance showing of negligence or wrongdoing by the CONTRACTOR, its employees, and/or authorized subcontractors, but shall be required whenever any claim, action, complaint, or suit asserts as its basis the negligence, errors, omissions or misconduct of the CONTRACTOR, its employees, and/or authorized subcontractors, and/or whenever any claim, action, complaint or suit asserts liability against the CITY, its elected officials, officers, agents and employees based upon the work performed by the CONTRACTOR, its employees, and/or authorized subcontractors under this Agreement, whether or not the CONTRACTOR, its employees, and/or authorized subcontractors are specifically named or otherwise asserted to be liable. Notwithstanding the foregoing, the CONTRACTOR shall not be liable for the defense or indemnification of the CITY for claims, actions, complaints or suits arising out of the sole

active negligence or willful misconduct of the CITY. This provision shall supersede and replace all other indemnity provisions contained either in the CITY's specifications or CONTRACTOR's proposal, which shall be of no force and effect.

CONTRACTOR shall comply with all of the provisions of the Workers' Compensation insurance laws and Safety in Employment laws of the State of California, including the applicable provisions of Divisions 4 and 5 of the California Labor Code and all amendments thereto and regulations promulgated pursuant thereto, and all similar State, Federal or local laws applicable; and CONTRACTOR shall indemnify and hold harmless CITY from and against all claims, liabilities, expenses, damages, suits, actions, proceedings and judgments, of every nature and description, including attorney fees, that may be presented, brought or recovered against CITY for or on account of any liability under or failure to comply with any of said laws which may be incurred by reason of any Work performed under this Agreement by CONTRACTOR or any subcontractor or others performing on behalf of CONTRACTOR.

CITY does not, and shall not, waive any rights against CONTRACTOR which it may have by reason of the above hold harmless agreements, because of the acceptance by CITY or the deposit with CITY by CONTRACTOR of any or all of the insurance policies described in Paragraph 21 (Insurance) of this Agreement.

The hold harmless agreements by CONTRACTOR shall apply to all liabilities, expenses, claims, and damages of every kind (including but not limited to attorney fees) incurred or alleged to have been incurred, by reason of the operations of CONTRACTOR or any subcontractor or others performing on behalf of CONTRACTOR, whether or not such insurance policies are applicable. CONTRACTOR shall require any and all tiers of subcontractors to afford the same degree of indemnification to the CITY OF COSTA

MESA and its elected and appointed boards, officers, agents, and employees that is required of CONTRACTOR and shall incorporate identical indemnity provisions in all contracts between CONTRACTOR and all tiers of its subcontractors.

In the event that CONTRACTOR and CITY are sued by a third party for damages caused or allegedly caused by negligent or other wrongful conduct of CONTRACTOR, or by a dangerous condition of CITY's property created by CONTRACTOR or existing while the property was under the control of CONTRACTOR, CONTRACTOR shall not be relieved of its indemnity obligation to CITY by any settlement with any such third party unless that settlement includes a full release and dismissal of all claims by the third party against the CITY.

21. INSURANCE.

CONTRACTOR shall not commence Work under this Agreement until it has obtained all insurance required under this section and CITY has approved the insurance as to form, amount, and carrier, nor shall CONTRACTOR allow any subcontractor to commence any Work until all similar insurance required of the subcontractor has been obtained and approved.

Neither the failure of CONTRACTOR to supply specified insurance policies and coverage, nor the failure of CITY to approve same shall alter or invalidate the provisions of Paragraph 20 (Indemnification) of this Agreement.

(a) Workers' Compensation Insurance.

CONTRACTOR shall obtain and maintain during the life of this Agreement workers' compensation insurance and, if any Work is sublet, CONTRACTOR shall require all tiers of subcontractors to obtain workers' compensation insurance.

All workers' compensation insurance policies shall provide that the

insurance may not be canceled without thirty (30) days' advance written notice of such cancellation to CITY.

CONTRACTOR agrees to waive, and obtain endorsements from its workers' compensation insurer waiving, subrogation rights under its workers' compensation insurance policy against the CITY and to require each of its subcontractors, if any, to do likewise under their workers' compensation insurance policies.

(b) Liability Insurance Coverage.

CONTRACTOR shall obtain and maintain during the life of this Agreement the following insurance coverage:

(i) Commercial General Liability, including coverage for premises-operations, products/completed operations hazard, blanket contractual, broad form property damage, and independent contractors. In addition, CONTRACTOR shall obtain and maintain during the life of this Agreement each of the following insurance coverage which are not stricken out and initialed by the Project Manager: Explosion and collapse hazard, underground hazard, personal injury, and automobile liability, including owned, hired, and non-owned vehicles. All insurance coverage shall have limits of not less than \$1,000,000.00 combined single limits, per occurrence and aggregate.

(ii) Below are approved endorsements which satisfy the basic insurance requirements contained in contracts entered into by City of Costa Mesa. These have been approved by the City Attorney's Office. The terms of any specific contract with the City are controlling. Prior to the commencement of any work, the City requires that the Engineer receive Certificates of Insurance in DUPLICATE for liability coverage of at least \$1,000,000.00 combined single limits, per occurrence and in the aggregate. Endorsements to the policies providing the above insurance shall be obtained by

CONTRACTOR, adding the following three provisions:

(1) Additional Insured:

“The City of Costa Mesa and its elected and appointed boards, officers, agents, and employees are additional insureds with respect to the subject project and agreement.”

(2) Notice:

“Said policy shall not terminate, nor shall it be canceled nor the coverage reduced, until thirty (30) days after written notice is given to CITY.”

(3) Other Insurance:

“Any other insurance maintained by the City of Costa Mesa shall be excess and not contributing with the insurance provided by this policy.”

If any of such policies provide for a deductible or self-insured retention to provide such coverage, the amount of such deductible or self-insured retention shall be approved in advance by CITY. No policy of insurance issued as to which the CITY is an additional insured shall contain a provision which requires that no insured except the named insured can satisfy any such deductible or self-insured retention.

22. PROOF OF INSURANCE.

Prior to commencement of the Work, CONTRACTOR shall furnish CITY, through the Project Manager, proof of compliance with the above insurance requirements in a form satisfactory to the Risk Management.

23. LEGAL WORK DAY - PENALTIES FOR VIOLATION.

Eight (8) hours of labor shall constitute a legal day's work during any one (1) calendar day. CONTRACTOR shall forfeit to CITY the sum of Twenty-Five Dollars (\$25.00) for each workman employed in the execution of this Agreement by

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 40 hours in any one calendar week in violation of California Labor Code Sections 1810 through 1815, inclusive.

24. PREVAILING WAGE SCALE.

This Project requires the payment of prevailing wages under California law. In accordance with Labor Code Section 1770, et seq., the director of the Department of Industrial Relations of the State of California has ascertained a general prevailing rate of wages which is the minimum amount which shall be paid to all workers employed to perform the work pursuant to this Agreement. A copy of the general prevailing wage rate determination is on file in the Office of the City Clerk and is hereby incorporated in this Agreement. In accordance with the provisions of Labor Code Section 1810, et seq., eight (8) hours is the legal working day. CONTRACTOR must forfeit to the CITY Twenty-Five Dollars (\$25.00) a day for each worker who works in excess of the minimum working hours for which CONTRACTOR does not pay overtime. CONTRACTOR is required to post a copy of such wage rates at all times at the project site. The statutory penalties for failure to pay prevailing wage or to comply with State wage and hour laws will be enforced. CONTRACTOR also comply with State law requirements to maintain payroll records and shall provide for certified records and inspection of records as required by California Labor Code Section 1770, et seq., including Section 1776. CONTRACTOR shall comply with all statutory requirements relating to the employment of apprentices.

CONTRACTOR shall furnish each week to CITY's Project Administration Division a statement with respect to the wages of each of its employees during the preceding weekly payroll period.

25. COMPLIANCE WITH ALL LAWS.

CONTRACTOR shall, at its own cost and expense, comply with all applicable local, state, and federal laws, regulations, and requirements in the performance of this Agreement, including but not limited to laws regarding health and safety, labor and employment, and wage and hours.

26. DRUG-FREE WORKPLACE POLICY.

CONTRACTOR, upon notification of the award of this Agreement, shall establish a Drug-Free Awareness Program to inform employees of the dangers of drug abuse in the workplace, the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace, and the employee assistance programs available to employees. Each employee engaged in the performance of a CITY contract must be notified of this Drug-Free Awareness Program, and must abide by its terms. CONTRACTOR shall conform to all the requirements of CITY's Policy No. 100-5, attached hereto as Exhibit E. Failure to establish a program, notify employees, or inform the CITY of a drug-related workplace conviction will constitute a material breach of contract and cause for immediate termination of the contract by the CITY.

27. NON-DISCRIMINATION.

In performing this Agreement, CONTRACTOR will not engage in, nor permit its agents to engage in, discrimination in employment of persons because of their race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status or sex, or sexual orientation, except as permitted pursuant to Section 12940 of the Government Code. Violation of this provision may result in the imposition of penalties referred to in Section 1735 of the California Labor Code.

28. CONTRACT ASSURANCE.

The CONTRACTOR or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. The CONTRACTOR shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the CONTRACTOR to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as recipient deems appropriate.

The CONTRACTOR will require that the above provision is included in all subcontracts.

29. PROVISIONS CUMULATIVE.

The provisions of this Agreement are cumulative and in addition to, and not in limitation of, any other rights or remedies available to CITY.

30. NOTICES.

It shall be the duty and responsibility of CONTRACTOR to notify all tiers of subcontractors and material men of the following special notice provision; namely, all preliminary 20-day notices or stop notices shall be directed only to the City Clerk and to no other department, and shall be either personally delivered or sent by certified mail, postage prepaid.

All other notices shall be in writing and delivered in person or sent by certified mail, postage prepaid. Notices required to be given to CITY pursuant to this Agreement shall be addressed as follows:

City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626
Attn: Arash Rahimian

Notices required to be given to CONTRACTOR shall be addressed as follows:

Handy Industrial, Inc.
4228 Lewis St.
Oceanside, CA 92056
Attn: Wahead William Raz

Notices required to be given to CONTRACTOR's sureties shall be addressed as follows:

Merchants Bonding Company (Mutual)
2710 Gateway Oaks Drive, Suite 150N
Sacramento, CA 95833
Attn: Melissa DeKoven

31. INDEPENDENT CONTRACTOR.

The parties hereto acknowledge and agree that the relationship between CITY and CONTRACTOR is one of principal and independent contractor and no other. All personnel to be utilized by CONTRACTOR in the performance of this Agreement shall be employees of CONTRACTOR and not employees of the CITY. CONTRACTOR shall pay all salaries and wages, employer's social security taxes, unemployment insurance and similar taxes relating to employees and shall be responsible for all applicable withholding taxes. Nothing contained in this Agreement shall create or be construed as creating a partnership, joint venture, employment relations, or any other relationship except as set forth between the parties. The parties specifically acknowledge and agree that CONTRACTOR is not a partner with CITY, whether general or limited, and no activities of CITY or CONTRACTOR or statements made by CITY or CONTRACTOR shall be interpreted by any of the parties hereto as establishing any type of business relationship other than an independent contractor relationship.

32. PERS ELIGIBILITY INDEMNIFICATION.

In the event that CONTRACTOR or any employee, agent, or subcontractor of

CONTRACTOR providing services under this Agreement claims or is determined by a court of competent jurisdiction or the California Public Employees' Retirement System (PERS) to be eligible for enrollment in PERS as an employee of the CITY, CONTRACTOR shall indemnify, defend, and hold harmless CITY for the payment of any employee and/or employer contributions for PERS benefits on behalf of CONTRACTOR or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of CITY.

Notwithstanding any other agency, state or federal policy, rule, regulation, law or ordinance to the contrary, CONTRACTOR and any of its employees, agents, and subcontractors providing service under this Agreement shall not qualify for or become entitled to, and hereby agree to waive any claims to, any compensation, benefit, or any incident of employment by CITY, including but not limited to eligibility to enroll in PERS as an employee of CITY and entitlement to any contribution to be paid by CITY for employer contribution and/or employee contributions for PERS benefits.

33. VALIDITY.

The invalidity in whole or in part of any provision of this Agreement shall not void or affect the validity of any of the other provisions of this Agreement.

34. GOVERNING LAW.

This Agreement shall be governed by and construed in accordance with the laws of the State of California. Any legal action relating to or arising out of this Agreement shall be subject to the jurisdiction of the County of Orange, California.

35. NO THIRD PARTY BENEFICIARY RIGHTS.

This Agreement is entered into for the sole benefit of the CITY and CONTRACTOR and no other parties are intended to be direct or incidental beneficiaries of this Agreement

and no third party shall have any right in, under or to this Agreement.

36. ASSIGNABILITY.

This Agreement may not be sold, transferred or assigned by either party, or by operation of law, to any other person or persons or business entity, without the other party's written permission. Any such sale, transfer or assignment, or attempted sale, transfer or assignment without written permission, may be deemed by the other party to constitute a voluntary termination of this Agreement and this Agreement shall thereafter be deemed terminated and void.

37. WAIVER.

No waiver of any provision of this Agreement shall be effective unless in writing and signed by a duly authorized representative of the party against whom enforcement of a waiver is sought referring expressly to this Paragraph. The waiver of any right or remedy in respect to any occurrence or event shall not be deemed a waiver of any right or remedy in respect to any other occurrence or event, nor shall any waiver constitute a continuing waiver.

38. HEADINGS.

Section and subsection headings are not to be considered part of this Agreement, are included solely for convenience, and are not intended to modify or explain or to be a full or accurate description of the content thereof.

39. COUNTERPARTS.

This Agreement may be executed in one or more counterparts by the parties hereto. All counterparts shall be construed together and shall constitute one Agreement.

40. CORPORATE AUTHORITY.

The persons executing this Agreement on behalf of the Parties hereto warrant that

they are duly authorized to execute this Agreement on behalf of said Parties and that by doing so, the Parties hereto are formally bound to the provisions of this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by and through their respective authorized officers, as of the date first above written.

CITY OF COSTA MESA,
A municipal corporation

Lori Ann Farrell Harrison
Lori Ann Farrell Harrison
City Manager

Date: 9/29/2020

CONTRACTOR

Wahead William Raz
Wahead William Raz
President

Date: 9/21/20

ATTEST:

Brenda Green
Brenda Green
City Clerk



Date: 9/29/2020

APPROVED AS TO FORM:

Kimberly Hall Barlow
Kimberly Hall Barlow
City Attorney

Date: 9/24/20

APPROVED AS TO INSURANCE:

Ruth Wang
Ruth Wang
Risk Management

Date: 9/23/2020

APPROVED AS TO PURCHASING:



Carol Molina
Finance Director

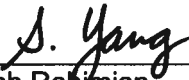
Date: September 03, 2020

DEPARTMENTAL APPROVAL:



Raja Sethuraman
Public Services Director

Date: 9-24-2020

for 

Arash Rahmian
Project Manager

Date: 9/24/2020

EXHIBIT A
CONTRACTOR'S BID

PROPOSAL

The Honorable City Council
City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626

Dear Council Members:

In compliance with the NOTICE INVITING BIDS for **LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15**, a copy of which is hereto attached, the undersigned has carefully examined the location of the proposed work, the plans, specifications and other contract documents therefor and is satisfied as to the conditions to be encountered, as to the character, quality and quantity of work to be performed and materials to be furnished and as to the requirements of the specifications and the contract. It is mutually agreed that the submission of a proposal shall be considered prima facie evidence that the bidder has made such examination. If awarded the contract, the undersigned agrees to commence the work under the contract within **TEN (10) DAYS** after the date of contract, and complete said work within **TWENTY (20) WEEKS** from the first day of commencement of such work unless legal extension is granted in accordance with the terms set forth in the specifications, and to perform and complete the work as shown on the plans and in accordance with the specifications and other contract documents, and to furnish all labor, materials, tools and equipment necessary to complete the work in place therefor, in the manner and time herein prescribed at the following prices, to wit:

Contractor's Lawful Name Handy Industrial

Total Amount for Base Bid including Allowances

(In written words) \$ONE MILLION SEVEN HUNDRED EIGHTY THOUSAND DOLLARS

(In figures) \$1,780,000.00

NOTE: Mandatory job walk-through is required starting at the project site (570 West 18th Street, Costa Mesa, August 5, 2020 at 2:00 p.m.

W.R.
Bidder's Initials

PROPOSAL SCHEDULE					
LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15					
ITEM	DESCRIPTION	APPROX. QUANTITY	UNIT	UNIT PRICE	TOTAL AMOUNT
1	Lions Park Playground Improvements excluding Irrigation (*)	1	L.S.	\$ 1,580,000.00	\$ <u>1,580,000.00</u>
2	Irrigation Allowances (**)(***)	1	F.A.	\$ <u>125,000</u>	\$ <u>125,000</u>
TOTAL BASE BID AMOUNT:					\$ _____
3	Allowances (***)	1	F.A.	\$ <u>75,000</u>	\$ <u>75,000</u>
TOTAL BASE BID INCLUDING ALLOWANCES:					\$ <u>1,780,000.00</u>

(*) Schedule of Values for Bid Item No. 1 shall be submitted before 4:00 PM of the 4th business day following the bid opening. The Schedule of Value for this bid item shall not include the Irrigation work. Price includes the indirect cost and markup.

(**) Schedule of Values and certified irrigation plans, if needed, shall be submitted to the City within two weeks after award of the contract. The Schedule of Value shall include only work related to Irrigation. Price includes the indirect cost and markup.

W.R.
 Bidder's Initials

**PROPOSAL SCHEDULE
(CONTINUED)**

NOTE:

1. The accuracy of estimate quantities as shown is not guaranteed; the Bidder shall make his/her own estimate from the drawings and field review for verification. If the unit price and the total amount are different, the unit price will control the bid. Payment shall be based on actual work done and/or actual quantities used.
2. The City reserves the right to delete one or more bid items and/or to increase or decrease bid items' quantities, at no additional cost to the City.
3. **(*) Schedule of Values for Bid Item No. 1 shall be submitted before 4:00 PM of the 4th business day following the bid opening. The Schedule of Value for this bid item shall not include the Irrigation work. Price includes the indirect cost and markup.**
4. **(**) Schedule of Values and certified irrigation plans, if needed, shall be submitted to the City within two weeks after award of the contract. The Schedule of Value shall include only work related to Irrigation. Price includes the indirect cost and markup.**
5. **(***) Allowance is for unforeseen work not included in the contract documents and to be included in the total bid amount as identified as follows. Use of the allowance will be at the sole discretion of the City and must be authorized in writing at the discretion of the City. This Bid Item will cover unforeseen work that is not included in the contract documents. Any money used from the project allowance will be authorized via an Allowance Disbursement Form at the City's sole discretion. Any amount of money remaining in the Allowance line item upon completion of the Project will be deducted from the Contract by Deductive Change Order for the full amount(s) remaining therein. The Contractor has no beneficial interest in, and/or claim to, the Allowances and hereby disclaims any and all such interests.**
6. FA designates force account. Payment shall be made on a time and materials basis, only if directed by the Engineer.
7. (F) Designates Final Pay Item. When an item of work is designated as "FINAL PAY ITEM" in the Specifications, the estimated quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion of that item are revised by the Engineer, or the item or any portion of the item is eliminated. If the dimensions of any portion of the item are revised, and the revisions result in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions. If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.
The estimated quantity for each item of work designated as "FINAL PAY ITEM" in the Specifications, shall be considered as approximate only, and no guarantee is made that the quantity which can be determined by computations, based on the details and dimensions shown on the plans, will equal the estimated quantity. No allowance will be made in the event that the quantity based on computations does not equal the estimated quantity. In case of discrepancy between the quantity shown in the Engineer's Estimate for a final pay item and the quantity or summation of quantities for the same item shown on the plans, payment will be based on the quantity shown in the Engineer's Estimate.

W.P.
Bidder's Initials

**PROPOSAL SCHEDULE
(CONTINUED)**

(Please Type or Print)

Total Amount for Base Bid including Allowances (in written words) ONE MILLION SEVEN HUNDRED EIGHTY THOUSAND DOLLARS(\$ 1,780,000.00)

in figures

Contractor's Lawful Name: Handy Industrial

Bidder's Name: Wahead William Raz Bidder's Initials: W.R.

Contractor's License No. 940082 Expiration: 11/30/21

Contractor's Taxpayer I.D. Number: 27-1027338

Contractor's PWC Registration Number: 1000037079

Signature:  Date: 08/27/20

Contractor's Address: 4228 Lewis St., Oceanside, CA 92056

Telephone Number: (858) 703- 7088 Mobile No.: (858) 703- 7088

Fax Number: () none E-mail: handyindustrial@yahoo.com

24-Hour Emergency Contacts:

Wahead William Raz
Name

Telephone Number: (-----) -----

Mobile No.: (858) 703- 7088

Seyam Sadree
Name

Telephone No.: (-----) -----

Mobile No.: (619) 592- 2982

Adriana Caceres
Name

Telephone No.: (-----) -----

Mobile No.: (858) 366- 5818

W.R.
Bidder's Initials

**PROPOSAL SCHEDULE
(CONTINUED)**

The Contractor agrees that the City will not be held responsible if any of the approximate quantities shown in the foregoing proposal shall be found incorrect, and he shall not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work as estimated and the work actually done. If any error, omission or misstatements shall be discovered in the estimated quantities, it shall not invalidate this contract or release the Contractor from the execution and completion of the whole or part of the work herein specified, in accordance with the specifications and the plans herein mentioned and the prices herein agreed upon and fixed therefore, or excuse him from any of the obligations or liabilities hereunder, or entitle him to any damages or compensation otherwise than as provided for in this contract.

The Contractor agrees that the City shall have the right to increase or decrease the quantity of any bid item or portion of the work or to omit portions of the work as may be deemed necessary or expedient, and that the payment for incidental items or work, not separately provided in the proposal shall be considered included in the price bid for other various items or work.

Accompanying this proposal is "Cash," "Certified Check," or "Bidder's Bond" (circle one) in the amount of ONE HUNDRED SEVENTY EIGHT THOUSAND DOLLARS (\$178,000.00) equal to at least ten (10%) percent of the total bid price, payable to the City of Costa Mesa, to guarantee that within fourteen (14) days after written notice is deposited in the mail, or the bidder has received notice by telephone, the bidder will furnish proper Certificates of Insurance, and required bonds satisfactory to the City and execute a contract in accordance with the proposal and in the manner and form required by the contract documents.

The undersigned deposits the above-named security as a proposal guarantee and agrees that it shall be forfeited to the City of Costa Mesa as Liquidated Damages if the above requirements are not complied with.

W.R.
Bidder's Initials

Project and Specification No. 20-15
Respectfully submitted,

Handy Industrial
Contractor's Business Name
4228 Lewis St.
Business Address: Street
Oceanside, CA 92056
City State Zip
(858) 703- 7088
Business Phone Number
Wahead William Raz/ President
Name Title
Oceanside, CA 92056
City State Zip

Handy Industrial
Contractor Title
Wahead William Raz/ President
By Title
940082 Class B
Contractor's License No. and Classification
08/27/20
Date
4228 Lewis St., Oceanside, CA 92056
Residence: Street
(858) 703- 7088
Residence phone Number

If the bid is by a corporation, state the names of the officers who can sign an agreement on behalf of the corporation and whether more than one officer must sign.

Corporation N/A Taxpayer I.D. Number: _____
Name _____ Can Sign Must Sign
Name _____
Name _____

If the bid is by a partnership or a joint venture, state the names and addresses of all general partners and joint ventures.

Partnership or Joint Ventures N/A Taxpayer I.D. Number: _____
Name _____
Address _____
Name _____
Address _____

If the bidder is a sole proprietorship or another entity that does business under a fictitious name, the bid shall be in the real name of the bidder with a designation following showing "DBA (the fictitious name)"; provided, however, no fictitious name shall be used unless there is a current registration with the Orange County Recorder.


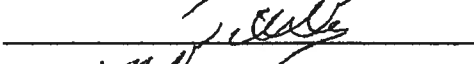
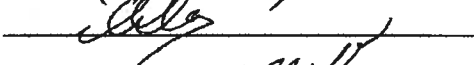

The full names and residences of all persons and parties interested in the foregoing proposal, as principals, are as follows:

NOTE: Give first and last names in full; in case of corporation, give names of President, Secretary, Treasurer and Manager, and affix corporate seal; in case of partnerships and joint ventures, give names of all the individual members.

Wahead William Raz DBA Handy Industrial _____

W.R.
Bidder's Initials

Bidder shall signify receipt of all Addenda here, if any:

<u>Addendum No.</u>	<u>Date Received</u>	<u>Bidder's Signature</u>
1	08/10/20	
2	08/11/20	
3 & 4	08/17/20	
5	08/24/20	

CONSTRUCTION PROJECT REFERENCES

In order to fully evaluate your firm's background and experience for the project herein proposed, it is required that you submit a list of similar construction projects completed, or in progress, within the last five (5) years. Contractors bidding to the City shall have a **minimum five (5) years** continuous experience as prime on projects of comparable quality, size, complexity and type. This information will be used to evaluate whether the bid is responsive and or responsible to the call for bids.

<u>Date Project Awarded</u>	<u>Awarding Agency</u>	<u>Agency's Contract Administrator</u>
05/20/2019	City of Chula Vista	Mike Mejia (619)847- 7448
05/15/2018	Vista Unified School Distric	Luis Llamas. (760) 207- 7220
05/18/2017	Oceanside Unified School District	Cheryl Gaston (760) 966 4077
05/10/2016	San Diego Unified School District	Robert Snipes (619) 249- 3882
04/09/2015	City Of San Diego	Zinna Rummani (619) 980- 6328

W.R.
Bidder's Initials

DESIGNATION OF SUBCONTRACTORS

In compliance with the "Subletting and Subcontracting Fair Practices Act" being Sections 4100-4113 of the Public Contract Code of the State of California, and any amendments thereto, each bidder shall set forth below the name and location of the place of business 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 in an amount in excess of one-half (½) of one percent (1%) of the prime contractor's total bid or in the case of bids for the construction of streets or highways, including bridges, in excess of one-half (½) of one percent (1%) of the prime contractor's total bid or ten thousand (\$10,000) dollars, whichever is greater. Bidder shall further set forth the portion of the work which will be done by each such subcontractor. Only one subcontractor for each such portion shall be listed.

If the contractor fails to specify a subcontractor for any portion of the work to be performed under the contract, he shall be deemed to have agreed to perform such portion himself, and he shall not be permitted to subcontract that portion of the work except under the conditions hereinafter set forth.

Subletting or subcontracting of any portion of the work to which no subcontractor was designated in the original bid, shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the Legislative Body of the owner.

All information must be filled out and typed. Please use additional pages in this format if needed.

<i>Bid Item (s) Number</i>	<i>% Portion of Work</i>	<i>Name, Address and E-mail of Subcontractor</i>	<i>State License Number</i>	<i>Class</i>	<i>DIR Registration Number</i>
25	10%	Robertson Recreational Surfaces 1027 W. 9th St. Upland, CA 91786 vbrantley@playcore.com	#667261	C-61 & D-12	#1000002700
29-39	10%	Miracle Recreation Equipment Co. 9106 Pulsar Ct., Unit C Corona, CA 92883 John@miracleplayground.com	supplier		
5-18	10%	Mack P & S Construction, Inc. 32020 Corydon Road Wildomar, CA 92525 mackconst@gmail.com	#995324	A	#1000004137
	2%	Land Surveying Consultants, Inc. 318 State Place Escondido, CA 92029 kbrewer@4iscinc.com	#5653	SRVY	#1000008005
44-61	10%	Fredrick's Electric, Inc. 1185 Linda Vista Drive, Suite H San Marcos, CA 92078 jason@fredrickselectric.com	#428666	C-10	#1000001118

By submission of this proposal, the Bidder certifies:

1. That (I)(we)(it) is able to and will perform the balance of all work which is not covered in the above subcontractors listing.
2. That the AGENCY will be furnished copies of all subcontracts entered into by subcontractor for this project.

W.R.
Bidder's Initials

BIDDER'S BOND TO ACCOMPANY PROPOSAL

(Required if the bidder desires to submit bond instead of a certified or cashier's check.)

KNOW ALL PEOPLE BY THESE PRESENTS:

That we, Handy Industrial as principals, and Merchants Bonding Company (Mutual) as surety, are held and firmly bound unto the City of Costa Mesa, a municipal corporation, organized under the laws of the State of California and situated in Orange County in the sum of Ten Percent of the Total Amount Bid (\$ ---- 10% ----) to be paid to the City, its successors and assigns, for which payment well and truly to be made, we bind ourselves, our heirs, executors, and administrators, successors or assigns, jointly and severally firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH:

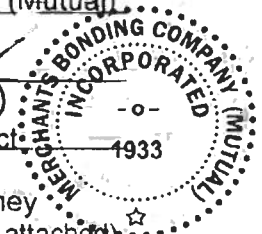
That is the certain proposal of the above bounden, Handy Industrial if accepted by the City of Costa Mesa, and if the above bounden, Handy Industrial, his heirs, executors, administrators, successors and assigns, shall duly enter into and execute a contract for such construction, and shall execute and deliver the CERTIFICATE OF INSURANCE and the LABOR AND MATERIAL and the FAITHFUL PERFORMANCE BONDS described within fourteen (14) days from the date of the mailing of a notice of the above bounden, Handy Industrial by and from the City, that said contract is ready for execution, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

IN WITNESS WHEREOF:

We hereunto set our hands and seals this 17th day of August, 2020.

Handy Industrial
By: [Signature]
Naheed Williams Raz
Contractor/ Principal
(Notary Acknowledgement to be attached)

Merchants Bonding Company (Mutual)
By: [Signature]
Melissa Lopez, Attorney-in-Fact
Surety Power of Attorney
(Notary Acknowledgment to be attached)



CALIFORNIA ALL-PURPOSE ACKNOWLEDGEMENT

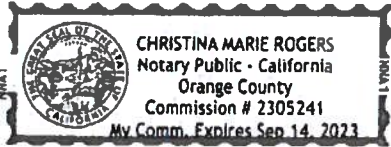
A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of Orange }

On AUG 17 2020, before me, Christina Marie Rogers, Notary Public,
personally appeared Melissa Lopez

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of State of California that the foregoing paragraph is true and correct.



WITNESS my hand and official seal.

SIGNATURE Christina Marie Rogers

PLACE NOTARY SEAL ABOVE

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of attached document

Title or type of document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other than Named Above: _____

MERCHANTS
BONDING COMPANY
POWER OF ATTORNEY

Know All Persons By These Presents, that MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., both being corporations of the State of Iowa (herein collectively called the "Companies") do hereby make, constitute and appoint, individually,

Erik Johansson; Frances Lefler; James W Johnson; Jennifer Anaya; Jessica Hollaender; Melissa Lopez

their true and lawful Attorney(s)-in-Fact, to sign its name as surety(ies) and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

This Power-of-Attorney is granted and is signed and sealed by facsimile under and by authority of the following By-Laws adopted by the Board of Directors of Merchants Bonding Company (Mutual) on April 23, 2011 and amended August 14, 2015 and adopted by the Board of Directors of Merchants National Bonding, Inc., on October 16, 2015.

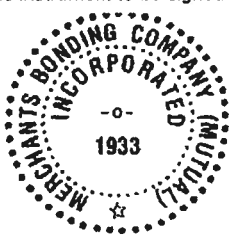
"The President, Secretary, Treasurer, or any Assistant Treasurer or any Assistant Secretary or any Vice President shall have power and authority to appoint Attorneys-in-Fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof."

"The signature of any authorized officer and the seal of the Company may be affixed by facsimile or electronic transmission to any Power of Attorney or Certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually fixed."

In connection with obligations in favor of the Florida Department of Transportation only, it is agreed that the power and authority hereby given to the Attorney-in-Fact includes any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts required by the State of Florida Department of Transportation. It is fully understood that consenting to the State of Florida Department of Transportation making payment of the final estimate to the Contractor and/or its assignee, shall not relieve this surety company of any of its obligations under its bond.

In connection with obligations in favor of the Kentucky Department of Highways only, it is agreed that the power and authority hereby given to the Attorney-in-Fact cannot be modified or revoked unless prior written personal notice of such intent has been given to the Commissioner-Department of Highways of the Commonwealth of Kentucky at least thirty (30) days prior to the modification or revocation.

In Witness Whereof, the Companies have caused this instrument to be signed and sealed this 11th day of February, 2020.

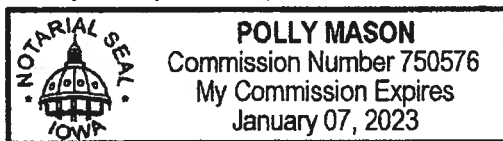


MERCHANTS BONDING COMPANY (MUTUAL)
MERCHANTS NATIONAL BONDING, INC.

By *Larry Taylor*
President

STATE OF IOWA
COUNTY OF DALLAS ss.

On this 11th day of February, 2020, before me appeared Larry Taylor, to me personally known, who being by me duly sworn did say that he is President of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC.; and that the seals affixed to the foregoing instrument are the Corporate Seals of the Companies; and that the said instrument was signed and sealed in behalf of the Companies by authority of their respective Boards of Directors.



Polly Mason
Notary Public

(Expiration of notary's commission does not invalidate this instrument)

I, William Warner, Jr., Secretary of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., do hereby certify that the above and foregoing is a true and correct copy of the POWER-OF-ATTORNEY executed by said Companies, which is still in full force and effect and has not been amended or revoked.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the Companies on this 17th day of August, 2020.



William Warner Jr.
Secretary

MERCHANTS
BONDING COMPANY

MERCHANTS BONDING COMPANY (MUTUAL) • P.O. BOX 14498 • DES MOINES, IOWA 50306-3498
PHONE: (800) 678-8171 • FAX: (515) 243-3854

ADDENDUM TO BOND

This Addendum is in reference to the bond(s) to which it is attached.

Merchants Bonding Company (Mutual) (“Merchants”) deems the digital or electronic image of Merchants’ corporate seal below affixed to the bond(s) to the same extent as if a raised corporate seal was physically stamped or impressed upon the bond(s). The digital or electronic seal below shall have the same force and effect as though manually fixed to the bond(s).

All terms of the bond(s) remain the same.

Signed and effective March 23, 2020.

MERCHANTS BONDING COMPANY (MUTUAL)



By: *Larry Taylor*
Larry Taylor, President

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of San Diego


On AUG. 26, 2020 before me, K. Mehrabani, Notary Public.
(Here insert name and title of the officer)

personally appeared WAHEED WILLIAM RAZ

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(ies), and that by his/~~her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.


Signature of Notary Public



(Notary Seal)

ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

BIDDER'S BOND TO ACCOMPANY
(Title or description of attached document)

PROPOSAL
(Title or description of attached document continued)

Number of Pages One Document Date 8-26-20

(Additional information)

CAPACITY CLAIMED BY THE SIGNER

- Individual (s)
 Corporate Officer

(Title)

- Partner(s)
 Attorney-in-Fact
 Trustee(s)
 Other _____

INSTRUCTIONS FOR COMPLETING THIS FORM

Any acknowledgment completed in California must contain verbiage exactly as appears above in the notary section or a separate acknowledgment form must be properly completed and attached to that document. The only exception is if a document is to be recorded outside of California. In such instances, any alternative acknowledgment verbiage as may be printed on such a document so long as the verbiage does not require the notary to do something that is illegal for a notary in California (i.e. certifying the authorized capacity of the signer). Please check the document carefully for proper notarial wording and attach this form if required.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they~~ is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
 - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
 - ❖ Indicate title or type of attached document, number of pages and date.
 - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary)
- Securely attach this document to the signed document

CONTRACT ASSURANCE

The CONTRACTOR or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The CONTRACTOR shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the CONTRACTOR to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as recipient deems appropriate.

The CONTRACTOR will require that the above provision is included in all subcontracts.

W.R.

Bidder's Initial

NONCOLLUSION AFFIDAVIT

The bidders, by its officers and agents or representatives present at the time of filing this bid, being duly sworn on their oaths say, that neither they nor any of them have in any way directly or indirectly entered into any arrangement or agreement with any other bidder, or with any public officer of such CITY OF COSTA MESA whereby such affiant or affiants or either of them has paid or is to pay to such bidder or public officer any sum of money, or has given or is to give to such other bidder or public officer anything of value whatever, or such affiant or affiants or either of them has not directly or indirectly, entered into any arrangement or agreement with any other bidder or bidders, which tends to or does lessen or destroy free competition in the letting of the contract sought for on the attached bids; that no bid has been accepted from any subcontractor or supplier through any bid depository, the By-Laws, Rules, or Regulations of which prohibit or prevent the Contractor from considering any bid from any subcontractor or supplier which is not processed through said bid depository, or which prevent any subcontractor or supplier from bidding to any Contractor who does not use the facilities or accept bids from or through such bid depository; that bidder has not bid as subcontractor to other bidders; that no inducement of any form or character other than that which appears upon the face of the bid will be suggested, offered, paid or delivered to any person of the contract, nor has this bidder any agreement or understanding of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the contracts sought by this bid.

Handy Industrial
Contractor Firm Name
Wahed Williams Raz
Name of Principal
owner
Title
[Signature]
Signature

Subscribed and sworn to before me by:

WAHEAD WILLIAMS RAZ

This 26 day of AUG., 2020.

My Commission Expires: 11-28-2023

[Signature]
Notary Public

PLEASE SEE
ATTACHED CERTIFICATE

W.R.
Bidder's Initials

California Jurat Certificate

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

s.s.

County of SAN DIEGO

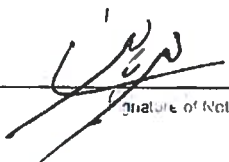
Subscribed and sworn to (or affirmed) before me on this 26th day of AUG Month

20 20, by WAHEAD WILLIAM RAZ and

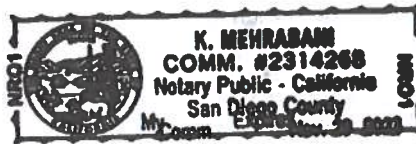
Name of Signer (1)

Name of Signer (2) proved to me on the basis of

satisfactory evidence to be the person(s) who appeared before me.



Signature of Notary Public



Seal

For other required information (Primary Name, Commission No., etc.)

OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this jurat to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The certificate is attached to a document titled/for the purpose of

NON COLLUSION AFFIDAVIT

containing ONE pages, and dated 08-26-2020

Additional Information

Method of Affiant Identification

Proved to me on the basis of satisfactory evidence:
 form(s) of identification credible witness(es)

Notarial event is detailed in notary journal on:

Page # _____ Entry # _____

Notary contact: _____

Other

| Affiant(s) Thumbprint(s) | | Describe: _____

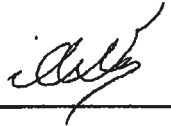
**CONTRACTOR'S CERTIFICATION
OF
WORKERS' COMPENSATION INSURANCE REQUIREMENTS
FOR
PUBLIC WORKS PROJECTS
(Labor Code §1861)**

I am aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' 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.

Dated: 08/27/20

CONTRACTOR

Wahead William Raz



Handy Industrial

Company Name

PROJECT: Lions Park Playground Improvements
(570 West 18th Street, Costa Mesa),
City Project # 20-15

W.R.

Bidder's Initials

DRUG-FREE WORKPLACE POLICY

CONTRACTOR, upon notification of contract award, shall establish a Drug-Free Awareness Program to inform employees of the dangers of drug abuse in the workplace, the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace, and the employee assistance programs available to employees. Each employee engaged in the performance of a CITY contract must be notified of this Drug-Free Awareness Program, and must abide by its terms. Failure to establish a program, notify employees, or inform CITY of a drug-related workplace conviction will constitute a material breach of contract and cause for immediate termination of the contract by CITY.

CONTRACTOR shall conform to all the requirements of CITY'S Policy No. 100-5. A copy of this policy is attached to the sample contract agreement as Attachment No. 1 in the Project Specifications.

W.R.
Bidder's Initials

P-9a



CITY OF COSTA MESA

CALIFORNIA 92628-1200

P.O. Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: AUGUST 10, 2020

TO: ALL PROSPECTIVE BIDDERS

ADDENDUM NO. 1 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: Waheed William Raz

Company: Handy Industrial

All bidders shall register with CIPList.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPList.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

BID OPENING DATE: NO CHANGE – WEDNESDAY, AUGUST 19, 2020

BID OPENING TIME: NO CHANGE

BID OPENING PLACE: NO CHANGE

RESPONSES TO PRE-BID REQUESTS FOR INFORMATIONS (RFIs):

Q1. Section 6-9 Liquidated Damages: Please clarify liquidated damages amount per calendar day for this project.

A1. *Liquidated Damages amount for this project is \$1,800 per calendar day.*

Q2. Please clarify who will be purchasing the CXT pre-fab restroom.

A2. *The Contractor will be responsible for purchasing and procuring the pre-fab restroom per the order form and installing the building with All the structural, plumbing, lighting, signage and furnishing components and protective padding on the Davis field side, installing new chain link fence at Davis Field interface the restroom. The scope of work also includes submitting the shop drawings to the Building Division and obtaining the Building Permit from the City.*

Q3. The irrigation plans are not included in the bid set. Will the City provide the irrigation plans?

A3. *The Irrigation plans will not be provided. Contractor is responsible to provide modifications to the existing system to meet the new site to include the installation of all lines, valves, spray heads, drip tubing, quick couplers and wires. Refer to existing irrigation record drawings and library as-built drawings for information.*



CITY OF COSTA MESA

CALIFORNIA 92628 1200

P O Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: **AUGUST 11, 2020**

TO: **ALL PROSPECTIVE BIDDERS**

ADDENDUM NO. 2 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: Wahed William Raz

Company: Handy Industrial

All bidders shall register with CIPList.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPList.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

BID OPENING DATE: NO CHANGE – WEDNESDAY, AUGUST 19, 2020

BID OPENING TIME: NO CHANGE

BID OPENING PLACE: NO CHANGE

PLANS:

Attached are existing irrigation record drawings and Library As-Built drawings for contractor's references. Hard copies of the drawings are available for review per contractor's request by the appointment only. Please contact Jim Ortiz at 714-327-7490 to schedule a visit.

SCOPE OF WORK:

The attached document "List of Items of Work" is the part of the contract documents. Any work that is not shown on the plans but specified in the attached list shall be considered included in price bid for the various items of work. No additional compensation shall be allowed.

The contents of this addendum shall have precedence over all related provisions within the contract documents. It is the intent of the City to clarify the above-mentioned items to all bidders and should it be necessary to request clarification on these matters, please contact Arash Rahimián at (714) 754-5096 and Irina Gurovich at (714) 754-5324.

Please acknowledge receipt of all addenda on the Proposal Page "P-4."

Sincerely,

Irina Gurovich
Assistant Engineer

Attachments: Record Drawings and Library As-Built drawings
List of Items of Work



CITY OF COSTA MESA

CALIFORNIA 92628-1200

P O Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: AUGUST 17, 2020

TO: ALL PROSPECTIVE BIDDERS

ADDENDUM NO. 3 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: Waheed William Raz

Company: Handy Industrial

All bidders shall register with CIPLIST.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPLIST.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

BID OPENING DATE: CHANGED TO MONDAY, AUGUST 31, 2020

BID OPENING TIME: NO CHANGE

BID OPENING PLACE: NO CHANGE

NOTICE INVITING BIDS:

The deadline to submit sealed bid proposals and the bid opening day have been revised as follows: Sealed bids will be received by the City of Costa Mesa (City) at the Office of the City Clerk, 77 Fair Drive, Costa Mesa, California, before a submittal deadline of **10:00 A.M., Monday, August 31, 2020**. The bid opening will be conducted at **2:00 P.M., Monday, August 31, 2020** by the City Clerk. NO public viewing of the bid opening will be allowed due to precautions related to COVID-19. Upon opening all the valid submitted bids, and verifying their contents, the City Clerk's office will contact each bidder via email and distribute the results and summary of the bid opening.

JOB WALK MEETING:

Non-mandatory job walk meeting is scheduled for **Wednesday, August 19, 2020 at 11 A.M.** to review the existing irrigation system.

SPECIFICATIONS:

The cut sheet and product data for the shade structures are attached to this addendum for contractor's references only. Contractor to request shop drawings from the manufacturer for approval.

The contents of this addendum shall have precedence over all related provisions within the contract documents. It is the intent of the City to clarify the above-mentioned items to all bidders and should it be necessary to request clarification on these matters, please contact Arash Rahimiari at (714) 754-5096 and Iriha Gurovich at (714) 754-5324.



CITY OF COSTA MESA

CALIFORNIA 92628 1200

P O Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: AUGUST 17, 2020

TO: ALL PROSPECTIVE BIDDERS

ADDENDUM NO. 4 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: Waheed William Raz

Company: Handy Industrial

All bidders shall register with CIPList.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPList.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

BID OPENING DATE: CHANGED TO THURSDAY, AUGUST 27, 2020

BID SUBMITTAL TIME: BEFORE 10:00 A.M.

BID OPENING TIME: 11:00 A.M.

BID OPENING PLACE: NO CHANGE

CORRECTIONS TO ADDENDUM NO. 3:

The deadline to submit sealed bid proposals and the bid opening day have been revised as follows: Sealed bids will be received by the City of Costa Mesa (City) at the Office of the City Clerk, 77 Fair Drive, Costa Mesa, California, before **10:00 A.M., Thursday, August 27, 2020**. The bid opening will be conducted at **11:00 A.M., Thursday, August 27, 2020** by the City Clerk. Due to precautions related to COVID-19, for your safety NO in-person bid opening will take place and it will be conducted online via Zoom. Upon opening all the valid submitted bids, and verifying their contents, the City Clerk's office will contact each bidder via email and distribute the results and summary of the bid opening.

The contents of this addendum shall have precedence over all related provisions within the contract documents. It is the intent of the City to clarify the above-mentioned items to all bidders and should it be necessary to request clarification on these matters, please contact Arash Rahimian at (714) 754-5096 and Irina Gurovich at (714) 754-5324.

Please acknowledge receipt of all addenda on the Proposal Page "P-4."

Sincerely,

Irina Gurovich
Assistant Engineer



CITY OF COSTA MESA

CALIFORNIA 92628-1200

P.O. Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: AUGUST 24, 2020

TO: ALL PROSPECTIVE BIDDERS

ADDENDUM NO. 5 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: Waheed William Bar

Company: Harvey Industrial

All bidders should register with CIPList.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPList.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

- BID OPENING DATE:** NO CHANGE THURSDAY, AUGUST 27, 2020
- BID SUBMITTAL TIME:** BEFORE 10:00 A.M.
- BID OPENING TIME:** 11:00 A.M.
- BID OPENING PLACE:** NO CHANGE

REVISIONS TO PROPOSAL AND BID ITEMS:

The proposal page P-1a and P-1b have been revised. Contractors shall utilize revised proposal pages P-1a (rev) and P-1b (rev) when submitting their bid.

The following revisions have been made to the proposal schedule:

Bid item No. 1 has been revised to exclude Irrigation item of work.

Schedule of Values for Bid Item No. 1 shall be submitted before 4:00 PM of the 4th business day following the bid opening. The Schedule of Value for this bid item shall not include the Irrigation work. Price includes the indirect cost and markup.

A new item of work has been added - **Bid Item No. 2: "Irrigation Allowances"**.

Schedule of Values and certified irrigation plans, if needed, shall be submitted to the City within two weeks after award of the contract. The Schedule of Value shall include only work related to Irrigation. Price includes the indirect cost and markup.

The Bid Item for Allowances renumbered to **Bid Item No. 3**. No changes have been made to this bid item.

EXHIBIT B
BID PACKAGE



Rev.	Date	By	Description
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LIONS PARK
 570 W. 18th Street
 Costa Mesa, CA 92627
 City of Costa Mesa
 Date: 07/13/11
 Project No: 11-013
 Revision: 01
 Date: JUL 31, 2011
 AS SHOWN

TITLE SHEET

LIONS PARK

LANDSCAPE, RESTROOM IMPROVEMENTS

570 W. 18TH STREET, COSTA MESA, CA 92627
 CITY PROJECT NO. 20-15

SCOPE OF WORK

THE SUPPLEMENTAL TO THE GENERAL CONTRACT, TOOLS LABOR AND INCIDENTALS AS REQUIRED BY THE PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS FOR THE ABOVE STATED PROJECT.

THE GENERAL ITEMS OF WORK TO BE PERFORMED HEREUNDER CONSIST OF BUT NOT LIMITED TO:

- MOBILIZATION, PREPARATION AND MAINTENANCE OF STORM WATER BEST MANAGEMENT PRACTICES, PREPARING NET STAMPED CONSIDERING DRAWINGS AND STRUCTURAL CALCULATIONS, OBTAINING BUILDING PERMITS.
- EXCAVATION, EARTHWORK, DEMOLITION AND SITE CLEARING, REMOVAL OF TRASH AND TREE STUMPS, INSTALLING CONSTRUCTION FENCING, SECURITY LIGHTING AND SECURED SITE THROUGHOUT THE CONSTRUCTION OF THE PROJECT.
- CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE IDENTIFIED TREES AND TO PROVIDE THE NECESSARY TREE CARE & MAINTENANCE. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE IDENTIFIED TREES AND TO PROVIDE THE NECESSARY TREE CARE & MAINTENANCE. ONLY WORK THAT THE CITY ENGINEER APPROVES SHALL BE PERMITTED UNLESS APPROVED BY THE CITY AND THE ACTION IS TAKEN ONLY WHEN THE CITY ENGINEER APPROVES.
- INSTALLATION AND CONNECTIONS TO THE UNDERGROUND UTILITIES, STOP WORK SIGN, WATER PIPES, ELECTRICAL, AND CONCRETE FINISHES, INTERIOR PLAY SURFACING, PLAY AREA, PRACTICE CONCRETE PAVING, DECOMPOSED GRANITE PAVING, SEAT WALLS, SHADE STRUCTURES, PLAY EQUIPMENT, SITE FURNISHINGS, AND MODEL POWER CONDUITING.
- INSTALLATION OF ALL LINES, VALVES, SPRAY HEADS, DRIP TUBING, CHECK COUPLERS AND WIPES.
- PLANTING: ALL TREES, SHRUBS, GROUNDCOVERS, TURF AND MULCH.
- ELECTRICAL: FRESH AIR INST. ALL CONDENSERS, LIGHT STANDARDS AND FUTURES.
- SEWAGE: INSTALL ALL PANS, SINKS AND MATERIALS INCLUDING LIGHTING. ALL PERMITS FOR ADA PARKING AND DRINKING HOOPS.
- ALL IMPROVEMENTS PROPOSED, UNLESS OTHERWISE SUBMITTED, HEREUNDER CONSIST OF BUT NOT LIMITED TO INCLUDE: DRIVEWAYS, FOOTINGS AND CALCULATIONS.
- PLAY EQUIPMENT.
- SHADE STRUCTURES.
- PHANTOM NET PLAN.

ELECTRICAL PLANS

Sheet	Date	Description
31	6-01	ELECTRICAL LEGENDS & NOTES
32	6-02	LUMINAIRE SCHEDULE & TITLE 24
33	6-03	CONSTRUCTION PANEL SCHEDULES
34	6-04	ELECTRICAL SITE PLAN
35	6-12	SITE PHOTO/ME/PEC PLAN
36	6-21	ELECTRICAL DETAILS

CIVIL ENGINEERING PLANS

Sheet	Date	Description
1	1-1	TITLE SHEET
2	AC-1	ACCESSIBILITY PLAN
3	SI-1	SITE SURVEY
4	1-1	DEVELOPMENT PLAN
5	D-2	DETAILED SECTIONS
6	EC-1	POSITION CONTROL PLAN
7	EC-2	POSITION CONTROL PLAN
8	G-2	GRADING PLAN
9	G-3	DETAILS AND SECTIONS
10	G-4	DETAILS AND SECTIONS
11	G-5	DETAILS AND SECTIONS
12	G-6	GEOTECHNICAL RECOMMENDATIONS

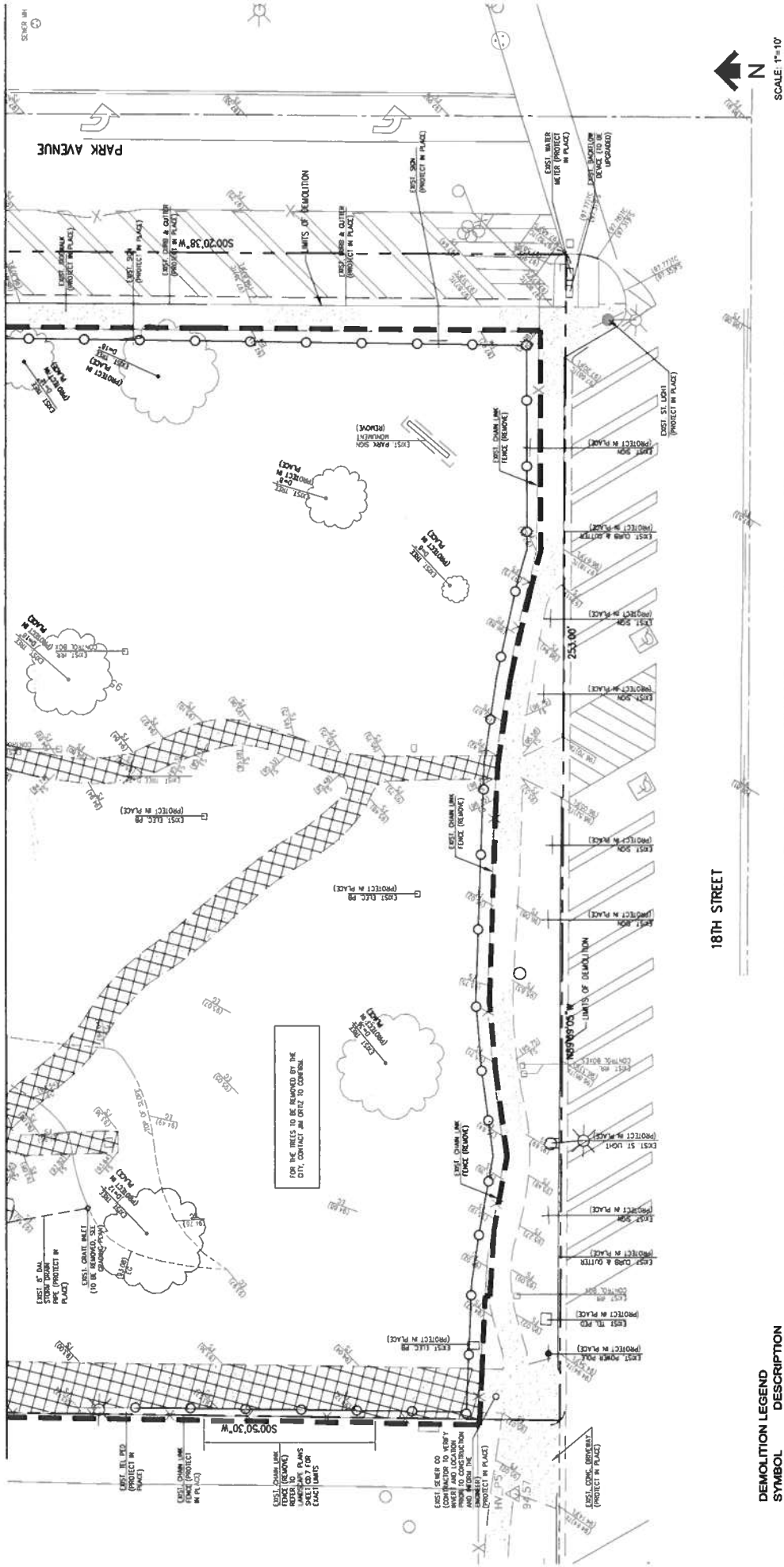
LANDSCAPE PLANS

Sheet	Date	Description
13	HC-2	HORIZONTAL CONTROL PLAN
14	HC-1	CONSTRUCTION PLAN
15	UC-1	CONSTRUCTION PLAN
16	UC-2	CONSTRUCTION PLAN
17	UC-3	CONSTRUCTION PLAN
18	CD-1	CONSTRUCTION PLAN
19	CD-2	CONSTRUCTION PLAN
20	CD-3	CONSTRUCTION PLAN
21	CD-4	CONSTRUCTION PLAN
22	CD-5	CONSTRUCTION PLAN
23	CD-6	CONSTRUCTION PLAN
24	CD-7	CONSTRUCTION PLAN
25	CD-8	CONSTRUCTION PLAN
26	CD-9	CONSTRUCTION PLAN
27	UP-1	PLANTING PLAN
28	UP-2	PLANTING PLAN
29	UP-3	PLANTING PLAN
30	UP-4	PLANTING PLAN

Abbreviations

AC	ASPHALT CONCRETE	CG	CURB MAP
AL	ALUMINUM	CG	CONCRETE
AP	ASPHALT PAVING	CG	CONCRETE
BM	BENCH MARK	CG	CONCRETE
BW	BACK WALL	CG	CONCRETE
CA	CURB AND GUTTER	CG	CONCRETE
CB	CURB	CG	CONCRETE
CC	CONCRETE	CG	CONCRETE
CD	CONCRETE DETAIL	CG	CONCRETE
CE	CONCRETE ELEVATION	CG	CONCRETE
CF	CONCRETE FINISH	CG	CONCRETE
CG	CONCRETE GRADING	CG	CONCRETE
CH	CHINA TILE	CG	CONCRETE
CI	CONCRETE INTERLOCK	CG	CONCRETE
CM	CONCRETE MASONRY	CG	CONCRETE
CO	CONCRETE	CG	CONCRETE
CP	CONCRETE PAVING	CG	CONCRETE
CS	CONCRETE SURFACE	CG	CONCRETE
CT	CONCRETE TYPING	CG	CONCRETE
CU	CONCRETE UNDERLAY	CG	CONCRETE
CV	CONCRETE VALVE	CG	CONCRETE
CW	CONCRETE WALL	CG	CONCRETE
CX	CONCRETE EXTERIOR	CG	CONCRETE
CY	CONCRETE YARD	CG	CONCRETE
DA	DETAILED SECTION	CG	CONCRETE
DB	DETAILED SECTION	CG	CONCRETE
DC	DETAILED SECTION	CG	CONCRETE
DD	DETAILED SECTION	CG	CONCRETE
DE	DETAILED SECTION	CG	CONCRETE
DF	DETAILED SECTION	CG	CONCRETE
DG	DETAILED SECTION	CG	CONCRETE
DH	DETAILED SECTION	CG	CONCRETE
DI	DETAILED SECTION	CG	CONCRETE
DJ	DETAILED SECTION	CG	CONCRETE
DK	DETAILED SECTION	CG	CONCRETE
DL	DETAILED SECTION	CG	CONCRETE
DM	DETAILED SECTION	CG	CONCRETE
DN	DETAILED SECTION	CG	CONCRETE
DO	DETAILED SECTION	CG	CONCRETE
DP	DETAILED SECTION	CG	CONCRETE
DQ	DETAILED SECTION	CG	CONCRETE
DR	DETAILED SECTION	CG	CONCRETE
DS	DETAILED SECTION	CG	CONCRETE
DT	DETAILED SECTION	CG	CONCRETE
DU	DETAILED SECTION	CG	CONCRETE
DV	DETAILED SECTION	CG	CONCRETE
DW	DETAILED SECTION	CG	CONCRETE
DX	DETAILED SECTION	CG	CONCRETE
DY	DETAILED SECTION	CG	CONCRETE
DZ	DETAILED SECTION	CG	CONCRETE
EA	EXCAVATION	CG	CONCRETE
EB	EXCAVATION	CG	CONCRETE
EC	EXCAVATION	CG	CONCRETE
ED	EXCAVATION	CG	CONCRETE
EE	EXCAVATION	CG	CONCRETE
EF	EXCAVATION	CG	CONCRETE
EG	EXCAVATION	CG	CONCRETE
EH	EXCAVATION	CG	CONCRETE
EI	EXCAVATION	CG	CONCRETE
EJ	EXCAVATION	CG	CONCRETE
EK	EXCAVATION	CG	CONCRETE
EL	EXCAVATION	CG	CONCRETE
EM	EXCAVATION	CG	CONCRETE
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EP	EXCAVATION	CG	CONCRETE
EQ	EXCAVATION	CG	CONCRETE
ER	EXCAVATION	CG	CONCRETE
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ET	EXCAVATION	CG	CONCRETE
EU	EXCAVATION	CG	CONCRETE
EV	EXCAVATION	CG	CONCRETE
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EX	EXCAVATION	CG	CONCRETE
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EZ	EXCAVATION	CG	CONCRETE
FA	FINISHED GRADE	CG	CONCRETE
FB	FINISHED GRADE	CG	CONCRETE
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FE	FINISHED GRADE	CG	CONCRETE
FF	FINISHED GRADE	CG	CONCRETE
FG	FINISHED GRADE	CG	CONCRETE
FH	FINISHED GRADE	CG	CONCRETE
FI	FINISHED GRADE	CG	CONCRETE
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HA	HORIZONTAL CONTROL PLAN	CG	CONCRETE
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HX	HORIZONTAL CONTROL PLAN	CG	CONCRETE
HY	HORIZONTAL CONTROL PLAN	CG	CONCRETE
HZ	HORIZONTAL CONTROL PLAN	CG	CONCRETE
IA	INSTALLATION	CG	CONCRETE
IB	INSTALLATION	CG	CONCRETE
IC	INSTALLATION	CG	CONCRETE
ID	INSTALLATION	CG	CONCRETE
IE	INSTALLATION	CG	CONCRETE
IF	INSTALLATION	CG	CONCRETE
IG	INSTALLATION	CG	CONCRETE
IH	INSTALLATION	CG	CONCRETE
II	INSTALLATION	CG	CONCRETE
IJ	INSTALLATION	CG	CONCRETE
IK	INSTALLATION	CG	CONCRETE
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IM	INSTALLATION	CG	CONCRETE
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IO	INSTALLATION	CG	CONCRETE
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IU	INSTALLATION	CG	CONCRETE
IV	INSTALLATION	CG	CONCRETE
IW	INSTALLATION	CG	CONCRETE
IX	INSTALLATION	CG	CONCRETE
IY	INSTALLATION	CG	CONCRETE
IZ	INSTALLATION	CG	CONCRETE
JA	JOB AREA	CG	CONCRETE
JB	JOB AREA	CG	CONCRETE
JC	JOB AREA	CG	CONCRETE
JD	JOB AREA	CG	CONCRETE
JE	JOB AREA	CG	CONCRETE
JF	JOB AREA	CG	CONCRETE
JG	JOB AREA	CG	CONCRETE
JH	JOB AREA	CG	CONCRETE
JI	JOB AREA	CG	CONCRETE
JJ	JOB AREA	CG	CONCRETE
JK	JOB AREA	CG	CONCRETE
JL	JOB AREA	CG	CONCRETE
JM	JOB AREA	CG	CONCRETE
JN	JOB AREA	CG	CONCRETE
JO	JOB AREA	CG	CONCRETE
JP	JOB AREA	CG	CONCRETE
JK	JOB AREA	CG	CONCRETE
JL	JOB AREA	CG	CONCRETE
JM	JOB AREA	CG	CONCRETE
JN	JOB AREA	CG	CONCRETE

MATCH LINE - SEE SHEET D.2



DEMOLITION LEGEND
SYMBOL DESCRIPTION

- REMOVE AND DEMOLISH ALL EXISTING SIDEWALK, CURBS & GUTTER BUILDINGS, STRUCTURES, TOWER AND SITE DEBRIS, MOUNT EXISTING PAVEMENT UNLESS OTHERWISE NOTED.
- REMOVE AND DEMOLISH ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED (E.G. GAS, WATER, SEWER, ETC.).
- INSTALL CONSTRUCTION FENCE WITH FACING FOR THE DIRECTION OF THE PROJECT.

CONTRACTOR WILL BE RESPONSIBLE TO PROVIDE ALL SITE DEBRIS WITH COMPLIANT WITH THE STAMPS AND FOOTERS AND MANHOLE COVERS.

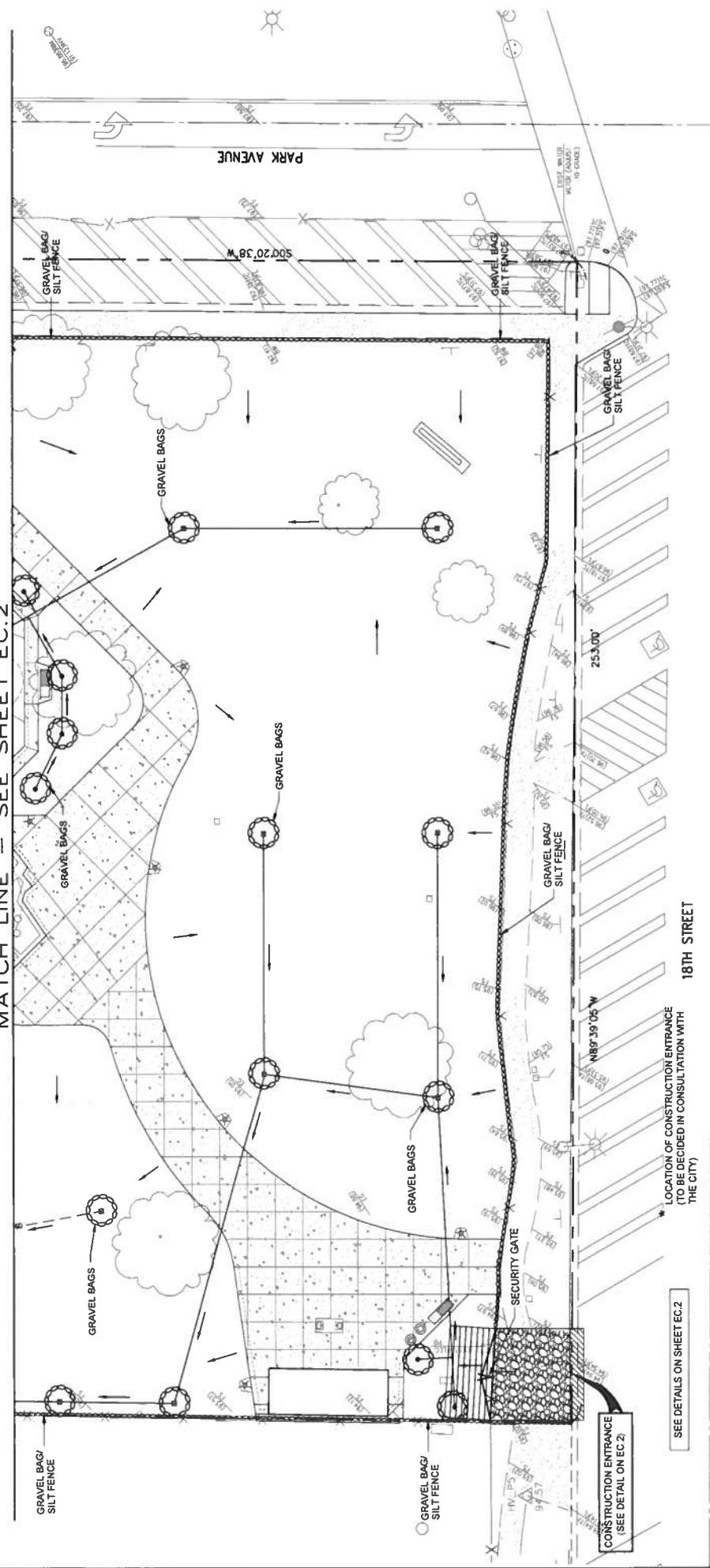
FOR THE TREES TO BE REMOVED BY THE CITY, CONTACT AN ORIZ TO CORRAL.

SEE SHEET D.2 FOR DEMOLITION LEGEND AND NOTES
SEE SHEET D.2 FOR TREE PROTECTION NOTES AND DETAIL

DIGALERT!
CALL BEFORE YOU DIG
811
UNDERGROUND SERVICE ALERT
Call at least 2 working days prior to beginning

NO. DATE APPROVED	CHECKED:	<p>PLANS PREPARED BY: DMS CONSULTANTS INC. CONSULTANTS INC. 1000 S. 10TH AVENUE, SUITE 100 DENVER, CO 80202 PHONE: 303.733.1111 FAX: 303.733.1112 EMAIL: info@dmsconsultants.com LICENSE NO. 07/21/2009</p>	<p>BENCHMARK NO. 1C-100-74 (ELEV. 95.678 (2005)) FOUND 2 3/4" OCS ALUMINUM BM DISE STAMPED "E 100-74" SOULMATE 51 LOCATED IN THE S.W. CORNER OF THE INTERSECTION OF AIRPORT BOULEVARD AND BROADWAY, 77 FT. N.E. OF THE CENTERLINE OF BROADWAY. THE CENTERLINE BENCHMARK MONUMENT IS SET LEVEL WITH THE SIDEWALK.</p>	<p>CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p>	<p>LIONS PARK UNDERWAYWAY PLANS FOR PART OF COSTA MESA TRACT</p>	<p>SHEET NO. 4 OF 36</p>
				<p>RECOMMENDED BY: [Signature] DATE: [Date]</p> <p>APPROVAL BY: [Signature] DATE: [Date]</p> <p>APPROVED BY: [Signature] DATE: [Date]</p>	<p>DEPARTMENT OF PUBLIC WORKS</p>	<p>CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p>

MATCH LINE - SEE SHEET EC.2



SCALE: 1"=10'

DIGITAL FRI
CALL BEFORE YOU DIG
811
UNDERGROUND SERVICE ALERT
FOR ALL LOCATING SERVICES

EROSION CONTROL NOTES

A) IN CASE OF EMERGENCY CALL CITY NON-EMERGENCY DISPATCH CENTER AT 311.

B) THE UNDERGROUND CIVIL ENGINEER WILL REVIEW EROSION CONTROL WORK AND CERTIFY THAT WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.

C) A STANDBY CRANE FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. (NUMBER 1, JUNE 15) NECESSARY MATERIALS SHALL BE AVAILABLE ON SITE AND STORED AT A MINIMUM OF 10 FEET FROM THE EROSION CONTROL MEASURES WHEN RAIN IS IMMINENT.

D) DEVICES SHALL NOT BE MOVED OR MODIFIED WITHOUT THE APPROVAL OF THE CITY INSPECTOR.

E) ALL REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY.

F) AFTER A RAINFALL EVENT, ALL SILT AND DEBRIS SHALL BE REMOVED FROM CHECK BASINS AND DESLING BASINS AND THE BASINS PUMPED DRY. A GRADED SLOPE SURFACE PROTECTION MEASURES DAMAGED DURING A RAINFALL EVENT SHALL ALSO BE IMMEDIATELY REPAIRED.

G) ALL SLOPES AT THE TRACT PERIMETER MUST DRAIN AWAY FROM THE TOP OF THE SLOPE. AT THE PERIMETER, ALL SLOPES SHALL BE PROTECTED WITH A GRADED SLOPE SURFACE PROTECTION MEASURES DAMAGED DURING A RAINFALL EVENT SHALL ALSO BE IMMEDIATELY REPAIRED.

H) A GRADE SHALL BE POSTED ON THE SITE UNLESS THE GRADE OF WATER IN ANY DEVICES EXCEEDS TWO FEET ABOVE THE GRADE OF THE SURFACE. TEMPORARY DEVICES OR ITS NEIGHBORING DAMAGED EROSION CONTROL MEASURES WHEN RAIN IS IMMINENT.

MR. SURFENDER DEWAN REC 34509 DATE 07/31/2020

THE UNDERSIGNED CIVIL ENGINEER ACCEPTS RESPONSIBILITY FOR PROFESSIONAL INSPECTION OF THE EROSION CONTROL MEASURES ON 07/31/2020 DATE

LOCATION OF CONSTRUCTION ENTRANCE (TO BE DECIDED IN CONSULTATION WITH THE CITY)

SEE DETAILS ON SHEET EC.2

<p>CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p>		<p>CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p>	
<p>RECOMMENDED BY: [Signature]</p>		<p>RECOMMENDED BY: [Signature]</p>	
<p>APPROVED BY: [Signature]</p>		<p>APPROVED BY: [Signature]</p>	
<p>DATE: 07/31/2020</p>		<p>DATE: 07/31/2020</p>	
<p>PROJECT NO. 1C-100-74</p>		<p>PROJECT NO. 1C-100-74</p>	
<p>DATE: 07/31/2020</p>		<p>DATE: 07/31/2020</p>	
<p>NO. [] DATE [] APPROVED []</p>		<p>NO. [] DATE [] APPROVED []</p>	
<p>PROJECT NO. 1C-100-74</p>		<p>PROJECT NO. 1C-100-74</p>	
<p>DATE: 07/31/2020</p>		<p>DATE: 07/31/2020</p>	
<p>NO. [] DATE [] APPROVED []</p>		<p>NO. [] DATE [] APPROVED []</p>	

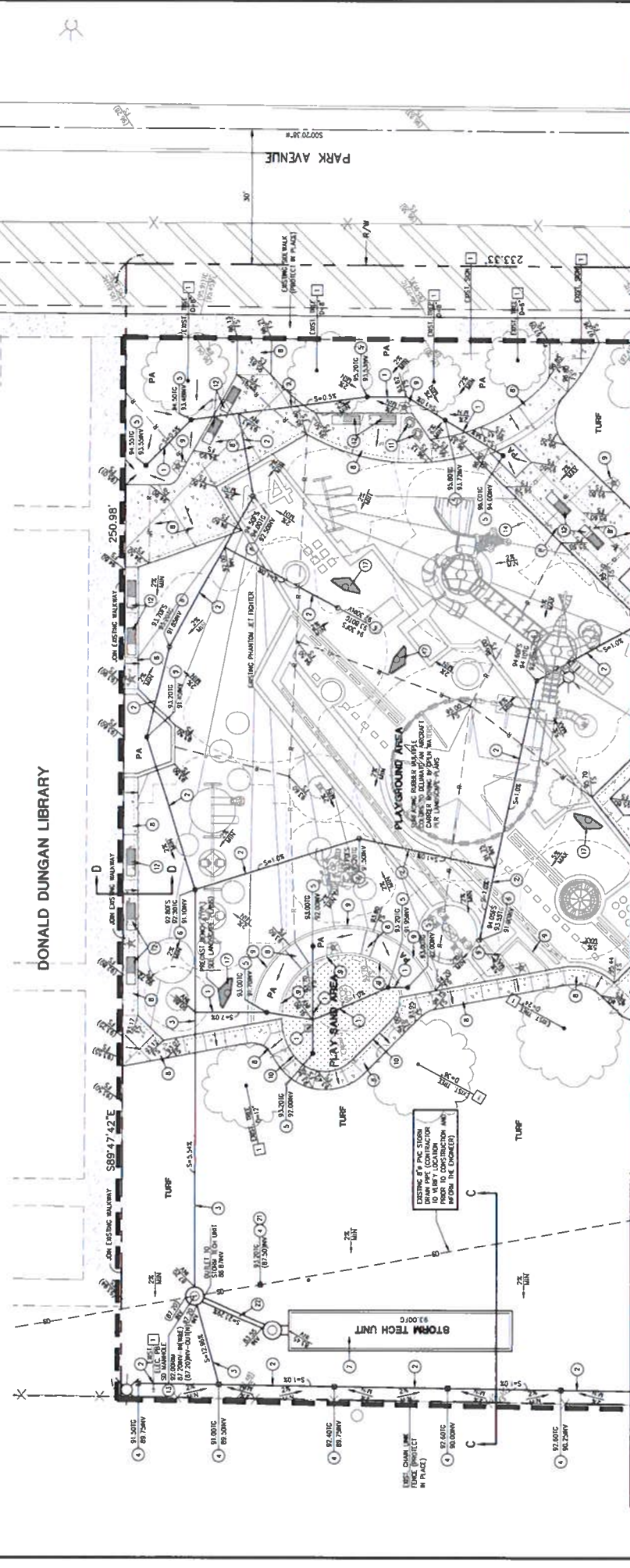
LIONS PARK IMPROVEMENT PLANS
EROSION CONTROL PLAN
CITY OF COSTA MESA
DEPARTMENT OF PUBLIC WORKS

SHEET NO. 6 OF 36
EC.1
PLAN NUMBER

- CONSTRUCTION NOTES (GRADING)**
- CONSTRUCT 4" PVC SOHO DRAIN PIPE.
 - CONSTRUCT 6" PVC SOHO DRAIN PIPE.
 - CONSTRUCT 8" PVC SOHO DRAIN PIPE.
 - CONSTRUCT 12" 17' BROOKS DRAIN BOX WITH BRASS GRATE PER DETAIL SHEET C.3.
 - CONSTRUCT 12" 17' SQUARE POLYPROPYLENE CATCH BASIN WITH 12" JERMAN SQUARE GRATE, FOR DRAIN PIPES ON TOP OF DRAIN PIPE SEE DETAIL C.4, UNDERBASE SEE DETAIL C.5.
 - CONSTRUCT DRAIN PIPES PER DETAIL C.10 ON LANDSCAPE ARCHITECT'S PLANS (SEE CD.1)
 - INSTALL MC-3000 JUNCTION SYSTEM WITH 2" HDPE/AST MANHOLE AND GULLATOR RISE FOR MAINTENANCE (SIZE AND SPECIFICATIONS PER TABLE AND DETAIL SHEET C.3)
 - CONSTRUCT 4" THICK CONCRETE FLATWORK PER DETAIL ON LANDSCAPE ARCHITECT'S PLANS
 - CONSTRUCT CONCRETE HEADER (6" MIN) PER DETAIL ON LANDSCAPE ARCHITECT'S PLANS

- CONSTRUCT DEPONDED CONCRETE EDGE PER DETAIL ON LANDSCAPE ARCHITECT'S PLANS (SEE CD.1)
- INSTALL TRASH & RECYCLE RECEPTACLE (MODEL PER LANDSCAPE ARCHITECT'S PLANS)
- INSTALL PRECAST PARK BENCH WITHOUT BACKREST PER MANUFACTURER'S SPECIFICATIONS
- CONSTRUCT STORMWATER MANHOLE PER AWWA STD. PLAN 307-2.
- INSTALL SHADE STRUCTURE "X" (20'x20') PER DETAIL 1 ON LANDSCAPE ARCHITECT'S PLANS (SEE CD.7)
- INSTALL 6" HIGH CHAINLINK FENCE PER DETAIL 1 ON LANDSCAPE ARCHITECT'S PLANS (SEE CD. 7A8)
- INSTALL 15" HIGH CHAINLINK FENCE PER DETAIL 1 ON LANDSCAPE ARCHITECT'S PLANS (SEE CD. 7A8)
- CONSTRUCT 4" x 6" JOIST WITH 2" HDPE/AST MANHOLE AND GULLATOR RISE FOR MAINTENANCE (SIZE AND SPECIFICATIONS PER TABLE AND DETAIL SHEET C.3)
- CONSTRUCT 4" x 6" JOIST WITH 2" HDPE/AST MANHOLE AND GULLATOR RISE FOR MAINTENANCE (SIZE AND SPECIFICATIONS PER TABLE AND DETAIL SHEET C.3)
- CONSTRUCT 4" THICK CONCRETE FLATWORK PER DETAIL ON LANDSCAPE ARCHITECT'S PLANS (SEE CD.3)

- INSTALL 1.17" WATER SERVICE PER MESA WATER DISTRICT STD DRAWING W-2, 3 AND 10 WITH CHINA WATER DISTRICT STD DRAWING W-23 WITH CAGE/PROLOGUE, CONNECT TO EXISTING WATER MAIN ON PARK AVENUE CONTRACTOR TO FIELD VERIFY LOCATION AND SIZE OF EXISTING WATER MAIN ON PARK AVENUE
- INSTALL 1" WATER SERVICE WITH GATE VALVE TO UNIVERSITY ISLAND.
- REWORK EXISTING DRAIN INLET.
- CONSTRUCT 12" PVC SOHO DRAIN PIPE.
- CONSTRUCT 1.17" PVC SOHO DRAIN PIPE.
- INSTALL UNIVERSITY ISLAND PER DETAILS ON LANDSCAPE ARCHITECT'S PLANS.



MATCH LINE - SEE SHEET G.1

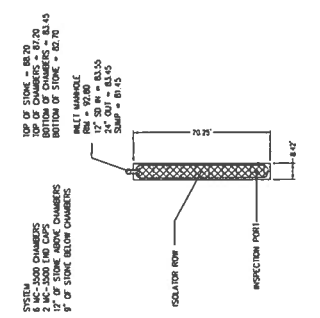
DIGALERT
CALL BEFORE YOU DIG
811
UNDERGROUND SERVICE ALERT
Call at least 1 working day prior to excavating



SCALE: 1"=10'

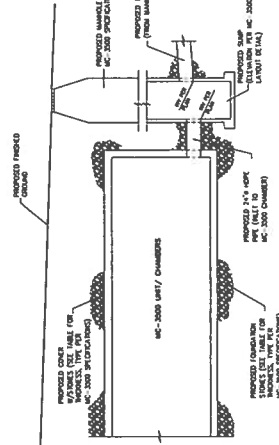
<p>LIONS PARK IMPROVEMENT PLANS 370 W 18TH ST, COSTA MESA, CA 92627</p> <p>GRADING PLAN</p> <p>CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p>		<p>PROJECT NO. 9 OF 35</p> <p>PLAN NUMBER</p>
<p>CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p> <p>RECOMMENDED BY: [Signature] DATE: [Date]</p> <p>APPROVAL BY: [Signature] DATE: [Date]</p> <p>APPROVED BY: [Signature] DATE: [Date]</p>		<p>PLANS PREPARED BY: [Signature] DATE: [Date]</p>
<p>DMS CONSULTANTS, INC. 1000 S. GARDEN ST., SUITE 100 COSTA MESA, CA 92626 TEL: 714.440.1100 WWW.DMSCONSULTANTS.COM</p>		<p>BENCH MARK 88 NORTHAVENUE 11 100.74 (ELEV 95.52' (2005)) FOUND 2.5'x4'x4' ALUMINUM BM GSA STAMPED "1E 100-74" SET IN THE S.W. CORNER OF 4 FT. BY 8 FT. CONC. CURB ON THE INTERSECTION OF 11TH AVE. AND GARDEN ST. OR NEAREST BRACKET AND QUANTIFY, 7/11/12, BY THE CITY OF COSTA MESA. THIS BENCHMARK IS TO BE USED FOR ALL SURVEYING AND CONSTRUCTION WORK ON THE SITE LEVEL WITH THE SUBMITTAL.</p>
<p>DISPOSITION NOTE</p> <p>1. PROTECT IN PLACE</p>		<p>NO. DATE APPROVED</p> <p>DRW. DATE CHECKED</p>
<p>ALL CHANGES SHALL COMPLY WITH SCS'S REPORT'S RECOMMENDATIONS</p>		<p>SUPPLIER OR LABORER SHALL MONITOR PROPERTY CORNER BEFORE STARTING GRADING, OTHER WITH PERMANENT MONUMENTS OR TEMPORARY MONUMENTS. ALL MONUMENTS SHALL BE SET INTO GROUND TO NEAR FULFILL AND MAINTAINED WITH TIME.</p>

STORMTECH SYSTEM	
MAX. LENGTH	48.75 FT.
MAX. WIDTH	8.42 FT.
EACH CHAMBER SIZE	777'45"
NO. OF CHAMBERS	6
NO. OF END CAPS	2
END SIZE	410 SQFT
STORAGE VOLUME (REQ.)	1198 C'
STORAGE VOLUME (PROVIDED)	1316 C'
PROPOSED ELEVATIONS	
TOP OF STONE	82.20
TOP OF CHAMBER	87.20
BOTTOM OF CHAMBER	83.45
BOTTOM OF STONE	82.70
INVERT AT END CAP	83.45
INVERT AT SD MANHOLE	86.87

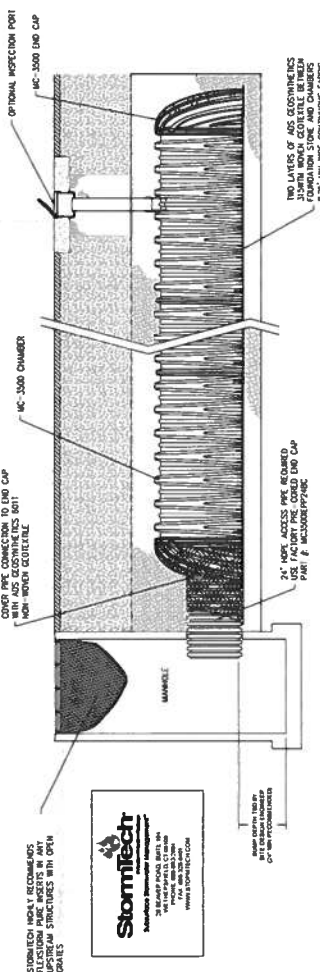


MC-3600 STORMTECH SYSTEM DETAIL
TOP VIEW
N15

MC-3600 STORMTECH SYSTEM DATA
N15
(SEE DETAIL BELOW)



MC-3600 STORMTECH SYSTEM DETAIL
SIDE VIEW
N15
(SEE TABLE THIS SHEET FOR SIZE AND SPECIFICATIONS)



MC-3500 ISOLATOR ROW DETAIL
N15

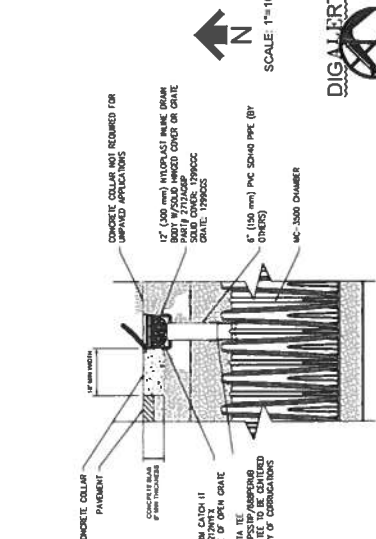
STORMTECH GENERAL NOTES

1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST MC-3000 INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. STORMTECH OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR REPRESENTATIVES FOR MORE INFORMATION. VISIT US AT [WWW.STORMTECH.COM](http://www.stormtech.com) PRIOR TO SYSTEM INSTALLATION TO AVOID A PRE-INSTALLATION CONSULTATION FEE.
3. CONTRACTORS MUST REPORT ANY PROBLEMS WITH THE BEARING CAPACITY OF THE CHAMBER FOUNDATION MATERIALS TO THE DESIGN ENGINEER. CALL STORMTECH FOR MORE INFORMATION OR VISIT [WWW.STORMTECH.COM](http://www.stormtech.com) FOR MORE INFORMATION.
4. A SPECIFIC REQUIREMENT FOR SYSTEMS WITH PAVEMENT DECKS (CONCRETE, ASPHALT, ETC.): MANHOLE COVER IS 24" (610 MM) NOT INCLUDING PAVEMENT. MANHOLE COVER IS 6.5' (1.98 M) INCLUDING PAVEMENT FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT. WHERE RUTTING FROM TRAFFIC MAY OCCUR, MANHOLE COVER IS 30" (762 MM) INCLUDING COVER IS 8.5' (2.59 M).
5. THE CONTRACTOR MUST REPORT ANY PROBLEMS WITH THE BEARING CAPACITY OF THE CHAMBER FOUNDATION MATERIALS TO THE DESIGN ENGINEER. CALL STORMTECH FOR MORE INFORMATION OR VISIT [WWW.STORMTECH.COM](http://www.stormtech.com) FOR MORE INFORMATION.
6. SOME PLACEMENT BETWEEN CHAMBERS BONE AND AROUND BONE MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH MC-3000 INSTALLATION INSTRUCTIONS.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH MC-3000 INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH MC-3000 INSTALLATION INSTRUCTIONS FOR A TABLE OF STORMTECH MC-3000 INSTALLATION INSTRUCTIONS. VISIT US AT [WWW.STORMTECH.COM](http://www.stormtech.com) FOR MORE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING MATERIALS THAT EXCEED STORMTECH REQUIREMENTS FROM TRAILING ACCESS OF PARKING OVER THE STORMTECH SYSTEM.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMTECH SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. ENVIRONMENTAL PRODUCT LIABILITY IS LIMITED CONTACT STORMTECH FOR WARRANTY INFORMATION.

1. CHAMBERS SHALL BE STORMTECH MC-3000 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MADE FROM WEAR, IMPACT-RESISTANT POLYPROPYLENE COPOLYMERS.
3. CHAMBER BONE SHALL PROVIDE CONTINUOUS, UNINTERRUPTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPIDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL OBTAIN THE ASHJO LRD BRIDGE DESIGN SPECIFICATIONS, SECTION 1917.17 (SEE DETAIL).
5. ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE ASHJO LRD BRIDGE DESIGN SPECIFICATIONS, SECTION 1917.17 ARE MET.
6. THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.

MC-3500 STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3000 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MADE FROM WEAR, IMPACT-RESISTANT POLYPROPYLENE COPOLYMERS.
3. CHAMBER BONE SHALL PROVIDE CONTINUOUS, UNINTERRUPTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPIDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL OBTAIN THE ASHJO LRD BRIDGE DESIGN SPECIFICATIONS, SECTION 1917.17 (SEE DETAIL).
5. ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE ASHJO LRD BRIDGE DESIGN SPECIFICATIONS, SECTION 1917.17 ARE MET.
6. THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.



MC-3500 6" INSPECTION PORT DETAIL
N15



SHEET NO. 10 OF 36
G.3
PLAN NUMBER

LIONS PARK IMPROVEMENT PLANS
DET. # 10711, ST. COSTA MESA, CA
CITY OF COSTA MESA
DEPARTMENT OF PUBLIC WORKS

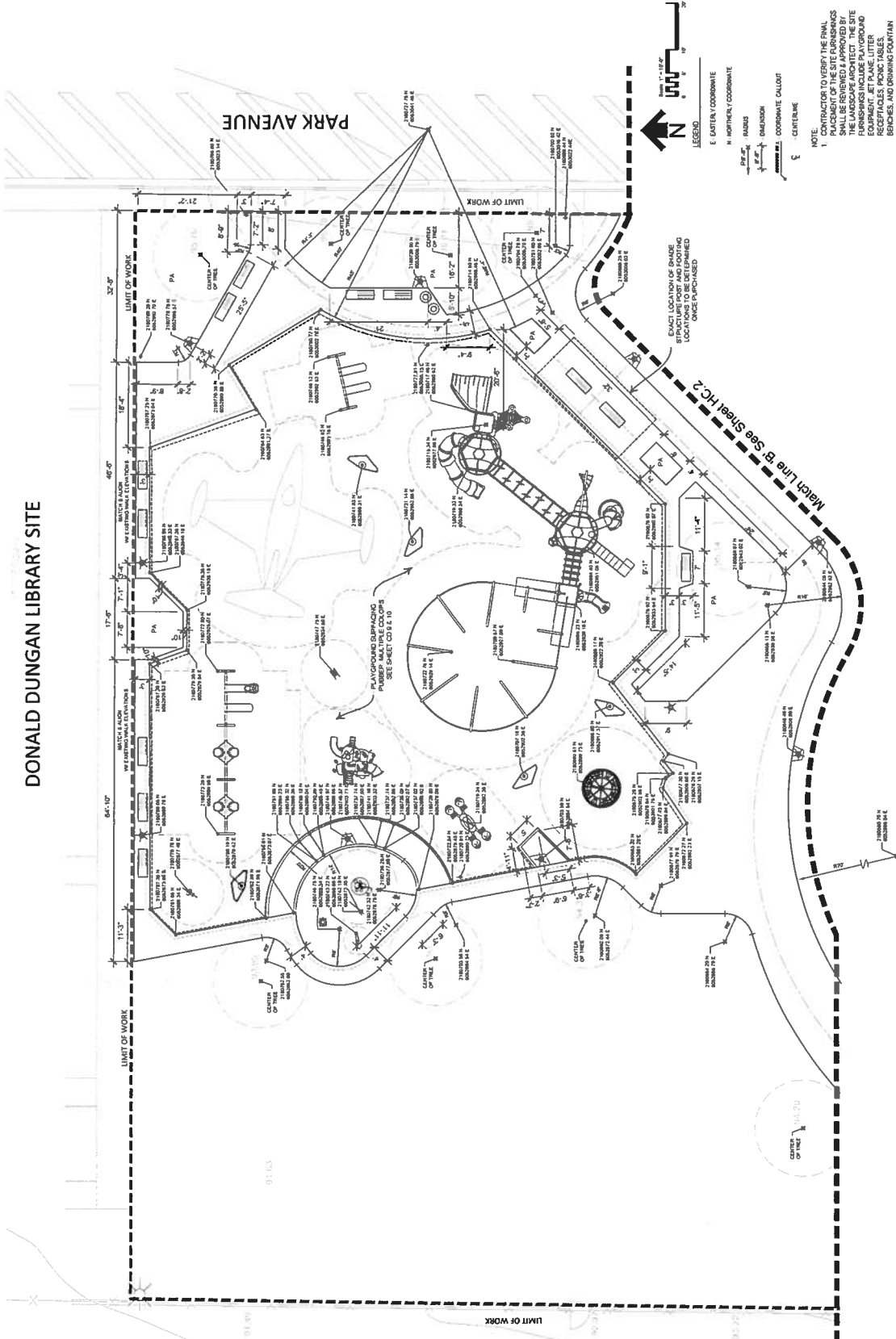
CITY OF COSTA MESA
DEPARTMENT OF PUBLIC WORKS
RECOMMENDED BY: [Signature]
APPROVAL BY: [Signature]
DATE: [Date]



PLANS PREPARED BY
DMS CONSULTANTS INC.
CONSULTANTS
DATE: 07/29/2020

BENCHMARK NO. 11-100-74 (ELEV. 87.676 (2005))
FOUND 2 3/4" OCS ALUMINUM BUSH STAMPED "11-100-74"
MONUMENT IS LOCATED IN THE C.V. CORNER OF THE INTERSECTION
OF HERRING BOULEVARD AND BROADWAY, 7.11 FEET N.E. OF THE
CORNER OF HERRING BOULEVARD AND BROADWAY. MONUMENT IS
SET LEVEL WITH THE SURFACE.

DONALD DUNGAN LIBRARY SITE



PARK AVENUE



- LEGEND**
- E EASTING COORDINATE
 - N NORTHING COORDINATE
 - DIMENSION
 - COORDINATE CALLOUT
 - CENTERLINE

- NOTE**
1. CONTRACTOR TO VERIFY THE FINAL PLACEMENT OF THE FURNISHINGS SHALL BE REVIEWED & APPROVED BY THE LANDSCAPE ARCHITECT. THE SITE EQUIPMENT, SET PLANKS, UTILITY RECEPTACLES, PONDING TABLES, AND PONDING PARTITION SHALL BE INSTALLED PRIOR TO SURFACING INSTALLATION.
 2. REFER TO THE CONSTRUCTION DOCUMENTS FOR ADDITIONAL CONSTRUCTION AND/OR PRODUCT INFORMATION.
 3. SEE TITLE SHEET FOR GENERAL NOTES.
 4. SEE GRADING AND DRAINAGE PLANS FOR DRAIN & INVERT ELEVATIONS.

DVD
 Donald Veitch Design
 Landscape Architects & Park Planning

Costa Mesa Office
 11111 Newport Blvd., Suite 108
 Costa Mesa, CA 92626
 Phone: (714) 441-1222
 Fax: (714) 441-1223
 email: dave@donaldveitch.com
 www.donaldveitch.com

Contractor

Name	
Address	
City	
State	
Zip	
Phone	
Fax	
Email	



811
MARKIT
 PROFESSIONAL LANDSCAPE ARCHITECTURE

811 MARKIT is a registered trademark of the International Association of Landscape Professionals (IALA). IALA is a non-profit organization dedicated to the advancement of the landscape architecture profession. 811 MARKIT is a service provided by IALA to its members and the public. For more information, please visit www.811markit.com.

Project

Name	
Address	
City	
State	
Zip	
Phone	
Fax	
Email	

LIONS PARK
 570 W. 18th Street
 Costa Mesa, CA 92627

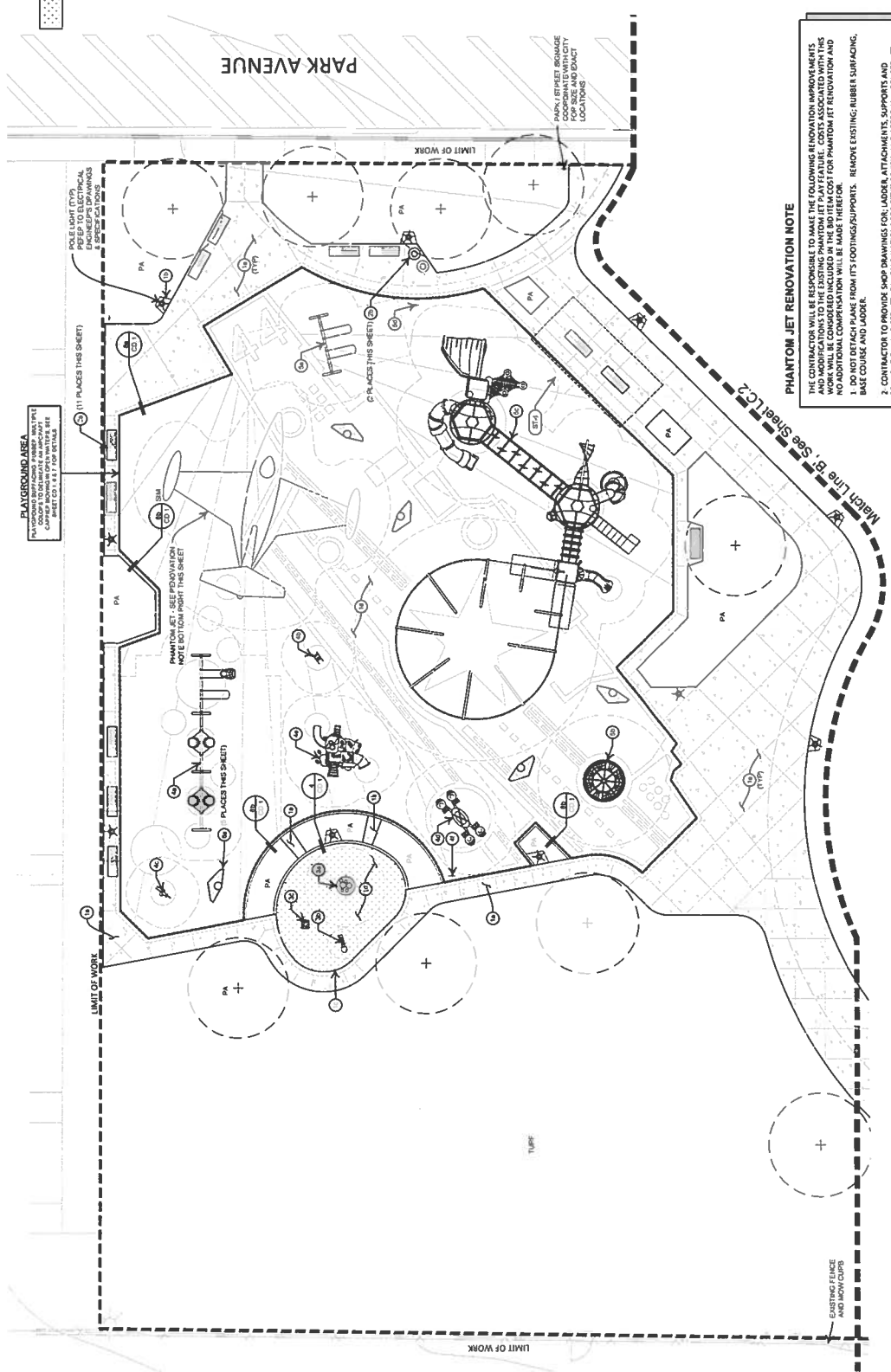
City of Costa Mesa

Project No.: 20-15
 Date: July 21, 2020
 Drawn by: AS BROWN

HORIZONTAL CONTROL PLAN

HC.1

DONALD DUNGAN LIBRARY SITE



CONSTRUCTION LEGEND

KEY	DESCRIPTION
1	CONCRETE PAVEMENT
2	ASPHALT PAVEMENT
3	GRAVEL
4	GRAVEL WITH SAND
5	GRAVEL WITH SAND AND FIBER
6	GRAVEL WITH SAND AND FIBER (2")
7	GRAVEL WITH SAND AND FIBER (3")
8	GRAVEL WITH SAND AND FIBER (4")
9	GRAVEL WITH SAND AND FIBER (5")
10	GRAVEL WITH SAND AND FIBER (6")
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67	GRAVEL WITH SAND AND FIBER (63")
68	GRAVEL WITH SAND AND FIBER (64")
69	GRAVEL WITH SAND AND FIBER (65")
70	GRAVEL WITH SAND AND FIBER (66")
71	GRAVEL WITH SAND AND FIBER (67")
72	GRAVEL WITH SAND AND FIBER (68")
73	GRAVEL WITH SAND AND FIBER (69")
74	GRAVEL WITH SAND AND FIBER (70")
75	GRAVEL WITH SAND AND FIBER (71")
76	GRAVEL WITH SAND AND FIBER (72")
77	GRAVEL WITH SAND AND FIBER (73")
78	GRAVEL WITH SAND AND FIBER (74")
79	GRAVEL WITH SAND AND FIBER (75")
80	GRAVEL WITH SAND AND FIBER (76")
81	GRAVEL WITH SAND AND FIBER (77")
82	GRAVEL WITH SAND AND FIBER (78")
83	GRAVEL WITH SAND AND FIBER (79")
84	GRAVEL WITH SAND AND FIBER (80")
85	GRAVEL WITH SAND AND FIBER (81")
86	GRAVEL WITH SAND AND FIBER (82")
87	GRAVEL WITH SAND AND FIBER (83")
88	GRAVEL WITH SAND AND FIBER (84")
89	GRAVEL WITH SAND AND FIBER (85")
90	GRAVEL WITH SAND AND FIBER (86")
91	GRAVEL WITH SAND AND FIBER (87")
92	GRAVEL WITH SAND AND FIBER (88")
93	GRAVEL WITH SAND AND FIBER (89")
94	GRAVEL WITH SAND AND FIBER (90")
95	GRAVEL WITH SAND AND FIBER (91")
96	GRAVEL WITH SAND AND FIBER (92")
97	GRAVEL WITH SAND AND FIBER (93")
98	GRAVEL WITH SAND AND FIBER (94")
99	GRAVEL WITH SAND AND FIBER (95")
100	GRAVEL WITH SAND AND FIBER (96")

PHANTOM JET REMOVAL NOTE

THE CONTRACTOR WILL BE RESPONSIBLE TO MAKE THE FOLLOWING RENOVATION IMPROVEMENTS AND MODIFICATIONS TO THE EXISTING PHANTOM JET PLAY FEATURE. COSTS ASSOCIATED WITH THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NO ADDITIONAL COMPENSATION WILL BE MADE FOR THIS WORK.

- DO NOT DETACH PLANE FROM ITS FOOTINGS/SUPPORTS. REMOVE EXISTING RUBBER SURFACING, BASE COURSE AND LADDER.
- CONTRACTOR TO PROVIDE SHIP BRANCHES FOR LADDER, ATTACHMENTS, SUPPORTS, AND FOUNDATION, AND STRUCTURAL CALCULATIONS FOR CITY'S REVIEW AND APPROVAL. CONSTRUCT NEW METAL LADDER TO ACCESS COCKPIT FOR CITY'S REVIEW AND APPROVAL. EMBED THE BASE OF THE LADDER INTO PLAY SURFACE.
- REPAIR ANY DAMAGED PORTIONS OF THE PLANE'S SURFACE TO THE SATISFACTION OF THE CITY ENGINEER. THIS MAY INCLUDE PATCHING AND SANDING GRACO'S WITH EPOXY MIX. SUBMIT A SAMPLE OF THE EPOXY MIX FOR THE CITY'S REVIEW AND APPROVAL.
- CONTRACTOR TO PREPARE THE PLANE'S SURFACE TO BE PAINTED AND WILL BE RESPONSIBLE TO PROVIDE THE PAINT AND ANTI-CORROSION ACTIVITIES. ADD ONE COAT OF PRIMER AND TWO COATS OF PAINT AND ANTI-CORROSION SEALER.

REFER TO COVER SHEET FOR GENERAL NOTES
 REFER TO COVER SHEET LC.3 FOR CONSTRUCTION LEGEND

DVP
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11111 Avenida...
 (714) 941-1000
 (714) 941-1001
 www.donatidesign.com

CITY OF COSTA MESA
 570 W. 18th Street
 Costa Mesa, CA 92627

CONSTRUCTION PLAN

City of Costa Mesa

570 W. 18th Street
 Costa Mesa, CA 92627

Project: _____
 Date: _____
 Designer: _____
 Checker: _____
 Date: _____
 Title: _____

LC.1

SHEET 16 OF 36

7.0 SHADE STRUCTURES

REF.	DESCRIPTION	MANUFACTURER/SUPPLIER	MODEL NO.	FINISH/TEXTURE	COLOR	DETAIL SHEET NO.	NOTE
(S-1)	METAL BRACE TO 2x4x8 POSTS PROTECTIVE FINISH	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL POST BRACKETING		TO MATCH FINISH OF POSTS AND BRACES	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL

9.0 FENCING & ACCESSORIES

REF.	DESCRIPTION	MANUFACTURER	FINISH/TEXTURE	COLOR	COMMENTS
(A)	CONCRETE POSTS 4x4x8				
(B)	CHAINS LINK FENCING 4x4x8				
(C)	PROTECTIVE FINISH				

1.0 HARDSCAPE AND PAVING

REF.	DESCRIPTION	MANUFACTURER/SUPPLIER	MODEL NO.	FINISH/TEXTURE	COLOR	DETAIL SHEET NO.	NOTE
(A)	CONCRETE (10'x10')	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(B)	CONCRETE (4'x4'x8')	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(C)	CONCRETE (4'x4'x8')	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(D)	CONCRETE (4'x4'x8')	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(E)	CONCRETE (4'x4'x8')	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL

2.0 SITE FURNISHINGS

REF.	DESCRIPTION	MANUFACTURER/SUPPLIER	MODEL NO.	FINISH/TEXTURE	COLOR	DETAIL SHEET NO.	NOTE
(A)	POSTS FOR SIGNAGE	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(B)	TRASH RECYCLING BINS	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL

3.0 PLAYGROUND EQUIPMENT - SAND PLAY AREA (2 TO 5 YEARS)

REF.	DESCRIPTION	MANUFACTURER/SUPPLIER	MODEL NO.	FINISH/TEXTURE	COLOR	DETAIL SHEET NO.	NOTE
(A)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(B)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(C)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL

4.0 PLAYGROUND EQUIPMENT - TOT LOT AREA (2 TO 5 YEARS)

REF.	DESCRIPTION	MANUFACTURER/SUPPLIER	MODEL NO.	FINISH/TEXTURE	COLOR	DETAIL SHEET NO.	NOTE
(A)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(B)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(C)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(D)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(E)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL

5.0 PLAYGROUND EQUIPMENT - (6 TO 12 YEARS)

REF.	DESCRIPTION	MANUFACTURER/SUPPLIER	MODEL NO.	FINISH/TEXTURE	COLOR	DETAIL SHEET NO.	NOTE
(A)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(B)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(C)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL
(D)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL		TO MATCH FINISH OF PAVING	PORTLAND CEMENT PORTLAND CEMENT		CONTRACTOR TO BE DETERMINED FOR SUBMITTAL CONTRACTOR TO BE DETERMINED FOR SUBMITTAL

6.0 CUSTOM

REF.	DESCRIPTION	MANUFACTURER	FINISH/TEXTURE	COLOR	COMMENTS
(A)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL			
(B)	MONITOR	CONTRACTOR TO BE DETERMINED FOR SUBMITTAL			

NOTES

A - A DEFERRED SUBMITTAL WILL BE REQUIRED FOR THE CITY'S REVIEW AND APPROVAL. THE SUBMITTAL SHALL INCLUDE SHOP DRAWINGS AND MATERIAL SAMPLES FOR FINISHES AND COLORS. TWO (2) COMPACT, HIGH SOLIDS, LOW VOC, NON-SOLUBLE, NON-YELLOWING ANTI-GRAFFITI PRODUCT.

B - PREPARE SURFACE TO RECEIVE COATING PER MANUFACTURER'S RECOMMENDATIONS. APPLY ANTI-GRAFFITI COATINGS PRIOR TO THE INSTALLATION OF PLANTINGS.

C - SURFACE MOUNT TO CONCRETE BASE AS RECOMMENDED BY THE MANUFACTURER.

D - PERMANENT IN-GROUND MOUNT. CONSTRUCT CONCRETE AS RECOMMENDED BY THE MANUFACTURER.

E - BID ALTERNATE. THE SUBMITTAL SHALL INCLUDE FREIGHT AND INSTALLATION COST.

REFER TO COVER SHEET FOR GENERAL NOTES



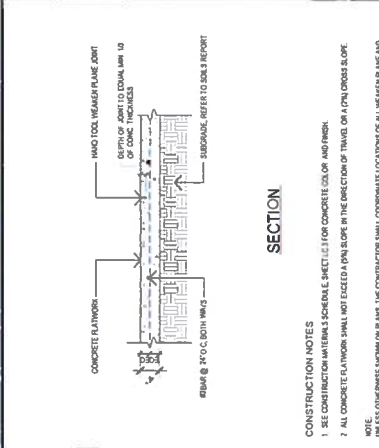
LIANS PARK
570 W. 18th Street
Costa Mesa, CA 92627

City of Costa Mesa
City Engineer
City of Costa Mesa
City of Costa Mesa

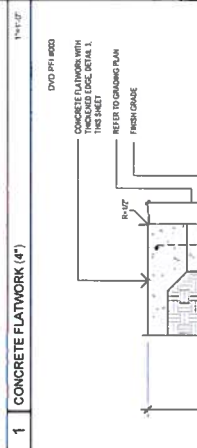
CONSTRUCTION LEGEND

LC.3

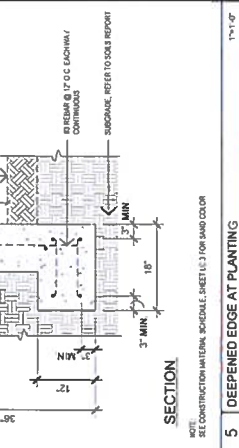
SHEET 16 OF 36



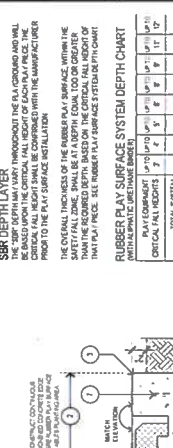
SECTION AT SAND PLAY



SECTION THICKENED CONCRETE EDGE



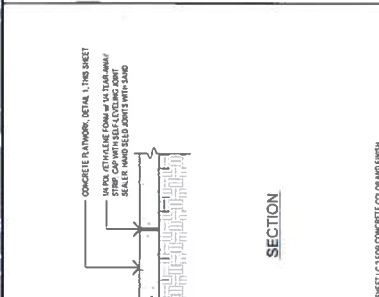
SECTION DEEPEDED EDGE AT SAND LOT



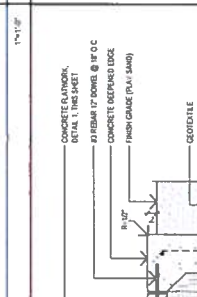
SECTION DEEPEDED EDGE AT PLANTING



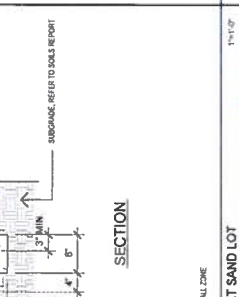
SECTION AT PLANTING



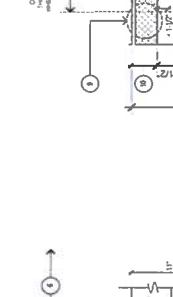
SECTION AT HARDSCAPE



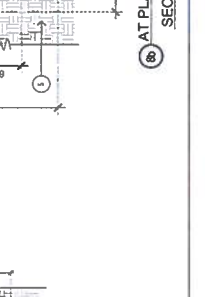
SECTION RESILIENT RUBBER PLAY SURFACE AND THICKEN CONCRETE EDGE



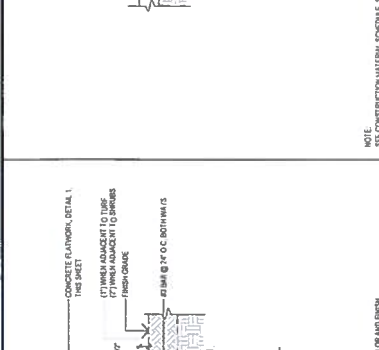
SECTION RESILIENT RUBBER PLAY SURFACE OVER DRAIN



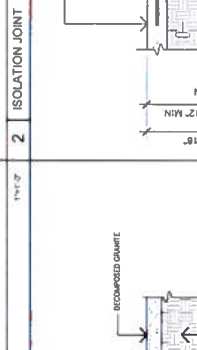
SECTION CONCRETE FLATWORK (4")



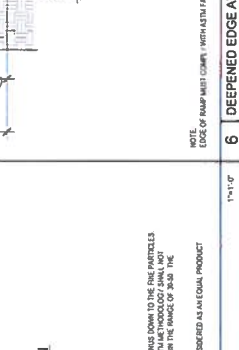
SECTION RUBBER PLAY SURFACE SYSTEM DEPTH CHART



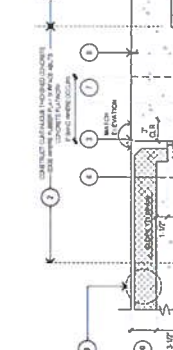
SECTION SBR DEPTH LAYER



SECTION RUBBER PLAY SURFACE SYSTEM DEPTH CHART



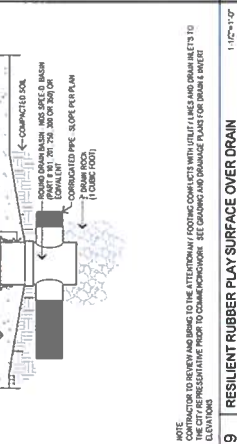
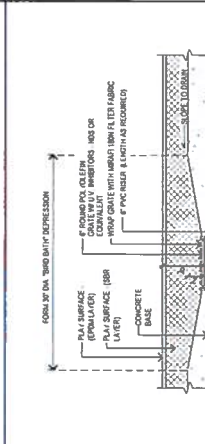
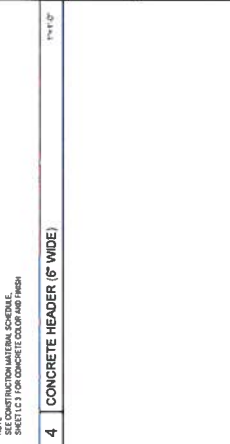
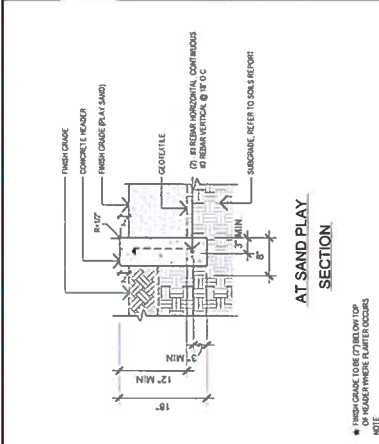
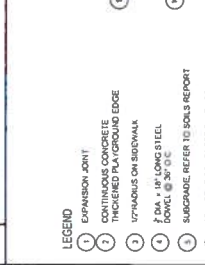
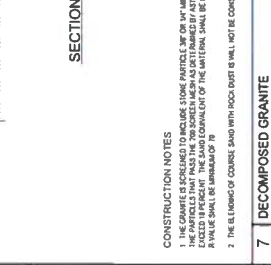
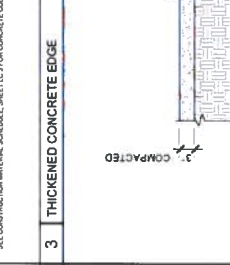
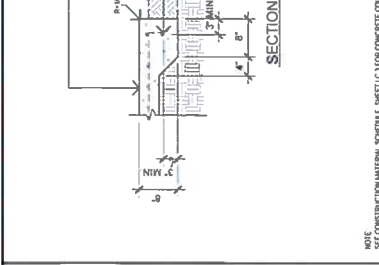
SECTION RUBBER PLAY SURFACE SYSTEM DEPTH CHART



SECTION RUBBER PLAY SURFACE SYSTEM DEPTH CHART



SECTION RUBBER PLAY SURFACE SYSTEM DEPTH CHART





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Costa Mesa, CA 92627

City of Costa Mesa

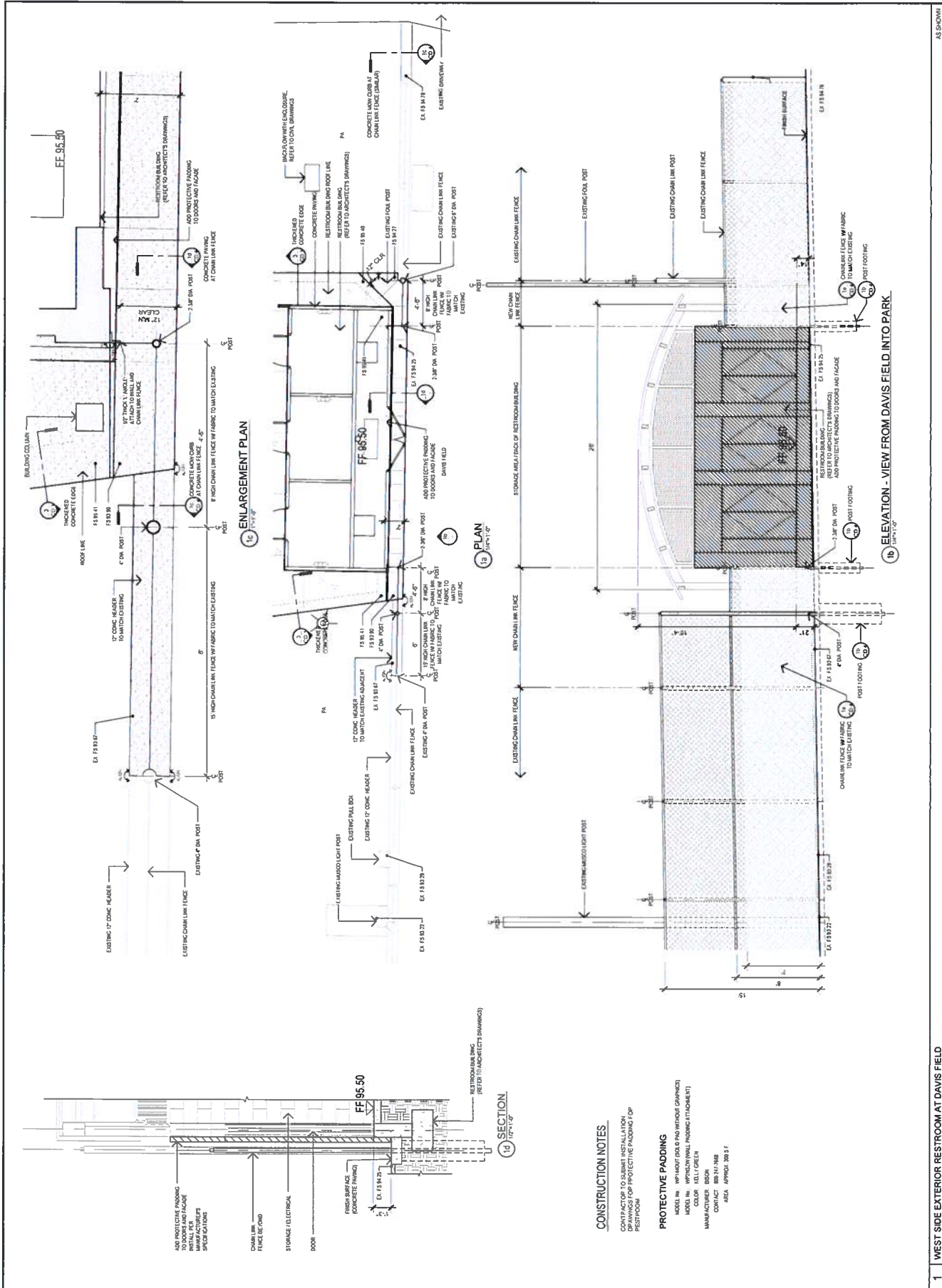
Project No.	20-15
Client	CD
Contract No.	CD
Date	AUG 21, 2020
Sheet	AS EXHIBIT
Drawing	EX

**RESTROOM &
DAVIS FIELD
INTERFACE**

CD.3

SHEET 21 OF 30

AS SHOWN

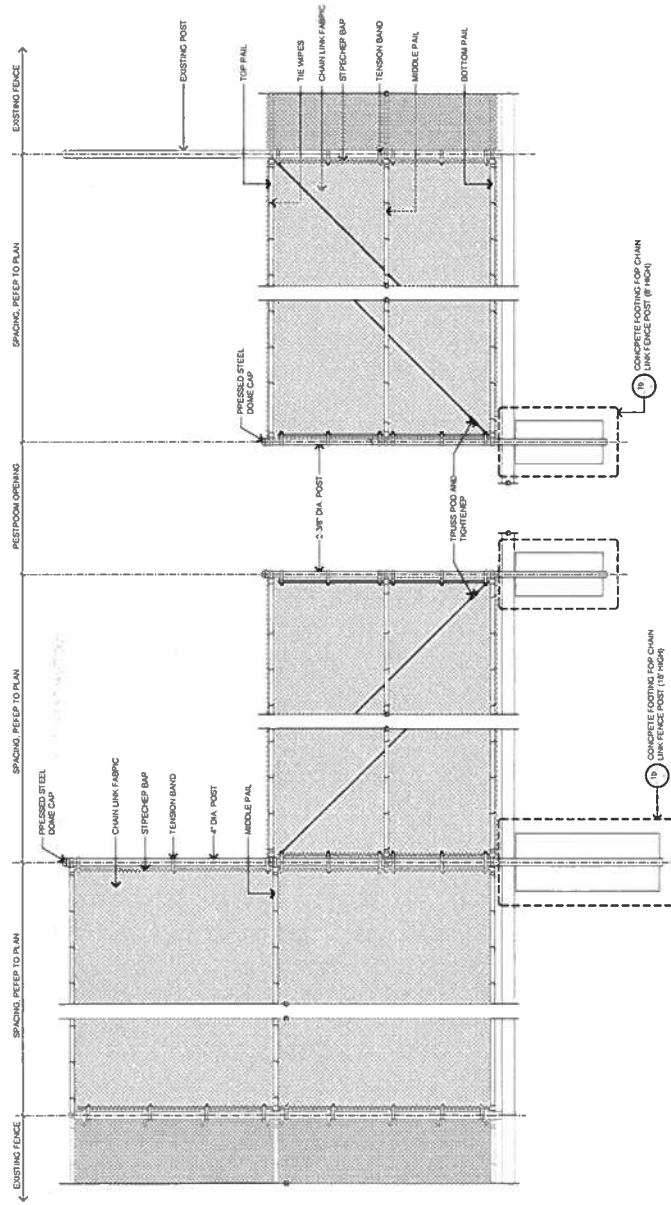


CONSTRUCTION NOTES

CONTRACTOR TO SUBMIT INSTALLATION DRAWINGS FOR PROTECTIVE PADDING FOR POSTS

PROTECTIVE PADDING

MODEL NO. WITH/OUT GOLF POLE WITHOUT GRAPHICS
MODEL NO. WITH/CONCRETE WALL PADDING ATTACHMENT
COLOR: YELLOW
MANUFACTURER: TETRA
CONTACT: 800-517-7468
AREA APPROX. 300 S.F.



1b CHAIN LINK FENCE AT RESTROOM & DAVIS FIELD - 8' & 15' HIGH

CHAIN LINK AND POST SPECIFICATIONS

FABRIC 1 1/4\"/>

TOP-AND-BOTTOM RAILS 1/4\"/>

BREAKAGE RAIL 1/4\"/>

LINE POST @ 8' HIGH SIZE 2 3/8\"/>

LINE POST @ 15' HIGH SIZE 4\"/>

FITTINGS 1\"/>

TE WIRES 1\"/>

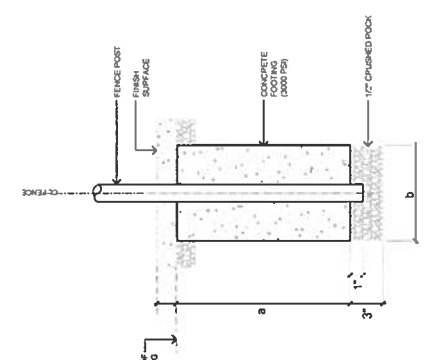
FRESH 1\"/>

CONCRETE FOOTING 3000# & 3\"/>

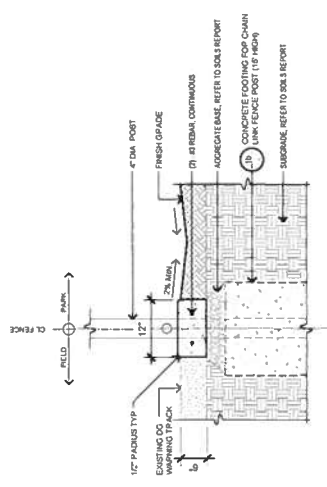
POST FOOTING DIMENSIONS

CHAIN LINK FENCE

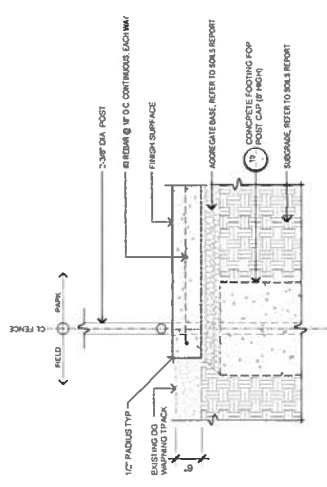
LINE POST FENCE (CLF)	a	b
8' HT.	48"	17" DIA.
15' HT.	60"	24" DIA.



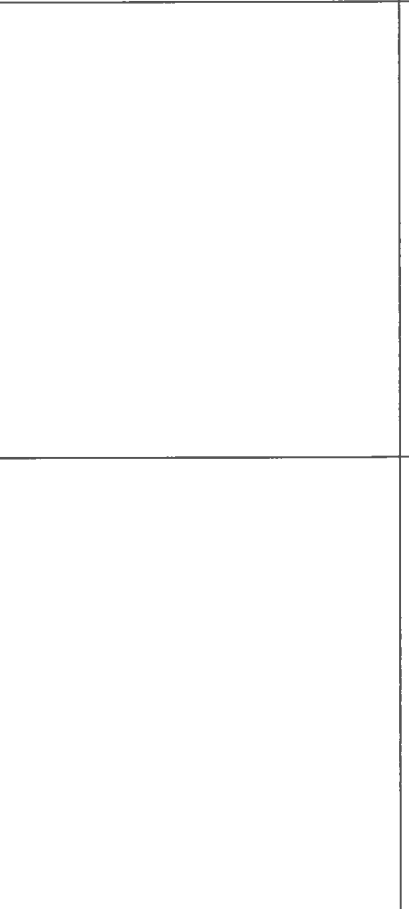
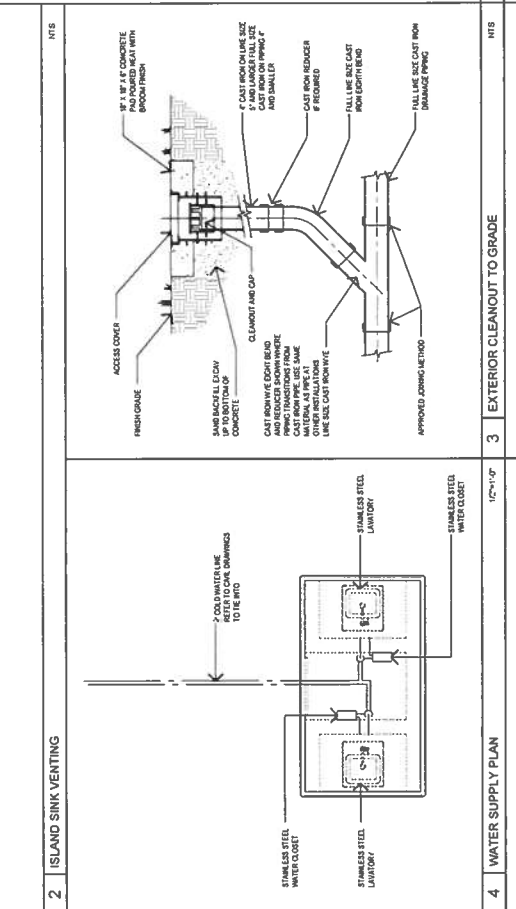
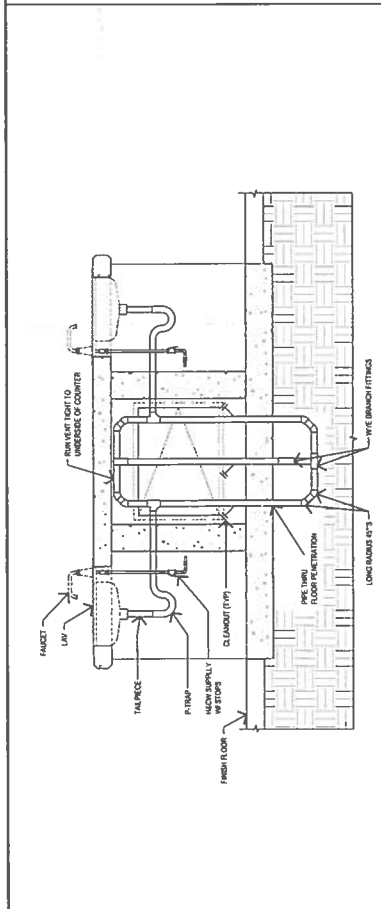
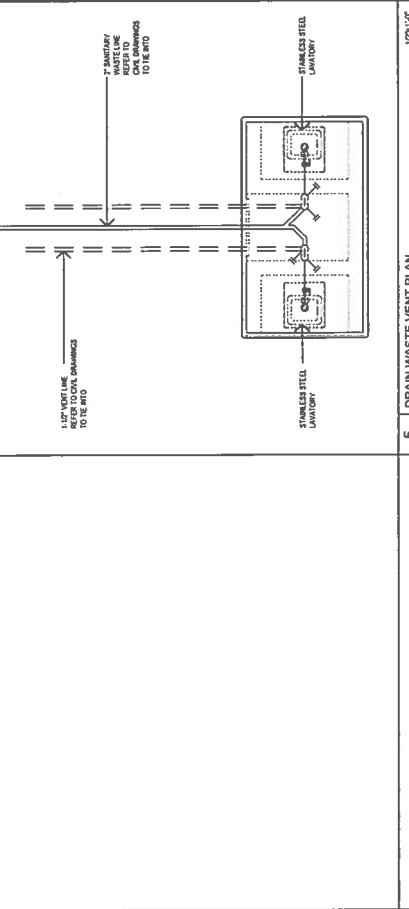
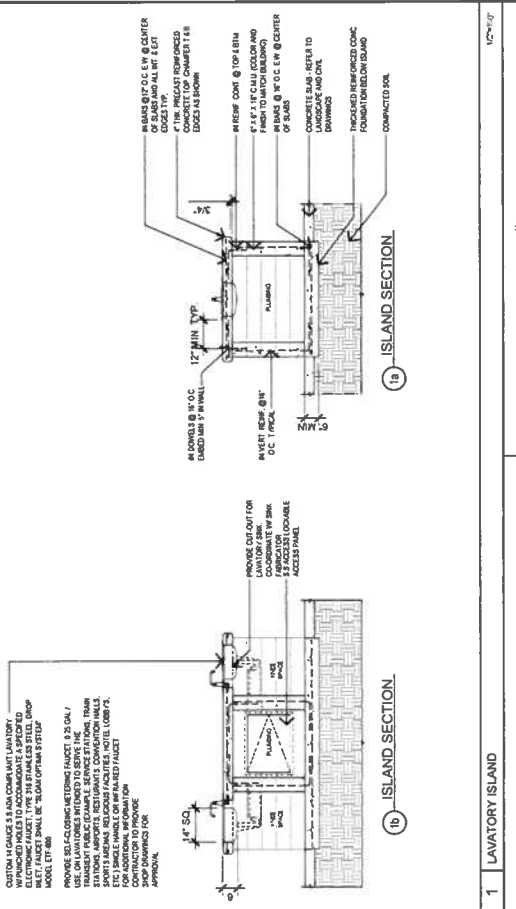
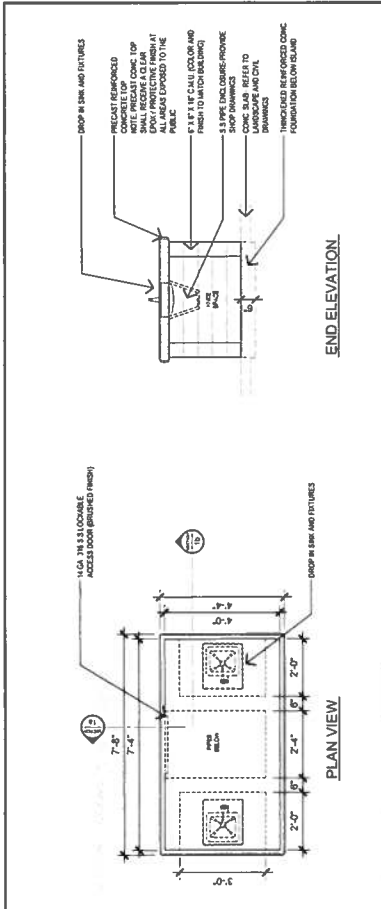
1d POST FOOTING SECTION



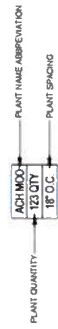
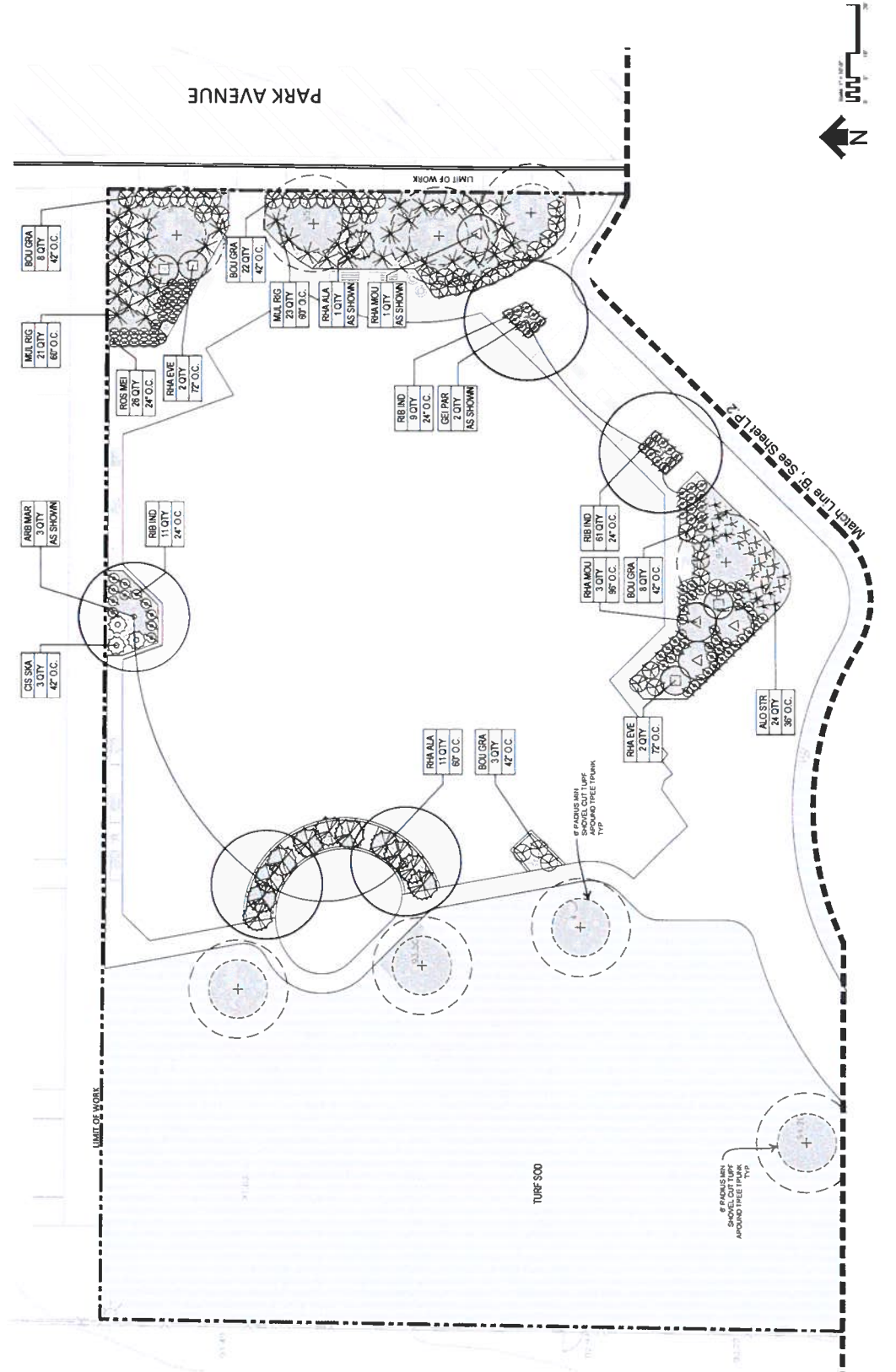
1c CONCRETE CURB AT CHAIN LINK FENCE



1d CONCRETE PAVING AT CHAIN LINK FENCE



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REFER TO COVER SHEET FOR GENERAL NOTES
 REFER TO SHEET LP.3 FOR PLANTING DETAILS & NOTES
 REFER TO SHEET LP.4 FOR PLANTING LEGEND



DVD
 Donald Veira Design
 Landscape Architecture & Plant Planning
 Costa Mesa Office
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 Costa Mesa, CA 92626
 P: 714.441.1200
 F: 714.441.1201
 www.donaldveiradesign.com
 email: daveira@donaldveiradesign.com



PROJECT INFORMATION

No.	Date	Project

LIONS PARK
 570 W. 18th Street
 Costa Mesa, CA 92627

Client: City of Costa Mesa
 Date: 08.23.2023
 Drawing: AS SHOWN

PLANTING PLAN

LP.1



DVP
 Donald V. P. Design
 Landscape Architects & Planting
 Costa Mesa Office
 10111 Newport Blvd, Suite 108
 Costa Mesa, CA 92626
 Phone (714) 441-1323
 Fax (714) 441-1322
 www.dvpdesign.com
 info@dvpdesign.com



811
 DIG FIRST
 Call 811 before you dig
 to avoid underground utilities.
 For more information visit
 www.811.com

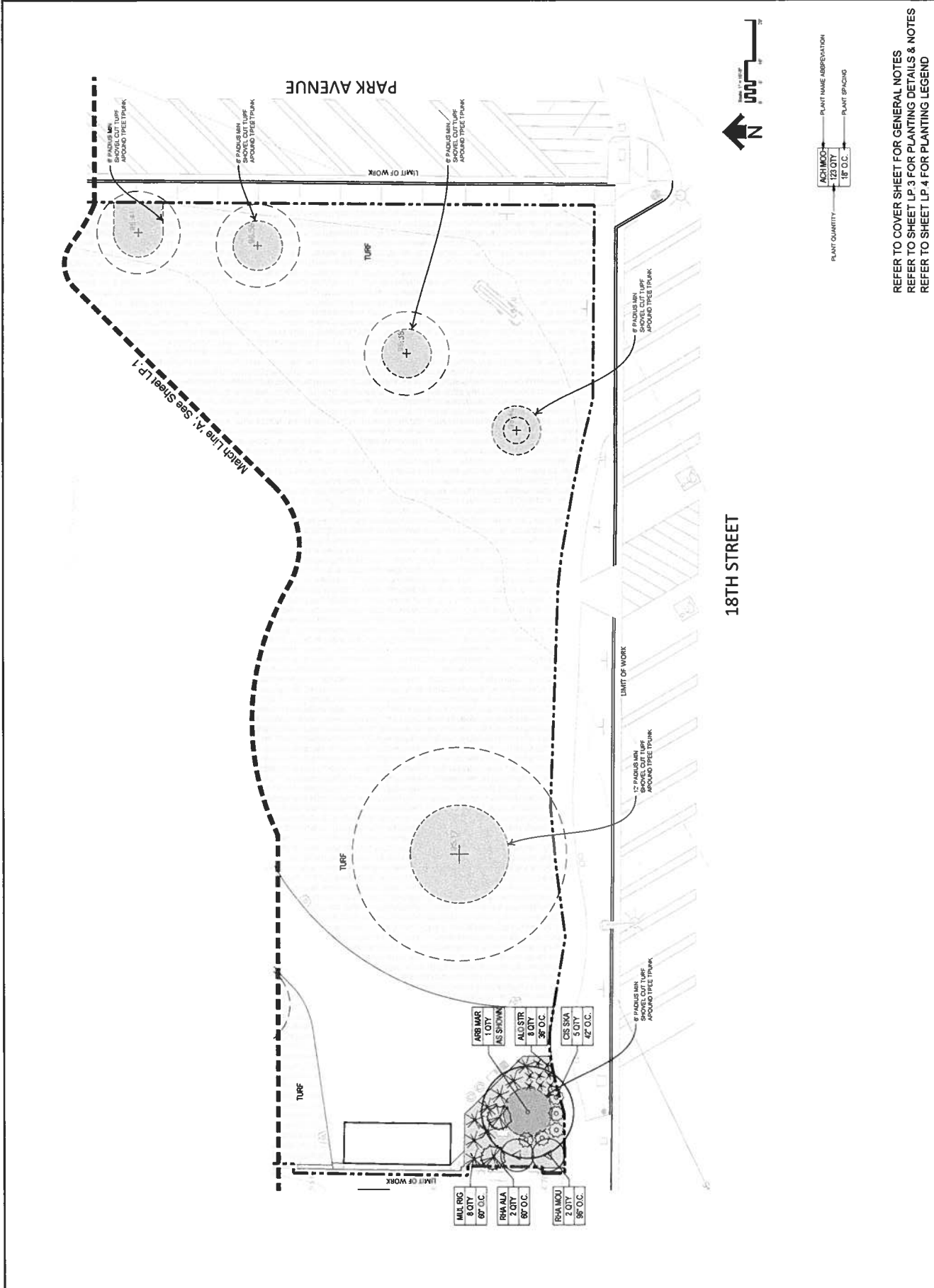
No.	Date	Revised	By

LIONS PARK
 570 W. 18th Street
 Costa Mesa, CA 92627

City of Costa Mesa
 Design No. _____
 Date _____
 Drawn By _____
 Checked By _____
 Date _____
 Scale _____
 Drawing Title _____

PLANTING PLAN

LP.2
 SHEET 28 OF 36



REFER TO COVER SHEET FOR GENERAL NOTES
 REFER TO SHEET LP.3 FOR PLANTING DETAILS & NOTES
 REFER TO SHEET LP.4 FOR PLANTING LEGEND

WEED ABATEMENT NOTES:

- 1 REFER TO WEED ABATEMENT REQUIREMENTS IN THE SPECIFICATIONS. ALL WEED ABATEMENT AND RELATED ACTIVITIES SHALL BE COMPLETED PRIOR TO THE PROCEEDING PERIODS.
- 2 THE WEED ABATEMENT PERIOD SHALL BE FOR PAVING FOR ALL WATER USED FOR IRRIGATION. THE WEED ABATEMENT PERIOD SHALL BE FOR PAVING FOR ALL WATER USED FOR IRRIGATION.
- 3 THE WEED ABATEMENT PERIOD SHALL BE FOR PAVING FOR ALL WATER USED FOR IRRIGATION. THE WEED ABATEMENT PERIOD SHALL BE FOR PAVING FOR ALL WATER USED FOR IRRIGATION.
- 4 VALVES SHALL BE WIRED TO THE CONTROLLER. IF THE CONTROLLER IS NOT INSTALLED, THE TYPE RECOMMENDED PER THE AGRONOMIC SOILS REPORT SHOULD BE USED TO DETERMINE THE WEED ABATEMENT PERIOD.
- 5 MAINLINE SHALL NOT BE ACCEPTED UNTIL AN IRRIGATION CONCERN TEST HAS BEEN PERFORMED BY THE PAINS SUPERINTENDENT OR CITY DESIGNATED REPRESENTATIVE. SOIL CONDITIONS AND FERTILIZERS SHALL BE MIXED INTO THE TOP SOIL AT QUANTITIES AND INTERVALS DESIGNATED BY THE AGRONOMIC SOILS REPORT.
- 6 ALL PLANTING AREAS SHALL BE FREE OF UNWANTED WEEDS, INSECTS, RODENTS, CLODS, ROCKS AND LITTER THROUGHOUT THE WEED ABATEMENT PERIOD.
- 7 ALL UNWANTED GRASSES AND WEEDS SHALL BE KILLED BY SPRAWLING AND REMOVED PRIOR TO BEGINNING THE WEED ABATEMENT PERIOD.

PLANTING NOTES

- 1 ALL LOCAL, MUNICIPAL COUNTY AND STATE LAWS, RULES, AND REGULATIONS GOVERNING OPEN SPACE AND PLANTING SHALL BE STRICTLY ENFORCED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO THE START OF WORK.
- 2 THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE AGENCY OF SOUTH CALIFORNIA GAS COMPANY OF ANY WORKING DURING THE PERIOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO THE START OF WORK.
- 3 THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE AGENCY OF SOUTH CALIFORNIA GAS COMPANY OF ANY WORKING DURING THE PERIOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO THE START OF WORK.
- 4 FINISH GRADE ALL PLANTING AREAS TO ACHIEVE A MINIMUM 1% DRAINAGE AND SMOOTH AND EVEN CONDITION. MAINLINE SHALL NOT BE ACCEPTED UNTIL AN IRRIGATION CONCERN TEST HAS BEEN PERFORMED BY THE PAINS SUPERINTENDENT OR CITY DESIGNATED REPRESENTATIVE. SOIL CONDITIONS AND FERTILIZERS SHALL BE MIXED INTO THE TOP SOIL AT QUANTITIES AND INTERVALS DESIGNATED BY THE AGRONOMIC SOILS REPORT.
- 5 ALL PLANTING AREAS SHALL BE FREE OF UNWANTED WEEDS, INSECTS, RODENTS, CLODS, ROCKS AND LITTER THROUGHOUT THE WEED ABATEMENT PERIOD.
- 6 ALL UNWANTED GRASSES AND WEEDS SHALL BE KILLED BY SPRAWLING AND REMOVED PRIOR TO BEGINNING THE WEED ABATEMENT PERIOD.
- 7 ALL PLANTING AREAS SHALL BE FREE OF UNWANTED WEEDS, INSECTS, RODENTS, CLODS, ROCKS AND LITTER THROUGHOUT THE WEED ABATEMENT PERIOD.
- 8 STAKE TREES AS INDICATED PER TREE PLANTING DETAIL.
- 9 FINAL LOCATION OF ALL PLANT MATERIALS IS SUBJECT TO THE APPROVAL OF THE PAINS SUPERINTENDENT PRIOR TO INSTALLATION.
- 10 THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO THE START OF WORK.
- 11 PLANT ESTABLISHMENT AND MAINTENANCE PERIOD SHALL BE IMMEDIATELY AFTER INSPECTION AND ACCEPTANCE OF THE WORK BY THE PAINS SUPERINTENDENT OR HIS/HER DESIGNATED REPRESENTATIVE. PLANT ESTABLISHMENT AND MAINTENANCE SHALL BE COMPLETED BY THE PROJECT SPECIFICATIONS.
- 12 SUPPLEMENTAL HAND WATERING MAY BE REQUIRED DURING THE MAINTENANCE PERIOD TO ESTABLISH PLANT MATERIAL.
- 13 PLACE WOOD CHIP MULCH IN ALL PLANTED AREAS AT A MINIMUM DEPTH OF 2" DO NOT INSTALL MULCH PRIOR TO THE REVIEW AND APPROVAL OF THE PAINS SUPERINTENDENT PRIOR TO INSTALLATION. REFER TO SPECIFICATIONS.

AGRONOMIC SOILS TESTING NOTES:

- UPON THE COMPLETION OF DEMOLITION AND GRADING AND PRIOR TO THE INSTALLATION OF THE IRRIGATION SYSTEM, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEN (10) SOIL SAMPLES TAKEN AT THE (8) SEPARATE LOCATIONS APPROVED BY THE PAINS SUPERINTENDENT. TWO (2) SOIL SAMPLES SHALL BE TAKEN AT EACH LOCATION.
- SAMPLE ONE: TAKEN AT GROUND LEVEL TO 10" DEEP.
 SAMPLE TWO: TAKEN AT A DEPTH BETWEEN 24" TO 30"
- EACH SAMPLE SHALL CONTAIN APPROXIMATELY 1 QUART OF SOIL AND BE LABELED PER LOCATION AND DATE OF SAMPLING.
- SOIL SAMPLES SHALL BE TESTED FOR SOIL FERTILITY AND ORGANIC MATTER, BUT NOT FOR NITRATES. SOIL TESTS SHALL BE PERFORMED BY A QUALIFIED LABORATORY. SOIL TEST RESULTS SHALL BE SUBMITTED AND APPROVED BY THE PAINS SUPERINTENDENT.
- AGRONOMIC SOILS REPORT
- 1 SOIL TESTING RESULTS SHALL BE SUBMITTED AND APPROVED BY THE PAINS SUPERINTENDENT.
 - 2 SOIL PREPARATION AND BACKFILL MIX SHALL CONFORM TO THE RECOMMENDATIONS OF THE AGRONOMIC SOILS REPORT.
 - 3 SOIL PREPARATION AND BACKFILL MIX SHALL CONFORM TO THE RECOMMENDATIONS OF THE AGRONOMIC SOILS REPORT.

REFER TO TITLE SHEET FOR GENERAL NOTES
 REFER TO SHEET LP 4 FOR PLANTING LEGEND

A TREE STAKING & PLANTING DETAIL (36" box)

LEGEND

- 1 - 1.5 UP 1/2 GAL. SPHERICAL MULCH
- 2 - MULCH PER GENERAL PLANTING NOTES
- 3 - 3" HIGH WATER BUSH
- 4 - ADVANCED SOIL TOP PLANTING PER SPECIFICATIONS FOR QUANTITY
- 5 - PLANT PIT ELEVATION
- 6 - ROOT BALL
- 7 - MIXED SOIL

LEGEND

- 1 - PRECAST CONCRETE SOIL ONE TREE STAKE (3 inch dia x 10 feet long by 3" box size)
- 2 - TREE SPACE (BY V.I.T. PRODUCTS) OF PREP (PRE) (18 inch by 30 inch)
- 3 - MULCH PER GENERAL PLANTING NOTES
- 4 - SET TOP OF ROOT BALL 1" HIGH
- 5 - 3" HIGH GRADE
- 6 - 3" HIGH GRADE
- 7 - 3" HIGH GRADE
- 8 - 3" HIGH GRADE
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- 100 - 3" HIGH GRADE

NOTE: SECURE TREE STAKE TO TREE STAKE USING 3/8" DIA. GALV. STEEL BRACE. BRACE SHALL BE 1/4" DIA. GALV. STEEL AND SIZE OF ALL ANCHOR BOLTS TO BE APPROVED BY LANDSCAPE ARCHITECT.

B SHRUB PLANTING DETAIL

LEGEND

- 1 - 1.5 UP 1/2 GAL. SPHERICAL MULCH
- 2 - MULCH PER GENERAL PLANTING NOTES
- 3 - 3" HIGH WATER BUSH
- 4 - ADVANCED SOIL TOP PLANTING PER SPECIFICATIONS FOR QUANTITY
- 5 - PLANT PIT ELEVATION
- 6 - ROOT BALL
- 7 - MIXED SOIL

CONTAINER SIZE

CONTAINER SIZE	DEPTH
1 GALLON	12 INCHES
2 GALLON	18 INCHES
3 GALLON	24 INCHES
5 GALLON	30 INCHES

BOX TREES

- 1 - PLANT PIT TO BE SQUARE. SEE CHPT ABOVE FOR THE PLANT PIT DIMENSIONS
- 2 - ROOTBALL

CONTAINER PLANTS

- 1 - PLANT PIT TO BE SQUARE. SEE CHPT ABOVE FOR THE PLANT PIT DIMENSIONS
- 2 - ROOTBALL

PLAN VIEW

PLAN VIEW

NOTE: LOCATE PLANTS SPACED TO MATCH AS SHOWN PER DETAIL TO THE PLANT LEGEND FOR DETAILS (C).

C TRIANGULAR SPACING DETAIL

LEGEND

- 1 - 1.5 UP 1/2 GAL. SPHERICAL MULCH
- 2 - MULCH PER GENERAL PLANTING NOTES
- 3 - 3" HIGH WATER BUSH
- 4 - ADVANCED SOIL TOP PLANTING PER SPECIFICATIONS FOR QUANTITY
- 5 - PLANT PIT ELEVATION
- 6 - ROOT BALL
- 7 - MIXED SOIL

CONTAINER PLANTS

- 1 - PLANT PIT TO BE SQUARE. SEE CHPT ABOVE FOR THE PLANT PIT DIMENSIONS
- 2 - ROOTBALL

PLAN VIEW

NOTE: LOCATE PLANTS SPACED TO MATCH AS SHOWN PER DETAIL TO THE PLANT LEGEND FOR DETAILS (C).

D PLANT PIT DIMENSIONS

LEGEND

- 1 - 1.5 UP 1/2 GAL. SPHERICAL MULCH
- 2 - MULCH PER GENERAL PLANTING NOTES
- 3 - 3" HIGH WATER BUSH
- 4 - ADVANCED SOIL TOP PLANTING PER SPECIFICATIONS FOR QUANTITY
- 5 - PLANT PIT ELEVATION
- 6 - ROOT BALL
- 7 - MIXED SOIL

PLANT PALETTE

MUST BE AT LEAST ONE FULL TO BE ACCEPTED

Symbol	Botanical Name Common Name	Size	Quantity	Water Use % of Plants to be located in field	%
*	<i>Alcea striata</i> Coral Aloe	1 gal	32	Low	%
⊗	<i>Bouteloua gracilis</i> 'Blonde Ambition'	1 gal	41	Low	%
⊙	<i>Blumea</i> Blue Gamma Grass	1 gal	8	Low	%
⊕	<i>Cistus</i> 'stanbergii' Pink Rockrose	1 gal	52	Low	%
✕	<i>Muhlenbergia rigens</i> Deer Grass	5 gal	14	Low	%
⊗	<i>Rhynchospora</i> Italian Buckhorn	5 gal	4	Very low	%
⊕	<i>Rhynchospora</i> 'Eye Case' California Coffeeberry	5 gal	6	Very low	%
⊗	<i>Rhynchospora</i> 'Mound San Bruno' California Coffeeberry	5 gal	81	Very low	%
⊕	<i>Ribes inodorum</i> White Flower Currant	5 gal	26	Low	%
●	<i>Rosa 'Meiradema'</i> Icecap Rose	5 gal			

CELEBRATION® BERMUDA GRASS (A-G SOD) (27,407 SF)
BIG ROLLS: 200 TO 500 SQ. FT.
5 TO 10 SQ. FT. PER PIECE

ANY PLASTIC NETTING TO BE REMOVED PRIOR TO
INSTALLATION. FOLLOW WEST COAST SOD
SPECIFICATIONS FOR SOD ESTABLISHMENT AND
MAINTENANCE.
AVAILABLE AT A-G SOD FARMS (800) 233-5254

MULCH ONLY AREAS (3" DEPTH)
REFER TO SHEET LP-3 PLANTING NOTES AND
SPECIFICATIONS

PLANT PALETTE

Trees & Turf

Symbol	Botanical Name Common Name	Size	Quantity
○	<i>Arbutus 'Mering'</i> Strawberry Tree	36"	4
○	<i>Cajupat</i> Australian Willow	36"	2
○	TREES TO BE PROTECTED IN PLACE		12
Total			18



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Landscape Architecture & Urban Planning
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TEL: (714) 441-1222
WWW.DONUTCALIFORNIA.COM

LIONS PARK
570 W. 18th Street
Costa Mesa, CA 92627
City of Costa Mesa

DATE	3/2/15
PROJECT	BY
DRAWN BY	BY
DATE	3/2/15
SCALE	AS SHOWN

PLANTING LEGEND
LP.4



David Volt Design
1415 North Loop West
Suite 100
Dallas, Texas 75243
Tel: (214) 625-1175
www.davidvolt.com



DESIGN WEST ENGINEERING
ARCHITECTURAL/MECHANICAL/ELECTRICAL ENGINEERS
No. Date: 11/11/11
By: EMMETT BROWN
Checked: ALICE CHEN
Reviewed: JESSICA BROWN

LIONS PARK
570 W. 18th Street
Costa Mesa, CA 92627
City of Costa Mesa

LUMINAIRE
SCHEDULE &
TITLE 24

E-0.2

LUMINAIRE SCHEDULE

Table with columns: TYPE, VOLTS, WATTAGE, LUMENS, LAMPS, HOUSING, FUTURE DESCRIPTION, SFR, CATALOG #, NOTES, SYMBOL. Includes notes on luminaire selection and compliance.

LUMINAIRE SCHEDULE NOTES
1. FINAL SHALL BE CORRECTED UPON FINAL REVIEW AND APPROVAL. PLEASE NOTE THAT IF ANY CHANGES ARE COMPLETED...
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND APPROVALS FROM THE CITY OF COSTA MESA...

Outdoor Lighting schedule table with columns: Item, Description, Voltage, Wattage, Lumens, Lamps, Housing, SFR, Catalog #, Notes, Symbol.

Outdoor Lighting schedule table with columns: Item, Description, Voltage, Wattage, Lumens, Lamps, Housing, SFR, Catalog #, Notes, Symbol.

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Outdoor Lighting schedule table with columns: Item, Description, Voltage, Wattage, Lumens, Lamps, Housing, SFR, Catalog #, Notes, Symbol.



Table with 4 columns: Description, Quantity, Unit, Price

LIONS PARK
570 W. 18th Street
Costa Mesa, CA 92627
City of Costa Mesa

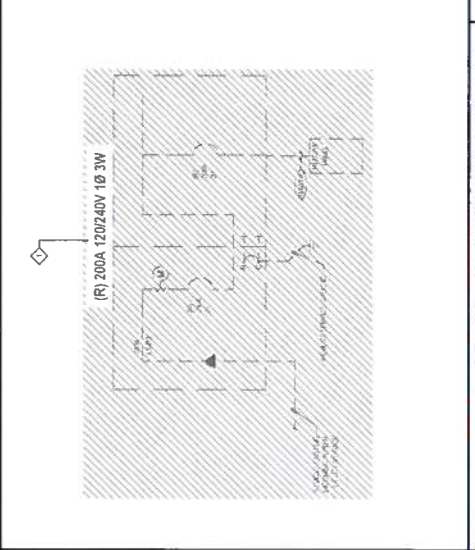
SINGLE LINE
DIAGRAM & PANEL
SCHEDULES

E-0.3

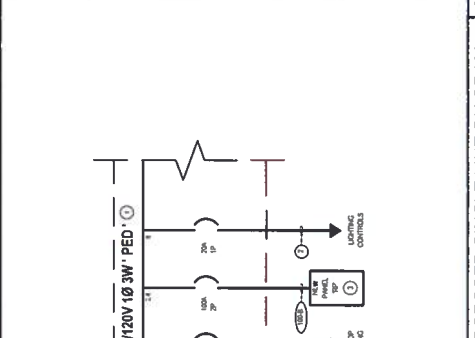
GENERAL NOTES
1. REFER TO THE ELECTRICAL PANEL SCHEDULES FOR WIRE TYPES, MATERIALS AND CONDUIT TYPES
2. ALL CROUCH CONNECTIONS SHALL BE OF THE SAME MANUFACTURER
3. ALL CROUCH CONNECTIONS SHALL BE CROUCHED IN A ZED BOX
4. AVAILABLE FAULT AT SERVICE POINT SHALL BE CALCULATED IN ZED BOX
5. ALL WIRING SHALL BE FULLY RATED FOR THE AVAILABLE FAULT UNLESS OTHERWISE NOTED
6. THE CROUCH LOCATIONS SHOWN ON THESE DRAWINGS ARE FOR GUIDANCE ONLY AND ARE NOT TO BE USED FOR ORDERING

DEMOLITION NOTES
1. DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF COSTA MESA DEMOLITION ORDINANCE (MUC 18.030)

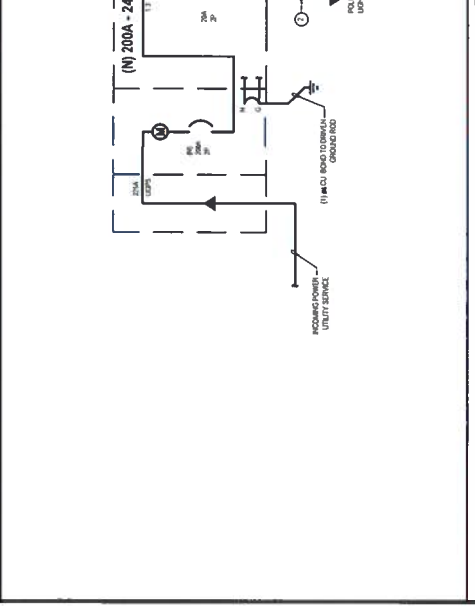
CONSTRUCTION NOTES
1. PROVIDE NEW ELECTRICAL SERVICE AS SHOWN
2. REFER TO SITE PLAN FOR ELEC. INFORMATION
3. ELECTRICAL PANEL SHALL BE PROVIDED BY PRECAST PRODUCTS



PROPOSED SINGLE LINE DIAGRAM 3



DEMOLITION SINGLE LINE DIAGRAM 1



VOLTAGE DROP - ONE PHASE 3

Table with columns: Description, Qty, Unit, Price, Voltage Drop

Table with columns: Description, Qty, Unit, Price, Voltage Drop

Table with columns: Description, Qty, Unit, Price, Voltage Drop



POLE LIGHTS VOLTAGE DROP 4

Table with columns: Description, Qty, Unit, Price, Voltage Drop

600W FEEDER SCHEDULE 10 3W
Table with columns: Label, Type, Size, Amps, Voltage Drop, Conductor

Table with columns: Description, Qty, Unit, Price, Voltage Drop

Table with columns: Description, Qty, Unit, Price, Voltage Drop

FEEDER SCHEDULES 5

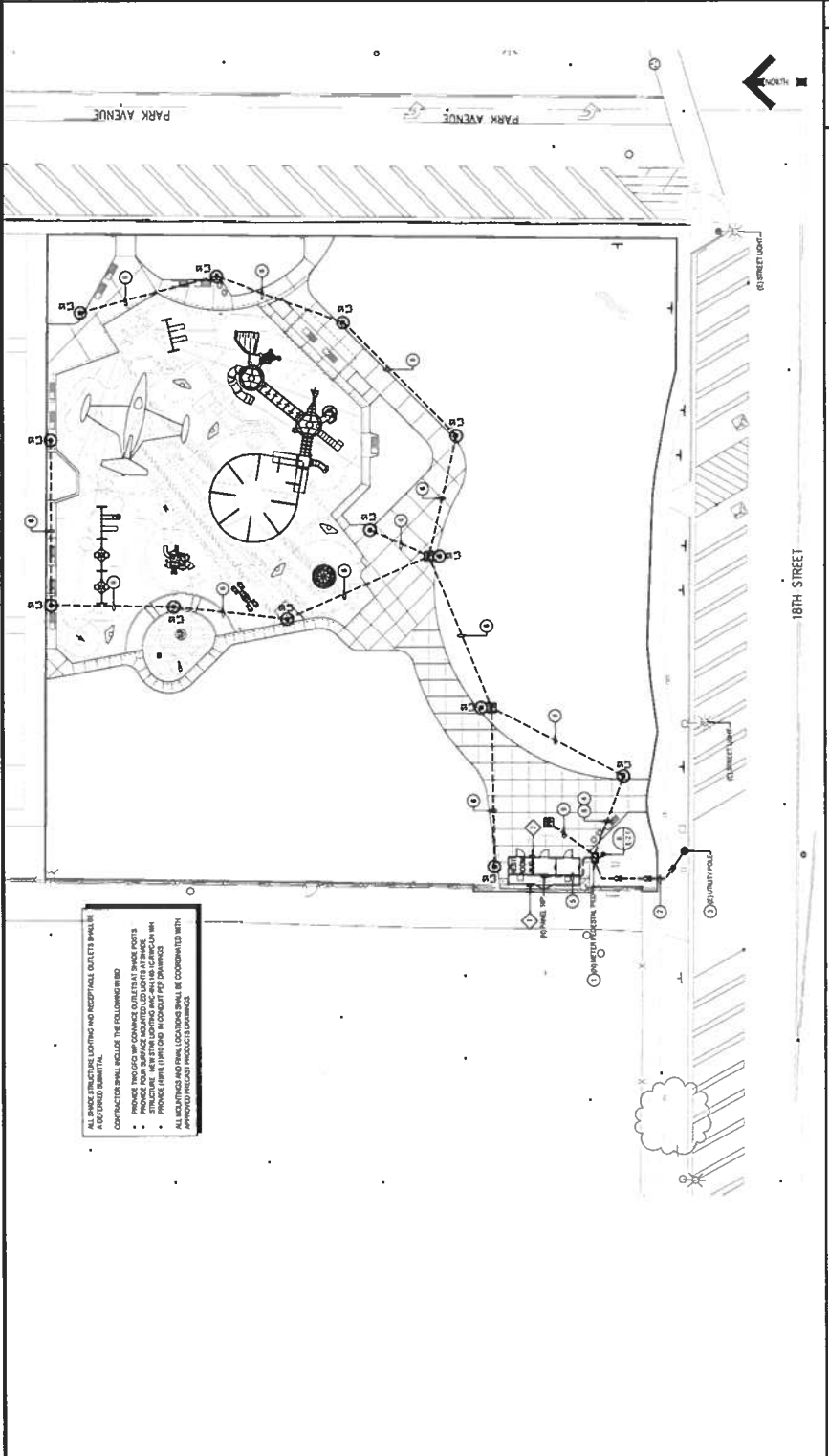
PANEL SCHEDULE 2

ALL BRANCH STRUCTURAL LIGHTING AND RECEPTACLE OUTLETS SHALL BE ADEQUATELY SUBMITTAL.

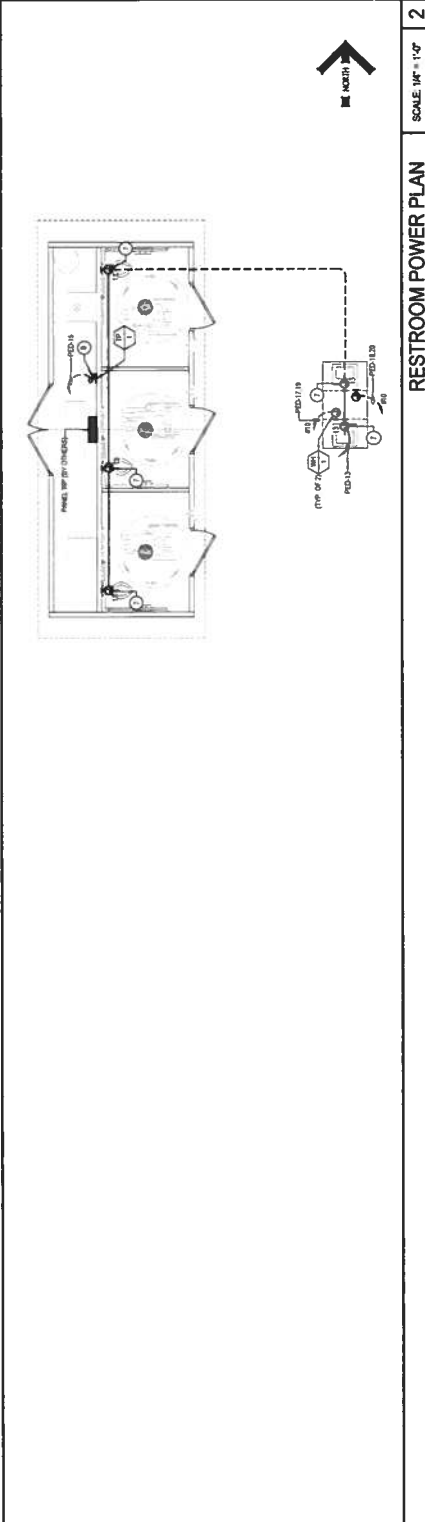
CONTRACTOR SHALL INCLUDE THE FOLLOWING IN BID:

- PROVIDE TWO GROUND BONDING CABLES AT BRANCH POINTS
- PROVIDE TWO GROUND BONDING CABLES AT BRANCH POINTS
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- PROVIDE TWO GROUND BONDING CABLES AT BRANCH POINTS

ALL RECEPTACLES AND PANEL LOCATIONS SHALL BE COORDINATED WITH ALL EXISTING AND PROPOSED STRUCTURAL ELEMENTS.



ELECTRICAL SITE PLAN SCALE: 1" = 30'-0" 1



RESTROOM POWER PLAN SCALE: 1/4" = 1'-0" 2

- ### GENERAL NOTES
- ALL UTILITY SERVICES SHALL BE INSTALLED BY THE UTILITY COMPANY. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE UTILITY COMPANY AND SERVICE PROVIDERS.
 - THE CONTRACTOR SHALL VERIFY AND VERIFY ALL FIELD CONDITIONS PRIOR TO INSTALLATION OF UTILITY SERVICES.
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- ### DEMOLITION NOTES
- CONTRACTOR SHALL DEMOLISH EXISTING WAREHOUSE ELECTRICAL SERVICE TO THE RESTROOMS. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE UTILITY COMPANY FOR THE REMOVAL OF FEEDERS.
 - CONTRACTOR SHALL DEMOLISH EXISTING WAREHOUSE ELECTRICAL SERVICE TO THE RESTROOMS. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE UTILITY COMPANY FOR THE REMOVAL OF FEEDERS.
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- ### CONSTRUCTION NOTES
- VERIFY EXISTING POWER UTILITY SERVICE REQUIREMENTS. SEE INCLUSIVE EXHIBITS FOR UTILITY INFORMATION. PROVIDE SERVICE CHANGES AS REQUIRED BY THE UTILITY COMPANY.
 - POWER UTILITY SECONDARY CONDUIT: PROVIDE 1/2" x 5" PVC EACH END OF SERVICE CAPACITY PLUS SPARE CONDUIT AS VENDOR SPECIFIED. PROVIDE EXCESS CONDUIT TO THE UTILITY COMPANY TO BE USED FOR FUTURE USE. PROVIDE EXCESS CONDUIT TO BE USED FOR FUTURE USE.
 - POINT OF CONNECTION TO POWER UTILITY COMPANY AT EXISTING UTILITY PULL. VERIFY EXISTING UTILITY COMPANY AT EXISTING UTILITY PULL.
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David Vozz Design
Civil/Structural/Electrical
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714.440.1111

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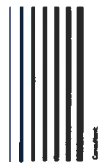
LIONS PARK
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Costa Mesa, CA 92627
City of Costa Mesa

**ELECTRICAL
SITE PLAN**

E-1.1



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REVISIONS

No.	Date	Description
1	05.18.2020	ISSUE FOR PERMITS
2	05.18.2020	PLAN CHECKS
3	05.18.2020	REVISED PERMITS

Project:
 LIONS PARK
 570 W. 18th Street
 Costa Mesa, CA 92627
 Owner: City of Costa Mesa

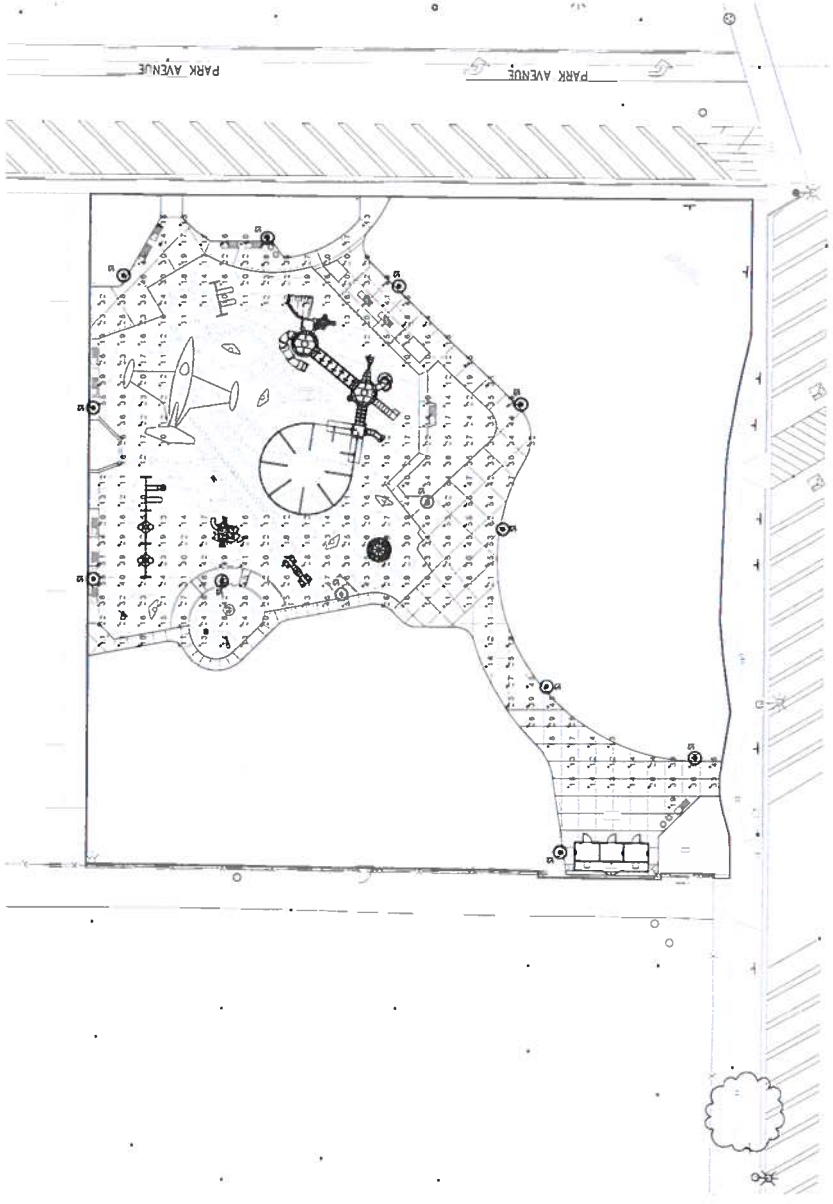
Drawn By: J. L. LEE
Checked By: J. L. LEE
Scale: AS SHOWN
Date: 05.18.2020
Drawing No.:

SITE PHOTOMETRIC PLAN

E-1.2

Lot	Area	Volume	Height	Area	Volume	Height
1	1,100	11,000	10	1,100	11,000	10

Area	Volume	Height
1	1,100	10



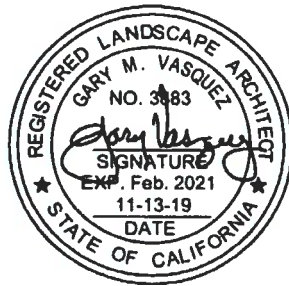
SITE PHOTOMETRIC PLAN SCALE: 1" = 20'-0" 1

CITY OF COSTA MESA
ORANGE COUNTY, CALIFORNIA

NOTICE TO BIDDERS, PROPOSAL, CONTRACT, AND
SPECIAL PROVISIONS FOR

**LIONS PARK PLAYGROUND IMPROVEMENTS
(570 WEST 18TH STREET, COSTA MESA)
CITY PROJECT NO. 20-15**

Prepared in the Office of
Davis Volz Design
151 Kalmus Drive, Suite M8
Costa Mesa, CA 92626
(714) 641-1300



**Gary M. Vasquez
R.L.A. 3883**

Copy No. _____

Checked by _____

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**CITY OF COSTA MESA
ORANGE COUNTY, CALIFORNIA
NOTICE INVITING BIDS**

NOTICE IS HEREBY GIVEN that the City of Costa Mesa ("City") invites sealed bids for furnishing all labor, materials, equipment, transportation and such other facilities as may be required for:

LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

1. **BID OPENING**: Sealed bids will be received by the City of Costa Mesa (City) at the Office of the City Clerk, 77 Fair Drive, Costa Mesa, California, before a submittal deadline of **10:00 A.M., Wednesday, August 19, 2020**. Sealed proposals shall bear the title of the work and name of the bidder but no other distinguishing marks. Any bid received after the scheduled closing time for the receipt of bids shall be returned to bidder unopened. It shall be the sole responsibility of the Bidder to see that its bid is received in proper time.
As a precautionary measure in response to the COVID-19 pandemic, a public bid opening will not be allowed and the following measures are being taken to ensure the health and safety of all parties during the bid opening process:
On the day of the submittal deadline, sealed proposals intended to be delivered in person to the City Clerk's office, Costa Mesa City Hall, 77 Fair Drive, Costa Mesa, California 92626 will be received at a table outside of City Hall in front of the north entry doors. Provided they are received by the City Clerk's office before the submittal deadline, sealed proposals will also be accepted by post mail.
The bid opening will be conducted at **2:00 P.M., Wednesday, August 19, 2020** by the City Clerk. NO public viewing of the bid opening will be allowed due to precautions related to COVID-19. Upon opening all the valid submitted bids, and verifying their contents, the City Clerk's office will contact each bidder via email and distribute the results and summary of the bid opening.
2. **BID CONTENTS**: All bids must be submitted on the proposal form included in the bid packet. No bid will be considered unless it is made on the proposal form furnished by the City and made in accordance with the provisions of the bid requirements. Each bid must be submitted in a sealed envelope addressed to the City Clerk with the Project Name, Project Number, and name of the bidder typed or clearly printed on the envelope. The sealed envelope shall not contain other distinguishing marks.
3. **BID DOCUMENTS**: **Complete bid packets will be available electronically, at no cost, via CIPLIST.com (a third-party website) at <http://ciplist.com/plans/?CostaMesa/city/11556>. Hard copies will NOT be available for purchase from the City.**
All bidders must register with CIPLIST.com in order to retrieve plans, specifications, addenda, bidders list, etc. It is the responsibility of prospective bidders to download and print the bid documents for review and bid. It is also the responsibility of each prospective bidder to check CIPLIST.com on a DAILY basis through the close of bids for any applicable addenda or updates. Each addendum will include a confirmation sheet indicating receipt of the addendum. This sheet must be signed and included with the bid for each addendum issued. Bids which do not include the confirmation sheet(s) for each addendum, if any, may be rejected.
The City of Costa Mesa does not warrant, represent, or guarantee the accuracy, completeness, or adequacy of information provided from any third party source. The City shall not be responsible or liable in any way whatsoever for any loss or damages of whatever kind, nature, or scope, including, but not limited to, time, money or goodwill

arising from errors, inaccuracies, or omissions in any documents and/or information retrieved from any third party source.

4. **BID SECURITY**: Each bid must be submitted with a certified check, cashier's check, or a bid bond, made payable to or in favor of the City of Costa Mesa, in an amount equal to at least ten percent (10%) of the total amount of the bid. No bid will be considered unless accompanied by such certified check, cashier's check, or bid bond.
5. **CONTRACTOR'S LICENSE**: A valid **California Contractor's License Class "A" (General Engineering Contractor) or California Contractor's License Class "B" (General Building Contractor)** issued by the California Contractors State License Board is required at the time the contract is awarded pursuant to California Public Contract Code Section 3300. Each bidder must also be qualified as required by law at the time of the bid opening.
6. **REGISTRATION WITH THE DEPARTMENT OF INDUSTRIAL RELATIONS**: Pursuant to California Labor Code Sections 1725.5 and 1771.1, no contractor or subcontractor shall be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work unless registered and qualified pursuant to Section 1725.5.
7. **PREVAILING WAGES**: This Project is a "public work" subject to prevailing wage requirements. Pursuant to provisions of Sections 1770 et seq. of the California Labor Code, all workers employed on the Project shall be paid not less than the general prevailing rate of per diem wages, as determined by the Director of the Department of Industrial Relations for work of a similar character in the locality in which the work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work. Copies of the prevailing rate of per diem wages are on file with the Public Services Department of the City of Costa Mesa and are available to any interested party upon request. The applicable State prevailing wages are also set forth on the Department of Industrial Relations' website at <https://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>; these rates are subject to predetermined increases. The prime contractor shall post a copy of the Director's determination of the prevailing rate of per diem wages at each job site. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.
8. **NON-DISCRIMINATION**: The bidding process and contract are subject to State and Federal non-discrimination requirements, including but not limited to the requirement that no person or business shall discriminate on the basis of race, color, national origin, ancestry, religious creed, physical disability, mental disability, medical condition, marital status, sex, gender, gender expression, gender identity, sexual orientation, age, or military or veteran status in its solicitation, selection, hiring, or treatment of individuals or businesses in connection with the bidding process or work performed for the City in connection with the Project.
9. **CITY'S RIGHT TO REJECT BIDS**: The City of Costa Mesa reserves the right, in its sole discretion, to reject any or all bids, or to waive any minor irregularities or informalities in any bid.
10. **PAYMENT BOND AND PERFORMANCE BOND**: A Payment Bond and a Performance Bond, each in the amount of 100% of the contract amount, will be required of the successful Bidder prior to award of the Contract.
11. **RETENTION**: In accordance with the Contract, five percent (5%) of any progress payment will be withheld as a retention. Pursuant to Section 22300 of the Public Contract Code, at the request and expense of the Contractor, approved securities equivalent to the amount withheld may be deposited with the City or with a state or federally chartered bank as the

escrow agent, and City shall then pay such moneys to the Contractor. Refer to the Sample Contract for further clarification.

12. **ADDITIONAL REQUIREMENTS:** This Project is subject to local, State, and Federal regulations and requirements, as detailed in the bid packet and contract documents.

NOTE: A MANDATORY PRE-BID JOB WALK HAS BEEN SCHEDULED FOR WEDNESDAY, AUGUST 5, 2020 AT 2:00 PM AT THE PROJECT SITE (570 WEST 18TH STREET, COSTA MESA, CA 92626).

For further information regarding this Project, please contact Arash Rahimian at Arash.Rahimian@costamesaca.gov

Published: July 29, 2020

Brenda Green, City Clerk, City of Costa Mesa

INFORMATION FOR BIDDERS

1. **PREPARATION OF BID FORM:** The City requires that bids be submitted on the proposal form attached at such time and place as is stated in the Notice Inviting Bids. All blanks in the bid form must be appropriately filled in. All bids shall be submitted in sealed envelopes bearing on the outside the name of the bidder, his address, and the name of the project for which the bid is submitted. It is the sole responsibility of the bidder to see that his bid is received in proper time. Any bid received after the scheduled closing time for receipt of bids will be returned to the bidder unopened. Each Bidder is responsible for acknowledging addenda.
2. **QUALIFICATION OF BIDDERS:** In order to fully evaluate your firm's background and experience for the project herein proposed, it is required that you submit a list of similar construction projects completed, or in progress, within the least five (5) years. This information will be used to evaluate whether the bid is responsive and or responsible to the call for bids. Only Licensed Contractors, authorized to do business under the laws of the State of California and that are able to meet the following criteria will be eligible to submit a bid:
 - A. Contractors bidding to the City shall have a minimum five (5) years continuous experience as prime on projects of comparable quality, size, complexity and type.
 - B. Contractors bidding to the City shall have completed as the prime at least three (3) projects of comparable quality, size, complexity and type.
 - C. Subcontractors shall meet the above two requirements as it pertains to their Work.
 - D. Within three (3) calendar days of request by City, Contractor shall submit evidence of compliance to the above qualifications and a list of all work performed, both complete and incomplete, within the previous five (5) years including the names and phone numbers of the City and Architects.
 - E. Before a contract is awarded, the City may, at its sole discretion, require from the proposed contractor evidence of their ability to faithfully, capably, and reasonably perform such proposed contract within the Contract Time and for the Contract Amount, and may consider such evidence before making a decision on the award of such proposed contract.
3. **BID SECURITY:** Each bid shall be accompanied by either cash, cashier's check made payable to the City, a certified check made payable to the City, or a bidder's bond executed by an admitted surety insurer, made payable to the City, in an amount not less than 10% of the maximum amount of the bid. The Bidder's Bond shall be signed by both, the bidder and the Surety; and both signatures shall be notarized. The bid security shall be given as a guarantee that the bidder shall execute the contract if it be awarded to him in conformity with the Contract Documents and shall provide the surety bond or bonds as specified therein within fourteen (14) days after a written Notice of Intent to Award Contract is deposited in the mail. In the case of refusal or failure to enter into said contract, the check or bond, as the case may be, shall be forfeited to the City.

4. NONCOLLUSION AFFIDAVIT: Each bid shall be accompanied by a notarized Noncollusion Affidavit on a form which is included in the Contract Documents.
5. SIGNATURE: The bid must be signed in the name of the bidder and must bear the signature in longhand of the person or persons duly authorized to sign the bid on behalf of the bidder.
6. ERASURES: The bid submitted **must not** contain any erasures, interlineations, or other corrections unless each such correction is suitably authenticated by affixing in the margin immediately opposite the correction, in ink, the initials, and/or surname or surnames of the person or persons signing the bid.
7. DELIVERY OF PROPOSAL: Proposals shall be enclosed in a sealed envelope plainly marked on the outside:

“SEALED BID”

**LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA),
CITY PROJECT NO. 20-15**

In the

CITY OF COSTA MESA – DO NOT OPEN WITH REGULAR MAIL

- Proposals may be mailed or delivered by messenger. However, it is the bidder's responsibility alone to ensure delivery of the proposal to the hands of the AGENCY's designated official prior to the bid opening hour stipulated in the Notice Inviting Sealed Bids. Late proposals will not be considered.
8. BID DEPOSIT RETURN: Deposits of three or more low bidders, the number being at the discretion of the City, will be held for sixty (60) calendar days or until posting by the successful bidder of the Bonds and Certificates of Insurance required and return of executed copies of the Agreement, whichever first occurs, at which time the deposits will be returned.
 9. TAXES: No mention shall be made in the proposal of Sales Tax, Use Tax or any other tax, as all amounts bid will be deemed and held to include any such taxes which may be applicable.
 10. WITHDRAWAL OF BIDS: Any bidder may withdraw his bid either personally, by written request, or by telegraphic request confirmed in the manner specified above at any time prior to the scheduled closing time for receipt of bids.
 11. AGREEMENT AND BONDS: The Agreement form, which the successful bidder, as Contractor, will be required to execute, and the forms and amounts of surety bonds and Certificate of Insurance which he will be required to furnish prior to the execution of the Agreement, are included in the Contract Documents and should be carefully examined by the bidder. The successful Bidder will be required to submit **THREE (3)** executed copies of the Agreement, the Performance Bond, the Payment Bond and the Certificate of Insurance. Payment and performance bonds shall be issued by a surety who is listed in the latest revision of U.S. Department of Treasury Circular 570 and Code of Civil Procedure Section 995.120. The Performance Bond and the Payment Bond shall be signed by both, the Bidder and the Surety; and both signatures shall be notarized.

12. FORFEITURE FOR FAILURE TO POST SECURITY AND EXECUTE AGREEMENT: In the event the bidder to whom the Notice of Intent to Award Contract is given fails or refuses to post the required bonds and Certificate of Insurance and return executed copies of the Agreement within fourteen (14) calendar days after notification, the City may declare the bidder's bid deposit or bond forfeited as damages caused by the failure of the bidder to post such security and execute such copies of the Agreement, and may give Notice of Intent to Award Contract to the next lowest responsible bidder, or may call for new bids.
13. BIDDERS INTERESTED IN MORE THAN ONE BID: No person, firm or corporation shall be allowed to make, or file or be interested in more than one bid for the same work unless alternate bids are specifically called for.
14. EXAMINATION OF SITE AND CONTRACT DOCUMENTS: Each bidder shall visit the site of the proposed work and fully acquaint himself with the conditions relating to the construction and labor so that he may fully understand 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 or omission of any bidder to receive or examine any contract document, form, instrument, addendum, or other document or to visit the site and acquaint himself with conditions there existing shall in no way relieve any bidder from any obligation with respect to his bid or to the contract. The submission of a bid shall be taken as prima facie evidence of compliance with this section.
15. INTERPRETATION OF PLANS AND DOCUMENTS: If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of the drawings, specifications, or other Contract Documents, or finds discrepancies in, or omissions from the drawings and specifications, he may submit to the Engineer a written request for an interpretation or correction thereof. The Bidder submitting the Request for Interpretation (RFI) shall be responsible for its prompt delivery and on the form included within this IFB. Any interpretation or correction of the Contract Documents will be made only by addendum. No person is authorized to make any oral interpretation of any provision in the Contract documents to any bidder, and no bidder is authorized to rely on any such unauthorized oral interpretation. ***Pre-Bid Request for Interpretations (RFIs) shall be submitted by August 12, 2020 at 2:00 pm. RFIs requests submitted after the advised date may not receive a response. Substitution proposals will only be considered during the bidding phase.***

Work not particularly specified in the specification or detailed on the contract drawings but involved in carrying out their intent, or in the complete and proper execution of the Work, is required and shall be performed by the Contractor. Should it appear that there is a real or apparent discrepancy between different sections of specifications concerning nature, quality or extent of Work to be furnished, it shall be assumed that Contractor has based his bid on the more expensive manner. Final decision shall rest with the City.

16. ADDENDA: The effect of all addenda to the Contract Documents shall be considered in the bid package and said addenda shall be made part of the Contract Documents and shall be returned with the bid package. Failure to submit any such addenda with the bid

package may render the bid irregular and result in its rejection by the City. It will be the responsibility of the bidder to contact the City prior to submitting a bid to ascertain if any addenda have been issued, to obtain all such addenda, and return executed addenda or acknowledgment thereof with the bid.

17. **QUESTIONS TO THE ENGINEER:** Questions regarding the bid documents (i.e. Plans, Specifications, Contract Documents, Bid Forms, etc.) will be received by the Engineer for review no later than **August 12, 2020 at 2:00 PM**. Questions asked of the Engineer after this time may not be addressed.
18. **EQUIVALENT MATERIALS:** Requests for the use of equivalents to those specified, must be submitted to the City. Only substitutions approved prior to bid due date via addenda Product Substitutions, will be considered. No substitutions will be considered after bid due date and contract award. It is the sole responsibility of the successful bidder to prove to the City that such a material is truly an equivalent
19. **EVIDENCE OF RESPONSIBILITY:** Upon the request of the City, a bidder whose bid is under consideration for the award of the contract shall submit promptly to the City satisfactory evidence showing the bidder's financial resources, his construction experience, and his organization and plant facilities available for the performance of the contract.
20. **LEGAL RESPONSIBILITIES:** All proposals must be submitted, filed, made and executed in accordance with State and Federal laws relating to bids for contracts of this nature whether the same or expressly referred to herein or not. Any Bidder submitting a proposal shall by such action thereby agree to each and all of the terms, conditions, provisions and requirements set forth, contemplated and referred to in the Plans, Specifications and other Contract Documents, and to full compliance therewith. Additionally, any Bidder submitting a proposal shall, by such action thereby, agree to pay at least the minimum prevailing per diem wages as provided in Section 1773, et. seq. of the Labor Code for each craft, classification or type of workman required as set forth by the Director of Industrial Relations of the State of California.
21. **ANTI-DISCRIMINATION:** It is the policy of the City that in connection with all work performed under contracts, there be no discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age, or marital status. The Contractor agrees to comply with applicable Federal and California laws including, but not limited to, the California Fair Employment Practice Act, beginning with Government Code Section 12900, and Labor Code Section 1735. In addition, the Contractor agrees to require like compliance by any subcontractors employed on the work by him.
22. **DRUG-FREE WORKPLACE POLICY:** Contractor, upon notification of contract award, shall establish a Drug-Free Awareness Program to inform employees of the dangers of drug abuse in the workplace, the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace, and the employee assistance programs available to employees. Each employee engaged in the performance of a City

contract must be notified of this Drug-Free Awareness Program, and must abide by its terms. Contractor shall conform to all the requirements of City's Policy No. 100-5. Failure to establish a program, notify employees, or inform the City of a drug-related workplace conviction will constitute a material breach of contract and cause for immediate termination of the contract by the City.

23. **BID PROTEST PROCEDURES:** Any bid protest must be submitted in writing before 5:00 PM of the 5th business day following bid openings. The initial protest document shall contain a complete statement of the basis for the protest. The protest shall refer to the specific portion of the document which forms the basis for the protest. The protest shall include the name, address and telephone number of the person representing the protesting party. The party filing the protest shall concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest which may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest. Upon receipt of a bid protest, the matter shall be reviewed by the Public Services Director, whose decision shall be final. This procedure supersedes the procedure of appeal outlined in City of Costa Mesa Municipal Code Section 2-303.

REQUEST FOR INTERPRETATION OF CONTRACT DOCUMENTS

PROJECT NAME: _____

Date: _____

Time: _____

Company: _____

Address: _____

Telephone: _____ Fax: _____

Plan Sheet: _____

Specification Section: _____

INTERPRETATION REQUESTED:

REPLY:

TO A/E:

PROPOSAL

The Honorable City Council
City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626

Dear Council Members:

In compliance with the NOTICE INVITING BIDS for **LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15**, a copy of which is hereto attached, the undersigned has carefully examined the location of the proposed work, the plans, specifications and other contract documents therefor and is satisfied as to the conditions to be encountered, as to the character, quality and quantity of work to be performed and materials to be furnished and as to the requirements of the specifications and the contract. It is mutually agreed that the submission of a proposal shall be considered prima facie evidence that the bidder has made such examination. If awarded the contract, the undersigned agrees to commence the work under the contract within **TEN (10) DAYS** after the date of contract, and complete said work within **TWENTY (20) WEEKS** from the first day of commencement of such work unless legal extension is granted in accordance with the terms set forth in the specifications, and to perform and complete the work as shown on the plans and in accordance with the specifications and other contract documents, and to furnish all labor, materials, tools and equipment necessary to complete the work in place therefor, in the manner and time herein prescribed at the following prices, to wit:

Contractor's Lawful Name _____

Total Amount for Base Bid including Allowances

(in written words) \$ _____

(In figures) _____

NOTE: Mandatory job walk-through is required starting at the project site (570 West 18th Street, Costa Mesa, August 5, 2020 at 2:00 p.m.

Bidder's Initials

PROPOSAL SCHEDULE LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15					
ITEM	DESCRIPTION	APPROX. QUANTITY	UNIT	UNIT PRICE	TOTAL AMOUNT
1	Lions Park Playground Improvements (*)	1	L.S.	\$ _____	\$ _____
TOTAL BASE BID AMOUNT:					\$ _____
2	Allowances (**)	1	L.S.	\$ _____	\$75,000
TOTAL BASE BID INCLUDING ALLOWANCES:					\$ _____

 Bidder's Initials

PROPOSAL SCHEDULE
(continued)

NOTE:

1. The accuracy of estimate quantities as shown is not guaranteed; the Bidder shall make his/her own estimate from the drawings and field review for verification. If the unit price and the total amount are different, the unit price will control the bid. Payment shall be based on actual work done and/or actual quantities used.
2. The City reserves the right to delete one or more bid items and/or to increase or decrease bid items' quantities, at no additional cost to the City.
3. **(*) Schedule of Values shall be submitted before 4:00 PM of the 4th business day following the bid opening. Price includes the indirect cost and markup.**
4. **(**)** Allowance is for unforeseen work not included in the contract documents and to be included in the total bid amount as identified as follows. Use of the allowance will be at the sole discretion of the City and must be authorized in writing at the discretion of the City. This Bid item will cover unforeseen work that is not included in the contract documents. Any money used from the project allowance will be authorized via an Allowance Disbursement Form at the City's sole discretion. Any amount of money remaining in the Allowance line item upon completion of the Project will be deducted from the Contract by Deductive Change Order for the full amount(s) remaining therein. The Contractor has no beneficial interest in, and/or claim to, the Allowances and hereby disclaims any and all such interests.
5. FA designates force account. Payment shall be made on a time and materials basis, only if directed by the Engineer.
6. (F) Designates Final Pay Item. When an item of work is designated as "FINAL PAY ITEM" in the Specifications, the estimated quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion of that item are revised by the Engineer, or the item or any portion of the item is eliminated. If the dimensions of any portion of the item are revised, and the revisions result in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions. If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.
The estimated quantity for each item of work designated as "FINAL PAY ITEM" in the Specifications, shall be considered as approximate only, and no guarantee is made that the quantity which can be determined by computations, based on the details and dimensions shown on the plans, will equal the estimated quantity. No allowance will be made in the event that the quantity based on computations does not equal the estimated quantity.
In case of discrepancy between the quantity shown in the Engineer's Estimate for a final pay item and the quantity or summation of quantities for the same item shown on the plans, payment will be based on the quantity shown in the Engineer's Estimate.

Bidder's Initials

**PROPOSAL SCHEDULE
(CONTINUED)**

(Please Type or Print)

Total Amount for Base Bid including Allowances (in written words) _____
_____ (\$ _____)
_____ in figures

Contractor's Lawful Name: _____

Bidder's Name: _____ Bidder's Initials: _____

Contractor's License No. _____ Expiration: _____

Contractor's Taxpayer I.D. Number: _____

Contractor's PWC Registration Number: _____

Signature: _____ Date: _____

Contractor's Address: _____

Telephone Number:(_____) _____ Mobile No.:(_____) _____

Fax Number: (_____) _____ E-mail: _____

24-Hour Emergency Contacts:

_____	Name	_____	Telephone Number: (_____)
_____	Name	_____	Mobile No.: (_____)
_____	Name	_____	Telephone No.: (_____)
_____	Name	_____	Mobile No.: (_____)
_____	Name	_____	Telephone No.: (_____)
_____	Name	_____	Mobile No.: (_____)

Bidder's Initials

**PROPOSAL SCHEDULE
(CONTINUED)**

The Contractor agrees that the City will not be held responsible if any of the approximate quantities shown in the foregoing proposal shall be found incorrect, and he shall not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work as estimated and the work actually done. If any error, omission or misstatements shall be discovered in the estimated quantities, it shall not invalidate this contract or release the Contractor from the execution and completion of the whole or part of the work herein specified, in accordance with the specifications and the plans herein mentioned and the prices herein agreed upon and fixed therefore, or excuse him from any of the obligations or liabilities hereunder, or entitle him to any damages or compensation otherwise than as provided for in this contract.

The Contractor agrees that the City shall have the right to increase or decrease the quantity of any bid item or portion of the work or to omit portions of the work as may be deemed necessary or expedient, and that the payment for incidental items or work, not separately provided in the proposal shall be considered included in the price bid for other various items or work.

Accompanying this proposal is "Cash," "Certified Check," or "Bidder's Bond" (circle one) in the amount of _____ (\$_____) equal to at least ten (10%) percent of the total bid price, payable to the City of Costa Mesa, to guarantee that within fourteen (14) days after written notice is deposited in the mail, or the bidder has received notice by telephone, the bidder will furnish proper Certificates of Insurance, and required bonds satisfactory to the City and execute a contract in accordance with the proposal and in the manner and form required by the contract documents.

The undersigned deposits the above-named security as a proposal guarantee and agrees that it shall be forfeited to the City of Costa Mesa as Liquidated Damages if the above requirements are not complied with.

Bidder's Initials

Project and Specification No. 20-15
Respectfully submitted,

_____ Contractor's Business Name		
_____ Business Address: Street		
_____ City	_____ State	_____ Zip
_____ Business Phone Number		
_____ Name		_____ Title
_____ City	_____ State	_____ Zip

_____ Contractor	_____ Title
_____ By	_____ Title
_____ Contractor's License No. and Classification	
_____ Date	
_____ Residence: Street	
_____ Residence phone Number	

If the bid is by a corporation, state the names of the officers who can sign an agreement on behalf of the corporation and whether more than one officer must sign.

Corporation

Taxpayer I.D. Number: _____

Name _____
Name _____
Name _____

Can Sign

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Must Sign

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

If the bid is by a partnership or a joint venture, state the names and addresses of all general partners and joint ventures.

Partnership or Joint Ventures

Taxpayer I.D. Number: _____

Name _____
Address _____
Name _____
Address _____

If the bidder is a sole proprietorship or another entity that does business under a fictitious name, the bid shall be in the real name of the bidder with a designation following showing "DBA (the fictitious name)"; provided, however, no fictitious name shall be used unless there is a current registration with the Orange County Recorder.

The full names and residences of all persons and parties interested in the foregoing proposal, as principals, are as follows:

NOTE: Give first and last names in full; in case of corporation, give names of President, Secretary, Treasurer and Manager, and affix corporate seal; in case of partnerships and joint ventures, give names of all the individual members.

_____	_____
_____	_____
_____	_____
_____	_____

Bidder's Initials

Bidder shall signify receipt of all Addenda here, if any:

<u>Addendum No.</u>	<u>Date Received</u>	<u>Bidder's Signature</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

CONSTRUCTION PROJECT REFERENCES

In order to fully evaluate your firm's background and experience for the project herein proposed, it is required that you submit a list of similar construction projects completed, or in progress, within the last five (5) years. Contractors bidding to the City shall have a **minimum five (5) years** continuous experience as prime on projects of comparable quality, size, complexity and type. This information will be used to evaluate whether the bid is responsive and or responsible to the call for bids.

<u>Date Project Awarded</u>	<u>Awarding Agency</u>	<u>Agency's Contract Administrator</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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_____	_____	_____
_____	_____	_____
_____	_____	_____

Bidder's Initials

DESIGNATION OF SUBCONTRACTORS

In compliance with the "Subletting and Subcontracting Fair Practices Act" being Sections 4100-4113 of the Public Contract Code of the State of California, and any amendments thereto, each bidder shall set forth below the name and location of the place of business 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 in an amount in excess of one-half (½) of one percent (1%) of the prime contractor's total bid or in the case of bids for the construction of streets or highways, including bridges, in excess of one-half (½) of one percent (1%) of the prime contractor's total bid or ten thousand (\$10,000) dollars, whichever is greater. Bidder shall further set forth the portion of the work which will be done by each such subcontractor. Only one subcontractor for each such portion shall be listed.

If the contractor fails to specify a subcontractor for any portion of the work to be performed under the contract, he shall be deemed to have agreed to perform such portion himself, and he shall not be permitted to subcontract that portion of the work except under the conditions hereinafter set forth.

Subletting or subcontracting of any portion of the work to which no subcontractor was designated in the original bid, shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the Legislative Body of the owner.

All information must be filled out and typed. Please use additional pages in this format if needed.

<i>Bid Item (s) Number</i>	<i>% Portion of Work</i>	<i>Name, Address and E-mail of Subcontractor</i>	<i>State License Number</i>	<i>Class</i>	<i>DIR Registration Number</i>

By submission of this proposal, the Bidder certifies:

1. That I(we)(it) is able to and will perform the balance of all work which is not covered in the above subcontractors listing.
2. That the AGENCY will be furnished copies of all subcontracts entered into by subcontractor for this project.

Bidder's Initials

CITY OF COSTA MESA BIDDERS LIST

All bidders/proposers are required to provide the following information for all DBE and non-DBE subcontractors and suppliers, who provided a proposal, bid, quote, or were contacted by the proposed prime. This information is also required from the proposed prime contractor, and must be submitted with their bid/proposal. City of Costa Mesa will use this information to maintain and update a "Bidders List" to assist in evaluating the level of DBE participation on all Public Works projects. To the extent permitted by law, all information submitted will be held in confidence.

If Bidders List information is not submitted with the bid, it shall be submitted to the City of Costa Mesa, Construction Management Division, 77 Fair Drive, Costa Mesa, CA 92626, no later than 4:00 p.m. on the fourth day, not including Saturdays, Sundays and legal holidays, following the bid opening. Bidders List information sent by U.S. Postal Service certified mail with return receipt and certificate of mailing and mailed on or before the third day, not including Saturdays, Sundays and legal holidays, following bid opening will be accepted even if it is received after the fourth day following bid opening. Failure to submit the required Bidders List information by the time specified will be grounds for finding the bid or proposal non-responsive.

Firm Name: _____ Phone: _____

Address: _____ Fax: _____

Contact Person: _____ No. of years in business: _____

Is the firm currently certified as a DBE under 49 CFR Part 26? YES NO

Type of work/services/materials provided by firm? _____

What was your firm's Gross Annual receipts for last year?

- Less than \$1 Million
- Less than \$5 Million
- Less than \$10 Million
- Less than \$15 Million
- More than \$15 Million

This form can be duplicated if necessary to report all bidders (DBE subcontractors, non-DBE subcontractors and/or suppliers' information).

BIDDER'S BOND TO ACCOMPANY PROPOSAL

(Required if the bidder desires to submit bond instead of a certified or cashier's check.)

KNOW ALL PEOPLE BY THESE PRESENTS:

That we, _____ as principals, and _____ as surety, are held and firmly bound unto the City of Costa Mesa, a municipal corporation, organized under the laws of the State of California and situated in Orange County in the sum of _____ (\$ _____) to be paid to the City, its successors and assigns, for which payment well and truly to be made, we bind ourselves, our heirs, executors, and administrators, successors or assigns, jointly and severally firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That is the certain proposal of the above bounden, _____, if accepted by the City of Costa Mesa, and if the above bounden, _____, his heirs, executors, administrators, successors and assigns, shall duly enter into and execute a contract for such construction, and shall execute and deliver the CERTIFICATE OF INSURANCE and the LABOR AND MATERIAL and the FAITHFUL PERFORMANCE BONDS described within fourteen (14) days from the date of the mailing of a notice of the above bounden, _____, by and from the City, that said contract is ready for execution, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

IN WITNESS WHEREOF:

We hereunto set our hands and seals this _____ day of _____, 20____.

Contractor/ Principal
(Notary Acknowledgement to be attached)

Surety/Power of Attorney
(Notary Acknowledgment to be attached)

CONTRACT ASSURANCE

The CONTRACTOR or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The CONTRACTOR shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the CONTRACTOR to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as recipient deems appropriate.

The CONTRACTOR will require that the above provision is included in all subcontracts.

Bidder's Initial

NONCOLLUSION AFFIDAVIT

The bidders, by its officers and agents or representatives present at the time of filing this bid, being duly sworn on their oaths say, that neither they nor any of them have in any way directly or indirectly entered into any arrangement or agreement with any other bidder, or with any public officer of such CITY OF COSTA MESA whereby such affiant or affiants or either of them has paid or is to pay to such bidder or public officer any sum of money, or has given or is to give to such other bidder or public officer anything of value whatever, or such affiant or affiants or either of them has not directly or indirectly, entered into any arrangement or agreement with any other bidder or bidders, which tends to or does lessen or destroy free competition in the letting of the contract sought for on the attached bids; that no bid has been accepted from any subcontractor or supplier through any bid depository, the By-Laws, Rules, or Regulations of which prohibit or prevent the Contractor from considering any bid from any subcontractor or supplier which is not processed through said bid depository, or which prevent any subcontractor or supplier from bidding to any Contractor who does not use the facilities or accept bids from or through such bid depository; that bidder has not bid as subcontractor to other bidders; that no inducement of any form or character other than that which appears upon the face of the bid will be suggested, offered, paid or delivered to any person of the contract, nor has this bidder any agreement or understanding of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the contracts sought by this bid.

Contractor Firm Name

Name of Principal

Title

Signature

Subscribed and sworn to before me by:

This ____ day of _____, 20____.
My Commission Expires: _____

Notary Public

Bidder's Initials

**CONTRACTOR'S CERTIFICATION
OF
WORKERS' COMPENSATION INSURANCE REQUIREMENTS
FOR
PUBLIC WORKS PROJECTS
(Labor Code §1861)**

I am aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' 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.

Dated: _____

CONTRACTOR

Company Name

PROJECT: _____

Bidder's Initials

DRUG-FREE WORKPLACE POLICY

CONTRACTOR, upon notification of contract award, shall establish a Drug-Free Awareness Program to inform employees of the dangers of drug abuse in the workplace, the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace, and the employee assistance programs available to employees. Each employee engaged in the performance of a CITY contract must be notified of this Drug-Free Awareness Program, and must abide by its terms. Failure to establish a program, notify employees, or inform CITY of a drug-related workplace conviction will constitute a material breach of contract and cause for immediate termination of the contract by CITY.

CONTRACTOR shall conform to all the requirements of CITY'S Policy No. 100-5. A copy of this policy is attached to the sample contract agreement as Attachment No. 1 in the Project Specifications.

Bidder's Initials



BIDDER/APPLICANT/CONTRACTOR CAMPAIGN CONTRIBUTION DISCLOSURE FORM

Proposer/Consultant/Applicant is required to identify any campaign contribution or cumulative contributions greater than \$249 to any city council member in the twelve months prior to submitting an application, proposal, statement of qualifications or bid requiring approval by the City Council.

Date	Name of Donor	Company/Business Affiliation	Name of Recipient	Amount

Except as described above, I/we have not made any campaign contribution in the amount of \$250 or more to any Costa Mesa City Council Member in the twelve months preceding this Application/Proposal.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Bidder/Applicant/Proposer

Date

GENERAL PROVISIONS

PART 1

SECTION 1 – GENERAL

1-2 GENERAL

Except as hereinafter provided, the provisions of the latest edition of the Standard Specifications for Public Works Construction ("Green Book"), and all amendments thereto, adopted by the Joint Cooperative Committee of Southern California Chapter, American Public Works Association, Southern California District and Associated Contractors of California; hereinafter referred to as Standard Specifications, are adopted as the "Standard Specifications of the City of Costa Mesa" and shall be considered as a part of these specifications. Copies of the Standard Specifications are available from the publisher:

BNi Building News
1612 S. Clementine Street
Anaheim, California 92802
(714) 517-0971

Where specified in these specifications, the latest edition of the California Building Code, based on the latest edition of the International Building Code, the latest edition of the "Standard Specifications and Standard Plans of the State of California, Department of Transportation, Division of Highways," "Standard Plans of the Orange County Environmental Management Agency," and "Los Angeles County Flood Control District, Design Manual, Standard Drawings" shall apply.

Where referenced in these Specifications, the latest edition of the "City of Costa Mesa Standard Drawings" and the "Work Area Traffic Control Handbook (WATCH)" published by Building News, Inc., shall also apply.

The section numbers of these Special Provisions coincide with those of the said Standard Specifications. Only those sections requiring amendment, elaboration, or specifying options, are called out.

The following modifications are made to the "Standard Specifications." If there is a conflict between the "Standard Specifications" and these modifications, these modifications shall have first precedence.

1-2 TERMS AND DEFINITIONS

- (a) AGENCY The City of Costa Mesa, California, hereinafter referred to as "CITY."
- (b) BOARD The City Council of the City of Costa Mesa, California, hereinafter referred to as "BOARD."
- (c) CONTRACT DOCUMENTS Documents including but not limited to the following: The proposal form P-1 through P-9b, Notice Inviting Bids, Standard Specifications, General Provisions, Special Provisions, Plans, Bonds, Insurance Certificates, Agreement, and all Addenda setting forth any modifications of the documents as further specified in contract agreement.
- (d) ENGINEER The administrating officer of the City of Costa Mesa or his authorized representative hereinafter referred to as ENGINEER.
- (e) BIDDER Any individual, firm, partnership, corporation, or combination thereof, submitting a bid proposal for the work contemplated in the contract documents, acting directly or through a duly authorized representative, hereinafter referred to as BIDDER.
- (f) LEGAL ADDRESS OF CONTRACTOR The legal address of the Contractor shall be the address given on the Contractor's bid and is hereby designated as the place to which all notices, letters or other communications to the Contractor shall be mailed or delivered.
- (g) LABORATORY An established laboratory approved and authorized by the ENGINEER for testing materials and work involved in the contract.

1-3 ABBREVIATIONS

- CALTRANS State of California, Department of Transportation, Division of Highways
- O.C.E.M.A. Orange County Environmental Management Agency

L.A.C.F.C.D.

Los Angeles County Flood Control District

1-6 BIDDING AND SUBMISSION OF THE BID

1-6.1 General

Proposal shall be made and submitted on proposal forms as provided within Section C of the Contract Documents in accordance with the Notice Inviting Bids. In addition to the required signatures in the spaces provided in the proposal forms, each BIDDER shall initial each sheet of the proposal forms at the bottom right hand corner.

No person, firm, partnership, corporation, or combination thereof shall be allowed to make or file or be interested in more than one bid for the same work, unless alternate bids are called for. A person, firm, partnership, corporation, or combination thereof who has submitted a sub-proposal to a BIDDER or who has quoted prices on materials to a BIDDER is not thereby disqualified from submitting a sub-proposal to or quoting prices to the other bidders. If, on the opening of bids, more than one bid appears in which the same person, firm, partnership, corporation or combination thereof is interested as a principal, all such bids shall be rejected.

Proposals with interlineations, alterations, or erasures shall be initialed by the BIDDER'S authorized agent. Alternative proposals, special conditions, or other limitations or provisions affecting the bid, except as such called for in the contract documents, will render the bid informal and may cause its rejection.

All proposals must give the prices bid for the various items of work and must be signed by the BIDDER, who shall give his address. Each bid shall have thereon the affidavit of the BIDDER that such bid is genuine and not sham nor collusive, nor made in the interest nor behalf of any other person not therein named and that the BIDDER has not directly nor indirectly induced or solicited any other BIDDER to put in a sham bid, nor induced nor solicited any person, firm, partnership, corporation, or combination thereof to refrain from bidding, and that the BIDDER has not in any manner sought by collusion to secure himself an advantage over any other BIDDER.

A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5 of the Labor Code. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

1-6.1.1 Request For Interpretation

If any person contemplating submitting a bid is in doubt as to the meaning of any part of the Plans, Specification, or other proposed Contract Documents, or finds discrepancies in, or omissions from the drawings or specifications, (It, he, she) may make a request to the ENGINEER, in writing, for an interpretation or correction thereof pursuant to the provisions in the Information For Bidders section of these specifications. The person submitting such a request shall be responsible for its prompt delivery. All such interpretations of the Contract Documents will be made only by addenda duly issued, and a copy of each such addendum will be mailed or delivered to each person receiving a set of Contract Documents at (its, his, her) last address of record. The CITY will not be responsible for any other explanations or interpretations of the Contract Documents.

1-6.1.2 Soil Conditions

The BIDDER shall inspect the soil conditions before submitting a bid. By submitting a bid, the BIDDER acknowledges that he is satisfied with the quality of the work area including but not restricted to the conditions affecting, handling and storage of materials, disposal of excess materials, and the soil conditions.

1-6.1.3 Return Of Bid Security

Any BIDDER may withdraw its bid, either personally, or by telegraphic or written request, at any time prior to the scheduled closing time for the receipt of bids. It is the sole responsibility of the BIDDER to see that any such telegraphic or written request is delivered to the City Clerk prior to said closing time. Bid security of such BIDDERS will be returned promptly to the BIDDER.

The bid security of the BIDDER whose bid is accepted will be held by the CITY until the contract has been executed and the accompanying insurance certificates, performance bond and labor and materials bond are approved and filed, whereupon the bid security will then be returned to the BIDDER.

The bid security of the second and third lowest BIDDERS will be retained until the contract is awarded to and executed by the BIDDER whose bid is accepted, or until 45 days after the opening of bids, whichever period is shorter. The bid security of all BIDDERS other than the three lowest will be returned promptly after the opening of bids.

If a BIDDER fails or refuses promptly to execute the agreement to do the work or fails or refuses to comply with insurance and bonding requirements, the bid security shall be forfeited to the CITY and shall be collected and paid into the General Fund of the CITY.

1-6.2 Subcontractor Listing

The ENGINEER, as duly authorized officer, may consent to subcontractor substitution requested by the Contractor subject to the limitations and notices prescribed in Section 4107 of the Public Contract Code.

1-7 AWARD AND EXECUTION OF THE CONTRACT

1-7.1 General

The award of contract, if awarded, will be to the lowest responsive and responsible bidder whose proposal complies with all requirements of the Notice Inviting Bids and Section 1-6 of these specifications. The BIDDER, upon notification as the "apparent low bidder," shall comply with the CITY'S insurance and bonding requirements by submitting the required insurance certificates and bonds within fourteen (14) days after the mailing of a Notice of Award to the BIDDER that the contract is ready for execution. The contract will be awarded within thirty (30) days of receipt of properly approved insurance certificates and bonds pursuant to CITY requirements spelled out in these specifications. BIDDER must take particular note of "insurance requirements" contained in these specifications and sample agreement included within the contract documents, and should provide that information to his insurance broker in order that a properly executed certificate is submitted. The CITY, however, reserves the right to reject any or all bids and to waive any informality in the bids received.

1-7.1.1 Execution of Agreement

The Agreement shall be signed by the successful BIDDER and returned to the CITY within fourteen (14) days after the mailing of the Notice of Award. Failure to comply with insurance and bonding requirements as specified in the Agreement and in Section 1-7.1 of these General Provisions shall be considered grounds for the revocation and rejection of the bid and forfeiture of bid security. No proposal shall be considered binding upon the CITY until the execution of the agreement by the CITY. In case of conflict, the agreement shall have precedence over all other written specifications.

1-7.2 Contract Bonds

The "Faithful Performance Bond" and the "Labor and Material Bond" as specified in this section shall be for one hundred percent (100%) of the Contract price. The Labor and Material Bond shall be maintained by the Contractor in full force and effect for at least seven (7) months following the filing of the Notice of Completion. The Faithful Performance Bond shall also be kept by the Contractor in full force and effect for at least one (1) year following the filing of the Notice of Completion.

CONTRACTOR shall provide the following:

A certified copy of the certificate of authority of the surety issued by the Insurance Commissioner.

A certificate from the clerk of the county in which the court or officer is located that the certificate of authority of the surety has not been surrendered, revoked, canceled, annulled, or suspended or, in the event that it has, that renewed authority has been granted.

Copies of the surety's most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code.

SECTION 2 – SCOPE OF THE WORK

2-1 WORK TO BE DONE

The work includes existing restroom building demolition and installation of pre-fabricated Restroom building. Grading that area and placing sod, site hardscape improvements and pathways, site utilities (water, sewer, electrical) and drainage infrastructure, panther jet refurbishment, new playground equipment, site sod improvements as needed, landscape and irrigation improvements needed to conform new layout to existing, and play area perimeter grading and transitions as needed.

2-2 PERMITS

All permits and licenses shall be obtained in sufficient time to prevent delays to the work.

In the event that the CITY has obtained permits, licenses or other authorizations applicable to the work, the Contractor shall comply with the provisions of said permits, licenses and other authorizations.

2-5 THE CONTRACTOR'S EQUIPMENT AND FACILITIES

2-5.1 General

The Contractor shall only use the proper construction equipment to protect the City streets from breaking up and deterioration. Haul trucks shall be limited to a gross vehicle weight of 10 tons or less.

2-5.2 Temporary Utility Services

The Contractor shall provide for his employees an adequate supply of clean, potable drinking water, which shall be dispensed through approved sanitary facilities.

If water is needed during construction, Contractor shall contact Mesa Consolidated Water District or the Irvine Ranch Water District to obtain necessary permits, instructions, and meters prior to commencing work. The Contractor is required to make any and all necessary installations and connections. All water shall be metered. The Contractor shall pay for all deposits and fees involved.

2-5.4 Haul Routes

In order to protect the City streets from deterioration due to hauling of materials, the Contractor shall submit to the ENGINEER (at the pre-construction meeting) for approval, a proposed route for the hauling of materials for disposal. Upon approval, the Contractor shall strictly adhere to that route only, unless written permission from the ENGINEER is obtained to change the route.

The California Green Building Standards Code, 2016 Edition, California Code of Regulations, Title 24, Part 11, impacting waste diversion as documented in the City of Costa Mesa's Municipal Code Chapter 4 of Title 8, requires that all construction and demolition related projects divert 65% of project waste generated from the landfill. Consequently, permitted building projects relating to construction and demolition – newly constructed buildings, additions, alterations, interior and exterior demolitions, etc. – are required to divert a minimum of 65% of nonhazardous construction and demolition waste from the landfill by recycling, reuse, or salvage. Generally, these materials include brick, drywall, other masonry, cardboard, green waste, paper, carpet, lumber, plastic, concrete, and/or metals. Asphalt, concrete, excavated soil and land-clearing debris should be 100% diverted from disposal. The County provides a suggested list of locations that are meeting and/or exceeding the 65% diversion requirement and may be used for recycling construction and demolition material.

The City of Costa Mesa requires that all hauling activity in Costa Mesa comply with one of the waste hauling options for your construction and demolition related project:

- Use Franchise Waste Hauler
- Self-Haul Permit - <https://www.costamesaca.gov/city-hall/city-departments/public-services/waste-collection-and-recycling>

2-7 CHANGES INITATED BY THE AGENCY

2-7.1 GENERAL

ENGINEER shall be the duly authorized officer of the CITY who may grant the changes

prescribed in this section.

2-8 EXTRA WORK

The extra work as defined in this section of the Standard Specifications and any work done by the Contractor beyond the lines and grades shown on the plans shall only be performed when ordered in writing by the ENGINEER. In absence of such written order, any such work by the Contractor shall be considered unauthorized and will not be paid. Work so done may be ordered to be removed at the Contractor's expense.

2-9 CHANGED CONDITIONS

The Contractor shall promptly act to supply all information to the ENGINEER for proper evaluation. Failure to do so shall constitute a waiver of any payment for delays suffered by the Contractor.

SECTION 3 – CONTROL OF THE WORK

3-1 ASSIGNMENT

No contract or portion thereof may be assigned without written consent of the BOARD.

3-4 AUTHORITY OF THE BOARD AND THE ENGINEER

When any of the various units or operations of the work have been suspended, the Contractor shall give at least 24 hours advance notice of the time when he or his subcontractor will start or resume any of such units or operations. That notice is to be given during working hours, exclusive of Saturdays, Sundays or holidays, for the purpose of permitting the ENGINEER to make necessary assignments to his representative on the work.

Any work performed in conflict with said notice, without the presence or approval of the ENGINEER, or work covered up without notice, approval or consent may be rejected or ordered to be uncovered for examination at Contractor's expense and shall be removed at Contractor's expense, if so ordered by the ENGINEER or his representative on the work. Any unauthorized or defective work, defective material or workmanship or any unfaithful or imperfect work that may be discovered before the final payment and final acceptance of work shall be corrected immediately by the Contractor without extra charge even though it may have been overlooked in previous inspections and estimates or may have been caused due to failure to inspect the work.

All authorized alterations affecting the requirements and information given on the approved plans shall be in writing. No changes shall be made on any plan or drawing by the Contractor after the same has been approved by the ENGINEER, except by direction of the ENGINEER in writing. Deviations from the approved plans, as may be required by critical conditions of construction, must be authorized in writing by the

ENGINEER.

All instructions, rulings and decisions of the ENGINEER shall be in writing and are binding on all parties unless a formal protest is made as provided in the following paragraph:

If the Contractor considers any work demanded of him to be outside the requirements of the contract, or if he considers any instruction, ruling or decision of the ENGINEER or ENGINEER'S representative to be unfair, the Contractor shall, within ten (10) days after any such demand is made, or instruction, ruling or decision is given, file a written protest with the ENGINEER, stating clearly and in detail his objections and reasons therefor. Except for such protests and objections as are made of record, in the manner and within the time above stated, the Contractor shall be deemed to have waived and does hereby waive all claims for extra work, damages and extensions of time on account of demands, instructions, rulings and decisions of the ENGINEER.

Upon receipt of any such protest from the Contractor, the ENGINEER shall review the demand, instruction, ruling or decision objected to and shall promptly advise the Contractor, in writing, of his final decision, which shall be binding on all parties, unless within the ten (10) days thereafter the Contractor shall file with the BOARD a formal protest against said decision of the ENGINEER. The BOARD shall consider and render a final decision on any such protest within thirty (30) days of receipt of same. If the BOARD fails to consider and render a final decision on any such protest within thirty (30) days of receipt of the same, the protest shall be deemed denied.

3-5 INSPECTION

If the Contractor requests and receives approval from the ENGINEER to receive inspection services from the CITY outside of a normal eight (8) hour day/forty (40) hour work week or on Saturday, Sunday, or CITY holidays, the Contractor shall arrange with the CITY and ENGINEER for the special inspection services and Contractor shall pay for such special inspection services at a fee established by the ENGINEER to defray the cost for such service.

All work, which has been inspected and deemed defective in its construction or does not meet all of the requirements of the plans and/or specifications by the ENGINEER shall be remedied, or removed and replaced by the Contractor in an acceptable manner, and no compensation will be allowed for such correction.

Any work done beyond the limits of the lines and grades shown on the plans or established by the ENGINEER or extra work done without written authority will be considered as unauthorized and not be paid.

Upon failure on the part of the Contractor to comply with any order of the ENGINEER made under the provisions of this article, the ENGINEER shall have authority to cause

defective work to be remedied, or removed and replaced, and unauthorized work to be removed, and to deduct the costs and thereof from any monies due or to come due the Contractor.

Payment will not be made for materials wasted or disposed of in a manner not called for under the Contract. This includes rejected material not unloaded from vehicles, material rejected after it has been placed and material placed outside the limits of the project. No compensation will be allowed for disposing of rejected or excess material.

3-6 THE CONTRACTOR'S REPRESENTATIVE

Contractor shall file with the ENGINEER the addresses and telephone numbers where its designated representative may be reached during hours when the work is not in progress.

Instructions and information given by the ENGINEER to the Contractor's authorized representative or at the address or telephone numbers filed in accordance with this section shall be considered as having been given to the Contractor.

The Contractor shall have on the work site at all times a competent English-speaking superintendent, as his agent, capable of reading and thoroughly understanding the plans and specifications and other related documents.

3-7 CONTRACT DOCUMENTS

3-7.1 General

Contractor will obtain from the ENGINEER, free of charge, copies of plans, general provisions, special provisions and additions to the Standard Specifications that are reasonably necessary for the execution of work.

Contractor shall, at its own expense, obtain copies of the Standard Specifications and Standard Plans and Specifications of CALTRANS, for his general use.

If after the Contract is awarded it appears that the work to be done, or any matter relative thereto, is not sufficiently detailed or explained in the specifications and plans, the Contractor shall apply to the ENGINEER for such further explanations as may be necessary and shall conform to such explanation or interpretation as part of the Contract.

All scaled dimensions are approximate. Before proceeding with the work, the Contractor shall carefully check and verify all dimensions and quantities and shall immediately inform the ENGINEER or his representative of any discrepancies.

3-10 SURVEYING

3-10.1 General

The Contractor will perform and be responsible for the accuracy of setting all required survey stakes adequate for the construction of the project.

3-10.3 Line and Grade

Unless otherwise provided in the Special Provisions, lines and grades for construction shall be the responsibility of the Contractor, with the following provisions:

All work under this Contract shall be built in accordance with the lines and grades shown on the plans. Field survey for establishing the lines and grades and for the control of construction shall be the responsibility of the Contractor. All such surveys, including construction staking, shall be under the supervision of a California-licensed land surveyor or by a California-licensed civil engineer allowed by law. Staking shall be performed on all items ordinarily requiring grade and alignment, at intervals normally accepted by the agencies and the trade involved.

The Contractor shall provide a copy of the office calculations and grade sheets to the City Inspector. The Contractor shall be responsible for any error in the finished work and shall notify the ENGINEER within one (1) working day of any discrepancies or design errors discovered during staking.

Unless a separate bid item is provided, the payment for surveying, construction staking, professional services, office calculations, furnishing all labor, materials, equipment, tools and incidentals, and for doing all work involved shall be considered as included in the various items of work, and no additional compensation will be allowed.

3-12 WORK SITE MAINTENANCE

3-12.1 General

Unless the construction dictates otherwise, and unless otherwise approved by the ENGINEER, Contractor shall furnish and operate a self-loading motor sweeper with a functional water spray nozzle system at least once each working day to keep paved areas in the Work zone and along all haul routes acceptably clean whenever construction, including restoration, is incomplete.

3-12.2 Air Pollution Control

Failure of the Contractor to comply with the ENGINEER'S dust control orders may result in an order to suspend work until the condition is corrected and, after giving notice to the Contractor, the ENGINEER may order the condition corrected by others. All costs thus

incurred shall be deducted from the amount to be paid to Contractor. No additional compensation will be allowed as a result of such suspension.

No separate payment will be made for any work performed nor material used to control dust resulting from Contractor's performance of the work or from public traffic, either inside or outside the right-of-way. Full compensation for such dust control will be considered to be included in the prices paid for the various items of Work involved.

3-12.4.1 General

All surplus materials shall be removed from the site of the Work within five (5) days after completion of the Work causing the surplus materials.

3-12.6 Water Pollution Control

3-12.6.1 General

Discharge of storm water from construction sites that disturb land equal to or greater than one (1) acre must be in compliance with the state General Construction Activity Permit (Construction Permit). The latest permit provisions of the Construction Permit shall apply. The Contractor is required to contact the Santa Ana Regional Water Quality Control Board (Regional Board) for all information contained in the Construction Permit. In the event project construction occurs during the transition of revised Construction Permits, the Contractor shall incorporate the necessary modifications specified by the revised Construction Permit within the time period specified in the new Construction Permit.

Project Soil Disturbance is: **less than 1 acre** (No General Construction Permit required)

Construction activity subject to the Construction Permit includes clearing, grading, disturbance to the ground such as stockpiling, work area, or excavation that results in soil disturbances of at least one acre of total land area. Construction activity that results in soil disturbances of less than one acre is subject to the Construction Permit if the construction activity is a part of a larger common plan of development that encompasses one or more acres of soil disturbance or if it is determined that discharges from the project pose a significant threat to water quality.

The CONTRACTOR shall have an account with the State for SMARTS (Storm Water Multiple Application and Report Tracking System). The CONTRACTOR shall contact the CITY with their user ID so that the CITY will grant the CONTRACTOR access as a Data Submitter.

The CONTRACTOR shall complete the NOI within SMARTS
<https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp> The

CONTRACTOR will notify the CITY when the NOI is ready for the CITY to submit to the State. The CONTRACTOR shall pay all fees associated with the NOI process. The CONTRACTOR shall also complete all required reports within SMARTS as required by the General Permit and the Project's Storm Water Pollution Prevention Plan (SWPPP).

The CONTRACTOR shall complete the Annual Report and NOT within SMARTS. Once the CITY has been notified, the CITY will review and submit to the State for processing.

A copy of the latest permit is available at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

The CONTRACTOR is hereby directed to read the Construction Permit thoroughly and comply with the requirements as specified therein.

3-12.6.2 Best Management Practices (BMPs)

The Contractor shall be responsible for any damage to any portion of the Work occasioned by failure to provide proper drainage control prior to the completion and acceptance of the Work.

3-12.6.3 Storm Water Pollution Prevention Plan (SWPPP)

If a General Construction Permit is required pursuant to Section 3-12.6.1 of these General Provisions, the following SWPPP requirements shall be adhered to:

The Contractor is responsible for the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) as required by the Construction Permit. The Contractor is responsible for completing all parts of the SWPPP including, REAPs, monitoring, sampling, rain gauge records, weather reports, submitting pictures of every third storm, non-authorized discharge reports, Ad-Hoc reports, Annual Reports, post construction BMPs and other requirements of the SWPPP.

The completed SWPPP must be signed by a QSD (Qualified SWPPP Developer). The completed SWPPP must be submitted to the resident engineer for City review and acceptance, prior to uploading to SMARTS. The Contractor will be responsible for uploading an electronic format of the SWPPP into SMARTS. The SWPPP must be signed by the City before construction begins. A copy of the SWPPP must be available at the site at all times and must be implemented and revised in accordance with the Construction Permit throughout the duration of the project.

Contractor must have QSP (Qualified SWPPP Practitioner). Contractor shall perform site inspections before and after the storm event, and once each 24-hour period during extended storm event, to identify BMP effectiveness and implement repairs or BMP

modifications as soon as possible. Sampling of potential pollutant discharges shall be conducted by trained personnel and required laboratory test conducted by laboratory accredited by the California Department of Health Services Environmental Laboratory Accreditation Program.

Contractor shall be responsible for any penalties assessed against the City if the penalty assessed is due to Contractor's violation of the Construction Permit requirement, or Contractor's failure to fully implement and monitor SWPPP as required.

Erosion and Sediment Control Plans

Erosion and Sediment Control Plans shall be prepared by the Contractor as part of the SWPPP that identify adequate controls to prevent erosion and discharge of sediment off-site. Payment for the Erosion and Sediment Control Plans shall be included as part of the SWPPP.

3-12.6.4 Dewatering

Unless otherwise directed in these Special Provisions, the Contractor shall provide and maintain ample means and devices with which to promptly remove and properly dispose of water entering the excavations or other parts of the work at all times during construction. Dewatering shall be accomplished by methods which will ensure a dry excavation and preservation of the final lines and grades of the bottoms of excavations. The methods may include sump pumps, deep wells, well points, suitable rock or gravel placed below the required bedding for draining and pumping purposes, temporary pipelines, and other means.

Standby pumping equipment shall be on the job site. A minimum of one standby unit shall be available for immediate installation should any well unit fail. The design and installation of well points or deep wells shall be suitable for the accomplishment of the work. Drawings or details indicating the proposed dewatering system shall be submitted to the CITY for review.

The Contractor shall dispose of the water from the work in a suitable manner without damage to adjacent property.

Conveyance of the water shall be such as to not interfere with traffic flow or treatment facilities operations. No water shall be drained into work built or under construction without prior consent of the ENGINEER.

Water shall be disposed of in such a manner as not to be a menace to the public health and such disposal shall be performed in accordance with Environmental Protection Agency and State Water Quality Control Board standards (NPDES permit). Any testing and reports required under NPDES permit shall be performed by the Contractor and submitted to the appropriate agency for approval at no additional cost to the CITY.

3-13.3 WARRANTY

The warranty period shall start on the date the Work is accepted by the Board.

SECTION 4 – CONTROL OF MATERIALS

4-4 TESTING

All tests of materials furnished by the Contractor shall be made in accordance with commonly recognized standards of national organizations and such special methods and tests as are prescribed in these specifications. No materials shall be used until they have been approved by the ENGINEER.

The Contractor shall at his expense furnish the CITY, in triplicate, certified copies of all required factory and mill test reports. Any materials shipped by the Contractor from a factory or mill prior to having satisfactorily passed such testing and inspection by a representative of the CITY shall not be incorporated in the work, unless the ENGINEER shall have notified the Contractor, in writing, that such testing and inspection will not be required.

At the option of the ENGINEER, the source of supply of each of the materials shall be approved by the ENGINEER before delivery is started and before such material is used in the work.

Unless otherwise provided in the Special Provisions, the CITY will complete and pay for the initial soils, compaction, and material tests. Any subsequent soil, compaction, and material tests deemed necessary due to the failure of initial tests will be at the Contractor's expense and deducted from the payment due.

SECTION 5 – LEGAL RELATIONS AND RESPOSIBILITIES

5-1 LAWS AND REGULATIONS

The Contractor shall protect and indemnify the CITY, the BOARD, the ENGINEER, and all of its or their officers, agents and servants against any claim or liability arising from or based on the violation of any existing or future State, Federal and local laws, ordinances, regulations, orders or decrees, whether by himself or his employees. If any discrepancy or inconsistency is discovered in the plans, drawings, specifications or contract for the work in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to the ENGINEER in writing.

The Contractor shall comply with and meet all applicable SCAQMD, OSHA, NPDES and EPA requirements as specified. The Contractor shall be responsible to obtain those necessary manuals and publications.

5-2 SPECIAL NOTICES

In addition to the special notices requirement to be served by Personnel Delivery or Certified Mail, special notices may also be served by the utilization of FedEx or UPS express service with a confirmed delivery receipt. Service shall be effective on the date of the receipt of the delivery confirm issued by FedEx or UPS.

5-3 LABOR

5-3.2 Prevailing Wages

Contractor shall comply with the provisions of Division 2, Part 7, Chapter 1, Article 2 commencing with Section 1770 of the California Labor Code and shall forfeit the sums prescribed therein for noncompliance with those provisions.

5-3.3 Payroll Records

In order to verify compliance with the Labor Code, Contractor shall furnish to the ENGINEER, weekly, for the duration of the contract period, copies of his payroll statements showing wages paid to each employee during the preceding week and the employee work classification. Use of Form DH-C-347, Payroll Statement of Compliance, is an acceptable method of fulfilling the above requirement.

Contractor shall also comply with Section 3700 of the California Labor Code which requires every employer to carry workers' compensation insurance or to undertake self-insurance in accordance with the provisions of that code.

5-3.5 Apprentices

Attention is directed to the provisions of Sections 1777.5 and 1777.6 of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor under it. The Contractor and any subcontractor under it shall comply with the requirements of those Sections in the employment of apprentices.

Information relative to apprenticeship standards, wage schedules and other requirements may be obtained from the Director of Industrial Relations, Ex-officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

5-4 INSURANCE

The minimum amounts and types of insurance coverages are as stated in the agreement (sample copy attached). Prior to bid submittal the BIDDER shall keep fully informed of the latest insurance requirements of the City of Costa Mesa and shall comply with all other provisions of Section 7.3 of the Standard Specifications.

Below are approved endorsements which satisfy the basic insurance requirements contained in contracts entered into by City of Costa Mesa. These have been approved by the City Attorney's office. The terms of any specific contract with the City are controlling. Prior to the commencement of any work, the CITY requires that the ENGINEER receive Certificates of Insurance in **DUPLICATE** for liability coverage of at least \$1,000,000 combined single limit, per occurrence and in the aggregate.

Each insurance policy required by the CITY of the Contractor shall contain the following endorsements:

1. Additional Insureds

"The City of Costa Mesa and its elected and appointed boards, officers, agents, and employees are additional insureds with respect to the subject project and agreement."

2. Notice

"Said policy shall not terminate, nor shall it be canceled nor the coverage reduced, until thirty (30) days after written notice is given to City."

3. Other Insurance

"Any other insurance maintained by the City of Costa Mesa shall be excess and not contributing with the insurance provided by this policy."

If any of such policies provide for a deductible or self-insured retention to provide such coverage, the amount of such deductible or self-insured retention shall be approved in advance by City. No policy of insurance issued as to which the City is an additional insured shall contain a provision which requires that no insured except the named insured can satisfy any such deductible or self-insured retention.

5-7 SAFETY

5-7.1 Work Site Safety

5-7.1.1 General

Material or other obstructions shall not be placed within fifteen feet (15') of fire hydrants.

Fire hydrants shall be made readily accessible to the Fire Department at all times. Traffic Control shall also conform with the provisions of the latest Work Area Traffic Control Handbook (WATCH) published by Building News, Inc.

Prior to restricting normal access from public street to adjacent properties, the Contractor shall notify each property owner or owner's agent, informing them of the nature of the access restriction and the approximate duration of the restriction. The Contractor shall make every effort possible to minimize such restrictions.

Trenches left open overnight shall be bridged in a safe and acceptable manner at all driveways and walkways to provide safe access.

A minimum of one four (4) foot wide pedestrian walkway shall be maintained and safely delineated along each public street at all times during construction.

5-7.8 Steel Plate Covers

5-7.8.1 General

All steel plate covers utilized for the project must be slide resistant. A non-slip coating will be required on the side of the steel plate that that will be utilized for the driving or walking surface.

SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK

6-1.1 Construction Schedule

The minimum amounts and types of insurance coverages are as stated in the agreement (sample copy attached). Prior to bid submittal the BIDDER shall keep fully informed of the latest insurance requirements of the City of Costa Mesa and shall comply with all other provisions of Section 7.3 of the Standard Specifications.

Below are approved endorsements which satisfy the basic insurance requirements contained in contracts entered into by City of Costa Mesa. These have been approved by the City Attorney's office. The terms of any specific contract with the City are controlling. Prior to the commencement of any work, the CITY requires that the ENGINEER receive Certificates of Insurance in **DUPLICATE** for liability coverage of at least \$1,000,000 combined single limit, per occurrence and in the aggregate.

Each insurance policy required by the CITY of the Contractor shall contain the following endorsements:

1. Additional Insureds

"The City of Costa Mesa and its elected and appointed boards, officers, agents, and employees are additional insureds with respect to the subject project and agreement."

2. Notice

"Said policy shall not terminate, nor shall it be canceled nor the coverage reduced, until thirty (30) days after written notice is given to City."

3. Other Insurance

"Any other insurance maintained by the City of Costa Mesa shall be excess and not contributing with the insurance provided by this policy."

If any of such policies provide for a deductible or self-insured retention to provide such coverage, the amount of such deductible or self-insured retention shall be approved in advance by City. No policy of insurance issued as to which the City is an additional insured shall contain a provision which requires that no insured except the named insured can satisfy any such deductible or self-insured retention.

The Contractor shall furnish the ENGINEER with a 3 week look ahead-schedule in a tabular format at every weekly construction meeting. The 3-week look ahead schedule shall utilize the main milestones within the approved Baseline Construction Schedule with updates and include sub-activities linked to the milestone tasks.

No construction shall be allowed to take place during the holidays observed by City of Costa Mesa. Those holidays observed by the City of Costa Mesa. The City observed holidays are: Every Sunday, New Years Day, Martin L. King Holiday, Presidents Day, Memorial Day, 4th of July, Labor Day, Veterans Day, Thanksgiving, the Friday after Thanksgiving, and Christmas. The observance date shall concur with Federal guidelines.

6-1.3 DAILY REPORT SUBMITTAL

Contractor shall submit daily reports to the CITY at the end of each working day. All forms shall be provided by the CITY. Any cost for this item shall be included in the various items of work and no other compensation will be allowed.

6-3 TIME OF COMPLETION

6-3.1 General

If awarded the contract, the undersigned agrees to commence the Work by the date specified in City's Notice to Proceed, unless a later date is agreed upon in writing by the parties. The Work shall be completed within **one-hundred forty (140) calendar days** from the first day of commencement of the Work.

6-5 USE OF IMPROVEMENT DURING CONSTRUCTION

Should it become necessary, due to developed conditions, to occupy any portion of the Work before Contract is fully completed, such occupancy shall not constitute acceptance by the CITY of work by Contractor.

6-7 TERMINATION OF THE CONTRACT FOR DEFAULT

6-7.3 Notice of Termination for Default

The ENGINEER will make the determination if the Contractor had failed to commence satisfactory corrective action within 5 working days after the receipt of the notice to cure, or to diligently continue satisfactory and timely correction of the default thereafter, and will take action as allowed by the Contract Documents.

6-7.4 RESPONSIBILITIES OF SURETY

Within 3 working days of receipt of the written notice of termination for default, the Surety shall provide the services needed to maintain the project in accordance with the Contract Documents. The services shall maintain the existing traffic control in place and the maintenance of the project site until the Engineer's review and acceptance of the Surety's plan for course of action.

6-9 LIQUIDATED DAMAGES

The amount of liquidated damages shall be \$1,800,000.00 per calendar day and in accordance with the Contract Agreement provisions.

SECTION 7 – MEASUREMENT AND PAYMENT

7-3 PAYMENT

7-3.1 General

Payment for the various items listed on the Bid Proposal, as further specified herein, shall constitute full compensation to the Contractor for furnishing all material, tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of Work and as specified and shown on the

drawings, including all costs for compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor. No separate payment will be made for any item that is not specifically set forth in the Bid Proposal. Costs arising from violations of regulations will be paid by the offending party to the extent that there will be no additional cost to the CITY. See Special Provisions for individual Bid Item descriptions.

When no bid item is provided for work/improvement shown or indicated on the plans and specifications, payment for such work/improvement will be considered to be included in various applicable items of work.

7-3.2 Partial And Final Payment

The closure date for the purpose of making partial progress payments will be the last day of each month. The Contractor may request, in writing, that such monthly closure date be changed. The ENGINEER may approve such request when it is compatible with the CITY's payment procedure.

Each month, the Contractor shall meet with the Engineer, a minimum of three (3) working days prior to the submittal of the progress payment to the AGENCY, to finalize and receive approval regarding the measurement of the Work performed through the closure date and the estimated value of the progress payment based on the Contract Unit Prices or as provided for in the Standard Specifications. Any progress payment submitted without such approval will be considered incomplete and returned to the Contractor and no payment shall be considered until such approval is obtained.

The amount retained and deducted by the BOARD shall be 5% of the progress estimates for all progress payments. No reduction in the amount of retention will be allowed. However, after 50% of the work has been completed, if the BOARD finds that satisfactory progress is being made, it may make any of the remaining progress payments in full for actual work completed. The final payment of the retention amount to the Contractor shall be made thirty-five (35) days after the date of the recording of the Notice of the Completion of the work after it is accepted by the CITY. The 5% withheld from each progress payment shall not include monies withheld for stop notices or other withholding by the CITY. The monies withheld for stop notice and other withholdings shall be in addition to the 5% withheld for retention.

Contractor shall comply with the requirements of Division 2, Part 1, Chapter 7, Section 7107 of the California Public Contract Code.

The lead time for processing invoices for the monthly progress payments approved by the ENGINEER for inclusion on the warrant list of the CITY is governed by the rules and

regulations established by the Finance Department of the CITY. Monthly payments will be processed and paid in accordance with the rules and regulations established or revised by the said Finance Department.

The Contractor shall submit all weight tickets or volumes of all materials used in the construction to the ENGINEER for checking and verification prior to any payment. Failure to do so will postpone the payment to the Contractor, until the matter is resolved satisfactorily.

The weight or volume from submitted tickets must correspond to the work done in the field; if not, the City shall reject the work without compensation to the Contractor, and/or the Contractor shall be directed to replace that work at no additional costs to the City.

After completion of the Contract, the BOARD shall, upon recommendation of the ENGINEER, accept the Work as completed and authorize the Final Payment.

The Final Payment shall be the entire sum found to be due the Contractor after deducting therefrom all previous payments and all amounts to be kept and all amounts to be retained under the provisions of the Contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

No certificate given or payment made under the Contract, except the final certificate or Final Payment, shall be conclusive evidence of full or substantial performance of this Contract; and no payment shall be construed to be an acceptance of any defective work or improper material.

The acceptance of Final Payment by the Contractor shall release the CITY, the BOARD, and the ENGINEER from any and all claims or liabilities on account of work performed by the Contractor under the Contract or any alterations thereof.

The Contractor shall record, on the set of contract documents maintained at the job site, deviations which have been made from the Contract Documents or approved shop drawings – including buried or concealed construction and utility features which are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Contract Documents. Said record documents shall be supplemented by detailed sketches as necessary or directed, to indicate fully the work as actually constructed.

Requests for partial payments shall not be approved until the record documents are brought up to date. Also, request for final compensation shall not be approved until all the variations between the work as constructed and as originally shown in the Contract Documents have been properly recorded and delivered to the City, after approved by the Engineer.

7-3.2.1 Prompt Progress Payment To Subcontractors

Contractor shall comply with the requirements of Division 2, Part 1, Chapter 7, Section 7200 of the California Public Code.

The CONTRACTOR agrees to pay each subcontractor under this Agreement for satisfactory performance of its contract no later than 7 days from the receipt of each payment the CONTRACTOR receives from CITY.

The CONTRACTOR agrees further to release retainage payments to each subcontractor within 7 days after the retention payment is received by the CONTRACTOR.

Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the CITY. Any violation of this provision shall subject the violating prime contractor or subcontractor to the penalties, sanctions and other remedies specified in Section 7108.5 of the Business and Professions Code. This clause applies to both DBE and non-DBE prime contractors and subcontractors.

City will be strictly monitoring the Contractor for prompt payment to all subcontractors.

7-3.2.2 Prompt Pay Monitoring And Enforcement Of Progress Payments

The City of Costa Mesa will use the following monitoring and enforcement mechanisms to ensure that all subcontractors, including DBE's, are promptly paid.

- A. The City will strictly monitor the prime contractor or subcontractor(s) for prompt release of progress payments for all subcontracted work as follows:
 1. The effective date of release is the date the City releases the check to the prime contractor by mailing or hand delivery at the City of Costa Mesa (has to be requested in writing ahead of time).
 2. Prime contractor or subcontractor(s) to provide verification in writing that the subcontracts have been paid within 7 days or the time period agreed, from the effective date of release.
 3. City may contact subcontractor(s) to confirm receipt of progress payment amount and if it was received within 7 days or the time period agreed from the effective date of release.
- B. If the prime contractor or subcontractor(s) is found to be in default of Federal or State Codes concerning prompt payment to subcontractors, City will enforce the

following besides the disciplinary action, sanctions and penalties imposed per the codes:

1. City will withhold 150% of the monies due to the subcontractor(s) from the prime contractor's next progress payment.
2. City may also elect to make the payment(s) directly to the subcontractor(s) without the prime contractor's approval for the remainder of the contract.

7-3.3 Delivered Materials

The cost of materials and equipment delivered, but not incorporated in said work, will not be included in the progress payment estimate unless otherwise provided in these Specifications. All materials shall be nontoxic and shall not contain asbestos and hazardous substances as established by applicable laws.

Materials delivered, but not in place, will not be classed as work done, except as otherwise provided in these Specifications.

7-3.4 Mobilization

Mobilization shall consist of all preparatory work and operations. It shall include, but not be limited to, the movement of personnel, equipment, materials and incidentals to the project site necessary for work on the project. The mobilization shall include all other work and operations, which must be performed.

Mobilization shall also include the time, materials, and labor to move the necessary construction equipment to and from the job site and the project administration costs during the entire contract period.

This work shall include, but not be limited to protect-in-place and/or relocation of the facility to accommodate the construction of an improvement; including resetting curb drains through new curbing.

The Contractor shall provide supervisory personnel to keep the construction site in a safe condition and all other related work as required at all times. These requirements shall also apply to all non-working days during construction period. The Contractor is responsible for securing an adequate storage site for equipment and materials.

The Contractor shall have on the work site at all times, as his agent, a competent English speaking superintendent capable of reading and thoroughly understanding the plans, specifications, and other related documents.

7-3.4.1 Travel Route for Trucking and Equipment

Plans indicating the travel route for the Contractor's equipment movement in and out of the work site must be submitted concurrently with the Haul Route Plan (Section 2-5.4) to the ENGINEER at the pre-construction meeting for approval prior to commencement of any work. The travel route plans, which meet the City's requirements, will be approved and returned to the Contractor; otherwise, further revisions are required until they are acceptable to the City. The approved travel plans shall be strictly adhered to by the Contractor during all phases of the construction.

Any deviation from these requirements is not permitted. All the Contractor's operations will be ceased at once if the Contractor violates any of these requirements. No further payments will be made to the Contractor until problems are resolved according the City's requirements.

7-3.4.2 Construction Sequence/Order of Work

In order to minimize the inconveniences to the residents and businesses, the contractor shall construct the Project and sequence the work where no two adjacent streets are closed at one time, and/or the nearest parking is no more than 300' from the intersection of the street being closed to traffic. The Contractor shall maintain adjacent streets open for ingress and egress and for parking.

7-4 PAYMENT FOR EXTRA WORK

7-4.2 Basis for Establishing Costs.

7-4.2.1 Labor

The compensation for employer's payments of payroll taxes; workers compensation insurance; liability insurance; health and welfare; pension; vacation; apprenticeship funds; other direct costs resulting from Federal, State, or local laws; and for assessments or benefits required by lawful collective bargaining agreements to be applied to the actual cost for wages shall be **23 percent** for regular time and overtime.

7-4.3 Markups

7-4.3.1 Work by the Contractor

[Replace in its entirety with the following:].

The allowance for overhead and profit to be added to the Contractor's costs shall be as follows:

Labor:	20%
Materials:	15%
Contractor Owned Equipment	15%

Equipment Rental	10%*
Other Items and Expenditures	10%

To the sum of the costs and markups provided for in this section, 1 percent shall be added as compensation for bonding.

* Equipment Rental rates shall be based on the latest applicable Caltrans Equipment Rental Rates.

7-4.3.2 Work by a Subcontractor

When all or any part of the extra work is performed by a Subcontractor, the markup established in 7-4.3.1 shall be applied to the Subcontractor's actual cost of such work. A markup of ten (10) percent on the first \$5,000 of the subcontracted portion of the extra work and a markup of five (5) percent on work added in excess of \$5,000 of the subcontracted portion of the extra work may be added by the Contractor.

No markups will be allowed for second tier or higher subcontractors.

7-6 SUMMARY OF PUBLIC CONTRACT CODE § 9204

The following procedure will apply to any claims by the Contractor on the City:

A "claim" is a separate demand on the City by a contractor on a public works project and sent by registered mail or certified mail with return receipt requested, for one or more of the following:

- A time extension, including relief from penalties for delay
- Payment by the City of money damages under the terms of the contract
- Payment of an amount that is disputed by the City

Initial Review

The claim must be supported by appropriate documentation. The City has 45 days within which to review the claim and provide the contractor with a written statement identifying the disputed and undisputed portions of the claim. If the City does not issue a written statement, the claim is deemed rejected in its entirety. The City will pay any undisputed portion of the claim within 60 days of issuing the statement.

Meet & Confer

If the contractor disputes the City's written response, or if the City does not issue one, the contractor may request in writing an informal conference to meet and confer for possible settlement of the claim. The City will schedule the meet and confer conference within 30 days of this request and provide a written statement identifying the remaining

disputed and undisputed portions of the claim within 10 business days of the meet and confer. The City will pay the undisputed portion within 60 days of issuing this statement.

Mediation

With respect to any disputed portion remaining after the meet and confer, the City and contractor will submit the matter to nonbinding mediation, agree to a mediator within 10 business days after issuing the written statement, and share mediation costs equally. If mediation is unsuccessful, then the terms of the public works agreement and applicable law will govern resolution of the dispute.

Miscellaneous Provisions

Amounts not paid by the City in a timely manner bear interest at 7% per annum. Subcontractors may submit claims via this procedure through the general contractor. The City and contractor may waive the requirement to mediate, but cannot otherwise waive these claim procedures.

CITY OF COSTA MESA, CALIFORNIA

**PROJECT MANUAL
TECHNICAL SPECIFICATIONS**

FOR

**LIONS PARK LANDSCAPE, RESTROOM IMPROVEMENTS
570 W 18th St, Costa Mesa, CA 92627**

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July 31, 2020

**PLANS & SPECIFICATIONS
FOR LIONS PARK LANDSCAPE, RESTROOM IMPROVEMENTS
IN THE CITY OF COSTA MESA, CALIFORNIA
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TECHNICAL PROVISIONS

GENERAL STANDARD SPECIFICATIONS

The Standard Specifications for the construction materials and construction methods as set forth in the "Standard Specifications for Public Works Construction", 2018 Edition shall be the Standard Provisions for all the Work to be done and the provisions of the Contract for the Work. In case of conflict between the Standard Specifications and these Technical Provisions, the Technical Provisions shall take precedence over and prevail over such conflicting portions.

MOBILIZATION

Mobilization shall consist of preparatory work and operations including all of the labor, equipment, tools, supplies, costs, arrangements, and others that are necessary for the movement of personnel, equipment, materials, and incidentals to the project site necessary for work on the project and for all other work and operations which must be performed including, but not limited to, bonds, insurance, securing an adequate storage site for equipment and materials, and financing prior to beginning work on the various contract items on the project site.

The cost of time, materials, and labor to move the necessary construction equipment to and from the site, supervisory time on the job by the Contractor's personnel to keep the construction site in a safe condition, and all other related work as required at all times and for all non-working days during the construction period shall have been included in the bid.

PAYMENT

Payment for the preceding shall be included in the **LUMP SUM** for mobilization and shall be considered full compensation including the cost for obtaining all of the required business licenses and permits.

TRAFFIC CONTROL

1.1 DESCRIPTION

Traffic control, construction signing and traffic maintenance shall comply with the provisions of Subsection 7-10 of the Standard Specifications and the current requirements set forth in the "Manual of Traffic Controls for Construction and Maintenance Work Zones" published by the Department of Transportation, State of California, these Technical Provisions, and as directed by the Engineer.

1.2 PROTECTION OF WORK AND PUBLIC

The Contractor shall take all necessary measures to protect work and prevent accidents during any and all phases of the work. The Contractor shall repair all damaged new improvements as a result of vandalism (i.e., vehicle tracks, footprints, writing, etc.). If deemed necessary by the City, the Contractor shall repair, at its cost, the defective area in accordance with these Technical Provisions.

1.3 CONSTRUCTION SIGNING

Construction signing shall consist of furnishing, installing, maintaining and removing construction signs and barricades as required by the "Manual of Traffic Controls for Construction and Maintenance Work Zones". The traffic control system shall be installed prior to starting work and shall not be removed until all work has been completed.

Also in conjunction to the public relations effort, Contractor shall supply and erect project construction information signs at the designated locations as determined by the City. Such signs shall conform to the City's specifications. Specific verbiage to be determined by the City. There shall be a minimum of four (4) such signs posted.

1.4 TRAFFIC MAINTENANCE

The Contractor shall be responsible for handling vehicular and pedestrian traffic in accordance with Subsection 7-10 of the Standard Specifications and these Technical Provisions.

The Contractor shall cooperate with the Engineer relative to handling traffic through all work areas and shall make his own arrangements relative to keeping the working area clear of parked vehicles and maintaining clear access to driveways.

Contractor's equipment and personal vehicles of the Contractor's employees shall not be parked on the traveled way at any time. Overnight parking of construction equipment in the work zone or on adjacent roads is not permitted. Parking of construction equipment shall be confined to the approved storage site.

1.5 STRIPING

Temporary striping and marking for traffic control if required shall conform to Section 310-5.6.5 of the Standard Specifications. Temporary striping and marking which has no further use shall be removed by wet sandblasting, and all sand used in sandblasting shall be removed without delay as the sandblasting operation progresses.

1.6 RESTRICTIONS ON CLOSURE OF STREETS AND TRAFFIC LANES

The Contractor shall conduct all operations so as to provide reasonable access to the existing park facilities and have no greater length or quantity of work under construction that can be properly constructed with a minimum of inconvenience to the public.

PAYMENT

Payment for traffic control shall be made at the contract **LUMP SUM** price bid and shall be considered full payment for furnishing all materials, labor, equipment, and all incidentals necessary to complete the work in accordance with the Standard Specifications and these Technical Provisions.

DEMOLITION AND SITE CLEARING

Perform demolition work in a pre-planned, systematic, efficient, and orderly manner. Deploy customary and acceptable methods as required to complete the Work indicated on the Plans in accordance with governing regulations.

Provide services for effective air and water pollution controls as required by City and County Air Pollution Control District and the Southern California Air Quality Management District.

1.1 DISPOSAL OF DEMOLISHED MATERIALS

All removed materials not salvaged or reused shall be removed from the project site no later than the end of each work day and transported legally for disposal at a qualified site.

If hazardous materials are encountered, notify the City Inspector immediately.

Burning of removed materials is not permitted.

1.2 ADJUSTMENT OF EXISTING SANITARY SEWERAGE, WATER, GAS, ELECTRICAL AND TELECOMMUNICATION SYSTEMS

All existing utility facilities, i.e. manholes, vaults, irrigation boxes, valve cans, etc. may or may not have been indicated on the plans. While these items are not expected on this project, the Contractor is nevertheless hereby made aware that such encounter will require the contractor to bear the cost to raise ALL to finished grade at no additional cost to the City.

Drawings show existing major underground utilities using the best information available. Verification of existing utilities and the actual locations are the Contractor's responsibility.

Any utility inadvertently damaged by the Contractor shall be immediately called to the City's attention for shutoff and then be immediately repaired by the Contractor at its own cost within 4 hours.

1.3 CLEANUP AND REPAIR

The Contractor, at the end of each work day, shall dispose of all removed materials from the site. The Contractor also shall protect the site and the new improvements from vandals or other damages at all times until City acceptance.

PAYMENT

Payment for demolition and site clearing shall be made at the contract **LUMP SUM** included in the bid price and shall have included all of the costs for labor, equipment, supplies, tools, haulers, permit and disposal dump fees, security personnel, and other items of work to dispose of all unwanted materials and to clear, protect, and maintain the jobsite at no additional cost to the City.

EARTHWORK, REMOVAL AND GRADING, REMOVAL OF EXISTING PAVEMENT, CONCRETE IMPROVEMENTS, AND EXCAVATION OF PROPOSED STRUCTURAL SECTION, INCLUDING RESTROOM BUILDING

Earthwork, removal and grading, removal and disposal of unclassified excavation, structural excavation, removal of asphalt concrete pavement, sidewalk, driveways, fences, etc. for proposed improvements shall conform to the applicable portions of Section 300 of the Standard Specifications for Public Works Construction and recommendations of a Geotechnical Report prepared by Strata-Tech, Inc, dated May 4, 2018. Such work shall include all the cost of all labor, equipment, tools, supplies, and all other costs required to:

- Arrange with DigAlert to mark all potential interfering underground wet and dry utilities within the work limits;
- To the extent possible search, identify, and mark other underground utilities that were not identified by DigAlert;
- Expose, cut, and cap all existing irrigation lines and components along the excavate limits;
- Excavate, remove, and properly dispose of existing interfering soil and landscape materials. Includes overexcavation for restroom building;
- Extend limits of excavation and disposal to 3-feet beyond the new building footprint;
- Remove and dispose of all interfering tree roots and organic matters. Root prune as described on the Landscaping Plan;
- Excavate and disposal required for StormTech unit shall be paid per Bid Item 18; and
- Grade to the elevations shown on plans. Backfill all voids and holes with similar and clean materials. Import as needed.

PAYMENT

Payment for this item shall be made per the contract **LUMP SUM** bid price for removal and disposal/export of excavated material and no additional compensation for this item of work shall be made.

WATER POLLUTION CONTROL

Construction activities will be conducted in a manner to protect channels, storm drains, and bodies of water from pollution. Water pollution control work shall consist of activities necessary to meet the requirements of the City's National Pollutant Discharge Elimination System (NPDES) Area wide Urban Storm Water Runoff Permit, the County's Drainage Area Management Plan (DAMP), The State's General Construction Activities Permit (Order No. 2009-0009-DWQ, NPDES No CAS000002, adopted September 2, 2009 and effective July 1, 2010), and as required by the Engineer. The Contractor shall coordinate water pollution control work with all other work done on the contract.

The Contractor shall be required to comply with all requirements of the NPDES Permit, including preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). Two (2) hard copies and one (1) electronic copy of the SWPPP shall be submitted to the City for review and approval. A hard copy of the SWPPP shall be retained on-site at all times as long as the contractor is responsible for the project site conditions.

Implementation of the SWPPP shall not reduce effectiveness of existing storm drain system or interfere with traffic on public streets. The Contractor will implement the SWPPP and make changes both to the SWPPP and in the field as conditions warrant it. The Contractor will be solely responsible to prevent any pollutants from leaving the site.

The Contractor shall notify the City of Costa Mesa's Stormwater/Wastewater Compliance Specialist immediately upon request from any regulatory agency to enter, inspect, sample, monitor, or otherwise access the project site or the Contractor's records pertaining to stormwater pollution control work. The Contractor shall provide copies of correspondence, notices of violation, enforcement actions, or fines proposed by regulatory agencies to the City's Stormwater/Wastewater Compliance Specialist.

Failure to update, implement and maintain the SWPPP will result in withholding of any progress payment(s) to the Contractor. Re-inspection staff costs due to NPDES non-compliance will be billed to the Contractor in 15-minute increments if the Contractor fails to maintain the site, water pollution testing data, Contractor inspection forms, and/or reports as detailed in the WPCP and as site conditions warrant. Contractor will also be responsible for any enforcement actions and penalties enacted on the City by the State Water Resources Control Board, Regional Water Quality Control Board, and/or any other agency due to Contractor's non-compliance with applicable water pollution regulations. Progress payments and/or final payments may be withheld to cover enforcement liabilities which include, but are not limited to, maximum financial penalties, legal costs, staff costs, economic savings from violations and/or costs associated with corrective actions as required by enforcing agency.

Contractor shall install erosion and sediment control measures as indicated on Improvement Plans.

PAYMENT

Payment for water pollution control and complying with NPDES requirements shall be at the contract **LUMP SUM** bid price and shall be full compensation for all items of work and all appurtenant work including installation of all erosion and sediment control measures and furnishing all labor, materials, tools, equipment and incidentals.

STORM DRAIN MANHOLE

All precast manhole shafting, cones and flattops shall be free from cracks, chips and surface imperfections, and shall be capable of producing a watertight unit. Manhole shafting shall not be installed with steps.

Precast manhole shall conform to size, shape, form, and details shown on APWA Standard Plan 321-2. The precast shafting and cones shall meet the strength requirements for "Precast Reinforced Concrete Manholes Risers and Tops" ASTM C-478. Design and manufacture shall be based on H-20 loading. Reinforcing steel shall be for handling loads only.

The backfill around the manhole shall be sand with minimum SE of 30 compacted to a relative compaction of 90%. Consolidation of the sand backfill by jetting is permitted and shall conform to the provisions of Section 300-3.5 of the Standard Specifications.

Manhole shafts and grade rings shall be joined with a minimum thickness of 1/2-inch of cement mortar or mastic joint sealant, approved for this type of installation, and shall form a smooth,

watertight joint. Any infiltration of groundwater shall be controlled by a method approved by the Engineer.

The manhole shall be brought to proper grade by means of concrete rings whose combined height shall be no more than 18-inches. Grade rings shall be free from cracks, chips, or excessive roughness as determined by the Engineer. The new manhole ring and cover shall be placed to finished grade.

In all cases, the Contractor shall place 1/2-inch plywood inserts on the manhole shelf to prevent debris from entering the sewer in the event the manhole protection cover is disturbed.

PAYMENT

Payment for storm drain manhole shall be at the contract unit bid price per **EACH** and shall be full compensation for all labor, material, tools, equipment, and incidentals to complete the work including excavation, backfill and compaction.

PVC DRAIN PIPE AND DRAIN INLET BOX

These items are for the construction of drainage improvements shall conform to Standard Specifications and to the details shown on Improvement Plans.

PAYMENT

Payment for installation of PVC SCH 40 drain pipe shall include excavation, backfill and backfill compaction and shall be paid at the contract unit price bid per **LINEAR FOOT** and no additional compensation shall be made.

Payment for construction of 12x12 Brooks Drain boxes, NDS1212 Catch Basins, Drain inlets in playground area per plans and NDS 12-inch square catch basin Atrium grates shall be paid at the contract unit price bid per **EACH** and no additional compensation shall be made. Payment for catch basin shall include the construction of local depression per APWA Standard plan 313-3 (Case B).

MC-3500 STORMTECH UNIT

The work shall consist of installing MC-3500 StormTech unit with 24-inch nyoplast manhole and isolator per detail on Plans and per manufacturer's specifications.

PAYMENT

Payment for this item shall be at the contract unit price per **EACH** and shall include full compensation for all labor, materials, tools and equipment and incidentals, and for doing all work complete in place including excavation to bottom of unit as indicated on Plans and hauling and disposal of excavated material, and no additional compensation shall be allowed.

4-INCH VCP SEWER SERVICE AND SEWER CLEANOUT

The contractor shall construct a 4-inch VCP sewer service connecting from the sewer POC to proposed bathroom to the existing cleanout located along the walkway on 18th Street.

Sewer construction shall conform to Sections 207-8, 207-9, 208-2, and 306 of the Standard Specifications, these special provisions, and Costa Mesa Sanitation District standards.

Sewer cleanout shall be free from cracks, chips and surface imperfection. Precast cleanouts shall conform to Costa Mesa Sanitation District standards.

1.1 COMPACTION

Compaction for all underground conduits and appurtenances bedding and cover materials shall be done in accordance with Section 306-1.3 of the Standard Specifications, these special provisions and as shown on the plans.

Trench backfill material for bedding, around pipe, and up to 12" from the bottom of asphalt concrete shall be compacted to a relative compaction of not less than 90%, in accordance with Section 301.1 of the Standard Specifications. Backfill around manholes and cleanouts shall be compacted to 90% relative compaction from the bedding up to 6" from finished grade. Upper 12" of backfill shall be compacted to 95% relative compaction.

Soil tests for bedding and backfill material shall be conducted per Section 211 of the Standard Specifications. The Contractor shall furnish Soil Engineer's certification or gradation certification for all backfill material prior to use on the job. The Contractor shall provide for backfill compaction and sand equivalence testing for purposes of certifying compliance with these provisions. This shall include scheduling and coordinating field tests with the City Inspector.

The City Inspector will specify the number and location of tests to be taken. The testing of material or of any portion of the job under construction shall be at the option of the Engineer. The Contractor shall furnish without charge any material requested for testing. The Contractor shall also provide access to any area of the job for testing purposes and shall furnish, without cost, any assistance necessary to perform the testing.

1.2 PIPELINE

All vitrified clay pipe and fittings shall be extra-strength and shall conform to the requirements of Section 207-8 of the Standard Specifications. Repair couplings shall have shear bands.

1.3 VCP JOINTS

All VCP joints shall conform to the requirements and provisions of Section 208 of the Standard Specifications.

VCP joints shall be factory made to provide a cast polyurethane elastomer bell and spigot with the joint seal being formed by the compression of the bead portion of the bell with the spigot casting when the joint is assembled. The joint shall conform in all respects to ASTM designation C 425.

Where existing sewers are to be joined, Type D rubber couplings with shear bands shall be used.

1.4 PIPE EXCAVATION AND BACKFILL

Excavation and backfill for all sewer pipe, and appurtenances shall be done in accordance with Sections 306-1.1 and 306-1.3 respectively, of the Standard Specifications, the project plans, and these special provisions.

No excavated native material can be re-used for backfill unless approved by the City Engineer. All excavated native material shall be removed and disposed of, off site, at the end of each day.

PAYMENT

Payment for 4-Inch VCP sewer service and cleanouts shall be made at the contract unit price per **LUMP SUM** and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved, including potholing existing 10-inch sewer main for connection invert elevation, control of ground and surface water, preparation of subgrade, compaction, testing, excavation including pavement removal, bedding, backfill, sheeting, and shoring and bracing to a depth of 5-feet below the roadway finish surface, construct sewer cleanouts at the locations shown on the Plans, connect new line to manholes, cleanouts, and the existing 10-inch LINED sewer main, sewer bypass, maintenance of sewer flow, and construct new aggregate base and temporary and permanent asphalt concrete trench resurfacing.

This item shall include all clearing of obstructions encountered which includes all fittings, elbows, pipes needed to clear the obstructions.

1½-INCH AND 1-INCH WATER SERVICE

This item shall construct 1½-inch and 1-inch water piping and its appurtenances to serve the new restroom building and fountain as shown on the Plans. Water connections shall be made at the existing water main as per approved Water Improvement Plans.

1.1 SYSTEM COMPONENTS

The components to be furnished and installed, at a minimum, shall include 1½-inch copper service, bends, "T"s, gate valves, backflow device, thrust blocks, hardware, fittings, and other appurtenances required for a functional system complete in place.

1.2 PIPELINE

Pipeline for 1½-inch water shall be per Mesa Water District Standard Drawing No. 1, 3, 18 and 23. 1-inch water shall be copper. The Contractor at its own cost may substitute a higher strength pipeline product for the Engineer's consideration and approval.

1.3 PIPELINE JOINTS

All pipeline joints shall be made and tested leak free prior to trench placement.

1.4 BRACING AND SHORING

The Contractor as a part of the Work shall brace and shore the work site if the installation work requires a trench that is 5-feet or deeper.

1.5 PIPE EXCAVATION AND BACKFILL

The Contractor, with the Engineer's prior approval, may reuse excavated clean native material as backfill. Backfill shall be compacted to a minimum of 90% relative compaction prior to placing topsoil for resurface restoration per the Plans. Where the water line is to be installed below and across existing concrete improvements, the Contractor at its sole expense may request approval from the Engineer to perform trenchless construction to avoid making concrete replacements as a part of the price bid.

1.6 DISINFECTION

The Contractor shall disinfect the installed system in accordance to the applicable County and State Rules and Regulations. Such disinfection work shall be witnessed by the Engineer and/or his designee.

PAYMENT

Payment for 1½-inch water service shall include 1-inch water meter, gate valves and backflow preventer in cage enclosure and shall be made at the contract **LUMP SUM** bid price and shall have included full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all of the listed and unlisted work for a functional system complete in place. The contract bid price includes trenching necessary for connection to existing water main and abandonment of existing facilities as called out on the Plans.

Payment for 1-inch water service at locations shown on plans shall be made at the contract **LUMP SUM** bid price and shall have included full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all of the listed and unlisted work for a functional system complete in place.

1½-INCH WASTE LINE

This item shall construct a 1½-inch PVC SDR-35 waste line from proposed water tank to existing sewer main.

The Contractor shall pothole the existing 6-inch sewer main shown on the Plans to obtain the sewer invert elevation at which the new 1½-inch waste line will be connected and to video/note the condition of the existing sewer main at the point of connection (POC). The Contractor shall inform the Engineer of the proposed sewer main POC condition and invert elevation prior to any construction.

The waste line and sewer cleanouts installation and the sewer main connection work shall conform to the applicable portions of the Standard Specifications and these Technical Provisions.

1.1 COMPACTION

Bedding and backfill materials acceptance and testing shall be performed per the Standard Specifications

Compaction for bedding and cover materials shall conform with the Standard Specifications and these Technical Provisions.

Trench backfill material for bedding, around pipe, and up to 12" from the bottom of asphalt concrete roadway surfacing shall be compacted to at least 90% relative compaction.

Trench resurfacing shall be performed per the City of Costa Mesa Standards and as directed by the Engineer.

1.2 PIPELINE

Pipeline shall be PVC SDR-35. The Contractor at its own cost may substitute a higher strength pipeline product for the Engineer's consideration and approval.

1.3 PIPELINE JOINTS

All pipeline joints shall be made and tested leak free prior to trench placement.

1.4 PIPE EXCAVATION AND BACKFILL

Excavation and backfill for all waste line pipes and appurtenances shall be done in accordance with Sections 306-1.1 and 306-1.3 respectively, of the Standard Specifications, the Project Plans, and these Technical Provisions.

No excavated native material can be re-used for backfill unless approved by the Engineer. All excavated native material shall be removed and disposed of, off site, at the end of each day.

PAYMENT

Payment for PVC waste line shall be made at the contract **LINEAR FOOT** bid price and shall have included full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved, including potholing existing 6-inch sewer main for condition and connection invert elevation, control of ground and surface water, preparation of subgrade, compaction, testing, excavation, native and subgrade removals, bedding, backfill, furnishing and installing the waste lines, and connecting the new lines to the existing sewer main.

The cost of all other customary labor and appurtenances and the clearing all obstructions encountered during the work not shown on the Plans but must be completed for a functional system complete in place shall have been included in the bid price and no additional compensation shall be made.

SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.2 RELATED REQUIREMENTS

- A. Section 03 30 00 - Cast-in-Place Concrete: Concrete equipment pads.

1.3 REFERENCE STANDARDS

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
- C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2015.
- D. MFMA-4 - Metal Framing Standards Publication; 2004.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
 - 2. Coordinate the work with other trades to provide additional framing and materials required for installation.
 - 3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
 - 4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
 - 5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:

1. Do not install products on or provide attachment to concrete surfaces until concrete has fully cured in accordance with Section 03 30 00.

1.5 SUBMITTALS

- A. **Product Data:** Provide manufacturer's standard catalog pages and data sheets for channel (strut) framing systems, non-penetrating rooftop supports, and post-installed concrete and masonry anchors.
- B. **Shop Drawings:** Include details for fabricated hangers and supports where materials or methods other than those indicated are proposed for substitution.

1.6 QUALITY ASSURANCE

- A. Comply with NFPA 70.
- B. Comply with applicable building code.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 SUPPORT AND ATTACHMENT COMPONENTS

- A. **General Requirements:**
 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
 2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
 3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported with a minimum safety factor of 5 times the applied force. Include consideration for vibration, equipment operation, and shock loads where applicable.
 4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
 5. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
 6. **Steel Components:** Use corrosion resistant materials suitable for the environment where installed.
 - a. **Indoor Dry Locations:** Use zinc-plated steel or approved equivalent unless otherwise indicated.
 - b. **Outdoor and Damp or Wet Indoor Locations:** Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
 - c. **Zinc-Plated Steel:** Electroplated in accordance with ASTM B633.

- d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
 - 1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
 - 2. Conduit Clamps: Bolted type unless otherwise indicated.
- C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
- D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
 - 1. Comply with MFMA-4.
 - 2. Channel Material:
 - a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.
- E. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
- F. Anchors and Fasteners:
 - 1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
 - 2. New Concrete: Use preset concrete inserts.
 - 3. Existing Concrete: Use expansion anchors.
 - 4. Solid or Grout-Filled Masonry: Use expansion anchors.
 - 5. Hollow Masonry: Use toggle bolts.
 - 6. Hollow Stud Walls: Use toggle bolts.
 - 7. Steel: Use welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts or Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
 - 8. Wood: Fasten with lag screws or through bolts.
 - 9. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.
 - 10. Preset Concrete Inserts: Continuous metal channel (strut) and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
 - a. Comply with MFMA-4.
 - b. Channel Material: Use galvanized steel.
 - c. Manufacturer: Same as manufacturer of metal channel (strut) framing system.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive support and attachment components.

- C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
- E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
- F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- G. Equipment Support and Attachment:
 - 1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
 - 2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
 - 3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
 - 4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- H. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.
- I. Secure fasteners according to manufacturer's recommended torque settings.
- J. Remove temporary supports.

3.3 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated but not less than 4 inches (100 mm) larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Use 3000-psi (20.7-MPa), 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements are specified in Division 03 Section "Cast-in-Place Concrete or Cast-in-Place Concrete (Limited Applications)" as applicable.
- C. Anchor equipment to concrete base.

1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor bolts to elevations required for proper attachment to supported equipment.
3. Install anchor bolts according to anchor-bolt manufacturers written instructions.

3.4 FIELD QUALITY CONTROL

- A. Inspect support and attachment components for damage and defects.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION

SECTION 26 05 33.13 - CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Galvanized steel rigid metal conduit (RMC).
- B. PVC-coated galvanized steel rigid metal conduit (RMC).
- C. Flexible metal conduit (FMC).
- D. Liquidtight flexible metal conduit (LFMC).
- E. Electrical metallic tubing (EMT).
- F. Rigid polyvinyl chloride (PVC) conduit.
- G. Conduit fittings.
- H. Accessories.

1.2 REFERENCE STANDARDS

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC); 2015.
- B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S); 2015.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- D. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT); 2013.
- E. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); 2003.
- F. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
- G. NEMA RN 1 - Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit; 2005 (R2013).
- H. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; 2013.
- I. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2015.
- J. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

- K. UL 1 - Flexible Metal Conduit; Current Edition, Including All Revisions.
- L. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.
- M. UL 360 - Liquid-Tight Flexible Steel Conduit; Current Edition, Including All Revisions.
- N. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.
- O. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.
- P. UL 797 - Electrical Metallic Tubing-Steel; Current Edition, Including All Revisions.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate minimum sizes of conduits with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate the arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
 - 3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed under other sections or by others.
 - 4. Coordinate the work with other trades to provide roof penetrations that preserve the integrity of the roofing system and do not void the roof warranty.
 - 5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not begin installation of conductors and cables until installation of conduit is complete between outlet, junction and splicing points.

1.4 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.
- B. Project Record Documents: Record actual routing for conduits installed underground and conduits 2 inch (53 mm) trade size and larger.

1.5 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.1 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.
- C. Underground:
 - 1. Under Slab on Grade: Use rigid PVC conduit.
 - 2. Exterior, Direct-Buried: Use rigid PVC conduit.
 - 3. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit where emerging from underground.
 - 4. Where rigid polyvinyl (PVC) conduit larger than 2 inch (53 mm) trade size is provided, use PVC-coated galvanized steel rigid metal conduit elbows for bends.
 - 5. Where steel conduit is installed in direct contact with earth where soil has a resistivity of less than 2000 ohm-centimeters or is characterized as severely corrosive based on soils report or local experience, use corrosion protection tape to provide supplementary corrosion protection or use PVC-coated galvanized steel rigid metal conduit.
 - 6. Where steel conduit emerges from concrete into soil, use corrosion protection tape to provide supplementary corrosion protection for a minimum of 4 inches on either side of where conduit emerges or use PVC-coated galvanized steel rigid metal conduit.
- D. Concealed Within Masonry Walls: Use galvanized steel rigid metal conduit or electrical metallic tubing (EMT).
- E. Concealed Within Hollow Stud Walls: Use electrical metallic tubing (EMT).
- F. Concealed Above Accessible Ceilings: Use electrical metallic tubing (EMT).
- G. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit.
- H. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit or electrical metallic tubing (EMT).
- I. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit.
 - 1. Locations subject to physical damage include, but are not limited to:
 - a. Where exposed below 8 feet, except within electrical and communication rooms or closets.
- J. Exposed, Exterior: Use galvanized steel rigid metal conduit.
- K. Concealed, Exterior, Not Embedded in Concrete or in Contact With Earth: Use galvanized steel rigid metal conduit.
- L. Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit.

1. Maximum Length: 6 feet.

M. Connections to Vibrating Equipment:

1. Dry Locations: Use flexible metal conduit.
2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit.
3. Maximum Length: 6 feet unless otherwise indicated.
4. Vibrating equipment includes, but is not limited to:
 - a. Transformers.
 - b. Motors.

N. Fished in Existing Walls, Where Necessary: Use flexible metal conduit.

2.2 CONDUIT REQUIREMENTS

A. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Minimum Conduit Size, Unless Otherwise Indicated:

1. Branch Circuits: 3/4 inch (21 mm) trade size.
2. Branch Circuit Homeruns: 3/4 inch (21 mm) trade size.
3. Control Circuits: 1/2 inch (16 mm) trade size.
4. Flexible Connections to Luminaires: 3/8 inch (12 mm) trade size.
5. Underground, Exterior: 1 inch (27 mm) trade size.

D. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.3 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.

B. Fittings:

1. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
2. Material: Use steel or malleable iron.
3. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

2.4 PVC-COATED GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit with external polyvinyl chloride (PVC) coating complying with NEMA RN 1 and listed and labeled as complying with UL 6.

B. Exterior Coating: Polyvinyl chloride (PVC), nominal thickness of 40 mil.

C. PVC-Coated Fittings:

1. Manufacturer: Same as manufacturer of PVC-coated conduit to be installed.
2. Non-Hazardous Locations: Use fittings listed and labeled as complying with UL 514B.
3. Material: Use steel or malleable iron.
4. Exterior Coating: Polyvinyl chloride (PVC), minimum thickness of 40 mil.

D. PVC-Coated Supports: Furnish with exterior coating of polyvinyl chloride (PVC), minimum thickness of 15 mil.

2.5 FLEXIBLE METAL CONDUIT (FMC)

A. Description: NFPA 70, Type FMC standard wall steel flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems to be used.

B. Fittings:

1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
2. Material: Use steel or malleable iron.

2.6 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

A. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed steel flexible metal conduit listed and labeled as complying with UL 360.

B. Fittings:

1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
2. Material: Use steel or malleable iron.

2.7 ELECTRICAL METALLIC TUBING (EMT)

A. Description: NFPA 70, Type EMT steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.

B. Fittings:

1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
2. Material: Use steel or malleable iron.
3. Connectors and Couplings: Use compression (gland) or set-screw type.
 - a. Do not use indenter type connectors and couplings.

2.8 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

A. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.

B. Fittings:

1. Manufacturer: Same as manufacturer of conduit to be connected.
2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

2.9 ACCESSORIES

- A. Corrosion Protection Tape: PVC-based, minimum thickness of 20 mil.
- B. Conduit Joint Compound: Corrosion-resistant, electrically conductive; suitable for use with the conduit to be installed.
- C. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
- D. Pull Strings: Use nylon cord with average breaking strength of not less than 200 pound-force.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
- D. Install PVC-coated galvanized steel rigid metal conduit (RMC) using only tools approved by the manufacturer.
- E. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.
- F. Conduit Routing:
 1. Unless dimensioned, conduit routing indicated is diagrammatic.
 2. When conduit destination is indicated without specific routing, determine exact routing required.
 3. Conceal all conduits unless specifically indicated to be exposed.
 4. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
 5. Arrange conduit to maintain adequate headroom, clearances, and access.
 6. Arrange conduit to provide no more than the equivalent of four 90 degree bends between pull points.
 7. Arrange conduit to provide no more than 150 feet between pull points.
 8. Route conduits above water and drain piping where possible.
 9. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.

10. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
 11. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:
 - a. Heaters.
 - b. Hot water piping.
 - c. Flues.
 12. Group parallel conduits in the same area together on a common rack.
- G. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
 2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
 3. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
 4. Use conduit strap to support single surface-mounted conduit.
 - a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
 5. Use metal channel (strut) with accessory conduit clamps to support multiple parallel surface-mounted conduits.
 6. Use conduit clamp to support single conduit from beam clamp or threaded rod.
 7. Use trapeze hangers assembled from threaded rods and metal channel (strut) with accessory conduit clamps to support multiple parallel suspended conduits.
 8. Use non-penetrating rooftop supports to support conduits routed across rooftops (only where approved).
 9. Use of spring steel conduit clips for support of conduits is not permitted.
 10. Use of wire for support of conduits is not permitted.
- H. Connections and Terminations:
1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
 2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
 3. Use suitable adapters where required to transition from one type of conduit to another.
 4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
 5. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
 6. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
 7. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- I. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
 4. Conceal bends for conduit risers emerging above ground.

5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
8. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

J. Underground Installation:

1. Minimum Cover, Unless Otherwise Indicated or Required:
 - a. Underground, Exterior: 24 inches.
 - b. Under Slab on Grade: 12 inches to bottom of slab.
2. Provide underground warning tape in accordance with Section 26 05 53 along entire conduit length.

K. Concrete Encasement: Where conduits not otherwise embedded within concrete are indicated to be concrete-encased, provide concrete in accordance with Section Concrete with minimum concrete cover of 3 inches on all sides unless otherwise indicated.

L. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:

1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
3. Where conduits are subject to earth movement by settlement or frost.

M. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:

1. Where conduits pass from outdoors into conditioned interior spaces.
2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.

N. Provide pull string in all empty conduits and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end.

O. Provide grounding and bonding in accordance with Section 26 05 26.

P. Identify conduits in accordance with Section 26 05 53.

3.2 FIELD QUALITY CONTROL

- A. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

B. Where coating of PVC-coated galvanized steel rigid metal conduit (RMC) contains cuts or abrasions, repair in accordance with manufacturer's instructions.

C. Correct deficiencies and replace damaged or defective conduits.

3.3 CLEANING

A. Clean interior of conduits to remove moisture and foreign matter.

3.4 PROTECTION

A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION

SECTION 26 05 33.16 - BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.

1.2 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2010.
- C. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
- D. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; 2013.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.
- F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- I. UL 508A - Industrial Control Panels; Current Edition, Including All Revisions.
- J. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.

4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
6. Coordinate the work with other trades to preserve insulation integrity.
7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
8. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.4 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for floor boxes and underground boxes/enclosures.

1.5 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

PART 2 PRODUCTS

2.1 BOXES

- A. General Requirements:
 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
 3. Use suitable concrete type boxes where flush-mounted in concrete.
 4. Use suitable masonry type boxes where flush-mounted in masonry walls.
 5. Use raised covers suitable for the type of wall construction and device configuration where required.
 6. Use shallow boxes where required by the type of wall construction.
 7. Do not use "through-wall" boxes designed for access from both sides of wall.
 8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.

9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
 10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
 11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
 12. Minimum Box Size, Unless Otherwise Indicated:
 - a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1-1/2 inch deep (100 by 38 mm) trade size.
 - b. Communications Systems Outlets: 4 inch square by 2-1/8 inch (100 by 54 mm) trade size.
 - c. Ceiling Outlets: 4 inch octagonal or square by 1-1/2 inch deep (100 by 38 mm) trade size.
 13. Wall Plates: Comply with Section 26 27 26.
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
 2. NEMA 250 Environment Type, Unless Otherwise Indicated:
 3. Junction and Pull Boxes Larger Than 100 cubic inches:
 - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide separate boxes for emergency power and normal power systems.
- E. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
- F. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.
- G. Box Locations:
 1. Locate boxes to be accessible. Provide access panels in accordance with Section Access Panels as required where approved by the Architect.
 2. Unless dimensioned, box locations indicated are approximate.
 3. Locate boxes as required for devices installed under other sections or by others.
 - a. Switches, Receptacles, and Other Wiring Devices: Comply with Section 26 27 26.
 4. Locate boxes so that wall plates do not span different building finishes.

5. Locate boxes so that wall plates do not cross masonry joints.
 6. Unless otherwise indicated, where multiple outlet boxes are installed at the same location at different mounting heights, install along a common vertical center line.
 7. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
 8. Acoustic-Rated Walls: Do not install flush-mounted boxes on opposite sides of walls back-to-back; provide minimum 24 inches horizontal separation.
 9. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.
 - a. Do not install flush-mounted boxes on opposite sides of walls back-to-back; provide minimum 24 inches separation where wall is constructed with individual noncommunicating stud cavities or protect both boxes with listed putty pads.
 - b. Do not install flush-mounted boxes with area larger than 16 square inches or such that the total aggregate area of openings exceeds 100 square inches for any 100 square feet of wall area.
 10. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 26 05 33.13.
 11. Locate junction and pull boxes in the following areas, unless otherwise indicated or approved by the Architect:
 - a. Concealed above accessible suspended ceilings.
 - b. Within joists in areas with no ceiling.
 - c. Electrical rooms.
 - d. Mechanical equipment rooms.
- H. Box Supports:
1. Secure and support boxes in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
- I. Install boxes plumb and level.
- J. Flush-Mounted Boxes:
1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
 2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
 3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch at the edge of the box.
- K. Install boxes as required to preserve insulation integrity.
- L. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

- M. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.
- N. Close unused box openings.
- O. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- P. Provide grounding and bonding in accordance with Section 26 05 26.

3.2 CLEANING

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.3 PROTECTION

- A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

END OF SECTION

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Voltage markers.
- E. Underground warning tape.
- F. Warning signs and labels.

1.2 RELATED REQUIREMENTS

- A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.
- B. Section 26 27 26 - Wiring Devices - Lutron: Device and wallplate finishes; factory pre-marked wallplates.

1.3 REFERENCE STANDARDS

- A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs; 2011.
- B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels; 2011.
- C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. NFPA 70E - Standard for Electrical Safety in the Workplace; 2015.
- E. UL 969 - Marking and Labeling Systems; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.
- B. Sequencing:

1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.
2. Do not install identification products until final surface finishes and painting are complete.

1.5 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.
- B. Shop Drawings: Provide schedule of items to be identified indicating proposed designations, materials, legends, and formats.

1.6 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.7 FIELD CONDITIONS

- A. Do not install adhesive products when ambient temperature is lower than recommended by manufacturer.

PART 2 PRODUCTS

2.1 IDENTIFICATION REQUIREMENTS

- A. Identification for Equipment:
 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
 - a. Switchboards:
 - 1) Identify ampere rating and name.
 - 2) Identify voltage and phase.
 - 3) Identify power source and circuit number. Include location when not within sight of equipment.
 - 4) Use identification nameplate to identify main overcurrent protective device.
 - 5) Use identification nameplate to identify load(s) served for each branch device. Identify spares and spaces.
 - b. Panelboards:
 - 1) Identify ampere rating and name.
 - 2) Identify voltage and phase.
 - 3) Identify power source and circuit number. Include location when not within sight of equipment.
 - 4) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces using pencil.
 - 5) For power panelboards without a door, use identification nameplate to identify load(s) served for each branch device. Identify spares and spaces.
 - c. Transformers:
 - 1) Identify kVA rating and name.

2. Service Equipment:
 - a. Use identification nameplate to identify each service disconnecting means.
 3. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70, including but not limited to the following.
 - a. Service equipment.
 - b. Industrial control panels.
 - c. Motor control centers.
 - d. Elevator control panels.
 - e. Industrial machinery.
 4. Arc Flash Hazard Warning Labels: Use warning labels to identify arc flash hazards for electrical equipment, such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that are likely to require examination, adjustment, servicing, or maintenance while energized.
 - a. Minimum Size: 3.5 by 5 inches.
 - b. Legend: Include orange header that reads "WARNING", followed by the word message "Arc Flash and Shock Hazard; Appropriate PPE Required; Do not operate controls or open covers without appropriate personal protection equipment; Failure to comply may result in injury or death; Refer to NFPA 70E for minimum PPE requirements" or approved equivalent.
- B. Identification for Conductors and Cables:
1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 05 19.
 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
 3. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
 - a. At each source and load connection.
 - b. Within boxes when more than one circuit is present.
 - c. Within equipment enclosures when conductors and cables enter or leave the enclosure.
 4. Use wire and cable markers to identify connected grounding electrode system components for grounding electrode conductors.
- C. Identification for Raceways:
1. Use voltage markers to identify highest voltage present for accessible conduits at maximum intervals of 20 feet.
 2. Use identification labels, handwritten text using indelible marker, or plastic marker tags to identify circuits enclosed for accessible conduits at wall penetrations, at floor penetrations, at roof penetrations, and at equipment terminations when source is not within sight.
 3. Use identification labels, handwritten text using indelible marker, or plastic marker tags to identify spare conduits at each end. Identify purpose and termination location.
 4. Use underground warning tape to identify underground raceways.
- D. Identification for Boxes:
1. Use voltage markers to identify highest voltage present.
 2. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.

- a. For exposed boxes in public areas, use only identification labels.
- E. Identification for Devices:
- 1. Wiring Device and Wallplate Finishes: Comply with Section 26 27 26.
 - 2. Use identification label or engraved wallplate to identify serving branch circuit for all receptacles.
 - a. For receptacles in public areas or in areas as directed by Architect, provide identification on inside surface of wallplate.
 - 3. Use identification label or engraved wallplate to identify load controlled for wall-mounted control devices controlling loads that are not visible from the control location and for multiple wall-mounted control devices installed at one location.
- F. Identification for Luminaires:
- 1. Use permanent red dot on luminaire frame to identify luminaires connected to emergency power system.

2.2 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
- 1. Materials:
 - a. Indoor Clean, Dry Locations: Use plastic nameplates.
 - b. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
 - 2. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
 - a. Exception: Provide minimum thickness of 1/8 inch when any dimension is greater than 4 inches.
 - 3. Stainless Steel Nameplates: Minimum thickness of 1/32 inch; engraved or laser-etched text.
 - 4. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch; engraved or laser-etched text.
 - 5. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.
- B. Identification Labels:
- 1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
 - 2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.
- C. Format for Equipment Identification:
- 1. Minimum Size: 1 inch by 2.5 inches.
 - 2. Legend:
 - a. Equipment designation or other approved description.
 - 3. Text: All capitalized unless otherwise indicated.
 - 4. Minimum Text Height:
 - a. Equipment Designation: 1/2 inch.
 - b. Other Information: 1/4 inch.
 - 5. Color:

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- a. Normal Power System: White text on black background.
- D. Format for Caution and Warning Messages:
- 1. Minimum Size: 2 inches by 4 inches.
 - 2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
 - 3. Text: All capitalized unless otherwise indicated.
 - 4. Minimum Text Height: 1/2 inch.
 - 5. Color: Black text on yellow background unless otherwise indicated.
- E. Format for Receptacle Identification:
- 1. Minimum Size: 3/8 inch by 1.5 inches.
 - 2. Legend: Power source and circuit number or other designation indicated.
 - 3. Text: All capitalized unless otherwise indicated.
 - 4. Minimum Text Height: 3/16 inch.
 - 5. Color: Black text on clear background.
- F. Format for Control Device Identification:
- 1. Minimum Size: 3/8 inch by 1.5 inches.
 - 2. Legend: Load controlled or other designation indicated.
 - 3. Text: All capitalized unless otherwise indicated.
 - 4. Minimum Text Height: 3/16 inch.
 - 5. Color: Black text on clear background.

2.3 WIRE AND CABLE MARKERS

- A. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.
- B. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.
- C. Legend: Power source and circuit number or other designation indicated.
- D. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
- E. Minimum Text Height: 1/8 inch.
- F. Color: Black text on white background unless otherwise indicated.

2.4 VOLTAGE MARKERS

- A. Markers for Conduits: Use factory pre-printed self-adhesive vinyl, self-adhesive vinyl cloth, or vinyl snap-around type markers.
- B. Markers for Boxes and Equipment Enclosures: Use factory pre-printed self-adhesive vinyl or self-adhesive vinyl cloth type markers.

- C. Minimum Size:
 - 1. Markers for Conduits: As recommended by manufacturer for conduit size to be identified.
 - 2. Markers for Pull Boxes: 1 1/8 by 4 1/2 inches.
 - 3. Markers for Junction Boxes: 1/2 by 2 1/4 inches.
- D. Legend:
 - 1. Markers for Voltage Identification: Highest voltage present.
- E. Color: Black text on orange background unless otherwise indicated.

2.5 UNDERGROUND WARNING TAPE

- A. Materials: Use non-detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
- B. Non-detectable Type Tape: 6 inches wide, with minimum thickness of 4 mil.
- C. Legend: Type of service, continuously repeated over full length of tape.
- D. Color:

2.6 WARNING SIGNS AND LABELS

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
 - 1. Materials:
 - 2. Minimum Size: 7 by 10 inches unless otherwise indicated.
- C. Warning Labels:
 - 1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
 - 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
 - 3. Minimum Size: 2 by 4 inches unless otherwise indicated.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
 - 1. Surface-Mounted Equipment: Enclosure front.
 - 2. Flush-Mounted Equipment: Inside of equipment door.

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3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
 4. Elevated Equipment: Legible from the floor or working platform.
 5. Branch Devices: Adjacent to device.
 6. Interior Components: Legible from the point of access.
 7. Conduits: Legible from the floor.
 8. Boxes: Outside face of cover.
 9. Conductors and Cables: Legible from the point of access.
 10. Devices: Outside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
 - D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
 - E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
 - F. Install underground warning tape above buried lines with one tape per trench at 3 inches below finished grade.
 - G. Mark all handwritten text, where permitted, to be neat and legible.

3.2 FIELD QUALITY CONTROL

- A. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

END OF SECTION

SECTION 26 09 23 - LIGHTING CONTROL DEVICES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Occupancy sensors.
- B. Daylighting controls.

1.2 RELATED REQUIREMENTS

- A. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- B. Section 26 05 33.16 - Boxes for Electrical Systems.
- C. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.
- D. Section 26 27 26 - Wiring Devices: Devices for manual control of lighting, including wall switches, wall dimmers, and fan speed controllers.

1.3 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2010.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.
- D. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts; 2015.
- E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 1472 - Solid-State Dimming Controls; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of lighting control devices with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate the placement of wall switch occupancy sensors with actual installed door swings.

3. Coordinate the placement of occupancy sensors with millwork, furniture, equipment or other potential obstructions to motion detection coverage installed under other sections or by others.
4. Coordinate the placement of photo sensors for daylighting controls with windows, skylights, and luminaires to achieve optimum operation. Coordinate placement with ductwork, piping, equipment, or other potential obstructions to light level measurement installed under other sections or by others.
5. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.5 SUBMITTALS

- A. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
 1. Occupancy Sensors: Include detailed motion detection coverage range diagrams.
- B. Shop Drawings:
 1. Occupancy Sensors: Provide lighting plan indicating location, model number, and orientation of each occupancy sensor and associated system component.
 2. Daylighting Controls: Provide lighting plan indicating location, model number, and orientation of each photo sensor and associated system component.
- C. Field Quality Control Reports.
- D. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- E. Operation and Maintenance Data: Include detailed information on device programming and setup.
- F. Project Record Documents: Record actual installed locations and settings for lighting control devices.

1.6 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND PROTECTION

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.8 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.9 WARRANTY

- A. Provide five year manufacturer warranty for all occupancy sensors.
- B. Provide five year manufacturer warranty for all daylighting controls.

PART 2 PRODUCTS

2.1 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.

2.2 OCCUPANCY SENSORS

- A. All Occupancy Sensors:
 - 1. Description: Factory-assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
 - 2. Sensor Technology:
 - a. Passive Infrared (PIR) Occupancy Sensors: Designed to detect occupancy by sensing movement of thermal energy between zones.
 - b. Ultrasonic Occupancy Sensors: Designed to detect occupancy by sensing frequency shifts in emitted and reflected inaudible sound waves.
 - c. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
 - 3. Provide LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
 - 4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn-off delay time interval.
 - 5. Dual Technology Occupancy Sensors: Field configurable turn-on and hold-on activation with settings for activation by either or both sensing technologies.
 - 6. Passive Infrared Lens Field of View: Field customizable by addition of factory masking material, adjustment of integral blinders, or similar means to block motion detection in selected areas.
 - 7. Turn-Off Delay: Field adjustable, with time delay settings up to 30 minutes.
 - 8. Sensitivity: Field adjustable.

9. Adaptive Technology: Field selectable; capable of self-adjusting sensitivity and time delay according to conditions.
 10. Integral Photocell: For field selectable and adjustable inhibition of automatic turn-on of load when ambient lighting is above the selected level.
 11. Compatibility (Non-Dimming Sensors): Suitable for controlling incandescent lighting, low-voltage lighting with electronic and magnetic transformers, fluorescent lighting with electronic and magnetic ballasts, and fractional motor loads, with no minimum load requirements.
 12. Load Rating for Line Voltage Occupancy Sensors: As required to control the load indicated on drawings.
- B. Wall Switch Occupancy Sensors:
1. All Wall Switch Occupancy Sensors:
 - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
 - b. Unless otherwise indicated or required to control the load indicated on drawings, provide line voltage units with self-contained relay.
 - c. Where indicated, provide two-circuit units for control of two separate lighting loads, with separate manual controls and separately programmable operation for each load.
 - d. Operation: Field selectable to operate either as occupancy sensor (automatic on/off) or as vacancy sensor (manual-on/automatic off).
 - e. Manual-Off Override Control: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.
- C. Wall Dimmer Occupancy Sensors:
1. General Requirements:
 - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated dimming control capability, and no leakage current to load in off mode.
 - b. Operation: Field selectable to operate either as occupancy sensor (automatic on/off) or as vacancy sensor (manual-on/automatic off).
 - c. Manual-Off Override Control Capability: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.
 - d. Dimmer: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, and listed as complying with UL 1472; type and rating suitable for load controlled.
 - e. Finish: Color to be selected.
- D. Ceiling Mounted Occupancy Sensors:
1. All Ceiling Mounted Occupancy Sensors:
 - a. Description: Low profile occupancy sensors designed for ceiling installation.
 - b. Unless otherwise indicated or required to control the load indicated on drawings, provide low voltage units, for use with separate compatible accessory power packs.
 - c. Occupancy sensor to be field selectable as either manual-on/automatic-off or automatic on/off.
 - d. Finish: White unless otherwise indicated.

2. Passive Infrared/Ultrasonic Dual Technology Ceiling Mounted Occupancy Sensors:
 - a. Standard Range Sensors: Capable of detecting motion within an area of 1000 at a mounting height of 9 feet, with a field of view of 360 degrees.
- E. Power Packs for Low Voltage Occupancy Sensors:
 1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage occupancy sensors for switching of line voltage loads.
 2. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on drawings.
 3. Input Supply Voltage: Dual rated for 120/277 V ac.
 4. Load Rating: As required to control the load indicated on drawings.

2.3 DAYLIGHTING CONTROLS

- A. System Description: Control system consisting of photo sensors and compatible control modules and power packs, contactors, or relays as required for automatic control of load indicated according to available natural light; capable of integrating with occupancy sensors and manual override controls.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that openings for outlet boxes are neatly cut and will be completely covered by devices or wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to lighting control devices.
- F. Verify that the service voltage and ratings of lighting control devices are appropriate for the service voltage and load requirements at the location to be installed.
- G. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

- A. Install lighting control devices in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of lighting control devices provided under this section.
 - 1. Mounting Heights: Unless otherwise indicated, as follows:
 - a. Wall Switch Occupancy Sensors: 48 inches above finished floor.
 - 2. Orient outlet boxes for vertical installation of lighting control devices unless otherwise indicated.
 - 3. Locate wall switch occupancy sensors on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
- C. Install lighting control devices in accordance with manufacturer's instructions.
- D. Unless otherwise indicated, connect lighting control device grounding terminal or conductor to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- E. Install lighting control devices plumb and level, and held securely in place.
- F. Where required and not furnished with lighting control device, provide wall plate in accordance with Section 26 27 26.
- G. Provide required supports in accordance with Section 26 05 29.
- H. Where applicable, install lighting control devices and associated wall plates to fit completely flush to mounting surface with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- I. Identify lighting control devices in accordance with Section 26 05 53.
- J. Occupancy Sensor Locations:
 - 1. Location Adjustments: Within the design intent, reasonably minor adjustments to locations may be made in order to optimize coverage and avoid conflicts or problems affecting coverage.
 - 2. Locate ultrasonic and dual technology passive infrared/ultrasonic occupancy sensors a minimum of 4 feet from air supply ducts or other sources of heavy air flow and as per manufacturer's recommendations, in order to minimize false triggers.
- K. Daylighting Control Photo Sensor Locations:
 - 1. Unless otherwise indicated, locate photo sensors for closed loop systems to accurately measure the light level controlled at the designated task location, while minimizing the measured amount of direct light from natural or artificial sources such as windows or pendant luminaires.
 - 2. Unless otherwise indicated, locate photo sensors for open loop systems to accurately measure the level of daylight coming into the space, while minimizing the measured amount of lighting from artificial sources.

- L. Lamp Burn-In: Operate lamps at full output for minimum of 100 hours or prescribed period per manufacturer's recommendations prior to use with any dimming controls. Replace lamps that fail prematurely due to improper lamp burn-in.
- M. Unless otherwise indicated, install power packs for lighting control devices above accessible ceiling or above access panel in inaccessible ceiling near the sensor location.
- N. Where indicated, install separate compatible wall switches for manual control interface with lighting control devices or associated power packs.
- O. Unless otherwise indicated, install switches on load side of power packs so that switch does not turn off power pack.

3.4 FIELD QUALITY CONTROL

- A. Inspect each lighting control device for damage and defects.
- B. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test results in written report to be included with submittals.
- C. Test daylighting controls to verify proper operation, including light level measurements and time delays where applicable. Record test results in written report to be included with submittals.
- D. Correct wiring deficiencies and replace damaged or defective lighting control devices.

3.5 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.
- C. Where indicated or as directed by Architect, install factory masking material or adjust integral blinders on passive infrared (PIR) and dual technology occupancy sensor lenses to block undesired motion detection.
- D. Adjust daylighting controls under optimum lighting conditions after all room finishes, furniture, and window treatments have been installed to achieve desired operation as indicated or as directed by Architect. Record settings in written report to be included with submittals. Readjust controls calibrated prior to installation of final room finishes, furniture, and window treatments that do not function properly as determined by Architect.

3.6 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.7 CLOSEOUT ACTIVITIES

- A. Demonstration: Demonstrate proper operation of lighting control devices to Architect, and correct deficiencies or make adjustments as directed.

- B. Training: Train Owner's personnel on operation, adjustment, programming, and maintenance of lighting control devices.
 - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - 2. Provide minimum of two hours of training.
 - 3. Instructor: Qualified contractor familiar with the project and with sufficient knowledge of the installed lighting control devices.
 - 4. Location: At project site.

END OF SECTION

SECTION 26 24 13 - SWITCHBOARDS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Low-voltage (600 V and less) switchboards and associated accessories for service and distribution applications.
- B. Overcurrent protective devices for switchboards.

1.2 REFERENCE STANDARDS

- A. FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service; Federal Specification; Revision E, 2013.
- B. IEEE C57.13 - IEEE Standard Requirements for Instrument Transformers; Institute of Electrical and Electronic Engineers; 2008.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- D. NECA 400 - Standard for Installing and Maintaining Switchboards; National Electrical Contractors Association; 2007.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association; 2014.
- F. NEMA PB 2 - Deadfront Distribution Switchboards; National Electrical Manufacturers Association; 2011.
- G. NEMA PB 2.1 - General Instructions for Proper Handling, Installation, Operation, and Maintenance of Deadfront Distribution Switchboards Rated 600 Volts or Less; National Electrical Manufacturers Association; 2013 (ANSI/NEMA PB 2.1).
- H. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; International Electrical Testing Association; 2013 (ANSI/NETA ATS).
- I. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.
- K. UL 869A - Reference Standard for Service Equipment; Current Edition, Including All Revisions.

- L. UL 891 - Switchboards; Current Edition, Including All Revisions.
- M. UL 1053 - Ground-Fault Sensing and Relaying Equipment; Current Edition, Including All Revisions.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
 - 4. Coordinate with manufacturer to provide shipping splits suitable for the dimensional constraints of the installation.
 - 5. Notify Architect of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.
- B. Service Entrance Switchboards:
 - 1. Coordinate with Utility Company to provide switchboards with suitable provisions for electrical service and utility metering, where applicable.
 - 2. Coordinate with Owner to arrange for Utility Company required access to equipment for installation and maintenance.
 - 3. Obtain Utility Company approval of switchboard prior to fabrication.
 - 4. Arrange for inspections necessary to obtain Utility Company approval of installation.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for switchboards, enclosures, overcurrent protective devices, and other installed components and accessories.
- C. Shop Drawings: For each switchboard and related equipment.
 - 1. Dimensioned plans, elevations, sections, and details, including required clearances and service space around equipment. Show tabulations of installed devices, equipment features, and ratings. Include the following:
 - a. Enclosure types and details for types other than NEMA 250, Type 1.
 - b. Bus configuration, current, and voltage ratings.
 - c. Short-circuit current rating of switchboards and overcurrent protective devices.
 - d. Descriptive documentation of optional barriers specified for electrical insulation and isolation.
 - e. Utility company's metering provisions with indication of approval by utility company.
 - f. Mimic-bus diagram.

- g. UL listing for series rating of installed devices.
 - h. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
 - 2. Wiring Diagrams: Power, signal, and control wiring.
- D. Manufacturer Seismic Qualification Certification: Submit certification that switchboards, overcurrent protective devices, accessories, and components will withstand seismic forces. Include the following:
- 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."
 - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- F. Project Record Documents: Record actual installed locations of switchboards and final equipment settings.
- G. Maintenance Data: Include information on replacement parts and recommended maintenance procedures and intervals.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
- 1. Enclosure Keys: Two of each different key.

1.5 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store switchboards in accordance with manufacturer's instructions, NECA 400, and NEMA PB 2.1.
- B. Store in a clean, dry space having a uniform temperature to prevent condensation (including outdoor switchboards, which are not weatherproof until completely and properly installed).

Where necessary, provide temporary enclosure space heaters or temporary power for permanent factory-installed space heaters.

- C. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- D. Handle carefully to avoid damage to switchboard internal components, enclosure, and finish.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Switchboards:
 - 1. Eaton Corporation: www.eaton.com.
 - 2. General Electric Company: www.geindustrial.com. (**Preferred CBU Standard**)
 - 3. Schneider Electric; Square D Products: www.schneider-electric.us.

2.2 SWITCHBOARDS

- A. Provide switchboards consisting of all required components, control power transformers, instrumentation and control wiring, accessories, etc. as necessary for a complete operating system.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Description: Dead-front switchboard assemblies complying with NEMA PB 2, and listed and labeled as complying with UL 891; ratings, configurations and features as indicated on the drawings.
- D. Service Entrance Switchboards:
 - 1. Listed and labeled as suitable for use as service equipment according to UL 869A.
 - 2. For solidly-grounded wye systems, provide factory-installed main bonding jumper between neutral and ground busses, and removable neutral disconnecting link for testing purposes.
 - 3. Comply with Utility Company requirements for electrical service.
- E. Service Conditions:
 - 1. Provide switchboards and associated components suitable for operation under the following service conditions without derating:
 - a. Altitude: Less than 6,600 feet.
 - b. Ambient Temperature:
 - 1) Switchboards Containing Molded Case or Insulated Case Circuit Breakers: Between 23 degrees F and 104 degrees F.
 - 2. Provide switchboards and associated components suitable for operation at indicated ratings under the service conditions at the installed location.
- F. Short Circuit Current Rating:

1. Provide switchboards with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
- G. Main Devices: Configure for top or bottom incoming feed as indicated or as required for the installation. Provide separate pull section and/or top-mounted pullbox as indicated or as required to facilitate installation of incoming feed.
- H. Bussing: Sized in accordance with UL 891 temperature rise requirements.
1. Through bus (horizontal cross bus) to be fully rated through full length of switchboard (non-tapered). Tapered bus is not permitted.
 2. Provide solidly bonded equipment ground bus through full length of switchboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
 3. Phase and Neutral Bus Material: Copper.
 4. Ground Bus Material: Copper.
- I. Conductor Terminations: Suitable for use with the conductors to be installed.
1. Line Conductor Terminations:
 - a. Main and Neutral Lug Material: Copper, suitable for terminating copper conductors only.
 - b. Main and Neutral Lug Type: Mechanical.
 2. Load Conductor Terminations:
 - a. Lug Material: Copper, suitable for terminating copper conductors only.
 - b. Lug Type:
 - 1) Provide mechanical lugs unless otherwise indicated.
- J. Enclosures:
1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
 - a. Indoor Clean, Dry Locations: Type 1 or Type 2 (drip-proof).
 2. Finish: Manufacturer's standard unless otherwise indicated.
- K. Future Provisions:
1. Prepare designated spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.
 2. Equip distribution sections with full height vertical bussing to accommodate maximum utilization of space for devices.
- L. Ground Fault Protection: Where ground-fault protection is indicated, provide system listed and labeled as complying with UL 1053.
- M. Instrument Transformers:
1. Comply with IEEE C57.13.
 2. Select suitable ratio, burden, and accuracy as required for connected devices.
 3. Current Transformers: Connect secondaries to shorting terminal blocks.
 4. Potential Transformers: Include primary and secondary fuses with disconnecting means.
- N. Main Phase Buses, Neutral Buses, and Equipment Ground Buses: Uniform capacity for entire length of switchboard's main and distribution sections. Provide for future extensions from both ends.

- O. Load Terminals: Insulated, rigidly braced, silver-plated, copper runback bus extensions equipped with pressure connectors for outgoing circuit conductors. Provide load terminals for future circuit-breaker positions at full ampere rating of circuit-breaker position.
- P. Neutral Buses: 100 percent of the ampacity of phase buses, unless otherwise indicated, equipped with pressure connectors for outgoing circuit neutral cables. Bus extensions for busway feeder neutral bus are braced.
- Q. Molded Case Circuit Breakers: Integral thermal and instantaneous magnetic trip in each pole. NEMA AB 3, with interrupting capacity to meet available fault currents.
 - 1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

2.3 OVERCURRENT PROTECTIVE DEVICES

- A. Circuit Breakers:
 - 1. Interrupting Capacity:
 - a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than specified minimum requirements.
 - b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
 - 2. Molded Case Circuit Breakers:
 - a. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers; listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
 - 1) Provide thermal magnetic circuit breakers unless otherwise indicated.
 - b. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.

2.4 SOURCE QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Factory test switchboards according to NEMA PB 2, including the following production (routine) tests on each switchboard assembly or component:
 - 1. Dielectric tests.
 - 2. Mechanical operation tests.
 - 3. Grounding of instrument transformer cases test.
 - 4. Electrical operation and control wiring tests, including polarity and sequence tests.
 - 5. Ground-fault sensing equipment test.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that the ratings and configurations of the switchboards and associated components are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive switchboards.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

- A. Examine elements and surfaces to receive switchboards for compliance with installation tolerances and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install switchboards in accordance with NECA 1 (general workmanship), NECA 400, and NEMA PB 2.1.
- C. Arrange equipment to provide required clearances and maintenance access, including accommodations for any drawout devices.
- D. Where switchboard is indicated to be mounted with inaccessible side against wall, provide minimum clearance of 1/2 inch between switchboard and wall.
- E. Provide required support and attachment components in accordance with Section 26 05 29.
- F. Install switchboards plumb and level.
- G. Unless otherwise indicated, mount switchboards on properly sized 4 inch high concrete pad constructed in accordance with Section 03 30 00.
- H. Provide grounding and bonding in accordance with Section 26 05 26.
- I. Install all field-installed devices, components, and accessories.
- J. Where accessories are not self-powered, provide control power source as indicated or as required to complete installation.
- K. Set field-adjustable ground fault protection pickup and time delay settings as indicated.

- L. Provide filler plates to cover unused spaces in switchboards.
- M. Install and anchor switchboards level on concrete bases, 4-inch (100-mm) nominal thickness minimum.
 - 1. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch (450-mm) centers around full perimeter of base.
 - 2. For switchboards, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.
 - 3. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 4. Install anchor bolts to elevations required for proper attachment to switchboards.
- N. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from switchboard units and components.
- O. Operating Instructions: Frame and mount the printed basic operating instructions for switchboards, including control and key interlocking sequences and emergency procedures. Fabricate frame of finished wood or metal and cover instructions with clear acrylic plastic. Mount on front of switchboards.

3.4 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Before energizing switchboard, perform insulation resistance testing in accordance with NECA 400 and NEMA PB 2.1.
- C. Inspect and test in accordance with NETA ATS, except Section 4.
- D. Perform inspections and tests listed in NETA ATS, Section 7.1.
- E. Molded Case and Insulated Case Circuit Breakers: Perform inspections and tests listed in NETA ATS, Section 7.6.1.1 for all main circuit breakers and circuit breakers larger than 225 amperes. Tests listed as optional are not required.
- F. Ground Fault Protection Systems: Test in accordance with manufacturer's instructions as required by NFPA 70.
 - 1. Perform inspections and tests listed in NETA ATS, Section 7.14. The insulation-resistance test on control wiring listed as optional is not required.
- G. Instrument Transformers: Perform inspections and tests listed in NETA ATS, Section 7.10.
- H. Correct deficiencies and replace damaged or defective switchboards or associated components.

3.5 ADJUSTING

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

- B. Adjust alignment of switchboard covers and doors.

3.6 CLEANING

- A. Clean dirt and debris from switchboard enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred surfaces to match original factory finish.

3.7 PROTECTION

- A. Protect installed switchboards from subsequent construction operations.

END OF SECTION

SECTION 26 24 16 - PANELBOARDS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Power distribution panelboards.
- B. Lighting and appliance panelboards.
- C. Overcurrent protective devices for panelboards.

1.2 RELATED REQUIREMENTS

- A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- B. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- C. Section 26 05 73 - Power System Studies: Additional criteria for the selection and adjustment of equipment and associated protective devices specified in this section.

1.3 REFERENCE STANDARDS

- A. FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service; Revision E with Supplement 1, 2013.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- C. NECA 407 - Standard for Installing and Maintaining Panelboards; 2015.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.
- E. NEMA PB 1 - Panelboards; 2011.
- F. NEMA PB 1.1 - General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less; 2013.
- G. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2013.
- H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.

- J. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- K. UL 67 - Panelboards; Current Edition, Including All Revisions.
- L. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted panelboards where indicated.
 - 4. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
 - 5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.5 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for panelboards, enclosures, overcurrent protective devices, and other installed components and accessories.
- B. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, overcurrent protective device arrangement and sizes, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.
- C. Project Record Documents: Record actual installed locations of panelboards and actual installed circuiting arrangements.
- D. Maintenance Data: Include information on replacement parts and recommended maintenance procedures and intervals.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Panelboard Keys: Two of each different key.

1.6 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

- C. **Manufacturer Qualifications:** Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. **Product Listing Organization Qualifications:** An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store panelboards in accordance with manufacturer's instructions and NECA 407.
- B. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- C. Handle carefully in accordance with manufacturer's written instructions to avoid damage to panelboard internal components, enclosure, and finish.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Eaton Corporation: www.eaton.com.
- B. Schneider Electric; Square D Products: www.schneider-electric.us.
- C. Siemens Industry, Inc: www.usa.siemens.com.
- D. **Source Limitations:** Furnish panelboards and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.2 PANELBOARDS - GENERAL REQUIREMENTS

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
 - 1. Altitude: Less than 6,600 feet.
 - 2. Ambient Temperature:
 - a. Panelboards Containing Circuit Breakers: Between 23 degrees F and 104 degrees F.
- C. Short Circuit Current Rating:
 - 1. Provide panelboards with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
 - 2. Provide panelboards with listed short circuit current rating not less than the available fault current at the installed location as determined by short circuit study performed in accordance with Section 26 05 73.

- D. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.
- E. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.
- F. Bussing: Sized in accordance with UL 67 temperature rise requirements.
 - 1. Provide fully rated neutral bus unless otherwise indicated, with a suitable lug for each feeder or branch circuit requiring a neutral connection.
 - 2. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
- G. Conductor Terminations: Suitable for use with the conductors to be installed.
- H. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
 - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
 - a. Indoor Clean, Dry Locations: Type 1.
 - b. Outdoor Locations: Type 3R.
 - 2. Boxes: Galvanized steel unless otherwise indicated.
 - a. Provide wiring gutters sized to accommodate the conductors to be installed.
 - 3. Fronts:
 - a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
 - b. Fronts for Flush-Mounted Enclosures: Overlap boxes on all sides to conceal rough opening.
 - 4. Lockable Doors: All locks keyed alike unless otherwise indicated.
- I. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.
- J. Load centers are not acceptable.

2.3 POWER DISTRIBUTION PANELBOARDS

- A. Description: Panelboards complying with NEMA PB 1, power and feeder distribution type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
- B. Conductor Terminations:
 - 1. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
 - 2. Main and Neutral Lug Type: Mechanical.
- C. Bussing:
 - 1. Phase and Neutral Bus Material: Copper.
 - 2. Ground Bus Material: Copper.
- D. Circuit Breakers:
 - 1. Provide bolt-on type.

2. Provide thermal magnetic circuit breakers for circuit breaker frame sizes less than 225 amperes.
3. Provide electronic trip circuit breakers for circuit breaker frame sizes 225 amperes and above.

E. Enclosures:

1. Provide surface-mounted or flush-mounted enclosures as indicated.
2. Fronts: Provide door-in-door trim with hinged cover for access to load terminals and wiring gutters, and separate lockable hinged door with concealed hinges for access to overcurrent protective device handles without exposing live parts.
3. Provide clear plastic circuit directory holder mounted on inside of door.

2.4 LIGHTING AND APPLIANCE PANELBOARDS

A. Description: Panelboards complying with NEMA PB 1, lighting and appliance branch circuit type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.

B. Conductor Terminations:

1. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
2. Main and Neutral Lug Type: Mechanical.

C. Bussing:

1. Phase Bus Connections: Arranged for sequential phasing of overcurrent protective devices.
2. Phase and Neutral Bus Material: Copper.
3. Ground Bus Material: Copper.

D. Circuit Breakers: Thermal magnetic bolt-on type unless otherwise indicated.

E. Enclosures:

1. Provide surface-mounted or flush-mounted enclosures as indicated.
2. Fronts: Provide door-in-door trim with hinged cover for access to load terminals and wiring gutters, and separate lockable hinged door with concealed hinges for access to overcurrent protective device handles without exposing live parts.
3. Provide clear plastic circuit directory holder mounted on inside of door.

2.5 OVERCURRENT PROTECTIVE DEVICES

A. Molded Case Circuit Breakers:

1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
2. Interrupting Capacity:
 - a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than:
 - 1) 42,000 rms symmetrical amperes at 240 VAC or 208 VAC.

- b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
3. Conductor Terminations:
 - a. Provide mechanical lugs unless otherwise indicated.
 - b. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
4. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
5. Electronic Trip Circuit Breakers: Furnish solid state, microprocessor-based, true rms sensing trip units.
6. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
7. Do not use tandem circuit breakers.
8. Provide multi-pole circuit breakers for multi-wire branch circuits as required by NFPA 70.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that the ratings and configurations of the panelboards and associated components are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive panelboards.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship).
- B. Install products in accordance with manufacturer's instructions.
- C. Install panelboards in accordance with NECA 407 and NEMA PB 1.1.
- D. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- E. Provide required support and attachment in accordance with Section 26 05 29.
- F. Install panelboards plumb.
- G. Install flush-mounted panelboards so that trims fit completely flush to wall with no gaps and rough opening completely covered.
- H. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches above the floor or working platform.

- I. Provide minimum of six spare 1 inch trade size conduits out of each flush-mounted panelboard stubbed into accessible space above ceiling and below floor.
- J. Provide grounding and bonding in accordance with Section 26 05 26.
- K. Install all field-installed branch devices, components, and accessories.
- L. Multi-Wire Branch Circuits: Group grounded and ungrounded conductors together in the panelboard as required by NFPA 70.
- M. Provide filler plates to cover unused spaces in panelboards.

3.3 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Molded Case Circuit Breakers: Perform inspections and tests listed in NETA ATS, Section 7.6.1.1 for all main circuit breakers and circuit breakers larger than _____ amperes. Tests listed as optional are not required.
- C. Correct deficiencies and replace damaged or defective panelboards or associated components.

3.4 ADJUSTING

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.
- B. Adjust alignment of panelboard fronts.

3.5 CLEANING

- A. Clean dirt and debris from panelboard enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

SECTION 26 27 26 - WIRING DEVICES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Wall switches.
- B. Receptacles.
- C. Wall plates.

1.2 RELATED REQUIREMENTS

- A. Section 26 05 33.16 - Boxes for Electrical Systems.
- B. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.3 REFERENCE STANDARDS

- A. FS W-C-596 - Connector, Electrical, Power, General Specification for; Revision H, 2014.
- B. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush-mounted (General Specification); Revision G, 2014.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- D. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2010.
- E. NEMA WD 1 - General Color Requirements for Wiring Devices; 1999 (R2015).
- F. NEMA WD 6 - Wiring Devices - Dimensional Specifications; 2016.
- G. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 20 - General-Use Snap Switches; Current Edition, Including All Revisions.
- I. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.
- J. UL 514D - Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.
- K. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
3. Coordinate the placement of outlet boxes for wall switches with actual installed door swings.
4. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
5. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

B. Sequencing:

1. Do not install wiring devices until final surface finishes and painting are complete.

1.5 SUBMITTALS

- A. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

1.6 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Hubbell Incorporated: www.hubbell-wiring.com.
- B. Leviton Manufacturing Company, Inc: www.leviton.com.
- C. Lutron Electronics Company, Inc: www.lutron.com.
- D. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us

2.2 WIRING DEVICE APPLICATIONS

- A. Provide wiring devices suitable for intended use and with ratings adequate for load served.
- B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.

- C. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.
- D. Provide GFCI protection for receptacles installed within 6 feet of sinks.
- E. Provide GFCI protection for receptacles installed in kitchens.
- F. Provide GFCI protection for receptacles serving electric drinking fountains.
- G. Unless noted otherwise, do not use combination switch/receptacle devices.

2.3 WIRING DEVICE FINISHES

- A. Provide wiring device finishes as described below unless otherwise indicated.
- B. Wiring Devices, Unless Otherwise Indicated: White with white nylon wall plate.
- C. Wiring Devices Installed in Finished Spaces: White with white nylon wall plate.
- D. Wiring Devices Installed in Unfinished Spaces: Gray with galvanized steel wall plate.
- E. Wiring Devices Installed in Wet or Damp Locations: White with specified weatherproof cover.

2.4 WALL SWITCHES

- A. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- B. Standard Wall Switches: Industrial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

2.5 RECEPTACLES

- A. Manufacturers:
 - 1. Hubbell Incorporated: www.hubbell-wiring.com.
 - 2. Leviton Manufacturing Company, Inc: www.leviton.com.
 - 3. Lutron Electronics Company, Inc; Designer Style: www.lutron.com/#sle.
 - 4. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
- B. Receptacles - General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.

2. NEMA configurations specified are according to NEMA WD 6.
- C. Convenience Receptacles:
1. Standard Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
 2. Automatically Controlled Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; controlled receptacle marking on device face per NFPA 70; single or duplex as indicated on the drawings.
- D. GFCI Receptacles:
1. GFCI Receptacles - General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
 2. Standard GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.
 3. Weather Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.

2.6 WALL PLATES

- A. Manufacturers:
1. Hubbell Incorporated: www.hubbell-wiring.com.
 2. Leviton Manufacturing Company, Inc: www.leviton.com.
 3. Lutron Electronics Company, Inc: www.lutron.com.
 4. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
- B. Wall Plates: Comply with UL 514D.
1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
 2. Size: Standard.
 3. Screws: Metal with slotted heads finished to match wall plate finish.
- C. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.
- D. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.
- E. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as indicated.

- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of wiring devices provided under this section.
 - 1. Mounting Heights: Unless otherwise indicated, as follows:
 - a. Wall Switches: 48 inches above finished floor.
 - b. Receptacles: 18 inches above finished floor or 6 inches above counter.
 - 2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
 - 3. Where multiple receptacles, wall switches, or wall dimmers are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
 - 4. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
 - 5. Locate receptacles for electric drinking fountains concealed behind drinking fountain according to manufacturer's instructions.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.

- G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- H. Provide GFCI receptacles with integral GFCI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.
- I. Where split-wired duplex receptacles are indicated, remove tabs connecting top and bottom receptacles.
- J. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- K. Install wall switches with OFF position down.
- L. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.
- M. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- N. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.
- O. Identify wiring devices in accordance with Section 26 05 53.

3.4 FIELD QUALITY CONTROL

- A. Inspect each wiring device for damage and defects.
- B. Operate each wall switch with circuit energized to verify proper operation.
- C. Test each receptacle to verify operation and proper polarity.
- D. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- E. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.5 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

3.6 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION

SECTION 26 28 16.16 - ENCLOSED SWITCHES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Enclosed safety switches.

1.2 RELATED REQUIREMENTS

- A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- B. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- C. Section 26 28 13 - Fuses.

1.3 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.
- C. NEMA KS 1 - Heavy Duty Enclosed and Dead-Front Switches (600 Volts Maximum); 2013.
- D. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2013.
- E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- G. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 98 - Enclosed and Dead-Front Switches; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades. Avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and within working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.

3. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.5 SUBMITTALS

- A. **Product Data:** Provide manufacturer's standard catalog pages and data sheets for enclosed switches and other installed components and accessories.
- B. **Shop Drawings:** Indicate outline and support point dimensions, voltage and current ratings, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.
 1. Include dimensioned plan and elevation views of enclosed switches and adjacent equipment with all required clearances indicated.
- C. **Project Record Documents:** Record actual locations of enclosed switches.

1.6 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. **Manufacturer Qualifications:** Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle carefully in accordance with manufacturer's written instructions to avoid damage to enclosed switch internal components, enclosure, and finish.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Eaton Corporation: www.eaton.com.
- B. Schneider Electric; Square D Products: www.schneider-electric.us.
- C. Siemens Industry, Inc: www.usa.siemens.com.
- D. **Source Limitations:** Furnish enclosed switches and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.2 ENCLOSED SAFETY SWITCHES

- A. Description: Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; heavy duty; ratings, configurations, and features as indicated on the drawings.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
 - 1. Altitude: Less than 6,600 feet.
 - 2. Ambient Temperature: Between -22 degrees F and 104 degrees F.
- D. Horsepower Rating: Suitable for connected load.
- E. Voltage Rating: Suitable for circuit voltage.
- F. Short Circuit Current Rating:
 - 1. Provide enclosed safety switches, when protected by the fuses or supply side overcurrent protective devices to be installed, with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
 - 2. Minimum Ratings:
 - a. Heavy Duty Single Throw Switches Protected by Class R, Class J, Class L, or Class T Fuses: 200,000 rms symmetrical amperes.
- G. Provide with switch blade contact position that is visible when the cover is open.
- H. Fuse Clips for Fusible Switches: As required to accept fuses indicated.
 - 1. Where NEMA Class R fuses are installed, provide rejection feature to prevent installation of fuses other than Class R.
- I. Conductor Terminations: Suitable for use with the conductors to be installed.
- J. Provide solidly bonded equipment ground bus in each enclosed safety switch, with a suitable lug for terminating each equipment grounding conductor.
- K. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
 - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
 - a. Indoor Clean, Dry Locations: Type 1.
 - b. Outdoor Locations: Type 3R.
- L. Provide safety interlock to prevent opening the cover with the switch in the ON position with capability of overriding interlock for testing purposes.
- M. Heavy Duty Switches:
 - 1. Comply with NEMA KS 1.
 - 2. Conductor Terminations:
 - a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.

3. Provide externally operable handle with means for locking in the OFF position, capable of accepting three padlocks.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that the ratings of the enclosed switches are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive enclosed safety switches.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide required support and attachment in accordance with Section 26 05 29.
- E. Install enclosed switches plumb.
- F. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed switches such that the highest position of the operating handle does not exceed 79 inches above the floor or working platform.
- G. Provide grounding and bonding in accordance with Section 26 05 26.
- H. Provide fuses complying with Section 26 28 13 for fusible switches as indicated or as required by equipment manufacturer's recommendations.

3.3 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Perform inspections and tests listed in NETA ATS, Section 7.5.1.1.
- C. Correct deficiencies and replace damaged or defective enclosed safety switches or associated components.

3.4 ADJUSTING

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

3.5 CLEANING

- A. Clean dirt and debris from switch enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

SECTION 26 56 00 - EXTERIOR LIGHTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Exterior luminaires.

1.2 RELATED REQUIREMENTS

- A. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- B. Section 26 05 33.16 - Boxes for Electrical Systems.

1.3 REFERENCE STANDARDS

- A. IES LM-79 - Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; 2008.
- B. IES LM-80 - Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, and Modules; 2015.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- D. NECA/IESNA 501 - Standard for Installing Exterior Lighting Systems; 2006.
- E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 1598 - Luminaires; Current Edition, Including All Revisions.
- G. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.5 SUBMITTALS

- A. Shop Drawings:
 - 1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.

2. Provide photometric calculations where luminaires are proposed for substitution upon request.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.
 1. LED Luminaires:
 - a. Include estimated useful life, calculated based on IES LM-80 test data.
- C. Samples:
 1. Provide one sample(s) of each luminaire proposed for substitution upon request.

1.6 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.8 WARRANTY

- A. Provide five year manufacturer warranty for all LED luminaires, including drivers.

PART 2 PRODUCTS

2.1 LUMINAIRE TYPES

- A. Furnish products as indicated in luminaire schedule included on the drawings.

2.2 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.

- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. LED Luminaires:
 - 1. Components: UL 8750 recognized or listed as applicable.
 - 2. Tested in accordance with IES LM-79 and IES LM-80.
 - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of luminaires provided under this section.
- B. Install products in accordance with manufacturer's instructions.
- C. Install luminaires in accordance with NECA/IESNA 501.

- D. Provide required support and attachment in accordance with Section 26 05 29.
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Install accessories furnished with each luminaire.
- G. Bond products and metal accessories to branch circuit equipment grounding conductor.
- H. Install lamps in each luminaire.

3.4 FIELD QUALITY CONTROL

- A. Inspect each product for damage and defects.
- B. Operate each luminaire after installation and connection to verify proper operation.
- C. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

3.5 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.

3.6 CLEANING

- A. Clean surfaces according to NECA/IESNA 501 and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.7 CLOSEOUT ACTIVITIES

- A. Demonstration: Demonstrate proper operation of luminaires to Architect, and correct deficiencies or make adjustments as directed.
- B. Just prior to Substantial Completion, replace all lamps that have failed.

3.8 PROTECTION

- A. Protect installed luminaires from subsequent construction operations.

END OF SECTION

SECTION 26 00 10 - BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE

- A. This section supplements all sections of this division and shall apply to all phases of work hereinafter specified, shown on the drawings, or required to provide a complete installation of electrical systems for the Project. The work required under this division is not limited to the electrical specifications and drawings. Refer to all bid documents including Civil, Architectural, Structural, and Mechanical documents which may designate Work to be accomplished. The intent of the Specifications is to provide a complete and operable electrical system, which shall include all documents that are a part of the entire Project Contract.
 - 1. Work included: Furnish all labor, material, tools, equipment, facilities, transportation, skilled supervision necessary for, and incidental to, performing operations in connection with furnishing, delivery, and installation of the work in this division complete as shown or noted on the Drawings and specified herein.
- B. Related Work Specified Elsewhere:
 - 1. Refer to all sections in the general contract conditions, Contract Requirements and Division 1, General Requirements.
- C. Work Installed but Furnished by Others:
 - 1. The electrical work includes the installation or connection of certain materials and equipment furnished by others. Verify installation details. Foundations for apparatus and equipment will be furnished by others unless otherwise noted or detailed.

1.2 GENERAL REQUIREMENTS

- A. Guarantee See General Conditions:
 - 1. Except as may be specified under other Sections in the specification, guarantee equipment furnished under the specifications for a period of one year, except for equipment required to have a longer guarantee period, from date of final completion. Guarantee all work against defective workmanship, material, and improper installation. Upon notification of failure, correct deficiency immediately and without additional cost to the Owner.
 - 2. Standard warranty of manufacturer shall apply for replacement of parts after expiration of the above period. Manufacturer shall furnish replacement parts to the Owner or his service agency as approved. Furnish to the Owner, through the Architect, printed manufacturer's warranties complete with material included and expiration dates, upon completion of project. Conform to Division 01.
- B. Equipment Safety: All electrical materials and equipment shall be new and shall be listed by Underwriter's Laboratories and bear their label, or listed and certified by a nationally recognized testing authority where UL does not have an approval. Custom made equipment must have complete test data submitted by the manufacturer attesting to its safety.
- C. Codes and Regulations:

1. Design, manufacturer, testing and method of installation of all apparatus and materials furnished under the requirements of these specifications shall conform to the latest publications or standard rules of the following:
 - a. Institute of Electrical and Electronic Engineers - IEEE
 - b. National Electrical Manufacturers' Association - NEMA
 - c. Underwriters' Laboratories, Inc. - UL
 - d. National Fire Protection Association - NFPA
 - e. American Society for Testing and Materials - ASTM
 - f. American National Standards Institute - ANSI
 - g. California Electrical Code - CEC, Title 24, Part 3
 - h. California Code of Regulations, Title 8, Subchapter 5
 - i. California Building Code-CBC, Title 24 Parts 1 &2
 - j. State & Municipal Codes in Force in the Specific Project Area
 - k. Occupational Safety & Health Administration - OSHA
 - l. California State Fire Marshal
 - m. California Fire Code- CFC, Title 24 Part 9
 - n. National Electrical Testing Association - NETA
 2. The term "Code", when used within the specifications, shall refer to the Publications, Standards, ordinances and codes, listed above. In the case where the codes have different levels of requirements the most stringent rules shall apply.
- D. Requirements of Regulatory Agencies:
1. Codes, Permits, and Fees: Where the Contract Documents exceed minimum requirements, the Contract Documents take precedence. Where code conflicts occur, the most stringent shall apply. The most stringent condition shall be as interpreted by the Engineer.
 - a. Comply with all requirements for permits, licenses, fees and Code. Permits, licenses, fees, inspections and arrangements required for the Contractor at his expense shall obtain the Work, unless otherwise specified.
 - b. Comply with the requirements of the applicable utility companies serving the Project. Make all arrangements with the utility companies for proper coordination of the Work.
- E. Shop Drawings:
1. See Division 01 for additional requirements.
 2. Time Schedules for Submission and Ordering: The Contractor shall prepare, review and coordinate his schedule of submissions carefully, determining the necessary lead time for preparing, submitting, checking, ordering and delivery of materials and equipment for timely arrival. The Contractor shall be responsible for conformance with the overall construction schedule.
 3. Submittals will be checked for general compliance with specifications only. The Contractor shall be responsible for deviations from the drawings or specifications and for errors or omissions of any sort in submittals.
 4. Submit a complete list of materials and equipment proposed for the job, including manufacturers names and catalog numbers.
 5. Shop drawings shall be submitted in completed groups of materials (i.e., lighting fixtures or switchgear). The Contractor shall add and sign the following paragraph on equipment and materials submitted for review. "It is hereby certified that the (equipment) (material) shown and marked in this submittal is that proposed to be incorporated into the project; is in compliance with the Contract Drawings and specifications and can be installed in the

allocated spaces". Failure to add the above written statement for compliance will result in return of submittals without review.

- a. Bind catalog cuts, plate numbers, descriptive bulletins and drawings, 11" x 17" (275 mm x 435 mm) or smaller, in sets with covers neatly showing titles.
 - b. The Contractor shall verify dimensions of equipment and be satisfied as to Code compliance for fit prior to submitting shop drawings for approval.
 - c. Where current limiting devices are specified, submit technical data to substantiate adequate protection of equipment cascaded downstream. Submittals shall not be reviewed unless supporting calculations and data are submitted therewith.
 - d. Include complete catalog information such as construction, ratings, insulation systems, as applicable.
 - e. For any material specified to meet UL or trade standards, furnish the manufacturers or vendor's certification that the material furnished for the work does in fact equal or exceed such specifications.
 - f. Reference listings to the specifications' Sections and Article to which each is applicable.
 - g. Equipment Floor Plans: After approval of material is secured prepare a floor plan of each electrical and communication equipment space, room or yard, drawn to scale at 1/2 inch equals 1 foot and submit for approval in the same manner as for shop drawings. The layout drawings shall be exact scale.
6. Contractor shall prepare coordinated drawings when required by Division 01 or where noted otherwise.
- F. Interpretations: The Contractor through the Architect must make Requests for interpretations of drawings and specifications. Any such requests made by equipment manufacturers or suppliers will be referred to the Contractor.
- G. Standard of Quality
1. The contract Drawings and Specifications establish the "MINIMUM STANDARD OF QUALITY" each product and/or system must meet to be considered acceptable. Products of other manufactures will be considered if the product and/or system meet or exceed the "MINIMUM STANDARD OF QUALITY" established by this Contract Document.
 2. Items for similar application shall be of the same manufacturer.
 3. The label of listing by UL shall appear on all materials and equipment for which standards have been established by the agency.
 4. Where codes as listed in Section General Requirement Section of the Specifications that establish label or approved requirements, furnish all materials and equipment with either the required labels affixed or the necessary written approval.
 5. Provide the type and quantity of electrical materials and equipment necessary to complete Work and all systems in operation, tested and ready for use.
 6. Provide and install all incidental items that belong to the Work described and which are required for complete systems.
 7. All switchboards, distribution boards, panel boards and circuit breakers shall be of the same manufacturer.
 8. All wiring devices such as switches and receptacles shall be of the same manufacturer.
- H. Substitutions: Refer to Division 01
- I. Submit comprehensive material list, shop drawings and complete technical data for the following equipment and materials:

1. General Requirements:
 - a. Main service and distribution switchboards.
 - b. Panelboards.
 - c. Conduits
 - d. Conductors, include all selected insulation types.
 - e. Fuses
 - f. Disconnect switches and Starters.
 - g. Pullboxes, manholes and handholes.
 - h. Standard lighting fixtures, specially fabricated fixtures, ballasts and lamps, with samples and sample of standard finish available (where requested).
 - i. Control devices, standard and special receptacles, switches, outlets and finish device plates.
 - j. Cabinets for signal and telephone system, special terminals and cabinets. Include all cabinet dimensions.
 - k. Fire alarm system.
 - l. Transformers

- J. Utility Service:
 1. Contractor shall verify the locations shown on the drawings and shall include extensions of lines to building service from locations which are acceptable to the Owner.
 2. Verify electrical, civil, architectural and structural, dimensional and other requirements with the Owner.
 3. Should any major modifications to the work indicated be necessary to comply with the Owner requirements, notify the Architect.
 4. Contractor shall contact the utility company representatives to establish pre-construction coordination, obtain all necessary meters and/or approvals, and schedule utility work to coordinate with the construction schedule.
 5. All utility services shall be installed per the utility company requirements. Verify final construction requirements with utility company service planners prior to construction.

- K. Record Drawings: Refer to Division 01, Contract Closeout.

- L. Work Responsibilities:
 1. The drawings indicate diagrammatically the desired locations or arrangement of conduit runs, outlets, junction boxes and equipment and are to be followed. Execute the work so as to secure the best possible installation in the available space and to overcome local difficulties due to space limitations. The Contractor is responsible for the correct placing of his work. Where conflicts occur in plans and/or specifications, the most stringent application shall apply and shall be part of the base bid.
 2. Locations shown on architectural plan or on wall elevations shall take precedence over electrical plan locations, but where a major conflict is evident, notify the Architect.
 3. In the event minor changes in the indicated locations or arrangement are necessary due to developed conditions in the building construction or rearrangement of furnishings or equipment or due to interference with other trades, such changes shall be made without extra cost.
 4. Verify dimensions and the correct location of Owner-Furnished equipment before proceeding with the roughing-in of connections.
 5. All scaled and figured dimensions are approximate of typical equipment of the class indicated. Before proceeding with work carefully check and verify dimensions and sizes

- with the drawings to see that the furnished equipment will fit into the spaces provided without violation of applicable Codes.
6. Should any changes to the work indicated on the drawings or described in the specifications be necessary in order to comply with the above requirements, notify the Architect.
 7. Contractor shall be responsible for coordination of coordinated drawings when required by the Architect.
 8. Replace or repair, without additional compensation any work which does not comply with or which is installed in violation of any of these requirements.
- M. Installation General: For special requirements, refer to specific equipment under these requirements.
1. Unless otherwise specified elsewhere in the specifications, do all excavating necessary for the proper installation of the electrical work.
 2. Locations of Openings: Locate chases, shafts and openings required for the installation of the electrical work during framing of the structure. Do any additional cutting and patching required. Cutting or drilling in any structural member is prohibited without approval of the Architect. Furnish all access panels to make all boxes, connections and devices accessible as required by CEC.
 3. Location of Sleeves: Where conduits pass through concrete walls, suspended slabs or metal deck floors, install sleeves of adequate size to permit installation of conduit. Sleeves shall be installed prior to pouring of concrete and shall have ends flush with the wall or extend 2 inches above floor surfaces. Verify locations.
 4. Wherever conduit extends through roof, install flashings in accordance with drawings and details.
 5. Contractor shall be responsible for cutting and patching which may be required for the proper installation of the electrical work.
 6. Protect work, materials and equipment and provide adequate and proper storage facilities during the progress of the work. Storage outdoors shall be weather protected and shall include space heaters to prevent condensation. Provide for the safety and good condition of all work until final acceptance of the work. Replace all damaged or defective work, materials and equipment before requesting final acceptance.
 7. Conduit and Equipment to be Installed: Clean thoroughly to remove plaster, spattered paint, cement and dirt on both exterior and interior. All underground conduits shall be mandrelled prior to pulling wire.
 8. Conduit and Equipment to be Painted: Clean conduit exposed to view in completed structure by removing plaster and dirt. Remove grease, oil and similar material from conduit and equipment by wiping with clean rags and suitable solvents in preparation for paint.
 9. Items with Factory Finish: Remove cement, plaster, grease and oil, and leave surfaces, including cracks and corners, clean and polished. Touch up scratched or bare spots to match finish.
 10. Site Cleaning: Remove from site all packing cartons, scrap materials and other rubbish on a weekly basis. Vacuum out all cabinets, switchgear and panels and junction boxes prior to pulling any conductors.
 11. Electrical equipment and materials exposed to public and in finished areas shall be finish-painted after installation in accordance with the Painting Section. All exposed screw-type fasteners, exterior, or interior in restrooms, shall be vandal-resistant spanner type; include tool.

N. Excavation, Cutting and Patching:

1. Excavating, trenching and backfilling required for the work of this Division in accordance with the applicable requirements of Division 2. Excavating and backfilling connected with electrical work, repaving cuts and providing and maintaining protective measures for the electrical work excavation required by the governing authorities having jurisdiction shall be performed as a part of the work of this Division.
2. Verify openings indicated on the drawings. Provide all cutting, patching and reinforcement of the construction of the building as required to install electrical work.

O. Tests

1. Equipment and systems for which the National Electrical Testing Association (NETA) has an approved or recommended procedure, shall be tested in accordance with that procedure. Test values shall equal values recommended by NETA. Copies of test reports shall be submitted as required under shop drawing submittals.
2. Resistance to ground tests shall be accomplished by a qualified independent testing firm to measure resistance to ground at grounding electrodes. Make tests before slabs or affected areas are poured in order that corrective measures, if required, may be taken. Submit a report showing the results of these measurements. If the resistances exceed values specified elsewhere or NETA test procedure recommendations, perform corrective measures required to reduce resistance to acceptable values.
3. Prior to energizing any motor, measure the service voltage for phase balance and report if unbalance exceeds 1% from mean.
4. Measure the three-phase voltage at no load and at maximum load conditions and submit to the engineer a report showing the results of these measurements.
5. Upon completion of the work and adjustment of all equipment, conduct an operating test. Conduct the test in the presence of an authorized representative of the Owner's Representative. Demonstrate system and equipment to operate in accordance with requirements of the Contract Documents and to be free from electrical and mechanical defects. Provide systems free from short circuits and grounds and show an insulation resistance between phase conductors and ground not less than the requirements of the governing electric code. Test circuits for proper neutral connection.
6. Complete tests prior to final inspection of project, including corrective work based on the results of the tests.
7. Perform special tests on systems and equipment as specified herein using personnel qualified to perform such tests.

- P. Protection: Protect finish parts of the materials and equipment against damage during the progress of the work and until final completion and acceptance. Cover materials and equipment in storage and during construction in such a manner that no finished surfaces will be damaged or marred. Keep moving parts clean, dry and lubricated.

Q. Cleaning Up:

1. Upon completion of the work and at various time during the progress of the work, remove from the building all surplus materials, rubbish and debris resulting from the work of this Division.
2. Thoroughly clean switchgear including busses, apparatus, exposed conduit, metal work including the exterior and interior, and accessories for the work of this Division, of cement, plaster and other deleterious materials; remove grease and oil spots with cleaning solvent; carefully wipe surfaces and scrape cracks and corners clean.

3. Thoroughly polish chromium or plated work. Remove dirt and stains from lighting fixtures.
 4. Leave the entire installation in a clean condition.
- R. Completion:
1. The work will not be reviewed for final acceptance until operating and maintenance data, manufacturer's literature, panel directories and nameplates specified herein have been approved and properly posted or installed and final cleaning of equipment and premises has been completed.
 2. When the installation is complete and adjustments have been made, operate the system for a period of one week, during which time demonstrate that systems are completed and operating in conformance with the specifications.
- S. Operating and Maintenance Data: Submit complete and at one time, prior to acceptance of the installation, 4 copies of manufacturer's instructions for operation and maintenance of electrical equipment, including replacement parts lists. As specified in Division 01
- T. Inspection and Acceptance Procedures: The Architect will submit observation reports periodically during the construction phase detailing Contract deficiencies. The Contractor is responsible for making corrections immediately. Notice of Completion of the project will not be made until all items have been corrected.
- U. Final Completion of Electrical Systems:
1. Prior to Final Completion of operating electrical systems, the Contractor shall:
 - a. Provide materials of the type and quality specified and as necessary for proper operation, tested and ready for use.
 - b. Furnish the required Operating and Maintenance Data/Manuals.
 - c. Clean up of the project pertaining to this Division of the work.
 - d. After installation has been completed and adjustments made, operate the system for a period of one week, during which time, demonstrate to the Architect that systems are complete and operating in conformance with Contract Documents.
 - e. Conduct tests required and as specified in this Division and submit test reports and corrective actions taken.
 - f. Submission of warranties and guarantees.
 2. Final Completion of Work Shall be Contingent On:
 - a. Contractor replacing defective materials and workmanship.
 - b. Upon completion of work and adjustments made, Contractor shall conduct an operating test for each system for approval at such time as Architect directs. Conduct test in presence of authorized representative of Architect and demonstrate that systems and equipment do operate in accordance with requirements of the Contract Documents and are free from electrical and mechanical defects.
 - c. Contractor shall provide the necessary training programs and instructions to the Owner's representative. Number of hours shall be a minimum of four (4) hours for each system or days as required under separate Sections of these Specifications. Complete operation and maintenance manuals shall be provided at least two (2) weeks prior to training.
 - d. Submit copies of manufacturer's instructions and maintenance of electrical equipment including replacement parts lists. Each set shall include one set of shop drawings of equipment installed.

- V. Submittals for Change Orders: When changes are made during the construction phase, deletions and additions shall be presented in a manner that will indicate the cost of each item of material and corresponding labor. Markup shall be then added in accordance with the requirements of the General Conditions as modified by the Supplementary Conditions.
- W. The Contractor at a time convenient to the Owner shall provide instruction to the Owner's operating personnel in the proper operation and maintenance of all equipment and systems. The instructors shall have received factory training and shall be thoroughly familiar with the equipment installed. The operating personnel shall receive the number of days instruction as indicated in other sections.

1.3 PROJECT RECORD DOCUMENTS

- A. Record Drawings: CAD: Use a computer aided drafting (CAD) system in the preparation of record drawings for this Project. Acceptable CAD systems shall be capable of producing files in AutoCAD Version 2004 compatible DWG or DXF format. Owner's consultant will furnish CAD backgrounds for use by the Contractor after construction is 85% complete except where prohibited by Contract.
- B. Record Set During the Work: At site, maintain at least one set of Drawings as a Field Record Set. Also maintain at least one copy of all Addenda, Modifications, approved submittals, correspondence, and transmittals at site. Keep Drawings and data in good order and readily available to Architect and Owner.
- C. Changes: Clearly and correctly mark Record Drawings to show changes made during the construction process at the time the changed work is installed. No such changes shall be made in the work unless authorized by the Architect.
- D. Final Record Drawings: Conform to Division 01 requirements.
- E. Preparation of Final Record Drawings: Contractor shall transfer recorded changes in the work indicated on the Field Record Set to the record set. Changes shall be neatly and clearly drawn and noted by skilled draftsmen, and shown technically correct.
- F. Approval: Prior to Architect's inspection for Substantial Completion, submit the Final Record Drawings to the Architect for review, and make such revisions as may be necessary for Final Record Drawings to be a true, complete, and accurate record of the work.
- G. Manuals: Obtain data from the various manufacturers and submit instruction, operation, and maintenance manuals as required and to the extent required under other Sections.
- H. At all times when the work is in progress, maintain at the workplace, fabrication shop or Project Site as applies, a complete separate, clean, undamaged set of the latest stamped, actioned submittals. As work progresses, maintain records of "as installed" conditions on this set in suitable ink or chemical fluid. Update the set daily. After successful completion of Project Site testing specified herein, and after completion of Punch List corrections, copy all records of "as installed" conditions on to originals.
- I. Quantity:
 - 1. Review sets: As for Shop and Field Drawings.

2. Record set: Refer to Division 01.

J. Content: All drawings required under "Field and Shop Drawings". Show "as installed" condition. Where room designations according to Project permanent signage differ from construction designations in the Contract Documents, show both designations.

K. Warranty Certificates: Comply with Division 01.

PART 2 - COMMISSIONING

2.1 COMMISSIONING OF ELECTRICAL SYSTEMS

A. Include cost for commissioning requirements in the contract price.

B. Attend commissioning meetings scheduled by the CxA.

C. Prepare preliminary schedule for indoor lighting system inspections, O&M manual submission, training sessions, lighting controls testing, system verification, performance testing, and system completion for use by the CxA. Update schedule as appropriate throughout the construction period and provide updated schedule to the commissioning team.

D. Verify proper installation and performance of all electrical services provided.

E. Complete Title 24 Certificate(s) of Installation and manufacturer's pre-start checklists prior to scheduling startup of HVAC and electrical equipment.

1. Retain Certificate(s) of Installation in a 3-ring binder in an organized fashion. Binder is to remain on the job site

2. Make Certificate(s) of Installation available for CxA review upon request.

3. Retain calibration records for equipment provided with manufacturer calibrated sensors in the Certificate(s) of Installation binder.

F. Where applicable, complete the Certificate(s) of Acceptance per the contract documents.

1. Retain Certificate(s) of Acceptance in a 3-ring binder in an organized fashion. Binder is to remain on the job site

2. Provide copies of all Certificate(s) of Acceptance to the CxA.

3. Certificate(s) of Acceptance shall be conducted by companies who are certified as California Advanced Lighting Controls Training Program Acceptance Technician (CALCTP-AT) employer and only completed by those employees of said company who are certified to complete the respective acceptance test.

G. Monitor and respond to Resolution Tracking Forms distributed by the CxA in order to expedite corrective actions necessary to achieve design intent.

H. Participate in the Certificate(s) of Acceptance and Functional Performance Tests as required to achieve design intent.

I. Participate in the opposite-season testing as required to achieve design intent.

J. Participate in O&M Training as required by project specifications.

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- K. Ensure participation of major equipment manufacturers and their representatives as applicable.
 - L. Obtain O&M data on all equipment and assemble in binders using tabs as required.
 - M. Conduct a maintenance orientation and inspection with hands on training per the contract documents.
 - N. Provide written certification and completed Certificate(s) of Installation forms and checklists documenting that the following work has been completed in accordance with the plans and specifications and that they are functioning as designed.
 - 1. Correct labeling of all circuits with connected equipment.
 - 2. Lighting system controls operations, including occupancy sensors, automatic time controls or Energy Management control, override timers, manual dimming controls, exterior lighting controls, multi-level switching, as applicable to the Work.

END OF SECTION

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Single conductor building wire.
- B. Wiring connectors.
- C. Electrical tape.
- D. Heat shrink tubing.
- E. Wire pulling lubricant.
- F. Cable ties.

1.2 RELATED REQUIREMENTS

- A. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.3 REFERENCE STANDARDS

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2013.
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2011.
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010 (Reapproved 2014).
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2014).
- E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2010.
- F. ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes; 2013.
- G. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- H. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; 2009.

- I. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2013.
- J. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- K. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- L. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- M. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.
- N. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.
- O. UL 486D - Sealed Wire Connector Systems; Current Edition, Including All Revisions.
- P. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
 - 3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.5 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.
- B. Project Record Documents: Record actual installed circuiting arrangements. Record actual routing for underground circuits.

1.6 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 CONDUCTOR AND CABLE APPLICATIONS

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
- C. Nonmetallic-sheathed cable is not permitted.
- D. Underground feeder and branch-circuit cable is not permitted.
- E. Service entrance cable is not permitted.
- F. Armored cable is not permitted.
- G. Metal-clad cable is not permitted.

2.2 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Provide new conductors and cables manufactured not more than one year prior to installation.
- D. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- E. Comply with NEMA WC 70.
- F. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- G. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- H. Conductor Material:
 - 1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
 - 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
 - 3. Tinned Copper Conductors: Comply with ASTM B33.

- I. Minimum Conductor Size:
 - 1. Branch Circuits: 12 AWG.
 - a. Exceptions:
 - 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
 - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
 - 3) 20 A, 277 V circuits longer than 150 feet: 10 AWG, for voltage drop.
 - 2. Control Circuits: 14 AWG.
- J. Conductor Color Coding:
 - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 - 2. Color Coding Method: Integrally colored insulation.
 - a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
 - 3. Color Code:
 - a. 480Y/277 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - 4) Neutral/Grounded: Gray.
 - b. 208Y/120 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral/Grounded: White.
 - c. Equipment Ground, All Systems: Green.

2.3 SINGLE CONDUCTOR BUILDING WIRE

- A. Manufacturers:
 - 1. Copper Building Wire:
 - a. Cerro Wire LLC: www.cerrowire.com/#sle.
 - b. Encore Wire Corporation: www.encorewire.com/#sle.
 - c. Southwire Company: www.southwire.com/#sle.
 - d. Rome Wire and Cable.
 - e. Okonite Wire
 - f. Pirelli Wire and Cable
 - g. Carol Cable
- B. Description: Single conductor insulated wire.
- C. Conductor Stranding:
 - 1. Feeders and Branch Circuits:
 - a. Size 10 AWG and Smaller: Solid.
 - b. Size 8 AWG and Larger: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation:

1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
 - a. Size 4 AWG and Larger: Type XHHW-2.
 - b. Installed Underground: Type XHHW-2.

2.4 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Wiring Connectors for Splices and Taps:
 1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
 2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.
- C. Wiring Connectors for Terminations:
 1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
 2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only compression connectors are specified.
 3. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
 4. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors or compression connectors where connectors are required.
- D. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.
- E. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.
- F. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
- G. Mechanical Connectors: Provide bolted type or set-screw type.
- H. Compression Connectors: Provide circumferential type or hex type crimp configuration.

2.5 WIRING ACCESSORIES

- A. Electrical Tape:
 1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
 2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight;

conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.

3. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil; suitable for continuous temperature environment up to 194 degrees F and short-term 266 degrees F overload service.
 4. Electrical Filler Tape: Rubber-based insulating moldable putty, minimum thickness of 125 mil; suitable for continuous temperature environment up to 176 degrees F.
 5. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, all-weather vinyl backing; minimum thickness of 90 mil.
- B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600 V; suitable for direct burial applications; listed as complying with UL 486D.
 - C. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.
 - D. Cable Ties: Material and tensile strength rating suitable for application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that field measurements are as indicated.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.3 INSTALLATION

- A. Circuiting Requirements:
 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 2. When circuit destination is indicated without specific routing, determine exact routing required.
 3. Arrange circuiting to minimize splices.
 4. Include circuit lengths required to install connected devices within 10 ft of location indicated.

5. **Circuiting Adjustments:** Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is not permitted.
 6. **Common Neutrals:** Unless otherwise indicated, sharing of neutral/grounded conductors among single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. **Installation in Raceway:**
1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
 2. Pull all conductors and cables together into raceway at same time.
 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- E. **Paralleled Conductors:** Install conductors of the same length and terminate in the same manner.
- F. **Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.**
1. **Installation Above Suspended Ceilings:** Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.
 2. **Installation in Vertical Raceways:** Provide supports where vertical rise exceeds permissible limits.
- G. Install conductors with a minimum of 12 inches of slack at each outlet.
- H. Where conductors are installed in enclosures for future termination by others, provide a minimum of 5 feet of slack.
- I. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- J. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- K. **Make wiring connections using specified wiring connectors.**
1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
 3. Do not remove conductor strands to facilitate insertion into connector.
 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminants. Do not use wire brush on plated connector surfaces.

5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 6. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- L. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
 - a. For taped connections, first apply adequate amount of rubber splicing electrical tape or electrical filler tape, followed by outer covering of vinyl insulating electrical tape.
 2. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
 - a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
 - b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
 3. Wet Locations: Use heat shrink tubing.
- M. Insulate ends of spare conductors using vinyl insulating electrical tape.
- N. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
- O. Identify conductors and cables in accordance with Section 26 05 53.
- P. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section Firestopping.
- Q. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.4 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.
- C. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION

SECTION 26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.

1.2 REFERENCE STANDARDS

- A. IEEE 81 - IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System; 2012.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- C. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2013.
- D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Verify exact locations of underground metal water service pipe entrances to building.
 - 2. Coordinate the work with other trades to provide steel reinforcement complying with specified requirements for concrete-encased electrode.
 - 3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.4 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.
- B. Field quality control test reports.
- C. Project Record Documents: Record actual locations of grounding electrode system components and connections.

1.5 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 GROUNDING AND BONDING REQUIREMENTS

- A. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- B. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- C. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- D. Grounding System Resistance:
 - 1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Architect. Precipitation within the previous 48 hours does not constitute normally dry conditions.
 - 2. Grounding Electrode System: Not greater than 25 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.
- E. Grounding Electrode System:
 - 1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
 - a. Provide continuous grounding electrode conductors without splice or joint.
 - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
 - 2. Metal Underground Water Pipe(s):
 - a. Provide connection to underground metal domestic and fire protection (where present) water service pipe(s) that are in direct contact with earth for at least 10 feet at an accessible location not more than 5 feet from the point of entrance to the building.
 - b. Provide bonding jumper(s) around insulating joints/pipes as required to make pipe electrically continuous.

- c. Provide bonding jumper around water meter of sufficient length to permit removal of meter without disconnecting jumper.
 - 3. Metal In-Ground Support Structure:
 - a. Provide connection to metal in-ground support structure that is in direct contact with earth in accordance with NFPA 70.
 - 4. Concrete-Encased Electrode:
 - a. Provide connection to concrete-encased electrode consisting of not less than 20 feet of either steel reinforcing bars or bare copper conductor not smaller than 4 AWG embedded within concrete foundation or footing that is in direct contact with earth in accordance with NFPA 70.
 - 5. Provide additional ground electrode(s) as required to achieve specified grounding electrode system resistance.
- F. Bonding and Equipment Grounding:
 - 1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
 - 2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
 - 3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
 - 4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
 - 5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
 - 6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

2.2 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
 - 1. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 05 26:
 - 1. Use insulated copper conductors unless otherwise indicated.
 - a. Exceptions:
 - 1) Use bare copper conductors where installed underground in direct contact with earth.
 - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
 - 1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
 - 2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.

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3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Make grounding and bonding connections using specified connectors.
 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
 3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
 4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- D. Identify grounding and bonding system components in accordance with Section 26 05 53.

3.3 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS except Section 4.
- B. Perform inspections and tests listed in NETA ATS, Section 7.13.
- C. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- D. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

END OF SECTION

SECTION 02 41 13 – DEMOLITION, SITE CLEARING AND GRUBBING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Furnish all labor, materials, tools, equipment, appliances and necessary incidentals for the complete, demolition and removals as shown on the project plans and specifications as specified herein.
- B. Demolition and removal of existing restroom building, concrete driveway, concrete driveway apron, concrete curb and gutter, concrete walkways, concrete wall, rubber play surfacing, play sand, and site vegetation.
- C. Disconnection, removal and capping of identified utilities.
- D. Temporary erosion and sedimentation control measures.
- E. All items noted for removal shall become the property of the Contractor unless otherwise noted, as salvage to be returned to the City maintenance yard.

1.02 RELATED DOCUMENTS

The Standard Specifications for Public Works Construction, “Greenbook”, 2018 edition, is reference as if herein contained and the Contractor shall keep a copy at the project site. These Specifications shall supersede conflicts with information given in the “Greenbook”, unless otherwise determined by the Engineer.

1.03 REGULATORY REQUIREMENTS

- A. Notify affected utility companies before starting work and comply with their requirements.
- B. Conform to applicable codes for site clearing, demolition, safety of adjacent structures and improvements, dust control, run off control and disposal.
- C. Obtain required permits from authorities. The Contractor shall apply for and obtain all construction permits from outside agencies as needed to complete the site improvements. All fees for permits required by the outside agencies shall be paid by the Contractor.
- D. Roadway or sidewalk obstructions or closures will not be allowed without permits.

- E. Traffic: Traffic control shall conform to the minimum standards as set out in the Work Area Traffic Control Handbook published by Building News, Inc., 3055 Overland Avenue, Los Angeles, CA 90034. The safety of the public shall be a high priority.
- F. Protection of Existing Improvements: Provide protection necessary to prevent damage to existing improvements indicated to remain in place by approved methods and/or as authorized by the Engineer and conform to Section 300-1.2 of the Standard Specifications for Public Works Construction. Protect existing utilities indicated or made known to remain traversing the job site and serving existing adjacent facilities. Improvements requiring protection include, but are not limited to, adjacent pavement, concrete sidewalk, chain link fencing, block wall, trees and irrigation equipment.

1.04 SUBMITTALS

Submit to the Engineer, demolition and removal sequence and location and construction of barricades and fences prior to the commencement of such activities.

1.05 MOBILIZATION

Mobilization shall include expenditures for all preparatory work and operations including, but not limited to, those costs necessary for the movement of personnel, equipment, supplies, and incidental to the project site; for the establishment of all facilities necessary for work on the project; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site as well as the related demobilization costs anticipated at the completion of the project.

1.06 DUST CONTROL

The Contractor at its expense shall take whatever steps, procedures, or means as are required to prevent abnormal dust conditions being caused by its operations in connection with the execution of the Work; and on any unpaved road which the Contractor or any of its subcontractors are using, excavation or fill areas, demolition operations, or other activities. Control shall be by sprinkling, use of dust palliative, modification of operations, or any other means acceptable to agencies having jurisdiction.

Unless otherwise approved by the Engineer, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzle at least twice each working day to keep paved areas acceptably clean whenever construction, including restoration, is incomplete.

Prior to occupation of the project site, the contractor shall submit and receive approval of a fugitive dust control plan prepared in accordance with the City of South Gate Municipal Code. In accordance with said Ordinance, the Contractor shall provide the City security in an amount enough to guarantee compliance with the provisions of the permit. A copy of the ordinance is available for review at the City.

1.07 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- B. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

PART 2 - PRODUCTS

- 2.01 PRODUCTS: Furnish all labor and equipment necessary for the work. Provide materials not specifically described but required for completion of the work of this Section, as selected by the contractor subject to the approval of the Engineer.
- 2.02 All fill materials used for this work shall be approved in writing by the Engineer. Other materials used on this portion of the work shall conform to the applicable sections of the specifications or be approved in writing by the Engineer.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Provide, erect and maintain temporary barricades and security devices such as flashers, barrier tape, fencing and signs as necessary for safety. Temporary 6' ht. fencing shall be installed where necessary around the perimeter of the project site as directed by the Engineer.
- B. Protect existing structures, lighting, appurtenances, fencing, walls, sidewalks, curbing, and improvements which are not to be removed.
- C. Mark location of utilities. Maintain existing utility service.

3.02 DEMOLITION REQUIREMENTS

- A. Disconnect, remove and cap utilities within demolition areas.
- B. Remove concrete structures and footings to a minimum of four feet below finished grade within area of new construction.
- C. Remove waste materials and unsuitable or excess topsoil from City property and dispose of off site in a legal manner. Any removal shall conform to Section 300-1.3.2, subsections (a), (b) and (c) of the Standard Specifications for Public Works Construction. All spoil material shall become the property of the Contractor. The Contractor shall submit a certificate of acceptance of the spoil material to the Engineer from the owner of the disposal site.
- D. Burning is not permitted on City property. Disposal of waste material shall conform to Section 300-1.3.1 of the Standard Specifications for Public Works Construction.

PART 4 – PAYMENT

4.01 MOBILIZATION

Payment for Mobilization will be made at the contract **lump sum (LS)** price as set forth in the bid schedule and shall be considered full compensation for furnishing labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing, complete in place, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

4.02 DUST CONTROL

Payment for dust control will be made at the contract **lump sum (LS)** price as set forth in the bid schedule and shall be considered full compensation for furnishing labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing, complete in place, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

4.03 DEMOLITION (REMOVE LANDSCAPING)

Payment for demolition (remove landscaping) will be made at the **lump sum (LS)** contract price as set forth in the bid schedule and shall be considered full compensation for furnishing labor, materials, tools, equipment, and incidentals, and for doing all work involved in furnishing and installing, complete in place, as specified in the Standard Specifications and these Technical Specifications, and as

directed by the Engineer, and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 02 88 20 - PLAYGROUND EQUIPMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish all labor, materials, tools, equipment, appliances and necessary incidentals for the complete installation of all play structures, stand-alone play equipment, and rope climbing equipment.
- B. Related sections.
 - Section 03 30 53: Concrete Formwork
 - Section 12 93 00: Site Furnishings and Miscellaneous Materials
 - Section 32 18 16 Synthetic Resilient Surfacing– Play Areas
- C. Provide playground certification.
 - 1. The contractor shall retain a certified playground safety inspector at his own expense and provide a playground safety certification report.
 - 2. Any discrepancies found in the playground safety report shall be resolved to the satisfaction of the city prior to acceptance of the playground and prior to the start of the maintenance period.
- D. Definitions.
 - 1. City: City of Costa Mesa.
 - 2. Engineer: City Engineer, or the City Engineer's designated representative.
 - 3. ASTM: American Society of Testing Materials
- E. All vendors, suppliers, and manufacturer's representatives and the associated addresses, phone and fax numbers on the Plans and in the Specification are listed for convenience only. They are subject to change and their inclusion in no way constitutes an endorsement by the City.

1.02 SUBMITTALS

- A. Product Data: Submit complete manufacturer's descriptive literature and specifications.
- B. Shop Drawings: Submit Shop Drawings describing the fabrication and installation of equipment proposed for use.

- C. Samples: Submit the manufacturer's standard palettes for the selection of color.
- D. Calculations:
 - 1. Provide Structural calculations for all materials proposed as required by local building code.
 - 2. Design Data: Submit engineering' calculations confirming the design of the play equipment, structures, and protective devices proposed for use.
 - a. Calculations for framing members, steel supports, and anchorage to the structure shall be prepared and signed by a Structural Engineer currently licensed to practice in the State of California.
- E. A Certificate of Insurance shall be provided by all equipment manufacturers.

1.03 SUBSTITUTIONS

- A. Submit three (3) sets of a typewritten list of equipment and materials as specified to the Engineer within twenty-one (21) days after award of contract. This list shall give the name, model number, and manufacturer, and shall be accompanied by cut sheets or reproductions of catalog pages for all of the equipment and material to be installed.
- B. Approval of substitutions will not relieve the Contractor from complying with the requirements of the Contract Documents, Plans and Specifications. Pay at Contractor's sole expense for all changes caused by approved substitutions which affect other items of work.
- C. Substitutions will be rejected if materials proposed do not meet or exceed those specified on the plans or within the contract documents. Comparison for proposed substitutions shall be provided in writing by the contractor.
 - 1. Product equivalency shall be base on maintaining the design intent as well as a qualitative analysis of strength and durability, Finishes, UV Exposure, warranty, and cost and savings to city.

1.04 FIELD CONDITIONS

- A. Field Measurements: The contractor shall be responsible for verifying all field measurements prior to the installation if the play equipment and the surrounding hardscape.
- B. The contractor shall be responsible for making any adjustments necessary to ensure the safety fall zones with-in the play areas.

- C. Any discrepancies within the layout of the design shall be immediately brought to the attention of the City Engineer, designer, and play equipment manufacturer's representative.
- D. Improper installation of play equipment resulting in a compromise or safety shall be corrected by the contractor at no additional cost to the city.
- E. All fall zone distances shall be field verified by the contractor prior to the installation of the adjacent hardscape and again prior to the installation of the synthetic grass surfacing. Fall zones shall be marked on the finished grade and reviewed by the City's designated representative.

1.05 WARRANTY

- A. Provide product warranty information for all items included in this section.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Design, play value, materials, and warranty are based on the use of products manufactured by:

1. UPC Parks
16538 Clear Creek Road
Redding, CA 96001
Phone: 530-605-2664
E-mail: info@upcparks.com
2. Miracle Recreation
878 E Highway 60
Monett, MO 65708
Phone: 888-458-2752

Regional Representative:
Miracle Playground Sales
9106 Pulsar Ct. Unit C
Corona CA 92883
Fax (877) 215-3869
Phone: 800-264-7225 x311
Contact: John Jason
Direct: 714-271-2983
E-mail: John@miracleplayground.com

3. Landscape Structures
601 7th Street South
Delano, MN 55328
Phone: 888-438-6574
E-mail: info@playlsi.com

Regional Representative:
Coast Recreation
3151 Airway Ave, Suite A3
Costa Mesa, CA 92626
Fax: 714-619-0106
Phone: 714-619-0100
Contact: Gregg Rogers
Direct: 949-633-1180
E-mail: grogers@coastrecreation.net

2.02 MATERIALS

See Construction Details for specific playground components.

PART 3 EXECUTION

3.01 INSTALLATION

- A. The installing contractor shall provide proof experience with references showing 5 similar projects constructed within the past 5 years.
- B. General: Install the playground equipment in accordance with the manufacturer's recommended procedures and installation sequence. Equipment shall be rigid, straight, plumb and level. Secure equipment with manufacturer's fastening devices.
- C. Foundations: Support holes shall be filled with concrete to the full required depth. The top of the concrete shall be 6" below finished grade. Primary supports shall be temporarily supported until concrete has sufficiently cured.
- D. Metal Connectors: Secure with pins or spot welding to prevent loosening of the connection.

3.02 CLEANING

- A. Clean surfaces of equipment thoroughly and leave ready for intended use.

3.03 CERTIFICATION

- A. The Contractor shall retain an independent certified playground safety inspector to review the play equipment after installation. The Playground inspector shall be certified by CPSI with no less than 5 years experience. The Playground safety inspector shall submit a letter report detailing any deficiencies or accessibility issues related to the design and manufacturing, or installation of the structure.
- B. Any deficiencies in the playground as noted for immediate correction by the certified playground inspector shall be reconciled by the contractor prior to acceptance at no additional cost to the city.

PART 4 PAYMENT

4.01 PLAY EQUIPMENT (INCLUDING INDIVIDUAL COMPONENTS, TAX, FREIGHT, AND INSTALLATION)

Payment for Play Equipment (including individual components, tax, freight and installation) will be made at the lump sum contract price as set forth in the bid schedule.

END SECTION

SECTION 03 11 13 - CONCRETE FORMWORK

PART 1: GENERAL

1.01 DESCRIPTION

- A. The General Provisions shall apply to all Concrete Formwork operations. Provide all labor, materials, tools, transportation, equipment and incidentals necessary to perform work as indicated on the Plans and as herein specified.
- B. Related Section.

Section 03 30 53: Miscellaneous Concrete
- C. The Standard Specifications for Public Works Construction, "Greenbook", latest edition, is referenced as if herein contained and the Contractor shall keep a copy at the project site. These Specifications shall supersede conflicts with information given in the "Greenbook", unless otherwise determined by the City.
- D. Definitions.
 - 1. City: City of Costa Mesa.
 - 2. Engineer: City Engineer, or the City Engineer's designated representative.
 - 3. ASTM: American Society of Testing Materials

1.02 QUALITY ASSURANCE

- A. Comply with all applicable local, state, federal requirements regarding materials, methods of work, and disposal of excess and waste materials.
- B. Manufacturer's directions, specifications and detailed drawings shall be followed in all cases where articles used furnish directions covering points not delineated on the Plans or Specifications.
- C. The work included in this Section shall be done to the satisfaction of the Engineer. The decision by the Engineer as to the true construction meaning of the Plans and Specifications will be final.

PART 2: PRODUCTS

2.01 MATERIALS

- A. Where finish concrete is below grade, plywood or sawed lumber formwork shall be constructed of substantial material as selected by the Contractor.
- B. Where finished concrete is above grade and scheduled to be exposed, use Ply form Class I and II B-B, EXT-DFPA.
- C. Form coating shall be a non-grain-raising and non-staining type that will not leave residual matter on the surface of the concrete or adversely affect bonding to concrete of paint, plaster, or other applied materials.
- D. Portland cement shall be Type V, ion alkali and shall conform to ASTM C150.

PART 3: EXECUTION

3.01 INSTALLATION

- A. All concrete above grade shall be cast in plywood or sawed lumber forms.
- B. Concrete below grade may be poured directly against earth in open trenches.
- C. All forms shall be constructed true to line and level, sufficiently tight to prevent leakage of mortar, and shall conform exactly to the dimensions of the finished concrete as shown on the drawings. Forms for curved surfaces shall be so constructed and placed that the finished surface shall not deviate from the arc of the curve; flat spots will not be accepted.
- D. Where studs in formwork are spaced not over 12" o.c., 5/8" minimum plywood shall be used. Where studs are spaced not over 16" o.c., 3/4" minimum plywood shall be used.
- E. Place long dimension of plywood sheets perpendicular to direction of studs.
- F. Forms and metal reinforcement shall be checked and approved by the Engineer before concrete is placed.

3.02 REMOVAL OF FORMS

Do not disturb or remove forms until the concrete has developed enough strength to safely sustain its own weight and the superimposed loads above. After

concrete is placed, the following minimum time periods shall elapse before the removal of forms.

ITEM	FORMS	SHORING
Sides of walls and edge of slabs and footings	3 days	5 days

PART 4: PAYMENT

Concrete formwork will be considered as included on other items of work and no additional payment will be made therefor.

END OF SECTION

SECTION 03 30 53 - MISCELLANEOUS CONCRETE

PART 1: GENERAL

1.01 DESCRIPTION

- A. The General Provisions shall apply to all miscellaneous concrete work operations. Provide labor, materials, tools, transportation, equipment and incidentals necessary to perform work as indicated on the Plans and as herein specified.
- B. Related Sections.

Section 03 10 00 - Concrete Formwork
Section 12 93 00 - Site Furnishings and Miscellaneous Materials
- C. The Standard Specifications for Public Works Construction, "Greenbook", 2018 edition, is referenced as if herein contained and the Contractor shall keep a copy at the project site. These Specifications shall supersede conflicts with information given in the "Greenbook", unless otherwise determined by the Engineer.
- D. References
Refer to Geotechnical Investigation Document(s)
Refer to American Concrete Institute
Refer to State of California Department of Transportation (Cal Trans) Standard Specifications (DTSS)
Refer to applicable ASTM Specifications
- E. Definitions.
 - 1. City: City of Costa Mesa
 - 2. Engineer: City Engineer, or the City Engineer's designated representative.
 - 3. ASTM: American Society of Testing Materials

1.02 QUALITY ASSURANCE

- A. Comply with all applicable local, state, federal requirements regarding materials, methods of work, and disposal of excess and waste materials.
- B. Manufacturer's directions, specifications and detailed drawings will be followed in all cases where articles used furnish directions covering points not delineated on the Plans or Specifications.

- C. The work included in this section will be done to the satisfaction of the Engineer. The decision by the Engineer as to the true construction meaning of the Plans and Specifications will be final.
- D. Material quality standards and testing procedures shall be in accordance with all ASTM standards and testing procedures and shall be the latest requirements.
 - 1. All tests shall be made by a testing laboratory acceptable and approved by the Engineer.
 - 2. One mechanical analysis and one decantation test shall be made of the sand and coarse aggregate proposed for the work.
 - 3. Concrete specimens shall be taken when directed by the Engineer. At least one pair of specimens shall be taken from each pour of concrete or from each one-hundred cubic yards of concrete or major fraction thereof. One cylinder from each pair shall be tested at seven (7) days. One from each pair shall be tested at twenty-eight (28) days. Concrete for specimens shall be taken from place of deposit. Specimens shall be prepared and tested in accordance with the latest ASTM specifications.
 - 4. Additional tests shall be made when and as directed by the Engineer. Cost of additional tests shall be borne by Contractor.
 - 5. Should concrete strengths do not attain the minimum specified at twenty-eight (28) days, the area of substandard work shall be examined by the Engineer. The defective concrete shall be removed between expansion joint and replaced or the work shall be strengthened in a manner as directed by the Engineer.
 - 6. The cost of all examination and testing of defective material, as well as corrective measures, shall be borne by the Contractor.
- E. Reinforcing Steel: All steel shall be Grade 60 billet steel conforming to ASTM A-615.

1.03 SUBMITTALS:

- A. Shop Drawings: Submit for concrete slabs showing dimensioned locations and types of construction and expansion joints.
- B. Samples: Prepare minimum 4-foot square samples of each required slab finish excluding only monolithic trowel and float finishes. Include a transverse expansion joint, scoring, and edging.

1.04 JOB CONDITIONS

The Contractor shall be responsible for the coordination and proper relation of his work to existing site improvements and utilities and to the work of all trades. The Contractor shall visit the site and be thoroughly familiar with all details of the work and working conditions and verify all dimensions in the field. Protect all existing improvements to remain on and adjacent to the project site during construction. Repair at its sole cost, all damages resulting from its operations or negligence.

PART 2: PRODUCTS

2.01 MATERIALS

- A. Concrete flatwork and headers shall have a minimum compressive strength at 28 days of 2,500 psi.
- B. Concrete walls have a minimum compressive strength at 28 days of 3,000 psi.
- C. Portland Cement shall be Type V, low alkali, and shall conform to ASTM C150.
- D. Concrete aggregate shall conform to ASTM C33. All aggregate shall be well graded and selected from a source that has a proven history of non-reactivity. Maximum aggregate size shall be 3/4 inch.
- E. Fine aggregate shall consist of washed natural sand having hard, strong and durable particles and which does not contain more than 2% by weight of clay, loam, shale, alkali, organic matter or other deleterious substances.
- F. Coarse aggregate shall consist of clean, hard, fine grained, sound crushed rock or gravel, which does not contain more than 5% by weight of flat, chip-like, thin, elongated, friable or laminated pieces. Any piece having a major dimension in excess of two and one-half (2 1/2) times the average thickness and which will adversely affect the strength of the concrete shall not be used.
- G. Water shall be clean and free from deleterious amounts of acids, alkalis, and organic materials.
- H. Each component of the concrete mix shall be supplied from the same source for the entire project.

2.02 PROPORTIONS AND MIXING

- A. The concrete shall be composed of cement, sand and coarse aggregate in the proportions as determined by the testing laboratory. Cost of mix design shall be borne by Contractor.
- B. Slump: Adjust quantity of water so concrete at time of placing does not exceed the following slumps when tested according to ASTM C143. Use the minimum water necessary for workability required by part of structure being cast.

Part of Structure	Maximum Slump Inches	Maximum Water-Cement Ratio
Footings, foundation walls, and mass concrete, not reinforced	4	0.6
Slabs on grade, reinforced and non-reinforced	3	0.45
Reinforced concrete over 8" thick	4	0.5
Reinforced concrete 8" or less thick	4-1/2	0.5
All other concrete	4	0.5

- C. The concrete shall be mixed as follows:
1. Each transit mixer shall be equipped with automatic devices for recording the number of revolutions of the drum prior to completing the mixing, with peripheral drum speed of approximately 200 feet per minute.
 2. Transit-mix concrete shall be mixed for a period of not less than ten (10) minutes. At least three (3) minutes of the mixing period shall be immediately prior to discharging at the job.
 3. Transit-mix concrete shall not be delivered to the work with the total specified amount of water incorporated therein. Two (2) gallons of water per cubic yard shall be withheld, and may be incorporated in the mix, before the concrete is discharged from the mixer truck.
 4. The concrete, at time of placing, shall be in such condition that it can be properly placed.

2.03 MISCELLANEOUS CONCRETE

- A. Concrete Footings
- B. Concrete Flatwork with Topcast Top-Surface Retarder Finish
- C. Concrete Flatwork with Heavy Sand Blast Finish

PART 3: EXECUTION

3.01 PLACING CONCRETE

- A. Before the placing of any concrete, all forms shall be thoroughly cleaned and wet. Concrete shall be poured into forms immediately after it is mixed, and so that no separation will occur. No concrete which has stood for more than fifteen (15) minutes after leaving the mixer shall be used. Concrete shall be rejected if not placed in final position within ninety (90) minutes after water is first added to the batch.
- B. Maximum free drop of concrete shall not be more than 5'-0". Use tremies in deep sections.
- C. The location of all stoppages shall be approved by the Engineer.
- D. The flow surface of the freshly poured concrete shall be level whenever any pour is stopped, and tight dams shall be built as necessary to accomplish this result. Construction joints shall be made only when unavoidable, and then only at the point determined by the Engineer. Details of such joints shall be as directed by the Engineer.
- E. Before the placing of any concrete, the surface of the previously poured concrete shall be wet.
- F. Install concrete and cement finish work true to lines, dimensions, levels, and finish with smooth unblemished surfaces for exterior finishes specified on Plans.
- G. Remove and replace defective concrete or cement work with new materials. Permission to patch any defective area shall not be a waiver of the right of the City to require complete removal of defective work if patching does not restore quality and appearance of work.
- H. No advertising impression, stamp, or mark of any description will be permitted on surface of concrete or cement finish.

3.02 CEMENT FINISH

- A. Compact and tamp concrete as specified to bring 3/8" of mortar to surface, wood float to straight edges and screeds, and apply following finishes. Do not use steel or plastic floats of any kind for initial floating operations. Unless otherwise specified, do not apply finishes until surface water disappears and surface is sufficiently hardened. Remove any bleed water and laitance as it appears.
- B. The color for concrete paving shall be as shown on the plans.

3.03 EXPANSION AND CONTROL JOINTS

- A. Expansion joint material shall be as noted on the Plans.
- B. Locate expansion and control joints to least impair the strength and appearance of the structure. In no case place an intersecting construction joint in such a way that two intersecting walks are separated by a construction or control joint at the point of intersection. Transition curves shall be part of a continuous pour of the intersection slab.
 - 1. Expansion joints shall be a maximum of twenty feet (20') apart, with control joints a maximum of ten feet (10') apart. Exception to this are specialty work joints which will be laid out as shown on the Plans.
 - 2. The Contractor shall obtain the Engineer's approval of layout showing proposed location of joints before pouring concrete.
- C. Caulking of expansion joints where called for on the Plans shall be done with a non-tracking, multi-part flow type, self-leveling, polyurethane sealant manufactured by Chem-Seal, Grace, 3-H or approved equivalent.
 - 1. Color shall match the color of the concrete where the expansion joint occurs unless shown otherwise on the plans.
 - 2. Caulking shall be done by an experienced applicator in a workmanlike manner, in smooth straight runs, after thoroughly cleaning and priming joints.
 - 3. All work shall be done in strict accordance with manufacturer's printed recommendations. Do not permit traffic to travel over seated joints until sealer has fully cured.
 - 4. A light dusting of fine sand will be required over wet sealer. Contractor to discuss option with City Engineer.

3.04 QUALITY CONTROL

- A. Smoothness tolerance exterior cement finish surfaces shall be of such smoothness and evenness that they shall contact the entire length of a 10' straight edge laid in any direction, with an allowable tolerance of 1/8 inch. Any operations necessary to achieve this result shall be performed by the Contractor at no additional cost to the City.
- B. Inspections will be provided as necessary. Call for inspection two (2) working days prior to need.
- C. The Contractor shall call for inspection during specific phases of construction. They shall include:
 - 1. All form work prior to pouring.
 - 2. All footings prior to pouring.
 - 3. Subgrade prior to pouring.
 - 4. Drag form approval.
- D. Contractor shall notify the Engineer twenty-four (24) hours prior to pouring any concrete.
- E. Any work covered prior to inspection shall be opened to view by the Contractor at his expense.

3.05 TESTING

- A. Compression tests of concrete shall be made as required by the Building Code except that compression tests of any grade of concrete shall be made whenever the quantity of that grade used in the project exceeds 25 cubic yards. At least two identical cylinders of each grade of concrete shall be taken of each 100 cubic yards of concrete or fraction thereof placed in the work. The cylinders shall be tested in a testing laboratory and test reports submitted to the City.
- B. Storage of test cylinders on the site and after delivery to the testing shall be in accordance with ASTM Designation C31.
 - 1. Should the strength by test fail, the mix shall be adjusted so that the resulting concrete shall comply with the minimum requirements, and all additional expense resulting from such adjustment shall be borne by the Contractor.

2. Should the strength of any grade by test fall below minimum, concrete from the defective pours which is in place may be tested by the core method. If such tests show the concrete to be defective, the concrete shall be removed and replaced or adequately strengthened as required under the governing Code. All expenses involved shall be borne by the Contractor.

PART 4: PAYMENT

4.01 CONCRETE FOOTINGS

Payment for concrete footings for various walls, planters, and site furnishings will be considered as included in other items of work and no additional payment will be made, therefore.

4.02 CONCRETE FLATWORK WITH TOPCAST TOP-SURFACE RETARDER FINISH

Payment for Concrete Flatwork with Topcast Top-Surface Retarder Finish will be made at the contract unit price per square foot as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.03 CONCRETE FLATWORK WITH HEAVY SAND BLAST FINISH

Payment for concrete flatwork with sand blast finish will be made at the contract unit price per square foot as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

END OF SECTION

SECTION 09 96 23 – NON-SACRIFICIAL ANTI-GRAFFITI COATING

PART 1: GENERAL

1.01 DESCRIPTION

- A. Provide all labor, materials, tools, transportation and incidentals to provide and field apply the Non-sacrificial Anti-Graffiti coating as indicated on the Plans and as herein specified.
- B. All vendors, suppliers, and manufacturer's representatives and the associated addresses, phone and fax numbers on the Plans and in the Specifications are listed for convenience only. They are subject to change and their inclusion in no way constitutes an endorsement by the City.
- C. Related Documents.
Drawings and general provisions of the Contract

1.02 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section. Low-sheen refers to a finish with a gloss range between 30 and 40 when measured at a 60-degree meter.
- B. General: Standard anti-graffiti properties defined in ASTM D 6578 apply to this Section.

1.03 SUBMITTALS AND SUBSTITUTIONS

- A. Submit three (3) sets of a typewritten list of each component of the coating system as specified to the Engineer within twenty-one (21) days after award of contract. This list shall give the name, catalog number, and manufacturer, and shall be accompanied by cut sheets or reproductions of catalog pages for all of the equipment and material to be installed. The submittal shall include a manufacturer's certification that all products supplied comply with the requirements indicated that limit the number of VOCs in coating products.
- B. Approval of substitutions will not relieve the Contractor from complying with the requirements of the Contract Documents, Plans and Specifications.

1.04 QUALITY ASSURANCE

- A. The Specifications only indicate the quality and workmanship to be performed rather than a detailed description of the performance of the work. Install said site components, materials and equipment in a functional manner and in which they were intended in the drawings.
- B. **Applicator Qualifications:** Engage an experienced applicator who has completed anti-graffiti coating system applications similar in material and extent to those indicated for Project and whose work has a record of successful in-service performance.
- C. **Source Limitations:** Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats.
- D. **Benchmark Samples (Mockups):** Provide a full-coat benchmark finish sample for each substrate required.
- E. Duplicate finish of approved sample Submittals. Architect will select one area or surface of each different substrate to represent surfaces and conditions for application. **Wall Surfaces:** Provide samples on at least 100 sq. ft. (9 sq. m), or as directed by Architect, of wall surface for each different substrate.
- F. Apply coatings to each surface as specified. Provide the required sheen of each surface.
- G. After finishes are accepted, City Engineer will use the surface to evaluate coating systems of a similar nature.
- H. Final approval of coatings will be from benchmark samples.
- I. **Preinstallation Conference:** Conduct conference at Project site to comply with requirements.
- J. In the event of any discrepancies between the Plans and the Specifications, the final decision as to which will be followed shall be made by the Engineer, or his designated representative. In the event the installation is contradictory to the direction of the Engineer, the installation shall be rectified by the Contractor at no additional cost to City.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label with the following information:
 - Name or title of material.
 - Product description (generic classification or binder type).
 - Manufacturer's stock number and date of manufacture.
 - Contents by volume, for vehicle constituents.
 - Thinning instructions.
 - Application instructions.
 - Handling instructions and precautions.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a temperature range between 40 and 95 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
- C. Protect materials from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and applying coatings.

1.06 PROJECT CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 45 and 85 deg F.
- B. Limitations: Proceed with application only when the following existing and forecasted weather and substrate conditions permit coatings to be applied according to manufacturers' written instructions and warranty requirements.
- C. Concrete surfaces and mortar have cured for more than 28 days. Rain is not predicted within 24 hours. Application proceeds more than 24 hours after surfaces have been wet, unless otherwise recommended by manufacturer.
- D. Windy conditions do not exist that may cause anti-graffiti coatings to be blown onto vegetation or surfaces not intended to be treated.
- E. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

- F. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before proceeding with or continuing coating operation. Work may continue during inclement weather only if areas and surfaces to be coated are enclosed and temperature within the area can be maintained within limits specified by manufacturer during application and drying periods.

1.07 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer and applicator agree(s) to repair or replace materials that fail to maintain graffiti repellency within specified warranty period.
- B. Warranty Period: Ten years from date of Substantial Completion.

PART 2: PRODUCTS

2.01 MATERIAL & MANUFACTURERS

- A. Whenever a material or process is delineated or specified by patent, proprietary name or process, or manufacturer's name, such specifications are used for the purpose of facilitating the description of material or process desired. Approved equals are acceptable.
- B. Information pertaining to the product as to the manufacturer, material, model, color, finish, etc. is shown on the plan.

2.02 GENERAL MATERIALS AND MANUFACTURERS

- A. Material Compatibility: Provide primers, undercoats, and finish-coat materials that are compatible with one another and substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's highest grade of the various anti-graffiti coatings specified. Materials not displaying manufacturer's product identification are not acceptable.
- C. Proprietary Names: Use of manufacturer's proprietary product names to designate materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

- D. VOC Classification: Provide anti-graffiti coating materials, including primers, undercoats, and finish-coat materials, that have a VOC classification of 100 g/L or less

2.03 EXTERIOR ANTI-GRAFFITI COATING SYSTEMS

- A. Provide the following 3 coat application over exterior cast-in-place concrete; concrete and brick masonry vertical surfaces; and where indicated per plans:
 - a. Primer: Acrylic/Silicon UV stable bonding primer applied at spreading rate recommended by manufacturer.
 - 1. SCS-002SP Sealer Prime Waterborne Sealer; Seicoat Corporation 323-263-4575 www.seicoat.com.
 - b. Intermediate Coat: One component nanotechnological anti-graffiti coating applied at spread rate recommended by manufacturer to a dry film thickness of 1.0. Product must be a Level 1 Antigrffiti coating as specified by ASTM D6578.
 - 1. GPA-300 Graffiti Proofer; Seicoat Corporation 323-263-4575
 - c. Finish Coat: One component nanotechnological anti-graffiti coating applied at a spread rate recommended by manufacturer to a thickness of 2.0 mils. Product must be a Level 1 Antigrffiti coating as specified by ASTM D6578.
 - 1. GPA-300 Graffiti Proofer; Seicoat Corporation 323-263-4575 Product must meet Anti-graffiti test defined in ASTM D 6578.

PART 3: EXECUTION

3.01 EXAMINATION

- A. Verify site conditions and surfaces are ready to receive work.
- B. Verify that layout and site are compatible.
- C. With Applicator present, examine substrates and conditions under which anti-graffiti coatings will be applied, for compliance with coating application requirements.
- D. Apply coatings only after unsatisfactory conditions have been corrected and surfaces to receive coatings are thoroughly dry.

- E. Start of application is construed as Applicator's acceptance of surfaces within that particular area.
- F. Coordination of Work: Review other Sections in which primers or other coatings are provided to ensure compatibility of total systems for various substrates. On request, furnish information on characteristics of specified finish materials to ensure compatible primers.

3.02 PREPARATION

- A. General: Remove plates, machined surfaces, and similar items already in place that are not to be coated. If removal is impractical or impossible because of size or weight of item; provide surface-applied protection before surface preparation and coating.
- B. After completing coating operations, reinstall items that were removed; use workers skilled in the trades involved.
- C. Cleaning: Before applying anti-graffiti coatings, clean substrates of substances that could impair bond of coatings. Remove oil and grease before cleaning.
- D. Schedule cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.
- E. Surface Preparation: Clean and prepare surfaces to be coated according to manufacturer's written instructions for each substrate condition and as specified.
- F. Prepare concrete, brick, concrete masonry block, and cast stone surfaces to be coated. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods to prepare surfaces.
- G. Use abrasive blast-cleaning methods if recommended by coating manufacturer.
- H. Do not coat surfaces if moisture content exceeds that permitted in manufacturer's written instructions.
- I. Material Preparation: Carefully mix and prepare coating materials according to manufacturer's written instructions.
- J. Maintain containers used in mixing and applying coatings in a clean condition, free of foreign materials and residue.

- K. Stir materials before applying to produce a mixture of uniform density. Stir as required during application.
- L. Do not stir surface film into the material. Remove film and, if necessary, strain coating material before using.
- M. Use only the type of thinners approved by manufacturer and only within recommended limits.
- N. Protect adjoining work, including sealant bond surfaces, from spillage or blow-over of coating system components.
- O. Cover adjoining and nearby surfaces of aluminum and glass if there is the possibility of components being deposited on surfaces. Cover live plants and grass.
- P. Coordination with Sealants: Do not apply anti-graffiti coatings until sealants for joints adjacent to surfaces receiving coatings have been installed and cured.
- Q. Anti-graffiti coating work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, anti-graffiti coatings, and sealant materials identical to those used in the work.
- R. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 APPLICATION

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect the substrate before application of anti-graffiti coatings and to instruct Applicator on the product and application method to be used.
- B. General: Apply anti-graffiti coatings according to manufacturer's written instructions.
- C. Use applicators and techniques best suited for the material being applied. Do not apply anti-graffiti coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film. Coating surface treatments and finishes are indicated in the coating system descriptions. Provide finish coats compatible with primers used. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convactor covers, grilles, covers for finned-tube radiation,

and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.

- D. Coat surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.
- E. Scheduling Coating: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for coating as soon as practicable after preparation and before subsequent surface deterioration.
- F. The number of coats and film thickness required is the same regardless of application method.
- G. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. Allow sufficient time between successive coats to permit proper drying.
- H. Give special attention to edges, corners, crevices, and similar surfaces to ensure that they receive a dry film thickness equivalent to that of flat surfaces.
- I. Application Procedures: Apply coatings according to manufacturer's written instructions.
- J. Spray Equipment: Use mechanical methods to apply coating as permitted by manufacturers written instructions and governing regulations.
- K. Use spray equipment with orifice size recommended by manufacturer for material and texture required.
- L. Minimum Coating Thickness: Apply each material no thinner than manufacturer's recommended spreading rate.
- M. Provide total dry film thickness of the entire system as recommended by manufacturer.
- N. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by manufacturer, to material required to be coated or finished that has not been prime coated by others.
- O. Recoat primed and sealed substrates immediately if there is evidence of suction spots or unsealed areas in first coat, to ensure a finish coat with no burn-through or other defects caused by insufficient sealing.

- P. Completed Work: Match approved Samples for shade and coverage. Remove, refinish, or recoat work that does not comply with specified requirements.

3.04 CLEANING

- A. Immediately clean anti-graffiti coatings from adjoining surfaces and surfaces soiled or damaged by application as work progresses. Repair damage caused by application. Comply with manufacturer's written cleaning instructions.

3.05 PROTECTION

- A. Protect work of other trades, whether being coated or not, against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.
- B. Provide "Wet Paint" signs to protect newly coated finishes. After completing coating operations, remove temporary protective wrappings provided by others to protect their work.
- C. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

PART 4: PAYMENT

4.01 NON-SACRIFICIAL ANTI-GRAFFITI COATING

Non-Sacrificial Anti-Graffiti Coating will be considered as included on other items of work and no additional payment will be made therefor.

END OF SECTION

SECTION 12 93 00 - SITE FURNISHINGS AND MISCELLANEOUS MATERIALS

PART 1: GENERAL

1.01 DESCRIPTION

- A. Provide all labor, materials, tools, transportation and incidentals to provide and install Site Furnishings and Miscellaneous Materials as indicated on the Plans and as herein specified.
- B. Related Section.
Section 03 30 53 - Miscellaneous Concrete.
- C. The Standard Specifications for Public Works Construction, "Greenbook", 2018 edition, is referenced as if herein contained and the Contractor shall keep a copy at the project site. These Specifications shall supersede conflicts with information given in the "Greenbook", unless otherwise determined by the City.

1.02 QUALITY ASSURANCE

- A. Shop Drawings: Provide shop drawings for each component and each item of site furniture. Shop drawings shall indicate layouts, component locations, dimensions, set-backs, details of assembly, anchors, footing details and all appurtenances required to assemble components. Three (3) sets of shop drawings shall be submitted to the City within twenty-one (21) calendar days after award of contract.
- B. Product Data: Provide data on all site furniture, equipment and materials, including accessories, utility characteristics, connection requirements and product cut-sheets. Three (3) sets of product data shall be submitted to the City within twenty-one (21) calendar days after award of contract.
- C. Manufacturer's Installation Instructions: Provide three (3) sets of the manufacturer's installation instructions to the City within twenty (21) calendar days of award after the contract.
- D. All vendors, suppliers, and manufacturer's representatives and the associated addresses, phone and fax numbers on the Plans and in the Specifications are listed for convenience only. They are subject to change and their inclusion in no way constitutes an endorsement by the City.

1.03 DELIVERY, STORAGE AND HANDLING

Store and protect all site furnishings. Contractor shall be responsible for all site furnishings and in the event of missing or stolen items, they shall be replaced at the CONTRACTOR'S sole expense.

1.04 RELATED REQUIREMENTS

- A. Obtain all permits (except permanent easements) and licenses and give notice and pay for all fees necessary to complete work under this Section as delineated or specified at no additional cost to City.
- B. Manufacturer's directions, specifications and detailed drawings will be followed in all cases where the articles used furnish directions and cover points not delineated on the Plans or in the Specifications.
- C. The Specifications only indicate the quality and workmanship to be performed rather than a detailed description of the performance of the work. Install said site furnishings, materials and equipment in such a manner that they will operate efficiently and evenly.
- D. In the event of any discrepancies between the Plans and the Specifications, the final decision as to which will be followed shall be made by the Engineer, or his designated representative. In the event the installation is contradictory to the direction of the Engineer, the installation shall be rectified by the Contractor at no additional cost to City.

1.05 REGULATORY REQUIREMENTS

- A. The work shall conform to Americans with Disabilities Act (ADA), U.S. Consumer Product Safety Commission-Public Playground Handbook for Safety, California Disabled Access Regulations-Title 24 and the State Play Equipment Guidelines (SB 2733). The Contractor shall be responsible for compliance and provide written documentation for compliance to the Engineer upon installation of all equipment and material governed by said regulations.
- B. All work shall conform to the City standards for public construction and any other agency's standards for public construction having jurisdiction over the work.
- C. Provide certificate(s) of compliance from authority(s) having jurisdiction over the work. The certificate(s) shall indicate approval of products and their installation. Comply with all applicable local, state, federal requirements regarding materials, methods of work, and disposal of excess and waste materials.

1.06 SAMPLES AND SUBSTITUTIONS

- A. All workmanship, equipment, materials, and articles incorporated shall be the best available grade of their respective kind.

- B. Provide a sample of each component specified. Accepted samples may be used in the Work, subject to approval by the Engineer.

Submit three (3) sets of a typewritten list of equipment and materials as specified to the Engineer within twenty-one (21) days after award of contract. This list shall give the name, model number, and manufacturer, and shall be accompanied by cut sheets or reproductions of catalog pages for all of the equipment and material to be installed.

- C. Approval of substitutions will not relieve the Contractor from complying with the requirements of the Contract Documents, Plans and Specifications. Pay at Contractor's sole expense for all changes caused by approved substitutions which affect other items of work.

PART 2: PRODUCTS

2.01 MATERIAL

- Whenever a material or process is delineated or specified by patent, proprietary name or process, or manufacturer's name, such specifications are used for the purpose of facilitating the description of material or process desired. Approved equals are acceptable.

2.02 COMPONENTS

1. Precast Concrete Benches
2. Steel Trash & Recycle Receptacles
3. Precast Concrete Bench (Wing Tail)

PART 3: EXECUTION

3.01 EXAMINATION

- A. Verify site conditions and surfaces are ready to receive work.
- B. Verify that layout and site are compatible.

3.02 PREPARATION

- A. Layout and stake locations of components for approval by Engineer prior to installation.

- B. Review layout requirements with other affected work.

3.03 INSTALLATION

- A. Install in accordance with City standards and manufacturer's instruction.
- B. Provide concrete footings for site furnishings as detailed on the Plans or as herein specified.
- C. Place decomposed granite in moist condition and placed in a minimum 3" layer. Compact with a sod roller. Contractor to submit one cubic foot sample for approval.

3.04 SITE CONDITIONS

Promptly repair damage to facilities caused by construction operations. Cost of repair at Contractor's sole expense.

PART 4: PAYMENT

4.01 PRECAST CONCRETE BENCHES

- 1. Payment for Precast Concrete Benches will be made at the contract unit price as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved.

4.10 STEEL TRASH & RECYCLE RECEPTACLES

Payment for Steel Trash & Recycle Receptacles will be made at the contract unit price as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved.

4.16 PRECAST CONCRETE BENCH (WING TAIL)

Payment for Precast Concrete Bench (Wing Tail) will be made at the contract unit price as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved.

END OF SECTION

SECTION 32 18 16 – SYNTHETIC RESILIENT SURFACING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Poured-in-place playground surfacing system.
- B. Related Sections
 - a. SECTION 03 30 53 - Miscellaneous Concrete
 - b. SECTION 11 68 13 - Playground Equipment

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
 2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
 4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
 5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
 6. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
 7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

1.03 SYSTEM DESCRIPTION

Poured-in-place playground surfacing system is based on “Playbound System” available through Surface America, Inc. over aggregate sub-base.
PO Box 157, Williamsville, NY 14231. Phone: (800) 999-0555,

-
- A. Performance Requirements: Provide a 2-layer rubber-polyurethane playground surfacing system which has been designed, manufactured and installed to meet the following criteria:
 - 1. Shock Attenuation (ASTM F1292):
 - a. Gmax: Less than 200.
 - b. Head Injury Criteria: Less than 1000.
 - 2. Flammability (ASTM D2859): Pass.
 - 3. Tensile Strength (ASTM D412): 60 psi (413 kPa).
 - 4. Tear Resistance (ASTM D624): 140%.
 - 5. Water Permeability: 0.4 gal/yd²/second.
 - 6. Accessibility: Comply with requirements of ASTM F1951.

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and installation instructions.
- C. Verification Samples: Submit manufacturer's standard verification samples of 9" x 9" (229 x 229 mm) minimum.
- D. Quality Assurance/Control Submittals: Submit the following:
 - 1. Certificate of qualifications of the playground surfacing installer.
- E. Closeout Submittals: Submit the following:
 - 1. Warranty documents specified herein.
 - 2. Certificate of Installation by an independent third-party certified playground safety inspector

1.05 QUALITY ASSURANCE

- A. Qualifications: Utilize an installer approved and trained by the manufacturer of the playground surfacing system, having experience with other projects of the scope and scale of the work described in this section.

- B. Certifications: Certification by manufacturer that installer is an approved applicator of the playground surfacing system.
- C. International Play Equipment Manufacturers Association (IPEMA) certified.

1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).

1.07 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in steady or heavy rain.

1.08 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.
 - 1. Warranty Period: 5 years from date of completion of work

PART 2 PRODUCTS

2.01 POURED-IN-PLACE PLAYGROUND SURFACING SYSTEM

- A. Resilient Rubber Surfacing shall be from the following suppliers or approved equal:

PlayCore
544 Chestnut Street
Chattanooga, TN 37402
Phone: (877) 762 7563

Fax: (423) 425-3124
info@playcore.com

Regional Representative:
TotTurf
Phone: 714-904-8219
Fax: 855-700-8780
Contact: Vince Brantley
E-mail: vbrantley@playcore.com
Website: www.totturf.com

Surface America, Inc.
PO Box 157
Williamsville, NY 14231
Phone: (800) 999-0555 or (716) 632-8413
Fax: (716) 632-8324
E-mail: info@surfaceamerica.com
Website: www.surfaceamerica.com

SpectraTurf
555 S. Promenade Avenue, Suite 103
Corona, CA 92879
Phone: 800-875-5788 or 714-814-7594
Fax: 951-734-3630
Contact: Kassi Hove
Email: kassi.hove@spectraturf.com
Website: www.spectraturf.com

- B. Products/Systems. Poured-in-place playground surfacing system, including the following:
1. PlayBound Poured-In-Place Primer:
 - a. Material: Polyurethane.
 2. PlayBound Poured-in-Place Basemat:
 - a. Material: Blend of 100% recycled SBR (styrene butadiene rubber) and polyurethane.
 - b. Thickness: 2 1/2" (64 mm), per working drawings.
 - c. Formulation Components: Blend of strand and granular material.
 3. PlayBound Poured-In-Place Top Surface:
 - a. Material: Blend of recycled EPDM (ethylene propylene diene monomer) and polyurethane.
 - b. Thickness: 1/2", per working drawings
 - c. Material: Alaphatic binder. Blend with EPDM course.

- d. Color: Refer to Plans for color selection.
- e. Dry Static Coefficient of Friction (ASTM D2047): 1.0.
- f. Wet Static Coefficient of Friction (ASTM D2047): 0.9.
- g. Dry Skid Resistance (ASTM E303): 89.
- h. Wet Skid Resistance (ASTM E303): 57.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: Requests of materials offered as equivalents to those specified must be submitted and approved a minimum of five working days prior to the opening of bids.

2.03 MIXES

- A. Required mix proportions by weight:
 - 1. Basemat: minimum 14% polyurethane, (86% rubber).
 - 2. Top Surface: minimum 18% polyurethane, (82% rubber).

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the instructions and recommendations of the playground surfacing manufacturer.

3.02 EXAMINATION

- A. Verify fall zones and clearances prior to installing sub-base.
- B. Site Verification of Conditions: Verify that substrate conditions are suitable for installation of the playground surfacing system.
- C. Do not proceed with installation until unsuitable conditions are corrected.
- D. After installation of the play equipment and rubberized surfacing, the contractor shall submit to the city a playground safety report as prepared by an independent certified playground safety inspector.

3.03 PREPARATION

- A. Surface Preparation: Using a brush or short nap roller, apply primer to the substrate perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal (7.5 m²/L).

3.04 INSTALLATION

- A. Do not proceed with playground surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.
- B. Basemat Installation:
 - 1. Using screeds and hand trowels, install the basemat at a consistent density of 29 pounds, 1 ounce per cubic foot (466 kg/m³) to the specified thickness.
 - 2. Allow basemat to cure for sufficient time so that indentations are not left in the basemat from applicator foot traffic or equipment.
 - 3. Do not allow foot traffic or use of the basemat surface until it is sufficiently cured.
- C. Primer Application: Using a brush or short nap roller, apply primer to the basemat perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal (7.5 m²/L).
- D. Top Surface Installation and Security:
 - 1. Using a hand trowel, install top surface at a consistent density of 58 pounds, 9 ounces per cubic foot (938 kg/m³) to a nominal thickness of 1/2" (12.7 mm).
 - 2. Provide streamer barrier and traffic easles to protect Top Surface to cure.
 - 3. Allow top surface to cure for a minimum of 48 hours.
 - 4. Do not allow foot traffic or use of the surface until it is sufficiently cured.
 - 5. Provide evening and overnight security from a bonded and insured security agency for the protection of the top surface.
 - a. Security Agency (or equal)
PACWEST Security Services
(800) 372-2937
(714) 429-1300
(213) 413-3500
 - 6. At the end of the minimum curing period, verify that the top surface is

sufficiently dry and firm to allow foot traffic and use without damage to the surface.

3.05 PROTECTION

- A. Protect the installed playground surface from damage resulting from subsequent construction activity on the site.
- B. Provide security over night to protect the top surface installation.

PART 4 PAYMENT

4.01 PLAYGROUND PLAY SURFACE

Payment for "Playground Play Surface" shall be paid for at the contract price per lump sum (LS) as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.02 SECURITY

Payment for the security will be considered as included in other items of work and no additional payment will be made, therefore.

END OF SECTION

SECTION 32 31 00 – PVC CHAIN LINK FENCE

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Poly Vinyl Chloride (PVC) coated chain link fabric with PVC color coated galvanized steel framework and accessories for commercial or industrial applications.

1.02 RELATED SECTIONS

- A. Section 03 30 53 - Miscellaneous Concrete
- B. Section 03 10 00 - Concrete Formwork

1.03 REFERENCES

- A. ASTM A36 Standard Specification for Carbon Structural Steel
- B. ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of Hot-dip Galvanized Coatings
- C. ASTM B221 Standard Specification for Aluminum and Aluminum Alloy Bars, Rods, Wire Profiles and Tubes
- D. ASTM F552 Standard Terminology Relating to Chain Link Fencing
- E. ASTM F567 Standard Practice for Installation of Chain Link Fence
- F. ASTM F626 Standard Specification for Fence Fittings
- G. ASTM F668 Standard Specification for Polyvinyl Chloride (PVC) and Other Organic Polymer-Coated Steel Chain Link Fence Fabric
- H. ASTM F900 Standard Specification for Industrial and Commercial Swing Gates
- I. ASTM F934 Standard Specification for Standard Colors for Polymer-Coated Chain Link Fence Materials
- J. ASTM F1043 Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework
- K. ASTM F1083 Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures

- L. ASTM F1184 Standard Specification for Industrial and Commercial Horizontal Slide Gates
- M. ASTM F1664 Standard Specification for Polyvinyl Chloride (PVC) and Other Conforming Organic Polymer-Coated Steel Tension Wire Used With Chain Link Fence
- N. ASTM F1665 Standard Specification for Polyvinyl Chloride (PVC) and Other Conforming Organic Polymer-Coated Steel Barbed Wire Used With Chain Link Fence
- O. ASTM F1910 Standard Specification for Long Barbed Tape Obstacles
- P. ASTM F1911 Standard Practice for Installation of Barbed Tape
- Q. ASTM F2200 Standard Specification for Automated Vehicular Gate Construction
- R. UL 325 Door, Drapery, Gate, Louver and Window Operators
- S. WLG2445 Chain Link Fence Manufacturers Institute, Chain Link Fence Wind Load Guide for the Selection of Line Posts and Line Post Spacing

1.04 SUBMITTALS

- A. Changes in specifications may not be made after the bid date.
- B. Shop drawings: Layout of fences and gates with dimensions, details, and finishes of components, accessories, and post foundations.
- C. Product data: Manufacturer's catalog cuts indicating material compliance and specified options.
- D. Samples: If requested, samples of materials (e.g., fabric, wires, color, and accessories).

1.05 QUALITY ASSURANCE

- A. Manufacturer: Company having manufacturing facilities in the United States with 5 years experience specializing in manufacturing of chain link fence products.
- B. Fence contractor: Contractor having 5 years experience installing similar projects in accordance with ASTM F567.
- C. Tolerances: ASTM current specification and tolerances apply and supersede any conflicting tolerance.

- D. Substitutions: Alternate chain link products may be acceptable by the architect as equal if approved in writing ten days prior to bidding provided that the items submitted meet the specifications contained in this document.
- E. Single source: To ensure system integrity obtain the chain link system, framework, fabric, fittings, gates and accessories from a single source.

PART 2 - PRODUCTS

2.01 MANUFACTURER

Approved Manufacturer or Manufacture with an equivalent product:

Master Halco, Inc.
Phone (800) 229-5615

2.02 CHAIN LINK FENCE FABRIC

- A. Poly Vinyl Chloride (PVC) color coated steel chain link fabric per ASTM F668 Class 2b Fused and adhered to metallic coated steel wire.
- B. Size and Height: Refer to details.
- C. Selvage of fabric to be knuckled at top and knuckled at bottom.
- D. Color of chain link fabric per ASTM F934. Color to be Black

2.03 PVC COLOR COATED (BLACK) STEEL FENCE FRAMEWORK.

- A. Steel pipe: ASTM F1043 Group IA, ASTM F1083 standard weight schedule 40 hot-dip galvanized pipe having a zinc coating of 1.8 oz/ft² (550 g/m²) on the outside and 1.8 oz/ft² (550 g/m²) on the inside surface. Exterior of pipe to have F1043 PVC thermally fused color coating, minimum thickness 10 mils (0.254 mm).
Regular Grade: Minimum steel yield strength of 30,000 psi (205 MPa)
Intermediate Strength Grade: Minimum steel yield strength of 50,000 psi (344 MPa)
- B. Pipe End and Corner Post – Refer to Details
- C. Pipe Line Post - Refer to Details
- D. Pipe Rail and Braces – Refer to Details

2.04 FITTINGS

- A. All fittings to be PVC thermally fused color coated having a minimum thickness of 0.006" (0.152 mm) per ASTM F626. PVC color to match fabric and framework. Moveable parts, nuts and bolts to be field coated with PVC liquid touch up after installation.
- B. Post caps: ASTM F626 galvanized pressed steel, malleable iron, or aluminum alloy weather tight closure cap for tubular posts. Provide one cap for each post. "C" shaped line post without top rail do not require post caps. When top rail is specified provide line post loop tops to secure top rail.
- C. Rail ends: Galvanized pressed steel per ASTM F626, for connection of rails to post using a brace band.
- D. Top rail sleeves: 7" (178 mm) galvanized steel sleeve per ASTM F626.
- E. Wire ties: 9 gauge (0.148") (3.76 mm) galvanized steel wire for attachment of fabric to line posts and rails. Pre-formed hog ring ties to be 9 gauge (0.148") (3.76 mm) galvanized steel or aluminum for attachment of fabric to tension wire. Tie wire and hog rings PVC coated and in compliance with ASTM F626. Color to match fabric color.
- F. Brace and tension (stretcher bar) bands: ASTM F626 galvanized 12 gauge (0.105") (2.67mm) pressed steel by 3/4" (19mm) formed to a minimum 300 degree profile curvature for post attachment. Secure bands using minimum 5/16" (7.94 mm) galvanized carriage bolt and nut.
- G. Tension (stretcher) galvanized steel bars: One piece lengths equal to 2 inches (50 mm) less than full height of fabric with a minimum cross-section of 3/16" x 3/4" (4.76 mm x 19 mm) per ASTM F626. Provide tension (stretcher) bars where chain link fabric is secured to the terminal post.
- H. Truss rod assembly: Galvanized steel minimum 5/16" (7.9mm) diameter truss rod with pressed steel tightener, in accordance with ASTM F626
- I. Carriage bolts and nuts: Galvanized of commercial quality

2.05 TENSION WIRE

- A. Tension wire: Poly Vinyl Chloride (PVC) coated metallic coated steel tension wire per ASTM F 1664 9 gauge steel core wire, 0.148 (3.76 mm) PVC coating class and color to match chain link fabric

2.06 CHAIN LINK SWING GATES

- A. Single Swing Gates – Refer to detail for gate height and opening. Fabricate chain link swing gates in accordance with ASTM F900. Gate frame to be of welded construction. Weld areas to be protected with zinc-rich paint per ASTM A780 then over coated with liquid PVC to match frame. The gate frame members are to be spaced no greater than 8' 0" (2.44 m) apart horizontally or vertically. Exterior members to be 1.900" (48.3 mm) OD pipe, interior members when required shall be 1.660" (42.2 mm) OD pipe. PVC coated pipe to be Grade 1 ASTM F1083 per section 2.03. Chain link fabric to match specification of fence system. Fabric to be stretched tightly and secured to vertical outer frame members using tension bar and tension bands spaced 12" (304.8 mm) on center and tied to the horizontal and interior members 12" (304.8 mm) on center using 9 gauge galvanized steel ties per section 2.04.
- B. Hinges, hot dip galvanized pressed steel or malleable iron, structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180° (3.14 rad)
- C. Latch: Galvanized forked or U-Latch type capable of retaining gate in closed position and have provision for padlock. Latch shall permit operation from either side of gate. Provide a separate pipe for locking gate in open position.
- D. Double gates: Provide galvanized drop rod with center gate stop pipe or receiver to secure inactive leaf in the closed position. Provide galvanized pressed steel locking latch, requiring one padlock for locking both gate leaves, accessible from either side.
- E. Keeper to secure open leaves: Provide galvanized gate hold back keeper for each gate leaf over 5' (1524 mm) wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position.
- F. Latch, hinges, moveable parts may be field coated with liquid PVC.
- G. Gate posts: PVC color coated Grade 1 pipe ASTM F1083 per section 2.03. Refer to details for gate fabric height.

2.07 POST SETTING MATERIALS

- A. Concrete: Minimum 28 day compressive strength of 3,000 psi (20 MPa).

PART 3 EXECUTIONS

3.01 SITE EXAMINATION

- A. Survey of fence location to be provided by General Contractor.
- B. Verify areas to receive fencing are completed to final grade.

3.02 CHAIN LINK FRAMEWORK INSTALLATION

- A. Install chain link fence system in accordance with ASTM F567 and manufacturer's instructions.
- B. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30° or more.
- C. Space line posts uniformly – Refer to details for line post spacing.
- D. Concrete set posts: Dig holes in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" (914 mm) below surface, unless otherwise noted in details, in firm, undisturbed soil. Place concrete around posts in a continuous pour. Trowel finish around post and slope to direct water away from posts.
- E. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.
- F. Bracing: Install horizontal brace and truss assembly at mid-height or above for fences 6' (1829 mm) and over at each fabric connection to the terminal post. The diagonal truss rod is installed at the point where the brace rail is attached to the terminal post and diagonally down to the bottom of the adjacent line post. Place the truss rod in tension by adjusting the turnbuckle.
- G. Tension wire: If bottom rail not specified, install tension wires so that it will be located 4" (101.6 mm) up from bottom the fabric. If top rail is not specified, install the tension wire so that it will be located 4" (101.6 mm) down from the top of the fabric. Stretch and Install tension wire before installing the chain link fabric and attach it to each post using wire ties.
- H. Top rail: Install in lengths of 21' (6.400 m). Connect ends with sleeves forming a rigid connection, allow for expansion and contraction.
- I. Center or Mid Rails: Install mid rails between line posts and attach to post using rail end or line rail clamps.
- J. Bottom Rails: Install bottom rails between posts and attach to post using rail end or line rail clamps.
- K. Touch up any nicks or scratches of the PVC color coating with liquid PVC paint.

3.03 CHAIN LINK FABRIC INSTALLATION

- A. Fabric: Install fabric on security side, pull fabric taut; thread the tension bar through fabric and attach to terminal posts with tension bands spaced maximum of 15" (381 mm) on center and attach so that fabric remains in tension after pulling force is released. Install fabric so that it is 2" (50 mm) +/- 1" (25 mm) above finish grade.
- B. Secure fabric using wire ties to line posts at 15" (381 mm) on center and to rails and braces 24" (610 mm) on center, and to the tension wire using hog rings 24" (610 mm) on center. Tie wire shall be secured to the fabric by wrapping it two 360 degree turns around the chain link wire pickets. Cut off any excess wire and bend back so as not to protrude so as to avoid injury if a pedestrian may come in contact with the fence.

3.04 CHAIN LINK GATE INSTALLATION

- A. Swing gates: Installation of swing gates and gate posts shall be per ASTM F567. Direction of swing shall be as shown on drawings. Gates shall be hung plumb in the closed position with minimal space from grade to bottom of gate leaf. Double gate drop bar receiver shall be set in a minimum concrete footing 6" (152 mm) diameter by 24" (610 mm) deep. Gate leaf holdbacks shall be installed on all double gates and all gate leaves greater than 5' (1524 mm) in width.
- B. Horizontal rolling gates: Install horizontal rolling gates and gate posts in accordance with ASTM F567. Horizontal rolling gates shall be plumb in the closed position with minimal ground clearance and slide with an initial force of 40 lbs. (18.14 kg). Double gate drop bar receiver shall be set in a minimum concrete footing 6" (152 mm) diameter by 24" (610 mm) deep.

3.05 SITE CLEAN UP

- A. Clean up area adjacent to fence line from debris and unused material created by fence installation.

PART 4: PAYMENT

4.01 CHAIN LINK FENCE – 4' HIGH

Payment for Chain Link Fence – 4' high will be made at the contract unit price per linear foot (LF) as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.02 CHAIN LINK FENCE – 8’ HIGH

Payment for Chain Link Fence - 8’ High will be made at the contract unit price per linear foot (LF) as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.03 GATE - DOUBLE SWING CHAIN LINK, 8’ HIGH (12’ OPENING)

Payment for Gate - Double Swing Chain Link, 8’ High (12’ Opening) will be made at the contract unit price per each (EA) as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.04 DOUBLE CANTILEVER SLIDING GATES - 8’ HT. (CHAIN LINK FABRIC) WITH ELECTRONIC GATE OPENING & CLOSING OPERATORS

Payment for Double Cantilever Sliding Gates - 8’ Ht. (Chain Link Fabric) With Electronic Gate Opening & Closing Operators will be made at the contract unit price per lump sum (LS) as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.05 ROLLING (CHAIN LINK FENCE) GATE - 8’ HT. (20’ OPENING)

Payment for Rolling Chain Link Gate - 8’ Ht. (20’ Opening) will be made at the contract unit price per each (EA) as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

END OF SECTION

SECTION 32 90 00 - LANDSCAPING

PART 1: GENERAL

1.01 DESCRIPTION

- A. The general requirements apply to all Landscaping work operations. Provide labor, materials, tools, transportation and all incidentals necessary to perform work as indicated on the Plans and as herein specified.
- B. The Standard Specifications for Public Works Construction, "Greenbook", 2018 edition, is referenced as if herein contained and the Contractor shall keep a copy at the project site. These Specifications shall supersede conflicts with information given in the "Greenbook", unless otherwise determined by the City.

1.02 QUALITY ASSURANCE

- A. Comply with all applicable local, state, federal requirements regarding materials, methods of work, and disposal of excess and waste materials.
- B. Manufacturer's directions, specifications and detailed drawings will be followed in all cases where articles used furnish directions covering points not delineated on the Plans or Specifications.
- C. The work included in this section will be done to the satisfaction of the City and the decision by the City as to the true construction meaning of the Plans and Specifications will be final.
- D. All drop slips for landscape materials (including plants, fertilizers, pesticides, seed mixes) shall be given to the Engineer.

1.03 AGRONOMIC SOILS TESTING

- A. All soil samples shall be taken in the field by a qualified soil technician from a testing agency registered by the State for agricultural evaluation.
- B. Take two (2) samples of site soil at a depth of 6 to 12 inches, within proposed planting area, after completion of grading and prior to weed control and soil preparation. Sample areas shall be selected by the Engineer.
- C. Request two (2) tests for fertility and suitability analysis with written recommendations for soil amendment, fertilizer and chemical conditioners, application rates for soil preparation, planting backfill mix and post-maintenance

fertilization programs. Soils report recommendations shall take precedence over the amendment and fertilizer application rates specified in this Section.

- D. Testing laboratory shall be Soil and Plant Laboratory, Inc., 1594 N. Main, Orange, CA 92667 (714) 282-8777 or Wallace Laboratories, 365 Coral Circle, El Segundo, Ca 90245, Phone (310) 615-0118. Tests shall be paid for by the Contractor.
- E. Submit testing laboratory's interpretation, recommendations, and comments to Engineer within 7 days after the completion of rough grading.
- F. For bidding purposes, the Contractor shall provide the following soil amendments for soil preparation and backfill mix.
 - 1. Soil preparation per 1,000 s.f. of planting area:
 - a. 4 cubic yards Nitrolized Redwood Sawdust
 - b. 200 lbs. Gro Power
 - c. 20 lbs. Soil Sulphur
 - 2. Backfill Mix:
 - a. 6 parts by volume on-site soil
 - b. 4 parts by volume Nitrogen Stabilized Organic Amendment
 - c. 18 lb. Gro Power per cu. yd. of mix
 - d. 2 lbs. Iron Sulphate per cubic yard of mix

1.04 ENVIRONMENTAL REQUIREMENTS

- A. Do not install landscape materials when ambient temperatures may drop below 45 degrees F (12 degrees C) or above 95 degrees F (39 degrees C).
- B. Do not install landscape materials when wind velocity exceeds 30 mph (48 k/hr).

PART 2: PRODUCTS

2.01 REFERENCES

- A. ANSI Z60.1 - Nursery Stock.
- B. California State Department of Agriculture - Regulations for nursery inspections, rules, and grading.

2.02 TOPSOIL

Topsoil if required in planting areas shall be Class A Topsoil. Topsoil shall be as specified in Section 212-1.1.2 of the Standard Specifications for Public Works Construction.

2.03 PLANT MATERIAL

- A. Trees, shrubs, ground cover and vines shall be grown by an established nursery having been in the business of growing trees, shrubs, ground cover a minimum of five (5) years. At the option of the Engineer, plants shall be inspected and tagged at the nursery prior to shipment to the planting site.
1. Trees: All trees shall be of the specified container size and of the species specified.
 2. Shrubs: Shrubs shall be of the specified type and size, selected from high quality, well-shaped nursery stock.
 3. Flatted Plants: Ground cover plants and other flatted plants shall be grown and remain in the flats until transplanted at the site. Soil that does not crumble with sufficient moisture, normal spacing of plants in the flat and well rooted plants shall be required to ensure the minimum disturbance of the root system at time of transplanting.
 4. Grass Plugs: Plugs shall be grown and remain in their containers until transplanted on the site. All plugs shall be planted within eight (8) hours upon arrival.
- B. Plant names indicated or listed in the "Plant Legend" on the Plans, conform to the approved names given in "An Annotated Checklist of Woody Ornamental Plants in California, Oregon, and Washington, Manual 4091", published by the University of California (1979). Except for names not covered therein, the established custom of the nursery shall be followed.
- C. Condition of plants shall be in accordance with the California State Department of Agriculture's regulations for nursery inspections, rules, and grading and shall be symmetrical, typical for variety and species, sound, healthy, vigorous, free from plant disease, insect pests, or their eggs, and shall have healthy normal root systems, well filling their containers, but not to the point of being root bound.
- D. Plants shall not be pruned prior to delivery, except as authorized by the City. In no case shall trees be topped before delivery.

- E. The size of the plants shall correspond with that normally expected for species and variety of commercially available nursery stock, or as specified on the Plans. The minimum acceptable size of all plants, measured before pruning with the branches in normal position, shall conform with the measurements, if any, specified on the Plans. Plants larger in size than specified may be used with the approval of the City, but the use of larger plants will not serve as the basis for a change order.
- F. All plant material shall be subject to the inspection and acceptance of the City before planting. A representative number of plants as determined by the City may be inspected for size and condition of root growth, insects, injuries and defects. Plants not accepted are to be removed from the site immediately and replaced with suitable plants. The City reserves the right to reject entire lots of plants represented by defective samples.

2.04 FERTILIZERS, SOIL CONDITIONING MATERIALS AND WATER

A. General.

1. Fertilizing and soil conditioning materials shall comply with the applicable requirements of the State Food and Agricultural Code. All materials shall be packaged first grade, commercial quality products identified as to source, type of material, weight, and manufacturer's guaranteed analysis. Fertilizing and soil conditioning material shall not contain toxic ingredients or fillers in quantities harmful to human life, animals, or plants.
2. Furnish a Certificate of Compliance stating that the material substantially meets the specifications.
3. Exact fertilizing and conditioning materials and the required composition and quantities shall be determined by agronomic soils test.

B. Commercial Fertilizer.

1. Commercial fertilizer shall be a palletized or granular product having a chemical analysis as specified on the Plans or in the Specifications. Commercial fertilizer shall be free-flowing material delivered in unopened sacks. Material which becomes caked or otherwise damaged shall not be used.
2. Exact composition and type of fertilizer to be determined by the agronomic soils test and will be supplied by the contractor at no additional cost to the City.

C. Nitrogen Stabilized Organic Soil Amendment.

Organic soil amendment shall be redwood sawdust free of shavings or particles of other woods such as fir or pine, supplied in bulk and .5% nitrogen stabilized by standard techniques. An acceptable substitute is nitrogen stabilized fir or cedar sawdust ground to 0-1/4" particle size and 1.0% nitrogen stabilized.

D. Water.

1. Water shall be clean, fresh and free of substances or matter which could inhibit vigorous growth of plants
2. Water shall be supplied at Contractor's sole expense at no additional cost to City through the end of the maintenance period.

2.05 HERBICIDE

- A. Non-selective herbicide for weed abatement shall be Round-Up, Rodeo or approved equal.
- B. Pre-emergent herbicide shall provide nine (9) month control.

2.06 MULCH

- A. Mulch shall be "Cover ES-2"

Available from or equal to:
Agromin Mulch Company
Contact Greg Jackson
714-475-8672
201 Kinetic Drive
Oxnard CA 93030

- B. The mulch shall consist of fibrous, woody bark mixture of varied particle size with the following characteristics:

Percent Passing	Sieve Size
90-100	25.4 mm (1")
80-100	12.7 mm (1/2")
20-60	6.35 mm (1/4")

- C. Mulch shall be packaged in bales or bags unless the City approves a bulk source in advance of delivery to the site of the work. The Contractor shall submit one sample of three (3) different mulch materials.

- D. The Engineer has the right to reject all samples and request additional samples until a suitable mulch material is approved.

2.07 PRE-EMERGENCE WEED CONTROL

In areas of woody ornamental plants use Ronstar, Weedban, or approved equal.

2.08 SAMPLES

- A. Samples of products and materials shall be required by the City. Submittals for inspection shall be stored on the site until furnishing of material is complete.
- B. Delivery of products and materials may begin upon acceptance of samples or as directed by the City.

2.09 PLANT TABLETS

- A. Plant tablets shall be Scotts Agriform, Growpower or approved equal, 20-10-5 applied at the following rates:

Tablet Size	21 Gram					5 Gram
	1 Gallon and 10" pots	5 Gallon	15 Gallon	24" Box	36" Box and Larger	Ground Cover Plants
Application Rates (No. of Tablets)	1	3	8	20	One Tablet per each foot of height	1

PART 3: EXECUTION

3.01 GENERAL

Earthwork and topsoil placement shall include the preparation for and the spreading, densification, cultivation, and raking of topsoil, including fertilization and conditioning.

1. Unless otherwise provided, curbs, walks, irrigation systems, and similar improvements required by the Plans or Specifications shall be constructed following rough grading and before landscaping.
2. Planting holes and backfill shall be as herein specified.

3. Preliminary rough grading and related earthwork, prepare areas for landscaping work to within one-tenth foot (0.1') of finish grade, or to subgrade for Class "A" topsoil if required.

3.02 TOPSOIL PREPARATION AND CONDITIONING

A. General.

1. Planting areas shall be free of weeds and other extraneous materials to a depth of twelve inches (12").
2. Soil shall not be worked when it is so wet or so dry as to cause excessive compaction or the forming of hard clods or dust.
3. The existing soil below subgrade for approved fill shall be scarified to a depth of six inches (6") prior to spreading fill material.

B. Fertilizing and Conditioning Procedures.

1. The planting area shall be brought to finish grade before spreading the fertilizers or conditioning materials specified.
2. The Contractor, at no additional cost to the City, shall make one (1) additional soils test per acre of all planting areas before and upon completion of excavation, backfilling, and grading to determine compliance with fertilizing and conditioning. The Contractor shall coordinate soil testing with the City.
3. Fertilizing and conditioning materials shall be mechanically spread at a uniform rate. The quantities of materials necessary for the planting area shall be at the site and shall be verified by delivery tickets furnished to the Engineer before spreading.
4. After spreading, the fertilizing and conditioning materials shall be uniformly cultivated into the upper six inches (6") of soil by suitable equipment, rototiller or equal, operated in at least two directions approximately at right angles. The resulting soil shall be a friable condition.
5. Fertilizer and soil amendment guidelines under agronomic soils testing shall be used for bidding purposes for planting areas, however, the Contractor shall amend it as necessary per the soils test report at no additional cost to the City.

3.03 WEED ABATEMENT

- A. The weed abatement program shall proceed upon the completion of the following:
 - 1. Installation of all pressure main line, quick coupler valves, irrigation valves, drip irrigation valves, non-pressure spray laterals and irrigation heads have been completed and accepted. (Prior to the installation of the drip line.)
 - 2. After all existing weeds and growth has been removed from the planting areas.
 - 3. After the controller or a temporary controller has been installed.
- B. Water all areas four (4) times daily for twenty-one (21) consecutive days and until weed seeds have germinated. Cease watering for three (3) days. Spray a non-selective herbicide (Roundup) to eradicate the germinated weeds. Allow herbicide to kill all weeds. Rake or hoe off all dead weeds to a depth of 1/4 inch below the surface of the soil. If perennial weeds or grasses still exist, re-water four (4) times daily for fourteen (14) consecutive days until new growth appears. Reapply a non-selective herbicide with a dye indicator. Remove weeds after herbicide has had sufficient time to kill.
 - 1. Water turf areas utilizing the irrigation controller.
 - 2. Water all drip zones manually utilizing the quick coupler valves.

3.04 FINISH GRADING

- A. After fertilizing and conditioning, the soil shall be watered and allowed to settle to provide a stable surface, not overly densified to the extent that it will prevent aeration and water infiltration. After the soil has dried out to a workable condition, the planting areas shall be regraded, raked, and smoothed to the required grades and contours. Finish surfaces shall be clean and suitable for planting.
- B. The finish grade shall be smooth, uniform, and free of abrupt grade changes and depressions to ensure surface drainage.
- C. The finish grade below adjacent paving, curbs, or headers shall be one inch (1") in lawn areas and two inches (2") in shrub or ground cover areas.

3.05 PLANTING GENERAL

- A. All sprinkler/irrigation work shall be inspected and accepted by the City, prior to start of any work of this subsection.

- B. Location of utility, structures and lines.
1. Prior to excavation for planting or placing of stakes, locate all utilities, electric cables, conduits, irrigation lines, heads, valves and valve control wires, and all utility lines so that proper precautions may be taken not to damage such improvements.
 2. In the event of a conflict between utilities and plant locations, promptly notify the Engineer who will arrange for one or the other to be relocated. If contractor fails to follow this procedure it shall repair all damages resulting from the work at contractor's sole expense.
- C. All plants will be inspected by the Engineer prior to planting, including plants previously approved at the nursery. The Contractor shall be responsible for the condition of all plants, planted or otherwise, until acceptance.
- D. Quantities.
1. Plant materials shall be furnished in the quantities and/or spacing as shown or noted for each location, and shall be of the species, kinds, sizes, etc., as symbolized, and/or described in the Plant Legend, as indicated on the Plans.
 2. Verify all sizes and quantities on the Plans. Promptly report any discrepancy to the Engineer.
- E. Substitution.
1. Any plant material or any development materials specified by trade name or equal, shall be according to these Plans and Specifications.
 2. Installation and use of substitute items shall not be made until the Contractor is in receipt of written approval from the Engineer. Substitution proposals for plant material must be accompanied by written proof of non-availability within a five hundred mile radius of the project site for material originally specified and proof that material was ordered in a timely manner upon award of contract.
- F. Protection and Storage.
1. Regularly water all nursery stock in containers and place them in a cool area protected from sun and drying winds.

2. Do not allow plants to dry out before or while being planted. Keep exposed roots moist by means of wet sawdust, peat moss or burlap at all times during planting operations. Do not expose roots to the air except while being placed in the ground. Wilted or diseased plants, whether in place or not, will not be accepted and shall be replaced at the Contractor's sole expense.
 3. Plugs: All plugs shall be kept moist and placed in a shady area prior to planting. DO NOT ALLOW PLUGS TO DRY OUT.
- G. Moisten prepared surface immediately prior to installing plant material.
- H. Install plant material immediately after delivery to site, within 24 hours after harvesting to prevent deterioration.
- I. Water landscaped areas immediately after installation.
- J. Layout and Plant Location.
1. Planting areas, borders and boundaries, will be surveyed and staked by the Contractor and approved by the Engineer.
 2. Detailed layout within the planting areas shall be performed by the Contractor and approved by the Engineer prior to planting.
 3. Locate first row of plants in areas designated for center to center spacing of plants shall be located at one-half of designated spacing from the edge of the area.

3.06 TREE AND SHRUB PLANTING

- A. **Planting Holes.** Planting holes shall be approximately square for container grown plants. The holes shall be twice the width of the plant container or ball, unless otherwise shown on the Plans. The holes shall be one-and-half times the depth of the root ball, or as shown on the Plans. The hole shall be larger, if necessary, to permit handling and planting without injury or breakage of the root ball or root system. Any plant having a broken or cracked root ball before or during planting shall not be planted.
- B. **Underground Obstructions.** In the event that underground construction work or obstructions are encountered in the planting operation, alternate locations for plant material will be selected by the City. Operation shall be done at no extra cost to the City.
- C. **Planting Procedures.**

1. The following material shall be thoroughly blended and used as a backfill mix.

6 parts by volume on-site soil
4 parts by volume Nitrogen Stabilized Organic Amendment
18 lb. Gro Power per cu. yd. of mix
2 lbs. Iron Sulfate per cubic yard of mix

The actual material and amounts, as determined by the agronomic soils test, shall be supplied by the Contractor at no additional cost to the City.

No mixing for individual planting holes is permitted. Mix planting soil prior to backfilling and stockpile at the site. Iron sulfate shall not contact cement surfaces because severe staining could occur; repair or replace stained cement at Contractor's sole cost.

2. Remove all plants from their containers and set so that, when settled, they bear the same relation to the required grade as they bore to the natural grade before being transplanted. Plant each plant in the center of the pit and backfill with prepared soil. Compact the backfill mix around the ball or roots. Do not use soil in muddy condition for backfilling. Do not fill around trunks or stems. Cut off all broken or frayed roots.
3. Thoroughly water each plant when the hole is one-half filled.
4. After watering, backfill the remainder of the hole and tamp the soil in place until the surface of the backfill is level with the surrounding area and the crown of the plant is at the finished grade of the surrounding area.
5. After backfilling, a basin shall be constructed around each plant. Each basin shall be of a depth sufficient to hold at least six inches (6") of water. Basins shall be the same size as the container size of each individual plant. The basins shall be constructed of amended backfill material.
6. Set the plant tablets to be used with each plant on the top of the root ball so the required number of tablets to be used in each hole can be easily verified. Bury tablets upon approval by the Engineer.
7. Immediately after planting, apply water to each tree and shrub by means of a hose. Apply water in a moderate stream in the planting hole until the material about the roots is completely saturated from the bottom of the hole to the top of the ground.

8. Apply water in sufficient quantities and as often as seasonal conditions require to keep the planted areas moist at all times, well below the root system of grass and plants.
 9. Basins around shrubs and trees in slopes shall be permanently maintained. In turf areas, basins shall be maintained *thirty (30) days* following tree planting. They shall be removed at that time, unless otherwise directed by the Engineer.
- D. Pruning. Pruning shall be limited to the minimum necessary to remove injured twigs and branches, and to compensate for loss of roots during transplanting, but never to exceed one-third of the branching structure. Upon approval of the Engineer, pruning may be done before delivery of plants, but not before plants have been inspected and approved.
 - E. Staking. All trees shall be staked per the planting details on the Plans. Staking shall be done immediately after planting.

3.07 GROUND COVER PLANTING

- A. Soil preparation and fine grading shall be completed prior to ground cover planting.
- B. Ground cover shall be planted in moist soil and spaced as indicated on the Plans.
- C. Each plant shall be planted with its proportionate amount of flat soil to minimize root disturbance. Soil moisture shall be such that the soil does not crumble when removing plants.
- D. Following planting, ground cover areas shall be regraded to restore smooth finish grade and to ensure proper surface drainage. Mulch shall be spread over the planted areas. Watering shall begin immediately following mulching.
- E. When necessary to prevent plant damage from pedestrian traffic during the initial growing stage, erect temporary protective fencing to be removed at the end of the maintenance period.
- F. Contractor shall hand water with a watering hose all grass plugs individually and immediately following planting. Apply enough water to saturate soil. After 3 weeks, hand water plugs every other day and after 4 weeks hand water plugs every 2 days.
- G. All grass plugs shall be planted in-ground eight (8) hours after being delivered to the site. Any plugs not planted within 8 hours after being delivered shall be rejected and replaced with new and fresh plugs at no cost to the City.

3.08 MULCHING

Mulch trees, shrubs and ground cover areas after planting with three inches (3") of mulch.

3.10 MAINTENANCE AND PLANT ESTABLISHMENT

- A. Maintenance period will be a minimum of ninety (90) days after "Date of Acceptance of Installation" of all planting areas. Request in writing from the Engineer notification of the date of the start of the maintenance period. At the acceptance of all planting areas, request in writing from the Engineer notification of the date of the completion of the maintenance period. The maintenance period shall not officially begin or end without written notification from the Engineer.
- B. Construction fencing shall remain until after the maintenance period is complete or as directed by the Engineer.
- C. Maintain all planted areas on a continuous basis as they are completed during the progress of the work and during the establishment and maintenance period, and shall continue to maintain them until final acceptance in accordance with the following.
 - 1. Water, weed, fertilize, mow, edge, prune, spray and apply topdressing as necessary to promote a healthy growing condition. All planted areas shall be kept free of debris and shall be weeded and cultivated at intervals not to exceed ten (10) days. Keep project neat and attractive throughout the maintenance period.
 - 2. Apply herbicides for weed control, as needed or directed by City, in accordance with manufacturer's instructions and applicable laws and regulations. Pre-emergent herbicide shall be required in all planter, shrub and ground cover areas. Remedy damage resulting from the use of herbicides.
 - 3. Exterminate rodents and insects as required and in accordance with applicable laws and regulations. Remedy damage from use of insecticides.
 - 4. Adjust the irrigation system to sufficiently saturate root zone without rotting trees, shrubs, and ground cover.
 - 5. Repair or replace any damaged item caused by vehicles, vandals, bicycles, or foot traffic during the maintenance period.

6. All planted areas, unless otherwise specified will receive the following fertilization program: Fertilize with “Gro-Power Plus” at 30 lbs./1,000 s.f. every *thirty (30) calendar days* (twice during the maintenance period), or as indicated by the agronomic soils test. Apply “Gro-Power Controlled Release Nitrogen” *five (5) calendar days* before the end of the maintenance period, or as indicated by the agronomic soils test. The Contractor shall adhere to fertilization requirements of the soils tests at no additional cost.
- D. Maintenance period shall be extended if plant material is not in a healthy growing condition. When all maintenance work has been completed to the satisfaction of the Engineer, the Engineer will issue to the Contractor a written notice of completion of maintenance.

3.11 INSPECTION

- A. All inspections herein specified shall be made by the City. Request inspection at least forty-eight (48) hours in advance of the time the inspection is required. Requested inspections, subsequently canceled without twenty-four (24) hours notice, will be billed to the Contractor.
- B. Inspection is required for, and not necessarily limited to, the following parts of the work.
 1. At completion of the incorporation of soil amendments and fine grading.
 2. Prior to digging plant pits for trees and shrubs.
 3. During backfilling of plant pits with amended backfill.
 4. Final inspection at the end of the maintenance period.

PART 4: PAYMENT

4.01 SOIL PREPARATION AND FINE GRADING

Payment for soil preparation, including fine grading, will be made at the contract unit price per square foot as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.02 WEED ABATEMENT

Payment for weed abatement will be made at the contract unit price per square foot as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.03 TREE – 36” BOX

Payment for Tree - 36" Box will be made at the contract unit price per each as set forth in the bid schedule schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.03 SHRUB - #15 CONTAINER

Payment for Shrub - #15 Container will be made at the contract unit price per each as set forth in the bid schedule schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.03 SHRUB - #5 CONTAINER

Payment for Shrub - #5 Container will be made at the contract unit price per each as set forth in the bid schedule schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.03 SHRUB - #1 CONTAINER

Payment for Shrub - #1 Container will be made at the contract unit price per each as set forth in the bid schedule schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.03 DAMAGED TURF REPLACEMENT

Payment for Damaged Turf Replacement will be made at the contract unit price per each as set forth in the bid schedule schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.04 WOOD MULCH (3” THICK)

Payment for Wood Mulch (3" thick) will be made at the contract unit price per cubic yard as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

4.05 PRE-EMERGENCE WEED CONTROL

Pre-Emergence weed control will be considered as included in other items of work and no additional payment will be made therefor.

4.06 (90) DAY MAINTENANCE

Payment for (90) day maintenance will be made at the lump sum contract unit price as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place.

END OF SECTION

SECTION 32 90 10 - 90 DAY MAINTENANCE

PART 1: GENERAL

1.01 DESCRIPTION

- A. The general requirements apply to all Landscaping work operations. Provide labor, materials, tools, transportation and all incidentals necessary to perform work as indicated on the Plans and as herein specified.
- B. Related Sections.

Section 32 90 00: Landscape
Section 32 92 23: Sod
- C. The Standard Specifications for Public Works Construction, “Greenbook”, 2018, is referenced as if herein contained and the Contractor shall keep a copy at the project site. These Specifications shall supersede conflicts with information given in the “Greenbook”, unless otherwise determined by the City.

1.02 QUALITY ASSURANCE

- A. Comply with all applicable local, state, federal requirements regarding materials, methods of work, and disposal of excess and waste materials.
- B. Manufacturer’s directions, specifications and detailed drawings will be followed in all cases where articles used furnish directions covering points not delineated on the Plans or Specifications.
- C. The work included in this section will be done to the satisfaction of the City and the decision by the City as to the true construction meaning of the Plans and Specifications will be final.
- D. All drop slips for landscape materials (including plants and fertilizers) shall be given to the Engineer.

1.03 ENVIRONMENTAL REQUIREMENTS

- A. Do not install landscape materials when ambient temperatures may drop below 45 degrees F (12 degrees C) or above 95 degrees F (39 degrees C).
- B. Do not install landscape materials when wind velocity exceeds 30 mph (48 k/hr).

PART 2: EXECUTION

2.01 MAINTENANCE AND ESTABLISHMENT PERIOD

- A. Maintenance and establishment period for trees, shrubs and groundcover will be one (1) year after “Date of Acceptance of Installation” of all planting areas. Request in writing from the Engineer notification of the date of the start of the maintenance period. At the acceptance of all planting, request in writing from the Engineer notification of the date of the completion of the maintenance period. The maintenance period shall not officially begin or end without written notification from the Engineer.
- B. Construction fencing shall remain until after the maintenance period is complete or as directed by the Engineer.
- C. Maintain all trees on a continuous basis as they are completed during the progress of the work and during the establishment and maintenance period and shall continue to maintain them until final acceptance in accordance with the following.
 - 1. Water and reapply mulch as necessary to promote a healthy growing condition. Re-stake if staking is not straight or solid. All areas shall be kept free of debris, weeds or litter. Keep project neat and attractive throughout the maintenance period.
 - 2. Adjust the irrigation system to sufficiently saturate root zone without rotting trees.
 - 3. Fertilize with “Gro-Power Plus” at 30 lbs./1000 sf every *thirty (30) calendar days*, during the maintenance period. Apply “Gro-Power Controlled Release Nitrogen” *five (5) calendar days* before the end of the maintenance period at manufacturer’s recommended rate.
- D. Maintenance period shall be extended if plant material is not in a healthy growing condition. When all maintenance work has been completed to the satisfaction of Engineer, the Engineer will issue to the Contractor a written notice of completion of maintenance.

2.02 WEED ABATEMENT

- A. The weed abatement program shall proceed upon the completion of the irrigation system and after all existing weeds and growth has been removed from the planting areas. Begin watering daily for twenty-one (21) consecutive days and until weed seeds have germinated. Cease watering for three (3) days. Spray a non-selective herbicide (Roundup) to eradicate the germinated weeds. Allow herbicide enough time to kill weeds. Remove dead weeds within 1” of the soil

surface. Repeat the non-selective herbicide application two more times. The contractor shall include a dye indicator with the third application of the non-selective herbicide.

- B. If perennial weeds or grasses still exist, re-water four (4) times daily for fourteen (14) consecutive days until new growth appears. Reapply a non-selective herbicide with a dye indicator. Remove weeds after herbicide has had enough time to kill.

2.03 INSPECTION

- A. All inspections herein specified shall be made by the City. Request inspection at least forty-eight (48) hours in advance of the time the inspection is required. Requested inspections, subsequently canceled without twenty-four (24) hours notice, will be billed to the Contractor.
- B. Inspection is required for, and not necessarily limited to, the following parts of the work.
 - 1. At completion of the incorporation of soil amendments and fine grading
 - 2. Prior to digging plant pits for trees and shrubs.
 - 3. Installing trees in the planting hole.
 - 4. During backfilling of plant pits with amended backfill.
 - 5. Final inspection at the end of the maintenance period.

PART 3: PAYMENT

3.01 NINETY (90) DAY MAINTENANCE

Payment for "Ninety (90) Day Maintenance" shall be paid for per the **lump sum (LS)** price as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved to complete in place, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 32 92 23- SOD

PART 1: GENERAL

1.01 DESCRIPTION

- A. The General Provisions shall apply to all Sod work operations. Provide all labor, materials, tools, transportation, equipment and incidentals necessary to perform work as indicated on the Plans and as herein specified.
- B. Related Sections.
 - 1. Section 32 90 00 Landscaping
- C. The Standard Specifications for Public Works Construction, “Greenbook” (SSPWC) 2018 edition, is referenced as if herein contained and the Contractor shall keep a copy at the project site. These specifications shall supersede conflicts with information given in the Standard Specification, unless otherwise determined by the Engineer.
- D. Definitions.
 - 1. City: City of Costa Mesa
 - 2. Engineer: City Engineer, or the City Engineer’s designated representative.
- E. All vendors, suppliers, and manufacturer’s representatives and the associated addresses, phone and fax numbers on the Plans and in the Specifications are listed for convenience only. They are subject to change and their inclusion in no way constitutes an endorsement by the City.

1.02 QUALITY ASSURANCE

- A. Comply with all applicable local, state, federal requirements regarding materials, methods of work, and disposal of excess and waste materials.
- B. Grower’s directions, specifications and detailed drawings will be followed in all cases where articles used furnish directions covering points not delineated on the Plans or Specifications.
- C. The work included in this section will be done to the satisfaction of the Engineer. The decision by the Engineer as to the true construction meaning of the Plans and Specifications will be final.
- D. All drop slips for sod fertilizers shall be given to the Engineer.

1.03 ENVIRONMENTAL REQUIREMENTS

- A. Do not install sod when ambient temperatures may drop below 45 degrees F (12 degrees C) or above 95 degrees F (39 degrees C).
- B. Do not install sod when wind velocity exceeds 30 mph (48 k/hr).

PART 2: PRODUCTS

2.01 REFERENCES

- A. ANSI Z60.1 - Nursery Stock.
- B. California State Department of Agriculture - Regulations for nursery inspections, rules, and grading.

2.02 SOD

- A. Sod shall be Celebration 'Big Rolls' or approved equivalent grown by an established sod nursery having been in the business of growing sod a minimum of five (5) years. Sod shall be free of turf disease, insects, or weeds, and capable of healthy, vigorous growth.
- B. Sod shall be grown in a blown sand medium. It shall be cut with a 1/2" to 3/4" thickness of soil that completely covers the root zone. Sod shall be wide cut, big roll. The sod shall arrive vigorous and have a lush appearance, uniform texture and dark green color throughout with no dead or dying edge. The sod shall be sufficiently dense to bear handling and placement without tearing.
- C. Nylon mesh in sod will not be accepted.
- D. Sod may be obtained from:

A-G Sod Farms
30932 Palm Avenue
Nuevo, CA 92567
Phone: (800) 233-5254

2.03 FERTILIZERS, SOIL CONDITIONING MATERIALS AND WATER

A. General.

1. Fertilizing and soil conditioning materials shall comply with the applicable requirements of the City's Standards and Specifications. All materials shall be packaged first grade, commercial quality products identified as to source, type of material, weight, and manufacturer's guaranteed analysis. Fertilizing and soil conditioning material shall not contain toxic ingredients or fillers in quantities harmful to human life, animals, or plants.
2. The Contractor shall furnish to the Engineer the Certificate of Compliance stating that the material substantially meets the City's specifications.
3. Exact fertilizing and conditioning materials and the required composition and quantities shall be determined by the agronomic soils test.

B. Commercial Fertilizer.

1. Commercial fertilizer shall be a palletized or granular product having a chemical analysis as specified on the Plans or in the Specifications. Commercial fertilizer shall be free-flowing material delivered in unopened sacks. Material which becomes caked or otherwise damaged shall not be used.
2. Pre-planting fertilizer composition to be 6-20-20. Post-planting composition shall be 6-20-20XB. Fertilizer shall provide one pound of P and K per 1,000 square feet. Nitrogen shall not exceed 1/3 pound per 1,000 square feet. Exact composition and type to be determined by agronomic soil test.
3. Fertilizer available from:

J.R. Simplot
Lathrop, CA 95330
Phone: (209) 858-2511, Fax: (209) 858-2519

C. Water.

1. Water shall be clean, fresh and free of substances or matter which could inhibit vigorous growth of plants.
2. Water shall be supplied at Contractor's expense at no additional cost to the City through the end of the maintenance period.

PART 3: EXECUTION

3.01 FERTILIZING

- A. Two to three days prior to sodding, fertilize with J.R. Simplot Best 6-20-20 at one pound of P and K per 1,000 square feet. Exact quantity shall be determined by the agronomic soil test.

Adequately irrigate after application.

- B. Fifteen days after sod installation is complete, fertilize as above with J. R. Simplot Best 16-20-20XB.

3.02 INSTALLING SOD

- A. Soil conditioning and fine grading shall be completed before sodding. No heavy equipment shall operate over the subgrade after grading is completed.

- B. The subgrade shall be moist but not wet when sod is laid. Sod shall be laid with closely fitted joints, and the ends of the trips shall be staggered. Openings shall be plugged with sod.

- C. Within two hours after installing sod and before rolling, the sod shall be adequately irrigated with a minimum of 1/2" of water. All seams and joints shall then be rolled until the sod is well bonded to the subgrade.

- D. The area shall then be watered thoroughly with 2 to 4 inches of water to penetrate the subsoil at least 8 inches. Watering shall be repeated as necessary to keep the sod moist until rooted into the subgrade. Sodded areas shall be protected against foot traffic until the sod is well established.

3.03 MAINTENANCE

- A. Maintenance period will be a minimum of *ninety (90) days* after Date of Acceptance by the City of all sod installation.

- B. Maintenance includes:

1. Water, weed, fertilize, mow, edge and spray as necessary to promote a healthy growing condition. Keep project neat and attractive throughout the maintenance period.
2. Apply herbicides for weed control, as needed or directed by City, in accordance with manufacturer's instructions. Remedy damage resulting from the use of herbicides.

3. Exterminate rodents and insects as required.
 4. Adjust irrigation system scheduling to sufficiently saturate root zone.
 5. Repair or replace any damaged item caused by vehicles, vandals, bicycles, or foot traffic during the maintenance period.
 6. (During growing season) fertilize turf every four weeks with one pound of nitrogen per 1,000 square feet in a complete fertilizer product (4-1-4 ratio).
- C. Maintenance period may be extended if turf grass and other plant material is not in a healthy growing condition. When all maintenance work has been completed to the satisfaction of the Engineer, the Contractor will be released through written notification by the Engineer.
- D. Mow turf a minimum of two (2) times a week with the first mowing to be completed *seven (7) days* after installation of sod. Maintain a mowing height of 3/8" to 3/4" inches. Do not cut more than 1/3 of grass blade at anyone mowing. Grass shall be mowed with a sharp power-driven reel mower. Clippings shall be collected and removed.

PART 4: PAYMENT

4.01 DAMAGED TURF REPLACEMENT

Payment for damaged turf replacement will be made at the contract unit price per square foot (SF) as set forth in the bid schedule and shall include full compensation for all labor, materials, tools, equipment, and incidentals for doing all work involved.

4.02 SOD MAINTENANCE

Payment for SOD MAINTENANCE will be included under Section 32 90 00 Landscaping and no additional payment will be made therefor.

END OF SECTION

Bid item No. 2: ALLOWANCES - ADDITIONAL WORK ITEMS

Allowance to be included in the total bid amount as identified as follows. Use of the allowance will be at the sole discretion of the City and must be authorized in writing at the discretion of the City. Any money used from the project allowance will be authorized via an Allowance Disbursement Form at the City's sole discretion. Any amount of money remaining in the Allowance line item upon completion of the Project will be deducted from the Contract by Deductive Change Order for the full amount(s) remaining therein. The Contractor has no beneficial interest in, and/or claim to, the Allowances and hereby disclaims any and all such interests.

Additional work items include work that will only be used at the discretion of the Engineer. At the discretion of the Engineer, the Contractor shall provide all labor, tools, equipment, materials and incidentals for the extra work beyond the scope of work established within the Contract documents. Work may include, but not be limited to, delivery of additional newsletters; disposal of materials, potholing, furnishing and installation of informational signs, and related work, and will only be performed, if required, and approved by the Engineer. The Contractor acknowledges that this allowance will only be used at the discretion of the City. Contractor shall be paid at force account or at agreed prices for all work performed within this allowance.

PAYMENT

The contractor shall be paid at Force Account (FA) for all work performed under this bid item of work. No additional compensation will be allowed.



Concrete Buildings

CXT® Precast Concrete Products manufactures restroom, shower and concession buildings in multiple designs, textures and colors. The roof and walls are fabricated with high strength precast concrete to meet all local building codes and textured to match local architectural details. All CXT buildings are designed to meet A.D.A. and to withstand heavy snow, high wind and category E seismic loads. All concrete construction also makes the buildings easy to maintain and withstand the rigors of vandalism. The buildings are prefabricated and delivered complete and ready-to-use, including plumbing and electrical where applicable. With thousands of satisfied customers nationwide, CXT is the leader in prefabricated concrete restrooms.

1. ORDERING ADDRESS(ES): CXT Precast Products, Inc., 3808 N. Sullivan Road, Building 7, Spokane, WA 99216
2. ORDERING PROCEDURES: Fax 509-928-8270
3. PAYMENT ADDRESS(ES): CXT Precast Products, Inc., 3808 N. Sullivan Road, Building 7, Spokane, WA 99216
4. WARRANTY PROVISIONS: CXT provides a warranty against structural defects in material or workmanship for a period of twenty (20) years on all concrete components (does not include non-structural cracking). The warranty is valid only when concrete is used within the specified loadings. Furthermore, said warranty includes only the related material necessary for the construction and fabrication of said concrete components. All other non-concrete components will carry a one (1) year warranty. CXT warrants that all goods sold pursuant hereto will, when delivered, conform to specifications set forth above. Goods shall be deemed accepted and meeting specifications unless notice identifying the nature of any non-conformity is provided to CXT in writing within the specified warranty. CXT, at its option, will repair or replace the goods or issue credit for the customer provided CXT is first given the opportunity to inspect such goods. It is specifically understood that CXT's obligation hereunder is for credit, repair or replacement only, F.O.B. CXT's manufacturing plants, and does not include shipping, handling, installation or other incidental or consequential costs unless otherwise agreed to in writing by CXT.

This warranty shall not apply to:

1. Any goods which have been repaired or altered without CXT's express written consent, in such a way as in the reasonable judgment of CXT, to adversely affect the stability or reliability thereof;
2. To any goods which have been subject to misuse, negligence, acts of God or accidents; or
3. To any goods which have not been installed to manufacturer's specifications and guidelines, improperly maintained, or used outside of the specifications for which such goods were designed.
5. TERMS AND CONDITIONS OF INSTALLATION (IF APPLICABLE): All prices subject to the "Conditions of Sale" listed on the CXT quotation form.

Customers are responsible for marking exact location building is to be set; providing clear and level site, free of overhead and/or underground obstructions; and providing site accessible to normal highway trucks and sufficient area for the crane to install and other equipment to perform the contract requirements. Customer shall provide notice in writing of low bridges, roadway width or grade, unimproved roads or any other possible obstacles to access. CXT reserves the right to charge the customer for additional costs incurred for special equipment required to perform delivery and installation. Customers will negotiate installation on

a project-by- project basis, which shall be priced as separate line items. For more information regarding installation and truck turning radius guidelines please see our website at <http://www.cxtinc.com>.

In the event delivery of the building/s ordered is/are not completed within 30 days of the agreed to schedule through no fault of CXT, an invoice for the full contract value (excluding shipping and installation costs) will be submitted for payment. Delivery and installation charges will be invoiced at the time of delivery and installation.

Should the delivery and installation costs increase due to changes in the delivery period, this increase will be added to the price originally quoted, and will be subject to the contract payment terms.

In the event that the delivery is delayed more than 90 days after the agreed to schedule and through no fault of CXT, then in addition to the remedies above, a storage fee of 1-1/2% of contract price per month or any part of any month will be charged.

**Customer is responsible for all local permits and fees.

6. DELIVERY CHARGE: All prices F.O.B. origin prepaid and added to invoice. CXT operates three (3) manufacturing plants in the United States and will deliver from the closest location on our carriers.
7. PAYMENT TERMS: Payment to CXT by the purchaser shall be made net 30 days after submission of the invoice to the purchaser on approved credit. Interest at a rate equal to the lower of (i) the highest rate permitted by law; or (ii) 1.5% per month will be charged monthly on all unpaid invoices beginning with the 35th day (includes five (5) day grace period) from the date of the invoice. Under no circumstance can retention be taken. If CXT initiates legal proceeding to collect any unpaid amount, purchaser shall be liable for all of CXT's costs, expenses and attorneys' fees and costs of any appeal.
8. LIMITATION OF REMEDIES: In the event of any breach of any obligations hereunder; breach of any warranty regarding the goods, or any negligent act or omission of any party, the parties agree to submit all claims to binding arbitration. Any settlement reached shall include all reasonable costs including attorney fees. In no event shall CXT be subject to or liable for any incidental or consequential damages. Without limitation on the foregoing, in no event shall CXT be liable for damages in excess of the purchase price of the goods herein offered.
9. DELIVERY INFORMATION: All prices F.O.B. origin prepaid and added to invoice. CXT operates three (3) manufacturing plants in the United States and will deliver from the closest location on our carriers. Use the information below to determine the origin:
 - F.O.B. 3808 N. Sullivan Road, Building 7, Spokane, WA 99216 applies to: AK, CA, HI, ID, MT, ND, NV, OR, SD, UT, WA, WY.
 - F.O.B. 901 North Highway 77, Hillsboro, TX 76645 applies to AR, AZ, CO, IA, KS, LA, MN, MO, MS, NE, NM, OK, TX.
 - F.O.B. 362 Waverly Road, Williamstown, WV 26183 applies to AL, CT, DE, FL, GA, IL, IN, KY, MA, MD, ME, MI, NC, NH, NJ, NY, OH, PA, PR, RI, SC, TN, VA, VT, WI, WV.
 - Prices exclude all federal/state/local taxes. Tax will be charged where applicable if customer is unable to provide proof of exemption.



Santiago



Custom building where you can match units to meet your needs. Units include restroom, shower, concession, storage and combo configurations. Standard features include simulated barnwood texture walls, simulated cedar shake textured roof, vitreous china fixtures, interior and exterior lights, off loaded and set up at site.

Santiago

Sections:		Total Sections		\$55,355.00
Restroom \$55,355 Qty: 1 = \$ 55,355	Shower* \$72,465 Qty: = \$ 0			
Family Assist Restroom \$55,355 Qty: = \$ 0	Concession \$60,675 Qty: = \$ 0			
Family Assist Shower* \$65,490 Qty: = \$ 0	Storage \$51,465 Qty: = \$ 0			
*Includes hot water tank.				

Added Cost Options:		Price Per Unit		
Final Connection to Utilities		\$ 2,370.00	<input checked="" type="checkbox"/>	2,370.00
Optional Wall Texture -choose one	<input checked="" type="radio"/> Split Face Block (\$2,370) <input type="radio"/> Struck Trowel (\$2,370) <input type="radio"/> Stone (\$3,150)		<input type="checkbox"/> Reset Wall Texture	2,370.00
Optional Roof Texture -choose one	<input checked="" type="checkbox"/> Delta Rib	\$ 975.00		975.00
Porch/Wing Wall		\$ 51,465.00	<input type="checkbox"/>	0.00
Two-Tone Color Scheme		\$ 265.00	<input checked="" type="checkbox"/>	265.00
Stainless Steel Plumbing Fixtures- Water Closet (each)	Qty: 3	\$ 900.00		2,700.00
Stainless Steel Plumbing Fixtures- Urinal (each)	Qty:	\$ 945.00		0.00
Stainless Steel Plumbing Fixtures- Sink (each)	Qty:	\$ 560.00		0.00
Electric Hand Dryer (each)	Qty:	\$ 625.00		0.00
Electronic Flush Valves- Water Closet (each)	Qty: 3	\$ 710.00		2,130.00
Electronic Flush Valves- Urinal (each)	Qty:	\$ 750.00		0.00
Electronic Flush Valves- Sink (each)	Qty:	\$ 610.00		0.00
Exterior Mounted ADA Drinking Fountain w/Cane Skirt		\$ 3,600.00	<input checked="" type="checkbox"/>	3,600.00
4-gallon Electric Water Heater		\$ 350.00	<input checked="" type="checkbox"/>	350.00
Skylight in Restroom (each)	Qty:	\$ 450.00		0.00
Marine Grade Skylight in Restroom (each)	Qty:	\$ 1,525.00		0.00
Marine Package for Extra Corrosion Resistance	Qty: 1	\$ 3,415.00		3,415.00
Fiberglass Entry and Chase Doors and Frames	Qty:	\$ 1,425.00		0.00
Tile Floor in Restroom		\$ 2,625.00	<input type="checkbox"/>	
2K Anti-Graffiti Coating		\$ 2,995.00	<input checked="" type="checkbox"/>	2,995.00
Timed Electric Lock System (does not include chase door)	Qty:	\$ 1,915.00		0.00
Exterior Frostproof Hose Bib with Box		\$ 410.00	<input type="checkbox"/>	
Paper Towel Dispenser (each)	Qty:	\$ 180.00		0.00
Toilet Seat Cover Dispenser (each)	Qty: 3	\$ 80.00		240.00
Sanitary Napkin Disposal (each)	Qty: 3	\$ 55.00		165.00
Baby Changing Station (each)	Qty:	\$ 450.00		0.00
CXT Wastebasket (each)	Qty:	\$ 130.00		0.00
Paint Touch up Kit - Single Color		\$ 60.00	<input type="checkbox"/>	
Paint Touch up Kit - Two Tone Color		\$ 65.00	<input checked="" type="checkbox"/>	65.00
Stamped Plans		\$ 3,000.00	<input checked="" type="checkbox"/>	3,000.00
Total Cost of Selected Accessories from Accessories Price List:				\$ 24,640.00
Estimated One-Way Transportation Costs to Site (quote):				\$ 13,500.00
Custom Options: CA approvals, DIR adjustment \$1900, 3rd room \$5000 proposal 17-329 1 case graffiti release agent NC				\$ 6,900.00
Non-taxable Items (i.e., freight, installation, etc.):				\$
			Tax:	\$
Total Cost per Unit Placed at Job Site:				\$ 100,395.00

Disclaimer: Please call to confirm selected sections are compatible.

This price quote is good for 60 days from date below, and is accurate and complete.

CXT Sales Representative

Date



I accept this quote. Please process this order.

Company Name

Customer

Date

OPTIONS

Exterior Color Options:

(For single color mark an X or for two tone combinations use W = Walls / R = Roof.)

<input type="checkbox"/> Amber Rose	<input type="checkbox"/> Liberty Tan	<input type="checkbox"/> Berry Mauve	<input type="checkbox"/> Sage Green
<input type="checkbox"/> Toasted Almond	<input type="checkbox"/> Oatmeal Buff	<input type="checkbox"/> Buckskin	<input type="checkbox"/> Rosewood
<input type="checkbox"/> Sun Bronze	<input type="checkbox"/> Golden Beige	<input type="checkbox"/> Mocha Carmel	<input type="checkbox"/> Malibu Taupe
<input type="checkbox"/> Sand Beige	<input type="checkbox"/> Natural Honey	<input type="checkbox"/> R Salsa Red	<input type="checkbox"/> W Java Brown
<input type="checkbox"/> Pueblo Gold	<input type="checkbox"/> Cappuccino Cream	<input type="checkbox"/> Coca Milk	<input type="checkbox"/> Raven Black
<input type="checkbox"/> Granite Rock	<input type="checkbox"/> Georgia Brick	<input type="checkbox"/> Western Wheat	<input type="checkbox"/> Nuss Brown
<input type="checkbox"/> Rich Earth	<input type="checkbox"/> Charcoal Grey	<input type="checkbox"/> Hunter Green	<input type="checkbox"/> Evergreen

Special roof color # _____

Special wall color # _____

Special trim color # _____

(Sage green, hunter and evergreen colors are not available in colored through concrete.)

Rock Color Options:

- Basalt
 Mountain Blend
 Natural Grey
 Romana

Roof Texture Options:

- Cedar Shake
 Ribbed Metal

Wall Texture Options:

(For single texture mark an X or for different top and bottom textures use T = Top / B = Bottom.)

- | | | |
|--------------------|----------------|---------------------------------------|
| Barnwood | Horizontal Lap | } Can only be used as bottom texture. |
| X Split Face Block | Board & Batt | |
| Stucco/Skip Trowel | Brick | |
| | | Napa Valley Rock |
| | | River Rock |
| | | Field Stone |

(Textures not included in CXT's quote are additional cost.)

Door Opener Options:

- Non-locking ADA Handle
 Pull Handle/Push Plate
 Privacy ADA Latch
 Pull Handle/Push Plate w/Slide Lock

Deadbolt Options:

- CXT Supplied
 Customer Supplied: _____
 Type & Part Number

Accessible Signage Options:

- Men
 Women
 Unisex

Paper Holder Options:

- 2-Roll Stainless Steel
 3-Roll Stainless Steel

Notes:

Drawing 17-329

EZ-MAX® Plus Relay Control Panels

Integrated building lighting control in a contractor friendly, quick to install and simple to configure compact enclosure

DEFINITION

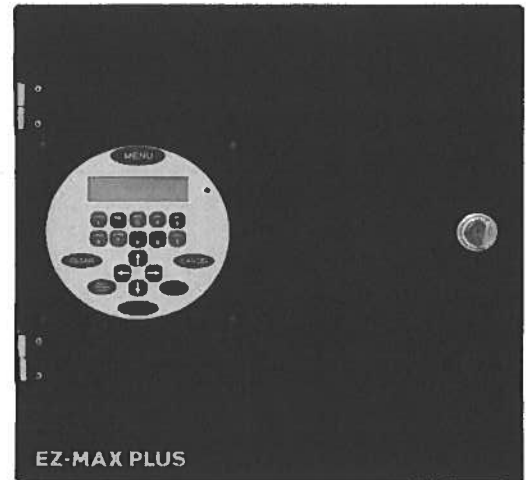
EZ-MAX® Plus relay lighting control panels deliver power and performance in compact and cost-effective 8-circuit and 16/24-circuit models. EZ-MAX Plus is the ideal solution for smaller, stand-alone applications that do not require the field configuration or advanced networking features like GreenMAX® Relay Control Systems.

The EZ-MAX Plus switching circuit offers an unprecedented 1,000,000 cycle life for unmatched durability. For maximum equipment protection, the standard 30A latching relay card has a short circuit current rating (SCCR) of 18,000A to allow it to withstand higher current inrushes caused by short circuit conditions. Low-voltage inputs allow connection of photocells, occupancy sensors, low-voltage switches and digital switches for a comprehensive yet easily installed energy management solution.

Designed in a compact, 13" x 13" (8-circuit model) or 20-1/4" x 34" (16/24-circuit model) standard electrical enclosure, EZ-MAX Plus is engineered to be contractor friendly, quick to install and simple to configure.

APPLICATIONS

- Smart replacement for time clock/contacter installations
- Low-voltage control
- Site lighting
- Daylight harvesting
- Occupancy sensor integration
- Parking garage/parking lot lighting
- Any application requiring reliable and cost-effective automatic lighting control



FEATURES

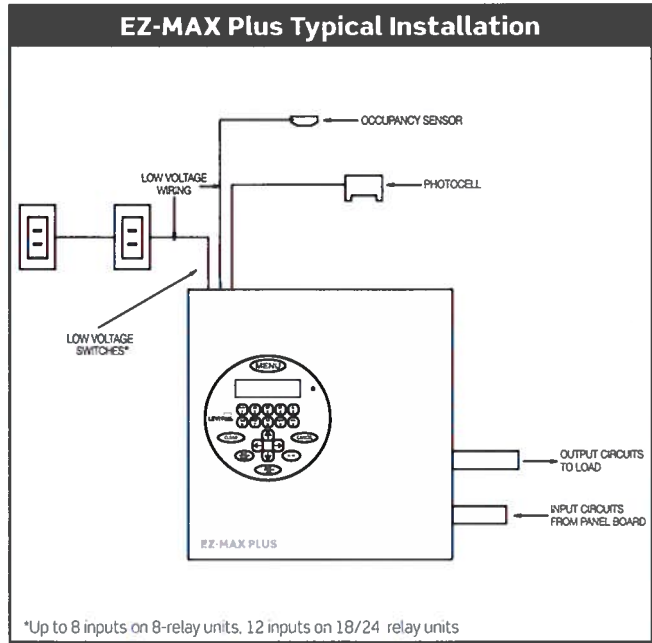
- Large, bright LCD screen with oversize buttons for easy programming
- Easy standard programming configuration
 - Occupancy sensors: manual-ON or auto-ON applications
 - Photocells: interior or exterior applications
 - Photocell light level trip points: on or off
- Built-in astronomical time clock
 - 101 major city and states programmed for easy astronomical setup
- Time clock and scheduler
- Sunrise/sunset time clock events
- Auto-detection/auto-assign of installed digital switches
- Enable/disable of low-voltage and digital input devices minimizes power consumption
- Clearly labeled access points allow installer to locate optimum knock-out locations
- UL and C-UL Listed Industrial Control Equipment and Emergency Lighting Equipment for 120V, 277V and 347V Panels
- ASHRAE 90.1 compliant
- Can be used to comply with 2019 Title 24, Part 6 occupancy/vacancy sensing, scheduling, and receptacle control requirements
- Rated for 100% load capacity

Leviton Manufacturing Co., Inc. Energy Management, Controls and Automation

20497 SW Teton Avenue, Tualatin, OR 97062 **tech line** 800-959-6004 **fax** 503-404-5594

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SPECIFICATIONS	
ELECTRICAL	
Input Power (Domestic): 120V, 277V or 347V	
Input Power (International): 230V +/- 15%	
All voltages 50/60Hz	
Non-volatile lifetime memory blackout protection	
PHYSICAL	
8-Circuit EZ-MAX Plus	
Size: 13" W x 13" H x 4-9/32" D (330.20 mm x 330.20 mm x 108.74 mm)	
Weight - fully loaded: 16 lbs (7.26 kg)	
Color: Black	
16/24-Circuit EZ-MAX Plus	
Size: 20-1/4" W x 34" H x 4-9/32" D (514.35 mm x 863.6 mm x 108.74 mm)	
Weight - fully loaded: 44 lbs (19.96 kg)	
Color: Black	
WARRANTY	
• Panels backed by Ten-Year Warranty	
• Relay Cards backed by Ten-Year Warranty	



ORDERING INFORMATION

CAT. NO.	DESCRIPTION
R08BD-000	EZ-MAX Plus 8 Relay Panel, (0) No Relays, (8) empty slots. 120V, 277V, 347V input power. With 8 Low Voltage Inputs
R08BD-L04	EZ-MAX Plus 8 Relay Panel, (4) 1-Pole 30A 120V/277V Relays, (4) empty slots. 120V, 277V, 347V input power. With 8 Low Voltage Inputs
R08BD-L08	EZ-MAX Plus 8 Relay Panel, (8) 1-Pole 30A 120V/277V Relays. 120V, 277V, 347V input power. With 8 Low Voltage Inputs
R08BD-208	EZ-MAX Plus 8 Relay Panel, (8) 2-Pole 20A 240V/480V Relays. 120V, 277V, 347V input power. With 8 Low Voltage Inputs
R24BD-000	EZ-MAX Plus 24 Relay Panel, (0) No Relays, (24) empty slots. 120V, 277V, 347V input power. With 12 Low Voltage Inputs
R24BD-L16	EZ-MAX Plus 24 Relay Panel, (16) 1-Pole 30A 120V/277V Relays, (8) empty slots. 120V, 277V, 347V input power. With 12 Low Voltage Inputs
R24BD-L24	EZ-MAX Plus 24 Relay Panel, (24) 1-Pole 30A 120V/277V Relays. 120V, 277V, 347V input power. With 12 Low Voltage Inputs
R24BD-216	EZ-MAX Plus 24 Relay Panel, (16) 2-Pole 20A 240V/480V Relays, (8) empty slots. 120V, 277V, 347V input power. With 12 Low Voltage Inputs
R24BD-224	EZ-MAX Plus 24 Relay Panel, (24) 2-Pole 20A 240V/480V Relays. 120V, 277V, 347V input power. With 12 Low Voltage Inputs
R08BF-000	EZ-MAX Plus 8 Relay Panel, (0) No Relays, (8) empty slots. 230V input power. With 8 Low Voltage Inputs
R08BF-L08	EZ-MAX Plus 8 Relay Panel, (8) 1-Pole 30A 120V/230V/277V Relays. 230V input power. With 8 Low Voltage Inputs
R24BF-000	EZ-MAX Plus 24 Relay Panel, (0) No Relays, (24) empty slots. 230V input power. With 12 Low Voltage Inputs

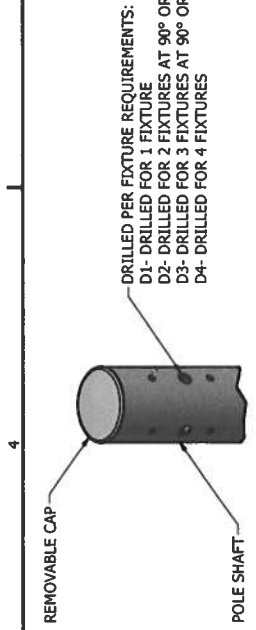
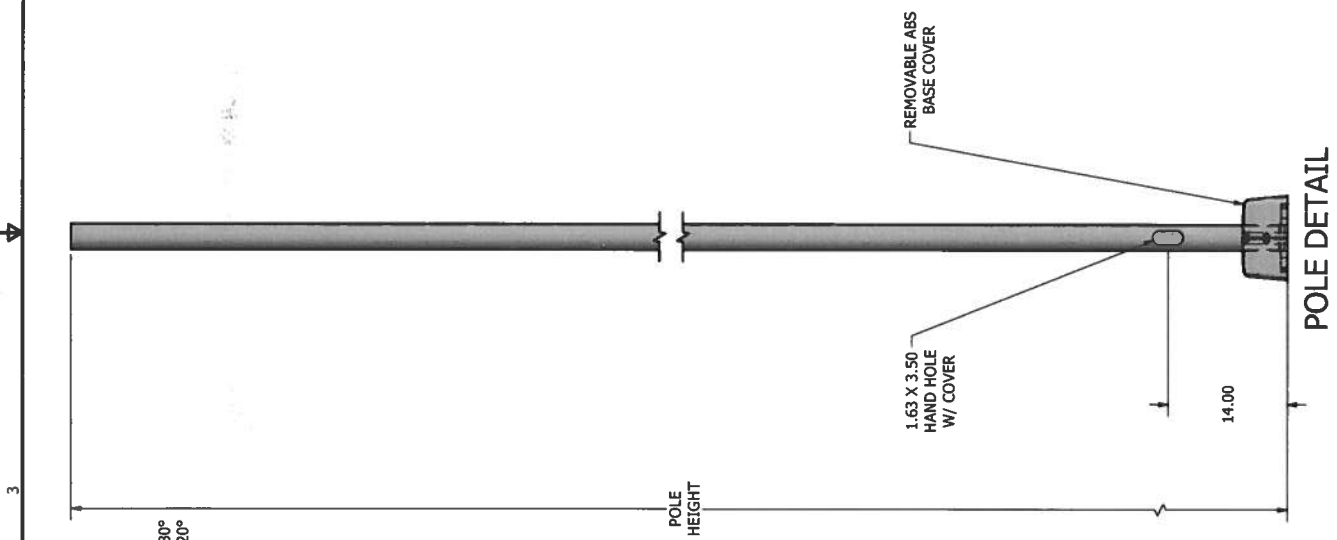
ACCESSORIES*

RAC00-2SB	Low Voltage Switch Adapter for GE 5-wire switches
00LVS-xxW**	xx Button, Low Voltage Switch, White
ZMDSW-xxW**	xx Button, Digital Switch, White
PCOUT-000	Outdoor Photocell, 0-10V, 0-250 fc
PCIND-000	Indoor Photocell, 0-10V, 0-100 fc
PCATR-000	Atrium Photocell, 0-10V, 0-1000 fc
PCSKY-000	Skylight Photocell, 0-10V, 0-2000 fc
RELAY-L30	EZ-MAX Relay 1-Pole 30A NO/NC, with handle, 120VAC/230VAC/277VAC, 18K SCCR
RELAY-2PL	EZ-MAX Relay 2-Pole 20A NO, 240VAC/480VAC
RELAY-347	EZ-MAX Relay 1-Pole 20A NO, 347VAC

* For a complete range of occupancy sensors for use with EZ-MAX Plus, visit www.leviton.com/sensors.
 ** xx = 1, 2, 3, 4, 5, 6, 8, 10 Button Switch

NO.		COMPONENT		POLE SPECIFICATIONS		MIN. YIELD (P.S.I.)	
1.		POLE SHAFT	A-500 GR. B			46,000	
2.		BASE PLATE	A36			36,000	
3.		ANCHOR BOLTS	F1554 GR. 55			55,000	
4.		GALVANIZED HARDWARE	A153			-	
FINISH SPECIFICATIONS							
POLES SHALL HAVE A POLYESTER POWDER COAT FINISH IN A STANDARD COLOR.							
POLE DIMENSIONS							
POLE HGT. (FT.)	12'	TOP DIA. (IN.)	3.00	GAGE	11 GAGE	MITG. HGT. (FT.)	12'
BASE PLATE DIMENSIONS							
BOLT CIRCLE (IN.)	8.00-9.00	BASE PLATE DIM. (IN.)	8.00 SQ.	BOLT HOLE (IN.)	1.00	PLATE THK. (IN.)	.75
ANCHOR BOLT DIMENSIONS							
ANCHOR BOLT DIA. (IN.)	.75	ANCHOR BOLT LENGTH (IN.)	20.00				
ALLOWABLE WIND LOADING (SQ. FT.)							
WIND* EPA	80 MPH	90 MPH	100 MPH	120 MPH			
	6.9	5.0	3.9	2.1			

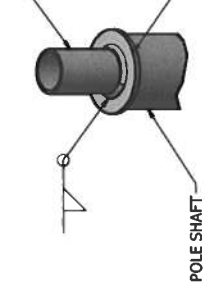
*WITH 1.3 GUST FACTOR



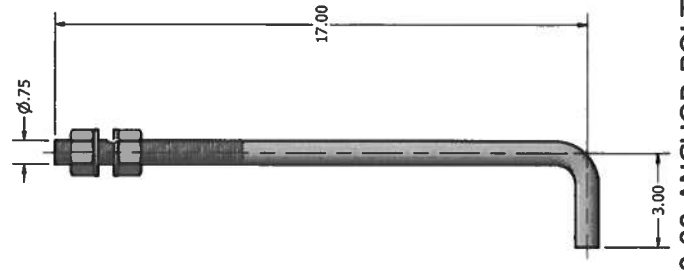
DRILLED MOUNT OPTIONS

- DRILLED PER FIXTURE REQUIREMENTS:
 D1- DRILLED FOR 1 FIXTURE
 D2- DRILLED FOR 2 FIXTURES AT 90° OR 180°
 D3- DRILLED FOR 3 FIXTURES AT 90° OR 120°
 D4- DRILLED FOR 4 FIXTURES

- TENON MOUNT OPTIONS:
 T2- Ø2.38 OD X 4.00 LG
 T3- Ø3.00 OD X 5.00 LG
 T4- Ø4.00 OD X 6.00 LG

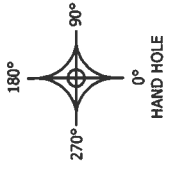


TENON MOUNT OPTIONS



Ø.75 X 20.00 ANCHOR BOLT

DRAWN: M. HARVALA	6/8/2015
CHECKED	
REVISION:	DATE:
APPROVED:	
QUOTE:	
S.O.#	
REF:	SCALE: NONE



UNITED LIGHTING STANDARDS
 a DAVIS COMPANY

23171 Groesbeck Hwy.
 Warren, MI 48089
 P: (586) 774-5650 | F: (586) 774-5706
www.unitedlightingstandards.com

TITLE:	
CATALOG:	
DWG NO:	RSP-12-3-11
SIZE:	C
SHEET 1 OF 1	

SOME GEOGRAPHICAL AREAS HAVE SPECIAL WIND CONDITIONS THAT CAN CREATE WIND INDUCED VIBRATIONS CAUSING A FATIGUE PROBLEM. NO METHOD HAS YET BEEN FOUND FOR PREDICTING DESTRUCTIVE LIGHTING POLE VIBRATION. THESE CONDITIONS ARE UNIQUE AND CANNOT BE GUARANTEED AGAINST, AND ARE THE RESPONSIBILITY OF A LOCAL SITE ENGINEER.

PTV Clio Post Top

Outdoor

The Clio Post Top is a decorative post top with high lumen output. These fixtures, inspired by the organic shapes of nature, become complimentary objects day or night in architectural environments. Find this lantern in parks, business complexes, and public spaces with contemporary urban design.



Luminaire	Clio Post Top	Type
Project		
Product		
Notes		



Features

- IP66 rated, silicon gasket
- Integrated thermal management
- Tempered glass



Order Format

Sample: PTV-60-50-T3

Series	Wattage	CCT	Voltage	Dimming	Optic/Lens Type	Finish Color
PTV=Clio Post Top	25=25W 35=35W 60=60W 80=80W	40=4000K 50=5000K	Blank=100-277V .V=347-480V	ND=Non-Dimming Blank=1-10V Dimming	T2=TypeII T3=TypeIII T4=TypeIV T5=Type V	Blank=Bronze

Application

The Clio Post Tops offer post top mounting.



Construction

The housing is die-casted as one piece with internal cooling fans. The model is casted from corrosion resistant aluminum, maintaining strength and precision for long term dayform appearance. This fixture is IP66 rated, with a molded silicon gasket throughout. Outside, the fixture is coated with premium AKZO polyester powder and a finish that is compliant with 1500 hrs of salt spray. 3 and 1 leg are in stock, with 2 leg available for custom orders.



Electrical

The decorative post tops produce a lumen output of 7,125 or greater lumens (60W). The fixture operates at a standard voltage of 100-277V and draws 25W to 80W of power. L70 is rated for 50,000 hours, or approximately 11.5 years at 12 hours a day of operation.

Input Voltage (VAC)	100-277 347-480
CRI	70+
CCT(K)	4,000, 5,000
PF	>.92
THD	<10%
L70 (Hours)	50,000+
Color	Matte Black
Housing	Aluminum
Optic Types	II, III, IV, V
Temperature Range	-40°C to 40°C
Warranty	10 Years

Optics

The Clio Post top luminaires are available in the standard offering of CCT 5000K. TypeII-S, Type III-S, TypeIV-S, and Type V-S optics are offered by this fixture.

Certifications

- DLC
- ETL
- CE
- RoHS
- Title 12
- IP66 rated

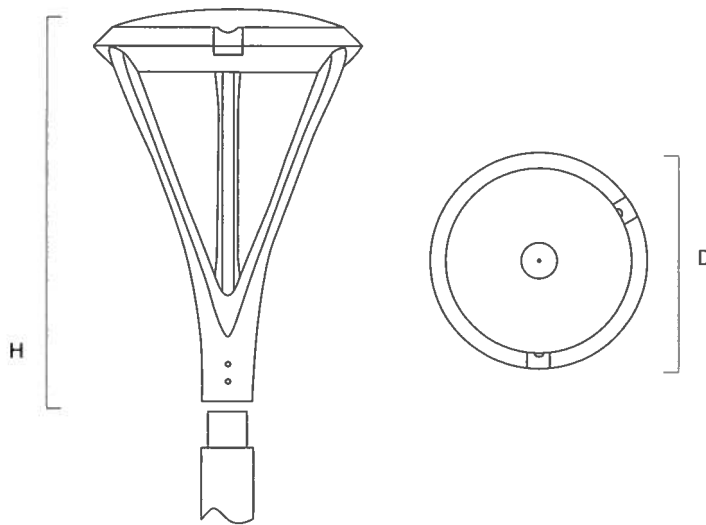
Lumen Data



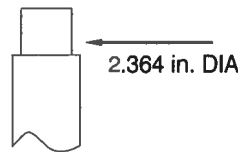
Wattage (W)	System Wattage	4K							
		T2		T3		T4		T5	
		Efficacy (Lm/W)	Lumens (Lm)	Efficacy (Lm/W)	Lumens (Lm)	Efficacy (Lm/W)	Lumens (Lm)	Efficacy (Lm/W)	Lumens (Lm)
25	23W	127	2945	128	2979	--	--	114	2664
35	33W	120	3960	121	3990	--	--	108	3560
60	57W	125	7125	129	7292	122	6925	118	6686
80	78W	118	9188	121	9443	113	8826	110	8642

Wattage (W)	System Wattage	5K							
		T2		T3		T4		T5	
		Efficacy (Lm/W)	Lumens (Lm)	Efficacy (Lm/W)	Lumens (Lm)	Efficacy (Lm/W)	Lumens (Lm)	Efficacy (Lm/W)	Lumens (Lm)
25	23W	134	3100	135	3136	--	--	120	2804
35	33W	126	4169	128	4200	--	--	114	3748
60	57W	132	7501	136	7676	128	7290	124	7039
80	78W	124	9672	127	9440	119	9290	116	9097

Dimensions



Part No.	Depth (D)	Height (H)
PTV-24	15.76	23.21
PTV-35	15.76	23.21
PTV-60	15.76	23.21
PTV-80	15.76	23.21



Recorded in inches

10 Year Warranty

ATG Electronics®
Industry Leading 10 Year Limited Warranty
For North American LED Lighting Fixtures

ATG Electronics warrants to the original purchaser of ATG Electronics Domestic LED products listed above that were manufactured for which the ATG Electronics Spec. Sheet located on our website contains the words "10 year limited warranty" that, subject to the below terms and conditions of this warranty, when such LED products are properly installed they will comply with ATG Electronics published product specifications for such products and will be free from material defects in material and workmanship for a period of ten (10) years from the date of sale by ATG Electronics, or, if lesser, 50,000 hours of operation (at an average of 13.6 hours per day operation). The LED arrays in the Product(s) will be considered defective in material or workmanship only if a total of 15% or more of the individual light emitting diodes in the Product(s) fail to illuminate.

The above express limited warranty is extended by ATG Electronics® only to the original or first end-user purchaser and only for the original installed location. This warranty only applies to products purchased after June 1, 2017. This warranty is non-transferrable, whether by assignment or operation of law. The original purchaser must provide warranty claims to ATG Electronics within the warranty period promptly upon discovery and in accordance with ATG Electronics Return and Repair Procedures as outlined within this document.

Should any defects be found by ATG Electronics upon its inspection of the properly returned product, ATG Electronics sole responsibility and liability under this warranty will be, at its option, to either repair or replace the defective part or parts or else make available a new replacement unit that will provide equal or better performance. All decisions regarding the existence or non-existence of defects or otherwise affecting the warranty shall be made by ATG ELECTRONICS and shall be final and binding on all parties. Where a defective LED product is replaced under this warranty, the balance of the original warranty period shall remain effective.

Conditions and Exclusions

This warranty is conditioned upon proper installation, use and maintenance. This warranty will automatically become null and void and shall not be applicable to any LED fixture which (i) has not been timely paid for, (ii) is not installed and operated in accordance with the current edition of The National Electric Code (NEC), the Standards for Safety of Underwriters' Laboratory, Inc. (UL) or with ATG Electronics instructions and guidelines, (iii) has been moved from its original installation, (iv) has been installed within an area that has exposure to sulfur or any area with high acidic compounds in use, (v) has been operated in an ambient temperature or humidity that is higher than 35 degrees Celsius, (vi) has been subjected to a lightning strike, power surge or overvoltage condition, (vii) has its LED Board subjected to static electricity due to failure to discharge same prior to connecting or disconnecting the lead from the LED board, (viii) was not installed and/or operated in accordance with ATG Electronics instructions and guidelines, (ix) has been mishandled, misused, abused, tampered with, modified or altered by anyone other than ATG ELECTRONICS, (x) has been subjected to abnormal stresses and operating conditions, or (xi) has been operated without overvoltage and lightning protection devices in place.

Limitations

Disclaimers & Limitations of Liability

The foregoing warranty is exclusive of all other statutory, written or oral warranties and no other warranties of any kind, statutory, by operation of law or course of performance, or otherwise, are given, herein expressed or otherwise received. EXCEPT AS EXPRESSLY PROVIDED ABOVE, ATG ELECTRONICS DISCLAIMS ALL REPRESENTATIONS, WARRANTIES AND CONDITIONS OF ANY KIND, EXPRESS OR IMPLIED, REGARDING THE LED PRODUCTS AND ITS SERVICES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE OR PURPOSE.

LIMITATION OF LIABILITY. Other than the obligation to repair or replace as provided above, ATG Electronics shall have no liability for any losses, expenses or damages as a result of the installation, use, inability to use, removal or replacement of any LED product. ATG Electronics will not under any circumstances whether as a result of breach of contract, breach of warranty, tort, strict liability or otherwise be liable for consequential, incidental, special or exemplary damages including but not limited to, loss of profits or revenues, loss of any other goods or associated equipment or damage to any associated equipment, cost of capital, cost of substitute products, facilities or services, down time cost or claims of claimant's customers. ATG Electronics liability on any claim of any kind for any loss or damages arising out of, resulting from or concerning any LED product, any aspect of this warranty or for any products or services furnished hereunder shall not exceed the price of the fixture which gives rise to the claim.

Return and Repair Procedures

All warranty requests and or questions are to be directed to ATG Electronics Customer Service Department (CSD) at 888-618-7298. If deemed necessary, the CSD will issue a Returned Merchandise Authorization (RMA) number which must be included on both the packing slip of the component or fixture being returned and on the outside of the box. You must include your name and contact information, including your email address, on the packing slip so that we can contact you easily. Each component or fixture must be packaged very carefully and properly so as to prevent damages in shipment and must be shipped freight prepaid. Please obtain a proof of delivery to ensure that the material is received.

Once the component or fixture has been received and tested, an evaluation report will be provided to the end user via email. This report will clarify the following:

- A) The component / fixture is covered under the warranty policy and will either be repaired or replaced.
- B) The component / fixture is not covered under the warranty policy and the reason for this determination.

If ATG ELECTRONICS determines that the component or fixture is covered under the warranty, then the appropriate repairs will be started or a replacement fixture will be manufactured and shipped. Please note that in the event the returned component or fixture is found not to be covered under this warranty, you may be subject to a labor charge for the evaluation process and will be responsible for all return shipping charges and fees. For components and fixtures determined to be covered under this warranty prior to the first anniversary of the Sale Date, the repaired or replacement component or fixture will be returned to you at no charge. You will be responsible for all other shipping charges.

No Labor Reimbursement

All components and fixtures determined to be covered by this warranty as provided above, will be repaired or replaced at no charge to the customer, however, except as expressly provided above with respect to recessed and linear fixtures during the first year, the customer must hire and pay for an electrician to remove and reinstall such components and fixtures. No labor costs will be covered for the removal or installation of any components or fixtures. The warranty does not cover modifications, repairs or replacements, or the related labor or materials costs, that may be necessary to facilities or third party products in connection with the removal, repair, or replacement of any LED product under this warranty.

**COMMERCIAL METER PEDESTAL
WITH CUSTOMER SECTION**

- Provides metered power distribution for street lighting, park lighting, private development lighting, signage, irrigation, pump, and cellular applications
- 100% stainless steel construction assures long term, rustproof durability and additional strength
- Swingside top allows for full exposure of meter compartment
- Top is easier to open and control than fliptops, and locks open for safety
- All stainless steel enclosures may be powder coated in various colors at an additional charge
- Double door design
- Mounting template and anchors included
- Ten year limited warranty
- NEMA TYPE 3R UL Listed

METER SECTION

- 0-200 amp meter sockets; 4, 5, 7 Jaw available
- 120v, 280v, 240v and 480v models available
- NEMA TYPE 3R Rated UL Listed
- E.U.S.E.R.C. 308 compliant commercial meter pedestal

CUSTOMER SECTION

- Unique design provides large electrical customer compartment but maintains a slim, small cabinet profile
- 0-200 amp load centers with up to 32 circuits
- 20" x 30" customer electrical compartment

MPS-A16-10K* Metered Enclosure

- 100 amp meter/100 amp load center
- 16 Circuits with main breaker, Single Phase

MPS-C20-10K* Metered Enclosure

- 200 amp meter/200 amp load center
- 20 Circuits with main breaker, Single Phase

MPS-C32-10K* Metered Enclosure

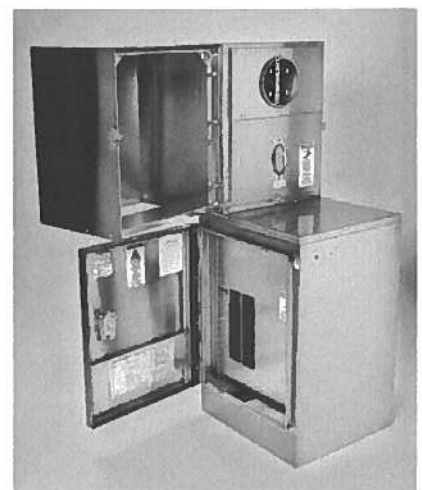
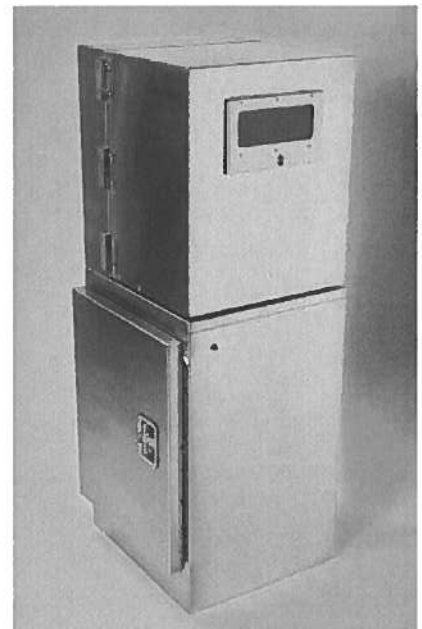
- 200 amp meter/200 amp load center
- 32 Circuits with main breaker, Single Phase

MPS-D18-10K* Metered Enclosure

- 100 amp meter/100 amp load center
- 18 Circuits with main breaker, Three Phase

MPS-E24-10K* Metered Enclosure

- 200 amp meter/200 amp load center
- 24 Circuits with main breaker, Three Phase

SPECIFICATION ON PAGE 59-60

landscape structures



The IPEMA logo is a mark of approval for playground equipment that has been tested and certified to meet the IPEMA safety standards. It is a mark of approval for playground equipment that has been tested and certified to meet the IPEMA safety standards.

THIS PLAY AREA & PLAY EQUIPMENT IS DESIGNED FOR AGES 2-12 YEARS UNLESS OTHERWISE NOTED ON PLAN.

IF IN THE UNFORTUNATE EVENT THAT THIS PLAY AREA IS USED BY CHILDREN OUTSIDE THE AGE ACCESSIBILITY PARAMETERS, THE USER ASSUMES ALL RESPONSIBILITY FOR ANY INJURY OR DAMAGE TO THE EQUIPMENT OR THE USER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL HEALTH DEPARTMENT AND THE LOCAL FIRE DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL HEALTH DEPARTMENT AND THE LOCAL FIRE DEPARTMENT.

IF IN THE UNFORTUNATE EVENT THAT THIS PLAY AREA IS USED BY CHILDREN OUTSIDE THE AGE ACCESSIBILITY PARAMETERS, THE USER ASSUMES ALL RESPONSIBILITY FOR ANY INJURY OR DAMAGE TO THE EQUIPMENT OR THE USER.

ACCESSIBILITY/PROVISIONS SUBJECTIVE TO BE A COMBINATION OF HEIGHT AND USE. SEE FULL MANUAL.

IF IN THE UNFORTUNATE EVENT THAT THIS PLAY AREA IS USED BY CHILDREN OUTSIDE THE AGE ACCESSIBILITY PARAMETERS, THE USER ASSUMES ALL RESPONSIBILITY FOR ANY INJURY OR DAMAGE TO THE EQUIPMENT OR THE USER.

DESIGNED BY:

WVO

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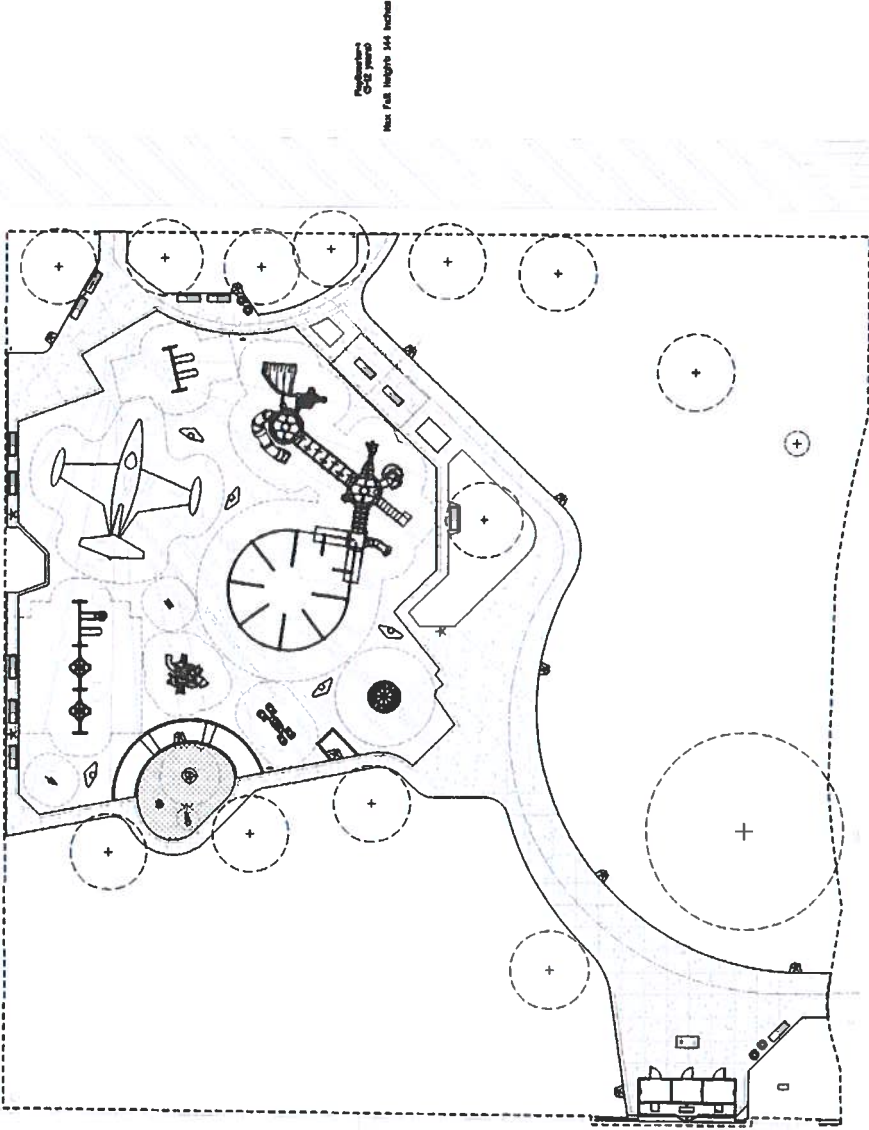
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Max Fall Height 96 inches

Max Fall Height 144 inches

5-12 Years

TOTAL ELEVATED PLAY COMPONENTS 5
 TOTAL ELEVATED COMPONENTS ACCESSIBLE BY RAMP 0 REQUIRED
 TOTAL ELEVATED COMPONENTS ACCESSIBLE BY TRANSFER 4 REQUIRED
 TOTAL ACCESSIBLE GROUND LEVEL COMPONENTS SHOWN 11 REQUIRED
 TOTAL DIFFERENT TYPES OF GROUND LEVEL COMPONENTS 7 REQUIRED

2-5 Years

TOTAL ELEVATED PLAY COMPONENTS 10
 TOTAL ELEVATED COMPONENTS ACCESSIBLE BY RAMP 0 REQUIRED
 TOTAL ELEVATED COMPONENTS ACCESSIBLE BY TRANSFER 10 REQUIRED
 TOTAL ACCESSIBLE GROUND LEVEL COMPONENTS SHOWN 14 REQUIRED
 TOTAL DIFFERENT TYPES OF GROUND LEVEL COMPONENTS 10 REQUIRED

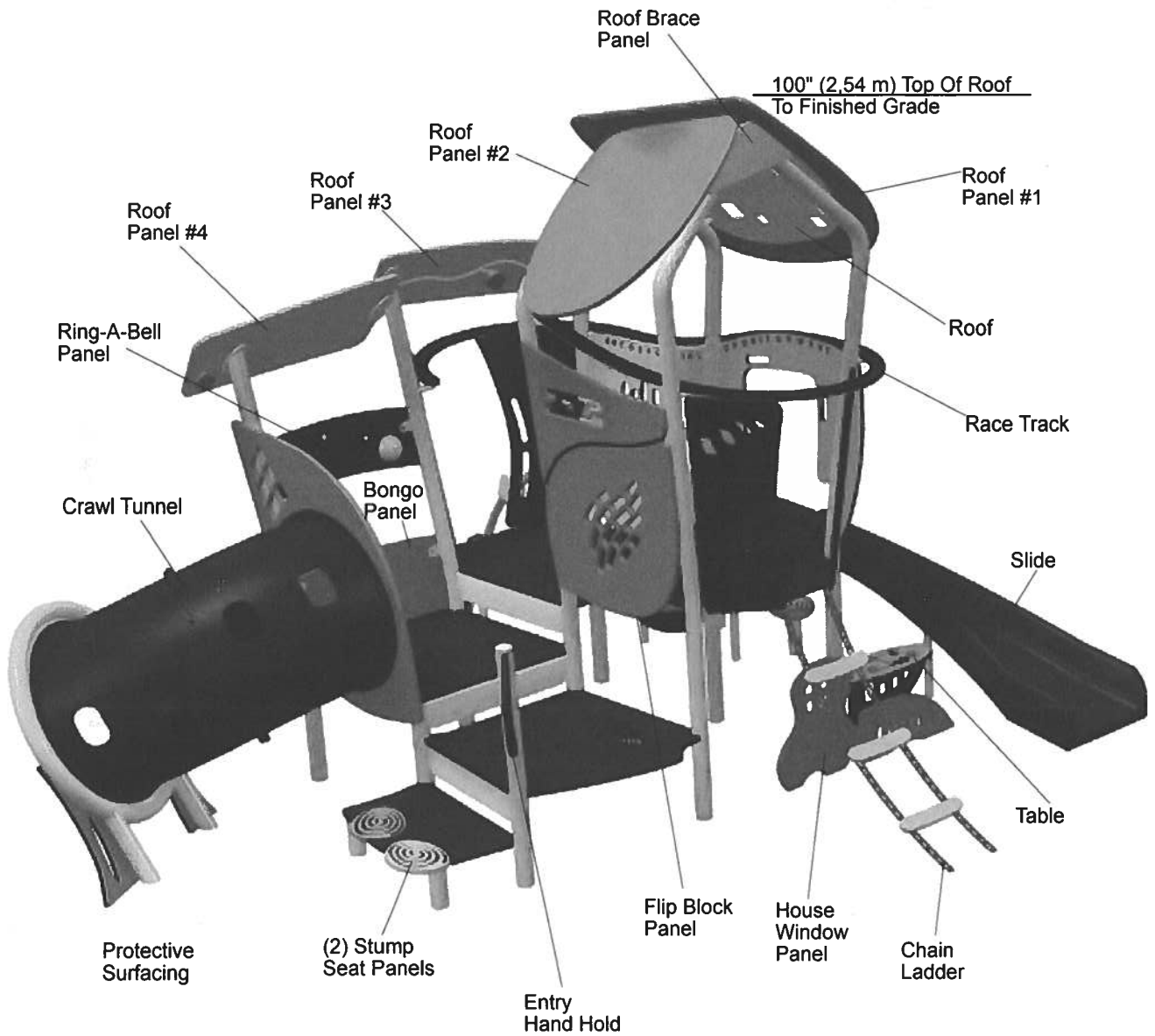


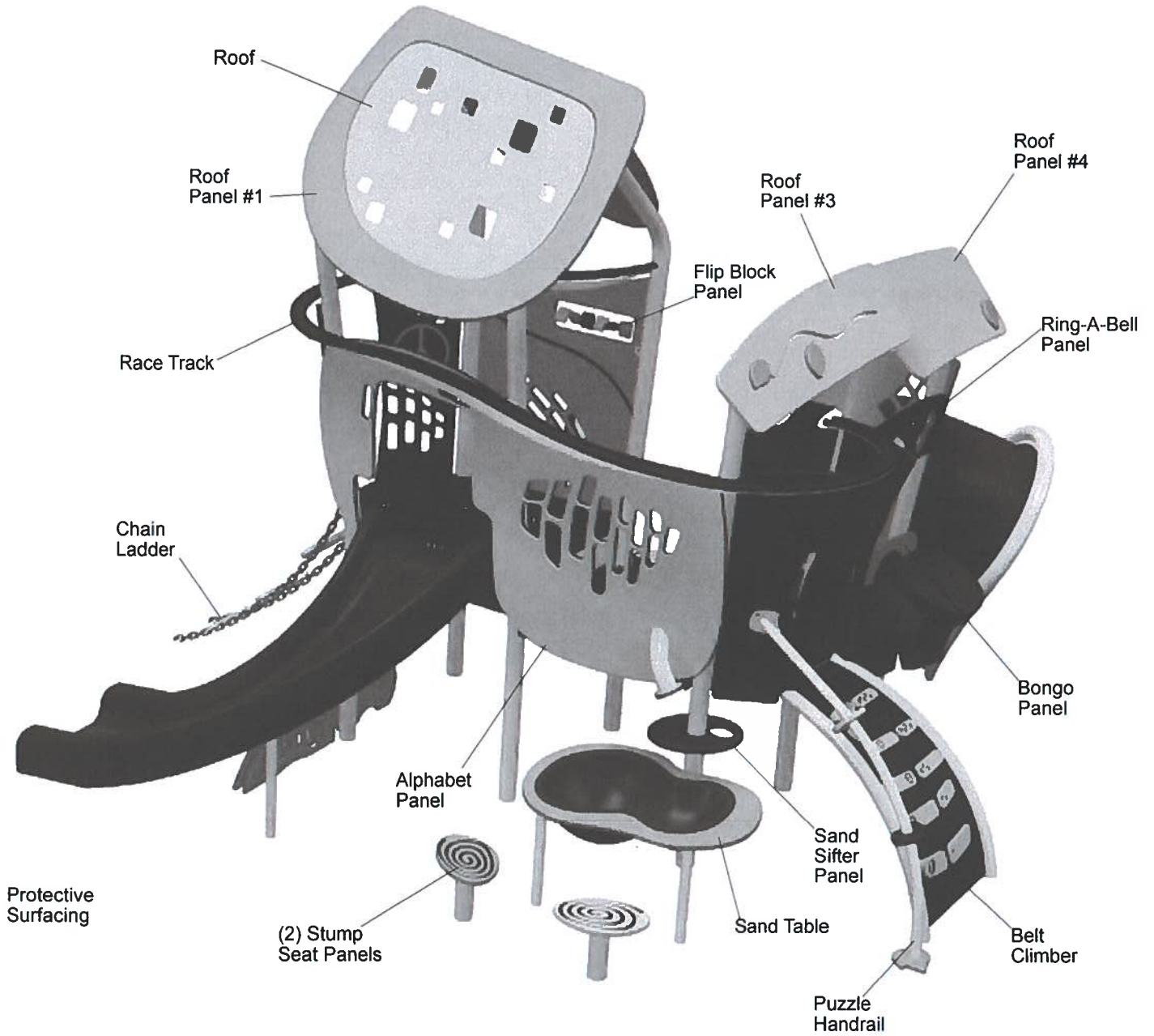
Lions Park
 City of Costa Mesa, CA

Coast Recreation, Inc.
 Gregg Rogers

SYSTEM TYPE:
 PlayBooster
 DRAWING #:
 1140430-01-02







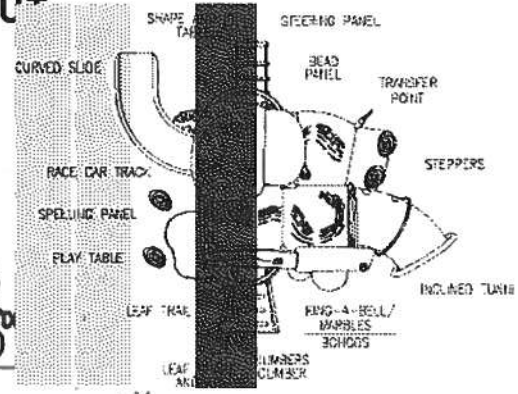
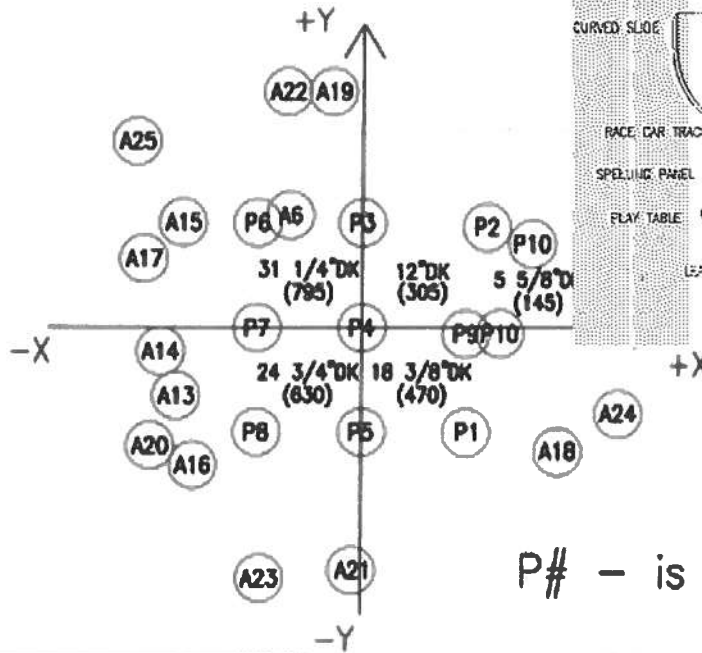
Smart Play®

197057 Motion

601 7TH STREET SOUTH, DELANO, MINNESOTA 55328-8605 888-574-4678 LSI Install Help 888-438-6574 LSI Direct 763-972-5200 Int. FAX (763) 972-3185

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PLAN VIEW /FOOTING LAYOUT

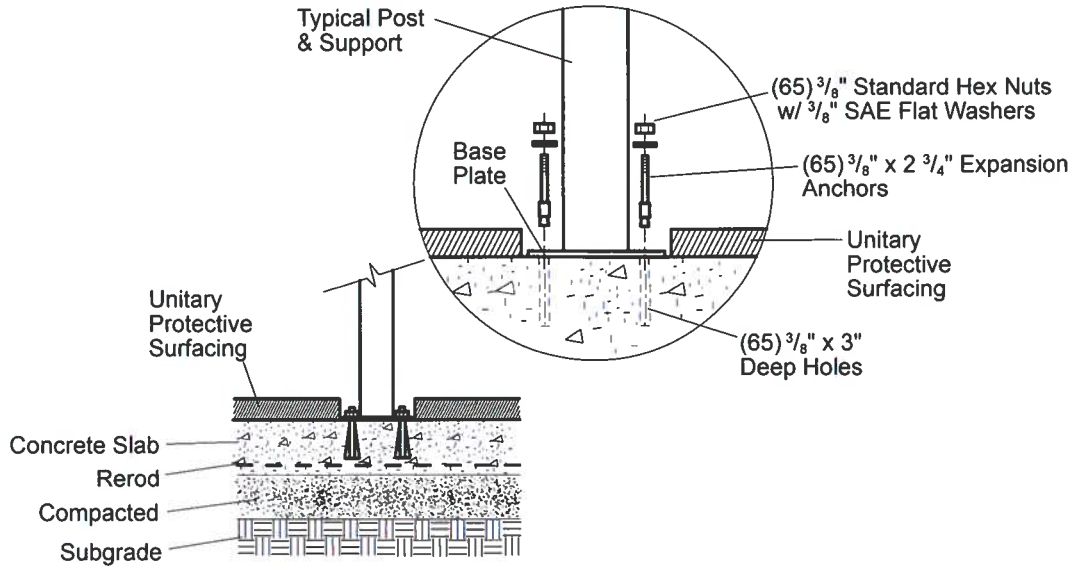


P# - is the POST Number

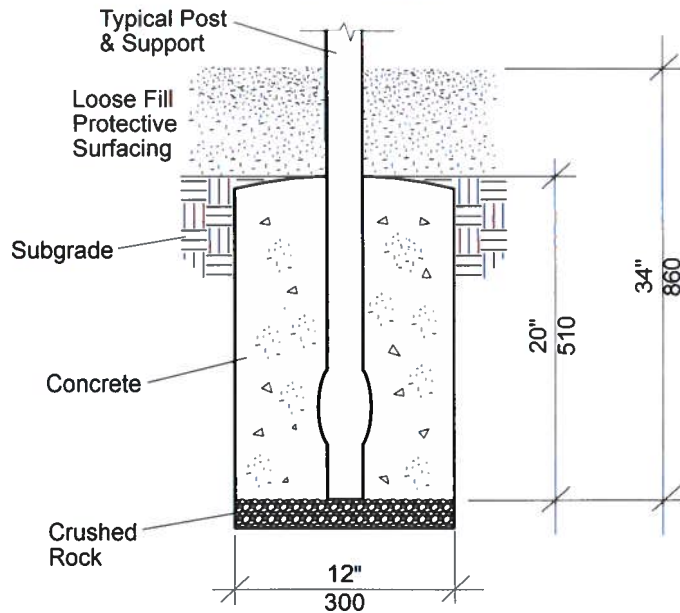
N.	I.D.	X (cm)	Y (cm)	Dist. to O	DIA (cm)
1	P4	0	0	0	30
2	P9	67	-4	67	30
3	P5	0	-67	67	30
4	P7	-67	0	67	30
5	P3	0	67	67	30
6	A6	-46	72	88	30
7	P10	89	-4	89	30
8	P8	-67	-67	95	30
9	P1	67	-67	95	30
10	P6	-67	67	95	30
11	P2	80	65	103	30
12	P10	109	54	122	30
13	A13	-119	-44	127	30
14	A14	-130	-15	130	30
15	A15	-115	67	134	30
16	A16	-108	-89	140	30
17	A17	-140	44	147	30
18	A18	126	-79	149	30
19	A19	-19	152	153	30
20	A20	-136	-76	156	30
21	A21	-6	-156	156	30
22	A22	-48	152	159	30
23	A23	-65	-162	174	30
24	A24	165	-55	174	30
25	A25	-145	120	188	30

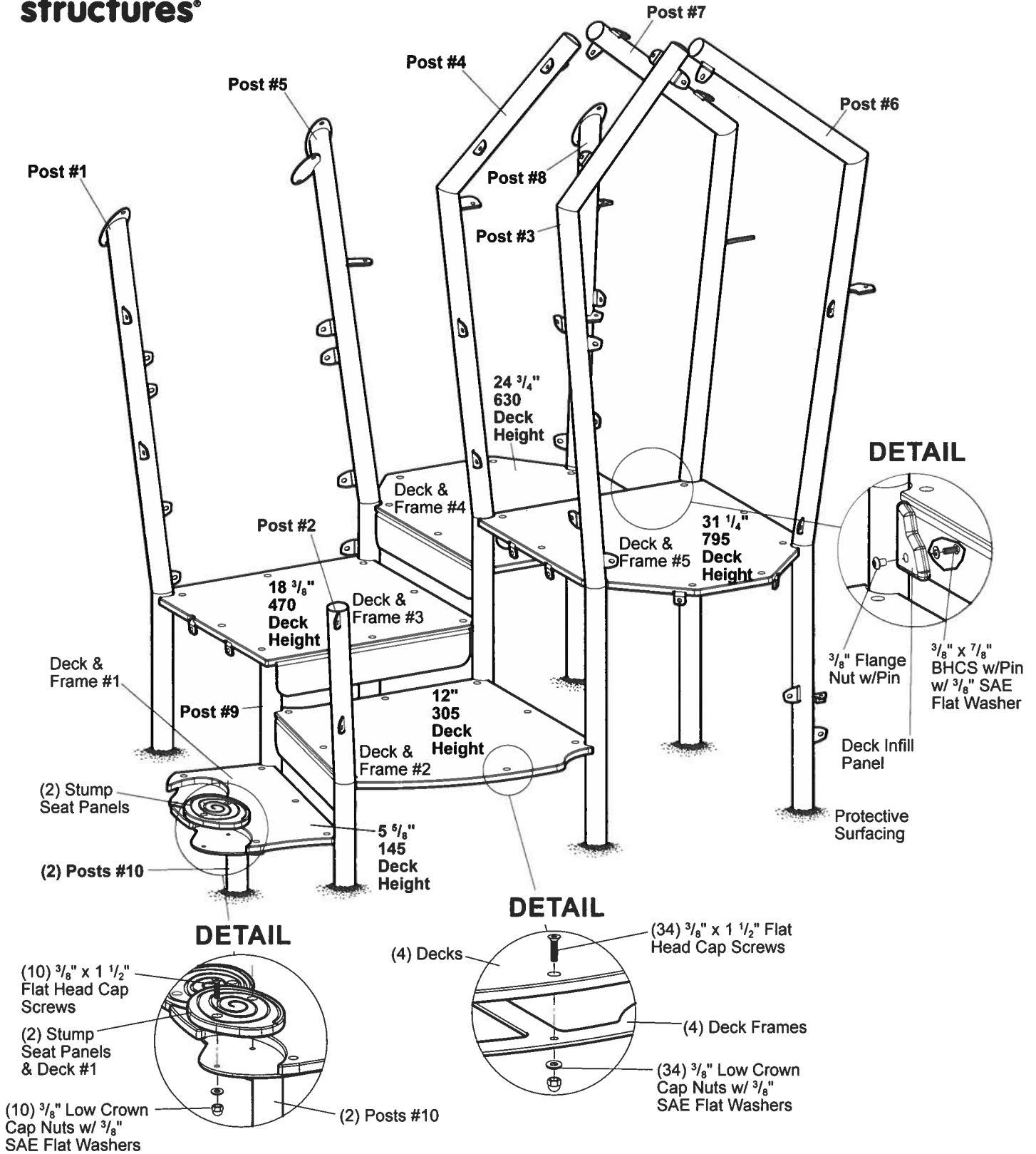
N.	I.D.	X (ft-in)	Y (ft-in)	Dist. to O	DIA (in)
1	P4	0"	0"	0"	12
2	P9	2'-2"	-2"	2'-2"	12
3	P5	0"	-2'-3"	2'-3"	12
4	P7	-2'-3"	0"	2'-3"	12
5	P3	0"	2'-3"	2'-3"	12
6	A6	-1'-6"	2'-4"	2'-10"	12
7	P10	2'-11"	-1"	2'-11"	12
8	P8	-2'-3"	-2'-3"	3'-1"	12
9	P1	2'-3"	-2'-3"	3'-1"	12
10	P6	-2'-3"	2'-3"	3'-1"	12
11	P2	2'-8"	2'-1"	3'-4"	12
12	P10	3'-7"	1'-9"	4'	12
13	A13	-3'-11"	-1'-5"	4'-2"	12
14	A14	-4'-3"	-6"	4'-3"	12
15	A15	-3'-9"	2'-3"	4'-5"	12
16	A16	-3'-7"	-2'-1"	4'-7"	12
17	A17	-4'-7"	1'-5"	4'-10"	12
18	A18	4'-2"	-2'-7"	4'-11"	12
19	A19	-8"	5'	5'	12
20	A20	-4'-6"	-2'-6"	5'-1"	12
21	A21	-2"	-5'-2"	5'-2"	12
22	A22	-1'-7"	5'	5'-3"	12
23	A23	-2'-2"	-5'-4"	5'-9"	12
24	A24	5'-5"	-1'-10"	5'-9"	12
25	A25	-4'-9"	3'-11"	6'-2"	12

DETAIL
SURFACE MOUNT



DETAIL
DIRECT BURY





Posts & Decks

Smart Play® 197057 Motion

Specifications

Part#	Description	Qty.
196425	Post #1, Specify Color (SM)	1
197094	Post #1, Specify Color (DB)	1
196424	Post #2, Specify Color (SM)	1
197095	Post #2, Specify Color (DB)	1
196426	Post #3, Specify Color (SM)	1
197096	Post #3, Specify Color (DB)	1
196427	Post #4, Specify Color (SM)	1
197097	Post #4, Specify Color (DB)	1
196428	Post #5, Specify Color (SM)	1
197098	Post #5, Specify Color (DB)	1
196429	Post #6, Specify Color (SM)	1
197099	Post #6, Specify Color (DB)	1
196431	Post #7, Specify Color (SM)	1
197100	Post #7, Specify Color (DB)	1
196432	Post #8, Specify Color (SM)	1
197101	Post #8, Specify Color (DB)	1
196524	Post #9, Specify Color (SM)	1
197102	Post #9, Specify Color (DB)	1
197246	Post #10, Specify Color (SM)	2
197272	Post #10, Specify Color (DB)	2
211280	Deck Surface #1, Black	1
211281	Deck Surface #2, Black	1
211282	Deck Surface #3, Black	1
211283	Deck Surface #4, Black	1
211284	Deck Surface #5, Black	1
196582	Deck Frame #1, Specify Color	1
196583	Deck Frame #2, Specify Color	1
196584	Deck Frame #3, Specify Color	1
196506	Deck Frame #4, Specify Color	1
196586	Deck Frame #5, Specify Color	1
197004	Stump Seat #1, Specify Color	1
197050	Stump Seat #2, Specify Color	1
200950	Deck Infill Panel, Specify Color	1
222622	Mainstructure Hardware Package	1
100365	3/8" SAE Flat Washer, SST	45
100349	3/8" Low Crown Cap Nut, SST	44
151421	3/8" x 1 1/2" FHCS w/Pin	44
100196	3/8" x 7/8" BHCS w/Pin, SST	1
100353	3/8" Flange Nut w/Pin, SST	1
200978	Motion (SM) Hardware Package	1
100327	3/8" Standard Hex Nuts, SST	65
100365	3/8" SAE Flat Washers, SST	65
100263	3/8" x 2 3/4" Expansion Anchors	65

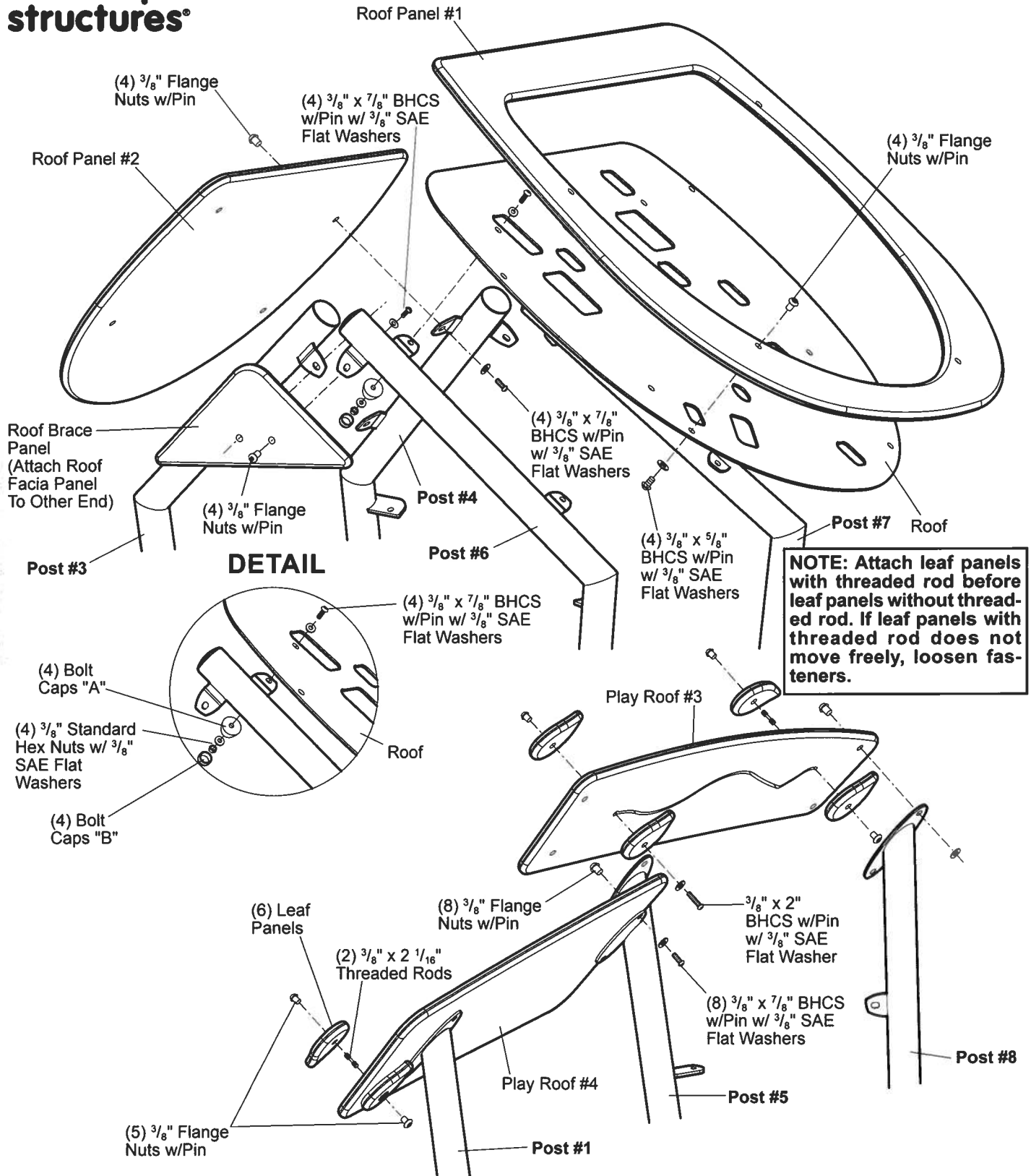
DB = Direct Bury
SM = Surface Mount

Deck Frame:	Fabricated from 1/4" (6,35 mm) HRPO steel sheet. Finish: ProShield®, color specified.
GripX Deck Surface:	3/4" (19,05 mm) Thick Permalene®, black in color.
Panels:	Recycled Permalene, color specified.
Post:	Weldment comprised of 2.375" (60,33 mm) O.D. RS20 (.095"-1.05") (2,41 mm - 2,67 mm) wall galvanized steel tubing, 1/4" (6,35 mm) HRPO steel sheet and 7 GA. (.179") (4,55 mm) HRPO steel sheet. Finish: ProShield, color specified.
Fasteners:	Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
Installation Time:	Approx. 30 man hours for entire structure (DB) Approx. 25 man hours for entire structure (SM)
Fall Height:	32" (813 mm)
Area Required:	24' x 24' (7,31 m x 7,31 m) minimum
Concrete:	Approx. 32.75 cu. ft. for entire structure (DB)
Weight:	1100 lbs. (DB) 950 lbs. (SM)
Height:	100" (2,54 m) Top Of Roof To Finished Grade

Installation Instructions

- 1) **(Direct Bury)** Dig footings spaced as shown. Orient posts correctly and set in proper footing holes.
- 2) Starting with the highest deck, attach deck frames and decks to posts. Level decks. Continue until all deck frames and decks are in position.
- 3) Install stump seat panels to deck frame.
- 4) Attach deck infill panel.
- 5) Attach remaining components and panels according to their respective installation sheets.
- 6) **(Direct Bury)** With structure square, plumb and level, pour concrete footings. Allow concrete to cure a minimum of 72 hours before users are allowed to play on the structure.

Surface Mount - Drill 3/8" x 3" deep holes through post and footer plates into concrete slab using 3/8" masonry bit and hammer drill. Tap 3/8" x 2 3/4" expansion anchors into drilled holes and fasten with 3/8" standard hex nuts and 3/8" SAE flat washers.
- 7) Install protective surfacing before users are allowed to play on the structure.



Roof

Installation Instructions

Part#	Description	Qty.
200383	Roof 2 Panel Set, Specify Color	1
196802	Roof Panel #1, Specify Color.....	1
196805	Roof Panel #2, Specify Color.....	1
196807	Roof Panel #3, Specify Color.....	1
196833	Roof Panel #4, Specify Color.....	1
196810	Roof, Specify Color.....	1
196806	Roof Brace Panel, Specify Color.....	1
199316	Play Roof Facia Panel, Specify Color.....	1
197233	Leaf Panel, Specify Color.....	6
200946	Motion Roofs Hardware Package	1
100195	3/8" x 5/8" BHCS w/Pin, SST	4
100196	3/8" x 7/8" BHCS w/Pin, SST	20
100327	3/8" Standard Hex Nut, SST	4
100353	3/8" Flange Nut w/Pin, SST	25
100365	3/8" SAE Flat Washer, SST.....	28
100173	3/8" x 2" BHCS w/Pin, SST.....	1
123115	3/8" x 2 1/16" Threaded Rod.....	2
108184	Bolt Cap Part A, White.....	4
108185	Bolt Cap Part B, White.....	4

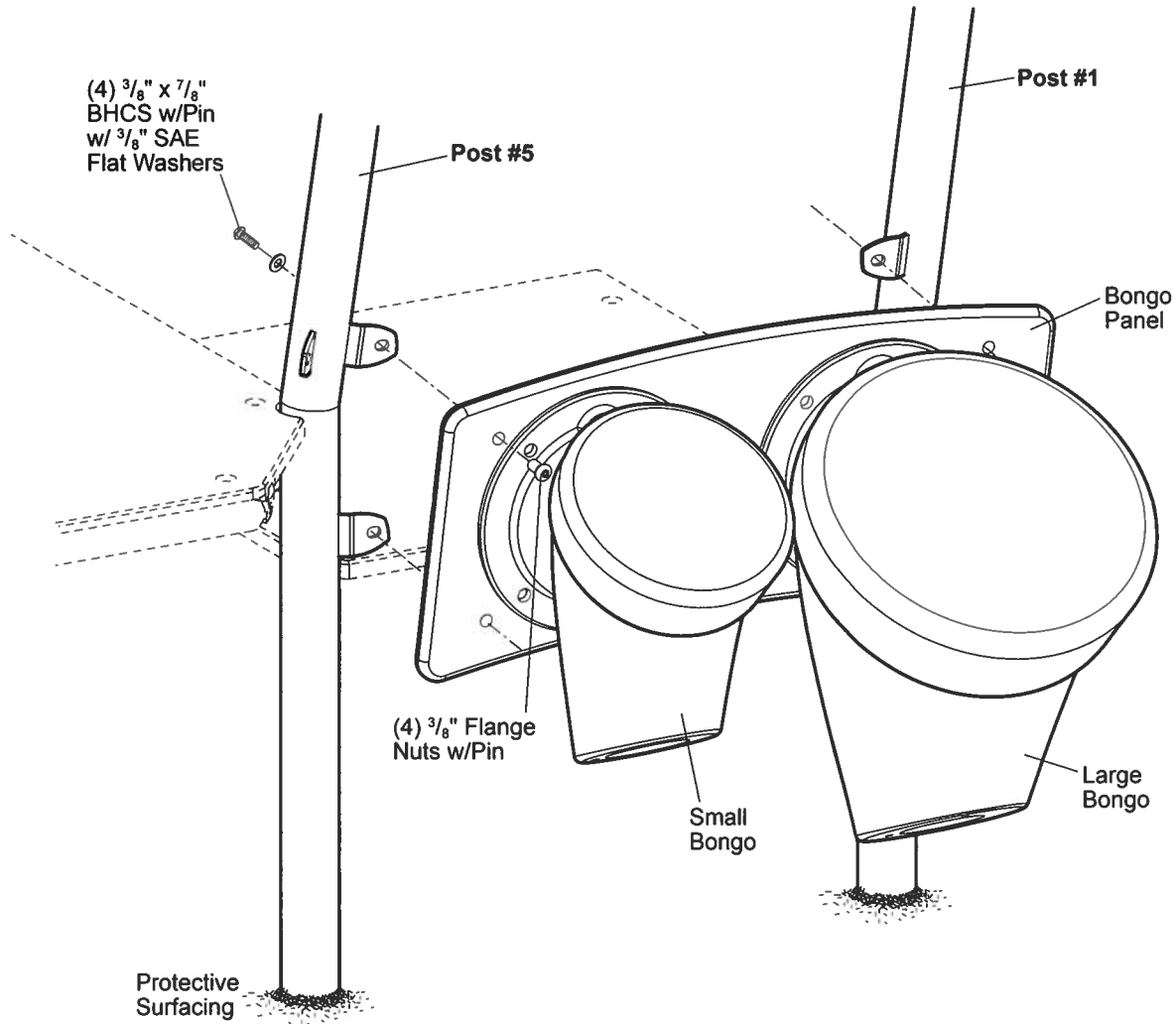
- 1) Attach leaf panels to roof panels.
- 2) Attach roof and roof panels to post tabs.

Specifications

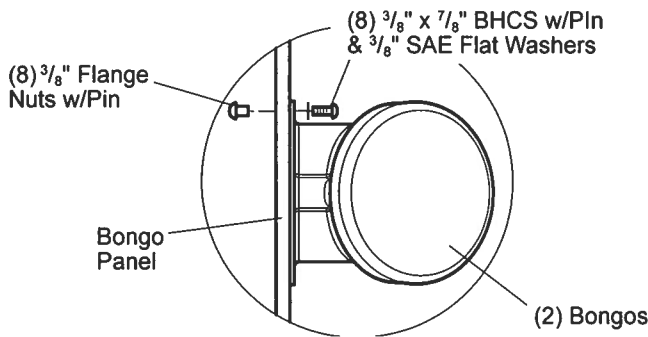
Panels: Recycled Permalene® panel, color specified.

Roof: Fabricated from 7 GA. (.179") (4,55 mm) HRPO steel sheet. Finish: ProShield®, color specified.

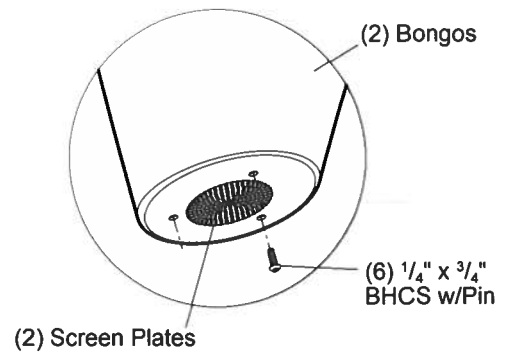
Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).



**DETAIL
BONGO ATTACHMENT**



**DETAIL
SCREEN ATTACHMENT**



NOTE: Screen plates attach (flat side to flat side) to inside of Bongos.



Bongo Panel

Parts List

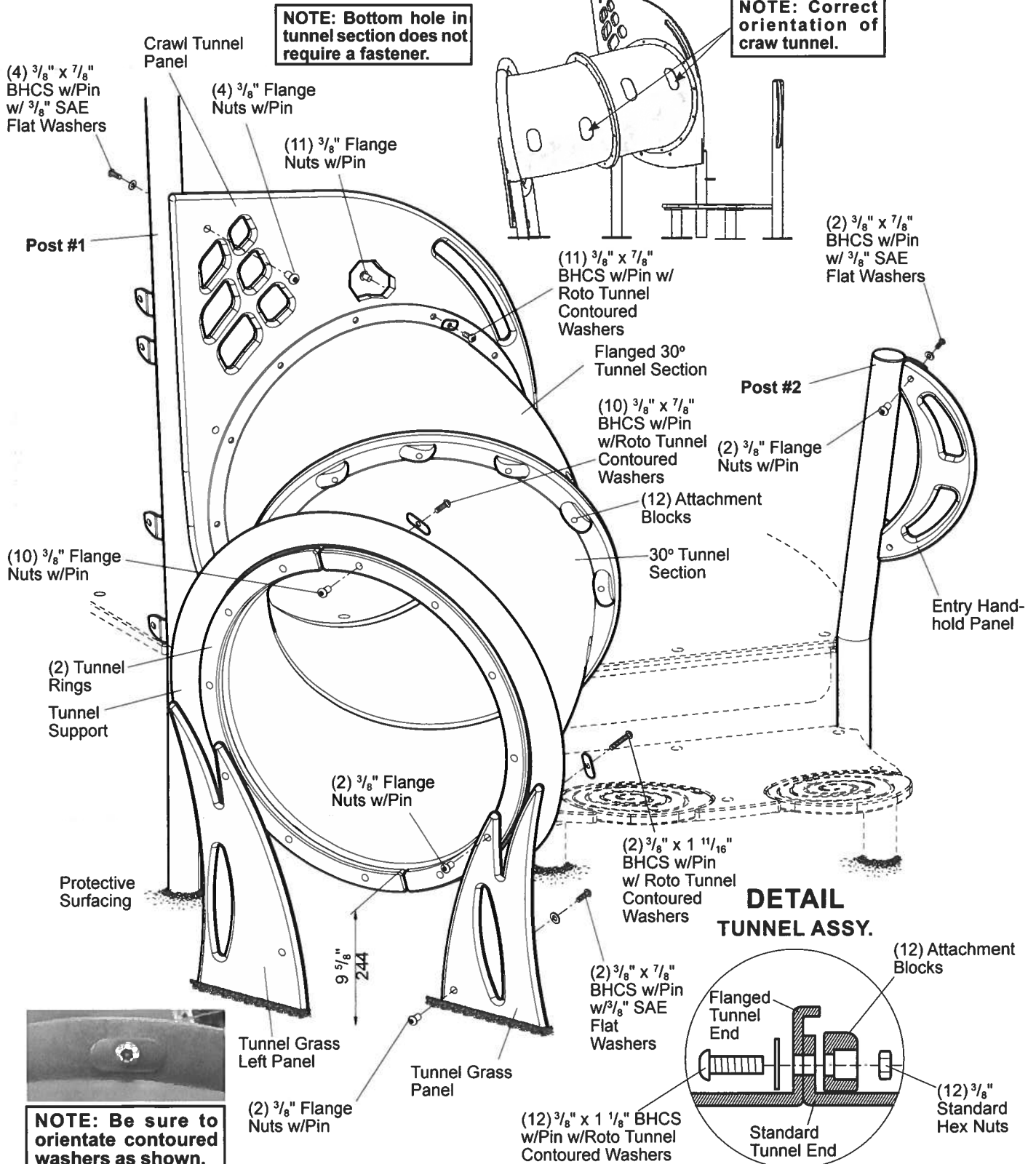
Part#	Description	Qty.
163911	Small Bongo, Specify Color.....	1
163912	Large Bongo, Specify Color.....	1
196817	Bongo Panel, Specify Color.....	1
164523	Screen Plate, Black.....	2
200949	Bongo Panel Hardware Package	1
100196	3/8" x 7/8" BHCS w/Pin, SST.....	12
100353	3/8" Flange Nut w/Pin, SST.....	12
100365	3/8" SAE Flat Washers, SST.....	12
162374	1/4" x 3/4" BHCS w/Pin, SST.....	6
127463	T-27 TPP Hex Bit (Torx).....	1

Specifications

- Panel:** Recycled Permalene® panel, color specified.
- Bongo:** Rotationally molded from U.V. stabilized linear low density polyethylene, color specified.
- Screen Plate:** Fabricated from 12 GA. (.105") (2,67 mm) HRPO flat steel. Finish: ProShield®, black in color.
- Fasteners:** Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Instructions

- 1) Attach screen plates to bongos. **NOTE:** Screen plates attach (flat side to flat side) to inside of Bongos.
- 2) Attach Bongos to Bongo Panel.
- 3) Attach Bongo Panel to post tabs.



Crawl Tunnel

Installation Instructions

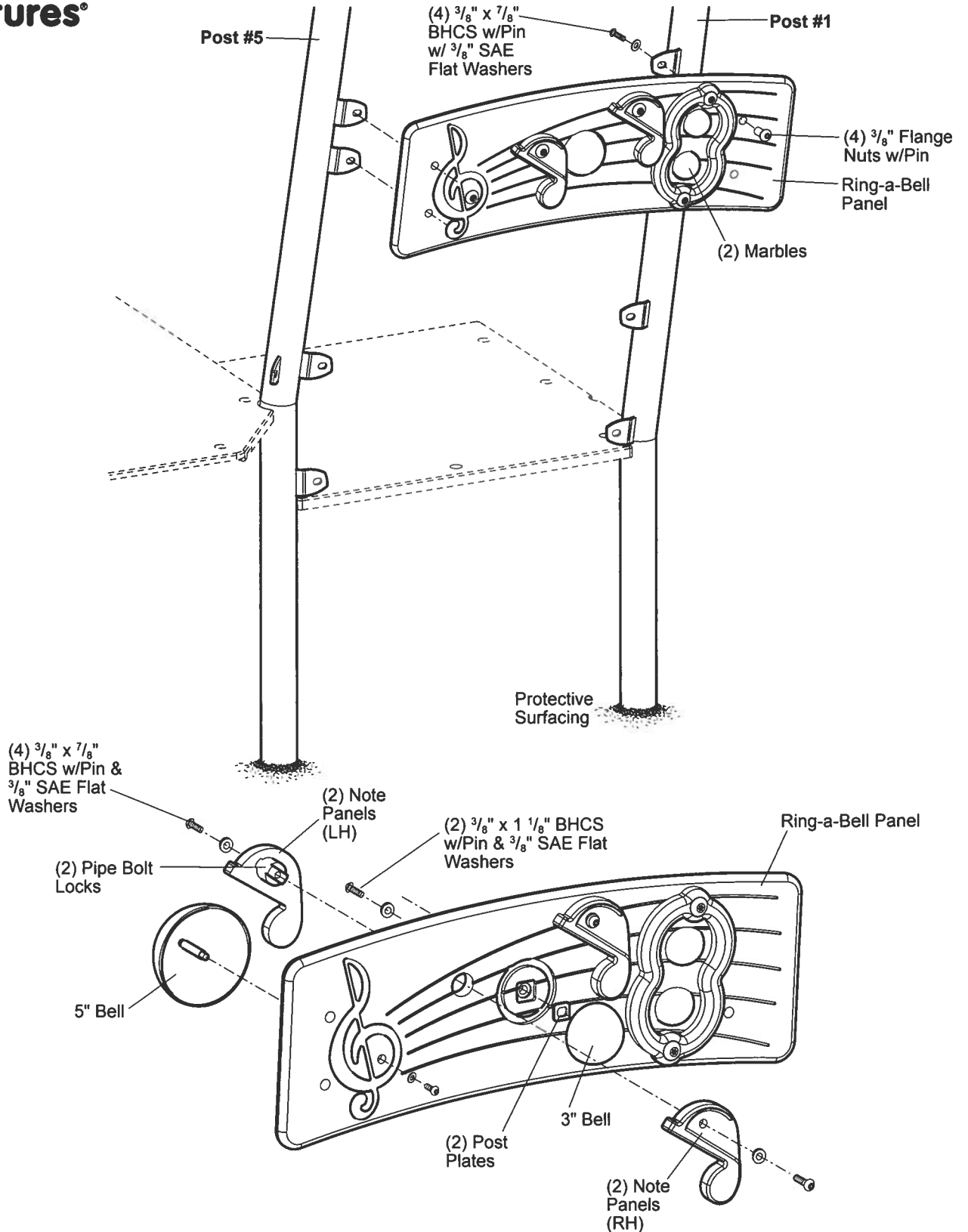
Part#	Description	Qty.
201077	Tunnel Ring Panel, Specify Color.....	2
196827	Crawl Tunnel Panel, Specify Color.....	1
200748	Tunnel Grass Left Panel, Specify Color.....	1
198121	Tunnel Grass Panel, Specify Color.....	1
108175	30° Tunnel Section, Specify Color.....	1
108177	Flanged 30° Tunnel Section, Specify Color.....	1
200498	Tunnel Support, Specify Color (SM)	1
201075	Tunnel Support, Specify Color (DB)	1
133047	Attachment Block, Specify Color.....	12
197232	Entry Handhold Panel, Specify Color.....	1
219162	Crawl Tunnel Hardware Package	1
100196	3/8" x 7/8" BHCS w/Pin, SST.....	29
100198	3/8" x 1 1/8" BHCS w/Pin, SST.....	12
123224	3/8" x 1 11/16 BHCS w/Pin, SST.....	2
100353	3/8" Flange Nut w/Pin, SST	31
100365	3/8" SAE Flat Washer, SST	8
216834	Roto Tunnel Contoured Washer, SST.....	35
100327	3/8" Standard Hex Nut, SST.....	12

DB = Direct Bury
SM = Surface Mount

- 1) Attach crawl tunnel panel to post and deck tabs.
- 2) Attach crawl tunnel sections to crawl tunnel panel.
- 3) Attach tunnel support, tunnel ring panels and grass panels to crawl tunnel.
- 4) Attach entry handhold panel to post tabs.

Specifications

- Panels:** Recycled Permalene® panel, color specified.
- Tunnel Section:** Rotationally molded from U.V. stabilized linear low density polyethylene, color specified.
- Tunnel Support:** Weldment comprised of 2.375" (60,33 mm) O.D. RS20 (.095"- .105") (2,41 mm - 2,67 mm) wall galvanized steel tubing, and 1/8" (.125") (3,18 mm) HRPO steel sheet. Finish: ProShield®, color specified.
- Attachment Block:** U.V. stabilized high-density polyethylene, color specified.
- Fasteners:** Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).





Ring-a-Bell Panel

Parts List

Part#	Description	Qty.
197308	Note Panel (RII), Specify Color.....	2
197309	Note Panel (LH), Specify Color.....	2
158433	3" Bell, Specify Color.....	1
158434	5" Bell, Specify Color.....	1
200770	Ring-a-Bell Panel, Specify Color.....	1
219272	Ring-a-Bell Hardware Package	1
100196	3/8" x 7/8" BHCS w/Pin, SST.....	8
100198	3/8" x 1 1/8" BHCS w/Pin, SST.....	2
100353	3/8" Flange Nut w/Pin, SST.....	4
100365	3/8" SAE Flat Washers, SST.....	10
158335	Bell Post Plate, SST.....	2
197312	Pipe Bolt Lock, Aluminum.....	2

Installation Instructions

- 1) Attach panel to post tabs.
- 2) Attach Note panels and pipe bolt locks to Ring-a-Bell panel.
- 3) Insert post plates into bell panel cutouts. Attach bells to Ring-a-Bell panel, as shown.

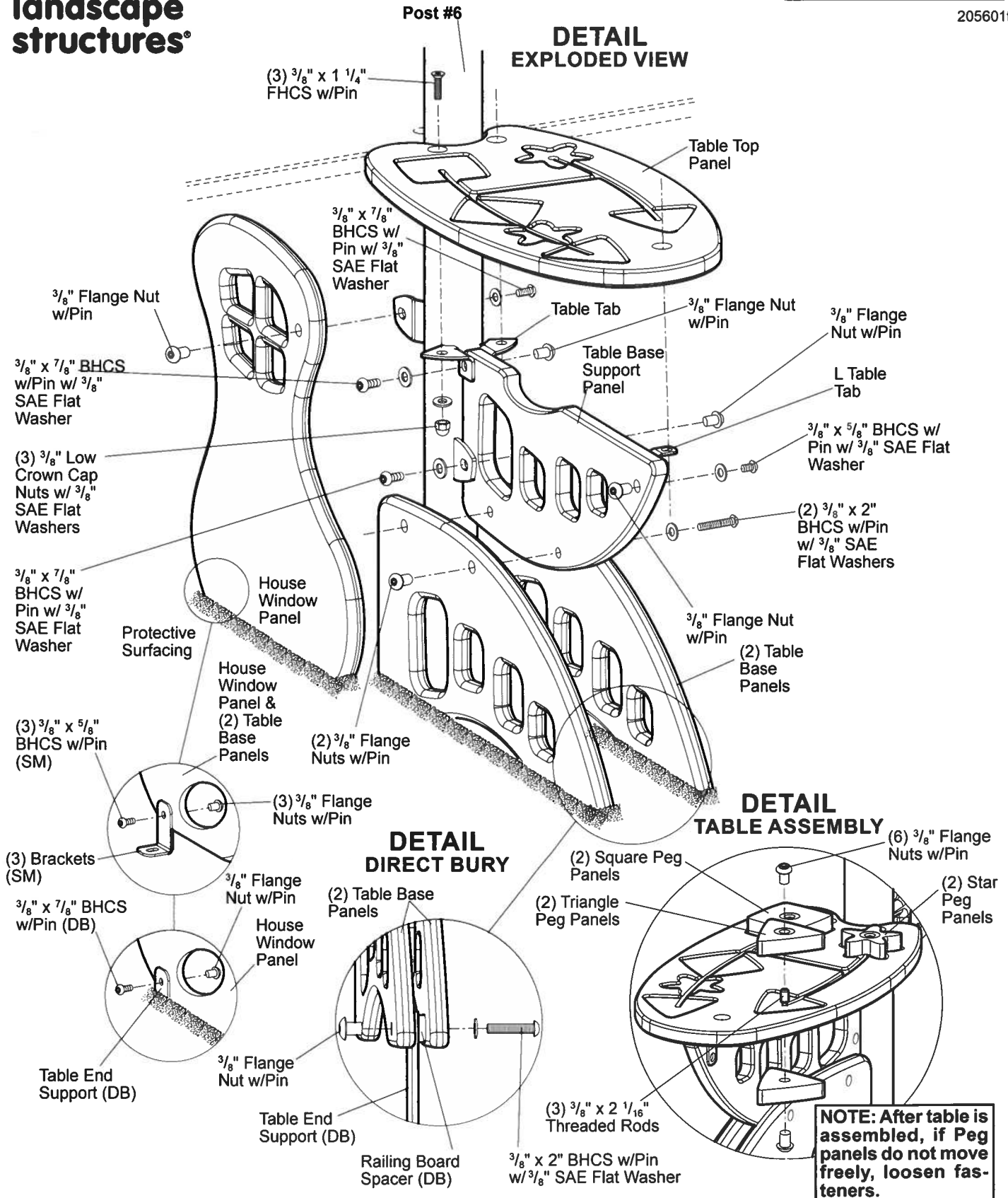
Specifications

Panels: Recycled Permalene®, color specified.

Marble: 2" Diameter glass.

Bells: Fabricated from 10 GA. (.135") HRPO low carbon steel. Finish: ProShield®, color specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).





Table

Parts List

Part#	Description	Qty.
197306	Table Tab, Specify Color.....	1
204724	Angle Bracket, SST. (SM).....	3
197307	L Table Tab, Specify Color.....	1
197054	House Panel, Specify Color.....	1
197055	Table Base Panel, Specify Color.....	2
197056	Table Base Support Panel, Specify Color.....	1
197069	Table Top Panel, Specify Color.....	1
197116	Star Peg Panel, Specify Color.....	2
197117	Square Peg Panel, Specify Color.....	2
197118	Triangle Peg Panel, Specify Color.....	2
201029	End Panel Support, (DB), Specify Color.....	2
207485	Railing Board,Spacer, (DB).....	1
203618	Play Table Hardware Package	1
100196	3/8" x 7/8" BHCS w/Pin, SST.....	4
100173	3/8" x 2" BHCS w/Pin, SST.....	3
100252	3/8" x 1 1/4" FHCS w/Pin, SST.....	3
100349	3/8" Low Crown Cap Nut, SST.....	3
100353	3/8" Flange Nut w/Pin, SST.....	15
123115	3/8" x 2 1/16" Threaded Rod.....	3
100365	3/8" SAE Flat Washer, SST.....	10
100195	3/8" x 3/8" BHCS w/Pin, SST.....	4

Installation Instructions

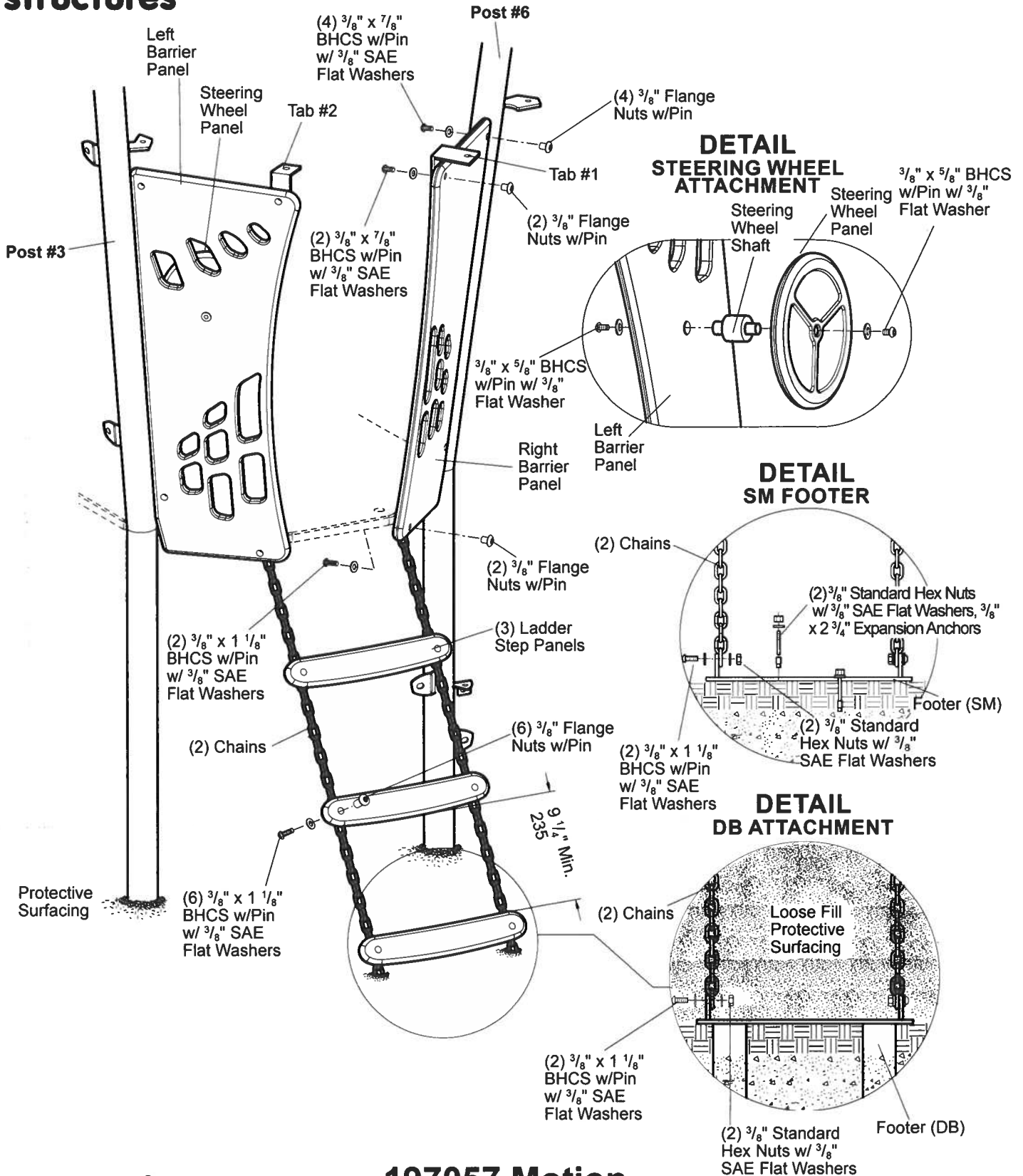
- 1) Attach table base support panel and house window panel to post tabs.
- 2) Attach table base panels to table base support panel.
- 3) Attach table top panel to post tabs and L table tab.
- 4) Attach peg panels to table top panel.
- 5) Attach angle brackets/supports to table base panels.

Specifications

Panels: Recycled Permalene®, color specified.

End Panel Supt.: Weldment comprised of 1/4" (6,35 mm) HRPO steel sheet and 3/8" (9,53 mm) re-bar. Finish: ProShield, color specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).



Chain Ladder

Parts List

Part#	Description	Qty.
200775	Chain Ladder Footer, (DB).....	1
200760	Chain Ladder Footer, (SM).....	1
196657	Barrier Panel, (R), Specify Color.....	1
196655	Barrier Panel, (L), Specify Color.....	1
200723	Steering Wheel Panel, Specify Color.....	1
152053	37 1/2" Chain, (SM), Dark Grey.....	2
152048	49 13/16" Chain, (DB), Dark Grey.....	2
197074	Ladder Step Panel, Specify Color.....	3
197070	Tab #1, Specify Color.....	1
197071	Tab #2, Specify Color.....	1
203620	Chain Ladder Hardware Package	1
100195	3/8" x 3/8" BHCS w/Pin, SST.....	2
100196	3/8" x 7/8" BHCS w/Pin, SST.....	6
100198	3/8" x 1 1/8" BHCS w/Pin, SST.....	10
100327	3/8" Standard Hex Nut, SST.....	2
100353	3/8" Flange Nut w/Pin, SST.....	14
100362	3/8" Flat Washer, SST.....	2
100365	3/8" SAE Flat Washer, SST.....	18
200550	Steering Wheel Shaft, Aluminum.....	1

DB = Direct Bury

SM = Surface Mount

Specifications

Panels: Recycled Permalene® panel, color specified.

Chain: Steel 3/16" (4,75 mm) straight link chain, 800 lb. (362,87 kilograms) working load limit. Finish: TenderTuff, color specified.

Chain

Ladder Footer: Weldment comprised of 1.900" (48,26 mm) O.D. RS20 (.090"-1.00") (2,29 mm - 2,54 mm) wall galvanized steel tubing and 1/4" (6,35 mm) HRPO steel sheet. Finish: ProShield®, color specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Instructions

- 1) Attach panels to post tabs.
- 2) Attach panels and chain to deck frame tabs.
- 3) Attach steering wheel to left barrier panel.
- 4) Attach ladder steps to chains.
- 5) **(Direct Bury)** Determine footing locations by pulling chain ladder tight and laying end on subgrade. Drill footing holes 2" out from end of where chain ladder meets subgrade.

Fasten chain ladder to support.

Pour concrete into footing holes. Push chain ladder support into concrete until chain ladder is tight and top of support is positioned flush with top of subgrade. Temporarily weigh support down so it remains in position until concrete has set.

(Surface Mount) Attach support to chain ladder. Pull chain ladder tight and drill 1/2" x 3" deep holes through support using hammer drill and 1/2" masonry bit. Tap expansion anchors into drilled holes. Fasten support to expansion anchors using 1/2" standard hex nuts with 1/2" flat washers.

Slide & Sand Table

Parts List

Part#	Description	Qty.
200985-00	Sand Table Support, (DB), Specify Color.....	2
200282-00	Sand Table Support, (SM), Specify Color.....	2
123289-00	Dish (Removable), Blue.....	1
130740-00	Curved Slide, Specify Color.....	1
200988-00	Exit Support, (DB), Specify Color.....	1
200337-00	Exit Support, (SM), Specify Color.....	1
200987-00	Mid-Support, (DB), Specify Color.....	1
200338-00	Mid-Support, (SM), Specify Color.....	1
196792-00	Alphabet Panel Panel, Specify Color.....	1
197004-00	Stump Seat Panel #1, Specify Color.....	1
197050-00	Stump Seat Panel #2, Specify Color.....	1
197080-00	Sand Tube, Specify Color.....	1
198856-00	Tube Cap Panel, Specify Color.....	1
197310-00	Sand Sifter Panel, Specify Color.....	1
197076-00	Table Sifter Panel, Specify Color.....	1
197313-00	Support Ring Panel, Specify Color.....	2
196830-00	Table Panel, Specify Color.....	1
197005-00	Stump Seat Support, (DB), Specify Color.....	2
200284-00	Stump Seat Support, (SM), Specify Color.....	2
200954-00	Slide Spacer Panel, Specify Color.....	1
223312-00	Alphabet Hardware Package	1
100196-00	3/8" x 7/8" BHCS w/Pin, SST.....	11
100353-00	3/8" Flange Nut w/Pin, SST.....	15
100365-00	3/8" SAE Flat Washer, SST.....	23
100362-00	3/8" Flat Washer, SST.....	8
151421-00	3/8" x 1 1/2" FHCS w/Pin, SST.....	14
123224-00	3/8" x 1 1/16" BHCS w/Pin, SST.....	2
100292-00	3/8" x 1 1/4" BHCS w/Pin Ltd. Thread Bolt, SST.....	4
100349-00	3/8" Low Crown Nut, SST.....	10
127463-00	T-27 TPP Hex Bit (Torx).....	1
129671-00	#14 x 1/2" Torx BHCS, SST.....	5
111442-00	Rubber Bushing.....	4

DB = Direct Bury
SM = Surface Mount

Specifications

Slide:	Rotationally molded from U.V. stabilized linear low density polyethylene, color specified.
Sand Tube:	Weldment comprised of 2.375" (60,33 mm) O.D. RS20 (.095" - .105") (2,41 mm-2,67 mm) galvanized steel tubing and 7 GA. (.179") (4,55 mm) HRPO steel sheet. Finish: ProShield®, color specified.
Dish (Removable):	Vacuum formed from U.V. stabilized linear low-density polyethylene, blue in color.
Mid-Support:	Weldment comprised of 1.315" (33,40 mm) O.D. RS20 (.080" - .090") (2,03 mm-2,29 mm) galvanized steel tubing, and 1/4" (6,35 mm) HRPO steel sheet. Finish: ProShield, color specified.
Sand Table Support:	Weldment comprised of 1.315" (33,40 mm) O.D. RS20 (.080" - .090") (2,03 mm-2,29 mm) galvanized steel tubing, and 1/4" (6,35 mm) HRPO steel sheet. Finish: ProShield, color specified.
Exit Footer:	Weldment comprised of 2.375" (60,33 mm) O.D. x .188" (4,78 mm) wall galvanized steel tubing, and 1/4" (6,35 mm) HRPO steel sheet. Finish: ProShield, color specified.

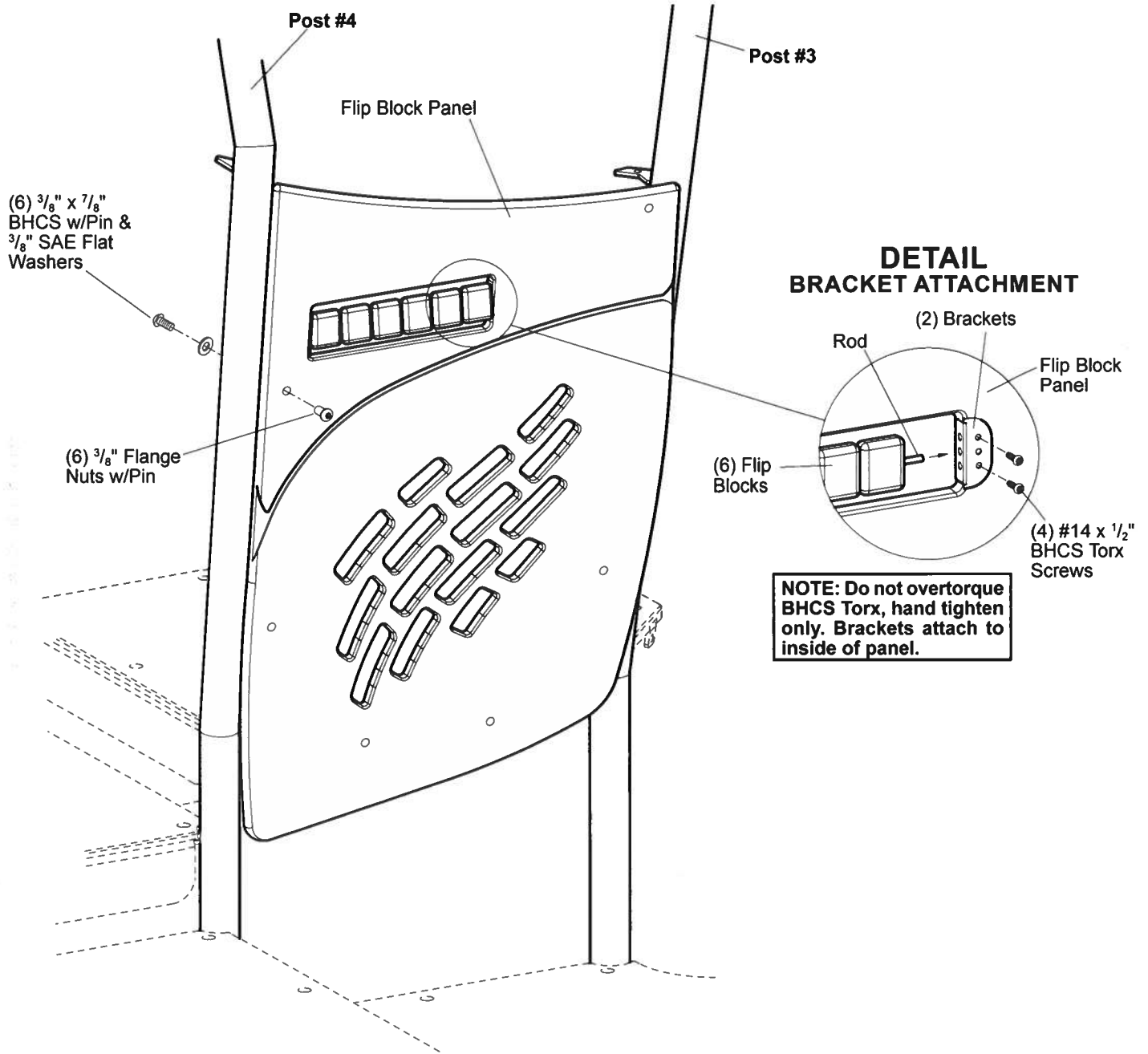
Stump Seat Support: Weldment comprised of 2.375" (60,33 mm) O.D. x .188" (4,78 mm) wall galvanized steel tubing, and 1/4" (6,35 mm) HRPO steel sheet. Finish: ProShield, color specified.

Panels: Recycled Permalene®, color specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Instructions

- 1) Attach alphabet panel to post tabs and deck frame tabs.
- 2) Attach exit and mid-supports to slide. **NOTE:** Attach bolts in center of the slots to allow for expansion and contraction. Snug bolts down only, do not over-tighten! See Support Attachment Detail.
- 3) Attach slide to deck frame tabs.
- 4) Attach sand tube to alphabet panel. Attach tube cap to sand tube.
- 5) Attach sand sifter panel and support ring panels to post tabs.
- 6) Place dish in table. **OPTIONAL PERMANENT MOUNTING:** Drill 1/8" pilot holes through dish using holes in table as drilling guide. Attach dish to table using #14 x 1/2" torx-pin cap screws.
- 7) Attach table panel to sand table supports and post tab.
- 8) Attach stump seat panels to stump seat supports.





Flip Block Panel

Parts List

Part#	Description	Qty.
196814	Flip Block Panel, Specify Color.....	1
106151	Flip Block Bracket, SST.....	2
200838	Flip Block 1, Specify Color.....	2
200982	Flip Block 2, Specify Color.....	2
200983	Flip Block 3, Specify Color.....	2
106161	1/4" x 12 3/8" Rod, SST.....	1
200964	Flip Block Hardware Package	1
100196	3/8" x 7/8" BHCS w/Pin, SST.....	6
100353	3/8" Flange Nut w/Pin, SST.....	6
100365	3/8" SAE Flat Washer, SST.....	6
129671	#14 x 1/2" Torx-Pin Cap Screw, SST.....	4
127463	T-27 TPP Hex Bit (Torx).....	1

Installation Instructions

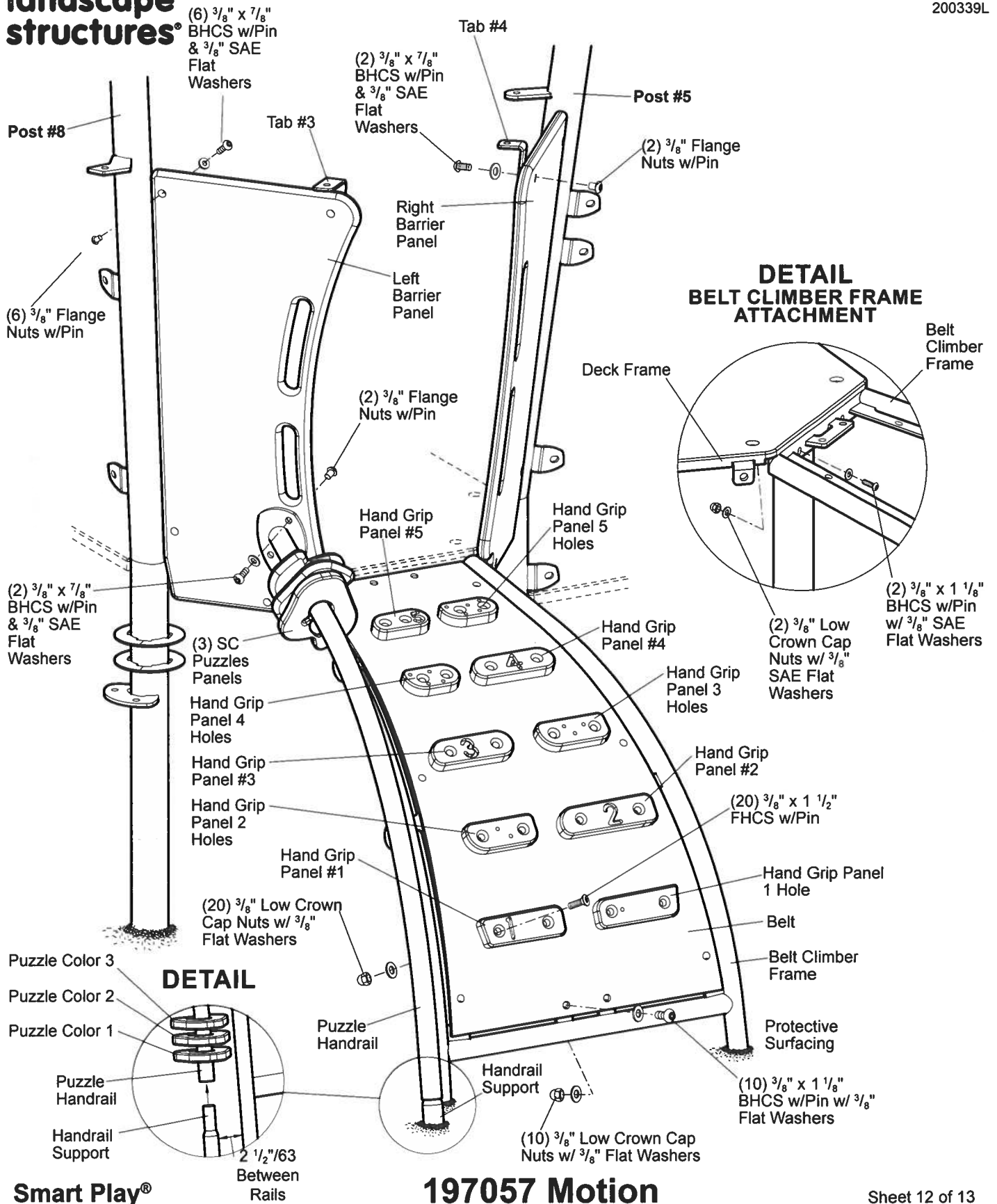
- 1) Attach flip blocks and brackets to flip block panel.
- 2) Attach panel assembly to post tabs.

Specifications

Panel: Solid color Permalene® panel, color specified.

Flip Blocks: Made from compression-molded 3/4" (19,05 mm) thick U.V. stabilized high-density polyethylene with all edges eased. Black, red and yellow in color.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).



Belt Climber

Parts List

Part#	Description	Qty.
199551	Hand Grip Panel #1, Specify Color.....	1
199552	Hand Grip Panel 1 Hole, Specify Color.....	1
199553	Hand Grip Panel #2, Specify Color.....	1
199554	Hand Grip Panel 2 Holes, Specify Color.....	1
199555	Hand Grip Panel #3, Specify Color.....	1
199556	Hand Grip Panel 3 Holes, Specify Color.....	1
199557	Hand Grip Panel #4, Specify Color.....	1
199558	Hand Grip Panel 4 Holes, Specify Color.....	1
199559	Hand Grip Panel #5, Specify Color.....	1
199560	Hand Grip Panel 5 Holes, Specify Color.....	1
200274	Belt Climber Frame, (SM), Specify Color.....	1
196555	Belt Climber Frame, (DB), Specify Color.....	1
228419	Belt, Black.....	1
196971	Puzzle Handrail, Specify Color.....	1
200273	Handrail Support, (SM), Specify Color.....	1
196974	Handrail Support, (DB), Specify Color.....	1
199776	Puzzle Panel Color #1, Specify Color.....	1
198901	Puzzle Panel Color #2, Specify Color.....	1
200410	Puzzle Panel Color #3, Specify Color.....	1
196653	Left Barrier Panel, Specify Color.....	1
197049	Right Barrier Panel, Specify Color.....	1
197048	Tab #4, Specify Color.....	1
197051	Tab #3, Specify Color.....	1
200965	Belt Climber Hardware Package	1
100196	3/8" x 7/8" BHCS w/Pin, SST.....	10
100198	3/8" x 1 1/8" BHCS w/Pin, SST.....	12
100365	3/8" SAE Flat Washer, SST.....	14
100362	3/8" Flat Washer, SST.....	40
151421	3/8" x 1 1/2" FHCS w/Pin, SST.....	20
100349	3/8" Low Crown Nut, SST.....	32
100353	3/8" Flange Nut w/Pin, SST.....	10

DB = Direct Bury
SM = Surface Mount

Specifications

Belt: Made from .315" (8,00 mm) thick mini rough top 3-ply rubber belting with polyester fabric plys, black in color.

Belt Climber Frame: Weldment comprised of 1.315" (33,40 mm) O.D. RS20 (.080" - .090") (2,03 mm-2,29 mm) galvanized steel tubing, 1/4" (6,35 mm) HRPO steel sheet and 1/8" (.125") (3,18 mm) HRPO steel sheet. Finish: ProShield®, color specified.

Puzzle Handrail: Weldment comprised of 1.315" (33,40 mm) O.D. RS20 (.080" - .090") (2,03 mm-2,29 mm) galvanized steel tubing, and 1/4" (6,35 mm) HRPO steel sheet. Finish: ProShield®, color specified.

Handrail Support: Weldment comprised of 1.315" (33,40 mm) O.D. RS20 (.080" - .090") (2,03 mm-2,29 mm) galvanized steel tubing. Finish: ProShield®, color specified.

Panels: Recycled Permalene®, color specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Instructions

- 1) Attach barrier panels to post tabs and deck frame tabs.
- 2) Attach belt climber frame to deck frame tabs.
- 3) Attach belt to frame.
- 4) Attach hand grip panels to belt.
- 5) Slide puzzle color panels onto puzzle handrail. Insert handrail support into puzzle handrail. Attach puzzle handrail to left barrier panel.



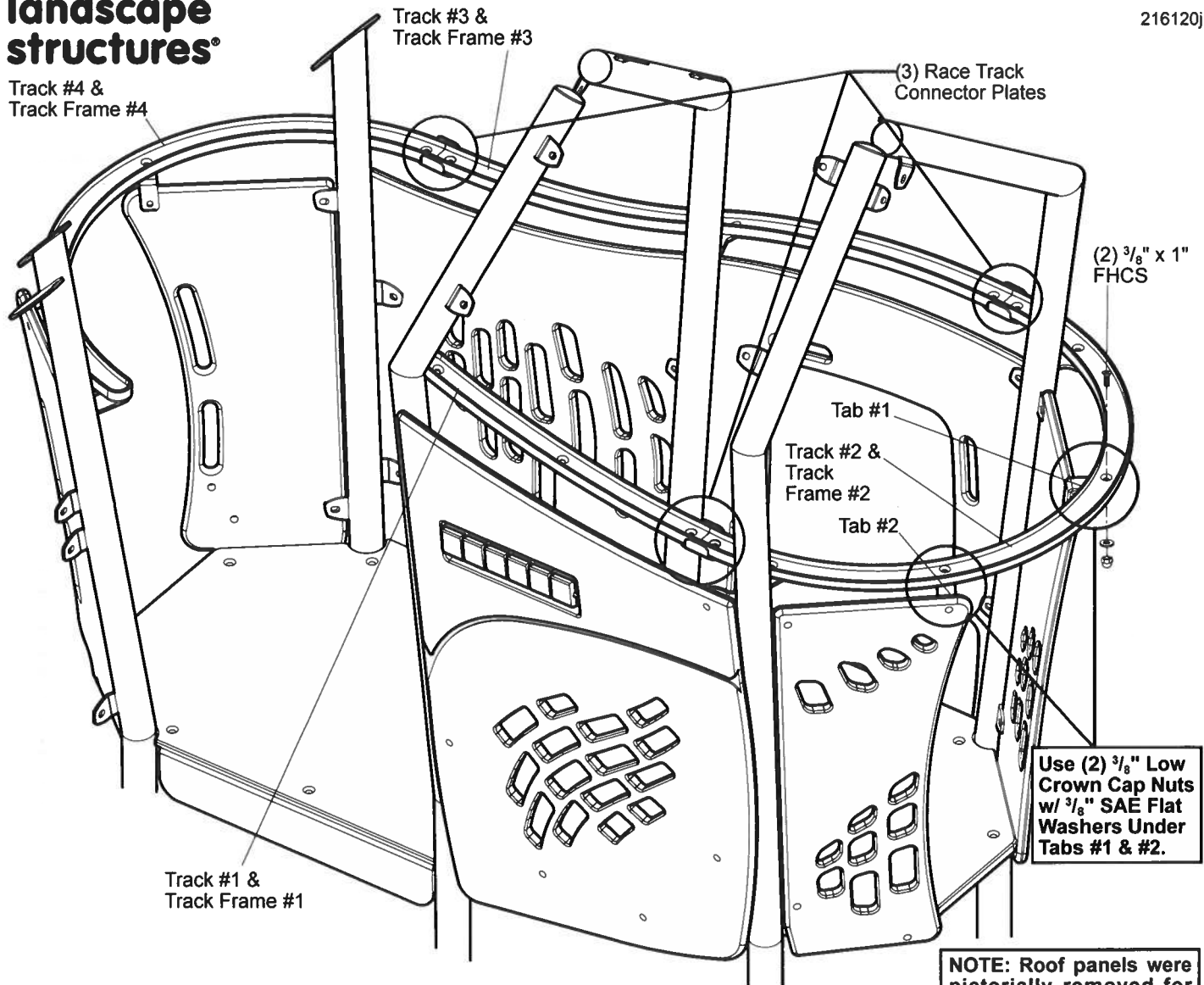
landscape structures®

Track #4 & Track Frame #4



SAFETY NOTE
Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Fall Height of the adjacent equipment. (Ref. ASTM F1487.)

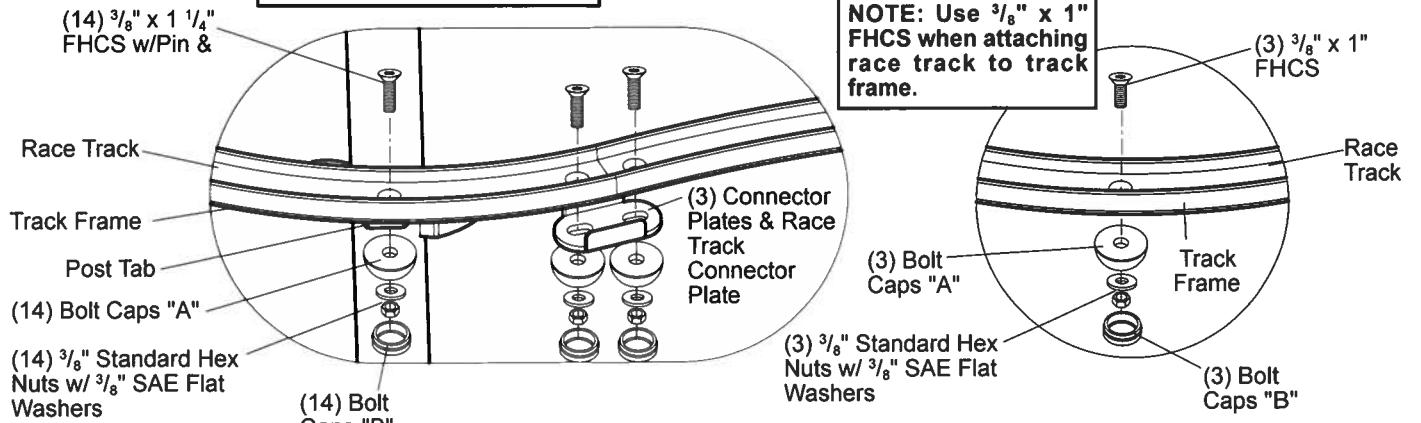
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NOTE: Use 3/8" x 1 1/4" FHCS w/Pin when attaching race track and track frame to tabs & connector plates.

NOTE: Roof panels were pictorially removed for clarity.

DETAIL RACE TRACK ATTACHMENT



Smart Play®

197057 Motion

Sheet 13 of 13

Race Track

Parts List

Part#	Description	Qty.
230700	Race Track #1, Black.....	1
230702	Race Track #2, Black.....	1
230701	Race Track #3, Black.....	1
230703	Race Track #4, Black.....	1
196996	Race Track Frame #1, Specify Color	1
197000	Race Track Frame #2, Specify Color	1
197124	Race Track Frame #3, Specify Color	1
197132	Race Track Frame #4, Specify Color	1
201088	Race Track Connector Plate, Specify Color	3
200966	Race Track Hardware Package	1
100252	3/8" x 1 1/4" FHCS w/Pin, SST.....	14
137091	3/8" x 1" FHCS, SST.....	5
108184	Bolt Cap Part A, White.....	17
108185	Bolt Cap Part B, White.....	17
100349	3/8" Low Crown Cap Nut, SST	2
100327	3/8" Standard Hex Nut, SST	17
100365	3/8" SAE Flat Washer, SST.....	19

Specifications

Race Track: Permalene®, black in color.

Connector Plate: Fabricated from 1/4" (6,35 mm) HRPO steel sheet. Finish: ProShield®, color specified.

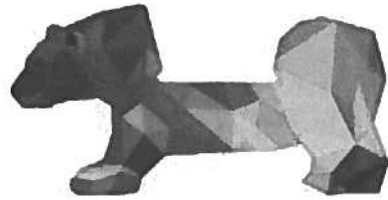
Race Track Tab: Fabricated from 7 GA. (.179") (4,55 mm) HRPO steel sheet. Finish: ProShield, color specified.

Race Track Frame: Fabricated from 1/8" (.125") (3,18 mm) HRPO steel sheet. Finish: ProShield, color specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Instructions

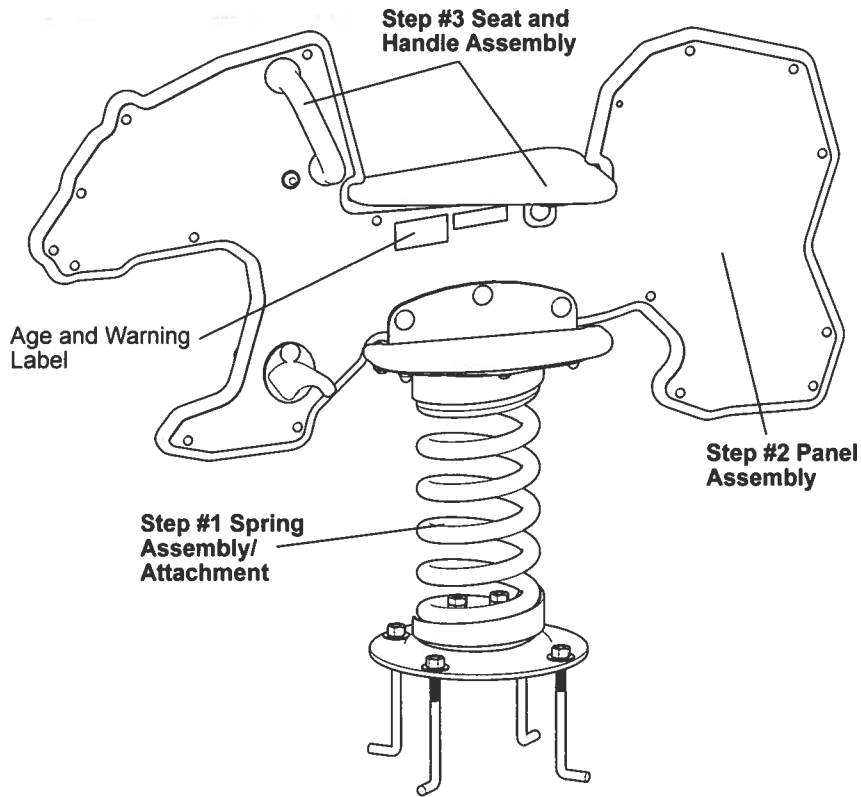
- 1) Attach track frames and race tracks to posts and panel tabs. Refer to the Race Track Attachment Detail.
- 2) Install protective surfacing before users are allowed to play on the structure.



SAFETY NOTE
 Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Fall Height of the adjacent equipment. (Ref. ASTM F1487.)

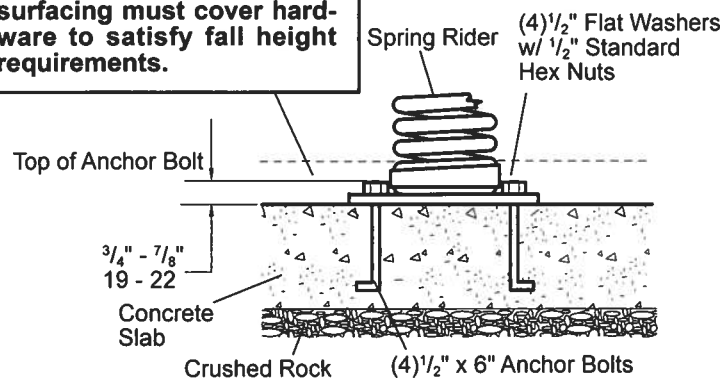
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DIGIRIDER BEAR

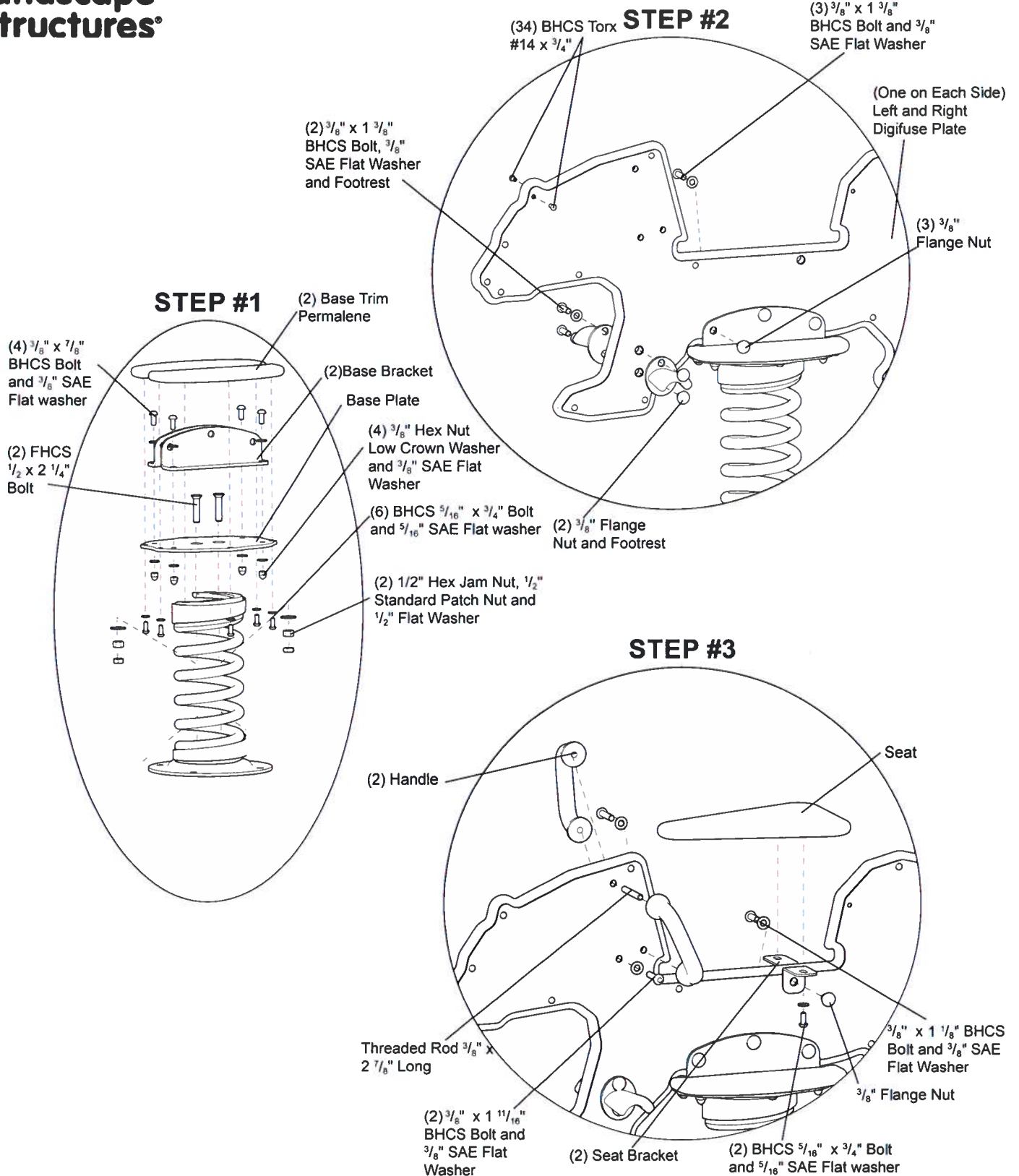


SECTION/ SURFACE MOUNTING

NOTE: Sufficient protective surfacing must cover hardware to satisfy fall height requirements.



Kids In Motion 233059 DigiRider™ Bear, w/Coil Spring





233059 DigiRider™ Bear, w/Coil Spring

Parts List

Part#	Description	Qty.
136479	Foot Rest, Black	2
228361	Tuffriders Digifuse Seat Brkt, Black	2
132276	Spring Assembly, Black	1
229817	Tuffriders Digifuse Base Plate Pnt, Black	1
229818	Tuffriders Digifuse Base Bracket Pnt, Black	2
105752	Handle, Black	2
115154	(Direct Bury) Leg Spring, Black	1
237177	Boxed DigiRider Bear Plastic	1
229896	Tuffriders Bear Main Perm, Black	1
230042	Tuffriders Bear Digifuse Left	1
230046	Tuffriders Bear Digifuse Right	1
230047	Tuffriders Base Trim Perm, Black	2
230808	Tuffriders Seat w/ Inserts, Grey	1
254271	Hdw Pkg DigiFuse Bear	1
100196	BHCS 6LP 3/8 x 7/8" SST	4
100363	Washer Flat 1/2" SST	2
100198	BHCS 6LP 3/8 x 1 1/8" SST	1
100349	Nut L/C CAP 3/8", SST	4
100353	3/8" Flange Nut w/Pin, SST	6
100365	3/8" SAE Flat Washer, SST	16
113027	BHCS 6LP 3/8 x 1 3/8", SST	5
127463	Bit Hex TPP T-27 (TORX)	1
130824	FHCS 1/2 x 2 1/4", SST	2
200332	Label Play Safe 2-12 Years	1
129692	1/2" Standard Patch Nut, SST	2
129693	1/2" Hex Jam Nut, SST	2
216760	BHCS Torx #14 x 3/4" SST Thread Type A	34
223807	BHCS 6LP 3/16" - 18 x 3/4", SST	8
223956	Washer Flat SAE 5/16" SST	8
183064	Warning Label	1
100643	Threaded Rod 3/8" x 2 7/8", SST	1
123224	BHCS 6LP 3/8 x 1 11/16", SST	2
148680	BIT 3/16" 6-LOBE T40 TAMP	1
120202	Spring Animal Anchor (SM) Hardware Package	1
100262	1/2" x 6" Anchor Bolt	4
100322	1/2" Standard Hex Nut, SST	4
100363	1/2" Flat Washer, SST	4
115326	Spring Rider (DB) Hardware Package	1
100198	3/8" x 1 1/8" BHCS w/Pin, SST	4
100327	3/8" Standard Hex Nut, SST	4
100365	3/8" SAE Flat Washer, SST	8

DB= Direct Bury

SM= Surface Mount

Specifications

Spring: Weldment comprised of 5 5/8" (142,88 mm) diameter 13/16" (20,64 mm) tempered alloy steel coil. Finish: ProShield®, black in color.

DigiFuse Panels: Made from 1/8" (3,17 mm) thick aluminum sheet. Dye sublimation printed digital artwork is fused onto the powdercoated substrate.

Spring Wedge: Casting made from A-356T-6 aluminum. Finish: ProShield, color specified.

Leg: Weldment comprised of 3 1/2" O.D. RS-20 (.120" - .130") galvanized steel tubing and 1/4" x 10" diameter HRPO zinc plated steel mounting plates. Finish: ProShield, Black in Color.

Permalene Panels: Permalene Main Panel and Trim Panels. Black in

Specifications are subject to change without notice.

Color, Seat Panel, Gray in Color.

Brackets: Fabricated from 7Ga (.179") HRS. Finish: ProShield, Black in Color.

Base Plate: Fabricated from 1/4" x 10" HRPO formed plate. Finish: ProShield, Black in Color.

Footrest: Cast from 356-T6 aluminum alloy. Finish: ProShield, Black in Color.

Handles: Cast from 356 aluminum alloy. Finish: ProShield, Black in Color.

Fasteners: Primary fasteners shall be socketed and pinned Tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Time: Approx. 3 man hours

Concrete Req.: Approx. 10 cu. ft. DB= 3 Cubic FT.

Area Req.: 13'-0" x 15'-0" (3,96 m x 4,57 m) minimum use zone

Weight: 85 lbs. Direct Bury

69 lbs. Surface Mount

Seat Height: 19 1/2" (495 mm)

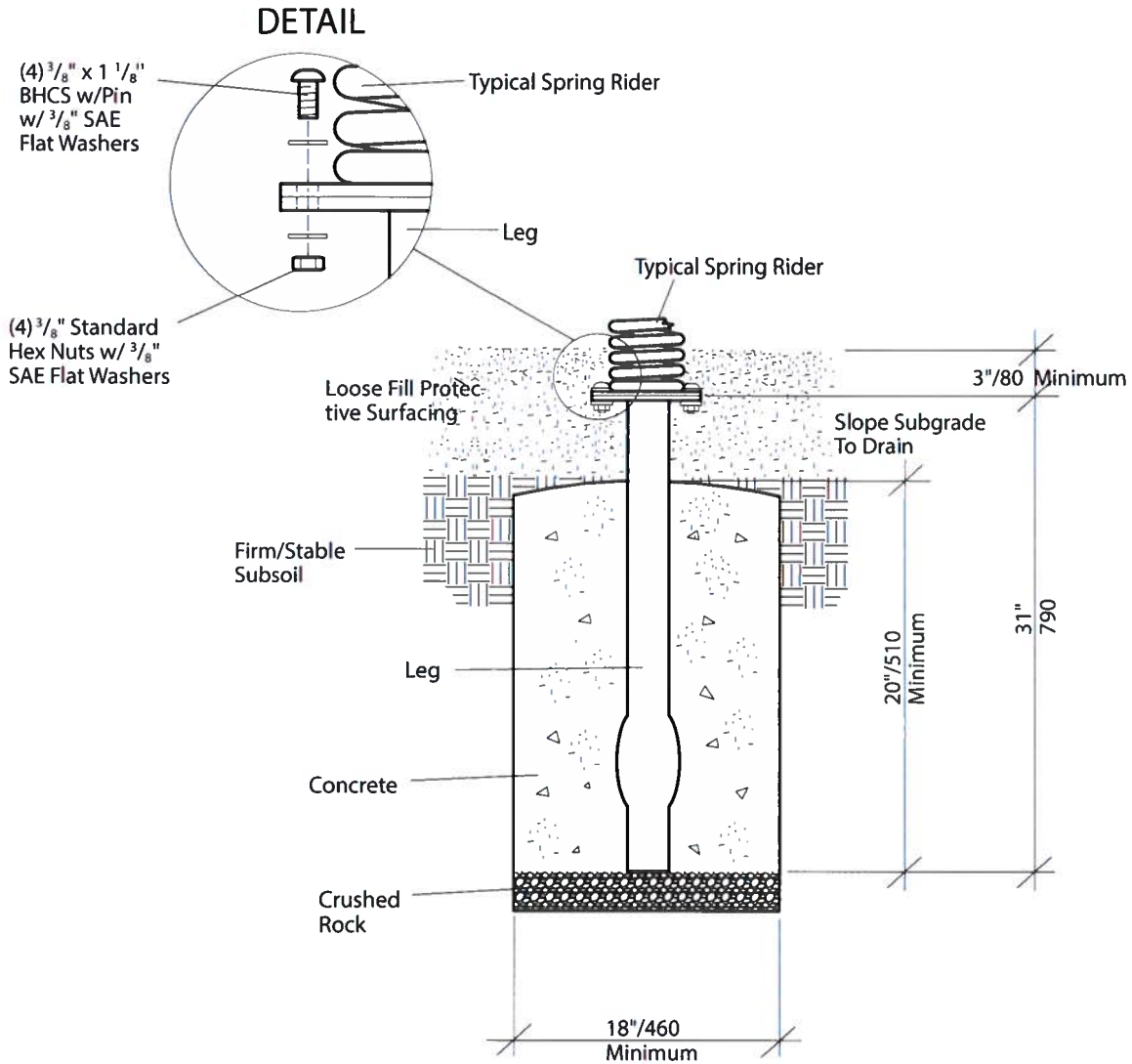
Installation Instructions

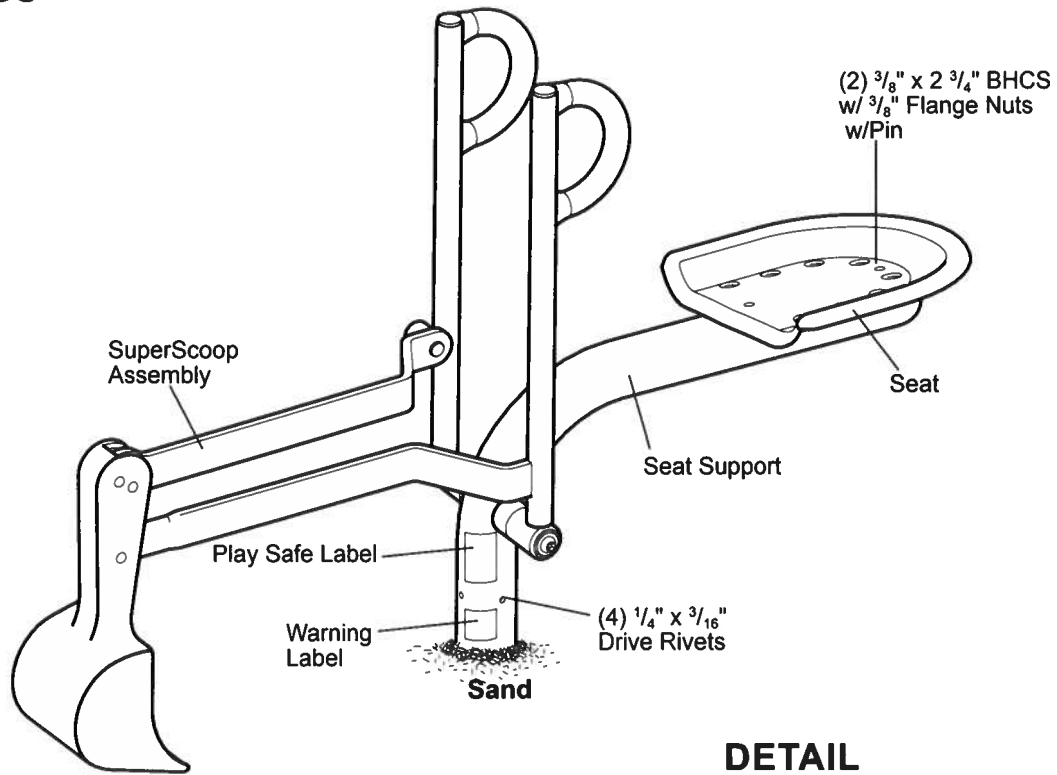
Surface Mounting On Concrete Slab

- Using the spring base plate as a pattern, make a plywood template for anchor bolt placement.
- Attach 1/2" x 6" anchor bolts with 1/2" flat washers and 1/2" standard hex nuts to holes in template. Allow 3/4" to 7/8" of thread to protrude from concrete.
- Pour concrete slab and lay template on surface in level position. Push anchor bolts into concrete, allowing 72 hours before template removal.
- Attach spring assembly to anchor bolts in concrete with 1/2" standard hex nuts and 1/2" flat washers. Assembly spring to attachments. **Refer to Step 1.**
- Attach Digifuse to Permalene Panels, then attach spring and foot pedals. **Refer to Step 2.**
- Attach steering wheel and seat to panels. **Refer to Step 3.**
- Final tighten all fasteners.
- Apply labels as shown.
- Install protective surfacing before users are allowed to play on the component. A minimum of 2" of protective surfacing should cover base plate and anchor bolts.

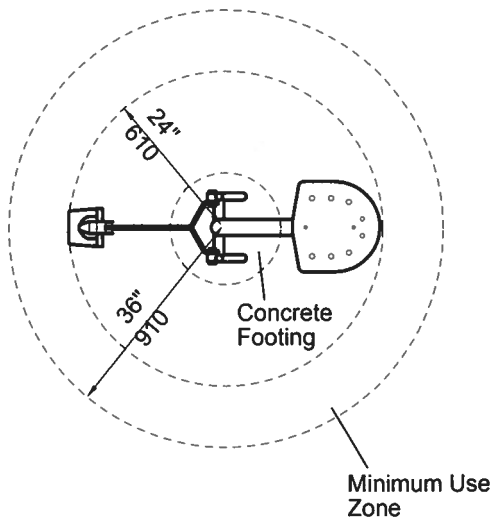
Direct Bury Mounting

- Dig footing hole as shown.
- Attach leg to spring assembly of spring rider using 3/8" x 1 1/8" BHCS w/pin with 3/8" SAE flat washers and 3/8" standard hex nuts with 3/8" SAE flat washers.
- With leg plumb and spring rider propped up, pour concrete footing and let cure for a minimum of 72 hours before using.
- Install protective surfacing before users are allowed to play on the component.

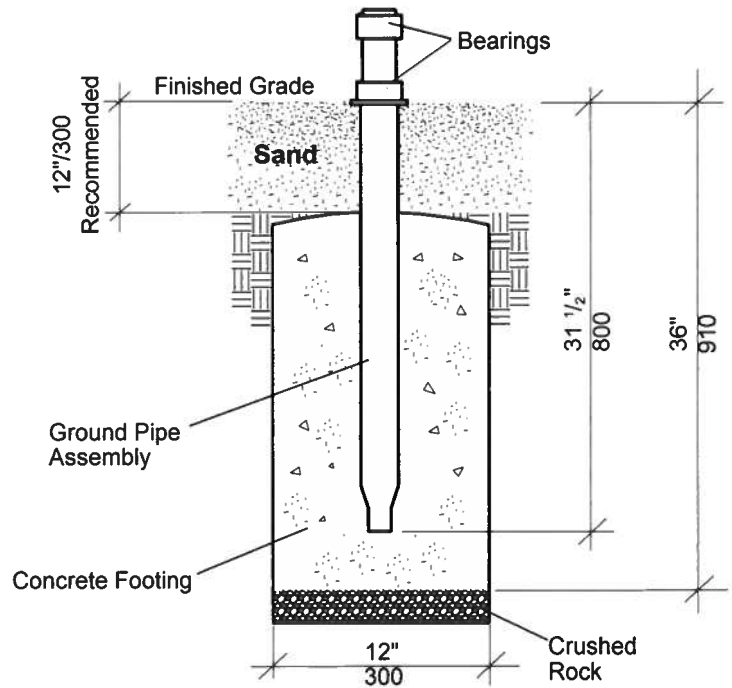




PLAN VIEW



**DETAIL
DIRECT BURY**





Kids In Motion 123831 SuperScoop

Parts List

Part#	Description	Qty.
151666	SuperScoop Assembly, Specify Color.....	1
108248	Seat, Brown	1
107440	Ground Pipe Assembly (DB).....	1
183873	SuperScoop Hardware Package	1
100175	$\frac{3}{8}$ " x $2\frac{3}{4}$ " BHCS, SST.....	2
100353	$\frac{3}{8}$ " Flange Nut w/Pin, SST.....	2
100609	$\frac{1}{4}$ " x $\frac{3}{16}$ " Drive Rivet, AL/AL.....	4
156846	Play Safe Label, 2-12 Yrs.....	1
183064	Warning Label	1

DB = Direct Bury

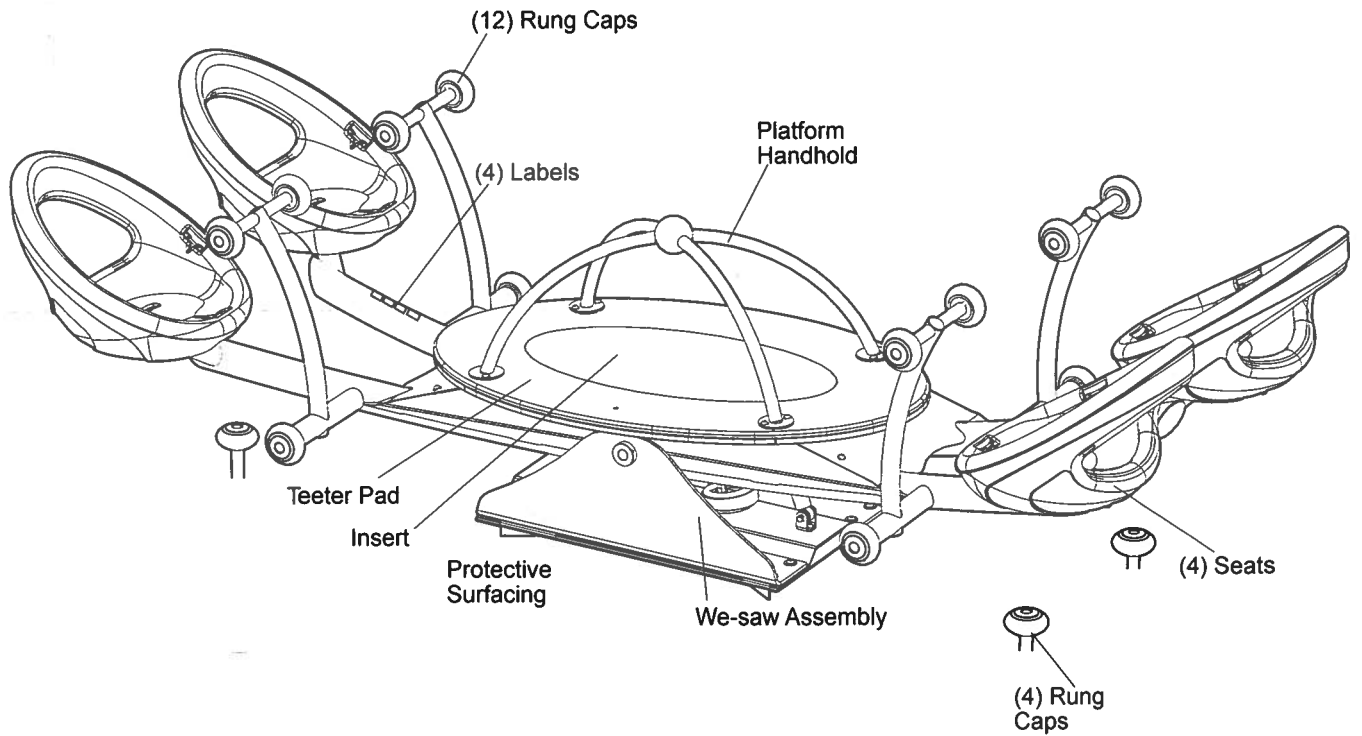
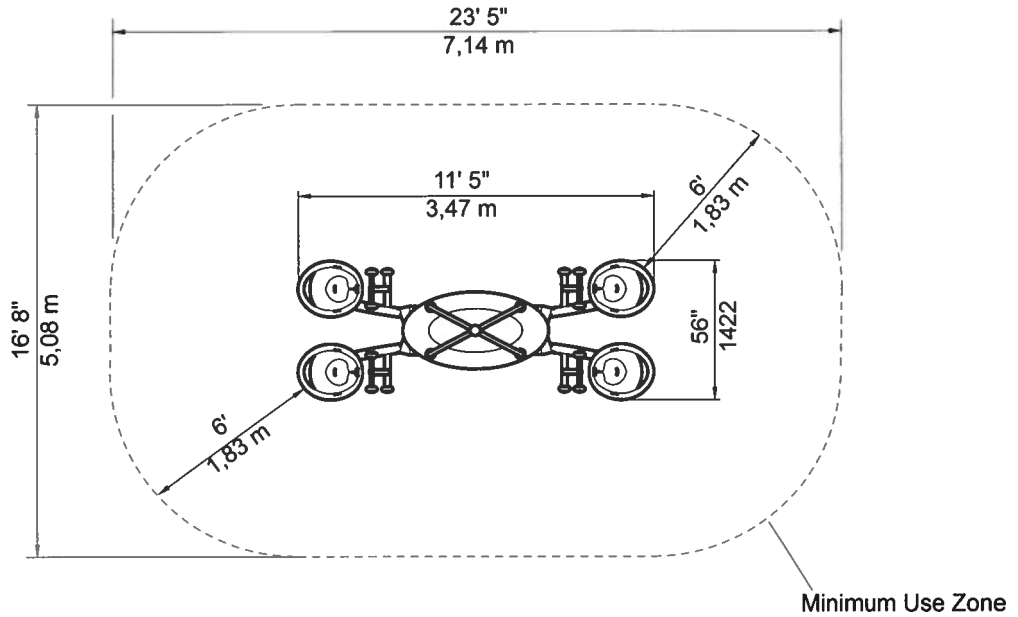
Specifications

Seat Support:	Fabricated from formed 2.375" O.D. x $\frac{3}{16}$ " wall tubing, zinc plated. Finish: ProShield®, color specified.
Seat:	Cast from 319.1 aluminum alloy. Finish: TenderTuft®, brown in color.
Bucket:	Almag 319 cast aluminum.
Bearings:	Oil impregnated bronze.
Ground Pipe:	Fabricated from 1.660" O.D. schedule 80 black pipe, zinc-plated.
Hand Control:	Fabricated from 1.05" O.D. schedule 40 black pipe, zinc plated. Finish: ProShield, color specified.
Pivot Arm:	Fabricated from formed $\frac{3}{8}$ " HRPO flat steel, zinc plated. Finish: ProShield, color specified.
Fasteners:	Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
Installation Time:	DB - Approx. 2 $\frac{1}{2}$ man hours
Concrete Req.:	Approx. 1.7 cu. ft.
Area Req.:	6' / 1830 mm diameter
Weight:	52 lbs.

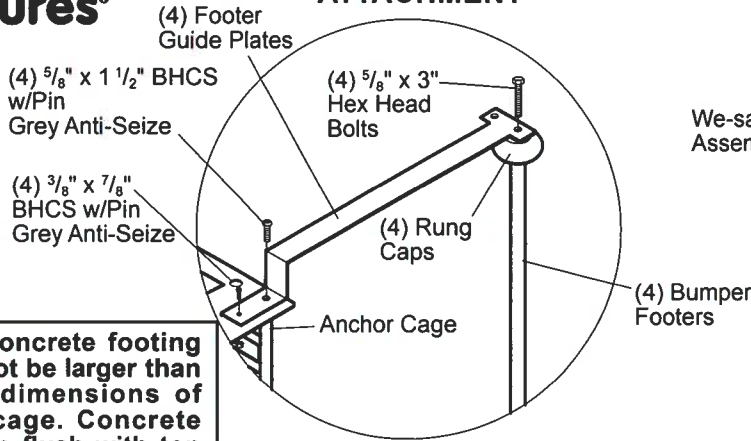
Installation Instructions

- Direct Bury**
- 1) Dig footing as shown.
 - 2) Insert ground pipe into footing. Pour concrete and plumb pipe. Allow concrete to cure for a minimum of 72 hours. Refer to the Direct Bury Detail.
 - 3) Place SuperScoop assembly over bearings on ground pipe. Tap $\frac{1}{4}$ " x $\frac{3}{16}$ " drive rivets into holes.
 - 4) Attach seat to seat support using $\frac{3}{8}$ " x $2\frac{3}{4}$ " BHCS and $\frac{3}{8}$ " flange nuts w/pin.
 - 5) Apply labels as shown.
 - 6) Install protective surfacing until flush with bushing before users are allowed to play on component.

PLAN VIEW

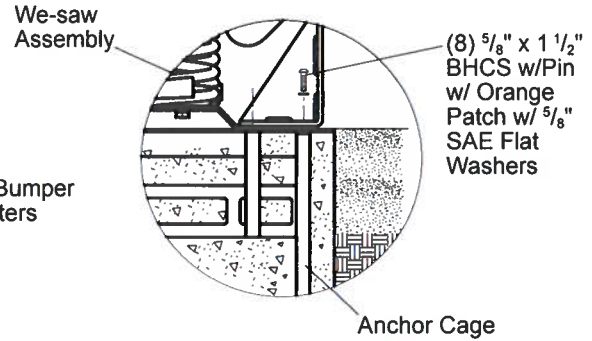


**DETAIL
 BUMPER FOOTER
 ATTACHMENT**

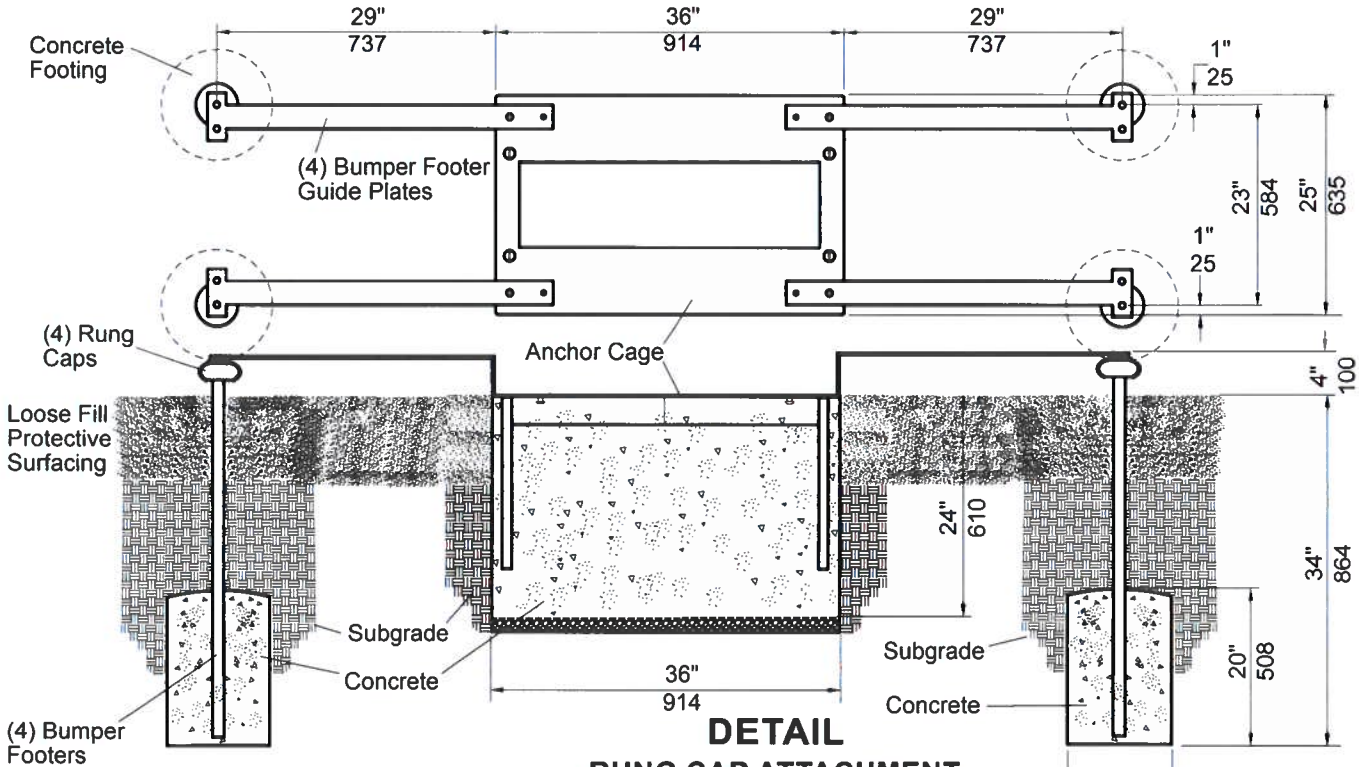


NOTE: Concrete footing should not be larger than outside dimensions of anchor cage. Concrete should be flush with top of anchor cage.

**DETAIL
 WE-SAW ASSEMBLY
 ATTACHMENT**

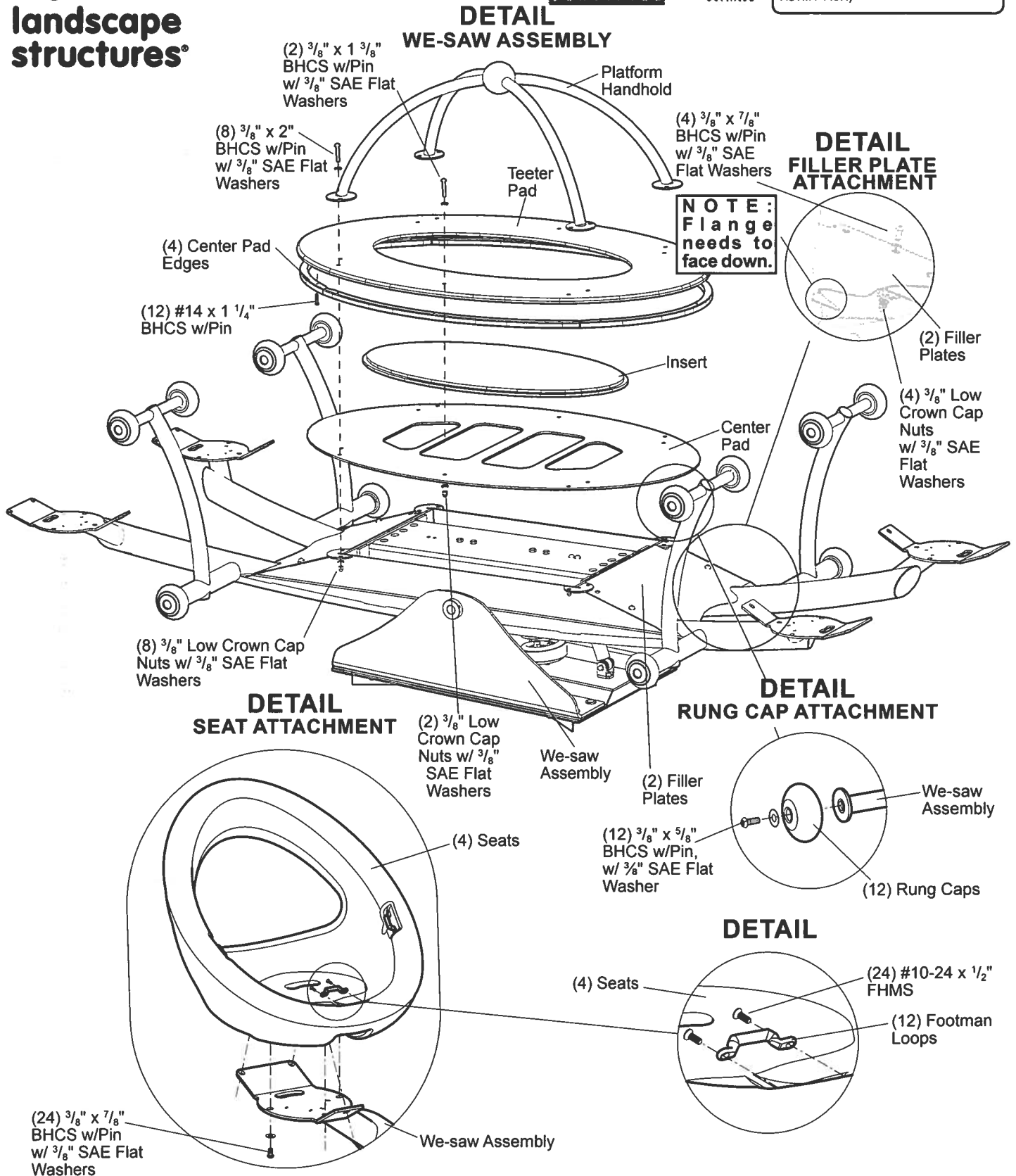


**DETAIL
 CONCRETE FOOTINGS
 (WITH FOOTER GUIDE PLATES)**



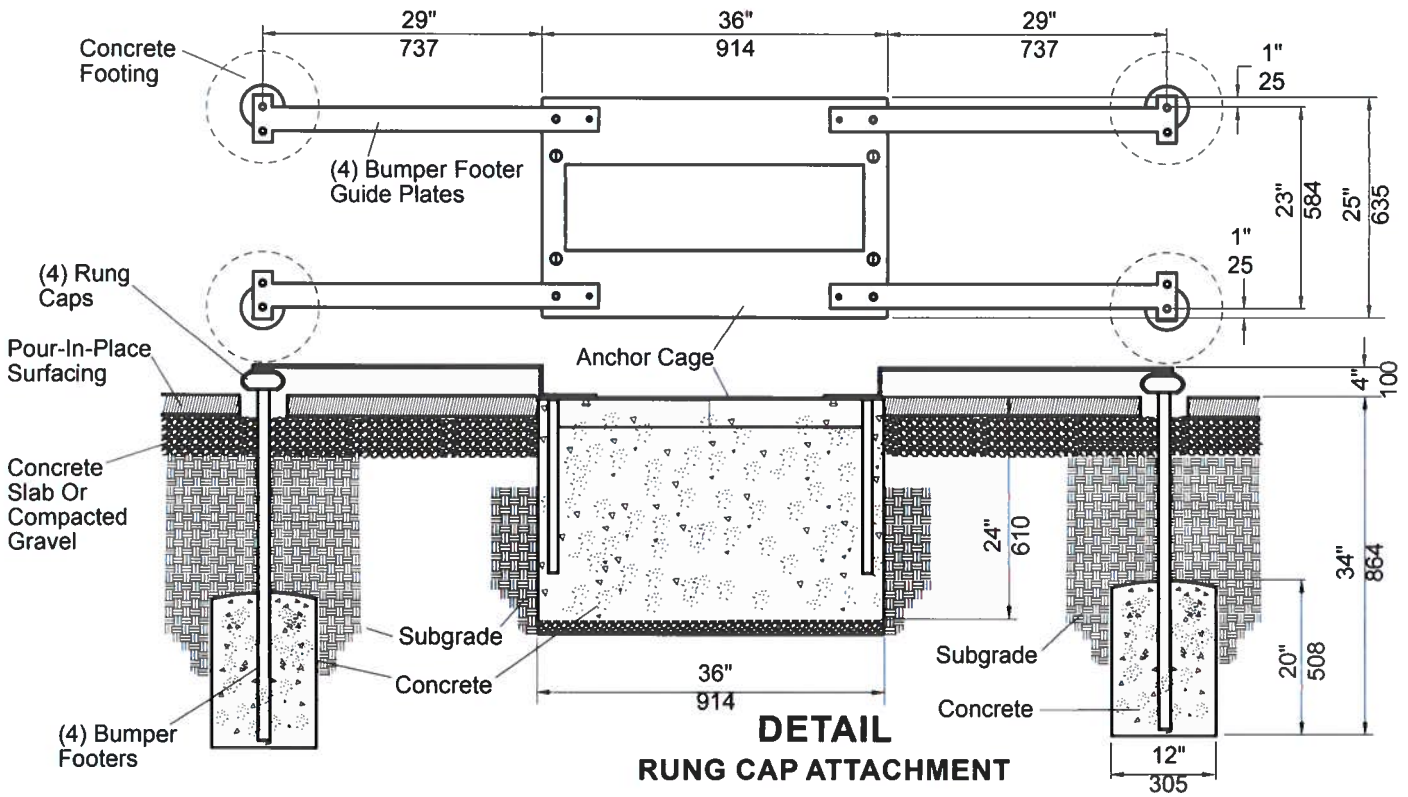
**DETAIL
 RUNG CAP ATTACHMENT**



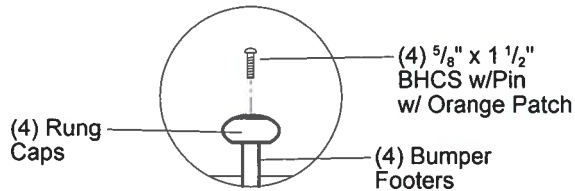


DETAIL
DIRECT BURY WITH
POUR-IN-PLACE SURFACING

CONCRETE FOOTINGS
(WITH FOOTER GUIDE PLATES)



DETAIL
RUNG CAP ATTACHMENT





Kids In Motion 186490 We-saw™

Parts List

Part#	Description	Qty.
181123	Seat, Specify Color.....	4
182262	Rung Cap, Black.....	16
182458	Platform Handhold, Specify Color.....	1
182947	Center Pad, Black.....	1
211277	GripX Insert, Black.....	1
183327	Teeter Pad, Specify Color.....	1
183328	Pad Edge Long, Specify Color.....	2
183329	Pad Edge Short, Specify Color.....	2
183748	Filler Plate, Specify Color.....	2
186453	Anchor Cage, Black.....	1
187231	Bumper Footer, Specify Color.....	4
188068	We-saw Assembly, Specify Color.....	1
186951	Footer Guide Plate, Black.....	4
249513	We-saw Hardware Package	1
100173	3/8" x 2" BHCS w/Pin, SST.....	8
100196	3/8" x 7/8" BHCS w/Pin, SST.....	28
100201	3/8" x 1 1/2" BHCS w/Pin, SST-Patch.....	12
100365	3/8" SAE Flat Washer, SST.....	64
129500	3/8" SAE Flat Washer, SST.....	8
129672	#14 x 1 1/4" TORX BHCS, SST.....	12
207709	Footman Loop, SST.....	12
162462	#10-24 x 1/2" FHMS.....	24
115176	ASTM Hard Surface Warning Label.....	1
156846	Play Safe Label, 2-12 Years.....	1
182212	Entanglement Warning Label.....	1
182213	Hot Surface Warning Label.....	1
100349	3/8" Low Crown Cap Nut, SST.....	14
127463	Bit Hex TPP T-27 Torx.....	1
113027	3/8" x 1 3/8" BHCS w/Pin, SST.....	2
100195	3/8" x 5/8" BHCS w/Pin, SST.....	12
188123	Bumper Guide Plate Hardware Package	1
127546	3/8" x 7/8" BHCS w/Pin, SST.....	4
127551	3/8" x 1 1/2" BHCS w/Pin, SST.....	4
188124	3/8" x 3" Hex Cap Screw, ZP.....	4

Specifications

We-saw Assembly: (Arm Assembly) Weldment comprised of 3.500" (88,9 mm) O.D. x 8 GA. (.162") (4,11 mm) wall galvanized steel tubing, 2.375" (60,33) O.D. RS40 (.130"-.140") (3,30 mm-3,56 mm) wall galvanized steel tubing, 1.900" (48,26 mm) O.D. RS40 (.120"-.130") (3,05 mm-3,30 mm) wall galvanized steel tubing, .375" (9,52 mm) thick HRPO steel plate and .250" (6,35 mm) stainless steel plate. Finish: ProShield®, specify color. (Rocker Assembly) Weldment comprised .250" (6,35 mm) HRPO steel plate and 2" (50 mm) x 5/16" (7,93 mm) wall steel tubing. Finish: ProShield, Black in color. (Base) Weldment comprised .375" (9,53 mm) HRPO steel plate and 2.500" (63,50 mm) O.D. x 1.150" (29,21 mm) I.D. stainless steel tubing. Finish: ProShield, Black in color. (Base Plate) Fabricated from .250" (6,35 mm) HRPO steel plate. Finish: ProShield, Black in color. (Spring) 5 3/8" (142,87 mm) diameter 13/16" (20,62 mm) tempered alloy steel coil. Finish: ProShield, Black in color. (Spring Wedge) Cast from ductile iron alloy. Finish: ProShield, Black in color. (Bearings) 1.145" (29,08 mm) I.D. oilite bronze. (Shaft) 1.14" (28,96 mm) O.D. stainless steel. (Cylinder) Chrome plated steel.

Filler Plate: Fabricated from 5052 Sheet Aluminum. Finish: ProShield, color specified.

GripX Insert: 3/4" (19,05 mm) Thick Permalene®, black in color.

Teeter Pad & Edges: Permalene®, color specified.

Platform Handhold: Weldment comprised of 1.315" (33,4 mm) O.D. RS20 (.080"-.090") (2,03 mm - 2,28 mm) wall galvanized steel tubing, 10 GA (.135") (3,42 mm) HRPO steel sheet and 7 GA. (.179") (4,54 mm) HRPO steel sheet. Finish: Proshield®, color specified.

Anchor Cage: Weldment comprised of 1.029" (26,13 mm) O.D. RS20 (.070"-.080") (1,77 mm - 2,03 mm) wall galvanized steel tubing with 203 or 303 stainless steel welded inserts with 5/8" internal threads and 7 GA. (.179") (4,54 mm) HRPO steel sheet. Finish: Proshield®, black in color.

Rung Cap: Molded from U.V. stabilized black EPDM rubber encapsulating .250" (6,35 mm) thick aluminum sheet and .125" (3,18 mm) thick aluminum plate.

Center Pad: Fabricated from .250" (6,35 mm) thick HRPO steel sheet plate. Finish: Proshield®, black in color.

Bumper Footer: Weldment comprised of 1.315" (33,40 mm) O.D. RS20 (.080"-.090") (2,03 mm - 2,29 mm) wall galvanized steel tubing with 203 or 303 stainless steel welded inserts with 5/8" internal threads and .250" (6,35 mm) thick stainless steel plate. Finish: Proshield®, color specified.

Seat: Rotationally molded from U.V. stabilized linear low density polyethylene, color specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Time: Approx. 16 man hours

Fall Height: 54" (1,37 m)

Min. Use Zone: 6' (1,83 m)

Area Required: 16' 8" x 23' 5" (5,08 m x 7,14 m)

Concrete Req.: Approx. 17.82 cu. ft.

Weight: 783 lbs.

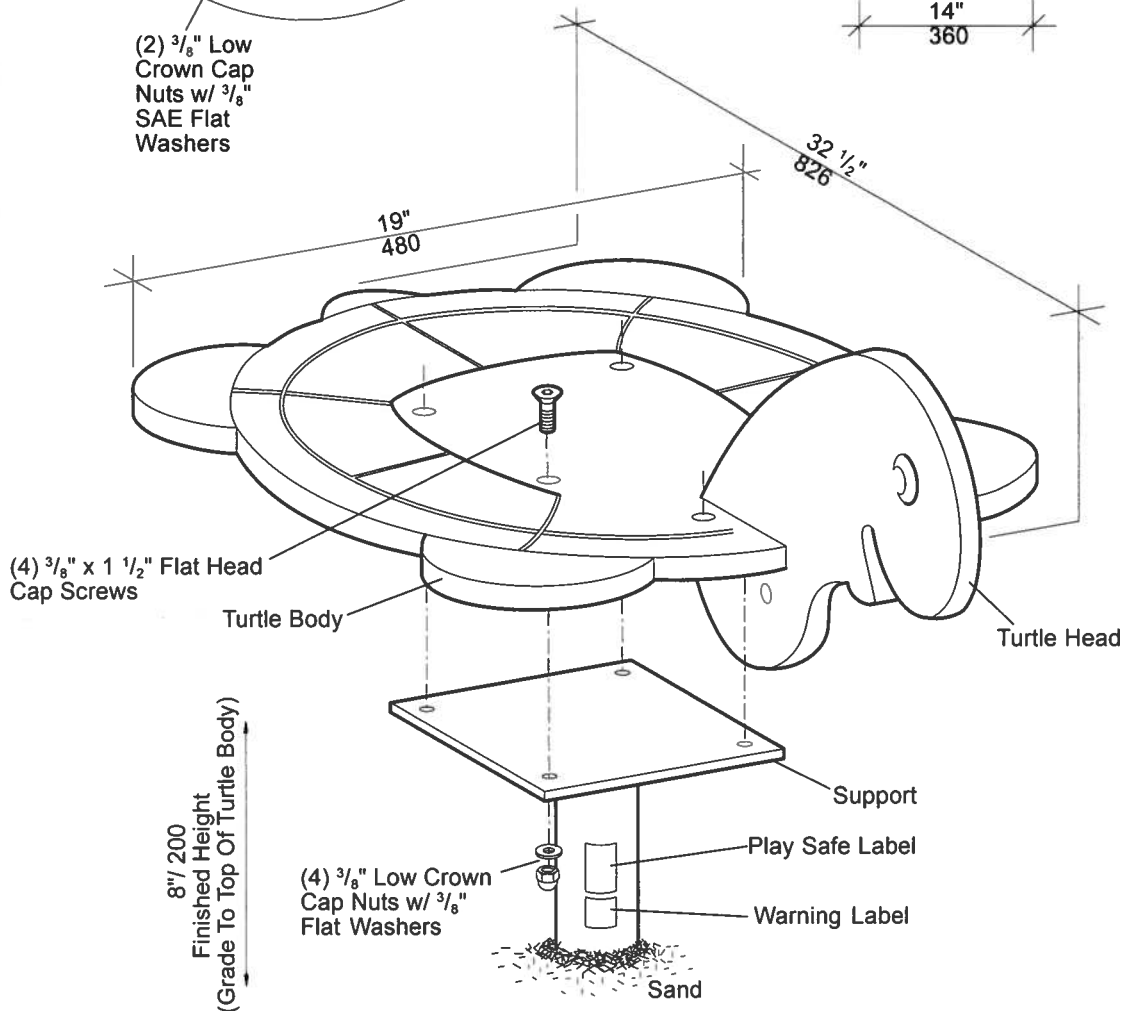
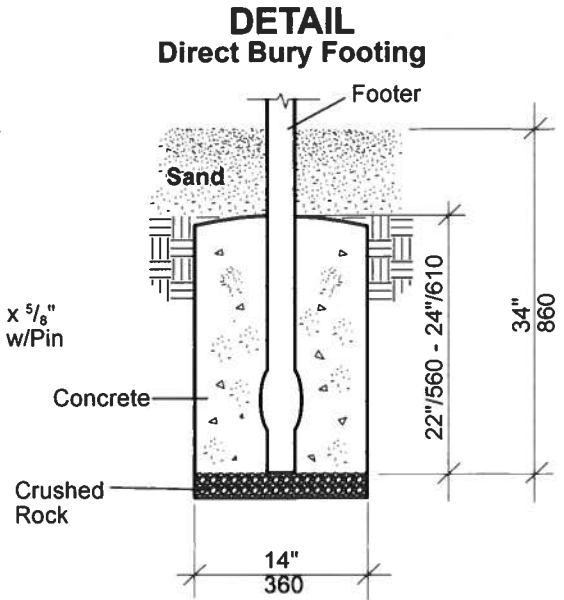
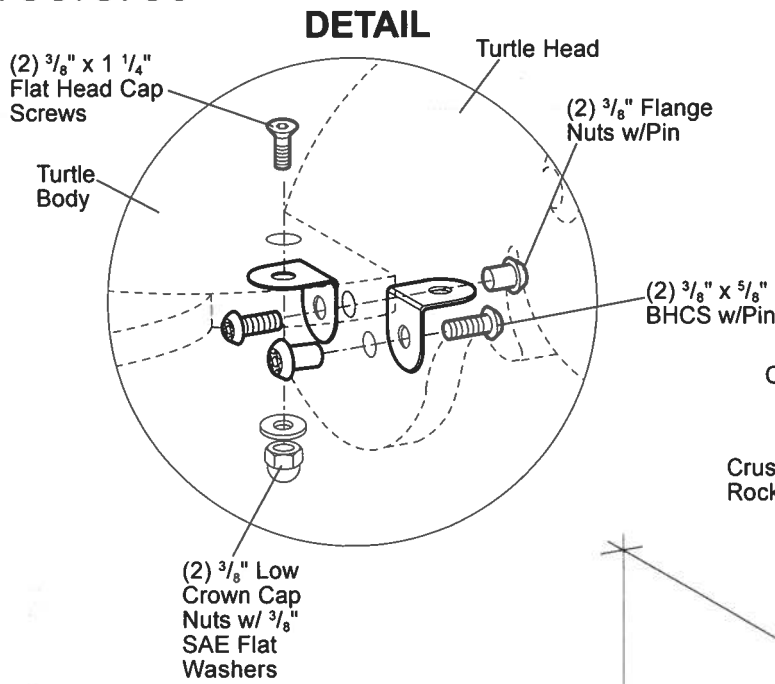
Installation Instructions

- 1) **(Direct Bury)** Dig footing holes for anchor cage and bumper footers. Build a form for anchor cage concrete footing. Concrete footing for anchor cage should not be larger than outside dimensions of anchor cage. Refer to Concrete Footing Details.
- 2) Attach rung caps and bumper footers to bumper footer guide plates using $\frac{5}{8}$ " x 3" hex head bolts. Refer to the Bumper Footer Attachment Detail.
- 3) Attach bumper footer guide plates to anchor cage using $\frac{3}{8}$ " x 1 $\frac{1}{2}$ " BHCS w/pin and $\frac{3}{8}$ " x $\frac{7}{8}$ " BHCS w/pin. Refer to the Bumper Footer Attachment Detail.
- 4) Place anchor cage and bumper footers in footing holes, as shown. Top of anchor cage should be flush with finished grade. With anchor cage level and bumper footers plumb, pour concrete. Concrete should be flush with top of anchor cage. Allow concrete footing to cure for a minimum of 72 hours before continuing. Refer to the Concrete Footing Details.
- 5) Remove footer guide plates from anchor cage and bumper footers. Discard bumper guard plates and hardware. Attach rung caps to bumper footers using $\frac{5}{8}$ " x 1 $\frac{1}{2}$ " BHCS w/pin. Refer to the Rung Cap Attachment Detail.
- 6) Set We-saw assembly onto anchor cage. Line up holes in We-saw assembly bottom plate with threaded inserts in anchor cage. Attach We-saw assembly to anchor cage using $\frac{5}{8}$ " x 1 $\frac{1}{2}$ " BHCS w/pin with $\frac{5}{8}$ " SAE flat washers. Refer to the We-saw Assembly Attachment Detail.
- 7) Attach filler plates to We-saw assembly using #3/8 x 7/8" BHCS w/pin with $\frac{3}{8}$ " SAE flat washers and $\frac{3}{8}$ " low crown cap nuts with $\frac{3}{8}$ " SAE flat washers. Refer to the Filler Plate Attachment Detail. Make sure flanges on filler plates are pointing downwards.
- 8) Attach center pad edges to teeter pad, using #14 x 1 $\frac{1}{4}$ " BHCS w/pin. Refer to the We-saw Assembly Detail.
- 9) Attach platform handhold, teeter pad, insert and center pad to We-saw assembly attachment plates, using $\frac{3}{8}$ " x 2" BHCS w/pin with $\frac{3}{8}$ " SAE flat washers and $\frac{3}{8}$ " low crown cap nuts with $\frac{3}{8}$ " SAE flat washers. Refer to the We-saw Assembly Detail.
- 10) Attach teeter pad to center pad using $\frac{3}{8}$ " x 1 $\frac{3}{8}$ " BHCS w/pin with $\frac{3}{8}$ " SAE flat washers and $\frac{3}{8}$ " low crown cap nuts with $\frac{3}{8}$ " SAE flat washers. Refer to the We-saw Assembly Detail.
- 11) Attach rung caps to We-saw assembly using $\frac{5}{8}$ " x 1 $\frac{1}{2}$ " BHCS w/pin. Refer to the Rung Cap Attachment Detail.
- 12) Attach seats to We-saw assembly using $\frac{3}{8}$ " x $\frac{7}{8}$ " BHCS w/pin with $\frac{3}{8}$ " SAE flat washers. Refer to the Seat Attachment Detail.
- 13) Attach footman loops, using #10-24 x $\frac{1}{2}$ " flat head screws, as shown. Footman loops are used for seat belts (not included).
- 14) Apply Play Safe and warning labels, as shown.
- 15) Install protective surfacing before users are allowed to play on the structure.



SAFETY NOTE
 Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Fall Height of the adjacent equipment. (Ref. ASTM F1487.)

19027400



Sensory Play

116568 Turtle Sand Table



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Sensory Play 116568 Turtle Sand Table

Parts List

Part#	Description	Qty.
116216-00	Turtle Body, Specify Color	1
116219-00	Turtle Head, Specify Color	1
156134-00	Support (DB), Specify Color	1
190275-00	Turtle Hardware Package	1
100195-00	3/8" x 5/8" BHCS w/Pin, SST	2
100252-00	3/8" x 1 1/4" Flat Head Cap Screw, SST	2
100353-00	3/8" Flange Nut w/Pin, SST	2
100365-00	3/8" SAE Flat Washer, SST	2
100349-00	3/8" Low Crown Cap Nut, SST	6
105207-00	Aluminum Angle	2
100362-00	3/8" Flat Washer, SST	4
151421-00	3/8" x 1 1/2" Flat Head Cap Screw, SST	4
156845-00	Play Safe Label, 2-5 Yrs.	1
183064-00	Warning Label	1

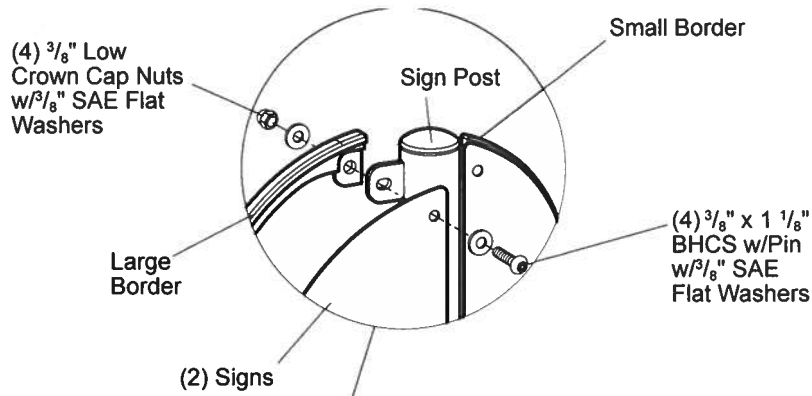
Specifications

- Turtle Body/Head:** Two color Permalene®, color specified.
- Support:** Weldment comprised of a 8" square x 1/4" galvanized steel plate and 2.375" O.D. RS-20 (.095" - .105") galvanized steel tubing. Finish: ProShield®, color specified.
- Fasteners:** Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
- Installation Time:** Approx. 1 1/4 man hour
- Concrete Req.:** Approx. 1.9 cu. ft.
- Area Req.:** 13'-7" x 14'-8 1/2" (4,14 m x 4,48 m) minimum use zone
- Weight:** 27 lbs.

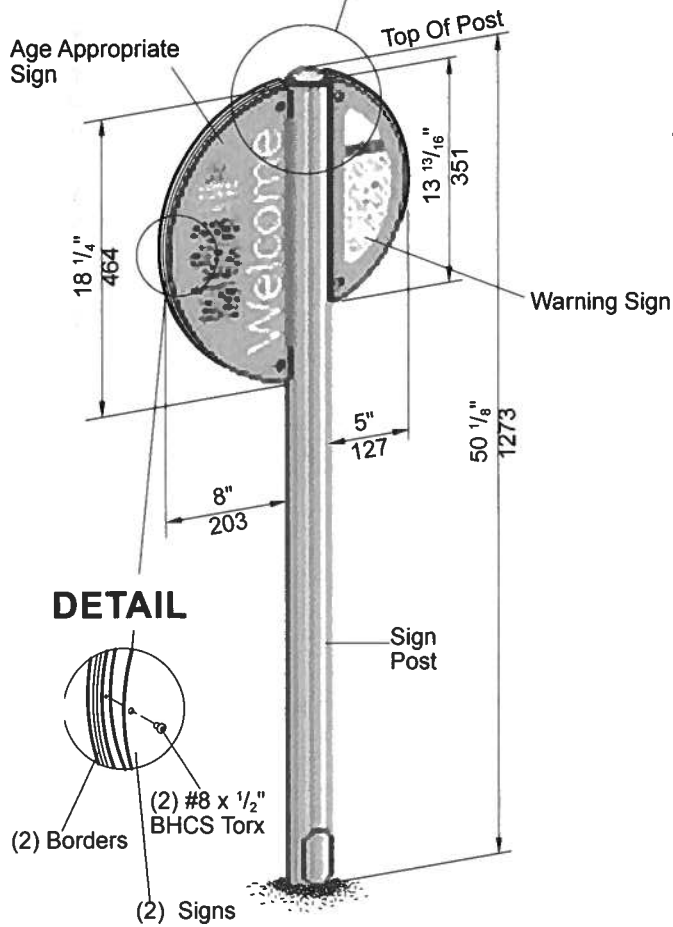
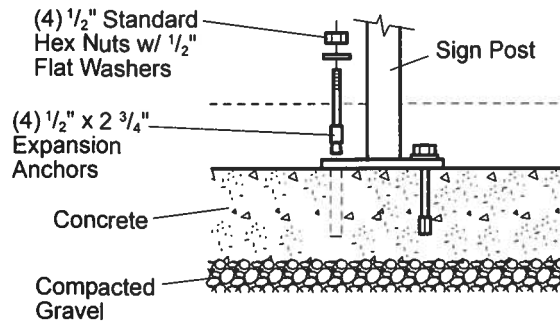
Installation Instructions

- 1) Dig footing as shown.
- 2) Attach turtle body to support using 3/8" x 1 1/2" flat head cap screws and 3/8" low crown cap nuts with 3/8" flat washers, as shown.
- 3) Attach aluminum angles to turtle body using 3/8" x 1 1/4" flat head cap screws and 3/8" low crown cap nuts with 3/8" SAE flat washers. Refer to Detail.
- 4) Attach turtle head to aluminum angles using 3/8" x 5/8" BHCS w/pin and 3/8" flange nuts w/pin. Refer to Detail.
- 5) Set support in footing hole and temporarily brace in plumb position.
- 6) Pour concrete footing. After concrete has cured for a minimum of 72 hours, remove bracing.
- 7) Apply labels as shown.
- 8) Install sand.

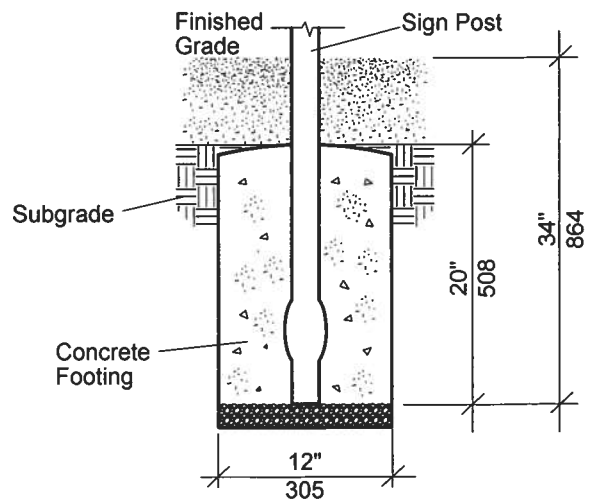
**DETAIL
SIGN ATTACHMENT**



**DETAIL
SURFACE MOUNT**



**DETAIL
DIRECT BURY FOOTING**



Model 182503 - Landscape Structures Provided Welcome Sign
Model 182504 - Welcome Sign

Signs

Welcome Sign

Parts List

Part#	Description	Qty.
219911	Warning Sign, Gray	1
219912	Age Appropriate Sign, 2-12 Years, Gray	*
219913	Age Appropriate Sign, 2-5 Years, Gray	*
219914	Age Appropriate Sign, 5-12 Years, Gray	*
219915	Age Appropriate Sign, 1 1/2-5 Years, Gray	*
219916	Age Appropriate Sign, 1 1/2-12 Years, Gray	*
219918	Age Appropriate Sign, 6-23 Months, Gray	*
180598	Sign Post (DB), Specify Color	*
181119	Sign Post (SM), Specify Color	*
193782	Large Border, Black	1
193783	Small Border, Black	1
213258	Age/Warning Sign Hardware Package	1
100198	3/8" x 1 1/8" BHCS w/Pin, SST	4
100349	3/8" Low Crown Cap Nut, SST	4
100365	3/8" SAE Flat Washer, SST	8
168323	#8 x 1/2" BHCS Torx, SST	2
169413	1/4-6 Lobe T-15 Tamp. Bit	1
121348	4 Hole (SM) Hardware Package	1
100266	1/2" x 2 3/4" Expansion Anchor	4
100322	1/2" Standard Hex Nut, SST	4
100363	1/2" Flat Washer, SST	4

DB = Direct Bury

SM = Surface Mount

* = Quantity Determined By Your Order

Specifications

Sign Panel: Panel is fabricated from 1/8" (.125")(3,17 mm) aluminum plate. Finish: ProShield®, gray in color. (Sign) Digital image is transferred to a 1/8" (.125")(3,17 mm) ProShield coated aluminum plate, then infused into the ProShield.

Border: Permalene, black in color.

Post: Weldment comprised 2.375" (60,33 mm) O.D. RS20 (.095-.105) (2,41 mm-2,67 mm) wall galvanized tube, 1/4" (6,35 mm) HRPO steel sheet and aluminum post cap. Finish: ProShield, color specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Time: (DB) Approx. 1 man hour
(SM) Approx. 1/2 man hour

Concrete Req: Approx. 1.31 cu. ft.

Weight: (DB) - 24 lbs.
(SM) - 27 lbs.

Installation Instructions

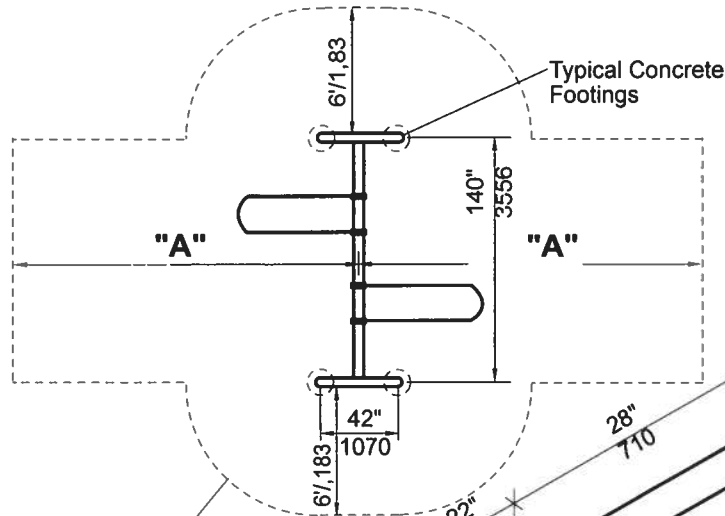
Direct Bury

- 1) Dig footing hole to depth and diameter shown.
- 2) Attach sign panels and borders to post as shown, using 3/8" x 1 1/8" BHCS with 3/8" SAE flat washers and 3/8" low crown cap nuts with 3/8" SAE flat washers. Attach signs to borders using #8 x 1/2" BHCS Torx.
- 3) Set sign assembly in footing hole and temporarily brace in plumb position.
- 4) Pour concrete footing. After concrete has cured, remove bracing.

Surface Mount

- 1) Attach sign panels and borders to post as shown, using 3/8" x 1 1/8" BHCS with 3/8" SAE flat washers and 3/8" low crown cap nuts with 3/8" SAE flat washers. Attach signs to borders using #8 x 1/2" BHCS Torx.
- 2) With sign in proper position, using a 1/2" masonry bit and hammer drill, drill 3" deep holes into concrete slab through holes in post plate. Tap 1/2" x 2 3/4" expansion anchors into holes and secure using 1/2" standard hex nuts with 1/2" flat washers.

PLAN VIEW/FOOTING LAYOUT



KEY	Dimension "A"
Seat Type	
Belt	16'-0" (4,88 m)
Flat	16'-0" (4,88 m)
Full Bucket	12'-0" (3,66 m)
Half Bucket	16'-0" (4,88 m)
Molded Bucket	16'-0" (4,88 m)
Molded Bucket/Harness	13'-0" (3,96 m)
Infant Full Bucket	N/A

Minimum Use Zone

(2) Typical Tee Clamps-Center Beam In Middle Of Arch

99 3/4" / 2534
From Top of Surfacing to Center of Beam

(2) Arches

(4) Labels

Protective Surfacing

KEY

Seat Type	Dimension "A"
Belt	16'-0" (4,88 m)
Flat	16'-0" (4,88 m)
Full Bucket	12'-0" (3,66 m)
Half Bucket	16'-0" (4,88 m)
Molded Bucket	16'-0" (4,88 m)
Molded Bucket/Harness	13'-0" (3,96 m)
Infant Full Bucket	N/A

Back To Back Swing Beam

NOTE: Model numbers are for swing frames only, order swing seats with chains separately.

Model #221293 Additional Bay

Swings

221292/221293 Arch Swing Frame

Sheet 1 of 2



Swings 221292/221293 Arch Swing Frame

Parts List

Part#	Description	Qty.	
		2 Pl	Add. Bay
126749	Swing Arch, Specify Color.....	2	1
100610	1/4" x 5/8" Drive Rivet, AL/SST.....	8	6
105327	5" Half Clamp, Specify Color.....	8	4*
216492	140" Swing Beam, Specify Color.....	1	1
121291	Swing Hanger Clamp Assy. Specify Color	4	4
121289	Swing Hanger Clamp, Specify Color.....	4	4
127068	7/16" x 2 7/16" BHCS w/Pin Ltd. Thread, SST.....	4	4
138917	Swing Hanger Double Clevis.....	4	4
100667	Oilite Bushing.....	4	4
243802	Hdw Pkg 5iOD Swing Beam.	1	1
100198	3/8" x 1 1/8" BHCS w/Pin, SST.....	8	8
234397	BHCS 6LP LTHD 7/16 x 1 11/16i, SST.....	8	8
100292	3/8" x 1 1/4" BHCS w/Pin Ltd. Thread, SST.....	4	4
100351	3/8" Tee Nut, SST.....	8	8
156846	Play Safe Label, 2-12 Yrs.....	1	1
234937	7/16" D Cut Washer, SST.....	16	16
182213	Hot Surface Warning Label.....	1	1
182212	Entanglement Warning Label.....	1	1
115176	Hard Surface Warning Label.....	1	1
100330	7/16" Nylok Hex Nut.....	8	8

* = 5" Half Clamps From 2 PL. End Of Beam Need To Be Used.

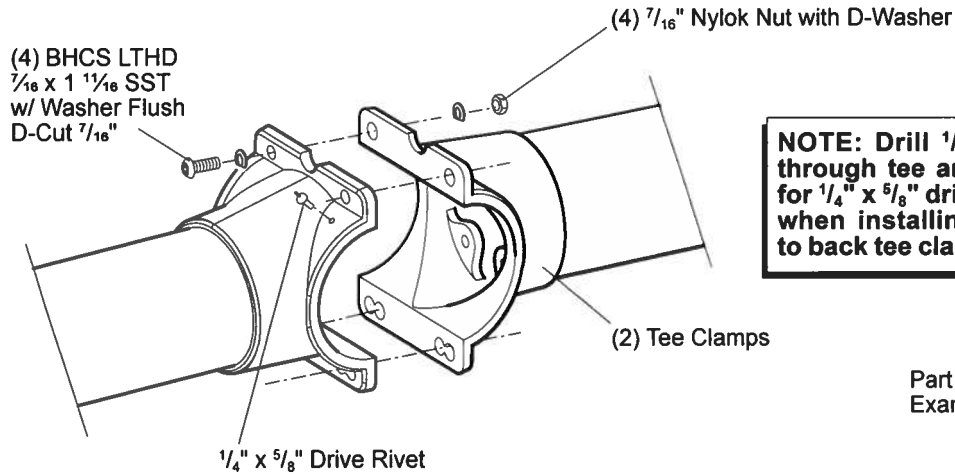
Installation Instructions

- 1) Dig footings, spaced as shown. Refer to the Concrete Footing Detail.
- 2) Set arches in footing holes and attach swing beam to center of arches using 5" half clamps with 7/16" BHCS w/Pin, 7/16" D-Cut Washers, and 7/16" Nylok nuts. Refer to the Tee Clamp Position Detail. Center of beam should be 99 3/4" above finished grade. When installing back to back swing beams refer to the Back To Back Tee Clamps Detail.
- 3) Level beam and plumb arches and temporarily prop in position. Pour concrete footings and let cure for 72 hours before proceeding.
- 4) Locate, mark and attach swing hanger clamps to beam in locations shown. Refer to the Typical Swing Hanger Clamp Spec Sheet.
- 5) **NOTE:** Refer to specific swing seat installation document for attaching chains and seats.
- 6) Install 1/4" x 5/8" drive rivets in all 5" half clamps. Refer to the Typical Offset Hanger Clamp Spec Sheet. Refer to the Back To Back Tee Clamps Detail.
- 7) Apply Play Safe and Warning Labels, as shown.
- 8) Install protective surfacing before users are allowed to play on the swing.

Specifications

Arch Posts:	See PlayBooster® (PB) General Specifications.
Swing Beam:	Weldment comprised of tee clamps and 5" O.D. extruded 6005-T5 aluminum alloy tube with a .125" wall. Finish: ProShield®, color specified.
Clamp:	Cast aluminum. Finish: ProShield, color specified.
Fasteners:	Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
Installation Time:	Approx. 8 man hours Additional Bay 4 man hours
Concrete Req.:	Approx. 7.5 cu. ft. Additional Bay 3.75 cu. ft.
Area Req.:	24'-2 3/4" x 32' (7,39 m x 9,75 m) Additional Bay 11'-8" x 32' (3,55 m x 9,75 m)
Weight:	204 lbs. Additional Bay 124 lbs.
Fall Height:	96" (2,43 m)

**DETAIL
BACK TO BACK
TEE CLAMPS**

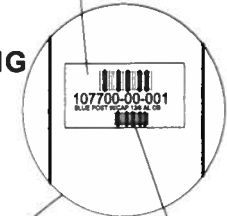


NOTE: Drill 1/4" hole through tee and arch for 1/4" x 5/8" drive rivet when installing back to back tee clamps.

Part Number Label Example

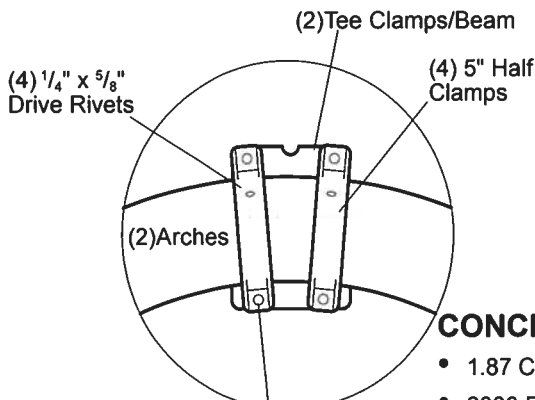
**DETAIL
CONCRETE FOOTING**

Finish Grade Sticker



Number Indicates Post Length

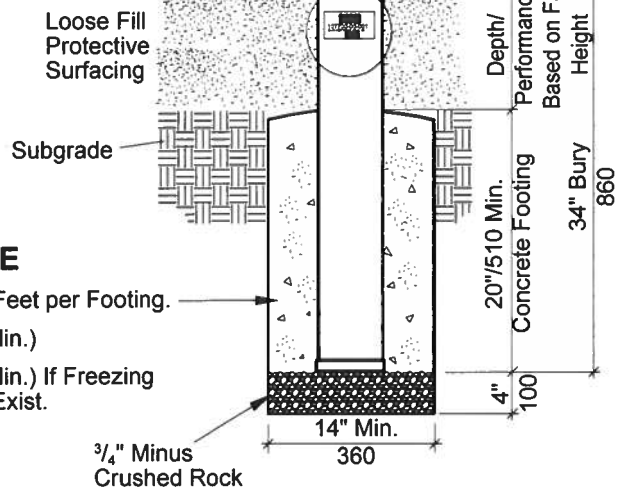
**DETAIL
TEE CLAMP POSITION**



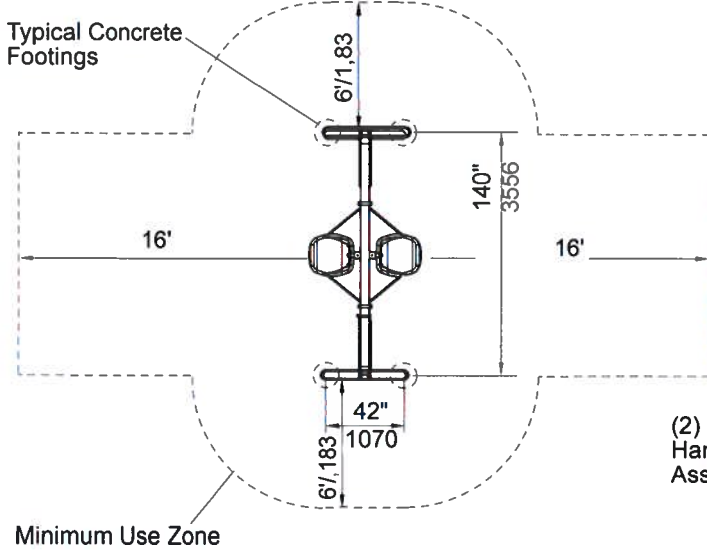
NOTE: Use inside holes for (4) 7/16 BHCS w/Pin limited thread w/D-Washer 7/16 Nylok Nut w/D-Washer

CONCRETE

- 1.87 Cubic Feet per Footing.
- 2000 PSI (Min.)
- 3000 PSI (Min.) If Freezing Conditions Exist.

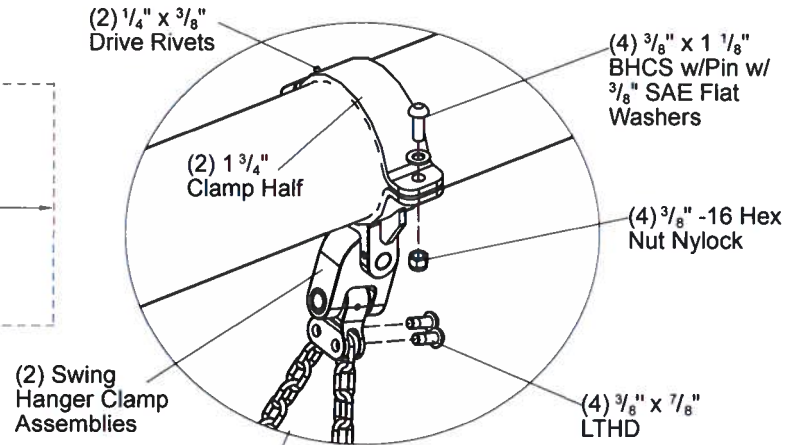


PLAN VIEW/FOOTING LAYOUT

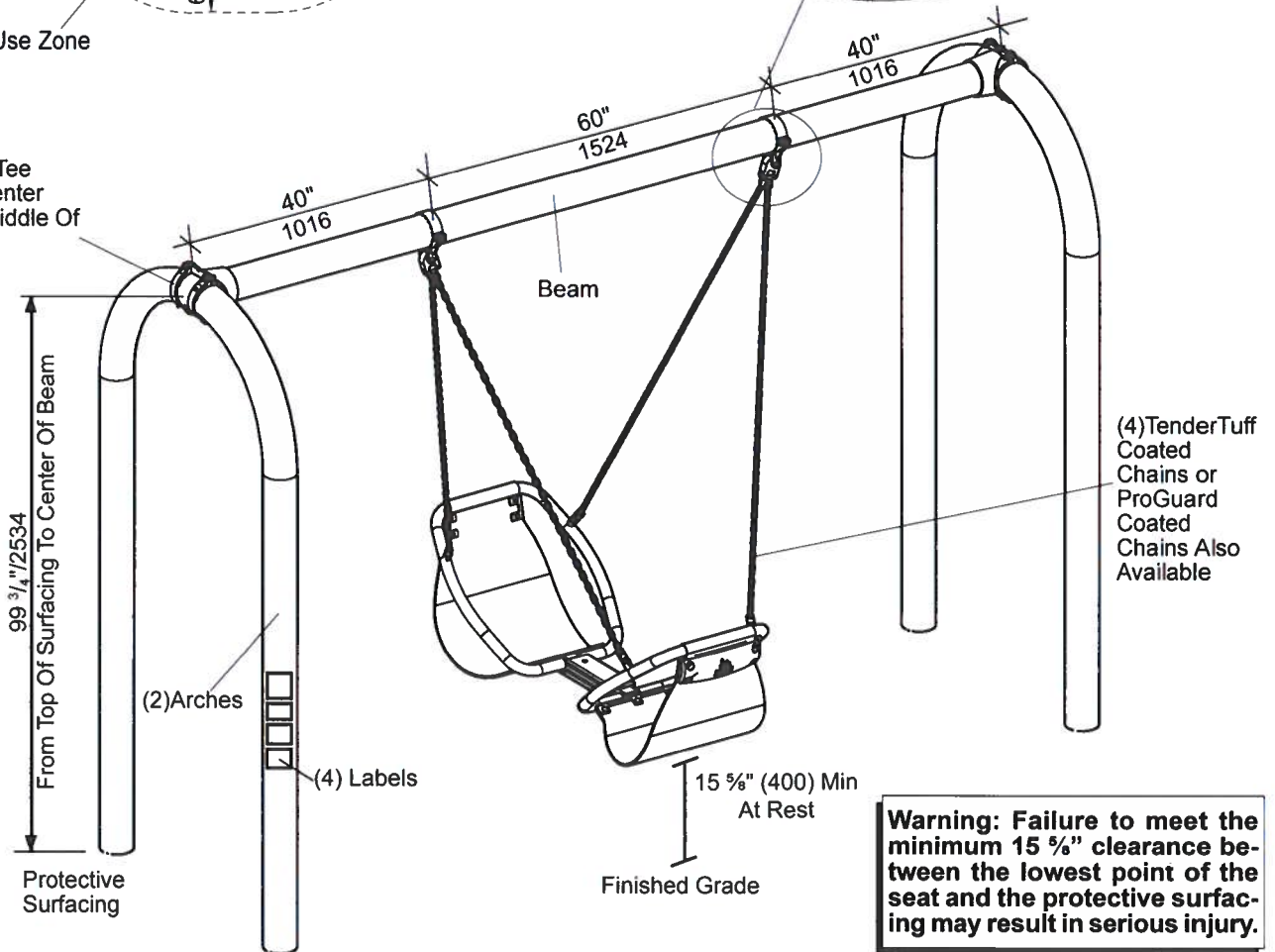


DETAIL

SWING HANGER ATTACHMENT



(2) Typical Tee Clamps-Center Beam In Middle Of Arch



Warning: Failure to meet the minimum 15 5/8" clearance between the lowest point of the seat and the protective surfacing may result in serious injury.

Model #237294 Additional Bay

Swings 237293/237294 Friendship Swing w/Arch Frame Sheet 1 of 2

Swings 237293/237294 Friendship Swing w/Arch Frame

landscape structures

Parts List

Part#	Description	Qty.	
		2 Pl	Add Bay
105327	Clmp Half 5i Al, Specify Color.....	4	*
126749	Arch Asy Pb 112-3/4 Al Db, Specify Color.....	2	1
175738	Bumper Bucket Seat Rubber.....	2	2
216492	Beam 5i Od X 140i Al, Specify Color.....	1	1
229492	Belt Bumper Seat Frame, Specify Color.....	1	1
229497	Belting Friendship Swing Seat.....	2	2
229500	Channel Cap Top Perm, Black.....	1	1
230235	Rubber Wrap Belt.....	2	2
237598	Channel Cap Bottom, Black.....	1	1
183829	Chn 3/16 P30 62-1/2i (ProGuard Chains).....	4	4
237686	Clmp Half 1-3/4i Wd SST, Specify Color.....	2	2
237734	Swing Hanger Asm, Specifiy Color.....	2	2
242397	Chn 3/16 P30 62-1/2i (TT Chn), Specify Color.....	4	4
237915	Top Belt Plate, Black.....	4	4
237916	Lower Belt Plate, Black.....	2	2
238080	Hdw Pkg 5i Swing Beam.....	1	1
100198	BHCS 6LP 3/8X1-1/8i SST.....	4	4
100330	Nut Hex Nylok 7/16-14 SST.....	8	8
100365	Washer Flat SAE 3/8i SST.....	4	4
100610	Rivet 1/4X5/8i Drv AS.....	4	4
100611	Rivet 1/4X3/8i Drv AS.....	2	2
115176	Label Hd Srf Warning ASTM.....	1	1
136931	Nut Hex Nylok 3/8-16 SST.....	4	4
156846	Label Play Safe 2-12 Yrs.....	1	1
182212	Label Entanglement Warning.....	1	1
182213	Label Hot Surface Warning.....	1	1
234397	BHCS 6LP LTHD 7/16 X 1 1/16, SST.....	8	8
234937	Washer Fl D-Cut 7/16i SST.....	16	16
238081	Hdw Pkg Friendship Swing Seat.....	1	1
100173	BHCS 6LP 3/8X2i SST Pat.....	2	2
100353	Flg Nut 6LP 3/8-16 SST.....	10	10
137091	FHCS 3/8X1i SST Pat.....	8	8
148686	FHCS 6LP 3/8X3/4i SST Pat.....	6	6
238082	Hdw Pkg Chain Swivels W/Bolts(ProGuard).....	1	1
100290	BHCS 6LP Lthd 3/8X7/8i SST.....	12	12
112501	Spacer Nylon 3/8i Id.....	8	8
127179	Bushing 5/8Od X 3/8 Lg SST.....	4	4
218781	Rope Swivel Tab.....	4	4
238083	Hdw Pkg Chain Swivels W/Bolts (TT Chn).....	1	1
100290	BHCS 6LP Lthd 3/8X7/8i SST.....	12	12
127179	Bushing 5/8Od X 3/8 Lg SST.....	4	4
218781	Rope Swivel Tab.....	4	4

* = 5" Half Clamps From 2 PL. End Of Beam Need To Be Used.

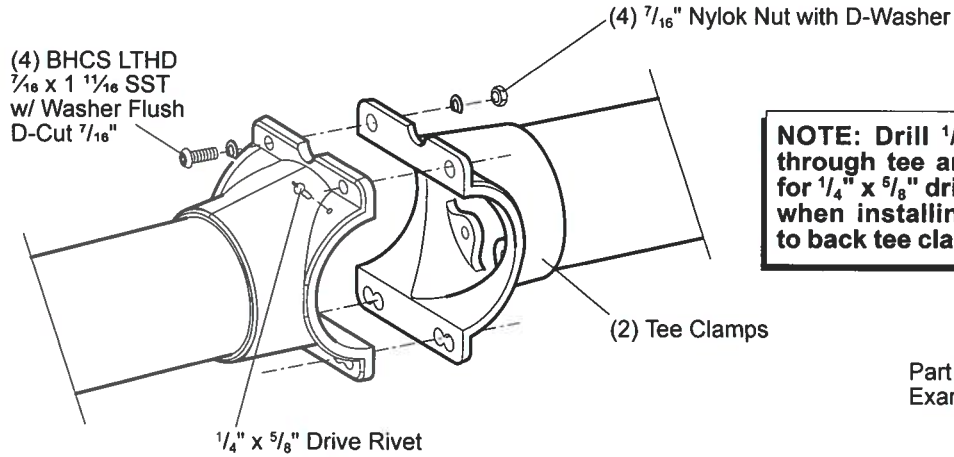
Specifications

Arch Posts:	See PlayBooster® (PB) General Specifications.
Belt:	Made from .315" thick mini rough top 3-ply rubber belting with polyester fabric plys, black in color.
Swing Beam:	Weldment comprised of tee clamps and 5" O.D. extruded 6005-T5 aluminum alloy tube with a .125" wall. Finish: ProShield®, color specified.
Clamp:	Cast aluminum. Finish: ProShield, color specified.
Fasteners:	Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
Installation Time:	Approx. 8 man hours Additional Bay 4 man hours
Concrete Req.:	Approx. 7.5 cu. ft. Additional Bay 3.75 cu. ft.
Area Req.:	24'-1" x 32' (7,34 m x 9,75 m) Additional Bay 18'-1" x 32' (5,51 m x 9,75 m)
Weight:	1 Place w/ProGuard Chain 276 lbs. 1 Place w/TenderTuff Chain 279 lbs. Additional Bay w/ProGuard Chain 214 lbs. Additional Bay w/TenderTuff Chain 218 lbs.
Fall Height:	96" (2,43 m)

Installation Instructions

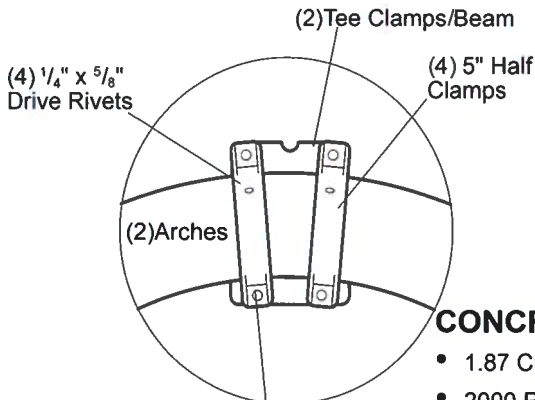
- 1) Dig footings, spaced as shown. Refer to the Concrete Footing Detail.
- 2) Set arches in footing holes and attach swing beam to center of arches using 5" half clamps with 7/16" BHCS w/Pin, 7/16" D-Cut Washers, and 7/16" Nylok nuts. Refer to the Tee Clamp Position Detail. Center of beam should be 99 3/4" above finished grade. When installing back to back swing beams refer to the Back To Back Tee Clamps Detail.
- 3) Level beam and plumb arches and temporarily prop in position. Pour concrete footings and let cure for 72 hours before proceeding.
- 4) Locate, mark and attach swing hanger clamps to beam in locations shown. Refer to the Typical Swing Hanger Clamp Spec Sheet.
- 5) **NOTE: Refer to specific swing seat installation document for attaching chains and seats.**
- 6) Install 1/4" x 5/8" drive rivets in all 5" half clamps. Refer to the Typical Offset Hanger Clamp Spec Sheet. Refer to the Back To Back Tee Clamps Detail.
- 7) Apply Play Safe and Warning Labels, as shown.
- 8) Install protective surfacing before users are allowed to play on the swing.

**DETAIL
BACK TO BACK
TEE CLAMPS**



NOTE: Drill 1/4" hole through tee and arch for 1/4" x 5/8" drive rivet when installing back to back tee clamps.

**DETAIL
TEE CLAMP POSITION**

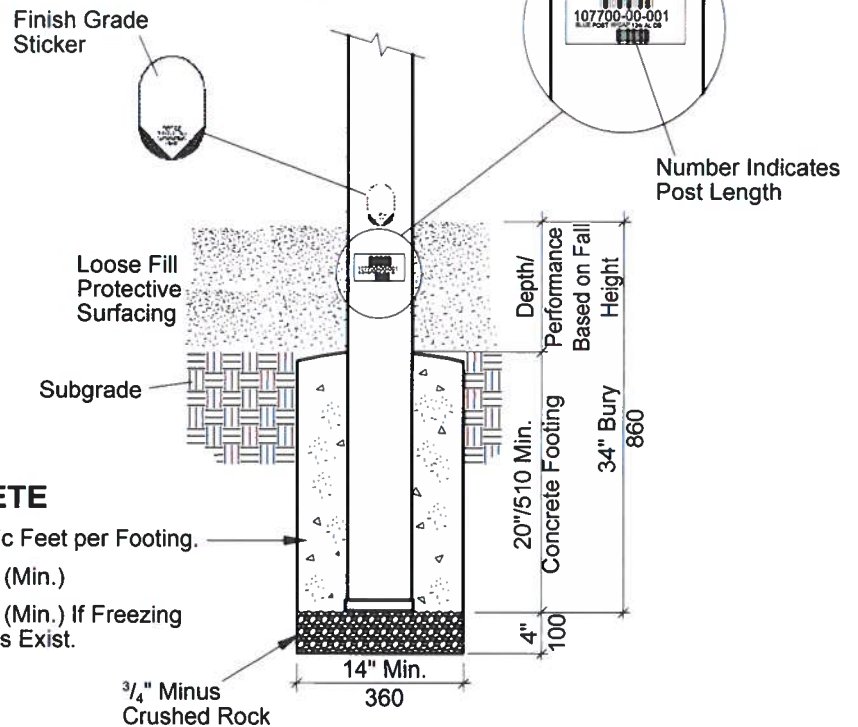


NOTE: Use inside holes for (4) 7/16 BHCS w/Pin limited thread w/D-Washer 7/16 Nylok Nut w/D-Washer

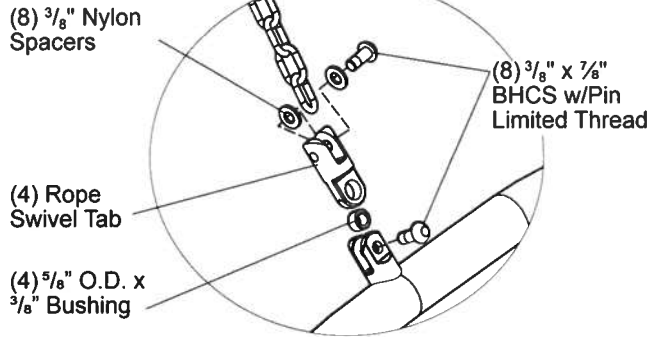
CONCRETE

- 1.87 Cubic Feet per Footing.
- 2000 PSI (Min.)
- 3000 PSI (Min.) If Freezing Conditions Exist.

**DETAIL
CONCRETE FOOTING**

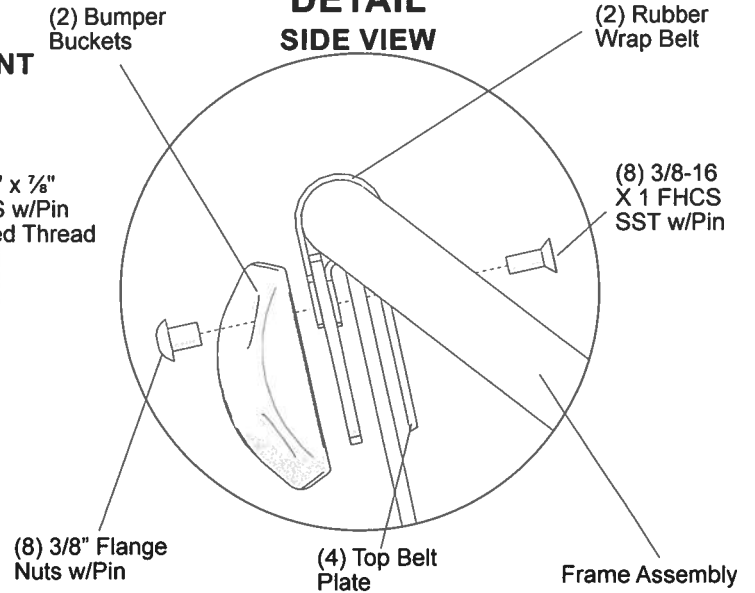


**DETAIL
SWING TO CHAIN ATTACHMENT**

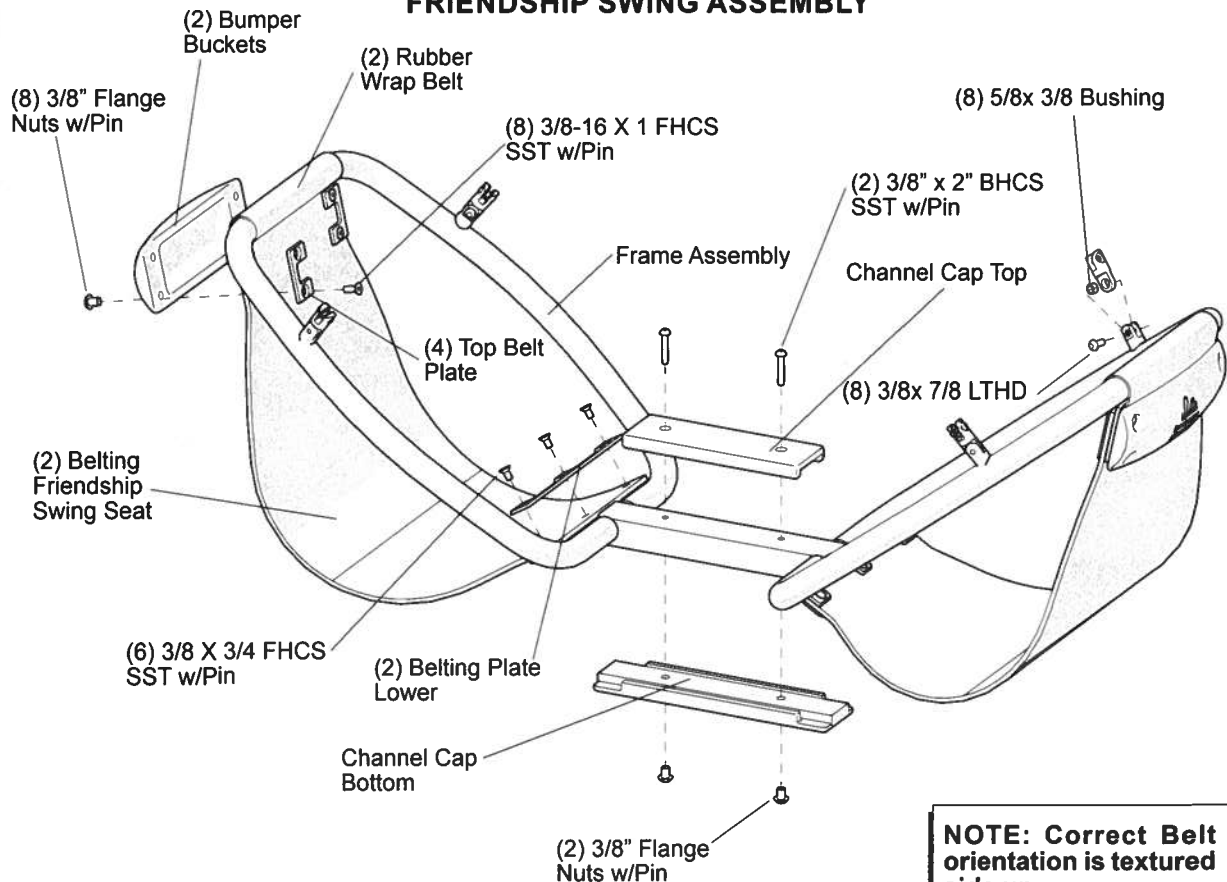


NOTE: Drill 1/4" hole through tee and arch for 1/4" x 5/8" drive rivet when installing back to back tee clamps.

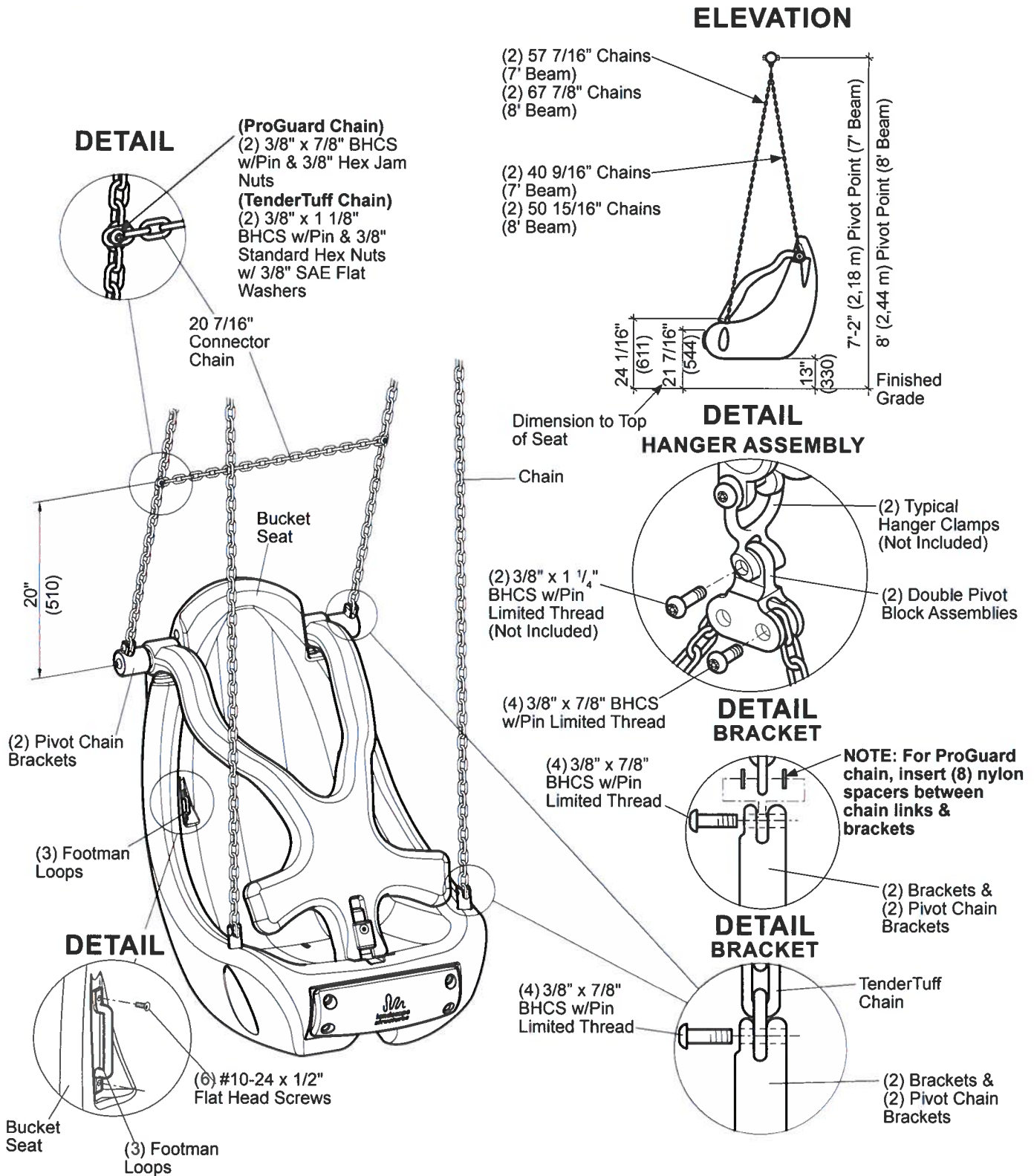
**DETAIL
SIDE VIEW**



**DETAIL
FRIENDSHIP SWING ASSEMBLY**



NOTE: Correct Belt orientation is textured side up.



Swings 218671 Molded Bucket Seat 2-5, w/Harness



Swings 218671 Molded Bucket Seat 2-5, w/Harness

Parts List

Part#	Description	Qty.
218680	Molded Bucket Seat Assembly, Specify Color.....	1
7 Ft. High Beam - ProGuard Finished Chains		
178679	57 7/16" Long, (Front).....	2
193869	49 9/16" Long, (Back).....	2
175653	20 7/16" Long, (Connector).....	1
8 Ft. High Beam - ProGuard Finished Chains		
174404	67 7/8" Long, (Front).....	2
175619	50 15/16" Long, (Back).....	2
175653	20 7/16" Long, (Connector).....	1
7 Ft. High Beam - TenderTuff Chains		
178679	57 7/16" Long, (Front), Specify Color.....	2
179286	40 9/16" Long, (Back), Specify Color.....	2
174571	20 7/16" Long, (Connector), Specify Color.....	1
8 Ft. High Beam - TenderTuff Chains		
152050	67 7/8" Long, (Front), Specify Color.....	2
174572	50 15/16" Long, (Back), Specify Color.....	2
174571	20 7/16" Long, (Connector), Specify Color.....	1
225662	Molded Seat w/Yoke Hardware Package	1
100196	3/8" x 7/8" BHCS w/Pin, SST.....	2
100198	3/8" x 1 1/8" BHCS w/Pin, SST.....	2
100290	3/8" x 7/8" BHCS w/Pin Limited Thread, SST.....	8
100327	3/8" Standard Hex Nut, SST.....	2
100365	3/8" SAE Flat Washer, SST.....	6
106035	Seat Mounting Bracket.....	2
112501	Nylon Spacer.....	8
128296	3/8" Hex Jam Nut, SST.....	2
207709	Footman Loop, SST.....	3
160307	Double Pivot Block Assembly.....	2
162462	#10-24 x 1/2" Flat Head Screw, SST.....	6

Specifications

- Bucket Seat Assy.:** (Bucket Seat & Yoke) Rotationally molded from U.V. stabilized linear low density polyethylene, color specified. (Pipebolt) Made from 1.125" (28,57 mm) O.D. 6005-T5 threaded anodized aluminum tube. (Bearings) UHMW PE lubricated. (Brackets) Made from 356-T6 aluminum.
- Chain/ProGuard:** Steel 3/16" (4,74 mm) straight link chain, 800 lb. working load limit. Finish: ProGuard.
- Chain/Coated:** Steel 3/16" (4,74 mm) straight link chain, 800 lb. working load limit. Finish: TenderTuff, color specified.
- Mounting Bracket:** Cast from 535 aluminum magnesium.
- Bumper Plate:** 1/8" (3,17 mm) thick aluminum plate. Finish: ProShield®, black in color.
- Bumper:** Molded from U.V. stabilized black EPDM rubber encapsulating 11 GA (.120") (3,04 mm) HRPO steel sheet.

Dbl. Pivot Block: Fabricated from 6061-T6 Aluminum with bronze oil impregnated bearing.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

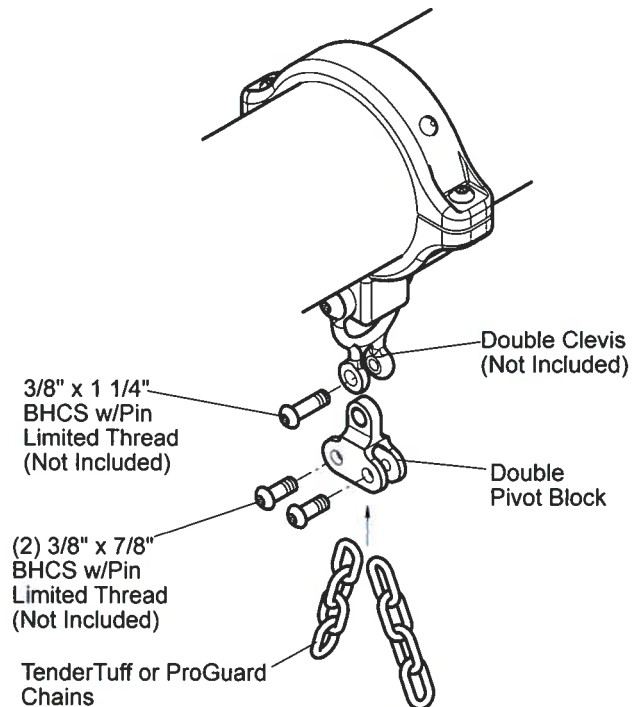
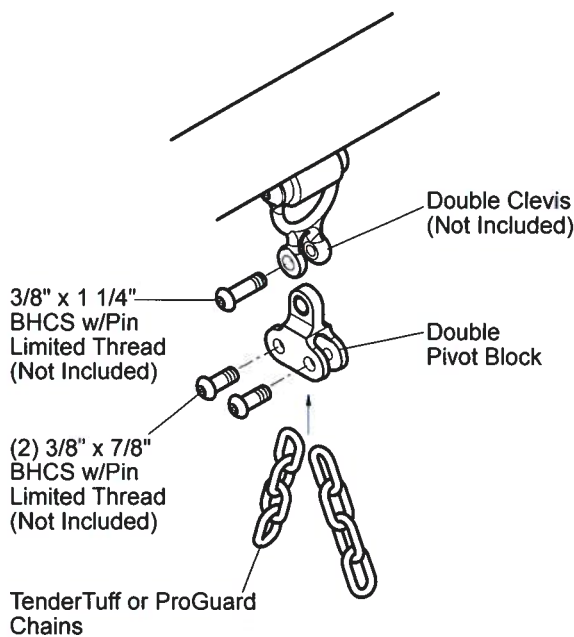
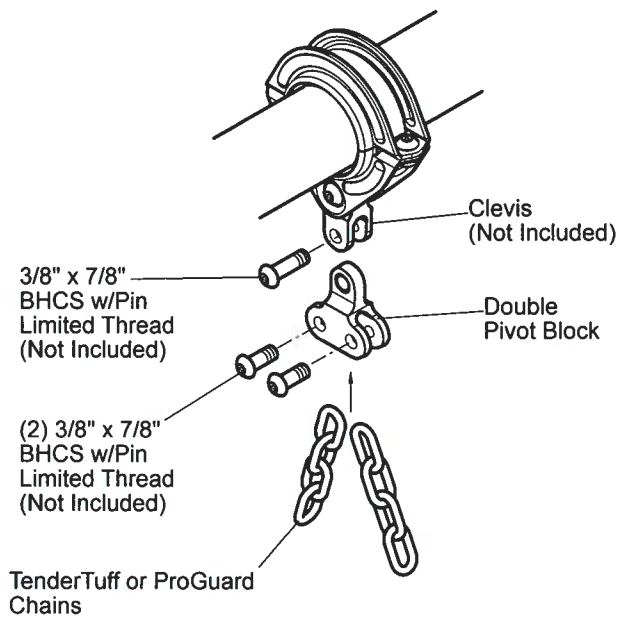
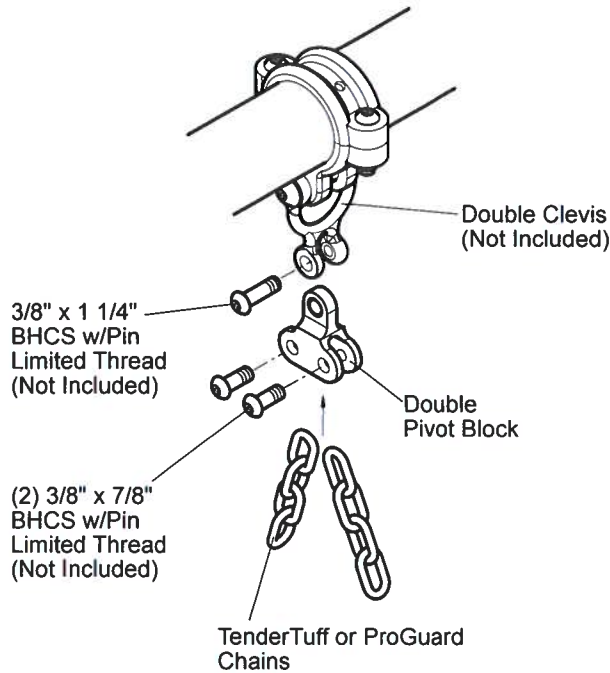
Installation Time: Approx. 1 man hour

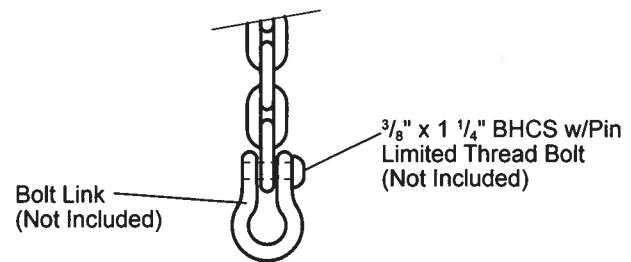
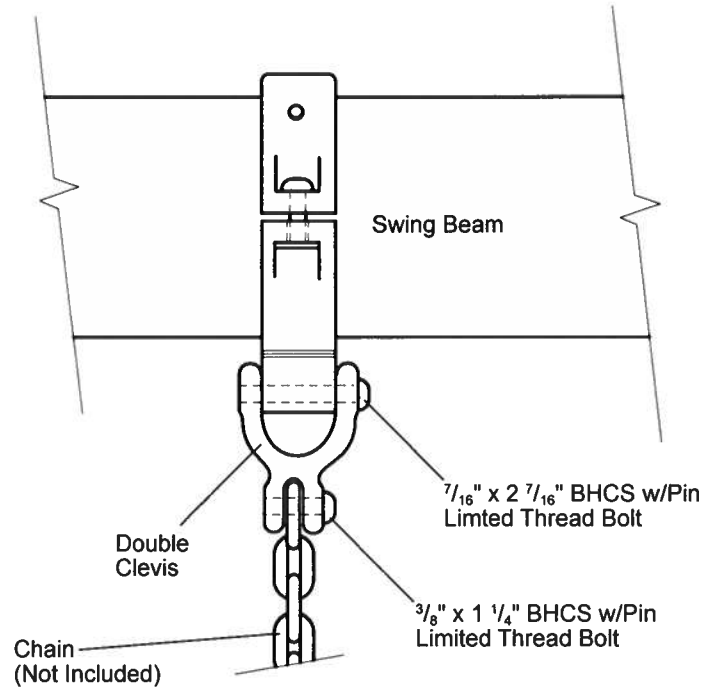
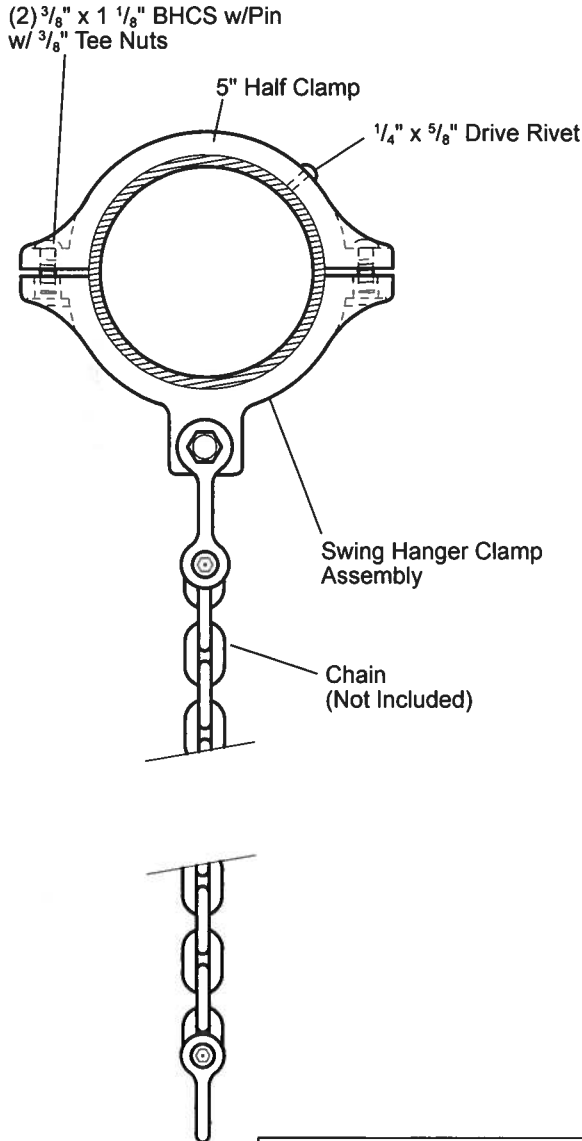
Weight: 50 lbs. (w/ProGuard Chains)
53 lbs. (w/TenderTuff Chains)

Installation Instructions

- 1) Insert seat mounting brackets into molded-in holes in front of bucket seat and attach ends of chain, using 3/8" x 7/8" BHCS w/pin limited thread. See Bracket Detail. **NOTE:** For ProGuard coated chain, insert (4) nylon spacers between chain links and brackets.
- 2) Attach ends of chain to pivot chain brackets, using 3/8" x 7/8" BHCS w/pin limited thread. See Bracket Detail. **NOTE:** For ProGuard coated chain, insert (4) nylon spacers between chain links and brackets.
- 3) Attach chains to double pivot blocks, using 3/8" x 7/8" BHCS w/pin limited thread.
- 4) **(Swing Hangers with Double Clevis)** Attach chains to swing hanger double clevis, using 3/8" x 1 1/4" BHCS w/pin limited thread.
(Anti-wrap Swing Hangers) Attach chains to anti-wrap swing hanger clevis, using 3/8" x 7/8" BHCS w/pin limited thread.
- 5) **(ProGuard Chain)** Attach connector chain to back swing chains at dimension shown, using 3/8" x 7/8" BHCS w/pin & 3/8" jam nuts. Refer to Detail.
(TenderTuff Chain) Attach connector chain to back swing chains at dimension shown, using 3/8" x 1 1/8" BHCS w/pin & 3/8" standard hex nuts with 3/8" SAE Flat Washers. Refer to Detail.
- 6) Attach footman loops, using #10-24 x 1/2" flat head screws, as shown. Footman loops are used for seat belts (not included).
- 7) Attach bumper plate and bumper to front of swing seat, using 3/8" x 7/8" BHCS w/pin with 3/8" SAE Flat Washers.
- 8) Install protective surfacing before users are allowed to play on the structure.

SWING HANGER OPTIONS





NOTE:
 Do Not Over-Tighten Limited Thread Bolt! Threads Should Not Protude Past Bolt Link.

NOTE:
 Position Bolt Head Inward Facing User.

Swings

111418 Swing Hanger, Belt Swing



Swings 111418 Swing Hanger, Belt Swing

Parts List

Part#	Description	Qty.
105327-01	5" Half Clamp, Specify Color	1
100198-00	$\frac{3}{8}$ " x $1\frac{1}{8}$ " BHCS w/Pin, SST	2
100351-00	$\frac{3}{8}$ " Tee Nut, SST.....	2
100610-00	$\frac{1}{4}$ " x $\frac{5}{8}$ " Drive Rivet, AL/SST.....	1
100292-00	$\frac{3}{8}$ " x $1\frac{1}{4}$ " BHCS w/Pin Ltd. Thread Bolt, SST.....	1
121291-00	Swing Hanger Clamp Assy. Specify Color	1
121289-00	Swing Hanger Clamp, Specify Color	1
127068-00	$\frac{7}{16}$ " x $2\frac{7}{16}$ " BHCS w/Pin Ltd. Thread Bolt, SST	1
138917-00	Swing Hanger Double Clevis SST	1
100667-00	Oilite Bushing.....	1

Specifications

Hanger Clamp

Assembly: Cast aluminum. Finish: ProShield®, color specified.

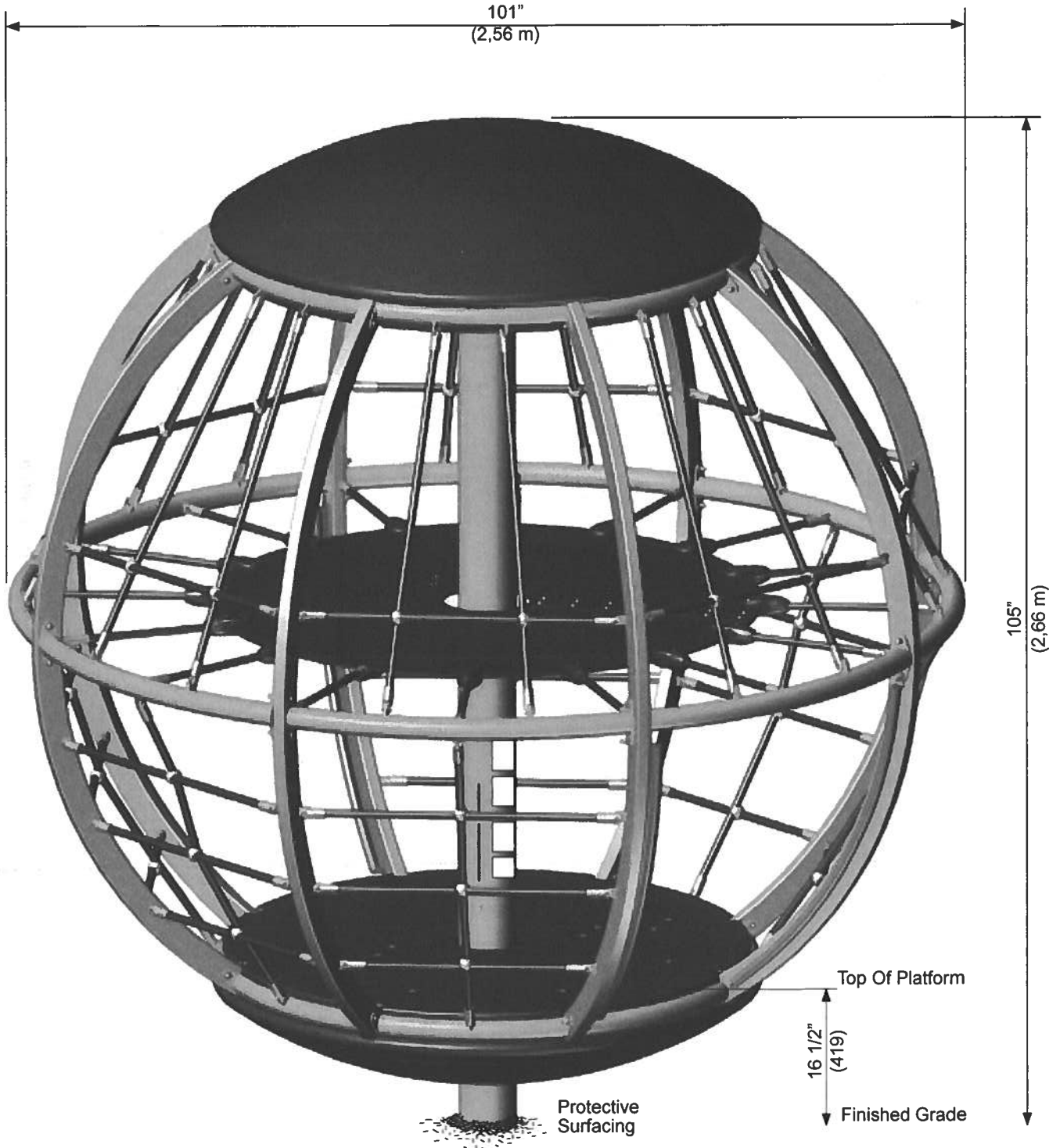
Double Clevis: Stainless Steel.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

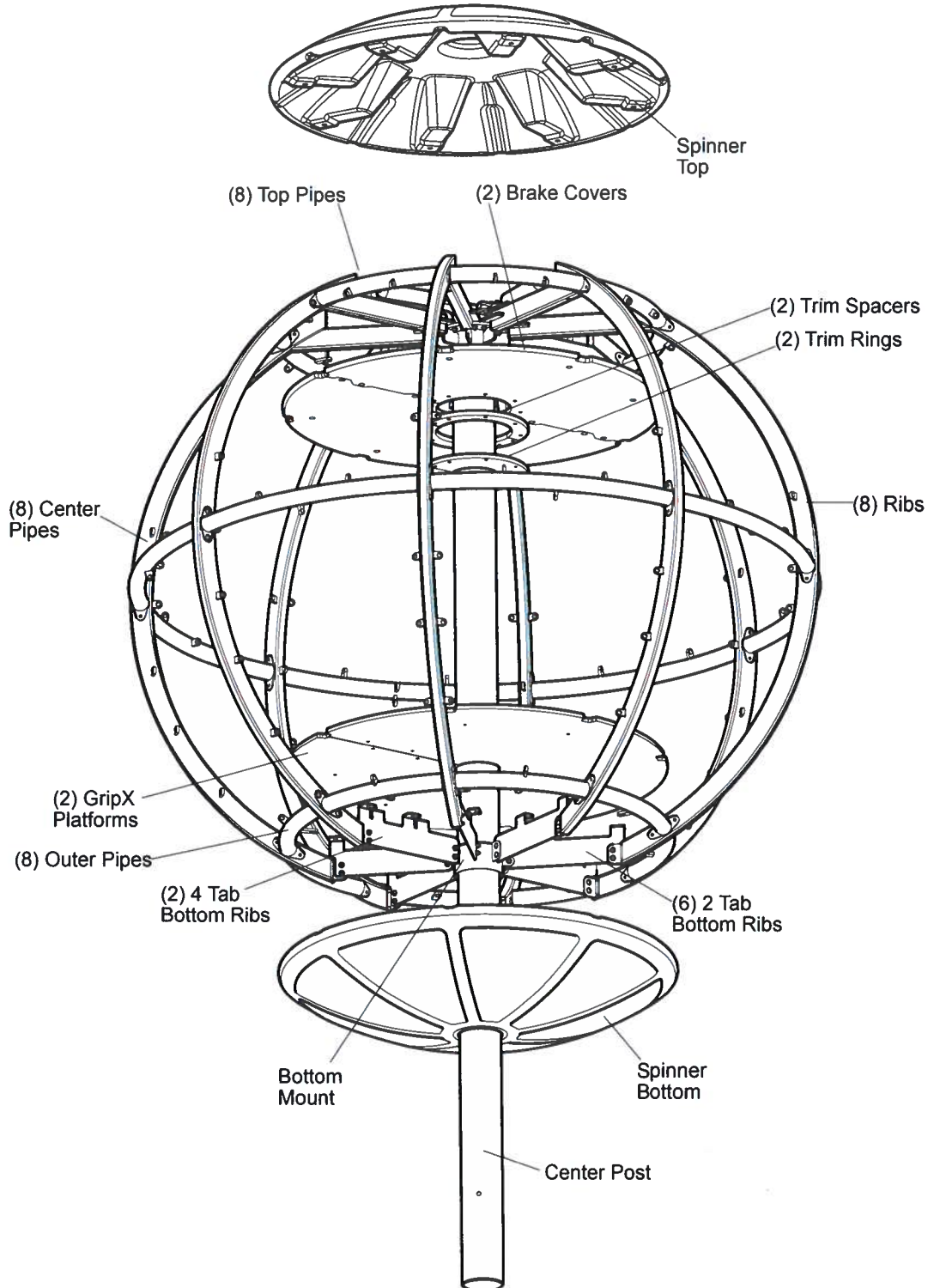
Installation Time: Approx. $\frac{1}{2}$ man hour
Weight: 6 lbs.

Installation Instructions

- 1) Locate and mark location of clamp on beam.
- 2) Attach 5" half clamp and swing hanger clamp to beam using $\frac{3}{8}$ " x $1\frac{1}{8}$ " BHCS w/pin and $\frac{3}{8}$ " tee nuts. *Tighten evenly.*
- 3) **IMPORTANT:** *Drill through holes in 5" half clamps and into 5" pipe with a $\frac{1}{4}$ " or "F" (only) drill bit, tap $\frac{1}{4}$ " x $\frac{3}{8}$ " drive rivets through 5" half clamps and into pipe, to ensure that clamps remain secure.*
- 4) Attach swing chain to double clevis using $\frac{3}{8}$ " x $1\frac{1}{4}$ " BHCS w/pin limited thread bolts.
- 5) Attach swing seat to chains using bolt links with $\frac{3}{8}$ " x $1\frac{1}{4}$ " BHCS w/pin limited thread bolts. **NOTE:** *Do not over-tighten limited thread bolt. Threads should not protrude past bolt link. Position bolt head inward facing user.*

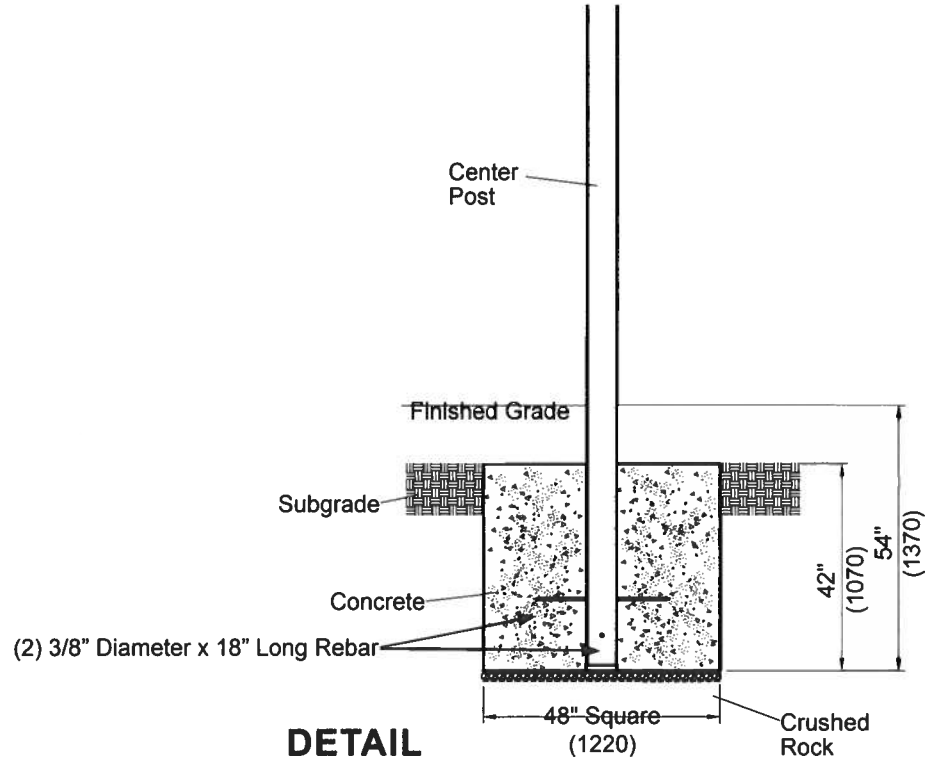


**DETAIL
EXPLODED VIEW**

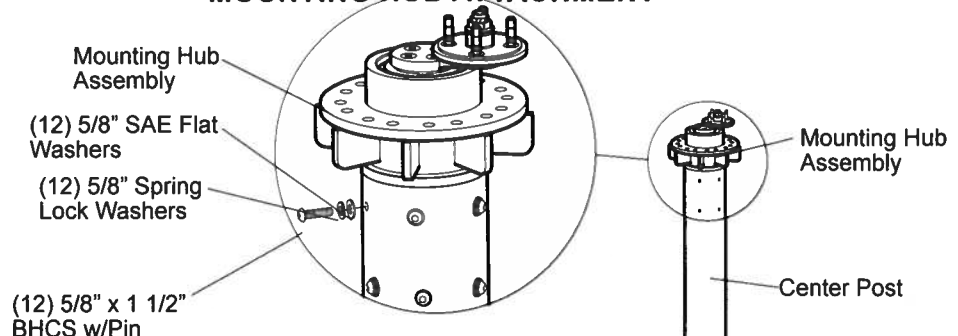


**DETAIL
DIRECT BURY**

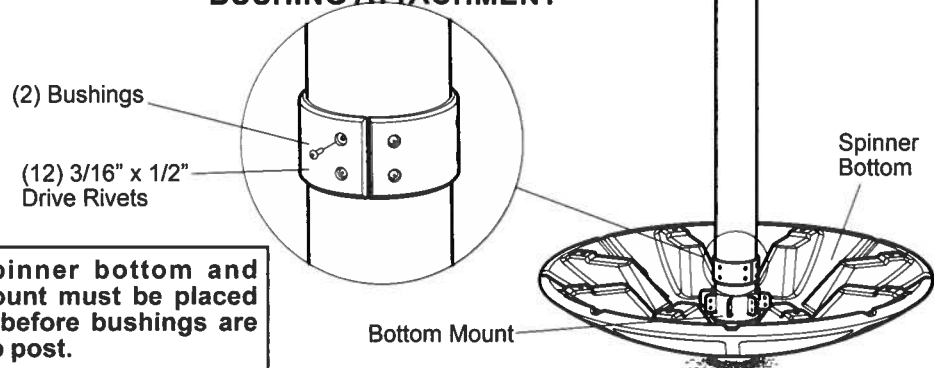
- 1) **(Direct Bury)** Dig footing as shown. Refer to the Elevation/Footing Layout Detail.
- 2) Place post assembly in footing hole. With post assembly propped in plumb position, pour concrete footing. Allow concrete footing to cure a minimum of 72 hours before completing Global Motion assembly.
- 3) Place spinner bottom onto post.
- 4) Place bottom mount onto post.
- 5) Attach bushings to post.
- 6) Attach mounting hub assembly to post.



**DETAIL
MOUNTING HUB ATTACHMENT**

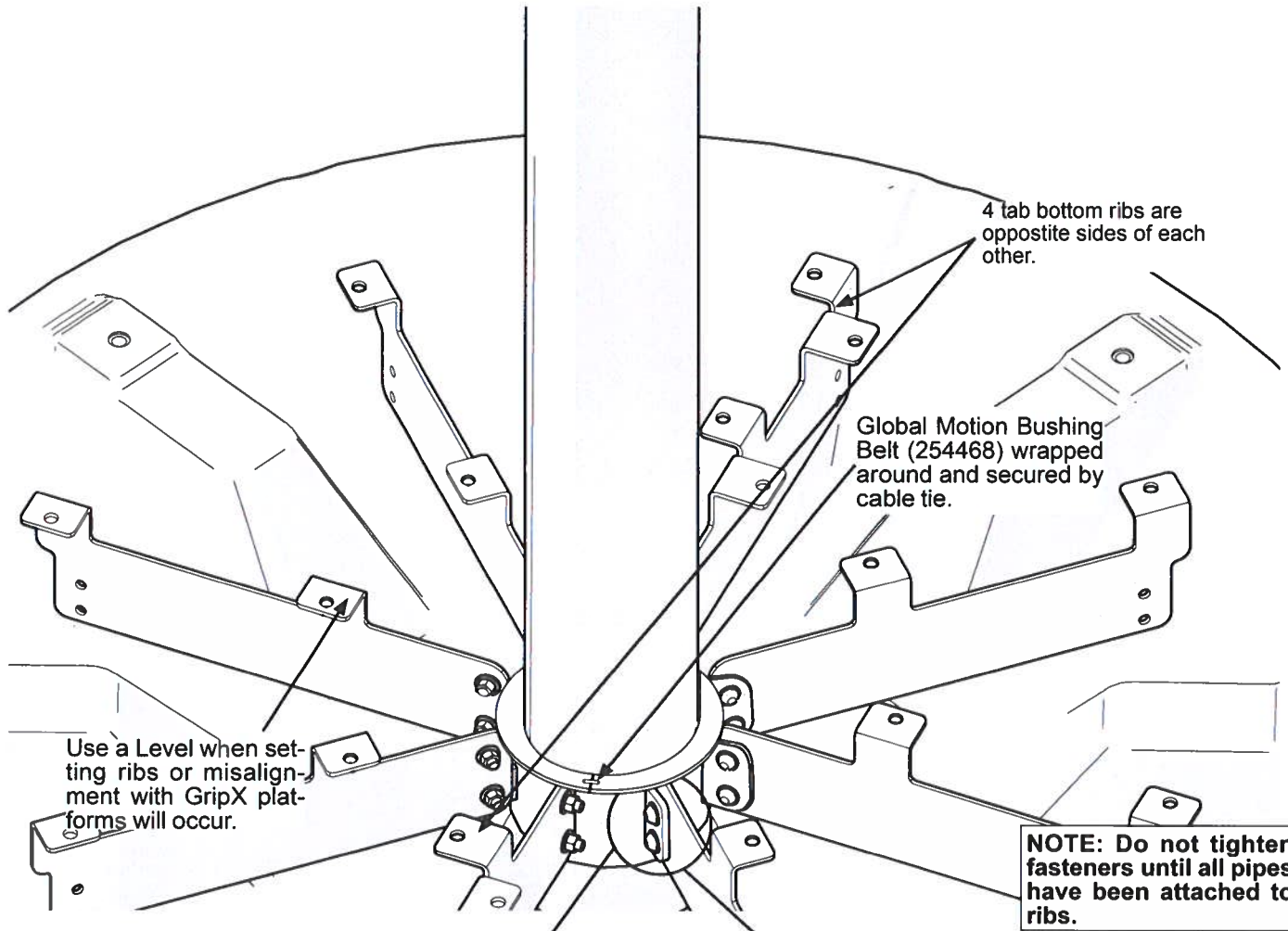


**DETAIL
BUSHING ATTACHMENT**



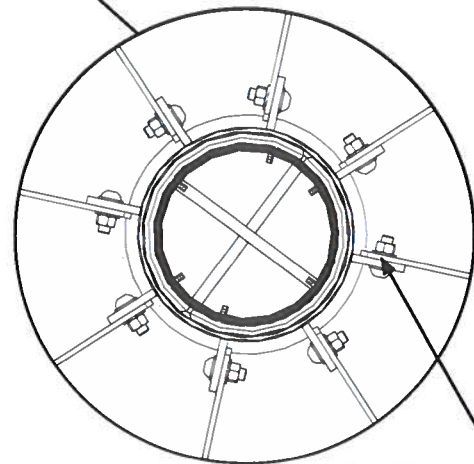
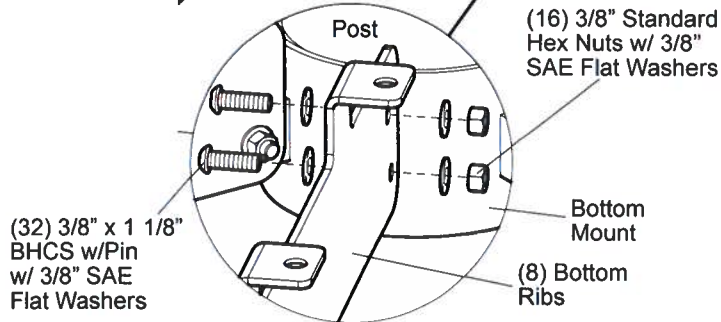
NOTE: Spinner bottom and bottom mount must be placed onto post before bushings are attached to post.

BOTTOM RIB ATTACHMENT



NOTE: Do not tighten fasteners until all ribs have been attached to ribs.

**DETAIL
BOTTOM RIB ATTACHMENT**



Bottom Ribs always placed on the right side of the hub tab.

**DETAIL
VERTICAL RIBS ASSEMBLY**

(2) 9 Tab Vertical Rib w/Mounting Pin
#212829



(2) 9 Tab Vertical Rib w/o Mounting Pin
#212830



(2) w6 Tab Vertical Rib w/Mounting Pin
#212831



(2) 6 Tab Vertical Rib w/o Mounting Pin
#212832



VERTICAL RIB ATTACHMENT



SAFETY NOTE
Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Fall Height of the adjacent equipment. (Ref. ASTM F1487.)

9 Tab Vertical Rib w/o Mounting Pin #212830

9 Tab Vertical Rib w/ Mounting Pin #212829

6 Tab Vertical Rib w/ Mounting Pin #212831

6 Tab Vertical Rib w/o Mounting Pin #212832

6 Tab Vertical Rib w/o Mounting Pin #212832

6 Tab Vertical Rib w/ Mounting Pin #212831

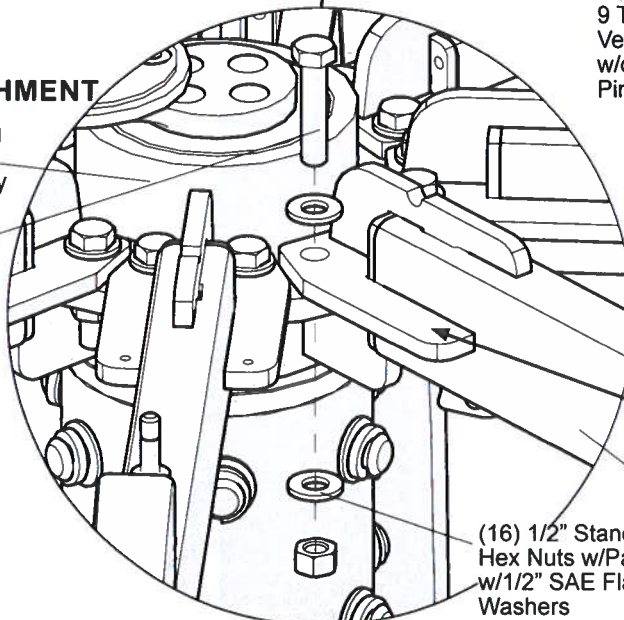
NOTE: 4 Tab bottom rib must attach to 9 tab vertical rib w/ mounting pin.

9 Tab Vertical Rib w/ Mounting Pin #212829

9 Tab Vertical Rib w/o Mounting Pin #212830

DETAIL VERTICAL RIB ATTACHMENT

Mounting Hub Assembly
(16) 1/2" x 2 1/4" Hex Cap Screws w/ 1/2" SAE Flat Washers



NOTE: Do not tighten fasteners until all pipes have been attached to ribs.

Assembly vertical ribs to top of mounting hub assembly first before attaching on the bottom.

(16) 1/2" Standard Hex Nuts w/Patch w/1/2" SAE Flat Washers

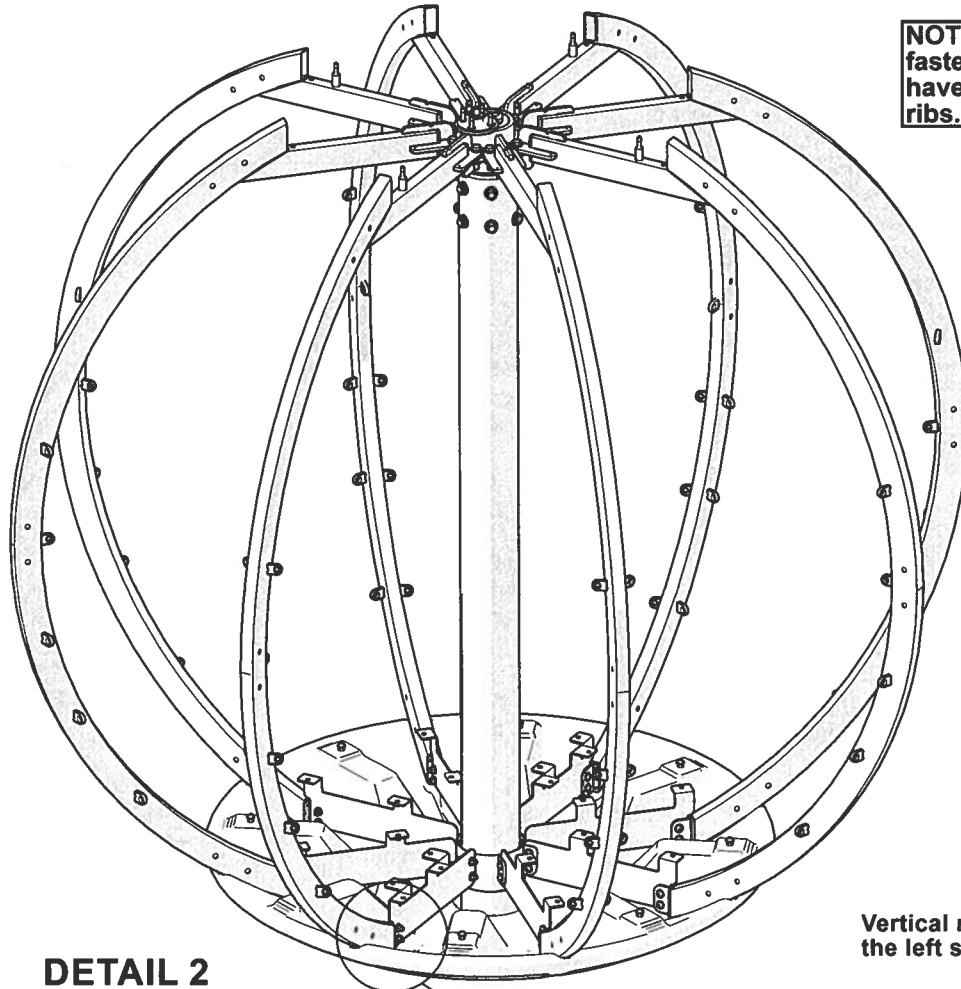
(8) Ribs

**VERTICAL RIB
ATTACHMENT**



SAFETY NOTE
Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Fall Height of the adjacent equipment. (Ref. ASTM F1487.)

NOTE: Do not tighten fasteners until all pipes have been attached to ribs.



**DETAIL 2
VERTICAL RIB ATTACHMENT**

(16) 3/8" x 1 1/8"
BHCS w/ 3/8" SAE
Flat Washers

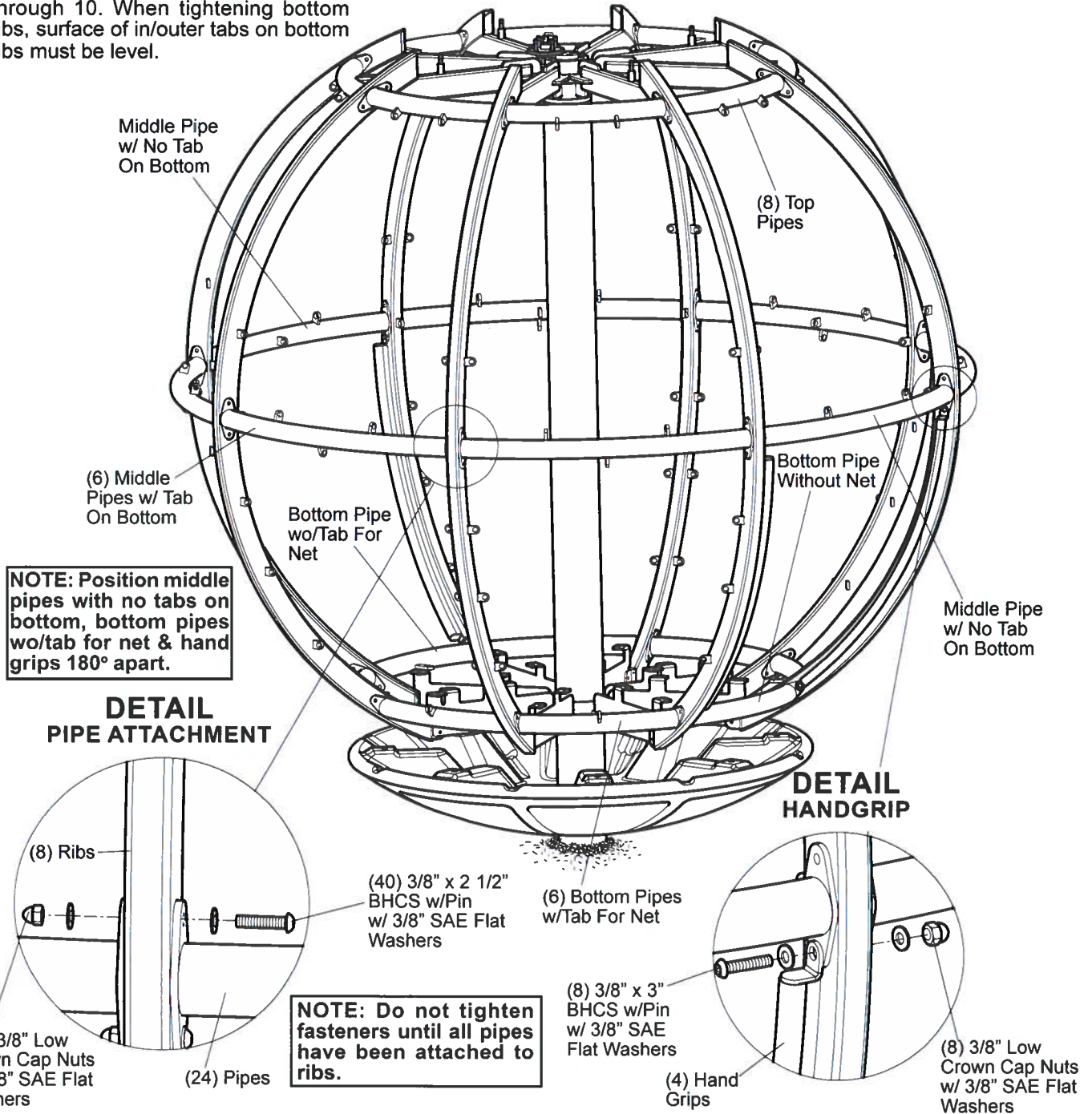
Bottom Ribs

Vertical ribs always placed on the left side of bottom ribs.

Vertical Ribs

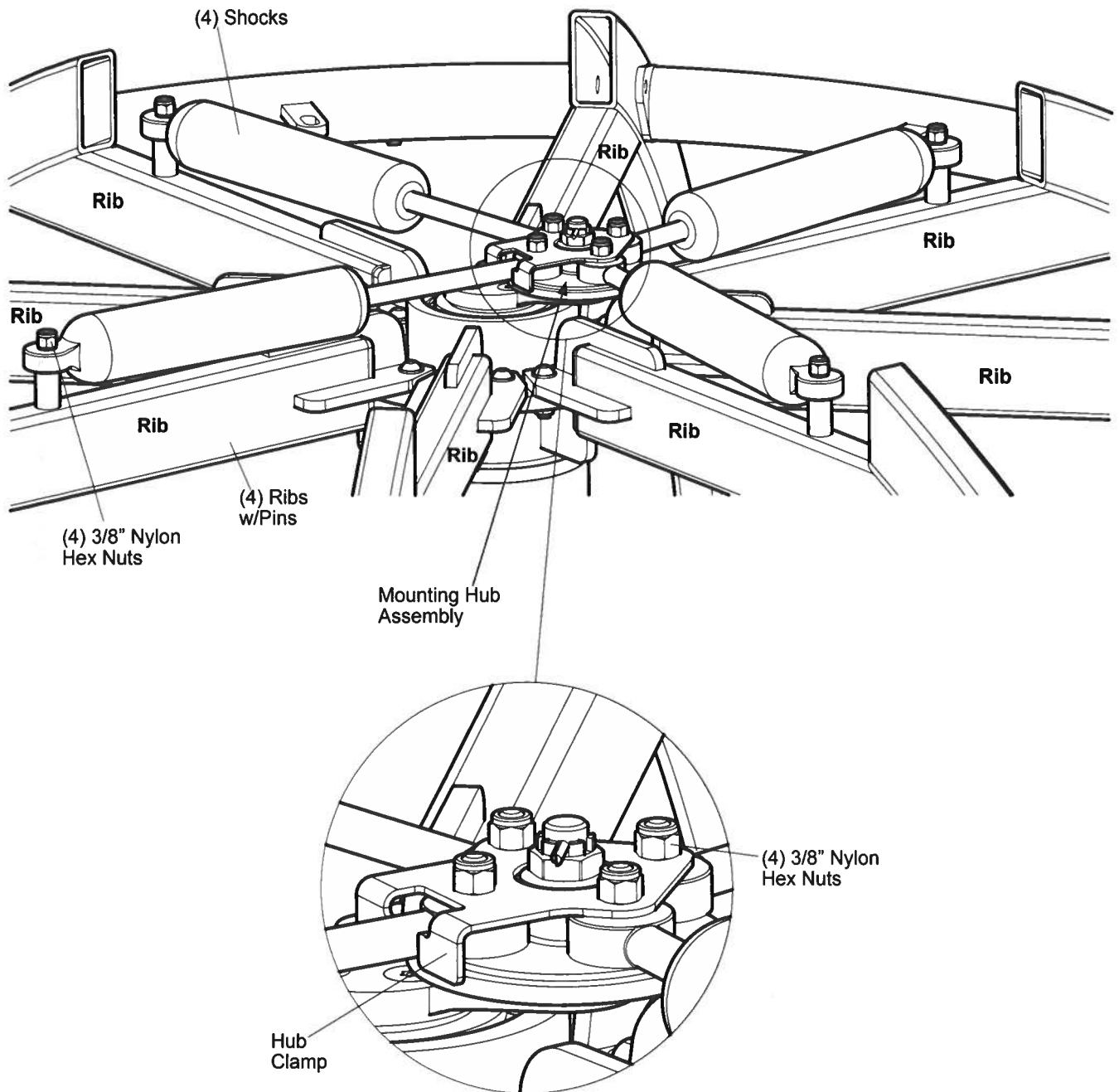
(16) 3/8" Stan-
dard Hex Nut w/
3/8" SAE
Flat Washers

- 10) Attach top, middle and bottom pipes to ribs.
NOTE: Position middle pipes with no tabs and bottom pipes without net in between part #212831 and part #212832. Do not tighten fasteners until all pipes have been attached to ribs.
- 11) Tighten all fasteners from steps 6 through 10. When tightening bottom ribs, surface of in/outer tabs on bottom ribs must be level.



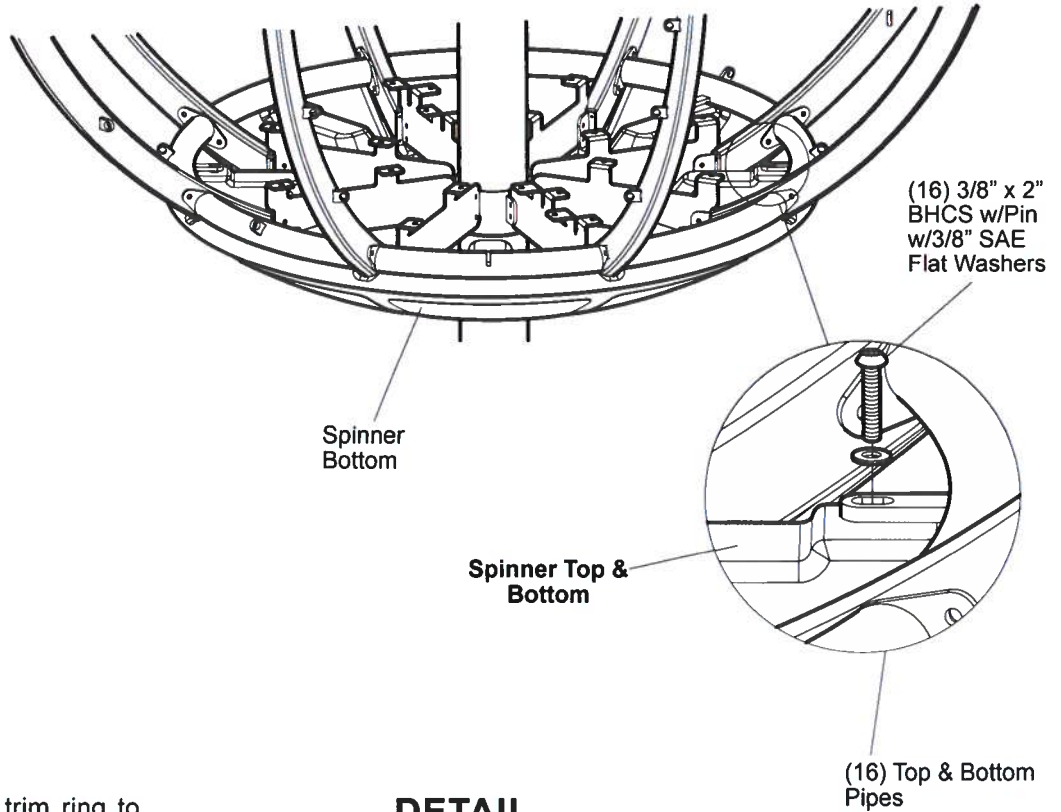
12) Attach shocks to ribs w/pins & mounting hub assembly.

**DETAIL
 SHOCK ATTACHMENT**



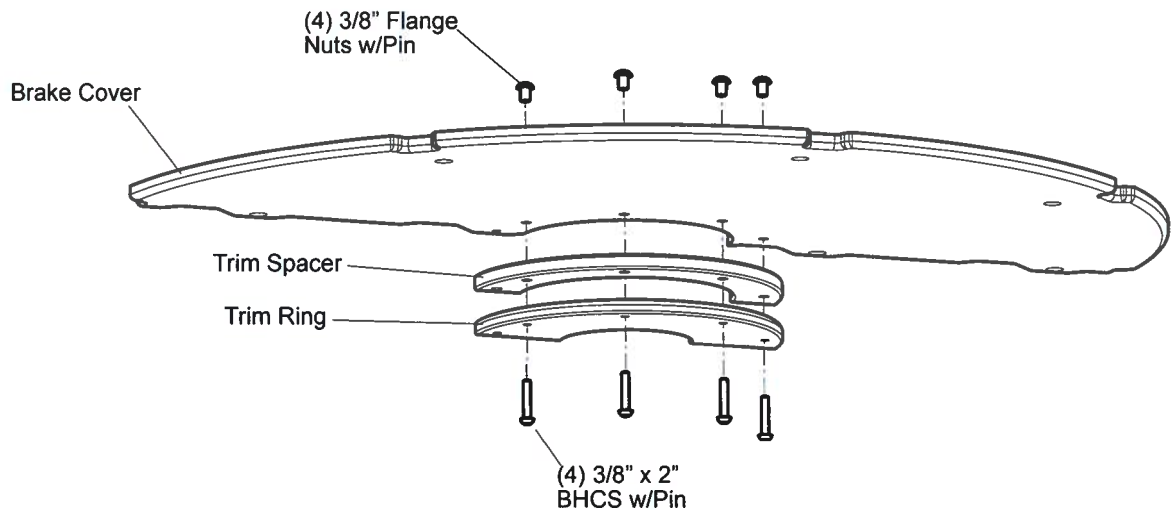
13) Attach spinner top to top pipes & spinner bottom to top bottom pipes.

**DETAIL
 GLOBE SPINNER ATTACHMENT**

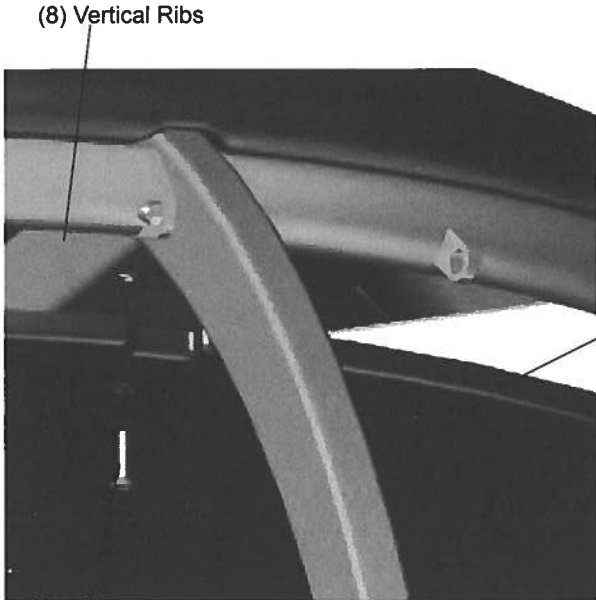


14) Attach trim spacer and trim ring to brake cover.

**DETAIL
 BRAKE COVER ASSEMBLY
 2-REQUIRED**

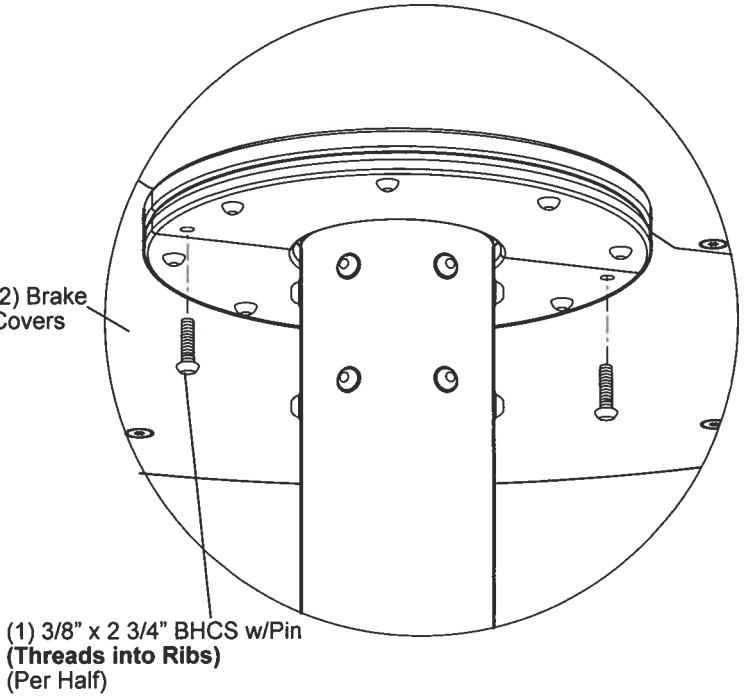


15) Attach brake covers to ribs.

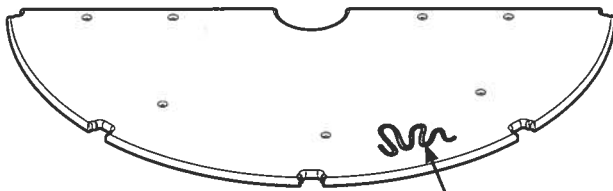


(12) 3/8" x 1 1/2" Flat Head Cap Screws

**DETAIL
 BRAKE COVER ATTACHMENT**

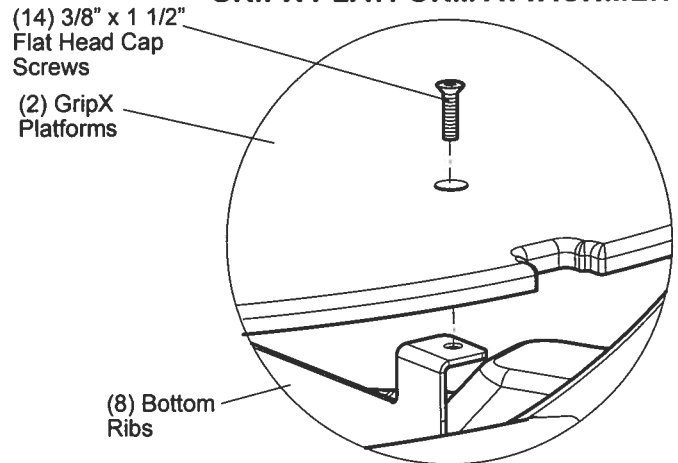


16) Attach GripX platforms to bottom ribs.

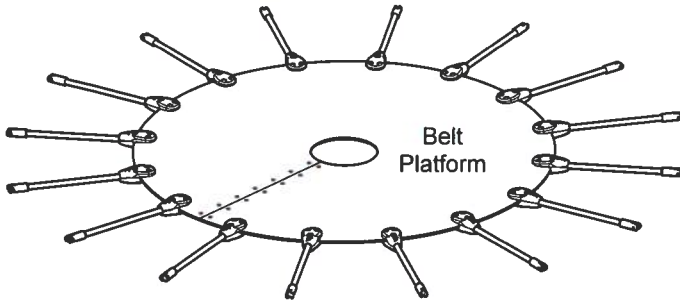


NOTE: Attach GripX platforms with Logos on top and facing middle pipes without tabs on bottom.

**DETAIL
 GRIPX PLATFORM ATTACHMENT**



17) Pre-assemble belt cables to belt platform.

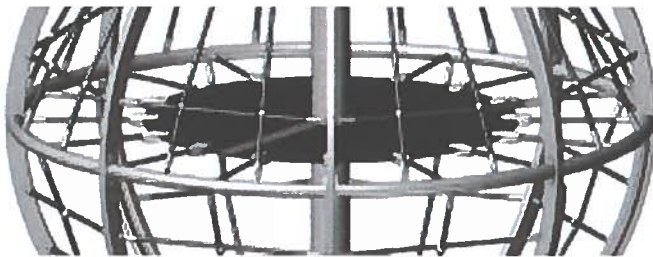


NOTE: Attach belt platform to ribs and middle pipes with textured side up.



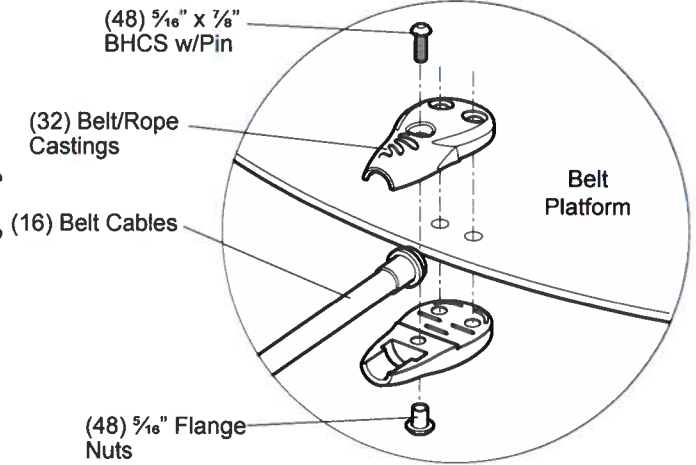
NOTE: Notched sections of platform should be in line with vertical ribs.

18) Wrap platform around center post. Attach belt plates to belt platform.

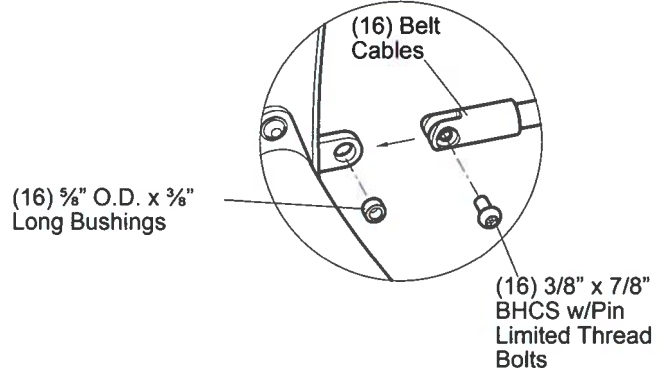


19) Attach belt cables to ribs and middle pipes. **NOTE:** Notched sections of platform should be in line with vertical ribs.

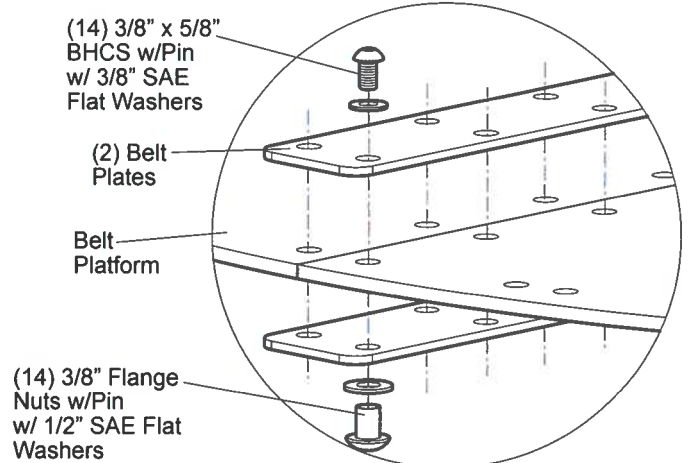
**DETAIL
BELT CABLE ATTACHMENT**



**DETAIL
BELT CABLE ATTACHMENT**



**DETAIL
BELT PLATE ATTACHMENT**

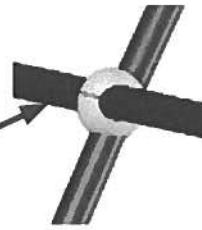


DETAIL

**DETAIL
NET ATTACHMENT**

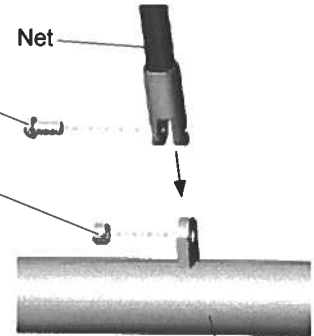
- 20) Attach nets to pipes & ribs.
- 21) Attach labels, as shown.
- 22) Install protective surfacing before users are allowed to play on the structure.

NOTE: Attach nets with horizontal ropes on the outside of the globe.



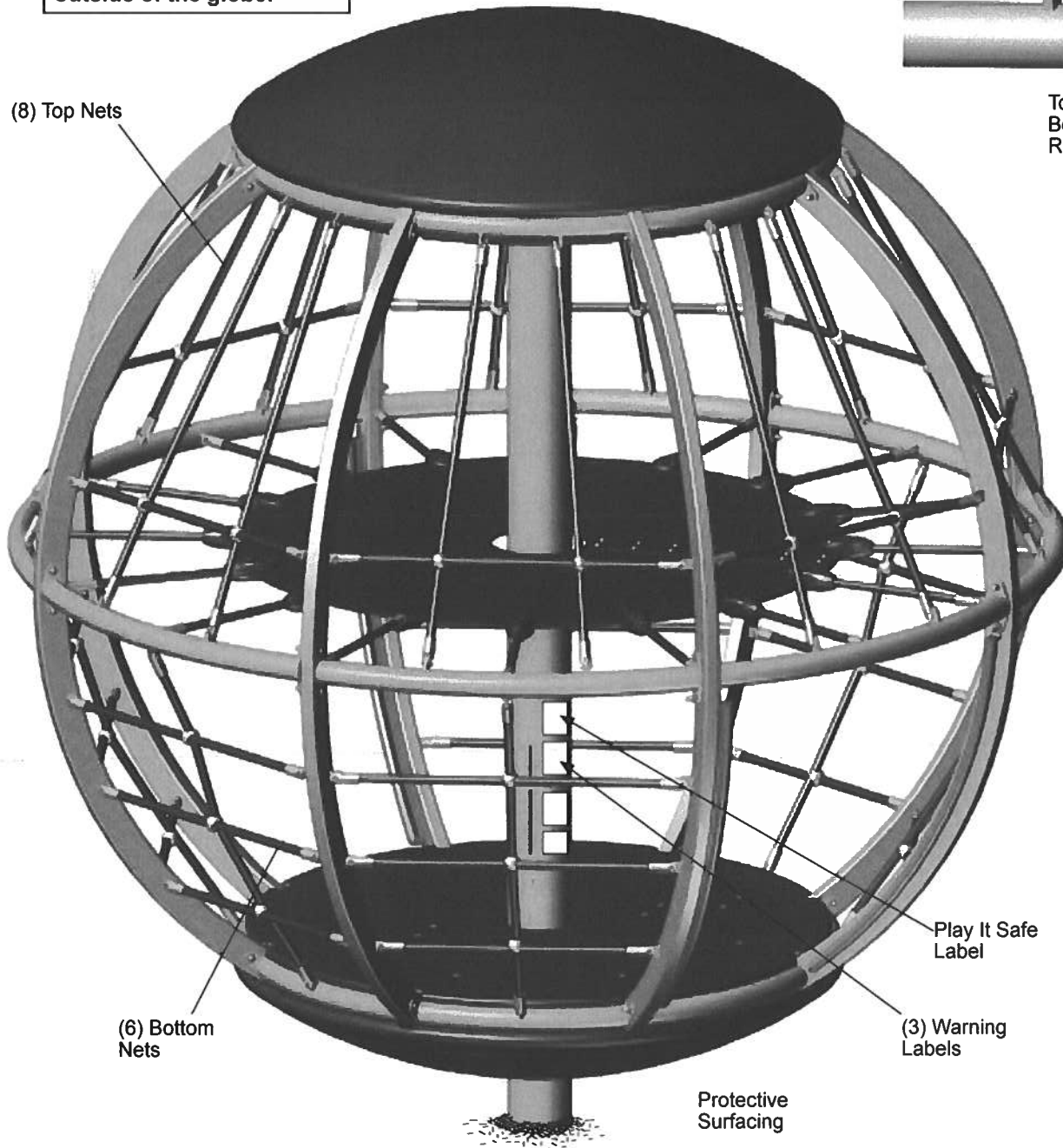
(96) 3/8" x 7/8" BHCS w/Pin Limited Thread

(96) 5/8" O.D. x 3/8" Long Bushing



Top, Middle, Bottom Pipe & Ribs

(8) Top Nets



(6) Bottom Nets

Play It Safe Label

(3) Warning Labels

Protective Surfacing

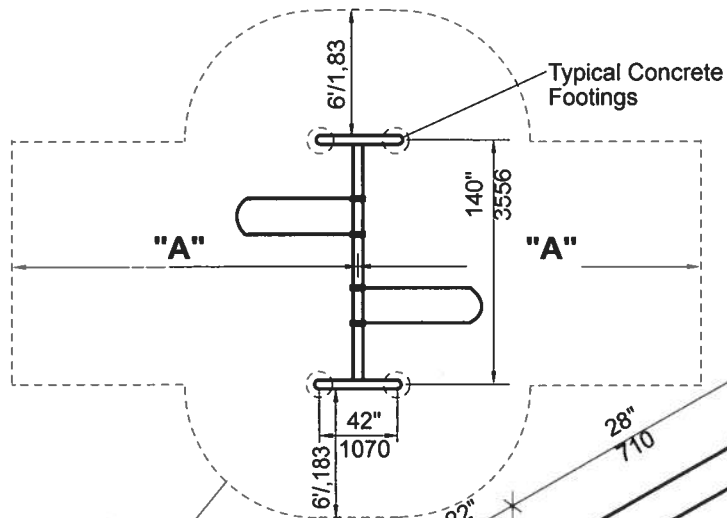
Parts List

Part#	Description	Qty.
222306	Hub Clamp, SST.....	1
206285	Bottom Net, Specify Color.....	6
206366	Center Post, Specify Color.....	1
228426	58" O.D. Belt Platform, Black.....	1
206379	GripX Platform, Black.....	2
212200	6" UHMW Base Bushing.....	2
212686	Center Belt Cable, Specify Color.....	16
212829	9 Tab Vertical Rib w/Mounting Pin, Specify Color.....	2
212830	9 Tab Vertical Rib w/o Mounting Pin, Specify Color.....	2
212831	6 Tab Vertical Rib w/Mounting Pin, Specify Color.....	2
212832	6 Tab Vertical Rib w/o Mounting Pin, Specify Color.....	2
212856	Middle Pipe wo/Tab On Bottom, Specify Color.....	2
212857	Belt Plate, Black.....	2
212864	Middle Pipe w/Tab On Bottom, Specify Color.....	6
212865	Bottom Pipe w/Tab For Net, Specify Color.....	6
212866	Bottom Pipe wo/Tab For Net, Specify Color.....	2
215474	Spinner Top, Specify Color.....	1
215887	Brake Cover, Black.....	2
217231	Mounting Hub Assembly, ZP.....	1
217907	Hand Grip, Gray.....	4
218444	Trim Spacer, Black.....	2
218445	Trim Ring, Black.....	2
218572	Spinner Bottom, Specify Color.....	1
219114	Top Net, Specify Color.....	8
219142	Top Pipe, Specify Color.....	8
215884	70 Series Shock.....	4
248520	Bottom Mount.....	1
219356	2 Tab Bottom Rib, Black.....	6
219359	4 Tab Bottom Rib, Black.....	2
220971	Belt Rope Casting, Black.....	32
222399	3/8" Diameter x 18" Long Rebar.....	2
254468	Global Motion Bushing Belt.....	1
182693	Labels 5-12 Hardware Package	1
115176	Hard Surface Warning ASTM Label.....	1
156847	Play Safe Label 5-12 YRS.....	1
182212	Entanglement Warning Label.....	1
182213	Hot Surface Warning Label.....	1
261539	Global Motion Hardware Package #1	1
100173	3/8" x 2" BHCS w/Pin, SST.....	24
100174	3/8" x 2 1/2" BHCS w/Pin, SST.....	40
100175	3/8" x 2 3/4" BHCS w/Pin, SST.....	2
100176	3/8" x 3" BHCS w/Pin, SST.....	8
100195	3/8" x 5/8" BHCS w/Pin, SST.....	14
100198	3/8" x 1 1/8" BHCS w/Pin, SST.....	32
151421	3/8" x 1 1/2" Flat Head Cap Screw, SST.....	26
100327	3/8" Standard Hex Nut, SST.....	32
100349	3/8" Low Crown Cap Nut, SST.....	48
100353	3/8" Flange Nut w/Pin, SST.....	22
100365	3/8" SAE Flat Washer, SST.....	190
100606	3/16" x 1/2" Drive Rivet, Aluminum.....	12
136931	3/8" Nylok Hex Nut, SST.....	8
175006	Flg Nut 6LP 5/16", SST.....	48
132626	BHCS 6LP 5/16" x 7/8", SST.....	48
109680	Cable Tie.....	1
222798	Global Motion Hardware Package #2	1
100290	3/8" x 7/8" BHCS w/Pin Limited Thread, SST.....	112
113550	1/2" SAE Flat Washer, SST.....	46
127179	5/8" O.D. x 3/8" Long Bushing, SST.....	112
131862	1/2" x 2 1/4" Hex Cap, SST.....	16
129692	1/2" Standard Hex Nut, SST.....	16
100201	5/8" x 1 1/2" BHCS w/Pin, SST.....	12
129500	5/8" SAE Flat Washer, SST.....	12
175652	5/8" Spring Lock Washer, SST.....	12

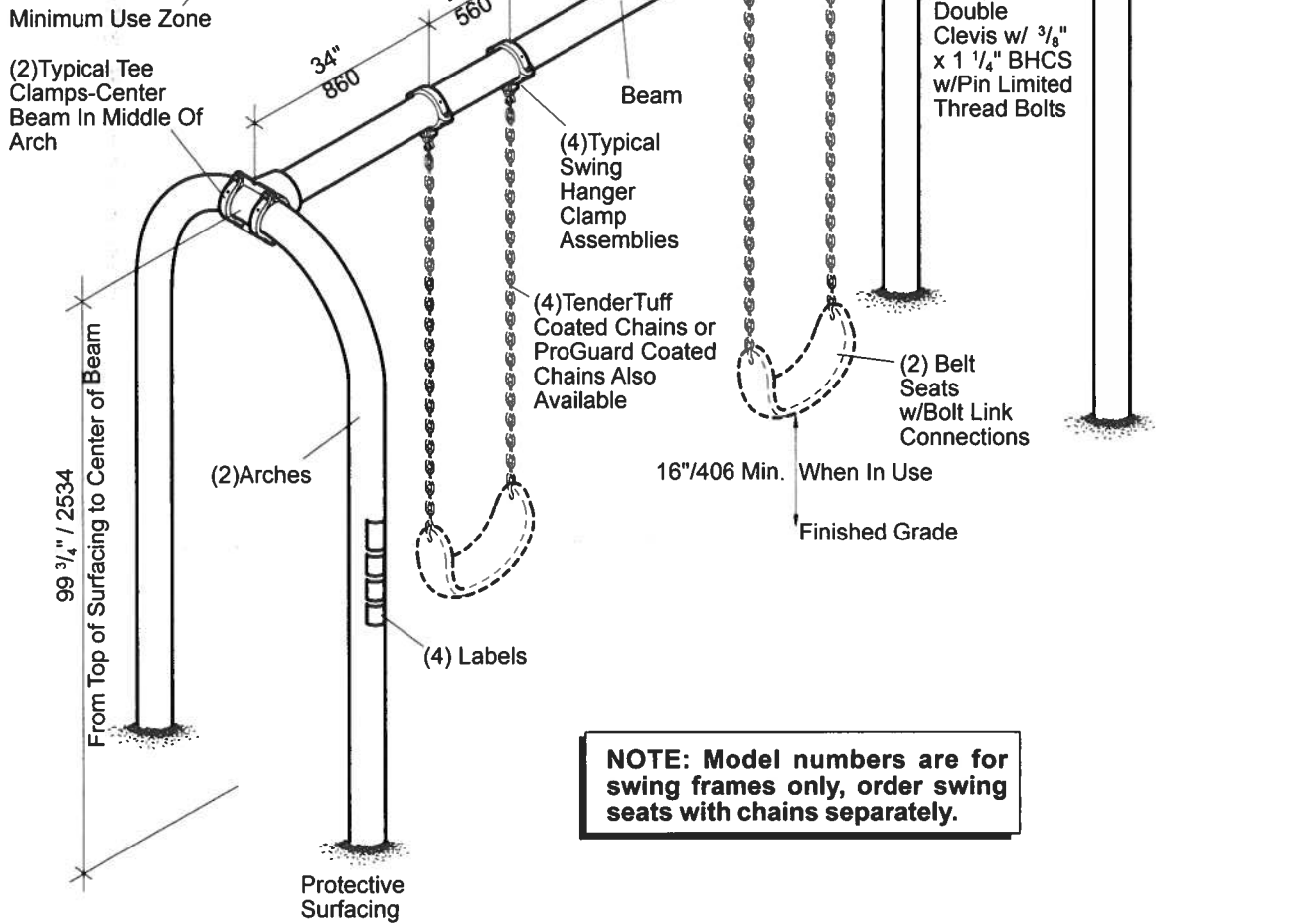
Specifications

Spinner Top/Bottom:	Rotationally molded from U.V. stabilized linear low density polyethylene, color specified.
Shock:	70 Series.
Hub Clamp:	12 GA. (.109")(2,76 mm) Thick stainless steel.
Middle & Bottom Pipe:	Weldment comprised of 2.375" (60,32 mm) O.D. RS20 (.095"-1.05")(2,41 mm-2,66 mm) galvanized steel tube, 1/4" (6,35 mm) thick HRPO steel plate and 3/8" (9,52 mm) thick stainless steel tab. Finish: ProShield, color specified.
Base Bushing:	Oil-Filled UHMW PE.
Center Post:	6.000" (152 mm) O.D. x (.250")(6,35 mm) wall HR Black D.O.M. Steel Tube. Finish: ProShield®, color specified.
Rope Casting:	Cast Aluminum. Finish: ProShield®, black in color.
Rib:	Weldment comprised of 1.5" (38,1 mm) x 3.0" (76,2 mm) x .180" (4,57 mm) wall HRPO steel tube, 3/8" (9,52 mm) thick stainless steel tab, 3/8" (9,52 mm) O.D. stainless steel pin, 3/8" (9,52 mm) thick HRPO steel plate and 1/4" (6,35 mm) thick HRPO steel plate. Finish: ProShield®, color specified.
Belt and Bushing Platform:	Made from .315" (8,00 mm) thick mini rough top 3-ply rubber belting with polyester fabric plys, 58" (1473 mm) diameter, black in color.
GripX Platform:	3/4" (19,05 mm) Thick recycled Permalene®, black in color.
Belt Plate:	7GA. (.179")(4,54 mm) Thick HRPO steel plate. Finish: ProShield, black in color.
Net/Cable:	Made of tightly woven polyester-wrapped, six-stranded galvanized-steel cable with a polypropylene core, red or black in color. (Cable Connectors) 6063-T6 aluminum.
Bottom Rib:	7GA. (.179")(4,54 mm) Thick HRPO steel plate. Finish: ProShield, black in color.
Bottom Mount:	Weldment comprised of 7.000" (177 mm) O.D. x .188" (4,77 mm) wall stainless steel tube and 1/4" (6,35 mm) thick stainless steel plate.
Trim Spacer:	Recycled Permalene, black in color.
Brake Cover:	Recycled Permalene, black in color.
Hand Grip:	Weldment comprised of 1.125" (28,57 mm) O.D. x 11 GA. (.120")(3,05 mm) wall steel tube and 7 GA. (.179")(4,54 mm) thick HRPO steel sheet. Finish: TenderTuft™ coated, gray in color.
Mounting Hub Assembly:	Comprised of 1/2" (12,7 mm) thick stainless steel plate, 11 Ga. (.120")(3,05 mm) stainless steel sheet, steel bearing shaft, bronze bearings, oilite bearings and stainless steel fasteners.
Fasteners:	Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
Installation Time:	Approx. 40 labor hours
Area Required:	26'-5" (8,05 m) Diameter
Concrete Req.:	Approx. 2.07 cubic yards
Weight:	1,555 lbs.
Fall Height:	105" (2,66 m)

PLAN VIEW/FOOTING LAYOUT



Seat Type	Dimension "A"
Belt	16'-0" (4,88 m)
Flat	16'-0" (4,88 m)
Full Bucket	12'-0" (3,66 m)
Half Bucket	16'-0" (4,88 m)
Molded Bucket	16'-0" (4,88 m)
Molded Bucket/Harness	13'-0" (3,96 m)
Infant Full Bucket	N/A



NOTE: Model numbers are for swing frames only, order swing seats with chains separately.

Model #221293 Additional Bay



Swings 221292/221293 Arch Swing Frame

Parts List

Part#	Description	Qty.	
		2 PL	Add. Bay
126749	Swing Arch, Specify Color.....	2	1
100610	1/4" x 3/8" Drive Rivet, AL/SST.....	8	6
105327	5" Half Clamp, Specify Color.....	8	4*
216492	140" Swing Beam, Specify Color.....	1	1
121291	Swing Hanger Clamp Assy. Specify Color	4	4
121289	Swing Hanger Clamp, Specify Color.....	4	4
127068	7/16" x 2 7/16" BHCS w/Pin Ltd. Thread, SST.....	4	4
138917	Swing Hanger Double Clevis.....	4	4
100667	Oilite Bushing.....	4	4
243802	Hdw Pkg 5iOD Swing Beam.	1	1
100198	3/8" x 1 1/8" BHCS w/Pin, SST.....	8	8
234397	BHCS 6LP LTHD 7/16 x 1 11/16i, SST.....	8	8
100292	3/8" x 1 1/4" BHCS w/Pin Ltd. Thread, SST.....	4	4
100351	3/8" Tee Nut, SST.....	8	8
156846	Play Safe Label, 2-12 Yrs.....	1	1
234937	7/16" D Cut Washer, SST.....	16	16
182213	Hot Surface Warning Label.....	1	1
182212	Entanglement Warning Label.....	1	1
115176	Hard Surface Warning Label.....	1	1
100330	7/16" Nylok Hex Nut.....	8	8

* = 5" Half Clamps From 2 PL. End Of Beam Need To Be Used.

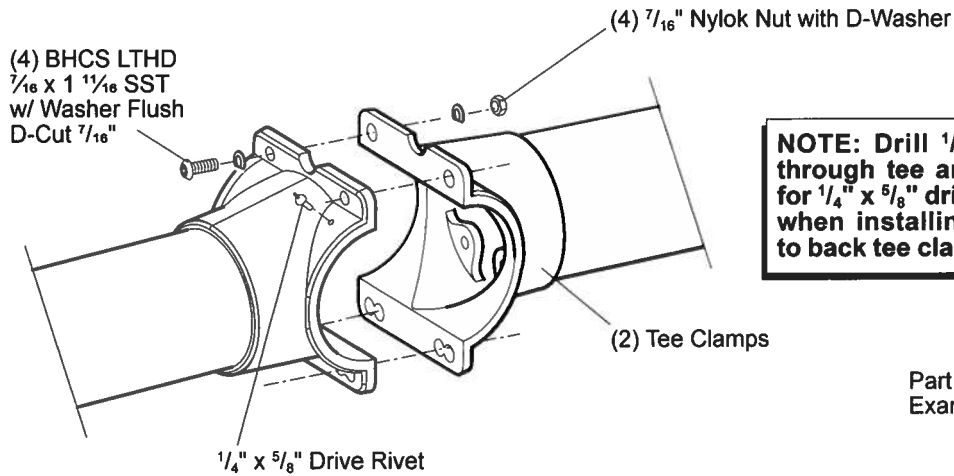
Installation Instructions

- 1) Dig footings, spaced as shown. Refer to the Concrete Footing Detail.
- 2) Set arches in footing holes and attach swing beam to center of arches using 5" half clamps with 7/16" BHCS w/Pin, 7/16" D-Cut Washers, and 7/16" Nylok nuts. Refer to the Tee Clamp Position Detail. Center of beam should be 99 3/4" above finished grade. When installing back to back swing beams refer to the Back To Back Tee Clamps Detail.
- 3) Level beam and plumb arches and temporarily prop in position. Pour concrete footings and let cure for 72 hours before proceeding.
- 4) Locate, mark and attach swing hanger clamps to beam in locations shown. Refer to the Typical Swing Hanger Clamp Spec Sheet.
- 5) **NOTE: Refer to specific swing seat installation document for attaching chains and seats.**
- 6) Install 1/4" x 3/8" drive rivets in all 5" half clamps. Refer to the Typical Offset Hanger Clamp Spec Sheet. Refer to the Back To Back Tee Clamps Detail.
- 7) Apply Play Safe and Warning Labels, as shown.
- 8) Install protective surfacing before users are allowed to play on the swing.

Specifications

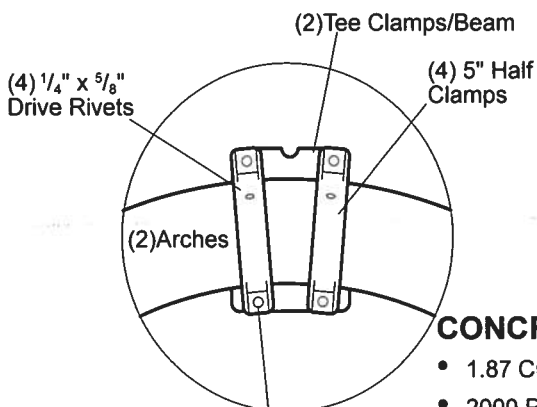
Arch Posts:	See PlayBooster® (PB) General Specifications.
Swing Beam:	Weldment comprised of tee clamps and 5" O.D. extruded 6005-T5 aluminum alloy tube with a .125" wall. Finish: ProShield®, color specified.
Clamp:	Cast aluminum. Finish: ProShield, color specified.
Fasteners:	Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
Installation Time:	Approx. 8 man hours Additional Bay 4 man hours
Concrete Req.:	Approx. 7.5 cu. ft. Additional Bay 3.75 cu. ft.
Area Req.:	24'-2 3/4" x 32' (7,39 m x 9,75 m) Additional Bay 11'-8" x 32' (3,55 m x 9,75 m)
Weight:	204 lbs. Additional Bay 124 lbs.
Fall Height:	96" (2,43 m)

**DETAIL
BACK TO BACK
TEE CLAMPS**



NOTE: Drill 1/4" hole through tee and arch for 1/4" x 5/8" drive rivet when installing back to back tee clamps.

**DETAIL
TEE CLAMP POSITION**

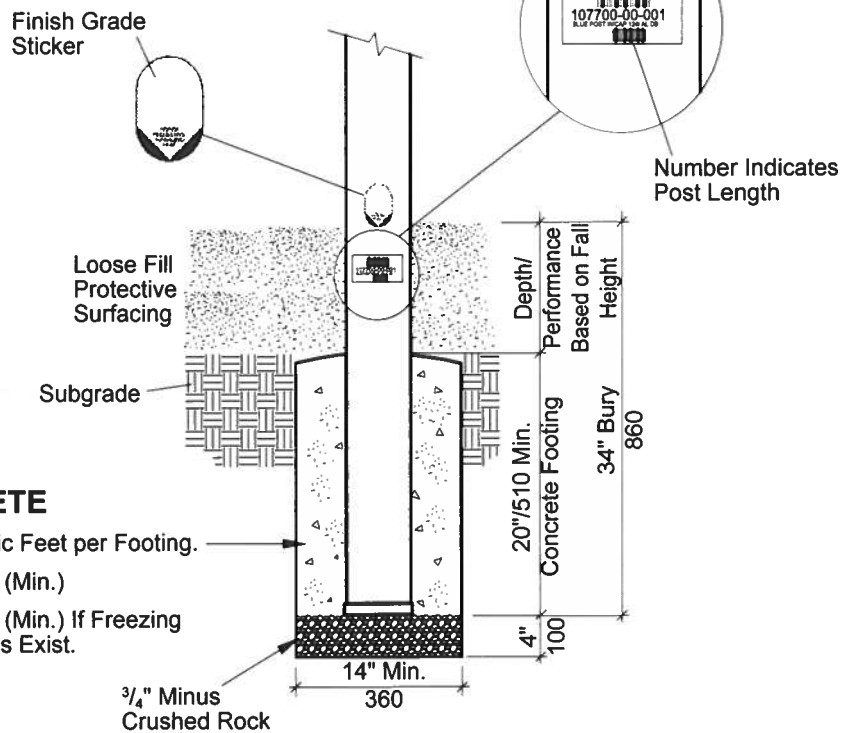


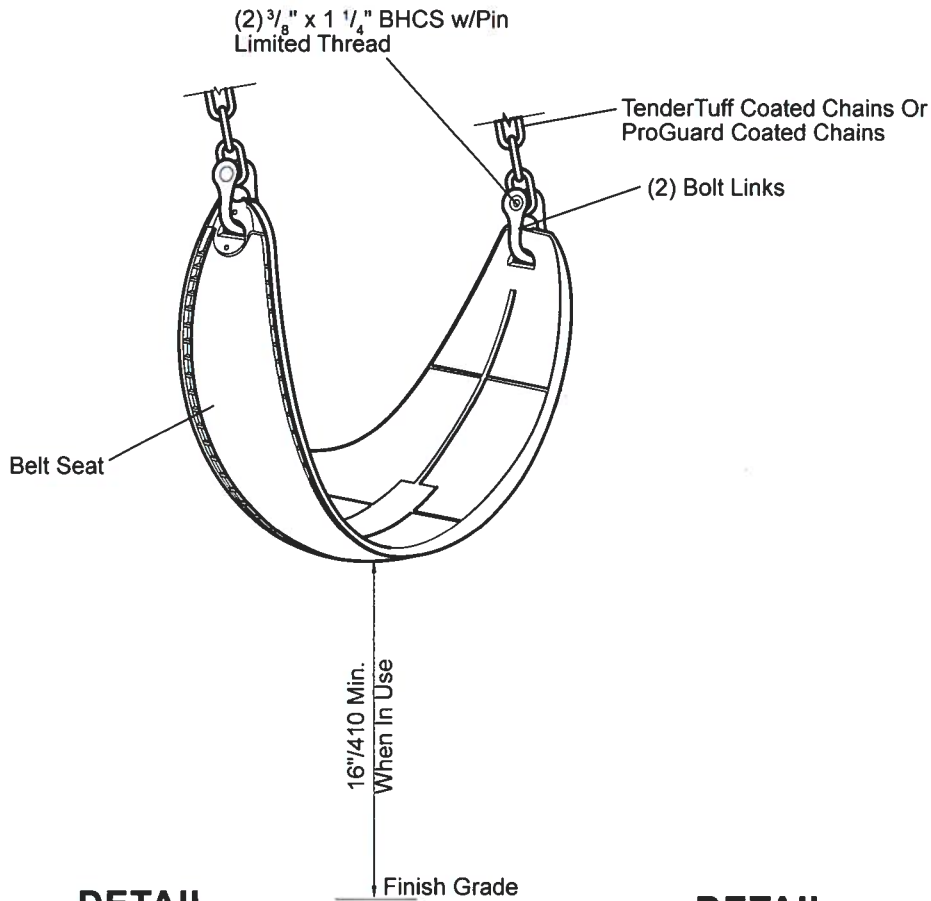
NOTE: Use inside holes for (4) 7/16 BHCS w/Pin limited thread w/D-Washer 7/16 Nylok Nut w/D-Washer

CONCRETE

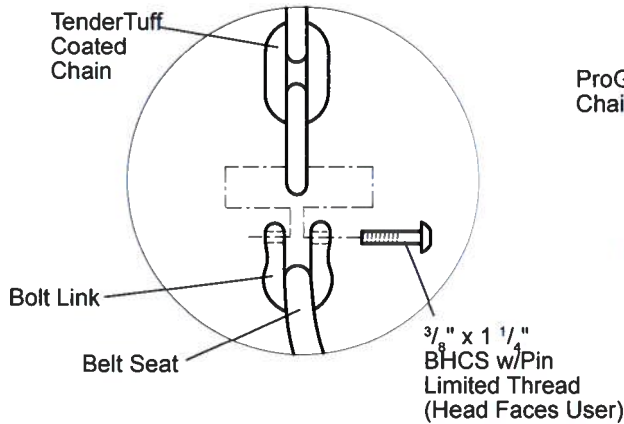
- 1.87 Cubic Feet per Footing.
- 2000 PSI (Min.)
- 3000 PSI (Min.) If Freezing Conditions Exist.

**DETAIL
CONCRETE FOOTING**

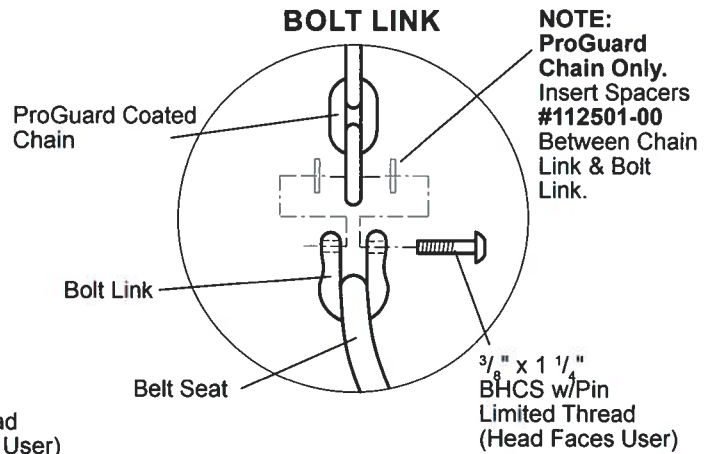




DETAIL BOLT LINK



DETAIL BOLT LINK



Parts List

Part #	Description	Qty.
7 Ft. High Beam		
128842	Belt Swing Seat, Black	1
178679	57 7/16" Chain, TenderTuff, Specify Color	2
175251	57 7/16" Chain, ProGuard	2
132672	Bolt Link w/Bolt & Spacers	1
100292	3/8" x 1 1/4" BHCS w/Pin Ltd. Thread, SST	2
138915	Bolt Link, SST	2
112501	Chain Spacer	4
132635	Bolt Link w/Bolt Hardware Package	1
100292-00	3/8" x 1 1/4" BHCS w/Pin Ltd. Thread, SST	2
138915	Bolt Link, SST	2
8 Ft. High Beam		
128842	Belt Swing Seat, Black	1
152050	67 7/8" Chain, TenderTuff, Specify Color	2
174404	67 7/8" Chain, ProGuard	2
132672	Bolt Link w/Bolt & Spacers	1
100292	3/8" x 1 1/4" BHCS w/Pin Ltd. Thread, SST	2
138915	Bolt Link, SST	2
112501	Chain Spacer	4
132635	Bolt Link w/Bolt Hardware Package	1
100292	3/8" x 1 1/4" BHCS w/Pin Ltd. Thread, SST	2
138915	Bolt Link, SST	2
10 Ft. High Beam		
128842	Belt Swing Seat, Black	1
152052	90 11/16" Chain, TenderTuff, Specify Color	2
174884	90 11/16" Chain, ProGuard	2
132672	Bolt Link w/Bolt & Spacers	1
100292	3/8" x 1 1/4" BHCS w/Pin Ltd. Thread, SST	2
138915	Bolt Link, SST	2
112501	Chain Spacer	4
132635	Bolt Link w/Bolt Hardware Package	1
100292	3/8" x 1 1/4" BHCS w/Pin Ltd. Thread, SST	2
138915	Bolt Link, SST	2

Specifications

- Chain Spacer:** Made from white nylon measuring .080" x .785" O.D.
- Chain/ProGuard:** Steel 3/16" straight link chain, 800 lb. working load limit. Finish: ProGuard.
- Chain/Coated:** Steel 3/16" straight link chain, 800 lb. working load limit. Finish: TenderTuff®, color specified.
- Belt Seats:** Molded from U.V. stabilized black EPDM rubber encapsulating a weldment comprised of a 22 GA (.029") spring stainless steel sheet, and (4) .105" thick stainless steel washers. The belt seat elliptical shape measures 7" wide x 26" long x .700" thick.
- Bolt Link:** Stainless Steel.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Time: 1/4 man hour per seat

Weight:
 8 lbs. (7 Ft. Beam w/ProGuard Chains)
 9 lbs. (7 Ft. Beam w/TenderTuff Chains)
 8 lbs. (8 Ft. Beam w/ProGuard Chains)
 9 lbs. (8 Ft. Beam w/TenderTuff Chains)
 10 lbs. (10 Ft. Beam w/ProGuard Chains)
 11 lbs. (10 Ft. Beam w/TenderTuff Chains)

Installation

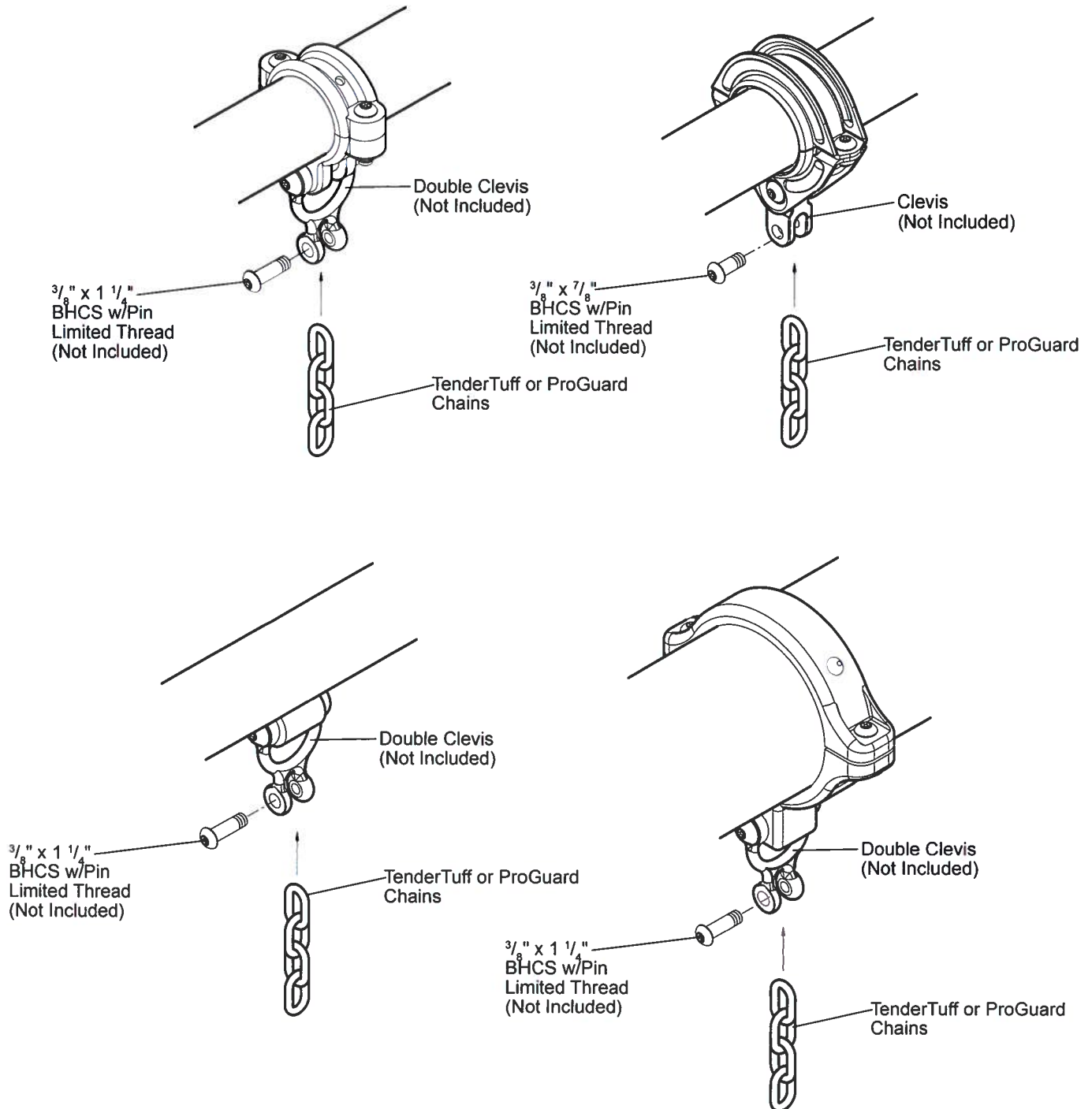
Swing Hangers With Double Clevis

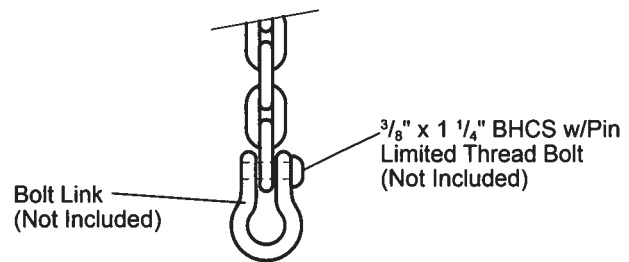
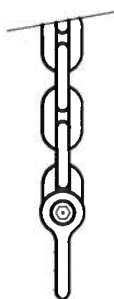
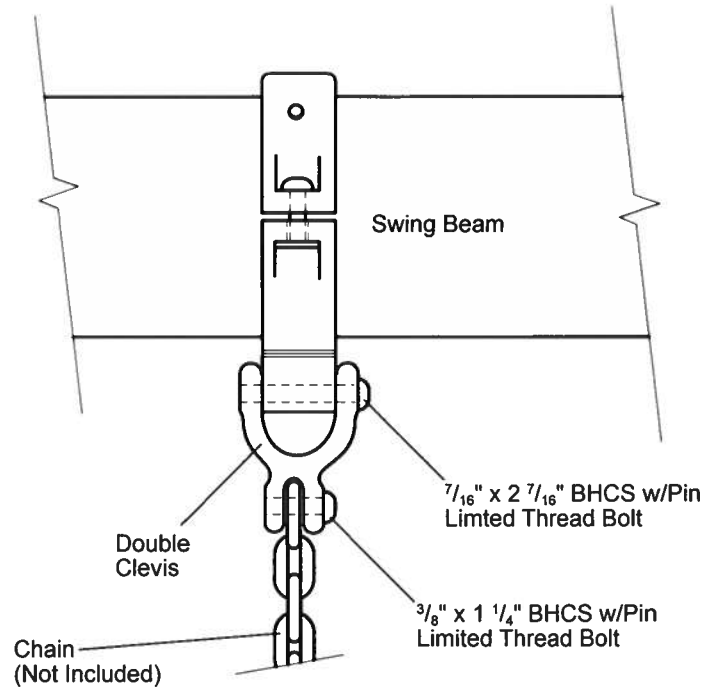
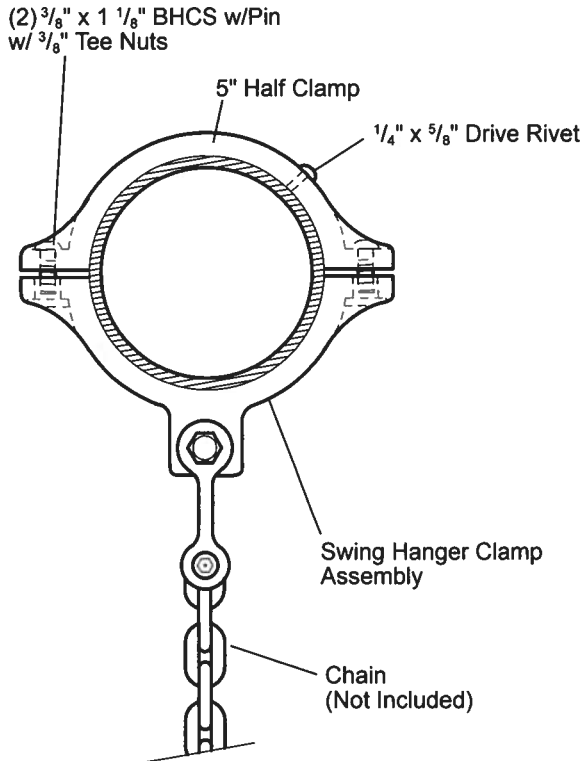
- 1) Attach chains to double clevis using 3/8" x 1 1/4" BHCS w/pin limited thread, as shown.
- 2) Attach chains to belt seat using bolt links with 3/8" x 1 1/4" BHCS w/pin limited thread. Be sure bolt heads face user. **NOTE:** Use chain spacers as shown when installing ProGuard chains.
- 3) Install protective surfacing before users are allowed to play on the structure.

Anti-wrap Swing Hangers

- 1) Attach chains to aluminum clevis using 3/8" x 7/8" BHCS w/pin limited thread, as shown.
- 2) Attach chains to belt seat using bolt links with 3/8" x 1 1/4" BHCS w/pin limited thread. Be sure bolt heads face user. **NOTE:** Use chain spacers as shown when installing ProGuard chains.
- 3) Install protective surfacing before users are allowed to play on the structure.

SWING HANGER OPTIONS





NOTE:
Do Not Over-Tighten Limited Thread Bolt! Threads Should Not Protude Past Bolt Link.

NOTE:
Position Bolt Head Inward Facing User.

Swings

111418 Swing Hanger, Belt Swing



Swings 111418 Swing Hanger, Belt Swing

Parts List

Part#	Description	Qty.
105327-01	5" Half Clamp, Specify Color	1
100198-00	$\frac{3}{8}$ " x $1\frac{1}{8}$ " BHCS w/Pin, SST	2
100351-00	$\frac{3}{8}$ " Tee Nut, SST	2
100610-00	$\frac{1}{4}$ " x $\frac{5}{8}$ " Drive Rivet, AL/SST	1
100292-00	$\frac{3}{8}$ " x $1\frac{1}{4}$ " BHCS w/Pin Ltd. Thread Bolt, SST	1
121291-00	Swing Hanger Clamp Assy. Specify Color	1
121289-00	Swing Hanger Clamp, Specify Color	1
127068-00	$\frac{7}{16}$ " x $2\frac{7}{16}$ " BHCS w/Pin Ltd. Thread Bolt, SST	1
138917-00	Swing Hanger Double Clevis SST	1
100667-00	Oilite Bushing	1

Specifications

Hanger Clamp

Assembly: Cast aluminum. Finish: ProShield®, color specified.

Double Clevis: Stainless Steel.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

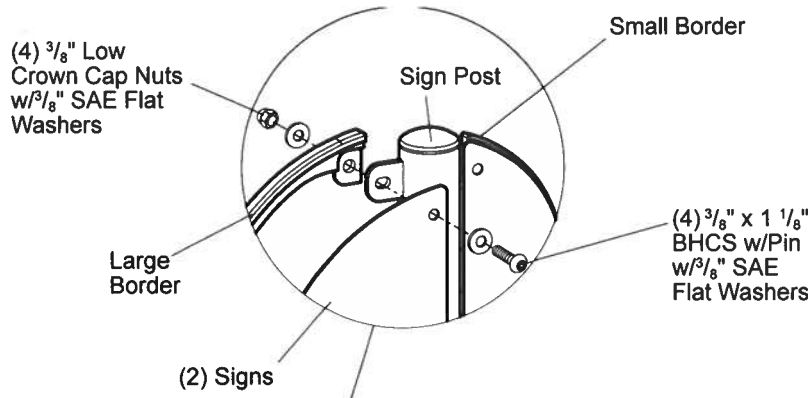
Installation Time: Approx. $\frac{1}{2}$ man hour

Weight: 6 lbs.

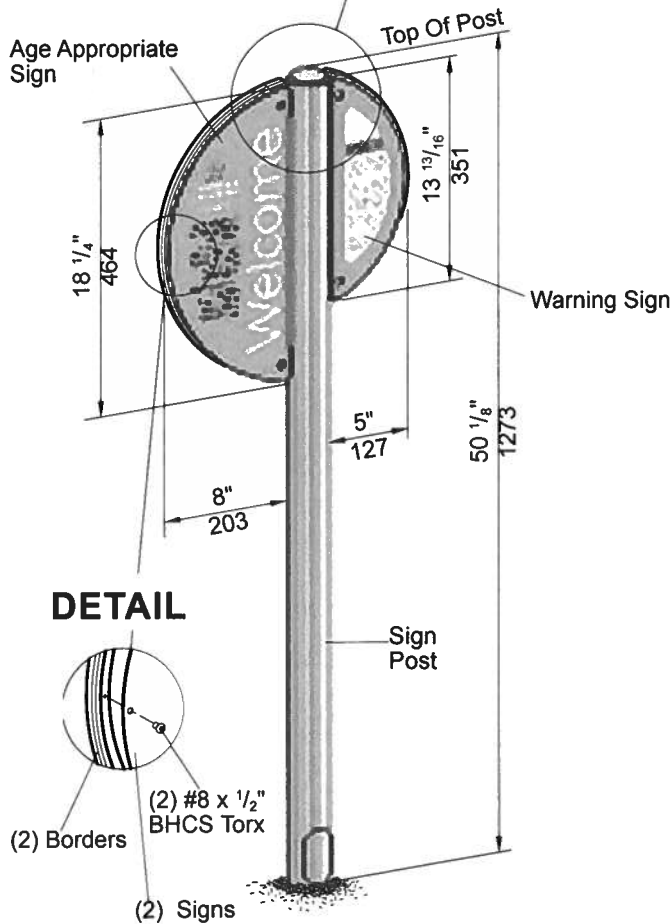
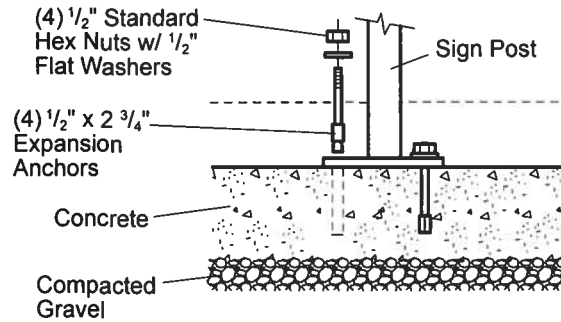
Installation Instructions

- 1) Locate and mark location of clamp on beam.
- 2) Attach 5" half clamp and swing hanger clamp to beam using $\frac{3}{8}$ " x $1\frac{1}{8}$ " BHCS w/pin and $\frac{3}{8}$ " tee nuts. *Tighten evenly.*
- 3) **IMPORTANT:** Drill through holes in 5" half clamps and into 5" pipe with a $\frac{1}{4}$ " or "F" (only) drill bit, tap $\frac{1}{4}$ " x $\frac{3}{8}$ " drive rivets through 5" half clamps and into pipe, to ensure that clamps remain secure.
- 4) Attach swing chain to double clevis using $\frac{3}{8}$ " x $1\frac{1}{4}$ " BHCS w/pin limited thread bolts.
- 5) Attach swing seat to chains using bolt links with $\frac{3}{8}$ " x $1\frac{1}{4}$ " BHCS w/pin limited thread bolts. **NOTE:** Do not over-tighten limited thread bolt. Threads should not protrude past bolt link. Position bolt head inward facing user.

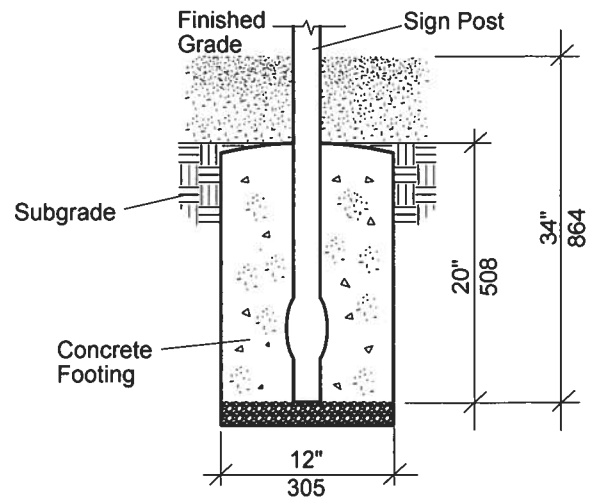
**DETAIL
SIGN ATTACHMENT**



**DETAIL
SURFACE MOUNT**



**DETAIL
DIRECT BURY FOOTING**



Model 182503 - Landscape Structures Provided Welcome Sign
Model 182504 - Welcome Sign

Signs

Welcome Sign

Parts List

Part#	Description	Qty.
219911	Warning Sign, Gray	1
219912	Age Appropriate Sign, 2-12 Years, Gray	*
219913	Age Appropriate Sign, 2-5 Years, Gray	*
219914	Age Appropriate Sign, 5-12 Years, Gray	*
219915	Age Appropriate Sign, 1 1/2-5 Years, Gray	*
219916	Age Appropriate Sign, 1 1/2-12 Years, Gray	*
219918	Age Appropriate Sign, 6-23 Months, Gray	*
180598	Sign Post (DB), Specify Color	*
181119	Sign Post (SM), Specify Color	*
193782	Large Border, Black	1
193783	Small Border, Black	1
213258	Age/Warning Sign Hardware Package	1
100198	3/8" x 1 1/8" BHCS w/Pin, SST	4
100349	3/8" Low Crown Cap Nut, SST	4
100365	3/8" SAE Flat Washer, SST	8
168323	#8 x 1/2" BHCS Torx, SST	2
169413	1/4-6 Lobe T-15 Temp. Bit	1
121348	4 Hole (SM) Hardware Package	1
100266	1/2" x 2 3/4" Expansion Anchor	4
100322	1/2" Standard Hex Nut, SST	4
100363	1/2" Flat Washer, SST	4

DB = Direct Bury

SM = Surface Mount

* = Quantity Determined By Your Order

Specifications

Sign Panel: Panel is fabricated from 1/8" (.125")(3,17 mm) aluminum plate. Finish: ProShield®, gray in color. (Sign) Digital image is transferred to a 1/8" (.125")(3,17 mm) ProShield coated aluminum plate, then infused into the ProShield.

Border: Permalene, black in color.

Post: Weldment comprised 2.375" (60,33 mm) O.D. RS20 (.095-.105) (2,41 mm-2,67 mm) wall galvanized tube, 1/4" (6,35 mm) HRPO steel sheet and aluminum post cap. Finish: ProShield, color specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).

Installation Time: (DB) Approx. 1 man hour
(SM) Approx. 1/2 man hour

Concrete Req: Approx. 1.31 cu. ft.

Weight: (DB) - 24 lbs.
(SM) - 27 lbs.

Installation Instructions

Direct Bury

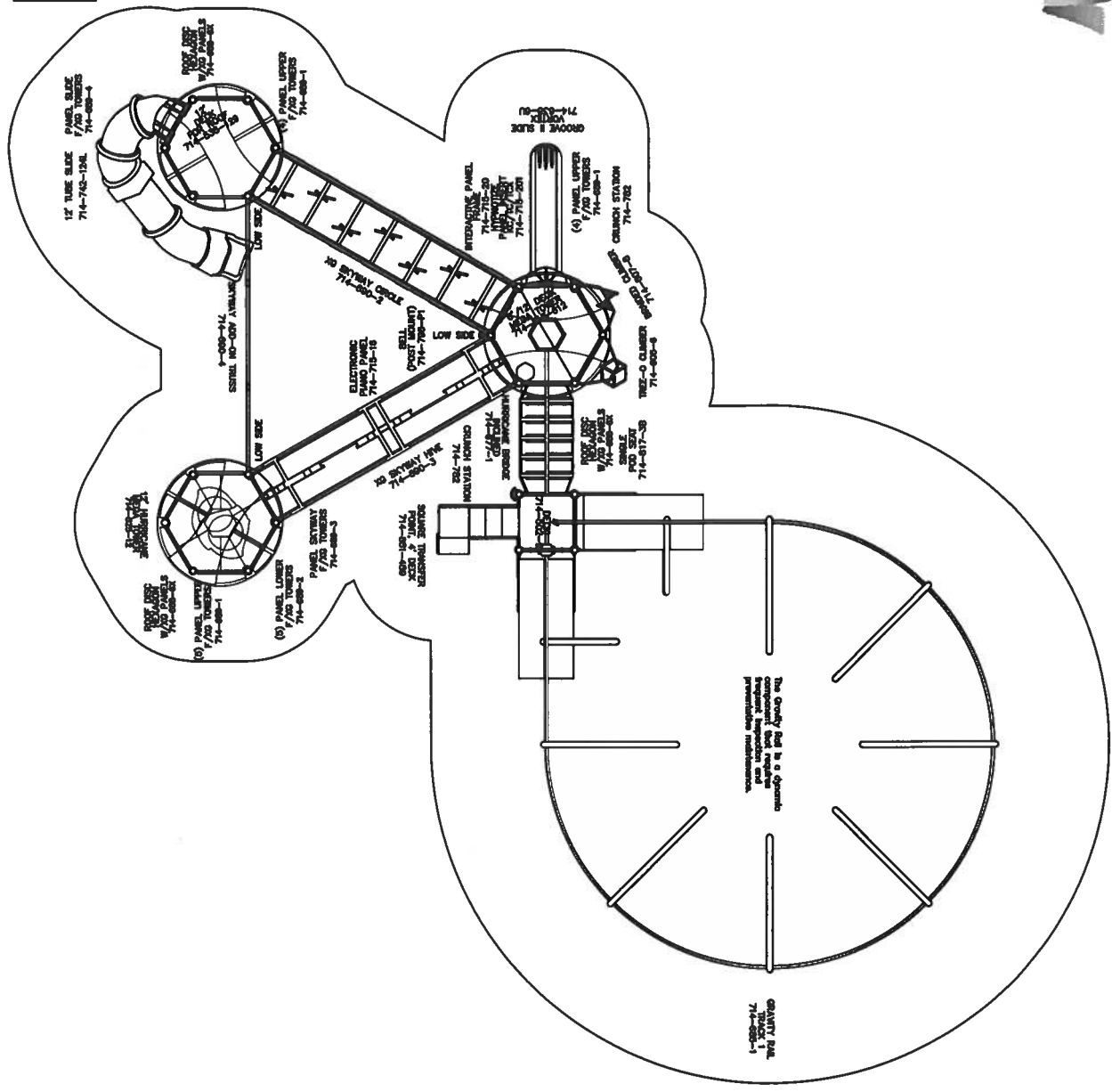
- 1) Dig footing hole to depth and diameter shown.
- 2) Attach sign panels and borders to post as shown, using 3/8" x 1 1/8" BHCS with 3/8" SAE flat washers and 3/8" low crown cap nuts with 3/8" SAE flat washers. Attach signs to borders using #8 x 1/2" BHCS Torx.
- 3) Set sign assembly in footing hole and temporarily brace in plumb position.
- 4) Pour concrete footing. After concrete has cured, remove bracing.

Surface Mount

- 1) Attach sign panels and borders to post as shown, using 3/8" x 1 1/8" BHCS with 3/8" SAE flat washers and 3/8" low crown cap nuts with 3/8" SAE flat washers. Attach signs to borders using #8 x 1/2" BHCS Torx.
- 2) With sign in proper position, using a 1/2" masonry bit and hammer drill, drill 3" deep holes into concrete slab through holes in post plate. Tap 1/2" x 2 3/4" expansion anchors into holes and secure using 1/2" standard hex nuts with 1/2" flat washers.

5-12 PLAY AREA

ELEVATED PLAY ACTIVITIES - TOTAL	12
ELEVATED PLAY ACTIVITIES ACCESSIBLE BY TRANSFER	8
ELEVATED PLAY ACTIVITIES ACCESSIBLE BY RAMP	0
GROUND LEVEL ACTIVITY TYPE	3
GROUND LEVEL ACTIVITY QUANTITY	4



Play Area Capacity: 110-120



To promote safe and proper equipment use by children, Miracle recommends the installation of either a Miracle safety sign or other appropriate safety signage near each play system's main entry point(s) to inform parents and supervisors of the age appropriateness of the play system and general rules for safe play.



<p>714-S609</p> <p>GROUND SPACE: 64' X 65' PROTECTIVE AREA: 78' X 80'</p>	<p>✓ COMPLIES TO CPSC</p>	<p>DESIGNED FOR AGES 5-12</p>	<p>SCALE: 1" = 12'-0"</p>
	<p>✓ COMPLIES TO ASTM</p>	<p>ADDITIONAL GROUND LEVEL ACCESSIBLE ITEMS NEEDED FOR ADA COMPLIANCE</p>	<p>DATE: 9/10/2018</p>
	<p>✓ COMPLIES TO ADA</p>	<p>TYPE: 0 QUANTITY: 0</p>	<p>CINDI</p>

THE PLAY COMPONENTS IDENTIFIED IN THIS PLAN ARE IPEMA CERTIFIED. THE USE AND LAYOUT OF THESE COMPONENTS CONFORM TO THE REQUIREMENTS OF ASTM F1487.

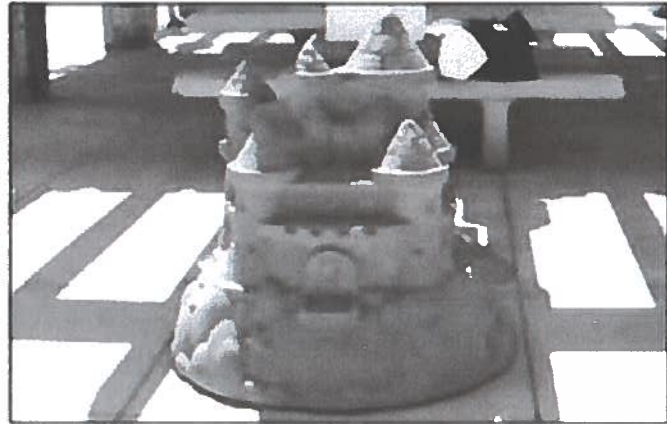
AN ENERGY ABSORBING PROTECTIVE SURFACE IS REQUIRED UNDER & AROUND ALL PLAY SYSTEMS.

Sandcastle

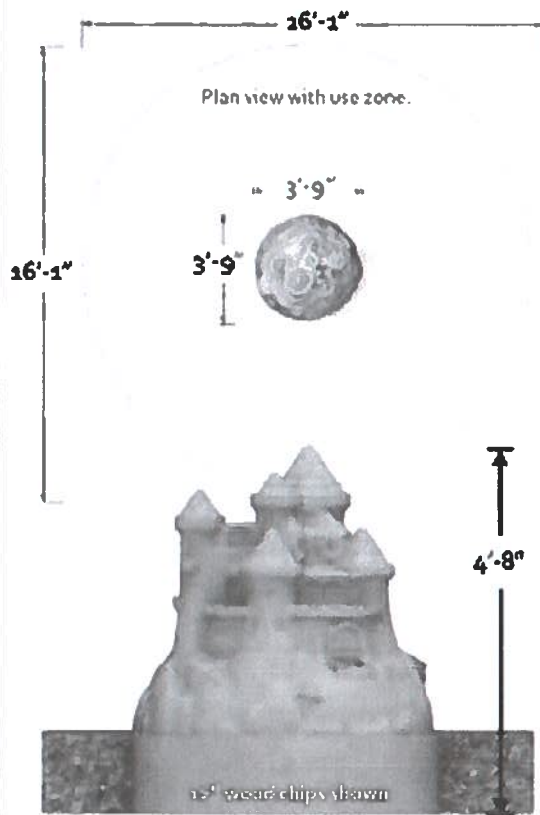
part of the Imagacast line



Installed in woodchips.



Sandcastle



The magic of surf and sunshine lasts all year round with the Sandcastle. Add this little play climber to your beach themed playground to add an element of whimsy.

Material: Imagacast
 Finish/Texture: Light sandblast
 Anti-graffiti: Acrylic sealer
 Color: Natural sand.

Color Options:
 Standard pictured.
 Custom available.
 Full or partial
 mosaic available.

Colors may vary from pictures.

For Ages: 2-5
 Estimated Users: 4
 Footing: Integral to part
 Highest Designated Play Surface: 3'-8"
 Installation: Install using two (2) straps under part.

12" of woodchips or EPDM surfacing and fill
 12" of part must be installed below top of surfacing.

Weights can vary up to 5% and dimensions ± 1/2-inch.

Rep.	Company.	Phone
Contractor	Project	
Part Name: Sandcastle	Part #: 13519	Weight: 4,000 lbs
Plant: 530-243-6477	Contact: Dan C.	Rev: 7/17 Page: 1/1

UPC Parks™
 530-605-2664
 www.upcparks.com

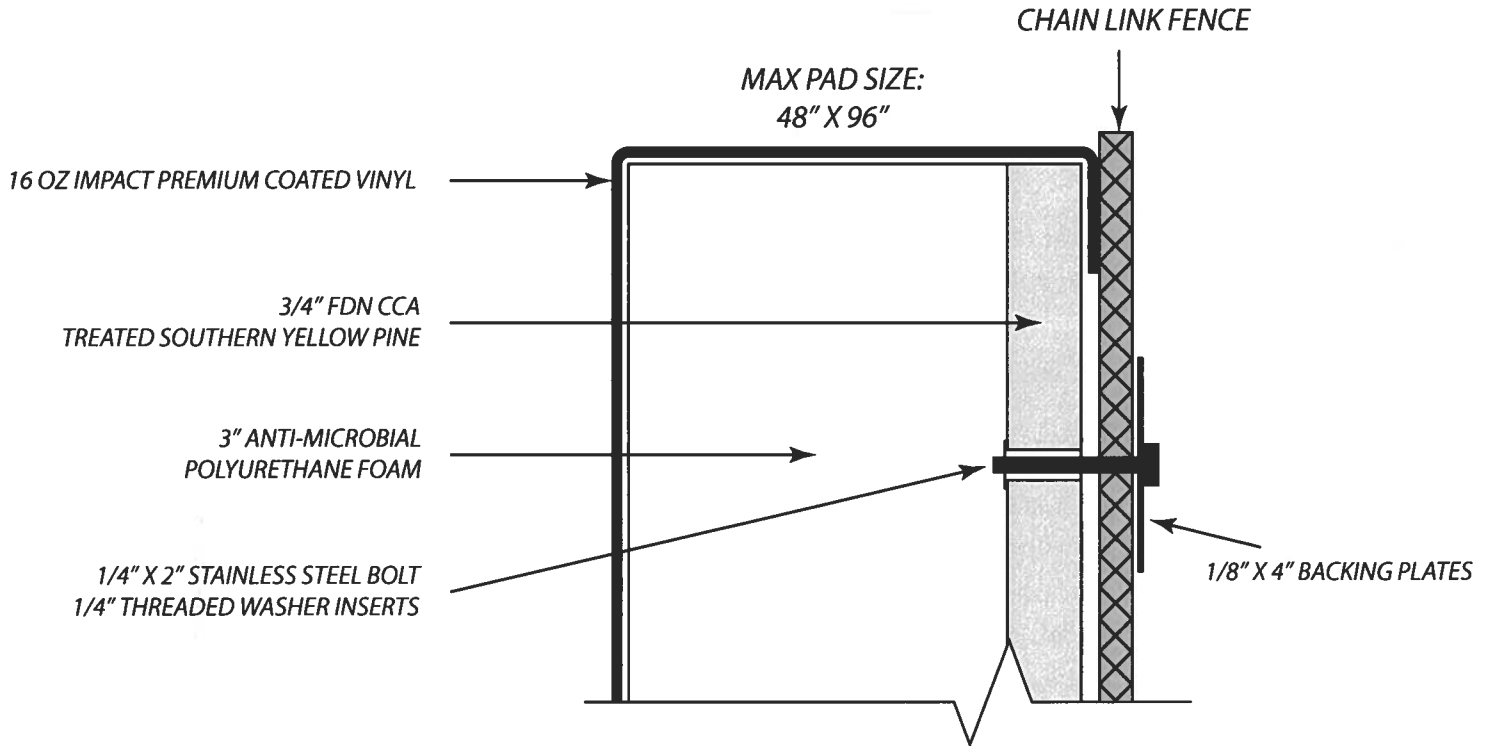
Product Detail

WPC

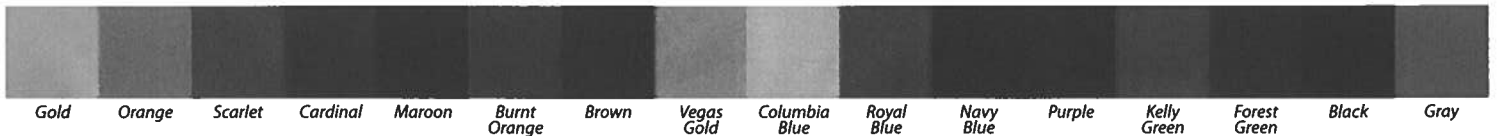
CHAIN LINK ATTACHMENTS



Customer Service
(800) 247-7668



Vinyl Colors: (Actual Colors May Vary)



SPECIFICATIONS:

OUTDOOR USE

Unless otherwise indicated outdoor padding is constructed of 3/4" FDN CCA treated southern yellow pine plywood with adhesive applied 3" anti-microbial polyurethane foam. Pads are covered with fabric-backed flame retardant and mildew- and UV-resistant 16 oz. vinyl with leather grain texture. Full-Color Graphic styles are covered with 16 oz. flame-, mildew-, and UV-resistant vinyl. All vinyl is tightly stretched around the foam and stapled to the plywood with rust-proof stainless steel staples no less than 2" apart. Specifications may vary on custom sizes, shapes, and configurations to meet site-specific requirements.



WALL PADDING LIMITED WARRANTY

Bison warrants all wall padding to be free of manufacturer defects for a period of 18 months from the date of shipment from our factory.

This warranty will provide either repair or replacement at the sole option of Bison. Written notice accompanied by photographic evidence must be submitted prior to the 18 month warranty expiration.

The following product failures are not covered by this warranty:

- Failure due to vandalism, improper installation, reinstallation at a different location, minor cosmetic scratches or scuff marks, tears, punctures, burns or graffiti.
- Improper dimension being provided by customer.
- Field modification for cutouts or other field customization.
- Any other costs incurred as a result of any failure of the wall padding.
- Reinstallation cost of replacement padding.
- Any padding that is installed in a location that could result in person sitting or standing on the padding.

CARE AND CLEANING INSTRUCTIONS

1. Periodically inspect wall pads for proper attachment to wall surface. If fasteners appear to be loose or damaged, tighten, repair, or replace as required.
2. The wall pad vinyl surface may be cleaned using a mild solution of 10% household detergent and warm water, or with a mild cleaning product such as Formula 409/Windex. Test the cleaning solution on an inconspicuous area of the wall padding (ie: side of pad) before trying on the original stain.

Note: Do not use harsh solvent type cleaners. Solvent type cleaners cause cracking, hazing and general deterioration of vinyl materials.

Padding Upgrade Options

WPUP3N

Upgrade any 2" neoprene foam wall padding to 3" neoprene foam for added player protection or to meet local codes or project specifications.

WPUPFRC

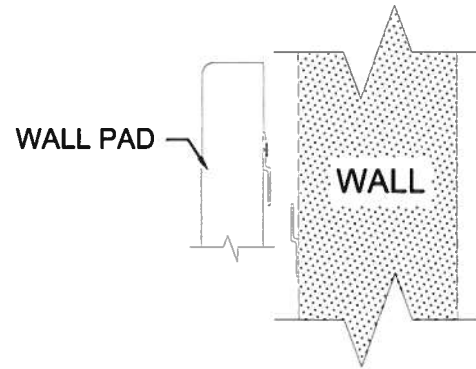
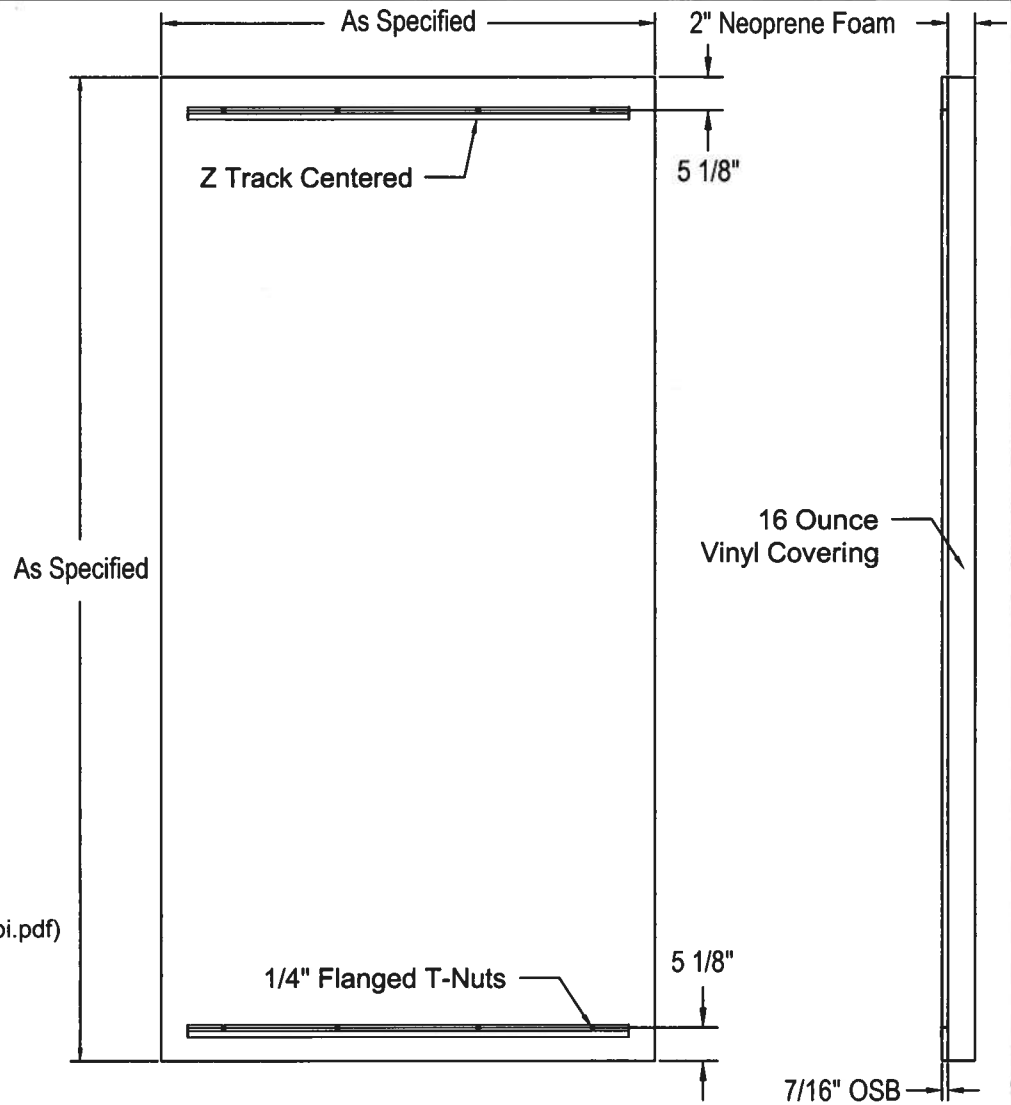
Upgrade any wood backed wall padding to add a fire retardant coating to the 7/16" OSB backing to meet local codes or project specifications.

COLOR SELECTION

Select desired pad color from:

(www.ipibybison.com/pdfs/vinyl_padding_colors_ipi.pdf)

Specify Color: _____



Firewall Wall Padding Specifications

Solid color Firewall padding including custom corner, column, door and stage padding is constructed of neoprene foam with Indentation Load Deflection (ILD) of 25-45 pounds, 2" thickness at 25% deflection per ASTM D3574 Test B1 and a density of 6.2 pounds per cubic foot per ASTM D3574 Test A. Firewall neoprene foam passes California Fire Code TIB 117:2013. 16 ounce vinyl covering has a ASTM D2261 tear strength of 92 x 83 pounds per inch and has been treated for mildew and UV protection. Vinyl conforms to NFPA-701 CSFM and Class A ASTM E-84. Wood backed padding is mounted on 7/16" OSB composite board with the foam attached to the OSB with water based adhesive. Assembled padding has been tested and meets NFPA 286.



PRODUCT SPECIFICATION: WP2NSZW

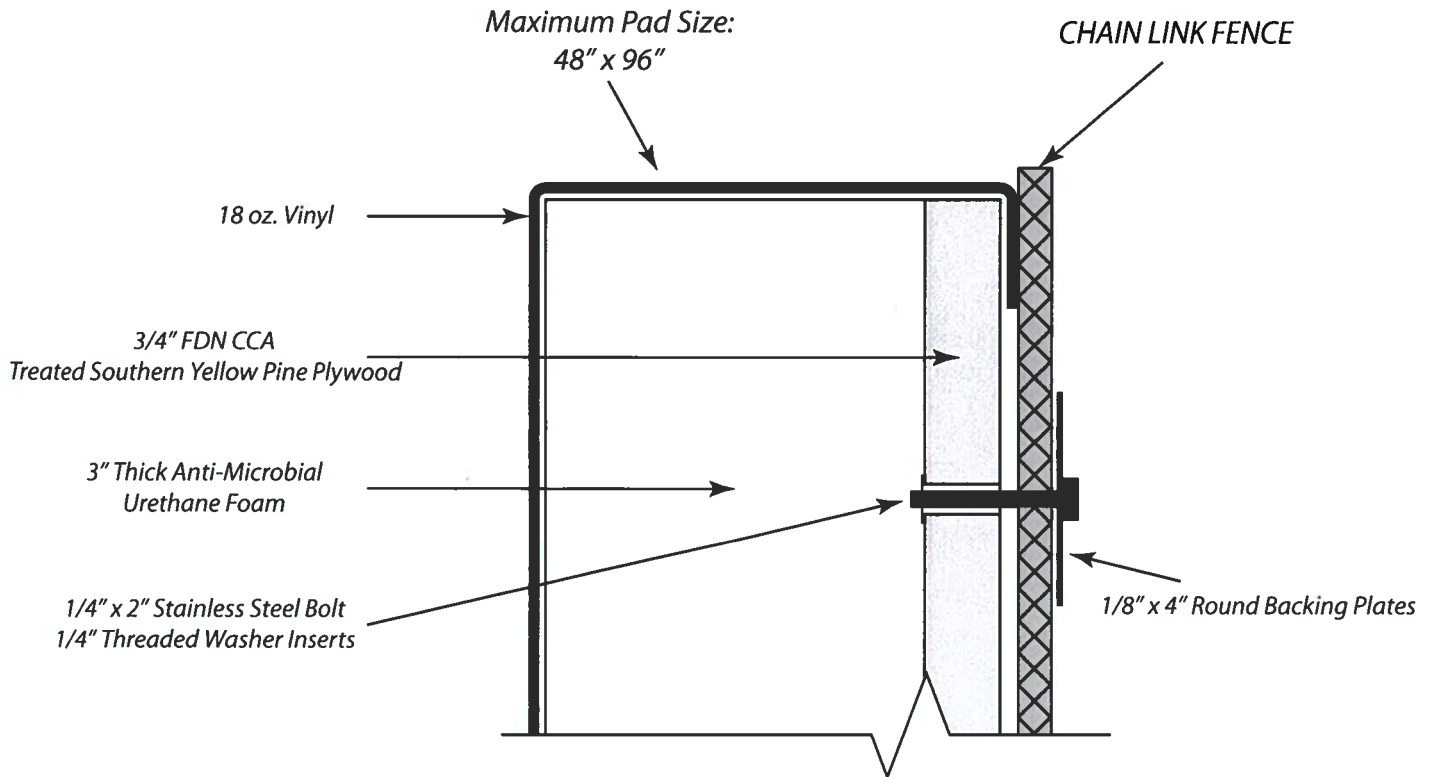
FIREWALL SOLID COLOR HIDDEN Z TRACK WALL PADDING

REVISED 07/02/19

Product Detail

WPC

CHAIN LINK ATTACHMENTS



18 oz Vinyl Colors: (Actual Colors May Vary)



SPECIFICATIONS:

OUTDOOR USE

All Weather Padding features 3/4" BC SYP exterior grade plywood, 100% rust-proof stainless steel, brass or aluminum hardware and fittings, 3" thick mildew-resistant polyurethane foam and heavy outdoor durable vinyl coverings • 16 sunfast solid color options (WP144OUT) or full color graphic (WP144GOUT) or lettered (WP144LOUT) options • Each assembled panel, regardless of size, is vented at the bottom to allow moisture to escape, increasing both functional and aesthetic longevity • Outdoor padding cost is computed by the square foot

Not To Scale

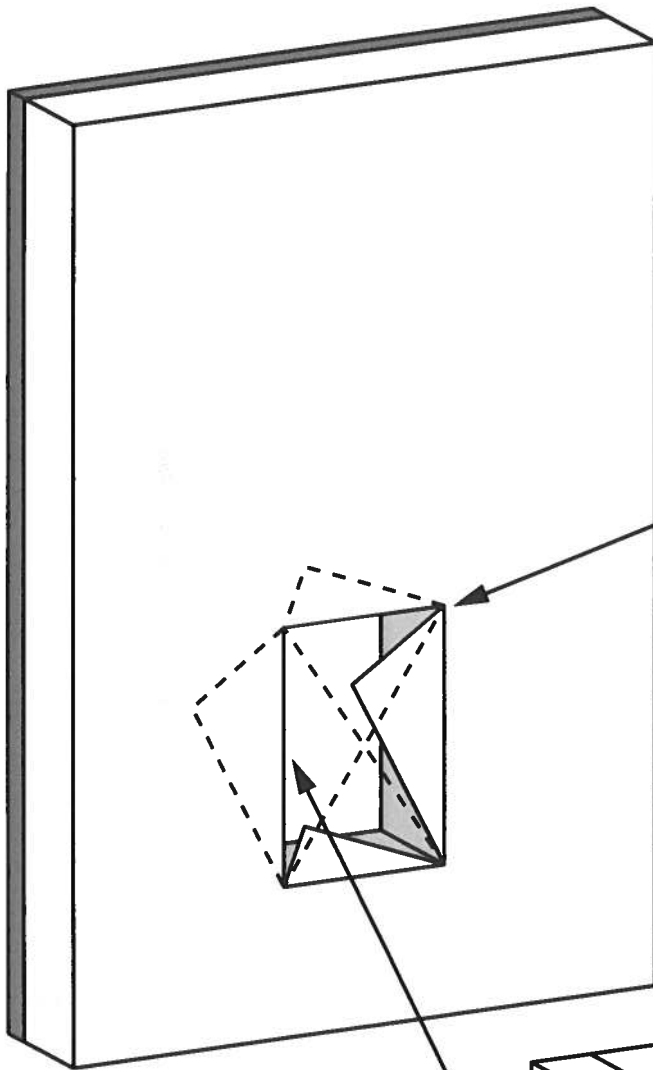
Model Numbers:

- WP144OUT (SOLID COLOR VINYL)
- WP144LOUT (SOLID COLOR VINYL WITH LETTERING)
- WP144GOUT (DIGITALLY PRINTED GRAPHIC VINYL)

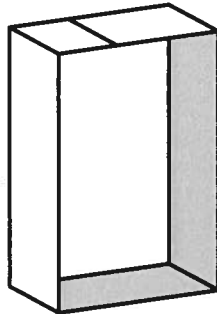
FIELD CUTOUT DETAIL



Customer Service
(800) 247-7668



- AFTER CUTOUT SIZE IS DETERMINED, DRAW CUTOUT LOCATION ON BACK SIDE OF WALL PAD.
- WITH A JIG SAW, CAREFULLY REMOVE THE WOOD BACKING.
- WITH AN ELECTRIC KNIFE, CAREFULLY REMOVE THE FOAM IN THE DESIRED CUTOUT LOCATION.
*MAKE SURE THAT THE VINYL IS NOT CUT IN THIS STEP.
- FROM EXTRA VINYL, CUT A STRIP AS DEEP AS THE PANEL AND LONG ENOUGH TO GO AROUND ALL FOUR SIDES OF CUTOUT.
- WITH VINYL ADHESIVE GLUE, PLACE STRIP AROUND INSIDE OF OPENING.
- ONCE VINYL STRIP HAS BEEN ADHERED TO THE INSIDE OF THE OPENING, MAKE AN "X" CUT THRU THE VINYL AND FOLD THE FLAPS BACK AS SHOWN.
- SECURE THE "X" FLAPS TO WOOD BACKING.



PRODUCT: Q2-GROOVE72B

WEIGHT: 375 lbs.
(CUSTOMER TO OFFLOAD IF OVER 6000 Lbs.)

Authorized Signature _____

Date _____

By signing above or stamping this drawing "approved" or "no exception taken" authorization is given to QCP to produce this drawing as shown within a 1/4" tolerance.

QUANTITY: _____

CONCRETE COLOR:

- QUAIL HILL RED
- NATURAL
- MISSION WHITE
- LATTE
- HARVEST
- FRENCH GREY
- BUNGALOW
- ADOBE TAUPE
- CUSTOM COLOR

CONCRETE TEXTURE:

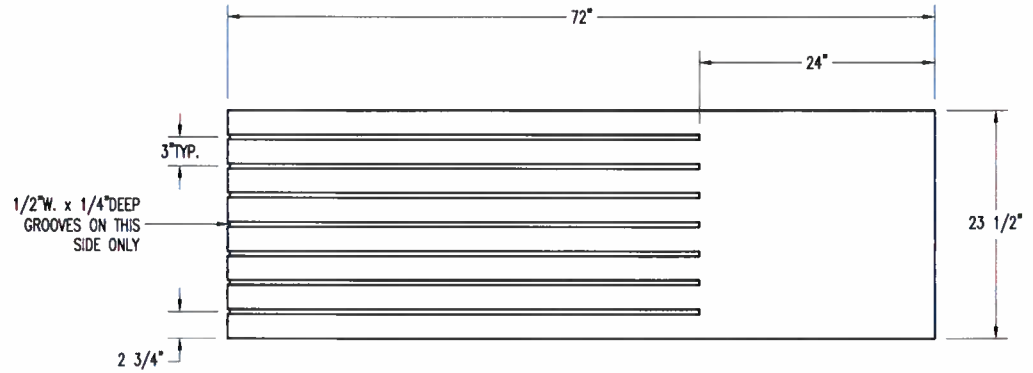
- SMOOTH
- SANDSTONE
- POLISH (TOP)

MADE WITH EDURACAST,
AN ULTRA HIGH
PERFORMANCE CONCRETE

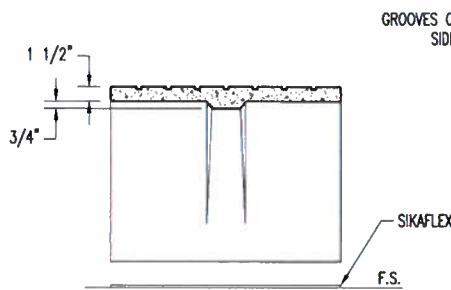
SEALER: STANDARD SEALER

GENERAL PRODUCT NOTES:

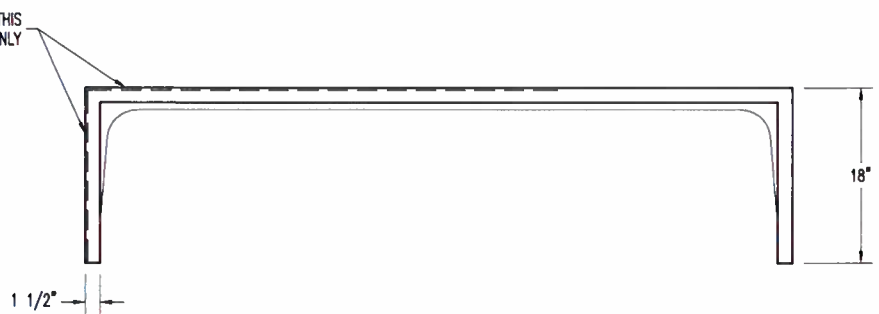
- E = EXPOSED FINISHED SURFACE
- INSTALLATION IS REQUIRED BY OTHERS.
- ALL EDGES TO BE EASED.
- MANUFACTURING TOLERANCE ±1/4".
- ANCHORING METHOD REQUIRED BY OTHERS




PLAN VIEW



SECTION VIEW



ELEVATION VIEW

 www.qcp-corp.com	PLAN TYPE	CONSTRUCTION PLAN	DATE	FILE NO	SHEET
	PRODUCT	Q2-GROOVE72B BENCH GROOVE	5/7/18	301_Q2_GROOVE_72B	1
	PROJECT NAME		SCALE	DRAWN BY:	OF
			5/8" = 1'	----	1
			PC. NO.	QC ITEM NO.	

PRODUCT: Q-GROOVE-72T
 WEIGHT: 514 lbs.(TABLE) 232 lbs. (BENCH)
 (CUSTOMER TO OFFLOAD IF OVER 6000 LBS.)

CONCRETE COLOR:

- QUAIL HILL RED
- FRENCH GREY
- NATURAL
- BUNGALOW
- MISSION WHITE
- ADOBE TAUPE
- LATTE
- CUSTOM COLOR
- HARVEST

- CONCRETE TEXTURE:
- SMOOTH
 - SANDSTONE
 - POLISH (TOP)

QUANTITY: —

MADE WITH EDURACAST,
 AN ULTRA-HIGH
 PERFORMANCE CONCRETE

SEALER: STANDARD SEALER 4200

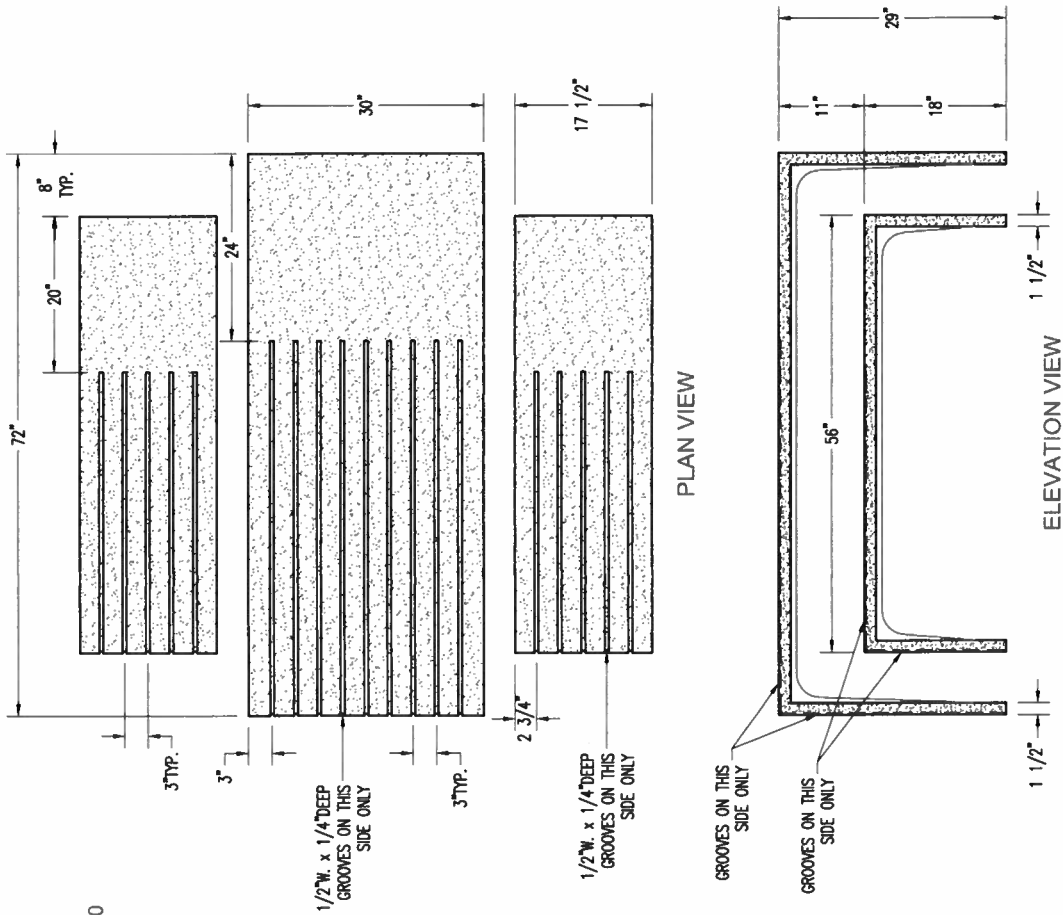
GENERAL PRODUCT NOTES:

- E = EXPOSED FINISHED SURFACE
- INSTALLATION IS REQUIRED BY OTHERS.
- ALL EDGES TO BE EASED.
- MANUFACTURING TOLERANCE ±1/4"
- ANCHORING METHOD BY OTHERS

Authorized Signature

Date

By signing above or stamping this drawing "approved" or "no exception taken" authorization is given to QCP to produce this drawing as shown within a 1/4" tolerance.

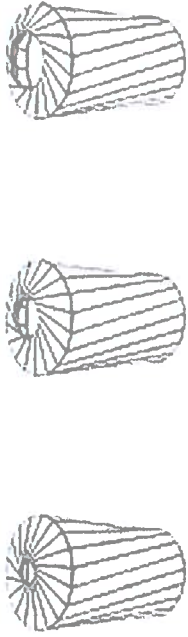


HARDWARE LIST	
QTY	TYPE
	SIKAFLEX



PLANT TYPE	CONSTRUCTION PLAN
PRODUCT	Q-GROOVE-72T TABLE GROOVE
PROJECT NAME	

DATE	3/5/19	FILE NO.	392_Q_GROOVE_72T	SHEET	1
SCALE	1 1/2" = 1'	DRAWN BY:		OF	1
PC. NO.		QC ITEM NO.			



Top Opening Unit

Tools Required

- Safety glasses
- Litter receptacle ships fully assembled with freestanding glides.
- Surface mount option: anchoring hardware not included. Two anchors, 3/8" diameter or less, are required per unit. The base casting adds 1-1/8" to the anchor length. The installer is responsible for anchoring hardware suitable for site conditions. Corrosion resistant anchors are recommended.

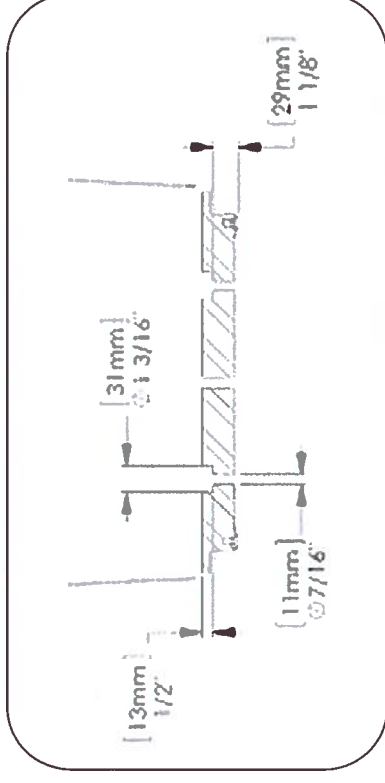
PROCEDURE FOR INSTALLATION:

FOR SURFACE MOUNTED LITTER RECEPTACLE:

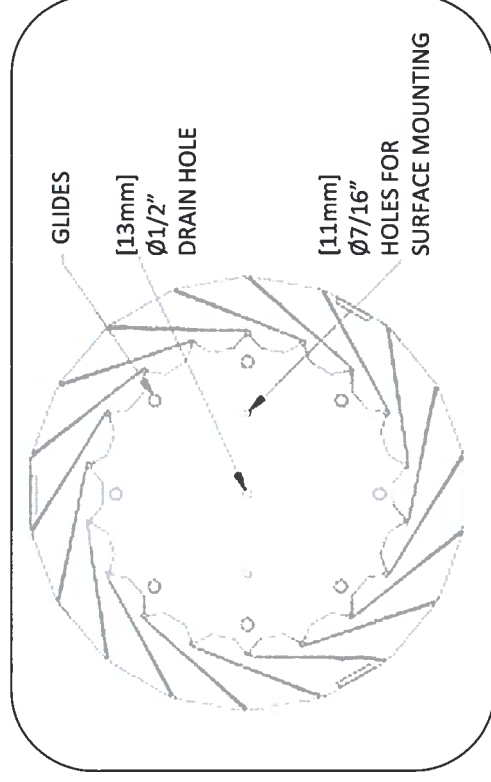
Note: Unit can be surface mounted with freestanding glides installed.

1. Place the unit in the desired position. Lift the lid to check clearance.
2. Remove the liner and mark anchor locations through the holes in the base.
3. Move the unit to allow access for drilling holes.
4. Drill holes at marked locations according to anchor manufacturer's specification.
5. Complete the anchor installation according to the anchor manufacturer's instructions.

ASSEMBLE WITH CARE! Pangard II® Polyester Powdercoat is a strong, long-lasting finish. To protect this finish during assembly, place unwrapped powdercoated parts on packaging foam or other non-marring surface. Do not place or slide powdercoated parts on concrete or other hard or textured surface – this will damage the finish causing rust to occur. Use touch-up paint on any gouges in the finish caused by assembly tools.



Base section view



Base bottom view

CENTRAL PARK CONSERVANCY RECYCLING SYSTEM

Materials / Colors

Powdercoated Metal

In addition to colors shown below, a wide selection of optional and custom colors may be specified for an upcharge.



Metallic



Designer Palette: Architectural Series



CENTRAL PARK CONSERVANCY RECYCLING SYSTEM

Product Data Sheet



The Central Park Conservancy Recycling System combines high form and humble function. The leading design and branding firm Landor designed it as a custom solution for the non-profit Central Park Conservancy to advance environmental stewardship at the world's most famous urban park. The three-unit system, first developed and produced by Landscape Forms Studio 431, has proven itself on the job, earned multiple design awards, and been adopted as a Landscape Forms standard product. Inspired by the classic 1930s Central Park bench, the vibrant design cleverly turns the hooped arms and seat slats of the original on end, re-envisioning them for a new purpose. Aluminum units are identical in size and shape, but different in the size of top openings that identify receptacles for cans and bottles, paper, and waste.

Central Park Conservancy Recycling System

- Constructed of aluminum with a cast aluminum base for stability.
- Top opening receptacle can be freestanding or surface mounted; surface mount holes provided with every unit.
- All units feature hinged top opening for easy emptying.
- The unit has a 30 gallon capacity, custom fit polyethylene liner in black included with all receptacles.
- Recycling litter available with 5", 8.6" or 12" diameter openings to collect recyclable material.
- Labels with recycle symbol and specified recyclable material printed on high performance, exterior grade UV protected vinyl, mounted securely to each unit.
- For more information on signage options, visit landscapeforms.com.
- Recycling system units ship fully assembled with freestanding glides.







Finishes

- Metal is finished with Landscape Forms' proprietary Pangard II® polyester powdercoat, a hard yet flexible finish that resists rusting, chipping, peeling and fading.
- Call for standard color chart.
- A wide array of optional colors may be specified for an upcharge.

To Specify

- Select powdercoat color.
- Choose standard 5" diameter, standard 8.6" diameter or standard 12" diameter opening.
- Select standard wording from options available on landscapeforms.com. Custom wording available for an upcharge.
- Select lid ring decal option.
- Black polyethylene liner included with each unit. Surface mount holes provided in base.
- Shipped with freestanding glides.
- Ships fully assembled.

Designed by Landor Associates

5" DIAMETER TOP-OPENING		WIDTH	HEIGHT	PRODUCT WEIGHT
		24.5"	35"	63 lb
8.6" DIAMETER TOP-OPENING		WIDTH	HEIGHT	PRODUCT WEIGHT
		24.5"	35"	63 lb
12" DIAMETER TOP-OPENING		WIDTH	HEIGHT	PRODUCT WEIGHT
		24.5"	35"	63 lb

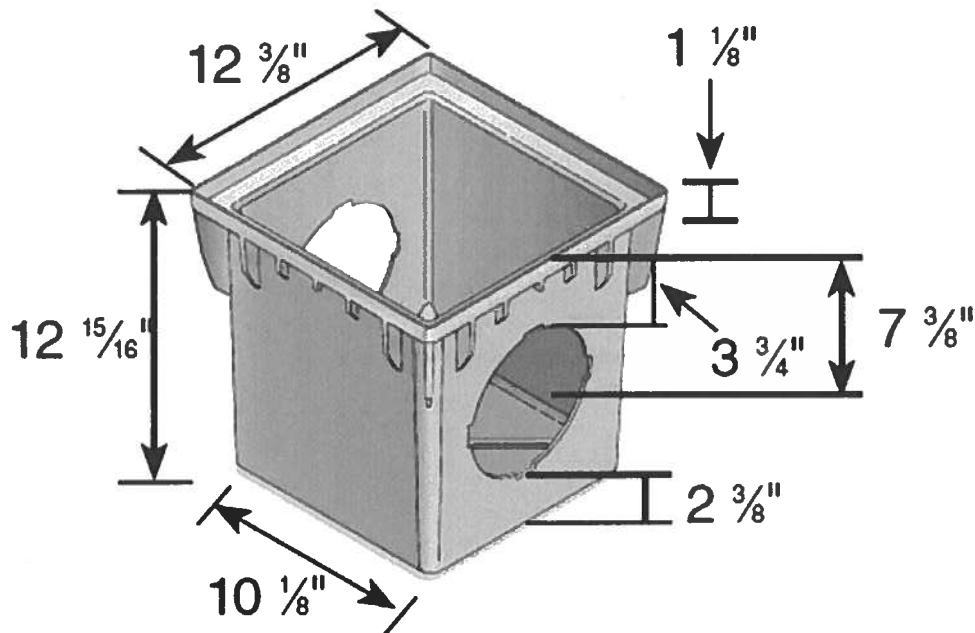
Visit our landscapeforms.com for more information. Specifications are subject to change without notice. Landscape Forms supports the Landscape Architecture Foundation at the Second Century level. ©2015 Landscape Forms, Inc. Printed in U.S.A.



NDSTM
WE PUT WATER IN ITS PLACE

**TECHNICAL
SPECIFICATIONS**

12" x 12" CATCH BASIN



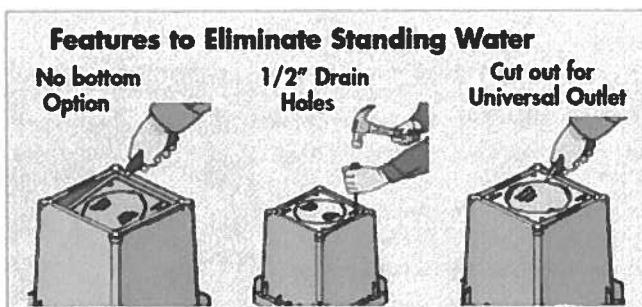
- 1200BLKIT- Catch basin with 2 openings
- 1200- Catch basin with two openings
- 1203- Catch basin with 3 openings
- 1204- Catch basin with 4 openings

Material: Polypropylene

Colors: Black (1200BLKIT, 1200, 1203, 1204)

Fits: Requires either part # 1206, #1242, # 1243, #1245, #1266, or # 1889 Universal Outlet for each opening.

Bottom cutout may be used for additional outlet.



851 N. Harvard Avenue
Lindsay, CA 93247
800-726-1994



Visit ndspro.com for specs,
detail drawings, and case studies



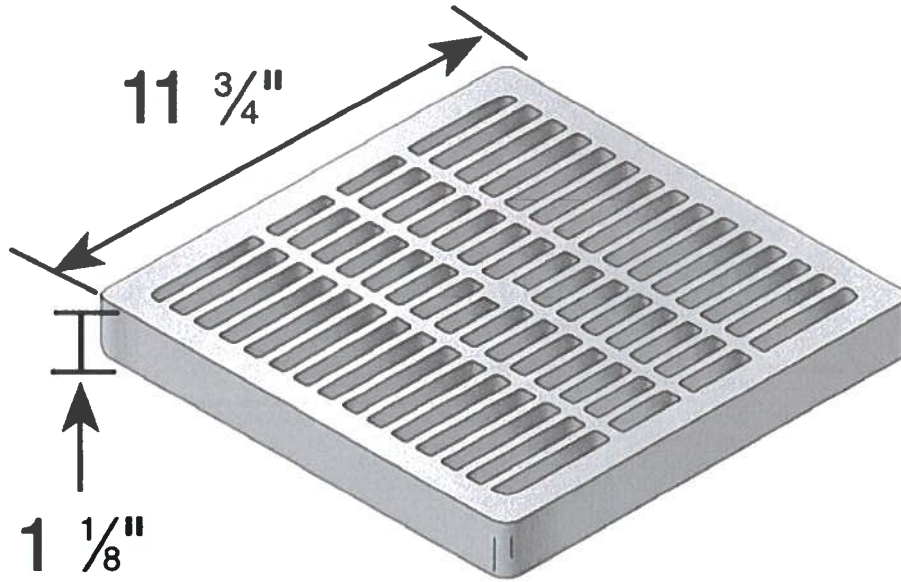
NDSTM
WE PUT WATER IN ITS PLACE



NDS[™]
WE PUT WATER IN ITS PLACE

TECHNICAL SPECIFICATIONS

12" x 12" SQUARE GRATE



3/8" Grate Opening

Material: UV Protected High Density Polyethylene (HDPE)

Weight: 2.33 lbs

Colors: Gray (1210), Black (1211), Green (1212), Sand (1212S)

Fits: Use with 12" catch basin series

Grate Openings: 50.76 in² open space

Will accommodate: 155.28 gallons per minute with 1/2" of head.

Made in USA.

Load Recommendation Guide



Class B

- Loads of 61-175 psi.
- Recommended for medium-duty pneumatic tire traffic, autos and light trucks at speeds less than 20 m.p.h.

Note: Some installations may require a concrete collar to meet load rating. Loads are based on encasing product in concrete. Product must be installed using NDS instructions.

ADA Compliance

NDS provides a wide selection of grates that are compliant with the Americans with Disabilities Act. The ADA Accessibility Guidelines For Buildings and Facilities Section 4.5.4 specifies that ground and floor grates "shall have spaces no greater than 1/2 in (13 mm) wide in one direction."

We are pleased to provide grates that comply with these requirements, so that no individual need be limited from accessing the area safely and confidently.

To see if a grate is ADA compliant, please check the description of the product in our NDS Drainage Catalog: products that meet these requirements are marked "ADA compliant."

Like to find out more about ADA compliance and NDS? Send us your question and we'd be happy to help.



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Lindsay, CA 93247
800-726-1994



Visit ndspro.com for specs,
detail drawings, and case studies



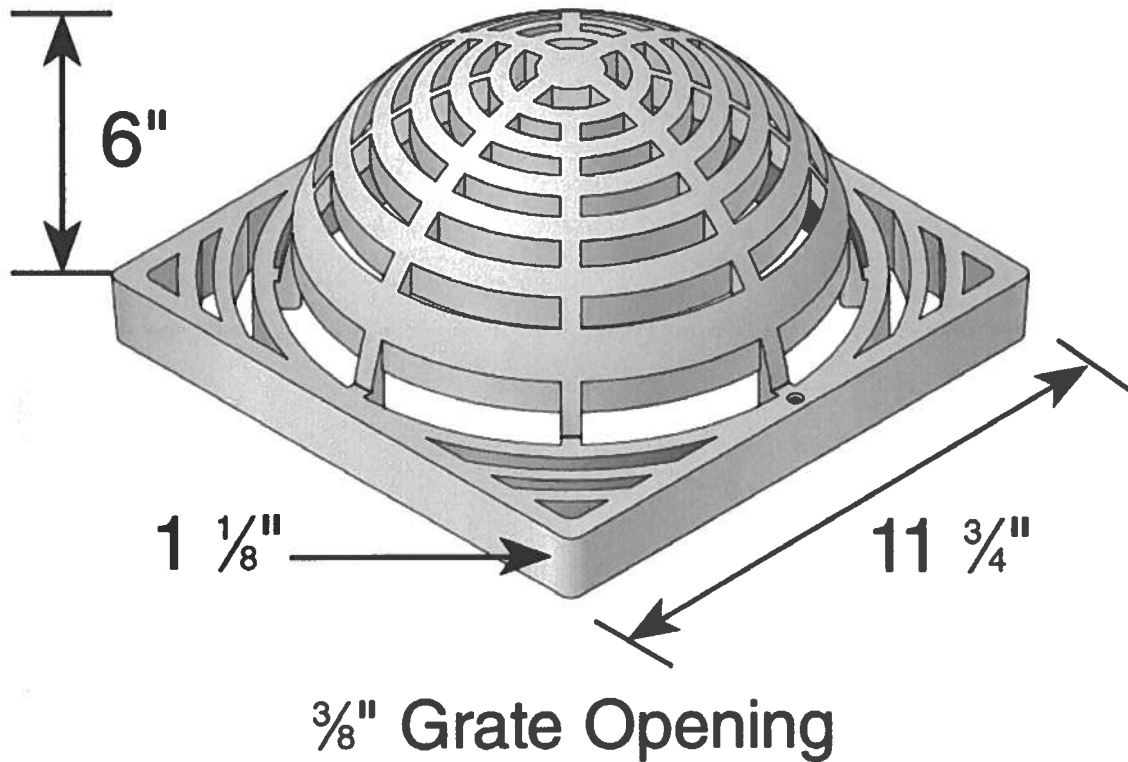
NDS[™]
WE PUT WATER IN ITS PLACE



NDS[™]
WE PUT WATER IN ITS PLACE

**TECHNICAL
SPECIFICATIONS**

12" x 12" ATRIUM GRATE



Material: UV Protected High Density Polyethylene (HDPE)

Weight: 1.74 lbs

Colors: Green (1280), Black (1290)

Fits: Use with 12" Catch basin series

Grate Openings: 50.60 in²

Will accommodate 154.79 gallons per minute with 1/2" of head

851 N. Harvard Avenue
Lindsay, CA 93247
800-726-1994



Visit ndspro.com for specs,
detail drawings, and case studies



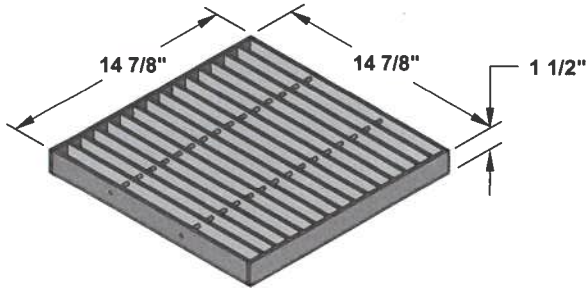
NDS[™]
WE PUT WATER IN ITS PLACE

1212 CAST IRON GRATE

PARKWAY ONLY 28 lbs.

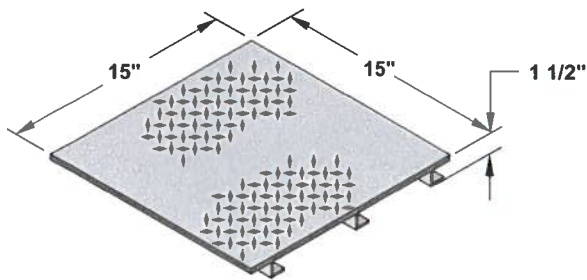
1212 STEEL GRATES

PARKWAY 16 lbs.
TRAFFIC 18 lbs.



1212 STEEL COVER

PARKWAY 22 lbs.
TRAFFIC 25 lbs.



NOTES:

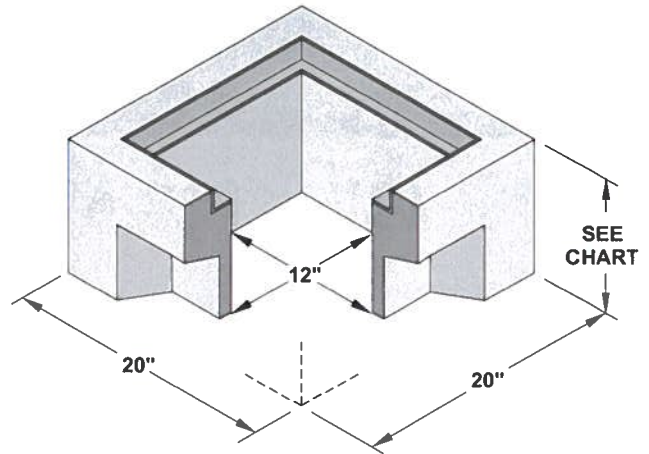
1. GRATES AND COVERS AVAILABLE PAINTED BLACK OR GALVANIZED
2. "ADA" GRATES AVAILABLE IN PARKWAY & TRAFFIC
3. "HEEL PROOF" GRATES AVAILABLE IN PARKWAY & TRAFFIC
4. A TOP SECTION WITH FRAME MUST BE USED IF BOLT DOWN REQUIRED

TOP SECTION	HT.	LBS	KNOCK-OUT
1212 T6	6"	170	NONE
1212 T12	12"	275	(4) 5" x 10"
1212 T18	18"	270	(4) 8" x 12"
1212 T24	24"	430	(4) 8" x 15"
1212 T28	28"	380	(4) 8" x 22"

EXTENSION SECTION	HT.	LBS	KNOCK-OUT
1212 E6	6"	170	NONE

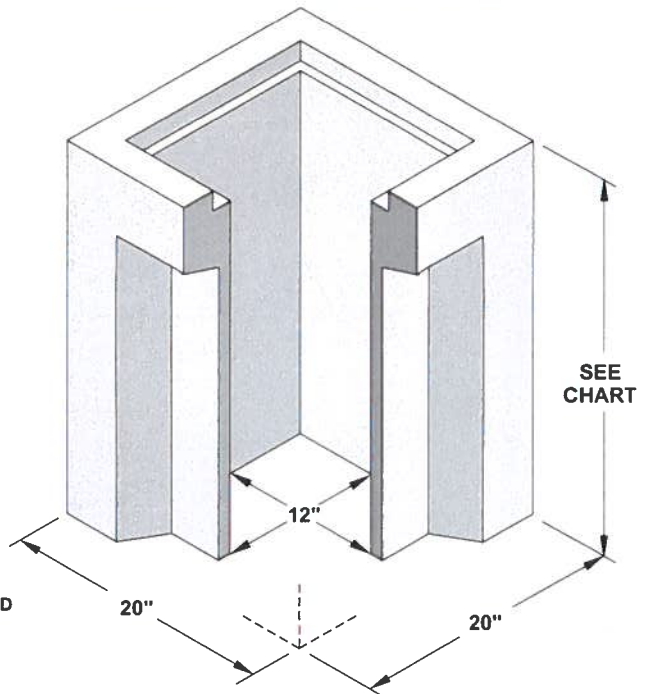
LOWER SECTION	HT.	LBS	KNOCK-OUT
1212 L12	12"	275	(4) 5" x 10"
1212 L18	18"	270	(4) 8" x 12"
1212 L24	24"	430	(4) 8" x 15"
1212 L28	28"	380	(4) 8" x 22"

1212 TOP SECTION (WITH GALVANIZED FRAME)



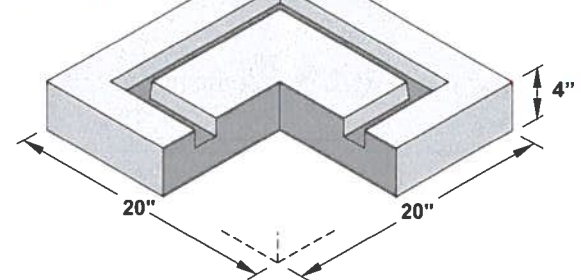
1212 LOWER SECTION (NO FRAME)

NOTE: USE 12", 18", 24", 28" LOWERS TO INCREASE DEPTH UP TO A MAXIMUM OF 72"



1212 BASE

WT. 165 lbs



12" x 12" CATCH BASIN



1212 CB

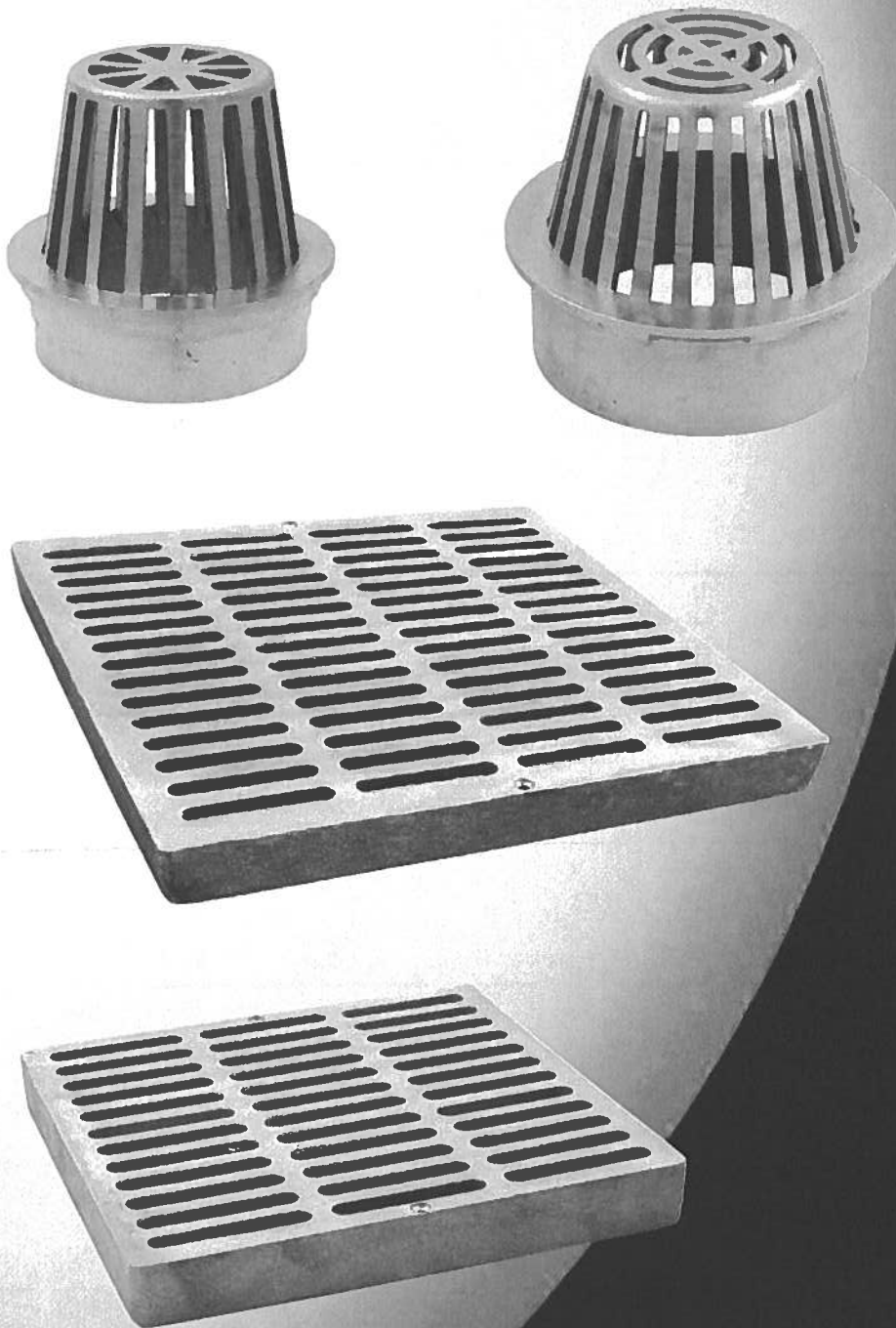
ORG. DWG. DATE 04-20-95

REV. DWG. DATE 05-18-00

7-01

Luxury Brass Grate

COLLECTION



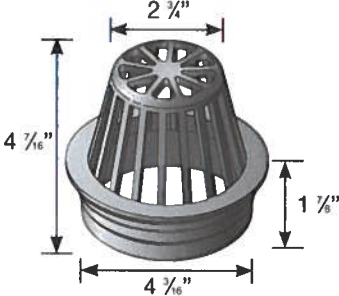
Square grates
rated Class B to
withstand light
vehicular traffic

Decorative
styling to
enhance the
look of any
landscape

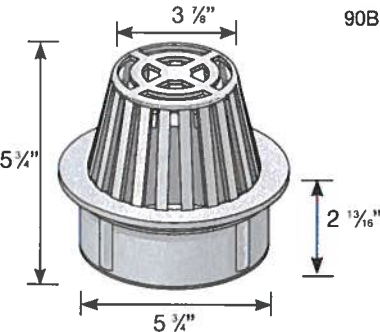
Available
nationwide
through
wholesale
distributors


Luxury Brass Grate Collection

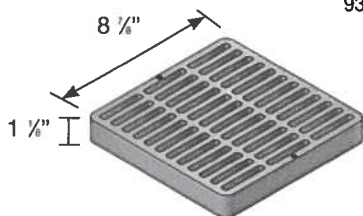
Part No.	Description	Color	Pkg. Qty.	Product Class	Specifications
78B	4" Atrium Brass Grate Fits 4" Sewer and Drain Pipe and Fittings, 4" Corrugated Pipe and 4" Triple Wall Pipe. 1/4" Grate Openings	Brass	1	15BR	Open surface area 17.00 square inches. 22.27 GPM.




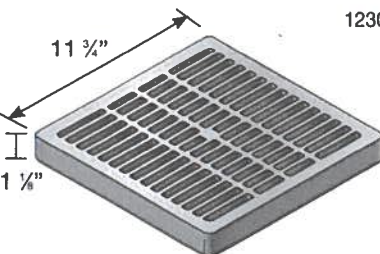
Part No.	Description	Color	Pkg. Qty.	Product Class	Specifications
90B	6" Atrium Brass Grate Fits Spee-D® Basin, 6" Sewer and Drain Pipe and Fittings, 6" Corrugated Pipe. 1/4" Grate Openings	Brass	1	15BR	Open surface area 28.40 square inches. 37.20 GPM.



Part No.	Description	Color	Pkg. Qty.	Product Class	Specifications
930B	9" Square Brass Grate Use with 9"x9" Catch Basin Series. ADA Compliant  3/16" Grate Openings	Brass	1	15BR	Open surface area 39.50 square inches. 51.75 GPM.



Part No.	Description	Color	Pkg. Qty.	Product Class	Specifications
1230B	12" x 12" Square Grate Use with 12" x 12" Catch Basin Series. ADA Compliant  3/16" Grate Openings	Brass	1	15BR	Open surface area 50.76 square inches. 66.50 GPM.



6.2010

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Lindsay, CA 93247
800-726-1994
nds@ndspro.com



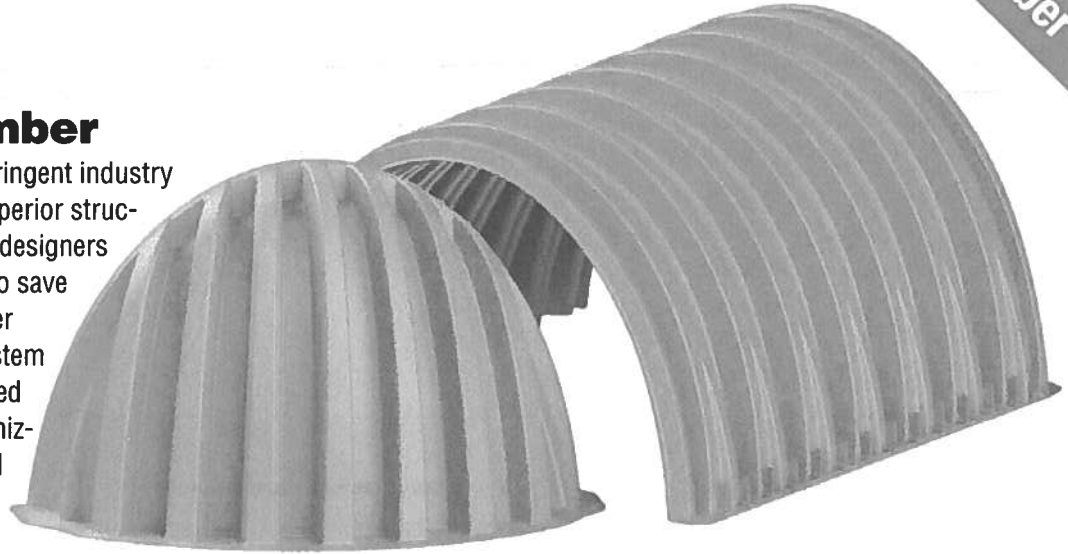
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WE PUT WATER IN ITS PLACE

StormTech MC-3500 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots thus maximizing land usage for commercial and municipal applications.



StormTech MC-3500 Chamber (not to scale)

Nominal Chamber Specifications

Size (L x W x H)	90" (2286 mm) x 77" (1956 mm) x 45" (1143 mm)
Chamber Storage	109.9 ft ³ (3.11 m ³)
Min. Installed Storage*	178.9 ft ³ (5.06 m ³)
Weight	134 lbs (60.8 kg)

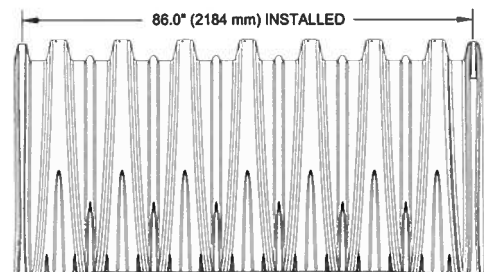
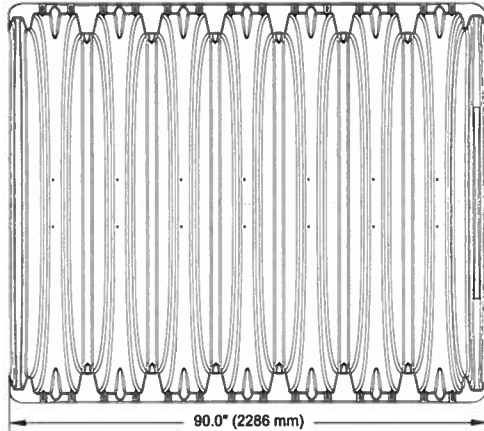
* This assumes a minimum of 12" (305 mm) of stone above, 9" (229 mm) of stone below chambers, 9" (229 mm) of row spacing, and 40% stone porosity.

Shipping

15 chambers/pallet

7 end caps/pallet

7 pallets/truck

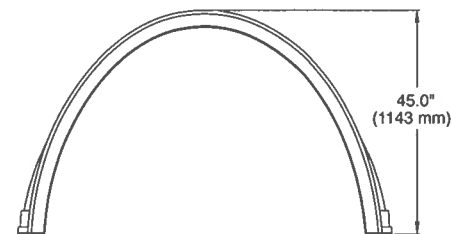
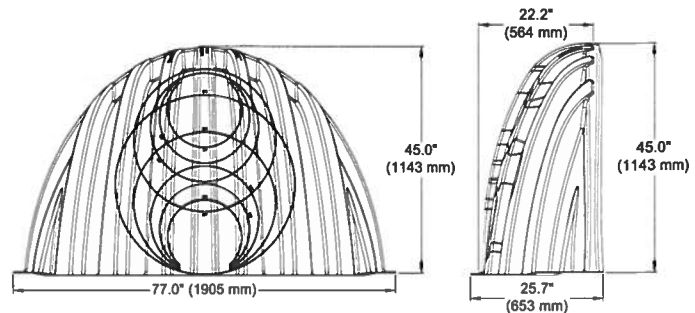


StormTech MC-3500 End Cap (not to scale)

Nominal End Cap Specifications

Size (L x W x H)	25.7" (653 mm) x 75" (1905 mm) x 45" (1143 mm)
End Cap Storage	14.9 ft ³ (0.42 m ³)
Min. Installed Storage*	46.0 ft ³ (1.30 m ³)
Weight	49 lbs (22.2 kg)

* This assumes a minimum of 12" (305mm) of stone above, 9" (229 mm) of stone below, 9" (229 mm) row spacing, 6" (152 mm) of stone perimeter, and 40% stone porosity.



Storage Volume Per Chamber/End Cap ft³ (m³)

	Bare Unit Storage ft ³ (m ³)	Chamber/End Cap and Stone Volume — Stone Foundation Depth in. (mm)			
		9 (229)	12 (305)	15 (381)	18 (457)
MC-3500 Chamber	109.9 (3.11)	178.9 (5.06)	184.0 (5.21)	189.2 (5.36)	194.3 (5.5)
MC-3500 End Cap	14.9 (0.42)	46.0 (1.33)	47.7 (1.35)	49.4 (1.40)	51.1 (1.45)

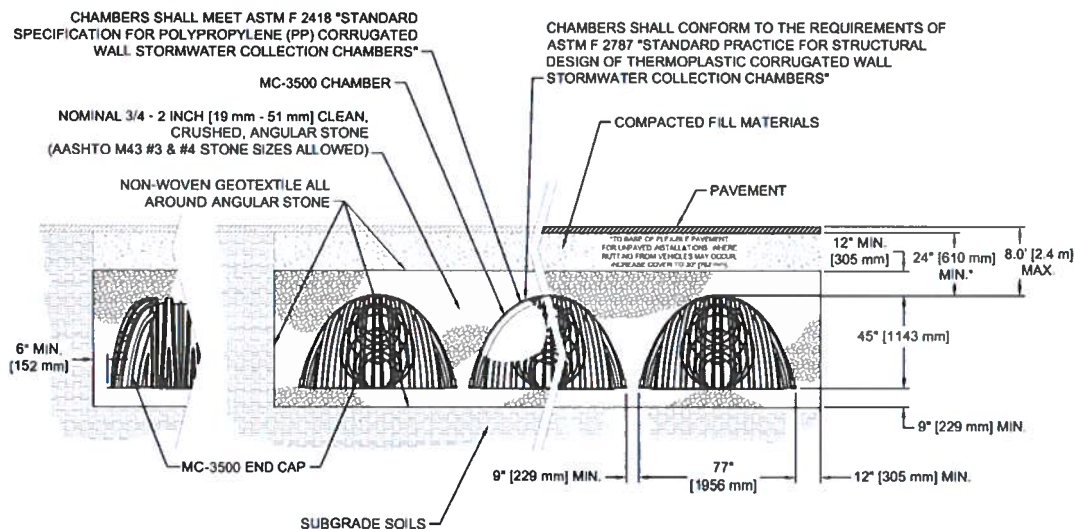
NOTE: Assumes 40% porosity for the stone plus the chamber/end cap volume. End Cap volume assumes 6" (152mm) stone perimeter.

Volume of Excavation Per Chamber/End Cap in yd³ (m³)

	Stone Foundation Depth in. (mm)			
	9 (229)	12 (305)	15 (381)	18 (457)
MC-3500	12.4 (9.5)	12.8 (9.8)	13.3 (10.2)	13.8 (10.5)
End Cap	4.1 (3.1)	4.2 (3.2)	4.4 (3.3)	4.5 (3.5)

NOTE: Assumes 9" (229 mm) of separation between chamber rows, 6" (152 mm) of perimeter in front of end caps, and 24" (610 mm) of cover. The volume of excavation will vary as depth of cover increases.

General Cross Section



NOTES:

1. THIS CROSS SECTION PROVIDES GENERAL INFORMATION FOR THE MC-3500 CHAMBER. STORMTECH MC-3500 CHAMBERS MUST BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE MC-3500 DESIGN MANUAL AND MC-3500 CONSTRUCTION GUIDE.
2. PROPERLY INSTALLED MC-3500 CHAMBERS PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR EARTH AND LIVE LOADS WITH CONSIDERATION FOR IMPACT AND MULTIPLE PRESENCES.
3. PERIMETER STONE MUST ALWAYS BE BROUGHT UP EVENLY WITH BACKFILL OF BED. PERIMETER STONE MUST EXTEND HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH STRAIGHT OR SLOPED SIDEWALLS.

Amount of Stone Per Chamber

ENGLISH tons (yd ³)	Stone Foundation Depth			
	9 in.	12 in.	15 in.	18 in.
MC-3500	9.1 (6.4)	9.7 (6.9)	10.4 (7.3)	11.1 (7.8)
End Cap	4.1 (2.9)	4.3 (3.0)	4.5 (3.2)	4.7 (3.3)
METRIC kg (m ³)	229 mm	305 mm	381 mm	457 mm
MC-3500	8220 (4.9)	8831 (5.3)	9443 (5.6)	10054 (6.0)
End Cap	3699 (2.2)	3900 (2.3)	4100 (2.4)	4301 (2.6)

NOTE: Assumes 12" (305 mm) of stone above, and 9" (229 mm) row spacing, and 6" (152mm) of perimeter stone in front of end caps.



A division of ADS

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S150909 03/2014



May 4, 2018

W.O. 284718

DMS Consultants, Inc.
12377 Lewis Street #101
Garden Grove, CA 92840

Subject: Geotechnical Engineering Investigation, Proposed
New Library Building, Lions Park, NEC 18th Street
and Park Avenue, Costa Mesa, California

Gentlemen:

Pursuant to your request, a geotechnical investigation has been performed at the subject site. The purposes of the investigation were to determine the general engineering characteristics of the soils on and underlying the site and to provide recommendations for the design of foundations and underground improvements.

PROPOSED DEVELOPMENT

It is our understanding that the exiting park will be redesigned and improved. A new Library will be constructed along with new garden.

PURPOSE AND SCOPE OF SERVICES

The scope of the study was to obtain subsurface information within the project site area and to provide recommendations pertaining to the proposed development and included the following:

1. A cursory reconnaissance of the site and surrounding areas.
2. Excavation of two exploratory hand borings to determine the subsurface soil conditions for evaluating subsurface conditions.
3. Collection of representative bulk and/or undisturbed soil samples for laboratory analysis.
4. Laboratory analyses of soil samples including determination of in-situ and maximum density, in-situ and optimum moisture content, shear strength and consolidation characteristics, expansion potential, sulfate content.
5. Preparation of this report presenting results of our investigation and recommendations for the proposed development.

SITE CONDITIONS

The area of study is approx 2.5 acre of an existing community center for the City of Costa Mesa. Site topography is essentially level.

The site is located on the attached Site Vicinity Map, Plate 1 and Aerial, Plate 1A.

FIELD INVESTIGATION

The field investigation was performed April 2018, consisting of the excavation of two hand auger borings at the locations shown on the attached Boring Location Map , Plate 2. As drilling progressed, personnel from this office visually classified the soils encountered, and secured representative samples for laboratory testing.

Description of the soils encountered is presented on the attached Boring Log, Plates 3-B1,B2. The data presented on this log is a simplification of actual subsurface conditions encountered and

applies only at the specific boring location and the date excavated. It is not warranted to be representative of subsurface conditions at other locations and times.

EARTH MATERIALS

Earth materials encountered within the exploratory test borings were visually logged by a representative from STRATA-TECH, Inc. The materials were classified as artificial fill and native soils.

Native soils consisted of clean to silty, fine grained sand, sandy silt, and silty, to the maximum depth explored.

Groundwater was not encountered in the shallow borings to 10 feet below ground surface(bgs).

Earth materials are further described on the attached boring logs.

SEISMICITY

Southern California is located in an active seismic region. Moderate to strong earthquakes can occur on numerous faults. The United States Geological Survey, California Division of Mines and Geology, private consultants, and universities have been studying earthquakes in Southern California for several decades. Early studies were directed toward earthquake prediction estimation of the effects of strong ground shaking. Studies indicate that earthquake prediction is not practical and not sufficiently accurate to benefit the general public. Governmental agencies are shifting their focus to earthquake resistant structures as opposed to prediction. The purpose of the code seismic design parameters is to prevent collapse during strong ground shaking. Cosmetic damage should be expected.

Within the past 30 years, Southern California and vicinity have experienced an increase in seismic activity beginning with the San Fernando earthquake in 1971. In 1987, a moderate earthquake struck the Whittier area and was located on a previously unknown fault. Ground shaking from this

event caused substantial damage to the City of Whittier, and surrounding cities. The January 17, 1994, Northridge earthquake was initiated along a previously unrecognized fault below the San Fernando Valley. The energy released by the earthquake propagated to the southeast, northwest, and northeast in the form of shear and compression waves, which caused the strong ground shaking in portions of the San Fernando Valley, Santa Monica Mountains, Simi Valley, City of Santa Clarita, and City of Santa Monica.

Southern California faults are classified as: active, potentially active, or inactive. Faults from past geologic periods of mountain building, but do not display any evidence of recent offset, are considered “inactive” or “potentially active”. Faults that have historically produced earthquakes or show evidence of movement within the past 11,000 years are known as “active faults”. There are no known active faults within the subject property. The nearest known active fault is the Newport-Inglewood located to the southwest.

The principal seismic hazard to the subject property and proposed project is strong ground shaking from earthquakes produced by local faults. It is likely that the subject property will be shaken by future earthquakes produced in Southern California. Secondary effects such as surface rupture, lurching, lateral spread or flooding are not considered probable. Liquefaction and seismically induced settlement are discussed in the following sections of this report.

CONCLUSIONS AND RECOMMENDATIONS

Development of the site as proposed is considered feasible from a soils engineering standpoint, provided that the recommendations stated herein are incorporated in the design and are implemented in the field. Recommendations are subject to change based on review of final foundation and grading plans.

To provide moderate risk from potential seismic settlement effects due to a catastrophic earthquake, the structure may be placed on compacted soil to reduce the effects of differential settlement. The foundation shall be continuous or tied together with grade beams. The foundation shall be reinforced with a minimum of four No. 4 bars, two top and two bottom, concrete slabs shall be a minimum of 4-inch actual thickness with No. 3 bars 18 inches on center each way, and shall be tied into foundations. These are minimum geotechnical recommendations. Additionally, the structural engineer shall utilize the newest seismic building codes in design.

Since surface soils will be disturbed due to removal of the existing structures, It is recommended that the proposed building/s be entirely supported by compacted fill. A minimum of 2 foot compacted fill blanket below the bottom of footings is recommended.

For minor structures like property line walls or retaining walls less than 4 feet high, competent native soils or compacted fill may be used.

PROPOSED GRADING

Grading plans were not available at the time our work was performed. It is assumed that proposed grades will not differ significantly from existing grades. The following recommendations are subject to change based on review of final grading plans.

GRADING RECOMMENDATIONS

Removal and recompaction of existing fill and loose native soils will be required to provide adequate support for foundations and slabs on grade.

Earthwork for foundation support shall include the entire building pad and shall extend a minimum of five feet outside exterior footing lines.

Removals shall extend downward into competent earth materials or to at least two feet below proposed footing bottoms, whichever is deeper. Average removal depth is estimated at 4 feet. The exposed excavation bottom shall be observed and approved by STRATA-TECH, Inc. prior to processing. Dependent on field observations, removals may be adjusted up or down.

Subsequent to approval of the excavation bottom, the area shall be scarified six inches, moisture conditioned as needed, and compacted to a minimum of 90% relative compaction.

Fill soils shall be placed in six to eight inch loose lifts, moisture conditioned as needed, and compacted to a minimum of 90% relative compaction. This process shall be utilized to finish grade.

Grading for hardscape areas shall consist of removal and recompaction of soft surficial soils. Removal depths are estimated at one to two feet. Earthwork shall be performed in accordance with previously specified methods.

Grading and/or foundation plans shall be reviewed by the soil engineer. All recommendations are subject to modification upon review of such plans.

FOUNDATIONS ON COMPACTED FILL

The proposed building may be supported by continuous spread placed a minimum depth of 18 inches below lowest adjacent grade utilizing an allowable bearing value of 2,000 pounds per square foot. This value is for dead plus live load and may be increased 1/3 for total including seismic and wind loads where allowed by code.

Type	Minimum Depth (inches)	Minimum Width (inches)	Bearing Value (psf)	Increase		Maximum (psf)
				Width	Depth	
				(psf/ft)	(psf/ft)	
Continuous	24	16	2000	180	440	3500
Interior	18	24	2000	180	440	3500

It is recommended that all footings be reinforced with a minimum of two no. 4 bars (2 top and 2 bottom). The structural engineer's reinforcing requirements should be followed if more stringent.

Footing excavations shall be observed by a representative of STRATA-TECH, Inc. prior to placement of steel or concrete to verify competent soil conditions. If unacceptable soil conditions are exposed mitigation will be recommended.

FOUNDATIONS ON COMPETENT NATIVE SOILS – for Minor Structures

Minor structures may be supported by continuous spread footings placed a minimum depth of 18 inches below lowest adjacent grade and 12-inches into competent natural soil utilizing an allowable bearing value of 1,500 pounds per square foot. This value is for dead plus live load and may be increased 1/3 for total including seismic and wind loads where allowed by code.

Footing excavations shall be observed by a representative of STRATA-TECH, Inc. prior to placement of steel or concrete to verify competent soil conditions. If unacceptable soil conditions are exposed, mitigation will be recommended.

LATERAL DESIGN

Lateral restraint at the base of footings and on slabs may be assumed to be the product of the dead load and a coefficient of friction of .35. Passive pressure on the face of footings may also be used to resist lateral forces. A passive pressure of zero (0) at the surface of finished grade, increasing at the rate of 350 pounds per square foot of depth to a maximum value of 3500 pounds per square foot, may be used for compacted fill or native soils at this site. If passive pressure and friction are combined for evaluating the lateral resistance, the value of the passive pressure should be limited to 2/3 of the values given above.

EXPANSIVE SOILS

Results of expansion tests indicate that the near surface soils have a low to very low expansion potential.

**Building Code Reference Document 2009 NEHRP Recommended Seismic Provisions
(which utilizes USGS hazard data available in 2008)**

- Site Coordinates 33.6403°N, 117.9221°W
- Site Soil Classification Site Class D – “Stiff Soil”
- Risk Category I/II/III ↓

USGS–Provided Output

$S_S =$	1.674g	$S_{MS} =$	1.674 g	$S_{DS} =$	1.116 g
$S_1 =$	0.616 g	$S_{M1} =$	0.924 g	$S_{D1} =$	0.616 g

- Mapped PGA $PGA = 0.678$ g
- Equation (11.8–1): $PGA_M = F_{PGA}PGA = 1.000 \times 0.678 = 0.678$ g

SETTLEMENT

The maximum total post-construction settlement is anticipated to be on the order of 1/2 inch. Differential settlements are expected to be less than 1/2 inch, measured between adjacent structural elements.

FLOOR SLABS

The surface soils are non-plastic.

If a slab on grade is utilized, the slab shall be supported on engineered fill compacted to a minimum of 90% relative compaction and underlain by a minimum of 4 inches clean sand with $SE > 30$. Slabs should be reinforced with at least No. 3 bars 18 inches on center both ways.

The soil should be kept moist prior to casting the slab. However, if the soils at grade become disturbed during construction, they should be brought to approximately optimum moisture content and rolled to a firm, unyielding condition prior to placing concrete.

In areas where a moisture sensitive floor covering will be used, a vapor barrier consisting of a plastic film (6 mil polyvinyl chloride or equivalent) should be used. The vapor barrier should be properly lapped and sealed. Since the vapor barrier will prevent moisture from draining from fresh concrete, a better concrete finish can usually be obtained if at least two inches of sand is spread over the vapor barrier prior to placement of concrete.

UTILITY LINE BACKFILLS

All utility line backfills, both interior and exterior, shall be compacted to a minimum of 90% relative compaction and shall require testing at a maximum of two foot vertical intervals.

HARDSCAPE AND SLABS

Hardscape and slab subgrade areas shall exhibit a minimum of 90% relative compaction to a depth of at least one foot. Deeper removal and recompaction may be required if unacceptable conditions are encountered. These areas require testing just prior to placing concrete.

CHEMICAL ANALYSIS

A representative, onsite soil sample has been analyzed for soluble sulfates, soluble chloride, minimum resistivity and PH. Type II concrete may be utilized for the foundation system. Concrete design and placement shall be in accordance with appropriate codes. The soils are

considered corrosive to metal pipes. All metal pipes must be wrapped. The Chemical Series Results are presented in Appendix A of this report.

DRAINAGE

Positive drainage should be planned for the site. Minimum drainage should be two percent for landscape areas and one percent for hardscape. Drainage should be directed away from structures via non-erodible conduits to suitable disposal areas. The structure should utilize roof gutters and down spouts tied directly to yard drainage.

Unlined flower beds, planters, and lawns should not be constructed against the perimeter of the structure. If such landscaping (against the perimeter of a structure) is planned, it should be properly drained and lined or provided with an underground moisture barrier. Irrigation should be kept to a minimum.

ENGINEERING CONSULTATION, TESTING & OBSERVATION

We will be pleased to provide additional input with respect to foundation design once methods of construction and/or nature of imported soil has been determined.

Grading and foundation plans should be reviewed by this office prior to commencement of grading so that appropriate recommendations, if needed, can be made.

Areas to receive fill should be inspected when unsuitable materials have been removed and prior to placement of fill, and fill should be observed and tested for compaction as it is placed.

AGENCY REVIEW

All soil, geologic and structural aspects of the proposed development are subject to the review and approval of the governing agency (s). It should be recognized that the governing agency (s) can dictate the manner in which the project proceeds. They could approve or deny any aspect of the

proposed improvements and/or could dictate which foundation and grading options are acceptable. Supplemental geotechnical consulting in response to agency requests for additional information could be required and will be charged on a time and materials basis.

LIMITATIONS

This report presents recommendations pertaining to the subject site based on the assumption that the subsurface conditions do not deviate appreciably from those disclosed by our exploratory excavations. Our recommendations are based on the technical information, our understanding of the proposed construction, and our experience in the geotechnical field. We do not guarantee the performance of the project, only that our engineering work and judgments meet the standard of care of our profession at this time.

In view of the general conditions in the area, the possibility of different local soil conditions may exist. Any deviation or unexpected condition observed during construction should be brought to the attention of the Geotechnical Engineer. In this way, any supplemental recommendations can be made with a minimum of delay necessary to the project.

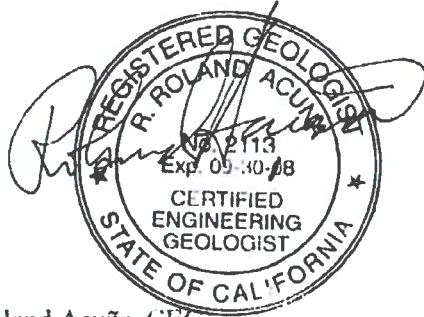
If the proposed construction will differ from our present understanding of the project, the existing information and possibly new factors may have to be evaluated. Any design changes and the finished plans should be reviewed by the Geotechnical Consultant. Of particular importance would be extending development to new areas, changes in structural loading conditions, postponed development for more than a year, or changes in ownership.

This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans and that the necessary steps are taken to see that the contractors and subcontractors carry out such recommendations in the field.

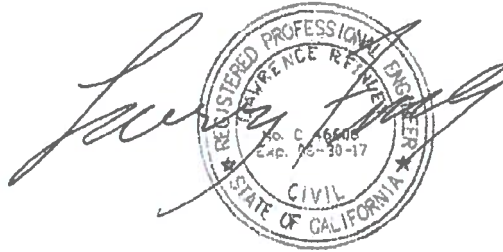
This report is subject to review by the controlling authorities for this project.

We appreciate this opportunity to be of service to you.

Respectfully submitted:
STRATA-TECH, INC.



Roland Acuña, CEG
President

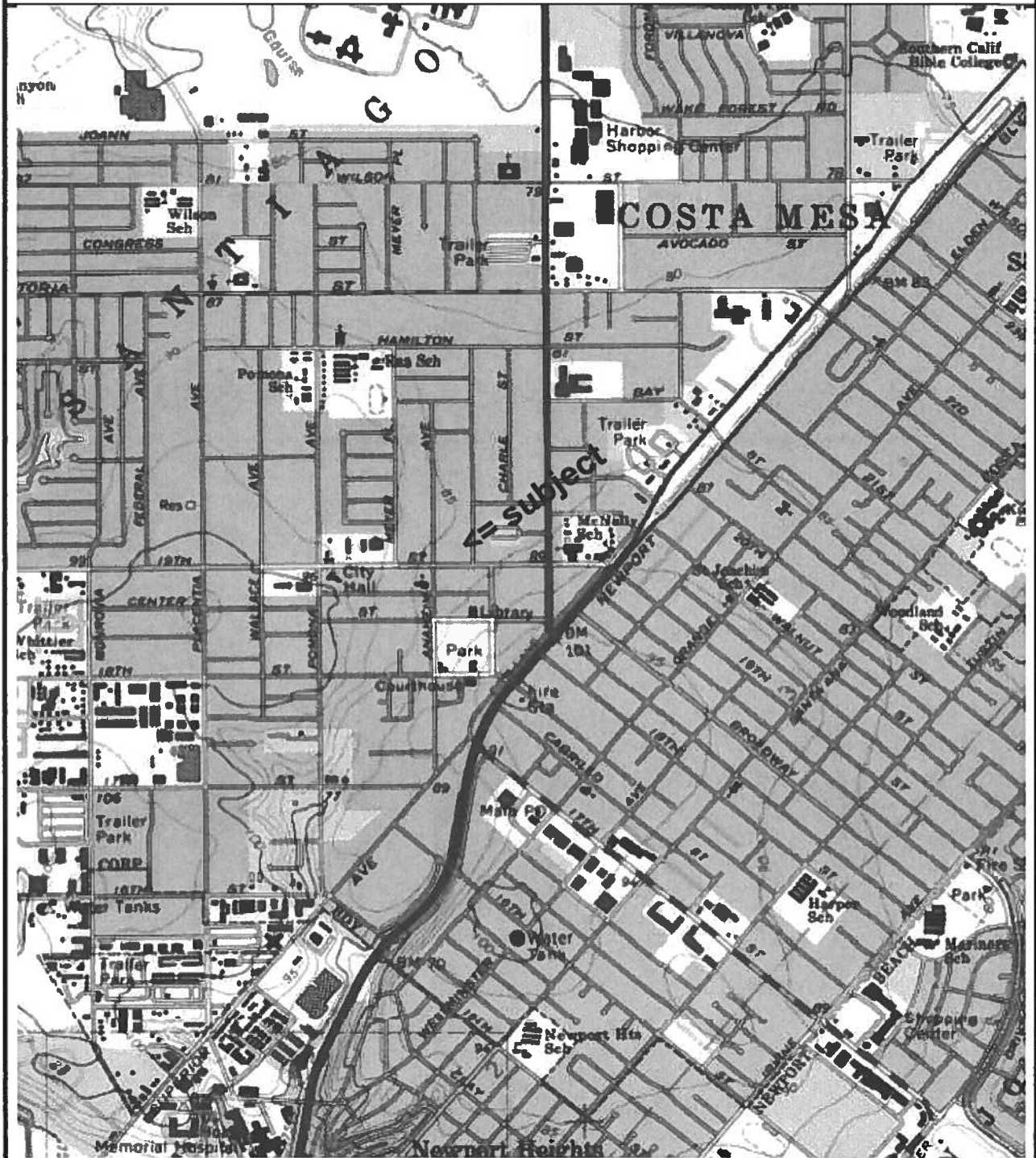


Larry Finley, RCE 46606

Enclosure(s)

- Plate No. 1 – Vicinity Map,
- Plate No. 2 – Site Plan
- Plates No. 3 – Boring Logs
- Plate No. 4 – Shear Test

VICINITY AERIAL MAP



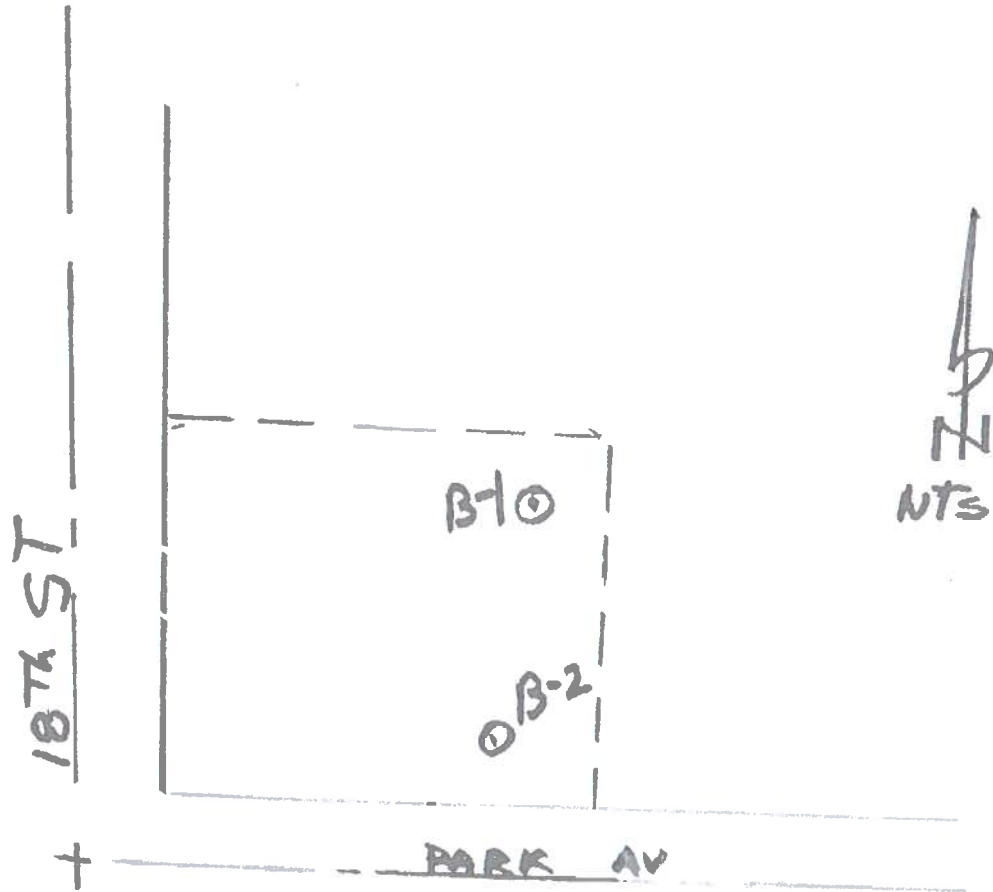
Preliminary Geotechnical Investigation
Lions Park
Costa Mesa, California

Work Order 284718

Plate No. 1

STRATA - TECH, INC.

PLOT PLAN



⊙ = App Loc. of BORING

Preliminary Geotechnical Investigation
Lions Park
Costa Nesa, California

Work Order 284718

Plate No. 1

STRATA - TECH, INC.

APPENDIX A

This appendix contains a description of the field investigation, laboratory testing procedures and results, site plan, and exploratory logs.

LABORATORY TESTING

Field samples were examined in the laboratory and a testing program was then established to develop data for preliminary evaluation of geotechnical conditions.

Sample Retrieval-

Undisturbed samples of earth materials were obtained at frequent intervals by driving a thin-walled steel sampler with a sampling hammer. The material was retained in brass rings of 2.41 inches inside diameter and 1.00 inch height. The central portion of the sample was in close-fitting, watertight containers for transportation to the laboratory.

Descriptions of the soils encountered are presented on the attached boring Logs. The data presented on these logs is a simplification of actual subsurface conditions encountered and applies only at the specific boring location and the date excavated. It is not warranted to be representative of subsurface conditions at other locations and times.

Laboratory Testing

Field samples were examined in the laboratory and a testing program was then established to develop data for preliminary evaluation of geotechnical conditions.

Moisture Density

Field moisture content and dry density were determined for each of the undisturbed soil samples. The dry density was determined in pounds per cubic foot. The moisture content was determined as a percentage of the dry soil weight. The results of the tests are shown in the test results section of this appendix.

Compaction Character

Compaction tests were performed on bulk sample of the existing soil in accordance with ASTM D1557. The results of the tests are shown in the test results section of this appendix.

Shear Strength

The ultimate shear strength of the fill soil, remolded to 90-percent of the laboratory standard was determined by performing a direct shear test. The test was performed in a strain-controlled machine manufactured by GeoMatic. The rate of deformation was 0.005 inches per minute. Samples were sheared under varying confining pressure, as shown on the "Shear Test Diagrams". The samples indicated as saturated were artificially saturated in the laboratory and were shear under submerged conditions. The results of tests are based on 80 percent peak strength or ultimate strength, whichever is lower, and are attached.

TEST RESULTS

Maximum Density/Optimum Moisture (ASTM:D-1557)

Boring	Depth in Feet	Maximum Density (pcf)	Optimum Moisture (%)
2	2 - 4	116.0	9.0

Direct Shear

Boring	Depth in Feet	Cohesion (psf)	Angle of Internal Friction (degrees)
1	2	120	24

Expansion Index (U.B.C. Standard 18-2)

Boring	Depth in Feet	Expansion Index	Expansion Potential
1	3 - 4	25	Low
2	0 - 1.5	34	Low

Chemical Analysis

Boring	Depth (feet)	Soluble Sulfate	Soluble Chlorides	Minimum Resistivity	PH
1	2	168	180	1523	7.5



May 4, 2018

W.O. 284718

DMS Consultants, Inc.
12377 Lewis Street #101
Garden Grove, CA 92840

Subject: Geotechnical Engineering Investigation, Proposed
New Library Building, Lions Park, NEC 18th Street
and Park Avenue, Costa Mesa, California

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Earth materials are further described on the attached boring logs.

SEISMICITY

Southern California is located in an active seismic region. Moderate to strong earthquakes can occur on numerous faults. The United States Geological Survey, California Division of Mines and Geology, private consultants, and universities have been studying earthquakes in Southern California for several decades. Early studies were directed toward earthquake prediction estimation of the effects of strong ground shaking. Studies indicate that earthquake prediction is not practical and not sufficiently accurate to benefit the general public. Governmental agencies are shifting their focus to earthquake resistant structures as opposed to prediction. The purpose of the code seismic design parameters is to prevent collapse during strong ground shaking. Cosmetic damage should be expected.

Within the past 30 years, Southern California and vicinity have experienced an increase in seismic activity beginning with the San Fernando earthquake in 1971. In 1987, a moderate earthquake struck the Whittier area and was located on a previously unknown fault. Ground shaking from this

event caused substantial damage to the City of Whittier, and surrounding cities. The January 17, 1994, Northridge earthquake was initiated along a previously unrecognized fault below the San Fernando Valley. The energy released by the earthquake propagated to the southeast, northwest, and northeast in the form of shear and compression waves, which caused the strong ground shaking in portions of the San Fernando Valley, Santa Monica Mountains, Simi Valley, City of Santa Clarita, and City of Santa Monica.

Southern California faults are classified as: active, potentially active, or inactive. Faults from past geologic periods of mountain building, but do not display any evidence of recent offset, are considered “inactive” or “potentially active”. Faults that have historically produced earthquakes or show evidence of movement within the past 11,000 years are known as “active faults”. There are no known active faults within the subject property. The nearest known active fault is the Newport-Inglewood located to the southwest.

The principal seismic hazard to the subject property and proposed project is strong ground shaking from earthquakes produced by local faults. It is likely that the subject property will be shaken by future earthquakes produced in Southern California. Secondary effects such as surface rupture, lurching, lateral spread or flooding are not considered probable. Liquefaction and seismically induced settlement are discussed in the following sections of this report.

CONCLUSIONS AND RECOMMENDATIONS

Development of the site as proposed is considered feasible from a soils engineering standpoint, provided that the recommendations stated herein are incorporated in the design and are implemented in the field. Recommendations are subject to change based on review of final foundation and grading plans.

To provide moderate risk from potential seismic settlement effects due to a catastrophic earthquake, the structure may be placed on compacted soil to reduce the effects of differential settlement. The foundation shall be continuous or tied together with grade beams. The foundation shall be reinforced with a minimum of four No. 4 bars, two top and two bottom, concrete slabs shall be a minimum of 4-inch actual thickness with No. 3 bars 18 inches on center each way, and shall be tied into foundations. These are minimum geotechnical recommendations. Additionally, the structural engineer shall utilize the newest seismic building codes in design.

Since surface soils will be disturbed due to removal of the existing structures, It is recommended that the proposed building/s be entirely supported by compacted fill. A minimum of 2 foot compacted fill blanket below the bottom of footings is recommended.

For minor structures like property line walls or retaining walls less than 4 feet high, competent native soils or compacted fill may be used.

PROPOSED GRADING

Grading plans were not available at the time our work was performed. It is assumed that proposed grades will not differ significantly from existing grades. The following recommendations are subject to change based on review of final grading plans.

GRADING RECOMMENDATIONS

Removal and recompaction of existing fill and loose native soils will be required to provide adequate support for foundations and slabs on grade.

Earthwork for foundation support shall include the entire building pad and shall extend a minimum of five feet outside exterior footing lines.

Removals shall extend downward into competent earth materials or to at least two feet below proposed footing bottoms, whichever is deeper. Average removal depth is estimated at 4 feet. The exposed excavation bottom shall be observed and approved by STRATA-TECH, Inc. prior to processing. Dependent on field observations, removals may be adjusted up or down.

Subsequent to approval of the excavation bottom, the area shall be scarified six inches, moisture conditioned as needed, and compacted to a minimum of 90% relative compaction.

Fill soils shall be placed in six to eight inch loose lifts, moisture conditioned as needed, and compacted to a minimum of 90% relative compaction. This process shall be utilized to finish grade.

Grading for hardscape areas shall consist of removal and recompaction of soft surficial soils. Removal depths are estimated at one to two feet. Earthwork shall be performed in accordance with previously specified methods.

Grading and/or foundation plans shall be reviewed by the soil engineer. All recommendations are subject to modification upon review of such plans.

FOUNDATIONS ON COMPACTED FILL

The proposed building may be supported by continuous spread placed a minimum depth of 18 inches below lowest adjacent grade utilizing an allowable bearing value of 2,000 pounds per square foot. This value is for dead plus live load and may be increased 1/3 for total including seismic and wind loads where allowed by code.

Type	Minimum Depth (inches)	Minimum Width (inches)	Bearing Value (psf)	Increase		Maximum (psf)
				Width	Depth	
				(psf/ft)	(psf/ft)	
Continuous	24	16	2000	180	440	3500
Interior	18	24	2000	180	440	3500

It is recommended that all footings be reinforced with a minimum of two no. 4 bars (2 top and 2 bottom). The structural engineer's reinforcing requirements should be followed if more stringent.

Footing excavations shall be observed by a representative of STRATA-TECH, Inc. prior to placement of steel or concrete to verify competent soil conditions. If unacceptable soil conditions are exposed mitigation will be recommended.

FOUNDATIONS ON COMPETENT NATIVE SOILS – for Minor Structures

Minor structures may be supported by continuous spread footings placed a minimum depth of 18 inches below lowest adjacent grade and 12-inches into competent natural soil utilizing an allowable bearing value of 1,500 pounds per square foot. This value is for dead plus live load and may be increased 1/3 for total including seismic and wind loads where allowed by code.

Footing excavations shall be observed by a representative of STRATA-TECH, Inc. prior to placement of steel or concrete to verify competent soil conditions. If unacceptable soil conditions are exposed, mitigation will be recommended.

LATERAL DESIGN

Lateral restraint at the base of footings and on slabs may be assumed to be the product of the dead load and a coefficient of friction of .35. Passive pressure on the face of footings may also be used to resist lateral forces. A passive pressure of zero (0) at the surface of finished grade, increasing at the rate of 350 pounds per square foot of depth to a maximum value of 3500 pounds per square foot, may be used for compacted fill or native soils at this site. If passive pressure and friction are combined for evaluating the lateral resistance, the value of the passive pressure should be limited to 2/3 of the values given above.

EXPANSIVE SOILS

Results of expansion tests indicate that the near surface soils have a low to very low expansion potential.

**Building Code Reference Document 2009 NEHRP Recommended Seismic Provisions
(which utilizes USGS hazard data available in 2008)**

- Site Coordinates 33.6403°N, 117.9221°W
- Site Soil Classification Site Class D – “Stiff Soil”
- Risk Category I/II/III ↓

USGS–Provided Output

$S_S =$	1.674g	$S_{MS} =$	1.674 g	$S_{DS} =$	1.116 g
$S_1 =$	0.616 g	$S_{M1} =$	0.924 g	$S_{D1} =$	0.616 g

- **Mapped PGA $PGA = 0.678 g$**
- **Equation (11.8–1): $PGA_M = F_{PGA}PGA = 1.000 \times 0.678 = 0.678 g$**

SETTLEMENT

The maximum total post-construction settlement is anticipated to be on the order of 1/2 inch. Differential settlements are expected to be less than 1/2 inch, measured between adjacent structural elements.

FLOOR SLABS

The surface soils are non-plastic.

If a slab on grade is utilized, the slab shall be supported on engineered fill compacted to a minimum of 90% relative compaction and underlain by a minimum of 4 inches clean sand with $SE > 30$. Slabs should be reinforced with at least No. 3 bars 18 inches on center both ways.

The soil should be kept moist prior to casting the slab. However, if the soils at grade become disturbed during construction, they should be brought to approximately optimum moisture content and rolled to a firm, unyielding condition prior to placing concrete.

In areas where a moisture sensitive floor covering will be used, a vapor barrier consisting of a plastic film (6 ml polyvinyl chloride or equivalent) should be used. The vapor barrier should be properly lapped and sealed. Since the vapor barrier will prevent moisture from draining from fresh concrete, a better concrete finish can usually be obtained if at least two inches of sand is spread over the vapor barrier prior to placement of concrete.

UTILITY LINE BACKFILLS

All utility line backfills, both interior and exterior, shall be compacted to a minimum of 90% relative compaction and shall require testing at a maximum of two foot vertical intervals.

HARDSCAPE AND SLABS

Hardscape and slab subgrade areas shall exhibit a minimum of 90% relative compaction to a depth of at least one foot. Deeper removal and recompaction may be required if unacceptable conditions are encountered. These areas require testing just prior to placing concrete.

CHEMICAL ANALYSIS

A representative, onsite soil sample has been analyzed for soluble sulfates, soluble chloride, minimum resistivity and PH. Type II concrete may be utilized for the foundation system. Concrete design and placement shall be in accordance with appropriate codes. The soils are

considered corrosive to metal pipes. All metal pipes must be wrapped. The Chemical Series Results are presented in Appendix A of this report.

DRAINAGE

Positive drainage should be planned for the site. Minimum drainage should be two percent for landscape areas and one percent for hardscape. Drainage should be directed away from structures via non-erodible conduits to suitable disposal areas. The structure should utilize roof gutters and down spouts tied directly to yard drainage.

Unlined flower beds, planters, and lawns should not be constructed against the perimeter of the structure. If such landscaping (against the perimeter of a structure) is planned, it should be properly drained and lined or provided with an underground moisture barrier. Irrigation should be kept to a minimum.

ENGINEERING CONSULTATION, TESTING & OBSERVATION

We will be pleased to provide additional input with respect to foundation design once methods of construction and/or nature of imported soil has been determined.

Grading and foundation plans should be reviewed by this office prior to commencement of grading so that appropriate recommendations, if needed, can be made.

Areas to receive fill should be inspected when unsuitable materials have been removed and prior to placement of fill, and fill should be observed and tested for compaction as it is placed.

AGENCY REVIEW

All soil, geologic and structural aspects of the proposed development are subject to the review and approval of the governing agency (s). It should be recognized that the governing agency (s) can dictate the manner in which the project proceeds. They could approve or deny any aspect of the

proposed improvements and/or could dictate which foundation and grading options are acceptable. Supplemental geotechnical consulting in response to agency requests for additional information could be required and will be charged on a time and materials basis.

LIMITATIONS

This report presents recommendations pertaining to the subject site based on the assumption that the subsurface conditions do not deviate appreciably from those disclosed by our exploratory excavations. Our recommendations are based on the technical information, our understanding of the proposed construction, and our experience in the geotechnical field. We do not guarantee the performance of the project, only that our engineering work and judgments meet the standard of care of our profession at this time.

In view of the general conditions in the area, the possibility of different local soil conditions may exist. Any deviation or unexpected condition observed during construction should be brought to the attention of the Geotechnical Engineer. In this way, any supplemental recommendations can be made with a minimum of delay necessary to the project.

If the proposed construction will differ from our present understanding of the project, the existing information and possibly new factors may have to be evaluated. Any design changes and the finished plans should be reviewed by the Geotechnical Consultant. Of particular importance would be extending development to new areas, changes in structural loading conditions, postponed development for more than a year, or changes in ownership.

This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans and that the necessary steps are taken to see that the contractors and subcontractors carry out such recommendations in the field.

This report is subject to review by the controlling authorities for this project.

We appreciate this opportunity to be of service to you.

Respectfully submitted:

STRATA-TECH, INC.



Roland Acuña, CEG
President



Larry Finley, RCE 46606

Enclosure(s)

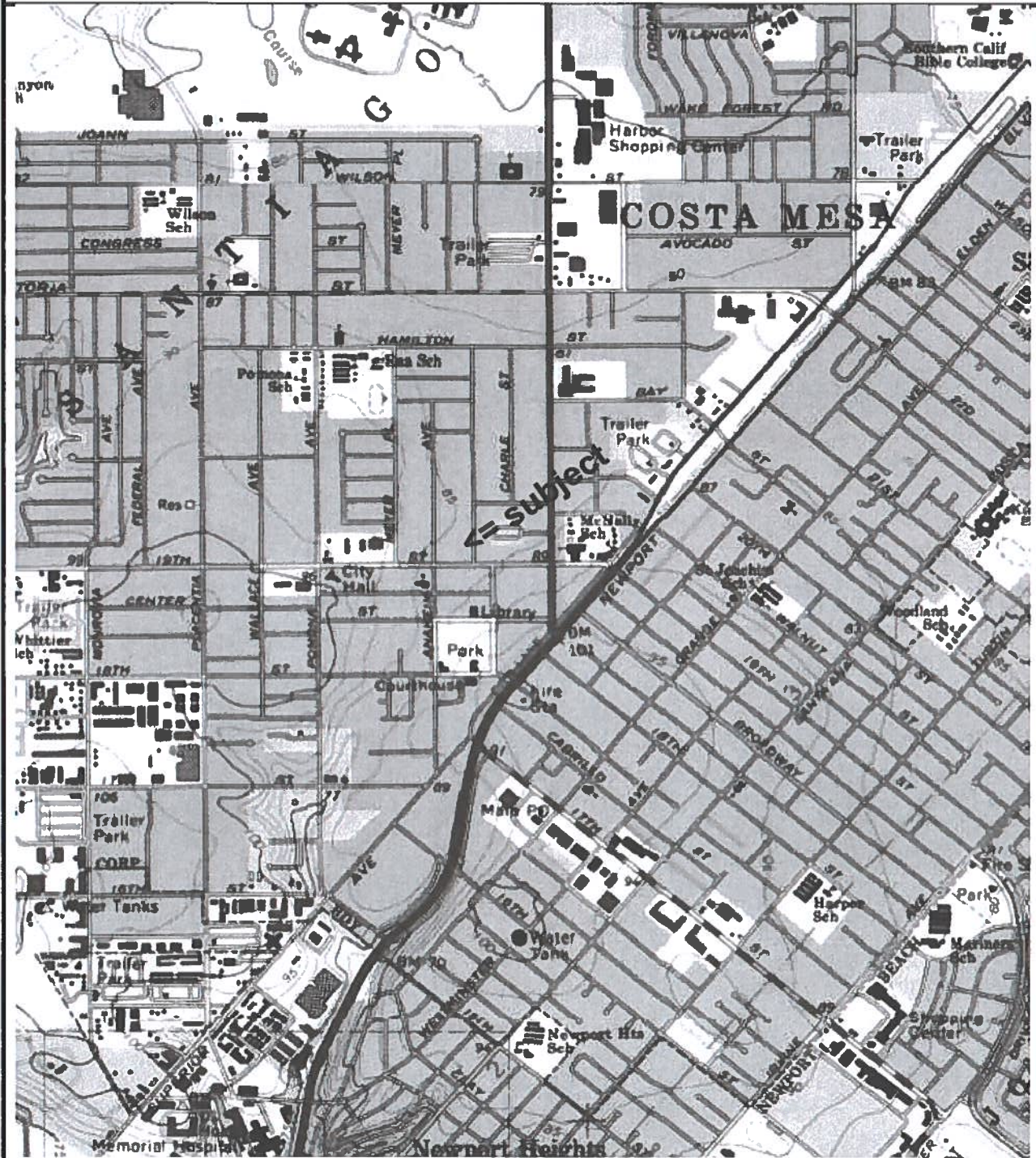
Plate No. 1 – Vicinity Map,

Plate No. 2 – Site Plan

Plates No. 3 – Boring Logs

Plate No. 4 – Shear Test

VICINITY AERIAL MAP



Preliminary Geotechnical Investigation

Lions Park

Costa Mesa, California

Work Order 284718

Plate No. 1

STRATA - TECH, INC.

PLOT PLAN



⊙ = APP. LOC. OF BORING

Preliminary Geotechnical Investigation
Lions Park
Costa Nesa, California

Work Order 284718

Plate No. 1

STRATA - TECH, INC.

APPENDIX A

This appendix contains a description of the field investigation, laboratory testing procedures and results, site plan, and exploratory logs.

LABORATORY TESTING

Field samples were examined in the laboratory and a testing program was then established to develop data for preliminary evaluation of geotechnical conditions.

Sample Retrieval-

Undisturbed samples of earth materials were obtained at frequent intervals by driving a thin-walled steel sampler with a sampling hammer. The material was retained in brass rings of 2.41 inches inside diameter and 1.00 inch height. The central portion of the sample was in close-fitting, watertight containers for transportation to the laboratory.

Descriptions of the soils encountered are presented on the attached boring Logs. The data presented on these logs is a simplification of actual subsurface conditions encountered and applies only at the specific boring location and the date excavated. It is not warranted to be representative of subsurface conditions at other locations and times.

Laboratory Testing

Field samples were examined in the laboratory and a testing program was then established to develop data for preliminary evaluation of geotechnical conditions.

Moisture Density

Field moisture content and dry density were determined for each of the undisturbed soil samples. The dry density was determined in pounds per cubic foot. The moisture content was determined as a percentage of the dry soil weight. The results of the tests are shown in the test results section of this appendix.

Compaction Character

Compaction tests were performed on bulk sample of the existing soil in accordance with ASTM D1557. The results of the tests are shown in the test results section of this appendix.

Shear Strength

The ultimate shear strength of the fill soil, remolded to 90-percent of the laboratory standard was determined by performing a direct shear test. The test was performed in a strain-controlled machine manufactured by GeoMatic. The rate of deformation was 0.005 inches per minute. Samples were sheared under varying confining pressure, as shown on the "Shear Test Diagrams". The samples indicated as saturated were artificially saturated in the laboratory and were shear under submerged conditions. The results of tests are based on 80 percent peak strength or ultimate strength, whichever is lower, and are attached.

TEST RESULTS

Maximum Density/Optimum Moisture (ASTM:D-1557)

Boring	Depth in Feet	Maximum Density (pcf)	Optimum Moisture (%)
2	2 - 4	116.0	9.0

Direct Shear

Boring	Depth in Feet	Cohesion (psf)	Angle of Internal Friction (degrees)
1	2	120	24

Expansion Index (U.B.C. Standard 18-2)

Boring	Depth in Feet	Expansion Index	Expansion Potential
1	3 - 4	25	Low
2	0 - 1.5	34	Low

Chemical Analysis

Boring	Depth (feet)	Soluble Sulfate	Soluble Chlorides	Minimum Resistivity	PH
1	2	168	180	1523	7.5



WQ XX-XXXX

**County of Orange/Santa Ana Region
Priority Project
Water Quality Management Plan
(WQMP)**

Project Name:

Lions Park Improvements

570 W. 18TH STREET, COSTA MESA, CA 92627

Prepared for:

City of Costa Mesa

77 Fair Drive

Costa Mesa, CA 92626

(714) 754-5000

Prepared by:

DMS Consultants, Inc.

12371 Lewis Street, Suite 203

Garden Grove, CA 92840

(714) 740-8840

Surrender@DMSConsultantsInc.com

July 23, 2020

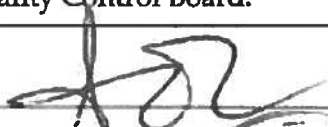
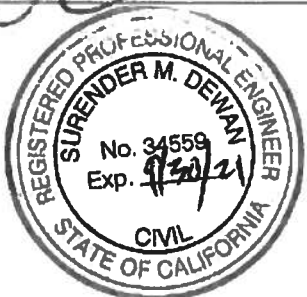
Project Owner's Certification			
Planning Application No. (If applicable)		Grading Permit No.	
Tract/Parcel Map and Lot(s) No.		Building Permit No.	
Address of Project Site and APN (If no address, specify Tract/Parcel Map and Lot Numbers)			

This Water Quality Management Plan (WQMP) has been prepared for the City of Costa Mesa by DMS Consultants, Inc. The WQMP is intended to comply with the requirements of the County of Orange NPDES Stormwater Program requiring the preparation of the plan.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan, including the ongoing operation and maintenance of all best management practices (BMPs), and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated Cities of Orange County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement and amend the WQMP. An appropriate number of approved and signed copies of this document shall be available on the subject site in perpetuity.

Owner:		
Title		
Company	City of Costa Mesa	
Address	77 Fair Drive	
Email		
Telephone #	(714) 754-5000	
I understand my responsibility to implement the provisions of this WQMP including the ongoing operation and maintenance of the best management practices (BMPs) described herein.		
Owner Signature		Date

Water Quality Management Plan (WQMP)
Lion Park Improvements

Preparer (Engineer):			
Title	Surender Dewan, President	PE Registration #	34559
Company	DMS Consultants, Inc.		
Address	12371 Lewis Street, Suite 203, Garden Grove, CA 92840		
Email	Surender@DMSConsultantsInc.com		
Telephone #	(714) 740-8840		
I hereby certify that this Water Quality Management Plan is in compliance with, and meets the requirements set forth in, Order No. R8-2009-0030/NPDES No. CAS618030, of the Santa Ana Regional Water Quality Control Board.			
Preparer Signature			Date
Place Stamp Here			

Contents

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Section II	Project Description	3
Section III	Site Description	8
Section IV	Best Management Practices (BMPs)	10
Section V	Inspection/Maintenance Responsibility for BMPs	24
Section VI	BMP Exhibit (Site Plan).....	25
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Attachments

Attachment A BMP Calculations
Attachment B Receiving Waters
Attachment C 303d List
Attachment D Water Maps
Attachment E.. Geotechnical Report
Attachment F.. Educational Material

Section I Permit(s) and Water Quality Conditions of Approval or Issuance

Provide discretionary or grading/building permit information and water quality conditions of approval, or permit issuance, applied to the project. If conditions are unknown, please request applicable conditions from staff. Refer to Section 2.1 in the Technical Guidance Document (TGD) available on the OC Planning website (ocplanning.net).

Project Information	
Permit/ Application No. (If applicable)	N/A
Grading or Building Permit No. (If applicable)	
Address of Project Site (or Tract Map and Lot Number if no address) and APN	570 W. 18 th Street, Costa Mesa, CA 92627
Water Quality Conditions of Approval or Issuance	
Water Quality Conditions of Approval or Issuance applied to this project. (Please list verbatim.)	N/A
Conceptual WQMP	
Was a Conceptual Water Quality Management Plan previously approved for this project?	No

Watershed-Based Plan Conditions

Provide applicable conditions from watershed-based plans including WIHMPs and TMDLS.

This project is located within the Santa Ana Watershed and discharges into the Lower Newport Bay. There are no WIHMPs or TMDLs applicable for this area.

Section II Project Description

II.1 Project Description

Provide a detailed project description including:

- Project areas;
- Land uses;
- Land cover;
- Design elements;
- A general description not broken down by drainage management areas (DMAs).

Include attributes relevant to determining applicable source controls. Refer to Section 2.2 in the Technical Guidance Document (TGD) for information that must be included in the project description.

Description of Proposed Project				
Development Category (From Model WQMP, Table 7.11-2; or -3):	Redevelopment Project			
Project Area (ft ²): 58,604	Number of Dwelling Units: _____		SIC Code: _____	
Project Area	Pervious		Impervious	
	Area (acres or sq ft)	Percentage	Area (acres or sq ft)	Percentage
Pre-Project Conditions	0.43	37%	0.75	63%
Post-Project Conditions	0.73	62%	0.45	38%
Drainage Patterns/Connections	<p>The proposed project consists of one drainage area.</p> <p>The proposed drainage pattern consists of drain inlets which connect to PVC drain pipes. These drain pipes drain to an existing 8" diameter drain which runs across the property and drains southwesterly. The drainage from this 8" diameter storm drain will outlet to a StormTech unit located along the southwest corner of the property for infiltration. Overflow from the unit will connect to the above said 8" diameter pipe.</p>			

Narrative Project
Description:

(Use as much space as
necessary.)

The project is located at 570 W. 18th Street in the City of Costa Mesa, California. The project site is 1.18 acres and is bounded by the Library to the west, baseball field to the south, 18th Street to the east and Park Avenue to the north.

The proposed improvements consist of installing a new restroom building, lighting, play equipment, protection of existing Phantom jet plane, shade structures, landscape and irrigation improvements.

II.2 Potential Stormwater Pollutants

Determine and list expected stormwater pollutants based on land uses and site activities. Refer to Section 2.2.2 and Table 2.1 in the Technical Guidance Document (TGD) for guidance.

Pollutants of Concern			
Pollutant	Check One for each:		Additional Information and Comments
	E=Expected to be of concern	N=Not Expected to be of concern	
Suspended-Solid/ Sediment	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	
Nutrients	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	
Heavy Metals	E <input type="checkbox"/>	N <input checked="" type="checkbox"/>	
Pathogens (Bacteria/Virus)	E <input type="checkbox"/>	N <input checked="" type="checkbox"/>	
Pesticides	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	
Oil and Grease	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	
Toxic Organic Compounds	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	
Trash and Debris	E <input checked="" type="checkbox"/>	N <input type="checkbox"/>	

II.3 Hydrologic Conditions of Concern

Determine if streams located downstream from the project area are potentially susceptible to hydromodification impacts. Refer to Section 2.2.3.1 in the Technical Guidance Document (TGD) for North Orange County or Section 2.2.3.2 for South Orange County.

No - Show map

Yes - Describe applicable hydrologic conditions of concern below. Refer to Section 2.2.3 in the Technical Guidance Document (TGD).

Refer to Attachment B for map showing the project site located outside of HCOCs.

II.4 Post Development Drainage Characteristics

Describe post development drainage characteristics. Refer to Section 2.2.4 in the Technical Guidance Document (TGD).

The proposed drainage pattern consists of drain inlets which connect to PVC drain pipes. These drain pipes drain to an existing 8" diameter drain which runs across the property and drains southwesterly. The drainage from this 8" diameter storm drain will outlet to a StormTech unit located along the southwest corner of the property for infiltration. Overflow from the unit will connect to the above said 8" diameter pipe.

II.5 Property Ownership/Management

Describe property ownership/management. Refer to Section 2.2.5 in the Technical Guidance Document (TGD).

The City of Costa Mesa will be the owner.

Section III Site Description

III.1 Physical Setting

Fill out table with relevant information. Refer to Section 2.3.1 in the Technical Guidance Document (TGD).

Name of Planned Community/Planning Area (if applicable)	Lions Park
Location/Address	570 W. 18 th Street, Costa Mesa, CA 92627
General Plan Land Use Designation	Institutional
Zoning	I&R - Institutional and Recreational
Acreage of Project Site	1.18
Predominant Soil Type	Type D

III.2 Site Characteristics

Fill out table with relevant information and include information regarding BMP sizing, suitability, and feasibility, as applicable. Refer to Section 2.3.2 in the Technical Guidance Document (TGD).

Site Characteristics	
Precipitation Zone	0.75
Topography	Existing park on-site

Drainage Patterns/Connections	The proposed drainage pattern consists of drain inlets which connect to PVC drain pipes. These drain pipes drain to an existing 8" diameter drain which runs across the property and drains southwesterly. The drainage from this 8" diameter storm drain will outlet to a StormTech unit located along the southwest corner of the property for infiltration. Overflow from the unit will connect to the above said 8" diameter pipe.
Soil Type, Geology, and Infiltration Properties	D-Soils
Hydrogeologic (Groundwater) Conditions	Depth of groundwater is greater than 15 feet.
Geotechnical Conditions (relevant to infiltration)	The proposed infiltration rate is 6.2 inches/hour.
Off-Site Drainage	N/A
Utility and Infrastructure Information	A proposed infiltration system will be used.

III.3 Watershed Description

Fill out table with relevant information and include information regarding BMP sizing, suitability, and feasibility, as applicable. Refer to Section 2.3.3 in the Technical Guidance Document (TGD).

Receiving Waters	Lower Newport Bay
303(d) Listed Impairments	Chlordane, DDT (Dichlorodiphenyltrichloroethane), Nutrients, PCBs (Polychlorinated biphenyls), Pesticides
Applicable TMDLs	Chlordane, Copper, DDT (Dichlorodiphenyltrichloroethane), Nutrients, PCBs (Polychlorinated biphenyls), Sediment Toxicity
Pollutants of Concern for the Project	Pollutants of concern for this project only include toxic compounds and other organics.
Environmentally Sensitive and Special Biological Significant Areas	The Lower Newport Bay is not considered an environmentally sensitive area or one of special biological significance.

Section IV Best Management Practices (BMPs)

IV. 1 Project Performance Criteria

Describe project performance criteria. Several steps must be followed in order to determine what performance criteria will apply to a project. These steps include:

- If the project has an approved WIHMP or equivalent, then any watershed specific criteria must be used and the project can evaluate participation in the approved regional or sub-regional opportunities. (Please ask your assigned planner or plan checker regarding whether your project is part of an approved WIHMP or equivalent.)
- Determine applicable hydromodification control performance criteria. *Refer to Section 7.II-2.4.2.2 of the Model WQMP.*
- Determine applicable LID performance criteria. *Refer to Section 7.II-2.4.3 of the Model WQMP.*
- Determine applicable treatment control BMP performance criteria. *Refer to Section 7.II-3.2.2 of the Model WQMP.*
- Calculate the LID design storm capture volume for the project. *Refer to Section 7.II-2.4.3 of the Model WQMP.*

(NOC Permit Area only) Is there an approved WIHMP or equivalent for the project area that includes more stringent LID feasibility criteria or if there are opportunities identified for implementing LID on regional or sub-regional basis?		YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
If yes, describe WIHMP feasibility criteria or regional/sub-regional LID opportunities.	N/A		

Project Performance Criteria	
<p>If HCOC exists, list applicable hydromodification control performance criteria (Section 7.II-2.4.2.2 in MWQMP)</p>	<p>N/A</p>
<p>List applicable LID performance criteria (Section 7.II-2.4.3 from MWQMP)</p>	<p>LID BMPs must be designed to:</p> <ul style="list-style-type: none"> ▪ Retain, on-site, (infiltrate, harvest and use, or evapotranspire) stormwater runoff as feasible up to the Design Capture Volume, and ▪ Recover (i.e., draw down) the storage volume as soon as possible after a storm event (see criteria for maximizing drawdown rate in the TGD Appendix XI), and, if necessary ▪ Biotreat, on-site, additional runoff, as feasible, up to 80 percent average annual capture efficiency (cumulative, retention plus biotreatment), and, if necessary ▪ NOC Permit Area only - retain or biotreat, in a regional facility, the remaining runoff up to 80 percent average annual capture efficiency (cumulative, retention plus biotreatment, on-site plus off-site), and, if necessary ▪ Fulfill alternative compliance obligations for runoff volume not retained or biotreated up to 80 percent average annual capture efficiency using treatment controls or other alternative approaches as described in Section 7.II-3.
<p>List applicable treatment control BMP performance criteria (Section 7.II-3.2.2 from MWQMP)</p>	<p>LID performance criteria above are being satisfied by infiltrating the runoff to StormTech unit Model MC-3500, and the overflow from the unit connects to existing storm drain.</p>

**Priority Project Water Quality Management Plan (WQMP)
Lions Park Improvements**

<p>Calculate LID design storm capture volume for Project.</p>	<p>See calculations in Attachment A.</p>
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IV.2. Site Design and Drainage

Describe site design and drainage including

- A narrative of site design practices utilized or rationale for not using practices;
- A narrative of how site is designed to allow BMPs to be incorporated to the MEP
- A table of DMA characteristics and list of LID BMPs proposed in each DMA.
- Reference to the WQMP "BMP Exhibit."
- Calculation of Design Capture Volume (DCV) for each drainage area.
- A listing of GIS coordinates for LID and Treatment Control BMPs.

Refer to Section 2.4.2 in the Technical Guidance Document (TGD).

The proposed drainage pattern consists of drain inlets which connect to PVC drain pipes. These drain pipes drain to an existing 8" diameter drain which runs across the property and drains southwesterly. The drainage from this 8" diameter storm drain will outlet to a StormTech unit located along the southwest corner of the property for infiltration. Overflow from the unit will connect to the above said 8" diameter pipe.

IV.3 LID BMP Selection and Project Conformance Analysis

Each sub-section below documents that the proposed design features conform to the applicable project performance criteria via check boxes, tables, calculations, narratives, and/or references to worksheets. Refer to Section 2.4.2.3 in the Technical Guidance Document (TGD) for selecting LID BMPs and Section 2.4.3 in the Technical Guidance Document (TGD) for conducting conformance analysis with project performance criteria.

IV.3.1 Hydrologic Source Controls (HSCs)

If required HSCs are included, fill out applicable check box forms. If the retention criteria are otherwise met with other LID BMPs, include a statement indicating HSCs not required.

Name	Included?
Localized on-lot infiltration	<input type="checkbox"/>
Impervious area dispersion (e.g. roof top disconnection)	<input type="checkbox"/>
Street trees (canopy interception)	<input type="checkbox"/>
Residential rain barrels (not actively managed)	<input type="checkbox"/>
Green roofs/Brown roofs	<input type="checkbox"/>
Blue roofs	<input type="checkbox"/>
Impervious area reduction (e.g. permeable pavers, site design)	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

IV.3.2 Infiltration BMPs

Identify infiltration BMPs to be used in project. If design volume cannot be met, state why.

Name	Included?
Bioretention without underdrains	<input type="checkbox"/>
Rain gardens	<input type="checkbox"/>
Porous landscaping	<input type="checkbox"/>
Infiltration planters	<input type="checkbox"/>
Retention swales	<input type="checkbox"/>
Infiltration trenches	<input type="checkbox"/>
Infiltration basins	<input type="checkbox"/>
Drywells	<input type="checkbox"/>
Subsurface infiltration galleries	<input checked="" type="checkbox"/>
French drains	<input type="checkbox"/>
Permeable asphalt	<input type="checkbox"/>
Permeable concrete	<input type="checkbox"/>
Permeable concrete pavers	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with infiltration BMPs. If not, document how much can be met with infiltration and document why it is not feasible to meet the full volume with infiltration BMPs.

See Calculations in Appendix A

IV.3.3 Evapotranspiration, Rainwater Harvesting BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, describe any evapotranspiration and/or rainwater harvesting BMPs included.

Name	Included?
All HSCs; See Section IV.3.1	<input type="checkbox"/>
Surface-based infiltration BMPs	<input type="checkbox"/>
Biotreatment BMPs	<input type="checkbox"/>
Above-ground cisterns and basins	<input type="checkbox"/>
Underground detention	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with evapotranspiration and/or rainwater harvesting BMPs in combination with infiltration BMPs. If not, document below how much can be met with either infiltration BMPs, evapotranspiration, rainwater harvesting BMPs, or a combination, and document why it is not feasible to meet the full volume with these BMP categories.

See calculations and StormTech Model MC-3500 specifications in Attachment A. This shows that the DCV can be contained within the infiltration system.

IV.3.4 Biotreatment BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, and/or evapotranspiration and rainwater harvesting BMPs, describe biotreatment BMPs included. Include sections for selection, suitability, sizing, and infeasibility, as applicable.

Name	Included?
Bioretention with underdrains	<input type="checkbox"/>
Stormwater planter boxes with underdrains	<input type="checkbox"/>
Rain gardens with underdrains	<input type="checkbox"/>
Constructed wetlands	<input type="checkbox"/>
Vegetated swales	<input type="checkbox"/>
Vegetated filter strips	<input type="checkbox"/>
Proprietary vegetated biotreatment systems	<input type="checkbox"/>
Wet extended detention basin	<input type="checkbox"/>
Dry extended detention basins	<input type="checkbox"/>
Other:	<input type="checkbox"/>
Other:	<input type="checkbox"/>

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with infiltration, evapotranspiration, rainwater harvesting and/or biotreatment BMPs. If not, document how much can be met with either infiltration BMPs, evapotranspiration, rainwater harvesting BMPs, or a combination, and document why it is not feasible to meet the full volume with these BMP categories.

See calculations and StormTech Model MC-3500 specifications in Attachment A. This shows that the DCV can be contained within the infiltration system.

IV.3.5 Hydromodification Control BMPs

Describe hydromodification control BMPs. *See Section 5 of the Technical Guidance Document (TGD).* Include sections for selection, suitability, sizing, and infeasibility, as applicable. Detail compliance with Prior Conditions of Approval (if applicable).

Hydromodification Control BMPs	
BMP Name	BMP Description
N/A	N/A

IV.3.6 Regional/Sub-Regional LID BMPs

Describe regional/sub-regional LID BMPs in which the project will participate. *Refer to Section 7.II-2.4.3.2 of the Model WQMP.*

Regional/Sub-Regional LID BMPs
N/A

IV.3.7 Treatment Control BMPs

Treatment control BMPs can only be considered if the project conformance analysis indicates that it is not feasible to retain the full design capture volume with LID BMPs. Describe treatment control BMPs including sections for selection, sizing, and infeasibility, as applicable.

Treatment Control BMPs	
BMP Name	BMP Description
N/A	N/A

IV.3.8 Non-structural Source Control BMPs

Fill out non-structural source control check box forms or provide a brief narrative explaining if non-structural source controls were not used.

Non-Structural Source Control BMPs				
Identifier	Name	Check One		If not applicable, state brief reason
		Included	Not Applicable	
N1	Education for Property Owners, Tenants and Occupants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N2	Activity Restrictions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No CCR are proposed
N3	Common Area Landscape Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N4	BMP Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N5	Title 22 CCR Compliance (How development will comply)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No hazardous waste from the project
N6	Local Industrial Permit Compliance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No local water quality ordinance
N7	Spill Contingency Plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No hazardous waste from the property
N8	Underground Storage Tank Compliance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No underground storage tank within the property boundaries
N9	Hazardous Materials Disclosure Compliance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No hazardous waste from the project
N10	Uniform Fire Code Implementation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No fire code implementation
N11	Common Area Litter Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N12	Employee Training	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N13	Housekeeping of Loading Docks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No loading docks are proposed for the project
N14	Common Area Catch Basin Inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N15	Street Sweeping Private Streets and Parking Lots	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
N16	Retail Gasoline Outlets	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No gasoline outlets are proposed for the project

IV.3.9 Structural Source Control BMPs

Fill out structural source control check box forms or provide a brief narrative explaining if structural source controls were not used.

Structural Source Control BMPs				
Identifier	Name	Check One		If not applicable, state brief reason
		Included	Not Applicable	
S1	Provide storm drain system stenciling and signage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S2	Design and construct outdoor material storage areas to reduce pollution introduction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No hazardous material is proposed for the project
S3	Design and construct trash and waste storage areas to reduce pollution introduction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
S5	Protect slopes and channels and provide energy dissipation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No protected slopes in the project
	Incorporate requirements applicable to individual priority project categories (from SDRWQCB NPDES Permit)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No requirements from SDRWQCB
S6	Dock areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No dock areas in the project
S7	Maintenance bays	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No maintenance bays in the project
S8	Vehicle wash areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No vehicle wash areas in the project
S9	Outdoor processing areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No outdoor processing areas in the project
S10	Equipment wash areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No equipment wash areas in the project
S11	Fueling areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No fueling areas in the project
S12	Hillside landscaping	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No hillside landscaping in the project
S13	Wash water control for food preparation areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No food preparation areas in the project
S14	Community car wash racks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No community car wash racks in the project

IV.4 Alternative Compliance Plan (If Applicable)

Describe an alternative compliance plan (if applicable). Include alternative compliance obligations (i.e., gallons, pounds) and describe proposed alternative compliance measures. Refer to Section 7.II 3.0 in the WQMP.

IV.4.1 Water Quality Credits

Determine if water quality credits are applicable for the project. Refer to Section 3.1 of the Model WQMP for description of credits and Appendix VI of the Technical Guidance Document (TGD) for calculation methods for applying water quality credits.

Description of Proposed Project				
Project Types that Qualify for Water Quality Credits (Select all that apply):				
<input checked="" type="checkbox"/> Redevelopment projects that reduce the overall impervious footprint of the project site.	<input type="checkbox"/> Brownfield redevelopment , meaning redevelopment, expansion, or reuse of real property which may be complicated by the presence or potential presence of hazardous substances, pollutants or contaminants, and which have the potential to contribute to adverse ground or surface WQ if not redeveloped.	<input type="checkbox"/> Higher density development projects which include two distinct categories (credits can only be taken for one category): those with more than seven units per acre of development (lower credit allowance); vertical density developments, for example, those with a Floor to Area Ratio (FAR) of 2 or those having more than 18 units per acre (greater credit allowance).		
<input type="checkbox"/> Mixed use development , such as a combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that can demonstrate environmental benefits that would not be realized through single use projects (e.g. reduced vehicle trip traffic with the potential to reduce sources of water or air pollution).	<input type="checkbox"/> Transit-oriented developments , such as a mixed use residential or commercial area designed to maximize access to public transportation; similar to above criterion, but where the development center is within one half mile of a mass transit center (e.g. bus, rail, light rail or commuter train station). Such projects would not be able to take credit for both categories, but may have greater credit assigned		<input type="checkbox"/> Redevelopment projects in an established historic district, historic preservation area, or similar significant city area including core City Center areas (to be defined through mapping).	
<input type="checkbox"/> Developments with dedication of undeveloped portions to parks, preservation areas and other pervious uses.	<input type="checkbox"/> Developments in a city center area.	<input type="checkbox"/> Developments in historic districts or historic preservation areas.	<input type="checkbox"/> Live-work developments , a variety of developments designed to support residential and vocational needs together – similar to criteria to mixed use development; would not be able to take credit for both categories.	<input type="checkbox"/> In-fill projects , the conversion of empty lots and other underused spaces into more beneficially used spaces, such as residential or commercial areas.

Calculation of Water Quality Credits (if applicable)	N/A
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IV.4.2 Alternative Compliance Plan Information

Describe an alternative compliance plan (if applicable). Include alternative compliance obligations (i.e., gallons, pounds) and describe proposed alternative compliance measures. *Refer to Section 7.II 3.0 in the Model WQMP.*

N/A

Section V Inspection/Maintenance Responsibility for BMPs

Fill out information in table below. Prepare and attach an Operation and Maintenance Plan. Identify the funding mechanism through which BMPs will be maintained. Inspection and maintenance records must be kept for a minimum of five years for inspection by the regulatory agencies. Refer to Section 7.II 4.0 in the Model WQMP.

BMP Inspection/Maintenance			
BMP	Responsible Party(s)	Inspection/Maintenance Activities Required	Minimum Frequency of Activities
MC-3500 StormTech Unit	City of Costa Mesa	Inspect periodically in accordance with manufacturer's recommendations.	Twice a year

Section VI BMP Exhibit (Site Plan)

VI.1 BMP Exhibit (Site Plan)

Include a BMP Exhibit (Site Plan), at a size no less than 24" by 36," which includes the following minimum information:

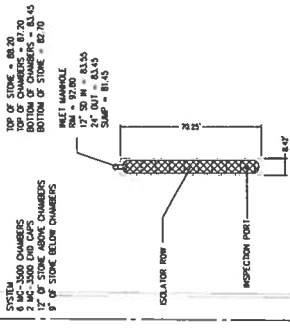
- Insert in the title block (lower right hand corner) of BMP Exhibit: the WQMP Number (assigned by staff) and the grading/building or Planning Application permit numbers
- Project location (address, tract/lot number(s), etc.)
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural BMP locations
- Drainage delineations and flow information
- Delineate the area being treated by each structural BMP
- GIS coordinates for LID and Treatment Control BMPs
- Drainage connections
- BMP details
- Preparer name and stamp

Please do not include any areas outside of the project area or any information not related to drainage or water quality. The approved BMP Exhibit (Site Plan) shall be submitted as a plan sheet on all grading and building plan sets submitted for plan check review and approval. The BMP Exhibit shall be at the same size as the rest of the plan sheets in the submittal and shall have an approval stamp and signature prior to plan check submittal.

VI.2 Submittal and Recordation of Water Quality Management Plan

Following approval of the Final Project-Specific WQMP, three copies of the approved WQMP (including BMP Exhibit, Operations and Maintenance (O&M) Plan, and Appendices) shall be submitted. In addition, these documents shall be submitted in a PDF format.

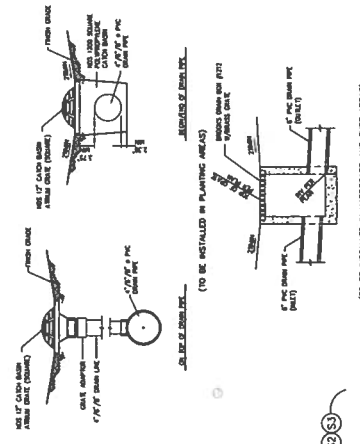
Each approved WQMP (including BMP Exhibit, Operations and Maintenance (O&M) Plan, and Appendices) shall be recorded in the Orange County Clerk-Recorder's Office, prior to close-out of grading and/or building permit. Educational Materials are not required to be included.



STORMTECH SYSTEM	NO. OF CHAMBERS	NO. OF DIO CAPS	STORAGE VOLUME (GAL)	1/8" OF STONE	PROPOSED ELEVATIONS
MC-3000	6	2	500 FT ³	13/8" OF STONE	82.30
				12" OF CHAMBERS	81.70
				12" OF STONE	81.45
				9" OF STONE	81.15
				INLET AT 10' MANHOLE	82.87

MC-3000 STORMTECH LAYOUT

MC-3000 STORMTECH SYSTEM DATA



- LEGEND**
- LANDSCAPE AREAS WITH BMP'S
 - LANDSCAPE AREAS WITHOUT BMP'S
 - COMMON AREA EFFICIENT IRRIGATION (S012)
 - FILTRATION SURFACE RUNOFF SHALL BE DIRECTED TO LANDSCAPE AREAS WHEREVER PRACTICAL
 - COMMON AREA EFFICIENT IRRIGATION
 - COMMON AREA RUNOFF-IRRIGATING
 - LANDSCAPE DESIGN
 - TRACT BOUNDARY
 - NOT A PART
 - DIRECTION OF ONSITE SURFACE FLOW
 - DIRECTION OF OFFSITE SURFACE FLOW
 - YARD DRAIN INLET
 - MC-3000 STORMTECH UNIT
 - BMP AREA LIMITS
 - AREA DESIGNATION
 - AREA IN ACRES



CITY OF COSTA MESA
WQMP PLOT PLAN
 LIONS PARK
 570 W 18TH STREET, COSTA MESA, CA 92627

PREPARED UNDER THE SUPERVISION OF
DMS
 CONSULTANTS, INC.
 CIVIL ENGINEERS

DATE: 07/21/2020

SHEET 1 OF 1



Section VII Educational Materials

Refer to the Orange County Stormwater Program (ocwatersheds.com) for a library of materials available. Please only attach the educational materials specifically applicable to this project. Other materials specific to the project may be included as well and must be attached.

Education Materials			
Residential Material (http://www.ocwatersheds.com)	Check If Applicable	Business Material (http://www.ocwatersheds.com)	Check If Applicable
The Ocean Begins at Your Front Door	<input checked="" type="checkbox"/>	Tips for the Automotive Industry	<input type="checkbox"/>
Tips for Car Wash Fund-raisers	<input type="checkbox"/>	Tips for Using Concrete and Mortar	<input type="checkbox"/>
Tips for the Home Mechanic	<input type="checkbox"/>	Tips for the Food Service Industry	<input type="checkbox"/>
Homeowners Guide for Sustainable Water Use	<input type="checkbox"/>	Proper Maintenance Practices for Your Business	<input checked="" type="checkbox"/>
Household Tips	<input type="checkbox"/>	Other Material	Check If Attached
Proper Disposal of Household Hazardous Waste	<input type="checkbox"/>		
Recycle at Your Local Used Oil Collection Center (North County)	<input type="checkbox"/>		
Recycle at Your Local Used Oil Collection Center (Central County)	<input type="checkbox"/>		<input type="checkbox"/>
Recycle at Your Local Used Oil Collection Center (South County)	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Maintaining a Septic Tank System	<input type="checkbox"/>		<input type="checkbox"/>
Responsible Pest Control	<input type="checkbox"/>		<input type="checkbox"/>
Sewer Spill	<input type="checkbox"/>		<input type="checkbox"/>
Tips for the Home Improvement Projects	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Horse Care	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Landscaping and Gardening	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Tips for Pet Care	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Pool Maintenance	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Residential Pool, Landscape and Hardscape Drains	<input type="checkbox"/>		<input type="checkbox"/>
Tips for Projects Using Paint	<input type="checkbox"/>		<input type="checkbox"/>

ATTACHMENT A

Table 2.7: Infiltration BMP Feasibility Worksheet

	Infeasibility Criteria	Yes	No
1	Would Infiltration BMPs pose significant risk for groundwater related concerns? Refer to Appendix VII (Worksheet I) for guidance on groundwater-related infiltration feasibility criteria.		X
<p>Provide basis:</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
2	<p>Would Infiltration BMPs pose significant risk of increasing risk of geotechnical hazards that cannot be mitigated to an acceptable level? (Yes if the answer to any of the following questions is yes, as established by a geotechnical expert):</p> <ul style="list-style-type: none"> • The BMP can only be located less than 50 feet away from slopes steeper than 15 percent • The BMP can only be located less than eight feet from building foundations or an alternative setback. • A study prepared by a geotechnical professional or an available watershed study substantiates that stormwater infiltration would potentially result in significantly increased risks of geotechnical hazards that cannot be mitigated to an acceptable level. 		X
<p>Provide basis:</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
3	Would infiltration of the DCV from drainage area violate downstream water rights?		X
<p>Provide basis:</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			

Table 2.7: Infiltration BMP Feasibility Worksheet (continued)

	Partial Infeasibility Criteria	Yes	No
4	Is proposed infiltration facility located on HSG D soils or the site geotechnical investigation identifies presence of soil characteristics which support categorization as D soils?		X
<p>Provide basis:</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
5	Is measured infiltration rate below proposed facility less than 0.3 inches per hour? This calculation shall be based on the methods described in Appendix VII.		X
<p>Provide basis:</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
6	Would reduction of over predeveloped conditions cause impairments to downstream beneficial uses, such as change of seasonality of ephemeral washes or increased discharge of contaminated groundwater to surface waters?		X
<p>Provide citation to applicable study and summarize findings relative to the amount of infiltration that is permissible:</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
7	Would an increase in infiltration over predeveloped conditions cause impairments to downstream beneficial uses, such as change of seasonality of ephemeral washes or increased discharge of contaminated groundwater to surface waters?		X
<p>Provide citation to applicable study and summarize findings relative to the amount of infiltration that is permissible:</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			

Table 2.7: Infiltration BMP Feasibility Worksheet (continued)

Infiltration Screening Results (check box corresponding to result):		
8	<p>Is there substantial evidence that infiltration from the project would result in a significant increase in I&I to the sanitary sewer that cannot be sufficiently mitigated? (See Appendix XVII)</p> <p>Provide narrative discussion and supporting evidence:</p> <p>Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>	NO
9	<p>If any answer from row 1-3 is yes: infiltration of any volume is not feasible within the DMA or equivalent.</p> <p>Provide basis:</p> <p>Summarize findings of infeasibility screening</p>	NO
10	<p>If any answer from row 4-8 is yes, infiltration is permissible but is not presumed to be feasible for the entire DCV. Criteria for designing biotreatment BMPs to achieve the maximum feasible infiltration and ET shall apply.</p> <p>Provide basis:</p> <p>Summarize findings of infeasibility screening</p>	NO
11	<p>If all answers to rows 1 through 10 are no, infiltration of the full DCV is potentially feasible, BMPs must be designed to infiltrate the full DCV to the maximum extent practicable.</p>	YES

AREA "A" 1.18 ACRES

Worksheet B: Simple Design Capture Volume Sizing Method

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, d (inches)	$d=$	0.75	inches
2	Enter the effect of provided HSCs, d_{HSC} (inches) (Worksheet A)	$d_{HSC}=$		inches
3	Calculate the remainder of the design capture storm depth, $d_{remainder}$ (inches) (Line 1 – Line 2)	$d_{remainder}=$	0.75	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), A (acres)	$A=$	1.18	acres
2	Enter Project Imperviousness, imp (unitless)	$imp=$	0.39	
3	Calculate runoff coefficient, $C = (0.75 \times imp) + 0.15$	$C=$	0.44	
4	Calculate runoff volume, $V_{design} = (C \times d_{remainder} \times A \times 43560 \times (1/12))$	$V_{design}=$	1198	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{observed}$ (in/hr) (Appendix VII)	$K_{observed}=$	6.20	In/hr
2	Enter combined safety factor from Worksheet H, S_{total} (unitless)	$S_{total}=$	2	
3	Calculate design infiltration rate, $K_{design} = K_{observed} / S_{total}$	$K_{design}=$	3.10	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, T (max 48 hours)	$T=$	48	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time (feet), $D_{max} = K_{design} \times T \times (1/12)$	$D_{max}=$	12.40	feet
6	Calculate minimum area required for BMP (sq-ft), $A_{min} = V_{design} / d_{max}$	$A_{min}=$	96.61	sq-ft

Worksheet H: Factor of Safety and Design Infiltration Rate Worksheet

Factor Category	Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) $p = w \times v$		
A	Suitability Assessment	Soil assessment methods	0.25	1	0.25	
		Predominant soil texture	0.25	1	0.25	
		Site soil variability	0.25	1	0.25	
		Depth to groundwater / impervious layer	0.25	1	0.25	
		Suitability Assessment Safety Factor, $S_A = \Sigma p$				1.00
		Tributary area size	0.25	1	0.25	
B	Design	Level of pretreatment/ expected sediment loads	0.25	3	0.75	
		Redundancy	0.25	3	0.75	
		Compaction during construction	0.25	3	0.25	
		Design Safety Factor, $S_B = \Sigma p$				2.0
Combined Safety Factor, $S_{total} = S_A \times S_B$			2.0			
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias) ¹			3.10 inches/hour			
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$			1.55 inches/hour			

Supporting Data

Briefly describe infiltration test and provide reference to test forms:

See Attachment E of the WQMP.

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

¹ - $K_{observed}$ is the vertical infiltration measured in the field, before applying a factor of safety. If field testing measures a rate that is different than the vertical infiltration rate (for example, three-dimensional borehole percolation rate), then this rate must be adjusted by an acceptable method (for example, Porchet method) to yield the field estimate of vertical infiltration rate, $K_{observed}$.

Worksheet I: Summary of Groundwater-related Feasibility Criteria

1	Is project large or small? (as defined by Table VIII.2) circle one	Large	<input checked="" type="radio"/> Small	
2	What is the tributary area to the BMP?	A	0.67	acres
3	What type of BMP is proposed?	Permeable pavers and infiltration trench		
4	What is the infiltrating surface area of the proposed BMP?	A _{BMP}	900	sq-ft
5	What land use activities are present in the tributary area (list all) Multi-family residential			
6	What land use-based risk category is applicable?	<input checked="" type="radio"/> L	M	H
7	If M or H, what pretreatment and source isolation BMPs have been considered and are proposed (describe all):			
8	What minimum separation to mounded seasonally high groundwater applies to the proposed BMP? See Section VIII.2 (circle one)	5 ft	<input checked="" type="radio"/> 10 ft	
	Provide rationale for selection of applicable minimum separation to seasonally high mounded groundwater: Hantush Equation Solution			
10	What is separation from the infiltrating surface to seasonally high groundwater?	SHGWT		ft
11	What is separation from the infiltrating surface to mounded seasonally high groundwater?	Mounded SHGWT		ft
12	Describe assumptions and methods used for mounding analysis: High groundwater encountered: 12 feet Proposed grade 3 feet higher than existing High groundwater from proposed grade: 15 feet Mounding per Hantush Eq.: 0.595 feet			

Worksheet I: Summary of Groundwater-related Feasibility Criteria

13	Is the site within a plume protection boundary (See Figure VIII.2)?	Y	N	<input checked="" type="radio"/> N/A
14	Is the site within a selenium source area or other natural plume area (See Figure VIII.2)?	Y	<input checked="" type="radio"/> N	N/A
15	Is the site within 250 feet of a contaminated site?	Y	<input checked="" type="radio"/> N	N/A
16	If site-specific study has been prepared, provide citation and briefly summarize relevant findings:			
17	Is the site within 100 feet of a water supply well, spring, septic system?	Y	<input checked="" type="radio"/> N	N/A
18	Is infiltration feasible on the site relative to groundwater-related criteria?	<input checked="" type="radio"/> Y	N	
<p>Provide rationale for feasibility determination:</p> <p>Proposed grade to high groundwater: 15.00 feet Bottom of infiltration trench is 3.00 feet from proposed grade Mounding per Hantush Eq.: 0.595 feet</p> <p>$15.00 - 3.00 - 0.595 = 11.41$ OK > 10 feet</p>				

Note: if a single criterion or group of criteria would render infiltration infeasible, it is not necessary to evaluate every question in this worksheet.



User Inputs

Chamber Model:	MC-3500
Outlet Control Structure:	No
Project Name:	LIONS PARK
Engineer:	N/A
Project Location:	California
Measurement Type:	Imperial
Required Storage Volume:	1198 cubic ft.
Stone Porosity:	40%
Stone Foundation Depth:	9 in.
Stone Above Chambers:	12 in.
Average Cover Over Chambers:	18 in.
Design Constraint Dimensions:	(10 ft. x 50 ft.)

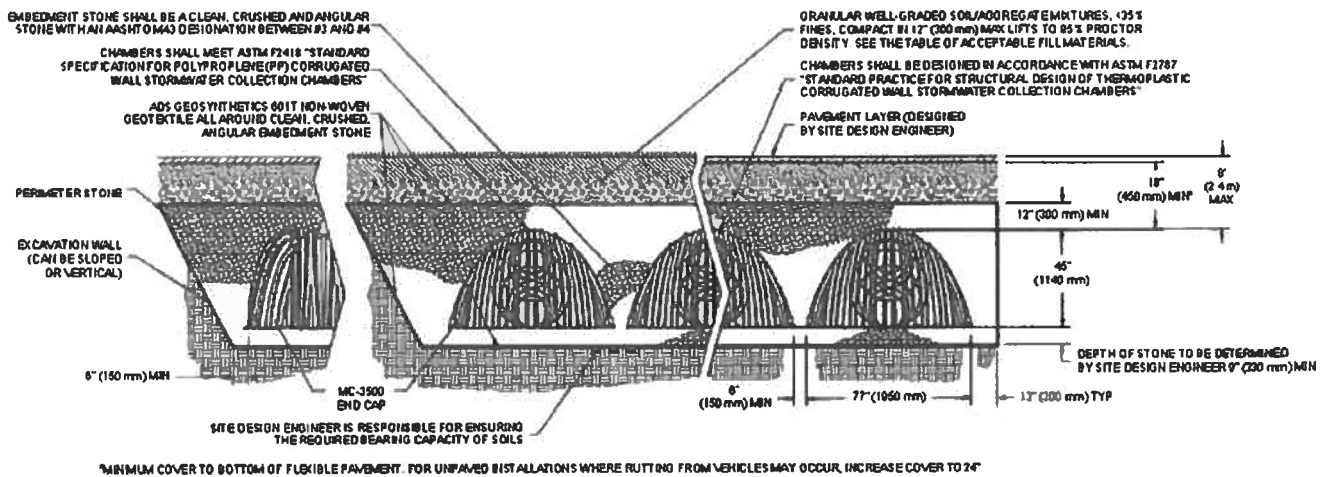
Results

System Volume and Bed Size

Installed Storage Volume:	1316.21 cubic ft.
Storage Volume Per Chamber:	109.90 cubic ft.
Number Of Chambers Required:	6
Number Of End Caps Required:	2
Chamber Rows:	1
Maximum Length:	48.75 ft.
Maximum Width:	8.42 ft.
Approx. Bed Size Required:	410.31 square ft.

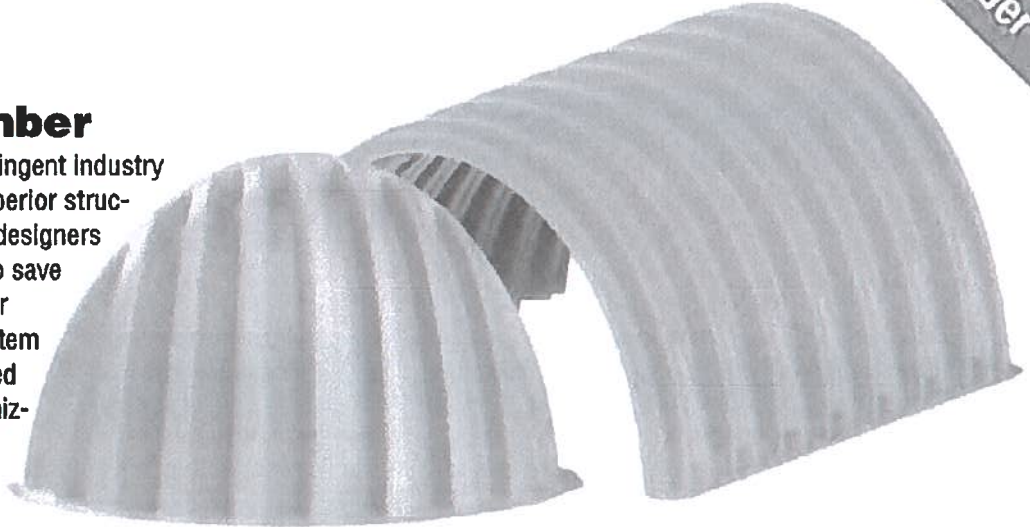
System Components

Amount Of Stone Required:	58.06 cubic yards
Volume Of Excavation (Not Including Fill):	83.58 cubic yards



StormTech MC-3500 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots thus maximizing land usage for commercial and municipal applications.



StormTech MC-3500 Chamber (not to scale)

Nominal Chamber Specifications

Size (L x W x H)	90" (2286 mm) x 77" (1956 mm) x 45" (1143 mm)
Chamber Storage	109.9 ft³ (3.11 m³)
Min. Installed Storage*	178.9 ft³ (5.06 m³)
Weight	134 lbs (60.8 kg)

* This assumes a minimum of 12" (305 mm) of stone above, 9" (229 mm) of stone below chambers, 9" (229 mm) of row spacing, and 40% stone porosity.

StormTech MC-3500 End Cap (not to scale)

Nominal End Cap Specifications

Size (L x W x H)	25.7" (653 mm) x 75" (1905 mm) x 45" (1143 mm)
End Cap Storage	14.9 ft³ (0.42 m³)
Min. Installed Storage*	46.0 ft³ (1.30 m³)
Weight	49 lbs (22.2 kg)

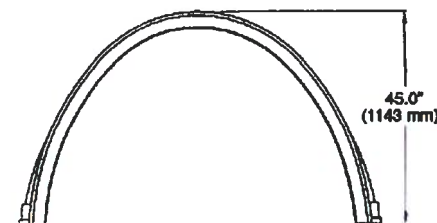
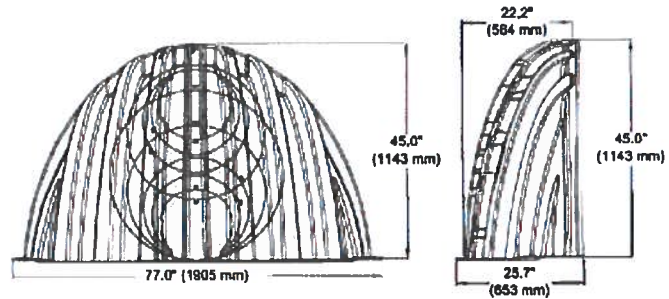
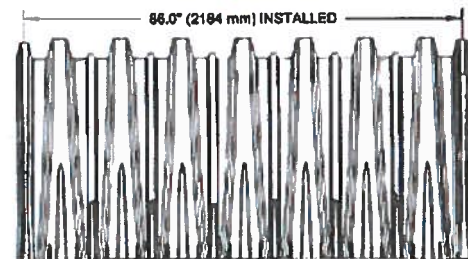
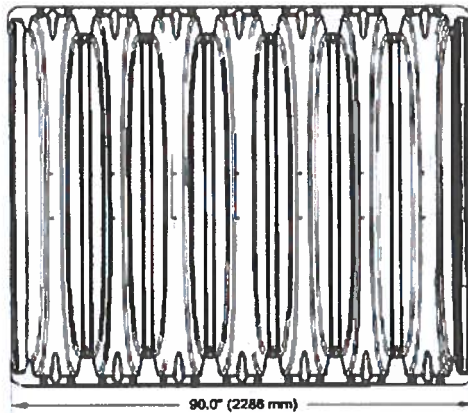
* This assumes a minimum of 12" (305 mm) of stone above, 9" (229 mm) of stone below, 9" (229 mm) row spacing, 6" (152 mm) of stone perimeter, and 40% stone porosity.

Shipping

15 chambers/pallet

7 end caps/pallet

7 pallets/truck



Storage Volume Per Chamber/End Cap ft³ (m³)

	Bare Unit Storage ft³ (m³)	Chamber/End Cap and Stone Volume — Stone Foundation Depth in. (mm)			
		9 (229)	12 (305)	15 (381)	18 (457)
MC-3500 Chamber	109.9 (3.11)	178.9 (5.06)	184.0 (5.21)	189.2 (5.36)	194.3 (5.5)
MC-3500 End Cap	14.9 (0.42)	46.0 (1.33)	47.7 (1.35)	49.4 (1.40)	51.1 (1.45)

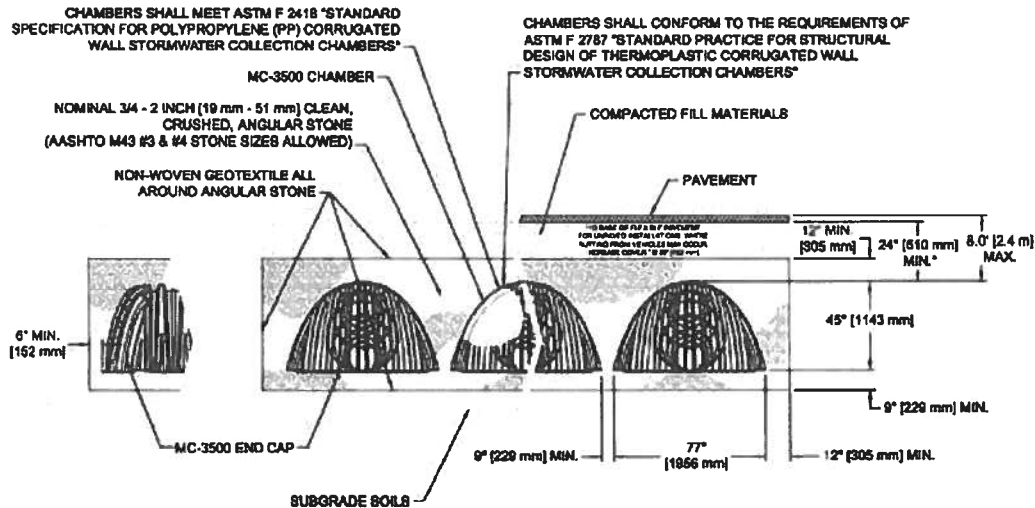
NOTE: Assumes 40% porosity for the stone plus the chamber/end cap volume. End Cap volume assumes 6" (152mm) stone perimeter.

Volume of Excavation Per Chamber/End Cap in yd³ (m³)

	Stone Foundation Depth in. (mm)			
	9 (229)	12 (305)	15 (381)	18 (457)
MC-3500	12.4 (9.5)	12.8 (9.8)	13.3 (10.2)	13.8 (10.5)
End Cap	4.1 (3.1)	4.2 (3.2)	4.4 (3.3)	4.5 (3.5)

NOTE: Assumes 9" (229 mm) of separation between chamber rows, 6" (152 mm) of perimeter in front of end caps, and 24" (610 mm) of cover. The volume of excavation will vary as depth of cover increases.

General Cross Section



NOTES:

1. THIS CROSS SECTION PROVIDES GENERAL INFORMATION FOR THE MC-3500 CHAMBER. STORMTECH MC-3500 CHAMBERS MUST BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE MC-3500 DESIGN MANUAL AND MC-3500 CONSTRUCTION GUIDE.
2. PROPERLY INSTALLED MC-3500 CHAMBERS PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR EARTH AND LIVE LOADS WITH CONSIDERATION FOR IMPACT AND MULTIPLE PRESENCES.
3. PERIMETER STONE MUST ALWAYS BE BROUGHT UP EVENLY WITH BACKFILL OF BED. PERIMETER STONE MUST EXTEND HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH STRAIGHT OR SLOPED SIDEWALLS.



A division of **ADS**

70 Inwood Road, Suite 3 | Rocky Hill | Connecticut | 06067

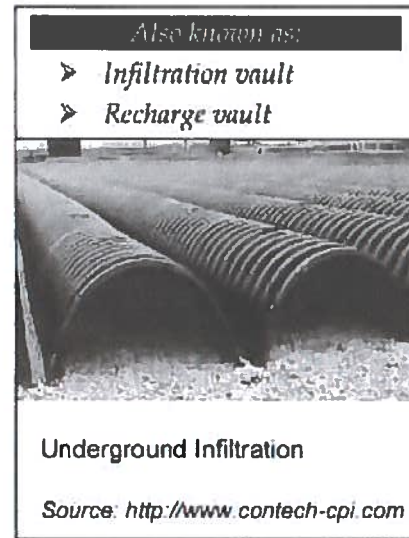
860.529.8188 | 888.892.2694 | fax 866.328.8401 | fax 860-529-8040 | www.stormtech.com



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StormTech® is a registered trademark of StormTech, Inc.
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S150909 03/2014

INF-7: Underground Infiltration

Underground infiltration is a vault or chamber with an open bottom that used to store runoff and percolate into the subsurface. A number of vendors offer proprietary infiltration products that allow for similar or enhanced rates of infiltration and subsurface storage while offering durable prefabricated structures. There are many varieties of proprietary infiltration BMPs that can be used for roads and parking lots, parks and open spaces, single and multi-family residential, or mixed-use and commercial uses.



Feasibility Screening Considerations

- Infiltration bays shall pass infeasible screening criteria to be considered for use.
- Underground infiltration galleries pose a potential risk of groundwater contamination; pretreatment should be used.

Opportunity Criteria

- Soils are adequate for infiltration or can be amended to provide an adequate infiltration rate.
- Appropriate for sites with limited surface space.
- Can be placed beneath roads, parking lots, parks, and athletic fields.
- Potential for groundwater contamination can be mitigated through isolation of pollutant sources, pretreatment of inflow, and/or demonstration of adequate treatment capacity of underlying soils.
- Infiltration is into native soil, or depth of engineered fill is ≤ 5 feet from the bottom of the facility to native material and infiltration into fill is approved by a geotechnical professional.
- Tributary area land uses include mixed-use and commercial, single-family and multi-family, roads and parking lots, and parks and open spaces. High pollutant land uses should not be tributary to infiltration BMPs.

OC-Specific Design Criteria and Considerations

- Placement of BMPs should observe geotechnical recommendations with respect to geological hazards (e.g. landslides, liquefaction zones, erosion, etc.) and set-backs (e.g., foundations, utilities, roadways, etc.)
- Minimum separation to mounded seasonally high groundwater of 10 feet shall be observed.
- Minimum pretreatment should be provided upstream of the infiltration facility, and water bypassing pretreatment should not be directed to the facility.
- Underground infiltration should not be used for drainage areas with high sediment production potential unless preceded by full treatment control with a BMP effective for sediment removal.
- Design infiltration rate should be determined as described in Appendix VII.
- Inspection ports or similar design features shall be provided to verify continued system performance and identify need for major maintenance.

TECHNICAL GUIDANCE DOCUMENT APPENDICES

- For infiltration facilities beneath roads and parking areas, structural requirements should meet H-20 load requirements.

Computing Underground Infiltration Device Size

Underground infiltration devices vary by design and by proprietary designs. The sizing method selected for use must be based on the BMP type it most strongly resembles.

- For underground infiltration devices with open pore volume (e.g., vaults, crates, pipe sections, etc), sizing will be most similar to infiltration basins.
- For underground infiltration devices with pore space (e.g., aggregate reservoirs), sizing will be most similar to permeable pavement.

Additional References for Design Guidance

- Los Angeles Unified School District (LAUSD) Stormwater Technical Manual, Chapter 5:
http://www.laschools.org/employee/design/fs-studies-and-reports/download/white_paper_report_material/Storm_Water_Technical_Manual_2009-opt-red.pdf?version_id=76975850

ATTACHMENT B

ATTACHMENT C

TECHNICAL GUIDANCE DOCUMENT

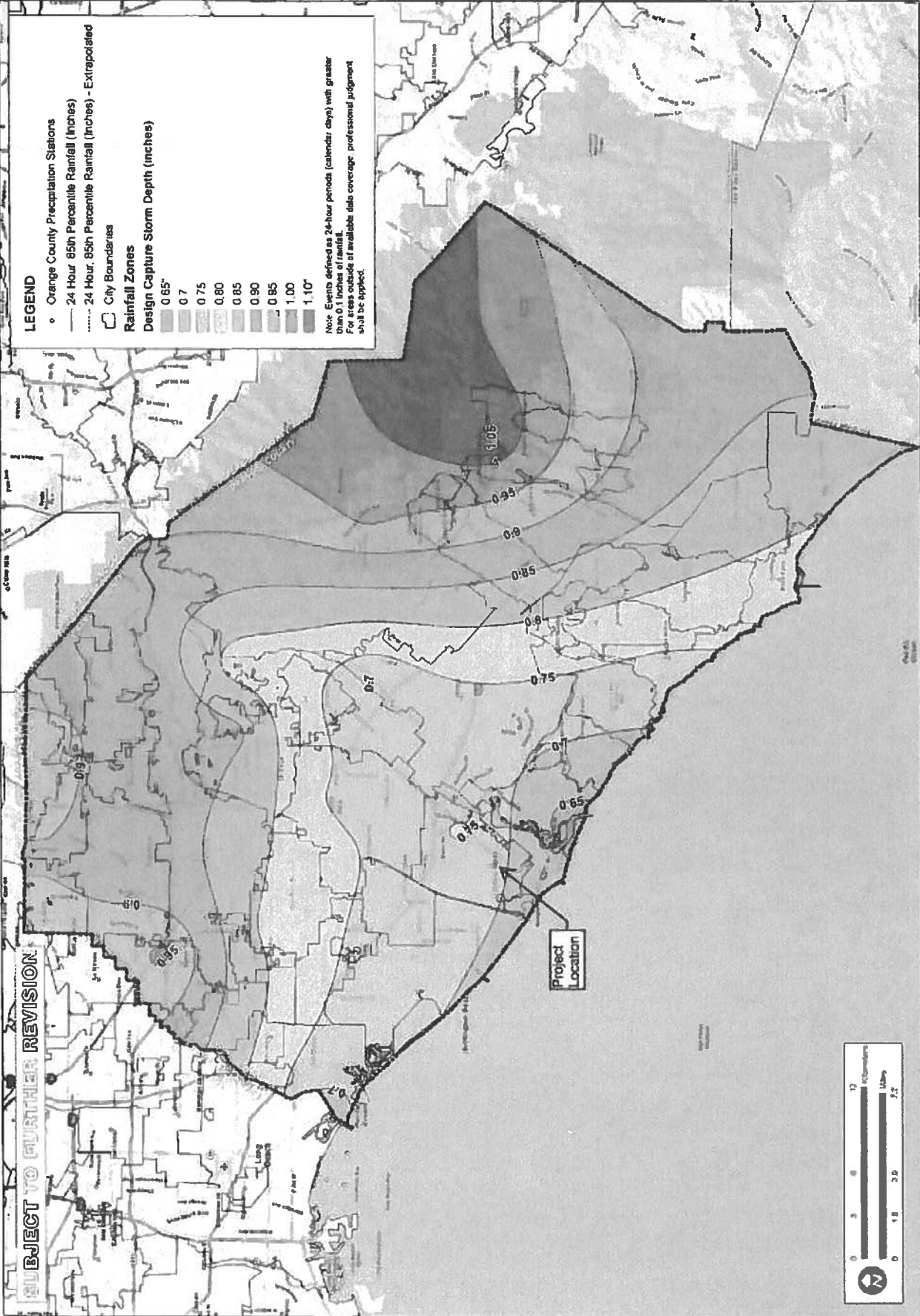
Table 2.2: Summary of the Approved 2010 303(d) Listed Water Bodies and Associated Pollutants of Concern for North Orange County

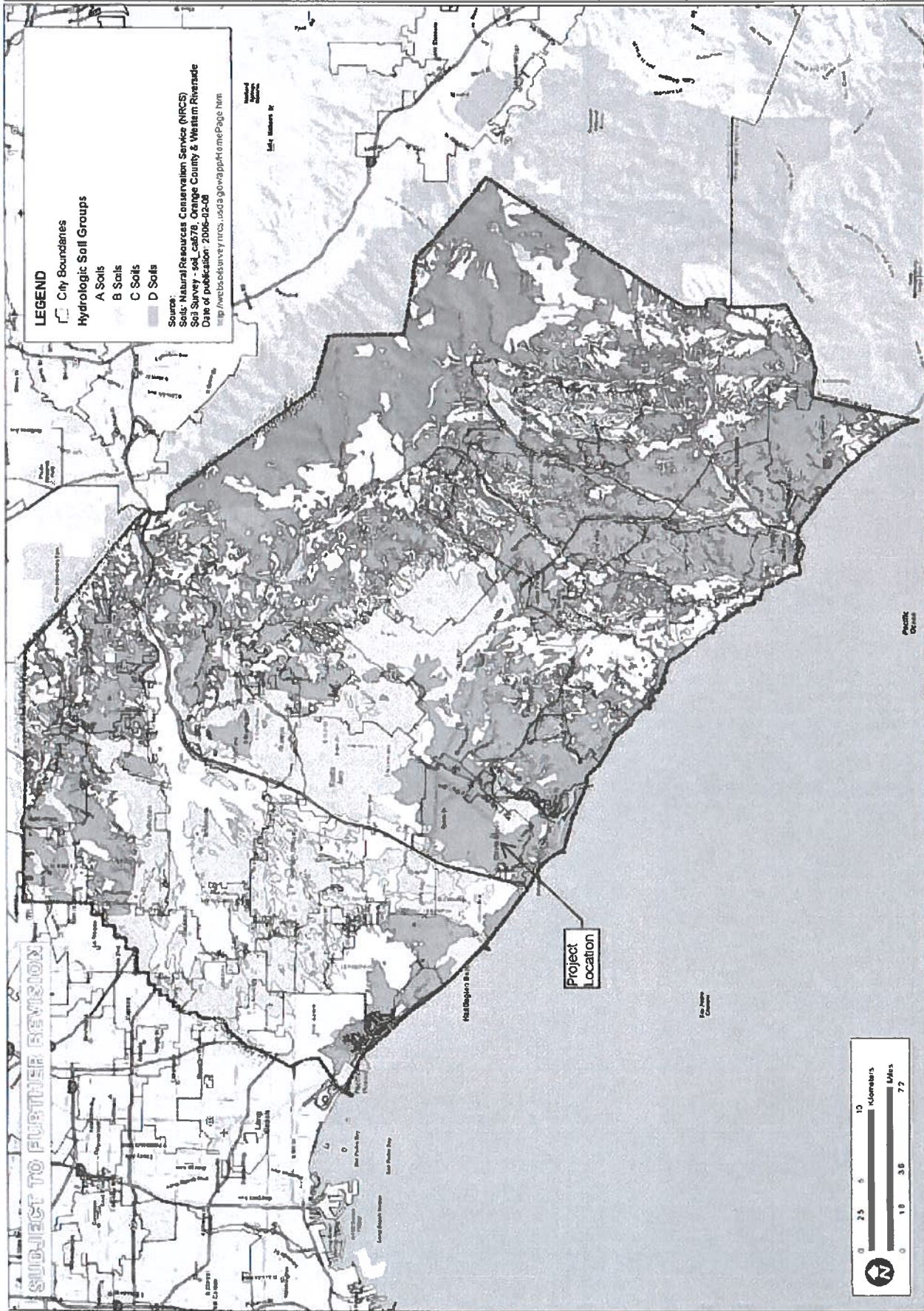
Region	Water Body	Bacteria Indicators/ Pathogens	Metals	Nutrients	Pesticides	Toxicity	Trash	Salinity/ TDS/ Chlorides	Turbidity	Other Organics
Region 8 Santa Ana	Anaheim Bay		X		X	X				X
	Boisa Chica Channel		X							
	Buck Gully Creek	X								
	Coyote Creek	X		X	X	X				
	Huntington Beach State Park									X
	Huntington Harbor	X	X		X	X				X
	Los Trancos Creek (Crystal Cove Creek)	X								
	Newport Bay, Lower					X				X
	Newport Bay, Upper (Ecological Reserve)					X				X
	San Diego Creek, Reach 1	X								
	San Diego Creek, Reach 2									
	San Gabriel River, Reach 1	X								
	Seal Beach	X								X
	<u>Silverado Creek</u>	X							X	

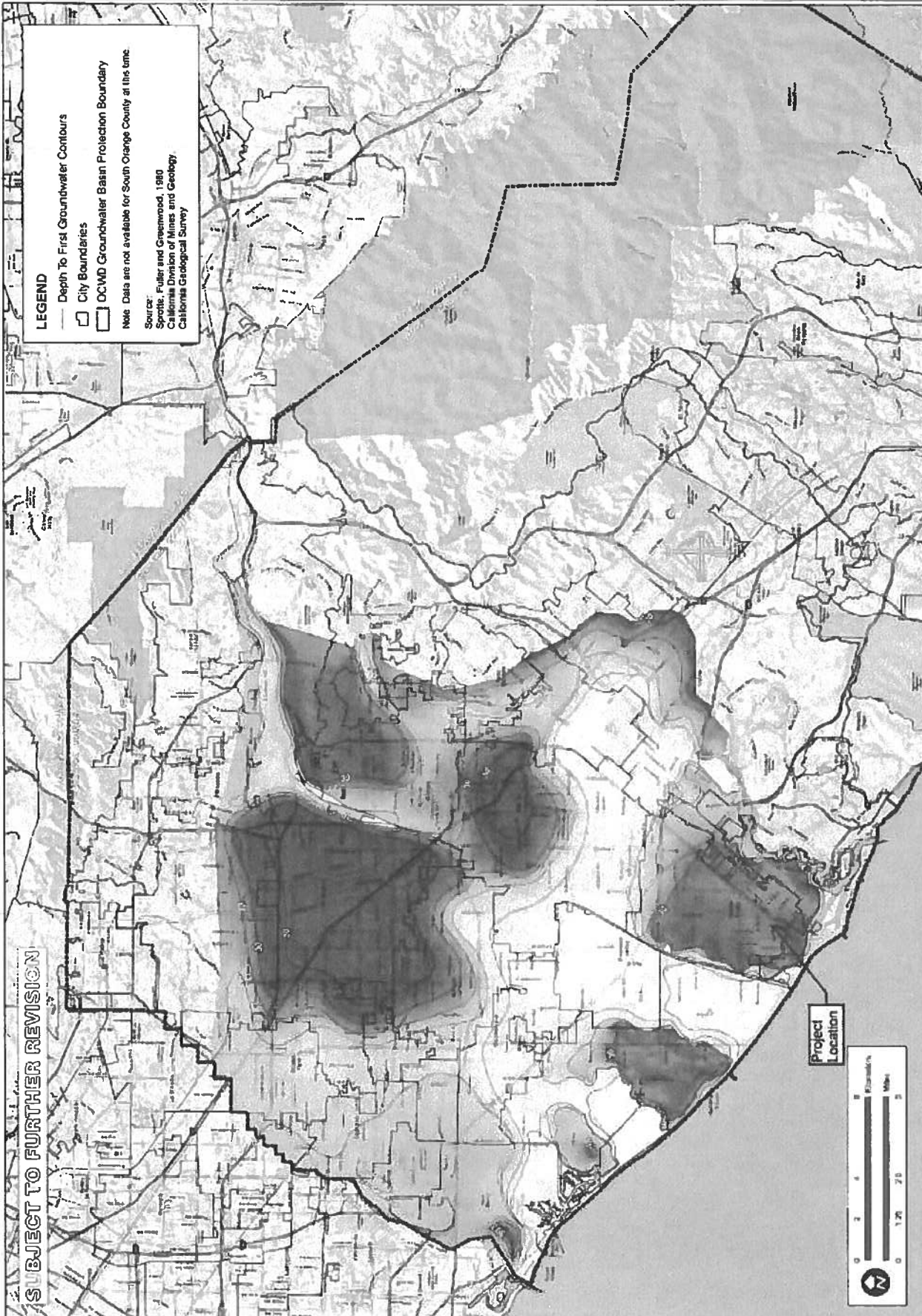
On October 11, 2011, the 2010 303(d) list was approved by USEPA Region 9. Project proponents should consult the most recent 303(d) list located on the State Water Resources Control Board website¹⁰.

¹⁰ http://www.swrcb.ca.gov/water_issues/programs/#wqassessment

ATTACHMENT D







SUBJECT TO FURTHER REVISION

LEGEND

- Depth To First Groundwater Contours
- City Boundaries
- DCWD Groundwater Basin Protection Boundary

Note: Data are not available for South Orange County at this time.

Source:
 Spotts, Fuller and Greenwood, 1980
 California Division of Mines and Geology
 California Geological Survey



Project Location

NORTH ORANGE COUNTY
 MAPPED DEPTH TO FIRST
 GROUNDWATER

ORANGE COUNTY
 INFILTRATION STUDY

ORANGE CO

DATE	1/27/04
BY	JL
PROJECT	ORANGE COUNTY
SCALE	1" = 1.25 MI
PROJECT NO.	000001
DATE	1/27/04



PLATE
 XVI-2d

ATTACHMENT E

December 13, 2018

W.O. 284718

DMS Consultants, Inc.
12377 Lewis Street #101
Garden Grove, CA 92840

Subject: Preliminary Infiltration testing, Storm Water
Management, Lions Park, Costa Mesa,
California,

Ref: STRATA-TECH, INC.; "Geotechnical Engineering Investigation, Proposed New Library
Building, Lions Park, NEC 18th Street and Park Avenue, Costa Mesa, California",
May 4, 2018

Gentlemen:

In accordance with your authorization and terms of our contract STRATA-TECH, Inc. is pleased to submit the results of our storm water infiltration testing.

Falling head percolation testing was performed in two Pits at the locations shown on the attached conceptual plan.

The soils encountered consist of Tan, silty, fn sand, Sand, fn to 5-feet. Logs of the Pits are attached. The percolation pit bottoms are substantially separated from seasonal groundwater. Ground water was encountered in adjacent borings that were dry to 15 feet. Groundwater is nominally at 15 feet below ground surface at the site.

Testing was performed in 4-foot dry wells consisting of 4-inch slotted well screen with .020" openings in an 8" diameter hand borings having the annular space packed with #3 Monterey filter sand to prevent caving. Hand borings were prepared 4/20/18

Testing was performed 4/20/18. The cased pits were filled with water for pre soak and the percolation test conducted immediately following the pre soak which confirmed sand condition criteria as outlined in OC_TGD_5-19-11 Appendix VII. .

STRATA-TECH, INC.
G E O C O N S U L T A N T S

DMS Assoc, Inc.
Preliminary Storm Water Percolation Testing

2

December 18, 2018
Lions Park, Costa Mesa, California

The testing consisted of filling each 4-foot pit with water to within 2-feet of the surface and allowing it to seep for 10 min intervals and repeatedly filling the test pit and measuring the stabilized rate at the end of 6th cycle. The drop between successive measurements was recorded for each pit and is the basis for the calculated infiltration rate.

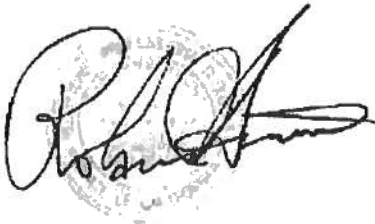
The lowest calculated infiltration rate of 6.2 inch/Hr. may be used by the design civil engineer for the infiltration system design for the subject site. When a conservative factor of safety, FS = 2 is applied the infiltration rate of 3.1 in/Hr results.

At the completion of testing the well screens were pulled and remaining holes filled with bentonite chips and covered with sod.

The work performed was carried out in accordance with acceptable geotechnical principles common to the local area in which we practice. We make no other warranties, either expressed or implied.

Respectfully submitted:

STRATA-TECH, INC.

A handwritten signature in black ink, appearing to read 'Roland Acuña', is written over a circular, faint watermark or stamp. The signature is fluid and cursive.

Roland Acuña, PG
President

Enclosures:

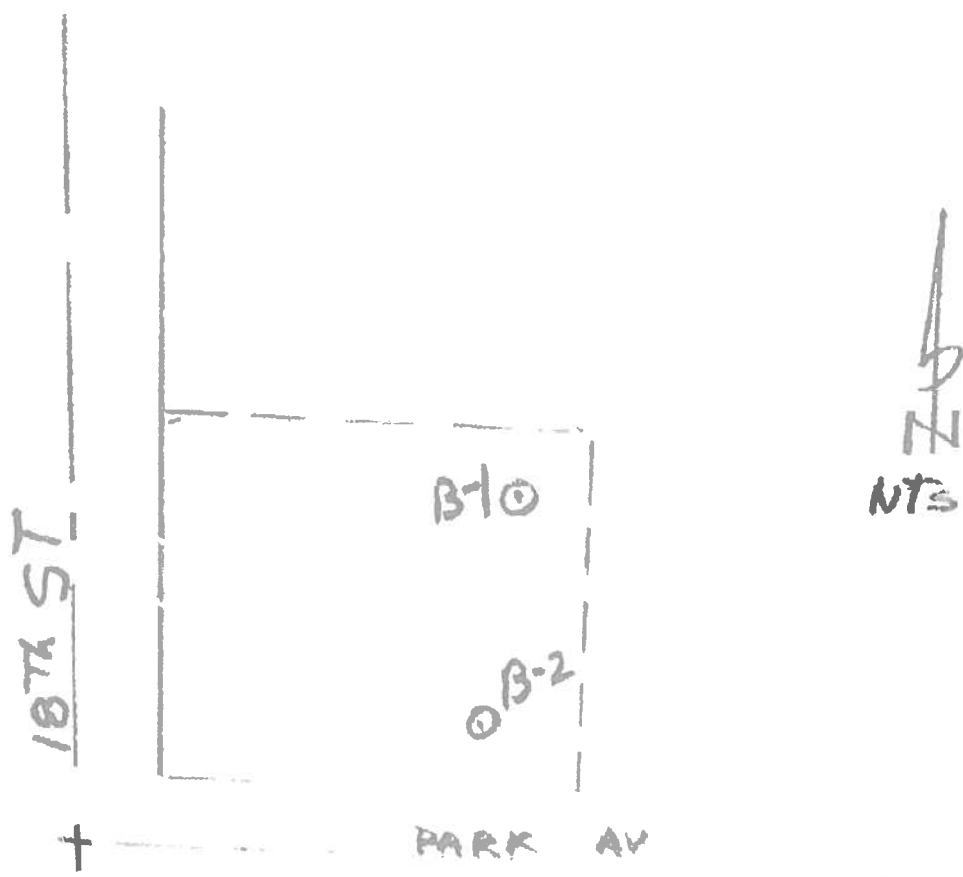
Appendix; A
Plate 1 – Pit/Perc Location Map
Plate 2 – Test Pit Logs
Plate 3 – Test Results

STRATA-TECH, INC.
GEOCONSULTANTS

APENDIX A

Plot Plan, Boring Logs and Test Results

PLOT PLAN



⊙ = APP LOC. OF BORING

Preliminary Geotechnical Investigation
Lions Park
Costa Nesa, California

Work Order 284718

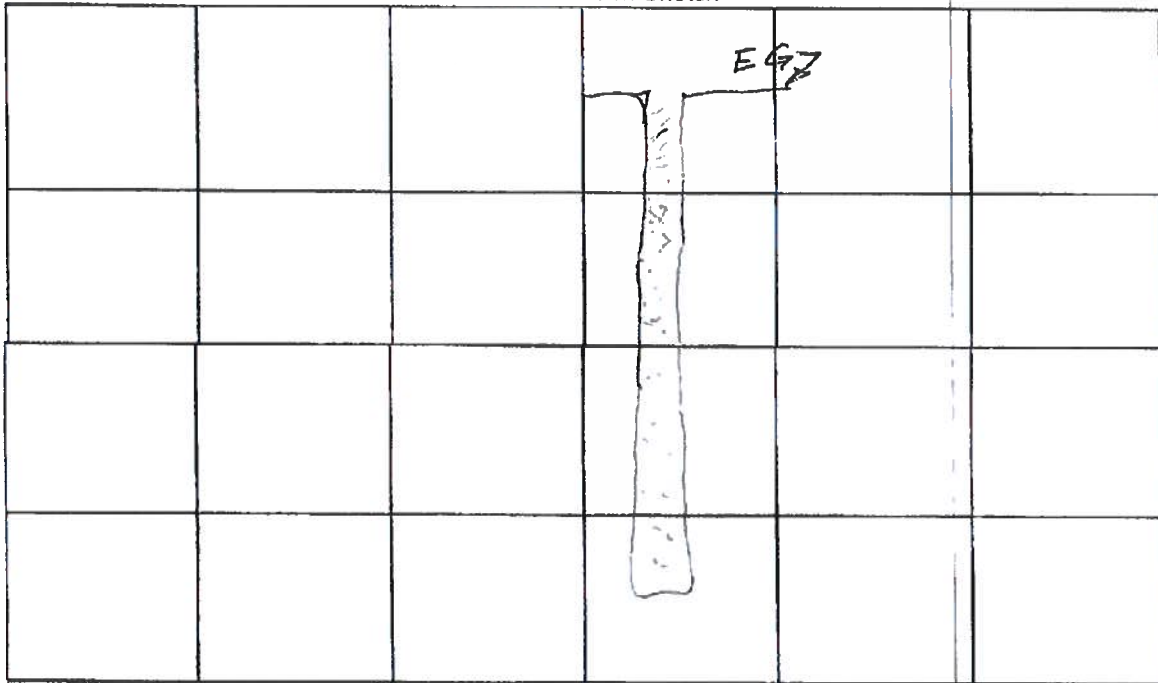
Plate No. 1

STRATA - TECH, INC.

RECORD OF SUBSURFACE EXPLORATION *ONE*

USCS	Samples		Moisture % (% dry wt.)	Dry Density (pcf)	Depth (Ft.)	Preliminary Stormwater Infiltration Testing
	U	B				<div style="font-size: 1.5em; font-weight: bold; text-align: center;">LIONS PARK</div> <div style="font-size: 1.5em; font-weight: bold; text-align: center;">COSTA MESA</div> <div style="font-size: 1.2em; font-weight: bold; text-align: center;">W.O. 284718</div>
SM					2	<div style="font-size: 0.8em;">gray brown silt to sandy, trace of clay dry</div> <div style="font-size: 0.8em;">orange brn. sand silty</div> <div style="font-size: 0.8em;">orange yellow sand trace of silt</div> <div style="font-size: 0.8em;">Damp sandier w/depth</div> <div style="font-size: 0.8em;">TD 15' NO water, NO cavities</div>
					4	
					6	
					8	
					10	
SC					12	
					14	
					15	

Cross Section Sketch

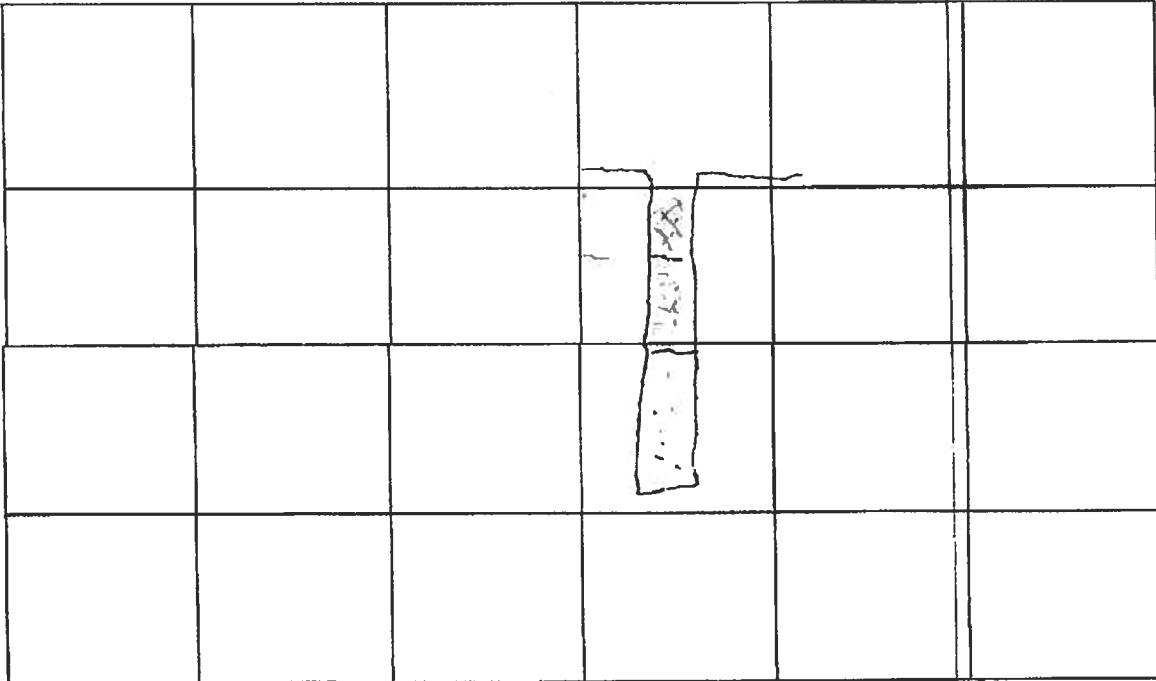


1" = 5'

RECORD OF SUBSURFACE EXPLORATION 2

USCS	Samples		Moisture % (% dry wt.)	Dry Density (pcf)	Depth (Ft.)	Preliminary Stormwater Infiltration Testing	
						LIONS PARK	
						COSTA MESA	
	U	B				W.O. 284718	
S/A					1	GRAY-BRN Silty VF-Sand, dry	
					2	ORANGE BRN, Sand, Silty	
					3	Dry	
					4	ORANGE yellow fn Sand trace of silt	
					5	EORC @ 40"	
					6		
					7		

Cross Section Sketch



1" = 2'

STRATA - TECH, INC.

Percolation Test Data Sheet

Project:	LIONS PARK	Project No:	284713	Date:	4/20/13
Test Hole No:	TWD	Tested By:	RA		
Depth of Test Hole (ft.):		USCS Soil Classification:	SM		
Test Hole Dimensions (inches)			Length	Width	
Diameter (if round)=	8"	Sides (if rectangular)=			

Sandy Soil Criteria Test*							
Trial No.	Start Time	Stop Time	Time Interval (min.)	Initial Depth to Water (in.)	Final Depth to Water (in.)	Change in Water Level (in.)	Greater than or Equal to 6" (y/n)
1	7:30	7:45	15	18	33.5	15.5	Y
2	7:50	8:05	15	19	32.1	13.1	Y

*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight. Obtain at least twelve measurements per hole over a six hours (approximately 30 minute intervals) with a precision of at least 0.25".

Trial No.	Start Time	Stop Time	Time Interval (min.)	Initial Depth to Water (in.)	Final Depth to Water (in.)	Change in Water Level (in.)	Percolation Rate (min./in.)
1	9:15	9:25	10	20	34.2	14.2	0.70
2	9:28	9:38	10	21	35.0	14.0	0.71
3	9:40	9:50	10	22	35.0	13.0	0.76
4	9:54	10:04	10	22	35.5	13.5	0.74
5	10:06	10:16	10	21	34.1	13.1	0.76
6	10:20	10:30	10	19	31.5	12.5	0.80
7							
8							
9							
10							
11							
12							
13							
14							
15							

COMMENTS:
$$I_e = \frac{12.5(240)}{10(4)} = 6.2 \text{ min/inch}$$

May 4, 2018

W.O. 284718

DMS Consultants, Inc.
12377 Lewis Street #101
Garden Grove, CA 92840

**Subject: Geotechnical Engineering Investigation, Proposed
New Library Building, Lions Park, NEC 18th Street
and Park Avenue, Costa Mesa, California**

Gentlemen:

Pursuant to your request, a geotechnical investigation has been performed at the subject site. The purposes of the investigation were to determine the general engineering characteristics of the soils on and underlying the site and to provide recommendations for the design of foundations and underground improvements.

PROPOSED DEVELOPMENT

It is our understanding that the exiting park will be redesigned and improved. A new Library will be constructed along with new garden.

PURPOSE AND SCOPE OF SERVICES

The scope of the study was to obtain subsurface information within the project site area and to provide recommendations pertaining to the proposed development and included the following:

1. A cursory reconnaissance of the site and surrounding areas.
2. Excavation of two exploratory hand borings to determine the subsurface soil conditions for evaluating subsurface conditions.
3. Collection of representative bulk and/or undisturbed soil samples for laboratory analysis.
4. Laboratory analyses of soil samples including determination of in-situ and maximum density, in-situ and optimum moisture content, shear strength and consolidation characteristics, expansion potential, sulfate content.
5. Preparation of this report presenting results of our investigation and recommendations for the proposed development.

SITE CONDITIONS

The area of study is approx 2.5 acre of an existing community center for the City of Costa Mesa. Site topography is essentially level.

The site is located on the attached Site Vicinity Map, Plate 1 and Aerial, Plate 1A.

FIELD INVESTIGATION

The field investigation was performed April 2018, consisting of the excavation of two hand auger borings at the locations shown on the attached Boring Location Map , Plate 2. As drilling progressed, personnel from this office visually classified the soils encountered, and secured representative samples for laboratory testing.

Description of the soils encountered is presented on the attached Boring Log, Plates 3-B1,B2. The data presented on this log is a simplification of actual subsurface conditions encountered and

applies only at the specific boring location and the date excavated. It is not warranted to be representative of subsurface conditions at other locations and times.

EARTH MATERIALS

Earth materials encountered within the exploratory test borings were visually logged by a representative from STRATA-TECH, Inc. The materials were classified as artificial fill and native soils.

Native soils consisted of clean to silty, fine grained sand, sandy silt, and silty, to the maximum depth explored.

Groundwater was not encountered in the shallow borings to 10 feet below ground surface(bgs).

Earth materials are further described on the attached boring logs.

SEISMICITY

Southern California is located in an active seismic region. Moderate to strong earthquakes can occur on numerous faults. The United States Geological Survey, California Division of Mines and Geology, private consultants, and universities have been studying earthquakes in Southern California for several decades. Early studies were directed toward earthquake prediction estimation of the effects of strong ground shaking. Studies indicate that earthquake prediction is not practical and not sufficiently accurate to benefit the general public. Governmental agencies are shifting their focus to earthquake resistant structures as opposed to prediction. The purpose of the code seismic design parameters is to prevent collapse during strong ground shaking. Cosmetic damage should be expected.

Within the past 30 years, Southern California and vicinity have experienced an increase in seismic activity beginning with the San Fernando earthquake in 1971. In 1987, a moderate earthquake struck the Whittier area and was located on a previously unknown fault. Ground shaking from this

event caused substantial damage to the City of Whittier, and surrounding cities. The January 17, 1994, Northridge earthquake was initiated along a previously unrecognized fault below the San Fernando Valley. The energy released by the earthquake propagated to the southeast, northwest, and northeast in the form of shear and compression waves, which caused the strong ground shaking in portions of the San Fernando Valley, Santa Monica Mountains, Simi Valley, City of Santa Clarita, and City of Santa Monica.

Southern California faults are classified as: active, potentially active, or inactive. Faults from past geologic periods of mountain building, but do not display any evidence of recent offset, are considered "inactive" or "potentially active". Faults that have historically produced earthquakes or show evidence of movement within the past 11,000 years are known as "active faults". There are no known active faults within the subject property. The nearest known active fault is the Newport-Inglewood located to the southwest.

The principal seismic hazard to the subject property and proposed project is strong ground shaking from earthquakes produced by local faults. It is likely that the subject property will be shaken by future earthquakes produced in Southern California. Secondary effects such as surface rupture, lurching, lateral spread or flooding are not considered probable. Liquefaction and seismically induced settlement are discussed in the following sections of this report.

CONCLUSIONS AND RECOMMENDATIONS

Development of the site as proposed is considered feasible from a soils engineering standpoint, provided that the recommendations stated herein are incorporated in the design and are implemented in the field. Recommendations are subject to change based on review of final foundation and grading plans.

To provide moderate risk from potential seismic settlement effects due to a catastrophic earthquake, the structure may be placed on compacted soil to reduce the effects of differential settlement. The foundation shall be continuous or tied together with grade beams. The foundation shall be reinforced with a minimum of four No. 4 bars, two top and two bottom, concrete slabs shall be a minimum of 4-inch actual thickness with No. 3 bars 18 inches on center each way, and shall be tied into foundations. These are minimum geotechnical recommendations. Additionally, the structural engineer shall utilize the newest seismic building codes in design.

Since surface soils will be disturbed due to removal of the existing structures, It is recommended that the proposed building/s be entirely supported by compacted fill. A minimum of 2 foot compacted fill blanket below the bottom of footings is recommended.

For minor structures like property line walls or retaining walls less than 4 feet high, competent native soils or compacted fill may be used.

PROPOSED GRADING

Grading plans were not available at the time our work was performed. It is assumed that proposed grades will not differ significantly from existing grades. The following recommendations are subject to change based on review of final grading plans.

GRADING RECOMMENDATIONS

Removal and recompaction of existing fill and loose native soils will be required to provide adequate support for foundations and slabs on grade.

Earthwork for foundation support shall include the entire building pad and shall extend a minimum of five feet outside exterior footing lines.

Removals shall extend downward into competent earth materials or to at least two feet below proposed footing bottoms, whichever is deeper. Average removal depth is estimated at 4 feet.

The exposed excavation bottom shall be observed and approved by STRATA-TECH, Inc. prior to processing. Dependent on field observations, removals may be adjusted up or down.

Subsequent to approval of the excavation bottom, the area shall be scarified six inches, moisture conditioned as needed, and compacted to a minimum of 90% relative compaction.

Fill soils shall be placed in six to eight inch loose lifts, moisture conditioned as needed, and compacted to a minimum of 90% relative compaction. This process shall be utilized to finish grade.

Grading for hardscape areas shall consist of removal and recompaction of soft surficial soils. Removal depths are estimated at one to two feet. Earthwork shall be performed in accordance with previously specified methods.

Grading and/or foundation plans shall be reviewed by the soil engineer. All recommendations are subject to modification upon review of such plans.

FOUNDATIONS ON COMPACTED FILL

The proposed building may be supported by continuous spread placed a minimum depth of 18 inches below lowest adjacent grade utilizing an allowable bearing value of 2,000 pounds per square foot. This value is for dead plus live load and may be increased 1/3 for total including seismic and wind loads where allowed by code.

Type	Minimum Depth (inches)	Minimum Width (inches)	Bearing Value (psf)	Increase		Maximum (psf)
				Width	Depth	
				(psf/ft)	(psf/ft)	
Continuous	24	16	2000	180	440	3500
Interior	18	24	2000	180	440	3500

It is recommended that all footings be reinforced with a minimum of two no. 4 bars (2 top and 2 bottom). The structural engineer's reinforcing requirements should be followed if more stringent.

Footing excavations shall be observed by a representative of STRATA-TECH, Inc. prior to placement of steel or concrete to verify competent soil conditions. If unacceptable soil conditions are exposed mitigation will be recommended.

FOUNDATIONS ON COMPETENT NATIVE SOILS – for Minor Structures

Minor structures may be supported by continuous spread footings placed a minimum depth of 18 inches below lowest adjacent grade and 12-inches into competent natural soil utilizing an allowable bearing value of 1,500 pounds per square foot. This value is for dead plus live load and may be increased 1/3 for total including seismic and wind loads where allowed by code.

Footing excavations shall be observed by a representative of STRATA-TECH, Inc. prior to placement of steel or concrete to verify competent soil conditions. If unacceptable soil conditions are exposed, mitigation will be recommended.

LATERAL DESIGN

Lateral restraint at the base of footings and on slabs may be assumed to be the product of the dead load and a coefficient of friction of .35. Passive pressure on the face of footings may also be used to resist lateral forces. A passive pressure of zero (0) at the surface of finished grade, increasing at the rate of 350 pounds per square foot of depth to a maximum value of 3500 pounds per square foot, may be used for compacted fill or native soils at this site. If passive pressure and friction are combined for evaluating the lateral resistance, the value of the passive pressure should be limited to 2/3 of the values given above.

EXPANSIVE SOILS

Results of expansion tests indicate that the near surface soils have a low to very low expansion potential.

**Building Code Reference Document 2009 NEHRP Recommended Seismic Provisions
(which utilizes USGS hazard data available in 2008)**

- Site Coordinates 33.6403°N, 117.9221°W
- Site Soil Classification Site Class D – “Stiff Soil”
- Risk Category I/II/III ↓

USGS–Provided Output

$S_S =$	1.674g	$S_{MS} =$	1.674 g	$S_{DS} =$	1.116 g
$S_1 =$	0.616 g	$S_{M1} =$	0.924 g	$S_{D1} =$	0.616 g

- Mapped PGA $PGA = 0.678 \text{ g}$
- Equation (11.8–1): $PGA_M = F_{PGA}PGA = 1.000 \times 0.678 = 0.678 \text{ g}$

SETTLEMENT

The maximum total post-construction settlement is anticipated to be on the order of 1/2 inch. Differential settlements are expected to be less than 1/2 inch, measured between adjacent structural elements.

FLOOR SLABS

The surface soils are non-plastic.

If a slab on grade is utilized, the slab shall be supported on engineered fill compacted to a minimum of 90% relative compaction and underlain by a minimum of 4 inches clean sand with $SE > 30$. Slabs should be reinforced with at least No. 3 bars 18 inches on center both ways.

The soil should be kept moist prior to casting the slab. However, if the soils at grade become disturbed during construction, they should be brought to approximately optimum moisture content and rolled to a firm, unyielding condition prior to placing concrete.

In areas where a moisture sensitive floor covering will be used, a vapor barrier consisting of a plastic film (6 mil polyvinyl chloride or equivalent) should be used. The vapor barrier should be properly lapped and sealed. Since the vapor barrier will prevent moisture from draining from fresh concrete, a better concrete finish can usually be obtained if at least two inches of sand is spread over the vapor barrier prior to placement of concrete.

UTILITY LINE BACKFILLS

All utility line backfills, both interior and exterior, shall be compacted to a minimum of 90% relative compaction and shall require testing at a maximum of two foot vertical intervals.

HARDSCAPE AND SLABS

Hardscape and slab subgrade areas shall exhibit a minimum of 90% relative compaction to a depth of at least one foot. Deeper removal and recompaction may be required if unacceptable conditions are encountered. These areas require testing just prior to placing concrete.

CHEMICAL ANALYSIS

A representative, onsite soil sample has been analyzed for soluble sulfates, soluble chloride, minimum resistivity and PH. Type II concrete may be utilized for the foundation system. Concrete design and placement shall be in accordance with appropriate codes. The soils are

considered corrosive to metal pipes. All metal pipes must be wrapped. The Chemical Series Results are presented in Appendix A of this report.

DRAINAGE

Positive drainage should be planned for the site. Minimum drainage should be two percent for landscape areas and one percent for hardscape. Drainage should be directed away from structures via non-erodible conduits to suitable disposal areas. The structure should utilize roof gutters and down spouts tied directly to yard drainage.

Unlined flower beds, planters, and lawns should not be constructed against the perimeter of the structure. If such landscaping (against the perimeter of a structure) is planned, it should be properly drained and lined or provided with an underground moisture barrier. Irrigation should be kept to a minimum.

ENGINEERING CONSULTATION, TESTING & OBSERVATION

We will be pleased to provide additional input with respect to foundation design once methods of construction and/or nature of imported soil has been determined.

Grading and foundation plans should be reviewed by this office prior to commencement of grading so that appropriate recommendations, if needed, can be made.

Areas to receive fill should be inspected when unsuitable materials have been removed and prior to placement of fill, and fill should be observed and tested for compaction as it is placed.

AGENCY REVIEW

All soil, geologic and structural aspects of the proposed development are subject to the review and approval of the governing agency (s). It should be recognized that the governing agency (s) can dictate the manner in which the project proceeds. They could approve or deny any aspect of the

proposed improvements and/or could dictate which foundation and grading options are acceptable. Supplemental geotechnical consulting in response to agency requests for additional information could be required and will be charged on a time and materials basis.

LIMITATIONS

This report presents recommendations pertaining to the subject site based on the assumption that the subsurface conditions do not deviate appreciably from those disclosed by our exploratory excavations. Our recommendations are based on the technical information, our understanding of the proposed construction, and our experience in the geotechnical field. We do not guarantee the performance of the project, only that our engineering work and judgments meet the standard of care of our profession at this time.

In view of the general conditions in the area, the possibility of different local soil conditions may exist. Any deviation or unexpected condition observed during construction should be brought to the attention of the Geotechnical Engineer. In this way, any supplemental recommendations can be made with a minimum of delay necessary to the project.

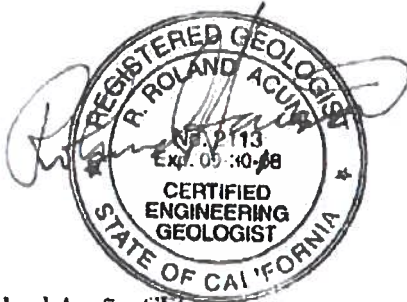
If the proposed construction will differ from our present understanding of the project, the existing information and possibly new factors may have to be evaluated. Any design changes and the finished plans should be reviewed by the Geotechnical Consultant. Of particular importance would be extending development to new areas, changes in structural loading conditions, postponed development for more than a year, or changes in ownership.

This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans and that the necessary steps are taken to see that the contractors and subcontractors carry out such recommendations in the field.

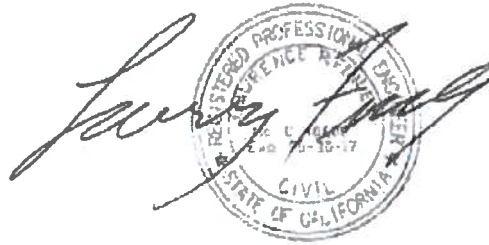
This report is subject to review by the controlling authorities for this project.

We appreciate this opportunity to be of service to you.

Respectfully submitted:
STRATA-TECH, INC.



Roland Acuña, CEG
President

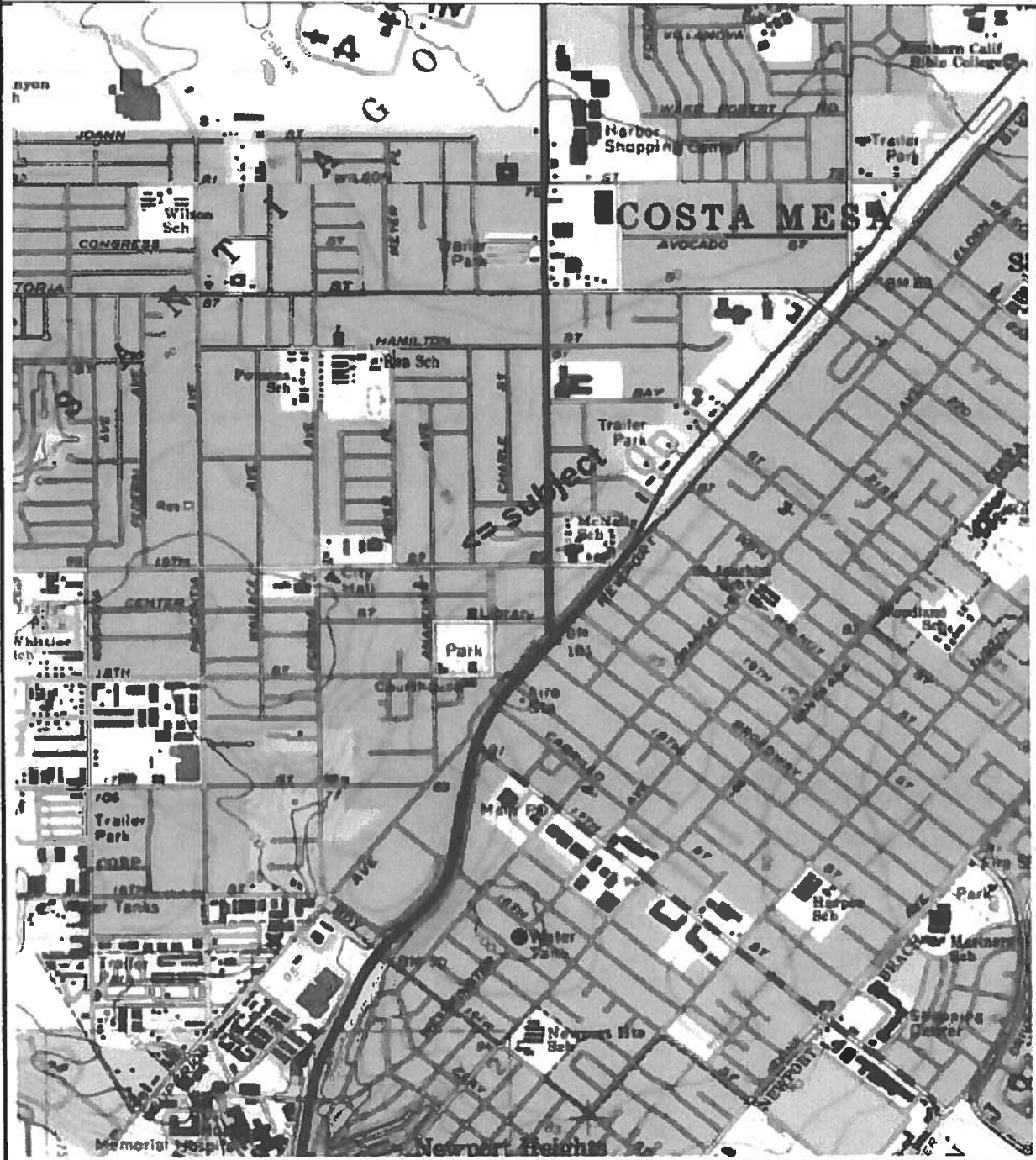


Larry Finley, RCE 46606

Enclosure(s)

- Plate No. 1 – Vicinity Map,
- Plate No. 2 – Site Plan
- Plates No. 3 – Boring Logs
- Plate No. 4 – Shear Test

VICINITY AERIAL MAP



Preliminary Geotechnical Investigation
Lions Park
Costa Mesa, California

Work Order 284718

Plate No. 1

STRATA - TECH, INC.

PLOT PLAN



⊙ = App Loc. of BORING

Preliminary Geotechnical Investigation
Lions Park
Costa Nesa, California

Work Order 284718

Plate No. 1

STRATA - TECH, INC.

APPENDIX A

This appendix contains a description of the field investigation, laboratory testing procedures and results, site plan, and exploratory logs.

LABORATORY TESTING

Field samples were examined in the laboratory and a testing program was then established to develop data for preliminary evaluation of geotechnical conditions.

Sample Retrieval-

Undisturbed samples of earth materials were obtained at frequent intervals by driving a thin-walled steel sampler with a sampling hammer. The material was retained in brass rings of 2.41 inches inside diameter and 1.00 inch height. The central portion of the sample was in close-fitting, watertight containers for transportation to the laboratory.

Descriptions of the soils encountered are presented on the attached boring Logs. The data presented on these logs is a simplification of actual subsurface conditions encountered and applies only at the specific boring location and the date excavated. It is not warranted to be representative of subsurface conditions at other locations and times.

Laboratory Testing

Field samples were examined in the laboratory and a testing program was then established to develop data for preliminary evaluation of geotechnical conditions.

Moisture Density

Field moisture content and dry density were determined for each of the undisturbed soil samples. The dry density was determined in pounds per cubic foot. The moisture content was determined as a percentage of the dry soil weight. The results of the tests are shown in the test results section of this appendix.

Compaction Character

Compaction tests were performed on bulk sample of the existing soil in accordance with ASTM D1557. The results of the tests are shown in the test results section of this appendix.

Shear Strength

The ultimate shear strength of the fill soil, remolded to 90-percent of the laboratory standard was determined by performing a direct shear test. The test was performed in a strain-controlled machine manufactured by GeoMatic. The rate of deformation was 0.005 inches per minute. Samples were sheared under varying confining pressure, as shown on the "Shear Test Diagrams". The samples indicated as saturated were artificially saturated in the laboratory and were shear under submerged conditions. The results of tests are based on 80 percent peak strength or ultimate strength, whichever is lower, and are attached.

TEST RESULTS

Maximum Density/Optimum Moisture (ASTM:D-1557)

Boring	Depth in Feet	Maximum Density (pcf)	Optimum Moisture (%)
2	2 - 4	116.0	9.0

Direct Shear

Boring	Depth in Feet	Cohesion (psf)	Angle of Internal Friction (degrees)
1	2	120	24

Expansion Index (U.B.C. Standard 18-2)

Boring	Depth in Feet	Expansion Index	Expansion Potential
1	3 - 4	25	Low
2	0 - 1.5	34	Low

Chemical Analysis

Boring	Depth (feet)	Soluble Sulfate	Soluble Chlorides	Minimum Resistivity	PH
1	2	168	180	1523	7.5

ATTACHMENT F

The Ocean Begins at Your Front Door

For More Information

- California Environmental Protection Agency
www.calcpa.ca.gov
- Air Resources Board
www.arb.ca.gov
- Department of Pesticide Regulation
www.cdpr.ca.gov
- Department of Toxic Substances Control
www.dtscc.ca.gov
- Integrated Waste Management Board
www.ciwrmb.ca.gov
- Office of Environmental Health Hazard Assessment
www.oehha.ca.gov
- State Water Resources Control Board
www.waterboards.ca.gov

Earth 911 - community-specific environmental information
1-800-cleanup or visit www.1800cleanup.org

Health Care Agency's Ocean and Bay Water Closure
and Posting Hotline
714-433-6400 or visit www.ocbeachinfo.com

Integrated Waste Management/ Dept. of Orange County
information on household hazardous waste collection
centers, recycling centers and solid waste collection
714-834-6752 or visit www.oclandfills.com

O.C. Agriculture Commissioner
714-447-7100 or visit www.ocagronum.com

Stormwater Best Management Practice Handbook
Visit www.cabmphandbooks.com

UC Master Gardener Hotline
714-708-1646 or visit www.ucvmg.org

The Orange County Stormwater Program has created and moderates an electronic mailing list to facilitate communications, take questions and exchange ideas among its users about issues and topics related to stormwater and urban runoff and the implementation of program elements. To join the list, please send an email to ocstormwaterinfo-join@list.ocwaterboards.com

Orange County Stormwater Program

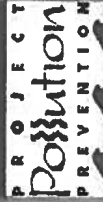
Aliso Viejo	(949) 425-2535
Anaheim Public Works Operations	(714) 765-8860
Brea Engineering	(714) 990-7666
Buena Park Public Works	(714) 562-9655
Costa Mesa Public Services	(714) 754-5923
Cypress Public Works	(714) 229-6740
Dana Point Public Works	(949) 248-8584
Fountain Valley Public Works	(714) 593-4441
Fullerton Engineering Dept	(714) 738-8853
Garden Grove Public Works	(714) 741-5956
Huntington Beach Public Works	(714) 536-5431
Irvine Public Works	(949) 724-6815
La Habra Public Services	(562) 905-9792
La Palma Public Works	(714) 690-3310
Laguna Beach Water Quality	(949) 497-0378
Laguna Hills Public Service	(949) 707-2650
Laguna Niguel Public Works	(949) 362-4337
Laguna Woods Public Works	(949) 639-0500
Lake Forest Public Works	(949) 461-3480
Los Alamitos Community Dev	(562) 431-3538
Mission Viejo Public Works	(949) 470-3056
Newport Beach, Code & Water Quality Enforcement	(949) 644-9215
Orange Public Works	(714) 532-6480
Placentia Public Works	(714) 993-8245
Rancho Santa Margarita	(949) 638-1800
San Clemente Environmental Programs	(949) 861-6143
San Juan Capistrano Engineering	(949) 234-4413
Santa Ana Public Works	(714) 647-3380
Seal Beach Engineering	(562) 431-2527 x317
Stanton Public Works	(714) 379-9222 x204
Tustin Public Works Engineering	(714) 575-3150
Villa Park Engineering	(714) 998-1500
Westminster Public Works Engineering	(714) 898-3311 x446
Yorba Linda Engineering	(714) 961-7198
Orange County Stormwater Program	(714) 567-6363

Orange County 24-Hour
Water Pollution Problem Reporting Hotline
(714)-567-6363

On-line Water Pollution Problem Reporting form
www.ocwaterboards.com



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Even if you live miles from the Pacific Ocean, you may be unknowingly polluting it.

Did You Know?

- Most people believe that the largest source of water pollution in urban areas comes from specific sources such as factories and sewage treatment plants. In fact the largest source of water pollution comes from city streets, neighborhoods, construction sites, and parking lots. This type of pollution is sometimes called "non-point source" pollution.
- There are two types of non-point source pollution: stormwater and urban runoff pollution.
- Stormwater runoff refers to runoff resulting from rainfall. It is very noticeable during heavy rainstorms when large volumes of water drain off the urban landscape picking up pollutants along the way.
- Urban runoff can happen anytime of the year when excessive water use from irrigation, vehicle washing and other sources carries trash, lawn clippings and other urban pollutants into storm drains.

Where Does It Go?

- Anything we use outside homes, vehicles and businesses – like motor oil, paint, pesticides, fertilizers, and cleaners – can be blown or washed into the storm drains.
- A little water from a garden hose or rain can also send materials into the storm drains.
- Storm drains are separate from our sanitary sewer systems; unlike water in sanitary sewers (from sinks or toilets) water in the storm drains is not treated before entering our waterways.

Sources of Non-Point Source Pollution

- Automotive leaks and spills.
- Improper disposal of used oil and other engine fluids.
- Metals found in vehicle exhaust, weathered paint, rust, metal plating, and tires.
- Pesticides and fertilizers from lawns, gardens and farms.
- Improper disposal of cleaners, paint and paint removers.
- Soil erosion and dust debris from landscape and construction activities.
- Litter, lawn clippings, animal waste, and other organic matter.
- Oil stains on parking lots and paved surfaces.

The Effect on the Ocean

Non-point source pollution can have a serious impact on water quality in Orange County. Pollutants from the storm drain system can harm marine life as well as coastal and wetland habitats. They can also degrade recreation areas such as beaches, harbors and bays.

Stormwater quality management programs have been developed by the Orange County Stormwater Program under National Pollutant Discharge Elimination System (NPDES) permits. The program educates and encourages the public to protect water quality, monitor runoff in the storm drain system, manage NPDES permit process for municipalities, investigate illegal disposals, and maintain storm drains.

The support of Orange County residents, businesses and industries is needed to improve water quality and reduce the threat of stormwater and urban runoff pollution. Proper use and disposal of materials we use everyday will help stop this form of pollution before it reaches the storm drain and the ocean.

Dumping one quart of motor oil into a storm drain can contaminate 250,000 gallons of water.

The Ocean Begins at Your Front Door



Never allow pollutants to enter the street, gutter or storm drain!

Follow these simple steps to help reduce water pollution:

Household Activities

- Do not rinse spills with water. Use dry cleanup methods such as applying cat litter or another absorbent material, sweep and dispose of in trash. Take items such as used or excess batteries, oven cleaners, automotive fluids, painting products, and cathode ray tubes, like TVs and computer monitors, to a Household Hazardous Waste collection center.
- For a household hazardous waste collection center near you call (714) 834-6752 or visit www.oilandfills.com.
- Do not hose down your driveway, sidewalk or patio to the street, gutter or storm drain. Sweep up debris and dispose of in trash.

Automotive

- Take your vehicle to a commercial car wash whenever possible. If you wash your vehicle at home, choose soaps, cleaners, or detergents labeled non-toxic, phosphate free or biodegradable. Vegetable and citrus-based products are typically safest for the environment.
- Do not allow washwater from vehicle washing into the street, gutter or storm drain. Excess washwater should be disposed of in the sanitary sewer (through a sink or toilet) or onto an absorbent surface like your lawn.
- Monitor vehicle for leaks and place a pan under leaks. Keep your vehicles well maintained to stop and prevent leaks.
- Never pour oil or antifreeze in the street, gutter or storm drain. Recycle these substances at a service station, a waste oil collection center or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit www.1800cleanup.org.

Pool Maintenance

- Pool and spa water must be dechlorinated and be free of excess acid, alkali or color to be allowed in the street, gutter or storm drain.
- Whenever possible, drain dechlorinated pool and spa water directly into the sanitary sewer but only when it is not raining.
- Some cities may have ordinances that do not allow pool water to be disposed into the storm drain. Check with your city.

Landscape and Gardening

- Do not overwater. Water your lawn and garden by hand to control the amount of water you use or set irrigation systems to reflect seasonal water needs. If water flows off your yard onto your driveway or sidewalk, your system is overwatering. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead dispose of waste by composting, hauling it to a permitted landfill, or as green waste through your city's recycling program.
- Follow directions on pesticides and fertilizer, (measure, do not estimate amounts) and do not use if rain is predicted with 48 hours.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. For locations and hours of Household Hazardous Waste Collection Centers call 714-834-6752 or visit www.oilandfills.com.

Trash

- Place trash and litter that cannot be recycled in securely covered trash cans.
- Whenever possible, buy recycled products.
- Remember: Reduce, Reuse, Recycle

Pet Care

- Always pick up after your pet. Flush waste down the toilet or dispose in the trash. Pet waste, if left outdoors, can wash into the street, gutter or storm drain.
- If possible, bathe your pets indoors. If you must bathe your pet outside, wash it on your lawn or another absorbent/permeable surface to keep the washwater from entering the street, gutter or storm drain.
- Follow directions for use of pet care products and dispose of any unused products at a Household Hazardous Waste Collection Center.

Common Pollutants

Home Maintenance

- Bleach, solvents, cleaners and solvents
- Oil and latex paint
- Swimming pool chemicals
- Outdoor trash and litter

Lawn and Garden

- Pet and animal waste
- Pesticides
- Clippings, leaves and soil
- Fertilizer

Automobile

- Oil and grease
- Radiator fluids and antifreeze
- Cleaning chemicals
- Brake pad dust



Preventing water pollution at your commercial/industrial site

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many landscape and building maintenance activities can lead to water pollution if you're not careful. Paint, chemicals, plant clippings and other materials can be blown or washed into storm drains that flow to the ocean. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour soap or fertilizers into the ocean, so why would you let them enter the storm drains? Follow these easy tips to help prevent water pollution.

Some types of industrial facilities are required to obtain coverage under the State General Industrial Permit. For more information visit: www.swrcb.ca.gov/stormwater/industrial.html

For more information, please call the **Orange County Stormwater Program** at 1-877-89-SPILL (1-877-897-7455)

or visit

www.ocwatersheds.com

To report a spill, call the

Orange County 24-Hour Water Pollution Problem

Reporting Hotline

at 1-877-89-SPILL (1-877-897-7455).

For emergencies, dial 911.



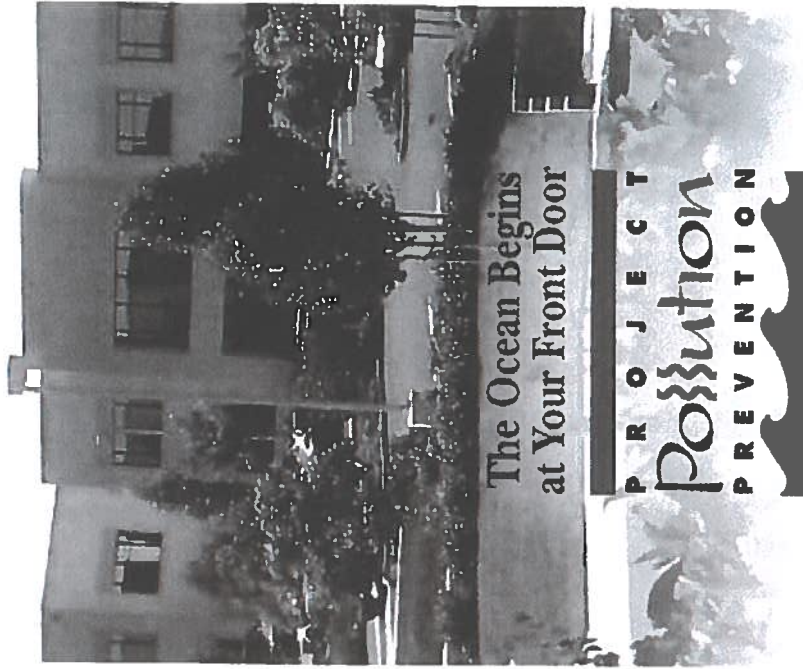
RECYCLE
USED OIL



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Help Prevent Ocean Pollution:

Proper Maintenance Practices for Your Business



Proper Maintenance Practices for your Business

Landscape Maintenance

- Compost grass clippings, leaves, sticks and other vegetation, or dispose of it at a permitted landfill or in green waste containers. Do not dispose of these materials in the street, gutter or storm drain.
- Irrigate slowly and inspect the system for leaks, overspraying and runoff. Adjust automatic timers to avoid overwatering.
- Follow label directions for the use and disposal of fertilizers and pesticides.
- Do not apply pesticides or fertilizers if rain is expected within 48 hours or if wind speeds are above 5 mph.
- Do not spray pesticides within 100 feet of waterways.
- Fertilizers should be worked into the soil rather than dumped onto the surface.
- If fertilizer is spilled on the pavement or sidewalk, sweep it up immediately and place it back in the container.

Building Maintenance

- Never allow washwater, sweepings or sediment to enter the storm drain.
- Sweep up dry spills and use cat litter, towels or similar materials to absorb wet spills. Dispose of it in the trash.
- If you wash your building, sidewalk or parking lot, you **must** contain the water. Use a shop vac to collect the water and contact your city or sanitation agency for proper disposal information. Do not let water enter the street, gutter or storm drain.
- Use drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of materials in the trash.
- Use a ground cloth or oversized tub for mixing paint and cleaning tools.
- Use a damp mop or broom to clean floors.
- Cover dumpsters to keep insects, animals, rainwater and sand from entering. Keep the area around the dumpster clear of trash and debris. Do not overfill the dumpster.

- Call your trash hauler to replace leaking dumpsters.

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or near a storm drain. Even materials that seem harmless such as latex paint or biodegradable cleaners can damage the environment.

**NEVER DISPOSE
OF ANYTHING
IN THE STORM
DRAIN.**

- Recycle paints, solvents and other materials. For more information about recycling and collection centers, visit www.oilandfills.com.
- Store materials indoors or under cover and away from storm drains.
- Use a construction and demolition recycling company to recycle lumber, paper, cardboard, metals, masonry, carpet, plastic, pipes, drywall, rocks, dirt, and green waste. For a listing of construction and demolition recycling locations in your area, visit www.ciwmb.ca.gov/recycle.
- Properly label materials. Familiarize employees with Material Safety Data Sheets.



Help Prevent Ocean Pollution:

Tips for Landscape & Gardening



Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Fertilizers, pesticides and other chemicals that are left on yards or driveways can be blown or washed into storm drains that flow to the ocean. Overwatering lawns can also send materials into storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour gardening products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the

Orange County Stormwater Program
at **1-877-89-SPILL (1-877-897-7455)**

or visit

www.ocwatersheds.com

UCCE Master Gardener Hotline:
(714) 708-1646

To report a spill,
call the

**Orange County 24-Hour
Water Pollution Problem
Reporting Hotline**

1-877-89-SPILL (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while landscaping or gardening. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.



Printed on Recycled Paper



Tips for Landscape & Gardening

Never allow gardening products or polluted water to enter the street, gutter or storm drain.

General Landscaping Tips

■ Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.

■ Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.

■ Plant native vegetation to reduce the amount of water, fertilizers, and pesticide applied to the landscape.

■ Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

■ Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro spray systems. Periodically inspect and fix leaks and misdirected sprinklers.

■ Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.

■ Use slow-release fertilizers to minimize leaching, and use organic fertilizers.

■ Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.

■ Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.

■ Rinse empty pesticide containers and re-use rinse water as you would use the



product. Do not dump rinse water down storm drains. Dispose of empty containers in the trash.

■ When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting. For more information, visit www.ipm.ucdavis.edu.

■ If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.

■ Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. Locations are provided below.

Household Hazardous Waste Collection Centers

Anaheim: 1071 N. Blue Gum St.
Huntington Beach: 17121 Nichols St.
Irvine: 6411 Oak Canyon
San Juan Capistrano: 32250 La Pata Ave.

For more information, call (714) 834-6752 or visit www.oilandfills.com

Help Prevent Ocean Pollution: Tips For Protecting Your Watershed

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, if we are not careful, our daily activities can lead directly to water pollution problems. Water that drains through your watershed can pick up pollutants which are then transported to our waterways and beautiful ocean.

You can prevent water pollution by taking personal action and by working with members of your watershed community to prevent urban runoff from entering your waterway.



For more information,
please call the
Orange County Stormwater Program
at **1.877.89.SPILL**
or visit
www.ocwatersheds.com

To report a spill,
call the
**Orange County 24-Hour
Water Pollution Problem
Reporting Hotline**
at **1.877.89.SPILL**.

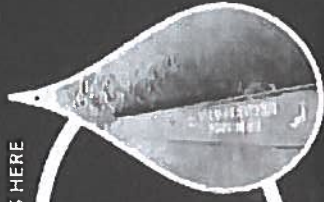
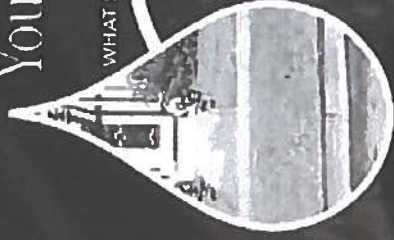
For emergencies, dial 911.

The tips contained in this brochure provide useful information to help protect your watershed. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.



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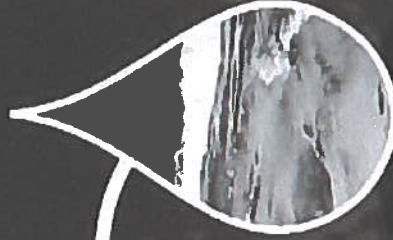
WHAT STARTS HERE



COULD TRAVEL HERE



WHICH FLOWS
THROUGH HERE



AND ENDS UP HERE

The Ocean Begins
at Your Front Door



Tips for Protecting Your Watershed

My Watershed. Our Ocean.

Water + shed, noun: A region of land within which water flows down into a specified water body, such as a river, lake, sea, or ocean; a drainage basin or catchment basin.

Orange County is comprised of 11 major watersheds into which most of our water flows, connecting all of Orange County to the Pacific Ocean.



As water from rain (stormwater) or sprinklers and hoses (urban runoff) runs down your driveway and into your neighborhood streets, sidewalks and gutters, it flows into storm drains that lead to waterways within your watershed. The waterways from other cities merge as they make their way through our watersheds until all the runoff water in Orange County meets at the Pacific Ocean. The water that reaches our ocean is not pure. As it flows through the watershed, it picks up pollutants such as litter, cigarette butts, fertilizer, pesticides, pet waste, motor oil and lawn clippings. Unlike water that enters the sewer (from sinks and toilets), water that enters the storm drain is not treated before it flows, ultimately, to the ocean.

Water quality can be improved by "Adopting Your Watershed." Through this effort, we are challenging citizens and



organizations to join the Orange County Stormwater Program and others who are working to protect and restore our creeks, rivers, bays and ocean.

There are many opportunities to get involved:

- Appreciate your watershed - explore the creeks, trails and ocean and make observations about its conditions. If you see anything abnormal (such as dead fish, oil spills, leaking barrels, and other pollution) contact the Orange County 24-hour water pollution problem reporting hotline at 1.877.89.SPILL to report the problem.
- Research your watershed. Learn about what watershed you live in by visiting www.ocwatersheds.com.
- Find a watershed organization in your community and volunteer to help. If there are no active groups, consider starting your own.
- Visit EPA's Adopt Your Watershed's Catalog of Watershed Groups at www.epa.gov/adopt to locate groups in your community.
- Organize or join in a creek, river, bay or ocean cleanup event such as Coastal & Inner Coastal Cleanup Day that takes place the 3rd Saturday of every September. For more information visit www.coast4u.org.

Follow these simple tips to protect the water quality of your watershed:

- Sweep up debris and dispose of it in the trash. Do not hose down driveways or sidewalks into the street or gutter.
- Use dry cleanup methods such as cat litter to absorb spills and sweep up residue.
- Set your irrigation systems to reflect seasonal water needs or use weather-based controllers. Inspect for runoff regularly.
- Cover trashcans securely.
- Take hazardous waste to a household hazardous waste collection center. (For example, paint, batteries and petroleum products)
- Pick up after your pet.
- Follow application and disposal directions for pesticides and fertilizers.
- If you wash your car at home, wash it on your lawn or divert the runoff onto a landscaped area. Consider taking your car to a commercial car wash, where the water is reclaimed or recycled.
 - Keep your car well maintained.
 - Never pour oil or antifreeze in the street, gutter or storm drain.



**MISCELLANEOUS
CONTRACT DOCUMENTS
(SAMPLE)**

**CITY OF COSTA MESA
PUBLIC WORKS AGREEMENT**

THIS PUBLIC WORKS AGREEMENT (“Agreement”), dated 2020 (“Effective Date”), is made by the CITY OF COSTA MESA, a political subdivision of the State of California (“CITY”), and a California corporation (“CONTRACTOR”).

CITY desires to construct the public work and improvements described below under Scope of Work, Paragraph 1 (“Work”).

ACCORDINGLY, the parties hereto agree as follows:

1. SCOPE OF WORK.

The Work consists of:

The Work is further described in the “Contract Documents” referred to below.

The Project is known as Project (“Project”).

2. CONTRACT DOCUMENTS.

The complete Agreement consists of the following documents relating to the Project:

- a. This Agreement;
- b. CONTRACTOR’s bid;
- c. Demolition and Construction Plans & Details;
- d. Labor and Material Bond, including agent’s Power of Attorney;
- e. Summary of Public Contract Code section 9204;
- f. Drug-Free Workplace Policy; and
- g. Provisions of the most current edition of The Greenbook: Standard Specifications for Public Works Construction (“The Greenbook”).

The documents attached hereto are incorporated herein by this reference. The Greenbook is incorporated by reference as if fully set forth herein. The documents

comprising the complete Agreement will be referred to as the "Contract Documents."

All of the Contract Documents are intended to complement one another, so that any Work called for in one and not mentioned in another is to be performed as if mentioned in all documents.

In the event of an inconsistency in the Contract Documents, the terms of this Agreement shall prevail over all other Contract Documents. The order of precedence between the remaining Contract Documents shall be as set forth in The Greenbook.

The Contract Documents constitute the entire agreement between the parties and supersede any and all other writings and oral negotiations.

3. CITY'S REPRESENTATIVE.

The CITY's Representative is referred to herein as the Project Manager ("Project Manager").

4. CONTRACTOR'S PROJECT MANAGER; PERSONNEL.

(a) Project Manager. CONTRACTOR's Project Manager must be approved by City. Such approval shall be at CITY's sole discretion.

(b) Personnel. CITY has the right to review and approve any personnel who are assigned to perform work under this Agreement. CONTRACTOR shall remove personnel from performing work under this Agreement if requested to do so by CITY.

This Paragraph 4 is a material provision of the Agreement.

5. SCHEDULE.

All Work shall be performed in accordance with the schedule approved on behalf of CITY by the Project Manager, and in accordance with the time of performance set forth in Paragraph 8 (Time of Performance).

6. EQUIPMENT - PERFORMANCE OF WORK.

CONTRACTOR shall furnish all tools, equipment, apparatus, facilities, labor and

materials necessary to perform and complete the Work of construction in a good and workmanlike manner in strict conformity with the Contract Documents.

The equipment, apparatus, facilities, labor and material shall be furnished and such Work performed and completed as required in the plans and specifications to the satisfaction of the Project Manager or his or her designee, and subject to his or her approval.

7. CONTRACT PRICE.

(\$00).

8. TIME OF PERFORMANCE.

CONTRACTOR shall commence Work by the date specified in CITY's Notice to Proceed, unless a later date is agreed upon in writing by the parties. The Work shall be completed within fourteen (14) working days from the first day of commencement of the Work.

9. TERMINATION.

(a) Termination for Convenience.

CITY may terminate this Agreement at any time, with or without cause, by providing thirty (30) days' written notice to CONTRACTOR.

(b) Termination for Breach of Contract.

(i) If CONTRACTOR refuses or fails to prosecute the Work or any severable part of it with such diligence as will ensure its timely completion, or if CONTRACTOR fails to complete the Work on time, or if CONTRACTOR, or any subcontractor, violates any of the provisions of the Contract Documents, the Project Manager may give written notice to CONTRACTOR and CONTRACTOR's sureties of the CITY's intention to terminate this Agreement; and, unless within five (5) days after the serving of that notice, such conduct shall cease and arrangements for the correction

thereof be made to the satisfaction of the CITY, this Agreement may be terminated at the option of CITY effective upon CONTRACTOR's receipt of a second notice sent by the CITY indicating that the CITY has exercised its option to terminate.

(ii) If CONTRACTOR is adjudged bankrupt or files for any relief under the Federal Bankruptcy Code or State insolvency laws, this Agreement shall automatically terminate without any further action or notice by CITY.

(iii) If CONTRACTOR is in breach of any material provision of this Agreement, CITY may immediately terminate this Agreement by providing written notice to CONTRACTOR of same.

10. DISPUTES PERTAINING TO PAYMENT FOR WORK.

Should any dispute arise respecting whether any delay is excusable, or its duration, or the value of the Work done, or of any Work omitted, or of any extra Work which CONTRACTOR may be required to do, or respecting any payment to CONTRACTOR during the performance of this Agreement, such dispute shall be decided by the Project Manager, and his or her decisions shall be final and binding upon CONTRACTOR and its sureties.

11. SUPERINTENDENCE BY CONTRACTOR.

At all times during performance of the Work, CONTRACTOR shall give personal superintendence or have a competent foreman or superintendent on the worksite, with authority to act for CONTRACTOR.

12. INSPECTION BY CITY.

CONTRACTOR shall at all times maintain proper facilities and provide safe access for inspection by CITY to all parts of the Work and to all shops on or off-site where the Work or portions of the Work, are in preparation. CITY shall have the right of access to the premises for inspection at all times. However, CITY shall, at all times, comply with CONTRACTOR's safety requirements on the job site.

13. CARE OF THE WORK AND OFF-SITE AUTHORIZATION.

CONTRACTOR warrants that it has examined the site of the Work and is familiar with its topography and condition, location of property lines, easements, building lines and other physical factors and limitations affecting the performance of this Agreement. CONTRACTOR, at CONTRACTOR's sole cost and expense, shall obtain any permission, and all approvals, licenses, or easements necessary for any operations conducted off the premises owned or controlled by CITY. CONTRACTOR shall be responsible for the proper care and protection of all materials delivered to the site or stored off-site and for the Work performed until completion and final inspection and acceptance by CITY. The risk, damage or destruction of materials delivered to the site or to Work performed shall be borne by CONTRACTOR.

14. PAYMENTS TO CONTRACTOR.

On or before the last Monday of each and every month during the performance of the Work, CONTRACTOR shall meet with the Project Manager or his or her designee to determine the quantity of pay items incorporated into the improvement during that month.

A "Progress Payment Order" will then be jointly prepared, approved, and signed by the Project Manager and the CONTRACTOR setting forth the amount to be paid. Upon approval of the progress payment order by the Project Manager, or his or her designee, it shall be submitted to CITY's Finance Department and processed for payment by obtaining approval from the City Council to issue a warrant. Within three (3) days following City Council's approval to issue a warrant, CITY shall mail to CONTRACTOR a warrant for the amount specified in the progress payment order as the amount to be paid.

15. SUBCONTRACTORS.

CONTRACTOR shall not subcontract the Work or any portion thereof without CITY's prior written consent.

16. CONTRACT SECURITY AND GUARANTEE.

Unless previously provided by CONTRACTOR to CITY, CONTRACTOR shall furnish, concurrently with the execution of this Agreement a surety bond in an amount equal to at least one hundred percent (100%) of the contract price as security for the payment of all persons furnishing labor or materials in connection with the Work under this Agreement. Sureties for each of the bonds and the forms thereof shall be satisfactory to CITY. In addition, such sureties must be authorized to issue bonds in California; sureties must be listed on the latest revision to the U.S. Department of the Treasury Circular 570; and must be shown to have sufficient bonding capacity to provide the bonds required by the Contract Documents.

CONTRACTOR shall provide a certified copy of the certificate of authority of the surety issued by the Insurance Commissioner; a certificate from the clerk of the county in which the court or officer is located that the certificate of authority of the surety has not been surrendered, revoked, canceled, annulled, or suspended or, in the event that it has, that renewed authority has been granted; and copies of the surety's most recent annual

statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code.

CONTRACTOR guarantees that all materials used in the Work and all labor performed shall be in conformity with the Contract Documents including, but not limited to, the standards and specifications set forth in the most current edition of The Greenbook. CONTRACTOR shall, at its own expense, make any and all repairs and replacements that shall become necessary as the result of any failure of the Work to conform to the aforementioned Contract Documents, and standard specifications; provided, however, that CONTRACTOR shall be obligated under this provision only to the extent of those failures or defects of which he is given notice within a period of twelve (12) months from the date that the Notice of Completion is recorded.

The rights and remedies available to CITY pursuant to this provision shall be cumulative with all rights and remedies available to CITY pursuant to statutory and common law, which rights and remedies are hereby expressly reserved, and neither the foregoing guarantee by CONTRACTOR nor its furnishing of the Bonds, nor acceptance thereof by CITY, shall constitute a waiver of any rights or remedies available to CITY against CONTRACTOR.

17. INDEMNIFICATION.

CONTRACTOR agrees to protect, defend, indemnify and hold harmless CITY and its elected and appointed boards, officers, agents, and employees from any and all claims, liabilities, expenses, or damages of any nature, including attorney fees, for injury to or death of any person, and for injury or damage to any property, including consequential damages of any nature resulting therefrom, arising out of or in any way connected with the performance of this Agreement. The defense obligation provided for

hereunder shall apply without any advance showing of negligence or wrongdoing by the CONTRACTOR, its employees, and/or authorized subcontractors, but shall be required whenever any claim, action, complaint, or suit asserts as its basis the negligence, errors, omissions or misconduct of the CONTRACTOR, its employees, and/or authorized subcontractors, and/or whenever any claim, action, complaint or suit asserts liability against the CITY, its elected officials, officers, agents and employees based upon the work performed by the CONTRACTOR, its employees, and/or authorized subcontractors under this Agreement, whether or not the CONTRACTOR, its employees, and/or authorized subcontractors are specifically named or otherwise asserted to be liable. Notwithstanding the foregoing, the CONTRACTOR shall not be liable for the defense or indemnification of the CITY for claims, actions, complaints or suits arising out of the sole active negligence or willful misconduct of the CITY. This provision shall supersede and replace all other indemnity provisions contained either in the CITY's specifications or CONTRACTOR's proposal, which shall be of no force and effect.

CONTRACTOR shall comply with all of the provisions of the Workers' Compensation insurance laws and Safety in Employment laws of the State of California, including the applicable provisions of Divisions 4 and 5 of the California Labor Code and all amendments thereto and regulations promulgated pursuant thereto, and all similar State, Federal or local laws applicable; and CONTRACTOR shall indemnify and hold harmless CITY from and against all claims, liabilities, expenses, damages, suits, actions, proceedings and judgments, of every nature and description, including attorney fees, that may be presented, brought or recovered against CITY for or on account of any liability under or failure to comply with any of said laws which may be incurred by reason of any Work performed under this Agreement by CONTRACTOR or any subcontractor or others performing on behalf of CONTRACTOR.

CITY does not, and shall not, waive any rights against CONTRACTOR which it may have by reason of the above hold harmless agreements, because of the acceptance by CITY or the deposit with CITY by CONTRACTOR of any or all of the insurance policies described in Paragraph 18 (Insurance) of this Agreement.

The hold harmless agreements by CONTRACTOR shall apply to all liabilities, expenses, claims, and damages of every kind (including but not limited to attorney fees) incurred or alleged to have been incurred, by reason of the operations of CONTRACTOR or any subcontractor or others performing on behalf of CONTRACTOR, whether or not such insurance policies are applicable. CONTRACTOR shall require any and all tiers of subcontractors to afford the same degree of indemnification to the CITY OF COSTA MESA and its elected and appointed boards, officers, agents, and employees that is required of CONTRACTOR and shall incorporate identical indemnity provisions in all contracts between CONTRACTOR and all tiers of its subcontractors.

In the event that CONTRACTOR and CITY are sued by a third party for damages caused or allegedly caused by negligent or other wrongful conduct of CONTRACTOR, or by a dangerous condition of CITY's property created by CONTRACTOR or existing while the property was under the control of CONTRACTOR, CONTRACTOR shall not be relieved of its indemnity obligation to CITY by any settlement with any such third party unless that settlement includes a full release and dismissal of all claims by the third party against the CITY.

18. INSURANCE.

CONTRACTOR shall not commence Work under this Agreement until it has obtained all insurance required under this section and CITY has approved the insurance as to form, amount, and carrier, nor shall CONTRACTOR allow any subcontractor to commence any Work until all similar insurance required of the subcontractor has been

obtained and approved.

Neither the failure of CONTRACTOR to supply specified insurance policies and coverage, nor the failure of CITY to approve same shall alter or invalidate the provisions of Paragraph 17 (Indemnification) of this Agreement.

(a) Workers' Compensation Insurance.

CONTRACTOR shall obtain and maintain during the life of this Agreement workers' compensation insurance and, if any Work is sublet, CONTRACTOR shall require all tiers of subcontractors to obtain workers' compensation insurance.

All workers' compensation insurance policies shall provide that the insurance may not be canceled without thirty (30) days' advance written notice of such cancellation to CITY.

CONTRACTOR agrees to waive, and obtain endorsements from its workers' compensation insurer waiving, subrogation rights under its workers' compensation insurance policy against the CITY and to require each of its subcontractors, if any, to do likewise under their workers' compensation insurance policies.

(b) Liability Insurance Coverage.

CONTRACTOR shall obtain and maintain during the life of this Agreement the following insurance coverage:

(i) Commercial General Liability, including coverage for premises-operations, products/completed operations hazard, blanket contractual, broad form property damage, and independent contractors. In addition, CONTRACTOR shall obtain and maintain during the life of this Agreement each of the following insurance coverage which are not stricken out and initialed by the Project Manager: Explosion and collapse hazard, underground hazard, personal injury, and automobile liability, including owned, hired, and non-owned vehicles. All insurance coverage shall have limits of not

less than \$1,000,000.00 combined single limits, per occurrence and aggregate.

(ii) Below are approved endorsements which satisfy the basic insurance requirements contained in contracts entered into by City of Costa Mesa. These have been approved by the City Attorney's Office. The terms of any specific contract with the City are controlling. Prior to the commencement of any work, the City requires that the Engineer receive Certificates of Insurance in DUPLICATE for liability coverage of at least \$1,000,000.00 combined single limits, per occurrence and in the aggregate. Endorsements to the policies providing the above insurance shall be obtained by CONTRACTOR, adding the following three provisions:

(1) Additional Insured:

"The City of Costa Mesa and its elected and appointed boards, officers, agents, and employees are additional insureds with respect to the subject project and agreement."

(2) Notice:

"Said policy shall not terminate, nor shall it be canceled nor the coverage reduced, until thirty (30) days after written notice is given to CITY."

(3) Other Insurance:

"Any other insurance maintained by the City of Costa Mesa shall be excess and not contributing with the insurance provided by this policy."

If any of such policies provide for a deductible or self-insured retention to provide such coverage, the amount of such deductible or self-insured retention shall be approved in advance by CITY. No policy of insurance issued as to which the CITY is an additional insured shall contain a provision which requires that no insured except the named insured can satisfy any such deductible or self-insured retention.

19. PROOF OF INSURANCE.

Prior to commencement of the Work, CONTRACTOR shall furnish CITY, through the Project Manager, proof of compliance with the above insurance requirements in a form satisfactory to the Risk Management.

20. LEGAL WORK DAY - PENALTIES FOR VIOLATION.

Eight (8) hours of labor shall constitute a legal day's work during any one (1) calendar day. CONTRACTOR shall forfeit to CITY the sum of Twenty-Five Dollars (\$25.00) for each workman employed in the execution of this Agreement by 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 40 hours in any one calendar week in violation of California Labor Code Sections 1810 through 1815, inclusive.

21. PREVAILING WAGE SCALE.

CONTRACTOR shall comply in all respects with the Davis-Bacon Act (40 U.S.C. section 276a) and with California Labor Code sections 1770 et seq., including the keeping of all records required by the provisions of Labor Code section 1776.

CONTRACTOR shall furnish each week to CITY's Project Administration Division a statement with respect to the wages of each of its employees during the preceding weekly payroll period.

22. COMPLIANCE WITH ALL LAWS.

CONTRACTOR shall, at its own cost and expense, comply with all applicable local, state, and federal laws, regulations, and requirements in the performance of this Agreement, including but not limited to laws regarding health and safety, labor and employment, and wage and hours.

23. DRUG-FREE WORKPLACE POLICY.

CONTRACTOR, upon notification of the award of this Agreement, shall establish a Drug-Free Awareness Program to inform employees of the dangers of drug abuse in the workplace, the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace, and the employee assistance programs available to employees. Each employee engaged in the performance of a CITY contract must be notified of this Drug-Free Awareness Program, and must abide by its terms. CONTRACTOR shall conform to all the requirements of CITY's Policy No. 100-5, attached hereto. Failure to establish a program, notify employees, or inform the CITY of a drug-related workplace conviction will constitute a material breach of contract and cause for immediate termination of the contract by the CITY.

24. NON-DISCRIMINATION.

In performing this Agreement, CONTRACTOR will not engage in, nor permit its agents to engage in, discrimination in employment of persons because of their race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status or sex, or sexual orientation, except as permitted pursuant to Section 12940 of the Government Code. Violation of this provision may result in the imposition of penalties referred to in Section 1735 of the California Labor Code.

25. CONTRACT ASSURANCE.

The CONTRACTOR or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. The CONTRACTOR shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the CONTRACTOR to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as recipient deems appropriate.

The CONTRACTOR will require that the above provision is included in all subcontracts.

26. PROVISIONS CUMULATIVE.

The provisions of this Agreement are cumulative and in addition to, and not in limitation of, any other rights or remedies available to CITY.

27. NOTICES.

It shall be the duty and responsibility of CONTRACTOR to notify all tiers of subcontractors and material men of the following special notice provision; namely, all preliminary 20-day notices or stop notices shall be directed only to the City Clerk and to no other department, and shall be either personally delivered or sent by certified mail, postage prepaid.

All other notices shall be in writing and delivered in person or sent by certified mail, postage prepaid.

Notices required to be given to CITY pursuant to this Agreement shall be addressed as follows:

City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626
Attn:

Notices required to be given to CONTRACTOR shall be addressed as follows:

Attn:

Notices required to be given to CONTRACTOR's sureties shall be addressed as follows:

Attn: _____

28. INDEPENDENT CONTRACTOR.

The parties hereto acknowledge and agree that the relationship between CITY and CONTRACTOR is one of principal and independent contractor and no other. All personnel to be utilized by CONTRACTOR in the performance of this Agreement shall be employees of CONTRACTOR and not employees of the CITY. CONTRACTOR shall pay all salaries and wages, employer's social security taxes, unemployment insurance and similar taxes relating to employees and shall be responsible for all applicable withholding taxes. Nothing contained in this Agreement shall create or be construed as creating a partnership, joint venture, employment relations, or any other relationship except as set forth between the parties. The parties specifically acknowledge and agree that CONTRACTOR is not a partner with CITY, whether general or limited, and no activities of CITY or CONTRACTOR or statements made by CITY or CONTRACTOR shall be interpreted by any of the parties hereto as establishing any type of business relationship other than an independent contractor relationship.

29. PERS ELIGIBILITY INDEMNIFICATION.

In the event that CONTRACTOR or any employee, agent, or subcontractor of CONTRACTOR providing services under this Agreement claims or is determined by a court of competent jurisdiction or the California Public Employees' Retirement System (PERS) to be eligible for enrollment in PERS as an employee of the CITY, CONTRACTOR shall indemnify, defend, and hold harmless CITY for the payment of any employee and/or employer contributions for PERS benefits on behalf of CONTRACTOR or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of CITY.

Notwithstanding any other agency, state or federal policy, rule, regulation, law or ordinance to the contrary, CONTRACTOR and any of its employees, agents, and

subcontractors providing service under this Agreement shall not qualify for or become entitled to, and hereby agree to waive any claims to, any compensation, benefit, or any incident of employment by CITY, including but not limited to eligibility to enroll in PERS as an employee of CITY and entitlement to any contribution to be paid by CITY for employer contribution and/or employee contributions for PERS benefits.

30. VALIDITY.

The invalidity in whole or in part of any provision of this Agreement shall not void or affect the validity of any of the other provisions of this Agreement.

31. GOVERNING LAW.

This Agreement shall be governed by and construed in accordance with the laws of the State of California. Any legal action relating to or arising out of this Agreement shall be subject to the jurisdiction of the County of Orange, California.

32. RESOLUTION OF CONTRACTOR CLAIMS.

CONTRACTOR claims, as defined in California Public Contract Code section 9204, shall be resolved in accordance with the provisions of Section 9204 and applicable law. A summary of Section 9204 is attached hereto and incorporated herein by reference.

33. NO THIRD PARTY BENEFICIARY RIGHTS.

This Agreement is entered into for the sole benefit of the CITY and CONTRACTOR and no other parties are intended to be direct or incidental beneficiaries of this Agreement and no third party shall have any right in, under or to this Agreement.

34. ASSIGNABILITY.

This Agreement may not be sold, transferred or assigned by either party, or by operation of law, to any other person or persons or business entity, without the other party's written permission. Any such sale, transfer or assignment, or attempted sale, transfer or assignment without written permission, may be deemed by the other party to

constitute a voluntary termination of this Agreement and this Agreement shall thereafter be deemed terminated and void.

35. WAIVER.

No waiver of any provision of this Agreement shall be effective unless in writing and signed by a duly authorized representative of the party against whom enforcement of a waiver is sought referring expressly to this Paragraph. The waiver of any right or remedy in respect to any occurrence or event shall not be deemed a waiver of any right or remedy in respect to any other occurrence or event, nor shall any waiver constitute a continuing waiver.

36. HEADINGS.

Section and subsection headings are not to be considered part of this Agreement, are included solely for convenience, and are not intended to modify or explain or to be a full or accurate description of the content thereof.

37. COUNTERPARTS.

This Agreement may be executed in one or more counterparts by the parties hereto. All counterparts shall be construed together and shall constitute one Agreement.

38. CORPORATE AUTHORITY.

The persons executing this Agreement on behalf of the Parties hereto warrant that they are duly authorized to execute this Agreement on behalf of said Parties and that by doing so, the Parties hereto are formally bound to the provisions of this Agreement.

39. ADDITIONAL SERVICES.

CONTRACTOR shall not receive compensation for any services provided outside the scope of the Contract Documents unless such additional services, including change orders, are approved in writing by CITY prior to CONTRACTOR performing the additional services.

It is specifically understood that oral requests or approvals of such additional services, change orders or additional compensation and any approvals from CITY shall be barred and are unenforceable.

[Signatures appear on following page.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by and through their respective authorized officers, as of the date first above written.

CITY OF COSTA MESA,
A municipal corporation

Lori Ann Farrell Harrison
City Manager

Date: _____

CONTRACTOR

Signature

Date: _____

Name and Title

Signature

Date: _____

Name and Title

Social Security or Taxpayer ID Number

ATTEST:

Brenda Green
City Clerk

Date: _____

APPROVED AS TO FORM:

Kimberly Hall Barlow
City Attorney

Date: _____

APPROVED AS TO INSURANCE:

Ruth Wang
Risk Management

Date: _____

APPROVED AS TO PURCHASING:

Kelly A. Telford
Finance Director

Date: _____

DEPARTMENTAL APPROVAL:

Raja Sethuraman
Public Services Director

Date: _____

Project Manager

Date: _____

COUNCIL POLICY – DRUG FREE WORKPLACE

CITY OF COSTA MESA, CALIFORNIA

COUNCIL POLICY

SUBJECT	POLICY NUMBER	EFFECTIVE DATE	PAGE
DRUG-FREE WORKPLACE	100-5	8/08/89	1 OF 3

BACKGROUND

Under the Federal Drug-Free Workplace Act of 1988, passed as part of omnibus drug legislation enacted November 18, 1988, contractors and grantees of Federal funds must certify that they will provide drug-free workplaces. At the present time, the City of Costa Mesa, as a subgrantee of Federal funds under a variety of programs, is required to abide by this Act. The City Council has expressed its support of the national effort to eradicate drug abuse through the creation of a Substance Abuse Committee, institution of a City-wide D.A.R.E. program in all local schools and other activities in support of a drug-free community. This Policy is intended to extend that effort to contractors and grantees of the City of Costa Mesa in the elimination of dangerous drugs in the workplace.

PURPOSE

It is the purpose of this Policy to:

1. Clearly state the City of Costa Mesa's commitment to a drug-free society.
2. Set forth guidelines to ensure that public, private, and nonprofit organizations receiving funds from the City of Costa Mesa share the commitment to a drug-free workplace.

POLICY

The City Manager, under direction by the City Council, shall take the necessary steps to see that the following provisions are included in all contracts and agreements entered into by the City of Costa Mesa involving the disbursement of funds.

1. Contractor or subgrantee hereby certifies that it will provide a drug-free workplace by:
 - A. Publishing a statement notifying employees that the unlawful manufacturer, distribution, dispensing, possessing, or use of a controlled substance is prohibited in Contractor's and/or subgrantee's workplace, specifically the job site or location included in this contract, and specifying the actions that will taken against the employees for violation of such prohibition;
 - B. Establishing a Drug-Free Awareness Program to inform employees about:
 1. The dangers of drug abuse in the workplace;

CITY OF COSTA MESA, CALIFORNIA

COUNCIL POLICY

SUBJECT	POLICY NUMBER	EFFECTIVE DATE	PAGE
DRUG-FREE WORKPLACE	100-5	8/08/89	2 OF 3

2. Contractor's and/or subgrantee's policy of maintaining a drug-free workplace;
3. Any available drug counseling, rehabilitation and employee assistance programs; and
4. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

C. Making it a requirement that each employee to be engaged in the performance of the contract be given a copy of the statement required by Subparagraph A.

D. Notifying the employee in the statement required by Subparagraph 1.A that, as a condition of employment under the contract, the employee will:

1. Abide by the terms of the statement; and
2. Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such violation.

E. Notifying the City of Costa Mesa within ten (10) days after receiving notice under Subparagraph 1.D.2 from an employee or otherwise receiving the actual notice of such conviction.

F. Taking one of the following actions within thirty (30) days of receiving notice under Subparagraph 1.D.2 with respect to an employee who is so convicted:

1. Taking appropriate personnel action against such an employee, up to and including termination; or
2. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health agency, law enforcement, or other appropriate agency.

G. Making a good faith effort to maintain a drug-free workplace through implementation of Subparagraph 1.A through 1.F, inclusive.

2. Contractor and/or subgrantee shall be deemed to be in violation of this Policy if the City of Costa Mesa determines that:

- A. Contractor and/or subgrantee has made a false certification under Paragraph 1 above.

CITY OF COSTA MESA, CALIFORNIA

COUNCIL POLICY

SUBJECT	POLICY NUMBER	EFFECTIVE DATE	PAGE
DRUG-FREE WORKPLACE	100-5	8/08/89	3 OF 3

B. Contractor and/or subgrantee has violated the certification by failing to carry out the requirements of Subparagraphs 1.A through 1.G above.

C. Such number of employees of Contractor and/or subgrantee have been convicted of violations of criminal drug statutes for violations occurring in the workplace as to indicate that the Contractor and/or subgrantee has failed to make a good faith effort to provide a drug-free workplace.

3. Should any Contractor and/or subgrantee be deemed to be in violation of this Policy pursuant to the provisions of 2.A, B and C, a suspension, termination or debarment proceeding subject to applicable Federal, State, or local laws shall be conducted. Upon issuance of any final decision under this section requiring debarment of a Contractor and/or subgrantee, the Contractor and/or subgrantee shall be ineligible for award of any contract, agreement or grant from the City of Costa Mesa for a period specified in the decision, not to exceed five (5) years. Upon Issuance of any final decision recommending against debarment of the Contractor and/or subgrantee, the Contractor and/or subgrantee shall be eligible for compensation as provided by law.

**LABOR AND MATERIAL BOND TO ACCOMPANY CONTRACT
PUBLIC WORK**

KNOW ALL MEN BY THESE PRESENTS:

THAT, WHEREAS the CITY OF COSTA MESA, 77 Fair Drive, Costa Mesa, California 92626, has awarded to _____ hereinafter designated as the "Contractor," a contract which is hereby incorporated by reference herein, for the work described as follows: _____

_____ ; and WHEREAS, said Contractor is required by the provisions of Chapter 7, Division 3, Title 15, Sections 3247-3248, Civil Code to furnish a bond in connection with said contract, as hereinafter set forth.

NOW, THEREFORE, We _____ the undersigned Contractor, as Principal, and _____ 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 the CITY OF COSTA MESA in the penal sum of _____ Dollars (\$ _____), said sum being not less than one-half of the estimated amount payable by the said CITY OF COSTA MESA under the terms of the contract, for which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

The Condition Of This Obligation Is Such, That, if said Contractor, his or its heirs, executors, administrators, successors or assigns, or sub-contractors, 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 for amounts due under the Unemployment Insurance Code with respect to such work or labor performed under the above 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 sub-contractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work and labor, the surety or sureties herein 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 claims 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, hereby 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.

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

**FAITHFUL PERFORMANCE BOND _____
PUBLIC WORK**

(The premium charge on this bond is \$ _____, being at
the rate of \$ _____ per thousand of the contract price)

KNOW ALL MEN BY THESE PRESENTS:

THAT, WHEREAS the CITY OF COSTA MESA, 77 Fair Drive, Costa Mesa, California 92626, has entered into a contract dated _____, 20____, which is hereby incorporated by reference herein, with _____ hereinafter designated as the "Principal," for the work described as follows:

_____ ; and

WHEREAS, said Principal is required by the terms of said contract to furnish a bond for the faithful performance of said contract.

NOW, THEREFORE, We the Principal, and _____, 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 the CITY OF COSTA MESA in the penal sum of _____ Dollars (\$ _____), lawful money of the United States, 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 Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said contract and any alteration thereof made as therein provided, or his or their 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 the CITY OF COSTA MESA, 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.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or 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 the work or to the specifications.

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

CERTIFICATE OF INSURANCE

CERTIFICATE HOLDER City of Costa Mesa 77 Fair Drive P. O. Box 1200 Costa Mesa, CA 92628-1200	INSURANCE COMPANIES AFFORDING COVERAGES Company Letter A Company Letter B Company Letter C Company Letter D Company Letter E
NAME AND ADDRESS OF INSURED	

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time, including attached endorsement(s).

COMPANY LETTER	TYPE OF INSURANCE	POLICY NO.	POLICY EXP. DATE	LIMITS OF LIABILITY IN THOUSANDS (\$000)	
				Each Occurrence	Aggregate
	GENERAL LIABILITY				
	Comprehensive Form			Bodily Injury	\$
	Premises—Operations			Property Damage	\$
	Explosion & Collapse Hazard				
	Underground Hazard				
	Products/Completed—Operations Hazard			Bodily Injury and Property Damage Combined	\$
	Contractual Insurance				
	Broad Form Property Damage				
	Independent Contractors				
	Personal Injury			Personal Injury	\$
	AUTOMOBILE LIABILITY				
	Comprehensive Form			Bodily Injury (Each Person)	\$
				Bodily Injury (Each Occurrence)	\$
	Owned			Property Damage	\$
	Hired			Bodily Injury and Property Damage Combined	\$
	Non-owned				
	EXCESS LIABILITY				
	Umbrella Form			Bodily Injury and Property Damage Combined	\$
	Other than Umbrella Form				
	WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY			Statutory	
					(Each Accident)

NOTE: The Comprehensive General Liability policy and/or Automotive Liability policy is/are endorsed with the City of Costa Mesa Endorsement(s) shown on the reverse side.

CANCELLATION: Said policy shall not terminate, nor shall it be cancelled, nor the coverage reduced, until thirty (30) days after written notice is given to City.

By: _____ Agency: _____ Date Issued _____
Authorized Representative

Description of operations/locations/vehicles: All operations performed for the City of Costa Mesa by or on behalf of the named insured in connection with the following designated contract:

(Project title and contract number)

NOTICE: This certificate or verification of insurance is not an insurance policy and does not amend, extend or alter the coverage afforded by the policies listed herein. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate or verification of insurance may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies, including attached endorsements.

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR
CONTRACTORS – COMPLETED OPERATIONS**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

SCHEDULE

Name of Person or Organization: The City of Costa Mesa and its elected and appointed boards, officers, agents, and employees are additional insureds with respect to the subject project and agreement.
Location And Description of Completed Operations:
Additional Premium:

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

Section II – Who Is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

Said policy shall not terminate, nor shall it be canceled nor the coverage reduced, until thirty (30) days after written notice to City.

Any other insurance maintained by the City of Costa Mesa shall be excess and not contributing with the insurance provided by this policy.

**Workers' Compensation and Employers' Liability Insurance Policy
Waiver of Our Right to Recover From Others Endorsement - California
WC 04 03 06**

If the following information is not complete, refer to the appropriate Schedule attached to the policy.

Insured: Policy Number

Producer: Effective Date

Schedule

Person or Organization

Job Description

Additional Premium %

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

You must maintain payroll records accurately segregating the remuneration of your employees while engaged in the work described in the Schedule.

The additional premium for this endorsement shall be the percentage, as shown in the Schedule applicable to this endorsement, of the California workers' compensation premium otherwise due on such remuneration.



Authorized Representative

**Workers Compensation
Waiver of Subrogation Endorsement**

Policy Number:
Named Insured:
Workers Compensation Carrier: Star Insurance Company

IT IS AGREED THAT WE WAIVE ANY RIGHT TO RECOVERY WE MAY HAVE AGAINST THE PERSON OR ORGANIZATION SHOWN IN THE SCHEDULE BECAUSE PAYMENT WE MAKE FOR INJURY OR DAMAGE ARISING OUT OF "YOUR WORK" DONE UNDER A CONTRACT WITH THAT PERSON OR ORGANIZATION.

Schedule

Name or Person(s) or Organization:

WC 04 03 06

Copyright, Insurance Service Office, Inc., 1984



APPLICATION FOR BUSINESS LICENSE
 SEND YOUR CHECK MADE PAYABLE TO THE CITY OF COSTA MESA
 TREASURY MANAGEMENT DIVISION, PO BOX 1200, COSTA MESA, CA 92628-1200
 (714) 754-5234 TDD: (714) 754-5244

Business Name _____

Parent Company Name _____
 (If Corporate Owned)

Note: Business address will be compared to zoning requirements before approval. Check with the Planning Division regarding the use of the location at (714) 754-5245.

Business Address _____
 (Cannot be a P.O. Box) Street # _____ Street name _____ Unit # _____ City _____ State _____ Zip _____

Mailing Address _____
 (Can be a P.O. Box) Street # _____ Street name _____ Unit # _____ City _____ State _____ Zip _____

Business Telephone # (_____) _____ Business Start Date _____ No. of Employees (on average) _____

Ownership (Check One only)

- Sole Owner Corporation Partnership Husband & Wife Co-ownership Limited Liability Company
 Limited Liability Partnership

Seller's Permit No. _____ (If Applicable) Contractors State No. & Class _____ (If Applicable)

Federal Employer ID # or, Owner's Social Security # _____ Federal Firearms License # (if applicable) _____

OWNER'S OR PRINCIPAL'S NAME(S)

Name _____	Name _____
Home Address _____	Home Address _____
City _____ Zip _____	City _____ Zip _____
Telephone # (_____) _____ Title _____	Telephone # (_____) _____ Title _____
Drivers License No. _____ Date of Birth _____	Drivers License No. _____ Date of Birth _____

TYPE OF BUSINESS

PLEASE CIRCLE ONE: Wholesale/Retail/Manufacturing/Services/Non-Profit/Administrative Only/Warehouse/ Other

Fully Describe Business Operation: _____

Standard Industrial Class Code (SIC) _____

Alcohol Beverage Control Permit No. _____ (If Applicable) Department of Motor Vehicles Permit # _____ (Required for automobile/motorcycle sales businesses)

Hours of Operation (M-F) _____ (S-SU) _____ Number of Rental Units/Rooms/Spaces _____ (If Applicable)

CHOOSE ONE OF THE APPROPRIATE FEES BELOW

GENERAL BUSINESS
(wholesale, retail, professional, Etc.)

Enter Annual Gross Receipts Amount \$ _____

And Circle the corresponding category below

Annual Gross Receipts	Tax
\$0.00 to 1,000.00	\$0.00
\$1,000.01 to 25,000.00	\$25.00
\$25,000.01 to 40,000.00	\$35.00
\$40,000.01 to 75,000.00	\$45.00
\$75,000.01 to 200,000.00	\$60.00
\$200,000.01 to 500,000.00	\$100.00
Over 500,000.00	\$200.00

TAX EXEMPT ORGANIZATIONS
 Attach proof of Tax Exempt Status (required for waiver of tax due)

SHOW, EXHIBITION, SWAP MEET Tax on the Promoter's Gross Receipts from the Gross Receipts schedule to the left Enter the tax due amount here \$ _____
 PLUS (# of sellers _____ x \$5 = \$ _____)
 EQUALS Total tax due \$ _____

ADMINISTRATIVE OFFICES/WAREHOUSES
 (Fees based on annual operating expenses when no receipts generated)
 Enter annual operating expenses amount \$ _____
 Use Gross Receipts schedule to the left to determine business license tax.

CONTRACTOR
 (California Licensed) Total tax due \$50.00

VEHICLE WHEEL, TAXI, TOW TRUCK, BUS
 Number of Vehicles: _____ x \$25.00 = Total Tax Due \$ _____

- | | | |
|---|------------------------------|-----------------------------|
| Will you store, handle or use 55 gallons, 500 pounds or 200 cubic feet of hazardous materials per year? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Will you have an assembly room with an occupant load of 50 or more persons? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Will you be installing a spray booth? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Will your business produce dust/wood shavings or other material? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Will you be storing or using flammable or combustible liquids or compressed gases? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Will you be warehousing materials higher than 12 feet? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

Fire Department approval required for any "Yes" answer. Please make an appointment by calling (714) 754-5128.

Your Business License will be issued under the provisions of Municipal Code Section 9-1. You are cautioned that this License does not permit operation of a business in violation of other Municipal Code Sections. There will be no tax refund if you are found operating illegally after the Certificate has been issued. Your business location will be checked by Planning, Building, and, if necessary, Fire Department officials. If you have any doubt whether your business location and/or building may conform with the requirements of the Municipal Code administered by these departments, you are urged to contact these departments for further information before filing your application. ** Sales or use tax may apply to your business activities. You may seek written advice regarding the application of tax to your particular business by writing or visiting the nearest State Board of Equalization. ** I declare under penalty of perjury that, to the best of my knowledge and belief, the statements made herein are correct and true and that acceptance of payment does not constitute approval of the Business License. Authorization to conduct business is not granted until issuance of the license.

Authorized Signature _____ Title _____ Date _____

FOR CITY OFFICE USE ONLY

Planning Approval _____ Date Approved _____ CUP Required? _____ CUP # _____
 Building Approval _____ Date Approved _____ Comments _____
 Fire Department Approval _____ Date Approved _____

City of Costa Mesa, Department of Public Services
Application and Permit for Work Described Below

PERMIT NO.

VENDOR NO.

Address or Location of Work _____ Date _____

Type of Work to be Done _____

Start Date _____ Permit Not Valid After _____ (Expiration Date) Plan No. _____

Contractor's Name _____ Address _____

Telephone No. (Day) _____ (Night) _____ City and State _____

State License No./Class _____ City Business License No. _____

Applicant's Name _____ Address _____

Telephone No. _____ Developer's Name _____ Telephone No. _____

Name of Insurance Co. _____ Insurance Cert. No.(s) _____

24-Hour Emergency Contact _____ Telephone No. _____

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="text-align: center;">FEES</td> </tr> <tr> <td>Bond \$</td> <td>_____</td> </tr> <tr> <td>Cash Deposit \$</td> <td>_____</td> </tr> <tr> <td>Issuance \$</td> <td>_____</td> </tr> <tr> <td>Inspection \$</td> <td>_____</td> </tr> <tr> <td>TOTAL \$</td> <td>_____</td> </tr> </table>		FEES	Bond \$	_____	Cash Deposit \$	_____	Issuance \$	_____	Inspection \$	_____	TOTAL \$	_____	<p>48 HOURS MINIMUM REQUIRED FOR PROCESSING PERMIT</p> <p>Account # </p>	<p align="center">PERMIT APPROVED FOR CITY ENGINEER</p> <p>By _____</p> <p>Date _____</p> <p>Underground Service Alert ID No. _____</p>
	FEES													
Bond \$	_____													
Cash Deposit \$	_____													
Issuance \$	_____													
Inspection \$	_____													
TOTAL \$	_____													

Permittee shall contact the City Inspector's office (754-6026) at least 24 hours prior to commencing any work. Failure to obtain proper inspections prior to commencement of work may be cause for its rejection. **THIS PERMIT WITH APPROVED PLANS MUST BE ON THE JOB AND AVAILABLE TO CITY REPRESENTATIVES AT ALL TIMES.** You are guided by Municipal Code Sections 1-33, 15-25, 15-27, 15-27.1, 15-39 and 15-48.

THE UNDERSIGNED PERMITTEE HEREBY CERTIFIES:

1. That all work shall be performed in accordance with the Standard Specifications for Public Works Construction (latest edition); Standard Drawings of the City of Costa Mesa; special agency provisions; and all applicable laws and ordinances.
2. Control of traffic shall conform to the Work Area Traffic Control Handbook (W.A.T.C.H.) (latest edition). The permittee shall furnish and/or install all signs, lights, barricades, traffic control or warning devices, flagmen and flashing arrow board. The permittee shall obtain approval of the Transportation Services Engineer for all street closures, detours, turn restrictions, parking prohibitions and methods of accommodating traffic. The permittee shall notify Emergency, Fire and Police services and residents or businesses twenty-four (24) hours in advance of any access limitation or traffic restrictions.
3. That a maximum of _____ lane(s) may be closed if necessary to perform work within the public right of way during the hours of 8:30 a.m. - 3:30 p.m. Monday through Friday as long as traffic can be maintained in each direction with flagmen unless otherwise approved by the Transportation Services Engineer.
4. That throughout all phases of construction the work site shall be kept clean and free of rubbish, debris and dust and drainage shall be maintained.

SUBJECT TO THE NOTES BELOW: (Inspection fees over the basic inspection time will be billed at the approved hourly rate.)

1. City will provide inspection between 7:30 a.m. and 3:00 p.m., Monday through Friday (except on City observed holidays).
2. Prior to placing Portland Cement Concrete or Asphalt Concrete (A.C.), the following will have been inspected and approved; native and imported .
3. Curb and gutter shall not be removed on the day prior to a weekend or a City observed holiday.
4. Fill in areas left by curb and gutter removal flush with the adjacent pavement on the same day that removal occurs.
5. Bore under all streets, curbs and gutters, sidewalks, cross-gutters and driveway approaches. Tunneling is not allowed.
6. Open excavations must be backfilled or plated with spikes and A.C. tacked around edges during non-working hours.
7. Sidewalk shall be constructed per City of Costa Mesa Standard Drawing No. _____.
8. Driveway approach shall be constructed per City of Costa Mesa Standard Drawing No. _____.
9. No traffic allowed on concrete for minimum of seven days for curing. See traffic control above.
10. Trench compaction and resurfacing shall conform to City of Costa Mesa Standard Drawing No. 813.
11. Trenches exceeding five (5) feet in depth require a permit from the Division of Industrial Safety, State of California.
12. Permittee shall pay for all S.E., compaction and materials tests deemed necessary by the City.
13. All trenches shall be permanently patched within ten (10) days of completion of work below subgrade.
14. Permittee shall provide the City with record drawings of permitted work before final inspection by the City.
15. Permittee understands and agrees to the hold-harmless agreement required by CMMC Section 15-27 and printed on the reverse of this application.
16. Other: _____

NOTICE: Contractor must notify the following Utility Companies two working days before starting work:

Costa Mesa Sanitary District
(714) 631-1731

Mesa Consolidated Water District
(714) 631-1200

UNDERGROUND SERVICE ALERT
Toll Free - 1-800-422-4133; After Hours & Holidays - (714) 739-3031; (213) 621-3111

INSPECTION RECORD	Inspector of Records	CERTIFICATE OF INSPECTION
Date		I hereby certify that the street work allowed by this permit has been constructed according to the plans and specifications and I hereby accept the work in this manner. By: _____ Inspector _____ Date

0163-62 mw, rev. 2/03
 White - Inspectors;
 Canary - Engineering;
 Pink - Finance
 Goldenrod - Applicant

I certify I have read and understand all of the above and that all statements made are correct and complete.

Applicant's Signature _____ Date _____

3 COPIES OF SKETCHES OR PLANS ARE REQUIRED PRIOR TO PERMIT ISSUANCE
THIS APPLICATION BECOMES A PERMIT WHEN APPROVED AND VALIDATED

EXHIBIT C

ADDENDA



CITY OF COSTA MESA

CALIFORNIA 92628-1200

P O Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: AUGUST 10, 2020

TO: ALL PROSPECTIVE BIDDERS

ADDENDUM NO. 1 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: _____

Company: _____

All bidders shall register with CIPList.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPList.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

BID OPENING DATE: NO CHANGE – WEDNESDAY, AUGUST 19, 2020

BID OPENING TIME: NO CHANGE

BID OPENING PLACE: NO CHANGE

RESPONSES TO PRE-BID REQUESTS FOR INFORMATIONS (RFIs):

Q1. Section 6-9 Liquidated Damages: Please clarify liquidated damages amount per calendar day for this project.

A1. *Liquidated Damages amount for this project is \$1,800 per calendar day.*

Q2. Please clarify who will be purchasing the CXT pre-fab restroom.

A2. *The Contractor will be responsible for purchasing and procuring the pre-fab restroom per the order form and installing the building with All the structural, plumbing, lighting, signage and furnishing components and protective padding on the Davis field side, installing new chain link fence at Davis Field interface the restroom. The scope of work also includes submitting the shop drawings to the Building Division and obtaining the Building Permit from the City.*

Q3. The irrigation plans are not included in the bid set Will the City provide the irrigation plans?

A3. *The Irrigation plans will not be provided. Contractor is responsible to provide modifications to the existing system to meet the new site to include the installation of all lines, valves, spray heads, drip tubing, quick couplers and wires. Refer to existing irrigation record drawings and library as-built drawings for information.*

Q. 4 Please clarify if this project adheres to the Davis-Bacon Act prevailing wage scale or the rates set by the California Labor Code, Department of Industrial Relations.

A. 4: Davis Bacon Act does not apply for this project: however, this Project is a "public work" subject to prevailing wage requirements. Pursuant to provisions of Sections 1770 et seq. of the California Labor Code, all workers employed on the Project shall be paid not less than the general prevailing rate of per diem wages, as determined by the Director of the Department of Industrial Relations for work of a similar character in the locality in which the work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work.

Q.5. Please clarify who will be providing a temporarily fencing for the project.

A. 5: It is the responsibility of the contractor to provide temporary fencing for the project.

Q.6: Does a bidder needs to be prequalified to bid on the project?

A6: Information for Bidders- Section 2:

In order to fully evaluate your firm's background and experience for the project herein proposed, it is required that you submit a list of similar construction projects completed, or in progress, within the last five (5) years. This information will be used to evaluate whether the bid is responsive and or responsible to the call for bids. Only Licensed Contractors, authorized to do business under the laws of the State of California and that are able to meet the following criteria will be eligible to submit a bid:

- A. Contractors bidding to the City shall have a minimum five (5) years continuous experience as prime on projects of comparable quality, size, complexity and type.*
- B. Contractors bidding to the City shall have completed as the prime at least three (3) projects of comparable quality, size, complexity and type.*
- C. Subcontractors shall meet the above two requirements as it pertains to their Work.*
- D. Within three (3) calendar days of request by City, Contractor shall submit evidence of compliance to the above qualifications and a list of all work performed, both complete and incomplete, within the previous five (5) years including the names and phone numbers of the City and Architects.*
- E. Before a contract is awarded, the City may, at its sole discretion, require from the proposed contractor evidence of their ability to faithfully, capably, and reasonably perform such proposed contract within the Contract Time and for the Contract Amount, and may consider such evidence before making a decision on the award of such proposed contract.*

CLARIFICATIONS TO PLANS:

Highlighted construction notes are added to the plans:

1. Revisions to Title Sheet:

Lions Park Scope of Work:

THE WORK COMPRISES THE PURCHASING FURNISHING OF ALL MATERIALS, EQUIPMENT, TOOLS LABOR AND INCIDENTALS AS REQUIRED BY THE PLANS, SPECIFICATIONS, AND

CONTRACT DOCUMENTS FOR THE ABOVE STATED PROJECT

THE GENERAL ITEMS OF WORK TO BE PERFORMED HEREUNDER CONSIST OF BUT NOT LIMITED TO:

MOBILIZATION; PREPARATION AND IMPLEMENTATION OF STORM WATER BEST MANAGEMENT PRACTICES; PREPARING WET-STAMPED ENGINEERING DRAWINGS AND STRUCTURAL CALCULATIONS; OBTAINING BUILDING PERMIT(S)

EXCAVATION; EARTHWORK, DEMOLITION AND SITE CLEARING, REMOVAL OF TRASH AND TREE STUMPS, INSTALLING CONSTRUCTION FENCING, SECURITY LIGHTING AND SECURED SITE THROUGH OUT THE CONSTRUCTION OF THE PROJECT.

THE CONTRACTOR WILL BE RESPONSIBLE TO PROTECT THE IDENTIFIED TREES AND TO PROVIDE THE NECESSARY TREE CARE & MAINTENANCE, INCLUDING WATERING, DURING CONSTRUCTION. ROOT PRUNING WILL NOT BE PERMITTED UNLESS APPROVED BY THE CITY AND THE ACTION IS TAKEN ONLY WHEN THE CITY REPRESENTATIVE IS PRESENT.

THE CONTRACTOR TO BE RESPONSIBLE FOR PROCURING THE PREFAB RESTROOM PER THE ORDER FORM AND INSTALLING THE BUILDING WITH ALL THE STRUCTURAL, PLUMBING, LIGHTING, SIGNAGE AND FURNISHING COMPONENTS AND PROTECTIVE PADDING ON THE DAVIS FIELD SIDE. INSTALLING NEW CHAIN LINK FENCE AT DAVIS FIELD INTERFACE WITH RESTROOM.

CONSTRUCTION: INSTALLATION AND CONNECTIONS TO THE UNDERGROUND UTILITIES; STORM DRAIN, SEWER, WATER PIPES, ELECTRICAL AND CONCRETE FLATWORK, RUBBER PLAY SURFACING, PLAY SAND, PRECAST CONCRETE PAVING, DECOMPOSED GRANITE PAVING, SEATWALLS, SHADE STRUCTURES, PLAY EQUIPMENT, SITE FURNISHINGS, AND MODEL PLANES ON PLINTHS.

IRRIGATION; MODIFICATIONS TO THE EXISTING SYSTEM TO MEET THE NEW SITE TO INCLUDE THE INSTALLATION OF ALL LINES, VALVES, SPRAY HEADS, DRIP TUBING, QUICK COUPLERS AND WIRES. REFER TO EXISTING IRRIGATION RECORD DRAWINGS AND LIBRARY AS-BUILT DRAWINGS FOR INFORMATION

PLANTING; ALL TREES, SHRUBS, GROUNDCOVERS, TURF AND MULCH

ELECTRICAL, TRENCH AND INSTALL ALL CONDUITS, LIGHT STANDARDS AND FIXTURES.

SIGNAGE; INSTALL PARK SIGN AND MATERIALS INCLUDING LIGHTING. ALL PERIMETER ADA PARKING AND PARK HOURS.

ALL IMPROVEMENTS REQUIRING A DEFERRED SUBMITTAL HEREUNDER CONSIST OF BUT NOT LIMITED TO INCLUDE DRAWINGS, FOOTINGS AND CALCULATIONS

- : PLAY EQUIPMENT
- : SHADE STRUCTURES
- : RESTROOM

2 The restroom site preparation notes have been added to Construction Plan, Sheet LC 2

RESTROOM / SPLASH PAD BUILDING SITE PREPARATION NOTES

1. EXCAVATE DOWN 10 INCHES BELOW FINISH FLOOR ELEVATION (THE SLAB IS 8 INCHES THICK ON TOP OF A 2 INCH SAND BED. THE SAND IS INSTALLED AFTER THE PLUMBING INSPECTION).
2. IF SOILS ARE POOR, IT MAY BE NECESSARY TO IMPORT 6 INCHES OF CLASS II BASE ROCK. (THIS IS NOT NECESSARY IF NATIVE SOILS WILL COMPACT)
3. COMPACT TO 95% OR TO LOCAL CODE REQUIREMENT.
4. COMPACT 1 FOOT OVER IN ALL DIRECTIONS (OVER BUILD).
5. BUILDING PAD MUST BE LEVEL.
6. EXCAVATE AND BACKFILL TRENCHES FOR UNDERGROUND PLUMBING AND UTILITY KIT WHEN SUPERVISOR IS ON SITE.
7. SUPPLY APPROXIMATELY 8 CUBIC YARDS (4 PER BUILDING SITE) OF CLEAN SAND FOR FINE GRADING. THE SAND IS INSTALLED AFTER PLUMBING INSPECTION.
8. DEPENDING ON WEATHER, ALL IRRIGATION SHOULD BE TURNED OFF PRIOR TO DELIVERY TO ALLOW THE SURROUNDING SOILS TO DRY AND BEAR THE WEIGHT OF THE TRUCK AND CRANE.
9. PROVIDE SUITABLE SAFE CLEAR ACCESS TO ALLOW A CRANE (UP TO 110 TONS) WITHIN 25' OF THE BUILDING PAD AND THE BUILDING ON A SEMI-TRAILER (UP TO 40 TONS) TO REACH THE SITE (14' WIDTH, 70' LENGTH, AND 14' IN HEIGHT). IF PATH TO SITE IS OVER EXISTING UTILITIES, SIDEWALKS, OR OTHER DAMAGEABLE AREAS, PROPER MARKING, PLATING OR OTHER APPROPRIATE PROTECTION MUST BE PROVIDED.
10. MANUFACTURER TO PROVIDE A PLUMBING KIT AND UTILITY KIT, WHICH IS BURIED UNDER THE BUILDING. MANUFACTURER TO STUB OUT 6 FEET FROM THE BUILDING AND PROVIDE CHRISTY BOXES FOR CONNECTIONS. CONTRACTOR RESPONSIBLE FOR MAKING FINAL CONNECTIONS.

The contents of this addendum shall have precedence over all related provisions within the contract documents. It is the intent of the City to clarify the above-mentioned items to all bidders and should it be necessary to request clarification on these matters, please contact Arash Rahimian at (714) 754-5096 and Irina Gurovich at (714) 754-5324.

Please acknowledge receipt of all addenda on the Proposal Page "P-4."

Sincerely,



Irina Gurovich
Assistant Engineer



CITY OF COSTA MESA

CALIFORNIA 92628-1200

P.O. Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: AUGUST 11, 2020

TO: ALL PROSPECTIVE BIDDERS

ADDENDUM NO. 2 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: _____

Company: _____

All bidders shall register with CIPList.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPList.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

BID OPENING DATE: NO CHANGE – WEDNESDAY, AUGUST 19, 2020

BID OPENING TIME: NO CHANGE

BID OPENING PLACE: NO CHANGE

PLANS:

Attached are existing irrigation record drawings and Library As-Built drawings for contractor's references. Hard copies of the drawings are available for review per contractor's request by the appointment only. Please contact Jim Ortiz at 714-327-7490 to schedule a visit.

SCOPE OF WORK:

The attached document "List of Items of Work" is the part of the contract documents. Any work that is not shown on the plans but specified in the attached list shall be considered included in price bid for the various items of work. No additional compensation shall be allowed.

The contents of this addendum shall have precedence over all related provisions within the contract documents. It is the intent of the City to clarify the above-mentioned items to all bidders and should it be necessary to request clarification on these matters, please contact Arash Rahimian at (714) 754-5096 and Irina Gurovich at (714) 754-5324.

Please acknowledge receipt of all addenda on the Proposal Page "P-4."

Sincerely,

Irina Gurovich
Assistant Engineer

Attachments: Record Drawings and Library As-Built drawings
List of Items of Work

LEGEND

SYMBOL	DESCRIPTION	SIZE	DEPTH	OTHER
○	1" SLOPE	1"	12"	
○	2" SLOPE	2"	12"	
○	3" SLOPE	3"	12"	
○	4" SLOPE	4"	12"	
○	5" SLOPE	5"	12"	
○	6" SLOPE	6"	12"	
○	8" SLOPE	8"	12"	
○	10" SLOPE	10"	12"	
○	12" SLOPE	12"	12"	
○	15" SLOPE	15"	12"	
○	20" SLOPE	20"	12"	
○	25" SLOPE	25"	12"	
○	30" SLOPE	30"	12"	
○	36" SLOPE	36"	12"	
○	42" SLOPE	42"	12"	
○	48" SLOPE	48"	12"	
○	54" SLOPE	54"	12"	
○	60" SLOPE	60"	12"	
○	66" SLOPE	66"	12"	
○	72" SLOPE	72"	12"	
○	78" SLOPE	78"	12"	
○	84" SLOPE	84"	12"	
○	90" SLOPE	90"	12"	
○	96" SLOPE	96"	12"	
○	102" SLOPE	102"	12"	
○	108" SLOPE	108"	12"	
○	114" SLOPE	114"	12"	
○	120" SLOPE	120"	12"	
○	126" SLOPE	126"	12"	
○	132" SLOPE	132"	12"	
○	138" SLOPE	138"	12"	
○	144" SLOPE	144"	12"	
○	150" SLOPE	150"	12"	
○	156" SLOPE	156"	12"	
○	162" SLOPE	162"	12"	
○	168" SLOPE	168"	12"	
○	174" SLOPE	174"	12"	
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○	720" SLOPE	720"	12"	
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○	750" SLOPE	750"	12"	
○	756" SLOPE	756"	12"	
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○	768" SLOPE	768"	12"	
○	774" SLOPE	774"	12"	
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○	786" SLOPE	786"	12"	
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○	990" SLOPE	990"	12"	
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○	1002" SLOPE	1002"	12"	

SPECIFIC NOTES

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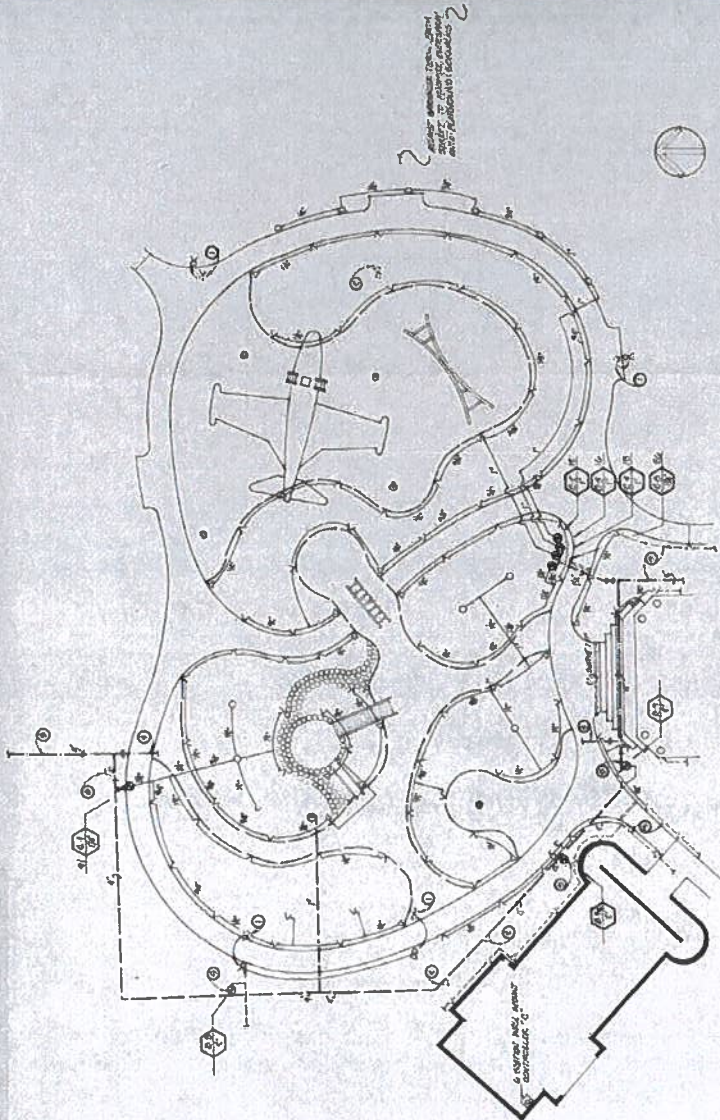
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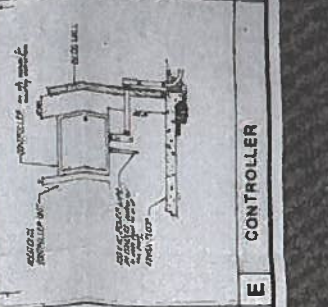
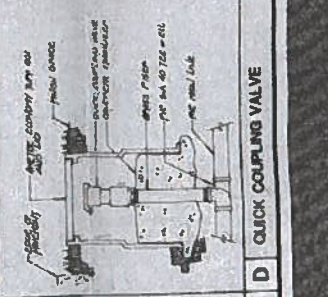
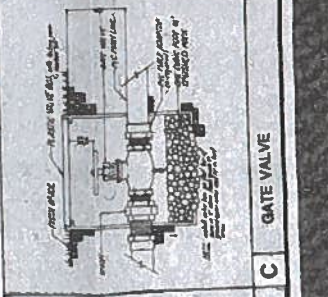
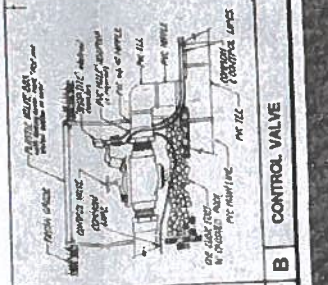
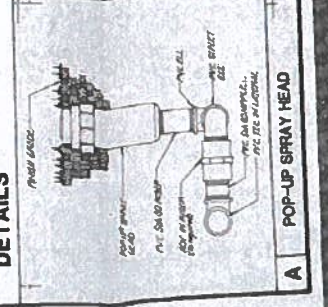
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DETAILS



Robert Jones Inc.
City of Costa Mesa
PLAY AREA
LIONS PARK

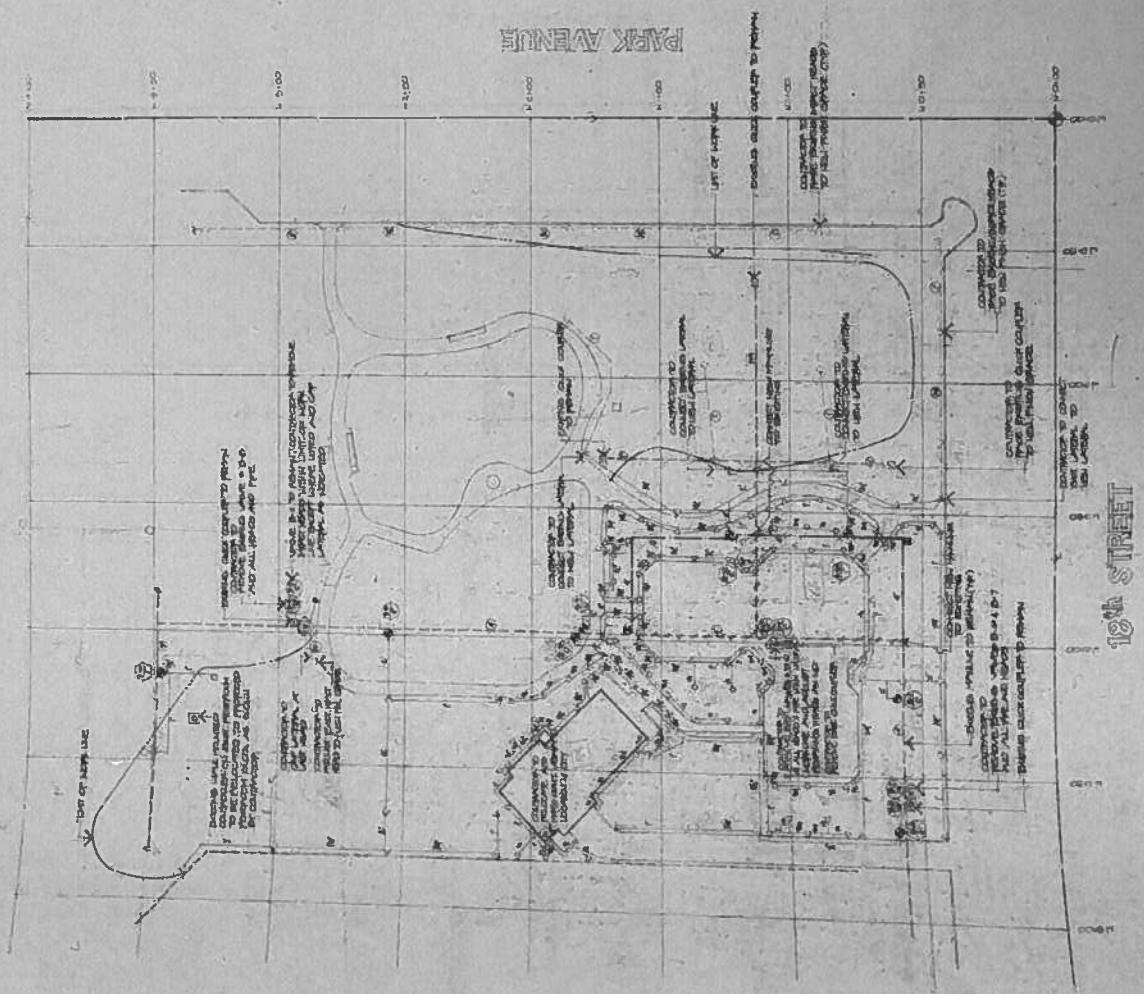
IRIGATION PLAN DETAILS
REVISIONS
DATE
SCALE
DRAWN
CHECKED

LEGEND

NO.	SYMBOL	DESCRIPTION	SCALE	DATE	BY
1	(Symbol)	1.000' TO 1.500' TO 2.000' TO 2.500' TO 3.000' TO 3.500' TO 4.000' TO 4.500' TO 5.000' TO 5.500' TO 6.000' TO 6.500' TO 7.000' TO 7.500' TO 8.000' TO 8.500' TO 9.000' TO 9.500' TO 10.000'	1" = 100'	01/15/10	JL
2	(Symbol)	2.000' TO 2.500' TO 3.000' TO 3.500' TO 4.000' TO 4.500' TO 5.000' TO 5.500' TO 6.000' TO 6.500' TO 7.000' TO 7.500' TO 8.000' TO 8.500' TO 9.000' TO 9.500' TO 10.000'	1" = 100'	01/15/10	JL
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4	(Symbol)	4.000' TO 4.500' TO 5.000' TO 5.500' TO 6.000' TO 6.500' TO 7.000' TO 7.500' TO 8.000' TO 8.500' TO 9.000' TO 9.500' TO 10.000'	1" = 100'	01/15/10	JL
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6	(Symbol)	6.000' TO 6.500' TO 7.000' TO 7.500' TO 8.000' TO 8.500' TO 9.000' TO 9.500' TO 10.000'	1" = 100'	01/15/10	JL
7	(Symbol)	7.000' TO 7.500' TO 8.000' TO 8.500' TO 9.000' TO 9.500' TO 10.000'	1" = 100'	01/15/10	JL
8	(Symbol)	8.000' TO 8.500' TO 9.000' TO 9.500' TO 10.000'	1" = 100'	01/15/10	JL
9	(Symbol)	9.000' TO 9.500' TO 10.000'	1" = 100'	01/15/10	JL
10	(Symbol)	10.000'	1" = 100'	01/15/10	JL

NOTES

1. CONTRACTOR SHALL VERIFY ALL UTILITIES AND RECORDS BEFORE ANY CONSTRUCTION BEGINS.
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THE LIONS PARK PROJECTS



CONSULTING ENGINEERS

1000 California Street, Suite 1000, San Francisco, CA 94109
Tel: 415-774-2100 Fax: 415-774-2101



CITY APPROVALS

Table with columns: No, Description, Date, Status. Includes entries for BO, BOA, BOB, BOE, BOF, BOG, BOH, BOI, BOJ, BOK, BOL, BOM, BON, BOO, BOQ, BOR, BOS, BOT, BOU, BOV, BOX, BOY, BOZ, BOA, BOB, BOE, BOF, BOG, BOH, BOI, BOJ, BOK, BOL, BOM, BON, BOO, BOQ, BOR, BOS, BOT, BOU, BOV, BOX, BOY, BOZ.

IRRIGATION AND LEGEND NOTES

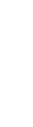
Issue: 1/15/10 Date: 1/15/10

L5.01.00

Scale: 1" = 10'

IRRIGATION MATERIAL LEGEND

Table with columns: SYMBOL, MANUFACTURER, DESCRIPTION, FLOW RATE (GPM), PRESSURE (PSI), DETAILS. Lists various pipe materials like 1/2" HDPE, 1/2" PVC, 1/2" ALUMINUM, etc.



IRRIGATION NOTES

- 1. ALL LOCAL, NATIONAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING THE DESIGN AND CONSTRUCTION OF IRRIGATION SYSTEMS SHALL BE COMPLIED WITH BY THE CONTRACTOR...
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO THE START OF CONSTRUCTION...
3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO THE START OF CONSTRUCTION...
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17. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO THE START OF CONSTRUCTION...
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22. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO THE START OF CONSTRUCTION...

VALVE CALCULATION LEGEND

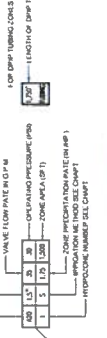


Table with columns: NUMBER, DESCRIPTION OF THE VALVE, TYPE OF VALVE, TYPE OF OPERATION, TYPE OF VALVE, TYPE OF OPERATION. Lists various valve types and their specifications.

Table with columns: Project Name, Location, Date, Status, etc. Includes a section for 'WATER EFFICIENT LANDSCAPE WORKSHEET' with various input fields and a calculation table for irrigation controller run times.

Table with columns: IRRIGATION CONTROLLER RUN TIMES. Includes a calculation table for run times based on various parameters like area, evapotranspiration, etc.

Table with columns: IRRIGATION CONTROLLER RUN TIMES. Includes a calculation table for run times based on various parameters like area, evapotranspiration, etc.

Notes regarding the irrigation controller run times, including instructions for the contractor and the engineer.



THE LIONS PARK PROJECTS

ARCHITECT JOHNSON FAVARO

CONSULTING ENGINEERS

Lions Park Phase I Irrigation 44-Buildings 11/8/2019 AMERICAN LANDSCAPE, INC.



CITY APPROVALS

PROVISIONS

Table with columns: No, Issue, Date, Issued By, Checked By, Approved By

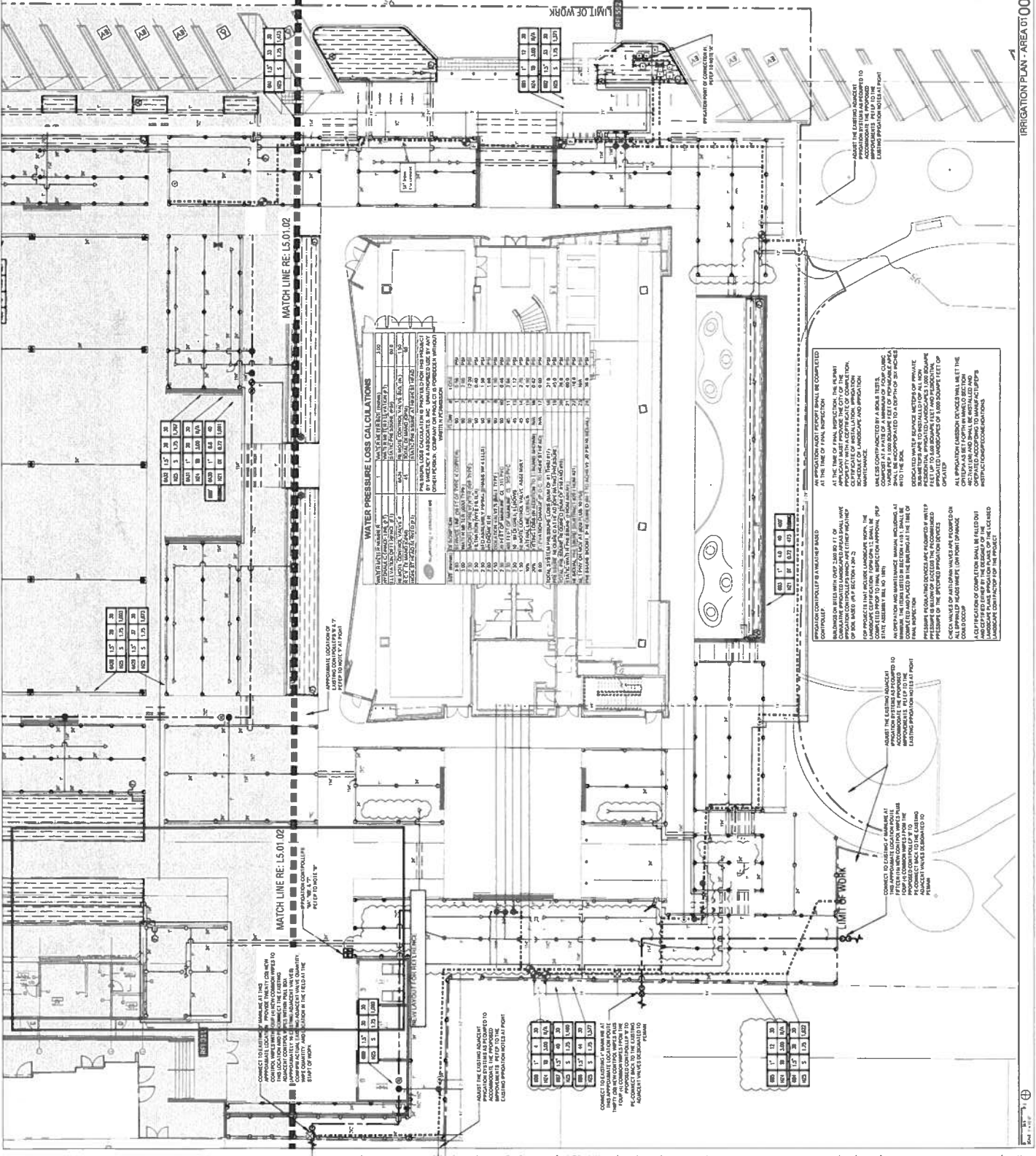
IRRIGATION PLANS

Scale: As Shown Date: June 21, 2017

L5.01.01

CAD

NOTE 1: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE IRRIGATION SYSTEM... NOTE 2: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE IRRIGATION SYSTEM... NOTE 3: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE IRRIGATION SYSTEM...



WATER PRESSURE LOSS CALCULATIONS table with columns for Pipe Size, Length, Friction Loss, etc.

VALVE SCHEDULE table listing valve types, sizes, and quantities.

PIPE SCHEDULE table listing pipe sizes, materials, and quantities.

CONDUIT SCHEDULE table listing conduit sizes, materials, and quantities.

WATER METER SCHEDULE table listing meter sizes and quantities.

VALVE SCHEDULE table listing valve types, sizes, and quantities.

PIPE SCHEDULE table listing pipe sizes, materials, and quantities.



THE LIONS PARK PROJECTS

ARCHITECT
**JOHNSON
FAVARO**

1111 North Lincoln Street, Suite 100
Chicago, IL 60610
Tel: 312.329.1100
www.johnsonfavaro.com

CONSULTING ENGINEERS

AMERICAN LANDSCAPE INC.
Lions Park - Phase I
Irvington Als-Buitts

1111 North Lincoln Street, Suite 100
Chicago, IL 60610
Tel: 312.329.1100
www.americanlandscape.com

ARCHITECT'S LICENSE/PROFESSIONAL STAMP



CITY APPROVALS

PERSON 01

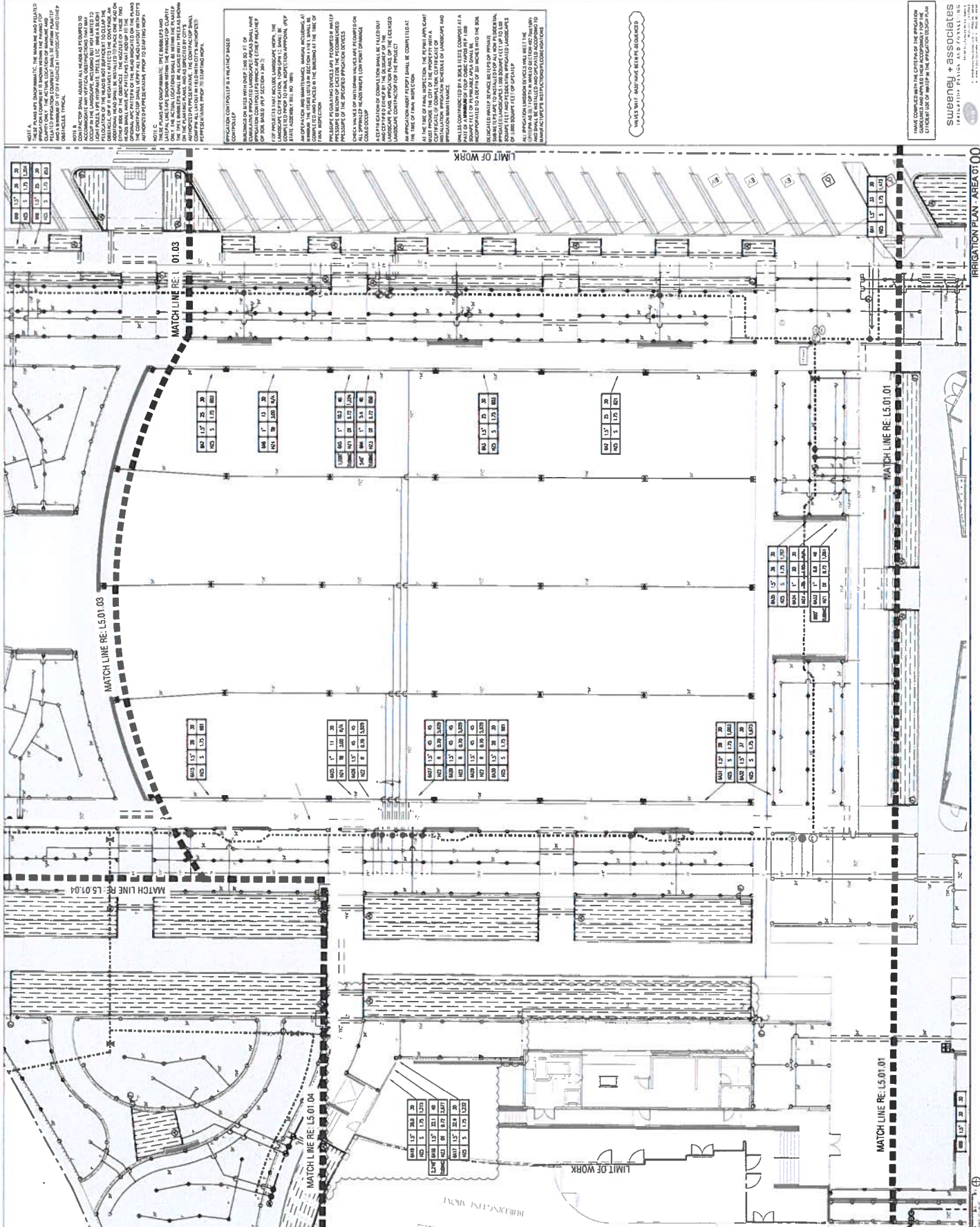
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NO. 00000099	000200

IRRIGATION PLANS

Project No. 1500
Date: June 21, 2017
City: Chicago, IL

L5.01.02

000



PROJECT NO. 1500
 DATE: JUNE 21, 2017
 CITY: CHICAGO, IL
 PROJECT: LIONS PARK - PHASE I
 SHEET: L5.01.02
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

swanney + associates
 1111 North Lincoln Street, Suite 100
 Chicago, IL 60610
 Tel: 312.329.1100
 www.swanney.com



THE LIONS PARK PROJECTS



CONCRETE ENGINEERS



ARCHITECTS / ENGINEERS STAMP



CITY APPROVALS

PERMITS

ISSUE / REVISIONS

Table with columns: NO, ISSUE / REVISIONS, DATE

IRIGATION AND LEGEND NOTES

DATE: 06/17/2017

PROJECT: 1500

L5.01.00

CDM

IRIGATION MATERIAL LEGEND

Table with columns: QTY, UNIT, MANUFACTURER, DESCRIPTION, FLOW RATE GPM, PSI, DRAIN, DATE

IRIGATION NOTES

- 1. ALL LOCAL MATERIALS AND STAINLESS STEEL... 2. ALL LOCAL MATERIALS AND STAINLESS STEEL... 3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS...

VALVE CALCULATIONS

Table with columns: NUMBER, DESCRIPTION OF THE APPLICATION, TYPE OF APPLICATION, APPLICATION NUMBER

IRIGATION CONTROLLER RUN TIMES

Table with columns: DATE, TIME, AMOUNT, COMMENTS

IRIGATION CONTROLLER RUN TIMES

Table with columns: DATE, TIME, AMOUNT, COMMENTS

IRIGATION CONTROLLER RUN TIMES

Table with columns: DATE, TIME, AMOUNT, COMMENTS

These calculations are based on the information provided in the schedule of irrigation and are subject to change based on actual field conditions.



THE LIONS PARK PROJECTS

ARCHITECT JOHNSON FAVARO

CONSULTING ENGINEERS

CONSULTING ENGINEERS

Lions Park - Phase I
Contract No. 1820219
AMERICAN LANDSCAPE, INC.

PROJECT CITY ENGINEERS STAMP



CITY APPROVAL

Table with 2 columns: NO, ISSUE / REVISIONS

IRRIGATION PLANS

DATE: 06/17/2018
PROJECT: 1820219

L5.01.01

CAD

NOTE 1: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS... CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS...

NOTE 2: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS... CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS...

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NOTE 4: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS... CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS...

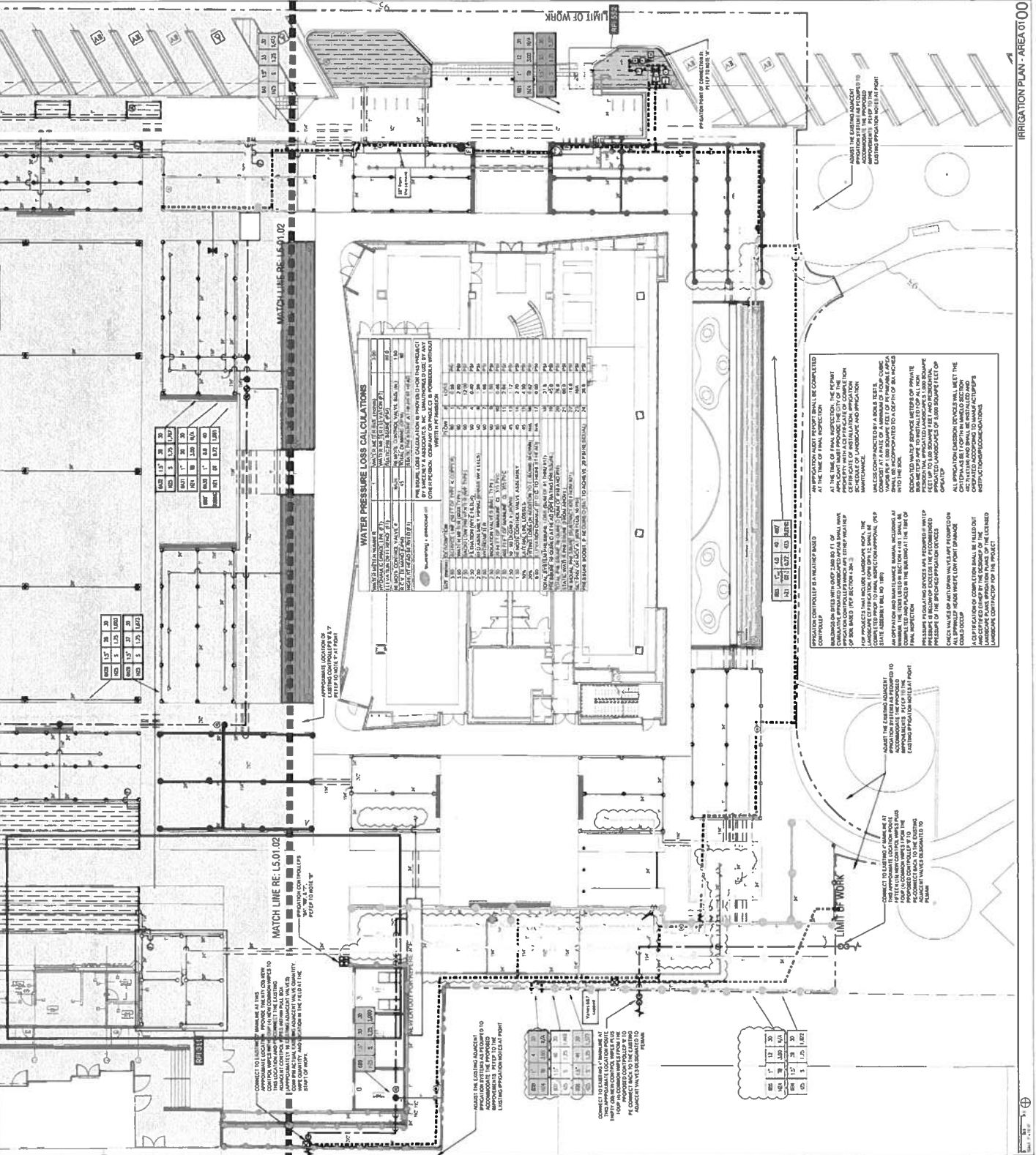
NOTE 5: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS... CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS...

NOTE 6: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS... CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS...

NOTE 7: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS... CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS...

NOTE 8: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS... CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS...

NOTE 9: CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS... CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL IRRIGATION SYSTEMS...



WATER PRESSURE LOSS CALCULATIONS table with columns for Pipe Size, Length, Friction Loss, etc.

Table with 2 columns: NO, ISSUE / REVISIONS

ADJUST THE EXISTING ADVISORY APPROXIMATIONS TO THE EXISTING IRRIGATION PLAN AND REVISIONS TO THE EXISTING IRRIGATION PLAN...

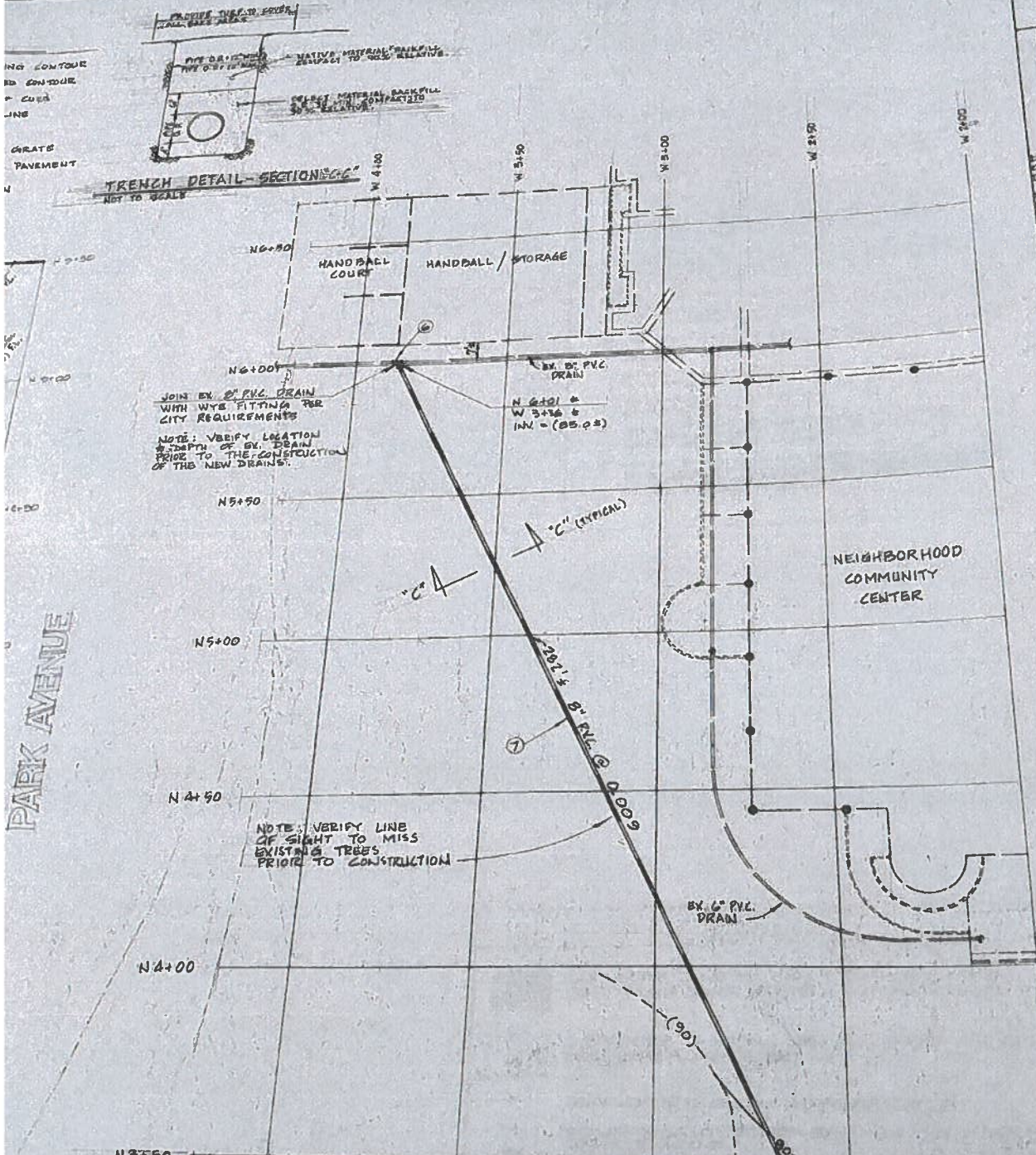
CONNECT TO EXISTING IRRIGATION SYSTEM AS SHOWN TO THE EXISTING IRRIGATION PLAN AND REVISIONS TO THE EXISTING IRRIGATION PLAN...

ADJUST THE EXISTING ADVISORY APPROXIMATIONS TO THE EXISTING IRRIGATION PLAN AND REVISIONS TO THE EXISTING IRRIGATION PLAN...

ADJUST THE EXISTING ADVISORY APPROXIMATIONS TO THE EXISTING IRRIGATION PLAN AND REVISIONS TO THE EXISTING IRRIGATION PLAN...

IRRIGATION PLAN - AREA 0100

18



GRADING PLAN
 MOBATA ASSOCIATES INC
 LANDSCAPE ARCHITECTURE
 BREA, CALIFORNIA 92621
 (714) 529-2181

CITY OF COSTA MESA

LIONS PARK

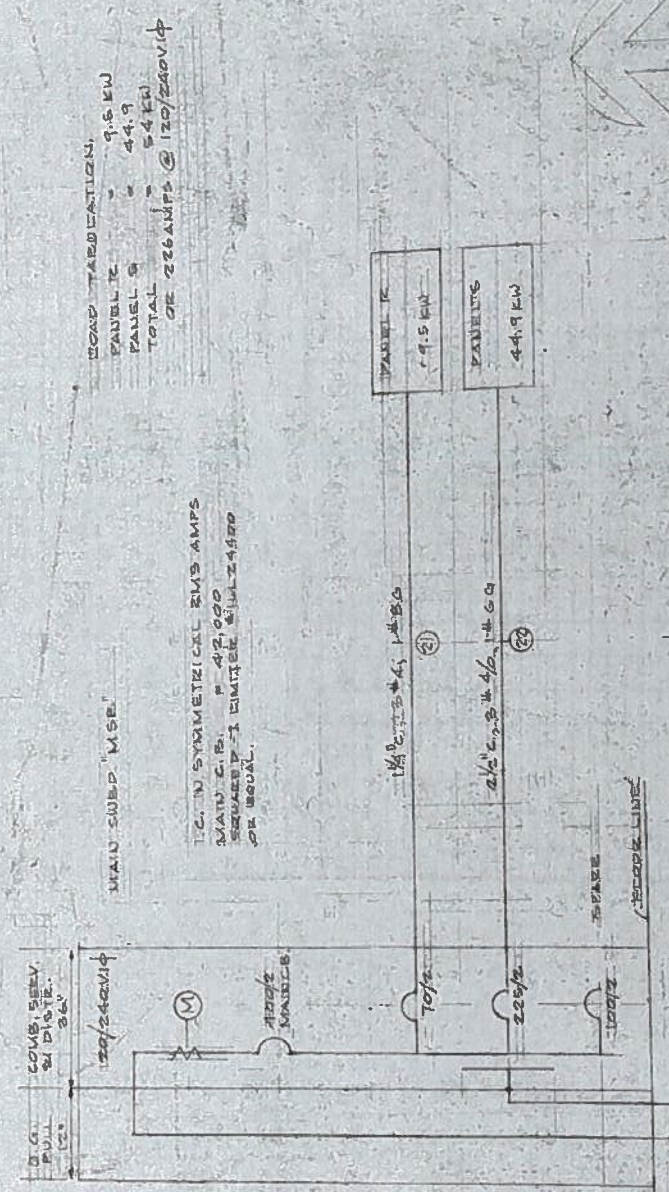
MATCH LINE - SEE ABOVE LEFT

CONSTRUCTION NOTES	QUANTITIES
CONSTRUCT 6" V.C.B. PER COSTA MESA SANITARY DISTRICT'S STD. PLANS & SPECS. ON BEDDING, BACKFILL & PAVEMENT REPLACEMENT PER CITY STD. 801	42 L.F.
CONSTRUCT 4" V.C.P. PER COSTA MESA SANITARY DISTRICT'S STD. PLANS & SPECS.	136 L.F.
INSTALL 24" S.M.H. PER COSTA MESA SANITARY DISTRICT'S STD. SPECS. SECTION 4-2	1 EA.
INSTALL 18" V.C.P. SEWER CLEAN OUT PER 24" S.M.H. STD. 5-107	3 EA.
INSTALL 3" A.C. P.V.M.T. OVER 6" A.B. (1) 3" A.C. P.V.M.T. OVER 9" A.B.	740 S.F. & 700 S.F.
INSTALL 2" X 6" REDWOOD HEADER, STAKED PER CITY REQUIREMENTS TO EXISTING 8" P.V.C. DRAIN PER CITY REQUIREMENTS	790 L.F.
INSTALL 8" P.V.C. DRAIN	1 PLACE

LIONS PARK

SHEET
 E-1
 OF 3

D	VARIABLE SPEED DRIVE MOTOR WITH SARV. AS TYPE 12, BUT 120V	120V 1P	STANLEY 1100
E	DRIVE AS TYPE 12, BUT 120V	120V 1P	STANLEY 1100
F	DRIVE AS TYPE 12, BUT 120V	120V 1P	STANLEY 1100
G	DRIVE AS TYPE 12, BUT 120V	120V 1P	STANLEY 1100
H	DRIVE AS TYPE 12, BUT 120V	120V 1P	STANLEY 1100



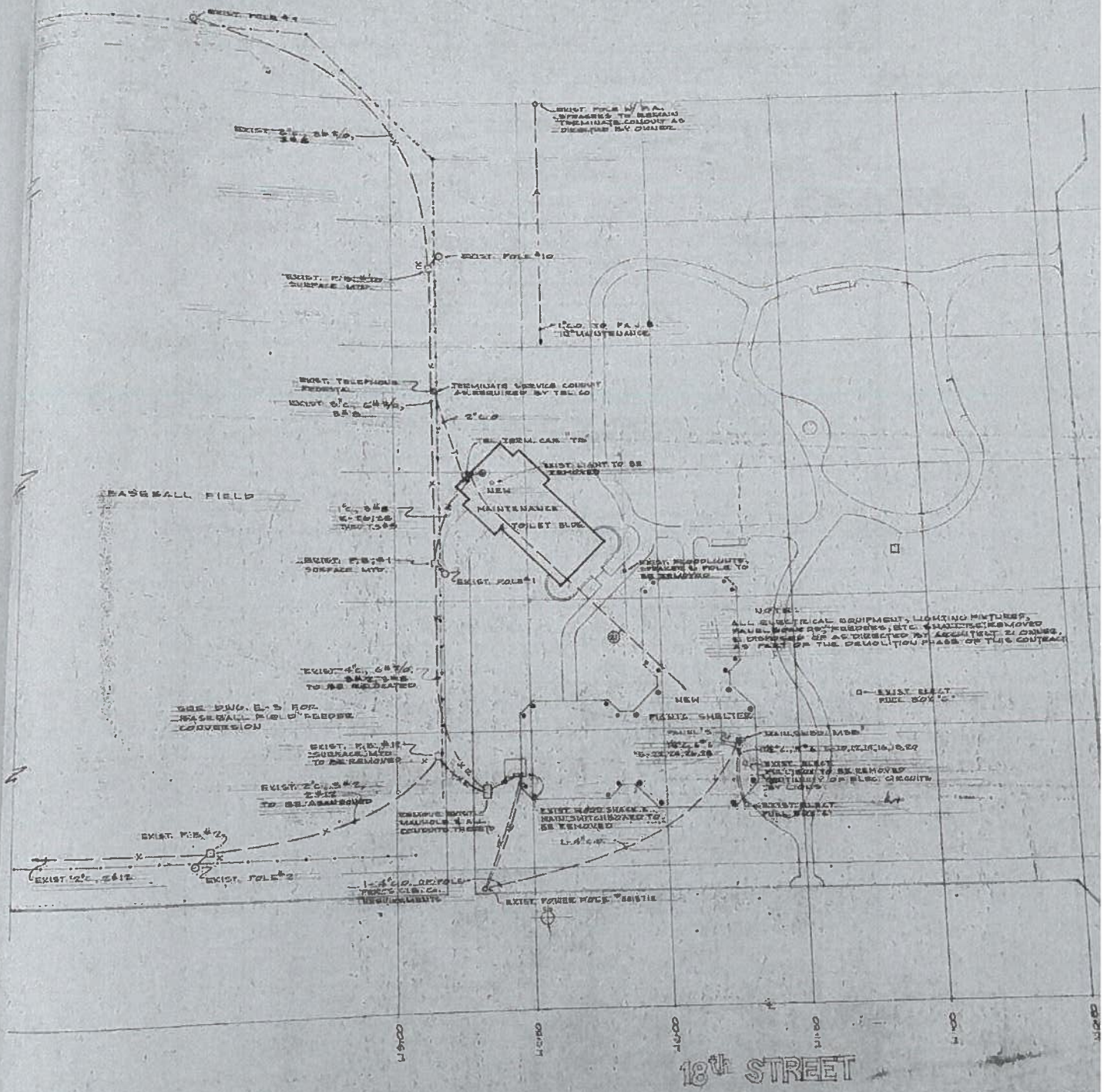
BOARD TABULATION
 PANEL 1 = 9.6 KW
 PANEL 2 = 44.9
 TOTAL = 54.5 KW
 @ 120/240V

I.C. IN SYMMETRICAL RMS AMPS
 MAIN C.B. = 42,000
 SQUARE INCHES = 14.450
 OR 100%

SINGLE LINE DIAGRAM
 NO SCALE



PARK



List of Items included in Scope of Work

Item No.	Item Description	Quantity	Unit
Civil			
1	Mobilization, Bonds Insurance, General Conditions	1	LS
2	Traffic Control	1	LS
3	Demolition & Site Clearing	1	LS
4	Earthwork, removal & grading, removal of existing pavement, concrete improvements & excavation of proposed structural section, including restroom building, concrete driveway, concrete driveway apron, concrete curb and gutter, concrete walkways, concrete wall, rubber play surfacing, play sand, and site vegetation.	1	LS
5	Water Pollution Control	1	LS
6	Storm Drain Manhole	1	EA
7	12" Dia. PVC Storm Drain Pipe	10	LF
8	4" Dia. PVC SCH40 Drain Pipe	76	LF
9	6" Dia. PVC SCH40 Drain Pipe	950	LF
10	8" Dia. PVC SCH40 Drain Pipe	110	LF
11	12"x12" Brooks Drain Box	13	EA
12	NDS1212 Catch Basin	15	EA
13	Drain inlet in playground area per landscape plans	7	EA
14	MC-3500 Stormtech Unit	1	EA
15	4" VCP sewer service and sewer cleanout	1	LS
16	1" Copper Water Service	1	LS
17	1-1/2" Water Service with Gate Valve and Backflow Preventer In Cage Enclosure, including Connection to Existing Main on 18th Street	1	LS
18	1-1/2" PVC SDR 35 Waste Line	120	LF
Landscape			
19	Construction Fencing	710	LF
20	Jet Plane Protection & Refurbishment	1	LS
21	Concrete Flatwork (4")	7,550	SF
22	Concrete Band - (6" Wide)	145	LF
23	Deepened Edge	650	LF
24	Play Sand	490	SF
25	Rubber Play Surfacing Over Concrete Sub-Base	11,405	SF

Item No.	Item Description	Quantity	Unit
Site Furnishings			
26	Precast Concrete Park Bench without Backrest	13	EA
27	Steel Trash & Recycle Receptacles	4	EA
28	Precast Concrete Bench 'C' (Wing Tail)	5	EA
Playground Equipment			
29	Sandcastle	1	EA
30	Sand Scooper	1	EA
31	Sand Table	1	EA
32	Swings	1	EA
33	Helicopter spring rider (sit-in style)	1	EA
34	Jet spring rider	1	EA
35	See Saw	1	LS
36	Smart Play® Motion Aviation	1	EA
37	Swings	1	EA
38	Global Motion	1	EA
39	Extreme Generation	1	EA
40	Foundations, Delivery, Assembly, and Installation	1	LS
Fencing & Accessories at Davis Field			
30	Chain link fence - 8' high	10	LF
31	Chain link fence- 15' high	8	LF
32	Padding	290	SF

Item No.	Item Description	Quantity	Unit
Planting			
33	Soil Preparation and Fine Grading	30,760	SF
34	Weed Abatement	3,340	SF
35	Tree - 36" box	6	EA
36	Shrub - Container #5 Gallon	131	EA
37	Shrub - Container #1 Gallon	133	EA
38	Turf - Sod	27,420	SF
39	Install Wood Mulch - 3" depth (4,760 SF)	44	CY
40	Ninety (90) Day Maintenance	1	LS
Irrigation			
41	Irrigation	30,760	SF
Restroom Building			
42	Restroom Building (Architecture, Structural & Plumbing)	1	LS
Shade Structure			
43	Shade Structure - (12' x 28')	1	EA
Electrical			
44	BC Trench (800 LF)	1	LS
45	Backfill BC Trench (800 LF)	1	LS
46	SCE Trench (75 LF)	1	LS
47	Backfill SCE Trench (75 LF)	1	LS
48	3"C - Utility (75 LF)	1	LS
49	2#10 1#10g 1"C (1250 LF)	1	LS
50	Weatherproof Outlets (2 LF)	1	LS
51	Pull Box - Concrete	2	EA
52	Fixture "S1"	13	EA
53	Poles 12'- 'S1'	13	EA
54	Dig Footing - 'S1'	13	EA
55	Footing Concrete - 'S1'	15.17	CY
56	Lighting Control Panel	1	EA
57	New 200A Service	1	EA
58	200A Panel	1	EA
59	Ground Rod	1	EA
60	Building Electrical	1	LOT
60	Electrical Material Taxes and Installation Labor	1	LS



CITY OF COSTA MESA

CALIFORNIA 92628-1200

P.O. Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: AUGUST 17, 2020

TO: ALL PROSPECTIVE BIDDERS

ADDENDUM NO. 3 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: _____

Company: _____

All bidders shall register with CIPList.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPList.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

BID OPENING DATE: CHANGED TO MONDAY, AUGUST 31, 2020

BID OPENING TIME: NO CHANGE

BID OPENING PLACE: NO CHANGE

NOTICE INVITING BIDS:

The deadline to submit sealed bid proposals and the bid opening day have been revised as follows: Sealed bids will be received by the City of Costa Mesa (City) at the Office of the City Clerk, 77 Fair Drive, Costa Mesa, California, before a submittal deadline of **10:00 A.M., Monday, August 31, 2020**. The bid opening will be conducted at **2:00 P.M., Monday, August 31, 2020** by the City Clerk. NO public viewing of the bid opening will be allowed due to precautions related to COVID-19. Upon opening all the valid submitted bids, and verifying their contents, the City Clerk's office will contact each bidder via email and distribute the results and summary of the bid opening.

JOB WALK MEETING:

Non-mandatory job walk meeting is scheduled for **Wednesday, August 19, 2020 at 11 A.M.** to review the existing irrigation system.

SPECIFICATIONS:

The cut sheet and product data for the shade structures are attached to this addendum for contractor's references only. Contractor to request shop drawings from the manufacturer for approval.

The contents of this addendum shall have precedence over all related provisions within the contract documents. It is the intent of the City to clarify the above-mentioned items to all bidders and should it be necessary to request clarification on these matters, please contact Arash Rahimian at (714) 754-5096 and Irina Gurovich at (714) 754-5324.

Please acknowledge receipt of all addenda on the Proposal Page "P-4."

Sincerely,

A handwritten signature in black ink that reads "Irina Gurovich". The signature is written in a cursive, flowing style.

Irina Gurovich
Assistant Engineer

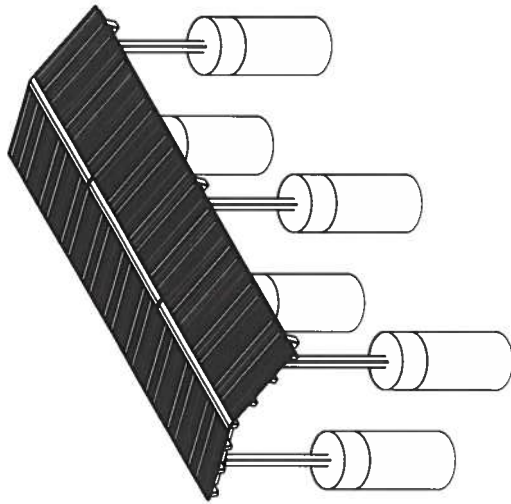
SHADE STRUCTURE DRAWINGS

MODEL: SAN

CONFIGURATION: S30-29.0-12.0-36.0

INDEX OF DRAWINGS

NO.	TITLE
COR-01	COVER SHEET
COR-02	STRUCTURE ELEVATIONS
COR-03	FOOTING DETAILS
COR-04	COMPONENT LINE DRAWINGS
COR-05	FRAMING FABRICATION PLANS
COR-06	ROOF BRASS FABRICATION PLANS
COR-07	LED BRASS FABRICATION PLANS
COR-08	TERMINING CABLE DETAILS
COR-09	FABRICATION DETAILS
COR-10	BILL OF MATERIALS



FOR REFERENCE ONLY
NOT FOR CONSTRUCTION
CONTRACTOR TO REQUEST
SHOP DRAWINGS FROM THE
MANUFACTURER FOR
APPROVAL

STRUCTURE ISO VIEW

FRAME COLOR: BUCKSKIN
ROOF COLOR: TERRA COTTA W72
APPROX. WEIGHT: 7,500lb

FABRICATION TOLERANCES
NORMAL TOLERANCE OF FINISH
1/8" OF RADIUS = +1/8"
2.0 TO 3.175" = +1/16"
POSITION OF FEATURES = +1/16"
THICKNESS AND THICKNESS OF PLATES = +1/16"
BENDING - 1/8" TO 1/16"
END DIMENSIONS = +1/8"



301 E. Pleasant Ave. 3rd Fl. 200 West, 100 Street
401 N. Highway 100, Millersburg, PA, 17044
301 Westly Millersburg, PA 17044

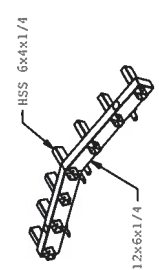
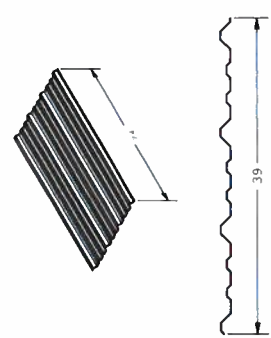
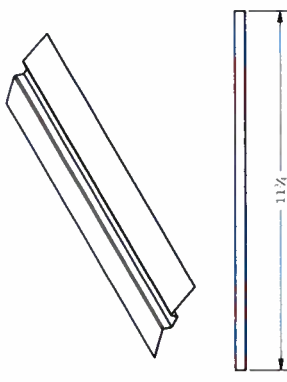
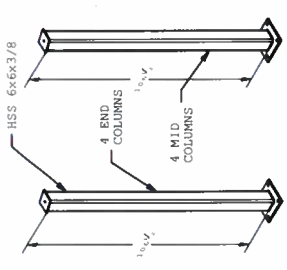
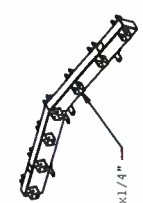
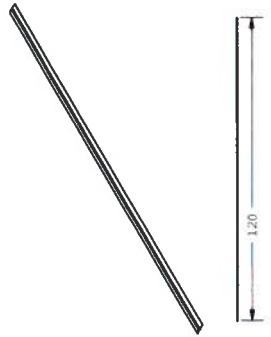
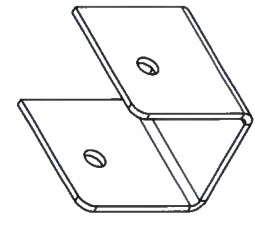
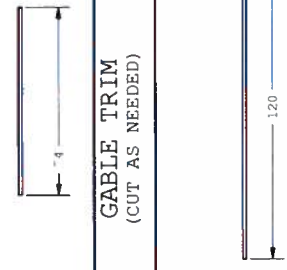
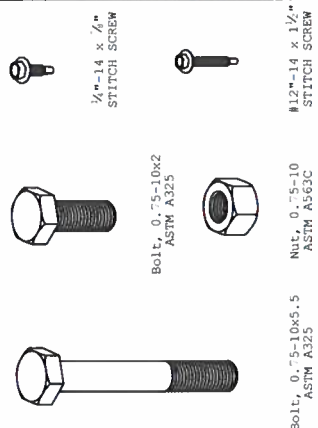
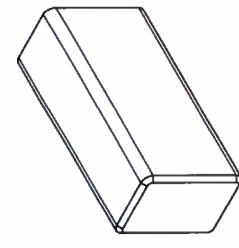
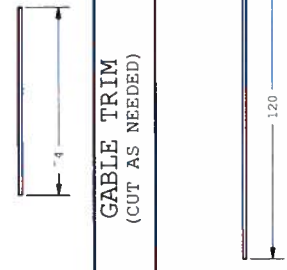
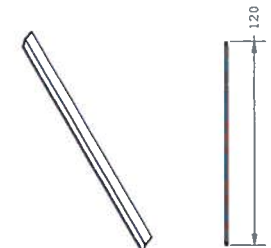
SHADE STRUCTURE - SAN
CONF. S30-29.0-12.0-36.0

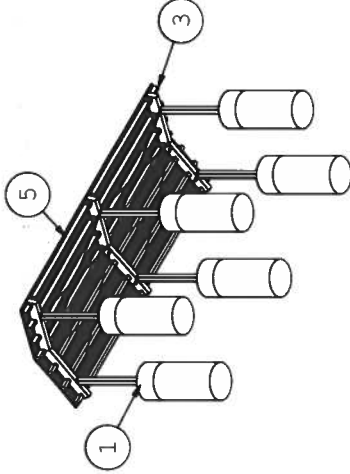
This information is not to be used in preparation of any other drawings or specifications without the express written consent of the manufacturer. The manufacturer shall not be held responsible for any errors or omissions in this drawing. The manufacturer shall not be held responsible for any errors or omissions in this drawing. The manufacturer shall not be held responsible for any errors or omissions in this drawing.

NO.	DATE	BY	CHKD.	APP'D.

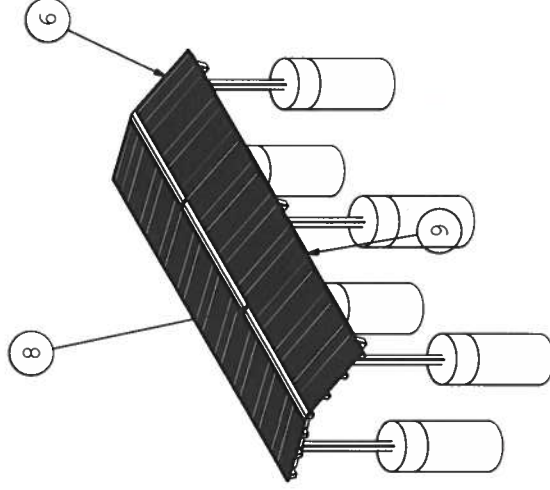
SHADE SHELTER
COVER SHEET

SAN-1
1 11 4

 <p>HSS 12x6x1/4 HSS 6x4x1/4</p>	<p>END TRUSS ASSEMBLY</p> <p>QTY 2</p>	 <p>HSS 6x4x3/16</p>	<p>PERLIN/ RIDGE BEAM ASSEMBLY</p> <p>QTY 7</p>		<p>ROOF SUPPORT TAIL</p> <p>QTY 2</p>
 <p>HSS 6x6x3/8 4 END COLUMNS 4 MID COLUMNS</p>	<p>COLUMN ASSEMBLIES</p> <p>QTY 6</p>	<p>FOR REFERENCE ONLY NOT FOR CONSTRUCTION CONTRACTOR TO REQUEST SHOP DRAWINGS FROM THE MANUFACTURER FOR APPROVAL</p>  <p>HSS 12x6x1/4</p>	<p>MID TRUSS ASSEMBLY</p> <p>QTY 1</p>		<p>ROOF SUPPORT BAY (CUT AS NEEDED)</p> <p>QTY 2</p>
	<p>STIRRUP (FACTORY WELDED TO TRUSS)</p> <p>QTY 14</p>	 <p>GABLE TRIM (CUT AS NEEDED)</p> <p>QTY 8</p>	<p>EAVE TRIM (CUT AS NEEDED)</p> <p>QTY 8</p>	 <p>Bolt, 0.75-10x3.5 ASTM A325</p> <p>Nut, 0.75-10 ASTM A563C</p> <p>Bolt, 0.75-10x2 ASTM A325</p> <p>1/4-14 x 7/8 STITCH SCREW</p> <p>#12-14 x 1 1/2 STITCH SCREW</p>	<p>FASTENERS</p>
	<p>TAIL ASSEM. (FACTORY WELDED TO TRUSS)</p> <p>QTY 14</p>	 <p>GABLE TRIM (CUT AS NEEDED)</p> <p>QTY 8</p>	<p>EAVE TRIM (CUT AS NEEDED)</p> <p>QTY 8</p>		<p>RIDGE CAP (CUT AS NEEDED)</p> <p>QTY 2</p>
<p>SHADE STRUCTURE - SAN CONF. SD-120-(100-80)</p> <p>501 E. Janssop Ave. 300 - 3000 - 10 31st JAN 10 1972 702 HAVRELL RD WILLIAMSBURG, VA 23187</p> <p>SHADE STRUCTURE - SAN CONF. SD-120-(100-80)</p> <p>The information contained herein is proprietary and the contractor shall not be permitted to reproduce or disseminate the same without the express written consent of the manufacturer. The manufacturer shall not be held responsible for any errors or omissions in this drawing. It is the responsibility of the contractor to verify all dimensions and quantities before construction. All dimensions are in inches unless otherwise noted.</p> <p>DATE: 10/10/71 DRAWN BY: J. W. HARRIS CHECKED BY: J. W. HARRIS APPROVED BY: J. W. HARRIS</p> <p>COMPONENT LINE DRAWINGS SAN-4</p>					



FOR REFERENCE ONLY
NOT FOR CONSTRUCTION
CONTRACTOR TO REQUEST
SHOP DRAWINGS FROM THE
MANUFACTURER FOR
APPROVAL



PARTS LIST

ITEM	QTY	PART NUMBER	MASS
1	6	Column Assembly	282 lbmass
3	2	Truss End Assembly	531 lbmass
4	1	Truss Mid Assembly	456 lbmass
5	14	Perlin Assembly	193 lbmass
6	26	24 GA PBR	3 lbmass
8	3	Ridge Cap	5 lbmass
9	6	Eave Trim	5 lbmass
10	4	Gable Trim	5 lbmass
12	26	Roof Panel Top Closures	
13	26	Roof Panel Bottom Closures	
14	5	Web Masitic 3/8"x50'	
15	750	TEK4 #12X1-1/4" Terra Cotta	
16	500	TEX Stitch Screw #14X3/4" Terra Cotta	
17	4	6" Flat Strip w/ Hems	
18	16	Jaw - Jaw 6" Turnbuckle	1 lbmass
19	32	Clevis	1 lbmass
20	16	Thimble	1 lbmass
21	8	Cable	6 lbmass
22	28	Nut, 3/4"-10 ASTM A563	0 lbmass
23	28	Bolt, 3/4"-10x5 1/2" ASTM A325	1 lbmass
24	1	Washer, 3/4" ASTM A436	
25	6	Bolt, 3/4"-10x2" ASTM A325	
26	24	Bolt Anchor, 5/8"Øx 6" Titan HD	1 lbmass
27	1	Touch-up Paint Kit	

EXTRUSION
CORPORATION
15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100



401 E. Flamingo Ave. Box 900, Miami, FL 33149
800 N. Highway 1, Bilalton, TX 75645
30 Beverly St. Billings, MT 59101

SHADE STRUCTURE - SAN
CONFIG. 530-100-260

The manufacturer is not responsible for the use of the product in any application not intended by the manufacturer. The user must follow the instructions provided in the product manual. The manufacturer is not responsible for any damage or injury resulting from the use of the product in any application not intended by the manufacturer.

ITEM	QTY	UNIT	WEIGHT
1	6	Column Assembly	282 lbmass
3	2	Truss End Assembly	531 lbmass
4	1	Truss Mid Assembly	456 lbmass
5	14	Perlin Assembly	193 lbmass
6	26	24 GA PBR	3 lbmass
8	3	Ridge Cap	5 lbmass
9	6	Eave Trim	5 lbmass
10	4	Gable Trim	5 lbmass
12	26	Roof Panel Top Closures	
13	26	Roof Panel Bottom Closures	
14	5	Web Masitic 3/8"x50'	
15	750	TEK4 #12X1-1/4" Terra Cotta	
16	500	TEX Stitch Screw #14X3/4" Terra Cotta	
17	4	6" Flat Strip w/ Hems	
18	16	Jaw - Jaw 6" Turnbuckle	1 lbmass
19	32	Clevis	1 lbmass
20	16	Thimble	1 lbmass
21	8	Cable	6 lbmass
22	28	Nut, 3/4"-10 ASTM A563	0 lbmass
23	28	Bolt, 3/4"-10x5 1/2" ASTM A325	1 lbmass
24	1	Washer, 3/4" ASTM A436	
25	6	Bolt, 3/4"-10x2" ASTM A325	
26	24	Bolt Anchor, 5/8"Øx 6" Titan HD	1 lbmass
27	1	Touch-up Paint Kit	

SHADE SHELTER
BILL OF MATERIALS

ITEM NO. SAN-10
REV. 4

NOTE:
1. WEIGHTS ARE PER PIECE.



CITY OF COSTA MESA

CALIFORNIA 92628 1200

P.O. Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: AUGUST 17, 2020

TO: ALL PROSPECTIVE BIDDERS

ADDENDUM NO. 4 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: _____

Company: _____

All bidders shall register with CIPList.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPList.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

BID OPENING DATE: CHANGED TO THURSDAY, AUGUST 27, 2020

BID SUBMITTAL TIME: BEFORE 10:00 A.M.

BID OPENING TIME: 11:00 A.M.

BID OPENING PLACE: NO CHANGE

CORRECTIONS TO ADDENDUM NO. 3:

The deadline to submit sealed bid proposals and the bid opening day have been revised as follows: Sealed bids will be received by the City of Costa Mesa (City) at the Office of the City Clerk, 77 Fair Drive, Costa Mesa, California, before **10:00 A.M., Thursday, August 27, 2020**. The bid opening will be conducted at **11:00 A.M., Thursday, August 27, 2020** by the City Clerk. Due to precautions related to COVID-19, for your safety NO in-person bid opening will take place and it will be conducted online via Zoom. Upon opening all the valid submitted bids, and verifying their contents, the City Clerk's office will contact each bidder via email and distribute the results and summary of the bid opening.

The contents of this addendum shall have precedence over all related provisions within the contract documents. It is the intent of the City to clarify the above-mentioned items to all bidders and should it be necessary to request clarification on these matters, please contact Arash Rahimian at (714) 754-5096 and Irina Gurovich at (714) 754-5324.

Please acknowledge receipt of all addenda on the Proposal Page "P-4."

Sincerely,

Irina Gurovich
Assistant Engineer



CITY OF COSTA MESA

CALIFORNIA 92628-1200

P.O. Box 1200

FROM THE OFFICE OF THE CITY ENGINEER

DATE: AUGUST 24, 2020

TO: ALL PROSPECTIVE BIDDERS

ADDENDUM NO. 5 – LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15

Please forward this addendum to the appropriate individual as soon as possible. To assist our office in confirming the delivery of this addendum, please sign acknowledging receipt herein and fax a copy of this sheet to (714) 754-5028. **A COPY WILL NOT BE SENT BY MAIL.**

Received by: _____

Company: _____

All bidders shall register with CIPList.com in order to retrieve addenda. It is the responsibility of each prospective bidder to check CIPList.com on a DAILY basis through the close of bids for any applicable addenda or updates.

This addendum, effective on this date, addresses the following items:

BID OPENING DATE: NO CHANGE THURSDAY, AUGUST 27, 2020

BID SUBMITTAL TIME: BEFORE 10:00 A.M.

BID OPENING TIME: 11:00 A.M.

BID OPENING PLACE: NO CHANGE

REVISIONS TO PROPOSAL AND BID ITEMS:

The proposal page P-1a and P-1b have been revised. Contractors shall utilize revised proposal pages P-1a (rev) and P-1b (rev) when submitting their bid.

The following revisions have been made to the proposal schedule:

Bid item No. 1 has been revised to exclude Irrigation item of work.

Schedule of Values for Bid Item No. 1 shall be submitted before 4:00 PM of the 4th business day following the bid opening. The Schedule of Value for this bid item shall not include the Irrigation work. Price includes the indirect cost and markup.

A new item of work has been added - **Bid Item No. 2: "Irrigation Allowances"**.

Schedule of Values and certified irrigation plans, if needed, shall be submitted to the City within two weeks after award of the contract. The Schedule of Value shall include only work related to Irrigation. Price includes the indirect cost and markup.

The Bid Item for Allowances renumbered to **Bid Item No. 3**. No changes have been made to this bid item.

REVISIONS TO PLANS:

The drawings for the proposed work are modified as indicated "Addendum No. 5" by revision dated 08/14/20 and attached to this addendum.

The clouds and deltas as noted on the enclosed drawings are an attempt to assist the bidders in locating the changes on the plans but its bidder's responsibility to include any changes to the bid amount.

REVISIONS TO SPECIFICATIONS:

Bid Items:

Bid Item No. 2 - "Irrigation Allowances" has been added to the contract documents.

Schedule of Values and certified irrigation plans, if needed, for this bid item shall be submitted to the City within two weeks after award of the contract. The Schedule of Value shall include only work related to Landscape Irrigation. Price includes the indirect cost and markup.

No landscape plans, specifications or details will be provided other than City Irrigation Standards. Contractor to make modifications to the existing system to meet the new site to include the installation of all lines, valves, spray heads, drip tubing, quick couplers, and wires. The contractor is responsible for identifying existing deficiencies in the irrigation system and making the necessary repairs - which would include installing new valves and other irrigation components as needed to ensure proper irrigation to new and existing landscape.

The attached City of Costa Mesa Irrigation Standards with standard irrigation notes per the revised plans dated 08/14/20, existing irrigation record drawings and library as-built drawings incorporated are in contract documents and provided to the bidders for information and actions.

Allowance for this bid item to be included in the total bid amount as identified as follows. Use of the allowance will be at the sole discretion of the City and must be authorized in writing at the discretion of the City.

Any money used from the project allowance will be authorized via an Allowance Disbursement Form at the City's sole discretion. Any amount of money remaining in the Allowance line item upon completion of the Project will be deducted from the Contract by Deductive Change Order for the full amount(s) remaining therein. The Contractor has no beneficial interest in, and/or claim to, the Allowances and hereby disclaims any and all such interests.

Additional work items include work that will only be used at the discretion of the Engineer. At the discretion of the Engineer, the Contractor shall provide all labor, tools, equipment, materials and incidentals for the extra work beyond the scope of work established within the Contract documents. Work may include, but not be limited to, delivery of additional newsletters; disposal of materials, potholing, furnishing and installation of informational signs, and related work, and will only be performed, if required, and approved by the Engineer. The Contractor acknowledges that this allowance will only be used at the discretion of the City. Contractor shall be paid at force account or at agreed prices for all work performed within this allowance.

PAYMENT

The contractor shall be paid at Force Account (FA) for all work performed under this bid item of work. No additional compensation will be allowed.

2-5.4 Haul Routes (Page GP-7):

The City of Costa Mesa Waste Hauling requirement has been removed from the contract Documents.

Technical Provisions - Demolition & Site Clearing (Page 3):

Note has been added to the specifications:

1.3 CLEANUP AND REPAIR

The Contractor, at the end of each work day, shall dispose of all removed materials from the site. The Contractor also shall protect the site and the new improvements from vandals or other damages at all times until City acceptance. **This CIP project is not subject to Waste Hauling Provisions.**

Section 02 88 20 Playground Equipment: Part 2 Products-2.01 Manufacturers:

The Flexground Standard System products have been added to the list and can be considered an equivalent to the specified product for the poured-in-place rubberized safety surfacing on the Lions Park Playground Improvements project (see attached Product Information for Flexground Standard System products).

Additional Documentation for Contractor's References:

The cut sheets for restroom, restroom order form, the cut sheets for shade structures, Elkay Water fountain with bottle filter, and Acorn Stainless Lavatory are attached to this addendum for contractor's references. The contractor will be responsible for purchasing and installing all materials and equipment specified in the contract documents. The contractor will also be responsible for submitting plans to the City Building Division and obtaining permit and approval.

PRE-BID RFI LOG:

The RFI(s) log with both the RFI questions and responses is included in this addendum and became a part of the contract documents.

The contents of this addendum shall have precedence over all related provisions within the contract documents. It is the intent of the City to clarify the above-mentioned items to all bidders and should it be necessary to request clarification on these matters, please contact Arash Rahimian at (714) 754-5096 and Irina Gurovich at (714) 754-5324.

Please acknowledge receipt of all addenda on the Proposal Page "P-4."

Sincerely,



Irina Gurovich
Assistant Engineer

Attachments: Revised Proposal Pages P-1a (rev) and P-1b (rev)
Revised Drawings "Addendum No. 5" dated 08/14/2020
Restroom order Form
Restroom Cut Sheet
Shade Structure Cut Sheet
Elkay Water Fountain with bottle Filter Cut Sheet
Acorn Stainless Steel Lavatory Cut Sheet
Flexground Standard System product information
City of Costa Mesa Irrigation Standards
Pre-Bid RFI(s) Log

PROPOSAL SCHEDULE					
LIONS PARK PLAYGROUND IMPROVEMENTS (570 WEST 18TH STREET, COSTA MESA), CITY PROJECT NO. 20-15					
ITEM	DESCRIPTION	APPROX. QUANTITY	UNIT	UNIT PRICE	TOTAL AMOUNT
1	Lions Park Playground Improvements excluding Irrigation (*)	1	L.S.	\$ _____	\$ _____
2	Irrigation Allowances (**) (***)	1	F.A.	\$ <u>125,000</u>	\$ <u>125,000</u>
TOTAL BASE BID AMOUNT:					\$ _____
3	Allowances (***)	1	F.A.	\$ <u>75,000</u>	\$ <u>75,000</u>
TOTAL BASE BID INCLUDING ALLOWANCES:					\$ _____

(*) Schedule of Values for Bid Item No. 1 shall be submitted before 4:00 PM of the 4th business day following the bid opening. The Schedule of Value for this bid item shall not include the Irrigation work. Price includes the indirect cost and markup.

(**) Schedule of Values and certified irrigation plans, if needed, shall be submitted to the City within two weeks after award of the contract. The Schedule of Value shall include only work related to Irrigation. Price includes the indirect cost and markup.

(***) Allowance is for unforeseen work not included in the contract documents and to be included in the total bid amount as identified as follows. Use of the allowance will be at the sole discretion of the City and must be authorized in writing at the discretion of the City. This Bid item will cover unforeseen work that is not included in the contract documents. Any money used from the project allowance will be authorized via an Allowance Disbursement Form at the City's sole discretion. Any amount of money remaining in the Allowance line item upon completion of the Project will be deducted from the Contract by Deductive Change Order for the full amount(s) remaining therein. The Contractor has no beneficial interest in, and/or claim to, the Allowances and hereby disclaims any and all such interests

Bidder's Initials

**PROPOSAL SCHEDULE
(CONTINUED)**

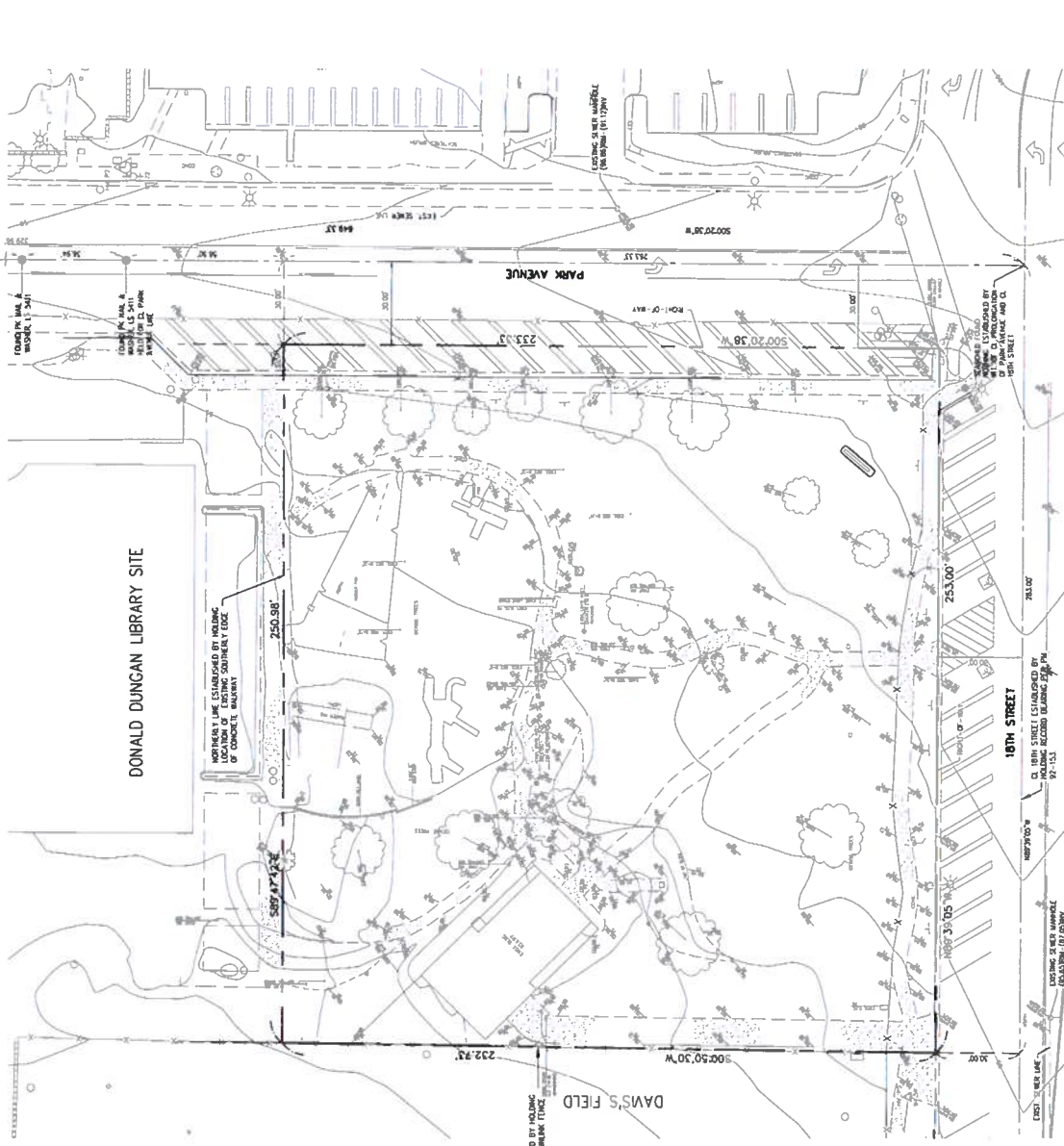
NOTE:

1. The accuracy of estimate quantities as shown is not guaranteed; the Bidder shall make his/her own estimate from the drawings and field review for verification. If the unit price and the total amount are different, the unit price will control the bid. Payment shall be based on actual work done and/or actual quantities used.
2. The City reserves the right to delete one or more bid items and/or to increase or decrease bid items' quantities, at no additional cost to the City.
3. **(*) Schedule of Values for Bid Item No. 1 shall be submitted before 4:00 PM of the 4th business day following the bid opening. The Schedule of Value for this bid item shall not include the Irrigation work. Price includes the indirect cost and markup.**
4. **(**) Schedule of Values and certified irrigation plans, if needed, shall be submitted to the City within two weeks after award of the contract. The Schedule of Value shall include only work related to Irrigation. Price includes the indirect cost and markup.**
5. **(***) Allowance is for unforeseen work not included in the contract documents and to be included in the total bid amount as identified as follows. Use of the allowance will be at the sole discretion of the City and must be authorized in writing at the discretion of the City. This Bid item will cover unforeseen work that is not included in the contract documents. Any money used from the project allowance will be authorized via an Allowance Disbursement Form at the City's sole discretion. Any amount of money remaining in the Allowance line item upon completion of the Project will be deducted from the Contract by Deductive Change Order for the full amount(s) remaining therein. The Contractor has no beneficial interest in, and/or claim to, the Allowances and hereby disclaims any and all such interests.**
6. FA designates force account. Payment shall be made on a time and materials basis, only if directed by the Engineer.
7. (F) Designates Final Pay Item. When an item of work is designated as "FINAL PAY ITEM" in the Specifications, the estimated quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion of that item are revised by the Engineer, or the item or any portion of the item is eliminated. If the dimensions of any portion of the item are revised, and the revisions result in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions. If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.
The estimated quantity for each item of work designated as "FINAL PAY ITEM" in the Specifications, shall be considered as approximate only, and no guarantee is made that the quantity which can be determined by computations, based on the details and dimensions shown on the plans, will equal the estimated quantity. No allowance will be made in the event that the quantity based on computations does not equal the estimated quantity. In case of discrepancy between the quantity shown in the Engineer's Estimate for a final pay item and the quantity or summation of quantities for the same item shown on the plans, payment will be based on the quantity shown in the Engineer's Estimate.

Bidder's Initials

CENTER STREET

18TH STREET



DONALD DUNCAN LIBRARY SITE

DAVIS'S FIELD

DATE OF SURVEY:
FEBRUARY 26, 2018

BASIS OF BEARING:
THE BEARINGS SHOWN HEREON ARE BASED UPON THE CENTER LINE OF PARK AVENUE BEARING BEING N 00°20'30\"/>



SCALE 1"=10'



811 UNDERGROUND SERVICE ALERT
Call it in at 811 or visit 811.org

SHEET NO. 3 OF 36

LIONS PARK IMPROVEMENT PLANS
S.S. 1811 FOR COSTA MESA, CA

SITE SURVEY

CITY OF COSTA MESA
DEPARTMENT OF PUBLIC WORKS

CITY OF COSTA MESA
DEPARTMENT OF PUBLIC WORKS

COMPILED BY

APPROVED BY

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

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DATE

DATE



PLANS PREPARED BY
DMS CONSULTANTS, INC.
CONSULTANTS, INC.
10000 N. CENTRAL AVENUE, SUITE 100
DANA POINT, CA 92629
TEL: 949.440.1111
WWW.DMSCONSULTANTS.COM

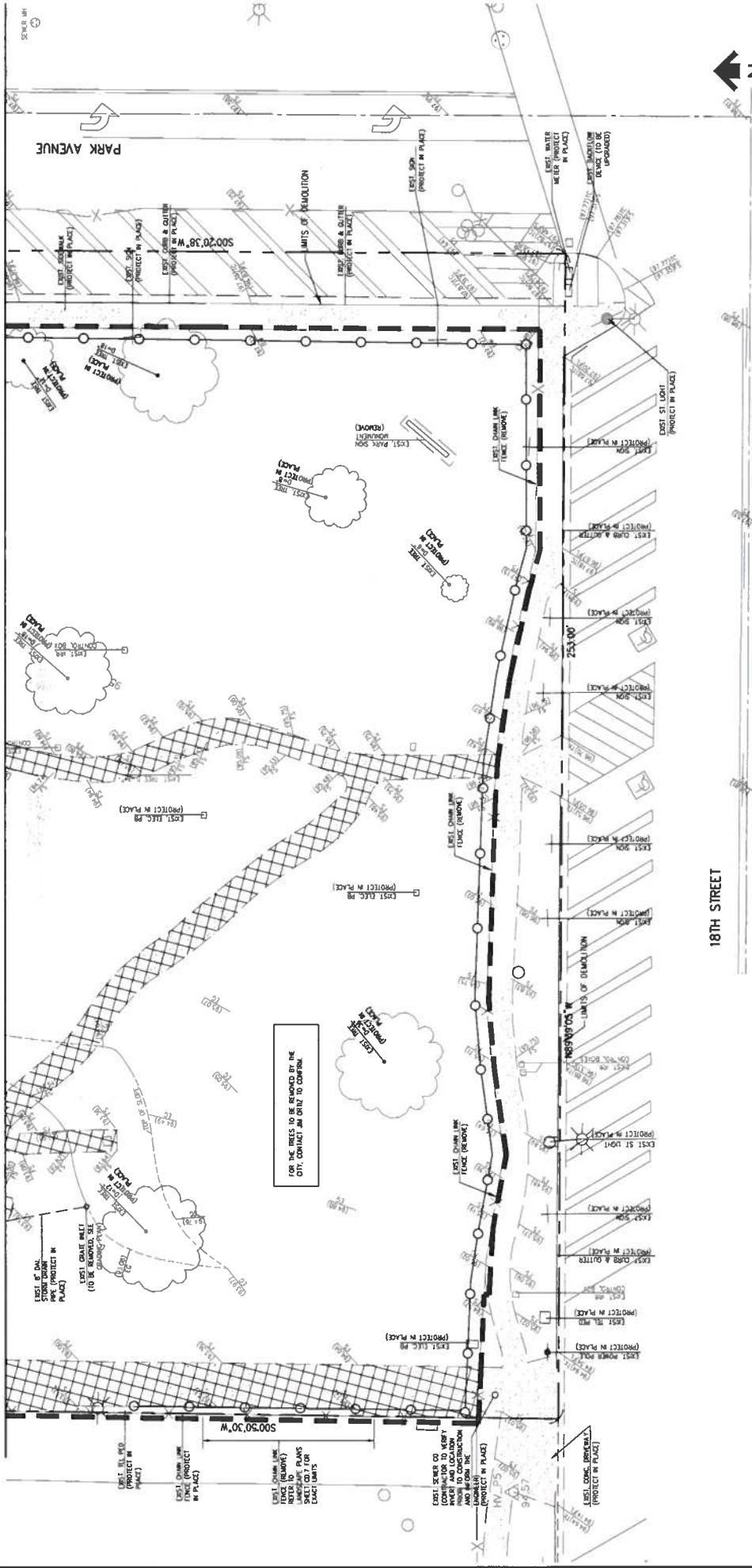
BENCHMARK NO. 11-100-74 L171 95.078 (ODS)
FOUND 3.15' SCS ALUMINUM BM DISK STAMPED "100 74"
AND "11-100-74" LOCATED IN THE ELY CORNER OF THE INTERSECTION
OF INDEPENDENT AVENUE AND UNIVERSITY, 77.11' N.E.1/4 OF THE
SECTION 16, T.11N. R.11E, S.11E, 1/4 OF THE
THE CENTER BOUNDARY ALONG THE NORTH BOUNDARY BOUNDARY TO
SET BACK WITH THE SIDEWALK

LOCATION OF BENCH MARK
DISAPPEARED

NO DATE APPROVED
DRAWN APPROVED

NO DATE APPROVED
DRAWN APPROVED

MATCH LINE - SEE SHEET D.2



DEMOLITION LEGEND SYMBOL DESCRIPTION

[---]	REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CURBS & GUTTERS, BUILDINGS, EXISTING PLAYGROUND, TURF AND ARTICLES, SAND AT EXISTING PLAYGROUND, UNLESS OTHERWISE NOTED
[X-X-X]	REMOVE AND DISPOSE OF CONCRETE PLAYWORKS, SAND, EXISTING BUILDING, MOW (LUMP AND/OR A.C. PAVING, PAVED PAD, ETC.)
[---o--- <td>INSTALL CONSTRUCTION FENCE WITH FABRIC FOR THE DURATION OF THE PROJECT</td>	INSTALL CONSTRUCTION FENCE WITH FABRIC FOR THE DURATION OF THE PROJECT

CONTRACTOR WILL BE RESPONSIBLE TO REMOVE ALL SITE OBSTACLES THAT CONFLICTS WITH THE NEW IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, VEGETATION, WALL FOUNDATION, TREE STUMPS AND POLES AND ANCHOR UNITS.

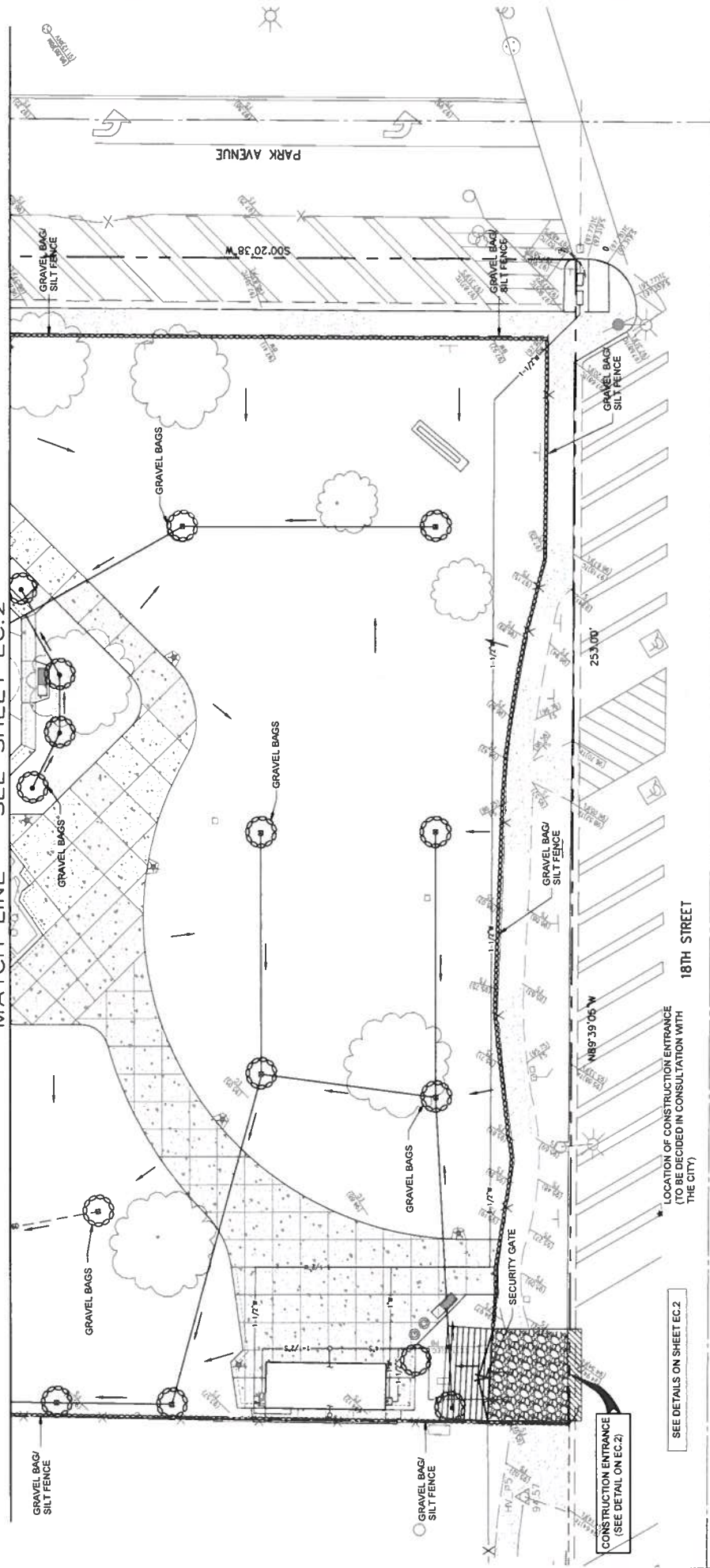
SEE SHEET D.2 FOR DEMOLITION LEGEND AND NOTES
SEE SHEET D.2 FOR TREE PROTECTION NOTES AND DETAIL

SCALE: 1"=10'



<p>APPROVED</p> <p>DATE</p>	<p>APPROVED</p> <p>DATE</p>	<p>APPROVED</p> <p>DATE</p>	<p>APPROVED</p> <p>DATE</p>	<p>CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p> <p>RECOMMENDED BY: [Signature] APPROVED BY: [Signature] APPROVED BY: [Signature]</p>	<p>SHEET NO. 4 OF 36</p> <p>D.1</p> <p>PLAN NUMBER</p>
<p>DEMOLITION PLAN</p> <p>CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p>					

MATCH LINE - SEE SHEET EC.2



SCALE: 1"=10'

EROSION CONTROL NOTES

A) IN CASE OF EMERGENCY CALL CITY NON-EMERGENCY DISPATCH.

B) THE UNDERSIGNED CIVIL ENGINEER WILL REVIEW EROSION CONTROL WORK AND CERTIFY THAT WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.

C) A SHIELDER BENCH (SEE 34509) SHALL BE INSTALLED AT ALL TRUCK DRIVING THE DRAINAGE CONDUIT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY BENCHES OR TO REPAIR ANY DAMAGED EROSION CONTROL MEASURES WHEN THAT IS WARRANT.

D) BENCHES SHALL NOT BE WORKED OR MOVED WITHOUT THE APPROVAL OF THE CITY INSPECTOR.

E) ALL REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY.

F) AFTER A RAINFALL, ALL SILT AND DEBRIS SHALL BE REMOVED FROM CHECK BENCHES AND DEBRIS DURING A RAINFALL. SLOPES SHALL ALSO BE IMMEDIATELY REPAIRED.

G) FILL SLOPES AT THE TRACT PERIMETER MUST DRAIN AWAY FROM THE TOP OF THE SLOPE AT THE CONCLUSION OF EACH WORKING DAY.

H) A GUARD SHALL BE POSTED ON THE SITE WHENEVER THE DEPTH OF WATER IN ANY DEVICES EXCEEDS TWO FEET.

I) PLACEMENT OF BENCHES TO REDUCE EROSION DAMAGE WITHIN THE TRACT MUST BE SHOWN ON THE PLAN.



SHEET NO. 6 OF 36
EC-1
PLAN NUMBER

LIONS PARK IMPROVEMENT PLANS
510 W 18TH ST, COSTA MESA, CA 92627

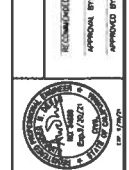
EROSION CONTROL PLAN

CITY OF COSTA MESA
DEPARTMENT OF PUBLIC WORKS

RECOMMENDED BY: [Signature] DATE: [Blank]

APPROVED BY: [Signature] DATE: 08/14/2020

APPROVED BY: [Signature] DATE: [Blank]

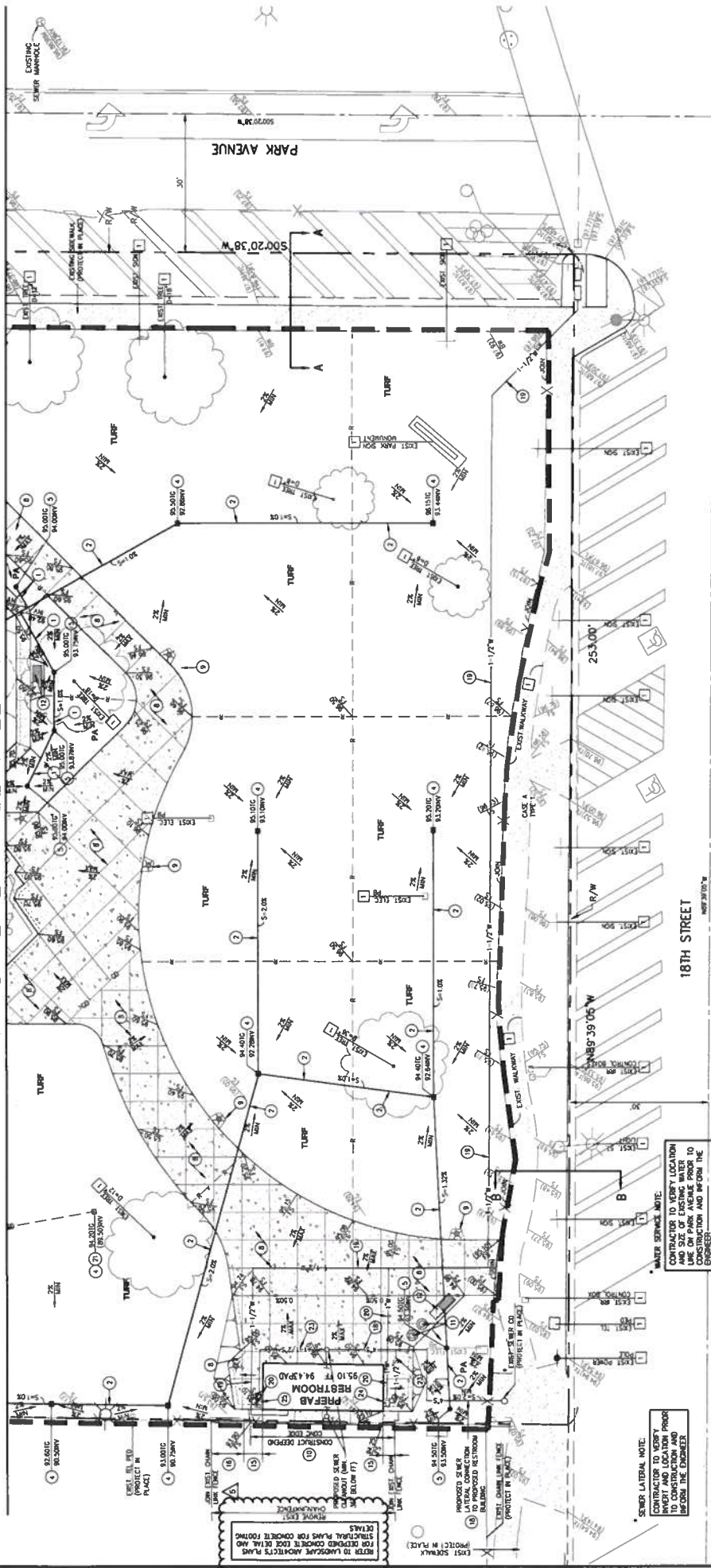


PLANS PREPARED BY:
DMS CONSULTANTS, INC.
CIVIL ENGINEERING
1000 S. GARDEN ST., SUITE 200
COSTA MESA, CA 92626
TEL: 714.440.1111
WWW.DMSCONSULTANTS.COM

BENCH MARK
BENCHMARK NO. 11-100-74 (LEV. 95.629) (2005)
FOUND 1.5'x1.5'x0.5' ALUMINUM BM PINS STAMPED "E 100 74"
SET IN THE S.W. CORNER OF A 4 FT. BY 8 FT. CONC. CB
WHICH IS LOCATED IN THE E.W. CORNER OF THE INTERSECTION
OF BROADWAY AND 34.11 ST. IN THE CENTER OF
CITY OF BROADWAY AND 34.11 ST. IN THE CENTER OF
34.11 ST. LEVEL WITH THE SIDEWALK

DATE	08/12/20	APPROVED	[Signature]
DATE	08/14/2020	APPROVED	[Signature]
DATE		APPROVED	
DATE		APPROVED	

MATCH LINE - SEE SHEET G.2



SCALE: 1"=10'



CONSTRUCTION NOTES (GRADING)

- CONSTRUCT 4" x 4" PVC SCHED DRAIN PIPE.
- CONSTRUCT 6" x 6" PVC SCHED DRAIN PIPE.
- CONSTRUCT 8" x 8" PVC SCHED DRAIN PIPE.
- CONSTRUCT 12" x 12" BRICKS DRAIN BOX WITH BRASS GATE PER DETAIL SHEET G.1.
- INSTALL 1/2" x 1/2" SLOTTED SYSTEM WITH 2" x 4" POLYESTER MANHOLE AND GELATOR FOR PERMANENCE (SEE DETAIL SPECIFICATIONS FOR MANHOLE DETAIL SHEET G.1).
- CONSTRUCT 4" THICK CONCRETE FOOTING PER DETAIL ON LANDSCAPE ARCHITECT'S PLANS.

SEWER SERVICE NOTE:
CONTRACTOR TO VERIFY LOCATION AND SIZE OF EXISTING WATER MAIN ON PARK AVENUE PRIOR TO CONSTRUCTION AND IMPROVE THE EXISTING WATER MAIN AND IMPROVE THE EXISTING SEWER.

WATER SERVICE NOTE:
CONTRACTOR TO VERIFY LOCATION AND SIZE OF EXISTING WATER MAIN ON PARK AVENUE PRIOR TO CONSTRUCTION AND IMPROVE THE EXISTING WATER MAIN AND IMPROVE THE EXISTING SEWER.

CONSTRUCTION NOTES (SEWER/GRADING)

- CONSTRUCT 4" x 4" PVC SCHED DRAIN PIPE.
- CONSTRUCT 6" x 6" PVC SCHED DRAIN PIPE.
- CONSTRUCT 8" x 8" PVC SCHED DRAIN PIPE.
- CONSTRUCT 12" x 12" BRICKS DRAIN BOX WITH BRASS GATE PER DETAIL SHEET G.1.
- INSTALL 1/2" x 1/2" SLOTTED SYSTEM WITH 2" x 4" POLYESTER MANHOLE AND GELATOR FOR PERMANENCE (SEE DETAIL SPECIFICATIONS FOR MANHOLE DETAIL SHEET G.1).
- CONSTRUCT 4" THICK CONCRETE FOOTING PER DETAIL ON LANDSCAPE ARCHITECT'S PLANS.

CONSTRUCTION NOTES (LANDSCAPE ARCHITECT'S PLANS)

- CONSTRUCT 24" x 24" x 8" CONCRETE DECK PER DETAIL ON LANDSCAPE ARCHITECT'S PLANS (SEE CD.1).
- INSTALL TRASH & RECYCLE RECEPTACLE (WOOD) PER LANDSCAPE ARCHITECT'S PLANS.
- INSTALL PRECAST PANE (BRUSH WITHOUT) SUGGEST PER MANUFACTURER'S SPECIFICATIONS.
- CONSTRUCT STURDIUM MANHOLE PER APM 510 PER PLAN 201-2.
- INSTALL SHAKY STRUCTURE "X" (20"x17"x17") REFER TO LANDSCAPE DRAWINGS.
- INSTALL 8" HIGH CHAIRBACK FENCE PER DETAIL 1 ON LANDSCAPE ARCHITECT'S PLANS (SEE CD. 78A).
- INSTALL 12" HIGH CHAIRBACK FENCE PER DETAIL 1 ON LANDSCAPE ARCHITECT'S PLANS (SEE CD. 78B).
- INSTALL PRECAST BENCH "C" (8" x 16" x 16") 5/8" DIA. 5/8" DIA PER DETAIL 2 ON LANDSCAPE ARCHITECT'S PLANS (SEE CD.3).
- CONSTRUCT 2" x 4" x 8" BRICKS DRAIN BOX WITH BRASS GATE PER DETAIL ON LANDSCAPE ARCHITECT'S PLANS (SEE CD.3).
- CONSTRUCT 4" THICK CONCRETE FOOTING PER DETAIL ON LANDSCAPE ARCHITECT'S PLANS (SEE CD.3).

DISPOSITION NOTE

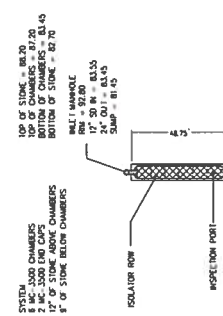
- PROTECT IN PLACE
- REMOVE EXISTING DRAIN INLET.
- CONSTRUCT 12" x 12" PVC SCHED DRAIN PIPE.
- CONSTRUCT 12" x 12" PVC SCHED DRAIN PIPE.
- INSTALL LAVATORY SINK PER DETAILS ON LANDSCAPE ARCHITECT'S PLANS.
- INSTALL DRAINAGE FOUNTAIN PER DETAILS ON LANDSCAPE ARCHITECT'S PLANS.

ALL GRADING SHALL COMPLY PER SOILS REPORT'S RECOMMENDATIONS.

WORK PER ENGINEER SHALL MAINTAIN PROPERTY CORNER BEFORE STARTING GRADING. EITHER WITH PERMANENT MONUMENTS OR TEMPORARY MONUMENTS. ALL MONUMENTS SHALL BE SET AND SIZE OF EXISTING WATER MAIN ON PARK AVENUE PRIOR TO CONSTRUCTION & NOTIFY THE ENGINEER.

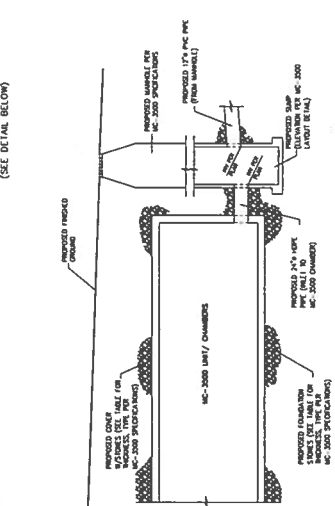
<p>PLANS PREPARED BY: DMS CONSULTANTS, INC. 1000 S. 11TH ST. COSTA MESA, CA 92627 (714) 440-1100 WWW.DMSCONSULTANTS.COM</p>		<p>CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p>	<p>RECOMMENDED BY: _____ DATE: _____ APPROVED BY: _____ DATE: _____ APPROVED BY: _____ DATE: _____</p>
<p>PROJECT NO. 14-100-274 ELEV. 95.628 (7000) CORNER 3.31' x 3.31' CORNER ALUMINUM (60) PER STAMPEL "1" - 100-141-511 IN THE S.W. CORNER OF A 4 FT BY 8 FT CONC. CURB. MONUMENT IS LOCATED IN THE S.W. CORNER OF THE INTERSECTION OF BROADWAY AND 34.17' S.W. 1/4' OF THE CORNER OF CHAIRBACK OF BROADWAY AND 34.17' S.W. 1/4' OF THE CORNER OF CHAIRBACK OF BROADWAY (SUGGESTED MONUMENT IS 24" x 24" x 8" WITH THE CORNER).</p>		<p>LIONS PARK IMPROVEMENT PLANS GRADING PLAN CITY OF COSTA MESA DEPARTMENT OF PUBLIC WORKS</p>	<p>SHEET NO. 8 OF 36 G.1 PLAN NUMBER</p>

STORMTECH SYSTEM	
MAX. LENGTH	48.75 FT.
MAX. WIDTH	8.42 FT.
EACH CHAMBER SIZE	77" x 45"
NO. OF CHAMBERS	6
NO. OF END CAPS	2
BED SIZE	410 SQ FT.
STORAGE VOLUME (REG.)	1198 CF
STORAGE VOLUME (PROPOSED)	1316 CF
PROPOSED ELEVATIONS	
TOP OF STONE	88.20
TOP OF CHAMBER	87.20
BOTTOM OF CHAMBER	83.45
BOTTOM OF STONE	82.70
INLET AT END CAP	83.45
INLET AT END CAP	86.87

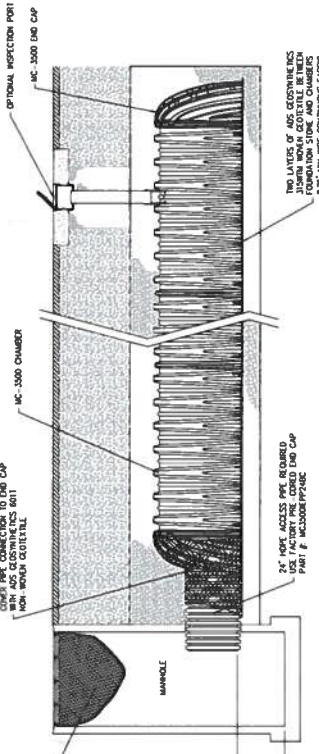


MC-3500 STORMTECH SYSTEM DATA
NIS
(SEE DETAIL BELOW)

MC-3500 STORMTECH SYSTEM DETAIL TOP VIEW
NIS



MC-3500 STORMTECH SYSTEM DETAIL SIDE VIEW
NIS
(SEE TABLE THIS SHEET FOR SIZE AND SPECIFICATIONS)



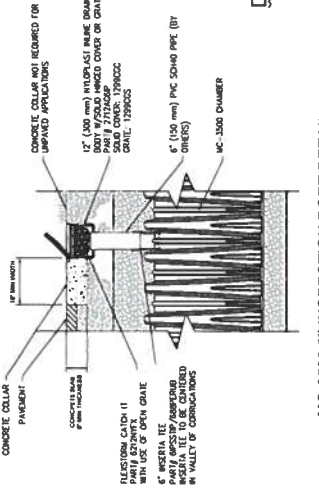
MC-3500 ISOLATOR ROW DETAIL
NIS

STORMTECH GENERAL NOTES

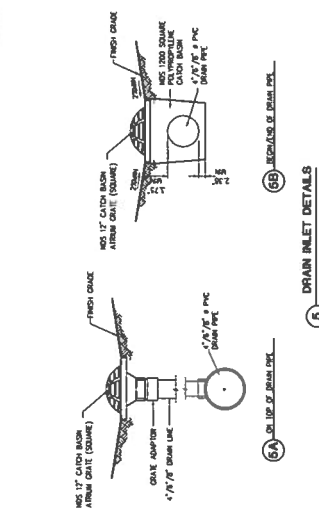
- STORMTECH LLC (STORMTECH) REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST MC-3500 INSTALLATION INSTRUCTIONS PRIOR TO COMMENCING SYSTEM INSTALLATION.
- STORMTECH OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICE DEPARTMENT OR LOCAL STORMTECH REPRESENTATIVE AT LEAST 30 DAYS BEFORE COMMENCING INSTALLATION. STORMTECH REPRESENTATIVES CAN ANSWER ANY QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH SYSTEM AND PROVIDE THE INSTALLING CONTRACTOR OF THE IMMEDIATE INSTALLATION REQUIREMENTS BEFORE COMMENCING INSTALLATION. STORMTECH REPRESENTATIVES CAN BE REACHED AT 800-333-3333 OR WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
- STORMTECH REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (SPHALT, CONCRETE PAVEMENT, ASPHALT CONCRETE, OR CONCRETE PAVEMENT) THAT DO NOT INCLUDE PAVEMENT, MANHOLE COVER (18" OR 24" DIA.), MANHOLE COVER IS 30" (762 mm), MANHOLE COVER IS 45" (1143 mm) CHAMBER FUNDATION MATERIALS TO THE DESIGN CHAMBER.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH THE BEARING CAPACITY OF THE CHAMBER FUNDATION MATERIALS TO THE DESIGN CHAMBER.
- ASPHALT WORK CLASS 2, NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
- STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT DESIGN OF STORMTECH MC-3500 INSTALLATION INSTRUCTIONS.
- STORMTECH MC-3500 INSTALLATION INSTRUCTIONS.
- THE CONTRACTOR MUST REFER TO STORMTECH'S 2008 INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE ON THE STORMTECH WEBSITE. STORMTECH CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THAT ALL VEHICLES TRAVELING THROUGH STORMTECH SYSTEMS MEET THE REQUIREMENTS FOR TRAILER TRUCKS AND TRAILERS. STORMTECH CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THAT ALL VEHICLES TRAVELING THROUGH STORMTECH SYSTEMS MEET THE REQUIREMENTS FOR TRAILER TRUCKS AND TRAILERS. STORMTECH CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THAT ALL VEHICLES TRAVELING THROUGH STORMTECH SYSTEMS MEET THE REQUIREMENTS FOR TRAILER TRUCKS AND TRAILERS.
- THE CONTRACTOR MUST APPLY DRAINAGE AND STORMWATER CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN CONTRACTOR'S SPECIFICATIONS.
- STORMTECH PRODUCTS MAINTAIN LIMITED CONTACT STORMTECH FOR WARRANTY INFORMATION.

MC-3500 STORMWATER CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500 OR APPROVED EQUAL.
- CHAMBERS SHALL BE MADE FROM VIBRA-MAX POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL BE SET IN A 12" (305 mm) CONCRETE COLLAR WITH 1/2" (12.7 mm) GAPS BETWEEN CHAMBERS. UNRESTRICTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD OBSTRUCT FLOW OR LIMIT ACCESS FOR PROTECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE ASPHALT BED BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET FOR: 1) LONG DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE ASPHALT DESIGN TRUCK WITH COMBINATION FOR IMPACT AND MULTIPLE TRAVEL PRESSIONS.
- THE COLLAR CONCRETE SHALL BE 3000 PSI (20.7 MPa) STRENGTH. THE CONCRETE SHALL SUBMIT (3 SETS) OF THE FOLLOWING TESTS TO THE PROJECT ENGINEER: 1) COMPRESSIVE STRENGTH TESTS TO THE PROJECT SPECIFICATION. 2) AIR CONTENT TESTS TO THE PROJECT SPECIFICATION. 3) CURING TESTS TO THE PROJECT SPECIFICATION. 4) TEMPERATURE TESTS TO THE PROJECT SPECIFICATION. 5) SPLIT TENSILE BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET.
- THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.



MC-3500 6" INSPECTION PORT DETAIL
NIS
SCALE: 1"=10'



MC-3500 STORMTECH SYSTEM DETAIL DRAIN INLET DETAIL
NIS
(TO BE INSTALLED IN HARDSCAPE AND TURF AREAS)

MC-3500 STORMTECH SYSTEM DETAIL DRAIN INLET DETAILS
NIS
(TO BE INSTALLED IN PLANTING AREAS)

DIGALERT
CALL BEFORE YOU DIG
811 SERVICE ALERT
Call at least 1 working day prior to excavation

LIONS PARK IMPROVEMENT PLANS
970 W 11TH ST COSTA MESA, CA 92627

DETAILS AND SECTIONS

CITY OF COSTA MESA
DEPARTMENT OF PUBLIC WORKS

RECOMMENDED BY: [Signature]
APPROVED BY: [Signature]
APPROVED BY: [Signature]

DATE: [Date]
DATE: [Date]
DATE: [Date]

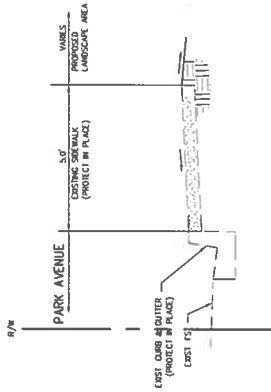
PROJECT NO. 10 OF 36

G.3

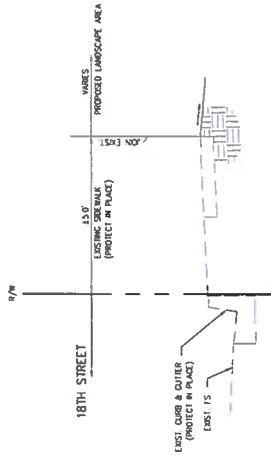
PLAN NUMBER

DATE: [Date]
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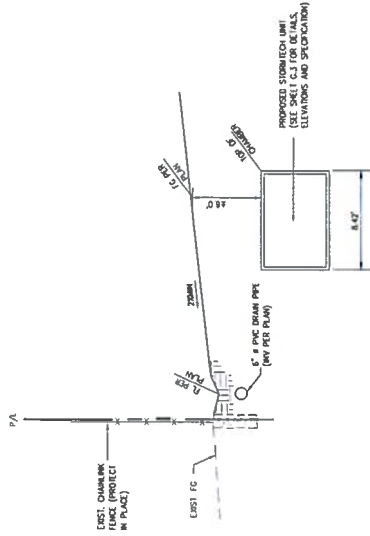
DESIGNED: [Signature]
CHECKED: [Signature]



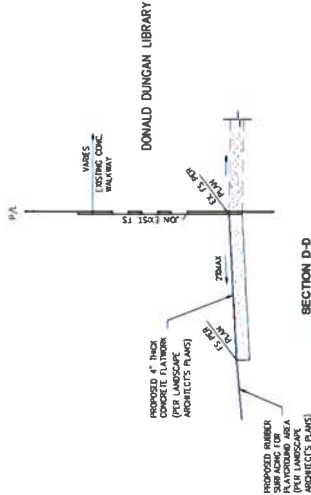
SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.



SECTION D-D
N.T.S.

SCALE CHANGES:
STRATA TECH, INC.
GEODISPLAYERS
1970 W. 10TH STREET
LONG BEACH, CA 90806
PROJECT NO. W.D. 281718
PI. NO. 313.868.9599

BENCH MARK:
FOUND 4 3/4" OCS ALUMINUM BM OCS, STAMPED "100 74"
SET IN THE S.W. CORNER OF THE 13' x 13' CONC. CURB
OF ALBERT BROADWAY AND BROADWAY, 77 1/2' N.E. OF THE
THE CENTER MARK ALONG AN IMPROVEMENT MONUMENT IS
SET LEVEL WITH THE SIDEWALK

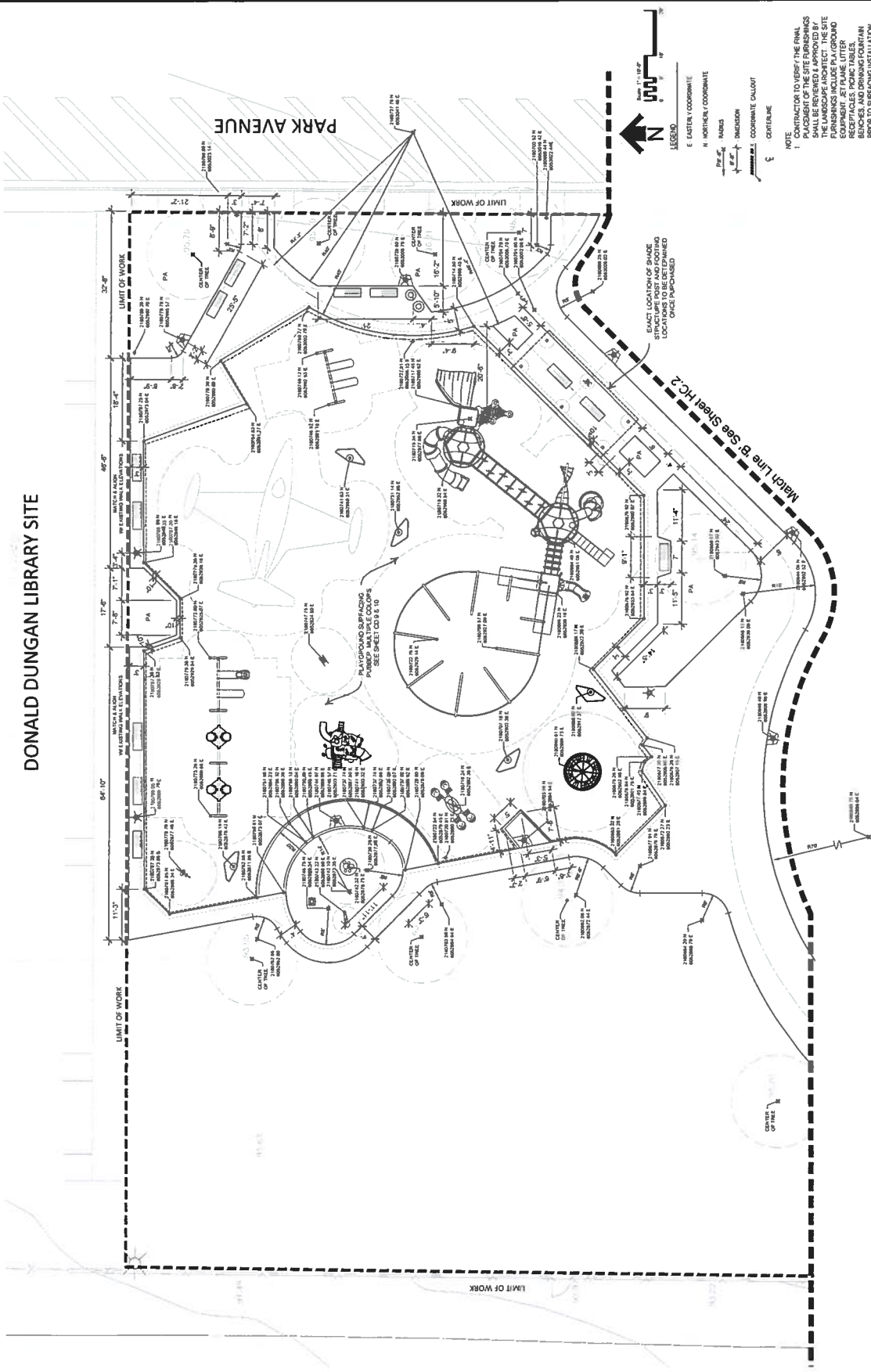
NO.	DATE	APPROVED	CHECKED
1	08/1/20	BY: ANDREW WISLA, P.E. PLAN CHECKER	

DMS CONSULTANTS, INC.
1000 W. 10TH STREET
LONG BEACH, CA 90806
PROJECT NO. W.D. 281718
PI. NO. 313.868.9599



CITY OF COSTA MESA
DEPARTMENT OF PUBLIC WORKS
RECOMMENDED BY: [Signature]
APPROVAL BY: [Signature]
APPROVED BY: [Signature]

DONALD DUNGAN LIBRARY SITE



DVD
Donald Votz Design
 Landscape Architecture & Park Planning
 1400
 Costa Mesa Office
 1400
 Costa Mesa, CA 92626
 Phone (714) 441-1222
 Fax (714) 441-1223
 email: donald@donalddesign.com
 www.donalddesign.com

Contractor



LIONS PARK
 570 W 18th Street
 Costa Mesa, CA 92627

City of Costa Mesa

Project No. _____
 Date: _____
 Drawn By: _____
 Checked By: _____
 Title: _____
 Scale: _____

HORIZONTAL CONTROL PLAN

HC.1

SHEET 14 OF 26

- NOTE**
- CONTRACTOR TO VERIFY THE FINAL PLACEMENT OF THE SITE FURNISHINGS AND FOOTING LOCATIONS PRIOR TO CONSTRUCTION. THE LANDSCAPE ARCHITECT, THE SITE FURNISHINGS INCLUDE PLAYGROUND EQUIPMENT, SET PLAKE, LITTER BENCHES AND DRINKING FOUNTAIN BENCHES AND DRINKING FOUNTAIN PRIOR TO SURFACING INSTALLATION.
 - REFER TO THE CONSTRUCTION MATERIALS SCHEDULE ON SHEET LC.3 FOR ADDITIONAL CONSTRUCTION AND/OR PRODUCT INFORMATION.
 - SEE TITLE SHEET FOR GENERAL NOTES
 - SEE GRADING AND DRAINAGE PLANS FOR DRAIN INVERT ELEVATIONS

DWD
David Water Design
 Landscape Architecture & Planning

1575 Avenue of the Stars, Suite 100
 Costa Mesa, CA 92626
 Phone: (714) 841-1822
 Fax: (714) 841-1823
 Email: david@dwdesign.com
 www.dwdesign.com

811
DIAMANT

COMMERCIAL SERVICE CONTRACTORS ASSOCIATION

NO. DATE PROJECT # PERMITS #
 1 08.11.2020 80-00000001/0001 D1

LIONS PARK
 570 W. 18th Street
 Costa Mesa, CA 92627

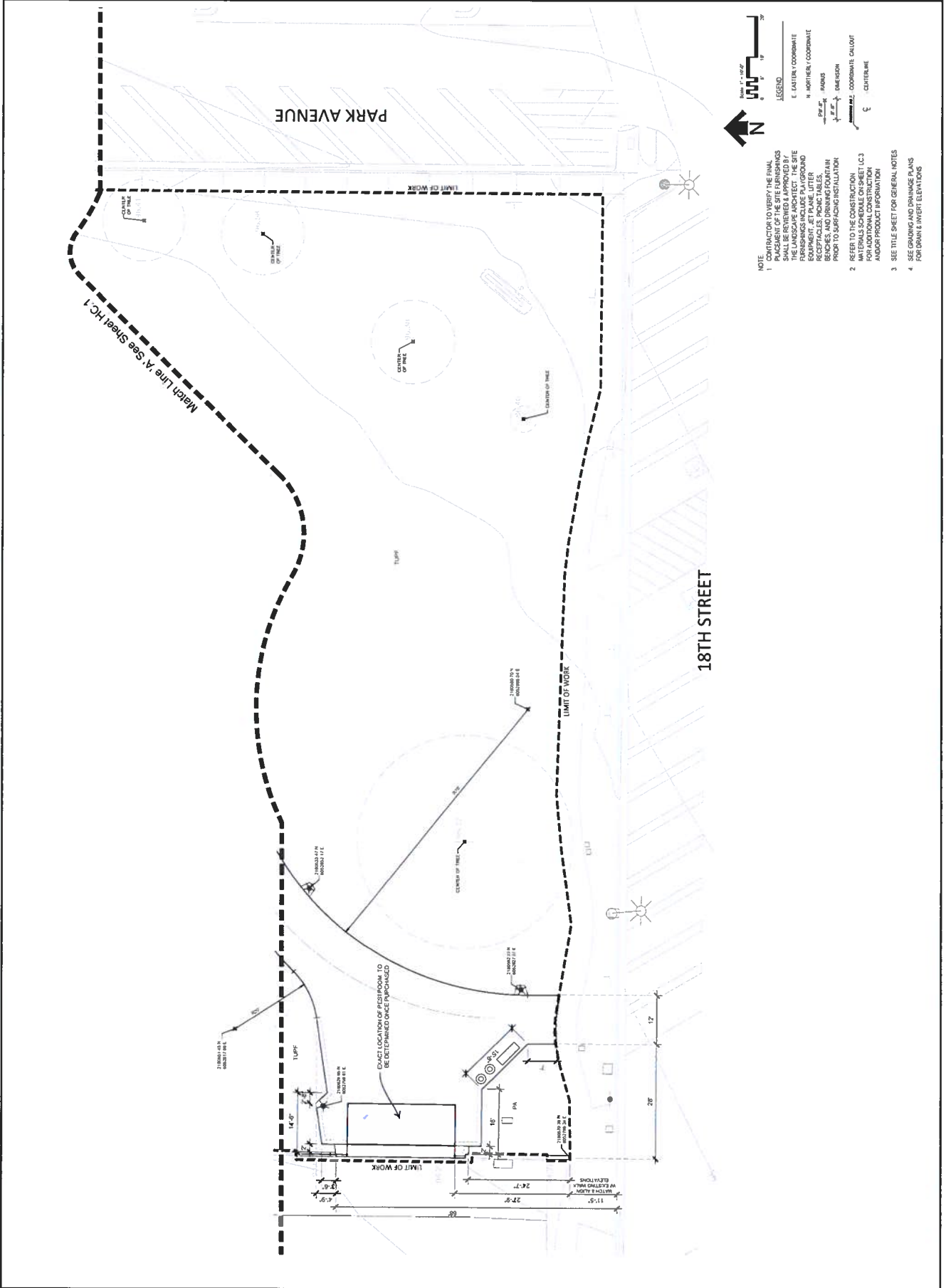
City of Costa Mesa

Drawn By:	AS SW/AM
Checked By:	AS SW/AM
Design No.:	30-15
Design Date:	07
Design City:	AV
Design State:	CA
Design Year:	JULY 21, 2020
Scale:	AS SHOWN
Sheet No.:	1 of 1

HORIZONTAL CONTROL PLAN

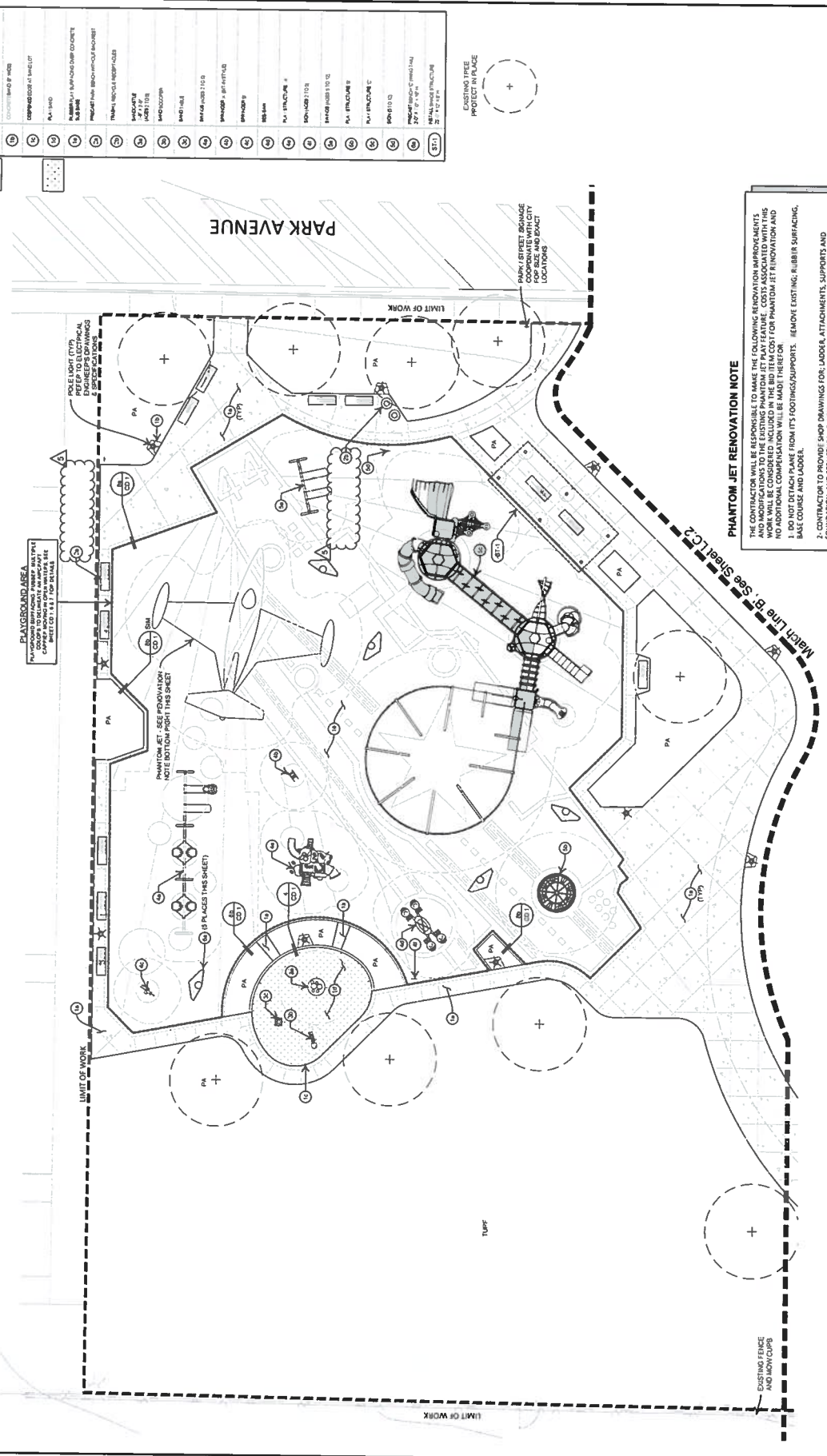
HC.2

SHEET 15 OF 36



- NOTE**
- CONTRACTOR TO VERIFY THE FINAL PLACEMENT OF THE SITE FURNISHINGS SHALL BE REVIEWED & APPROVED BY THE CITY ENGINEER. THE FURNISHINGS TO BE INSTALLED SHALL INCLUDE PLAYGROUND EQUIPMENT, JET PLANE, LITTER RECEPTACLES, POINTABLES, BENCHES, AND SIGNAGE. ALL FURNISHINGS SHALL BE INSTALLED PRIOR TO SURFACE INSTALLATION.
 - REFER TO THE CONSTRUCTION PERMITS AND SPECIFICATIONS FOR ADDITIONAL CONSTRUCTION AND/OR PRODUCT INFORMATION.
 - SEE TITLE SHEET FOR GENERAL NOTES.
 - SEE GRADING AND DRAINAGE PLANS FOR DRIVE & DRIVEWAY ELEVATIONS.

DONALD DUNGAN LIBRARY SITE



CONSTRUCTION LEGEND

SEC.	EXEMPTION
1	CONSTRUCTION PERMITS
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99	CONSTRUCTION PERMITS
100	CONSTRUCTION PERMITS

EXISTING TREE
PROTECT IN PLACE



PHANTOM JET RENOVATION NOTE

THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE THE FOLLOWING RENOVATION IMPROVEMENTS AND MODIFICATIONS TO THE PHANTOM JET STRUCTURE FOR THE CITY OF COSTA MESA. THE WORK WILL BE CONSIDERED INCLUDED IN THE BID ITEM COST FOR PHANTOM JET RENOVATION AND NO ADDITIONAL COMPENSATION WILL BE MADE THEREFOR.

- DO NOT DETACH PLANKS FROM ITS FOOTINGS/SUPPORTS. REMOVE EXISTING RUBBER SURFACING, BALE CURBS AND LABELS.
- CONTRACTOR TO PROVIDE: SHOP DRAWINGS FOR: LADDER, ATTACHMENTS, SUPPORTS AND NEW METAL LADDER TO ACCESS COCKPIT AND AT EACH LADDER TO THE COCKPIT AREA. TIE THE BASE OF THE LADDER INTO PLAY SURFACE.
- REPAIR ANY DAMAGE TO PORTIONS OF THE PLANKS DUE TO THE SATISFACTION OF THE CITY ENGINEER. THIS MAY INCLUDE PAINTING AND SANDING GAINS WITH EPOXY. SUBMIT A SAMPLE OF THE EPOXY MIX FOR THE CITY'S REVIEW AND APPROVAL.
- CONTRACTOR TO PREPARE THE PLANKS SURFACE TO BE PAINTED AND SHALL BE RESPONSIBLE TO PROTECT ANY NEW PLAYGROUND IMPROVEMENTS FROM THESE RENOVATION ACTIVITIES. ADD ONE COAT OF PRIMER AND TWO COATS OF PAINT AND ANTI-GRAFFITI SEALER.

REFER TO COVER SHEET FOR GENERAL NOTES
REFER TO COVER SHEET LC.3 FOR CONSTRUCTION LEGEND

DVID
Donald Vidra Design
Landscape Architecture & Fine Artwork

1111 Alameda Street, Suite 408
Costa Mesa, CA 92627
Tel: (714) 841-1333
Fax: (714) 841-1333
www.dviddesign.com

811
DAVID J. VIDRA
Professional Engineer
No. 811, State of California

No.	Description	Date
1	811-1333	08/08/2008
2	811-1333	08/08/2008
3	811-1333	08/08/2008
4	811-1333	08/08/2008
5	811-1333	08/08/2008
6	811-1333	08/08/2008
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LIONS PARK
570 W. 18th Street
Costa Mesa, CA 92627

City of Costa Mesa
Date: 08/08/2008
Drawing No: 08-000000

CONSTRUCTION PLAN

LC.1



PROJECT
 LIONS PARK
 570 W 18th Street
 Costa Mesa, CA 92627

CITY
 City of Costa Mesa

DATE
 08/13/2013

BY
 David V. D'Amico

CHECKED BY
 David V. D'Amico

SCALE
 AS SHOWN

CONSTRUCTION LEGEND

LC.3

1.0 HARDCAPE AND PAVING

REF.	DESCRIPTION	MANUFACTURER/TYPE	MODEL NO.	FINISH/DETAIL	COLOR	DETAIL SHEET NO.	NOTE
1.1	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
1.2	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
1.3	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
1.4	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
1.5	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING

2.0 SITE FURNISHINGS

REF.	DESCRIPTION	MANUFACTURER/TYPE	MODEL NO.	FINISH/DETAIL	COLOR	DETAIL SHEET NO.	NOTE
2.1	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
2.2	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING

3.0 PLAYGROUND EQUIPMENT - SAND PLAY AREA (2 TO 5 YEARS)

REF.	DESCRIPTION	MANUFACTURER/TYPE	MODEL NO.	FINISH/DETAIL	COLOR	DETAIL SHEET NO.	NOTE
3.1	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
3.2	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING

4.0 PLAYGROUND EQUIPMENT - TOT LOT AREA (2 TO 5 YEARS)

REF.	DESCRIPTION	MANUFACTURER/TYPE	MODEL NO.	FINISH/DETAIL	COLOR	DETAIL SHEET NO.	NOTE
4.1	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
4.2	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
4.3	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
4.4	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
4.5	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING

5.0 PLAYGROUND EQUIPMENT - (6 TO 12 YEARS)

REF.	DESCRIPTION	MANUFACTURER/TYPE	MODEL NO.	FINISH/DETAIL	COLOR	DETAIL SHEET NO.	NOTE
5.1	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
5.2	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
5.3	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
5.4	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
5.5	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING

6.0 CUSTOM

REF.	DESCRIPTION	MANUFACTURER/TYPE	MODEL NO.	FINISH/DETAIL	COLOR	DETAIL SHEET NO.	NOTE
6.1	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING

7.0 SHADE STRUCTURES

REF.	DESCRIPTION	MANUFACTURER/TYPE	MODEL NO.	FINISH/DETAIL	COLOR	DETAIL SHEET NO.	NOTE
7.1	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING

9.0 FENCING & ACCESSORIES

REF.	DESCRIPTION	MANUFACTURER/TYPE	MODEL NO.	FINISH/DETAIL	COLOR	DETAIL SHEET NO.	NOTE
9.1	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING
9.2	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING	CONCRETE FLOORING

NOTES

A- A DEFERRED SUBMITTAL WILL BE REQUIRED FOR THE CITY'S REVIEW AND APPROVAL. THE SUBMITTAL SHALL INCLUDE SHOP DRAWINGS, DETAILS AND STRUCTURAL CALCULATIONS. APPLY A TWO (2) COMPONENT, HIGH SOLIDS, LOW VOC, NON-SACRIFICIAL, NON-YELLOWING ANTI-GRAFFITI PRODUCT.

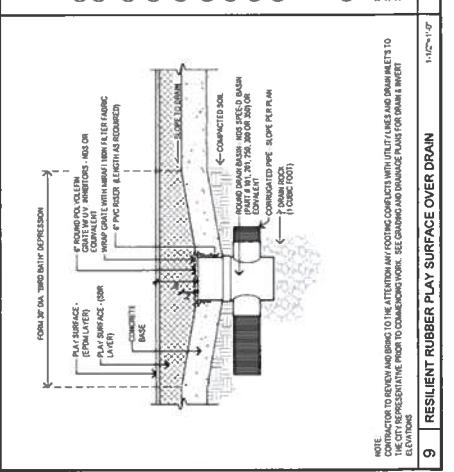
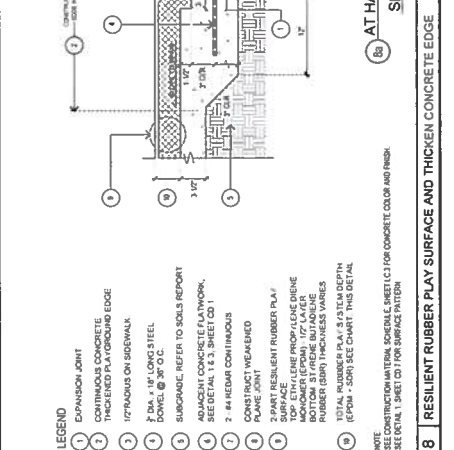
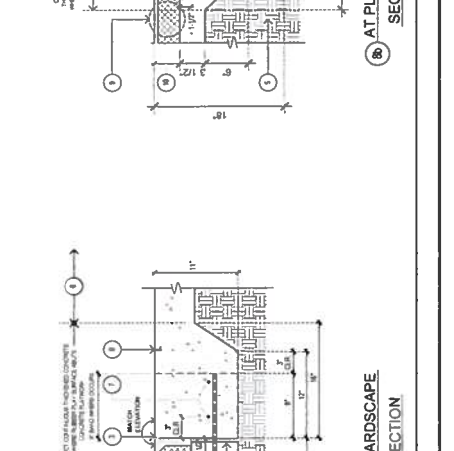
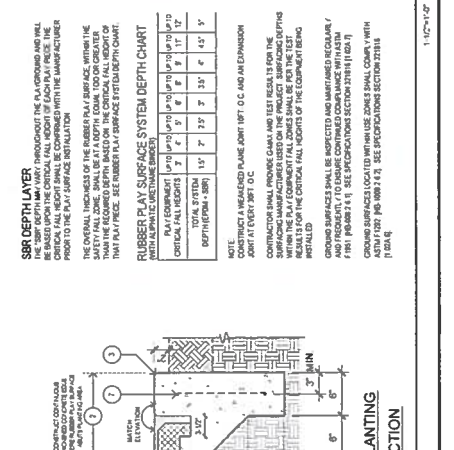
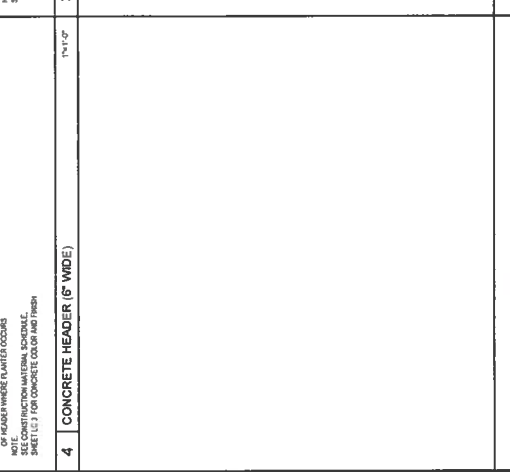
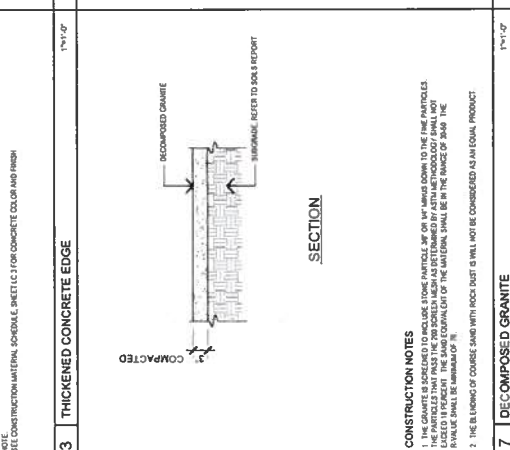
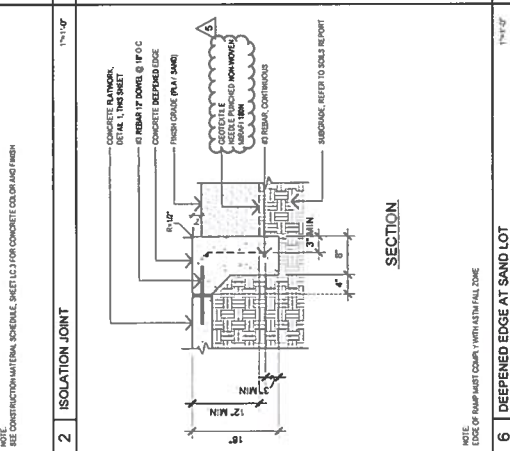
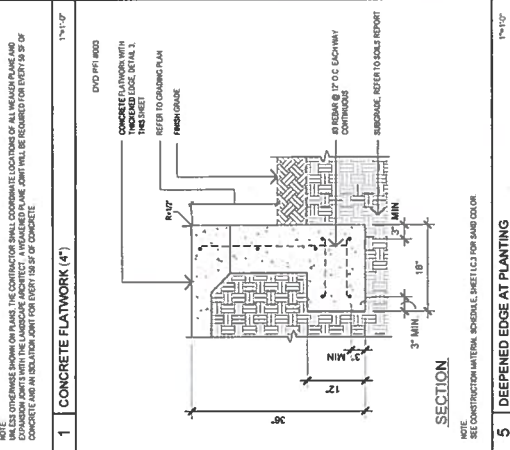
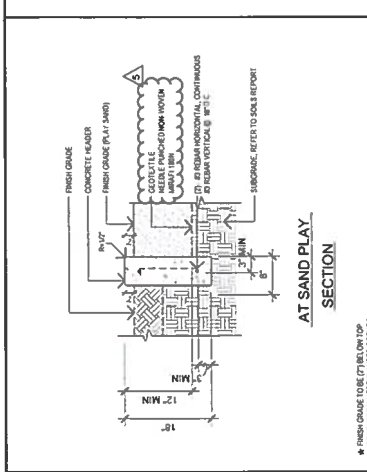
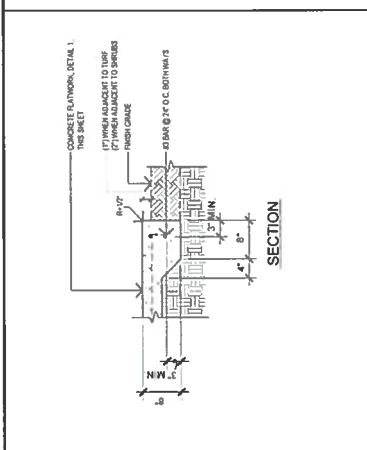
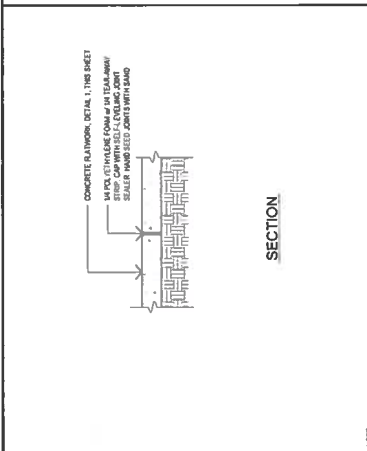
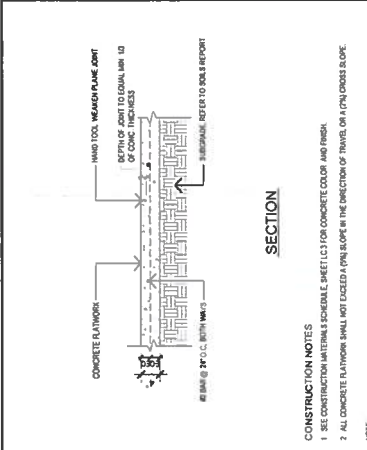
B- PREPARE SURFACE TO RECEIVE COATINGS PER MANUFACTURER'S RECOMMENDATIONS. APPLY ANTI-GRAFFITI COATINGS PRIOR TO THE INSTALLATION OF PLANTINGS.

C- SURFACE MOUNT TO CONCRETE BASE AS RECOMMENDED BY THE MANUFACTURER.

D- PERMANENT IN-GROUND MOUNT. CONSTRUCT CONCRETE AS RECOMMENDED BY THE MANUFACTURER.

E- BID ALTERNATE. THE SUBMITTAL SHALL INCLUDE FREIGHT AND INSTALLATION COST.

REFER TO COVER SHEET FOR GENERAL NOTES



CONSTRUCTION NOTES

- THE FINISH OF THE SAND PLAY SURFACE SHALL BE AS DETERMINED BY THE MANUFACTURER OF THE RUBBER PLAY SURFACE. THE SAND COLOR SHALL BE IN THE RANGE OF SAND #100 (FINE SAND) TO SAND #200 (MEDIUM SAND).
- THE FINISH OF COURSE SAND WITH ROCK MUST BE WELL NOT BE CONSIDERED AS AN EQUAL PRODUCT.

LEGEND

- EXPANSION JOINT
- CONCRETE FLATWORK, DETAIL 1, THIS SHEET
- THICKENED CONCRETE EDGE
- 1/2" RADIUS ON SIDEWALK
- 2" DIA. x 18" LONG STEEL DOWEL @ 20' O.C.
- SUBGRADE REFER TO SOILS REPORT
- ADJACENT CONCRETE FLATWORK, DETAIL 1, THIS SHEET (C)
- 2" x 4" REBAR CONFINEMENT
- CONSTRUCT WEARDED SURFACE
- RESILIENT RUBBER PLAY SURFACE
- TOP: ETHYLENE PROPYLENE DIENE RUBBER (EPDM) BUTADIENE RUBBER (SBR) THICKNESS VARIES
- TOTAL RUBBER PLAY SURFACE DEPTH (EPDM + SBR) SEE CHART THIS DETAIL

NOTE:
 1. CONSTRUCTION MATERIAL SCHEDULE, SHEET C.1 FOR CONCRETE COLOR AND FINISH.
 2. SEE DETAIL C.1 FOR SAND PLAY SURFACE.



Rev	Description	Date
0	ISSUE FOR PERMIT	07/27/2020
1	ISSUE FOR PERMIT	07/27/2020
2	ISSUE FOR PERMIT	07/27/2020
3	ISSUE FOR PERMIT	07/27/2020
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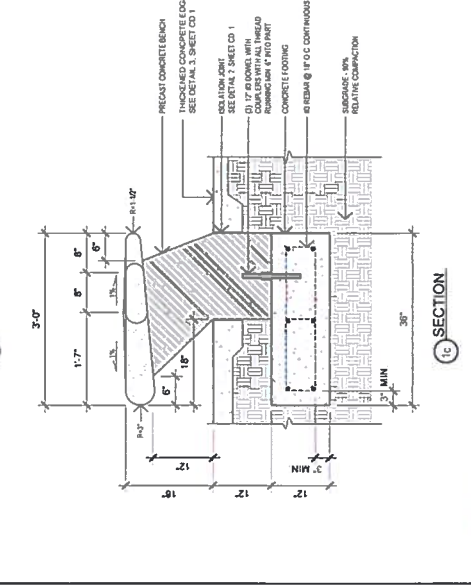
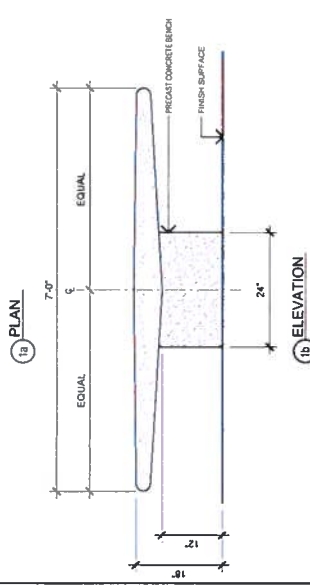
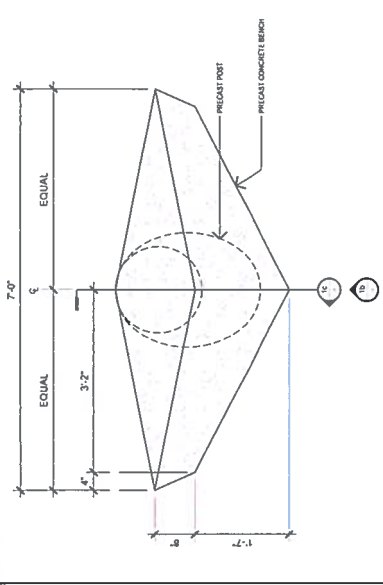
LIONS PARK
570 W. 18th Street
Costa Mesa, CA 92627

City of Costa Mesa
Project No. 20-11
Sheet No. CD.2
Date: JULY 27, 2020
Title: AS SHOWN

SITE FURNISHINGS

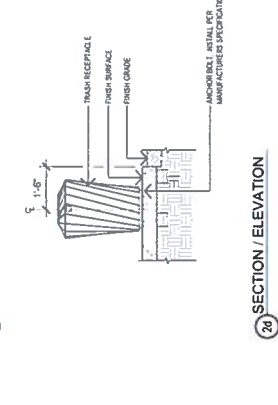
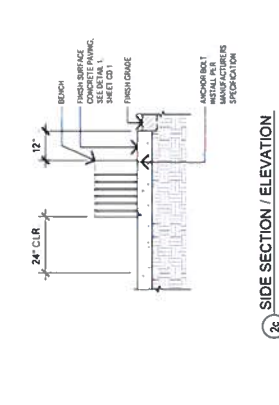
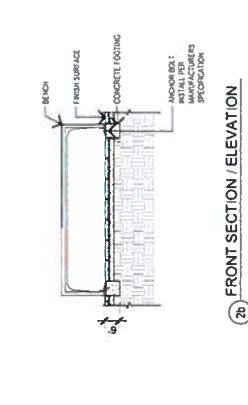
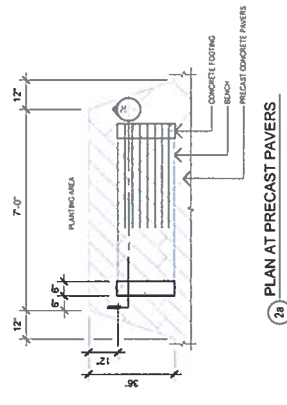
CD.2

SHEET 20 OF 30



PRECAST BENCH
MODEL NO. CD.2 (A)
MANUFACTURER: [REDACTED]
CONTRACT: COSTA MESA, (P01) 17-008 (P.171)
TOTAL PAGES: 11

1 PRECAST CONCRETE BENCH (18" TALL)



NOTE
REFER TO CONSTRUCTION MATERIAL SCHEDULE SHEET C3 FOR MODEL, FINISH AND COLOR

2 CONCRETE PAD FOR TRASH RECEPTACLE & PARK BENCH

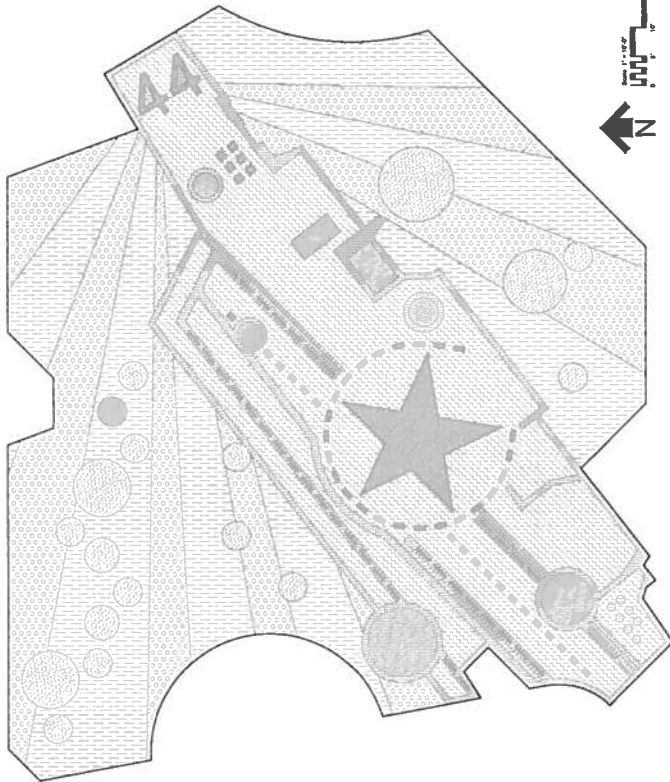
1" = 1'-0"

1/2" = 1'-0"

PLAYGROUND SURFACING

SYMBOL	COLOR / FORM LAYER	TYPE OF SURFACING BASE	DESCRIPTION	SUPPLIER
[Symbol]	(10%) BLACK (90%) LIGHT GRAY			
[Symbol]	(50%) REDDISH BLUE (50%) BLACK			
[Symbol]	(50%) BLUE (50%) BLACK			
[Symbol]	(50%) BLACK (50%) LIGHT GRAY	ALPHABETIC EQUIPMENT SYSTEM		
[Symbol]	(50%) LIGHT GRAY (50%) BLACK			
[Symbol]	(50%) BLACK (50%) DARK GRAY			
[Symbol]	(50%) LIGHT GRAY (50%) BLACK			
[Symbol]	(50%) LIGHT GRAY (50%) BLACK			
[Symbol]	(50%) PRIMARY (50%) TRIPPA (50%) COPIA			

- NOTE: CONTRACTOR TO SUBMIT 12"x12" SAMPLES OF EACH SPECIFIED COLOR MIX FOR APPROVAL PRIOR TO INSTALLATION.
- CONTRACTOR TO VERIFY THE FINAL PLACEMENT OF THE SITE ELEVATIONS AND SHALL PROVIDE TO VERIFY THE FINISH ELEVATIONS. THE CONTRACTOR SHALL PROVIDE TO THE CITY ENGINEER INCLUDE PLAYGROUND EQUIPMENT PHANTOM LET PLANE, PRECAST CONCRETE BENCHES AND BENCHES PRIOR TO SURFACING INSTALLATION.
 - REFER TO THE CONSTRUCTION MATERIALS SCHEDULE ON SHEET G-3 FOR ADDITIONAL CONSTRUCTION AND/OR PRODUCT INFORMATION.
 - SEE TITLE SHEET FOR GENERAL NOTES.
 - SEE GRADING AND DRAINAGE PLANS FOR DRAIN & INVERT ELEVATIONS.
 - SEE DETAILS 8 & 8. SHEET G-1 FOR SURFACING INSTALLATION.
 - SEE RUBBER PLAY SURFACE SYSTEM DEPTH CHART ON DETAIL 9. SHEET G-1 FOR THICKNESS OF SURFACING AT EACH EQUIPMENT.
 - CONTRACTOR TO SUBMIT 12"x12" SAMPLES OF EACH SPECIFIED COLOR MIX FOR APPROVAL PRIOR TO INSTALLATION.
 - GROUND SURFACES SHALL BE INSPECTED AND MAINTAINED REGULARLY AND FREQUENTLY TO ENSURE CONTINUED COMPLIANCE WITH ASTM F1951 (IP-008.2.6.1) SEE SPECIFICATIONS SECTION 321016 (1.02A.7).
 - GROUND SURFACES LOCATED WITHIN USE ZONES SHALL COMPLY WITH ASTM F1292 (IP-1008.2.2). SEE SPECIFICATIONS SECTION 321016 (1.02A.6).



DVID
David Valdez Design
Landscape Architecture & Park Planning

Costa Mesa Office
17111 Wilshire
Costa Mesa, CA 92627
Phone (714) 441-1222
www.dvidlandscape.com



Project: LIONS PARK
Site No.: 2015-01
Project No.: 801-000000-000-000-000
Date: JULY 23, 2023
Drawing Title: AS SHOWN

LIONS PARK
5770 W. 18th Street
Costa Mesa, CA 92627
City of Costa Mesa

PLAYGROUND
COLOR LAYOUT

CD.7



DVP
 Donald Verba Design
 Landscape Architecture & Planning
 Costa Mesa Office
 17111 S. Bascom Ave., Suite 108
 Costa Mesa, CA 92626
 Phone: (714) 941-1200
 Fax: (714) 941-1212
 www.donaldverbadesign.com



811
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 Fax: (503) 253-8889
 www.donkri.com

Item	Quantity	Unit	Notes
1	1	Sheet	See Schedule Item Code
2	1	Sheet	See Schedule Item Code

LIONS PARK
 570 W. 18th Street
 Costa Mesa, CA 92627

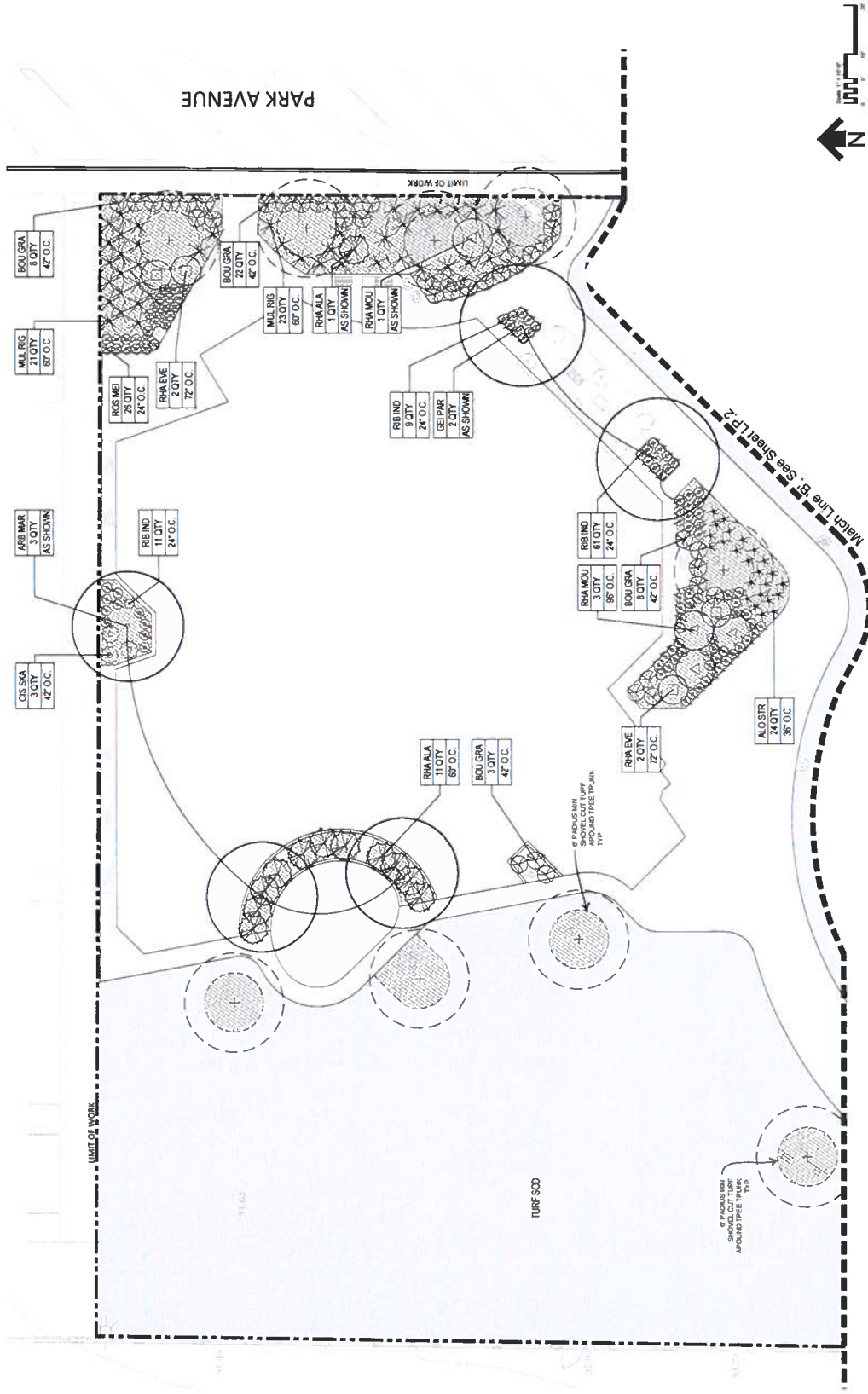
City of Costa Mesa
 Date: JUL 21, 2020
 Drawn By: AS SHOWN
 Checked By: 20-15
 Design: 07
 Scale: 1" = 10'-0"

PLANTING PLAN



SHEET 27 OF 36

DONALD DUNGAN LIBRARY SITE



PLANT QUANTITY — PLANT NAME ABBREVIATION — PLANT SPACING

ACH MOO	123 QTY	18' O.C.
---------	---------	----------

REFER TO COVER SHEET FOR GENERAL NOTES
 REFER TO SHEET LP.3 FOR PLANTING DETAILS & NOTES
 REFER TO SHEET LP.4 FOR PLANTING LEGEND

PLANT PALETTE

Trees & Turf

Symbol	Botanical Name Common Name	Size	Quantity	Water Use
	<i>Adiantum 'Marina'</i> Strawberry Tree	36"	4	Low
	<i>Carex pendula</i> Australian Willow	36"	2	Low
	TREES TO BE PROTECTED IN PLACE			

PLANT PALETTE

Shrubs & Groundcover
MUST BE AT LEAST 50% FULL TO BE ACCEPTED

Symbol	Botanical Name Common Name	Size	Quantity	Water Use
	<i>Aloe striata</i> Coral Aloe	1 gal	32	Low
	<i>Bouteloua gracilis</i> 'Blonde Ambition'	1 gal	41	Low
	<i>Cistus skanbergii</i> Pink Rockrose	1 gal	8	Low
	<i>Muhlenbergia rigens</i> Deer Grass	1 gal	52	Low
	<i>Rhamnus alaternus</i> Italian Buckthorn	5 gal	14	Low
	<i>Rhamnus californica</i> 'Eye Case'	5 gal	4	Very low
	<i>Rhamnus californica</i> 'Mound San Bruno'	5 gal	6	Very low
	<i>Ribes indecolum</i> White Flower Currant	5 gal	81	Very low
	<i>Rosa 'Meiseldena'</i> Icecap Rose	5 gal	26	Low

Total: 18



CELEBRATION® BERMUDA GRASS (A-G SOD) (27,407 SF)
BIG ROLLS: 200 TO 500 SQ. FT.
5 TO 10 SQ. FT. PER PIECE

High 0.7

ANY PLASTIC NETTING TO BE REMOVED PRIOR TO
INSTALLATION. FOLLOW WEST COAST SOD
SPECIFICATIONS FOR SOD ESTABLISHMENT AND
MAINTENANCE.
AVAILABLE AT A-G SOD FARMS (800) 233-5254



MULCH ONLY AREAS (3" DEPTH)
REFER TO SHEET LP.3 PLANTING NOTES AND
SPECIFICATIONS

REFER TO COVER SHEET FOR GENERAL NOTES
REFER TO SHEET LP.3 FOR PLANTING DETAILS & NOTES

DVP
Donald V. Deakyn
Landscape Architects & Urban Planners

Costa Mesa Office
1770 Westside Blvd. #100
Costa Mesa, CA 92626
Phone: (714) 441-1222
Fax: (714) 441-1222
www.dvplandscape.com
www.dvpdesign.com

811
DIAL AHEAD
Call before you dig. 811 is the national number for locating underground utilities. Call 811 at least 48 hours before you dig. For more information, visit www.811.com.

Item	Quantity	Unit	Notes
1	18	SQ. YARDS	PLANTING

LIONS PARK
570 W. 18th Street
Costa Mesa, CA 92627

City of Costa Mesa
Date: 03/11/2013
Drawing No: 13-001
Scale: AS SHOWN

PLANTING
LEGEND

LP.4
SHEET 30 OF 36

DATE: 01/11/2017 10:58:11 AM

David Voz Design
 Landscape Architecture
 17111 Via Arroyo, Suite 100
 San Diego, CA 92128
 Phone: (619) 451-1111
 Fax: (619) 451-1112
 www.davidvozdesign.com

DESIGN WEST ENGINEERING
 ARCHITECTURE • INTERIOR DESIGN • CONSTRUCTION

811
DOWN



PROJECT
 LIONS PARK
 570 W. 18th Street
 Costa Mesa, CA 92627

No.	Date	Revisions	By
1	01/11/2017	ISSUE FOR PERMITS	JV
2	01/11/2017	REVISIONS	JV
3	01/11/2017	REVISIONS	JV
4	01/11/2017	REVISIONS	JV
5	01/11/2017	REVISIONS	JV
6	01/11/2017	REVISIONS	JV
7	01/11/2017	REVISIONS	JV
8	01/11/2017	REVISIONS	JV
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97	01/11/2017	REVISIONS	JV
98	01/11/2017	REVISIONS	JV
99	01/11/2017	REVISIONS	JV
100	01/11/2017	REVISIONS	JV

PROJECT
 LIONS PARK
 570 W. 18th Street
 Costa Mesa, CA 92627

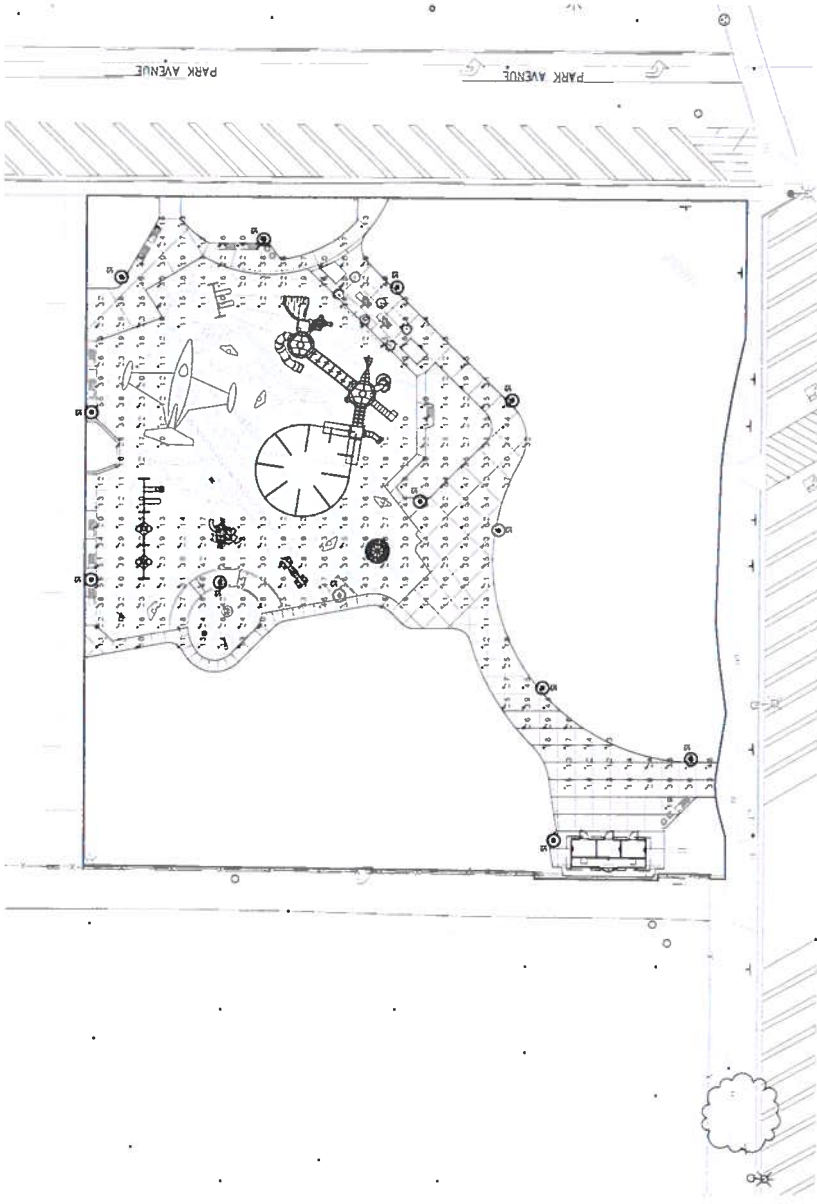
CITY
 City of Costa Mesa

SITE
 PHOTOMETRIC PLAN

E-1.2
 SHEET 15 OF 36

Symbol	Code	Quantity	Description	Notes
⊙	S1	1	10' x 10' SIGN	SEE PLAN FOR LOCATION

Symbol	Code	Quantity	Description	Notes
○	S1	1	10' x 10' SIGN	SEE PLAN FOR LOCATION



18TH STREET





Concrete Buildings

CXT® Precast Concrete Products manufactures restroom, shower and concession buildings in multiple designs, textures and colors. The roof and walls are fabricated with high strength precast concrete to meet all local building codes and textured to match local architectural details. All CXT buildings are designed to meet A.D.A. and to withstand heavy snow, high wind and category E seismic loads. All concrete construction also makes the buildings easy to maintain and withstand the rigors of vandalism. The buildings are prefabricated and delivered complete and ready-to-use, including plumbing and electrical where applicable. With thousands of satisfied customers nationwide, CXT is the leader in prefabricated concrete restrooms.

1. ORDERING ADDRESS(ES): CXT Precast Products, Inc., 3808 N. Sullivan Road, Building 7, Spokane, WA 99216
2. ORDERING PROCEDURES: Fax 509-928-8270
3. PAYMENT ADDRESS(ES): CXT Precast Products, Inc., 3808 N. Sullivan Road, Building 7, Spokane, WA 99216
4. WARRANTY PROVISIONS: CXT provides a warranty against structural defects in material or workmanship for a period of twenty (20) years on all concrete components (does not include non-structural cracking). The warranty is valid only when concrete is used within the specified loadings. Furthermore, said warranty includes only the related material necessary for the construction and fabrication of said concrete components. All other non-concrete components will carry a one (1) year warranty. CXT warrants that all goods sold pursuant hereto will, when delivered, conform to specifications set forth above. Goods shall be deemed accepted and meeting specifications unless notice identifying the nature of any non-conformity is provided to CXT in writing within the specified warranty. CXT, at its option, will repair or replace the goods or issue credit for the customer provided CXT is first given the opportunity to inspect such goods. It is specifically understood that CXT's obligation hereunder is for credit, repair or replacement only, F.O.B. CXT's manufacturing plants, and does not include shipping, handling, installation or other incidental or consequential costs unless otherwise agreed to in writing by CXT.

This warranty shall not apply to:

1. Any goods which have been repaired or altered without CXT's express written consent, in such a way as in the reasonable judgment of CXT, to adversely affect the stability or reliability thereof;
2. To any goods which have been subject to misuse, negligence, acts of God or accidents; or
3. To any goods which have not been installed to manufacturer's specifications and guidelines, improperly maintained, or used outside of the specifications for which such goods were designed.
5. TERMS AND CONDITIONS OF INSTALLATION (IF APPLICABLE): All prices subject to the "Conditions of Sale" listed on the CXT quotation form.

Customers are responsible for marking exact location building is to be set; providing clear and level site, free of overhead and/or underground obstructions; and providing site accessible to normal highway trucks and sufficient area for the crane to install and other equipment to perform the contract requirements. Customer shall provide notice in writing of low bridges, roadway width or grade, unimproved roads or any other possible obstacles to access. CXT reserves the right to charge the customer for additional costs incurred for special equipment required to perform delivery and installation. Customers will negotiate installation on

a project-by- project basis, which shall be priced as separate line items. For more information regarding installation and truck turning radius guidelines please see our website at <http://www.cxtinc.com>.

In the event delivery of the building/s ordered is/are not completed within 30 days of the agreed to schedule through no fault of CXT, an invoice for the full contract value (excluding shipping and installation costs) will be submitted for payment. Delivery and installation charges will be invoiced at the time of delivery and installation.

Should the delivery and installation costs increase due to changes in the delivery period, this increase will be added to the price originally quoted, and will be subject to the contract payment terms.

In the event that the delivery is delayed more than 90 days after the agreed to schedule and through no fault of CXT, then in addition to the remedies above, a storage fee of 1-1/2% of contract price per month or any part of any month will be charged.

**Customer is responsible for all local permits and fees.

6. DELIVERY CHARGE: All prices F.O.B. origin prepaid and added to invoice. CXT operates three (3) manufacturing plants in the United States and will deliver from the closest location on our carriers.

7. PAYMENT TERMS: Payment to CXT by the purchaser shall be made net 30 days after submission of the invoice to the purchaser on approved credit. Interest at a rate equal to the lower of (i) the highest rate permitted by law; or (ii) 1.5% per month will be charged monthly on all unpaid invoices beginning with the 35th day (includes five (5) day grace period) from the date of the invoice. Under no circumstance can retention be taken. If CXT initiates legal proceeding to collect any unpaid amount, purchaser shall be liable for all of CXT's costs, expenses and attorneys' fees and costs of any appeal.

8. LIMITATION OF REMEDIES: In the event of any breach of any obligations hereunder; breach of any warranty regarding the goods, or any negligent act or omission of any party, the parties agree to submit all claims to binding arbitration. Any settlement reached shall include all reasonable costs including attorney fees. In no event shall CXT be subject to or liable for any incidental or consequential damages. Without limitation on the foregoing, in no event shall CXT be liable for damages in excess of the purchase price of the goods herein offered.

9. DELIVERY INFORMATION: All prices F.O.B. origin prepaid and added to invoice. CXT operates three (3) manufacturing plants in the United States and will deliver from the closest location on our carriers. Use the information below to determine the origin:

- F.O.B. 3808 N. Sullivan Road, Building 7, Spokane, WA 99216 applies to: AK, CA, HI, ID, MT, ND, NV, OR, SD, UT, WA, WY.

- F.O.B. 901 North Highway 77, Hillsboro, TX 76645 applies to AR, AZ, CO, IA, KS, LA, MN, MO, MS, NE, NM, OK, TX.

- F.O.B. 362 Waverly Road, Williamstown, WV 26183 applies to AL, CT, DE, FL, GA, IL, IN, KY, MA, MD, ME, MI, NC, NH, NJ, NY, OH, PA, PR, RI, SC, TN, VA, VT, WI, WV.

- Prices exclude all federal/state/local taxes. Tax will be charged where applicable if customer is unable to provide proof of exemption.





Custom building where you can match units to meet your needs. Units include restroom, shower, concession, storage and combo configurations. Standard features include simulated barnwood texture walls, simulated cedar shake textured roof, vitreous china fixtures, interior and exterior lights, off loaded and set up at site.

Santiago

Sections:				
Restroom \$55,355 Qty: 1 = \$ 55,355		Shower* \$72,465 Qty: = \$ 0		
Family Assist Restroom \$55,355 Qty: = \$ 0		Concession \$60,675 Qty: = \$ 0		
Family Assist Shower* \$65,490 Qty: = \$ 0		Storage \$51,465 Qty: = \$ 0		
*Includes hot water tank.			Total Sections	\$55,355.00
Added Cost Options:			Price Per Unit	
Final Connection to Utilities		\$	2,370.00 <input checked="" type="checkbox"/>	2,370.00
Optional Wall Texture -choose one	<input checked="" type="radio"/> Split Face Block (\$2,370) <input type="radio"/> Struck Trowel (\$2,370) <input type="radio"/> Stone (\$3,150)		Reset Wall Texture.	2,370.00
Optional Roof Texture -choose one	<input checked="" type="checkbox"/> Delta Rib	\$	975.00	975.00
Porch/Wing Wall		\$	51,465.00 <input type="checkbox"/>	0.00
Two-Tone Color Scheme		\$	265.00 <input checked="" type="checkbox"/>	265.00
Stainless Steel Plumbing Fixtures- Water Closet (each)	Qty: 3	\$	900.00	2,700.00
Stainless Steel Plumbing Fixtures- Urinal (each)	Qty:	\$	945.00	0.00
Stainless Steel Plumbing Fixtures- Sink (each)	Qty: 1	\$	560.00	560.00
Electric Hand Dryer (each)	Qty:	\$	625.00	0.00
Electronic Flush Valves- Water Closet (each)	Qty: 3	\$	710.00	2,130.00
Electronic Flush Valves- Urinal (each)	Qty:	\$	750.00	0.00
Electronic Flush Valves- Sink (each)	Qty:	\$	610.00	0.00
Exterior Mounted ADA Drinking Fountain w/Cane Skirt		\$	3,600.00 <input checked="" type="checkbox"/>	3,600.00
4-gallon Electric Water Heater		\$	350.00 <input checked="" type="checkbox"/>	350.00
Skylight in Restroom (each)	Qty:	\$	450.00	0.00
Marine Grade Skylight in Restroom (each)	Qty:	\$	1,525.00	0.00
Marine Package for Extra Corrosion Resistance	Qty: 1	\$	3,415.00	3,415.00
Fiberglass Entry and Chase Doors and Frames	Qty:	\$	1,425.00	0.00
Tile Floor in Restroom		\$	2,625.00 <input type="checkbox"/>	
2K Anti-Graffiti Coating		\$	2,995.00 <input checked="" type="checkbox"/>	2,995.00
Timed Electric Lock System (does not include chase door)	Qty:	\$	1,915.00	0.00
Exterior Frostproof Hose Bib with Box		\$	410.00 <input type="checkbox"/>	
Paper Towel Dispenser (each)	Qty:	\$	180.00	0.00
Toilet Seat Cover Dispenser (each)	Qty: 3	\$	80.00	240.00
Sanitary Napkin Disposal (each)	Qty: 3	\$	55.00	165.00
Baby Changing Station (each)	Qty:	\$	450.00	0.00
CXT Wastebasket (each)	Qty:	\$	130.00	0.00
Paint Touch up Kit - Single Color		\$	60.00 <input type="checkbox"/>	
Paint Touch up Kit - Two Tone Color		\$	65.00 <input checked="" type="checkbox"/>	65.00
Stamped Plans		\$	3,000.00 <input checked="" type="checkbox"/>	3,000.00
Total Cost of Selected Accessories from Accessories Price List:			\$	25,200.00
Estimated One-Way Transportation Costs to Site (quote):			\$	13,500.00
Custom Options: CA approvals, DIR adjustment \$1900, 3rd room \$5000 proposal 17-329 1 case graffiti release agent NC			\$	6,900.00
Non-taxable Items (i.e., freight, installation, etc.):			\$	
			Tax:	\$
			Total Cost per Unit Placed at Job Site:	\$ 100,955.00

Disclaimer: Please call to confirm selected sections are compatible.

I accept this quote. Please process this order.

This price quote is good for 60 days from date below, and is accurate and complete.

CXT Sales Representative

Date



Company Name

Customer

Date

Exterior Color Options:

(For single color mark an X or for two tone combinations use W = Walls / R = Roof.)

- | | | | |
|---|---|--|---------------------------------------|
| <input type="checkbox"/> Amber Rose | <input type="checkbox"/> Liberty Tan | <input type="checkbox"/> Berry Mauve | <input type="checkbox"/> Sage Green |
| <input type="checkbox"/> Toasted Almond | <input type="checkbox"/> Oatmeal Buff | <input type="checkbox"/> Buckskin | <input type="checkbox"/> Rosewood |
| <input type="checkbox"/> Sun Bronze | <input type="checkbox"/> Golden Beige | <input type="checkbox"/> Mocha Carmel | <input type="checkbox"/> Malibu Taupe |
| <input type="checkbox"/> Sand Beige | <input type="checkbox"/> Natural Honey | <input type="checkbox"/> R Salsa Red | <input type="checkbox"/> W Java Brown |
| <input type="checkbox"/> Pueblo Gold | <input type="checkbox"/> Cappuccino Cream | <input type="checkbox"/> Coca Milk | <input type="checkbox"/> Raven Black |
| <input type="checkbox"/> Granite Rock | <input type="checkbox"/> Georgia Brick | <input type="checkbox"/> Western Wheat | <input type="checkbox"/> Nuss Brown |
| <input type="checkbox"/> Rich Earth | <input type="checkbox"/> Charcoal Grey | <input type="checkbox"/> Hunter Green | <input type="checkbox"/> Evergreen |

Special roof color # _____

Special wall color # _____

Special trim color # _____

(Sage green, hunter and evergreen colors are not available in colored through concrete.)

Rock Color Options:

- Basalt
 Mountain Blend
 Natural Grey
 Romana

Roof Texture Options:

- Cedar Shake
 Ribbed Metal

Wall Texture Options:

(For single texture mark an X or for different top and bottom textures use T = Top / B = Bottom.)

- | | | | |
|---|---|---|--|
| <input type="checkbox"/> Barnwood | <input type="checkbox"/> Horizontal Lap | Napa Valley Rock
River Rock
Field Stone | } <i>Can only be used as bottom texture.</i> |
| X <input type="checkbox"/> Split Face Block | <input type="checkbox"/> Board & Batt | | |
| <input type="checkbox"/> Stucco/Skip Trowel | <input type="checkbox"/> Brick | | |

(Textures not included in CXT's quote are additional cost.)

Door Opener Options:

- Non-locking ADA Handle
 Pull Handle/Push Plate
 Privacy ADA Latch
 Pull Handle/Push Plate w/Slide Lock

Deadbolt Options:

- CXT Supplied
 Customer Supplied: _____
 Type & Part Number

Accessible Signage Options:

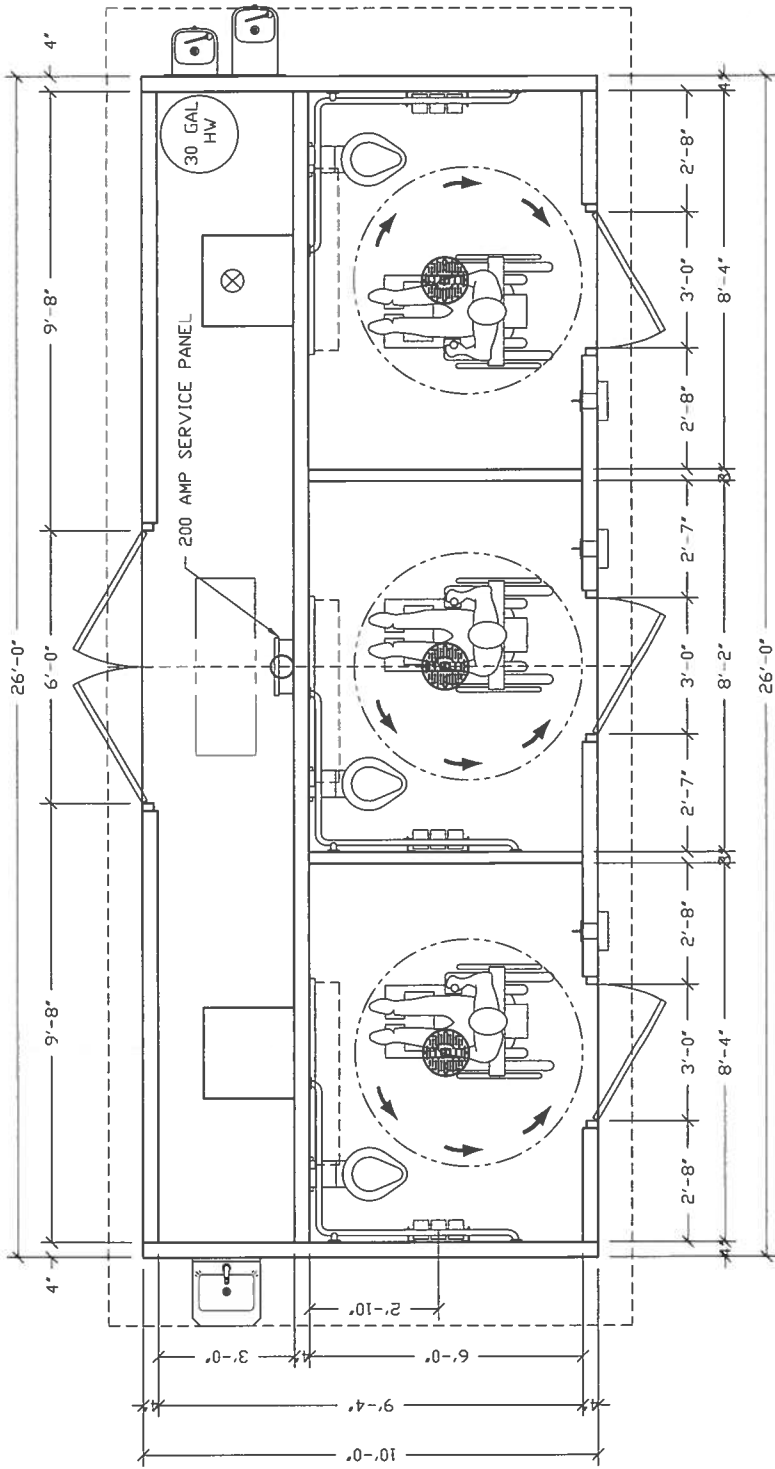
- Men
 Women
 Unisex

Paper Holder Options:

- 2-Roll Stainless Steel
 3-Roll Stainless Steel

Notes:

Drawing 17-329 PREV 2



FOR REFERENCE ONLY
 NOT FOR CONSTRUCTION
 CONTRACTOR TO REQUEST
 SHOP DRAWINGS FROM THE
 MANUFACTURER FOR
 APPROVAL

3000 N. Sullivan Blvd., Ft. Worth, TX 76276
PRECAST PRODUCTS
 901 N. Highway 77, Houston, TX 77045

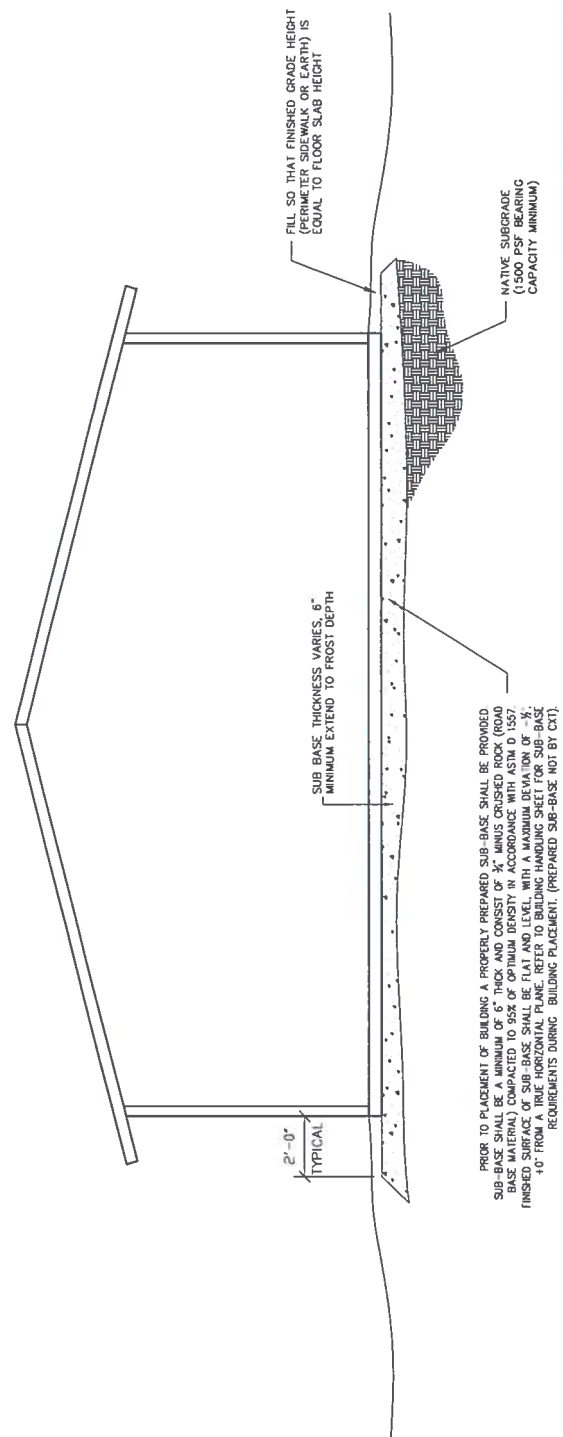
PROJECT
 SANTIAGO
 PROPOSAL NUMBER 17-329P

DATE
 07/25/20
 08/18/20
 09/15/20
 10/15/20
 11/15/20
 12/15/20

NO.	DESCRIPTION	DATE
1	ISSUE FOR PERMITS	07/25/20
2	ISSUE FOR CONSTRUCTION	08/18/20
3	ISSUE FOR OCCUPANCY	09/15/20
4	ISSUE FOR ARCHIVE	10/15/20
5	ISSUE FOR AS-BUILT	11/15/20
6	ISSUE FOR FINAL	12/15/20

FLOOR PLAN
 SHEET NO. S-03
 REV. 3

NOTE:
 THIS FACTORY ASSEMBLED BUILDING, AS CONSTRUCTED, PROVIDES A RIGID BOX TYPE STRUCTURAL SYSTEM. VERTICAL LOADS ARE TRANSFERRED PRIMARILY THROUGH BEARING WALLS TO THE STRUCTURAL SLAB FLOOR OF THE BUILDING. THE VERTICAL LOADS ARE THEN DISTRIBUTED THROUGH THE REINFORCED CONCRETE FLOOR TO THE PREPARED GRANULAR, NON-FROST SUSCEPTIBLE (NFS), SUB-BASE WHICH DISTRIBUTES THE VERTICAL LOADS TO THE SUBGRADE. THE GRANULAR SUB-BASE IS TO BE PROPERLY PLACED AND COMPACTED TO THE PROPER DENSITY AND MOISTURE CONTENT TO BE STABILIZED TO THE POINT OF BEING SUITABLE FOR THE PROPOSED GRANULAR SUB-BASE. DUE TO THE INHERENT STIFFNESS OF THE BUILDING, IT WILL REMAIN SAFE AND STRUCTURALLY SOUND IN THE UNLIKELY EVENT OF FREEZING ACTION BELOW THE BUILDING REGARDLESS OF NATURAL FREEZE/THAW CYCLES ANTICIPATED TO BE ENCOUNTERED IN THE STATE OF TEXAS.
 LATERAL LOADS ARE TRANSFERRED TO THE GROUND THROUGH FRICTIONAL RESISTANCE WITHOUT SLIDING OR SHIFTING BETWEEN THE BUILDING FLOOR SLAB AND THE PREPARED SOIL AND GRAVEL SUB-BASE ON WHICH THE BUILDING RESTS. SEISMIC ANALYSES ARE BASED ON LOADS DETERMINED IN ACCORDANCE WITH THE 2016 CALIFORNIA BUILDING STANDARDS CODE USING PARAMETERS, WHICH MEET OR EXCEED THE CODE PRESCRIBED REQUIREMENTS FOR THIS INSTALLATION.
 THIS BUILDING AS DESIGNED, RESTING ON A PROPERLY PREPARED GRANULAR SUB-BASE WILL BE SAFE AND STRUCTURALLY SOUND FOR VERTICAL AND LATERAL LOADS AS DISCUSSED ABOVE. A FULL DEPTH FOUNDATION WALL AT THE BUILDING PERIMETER AND AN ANCHORAGE SYSTEM, TYPICAL FOR OTHER TYPES OF BUILDING CONSTRUCTION, ARE NOT REQUIRED FOR THIS BUILDING.
 THE "FOUNDATION" FOR THIS STRUCTURE IS ESSENTIALLY THE COMBINATION OF THE COMPACTED SUB-BASE MATERIAL AND THE BUILDING'S REINFORCED SLAB. THE COMBINATION OF THE COMPACTED SUB-BASE MATERIAL AND THE BUILDING'S REINFORCED SLAB NEED TO BE AT LEAST 12" THICK AND THE COMPACTED SUB-BASE MATERIAL SHALL EXTEND BELOW THE LOCAL FROST DEPTH.



PRIOR TO PLACEMENT OF BUILDING, A PROPERLY PREPARED SUB-BASE SHALL BE PROVIDED. SUB-BASE SHALL BE A MINIMUM OF 6" THICK AND CONSIST OF 3/4" MINUS CRUSHED ROCK (ROAD BASE MATERIAL) COMPACTED TO 95% OF OPTIMUM DENSITY IN ACCORDANCE WITH ASTM D 1557. FINISHED SURFACE OF SUB-BASE SHALL BE FLAT AND LEVEL, WITH A MAXIMUM DEVIATION OF +/- 1/4" FROM A TRUE HORIZONTAL PLANE. REFER TO BUILDING HANDLING SHEET FOR SUB-BASE REQUIREMENTS DURING BUILDING PLACEMENT. (PREPARED SUB-BASE NOT BY CXT).

**FOR REFERENCE ONLY
 NOT FOR CONSTRUCTION
 CONTRACTOR TO REQUEST
 SHOP DRAWINGS FROM THE
 MANUFACTURER FOR
 APPROVAL**

CXT
Precast Products
 601 N. Highway 77 Hillborn, TX 76645

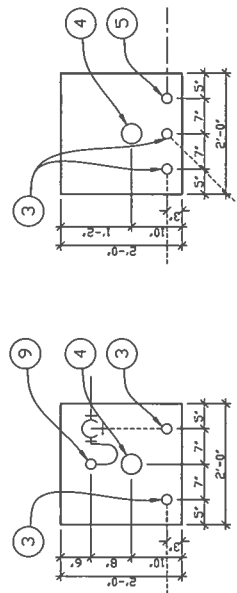
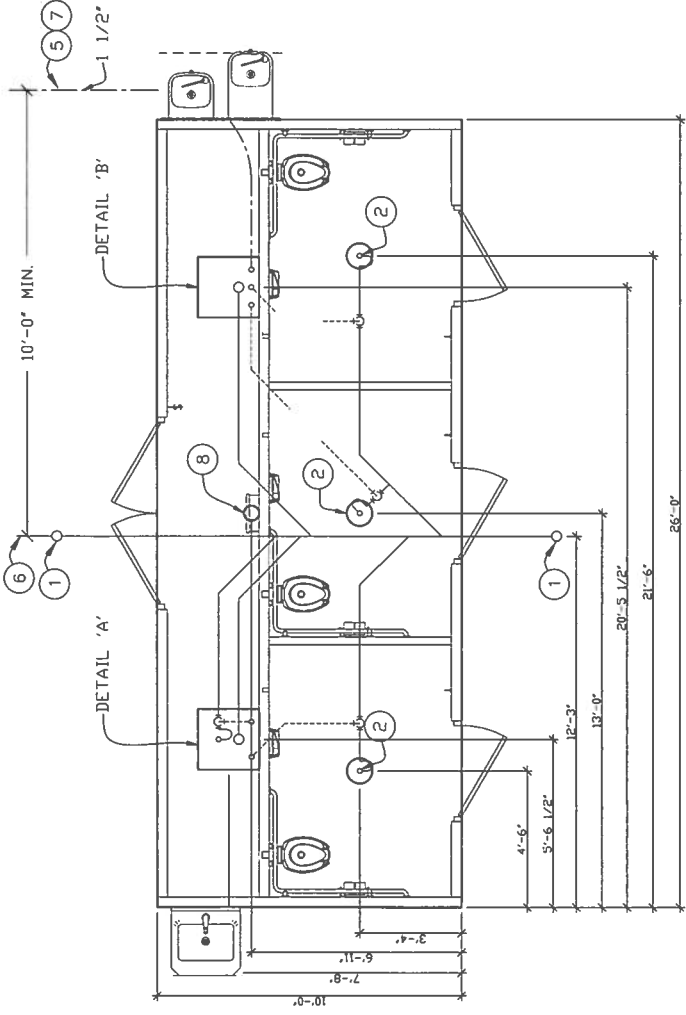
SANTIAGO
 BUILDING NUMBER 5-211
 SERVICE: _____
 THE INFORMATION CONTAINED HEREIN IS PROPRIETARY AND THE PROPERTY OF CXT. IT IS TO BE USED ONLY FOR THE PROJECT AND NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF CXT. CXT ASSUMES NO LIABILITY FOR THE USE OF THIS INFORMATION IN ANY PROJECT. CXT IS NOT RESPONSIBLE FOR THE DESIGN OR CONSTRUCTION OF ANY PROJECT. CXT IS A MEMBER OF THE CXT GROUP, WHICH INCLUDES CXT, CXT CONSTRUCTION, CXT SERVICES, CXT SUPPLY, CXT TRAILERS, CXT TRUCKS, CXT TRUCKS & TRAILERS, CXT TRUCKS & TRAILERS SERVICE, CXT TRUCKS & TRAILERS SERVICE, CXT TRUCKS & TRAILERS SERVICE, CXT TRUCKS & TRAILERS SERVICE.

NO.	DESCRIPTION	DATE	BY	CHECKED
1	ISSUED FOR PERMIT	07/20	_____	_____
2	ISSUED FOR CONSTRUCTION	07/20	_____	_____
3	ISSUED FOR RECORD	07/20	_____	_____

ALL PIPING INDICATED ON THIS SHEET IS NOT BY CXT

BELOW FLOOR PIPING - KEY NOTES

1. 4" CLEAN OUT TO GRADE.
2. 2" FLOOR DRAIN FIELD INSTALLED TRAP PRIMER SYSTEMS BY AUTHORITY HAVING JURISDICTION. (24"x24" BLOCKOUT)
3. VENT PIPES EXTENDED 2' ABOVE FINISHED FLOOR LEVEL. PROVIDE TEST PLUG. (24"x24" BLOCKOUT)
4. WASTE PIPE EXTENDED 12" ABOVE FINISHED FLOOR LEVEL. PROVIDE TEST PLUG. (24"x24" BLOCKOUT)
5. 1/2" TYPE K ANNEALED "SOFT" COPPER WATER SERVICE EXTENDED 2' ABOVE FINISHED FLOOR LEVEL. PROVIDE CAP AT END. (24"x24" BLOCKOUT)
6. 30" MIN. BURY, PROVIDE TRACER TAPE.
7. MIN. BURY PER LOCAL REQUIREMENTS TO PROTECT AGAINST FREEZING AND DAMAGE.
8. ELECTRICAL STUB UP. (6" DIA BLOCKOUT)
9. 2" FLOOR DRAIN FIELD INSTALLED TRAP PRIMER SYSTEM IF REQUIRED BY AUTHORITY HAVING JURISDICTION. (24"x24" BLOCKOUT)



FLOOR DRAIN BLOCKOUTS & BELOW FLOOR PIPING

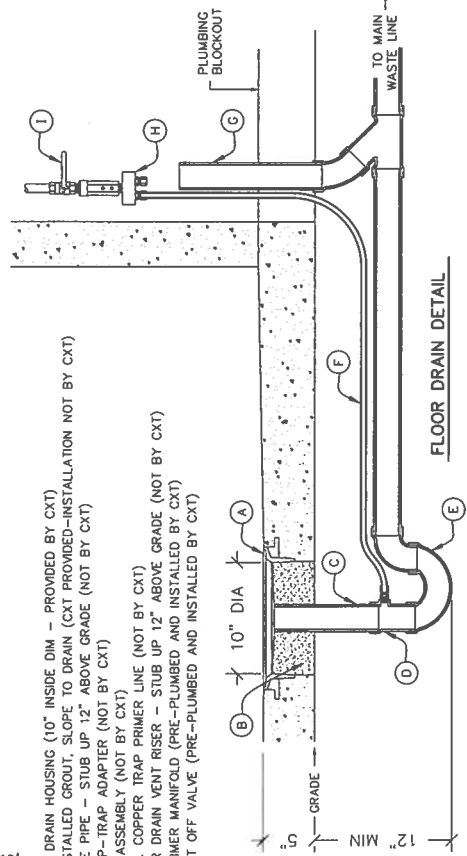
FOR REFERENCE ONLY
 NOT FOR CONSTRUCTION
 CONTRACTOR TO REQUEST
 SHOP DRAWINGS FROM THE
 MANUFACTURER FOR
 APPROVAL

PIPING LEGEND

- BELOW FLOOR VENT PIPING SCH 40 ABS TYPE DWV
- BELOW FLOOR WASTE PIPING SCH 40 ABS TYPE DWV
- 1 1/2" TYPE "K" ANNEALED "SOFT" COPPER WATER SERVICE

BELOW FLOOR PIPING - KEY NOTES

- A. CAST-IN DRAIN HOUSING (10" INSIDE DIM - PROVIDED BY CXT)
- B. FIELD INSTALLED GROUT, SLOPE TO DRAIN (CXT PROVIDED-INSTALLATION NOT BY CXT)
- C. 2" WASTE PIPE - STUB UP 12" ABOVE GRADE (NOT BY CXT)
- D. TAPPED P-T-TRAP ADAPTER (NOT BY CXT)
- E. P-TRAP ASSEMBLY (NOT BY CXT)
- F. 1/2" O.D. COPPER TRAP PRIMER LINE (NOT BY CXT)
- G. 2" FLOOR DRAIN VENT RISER - STUB UP 12" ABOVE GRADE (NOT BY CXT)
- H. TRAP PRIMER MANIFOLD (PRE-PLUMBED AND INSTALLED BY CXT)
- I. 1/2" SHUT OFF VALVE (PRE-PLUMBED AND INSTALLED BY CXT)



3000 N. Sullivan Blvd, Ft. Worth, TX 76226

CXT

Precast Products

901 N. Highway 77, Hillsboro, TX 78645

VALLEY VIEW
 SANTIAGO
 BUILDING NUMBER S-211

DATE: 11/27/20
 DRAWN: JAC/MS
 CHECKED: JAC/MS
 PROJECT NO.: 247720
 SHEET NO.: S-18
 OF 23

FOR INFORMATION, CONSULT THE ARCHITECT'S AND ENGINEER'S DRAWINGS FOR THE LOCATION OF ALL PIPING. THE LOCATION OF ALL PIPING IS SUBJECT TO THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. BY USING THIS DRAWING, THE USER ACCEPTS THE RESPONSIBILITY OF OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

PROJECT NO.: 247720
 SHEET NO.: S-18
 OF 23

FLOOR DRAIN LOCATIONS & BELOW FLOOR PIPING

Stainless Steel Lavatory

Fixture is designed to be installed on a finished wall and serviced from an accessible pipe chase. Optional wall sleeve or metal template is recommended for all installations for required wall openings. Lavatory complies with ANSI, UFAS, CBC and ADA 2010 requirements for accessibility. Compliance is subject to the interpretation and requirements of the local code authority.

Cabinet is fabricated from 14 gage, type 304 stainless steel and is seamless welded construction with exposed surfaces polished to a satin finish. Cabinet interior is sound-deadened with fire-resistant material. There are no accessible voids or crevices where contraband can be concealed.

Lavatory oval bowl is 14-³/₄" x 9-¹/₂" x 4-¹/₂" deep and includes an integral fast drain. Standard elbow waste outlet is 1-¹/₂" O.D. plain end and extends 11" beyond the fixture to be field trimmed to fit by installer.

Optional lavatory valve is an pneumatically operated, pushbutton air-control valve using atmospheric air. Pushbutton is vandal-resistant and requires less than five pounds to activate valve. Valve is metering, non-hold open type. Valve timing is adjustable from 5 to 60 seconds. Valve includes a 0.5 GPM flow control and can be remotely located up to 10 feet from the operating pushbutton. Valve and bubbler conforms with lead free requirements of NSF61, Section 9, 1997 and CHSC 116875.

Regularly furnished items include a fast drain, an integral self-draining soap dish and mounting hardware for walls up to 8" thick.

Suffix option -DMB, Deck Mounted Bubbler optionally available, provides a drinking bubbler that meets ADA requirements and lead free requirements of NSF61, Section 9, 1997, CHSC 116875. This option also includes a separate pushbutton and non-metering air-control valve with .7 GPM flow control.

GUIDE SPECIFICATION

Provide and install an Acorn Penal-Ware, 18" wide ADA 2010 compliant lavatory with oval bowl. Unit shall conform with ANSI, UFAS, CBC and ADA requirements for accessibility. Fixture shall be fabricated from 14 gage, type 304 stainless steel. Construction shall be seamless welded and exposed surfaces shall have a satin finish. Countertop shall have an air-circulating, self-draining soap dish. Provide air-control pneumatically operated, metering, non-hold open valve with ADA compliant pushbutton. Valve and bubbler conform with lead free requirements of NSF61, Section 9, 1997 and CHSC 116875. Cabinet interior shall be sound deadened with fire-resistant material. Fixture shall be furnished with necessary fasteners to complete installation.

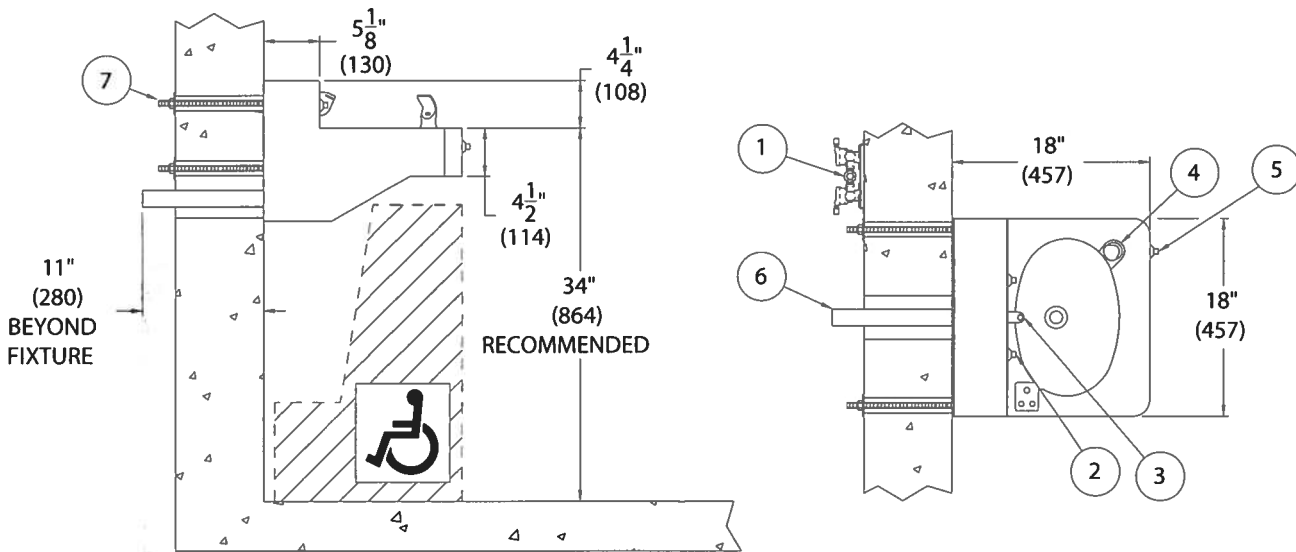
Penal-Ware® 1652-1-BP-04-M
18" Lavatory with Oval Bowl - ADA 2010 Compliant
Fixture May Show Some Available Options



Stainless Steel Lavatory

MODEL NUMBER AND OPTIONS

Base Model Number -1652; 18" Lavatory with Oval Bowl-ADA Compliant
 Fixture Mounting and Waste -1; Off-Floor, Wall Outlet
 Bubbler Selection -BP; Bubbler, Penal
 Valve Selection -04-M; Air-Control, H & C, Metering



1652ADA-1-BP-4-DMB

NOTES:

- 1. Optional -4 Air-Control Valve.
- 2. Lavy Valve Pushbuttons.
- 3. Lavy Bubbler.
- 4. Optional -DMB Deck Mounted Bubbler.
- 5. Pushbutton for option -DMB.
- 6. Lavy Waste Outlet. Extended 11" Beyond Fixture.
- 7. Wall Mounting Hardware.

Important: Installation instructions and current rough-in are furnished with each fixture. Do not rough in without certified dimensions. Dimensions are subject to manufacturer's tolerance of plus or minus 1/4" and change without notice. Acorn assumes no responsibility for use of void or superseded data. © Copyright 2009 Acorn Engineering Company	
<p style="text-align: center;">Selection Summary</p> Model No. & Option _____ Quantity _____	<p style="text-align: center;">Approved for Manufacturing</p> Company _____ Title _____ Signature _____ Date _____

ELKAY® SPECIFICATIONS

Vandal-Resistant EZH2O® Bottle Filling Station with Bi-Level Vandal-Resistant Cooler Models VRCTL8WS & VRCTLDDWS

RATED FOR INDOOR AND OUTDOOR USE

PRODUCT SPECIFICATION

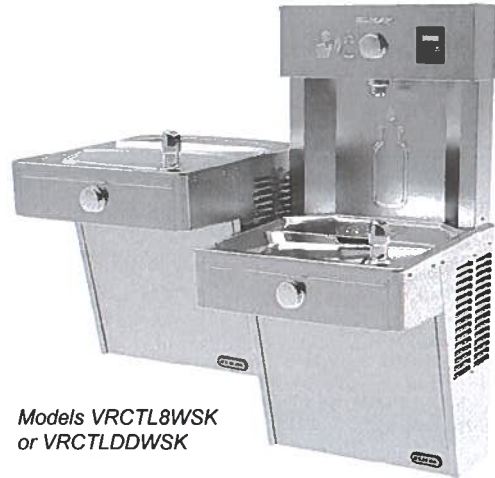
Unit shall include bi-level electric water cooler with bottle filling station. VRCTL8WS shall deliver 8 GPH of 50°F drinking water at 90°F ambient and 80°F inlet water. VRCTLDDWS shall deliver non-chilled drinking water. Units shall be stainless steel construction and include vandal-resistant bubbler. Bottle filling unit shall include an automatic 20-second shut-off timer. Shall include Green Ticker™ displaying count of plastic bottles saved from waste. Bottle filler shall provide 1.1 - 1.5 gpm flow rate with laminar flow to minimize splashing. Unit shall meet ADA guidelines. Unit shall be lead-free design which is certified to NSF/ANSI 61 and 372 and meets federal and state low-lead requirements. Unit shall be certified to UL399 and CAN/CSA 22.2 No. 120.

STANDARD FEATURES

- Vandal-resistant pushbutton activation
- Automatic 20-second shut-off
- Quick Fill Rate: 1.1 gpm (VRCTL8WS); 1.5 gpm (VRCTLDDWS)
- Laminar Flow provides minimal splash
- Real Drain System eliminates standing water
- Visual User Interface display includes:
 - Innovative Green Ticker™ counts bottles saved from waste
- Includes Vandal-resistant bubbler
- Cooler panel finish: Stainless Steel

COOLING SYSTEM (Model VRCTL8WS only)

- Compressor: Hermetically sealed, reciprocating type, single phase. Sealed-in lifetime lubrication.
- Condenser: Fan cooled, copper tube with aluminum fins. Fan motor is permanently lubricated.
- Cooling unit: Combination tube-tank type. Self-cleansing. Continuous copper tubing with stainless steel tank. Fully insulated with EPS foam which meets UL requirements for self-extinguishing material.
- Refrigerant Control: Refrigerant R134a is controlled by accurately calibrated capillary tube.
- Temperature Control: Easily accessible enclosed adjustable thermostat is factory preset. Requires no adjustment other than for altitude requirements.



Models VRCTL8WSK
or VRCTLDDWSK



CONSTRUCTION

- Stainless steel basin with integral drain
- Galvanized structural steel cooler chassis provides structural integrity
- Stainless steel construction bottle filler
- Cooler cabinet is stainless steel construction
- Vandal-resistant bubbler is one-piece, heavy-duty chrome plated

WARRANTY

5 Year limited warranty on the unit's refrigeration system. Electrical components and water system are warranted for 12 months from date of installation or 18 months from factory shipment, whichever date falls first.

CAPACITIES CHART

CAPACITIES CHART									
Model	Voltage / Hertz	Chilling Capacity**	F.L. Amps	Rated Watts	Approx. Shipping Wt. (lb)	UL399 and CAN/CSA 22.2 No. 120 Certified	ADA Compliant	ANSI/NSF 61 & 372 Certified	GreenSpec® Listed
VRCTL8WSK	115V / 60Hz	8 GPH	5.0	370	114	•	•	•	•
VRCTL8WS2K	220V / 50Hz	6.7 GPH	2.5	370	114	++	•	•	•
VRCTL8WS3K	220V / 60Hz	8 GPH	2.5	370	114	++	•	•	•
VRCTLDDWSK	115V / 60Hz	-	1.0	15	86	•	•	•	•
VRCTLDDWS2K	220V / 50Hz	-	0.5	15	86	++	•	•	•
VRCTLDDWS3K	220V / 60Hz	-	0.5	15	86	++	•	•	•

**Based on 80°F inlet water and 90°F ambient air temp for 50°F chilled drinking water.
++Complies; not third party certified.

This specification describes an Elkay product with design, quality and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

In keeping with our policy of continuing product improvement, Elkay reserves the right to change specification without notice. Please visit elkay.com for the most current version.

2222 Camden Court
Oak Brook, IL 60523
630-572-3192
elkay.com

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SPEC14-79 (10/2014)

**Vandal-Resistant EZH2O® Bottle Filling Station
with Bi-Level Vandal-Resistant Cooler
Models VRCTL8WS & VRCTLDDWS**

**ELKAY®
ROUGH-IN DIMENSIONS**

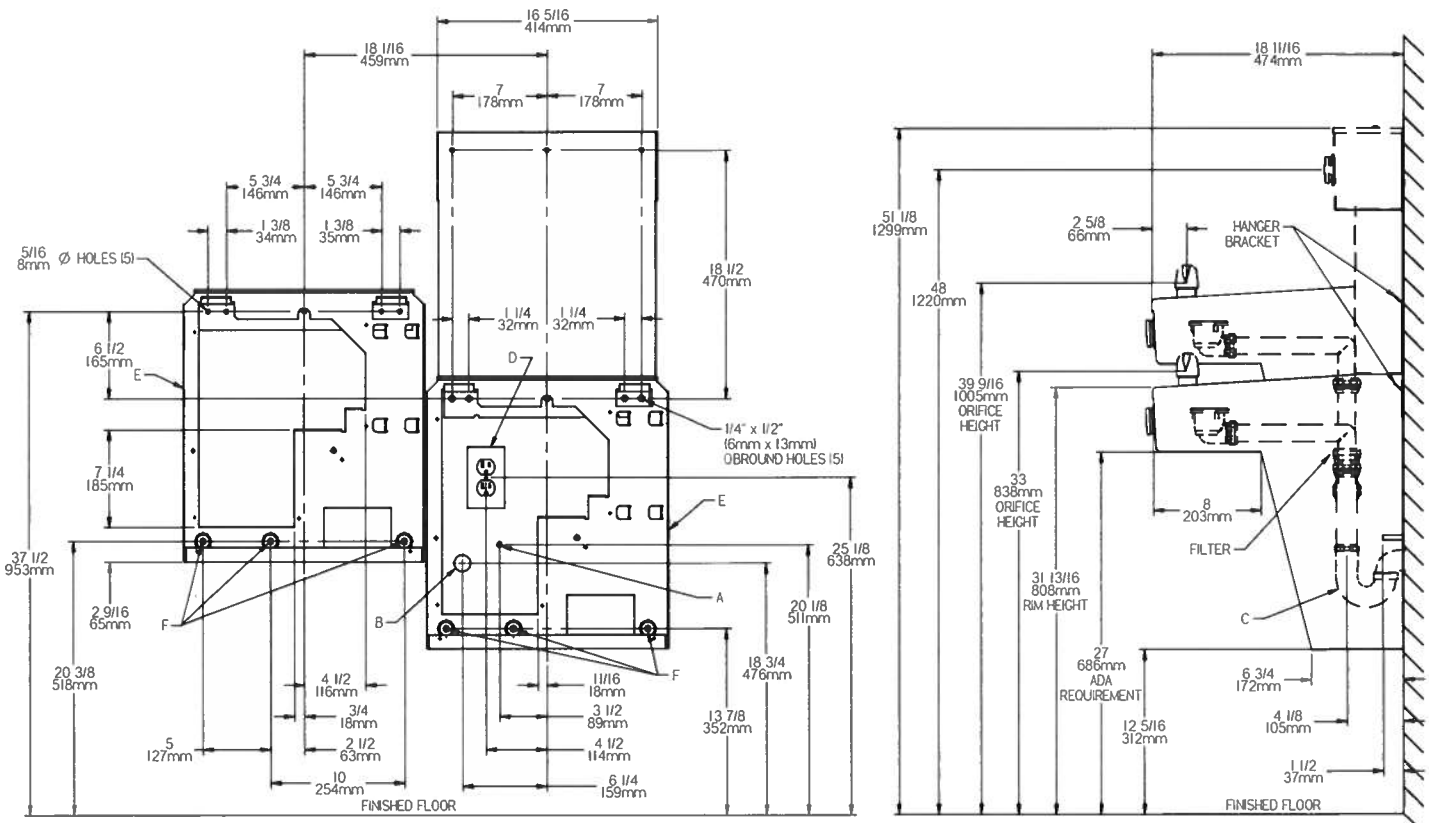
RATED FOR INDOOR AND OUTDOOR USE

IMPORTANT! INSTALLER PLEASE NOTE:

These units are designed and built to provide water to the user which has not been altered by materials in the cooler waterway. The grounding of electrical equipment such as telephone, computers, etc. to water lines is a common procedure. This grounding may be in the building buy may also occur away from the building. This grounding can cause electrical feedback into a water cooler creating an electrolysis which results in a metallic taste or an increase in the metal content of the water. This condition is avoidable by installing the cooler using the proper materials as shown.

NOTICE:

This water cooler must be connected to the water supply using a dielectric coupling. The cooler is furnished with a non-metallic strainer which meets this requirement. The drain trap which is provided by the installer should also be plastic to completely isolate the cooler from the building plumbing system.



REDUCE HEIGHT BY 3" FOR INSTALLATION OF CHILDREN'S ADA COOLER

LEGEND:

- A = Recommended Water Supply location. Shut-off Valve (not furnished) to accept 3/8" O.D. unplated copper tube. Up to 3" (38mm) maximum out from wall.
 - B = Recommended Waste Outlet location. To accommodate 1-1/2" nominal drain. Drain stub 2" (51mm) out from wall.
 - C = 1-1/2" Trap (not furnished).
 - D = Electrical Supply (3) Wire Recessed Box Duplex Outlet.
 - E = Insure proper ventilation by maintaining 6" (152mm) minimum clearance from cabinet louvers to wall.
 - F = 7/16" (11mm) Bolt Holes for fastening to wall.
- NOTE: Installations Must Use Ground Fault Circuit Interrupter. (GFCI)

Job Name: _____

Model: _____ Qty. _____

Contact: _____

Approval Signature: _____

Notes: _____

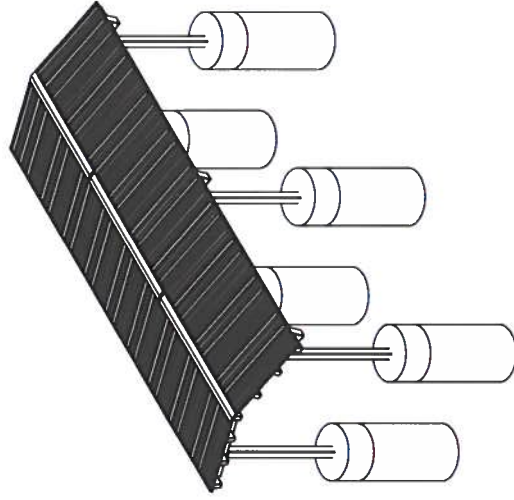
SHADE STRUCTURE DRAWINGS

MODEL: SAN

CONFIGURATION: S30-29.0-12.0--36.0

INDEX OF DRAWINGS

NO.	TITLE
CON-01	COVER SHEET
CON-02	FRONT ELEVATION
CON-03	FRONT ELEVATION
CON-04	COMPONENT USE DRAWING
CON-05	GENERAL COMPONENTS FABRICATION PLANS
CON-06	END BRACE FABRICATION PLANS
CON-07	END BRACE FABRICATION PLANS
CON-08	FRONT ELEVATION DETAIL
CON-09	FABRICATION DETAIL
CON-10	LIST OF MATERIALS



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APPROVAL

STRUCTURE ISO VIEW

FABRICATOR TOLERANCES
ON PARALLELISM WITH
S15.0311 ± 1/8" SHIP
S15.0311 ± 1/8" SHIP
POSITION OF FIXTURES ± 1/4"
BENDING AND CUTTING
LIFT DIMENSIONS ± 1/8"

FRAME COLOR:
ROOF COLOR:
APPROX. WEIGHT:

HUCKABO
LURA COLIA W/7
2/2006



201 E. Exchange Ave. Ste. 300, Waukesha, WI 53186
Tel: 262.533.3333 Fax: 262.533.3334
300 North Liberty Rd. Waukesha, WI 53186

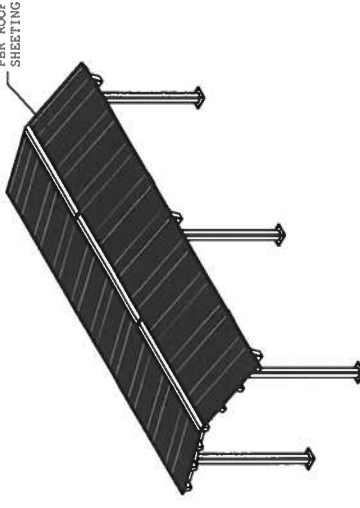
SHADE STRUCTURE - SAN
CONFIG. S30-12.0-10.0-28.0

THE STRUCTURE IS SHOWN IN THIS DRAWING FOR THE
PURPOSE OF ILLUSTRATION ONLY. THE MANUFACTURER
SHALL BE RESPONSIBLE FOR THE DESIGN AND
CONSTRUCTION OF THE STRUCTURE. THE MANUFACTURER
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SHALL BE RESPONSIBLE FOR THE DESIGN AND
CONSTRUCTION OF THE STRUCTURE.

NO.	REV.	DATE	DESCRIPTION

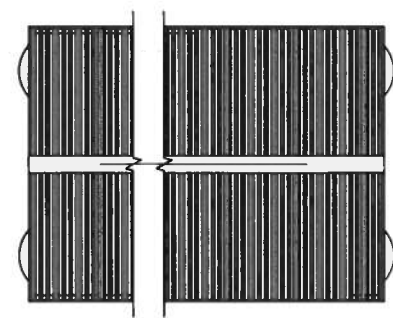
SHADE SHELTER
COVER SHEET

SAN-1
4

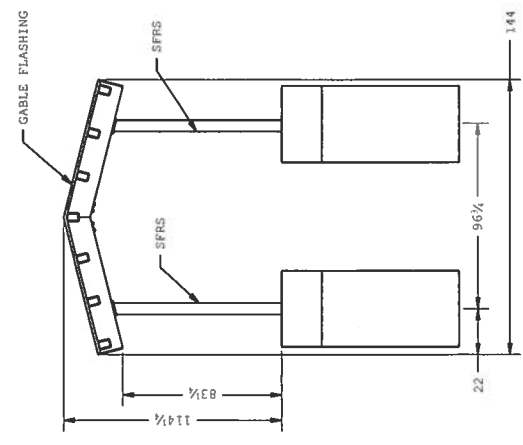


ISO VIEW

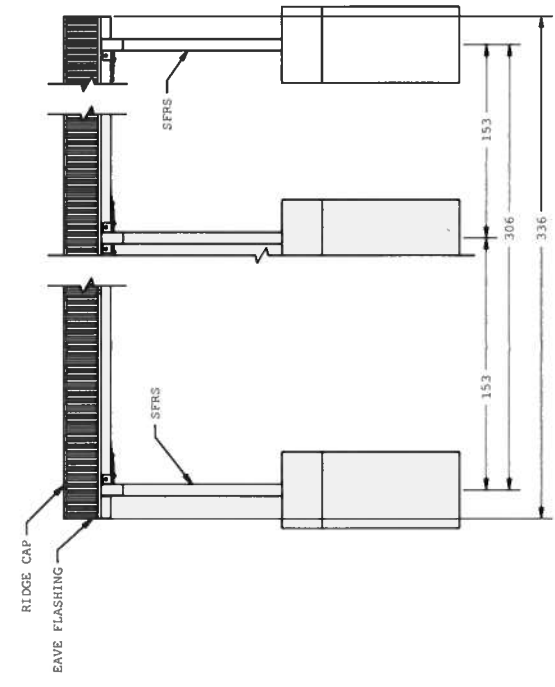
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 APPROVAL



TOP VIEW



FRONT VIEW



SIDE VIEW

SAFETY
 ALL WORKERS MUST WEAR
 PROTECTIVE EQUIPMENT
 AT ALL TIMES
 SEE SAFETY MANUAL FOR
 COMPLETE LIST OF REQUIREMENTS
 AND INSTRUCTIONS

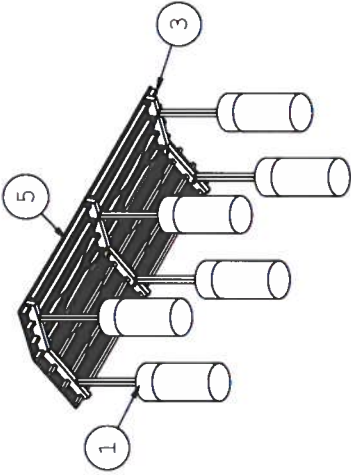


SHADE STRUCTURE - SAN
 CONF - 330-112-100-33.0

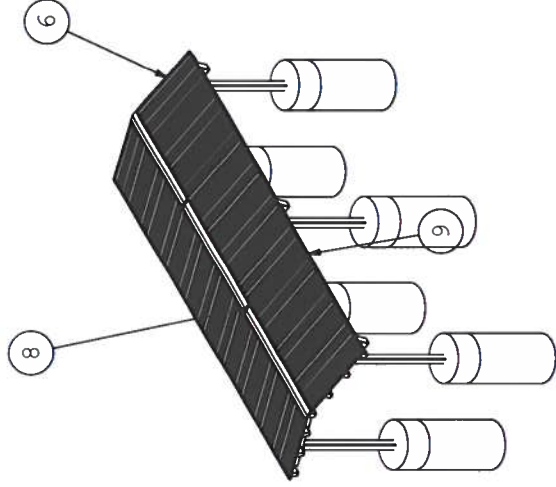
SHADE STRUCTURE - SAN
 CONF - 330-112-100-33.0

NO.	DESCRIPTION	QTY	UNIT	REMARKS
1	SHADE STRUCTURE - SAN	1	EA	
2	SHADE STRUCTURE - SAN	1	EA	
3	SHADE STRUCTURE - SAN	1	EA	
4	SHADE STRUCTURE - SAN	1	EA	
5	SHADE STRUCTURE - SAN	1	EA	
6	SHADE STRUCTURE - SAN	1	EA	
7	SHADE STRUCTURE - SAN	1	EA	
8	SHADE STRUCTURE - SAN	1	EA	
9	SHADE STRUCTURE - SAN	1	EA	
10	SHADE STRUCTURE - SAN	1	EA	
11	SHADE STRUCTURE - SAN	1	EA	
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14	SHADE STRUCTURE - SAN	1	EA	
15	SHADE STRUCTURE - SAN	1	EA	
16	SHADE STRUCTURE - SAN	1	EA	
17	SHADE STRUCTURE - SAN	1	EA	
18	SHADE STRUCTURE - SAN	1	EA	
19	SHADE STRUCTURE - SAN	1	EA	
20	SHADE STRUCTURE - SAN	1	EA	

SHADE SHELTER
 STRUCTURE ELEVATIONS
 SAN-2
 2 11 4



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PARTS LIST			
ITEM	QTY	PART NUMBER	MASS
1	6	Column Assembly	282 lbmass
3	2	Truss End Assembly	531 lbmass
4	1	Truss Mid Assembly	456 lbmass
5	14	Perlin Assembly	193 lbmass
6	26	24 GA PBR	3 lbmass
8	3	Ridge Cap	5 lbmass
9	6	Eave Trim	5 lbmass
10	4	Gable Trim	5 lbmass
12	26	Roof Panel Top Closures	
13	26	Roof Panel Bottom Closures	
14	5	Web Mastic 3/8"x50'	
15	750	TEK4 #12X1-1/4" Terra Cotta	
16	500	TEX Stitch Screw #14X3/4" Terra Cotta	
17	4	6" Flat Stip w/ Hems	
18	16	Jaw - Jaw 6" Turnbuckle	1 lbmass
19	32	Clevis	1 lbmass
20	16	Thimble	1 lbmass
21	8	Cable	6 lbmass
22	28	Nut, 3/4"-10 ASTM A563	0 lbmass
23	28	Bolt, 3/4"-10x5 1/2" ASTM A325	1 lbmass
24	1	Washer, 3/4" ASTM A436	
25	6	Bolt, 3/4"-10x2" ASTM A325	
26	24	Bolt Anchor, 5/8"Øx 6" Titan HD	1 lbmass
27	1	Touch-up Paint Kit	

NOTE: WEIGHTS ARE PER ITEM

SHADE STRUCTURE - SAN
CONF. 530-120-100-250

SHADE STRUCTURE - SAN
CONF. 530-120-100-250

ELKAY® SPECIFICATIONS

Vandal-Resistant EZH2O® Bottle Filling Station with Bi-Level Vandal-Resistant Cooler Models VRCTL8WS & VRCTLDWS

RATED FOR INDOOR AND OUTDOOR USE

PRODUCT SPECIFICATION

Unit shall include bi-level electric water cooler with bottle filling station. VRCTL8WS shall deliver 8 GPH of 50°F drinking water at 90°F ambient and 80°F inlet water. VRCTLDWS shall deliver non-chilled drinking water. Units shall be stainless steel construction and include vandal-resistant bubbler. Bottle filling unit shall include an automatic 20-second shut-off timer. Shall include Green Ticker™ displaying count of plastic bottles saved from waste. Bottle filler shall provide 1.1 - 1.5 gpm flow rate with laminar flow to minimize splashing. Unit shall meet ADA guidelines. Unit shall be lead-free design which is certified to NSF/ANSI 61 and 372 and meets federal and state low-lead requirements. Unit shall be certified to UL399 and CAN/CSA 22.2 No. 120.

STANDARD FEATURES

- Vandal-resistant pushbutton activation
- Automatic 20-second shut-off
- Quick Fill Rate: 1.1 gpm (VRCTL8WS); 1.5 gpm (VRCTLDWS)
- Laminar Flow provides minimal splash
- Real Drain System eliminates standing water
- Visual User Interface display includes:
 - Innovative Green Ticker™ counts bottles saved from waste
- Includes Vandal-resistant bubbler
- Cooler panel finish: Stainless Steel

COOLING SYSTEM (Model VRCTL8WS only)

- Compressor: Hermetically sealed, reciprocating type, single phase. Sealed-in lifetime lubrication.
- Condenser: Fan cooled, copper tube with aluminum fins. Fan motor is permanently lubricated.
- Cooling unit: Combination tube-tank type. Self-cleansing. Continuous copper tubing with stainless steel tank. Fully insulated with EPS foam which meets UL requirements for self-extinguishing material.
- Refrigerant Control: Refrigerant R134a is controlled by accurately calibrated capillary tube.
- Temperature Control: Easily accessible enclosed adjustable thermostat is factory preset. Requires no adjustment other than for altitude requirements.



Models VRCTL8WSK
or VRCTLDWSK

CONSTRUCTION

- Stainless steel basin with integral drain
- Galvanized structural steel cooler chassis provides structural integrity
- Stainless steel construction bottle filler
- Cooler cabinet is stainless steel construction
- Vandal-resistant bubbler is one-piece, heavy-duty chrome plated

WARRANTY

5 Year limited warranty on the unit's refrigeration system. Electrical components and water system are warranted for 12 months from date of installation or 18 months from factory shipment, whichever date falls first.

CAPACITIES CHART									
Model	Voltage / Hertz	Chilling Capacity**	F.L. Amps	Rated Watts	Approx. Shipping Wt. (lb)	UL399 and CAN/CSA 22.2 No. 120 Certified	ADA Compliant	ANSI/NSF 61 & 372 Certified	GreenSpec® Listed
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VRCTL8WS2K	220V / 50Hz	6.7 GPH	2.5	370	114	++	•	•	•
VRCTL8WS3K	220V / 60Hz	8 GPH	2.5	370	114	++	•	•	•
VRCTLDWSK	115V / 60Hz	-	1.0	15	86	•	•	•	•
VRCTLDWS2K	220V / 50Hz	-	0.5	15	86	++	•	•	•
VRCTLDWS3K	220V / 60Hz	-	0.5	15	86	++	•	•	•

**Based on 80°F inlet water and 90°F ambient air temp for 50°F chilled drinking water.
++Complies; not third party certified.

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**Vandal-Resistant EZH2O® Bottle Filling Station
with Bi-Level Vandal-Resistant Cooler
Models VRCTL8WS & VRCTLDDWS**

**ELKAY®
ROUGH-IN DIMENSIONS**

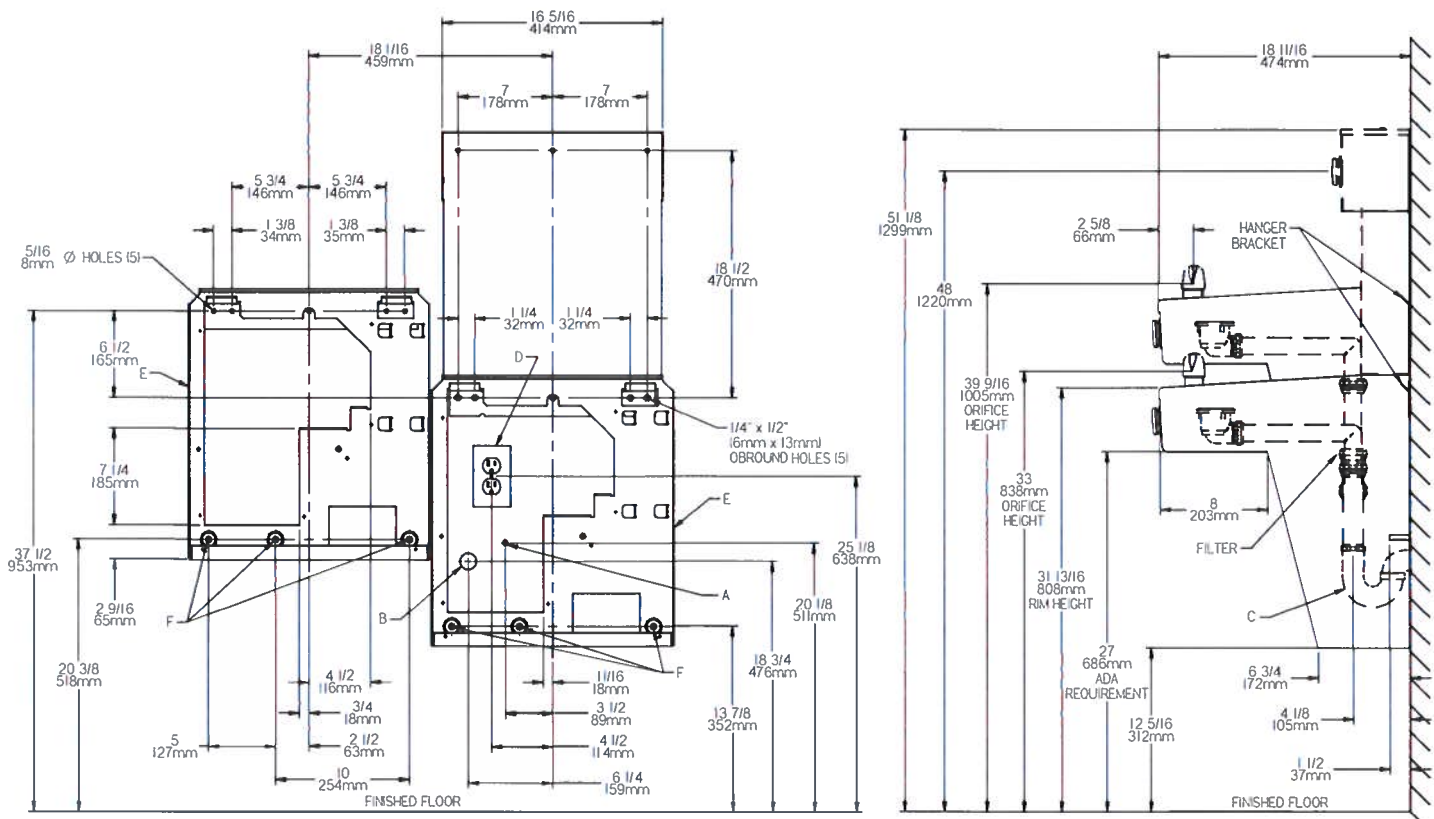
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These units are designed and built to provide water to the user which has not been altered by materials in the cooler waterway. The grounding of electrical equipment such as telephone, computers, etc. to water lines is a common procedure. This grounding may be in the building buy may also occur away from the building. This grounding can cause electrical feedback into a water cooler creating an electrolysis which results in a metallic taste or an increase in the metal content of the water. This condition is avoidable by installing the cooler using the proper materials as shown.

NOTICE:

This water cooler must be connected to the water supply using a dielectric coupling. The cooler is furnished with a non-metallic strainer which meets this requirement. The drain trap which is provided by the installer should also be plastic to completely isolate the cooler from the building plumbing system.



REDUCE HEIGHT BY 3" FOR INSTALLATION OF CHILDREN'S ADA COOLER

LEGEND:

- A = Recommended Water Supply location. Shut-off Valve (not furnished) to accept 3/8" O.D. unplated copper tube. Up to 3" (38mm) maximum out from wall.
 - B = Recommended Waste Outlet location. To accommodate 1-1/2" nominal drain. Drain stub 2" (51mm) out from wall.
 - C = 1-1/2" Trap (not furnished).
 - D = Electrical Supply (3) Wire Recessed Box Duplex Outlet.
 - E = Insure proper ventilation by maintaining 6" (152mm) minimum clearance from cabinet louvers to wall.
 - F = 7/16" (11mm) Bolt Holes for fastening to wall.
- NOTE: Installations Must Use Ground Fault Circuit Interrupter. (GFCI)

Job Name: _____

Model: _____ Qty. _____

Contact: _____

Approval Signature: _____

Notes: _____

Stainless Steel Lavatory

Fixture is designed to be installed on a finished wall and serviced from an accessible pipe chase. Optional wall sleeve or metal template is recommended for all installations for required wall openings. Lavatory complies with ANSI, UFAS, CBC and ADA 2010 requirements for accessibility. Compliance is subject to the interpretation and requirements of the local code authority.

Cabinet is fabricated from 14 gage, type 304 stainless steel and is seamless welded construction with exposed surfaces polished to a satin finish. Cabinet interior is sound-deadened with fire-resistant material. There are no accessible voids or crevices where contraband can be concealed.

Lavatory oval bowl is 14- $\frac{3}{4}$ " x 9- $\frac{1}{2}$ " x 4- $\frac{1}{2}$ " deep and includes an integral fast drain. Standard elbow waste outlet is 1- $\frac{1}{2}$ " O.D. plain end and extends 11" beyond the fixture to be field trimmed to fit by installer.

Optional lavatory valve is an pneumatically operated, pushbutton air-control valve using atmospheric air. Pushbutton is vandal-resistant and requires less than five pounds to activate valve. Valve is metering, non-hold open type. Valve timing is adjustable from 5 to 60 seconds. Valve includes a 0.5 GPM flow control and can be remotely located up to 10 feet from the operating pushbutton. Valve and bubbler conforms with lead free requirements of NSF61, Section 9, 1997 and CHSC 116875.

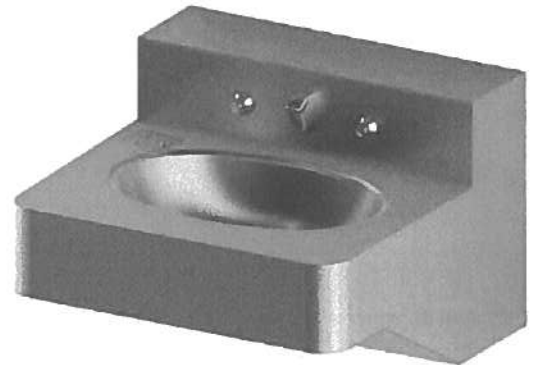
Regularly furnished items include a fast drain, an integral self-draining soap dish and mounting hardware for walls up to 8" thick.

Suffix option -DMB, Deck Mounted Bubbler optionally available, provides a drinking bubbler that meets ADA requirements and lead free requirements of NSF61, Section 9, 1997, CHSC 116875. This option also includes a separate pushbutton and non-metering air-control valve with .7 GPM flow control.

GUIDE SPECIFICATION

Provide and install an Acorn Penal-Ware, 18" wide ADA 2010 compliant lavatory with oval bowl. Unit shall conform with ANSI, UFAS, CBC and ADA requirements for accessibility. Fixture shall be fabricated from 14 gage, type 304 stainless steel. Construction shall be seamless welded and exposed surfaces shall have a satin finish. Countertop shall have an air-circulating, self-draining soap dish. Provide air-control pneumatically operated, metering, non-hold open valve with ADA compliant pushbutton. Valve and bubbler conform with lead free requirements of NSF61, Section 9, 1997 and CHSC 116875. Cabinet interior shall be sound deadened with fire-resistant material. Fixture shall be furnished with necessary fasteners to complete installation.

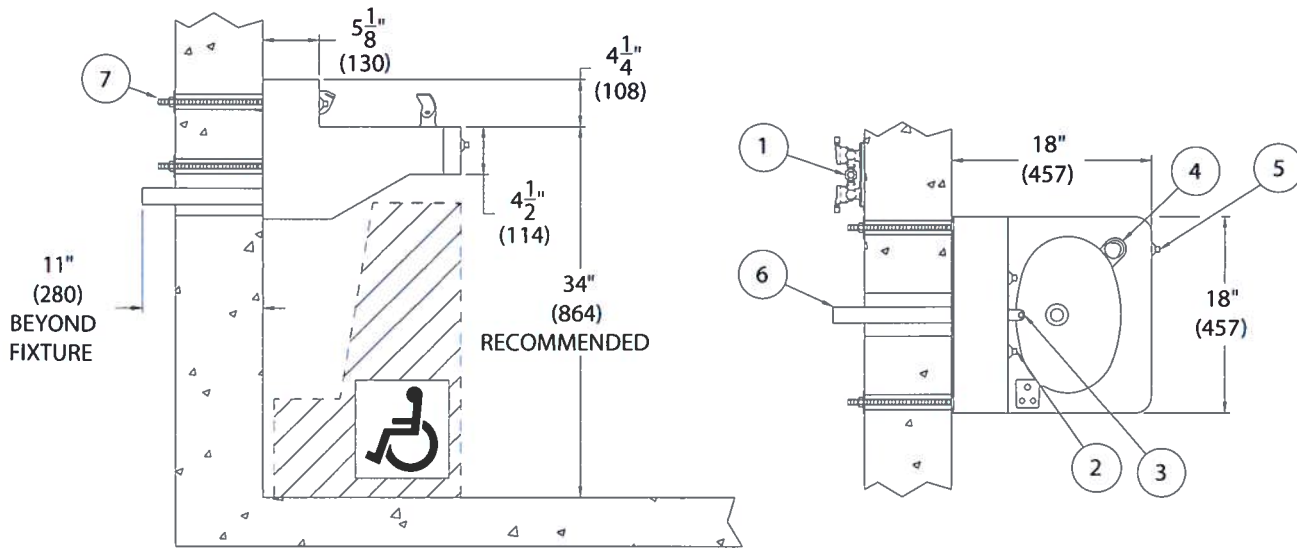
Penal-Ware® 1652-1-BP-04-M
18" Lavatory with Oval Bowl - ADA 2010 Compliant
Fixture May Show Some Available Options



Stainless Steel Lavatory

MODEL NUMBER AND OPTIONS

Base Model Number -1652; 18" Lavatory with Oval Bowl-ADA Compliant
 Fixture Mounting and Waste -1; Off-Floor, Wall Outlet
 Bubbler Selection -BP; Bubbler, Penal
 Valve Selection -04-M; Air-Control, H & C, Metering



1652ADA-1-BP-4-DMB

NOTES:

- 1. Optional -4 Air-Control Valve.
- 2. Lavy Valve Pushbuttons.
- 3. Lavy Bubbler.
- 4. Optional -DMB Deck Mounted Bubbler.
- 5. Pushbutton for option -DMB.
- 6. Lavy Waste Outlet. Extended 11" Beyond Fixture.
- 7. Wall Mounting Hardware.

Important: Installation instructions and current rough-in are furnished with each fixture. Do not rough in without certified dimensions. Dimensions are subject to manufacturer's tolerance of plus or minus 1/4" and change without notice. Acorn assumes no responsibility for use of void or superseded data. © Copyright 2009 Acorn Engineering Company	
<p style="text-align: center;">Selection Summary</p> Model No. & Option _____ Quantity _____	<p style="text-align: center;">Approved for Manufacturing</p> Company _____ Title _____ Signature _____ Date _____



CERTIFICATE

ISSUE DATE: 5/9/2012

In the interest of public playground safety, IPEMA provides a third-party certification service whereby TÜV SÜD America validates a manufacturer's certification of conformance to the ASTM F1292-09, Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment Standard. The

manufacturer listed below has received written validation from TÜV SÜD America that the products listed below conform with the requirements of ASTM F1292-09.

Manufacturer
 Flexground, LLC
 1950 West Rose Garden Lane, Suite 100
 Phoenix, AZ 85027
 United States
 (602) 954-0000

<u>PRODUCT #</u>	<u>PRODUCT LINE</u>	<u>DESCRIPTION</u>	<u>THK/HT RATIO</u>
FG4	FlexGround Poured In Place	Rubber Poured In Place Playground Safety Surfacing up to 4'	2" Thick, 4' Fall
FG5	FlexGround Poured In Place	Rubber Poured In Place Playground Safety Surfacing up to 5'	2.5" Thick, 5' Fall
FG6	FlexGround Poured In Place	Rubber Poured In Place Playground Safety Surfacing up to 6'	3" Thick, 6' Fall
FG8	FlexGround Poured In Place	Rubber Poured In Place Playground Safety Surfacing up to 8'	3.5" Thick, 8' Fall



IPEMA Certificate of Compliance

PRODUCT #

FG9

PRODUCT LINE

FlexGround Poured In Place

DESCRIPTION

Rubber Poured In Place Playground
Safety Surfacing up to 9'

THK/HT RATIO

4" Thick, 9' Fall





REPORT NUMBER
QI1411123-2



America

PREPARED FOR
FLEXGROUND, LLC
1809 WEST 4TH STREET
TEMPE, AZ 85281

ATTENTION
JESSICA KILE

CUSTOMER PURCHASE ORDER NUMBER
090314

REPORT DATE
DECEMBER 17, 2014

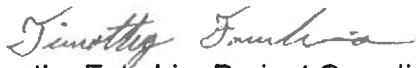
TÜV SÜD America, Inc.
47523 Clipper Street
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www.TUVAmerica.com

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REPORTED / APPROVED BY:

TÜV SÜD America, Inc.

Reported by: 
Timothy Fouchia, Project Coordinator
CERTIFICATION TEST PROGRAMS

Approved by: 
David Splane, Certification Program Manager
CERTIFICATION TEST PROGRAMS



PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

ASTM D412-06a(2013), Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension

TEST SEQUENCE

Testing for ASTM D412-06a(2013) was reported on December 8, 2014.

SAMPLE DESCRIPTION

Flexground, LLC, supplied three (3), 2in. x 5.5in., samples of each of the following surfacing types for testing:

- **FlexGround Surfacing**
- **EnduraFlex Surfacing**
- **UltraFlex Surfacing**



Element Materials Technology
27105 George Meade Drive
Warren, MI
48092-2709 USA

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info@element.com
element.com

TEST REPORT

REPORT NUMBER: EWA032508P-1

TUV SUD America
47523 Clipper Street
Plymouth, MI 48170

Date: December 08, 2014
Purchase Order Number: 2000011808

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EAR-CONTROLLED DATA
December 08, 2014

REPORTED / APPROVED BY:

Prepared By: 
Michole Janssen, Associate Administrative Assistant
ADMINISTRATION

Approved By: 
Dave Smith, Laboratory Manager
MATERIALS TESTING

Approved By: 
Timothy R. Geiger, Department Manager
MATERIALS, MECHANICAL & INTERIORS



EAR-CONTROLLED DATA
December 08, 2014

PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s). All results relate only to the items tested, as listed within this report.

WORK REQUESTED / REFERENCE DOCUMENT(S)

Tensile Strength and Elongation per ASTM D412 (13)

SAMPLE DESCRIPTION

A total of three (3) materials identified as FlexGround, EnduraFlex, and UltraFlex were presented by TUV SUD America for testing.

SAMPLE CONDITIONING

Prior to testing, the samples were conditioned at $+23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and $50\% \pm 5\%$ relative humidity, as applicable.



EAR-CONTROLLED DATA
December 08, 2014

TESTING PERFORMED

TENSILE STRENGTH AND ELONGATION PER ASTM D412 (13)

Procedure

The specimens were tested as received with a test speed of 500 mm/min. Due to the physical properties and delicate nature of the material tested, crosshead displacement was used to calculate elongation.

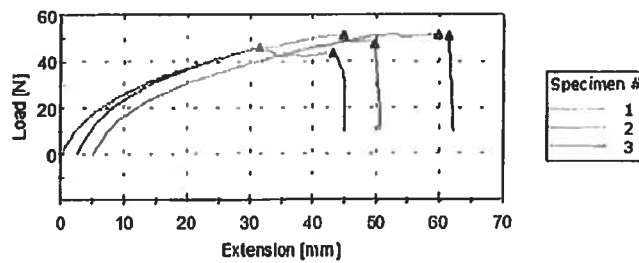
Requirements

No specific criteria provided.

Results

FlexGround:

Specimen 1 to 3



Specimen Number	Maximum Load (N)	Tensile Strength at Yield (MPa)	Elongation at Yield (%)	Tensile Strength at Break (MPa)	Elongation at Break (%)
1	51.2	0.72	88.9	0.67	98.8
2	45.7	0.64	57.3	0.61	80.6
3	51.9	0.73	109	0.72	112
Average	49.6	0.70	85.0	0.67	97.2



EAR-CONTROLLED DATA
December 08, 2014

TEST EQUIPMENT

All test instruments were calibrated and are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) or another National Measurement Institute or through consensus standards. The Element Warren calibration system meets the requirements of ISO 17025:2005.

ID	Description	Manufacturer	Model	Calibration Due
15517	Tensile Tester	Instron	5982	09/25/15
07881	Load Cell	Instron	2518-806	09/25/15
12200	Caliper	Mitutoyo	CD-8"	12/27/14

REVISION HISTORY

Rev. #	Description/Changes	Date
0	Initial Issue	12/08/14



REPORT NUMBER
QI1411123-3



America

PREPARED FOR
FLEXGROUND, LLC
1809 WEST 4TH STREET
TEMPE, AZ 85281

ATTENTION
JESSICA KILE

CUSTOMER PURCHASE ORDER NUMBER
090314

REPORT DATE
DECEMBER 17, 2014


TÜV SÜD America, Inc.
47523 Clipper Street
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Phone: 734.455.4841
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REPORTED / APPROVED BY:

TÜV SÜD America, Inc.

Reported by: 
Timothy Fouchia, Project Coordinator
CERTIFICATION TEST PROGRAMS

Approved by: 
David Splane, Certification Program Manager
CERTIFICATION TEST PROGRAMS



PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

ASTM D624-00(2012), Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

TEST SEQUENCE

Testing for D624-00(2012) was reported on December 8, 2014.

SAMPLE DESCRIPTION

Flexground, LLC, supplied three (3), 1.5in. x 4.5in., samples of each of the following surfacing types for testing:

- **FlexGround Surfacing**
- **EnduraFlex Surfacing**
- **UltraFlex Surfacing**



Element Materials Technology
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48092-2709 USA

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Info: usaren@element.com
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TEST REPORT

REPORT NUMBER: IEWA032508P-2

TUV SUD America
47523 Clipper Street
Plymouth, MI 48170

Date: December 08, 2014
Purchase Order Number: 2000011808

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Doc: 10090 Ver: 03/23 02/17/14

Page 1 of 7



EAR-CONTROLLED DATA
December 08, 2014

REPORTED / APPROVED BY:

Prepared By: 
Michèle Jansson, Associate Administrative Assistant
ADMINISTRATION

Approved By: 
Dave Smith, Laboratory Manager
MATERIALS TESTING

Approved By: 
Timothy R. Geiger, Department Manager
MATERIALS, MECHANICAL & INTERIORS



EAR-CONTROLLED DATA
December 08, 2014

PURPOSE

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WORK REQUESTED / REFERENCE DOCUMENT(S)

Tear Resistance per ASTM D624 (12)

SAMPLE DESCRIPTION

A total of three (3) materials identified as FlexGround, EnduraFlex, and UltraFlex were presented by TUV SUD America for testing.

SAMPLE CONDITIONING

Prior to testing, the samples were conditioned at +23°C ±2°C and 50% ±5% relative humidity, as applicable.



EAR-CONTROLLED DATA
December 08, 2014

TESTING PERFORMED

TEAR RESISTANCE PER ASTM D624 (12)

Procedure

The specimens were tested as received with a test speed of 500 mm/min.

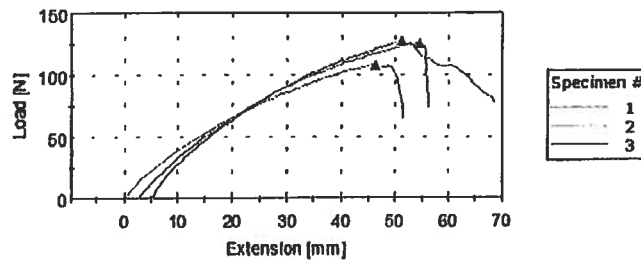
Requirements

No specific criteria provided.

Results

FlexGround:

Specimen 1 to 3



Specimen Number	Maximum Load (N)	Load / Width at Maximum Load (N/m)	Load/width at Maximum Load (kN/m)
1	108	10500	10.5
2	125	12100	12.1
3	127	12400	12.4
Mean	120	11700	11.7



EAR-CONTROLLED DATA
December 08, 2014

TEST EQUIPMENT

All test instruments were calibrated and are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) or another National Measurement Institute or through consensus standards. The Element Warren calibration system meets the requirements of ISO 17025:2005.

ID	Description	Manufacturer	Model	Calibration Due
15517	Tensile Tester	Instron	5982	09/25/15
07881	Load Cell	Instron	2518-806	09/25/15
12200	Calliper	Mitutoyo	CD-8"	12/27/14

REVISION HISTORY

Rev. #	Description/Changes	Date
0	Initial Issue	12/08/14



REPORT NUMBER
QI1411123-4



America

PREPARED FOR
FLEXGROUND, LLC
1809 WEST 4TH STREET
TEMPE, AZ 85281

ATTENTION
JESSICA KILE

CUSTOMER PURCHASE ORDER NUMBER
090314

REPORT DATE
DECEMBER 17, 2014

TÜV SÜD America, Inc.
47523 Clipper Street
Plymouth, Michigan 48170 USA
Phone: 734.455.4841
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REPORTED / APPROVED BY:

TÜV SÜD America, Inc.

Timothy Fouchia
Reported by: Timothy Fouchia, Project Coordinator
CERTIFICATION TEST PROGRAMS

David Splane
Approved by: David Splane, Certification Program Manager
CERTIFICATION TEST PROGRAMS



PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

ASTM D2047-11, Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine

TEST SEQUENCE

Testing for ASTM D2047-11 was reported on December 12, 2014.

SAMPLE DESCRIPTION

Flexground, LLC, supplied three (3), 12in. x 12in., samples of each of the following surfacing types for testing:

- **FlexGround Surfacing**
- **EnduraFlex Surfacing**
- **UltraFlex Surfacing**
- **Xtreme Surfacing**



QAI LABORATORIES
CERTIFICATION TESTING INSPECTION

1328 North 10th E. Ave.
Tulsa, OK 74110
918.437.0333 fax: 918.437.8487 tx.

CLIENT: TUV SUD America, Inc.
47523 Clipper Street
Plymouth, MI 48170

Test Report No: TJ2690-1	Date: December 12, 2014
--------------------------	-------------------------

SAMPLE ID: FlexGround

SAMPLING DETAIL: Test samples were submitted to the laboratory directly by the client. No special sampling conditions or sample preparation were observed by QAI.

DATE OF RECEIPT: Sample was received at QAI on December 1, 2014.

TESTING PERIOD: December 9 – December 11, 2014

AUTHORIZATION: Signed Proposal No.: FB-2014-082202 by Timothy Fouchla of TUV SUD America, Inc. on September 4, 2014.

TEST PROCEDURE: ASTM D2047-11, Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.

REMARKS: The Occupational Safety and Health Administration recommend that walking surfaces have a static coefficient of friction of 0.5. According to 28 CFR Ch. 1-1994 Section A4.5.1, a static coefficient of friction of 0.6 is recommended for accessible routes and 0.8 for ramps.

TEST RESULTS: Detailed test results are presented in the subsequent pages of this report.

Prepared By

Rocky Hale
Material Test Technician

Signed for and on behalf of
QAI Laboratories, Inc.

Joe Cavett
Project Manager

Page 1 of 3
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WWW.QAI.ORG
info@qai.org



Procedure and Results:

The test shoe material used during test was leather purchased and specified to conform to Federal Specification KK-L-165C. The test shoe was assembled and maintained as per Section 7 and all testing conducted in accordance with Section 8. Results are reported in Tables 1 and 2 of this report.

All materials and equipment used during test conformed to the relevant applicable sections of the test method.

Environment: The testing was conducted in a controlled environment of 70°F and 56% relative humidity.

Coating Identification: None Specified by Client

Calibration Performed: Calibration was performed on an OVCT tile using leather foot.
Calibration Tile Arithmetic Average: 0.623

SAMPLE ID: FlexGround

Table 1- Test Results with Leather Test Shoe, Dry Condition

Specimen	Determination	Static Coefficient of Friction
1	1	0.81
	2	0.80
	3	0.81
	4	0.80
2	1	0.84
	2	0.78
	3	0.73
	4	0.75
3	1	0.78
	2	0.73
	3	0.74
	4	0.70
Arithmetic Average:		0.773
Standard Deviation:		0.0420

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info@qai.org



Table 2- Test Results with Leather Test Shoe, Wet Condition

Specimen	Determination	Static Coefficient of Friction
4	1	0.82
	2	0.87
	3	0.88
	4	0.92
6	1	0.87
	2	0.88
	3	0.88
	4	0.90
6	1	0.82
	2	0.85
	3	0.89
	4	0.87
Arithmetic Average:		0.871
Standard Deviation:		0.0294

*** END OF TEST REPORT ***

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REPORT NUMBER
QI1204452



America

PREPARED FOR
FLEXGROUND, LLC
1950 W. ROSE GARDEN LANE, SUITE 100
PHOENIX, AZ 85027

ATTENTION
BILL STAFFORD

CUSTOMER PURCHASE ORDER NUMBER
41712

REPORT DATE
APRIL 30, 2012

TÜV SÜD America, Inc.
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Plymouth, Michigan 48170 USA
Phone: 734.455.4841
Fax: 734.455.6590
www.TUVAmerica.com

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Report Number: QI1204452
April 30, 2012

REPORTED / APPROVED BY:

TÜV SÜD America, Inc.

Timothy Fouchia

Reported by: Timothy Fouchia, Test Technician
CERTIFICATION TEST PROGRAMS

A handwritten signature in black ink, appearing to read 'D. Splane'.

Approved by: David Splane, Product Safety Engineer
CERTIFICATION TEST PROGRAMS



PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

ASTM D2859-06(11), Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials

TEST SEQUENCE

Testing for ASTM D2859-06(11) was reported on April 27, 2012.

SAMPLE DESCRIPTION

Please see attached Detroit Testing Laboratory, Inc. (DTL) report number 1204H0093, Rev.1, dated 4/27/2012.



Conclusion

Test results shall be interpreted by FlexGround, LLC.

Please see attached Detroit Testing Laboratory, Inc. (DTL) report 1204H0093Rev.1, dated April 27, 2012, identified as Appendix A pages 5 through 8, for ASTM D2859-06(11) test results of FlexGround, UltraFlex, EnduraFlex, and FlexGrass, playground surfacing samples.

Appendix A: Detroit Testing Laboratory, Inc. (DTL) Report Number 1204H0093Rev.1., (4 pages).



[Handwritten signature]

DTL REPORT NUMBER
1204H0093REV.1



Since 1903

DETROIT TESTING LABORATORY, INC.

PREPARED FOR
TUV SUD AMERICA
47523 CLIPPER STREET
PLYMOUTH, MI 48170

ATTENTION
TIMOTHY FOUCHA

CUSTOMER PURCHASE ORDER NUMBER
QI1204452

REPORT DATE
APRIL 27, 2012

DTL

Detroit Testing Laboratory, Inc.
27485 George Merrell Drive
Warren, Michigan 48092 USA
Phone: 586.754.9000
Fax: 586.754.9045
www.dtl-inc.com

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DTL Report Number: 1204H0093Rev. 1
April 27, 2012

REPORTED / APPROVED BY:

DETROIT TESTING LABORATORY, INC.


David Smith, Department Manager
Materials Testing


Timothy R. Geiger, Group Manager
Materials Testing

DS/TRG/amnd jed



DTL Report Number: 1204H0083Rev.1
April 27, 2012

PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

Ignition Characteristics per ASTM D2859-06 (11)

SAMPLE DESCRIPTION

Four (4) types of pour-in-place playground surfacing materials identified as follows:
FlexGround
UltraFlex
EnduraFlex
FlexGrass

SAMPLE CONDITIONING

Prior to testing, the samples were conditioned at 23 °C ±2 °C and 60% ±5% relative humidity, as applicable.



DTL Report Number: 1204H0093Rev.1
April 27, 2012

TESTING PERFORMED

IGNITION CHARACTERISTICS PER ASTM D2859-06 (11)

Procedure All 32 specimens were aged for 2 hours at 105 °C then left to cool back to room temp in a desiccator. They were then tested.

Results

Sample ID	Observations
FlexGround	Flames went out after accelerant burned off.
UltraFlex	
EnduraFlex	
FlexGrass	

Requirements A single specimen has passed the test if the charred portion of the tested specimen shall not extend to within 25 ± 0.5 mm (1.0in) of the edge of the hole in the steel frame at any point.

Conclusion The specimens met the stated requirements.

SAMPLE DISPOSITION

Samples will be retained at Detroit Testing Laboratory, Inc. for 30 days and then disposed of, unless otherwise specified by client.

Remark Per customer email request on 4/26/12, revision 1 of this test report was generated to correct sample description/types with capitalized letters

TEST EQUIPMENT

Detroit Testing Laboratory, Inc.'s calibration system meets the requirements of ISO 17025:2005.

DTL ID	Description	Manufacturer	Model	Calibration Due
10890	Hydra Data Bucket	Fluke	2625A	02/13

Detroit Testing Laboratory, Inc.

Test Report

Page 4 of 4



REPORT NUMBER
QI1212574



America

PREPARED FOR
FLEXGROUND, LLC
1809 WEST 4TH STREET
TEMPE, AZ 85281

ATTENTION
JESSICA KILE

CUSTOMER PURCHASE ORDER NUMBER
121812B

REPORT DATE
JANUARY 30, 2013

TÜV SÜD America, Inc.
47523 Clipper Street
Plymouth, Michigan 48170 USA
Phone: 734.455.4841
Fax: 734.455.6590
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REPORTED / APPROVED BY:

TÜV SÜD America, Inc.

Timothy Fouchia

Reported by: Timothy Fouchia, Test Technician
CERTIFICATION TEST PROGRAMS

Keith Shelton

Approved by: Keith Shelton, Department Manager
CERTIFICATION TEST PROGRAMS



PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

ASTM D2859-06(11), Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials

TEST SEQUENCE

Testing for ASTM D2859-06(11) was reported on January 30, 2013.

SAMPLE DESCRIPTION

Please see attached Element Materials Technology (Element) report number EWA004203P, Rev.1, dated 1/30/2013.



Conclusion

Test samples met the requirements specified.

Please see attached Element Materials Technology (Element) report number EWA004203P, Rev.1, dated 1/30/2013, identified as Appendix A pages 5 through 9, for ASTM D2859-06(11) test results of Xtreme Surfacing, playground surfacing samples.

Appendix A: Element Materials Technology (Element) report number EWA004203P, Rev.1, (5 pages).



Element Materials Technology P 608 704 9000
27488 George Merrell Drive F 608 784 0046
Warren, MI info.warren@element.com
48082-2700 USA element.com

REPORT NUMBER: EWA004203P Rev1

TUV SUD America
47523 Clipper Street
Plymouth, MI 48170

Date: January 30, 2013
Purchase Order Number: 2000002265

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It is our policy to retain components and sample remnants for a minimum of 30 days from the report date, after which time they may be discarded. The data herein represents only the item(s) tested. This report shall not be reproduced, except in full, without prior permission of Element Materials Technology.

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EAR-CONTROLLED DATA
January 30, 2013

REPORTED / APPROVED BY:

Prepared By: 
Jean DeKeyser,
Principal Administrative Assistant

Approved By: 
David Smith, Laboratory Manager
MATERIALS TESTING

Approved By: 
Timothy R. Geiger, Department Manager
MATERIALS, MECHANICAL AND INTERIORS



EAR-CONTROLLED DATA
January 30, 2013

PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s). All results relate only to the items tested, as listed within this report.

WORK REQUESTED / REFERENCE DOCUMENT(s)

Ignition Characteristics per ASTM D2859-06(11)

SAMPLE DESCRIPTION

Eight (8) samples were presented for testing; five (5) 9 x 9 inches square x 2 inches thick and three (3) 12 x 12 inches square x 2 inches thick
Samples, as received, were identified as "Xtreme Surfacing Playground Tiles"

SAMPLE CONDITIONING

Prior to testing, the samples were conditioned at 23 °C ±2 °C and 50% ±5% relative humidity, as applicable.



EAR-CONTROLLED DATA
January 30, 2013

TESTING PERFORMED

IGNITION CHARACTERISTICS PER ASTM D2859-08(11)

Requirements

The charred portion of the tested specimen shall not extend to within 25 ±0.5mm of the edge of the hole in the steel frame at any point

Results

Specimen	Burn Time (Seconds)	Distance to Edge of Frame (mm)
Sample ID: 12 inches x 12 inches		
1	72	100
2	98	98
3	82	96
Sample ID: 9 inches x 9 inches		
1	67	96
2	75	96
3	81	95
4	70	97
5	63	95

Conclusion

The test samples met the requirements specified.



EAR-CONTROLLED DATA
January 30, 2013

TEST EQUIPMENT

All test instruments were calibrated and are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) or another National Measurement Institute or through consensus standards. The Element Warren calibration system meets the requirements of ISO 17025:2005.

ID	Description	Manufacturer	Model	Calibration Due
EC144	Chamber	Thermotron	11-64-CFA-15-15	5/13
14285	Stop Watch	VWR / Control Company	62379-460	12/13
13126	Stainless Steel Rule	Officemate International Corp.	MRU-12	ICG

Initial Calibration Only

Remark: Revision 1 of this test report was generated to correct sample description.



REPORT NUMBER
QI1204428 Rev. 1



America

PREPARED FOR
FLEXGROUND, LLC
1950 W. ROSE GARDEN LANE, SUITE 100
PHOENIX, AZ 85027

ATTENTION
BILL STAFFORD

CUSTOMER PURCHASE ORDER NUMBER
41612

REPORT DATE
APRIL 24, 2012

TÜV SÜD America, Inc.
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REPORTED / APPROVED BY:

TÜV SÜD America, Inc.

A handwritten signature in cursive script that reads "Timothy Fouchia".

Reported by: Timothy Fouchia, Test Technician
CERTIFICATION TEST PROGRAMS

A handwritten signature in cursive script that reads "David Splane".

Approved by: David Splane, Product Safety Engineer
CERTIFICATION TEST PROGRAMS



PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

ASTM E303-08, Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester

TEST SEQUENCE

Testing for ASTM E303-08 was performed on April 19, 2012.

SAMPLE DESCRIPTION

Please see attached QAI Laboratories (QAI) report.



TEST REPORT



9325 North 162nd E. Ave.
Kirkland, OK 74116
817.477.4333 fax 817.417.0407 fax

CLIENT:
TUV SUD America, Inc.
47523 Clipper St.
Plymouth, MI 48170

Attn: Timothy Fouchia

Test Report No: TJS53-1	Date: April 19, 2012
-------------------------	----------------------

SAMPLE ID: The test samples are identified as: FlexGround

SAMPLING DETAIL: Test samples were submitted to the laboratory directly by the client. No special sampling conditions or sample preparation were observed by QAI.

DATE OF RECEIPT: Samples were received at QAI on April 16, 2012 in good condition.

TESTING PERIOD: April 19, 2012

AUTHORIZATION: Purchase Order: QI1204428 and Proposal Number FB041212-2 signed by Timothy Fouchia of TÜV SÜD America, Inc., dated April 16, 2012.

TEST PROCEDURE: ASTM E-303-08, *Measuring Surface Frictional Properties Using the British Pendulum Tester*

TEST RESULTS: Detailed test results are presented in the subsequent pages of this report.

Prepared By:

Signed for and on behalf of
QAI Laboratories, Inc.

Linda Lewis
Materials Technician

S. Scott Parkhurst
Plumbing and Materials Manager

Page 1 of 2
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WWW.QAI.ORG
info@qai.org



TUV SUD America, Inc.
Report No.: T30533-1
April 19, 2012
Page 2 of 2

Test Procedure and Results

ASTM E 303 British Pendulum Test:

Sample ID: FlexGround
Laboratory Temperature: 70°F 50%R.H.
Type of Material Surface: Mod to large pellets molded smooth surface
Age of Rubber Slider: May 2011

Swing	British Pendulum Number	
	Wet	Dry
1	19	30
2	20	28
3	22	30
4	20	28
Average	20.25	29

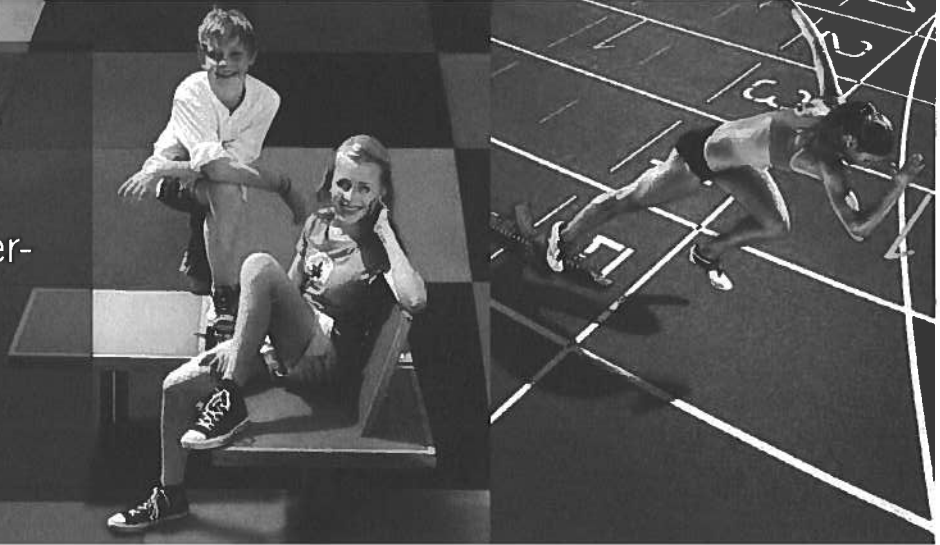
End of Report

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WWW.QAI.ORG
info@qai.org

Melos Granules EPDM Standard

»Elastic allrounder
for use in sports,
leisure and commer-
cial flooring«



Freedom to be creative: EPDM Granules by Melos.

Motivation in sport, enjoyment of leisure, harmony at the workplace – we have many good reasons for manufacturing granules in the most attractive colours. As a leading manufacturer in the field of coloured rubber granules for bounded floor covering systems we are committed to offering the highest quality and the widest possible range of colours. In addition to our range of 24 standard colours we will be glad to create individual special colours on request for unique and representative designs both indoors and out.

High availability, flexible delivery service and a high colour resistance are further compelling advantages of coloured EPDM granules.



Durable



Weatherproof



Virgin material



24 standard colours



Flame retardant



Eco-friendly and harmless to health



Inexpensive to look after and maintain



Sensible use of resources in the long term



























Consistently high quality



» Consistently high quality

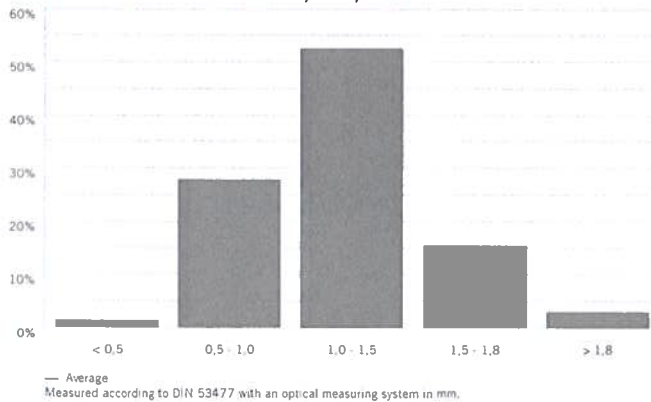
Coloured granules have to withstand sophisticated conditions in practice. Through regular audits Melos ensures a permanently high-performing product as well as a consistently high product quality.

» **Standard colours**

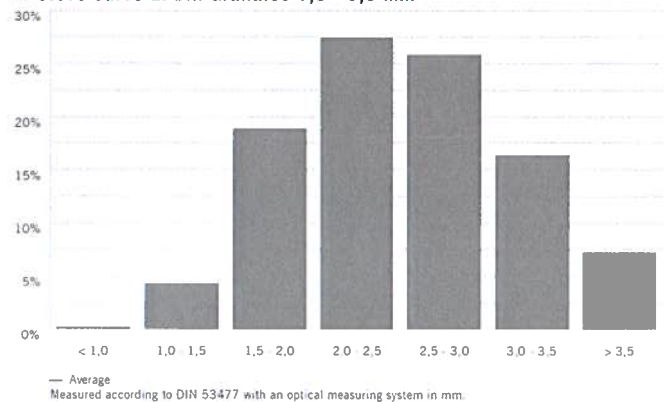
 Red Code: 46 0000 RAL: 3016	 Beige Code: 46 2100 RAL: 1001	 Purple Code: 46 3400 RAL: 4005	 Signal Green Code: 46 4600 RAL: 6032	 Earth Yellow Code: 46 5700 RAL: 1006
 Blue Grey Code: 46 1000 RAL: 5014	 Eggshell Code: 46 2400 RAL: 1015	 Light Grey Code: 46 3800 RAL: 7035	 Reseda Green Code: 46 4700 RAL: 6011	 Teal Code: 46 5800 RAL: 5024
 Capri Blue Code: 46 1500 RAL: 5019	 Brown Code: 46 2800 RAL: 8024	 Black Code: 46 3900 RAL: 9004	 Turquoise Blue Code: 46 5400 RAL: 5018	 Rainbow Blue Code: 46 5900 RAL: 5017
 Sky Blue Code: 46 1800 RAL: 5015	 Pearl Code: 46 2900 RAL: 1013	 Patina Green Code: 46 4000 RAL: 6000	 Orange Code: 46 5500 RAL: 2004	 Rose Code: 46 7500 RAL: 3017
 Yellow Code: 46 2000 RAL: 1012	 Slate Grey Code: 46 3100 RAL: 7015	 May Green Code: 46 4100 RAL: 6017	 Rainbow Green Code: 46 5600 RAL: 6025	

RAL - Approximate value!

» **Sieve curve EPDM Granules 0,5 - 1,5 mm**



» **Sieve curve EPDM Granules 1,0 - 3,5 mm**



» **Product information**

Property	Unit	Value*	Test standards
Density	g/cm ³	1,6	DIN EN 1183-1
Polymer content	%	> 20	DIN EN ISO 3451-1
Hardness	Shore A	60 (optional 90)	DIN ISO 7619-1
Tensile strenght	MPa	> 6	DIN 53 504
Elongation at break	%	> 700	DIN 53 504
Grain size	mm	0,5 - 1,5 and 1,0 - 3,5 (other grain sizes are available on request)	
Polymer base	EPDM		
Flame retardance	Flame-retardant material compliant with class C _s -s1 (DIN EN 13501-1) available		

» **Environmental and health tests**

Test in accordance with	Conformity
EN 71-3	Fulfils the requirements of the toy safety standard with respect to the migration of certain components.
ZEK 01.4-08	Fulfils the requirements of the category 1 for materials that can be put in the mouth.

*Technically related variations in property and colour and production-related variations as well as innovations and technical changes are reserved. Products shown may differ in configuration from the actual product.

! The RAL colour specifications are non-binding approximations. Differences in colour of the images are due to printing process.



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FlexGround Standard

Poured In Place Safety Surfacing

Manufacturer's Specifications

This document provides the specifications for a poured in place safety surfacing system composed of a wearing layer upper membrane and an underlying impact attenuation cushion layer.

There may be variations in the final specifications as required by the Client.

PART 1 – GENERAL

1.01 Work Included

Provide all labor, materials, and tools necessary for the complete installation of a poured in place safety surfacing system as outlined in these specifications. The system should consist of but not necessarily be limited to the following:

- A. Section includes: Resilient playground surfacing poured in place system.
- B. Related work: Playground equipment and resilient playground surfacing sub base.
- C. Quality Assurance: Manufacturer should have manufactured and installed playground poured in place safety surfaces for a minimum of 5 years, and meet current ASTM F 1292 Test Criteria. The installation of the poured in place product should be completed by FLEXGROUND. Manufacturer's detailed installation procedures should be submitted to the Architect and made part of the Bid Specifications.

1.02 Submittals

Prospective manufacturers and/or installers of the poured in place safety surfacing system should be required to comply with the following:

- A. The manufacturer must be experienced in the manufacturing of a poured in place safety surfacing system and provide references of five (5) specific installations in the last three (3) years.
- B. The installer must provide competent workmen skilled in this specific type of poured in place safety surfacing system installation. The designated supervisory personnel on the project must be competent in the installation of this material, including mixing of the materials, and spreading and compacting the materials correctly.

- C. Installation should be in accordance with ASTM F1292 for Impact Attenuation of surface system under and around playground equipment. The poured in place system to be installed in compliance with the Critical Fall Height as determined by the Playground Equipment.
- D. IPEMA Certification specific to poured in place safety surfacing.
- E. IPEMA certification specific to ½" layer of 1-3mm EPDM over cushion layer. .5mm TPV or EPDM IPEMA certification not acceptable.
- F. Manufacturer should provide written instructions for recommended maintenance practices.
- G. Manufacturer should submit color samples for customer verification. Color samples shall be 6" x 6" of ½" top wearcourse layer with aromatic or aliphatic binder – per client selection or specification; or 8 oz clear plastic jars with specified colored granules. Sample submittal format per client preference.

1.03 Definitions

- A. EPDM granules: EPDM rubber (ethylene propylene diene monomer(M-class) rubber), a type of synthetic rubber, is an elastomer characterized by a wide range of applications. The M refers to its classification in ASTM standard D-1418; the M class includes rubbers having a saturated chain of the polymethylene type.
- B. Critical Fall Height: A critical fall height (CFH) is the maximum height of fall from play equipment to the ground. It is important to note that safety surfaces do not prevent injury but aim to lessen the severity of any injury that may occur on falls from height.
- C. Fall Height: Fall height is a measurement defined as the "vertical distance between a designated play surface and the protective surfacing beneath it.
- D. SBR: Styrene-butadiene or styrene-butadiene rubber (SBR) describe families of synthetic rubbers derived from styrene and butadiene

1.04 ASTM Testing Standards – FlexGround Standard meets or exceeds all required ASTM standards below.

- A. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
- B. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials
- C. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester
- D. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment
- E. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment

ARIZONA

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NEVADA

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702.303.8701

- F. ASTM C1028 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull Meter Method – This standard replaces ASTM D2047
- G. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers- Tension

1.05 WARRANTY AND MAINTENANCE

The bidder and/or poured in place safety surfacing manufacturer must provide the following:

- A. The poured in place safety surfacing manufacturer should provide a warranty to the owner that covers defects in materials and workmanship of the rubber for a period of **FIVE (5) years** from the date of Substantial Completion.
- B. The manufacturer's warranty should include general wear and tear. The warranty should specifically exclude vandalism, high heel punctures, acts of war or acts of nature beyond the control of the owner or the manufacturer.
- C. All poured in place warranties should be limited to repair or replacement of the affected areas and should include all necessary materials, labor, transportation costs, etc. to complete said repairs.
- D. The manufacturer should instruct the owner's personnel on proper maintenance and repair of the FLEXGROUND STANDARD safety surface.
- E. All warranties, expressed or implied, are contingent upon the following: 1. installation being performed by FLEXGROUND, 2: Owner, at owner's expense, having a Flexcoat performed at 2 year intervals from date of substantial completion, and 3. Full payment by the owner of all pertinent invoices and adherence to any required maintenance procedures.

Part 2 – FLEXGROUND STANDARD MATERIAL

The FLEXGROUND STANDARD poured in place safety surfacing system should be in accordance with the following:

- A. A dual durometer poured in place system with a wearing layer upper membrane and an underlying impact attenuation cushion layer. The finished surface should be porous and capable of being installed at varying thickness to comply with the Critical Fall Height requirements of the playground equipment.
- B. FLEXGROUND primer is a 100% solids urethane primer/sealer. It is designed with low viscosity and penetrating abilities making this an ideal priming urethane.
- C. The cushion layer should be a mixture of black recycled rubber mixed with a 100% solids moisture cured aromatic Polyurethane binder (100 pounds of rubberized cushion layer to 14

pounds of binder) installed at the appropriate thickness. As an upgrade, a 5/8" chunk rubber derived only from high quality pre-consumer recycled rubber containing EPDM is available. The cushion layer should be porous.

- D. The FLEXGROUND STANDARD wearing surface should be manufactured from 1-3mm EPDM virgin colored rubber granules bonded by FLEXGROUND binder, 100% solids moisture cured Aliphatic Polyurethane binder (110 pounds of EPDM to 22 pounds of binder), and applied to a minimum thickness of ½" (12.7 mm) over the cushion layer.
- E. The system color should be selected from Manufacturer's Color Chart by owner prior to bid.

PART 3 – SITE PREPARATION AND BASE

The FLEXGROUND site preparation and base should be in accordance with the following:

- A. The sub-base will have a slope of 2%.
- B. The base aggregate should consist of a minimum of four inches (4") of ¾" Class 2 aggregate compacted to 95%. Finish slope of porous aggregate should be 2% from the centerline of the area to the perimeter, and the grade should not vary more than a quarter inch (¼") in ten feet (10').
- C. The sub base should be installed in two inch (2") lifts to appropriate thickness.
- D. The sub-base should be compacted using vibrating tamper, to approximately 95% Proctor density.
- E. The sub-grade should no longer have any vegetation.
- F. Sublevel grade is to be compacted prior to the ABC aggregate installation. Particular attention should be paid to areas of disturbed earth such as where footers for playground equipment enter the ground. Concrete used to fill said areas/footers should be poured to the top of sublevel surface.
- G. The sub-base installer and architect will accept the aggregate base in writing prior to the installation of the poured in place system.
- H. Any alterations must be agreed between all parties.
- I. Hard Base Construction: For concrete surfaces, shot blast, acid etch or power scarify as required to obtain optimal bond of the Cushion Layer to the concrete. Remove sufficient material to provide a sound surface, free of glaze, efflorescence, or form release agents. Remove grease, oil, and other penetrating contaminants.
- J. For concrete or asphalt surface that is not enclosed (i.e. a curb to curb pour), the concrete shall have keyway cuts 1.5" wide by 1.5" deep so that the system can be bull nosed down into the notch area.

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Lic #0076764 & 0077757
702.303.8701

PART 4- EXECUTION AND INSTALLATION

The poured in place safety surfacing installer should strictly adhere to the installation procedures outlined under these sections. Any variance from these requirements should be accepted in writing by the manufacturer's onsite representative and submitted to the architect/owner, verifying that the changes do not in any way affect the warranty.

4.01 Primer

- A. A urethane primer should be applied to concrete, asphalt or wood surfaces at a rate of 200-250 square feet per gallon. The entire area does not need to be primed at once, instead, prime about 700 square feet at a time in immediate advance of rubber installation. This procedure should be continued until all areas are complete.
- B. The urethane primer should be applied to any playground equipment that will be surrounded by the poured in place safety surfacing system.

4.02 Cushion Layer

- A. The components of the poured in place safety surfacing should be mixed on site in a mixer to ensure a comprehensive mix according to manufacturer's instructions.
- B. The cushion layer comprised of SBR buffings/recycled rubber shall be mixed with the aromatic moisture cure polyurethane binder at a rate of 14% of the total weight of the material thoroughly so that the binder is evenly dispersed into the rubber base. Or;
- C. The cushion layer comprised of non-tire derived SBR & EPDM Chunk Rubber shall be mixed with the appropriate amount of urethane so that the binder is evenly dispersed into the rubber base.
- D. The cushion layer mix should then be spread and troweled to the desired depth and allow to cure for 24 hours.

4.03 Wear Course Layer

- A. The wear course layer should be mixed with 1-3mm EPDM granules and ALIPHATIC urethane binder at a rate of 20% of the total weight of the materials so the granules are covered thoroughly and evenly.
- B. The wear course layer mix should be spread and troweled to a depth of a half inch ($\frac{1}{2}$ ").
- C. Where seams are required due to color change, a step configuration will be constructed to maintain wear surface integrity. Step seam shall overlap a minimum of 4". Butt seams are not acceptable.
- D. The finished texture shall be slip resistant, smooth and even.
- E. The poured in place surface should be allowed to cure for 48-72 hours or until dry to the touch.

PART 5- SITE (GENERAL)

- A. Trailer/ Large truck access will be necessary for the installation. In the case that access for trailer/truck is not available the owner or general contractor will be responsible for transporting material to the job site.
- B. Crew is responsible for protecting the surface only while present on site. General Contractor or owner shall be responsible for the security of the surfacing overnight during installation, as well as during the product's cure period after completion of the install.
- C. Crew will leave site clean and shall remove all trash and debris.
- D. Owner/General contractor shall provide a dumpster for all waste and trash.

ARIZONA

Lic #288687 & 283192
602.954.0000

CALIFORNIA

Lic #1003439
916.474.5431

NEVADA

Lic #0076764 & 0077757
702.303.8701

**City of Costa Mesa
Maintenance Services Division
Standard Irrigation Hardware**

Mainlines:

Up to 2" – Schedule 40 PVC Pipe (same for non-potable sites)
2 ½ "and Above – Class 315 PVC Pipe (same for non-potable sites)

Lateral Lines:

Up to 2" – Schedule 40 PVC Pipe (same for non-potable sites)
2 ½ "and Above – Class 315 PVC Pipe (same for non-potable sites)

Irrigation Controller Specifications:

Outdoor Irrigation Controller – Parks & Sports fields:

Rain Bird Tech Division (1-888-444-5756) – Maxi-Peds–1–P5-NA-LK-EL24__ANT06-FM2-SPP-TP1A-RMK450nARR (**Bold area dependent upon station count. Verify specifications with Rain Bird Area Manager, prior to purchasing**). **All enclosures to be top-entry**. Inspection and certification are required after installation. Please contact Jeff Evans – Public Agency Area Manager – 1-509-954-2008. The contractor is to install two (2) additional station wires and two (2) additional common wires.

Outdoor Irrigation Controller – Facilities, Fire Stations, Medians, Parkways:

John Deere Green Tech Division (949-455-7465) – Rain Master Irrigation Controllers. **Verify specifications with District Sales Manager, prior to purchasing**). **All enclosures to be top entry**. Inspection and certification are required after installation. Please contact John Ross – District Sales Manager – 1-714-585-9352. The contractor is to install two (2) additional station wires and two (2) additional common wires.

Indoor Controller Specifications:

John Deere Green Tech Division (949-455-7465) – Rain Master Irrigation Controllers. **Verify specifications with District Sales Manager, prior to purchasing**). Inspection and certification are required after installation. Please contact John Ross – District Sales Manager – 1-714-585-9352. The contractor is to install two (2) additional station wires and two (2) additional common wires.

Backflow Prevention Devices:

Febco 825Yor 825YA (size dependent upon the needs of the project)

Backflow Enclosure:

Guardshack – Hinged (size and type dependent upon the needs of the project)
All Spec – Hinged (size and type dependent upon the needs of the project)

**City of Costa Mesa
Maintenance Services Division
Standard Irrigation Hardware**

Ball Valves:

Nibco – T-580 (bronze – size dependent upon site location)

Gate Valves:

Nibco – T113IRR– K – 200 PSI CWP (Bronze Cross – size dependent upon site location)

Electric Remote Control Valves:

Rain Bird GB (size dependent upon site location – brass casing) - Potable

Rain Bird GB-R (size dependent upon site location - brass casing) – Non Potable

Quick Coupler Valves:

Rain Bird 33-DLRC & 44-LRC (size dependent upon the site location) - Potable

Rain Bird 33-DNP & 44-NP (size dependent upon the site location) – Non Potable

Pop Up Spray Heads:

Rain Bird 1800 SAM-PRS – Bottom Inlet Only (sizes dependent upon the site location) with 1800 PCS compensating screens

Spray Heads are to be specified reclaimed for non-potable projects.

Pop Up Spray Nozzles:

MPR nozzles, U-nozzles, VAN nozzles, HE-VAN nozzles, Rotary nozzles, and R-VAN nozzles are acceptable nozzles dependent upon the configuration of the irrigation spray heads.

Stream Bubblers:

Rain Bird – Body Assembly – Bottom Inlet Only. 1800 Series (sizes dependent upon the site location).

Rain Bird – PA-80 (plastic adapter) for potable or PA-8S-NP (plastic adapter) for non-potable.

Rain Bird – 1400 Series – Pressure Compensating Full-Circle Bubblers.

Rain Bird – 1800 PCS – Pressure Compensating Screens

Rain Bird – XPCN Series Nozzles (Low Volume Spray Nozzles)

**City of Costa Mesa
Maintenance Services Division
Standard Irrigation Hardware**

Drip Irrigation Systems:

All potable drip irrigation and components to be Rain Bird Products. All drip shall be sub-surface.

All non-potable drip irrigation and components to be Rain Bird Products. All drip shall be sub-surface.

Rotors:

Hunter PGP Ultra (sizes and nozzles dependent upon the site location)
Hunter I-20 Series (sizes and nozzles dependent upon the site location)
Hunter I-25 Series (sizes and nozzles dependent upon the site location)
Hunter I-40 Series (sizes and nozzles dependent upon the site location)
Hunter I-60 Series (sizes and nozzles dependent upon the site location)
Hunter I-90 Series (sizes and nozzles dependent upon the site location)
Rain Bird 3500 Series (sizes and nozzles dependent upon the site location)
Rain Bird 5000 Series (sizes and nozzles dependent upon the site location)
Rain Bird 5500 Series (sizes and nozzles dependent upon the site location)
Rain Bird 6504 Series (sizes and nozzles dependent upon the site location)
Rain Bird 8005 Series (sizes and nozzles dependent upon the site location)

Rotors are to be specified reclaimed in non-potable projects.

Valve Boxes:

NDS Pro Potable – with lockable lid (sizes and variations dependent upon the site location)

NDS Pro Non-Potable – with lockable lid (sizes and variations dependent upon the site location)

Wire Connectors:

Spears DS-400

Master Valves:

Bermad 910 Series – Normally open (quick coupler valves) or normally closed. Read in U.S. gallons.

Netafim - Normally open (quick coupler valves) or normally closed. Read in U.S. gallons.

PRE BID RFI LOG
COSTA MESA CITY PROJECT 20-15 LIONS PARK PLAYGROUND IMPROVEMENTS
570 WEST 18TH STREET, COSTA MESA

ID	INTERPRETATION REQUESTED	RESPONSE	ADDRESSED BY
001	6-5 Liquidated Damages: Please clarify that the liquidated damages per calendar day will be \$1,800,000.00	The Liquidated Damages are \$1,800.00 per calendar day	Addendum No. 1
002	Please confirm that the City will be purchasing the CXT Pre-fab building directly. This will not be the contractor's responsibility.	The Contractor will be responsible for purchasing and procuring the prefab restroom per the order form and installing the building with All the structural, plumbing, lighting, signage and furnishing components and protective padding on the Davis field side, installing new chain link fence at Davis Field interface the restroom. The scope of work also includes submitting the shop drawings to the Building Division and obtaining the Building Permit from the City. The Restroom Building Site Preparation note #4 has been updated to reflect the specs.	Addendum No. 1
003	Please clarify if this project address to the Davis-Bacon Act prevailing wage scale or the rates set by the California Labor Code, Department of Industrial Relations. The sample contract on page 477 of the specifications mentions Davis-Bacon but I do not believe it is applicable to this project.	Davis Bacon Act does not apply for this project; however, this Project is a "public work" subject to prevailing wage requirements. Pursuant to provisions of Sections 1770 et seq. of the California Labor Code, all workers employed on the Project shall be paid not less than the general prevailing rate of per diem wages, as determined by the Director of the Department of Industrial Relations for work of a similar character in the locality in which the work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work.	Addendum No. 1
004	There is no irrigation plans, specs, and detail provided.	No landscape plans, specifications or details will be provided. Contractor to make modifications to the existing system to meet the new site to include the installation of all lines, valves, spray heads, drip tubing, quick couplers and wires. Refer to existing irrigation record drawings and library as-built drawings for information that are attached to Addendum No. 2. Hardcopies can be found at the Maintenance Yard, contact: Jim Ortiz.	Addendum No. 1 and 2
005	Please specify the material for Geotextile, which is shown in detail 4, sheet CD.1	Use Mirafi® 180N is a needlepunched nonwoven geotextile. See attached cut sheet and updated sheet CD.1	Addendum no. 5
006	The title of specs section 329010 and the specs section 329010, article 3.01 shows 90-days maintenance. However, specs section 329010, page 2, article 2.01 shows 1 year maintenance. Please clarify.	The 90 day maintenance is what the contractor will be responsible for until the site is handed over to the city, however, the contractor is still responsible to replace any failed all plant materials; trees, shrubs, and groundcover for one year.	Addendum No. 5
007	The symbol of sod shows on planting plans sheet LP. 1, LP. 2 are different from sod symbol shown on sheet LP.4 Planting legend. Please clarify	See attached updated sheets LP. 1, LP.2 & LP. 4	
008	Refer to planting plan sheets LP. 1, LP. 2, there is a symbol like sod covered all ground cover areas. Please clarify	See attached updated sheets LP. 1 & LP.2	Addendum no. 5
009	Please clarify who will be providing a temporarily fencing for the project.	It is the responsibility of the contractor to provide temporary fencing for the project.	Addendum No. 1
010	Does the contractor needs to be prequalified to bid the job? if yes, what is the prequalification process.	Information for Bidders- Section 2 and Addendum No. 1 addressed the question.	Addendum No. 1
011	The existing irrigation record drawing and library as-builts drawings identify locations but not the existing conditions of the existing system. If the scope requires modifications will the city allow an additional job walk to inspect the system? if a job walk will not be allowed then additional information is required to determine the modification scope.	Non-mandatory job walk meeting was held on Wednesday, August 19, 2020 at 11 A.M. to review the existing irrigation system. Refer to the Scope of Work on Sheet T.1 for note below: "IRRIGATION; THE CONTRACTOR IS RESPONSIBLE TO MAKE MODIFICATIONS TO THE EXISTING SYSTEM TO MEET THE NEW SITE DESIGN, TO INCLUDE ADJUSTMENT, RELOCATION AND INSTALLATION OF ALL LATERAL LINES, SPRAY HEADS, DRIP TUBING, QUICK COUPLERS AND WIRES AROUND THE PERIMETER OF THE WORK AREA TO ENSURE FULL COVERAGE OF ALL PLANTING AREAS. REFER TO EXISTING IRRIGATION RECORD DRAWINGS FOR THE PARK AND LIBRARY AS-BUILT DRAWINGS FOR INFORMATION, AS WELL AS FIELD NOTES. CONTACT JIM ORTIZ AND OR PHILLIP WILLEY WITH THE CITY FOR EXISTING SYSTEM CONDITIONS." In addition, record drawings, library as-built drawings, and field notes for reference are provided.	Addendum No. 1 and No. 3

PRE BID RFI LOG
COSTA MESA CITY PROJECT 20-15 LIONS PARK PLAYGROUND IMPROVEMENTS
570 WEST 18TH STREET, COSTA MESA

ID	INTERPRETATION REQUESTED	RESPONSE	ADDRESSED BY
012	Would it be possible to allow prime contractors to list the sub name, city and license number of each sub and then turn in the full list within 24 hours? (2) Also, does the bid form need to be typed or can it be handwritten?	In compliance with the "Subletting and Subcontracting Fair Practices Act" being Sections 4100-4113 of the Public Contract Code of the State of California, and any amendments thereto, each bidder shall set forth below the name and location of the place of business 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 in an amount in excess of one-half (1/2) of one percent (1%) of the prime contractor's total bid or in the case of bids for the construction of streets or highways, including bridges, in excess of one-half (1/2) of one percent (1%) of the prime contractor's total bid or ten thousand (\$10,000) dollars, whichever is greater. Bidder shall further set forth the portion of the work which will be done by each such subcontractor. Only one subcontractor for each such location shall be listed. The Bid form can be handwritten.	Addendum No. 5
013	G.1/14 calls for the install of shade structure 'A' per detail 1 on CD.7 but there is no detail on CD.7. Please provide details for shade structure installation. Also, is the shade structure owner furnished/contractor installed? Or is it contractor furnished and contractor installed?	The cut sheet and product data for the shade structures provided with addendum No.3 for contractor's references. Contractor to request shop drawings from the manufacturer for approval. The note on G.1/14 has been revised. There will be no details provided for the shade structure, this will be a deferred submittal, provided by the Prefab supplier. The shade structure will be furnished and installed by the contractor.	Addendum No. 3 and Addendum No. 5
014	Please confirm the quantities of the precast park benches as well as trash/recycling receptacles. Page LC.1/2a states there are 11 benches on the sheet but I count 12 and detail 2b shows 2 areas of trash/recycling but only one area can be found on the plan.	LC.1 quantities for the bench and trash & recycling have been removed. See updated sheet LC.1 for reference.	Addendum No. 5
015	Page 3 of addendum 1 states that we are to 'install park sign and materials including lighting. All permitter ADA parking and park hours' but there is no signage plan or spec. Please provide more info on what signage is required and if it's install only or the prime will have to supply.	The park signage note has been removed. See attached updated sheet T. 1.	Addendum no. 5
016	We understand this is rebid from March 6, 2020. Can you please let us know the original bid result? What changed from the original bid to this bid? Why is there a re-bid?	The scope of work, the bid result, project specifications, plans, and addenda for the City Project No. 20-04 can be downloaded from here: https://www.ciplist.com/plan/?Costa%20Mesa/city/11556/plan/3351 The link with the scope of work and construction documents for the project Lions Park Playground Improvement Project - City Project No. 20-15 can be downloaded from here: https://www.ciplist.com/plan/?Costa%20Mesa/city/11556/plan/3602 The City rejected all bids at the May 5th Council Meeting. Here is the link to the city council report where you can find the answers to your other questions: http://ftp.costamesaca.gov/costamesaca/council/agenda/2020/2020-05-05/NB-1.pdf	Addendum no. 5
017	Per Keynote 19, new water service is to be established. Please confirm if that's the case and advise what is to be done with the existing service on the corner of Park Ave and 18th Street.	Yes, new water service, including back flow and water meter to be constructed per a improvement plan. Contractor to remove existing back flow and meter. Connect to existing service on the corner of 18 th and Park.	Addendum no. 5
018	(1). We are a subcontractor bidding on the Lyons Park Playground Improvements, City Project No. 20-15. We are looking at Demo, Cleaning and Earthwork. We have concerns with complying with the hauling requirements in your General Provisions Part 1, 2-5.4 Haul Routes which states: "The City of Costa Mesa requires that all hauling activity in Costa Mesa comply with one of the waste hauling options for your construction and demolition related project". The Franchise Waste Hauler's appear to be only municipal waste trash haulers. The self-haul permit appears to be geared to small remodel/demo projects and requires truck ownership or a rented truck with a rental agreement. This project is a City Public Works Project with a sizeable quantity of C&D Demo, green waste, grass and PCC.	The City of Costa Mesa Waste Hauling requirement has been removed from the contract Documents. 1. Note has been added to the specifications; "1.3 CLEANUP AND REPAIR The Contractor, at the end of each work day, shall dispose of all removed materials from the site. The Contractor also shall protect the site and the new improvements from vandals or other damages at all times until City acceptance. This CIP project is not subject to waste hauling provisions. "	Addendum No.5

PRE BID RFI LOG
COSTA MESA CITY PROJECT 20-15 LIONS PARK PLAYGROUND IMPROVEMENTS
570 WEST 18TH STREET, COSTA MESA

ID	INTERPRETATION REQUESTED	RESPONSE	ADDRESSED BY
019	<p>(2). Site Preparation Notes for Restroom provided in Addendum 1 conflict with the soils report by Strata-Tech, Inc dated 5/4/2018. The soils report calls for a 2' compacted fill blanket at least 2' below the bottom of footings. Average removal depth is estimated at 4'. They also call out to go 5' outside.</p> <p>The Site Prep Notes call to compact to 95% and 1' over in all directions, these notes do not call for Over-ex & Recompact. The Technical Specifications page 4 call for 3' outside the building footprint</p> <p>What OX requirements do you want us to use for the building pad?</p>	<p>2. Follow the soils report, use 4 foot average removal depth from existing grade for Restroom building and go out 5 feet. The Restroom Building Site Preparation note #4 has been updated to reflect the specs; "4. COMPACT 3 FEET OVER IN ALL DIRECTIONS (OVER BUILD)."</p>	Addendum No. 5
019	<p>(3). What depth of Over-ex do you want us to use for Hardscape Areas? The soils report estimates 1' to 2' of removals. There are only 2 borings, neither shows depth of fill. How are we to quantify the OX for hardscape without additional borings plotted on a site plan that is to scale with a correct directional arrow? Can you specify a depth of OX for hardscape that would be acceptable to the City so everyone bids the same?</p>	<p>3. Use 2 foot Overex under hardscape areas.</p>	Addendum No. 5
020	<p>1. Please provide information on existing irrigation records drawings and library as-built drawings. To provide an equal bidding opportunity for all contractors, please consider implementing an allowance of some degree to the irrigation portion of the project.</p>	<p>The existing irrigation record and library as-built drawings were provided with the Addendum No. 2.</p>	Addendum No. 1 and 2 and Addendum no. 5
021	<p>1. We were told that there were two areas where the previous project had cut off valves. How are we to determine where to connect these lines back?</p>	<p>The contractor is responsible for identifying existing deficiencies in the irrigation system and making the necessary repairs which would include installing new valves and other irrigation components as need to ensure proper irrigation to new and existing landscape. The City of Costa Mesa Irrigation Standards are attached for Contractor's use.</p>	Addendum no. 5
022	<p>2. Several areas are brown and dying. The plans state we are to maintain irrigation as needed on site. Please confirm that we only need to maintain the existing vegetation to the state that we have received it.</p>	<p>The contractor will be required to maintain the existing vegetation to the state that it was received.</p>	Addendum no. 5
023	<p>3. It appears that the existing sprinkler coverage is not sufficient to support the site as it is now. Please confirm we are not responsible for any existing inadequacies and are only responsible for adjusting the areas per the new construction work.</p>	<p>The contractor is responsible for identifying existing deficiencies in the irrigation system and making the necessary repairs which would include installing new valves and other irrigation components as need to ensure proper irrigation to new and existing landscape. The City of Costa Mesa Irrigation Standards are attached for Contractor's use.</p>	Addendum no. 5
024	<p>4. Several existing heads do not appear to be working properly. There is no way to accurately price out the project without examining each and every head. This was not possible in a simple job walk. Please confirm we are not responsible for repairing any existing issues that were present prior to our mobilization.</p>	<p>The contractor is responsible for identifying existing deficiencies in the irrigation system and making the necessary repairs which would include installing new valves and other irrigation components as need to ensure proper irrigation to new and existing landscape. The City of Costa Mesa Irrigation Standards are attached for Contractor's use.</p>	Addendum no. 5
025	<p>5. We are concerned about the integrity of the existing system. Due to these unknowns, please confirm that we are not responsible for any existing infrastructure (piping/fittings/low voltage) and only the work we need to modify to meet the new site.</p>	<p>The contractor is responsible for identifying existing deficiencies in the irrigation system and making the necessary repairs which would include installing new valves and other irrigation components as need to ensure proper irrigation to new and existing landscape. The City of Costa Mesa Irrigation Standards are attached for Contractor's use.</p>	Addendum no. 5
026	<p>6. Because there seems to be several inadequacies to the existing irrigation system, we are concerned that it will not work to just "provide modifications to the existing system to meet the new site". A design needs to be issued to ensure we have the proper amount of heads on each station and is not something that can simply be priced out as it is a guess. We recommend having all contractors include an allowance, issued by the city, in all our bids to repair or replace what may be necessary to support the new site</p>	<p>Bid Item No. 2: "IRRIGATION ALLOWANCES" has been added to the Bid Proposal. Schedule of Values and certified irrigation plans, if needed, shall be submitted to the City within two weeks after award of the contract. The Schedule of Value shall include only work related to the irrigation. Price includes the indirect cost and markup.</p>	Addendum no. 5

EXHIBIT D

BONDS

[TO BE PROVIDED FOLLOWING CITY COUNCIL APPROVAL OF THE AGREEMENT.]

PRE BID RFI LOG
COSTA MESA CITY PROJECT 20-15 LIONS PARK PLAYGROUND IMPROVEMENTS
570 WEST 18TH STREET, COSTA MESA

ID	INTERPRETATION REQUESTED	RESPONSE	ADDRESSED BY
027	<p>(1) On sheet G.1, construction note #19 calls for a new 1 1/2" water service per Mesa Water District standard 2, 3 and 18. Although the plan indicates there is an existing water meter to be adjusted to grade. And on sheet D.1 the existing backflow device is to be upgraded and the existing water meter is to be protected in place. Do we connect to the existing water meter as the plans indicates or do we connect to the water line on Park Ave?</p> <p>(2) On the list of items included in scope of work #17 calls for a new connection on 18TH Street. Please confirm.</p>	<p>Yes, new water service, including backflow and water meter to be constructed per Improvement Plan. Contractor to remove existing backflow and meter and connect to existing service on the corner of 18th and Park.</p>	<p>Addendum No.5</p>
028	<p>Sheet T.1, General Notes, note 24 state the contractor is to pay for all permits. Please clarify either the cost of the permits or if it is a no fee city permit(s).</p>	<p>The fees of the permits issued by the City are waived for the City's Projects.</p>	<p>Addendum No. 5</p>

EXHIBIT D

BONDS

FAITHFUL PERFORMANCE BOND
PUBLIC WORK

(The premium charge on this bond is \$44,500.00, being at the rate of \$25.00 per thousand of the contract price) Subject to Change Based on Final Contract Price.

KNOW ALL MEN BY THESE PRESENTS:

THAT, WHEREAS the CITY OF COSTA MESA, 77 Fair Drive, Costa Mesa, California 92626, has entered into a contract dated September 15, 20 20, which is hereby incorporated by reference herein, with Handy Industrial

hereinafter designated as the "Principal," for the work described as follows:

LIONS PARK PLAYGROUND IMPROVEMENTS PROJECT, CITY PROJECT NO. 20-15

_____ ; and
WHEREAS, said Principal is required by the terms of said contract to furnish a bond for the faithful performance of said contract.

NOW, THEREFORE, We the Principal, and Merchants Bonding Company (Mutual) a corporation organized and existing under the laws of the State of Iowa and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the CITY OF COSTA MESA in the penal sum of One Million Seven Hundred Eighty Thousand and 00/100 ----- Dollars (\$ 1,780,000.00 -----), lawful money of the United States, 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 Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, condition and agreements in the said contract and any alteration thereof made as therein provided, or his or their 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 the CITY OF COSTA MESA, 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.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or 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 the work or to the specifications.

IN WITNESS WHEREOF. We have hereunto set our hands and seals this 15th day of September, 20 20

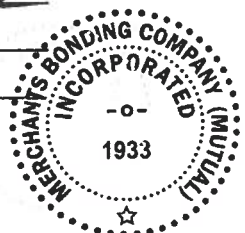
Handy Industrial *idh*

By: Wahnead William Raz

Merchants Bonding Company (Mutual)

By: Melissa Lopez
Melissa Lopez, Attorney-in-Fact

PLEASE SEE
ATTACHED CERTIFICATE



California All-Purpose Certificate of Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of San Diego } s.s.

On 09/22/2020 before me, P. Mehrabani, Notary Public
Name of Notary Public, Title
personally appeared Waheed William Raz
Name of Signer (1)

Name of Signer (2)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



[Signature]
Signature of Notary Public

Seal

OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of Performance Bond

containing 1 pages, and dated 09/22/2020

The signer(s) capacity or authority is/are as:

- Individual(s)
- Attorney-in-fact
- Corporate Officer(s) _____
Title(s)

- Guardian/Conservator
- Partner - Limited/General
- Trustee(s)
- Other: _____

representing: _____
Name(s) of Person(s) Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:

- form(s) of identification credible witness(es)

Notarial event is detailed in notary journal on:

Page # _____ Entry # _____

Notary contact: _____

Other

- Additional Signer Signer(s) Thumbprints(s)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGEMENT

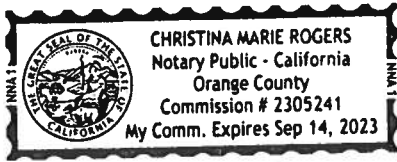
A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of Orange }

On SEP 15 2020, before me, Christina Marie Rogers, Notary Public,
personally appeared Melissa Lopez

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of State of California that the foregoing paragraph is true and correct.



WITNESS my hand and official seal.

SIGNATURE Christina Marie Rogers

PLACE NOTARY SEAL ABOVE

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of attached document

Title or type of document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other than Named Above: _____

MERCHANTS
BONDING COMPANYTM
POWER OF ATTORNEY

Know All Persons By These Presents, that MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., both being corporations of the State of Iowa (herein collectively called the "Companies") do hereby make, constitute and appoint, individually, Erik Johansson; Frances Lefler; James W Johnson; Jennifer Anaya; Jessica Hollaender; Melissa Lopez

their true and lawful Attorney(s)-in-Fact, to sign its name as surety(ies) and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

This Power-of-Attorney is granted and is signed and sealed by facsimile under and by authority of the following By-Laws adopted by the Board of Directors of Merchants Bonding Company (Mutual) on April 23, 2011 and amended August 14, 2015 and adopted by the Board of Directors of Merchants National Bonding, Inc., on October 16, 2015.

"The President, Secretary, Treasurer, or any Assistant Treasurer or any Assistant Secretary or any Vice President shall have power and authority to appoint Attorneys-in-Fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof."

"The signature of any authorized officer and the seal of the Company may be affixed by facsimile or electronic transmission to any Power of Attorney or Certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually fixed."

In connection with obligations in favor of the Florida Department of Transportation only, it is agreed that the power and authority hereby given to the Attorney-in-Fact includes any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts required by the State of Florida Department of Transportation. It is fully understood that consenting to the State of Florida Department of Transportation making payment of the final estimate to the Contractor and/or its assignee, shall not relieve this surety company of any of its obligations under its bond.

In connection with obligations in favor of the Kentucky Department of Highways only, it is agreed that the power and authority hereby given to the Attorney-in-Fact cannot be modified or revoked unless prior written personal notice of such intent has been given to the Commissioner-Department of Highways of the Commonwealth of Kentucky at least thirty (30) days prior to the modification or revocation.

In Witness Whereof, the Companies have caused this instrument to be signed and sealed this 11th day of February, 2020.

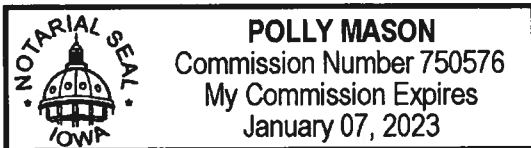


MERCHANTS BONDING COMPANY (MUTUAL)
MERCHANTS NATIONAL BONDING, INC.

By *Larry Taylor*
President

STATE OF IOWA
COUNTY OF DALLAS ss.

On this 11th day of February 2020, before me appeared Larry Taylor, to me personally known, who being by me duly sworn did say that he is President of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC.; and that the seals affixed to the foregoing instrument are the Corporate Seals of the Companies; and that the said instrument was signed and sealed in behalf of the Companies by authority of their respective Boards of Directors.



Polly Mason
Notary Public

(Expiration of notary's commission does not invalidate this instrument)

I, William Warner, Jr., Secretary of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., do hereby certify that the above and foregoing is a true and correct copy of the POWER-OF-ATTORNEY executed by said Companies, which is still in full force and effect and has not been amended or revoked.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the Companies on this 15th day of September, 2020.



William Warner Jr.
Secretary

MERCHANTS
BONDING COMPANY[™]

MERCHANTS BONDING COMPANY (MUTUAL) • P.O. BOX 14498 • DES MOINES, IOWA 50306-3498
PHONE: (800) 678-8171 • FAX: (515) 243-3854

ADDENDUM TO BOND

This Addendum is in reference to the bond(s) to which it is attached.

Merchants Bonding Company (Mutual) (“Merchants”) deems the digital or electronic image of Merchants’ corporate seal below affixed to the bond(s) to the same extent as if a raised corporate seal was physically stamped or impressed upon the bond(s). The digital or electronic seal below shall have the same force and effect as though manually fixed to the bond(s).

All terms of the bond(s) remain the same.

Signed and effective March 23, 2020.

MERCHANTS BONDING COMPANY (MUTUAL)



By: _____

Larry Taylor

Larry Taylor, President

Bond No. CAC718902
Premium Included in Cost
of Performance Bond.

**LABOR AND MATERIALS PAYMENT BOND
TO ACCOMPANY CONTRACT PUBLIC WORK**

WHEREAS, the City of Costa Mesa, State of California, has awarded to Handy Industrial, hereinafter designated as the "Principal", a contract for the project known as: LIONS PARK PLAYGROUND IMPROVEMENTS PROJECT, CITY PROJECT NO. 20-15 in the City of Costa Mesa, in strict conformity with the contract on file with the Costa Mesa City Clerk, which is incorporated herein by this reference.

WHEREAS, Principal has executed or is about to execute the contract and the terms thereof and California Civil Code section 9554 require the furnishing of a bond, providing that if Principal or any of Principal's subcontractors fails to pay for any materials, provisions, or other supplies used in, upon, for, or about the performance of the work agreed to be done, or for any work or labor done thereon of any kind, the Surety on this bond will pay the same to the extent hereinafter set forth.

NOW, THEREFORE, We, the undersigned Principal, and Merchants Bonding Company (Mutual), duly authorized to transact business under the laws of the State of California, as Surety (referred to herein as "Surety"), are held and firmly bound unto the City of Costa Mesa, in the sum of One Million Seven Hundred Eighty Thousand and 00/100 Dollars (\$1,780,000.00) lawful money of the United States of America, said sum being equal to 100% of the estimated amount payable to the City of Costa Mesa under the terms of the contract, for which payment well and truly to be made, we bind ourselves, our heirs, executors, excutors, and administrators, successors and assigns, jointly and severally, firmly by these present.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the Principal or the Principal's subcontractors fail to pay for any materials, provisions, or other supplies, implements or machinery used in, upon, for, or about the performance of the work contracted to be done, or for any other work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code with respect to such work or labor, or for any amounts required to be deducted, withheld and paid over to the Employment Development Department from the wages of employees of the Principal and subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work and labor, then the Surety will pay for the same, in an amount not exceeding the sum specified in this Bond, and also, in case suit is brought to enforce the obligations of this Bond, a reasonable attorneys' fees, to be fixed by the Court as required by the provisions of Section 9554 of the California Civil Code.

This bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under Section 9100 of the California Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond. And the Surety, for value received, hereby 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 way 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.

IN WITNESS WHEREOF, this instrument has been duly executed by the above-named Principal and Surety, on the 15th day of September, 2020.

Handy Industrial
Name of Contractor (Principal)

Merchants Bonding Company (Mutual)
Name of Surety
P.O. BOX 14498
DES MOINES, IOWA 50306-3498
Address of Surety

By: Waheed Williams Raz
Authorized Signature/Title

By: Melissa Lopez
Authorized Agent Signature

Melissa Lopez, Attorney-in-Fact
Print Name and Title



PLEASE SEE
ATTACHED CERTIFICATE

California All-Purpose Certificate of Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
 County of San Diego } s.s.

On 09/22/2020 before me, P. Mehrabani, Notary Public
Name of Notary Public, Title

personally appeared Waheed William Rax
Name of Signer (1)

Name of Signer (2)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.



WITNESS my hand and official seal.

[Signature]
Signature of Notary Public

Seal

OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of Labor And Materials Payment Bond containing 1 pages, and dated 09/22/2020.

- The signer(s) capacity or authority is/are as:
- Individual(s)
 - Attorney-in-fact
 - Corporate Officer(s) _____
Title(s)
 - Guardian/Conservator
 - Partner - Limited/General
 - Trustee(s)
 - Other: _____

representing: _____
Name(s) of Person(s) Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:
 form(s) of identification credible witness(es)

Notarial event is detailed in notary journal on:
 Page # _____ Entry # _____

Notary contact: _____

Other

Additional Signer Signer(s) Thumbprints(s)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGEMENT

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of Orange }

On SEP 15 2020, before me, Christina Marie Rogers, Notary Public,
personally appeared Melissa Lopez

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of State of California that the foregoing paragraph is true and correct.



WITNESS my hand and official seal.

SIGNATURE Christina Marie Rogers

PLACE NOTARY SEAL ABOVE

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of attached document

Title or type of document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other than Named Above: _____

MERCHANTS
BONDING COMPANYTM
POWER OF ATTORNEY

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their true and lawful Attorney(s)-in-Fact, to sign its name as surety(ies) and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

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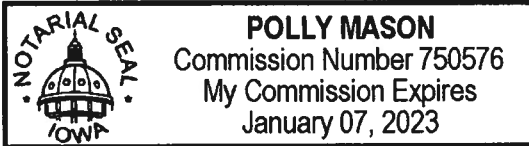


MERCHANTS BONDING COMPANY (MUTUAL)
MERCHANTS NATIONAL BONDING, INC.

By *Larry Taylor*
President

STATE OF IOWA
COUNTY OF DALLAS ss.

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Polly Mason
Notary Public

(Expiration of notary's commission does not invalidate this instrument)

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William Warner Jr.
Secretary

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All terms of the bond(s) remain the same.

Signed and effective March 23, 2020.

MERCHANTS BONDING COMPANY (MUTUAL)



By: _____

Larry Taylor

Larry Taylor, President

EXHIBIT E

DRUG-FREE WORKPLACE POLICY

CITY OF COSTA MESA, CALIFORNIA

COUNCIL POLICY

SUBJECT	POLICY NUMBER	EFFECTIVE DATE	PAGE
DRUG-FREE WORKPLACE	100-5	8-8-89	1 of 3

BACKGROUND

Under the Federal Drug-Free Workplace Act of 1988, passed as part of omnibus drug legislation enacted November 18, 1988, contractors and grantees of Federal funds must certify that they will provide drug-free workplaces. At the present time, the City of Costa Mesa, as a sub-grantee of Federal funds under a variety of programs, is required to abide by this Act. The City Council has expressed its support of the national effort to eradicate drug abuse through the creation of a Substance Abuse Committee, institution of a City-wide D.A.R.E. program in all local schools and other activities in support of a drug-free community. This policy is intended to extend that effort to contractors and grantees of the City of Costa Mesa in the elimination of dangerous drugs in the workplace.

PURPOSE

It is the purpose of this Policy to:

1. Clearly state the City of Costa Mesa's commitment to a drug-free society.
2. Set forth guidelines to ensure that public, private, and nonprofit organizations receiving funds from the City of Costa Mesa share the commitment to a drug-free workplace.

POLICY

The City Manager, under direction by the City Council, shall take the necessary steps to see that the following provisions are included in all contracts and agreements entered into by the City of Costa Mesa involving the disbursement of funds.

1. Contractor or Sub-grantee hereby certifies that it will provide a drug-free workplace by:
 - A. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in Contractor's and/or sub-grantee's workplace, specifically the job site or location included in this contract, and specifying the actions that will be taken against the employees for violation of such prohibition;
 - B. Establishing a Drug-Free Awareness Program to inform employees about:

SUBJECT	POLICY NUMBER	EFFECTIVE DATE	PAGE
DRUG-FREE WORKPLACE	100-5	8-8-89	2 of 3

1. The dangers of drug abuse in the workplace;
 2. Contractor's and/or sub-grantee's policy of maintaining a drug-free workplace;
 3. Any available drug counseling, rehabilitation and employee assistance programs; and
 4. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- C. Making it a requirement that each employee to be engaged in the performance of the contract be given a copy of the statement required by subparagraph A;
- D. Notifying the employee in the statement required by subparagraph 1 A that, as a condition of employment under the contract, the employee will:
1. Abide by the terms of the statement; and
 2. Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction;
- E. Notifying the City of Costa Mesa within ten (10) days after receiving notice under subparagraph 1 D 2 from an employee or otherwise receiving the actual notice of such conviction;
- F. Taking one of the following actions within thirty (30) days of receiving notice under subparagraph 1 D 2 with respect to an employee who is so convicted:
1. Taking appropriate personnel action against such an employee, up to and including termination; or
 2. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health agency, law enforcement, or other appropriate agency;

SUBJECT	POLICY NUMBER	EFFECTIVE DATE	PAGE
DRUG-FREE WORKPLACE	100-5	8-8-89	3 of 3

- G. Making a good faith effort to maintain a drug-free workplace through implementation of subparagraphs 1 A through 1 F, inclusive.
2. Contractor and/or sub-grantee shall be deemed to be in violation of this Policy if the City of Costa Mesa determines that:
 - a. Contractor and/or sub-grantee has made a false certification under paragraph 1 above;
 - b. Contractor and/or sub-grantee has violated the certification by failing to carry out the requirements of subparagraphs 1 A through 1 G above;
 - c. Such number of employees of Contractor and/or sub-grantee have been convicted of violations of criminal drug statutes for violations occurring in the workplace as to indicate that the contractor and/or sub-grantee has failed to make a good faith effort to provide a drug-free workplace.
 3. Should any contractor and/or sub-grantee be deemed to be in violation of this Policy pursuant to the provisions of 2 A, B, and C, a suspension, termination or debarment proceeding subject to applicable Federal, State, and local laws shall be conducted. Upon issuance of any final decision under this section requiring debarment of a contractor and/or sub-grantee, the contractor and/or sub-grantee shall be ineligible for award of any contract, agreement or grant from the City of Costa Mesa for a period specified in the decision, not to exceed five (5) years. Upon issuance of any final decision recommending against debarment of the contractor and/or sub-grantee, the contractor and/or sub-grantee shall be eligible for compensation as provided by law.