JUN 0 6 2018

BOARD OF RECREATION AND PARK COMMISSIONERS

NO.______18-110

DATE June 6, 2018

BOARD REPORT

C.D. <u>15</u>

BOARD OF RECREATION AND PARK COMMISSIONERS

SUBJECT: KEN MALLOY HARBOR REGIONAL PARK - SYNTHETIC SOCCER FIELD AND WALKING PATH (PRJ20761) (W.O. #E170384F) PROJECT - FINAL ACCEPTANCE

Ro1	AP Diaz * R. Barajas H. Fujita	DF	V. Israel S. Piña-Cortez N. Williams			
					m.	Suce
						General Manager
	Approved	X		Disapproved _		Withdrawn

RECOMMENDATIONS

- Approve the final acceptance of the work performed for the Ken Malloy Harbor Regional Park - Synthetic Soccer Field and Walking Path (PRJ 20761) (W.O. #E170384F) Project, constructed by the Department of Recreation and Parks (RAP) as-needed prequalified on-call vendors, as outlined in the Summary of this Report.
- 2. Accept the Project work completed under the RAP contract with Byrom-Davey Contractors for the synthetic soccer field, as outlined in the Summary of this Report;
- 3. Accept the Project work completed under the RAP contract with Commercial Paving and Coatings for the synthetic soccer field, as outlined in the Summary of this Report; and,
- Authorize the Board of Recreation and Park Commissioners' (Board) Secretary to furnish Byrom-Davey Contractors and Commercial Paving and Coatings a letter of completion for their portion of the work in the subject Project; and,
- 5. Authorize the release of retention to Byrom-Davy, in the amount of Fifty-One Thousand, Sixty-Eight Dollars and Ninety Cents (\$51,068.90).

BOARD REPORT

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<u>SUMMARY</u>

The Ken Malloy Harbor Regional Park (Park) is located at 1501 West L Street, Los Angeles, California 90744, in Council District No. 15. On June 1, 2016, the Board approved the final plans for construction of the Ken Malloy Harbor Regional Park - Synthetic Soccer Field (PRJ20761) (W.O. #E170384F) Project (Report No. 16-139). That Report stated that RAP had secured a total of One Million, Two Hundred Fifty Thousand Dollars (\$1,250,000.00) in funding from Proposition K. The scope of work consisted of construction of a synthetic soccer field, and walking paths. Plans for the synthetic soccer field project were prepared by the Department of Public Works, Bureau of Engineering (BOE). Construction of the Project began in August 2016 and the Project was deemed complete on November 13, 2017. The walking paths were completed under a separate phase of the Project.

After the completion of the soccer field by Byrom-Davey Contractors, RAP issued a Notice to Proceed (NTP) to Commercial Paving and Coatings to construct an eight foot (8') wide walking path in the Park from the south end of the north parking lot along Vermont Avenue to the fitness area in the Park, a distance of 336 feet. The exact description of the work is shown on Commercial Paving and Coating's final invoice (Attachment No. 2).

BOE and the Department of Public Works, Bureau of Contract Administration (BCA) were involved in the construction management and inspection of the Project. Project Management was performed by BOE.

RAP's approved on-call contractor and vendor, Byrom Davey Contractors and Commercial Paving and Coating completed all of the construction work for a total construction cost of One Million, One Hundred Forty-Eight Thousand, Two Hundred Fifty-Three Dollars (\$1,148,253.00). The breakdown of the total construction cost is as follows:

Vendor/Contractor Name	Base Bid	Change Orders	Total Cost
Byrom-Davey Contractors	\$964,400	\$56,978	\$1,021,378
Commercial Paving and Coatings	\$126,875	\$0	\$126,875
Totals	\$1,091,275	\$56, 978	\$1,148,253

Indirect costs (i.e. design, permits, survey, inspection, construction management, project management, etc.) are projected to be Two Hundred Forty-Five Thousand Dollars (\$245,000.00). The total cost of the Project, including direct and indirect costs will not exceed One Million, Three Hundred Eighty-Seven Thousand, Nine Hundred Thirty-Five Dollars (\$1,393,253.00). Therefore, the Project has a shortfall of One Hundred Forty-Three Thousand, Two Hundred Fifty-Three Dollars (\$143,253.00). As this amount is for BOE's in-house labor costs, it will be absorbed by the RAP's and BOE's General Fund,

The BOE Program Manager has reviewed BCA's Statement of Completion, As-Built Drawings, (Attachment 3) and the project as constructed, and concurs that RAP has completed the construction of the Project and that the quality of the work is satisfactory.

BOARD REPORT

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TREES AND SHADE

As part of the Project, five (5) dead trees were removed to make room for the synthetic soccer field and the walkway. The Proposition K funds for the Project only allow for the scope of work identified in the grant. No shade trees or shade structures were included in the grant scope of work; however, there are shade trees next to the adjacent fields.

FISCAL IMPACT STATEMENT

The construction and indirect costs for the soccer field and walking path were funded entirely with Proposition K funds and by RAP's and BOE's General Fund. The funding shortfall will be covered by RAP's and BOE's General Fund, inasmuch as it is for Department of Public Works, Bureau of Engineering's in-house labor costs.

The annual maintenance cost of the synthetic soccer field and walking path will not increase the annual maintenance cost of the park.

This Report was prepared by Richard Campbell, BOE Architectural Division; Neil Drucker Proposition K – Program Manager, and Cathie Santo Domingo, RAP Superintendent, Planning, Maintenance and Construction Branch.

LIST OF ATTACHMENT(S):

- 1. Board Report No. 16-139 Approval of Final Plans
- 2. Commercial Paving & Coating Final invoice dated 8/8/17
- 3. As-Built Drawings
- 4. Change Order Log

Attachment 1

J PARK COMMISSIONERS

BOARD REPORT

NO. 16-139

DATE June 01, 2016

C.D. <u>15</u>

BOARD OF RECREATION AND PARK COMMISSIONERS

SUBJECT: KEN MALLOY HARBOR REGIONAL PARK SYNTHETIC SOCCER FIELD (PRJ20761) (W.O. E170384F) – APPROVAL OF FINAL PLANS; EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) PURSUANT TO ARTICLE III, SECTION 1, CLASS 3 (6), CLASS 11 (3, 6) OF THE CITY CEQA GUIDELINES

AP Diaz Fur R. Barajas H. Fujita	65D	V. Israel K. Regan N. Williams		Tit		
	/			General Manager		
Approved	\checkmark	j	Disapproved _	Withdrawn		

RECOMMENDATIONS

- Approve the final plans, substantially in the form on file in the Board Office, for the Ken Malloy Harbor Regional Park Synthetic Soccer Field (PRJ20761) (W.O. #E170384F) project (Project); and,
- Find that the proposed project is exempt from the California Environmental Quality Act (CEQA).

SUMMARY

In June 2013, the Department of Recreation and Parks (RAP) was awarded a Proposition K 8th Cycle Competitive Grant to design and construct a synthetic soccer field, walking paths, and fencing at the Ken Malloy Harbor Regional Park. The Project is located at 25820 Vermont Avenue, Harbor City, California 90744.

The proposed Project is the construction of the synthetic soccer field and perimeter fencing. The remaining component of the competitive grant, walking paths, will be constructed in a future phase.

Department of Public Works, Bureau of Engineering (BOE), Architectural Division prepared the plans and specifications, and obtained all the necessary permits for the Project. The plans and specifications provide for the following scope of work: installation of a synthetic soccer field in an existing open space informally used as a soccer field and installation of perimeter fencing.

BOARD REPORT

PG. 2 NO. 16-139

The synthetic turf area is approximately 325 feet by 177 feet. It will integrate water shedding features, which will allow the field to drain quickly after rain events and improve the overall drainage in the park.

The project is proposed to be constructed through RAP's pre-qualified on call synthetic field contract. The on-call contract includes construction, retrofit, maintenance, and repairs of synthetic turf. BOE will provide construction management services for RAP in the construction of these improvements.

Approved project funds are available for the construction work in the following fund and accounts:

Funding Source	Fund/Dept./Acct No.			
Proposition K Year 11	43K/10/10KM13			
Proposition K Year 17	43K/10/10LM13			

TREES AND SHADE

The Proposition K funds for the Project only allow for the scope of work identified in the grant. No shade trees or shade structures were included in the grant; however, there are shade trees next to the adjacent fields.

ENVIRONMENTAL IMPACT STATEMENT

RAP Environmental Staff has determined that the subject project will consist of construction and location of limited numbers of new structures that are accessory (appurtenant) to existing institutional facilities, including fences and play areas, and therefore, is exempt from the provisions of the CEQA pursuant to Article III, Section 1, Class 3 (6), Class 11 (3, 6) of the City CEQA Guidelines. A Notice of Exemption (NOE) was filed with the Los Angeles City Clerk and the Los Angeles County Clerk on June 20, 2013. It was also determined that this project and the environmental conditions of the site have not substantially changed since the previous evaluation. Therefore, no additional CEQA documentation is required.

FISCAL IMPACT STATEMENT

Funding for the design and construction of the project is provided by Proposition K – L.A. for Kids Program Competitive funds. The assessments of the future operations and maintenance costs have yet to be determined and would be addressed in future budget requests.

This report was prepared by Richard Campbell, Project Manager, Recreational and Cultural Facilities Program, BOE. Reviewed by Neil Drucker, Program Manager, Recreational and

BOARD REPORT

PG. 3 NO. 16-139

Cultural Facilities Program, BOE; Deborah Weintraub, Chief Deputy City Engineer, BOE; and Cathie Santo Domingo, Superintendent, Planning, Construction and Maintenance Branch.

				A	Attachment 2
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11. I	REPLACE SLEEVE & ADJUST EXIST	ING IRRIGATION S	YSTEM THAT	WILL	

Please Pay This Amount \$126,875.00

Terms: All invoices are due and payable upon receipt

Thank You . . . We appreciate your business.









BUREAU OF ENGINEERING DEPARTMENT OF PUBLIC WORKS CITY OF LOS ANGELES KEN MALLOY HARBOR REGIONAL PARK SYNTHETIC SOCCER FIELD PROJECT

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CLIENT: CITY OF LOS ANGELES DEPARTMENT OF RECREATION AND PARKS MICHAEL SHULL GENERAL MANAGER CATHY SANTO DOMINGO SUPERINTENDENT

CONSTRUCTION BUREAU OF ENGINEERING MANAGEMENT: CONSTRUCTION MANAGEMENT DIVISION JOSE FUENTES DIVISION ENGINEER

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ARCHITECTURAL: BUREAU OF ENGINEERING **ARCHITECTURAL DIVISION** MAHMOOD KARIMZADEH, A.I.A. PRINCIPAL ARCHITECT **GUILLERMO BARRAGAN PROJECT MANGER/** LANDSCAPE ARCHITECT ASSOC. II PHONE: 213.485.4348

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Sheet Version 2.2

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PROJECT TEAM

SURVEY:	SURVEY DIVISION JIM LANTRY CHIEF SURVEYOR
GEOTECHNICAL:	GEOTECHNICAL ENGINEERING GROUP
	CHRISTOPHER JOHNSON, P.E., G.E. GROUP MANAGER
	AMY BI CIVIL ENGINEERING ASSOCIATE II

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ABBREVIATIONS

AC	ASPHALT CONCRETE	GV	
AD	ATRIUM DRAIN/AREA DRAIN	HB	
AMPS	AMPERES	HP	
AWG	AMERICAN WIRE GAUGE	ID	INSIDE DIAMETER
BC	BOTTOM OF CURB/BEGIN CURB	IE	INVERT ELEVATION
BDRY	BOUNDARY	IRRG	IRRIGATION
BLDG	BUILDING	LA	LANDSCAPE ARCHITECT
BM		LP	LOW POINT
		LBS	POUNDS
		LS	LANDSCAPE
BOC		MAX	
BS	BOTTOM OF STEP		
BW	BOTTOM OF WALL		
С	COMPACT	IVIEG	
СВ	CATCH BASIN	MIN	
C-C	CENTER TO CENTER	NIC	NOT IN CONTRACT
CF	CURB FACE	OC	ON CENTER
CI		OD	OUTSIDE DIAMETER
		PA	PLANTING AREA
		PB	PULL BOX
		PI	
CONST	CONSTRUCTION/CONSTRUCT		
CONT	CONTINUOUS	POB	
DD	DECK DRAIN	POC	
DEMO	DEMOLITION	POC	POINT OF CONNECTION
DBL STK	DOUBLE STAKE	PP	POWER POLE
DET	DETAIL	PSI	POUNDS PER SQUARE INCH
		PW	POTABLE WATER
		QC	QUICK COUPLER
		R/RAD	RADIUS "R"
		RAP	RECREATION AND PARKS DEPARTA
	DOWN	RF	
DOT	DEPARTMENT OF TRANSPORTATION	BCV	
DWG	DRAWING		
DWP	DEPARTMENT OF WATER AND POWER		RIGHT OF WAY
DWY	DRIVEWAY		REFERENCE LINE
EFF	EFELUENT WATER	REINF	REINFORCED
FI		REQD	REQUIRED
		SCH	SCHEDULE
		SF	SQUARE FEET
		SGL STK	SINGLESTAKE
(XXX.XX)	EXELEVATION	SHT	
XXX.XX	NEW CONSTRUCTION ELEVATION	SI	
ENCL	ENCLOSURE		
EQ	EQUAL		SEWER MAINTENANCE HOLE
EXP JT	EXPANSION JOINT	SPEC	SPECIFICATION
EXIST	EXISTING	STA	STATION
FC	END OF CURB	STD	STANDARD
Elo El		SOV	SHUT OFF VALVE
		SIN	SIGNAL
		TF	
	FACE OF CURB	ТҮР	
-OW	FACE OF WALL	ТР	
FF	FINISHED FLOOR	ТС	TOP OF PAVING
FG	FINISHED GRADE		TOP OF CURB
FS	FINISHED SURFACE	IS	TOP OF STEP
FFF	FINISHED FLOOR FLEVATION	TW	TOP OF WALL
FD		V	VOLTS
		W/	WITH
		W/O	
GALV	GALVANIZED	WO	
GAL	GALLON(S)		
GB	GRADE BREAK	VVPO	WEAKENED PLANE JOINT
		TDS	YARDS
GC			

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PROJECT DESCRIPTION

SCOPE OF WORK:

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Replacement of an existing soccer field with new synthetic turf. Improvements will include soil preparation, soil isolation fabric, underlayment materials and field and sub-base perimeter drainage system, fencing, irrigation and new modified decomposed granite path.

G002

L001

G001

L002 L003 L004 L101 L102 L103 L201 L301 L401A L401 L402 L403 L404 L405 L406 L407 L408

L501

L601 L602

L701

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SHEET INDEX

GENERAL

COVER SHEET ABBREVIATIONS, PROJECT DESCRIPTION AND SHEET INDEX

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LANDSCAPE

LANDSCAPE CONSTRUCTION NOTES, SHEET 1 LANDSCAPE CONSTRUCTION NOTES, SHEET 2 LANDSCAPE CONSTRUCTION NOTES, SHEET 3 LANDSCAPE CONSTRUCTION NOTES, SHEET 4 SITE SURVEY AS-BUILT DRAINAGE PLAN AS-BUILT IRRIGATION PLAN DEMOLITION PLAN GRADING AND DRAINAGE PLAN ADA PATH OF TRAVEL CONSTRUCTION PLAN SYNTHETIC TURF SOCCER FIELD CONSTRUCTION DETAILS, SHEET 1 CONSTRUCTION DETAILS, SHEET 2 TRILOGY LOCK KIT CHAINLINK GATE DETAILS SYNTHETIC TURF DETAILS & SPECIFICATIONS, SHEET 1 SYNTHETIC TURF DETAILS & SPECIFICATIONS, SHEET 2 SYNTHETIC TURF DETAILS & SPECIFICATIONS, SHEET 3 LAYOUT PLAN IRRIGATION PLAN IRRIGATION DETAILS PLANTING PLAN

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ARTMENT OF PUBLIC WORKS	GARY LEE MOORE, PE, ENV SPA CITY ENGINEER	ARCHITECTURAL DIVISION DATE:	ARCHITECT: JANE ADRIAN LIC. NO. 3940	DESIGNED BY: GUILLERMO BARRAGAN	DRAWN BY: GUILLERMO BARRAGAN	CHECKED BY: JANE ADRIAN	APPROVED BY: MAHMOOD KARIMZADEH, A.I.A., PRINCIPAL ARCHITECT
OS ANGELES DEP	CLIENT: RECREATION AND PARKS	GENERAL MANAGER: MICHAEL A. SHULL	SHEET TITLE: ABBREVIATIONS, PROJECT	DESCRIPTION AND SHEET INDEX	PROJECT: KEN MALLOY HARBOR REGIONAL PARK	ADDRESS: 1501 W. L STREET	LOS ANGELES, CA 90710
GITY OF L	RA DF				NO. 384, 076	А 1 ЭНЕЕ 24	TS 1

LANDSCAPE CONSTRUCTION NOTES	1⁄₂⁄₄FÈ CONTRACT FINAL INSPECTION Approximately seven (7) days pri List Work, the Contractor shall fir
GENERAL The General Conditions and General Requirements, the latest edition and supplements of the Standard Specifications for Public Works Construction, hereinafter referred to as (SSPWC) adopted by the Board of Public Works and the City of Los Angeles including the City of Los Angeles Department of Public Works SSPWC additions and amendments (Brown Book) shall be made a part of these plans.	Manager that he desires a Final I BCA Inspector, the project Manager, the the contractual requirements of the V
Website: http://eng.lacity.org/techdocs/stdplans/s-600/BB2006.pdf	list
Where conflicts occur between the General Conditions and General Requirements and the Standard Specifications for Public Works Construction, the General Conditions and General Requirements shall take precedence. Where conflicts occur between these Landscape Construction Notes and the SSPWC, these LANDSCAPE CONSTRUCTION NOTES shall take precedence.	must be completed with thirty (30 Inspection and Correction List shall be requi
Precedence of Contract Documents shall be in accordance with Article 7 of the General Conditions.	inspections with the Bureau of Co
Subsections included within these LANDSCAPE CONSTRUCTION NOTES modify or add to the corresponding subsection (by number) of the SSPWC, latest edition with current yearly supplements; where options for materials and/or methods appear in the SSPWC, the option listed hereon shall be used.	 Galvanizing Chain link fabric Grates and frames Portland cement concrete & base
This improvement consists only of work called for on these plans.	FORM OF MATERIALS SUBMITTAL AND
PLANS AND SPECIFICATIONS The General Contractor shall be responsible for issuing a complete set of plans and specifications to all Sub-Contractors.	required items, including but not limited to tubular steel fencing materials, concrete a units specified in the contract plans, scheo specified equipment indicated in any portio
Indicates approvals or submittals, including items to be turned over at the pre- final. All approvals and submittals shall be transmitted to the Project Manager.	the Materials Submittal. Deviations from th accompanied by a reasonable written just only allowed within thirty days after the No
¹ / ₂ Indicates required field inspections with the Bureau of Contract Administration (BCA) Inspector and the Project Manager. Notify all party's three (3) days prior to the required inspection.	½ ÙWÓÙVQWWQ ÞÙÁŒÖÁU ÜÁÔÛ WOŠHÂW The Contractor shall make substitution su Requirements.
 ✓ SCHEDULE OF WORK The Contractor shall submit a Schedule of Work for approval to the Project Manager prior to the commencement of work. The Project Manager, Contractor and Department Maintenance Personnel shall coordinate the Contractor's schedule of work with ongoing Department maintenance of the facility outside the work area and the Contractor's maintenance of the area within the work area, as defined in the maintenance portion of the Landscape Planting Section. The Contractor shall schedule all work in accordance with the General Requirements Article 18. The work area shall be as defined on the Title Sheet, or as indicated on the Plans by means of a contract limit line. ✓JOB START MEETING 	1/Á RECORD DRAWINGS (AS-BUILTS) SUB Record drawings shall reflect any changes progress of the work as a result of addend conditions or plan clarification. They shall during the progress of construction that wa from the specified depth at which material drawings. Record all appropriate as-built i information shall include but not be limited mainline wire installed separately from ma
The Contractor shall schedule a Job Start Meeting with the Project Manager after receipt of the Notice To Proceed. This meeting shall include the following participants: the Project Manager, Bureau of Contract Administration (BCA) Inspector, Landscape Architect, and Region Maintenance personnel, prior to the commencement of meeting to review the content of the plans and discuss the coordination of the project with the Department's operations at the project site. The pre-construction meeting can be held at the same time as the Job Start Meeting at the Contractors discretion.	plan sheets for each trade as provided in the responsible for coordinating all sub-Contra- installations, which shall be kept on the job project Inspector shall review the record de payment request and shall report any discurrent of the Work and prior to final inspection, the prints to the Project Manager at the Operation of the Contract Work.
All work and materials are subject to inspection and approval by the Project Manager. Any work done without proper inspection will be subject to rejection. As indicated in Section 2-11 of the Standard Specifications for Public Works Construction.	DEPARTMENT OF PUBLIC WORKS STA The following Department of Public Works
The Contractor shall notify the Bureau of Contract Administration (BCA) Inspector and Project Manager three (3) days prior to inspection of the following for approval:	NUMBER TITLE
$\sqrt{1.$ ROUGH GRADING: When forms have been set, to approve alignment. Offsets or vertical controls shall be verifiable in the field, or be provided in grade sheet form, and submitted to the Project Manager for approval prior to the inspection.	S-251-1 Pipe Laying in Tre S-351-1 Side Opening Cat S-430-1 Contraction, Expa Pavement
$\sqrt{\sqrt{2}}$. TREE TAGGING: Tagging of 24" box or larger trees at the grower with Recreation and Parks tags. This inspection will be for compliance with the caliper, height and spread requirements given on the plant legend and general health and appearance of plants.	SSPWC 2006 Edition of the Additions and Amendr website: http://eng.lacity.org/techdocs/std
$\sqrt{3}$. ON-SITE PLANT MATERIAL INSPECTION: The inspection of all plant materials under 24" box size at the job site. This inspection will be for compliance with the caliper, height and spread requirements given on the plant legend and to confirm the general health and appearance of plants. The Contractor shall also stake all tree planting locations at this time for approval.	UNDERGROUND SUBSTRUCTURES The construction plans provided to the Co substructures to the extent of the Departm including the Department of Water and Po
√√4. IRRIGATION PRESSURE AND COVERAGE TESTS: The pressure test shall take place under the direction of the BCA Inspector. Following the pressure test the entire irrigation system shall be tested for coverage under the direction of the Project Manager. The coverage test shall cycle through each station of the irrigation system from the automatic controller for all new or revised irrigation systems. Existing irrigation systems shall be tested prior to new construction. The BCA Inspector, Project Manager, Contractor and Recreation and Parks Regional maintenance staff shall be notified three (3) days before the ashedwlad test	SERVICE ALERT at 1 - (800) 422-4133 TREE PROTECTION (a) All trees that occur within the are designated for removal, shall be p
$\sqrt{5}$. FINISH GRADE REVIEW: For all finish grades in planting areas following rolling and prior to turf or landscape planting	1. ANY FAILURE BY THE CON SPECIFIED BELOW WILL RE CONSTRUCTION ACTIVITIES
√√6. PRE-FINAL INSPECTION Approximately two weeks before the Completion of the Work, the contractor shall schedule a Pre-final Inspection. The Pre-Final Inspection shall be attended by the BCA Inspector, the Project Manager, the Contractor, and invited parties associated with the Project. At this time, a list of items requiring correction or completion before the Final Inspection will be compiled. The following items shall be delivered to the appropriate Department of Recreation and Parks personnel: manufacturers' data, manuals, operating instructions, and keys. NOTE: If play equipment has been installed, the play equipment	EXPENSE. THE CONTRACTO OF OR PAYMENT FOR ANY WITH THESE SPECIFICATIO OF IMPACTED TREES WILL (RAP) ARBORIST OR BY A R

manufacturer, or a representative of the manufacturer, shall submit in writing, prior to the

Pre-Final Inspection, a letter certifying that the play equipment has been installed in compliance with the manufacturer's installation procedures. See Play Equipment Safety Inspection section. The Contractor shall also arrange to have a representative present at

the Pre-Final Inspection.

Sheet Version 2.2

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ior to completion of the Pre-final Inspection Correction st notify the BCA Inspector and then the Project Inspection of the Project. During this inspection, the

he Contractor and other parties concerned only with

Nork will compile a Final Inspection Correction List, nd corrections required to complete the Project. This

)) days of the Final Inspection, or a new Final

ired.

ctor shall be responsible for scheduling all in-plant ontract Administration plant inspection. In-plant not limited to, the following items:

ase

D SUBSTITUTIONS

atalog cuts with a corresponding index listing all irrigation equipment, site furnishings, chain link and and asphalt mixes, soil amendments, and masonry dules or legends. Any proposed deviation from any on of the plans and specifications shall be included in he specified equipment or materials shall be ification for the proposed change. Substitutions are otice to Proceed date.

ĚDVVQ TÒV

bmittals in accordance with Article 11 of the General

BMITTALS

s made to the plans or specifications during the da, change orders or adjustments due to field also indicate any additional information discovered as not a part of the contract documents. All deviations Is are constructed shall be shown on the record information on the record drawings in red ink. As-built to drain lines, valve locations, mainline locations and ainline. The record of each trade shall be made on the the original plan set. The Contractor shall be actors work and shall produce a complete record of all b site and updated daily during construction. The Irawings monthly before approving the Contractor's crepancies to the Project Manager. At the completion he Contractor shall submit signed 'as-built' blue-line ational Final Inspection, prior to the City's acceptance

ANDARD PLANS

Standard Plans are to be included as a part of these

enches ch Basins

Insion & Weakened Plane Joints in Concrete

ments to the SSPWC plans/s-600/s61028.pdf

ontractor will show existing on-site underground nent's records. Service lines from other public utilities, ower shall be located by notifying UNDERGROUND prior to commencing any excavation.

a of work, as shown on the plans, and NOT specifically protected by the following means:

TRACTOR TO ADHERE TO THE REQUIREMENTS ESULT IN THE SUSPENSION OF ALL S, TO BE DONE AT THE CONTRACTOR'S OR SHALL BE RESPONSIBLE FOR REPLACEMENT TREES DAMAGED THROUGH NON-COMPLIANCE ONS. THE MONETARY OR REPLACEMENT VALUE **BE DETERMINED BY A RECREATION AND PARKS** RAP APPROVED ARBORIST.

- 2. Defining the Tree Protection Zone (TPZ) The radius (not the diameter) of the TPZ, measured from the outside of the tree trunk, shall be calculated according to the following:
 - (a) Single trunk trees multiply the trunk diameter in inches, measured 4.5' above grade, by 1.5 feet.
 - (b) Multi trunk trees multiply the sum of the diameters of all trunks in
 - inches, measured 4.5' above grade, by 1.5 feet.
 - (c) Palm trees 5' from the base of the trunk.
- 3. Beyond the TPZ, the contractor shall also be responsible for protecting all trees within the boundaries of the construction zone, including vehicular access areas, lay down areas, and any other areas impacted by construction activities. Any damage to trees in these areas shall also be subject to the same monetary or replacement requirements specified in #1 above. Any necessary root cutting in this area must be confirmed with either the RAP or other approved arborist. See also the General Conditions for any damage done by the contractor to landscaping or other park amenities that fall outside the boundaries of the construction zone.
- 4. Within the boundaries of the construction zone (including the TPZ), the contractor shall be responsible for mitigating construction-related dust accumulation on all trees by spraying the trunks, limbs, and foliage with water to a maximum height of 30 feet during the months of April through November, at monthly intervals.
- 5. Within the TPZ, the contractor shall adhere to the following requirements, including, but not limited to:
 - (a) No stockpiling or storage of any material, debris, or soil.
 - (b) No storage of any construction equipment.
 - (c) No vehicular access.
 - (d) No cutting of roots. (e) No disturbance of soil or grade changes.
 - (f) No objects of any kind to be attached to tree trunks.
- 6. The contractor shall install a 5' temporary chain link fence with one pedestrian access gate along the boundary of the TPZ. See detail for temporary chain link fence on detail sheet.
- 7. The contractor shall provide one sign per each 20 lineal ft. of fence bordering the TPZ indicating that fencing shall not be removed. See sign detail.
- 8. No work is permitted within the TPZ without the approval of: 1) the project landscape architect, 2) the project manager, and 3) RAP Forestry staff. Any work authorized within the TPZ must be done in accordance with the recommendations of a RAP arborist and under the supervision of a Monitoring Arborist. A Monitoring Arborist must be: 1) an ISA Certified Arborist or a Registered Consulting Arborist, with verifiable experience in protecting trees; 2) approved by RAP Forestry.
- 9. Irrigation to all trees NOT specifically designated for removal shall be kept in operation for the duration of the project. Contractor shall be responsible for hand watering all impacted trees if necessitated by temporary shutdowns to existing irrigation systems. Trees are to be irrigated deeply and infrequently so that soil -{[ãrč¦^ÁārÁå^ơ∿&cæà|^ÁærÁærÁ;ãjã[č{Áå^]c@AţÁrÌ+Á•ãj*ÁærÁ[ãlÁ,¦[à^È
- 10. Upon job completion, contractor shall remove all items installed to protect trees during the construction process.
- 11. Any of the following Southern California native tree species fall under Ordinance No. 177404 of the Los Angeles Municipal Code:
 - (a) Oaks, including Valley Oak (Quercus lobata), California Live Oak (Quercus agrifolia), or any other tree of the oak genus indigenous to California but excluding Scrub Oak (Quercus dumosa);
 - (b) Southern California Black Walnut (Juglans californica var. californica);
 - (c) Western Sycamore (Platanus racemosa);
 - (d) California Bay (Umbellularia californica).
 - Contractor shall comply with the requirements of the ordinance found

at:http://cityplanning.lacity.org/Code_Studies/Other/ProtectedTreeOrd.pdf.

TYPICAL WORK PROCEDURES

All work around any existing oak trees shall follow this work procedures program. This program has been developed to minimize the impacts to each tree and protect them from unscheduled damage.

- 1. All work within a tree's root zone shall be observed by a Recreation and Parks-approved certified Arborist, hired by the contractor.
- 2. The extent of all work affecting any oaks shall be staked by field survey and reviewed with the Recreation and Parks Arborist prior to construction.
- 3. Any approved pruning of oaks shall be done by a Recreation and Parks Arborist prior to the start of construction.
- 4. Hand dig vertical trench at the final cut line to final grade and cleanly cut any roots encountered and seal with approved tree seal. (This procedure will protect the root system from unnecessary damage by excavation equipment).
- 5. A five (5) foot high chain link fence shall be constructed at the limit of approved work to protect the trees from further unauthorized damage and remain in place until completion of construction.
- 6. No further work within the root zone shall be done beyond that which was approved, without obtaining written approval form the Recreation and Parks Arborist prior to proceeding.
- 7. The area within the chain link fence shall not be used for material or equipment storage or parking during construction.

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- 8. During construction, the impacted trees should be closely monitored to further mitigate shock symptoms if they occur. The contractor should be prepared to provide temporary water to irrigate and wash the dust from foliage if needed. Contact a Recreation and Parks Arborist if a decline in tree condition is noted.
- 9. Recreation and Parks Arborists are available to answer any general questions regarding trees in parks.

DAMAGES

If a tree that is designated to remain is removed or caused to be irreversibly damaged as determined by the Recreation and Parks Arborist, install a replacement tree matching in size, quality and variety using an installer designated by the Recreation and Parks Arborist. If an acceptable replacement tree is not available, pay damages to the City for the value of the damaged tree as assessed by the tree value formula in the ISA Guide for Establishing Value of Trees and Other Plants.

IMPLEMENTATION

The qualifications of oak tree consultants shall also be reviewed prior to report preparation. If tree removals are requested, the Street Tree Division reviews applications and passes their recommendations to The Board of Public Works for action. If pruning is required, contact Steve Dunlap, Tree Surgeon Supervisor III, at Central Service Yard, (213) 485-6547.

1. GENERAL EARTHWORK

METHODS

The stamped set of plans shall be on the job site at all times. Geotechnical Engineering Report dated January 15, 2014 shall be a part of these plans.

All grades between contours and/or spot elevations shall be assumed to be straight grades. There shall be no localized depressions or humps, (308-2.1).

The Contractor shall verify all grades and amounts of cut and fill before commencing work.

The area to be filled shall be cleared of all vegetative material, except the existing trees to remain. Protect remaining trees during all construction.

All fill soil shall be compacted to a minimum 90% relative compaction, as determined by ASTM Test Method D1557 as required by the geotechnical report dated January 15, 2014. Structural fill with less than 15% finer than 0.005 millimeters shall be compacted to a minimum 95% of the ASTM Test Method D1557 laboratory maximum density. The Geotechnical Engineer shall determine the compaction test locations in the field. The contractor shall obtain and pay for all soil compaction tests.

Prior to placing fill rip existing subgrade to a depth of 6 inches. Intermix first 6 inches of fill placed with ripped subgrade to eliminate interface lens. Place remaining fill in 8" lifts.

The source of import soil shall be approved by the Project Manager prior to any grading operations. The Contractor shall be required to provide an Agricultural Suitability soil test to establish the suitability of imported soil and that soil concentrations of boron and salinity are within agricultural limits. The Contractor shall, at his own expense, amend the soil according to the recommendations of the soils report. Any import soil shall be inspected and approved at the borrow site by the Geotechnical Engineer and tested prior to import. The Geotechnical Engineer shall be notified a minimum of (3) three working days prior to schedule of import soil to the project site.

Fill material 24 inches, or more, below the finish grade may contain up to 25 percent broken concrete or bituminous paving with maximum dimension of 3 inches of any piece. The top 24

The contractor shall be responsible for removal and disposal of all excess soil and debris from the work area, (300-1.3.1, 300-2.6). No soil or debris shall be disposed of on Recreation and Parks Property without the permission of the Project Manager.

The Contractor shall conform to Section 7-8.1 of the SSPWC latest edition with the current yearly supplements for clean up and dust control.

If any grading operation covered by this section shall extend into or through, or shall be commenced during the period of October 15 to April 15, the contractor shall be required to submit plans of the temporary erosion control methods and devices he proposes to use in connection with the grading operations to be performed during that period. Said plans shall be submitted to the City Engineer for approval on or before September 15 or at least 30 days before any grading is performed during said period.

Grading, excavation, compaction, and soil testing shall be observed by the Geotechnical Engineer of Record.

GEO is the Geotechnical Engineer of Record. Requests for inspection shall be directed to GEO a minimum of (2) two working days prior to inspections.

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OS ANGELES DEPA	CLIENT: RECREATION AND PARKS	GENERAL MANAGER: MICHAEL A. SHULL	SHEET TITLE: LANDSCAPE CONSTRUCTION NOTES,	SHEET 1	PROJECT: KEN MALLOY HARBOR REGIONAL PARK	ADDRESS: 1501 W I STRFFT	LOS ANGELES, CA 90710
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STORM WATER POLLUTION CONTROL

All construction works or activities due to site development and redevelopment, and applicable linear underground/overhead project (LUP) shall have erosion controls and measures as required by the Federal Clean Water Act (CWA). The erosion controls and measures used shall be from approved Best Management Practices (BMPs) conforming with the City of Los Angeles municipal code requirements and/or the California Construction General Permit Order 2009-0009-DWQ adopted by the State Water Board Resources Control Board (SWRCB), whichever is applicable. These erosion controls and measures are in addition to the hydrology report, excavation support, the dewatering plan, the emergency plan or the equipment, and all other requirements as required by the Grading and/or Building Permit or from the other local governing authorities, or the recommendations provided in Geotechnical or Soil Report by the Geotechnical or Soil Engineer, or from the Standard Specifications of Public Works as amended by BOE Brown Book, or the Project Documents. Should any conflict occur, the most stringent requirements shall govern. The BMPs shall include, but not limited to, erosion and sediment control, tracking control, wind erosion control, non-storm water control, waste management and material pollution control, and post construction storm water control. No storm water discharges and authorized non-storm water discharges shall contain pollutants that cause or contribute to an exceedance of any applicable water quality objective or water quality standards. The BMPs shall also conform to the Minimum Storm Water Requirements as specified herein and with the best management practices as specified in California Stormwater Best Management Practice Handbook Portal: Construction (or known as Construction Best Management Practice Handbook, http://www.cabmphandbooks.com) published by the California Storm Water Quality Association (CASQA); Development Best Management Practices Handbook, Part A-Construction Activities, latest edition

(http://www.lastormwater.org/siteorg/download/techman.htm), published by Watershed Protection Division of Bureau of Sanitation of the Department of Public Works of the City of Los Angeles; and the Wet weather Erosion Control Plan (http://bca.ci.la.ca.us/index.cfm) approved and adopted by the Board of Public Works per applicable Sections 61.02, 61.09, 64.72, 91.106 of the Los Angeles Municipal Code (LAMC) and other related City ordinances. No discharge of any hazardous substance shall be allowed. All Minimum Storm Water Requirements and/or the BMPs shall be incorporated or attached to the construction plans, the building plans and/or the grading plans and submitted to the appropriate jurisdictional City department(s) and the governing authorities for review and approval and to be used to complete all necessary work permits. (Note: Since the runoff from any construction site in private development can enter the public right of ways and City's storm drain system, review and approval of the BMPs by the Los Angeles Department of Building and Safety and the Bureau of Engineering of Department of Public Works shall also be required. If storm water runoffs may enter neighboring area under jurisdiction of other local governing authority, additional approval from such authority shall also be required.)

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) Contractor is responsible for the payment of the Notice of Intent (NOI) to the State of California and the development of the Storm Water Pollution Prevention Plan (SWPPP) document, which is to be prepared by a Qualified SWPPP Developer (QSD). This document is to be submitted to the City Engineer/Project Manager for approval and submission to the State Water Resources Control Board. The SWPPP must describe the erosion control practices to be implemented during construction and the selection and implementation of appropriate BMPs to account for site-specific and seasonal conditions. Contractor shall draft the SWPPP before start of construction and submit it to the Engineer for approval; no construction work shall commence without an approved SWPPP. The document is to remain on the construction site and all of the measures stated in the document are to be implemented during the duration of construction. The QSD shall be responsible for creating, revising, overseeing and implementing the SWPPP and the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.

2. CONCRETE

All concrete construction shall be as specified in this Section unless specified otherwise in these Landscape Construction Notes.

MATERIALS

BASE MATERIAL

Base material for Portland Cement concrete shall be (CMB) crushed miscellaneous base, (200-2.4).

CONCRETE SPECIFIED BY CLASS

Placed concrete shall be class 520-C-2500, maximum 4 inch slump. Pumped concrete shall be class 560-E-2500, maximum 6 inch slump. A complete delivery receipt shall be required for each truckload of concrete delivered. The receipt shall be given to the BCA Inspector, (201-1.1.2).

PORTLAND CEMENT

All cement shall be Type II, low alkali Portland cement conforming to ASTM C150 (201-1.2).

CONCRETE SPECIFIED BY CLASS

Placed concrete shall be class 520-C-2500, maximum 4 inch slump. Pumped concrete shall be class 560-E-2500, maximum 6 inch slump. A complete delivery receipt shall be required for each truckload of concrete delivered. The receipt shall be given to the BCA Inspector, (201-1.1.2).

PORTLAND CEMENT

All cement shall be Type II, low alkali Portland cement conforming to ASTM C150 (201-1.2).

AGGREGATES

Sheet Version 2.2

The aggregates for all concrete construction shall be fractured face aggregates obtained from a quarry in the San Gabriel River drainage area only and shall be certified non-reactive by an approved testing laboratory as approved by the Bureau of Contract Administration, (201-1.2.2).

COMBINED AGGREGATE GRADINGS (201 - 1.3.2).

EXPANSION JOINTS

JOINT URETHANE SEALANT When specified, expansion joint material shall be urethane elastomeric sealant for concrete pavement shall be Lithoseal Trafficalk-G3 by L. M. Scofield Company, or an approved equal, (201-3). Color to match concrete.

EXPANSION JOINT PREMOLDED ASPHALTIC JOINT MATERIAL manufactured by Sealtight Co., or an approved equal, (201-3).

DOWELS (EXPANSION AND END-OF-POUR JOINTS) Shall be grade 40 or grade 60 billet steel, (201-2.2).

END OF POUR JOINTS

or an approved equal, (201-3).

COLORED CONCRETE ADMIXTURES

approved equal.

METHODS

EXPANSION JOINTS

Shall be placed against previously constructed concrete structures or as indicated in the plans (303-5.4.2) and the applicable details.

Inspector.

COLORED CONCRETE ADMIXTURES

PAVEMENT MARKINGS

Paint for parking stalls and game courts shall be regular dry type non-reflective paint, applied to a wet film thickness of 7 mil. Paint shall be Zone-Loc, Traffic Line Paint, as manufactured by Morton, or an approved equal, in the specified color, (310-5.6 and 210.6)

MATERIALS

SOLVENT WELDED PLASTIC PIPE Schedule 40 PVC plastic pipe shall be used for pipe sizes up to and including 2 1/2 inch diameter on both the discharge and supply side of control valves, (212-2.1.3). Class 200 PVC plastic pipe shall be used for pipe sizes from 3 inch up to and including 6 inch diameter.

RESTRAINED PLASTIC PIPE

including 6 inch diameter.

including 10 inch diameter.

DUCTLE IRON FITTINGS FOR RESTRAINED PLASTIC PIPE

Fittings shall be manufactured of ductile iron, Grade 65-45-12 in accordance with ASTM A536. Fittings shall have deep bell push-on joints with gaskets meeting ASTM F477.

GASKET LUBRICANT

Push on fitting joint lubricant shall be non-toxic, odorless, tasteless and shall not support bacteria. W•^Á\Ju^æµÁŠčà^+HÂÛSÀÌÏÏF€ÁsîÁQÚÙÁ⁄^|å[}ÁÔ[¦][¦ææãį}Áį́¦Á°ča¢È

VALVE TO PIPE RESTRAINTS

Valve to pipe restraint shall consist of ductile iron (ASTM A536) grip rings with machined serrations and ductile iron restraint rods. The ring that grips the pipe shall meet the requirements of UNI-B-13-94. The restraint rod nuts shall be made from low alloy steel to AWWA/ANSI C111/A21.11 or ductile iron to ASTM A536.

FITTING TO PIPE RESTRAINTS

Fitting to pipe restraint shall allow the full rating of the pipe on which it is use. Grip rings and restraint structures shall be made of ductile iron to ASTM A536. Grip ring serrations (gripping features) shall be fully machined or cast. Clamp bolts and nuts shall meet or exceed ASTM A307.

Combined aggregate gradings for Portland Cement shall be as specified under this section,

Expansion joints shall use a 3/8 inch thick asphalt impregnated felt expansion joint.

When specified, expansion joint material shall be 1/4 inch thick asphaltic joint material as

End of pour joints shall be 1/4 inch thick asphaltic joint material as manufactured by Sealtight Co.,

Admixtures for colored concrete shall be Lithochrome Color Hardener by L.M. Scofield Company (800) 800-9900, or Davis Mix-in Colors for concrete by Davis Colors, (800) 800-6856, or an

Concrete walks, pads, or mow strips shall have a medium broom finish, unless otherwise noted on the plans. The Contractor shall prepare a minimum three foot by three foot sample for approval by the Project Manager before any concrete is placed, (303-5.5.3). Any sidewalk in the public street right of way constructed as a portion of this contract shall be finished as directed by the BCA

Colored concrete admixtures shall be formulated and mixed according to manufacturer's printed instructions. Calcium chloride set-accelerators shall not be used.

3. IRRIGATION SYSTEMS

For Irrigation main lines, Class 200 PVC pipe shall be used for pipe sizes of 3 inch up to and

For fire lines, Class 150, DR 18, C900 PVC pipe shall be used for pipe sizes of 4 inch up to and

9 10 **PIPE TO PIPE RESTRAINTS**

Pipe to pipe restraints shall allow the full rating of the pipe on which it is used. Grip rings and bell rings shall be made of ductile iron to ASTM A536. Grip ring serrations (gripping features) shall be fully machined or cast. Restraint rod nuts shall be of low alloy steel to AWWA/ANSI C111/A21.11. Clamp bolts and nuts shall meet or exceed ASTM A307.

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REMOTE CONTROL VALVES

All remote control valves shall be electrically operated with body of cast brass or bronze construction, (212-2.2.4) and installed per details.

CONTROL WIRE

Connection between the automatic controller(s) and the remote control valves shall be made with direct burial 14 gage, AWG-UF, 600 volt, copper wire. Wires shall be provided in the following colors: red, yellow, blue, green, orange, tan, purple, pink, brown, gray, and white.

CONTROL WIRE CONNECTIONS

Control wire connections shall be made with 3-M brand of DBY or DBR Direct Burial Splice kits or approved equal. The splice kit shall consist of a one-piece malleable plastic bulb body with internal locking fingers, filled with re-enterable gel sealant and a Scotchlok Electrical Spring Connector. Materials shall be as follows:

Connector shall be a flame retardant PVC insulator with a steel spring and shell within. Connector shall be a non-crimping system

Tube material shall be clear see-through polypropylene. Gel material shall be hixotropic calcium organic complex.

Wire sizes and numbers of wires shall be as shown below

CONNECTOR	COLOR	NO. AND SIZE OF WIRE
3M Model DBY	Yellow	Max. 4-12 gage UF wires
3M Model DBR	Red	Max. 3-14 gage UF wires

$\sqrt{1}$ QUICK COUPLING VALVES AND ASSEMBLIES

Quick couplers shall be 1 inch i.p.s., two piece, brass or bronze construction equipped with a cover, unless otherwise specified on plans. The Contractor shall provide one quick coupler key with hose swivel for each five quick couplers installed. Contractor shall supply a minimum of one quick coupler key with hose swivel, (212-2.2.6) and shall be installed per details.

$\sqrt{VALVE BOXES}$

Valve boxes shall be of Portland Cement with a cast iron frame and hinged double toggle locking cover, or as specified on plan or in plan details. The inside dimensions of the box shall be 10 1/2 inches by 17 1/4 inches, Model 363 1/2 HFL by Eisel Enterprises Inc., or approved equal. The cast iron cover shall be permanently embossed, "GV" for gate valve, "RCV" for remote control valves, "QC" for quick coupler valves, MV for Master Valves, or FM for Flow Meter. Paint is not acceptable. Contractor shall supply one (1) valve box cover key for each five (5) valve boxes installed. Provide a minimum of two (2) cover keys, (212-2.2.7). Boxes are to be installed per the applicable details.

$\sqrt{\text{DOMESTIC WATER LINES FOR DRINKING FOUNTAINS}}$

Install water piping in accordance with the latest edition of the Uniform Building Code and all local ordinances. Prior to allowing human consumption of water from newly installed drinking fountains the contractor shall perform domestic sterilization procedures as indicated in applicable details and meet standards indicated. New drinking fountains shall be turned off or otherwise made inoperable until this testing is successfully accomplished.

Domestic Cold Water Piping ABOVE GRADE KÁUJ J * Á @ee|Ás^ÁOEUVT ÁÓI Ì ÁV^] ^ ÁSAÁ^æ [^•• hard drawn copper tubing with ANSI B 16.22 wrought copper fittings. Joints shall be made up with lead-free, nickel bearing alloy solder such as Harris Bridget.

Domestic Cold Water Piping BELOW GRADE KÚJ jā * Á @ed Ás^ÁŒUVT ÁÓI Ì ÁV^] ^ ÁS +Á ^ æt /^•• hard drawn copper tubing with ANSI B 16.22 wrought copper fittings. Joints shall be made up with lead-free, nickel bearing alloy solder such as Harris Bridget.

METHODS

EXISTING IRRIGATION SYSTEM REPAIR - GENERAL

The Contractor shall reconstruct any existing irrigation lines that are to remain in service, when they interfere or are damaged by construction. Reconstruction of the irrigation lines shall conform to the applicable sections of the Landscape Construction Notes using all new materials except existing irrigation heads, which may be reinstalled. When modifications to an existing irrigation system are part of the project, the Contractor shall verify the operation of all existing irrigation controllers, remote control valves, quick coupling valves, and irrigation heads prior to the commencement of work. The Project Manager shall be notified, in writing, of any inoperable equipment encountered.

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NEW PIPELINE INSTALLATION - GENERAL

- $\sqrt{\sqrt{W}}$ When pipelines run parallel they shall be separated horizontally by a minimum distance of 12". When pipelines cross each other they shall be separated vertically by a minimum distance of 3".
- $\sqrt{1}$ No irrigation trenching shall pass closer than eight feet of the base of any tree. No tree root larger than 2" diameter shall be cut without approval of the Project Manager.

COVER OVER MAINLINES:

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COVER OVER LATERAL LINES:

 $\sqrt[]{}$ Maintain 12 inches of cover over all lateral lines.

Pipe bedding and backfill: bedding shall surround the pipe to one foot above the top of the pipe. Bedding shall be placed in 6 inch lifts. All bedding shall be densified by water jetting. Water jetting shall be sufficient to thoroughly wet bedding material around the pipe, (306-1.2.1). There shall be no rocks over 1/2" in greatest dimension and no organic matter placed in the bedding material. Backfill shall be the material placed above the bedding. Backfill shall be placed in one-foot lifts and densified by water jetting. Jetting shall be continued until backfill collapses and water is forced to the surface, (306-1.3.1). Pipe trenches thoroughly densified by water settling shall have a minimum relative compaction of 85%. There shall be no rocks over 2" in greatest dimension or organic matter in the backfill. Trench areas which exhibit insufficient densification shall be subject to compaction tests as requested by the BCA Inspector or the Project Manager. All such compaction tests shall be at the expense of the Contractor. Additional tests may be

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required until the 85% minimum compaction is achieved. Finished trenches shall match finish grades flush with adjacent finish grades. The Contractor shall be responsible for maintaining the trenches flush and smooth until final acceptance of the project. Trenches in existing lawn shall be repaired per method A lawn repair of the Landscape Planting Section of the Landscape Construction Notes.

The maximum trench width shall be two and a half diameters of the pipe.

PIPES AND REMOTE CONTROL WIRING CROSSING UNDER PAVING:

Where irrigation piping crosses a vehicular roadway or other paving having a width of less than 25 feet, a Schedule 40 PVC sleeve which is a minimum of two pipe sizes larger than the piping to pass through it, shall be jacked under the paving at a depth of 36 inches minimum. Where remote control wiring crosses under paving having a width of less than 25 feet, a 3 inch Schedule 40 PVC sleeve shall be jacked under the paving at a depth of 30 inches minimum. All sleeves shall extend 3 feet minimum beyond the edges of paving.

Where irrigation piping crosses a vehicular roadway or other paving having a width greater than 25 feet, a trench shall be excavated across the roadway or paving to accommodate a Schedule 40 PVC sleeve a minimum of two pipe sizes larger than the piping to pass through it, at a depth of 30 inches below the bottom of the paving, as measured from the top of the sleeve. Where remote control wiring crosses under paving having a width greater than 25 feet, a 3 inch Schedule 40 PVC sleeve shall be installed at a depth of 30 inches below the bottom of the paving, as measured from the top of the sleeve. The backfill of the trench shall be a 2 sack cement slurry. The slurry shall extend from the bottom of the trench to within one inch of the bottom of the existing paving. The trench in the existing paving shall be repaired with a like paving material and join the existing paving both horizontally and vertically.

FITTINGS ON MAINLINES:

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All outlets from a mainline shall be accomplished with line sized tees with an outlet of the specified size. No saddle tees shall be permitted.

INSTALLATION OF VALVE BOXES

Boxes shall be set flush with existing grade, including sloped areas, and all soil within 12 inches of the perimeter of the box shall be compacted by water settlement as indicated in the trench repair section of this specification. Boxes are to be positioned per details.

LAYOUT OF PIPING

Pipe layout as shown on irrigation plan is schematic. Contractor may route piping in the most expedient manner consistent with the requirements set forth herein, including avoidance of tree roots. Contractor shall adhere to As-Built requirements as shown below.

PLACEMENT OF IRRIGATION HEADS

Note: Irrigation plans are designed, as a minimum standard, for head-to-head coverage. Head locations shall be scaled from center of head symbol directly from the irrigation plan. Accuracy of placement shall be within plus or minus two feet for all rotary heads having a throw of 25 feet or greater; within plus or minus 12 inches for all head types with a throw of under 25 feet. Where heads are located adjacent to paving, the heads shall be placed within three inches of such paving.

INSTALLATION OF IRRIGATION HEADS

Sprinkler heads in lawn areas shall be set flush with finish grade at initial installation and protected during construction. All soil 12 inches from the perimeter of the head shall be compacted by water jetting as indicated in this specification, or set in sand as shown on details.

SPRINKLER HEAD RISER

All plastic sprinkler heads shall be installed on swing joint assemblies as shown on details.

AUTOMATIC CONTROL SYSTEM INSTALLATION

The foundation of the automatic controller shall be per details. Each remote control valve shall have a separate 24 volt control wire from the automatic irrigation controller.

\sqrt{V} LOW VOLTAGE WIRE CONNECTIONS

Connectors shall be DBY or DBR as manufactured by 3M Corp. Control wires shall be stripped of 1/2 inch insulation, inserted into the electrical spring connector, and the connector twisted in a clockwise direction until the wires are tight. Insert the completed splice into the gel-filled tube, and check visually to confirm that the wire nut has been pushed past the fingers and is seated in the bottom of the tube. Position wires in wire channels and close insulator cover.

CONTROL WIRE

Connection between the automatic controller(s) and the remote control valves shall be made with direct burial 14 gage, AWG-UF, 600 volt, copper wire. Wires shall be color coded as follows:

COLOR	STATION	STATIONS	STATIONS	STATIONS
RED	1	11	21	31
YELLOW	2	12	22	32
BLUE	3	13	23	33
GREEN	4	14	24	34
ORANGE	5	15	25	35
TAN	6	16	26	36
PURPLE	7	17	27	37
PINK	8	18	28	38
BROWN	9	19	29	39
GRAY	10	20	30	40

CONTROLLER TAPE BUNDLE COLOR

А	RED
В	YELLOW
С	BLUE
D	GREEN
E	WHITE
F	BLACK

Each exterior controller enclosure shall have a ground rod installed if detailed on controller installation detail.

Wire shall not be taped to mainline (308-5.5). If control wires run in same trench as lateral lines, or are dead headed, wire depth shall be maintained at 24". For installation, see details.

$\sqrt{1}$ IRRIGATION SYSTEM FLUSHING AND TESTING

The irrigation system shall be flushed in the presence of the BCA Inspector. Flushing shall start with the valve closest to the point of connection and proceed with each consecutive valve toward the valve farthest from the point of connection. Each lateral system shall have each riser capped during the flushing commencing with the riser closest to the valve and proceeding to the farthest riser. After the entire irrigation system has been flushed the system shall be pressure tested in accordance with section 308-5.6 of the SSPWC.



 $\sqrt[4]{}$ The irrigation system mainlines shall be pressure tested following the flushing of the complete system. The mainlines shall be tested for 24 hours at 125 p.s.i. with all control valves in place and closed. During the test, the Contractor shall provide pressure gauges downstream from the backflow device and upstream from the farthest remote control valve in the system. Air pressure testing of the irrigation system is acceptable if approved by the Project Manager. Placement, quantity and color coding of controller wires shall be verified before mainline trenches are backfilled.

RECORD DRAWINGS (AS-BUILTS) AND CONTROLLER CHARTS

As built plans shall be maintained throughout the construction period and turned over to the Project Manager at the Operational Final Inspection, in accordance with Article 8 of the General Requirements.

The Contractor shall provide two copies of a controller chart showing the irrigation system installed. The chart shall be done on a half size photographic reproduction of the irrigation plan and shall reflect the as-built data. Each station shall be shown in a different color and control wire locations shall be indicated. The complete plan shall be laminated on each side with a 20 mil acrylic plastic sheet. A 3/4" brass grommet shall be placed in each top corner. The Contractor shall obtain approval of the controller chart from the Project Manager, before proceeding with the plastic lamination.

WARRANTY FOR IRRIGATION SYSTEM WORK

The entire sprinkler irrigation system shall be warranted to be free from defects in materials and workmanship, and installed in accordance with these Landscape Construction Notes and the SSPWC. The Contractor shall be required to repair or replace any defects in material or workmanship which may develop within one (1) calendar year from the date of acceptance, ordinary wear and tear and unusual abuse or neglect excepted. Further, the Contractor shall be required to make any necessary repairs within 24 hours of notification at no cost to the Department. If the Contractor or his agent fail to make such repairs within the stipulated time, the Department shall make such repairs or have repairs made by a third party and bill the Contractor for all expenses that accrue from making such repairs.

GUARANTEE AGAINST SETTLEMENT

If, within one (1) calendar year from the date of acceptance, settlement occurs along mainlines, lateral lines, at valve boxes, or other irrigation related appurtenances, and adjustments in pipes valves and sprinkler heads are required to bring the system, sod, or paving to the level of the permanent grades, the Contractor shall make all adjustments without additional cost to the Department, including complete restoration of any planting, paving, or other improvements damaged as a result of settlement.

STEEL PIPELINE

Joints shall be made with Teflon tape applied to the male threads only, (308-5.2.2).

PLASTIC PIPELINE-SOLVENT WELDED OR THREADED ENDS

Prior to the application of the P.V.C. solvent cement, prepare all surfaces to be solvent welded with tetrahydrofuran primer tinted purple. Teflon tape shall be used on all plastic male pipe threads, (308-5.2.3).

SPIGOT AND BELL JOINTS FOR 3" AND LARGER PVC MAINLINE

Øð\å/&č of\ā]^Á @ed|/&s^Ás^ç^|^å ÁserÁe]]¦[¢ã] æe^\^ÁFÍ óÁse}å/sed|Á @ed] Á&[¦}^!•Á{ [[c@*åÉkOE[ð]} pipe sections straight. Clean all debris from the bell areas of the fitting and install gasket so that it is completely seated in the groove with no raised areas.

Apply lubricant to the installed gasket and to beveled end of the cut pipe or to the spigot end of the pipe or fitting. Align the pipe with fitting and push together by hand or with pry bars on the end of the fitting or with two pry bars using the lugs on the fitting. Insert until the reference line mark is even with edge of the fitting bell.

BACKFLOW DEVICE INSTALLATION AND CERTIFICATION

The Contractor shall obtain certification of the backflow device and submit two copies of the certification to the Project Manager at the Operational Final. The backflow certification shall be made on the County Health Department standard form and filed with the County Health Department, Cross Connection Section, Room 150, 2525 Corporate Place, Monterey Park, CA, 91754. The contractor shall paint all backflow prevention devices above ground with two coats of forest green enamel. Mask all identification tags prior to painting, (308-5.3). After certification remove all test cocks, replace with threaded brass plugs, and deliver test cocks to Project Manager.

4. CHAIN LINK FENCING AND MISCELLANEOUS METAL CONSTRUCTION

MATERIALS

√√CHAIN LINK FENCING

Chain link fencing materials shall be as specified in the applicable details and Section (206-6).

 \sqrt{V} Pipes for posts, braces and rails shall be Class 1, Schedule 40, ASTM F 1083 or, Class 1A, with a minimum 50,000 psi yield strength. Class 1 pipe shall be galvanized as indicated in this section of the Landscape Construction Notes. Class 1A pipe shall have a minimum hot dipped zinc coating of 0.9 oz./Sq. Ft., 15 micrograms of chromate per square inch and a minimum or 3 mils of acrylic coating on the exterior of the pipe. The interior coating of Class 1A pipe shall be hot dipped galvanized with .9 oz/ Sq. Ft. Zinc. Materials for chain link fence posts, rails and braces shall be sized as follows:

NOMINAL SIZE	ACTUAL O.D.	Class 1 Pipe Wall	Class 1 Weight	Class 1A Pipe Wall	Class 1A Weight
(incries)	(inches)	THICKNESS	lin. ft.	THICKNESS	(Pounds)
1 1/4"	1 5/8"	.140	2.27	.110	1.82
1 1/2"	1 7/8"	.145	2.72	.120	2.28
2"	2 3/8"	.154	3.65	.130	3.12
2 1/2"	2 7/8"	.203	5.79	.160	4.64
3"	3 1/2"	.216	7.57	.160	5.71
3 1/2"	4"	.226	9.11	.160	6.56
4"	4 1/2"	.237	10.79	NA	NĀ
6"	6 5/8"	.280	18.97	NA	NA

CHAIN LINK FABRIC

5

Galvanized steel chain link fabric shall conform to ASTM A 392, Class 2, 1.20 0z./Sq.Ft. zinc. Fabric shall be 9 gauge and be woven in a 2" mesh unless otherwise indicated on the plan. Top and bottom selvages shall be knuckled.

6

PVC coated galvanized steel fabric, when specified, shall conform to ASTM F 668, Class 2b, "fused and adhered", and meet the galvanizing requirements contained in this section of the Landscape Construction Notes, (206-6.3).

STEEL SHAPES

210-3.2(A) of the SSPWC.

WANUFACTURER'S CERTIFICATE OF COMPLIANCE The manufacturer of the Chain link fabric, fence posts, rails and braces shall provide the shall state that the materials delivered conform the specification for materials as described in these Landscape Construction Notes. The Certificate of Compliance shall be delivered to the

REPAIRING OF DAMAGED GALVANIZED SURFACES

Standard Specification.

 $\sqrt{PAINTING}$ (TUBULAR STEEL AND CHAIN LINK FENCING WHEN REQUIRED) %2000054 ¦^+/&{ 2000 à Áč à` |26 Á c^^ |Á^} &3 * Á ¦Á&@2000 Á3 \ Á^} &3 * Á @26 |Á3 ^ Á % (20 *) * A * (20 *) requirement. All other shop fabricated tubular steel fencing or fencing constructed on site shall à^Á;æājơ^åÁ5jÁæ&&{[¦åæ);&^Á;ãc@ko@:Á^˘˘ã^{ ^}œÁ{[¦Ájæājcāj*Áxa2^\¦[č•ÁT^œ4ÁQÞ[}Ë*æqcæ);ã^åD Ù˘¦-æ&∧•+Áà^∥[, ÈÁ/@^Áç [Á∄jã @Á&] æ® Á @æd|Áà^Áà|æ&∖Á }|^••Á;c@o¦,ã^Á]^&ããð åÈ

METHODS

site.

CHAIN LINK FENCE

All connection bolts shall not extend more than 1/4 inch past the end of the nut and be free from burrs.

MATERIALS

AMMONIUM PHOSPHATE

Shall be a standard agricultural grade of ammonium phosphate having guaranteed analysis of 16-20-0.

GYPSUM

Shall be agricultural grade

HYDROSEED MULCH FIBER

Shall consist of virgin wood fiber of Aspen or Alder. It shall not contain any waste paper, newsprint or straw material. The mulch shall contain a green dye to facilitate application. Fiber shall be as manufactured by Conwed Co., (Green Tag), Silva-Fiber by Weyerhauser Co., or an approved equal, (212-1.2 (e)).

HYDROSEED STABILIZER

684-0436, no equal.

√ ORGANIC AMENDMENT

Contractor shall submit a sample of the organic soil amendment to the Project Manager/BCA Inspector for approval prior to installation

GRO-POWER PLUS - GENERAL PURPOSE FERTILIZER Shall have a minimum analysis of 5-3-1 (N-P-K) derived from ammonium phosphate, urea, sulfate of potash, compost and sulfides and oxides of iron, manganese and zinc, with 1.00% Alkyl Naphthalene Sodium Sulfonate soil penetrant as manufactured by Gro-Power Inc., 5065 Telephone Avenue, Chino, CA 91710 (909) 393-3744, or an approved equal.

ESTABLISH - GENERAL PURPOSE FERTILIZER

Shall have a minimum analysis of 1-1.3-5, (N-P-K), derived from rock phosphate, peat moss, chicken manure, sand, sulfate of potash, gypsum, and EDDHA chelate. As manufactured by Earth Works Soil Amendment, Inc., (888) 764-5296, or an approved equal.

FERTILIZER TABLETS

Fertilizer tablets shall be Gro-Power planting tablets, 7 gram 12-8-8 (N-P-K) 20% HUMUS, 4% HUMIC ACIDS, 3.5% Sulfur, 2% Iron, Micronutrients, as manufactured by Gro-Power Inc., 5065 Telephone Avenue, Chino, CA 91710 (909) 393-3744, or an approved equal.

HYDROBLEND SOIL ACTIVATOR 764-5296, or an approved equal.

FEATHER MEAL

Shall have a minimum analysis of 12-0-0, (N-P-K), derived from feathermeal. As manufactured by Earth Works Inc., (888) 764-5296, or an approved equal.

OVERSEED TOPDRESSING, EARTH WORKS ORGANIC TOPDRESSING

Shall be derived from composted wood products, peat moss, chicken manure and a wetting agent. As manufactured by Earth Works Inc., (888) 764-5296, or an approved equal.

Potassium sulfate

0-0-50.

Sheet Version 2.2

All structural steel shapes shall be as specified in the applicable detail.

Where called out, metal products shall be hot dipped galvanized in accordance with **TABLE**

Contractor a Certificate of compliance for each shipment sent to the project site. The Certificate Project Manager and BCA Inspector before any fencing materials are installed at the project

Galvanized surfaces which have been damaged in transport or during installation shall be re-coated using the metalizing process or zinc oxide, zinc dust paint per Section 210-3.5 of the

Chain link fence shall be installed and stretched tight between posts

5. LANDSCAPE PLANTING

Shall consist of natural muciloid materials supplied by Ecology Controls M-binder, (805)

Á&c^]^ÁF+4{\!*æ} &&4{[alÁse{ ^} å{ ^} c^] c^{(1)} & 20 } composite that is well-composted and nitrogen stabilized, derived primarily from composted greenwaste or processed wood products, and free of foreign matter including any viable plant tree or weed seed. 99% of material shall pass through a 1/2" screen. Salinity: material shall have a maximum saturation extract conductivity of 2.50 millisiemens per centimeter.

Shall have a minimum analysis of 1.2-1.4-5, (N-P-K), derived from rock phosphate, peat moss, chicken manure, sulfate of potash, gypsum. As manufactured by Earth Works Inc., (888)

Shall be a standard agricultural grade of potassium sulfate having guaranteed analysis of

8

9 ROUNDUP

8

Shall be a water-soluble herbicide for non-selective control of weeds containing 480 grams per liter of the active ingredient Isopropylamine salt of N-(phosphonomethyl) Glycine (Glyphosate) per U.S. gallon, as manufactured by Monsanto Chemical Company, or approved equal.

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PRE-EMERGENT HERBICIDE

Shall be Balan Granular, by Elanco, or an approved equal. All pre-emergent herbicides, when required, shall be specified and applied by a licensed Pest Control Advisor.

1/ATOP DRESSING MULCH

Shall be seasoned tree chip mulch, free all foreign matter including weed and tree seeds. Mulch chip size shall be minimum one (1) inch in diameter and not more than two (2) inches in diameter. Submit sample of mulch and source to the Project Manager or BCA Inspector for approval prior to application.

√√**PLANT ESTABLISHMENT PERIOD**

The plant establishment period shall be for a period of 49 days unless extended as described in this section. The plant establishment period shall be started when all planting and related work has been completed in accordance with the contract documents and approved by the Project Manager. The beginning of the plant establishment period shall be determined by an on site review by the Project Manager. The Contractor shall immediately replace any and all plant materials and/or grass which, for any reason dies or is damaged while under the Contractors care. Replacement shall be made with seed and/or plants as indicated or specified for the original planting.

TURFGRASS SEED

Fresh, clean, new crop seed, mechanically premixed to specified proportions; delivered to the site in original unopened containers bearing the dealer's guaranteed analysis and germination percentage and a certification or stamp of release by a County Agriculture Commissioner. All seed mix shall be in original unopened containers and be subject to inspection prior to mixing. Seed for seeding turf areas shall be as shown in the planting section.

WATER HOLDING POLYMER

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PLANT MATERIALS:

- a. **ALL PLANTS** : The plant names shown or listed on the Contract Drawings shall conform to c@^ÁkJĭ}•^cÁY^•c^\}ÁŐæbå^}ÁÓ[[\ÊkÁæe^•cÁ\åããã[}Á`}|^••Á\c@\\ ã^A`A]^&ããð\åÉQA\$ee|Á&æe^•Ê botanical names take precedence over common names.
- b. **QUALITY**: All plants shall have a growth habit normal to the species in accordance with U.S.A. Standards fore Nursery Stocks, latest editions; shall be sound, healthy, vigorous and free from insect pests, plant disease, sun scalds, fresh bark abrasions, excessive abrasions or other objectionable disfigurements. Tree trunks shall have normal well-developed branch systems, and vigorous and fibrous root system, not root bound and shall be free of kinked or girdling roots.
- c. **TYPE AND SIZE** : Plant materials shall be as listed on the Contract Drawings, unless otherwise instructed by the Project Manager. In case of conflict between the plant schedule totals and total plant count of the contract documents, the Contractor shall the higher number of plants.
- d. **DELIVERY OF PLANT MATERIAL** : shall begin only when it is ready for the work and after the inspections are made and any required soil samples and tests have been reviewed by the Project Manager. All materials furnished for the work shall be not less than the reviewed sample. Upon delivery, Contractor shall tag one plant of each variety for identifying purposes.
- e. **PRUNING**: Other than normal side pruning during the growth period, no pruning shall be done prior to the inspection at the nursery.
- f. **TREES**: All trees shall conform to types, sizes and heights noted on the Contract Drawings. All trees shall be measured for height from the root crown to the last division of the terminal leader and measured for the diameter 3 feet above the root crown. All palm trees shall be measured for height from the root crown to the brown trunk and measured for the diameter 3 feet above the root crown. Trees and plams shall stand erect without support.

All trees shall be staked as designated on the Contract Drawings. Wood tree stakes shall be 2 inches in diameter by 10 feet long, lodgepole grade, pressure treated, capable of standing in the ground at least two years.

g. SOD: Shall be of the type designated on the planting plan, or an approved equal. Sod shall be delivered to the jobsite withn 24 hours of being cut at the nursery, and COMPLETELY installed within 12 hours of delivery to the jobsite. The sod shall be machine cut to between +Ása) å Ái Ðì +Ás@a&\ ÉA, [OÁ§) & |ĭ å ãj * Ás[] Á' ¦ [、 c@4, ¦ Ás@eee&@È

METHODS

TOPSOIL PREPARATION - GENERAL

The type and thickness of topsoil shall be as shown on the plans. If not shown, the topsoil shall be the existing class "C" on-site topsoil. Topsoil shall be scarified and cultivated to a uniform, finely divided condition to a depth of 8 inches. Remove all stones over 1 inch in greatest dimension, to a depth of 6 inches below finish grade, (308-2.3.1). Prior to planting, the top 2 inches of all areas (including slopes) shall be free of weeds, stones and other deleterious matter 1 inch in diameter and larger. Soil shall not be worked when it is so wet or dry as to cause excessive compaction or the formation of large clods or dust.

TOPSOIL PREPARATION

9

If not otherwise specified, all lawn and ground cover areas shall receive the following soil preparation:

3 cubic yards, Type I organic soil amendment per 1,000 sq. ft., (.003 CY/Sq.Ft.) 75 lbs of Establish per 1,000 sq.ft., (.075 Lbs./Sq.Ft.)

12

5 lbs. of Feathermeal, 12-0-0, per 1,000 sq. ft., (.005 Lbs./Sq.Ft.)

10

The soil preparation materials shall be uniformly cultivated into the soil to a depth of 6 inche
minimum and thoroughly watered, (308-2.3.1).

14

$\sqrt{1}$ FINISH GRADING (FOR LAWN AREAS)

13

Finish grading of lawn areas shall take place after the soil has dried out to a workable condition following the soil preparation operations. The soil shall be remodeled and smoothed to the required grades and contours, then rolled in two directions at right angles with a water ballast roller weighing 200 to 300 pounds. Any resulting irregularities in the grade after the initial rolling shall be re-raked, cut or filled, then re-rolled until the grade is free from irregularities. No heavy objects shall be taken over the areas at any time. The final finish grade shall be uniform, without abrupt changes in grade, within one-tenth of a foot of the grades shown on the plan, and approved by the Project Manger/BCA Inspector prior to seeding or sodding. (308-2.4).

WEED ABATEMENT ("GROW AND KILL")

Weed abatement shall apply to all turf and planting areas. The abatement operation shall be commenced only after demolition, grading, hardscape, construction, installation of irrigation system, soil preparation, and fine grading of turf and planting areas have been completed.

NOTE: It is required that herbicides be applied by a licensed **PEST CONTROL APPLICATOR**.

CONTRACTOR RESPONSIBILITY DURING WEED ABATEMENT OPERATION AND **APPLICATION PRECAUTIONS**

The Contractor shall abide by all laws and codes governing weed abatement operations including but not limited to CAL-OSHA requirements and The Healthy School Act which includes ÏGÁQ;`¦Á,[cã&^Á{[Á^{]|[^^^• Ásè} å Á},æd:[}• ÉA`à{ãcædÁ[, ÁscÁ%u/-• cÁÔ[}d[|ÁÜ^&[{ { ^} åæeã[} Á2[¦{ + to RAP, and a completed and accurate MSDS (Material Safety Data Sheet) to be at the site of application. The area of application shall be posted as such and barricaded for public safety æ);åÁ§j-{¦{æeā[}}ĖĂU}Ááã^•Á;ç^¦ÁÁæs&¦^Á§jÁã^^Áõ@Á&[}dæs&d[¦Á@æe|Ádāã^ÁæÁÚ¦[b^&oATæ);æ*^¦ approved plan of phasing the application.

The Contractor is responsible or any and all damage done to plant materials outside of the treatment area. Contractor shall replace, in kind and size, any plant material damaged or killed through the application of herbicide.

Any Contractor, who is obligated under contract with the Department for the construction or refurbishment of a park facility that involves the intended use of herbicides or other pesticides, must first notify the pest management supervisor of the Forestry Division (213) 485-3674. Prior to any approved pesticide applications at any recreation/child care center, the contractor is also required to notify the recreation director-in-charge at least 72 hours in advance of the date/s of application. This is to conform to the State of California Healthy Schools Act of 2000(AB2260). Also, all pest control work performed at any facility should fall within the guidelines of the Department's IPM programs. In addition, each individual project will require a written recommendation by a licensed Pest Control Advisor for any pesticide application.

Any questions regarding pesticide application and procedures at Recreation and Parks facilities shall be directed to the Project Manger/BCA Inspector and the RAP Forestry group, Vegetative Management (213) 485-4826.

In addition to the afore listed responsibilities the following precautions shall be observed in handling and applying herbicide:

- 1. Before applying, Contractor shall read and understand all instructions provided by the manufacturer.
- 2. Product shall not be used when winds are gusty or in excess of 3 miles per hour, or when any other conditions exist, which would result in drift.
- 3. Avoid combinations of pressure and nozzle type or adjustment that result in mist.
- 4. Do not apply during rain, or if rain is forecast within twelve hours. If rain occurs within twelve hour period, material must be reapplied after plant growth has dried out. 5. Contractor shall observe extreme care not to allow spray to contact desirable plant
- material. Use cardboard, plywood, or other appropriate material to shield plant materials outside of the treatment area from overspray.
- 6. Do not apply to bare ground.
- 7. Do not add any other products to any herbicide mix, including spreader stickers or surfactants, unless required by the label directions and approved by the Department's Pest Control Advisor (PCA).

WEED ABATEMENT: GROW AND KILL METHOD

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- Step 1. Clear site of all dead or living vegetative growth by hand or mechanical means. Step 2. Thoroughly water all turf and planting areas daily to keep soil evenly moist for a period of at least two weeks.
- Step 3. At the conclusion of the growth period, treat all plants within the treatment area with Roundup at an application rate of five (5) quarts of Roundup mixed in 50 gallons of clean water per acre applied by spraying. Thoroughly moisten all plant material with herbicide.
- Step 4. Do not water or otherwise disturb treated areas for a period of two (2) weeks.
- Step 5. After two week kill period, remove all dead plant growth. If any living plants are observed, entire plant, including roots, shall be removed by hand. Minimize physical disturbance of the soil.

WEED SUPPRESSION (NON-HERBICIDE WEED REMOVAL)

Weed suppression, shall apply to all turf and planting areas. The suppression operation shall be commenced only after removals, grading, hardscape construction, installation of irrigation system, soil preparation, and fine grading of turf and planting areas have been completed. Contractor shall thoroughly water all turf and planting areas for a period of two weeks minimum prior to commencing removal. Contractor shall clear site of all dead vegetation and living weeds by hand or mechanical means. All removed vegetation shall be properly disposed of off site.

METHOD "A" LAWN PLANTING - REPAIR, SEEDING

Irrigation trenches shall be fully compacted and the grade brought flush with the adjacent undisturbed finish grade. Irrigation trench areas and areas where equipment has damaged the existing lawn shall be seeded per this section.

Sow seed at a rate of three (3) pounds of common Bermuda per 1,000 sq. ft. and six (6) pounds of perennial ryegrass per 1,000 sq. ft. Mulch all seed with 1/4" (or 3/4 cubic yard per 1,000 sq. ft.) of Earth Works Organic Top Dressing.

Alternate method: Existing sod may be carefully cut, removed and reused to sod trenches after backfilling and densification.

If seeding of turf areas is done during cool-season (between October 1st and March 1st) mix shall be:



1 2 3 4	
METHOD "B" LAWN PLANTING, HYDROSEEDING The lawn seed mix for lawn planting shall contain the following materials at the rates specified:	
A.Mulch Fiber - 1,500 lbs./acre B.Stabilizer - 120 lbs./acre C.Fertilizer - Hydroblend, at 3,000 lbs. per acre D.Seed by Weight 280 lb./acre Stovers 'Grand Slam' ryegrass Î €Áà⊞æ'^ÁÙ⊈ ç^¦∙ÁÚ¦∄ &^•• -Áa^¦{ `åæÁ'¦æ•	
60 lb./acre Stovers 'AZ-1' improved kikuyugrass If seeding of turf areas is done during warm-season (between March 1st and October	
METHOD "B" LAWN PLANTING, HYDROSEEDING	
specified: A.Mulch Fiber - 1,500 lbs./acre B.Stabilizer - 120 lbs./acre	
C.Fertilizer - Hydroblend, at 3,000 lbs. per acre D.Seed by Weight 100 lb./acre Stovers 'Grand Slam' ryegrass	
Ϊ Í ÁàÈæ&¦^ÁÙą ç^¦∙Áΰ¦ậ &∿∙∙ ⊬á∧¦{ ઁåǽ⊀¦æ∙ 75 lb./acre Stovers 'AZ-1' improved kikuyugrass	
The Contractor shall supply a delivery receipt to the BCA Inspector certifying conformance with the specified hydroseed mix and indicating that the slurry has not been mixed for longer than two hours. Slurry which has been mixed longer than two hours shall be recharged with 50 percent more of the specified seed mix, at the Contractor's expense, (308-4.8.2(b)). Delivery tickets shall be forwarded to the Project Manger/BCA Inspector.	
SOD LAWN Sod shall be laid on a grade which has been amended and finish graded in accordance with the topsoil preparation and finish lawn grading specifications of the Landscape Construction Notes. The sod strips shall be laid tight against the adjacent strip with adjacent ends forming a running bond pattern. After laying the sod, roll with a minimum 300 lb. water ballast roller and irrigate.	
The sod shall be Available at\-\	
MULCHING All planting areas except lawn shall receive a minimum two (2) inch deep layer of Top Dressing Mulch per the Planting Details and the Landscape Construction Notes Materials list. Mulch shall be spread evenly throughout planting beds and tree watering basins. Do not bury plant crowns.	
WPLANT ESTABLISHMENT PERIOD The plant establishment period shall be for a period of 49 days unless extended as described in this section. The plant establishment period shall be started when all planting and related work has been completed in accordance with the contract documents and approved by the Project Manager. The beginning of the plant establishment period shall be determined by an on site review by the Project Manager. The Contractor shall immediately replace any and all plant materials and/or grass which, for any reason dies or is damaged while under the Contractors care. Replacement shall be made with seed and/or plants as indicated or specified for the original planting.	
The Contractor shall be responsible for maintenance within the area of work <i>throughout the period of construction and the plant establishment period</i> . Broken or vandalized trees, shrubs, or tree stakes shall be repaired/replaced to a condition as initially installed within seven (7) days of damage. The maintenance shall include continuous operations of picking up trash and emptying trash cans daily, watering, the removal of all weeds in planting areas and all broad leaf weeds in lawn areas, mowing, rolling, trimming, edging, cultivation, fertilization, spraying, control of pests, insects and rodents, reseeding, plant replacement (irrespective of cause), or any other operations necessary to assure normal plant growth and the collection and removal of all trash daily. The Contractor shall maintain the area of work at maximum seven (7) day intervals and perform any needed mowing of existing lawns within the area of work when the grass reaches a three (3) inch height maximum. Five weeks after lawn seeding the Contractor shall apply a slow release 38-0-0 granular fertilizer at a rate of 15 pounds per 1000 sq. ft. to all lawn areas. The fertilizer shall be applied in the presence of the BCA Inspector.	
All lawns shall be of the grass seed or sod specified and shall be free from all broad leaf weeds. The lawn shall not be allowed to grow higher than three (3) inches and • @data At [, ^åAt Add At	
Any malfunctions of, or damage to, the irrigation system caused by the Contractor in the prosecution of his work shall be repaired within 24 hours.	
The designated plant establishment period is part of the total contract time. The plant establishment period will be extended at fourteen (14) day intervals if, at the end of the plant establishment period, the planting, irrigation and other improvements do not reflect the intent of the plans and Landscape Construction Notes. All extensions of the plant establishment period shall be subject to the assessment of liquidated damages, (308-6).	
All shrubs and ground covers shall be guaranteed for a period of ninety (90) days from the end of the plant establishment period. All trees and shrubs 15 gallon size or larger shall be guaranteed for a period of one (1) year from the end of the plant establishment period.	

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DEMOLITION NOTES:

- 1. ANY ABANDONED MAINLINE, LATERAL LINE, OR DOMESTIC LINE WHOSE DEPTH OR LOCATION INTERFERES WITH THE INSTALLATION OF THE NEW FIELD SHALL BE REMOVED.
- 2. ALL REMOVALS SHALL BE PROPERLY DISPOSED OF OFF-SITE.
- 3. LOCATIONS OF EXISTING EQUIPMENT ARE SHOWN SCHEMATICALLY FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR TO VERIFY EXACT LOCATION FROM SITE SURVEY AND IN FIELD. CONTRACTOR SHALL BRING TO THE ATTENTION OF THE PROJECT MANAGER ANY CONFLICTS.
- 4. AFTER EACH RCV OR VALVE IS REMOVED, FILL IN HOLE(S) WITH APPROVED FILL, COMPACT AND BRING FLUSH WITH ADJACENT GRADE.
- 5. ALL EXISTING TREES ARE TO REMAIN UNLESS INDICATED OTHERWISE ON THE PLAN AND SHALL BE PROTECTED PER TREE PROTECTION SECTION IN THE PROVIDED LANDSCAPE CONSTRUCTION NOTES SHEET L001.
- 6. COORDINATE IRRIGATION DEMOLITION WITH THE DEPARTMENT OF RECREATION AND PARKS (RAP) PACIFIC MAINTENANCE SUPERVISOR AT (310) 548-7644.
- 7. ALL SALVAGED IRRIGATION EQUIPMENT SHALL BE TURNED OVER TO R.A.P. IRRIGATION VALLEY MAINTENANCE SUPERVISOR. COORDINATE WITH RAP PACIFIC MAINTENANCE SUPERVISOR AT (310) 548-7644.
- 8. ALL COMPONENTS OF ADJACENT IRRIGATION SYSTEMS (VALVES, HEADS, LATERALS, CONTROL WIRING, ETC.) SHALL BE PRESERVED AND RETAINED. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ADJACENT IRRIGATION SYSTEMS AND SHALL REPAIR AT NO COST TO THE CITY.
- 9. ALL ADJACENT IRRIGATION SYSTEMS SHALL REMAIN OPERABLE DURING DEMOLITION AND CONSTRUCTION PHASE.
- 10. ALL EXISTING SITE ELEMENTS (INCLUDING CHAINLINK FENCING, DRINKING FOUNTAINS, CONCRETE PADS, AC SURFACING) NOT INDICATED ON PLAN FOR REMOVAL SHALL BE PROTECTED IN PLACE.

KEY:

 $\overbrace{(\mathsf{A})}$ CLEAR AND SCRAPE EXISTING TURF AND DISPOSE OF PROPERLY OFF SITE.

- (B) EXISTING CONCRETE CURB TO REMAIN IN PLACE AND PROTECTED.
- C REMOVE AND SALVAGE ALL IRRIGATION HEADS IN THE HATCHED FIELD PER NOTE #7, L201.
- D REMOVE EXISTING IRRIGATION VALVES PER NOTE #7, L201.
- (E) EXISTING IRRIGATION VALVES TO REMAIN IN PLACE AND PROTECTED, TYP.
- (F) EXISTING TREES TO REMAIN IN PLACE AND PROTECTED, TYP. REFER TO TREE PROTECTION NOTES ON SHEET L001
- (G) EXISTING SECURITY LIGHTING FIXTURE TO REMAIN IN PLACE AND PROTECTED.
- (H) EXISTING CHAIN LINK FENCE SHALL REMAIN IN PLACE AND PROTECTED.
- I EXISTING 4" IRRIGATION MAINLINES AND CONTROL WIRES TO BE RELOCATED PER IRRIGATION PLAN ON SHEET L601
- (J) EXISTING 4" IRRIGATION MAINLINES TO REMAIN IN PLACE AND PROTECTED.
- K TWO EXISTING IRRIGATION VALVES (VALVE #23,24 PER AS-BUILT SHEET L103) TO BE REMOVED & CAPPED. REFER TO NOTE #7, L201.
- L EIGHT EXISTING IRRIGATION VALVES (VALVE #22,6,5,4,3,2,1,21 PER AS-BUILT SHEET L103) TO BE REMOVED & CAPPED. REFER TO NOTE #7, L201.
- M EXISTING 2-WIRE GROUNDING BOX TO BE RELOCATED PER IRRIGATION PLAN ON SHEET L601.
- N EXISTING GRAVEL SUMP AND PIPE CONNECTIONS TO REMAIN IN PLACE AND PROTECTED.

LEGEND



EXISTING TURF AREA TO BE SCRAPED AND CLEARED FOR NEW SYN. SOCCER FIELD



13

EXISTING DG PATH TO REMAIN IN PLACE AND PROTECTED

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LOS ANGELES DEPA	CLIENT: RECREATION AND PARKS	GENERAL MANAGER: MICHAEL A. SHULL	SHEET TITLE:			PROJECT: KEN MALLOY HARBOR REGIONAL PARK SVNTHETIC SOCCED FIELD BDO IECT	ADDRESS: 1501 W. L STREET	LOS ANGELES, CA 90710
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GRADING NOTES:

1. ALL REQUIRED FILL OR BACKFILL SHALL BE PLACED IN LOOSE LEVEL LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS, MOISTURE CONDITIONED BETWEEN OPTIMUM MOISTURE CONTENT AND A FEW PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT. STRUCTURAL FILL SHALL BE MECHANICALLY COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY OBTAINED BY THE ASTM D1557 METHOD.

2. ALL WORK SHALL COMPLY TO CITY GRADING REGULATIONS.

3. THE STAMPED SET OF PLANS SHALL BE ON THE JOB SITE AT ALL TIMES.

4. PROTECTIVE MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT ADJACENT PROPERTIES AND FIXED IMPROVEMENTS IN THE PUBLIC RIGHT-OF-WAY DURING GRADING OPERATIONS.

5. DUST SHALL BE CONTROLLED BY WATERING.

6. NO TRENCHES OR EXCAVATION 5'-0" OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND SHALL BE ALLOWED. AN EXCEPTION WILL BE MADE ONLY IF A NECESSARY PERMIT IS OBTAINED FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRY SAFETY PRIOR TO THE ISSUANCE OF A BUILDING OR GRADING PERMIT.

7. REFER TO THE CONSTRUCTION AND LAYOUT PLAN FOR ADDITIONAL DIMENSIONS, TIES, OR OTHER STAKING DATA.

8. FOR REFERENCE TO EXISTING CONDITIONS, SEE TOPOGRAPHIC SURVEY SHEET L101.

9. ALL GRADING SHALL BE IN ACCORDANCE WITH THE LANDSCAPE CONSTRUCTION NOTES, GENERAL EARTHWORK, SHEET L001. ALL OTHER GRADING ISSUES NOT COVERED HEREIN OR LANDSCAPE CONSTRUCTION NOTES, GENERAL EARTHWORK SHALL BE GOVERNED BY THE STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION (SSPWC), LATEST EDITION APPROVED BY THE CITY OF LOS ANGELES, DEPARTMENT OF PUBLIC WORKS.

10. STRAIGHT GRADE SHALL BE RUN BETWEEN CONTOURS AND SPOT ELEVATIONS UNLESS OTHERWISE INDICATED.

11. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY METHODS, MATERIALS, AND LABOR TO EFFECTIVELY CONTROL ANY EROSION ACTIVITY THAT MAY OCCUR DURING THE COURSE OF GRADING AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL OBTAIN THE APPROVAL FROM THE PROJECT ENGINEER PRIOR TO IMPLEMENTATION OF ANY EROSION CONTROL ACTIVITY.

12. SYNTHETIC TURF FIELD PERIMETER DRAINAGE PIPE SYSTEM SHALL BE INSTALLED PER DET. A1 SHEET L406.

KEY:

(A) EXISTING GRAVEL SUMP SCHEMATIC LAYOUT, PLEASE REFER TO SHEET L102.

(B) EXISTING 6" DIA. PIPE, PLEASE REFER TO SHEET L102.

(C) NEW 8" SDR PVC DRAIN PIPE TO CONNECT TO EXISTING 6" DIA. PIPE.

CUT AND FILL CALCATIONS:

FILL : 0 CUT: 1,065 CY OF SOIL

LEGEND

_ _ _

EXISTING DG PATH TO REMAIN IN PLACE AND PROTECTED

ABBREVIATIONS

FS	FINISH SURFACE
FG	FINISH GRADE
INV	INVERT ELEVATION
HP	HIGH POINT
ТС	TOP OF CURB
(30.3)	EXISTING GRADE
30.3໌	PROPOSED GRADE
(30)— —	EXISTING CONTOUR
- 30	PROPOSED NEW CONTOUR
	DIRECTION OF FLOW
	DIRECTION OF SUBSURFACE FLOW
	4" RIGID PVC PERFORATED DRAIN PIPE (SDR)
	ADS ADVANEDGE PERFORATED FLAT
	DRAIN OR APPROVED EQUAL



DIGALERT

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Underground Service Alert of Southern California

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SCALE: 1" = 20'-0"



Y:
SYNTHETIC TURF SOCCER FIELD.
TING CHAIN LINK GATE SHALL BE REPLACED WITH A NEW CHAIN LINK GATE WITH OGY GATE LOCK SYSTEM.
4' HIGH X 5' WIDE SINGLE LEAF CHAIN LINK GATE.
4' HIGH X 10' WIDE DOUBLE LEAF CHAIN LINK GATE.
4' TALL CHAIN LINK FENCE WITH MOW BAND.
TING CURB TO REMAIN IN PLACE AND PROTECTED.
TING DECOMPOSED GRANITE PATH TO REMIAN IN PLACE AND PROTECTED.
ITNG ADA PARKING.

PATH OF TRAVEL TO EXISING RESROOM AND NEW SYNTHETIC SOCCER FIRLD.



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LOS ANGELES	CLIENT: RECREATION AND PARKS	GENERAL MANAGER: MICHAEL A. SHULL				PROJECT: KEN MALLOY HARBOR REGION, SVNTHETIC SOCCER FIELD DRC	ADDRESS: 1501 W. I. STRFFT	LOS ANGELES, CA 90710
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NOTES:

1. CONTRACTOR TO SUBMIT MFR. SHOP DRAWINGS. DETAILS AND MATERIALS TO PROJECT MANAGER FOR APPROVAL PRIOR TO INSTALLATION.

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PANIC BAR ASSEMBLY

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LATCH SIDE ELEVATION

INTERIOR ELEVATION

13 14 15 16							
 GATE MATERIALS POSTS: 3-1/2" O.D. WITH 12" DIA. X 4'-0" DEEP FOOTINGS. GATE FRAMES: TOP, BOTTOM AND SIDE MEMBERS: 2" O.D., MITER GATE FRAME CORNERS, WELD AND GRIND SMOOTH. GATE RAILS: MID RAILS, 1-5/8" O.D. WELD TO GATE FRAME SIDE MEMBERS AND GRIND SMOOTH. RAILS: TOP AND BOTTOM RAILS, 1-5/8" O.D. 2"Y3" 3/16" THICK TUBLI AR STEEL WELD TO GATE POST AT ALL FOUR SIDES. 	ingering			ENGINEERING			CITY OF LOS ANGELES
 6 FABRIC: 9-GAUGE, 1" SQAURE MESH, KNUCKLE TOP AND BOTTOM, PLACE ON EXTERIOR SIDE OF GATES. 7 HINGES: INDUSTRIAL BULLDOG HINGE (180° SWING), 2 HINGES PER GATE, ONE AT TOP AND BOTTOM. 8 ALARM LOCK TRILOGY ETDL-S1G-26D-V99 KEYLESS CONTROL UNIT WITH ALARM LOCK ET-BIC/26D BEST KIT. SATIN CHROME FINISH. 9 5-1/2" WIDTH X 16" LENGTH X 1-3/4" DEPTH STEEL BOX TO HOUSE TRILOGY LOCK ASSEMBLY. STEEL TO BE ³/₁₆" THICK. 10 STRETCHER BAR: 3/16" X 3/4" WITH 1/8" X 1" TENSION BANDS AT 1'-0" O.C. 11 TIE WIRES:11-GAUGE AT 1'-6" O.C AT GATE FRAME TOP, BOTTOM AND MID RAILS. 	au of eng	DATE: BY:					BUILDING NO.
 POST CAPS SHALL BE MALLEABLE IRON OR PRESSED STEEL. TRILOGY LOCK STEEL COVER, 5-1/2" WIDE, 11 GAUGE THICK AROUND TRILOGY LOCK, WELD ONTO FACE OF LOCKING ASSEMBLY BOX ON ALL SIDES, SEE ENLARGED DETAILS, THIS SHEET. 2" X 1'-6", ½" THICK, METAL LATCH PROTECTOR WELD TO LOCK BOX AND GATE FRAME. 2 - 2" X 1" METAL SPACERS, TACK WELD TOGETHER AND WELD TO 2" X 4" METAL PLATE WELD TO GATE POST FOR THE ENTIRE LENGTH OF GATE. 2" X 4", ½" THICK METAL PLATE WELD TO GATE POST AND 2"X1" METAL SPACERS. PANIC BAR ASSEMBLY. AVAILABLE THROUGH VON DUPRIN MODEL #99EO 26D 48" OR APPROVED EQUAL. SATIN CHROME FINISH. TRILOGY LOCK BATTERY UNIT. 	BURE			S-BUILIN			
 ³/₆" THICK X 18" WIDTH, STEEL MOUNTING PLATE FOR PANIC BAR. BEAD WELD PLATE TO GATE FRAME AND LOCK BOX. LENGTH TO BE EQUAL TO WIDTH OF GATE FRAME. ²⁰ 10" METAL KICK PLATE ³/₁₆" THICK (INSIDE OF PARK), WELD TO GATE FRAME ON PARK SIDE OF GATE. ²¹ 12" X 12", ¹/₈" THICK STEEL GATE CLOSURE MOUNTING PLATE. WELD TO GATE FRAME. ²² GATE CLOSURE UNIT, AVAILABLE THROUGH LCN, MODEL # 4040XP R-W/PA 689 OR APPROVED EQUAL. ²³ 1"X1"X60", ¹/₈" THICK, 'L' SHAPE, 90 DEGREE ANGLE METAL STRIP ATTACHED TO METAL SPACER ON LATCH SIDE OF GATE AS GATE STOP AND LATCH FOR PANIC BAR. ²⁴ PROVIDE A 1" CROWN AT TOP OF ALL POST FOOTINGS ²⁵ CONCRETE PAVING. 		∆uo REVISIONS: ^				\Box	INDEX NO.
 26 CONCRETE FOOTING, SEE DETAIL, THIS SHEET. 27 90% RELATIVE COMPACTED SUBGRADE 	8	I ANDSCAPE	1:5 TODATA TA	12 No. 3940 22 E	I C Signature	Renewal Date	APP Date Date
PARK SUNST	TMENT OF PUBLIC WORK	ARY LEE MOORE, PE, ENV SPA CITY ENGINEER	ARCHITECTURAL DIVISION DATE:	CHITECT: JANE ADRIAN LIC. NO. 3940	SIGNED BY: GUILLERMO BARRAGAN	AWN BY: GUILLERMO BARRAGAN	ECKED BY: JANE ADRIAN PROVED BY: MAHMOOD KARIMZADEH, A.I.A., PRINCIPAL ARCHITECT
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16. SYNTHETIC TURF AND SUB-BASE DRAINAGE

Sub-Grade Foundation and Drainage

PART I: General: A. DEFINITION

1.

1.

This section defines requirements for the materials, installation, and operating performance of a sub-grade foundation and drainage system needed for professional-grade synthetic turf field. Defined are the primary system requirements for insuring vertical and dimensional stability of the soil and adequate storm drainage of the playing surface.

B. STANDARDS

All specifications listed are defined per applicable ASTM standard test methods, unless no ASTM standard exists. All other specifications and tolerances listed shall be defined under standard ANSI and/or ISO drawing and specification rules.

Note: This specification requires installation of a continuous foundation-grade concrete curb around the entire perimeter of the athletic field. A formed top ledge or side-mounted composite header (2' x 4') is required for synthetic turf attachment.

PART II: MATERIALS

- A. FIELD SOIL ISOLATION FABRIC
- The prepared soil subsurface shall be isolated from the installed field and drainage system 1. above it with the specified soil isolation fabric. The soil isolation fabric is a woven polyurethane-based material with a minimum gage of 12 mils in thickness.
- 2. A non-permeable membrane is recommended for all soils: Drainage properties of the selected non-permeable fabric shall be 0.10 gallons per minute per square-foot maximum (ASTM D4491). Mirafi 550X fabric or approved equal.

B. TRENCH SOIL ISOLATION FABRIC

The soil isolation fabric is a polypropylene-based material with a minimum gage weight of five (5) Oz/yd2. Minimum permeability is 130 gallons/minute/square foot. Mirafi 180N or approved equal. A non-permeable membrane may be recommended under specific site conditions-see plans to verify.

C. PERIMETER DRAINAGE COLLECTOR PIPE

Drainage piping is a perforated HDPE pipe, diameter specified on plans.

D. PERIMETER CURB

A continuous foundation grade curbing of 3000 psi concrete shall be installed along the entire perimeter of the synthetic field. See plans for curb dimensions.

SECTION B: STABLIZED SOIL BASE COURSE

PART I: GENERAL

A. DESCRIPTION OF WORK

- Extent: It shall be the responsibility of Contractor to provide all labor, materials, equipment and tools necessary for the complete installation of a cement dust stabilized sub-grade in the specified area as shown on the Drawings.
- After the removal of all organic material having an organic content of more than 25%, the 2. subbase shall be graded for planarity. a. Break-up and or pulverize, similar to lime treatment, existing soil as necessary to
- re-grade the treated area as shown on the Drawings, minimum depth of 8 inches. àÈÁV + ã * Á&^{ ^} ŒÁt^æAv@ + ^ Á= ^ æ Á [Á= ^] ^¦ Á= è
- c. Rough grade and compact the mixed material to achieve 98% compaction. 1) Fine grade to specified tolerance.

B. REQUIRED CONTRACTOR EXPERIENCE

The Contractor shall demonstrate experience on at least two (2) sub-grade stabilization projects of the type herein specified.

PART II: MATERIALS

- A. Portland Cement Dust
- Type-II cement shall conform to the requirements of ASTM C150.

PART III: EXECUTION

A. BASE CONSTRUCTION

B. STABILIZATION OF SUB-GRADE

- a. Cement shall be 360 pounds per cubic yard more of the following:
 - Bomag pulverization machine
 - high speed tiller
 - plowing disc
 - rototiller
- 2.
- 3.
- 4. Compact with double drum roller.

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C. QUALITY ASSURANCE

- 1. Testing:
- registered geotechnical engineer from a sampling of the aggregate sieve prior to a double-ring infiltration testing method (ASTM D3385).
- 10,000 square feet intervals.
- achieve compliance with the specification.
- cross-section and density.
- Team for the inspection process.
- f. All testing fees shall be paid for by the Contractor.

1. The Contractor shall approve, in writing, the cross-sectional detail for construction.

1. Apply 10% by volume Portland Cement dust to treatment area and mix in with pulverizing machine. Water shall be as needed to allow setting up of soil cement.

b. Material shall be mixed thoroughly into the existing top 6" of soil using one or

All work in a designated portion of the field area shall be completed, including fine grading, within 24 hours. Cure time of the material is 24 to 72 hours without rain. Do not apply if temperature is below 40 degrees F, including cure process time. Ü[`*@Át¦æå^Ásel^æát[ÁÉ⊞ÉÆF+Át[|^¦æ}&^ÈÔ[{]æ&o∕ásel^æá,ãc@ÁtËF€Át[}Áçãa¦æet[¦Át[[`à|^Áta¦`{

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a. The permeability of the sub-base stabilized material shall be checked by a

placing the liner on the base. The permeability shall not exceed $\frac{1}{4}$ per hour using

b. Testing shall occur after installation and final rolling of the base installation at

c. The Contractor is responsible to meet this performance specification, **before** proceeding with installation of the any stone leveling course, and shall bear the cost of the on-site testing and the cost of any additional work necessary to

d. All test results shall be logged and documented by the Owner's Technical Representative or Geotechnical Engineer. If at any time the stabilized stone base does not meet specifications, it shall be the Contractor's responsibility to restore, at his expense, the processed stone base to the required grade,

e. After the contractor has independently confirmed compliance with all the above tolerances (planarity and elevation verified by a licensed surveyor and compaction, gradation, & permeability verified by Geotechnical Engineer), he shall notify the appropriate party and schedule a final inspection for approval. The contractor shall make available an orbital laser system to the Inspection

PERIMETER MOW STRIP. REFER TO DETAIL J9/L407. WHEN ABUTTING HARDSCAPE OR PLANTING AREA AND 12" WHERE ABUTTING LAWN
/½" RADIUS ON EDGE OF CURB, TYP.
SYNTHETIC TURF, NAILED IN PLACE, INTO POLYMER COMPOSITE LUMBER, MAX. 8" O.C.
2X4 POLYMER COMPOSITE TURF HEADER CONCRETE SCREWED TO CURB USING 1/2" x 3-1/4" TAPCON CONCRETE SCREWS, MIN. EVERY 3' O.C.
IMPERMEABLE ISOLATION FABRIC LINER PER SPECS
8" THICK CEMENT STABLIZED BASE COMPACTED TO 90% MIN
ALL WEATHER TURF WITH ZEC INFILL SEE SPECIFICATIONS
COMPACTED SUB GRADE (90% MIN. COMPACTION)
#4 REBAR, CONTINUOUS CENTERED
CONC. CURB / FOOTING

SECTION C: PERIMETER COLLECTOR DRAINAGE

PART I: GENERAL

A. This work consist of the perimeter perforated pipe and drain rock installed in the perimeter trench.

PART II: MATERIALS

the following gradation criteria:

Mesh size	% Passing
3/4"	100
5/8	100
1/2"	90-100
3/8"	70-90
#4	25-40
#8	15-30
#30	5-15
#50	0-7
#200	0-3

PART III: QUALITY ASSURANCE

A. The permeability of the aggregate shall be checked by a registered geotechnical engineer from a sample of the aggregate sieve prior to shipping the rock to the site. In addition, tests shall be coordinated through the Project Manager to test the rock in 600 ton āj&¦^{ ^}@•Á; -Á;@āj]āj* ĖÁ/@∘Á[&\Á;@eel|Á@eeç^ÁseA,^¦{ ^æeùājãô; Ázee^Á,[Á^••Ásœeù,Á+Î+4,^¦Á@;`¦ and shall be per Din 8035 Part 7, ASTM 2434 (constant head), or ASTM D3385 (doublering) testing methods. In addition to the lab testing, after installation of any aggregate base cross-section designed to conduct rainfall from the turf to the sub-soils and/or under-drain system shall be tested in situ for infiltration rate, using a double-ring infiltrometer (ASTM D-3385-94). The test shall be performed in the presence of the Project Manager. The average infiltration rate of 12 critical areas of the field, as determined by the Project Ta)azt^¦É4.@ad|Á[o/á∖^Á^••Á∞ad)ÁÌ+Á,^¦Á@[`¦Á;Áç^¦ca3aadÁ,aaz^¦Á;ae•azt^Á,^¦Á@[`¦É4,ão@Á[[}^Á/[&ææā]}Á@æçā]*ÁæÁæe^Á/••Á∞æa;Á/1 +Á,^¦Á@_`¦ÈÁ/@/ÁÔ[}dæ&d;¦Áā;Á/•][}•ãa|^Á;tÁ; ^^c this in-situ performance specification, before proceeding with the installation of the synthetic turf, and shall bear the cost of the on-site testing and the cost of any additional work necessary to achieve compliance with the specification. It shall be the Contractor's responsibility to restore at his expense, the processed stone base to the required grade, cross-section and density.

- All testing fees shall be paid for by the Contractor.
- C. The Contractor shall notify the Project Manager and designated City inspector to schedule a final inspection for approval of base and subgrade prior to installing the synthetic turf. The Contractor shall make available an orbital laser system to the inspection team for the inspection process.

C. METHODS

5.

RP DETAIL ---

UNDERLYING SOIL Prior to preparing the site for subgrade foundation and drainage installation, all surface turf and vegetation shall be removed and properly disposed of off-site.

SOIL PREPARATION 2.

The native soil shall be sufficiently irrigated and strafed as required to meet the final conditions set forth below.

Field Contour - Overall surface contour after final grading and compaction shall be as indicated in the Construction Documents

SUBGRADE AND BASE COMPACTION

After final contouring and rolling, the subgrade soil compaction: a. The soil compaction shall be greater than 95% on average, with no measurement less than 95%, in accordance with ASTM D-698, based on eight (8) samples taken at reasonably spaced (pseudo-random locations across the field surface location). The designated City inspector may modify the exact location in the field depending on field conditions. Where site soil is considered expansive, the compaction shall be greater than 95% on average, with no measurement less than 93%.

3.

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b. Installed compaction of base material shall average 95% minimum measured at eight (8) locations reasonable spaced across the field surface with no individual measurement less than 90%. The designated City inspector may modify the exact location in the field.

SUBGRADE AND BASE PLANARITY 4.

- a. Local soil contour after final compaction and grading shall not have deviations in • č¦-æ&∧Á@ea]^Át¦^æe^¦Ás@ea)Á+DÒ+Á;ç^¦Áæá/F€ÓA]æ)EÁ/27a]æ4Á contour shall be plotted on a table of laser-sighted grade elevations using a rectangular grid size appropriate to the area of synthetic turf. Soil grade elevations to be reviewed and approved by the designated City inspector prior to installation of the soil isolation fabric.
- _b. V@^Áa]ā@°åÁ`¦~æ&^Á,~Á©?A&[{]æ&c^åÁæ}åÁæ^^¦Ë'¦æå^åÁaæ^^{; aæ^¦ãæhÁ@`|åÁa^Á^cA + along the nailer.

PERIMETER COLLECTOR DRAINAGE PIPE INSTALLATION

- a. Perimeter drainage system shall be coupled with a main drain exit, see Construction Drawings.
- b. The perimeter drainage trench is nominally placed 4' inboard of the perimeter curbing ãc@ÁscÁ, ājāj ǐ{ Á, ãå c@Á, ÁFÌ +ce) å ÁscÁ, ājāj ǐ{ Áå^] c@Á, ÁFÌ +ÁQacóko@ Á‰] @ã|+Á?} å Á, Ás@
- c. Surface contour between the drainage trench and perimeter concrete curb should be counter-sloped to the field at a minimum of 1% for surrounding infiltration or as specified in the provided Construction Drawings.
- d. Trenches shall be cleared of all loose debris.
- e. Install perforated HDPE pipe in the perimeter collector trenches.
- f. The centerline of the pipe shall coincide with the centerline of the trench. _g. OEÁ, ājāj ~{ Áj ~Á, +Áj ~Ás@ Á&j ||^&d; ¦Ás/^}&@4si ¦æaj Áj &\ Á @ed;|Ás/^Á, |æ8/^å Áaj Ás@ Ási [oc; { Áj ~Ás@ collector trenches, on top of the specified soil isolation fabric. The drainage rock shall be compacted per specification. Fill the remainder of the collector trenches with the specified pipe and the specified drainage rock to top of subgrade, compacted per specification.
- h. The trench bottoms shall have a drainage slope of 0.5% minimum with a preferred slope of 0.75% throughout the entire system or as specified in the provided Construction Drawings.

SYNTHETIC TURF CONNECTION AND EXPOSED CURB

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OF

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9.	Site Acceptance: As a part of this contract, this contractor shall be responsible to oversee the installation of the base and drainage and to comment on any problems or conflicts that may be discovered. Upon completion of the base work, submit a letter confirming the site inspection has been performed, noting any discrepancies, problems and/or conflicts. A summary of certification of the acceptance of the base and drainage shall be submitted.	6.	Contractor shall replace with new materia synthetic grass system, which extends m combustibles, which may ignite, and fire-o Contractor shall not be held responsible f These warranties and the Contractor's ob	Ils, at their sole expense, any damage to the ore than one meter beyond the location of foreign damage the synthetic grass system. The or any incidental or consequential damages. Iligations here-under are expressly conditioned	3. 4. a.	Packing and Shipping: Deliver manufacturers' identification. A sunlight. The in-fill system shall have n The materilal shall have a MO	products in original All materials shall be ot less than 2 pound HS hardness of 4.2	unopened packaging with legible stored in a dry place out of the direct s of Zeolite, 12-20 mesh sieve size. to 4.8		
C. 1. D. 1.	STANDARD SPECIFICATIONS FOR LAYOUT AND RULES All markings shall be performed using selected colors of turf materials. FIELD SLOPE Each field shall be installed with a SLOPED surface. The slope of the field may not exceed		 The City of Los Angeles making all the discovery of the need for such rep The City of Los Angeles maintaining in accordance with the Contractor's m The City of Los Angeles complying 	minor repairs to the synthetic grass system upon airs. and properly caring for the synthetic grass system aintenance manual and instructions.	C. 1. D.	PERMEABILITY REQUIREM The combined turf, in-fill syste precipitation per hour for 24 he ADHESIVE MATERIAL PRO	ENTS OF THE SYN m and pad shall dra burs continuously, w PERTIES	THETIC GRASS SYSTEM in vertically at a minimum of 10 inche vithout visible surface ponding.		
E. 1.	a finish profile of 0.75% grade for the Base Bid. This will be maintained throughout. Any modification to this slope shall be submitted in advance to the Project Manager for final review and approval. DELIVERY, STORAGE AND HANDLING Packing and Shipping: Deliver products in original unopened packaging with legible	7.	 The City of Los Angeles complying established by the Contractor. The warranty is not to cover any defect, for synthetic grass system caused by or contract of God, casualty, static or dynamic loads 	ailure, damage or undue wear in or to the nected with abuse, neglect, deliberate acts, acts exceeding Contractor's recommendations.	1.	 Adhesive material to adhere the adhesive material to adhere the adhesive as manuface. StaBond (one part adhesive. Mapai Ultrabond PU 1K(sinted to adhesive. The adhesive shall be appeared. 	ne synthetic turf sha ctured by Synthetic S re), By StaBond adh ngle component), M lied at the rate not to	II be: Surfaces, Inc. of Scotch Plains, NJ. esive, Gardena, CA apai, Deerfield Beach, FL o exceed 60 square feet per gallon.		
a.	manufacturers' identification. All materials shall be stored in a dry place out of the direct sunlight. Bulk Materials: Deliver materials in clean, washed and covered trucks to eliminate contamination during transportation. On site stockpiling locations to be coordinated with the City of Los Angeles. Stockpile only in areas free of debris and away from	8.	Contractor shall examine the synthetic tu any claim that the City of Los Angeles ma results of all tests conducted by the City of tests of their own. Contractor shall not be by the City of Los Angeles or others with	of system at least once per year or in regards to akes to be present at any time, to analyze the of Los Angeles or others, and to conduct such responsible for any costs or expenses incurred respect to such tests, except the Contractor shall	2. E .	 Hot melt glue method using The adhesive shall have the s SYNTHETIC TURF PILE SUF 	g National Adhesive ame warranty perio RFACE	s (281) 731-8949 Product #34-5637 d as the synthetic grass system.		
F. 1.	 Grainage routes. Cover all materials with plastic or geotextile if materials are to be stockpiled more than 48 hours. FIELD SYSTEM HOLD HARMLESS The contractor shall hold the City of Los Angeles, Project Manager and Field Consultant hormlose from infringement of any current or future potent issued for the current to an and the current of the current of the superscent of the current of the superscent of	9.	pay for costs of all tests and analysis con annual testing will be at the expense of th of Los Angeles within 60 days of the testi In the event the Contractor does not resp	ducted or directed by their representative. The ne Contractor and the results delivered to the City ng. ond to the City of Los Angeles's written notice	1.	The pile surface shall provide &[} ç^} 確	good traction in all t	ypes of weather with the use of }		
	system, fibers, backings, including shock pad (if required), installation methods and vertical draining characteristics. The successful Proposer will be required to submit a letter for consent from their surety. Surety will indemnify the requirements.	10	within 10 days of receipt of the notice or of work within 60 days (weather permitting), the work performed at the expense of the	does not submit, schedule and execute corrective the City of Los Angeles has the option of having Contractor.	2. F.	V@A 葎A@ 都 @A @A A A A A A A A A A A A A A A A	`&c^åÁų[Áæψ∥,ÁæÁų[œ MATERIAL COMP(ạA,ÁHÐ +A,Á⊹^^Áaà^¦Áæe∿¦Ác@Á§,Ëa∥ DNENTS		
G. 1.	FIELD DIMENSIONS AND LAYOUT The Contractor will be responsible for furnishing, setting and marking all lines, seams and markings for the field. The Contractor shall at all times maintain all necessary benchmarks and control points to locate all events and markings.	11.	Contractor of the end of the 60 day sched Sample form of warranty herein set forth section. Manufacturers' standard form of	a suggested for use for the work under this warranty may be used provided conditions	1. 2.	Pile fibers shall resemble fresh (except for the color turf for ma Fibers shall be a combination 100 micron (before the oven), and 230 micron (before the over)	nly grown natural gra arkings). of 31% parallel slit f 31% monofilament ren) of 100% polveth	ass in appearance, texture and color ilm (1.5mm pattern) having adenier of having a denier of not less than 1200 hylene fiber with 18% nylon (500 deni		
H. 1.	PROTECTION OF UTILITIES AND STRUCTURES This Contractor shall take special care to protect all field and stadium structures and utilities. WARRANTY OF SYNTHETIC GRASS SYSTE		specified nerein are incorporated. All clair must be made in writing to the Contractor Within 30 days after the City of Los Ange This warranty shall constitute a contract r	This by the City of Los Angeles under this warranty 's address. les learns of the defect, giving rise to the claim. nade in the State of California and shall be	3. 4.	monofilament as a thatch zone square yard. Úậ^Á`¦-æ\$^Á @#[Áà^Á][{ ậ æ]î The fibers are tufted through a	Á}ã{¦{Á§Á∿}*œÁ a two layer (one wov	shall be not less than 80 ounces per [4/ •• ᡬ@) 在世日中 ren and one non-woven) synthetic		
1.	The Warranty/Guarantee shall cover, in general, the usability of the turf system (and pad if required); accessories use characteristics and suitability of the installation. All items covered by the warranty are to be replaced or repaired with new materials, including installation at the sole expense of the warranting contractor for a period of eight (8) years to the City of Los Angeles from the date of substantial completion. The field materials shall be guaranteed for the designated uses as follows:	<u>PAR</u> A. 1.	governed by the laws of that State. T II - MATERIALS GENERAL The field surfacing system shall be a vert consisting of a synthetic grass like pile the backing. The final coating shall be a polyu	ically draining permeable synthetic grass system at shall be tufted into a triple layer synthetic rethane based material.	5. 6.	backing material. The final coating or secondary backing shall be not less than secondary backing or polyured If sewn, all turf seams shall be @ (\$\d^} * @) [^^• c^!\Aa^!\& seams are not acceptable) tyr	v backing shall be a 20 ounces. Latex ba hane coating shall b constructed of rein håÈù^, } Á^æ • Á	moisture cure polyurethane. This acking material is not acceptable. The be uniform and monolithic when cured forced backing material or sewn with @#/ᡬa/ᡬæĥá[čà ^Á[[] Á cã&@Áゐæ*^¦ all lay flat after in-fill		
	 a. Marching Band b. Football c. Soccer d. Physical Trustees exercises e. Physical Trustees activities f. Lacrosse g. Field Hockey 	2.	The suppliers listed are capable vendors supersede any references to the vendors specification is meant to identify the quali performance results. Any material exceed equal. Any material with variations from the	for the specified material. This specification will specifications or product literature. The ty and quantity of the specific components and ling the specifications shall be consider as an ne specifications shall be approved by the Owner	7. 8.	OĘļÁ ` ^åÁ ^æ (•Á @æļÁ@æç ^ Áǽł <u>adhesive</u> . All seams shall not graphics or markings can be in All turf shall be perforated for @æļÁs^Á [ớ{ ••• Á@æ} Á⊕ +Áş Ás center. Perforations shall be c	FGIÁ ãã^Á A A a f 3 * Á a have any adhesive n-laid or cut-in. drainage after the fii ãe (^c\: Á a) å Á @ c^Á a omplete and full dia	All hay flat after in finit. A 〈A 〈A ^ [} Á ¦ Á ˆ 念 É A <u>fully coated v</u> applied to any exposed fibers. All hal backing coating. The perforations Á } ã [¦ { Á] 惑 (〈A) [〈A) [〈A • • Á @) Á +Á meter for a minimum of 95% of each		
2.	 A principal of the applicable firm, duly authorized to make contracts, shall sign the turf A principal of the applicable firm, duly authorized to make contracts, shall sign the turf 		 prior to acceptance under this specification <u>The Synthetic Grass Producers:</u> Shaw Sports Surface, by Shaw Indust ACT Global, Austin, TX Domo Sports Grass, Dalton, G A 	on and contract. rries, Dalton, GA	9. 10.	On-site perforations are to be Fabric surface shall be constru- longitudinal or transverse sear •^عو • Á ﷺ الله الله من الله الله الله الله الله الله الله الل	inspected prior to in ucted and installed i ns, except for inlaid åÁ @#Á@c^Á@A^ @ that do not comply	stallation of the product. n minimum widths of 15 feet with no lines with a finished roll assembly. Th ﷺ Á Ë ൿ Á Á A Á Á Á (Á ﷺ ④ A Á with the proper length or conform to t		
	مَعْ مَعْ مُعَامَةُ مَعْ مُعَامَةً وَ اللَّهُ مَعَامَةً مَعَامَةً مَعَامَةً مَعَامَةً مَعَامَةً مَعَامَةً وَ م مَعْ هُوَ مُعَامًا عَلَي مَعَامًا عَلَي مَعَامًا عَلَي مَعَامًا عَلَي مَعَامًا عَلَي مَعَامًا عَلَي مَعَامًا عَ turf manufacturer of the synthetic grass system is not the same entity as the contractor, the warranty shall be co-signed by the manufacturer and the installation contractor.		 Astroturf, Dalton, GA Hellas Construction, Leander, TX Sprinturf, Marietta, GA Equal Producers Approved by the City 	v of Los Angeles only.	G.	seaming diagram as submitted fitted pieces will be allowed to Performance and Test Requ	d prior to the installa true alignment. irements	tion, shall be rejected from the site. N		
J. 1.	FORM OF WARRANTY OF THE SYNTHETIC GRASS SYSTEM Contractor hereby warrants to the City of Los Angeles, subject to the limitations and conditions set forth below, that its synthetic grass system consisting of the synthetic turf described as, the shock-absorbing under-pad (if necessary) described as, and the adhesives used in the	3.	The entire system shall be resistant to we non-allergenic and non-toxic. The entire s dimensional stability, to resist damage an and to minimize the ultra-violet degradation	eather, insects, rot, mildew, fungus growth and be system shall be constructed to maximize Ind normal wear and tear from its designated uses on.		Melting PointSpecific GravityBreaking Strength	ASTM D789 ASTM D792 ASTM D5034	135 degrees C. .950 to .960 Length 283 lbs./ft.		
3.	installation, are free from defects in material and workmanship and shall, for a period of eight (8) years from the date of acceptance by the City of Los Angeles, remain serviceable for the activities as listed above.	4. 5.	All adhesives used in bonding the system and fungus attacks, and resistant to ultra- Include all labor, materials, equipment, tra	n together shall be resistant to moisture, bacterial violet rays at any location upon installation.		 Coefficient of Friction Pill Burn Test Tuft Bind (without in-fill) Tuft Bind (with in-fill) 	ASTM D5034 ASTM D2859 ASTM D1335 ASTM D1335	Dry 1.15 Wet 1.00 8 Passed/0 Failed 8 lbs./sq.ft. 22 lbs./sq.ft.		
0.	ade, fail, shrink, wrinkle or reflect excessive wear. Contractor shall, at their sole expense and cost, replace such areas of the synthetic grass system not performing to these standards for the life of the warranty.	6.	all-weather synthetic grass system. Zeolite Infill: as supplied by ZeoFill, Produ Pierce 760.300.3920 ext. 1001. Mesh siz	uct lead time is 30 days minimum. Contact Brian e 12 - 20.		 Pile Height Fiber Face Weight Fiber Construction 	ASTM D418 ASTM D418 ASTM D418	FËÐ ‡{ ð ã `{ 80 oz./sq. yard total Fibers shall be a combination of 6 parallel slit film (1.5mm pattern) h		
4.	 The term %[c -æå^+ in the context of this warranty shall mean that the synthetic grass material remain a uniform shade of green or the other colors installed with no significant loss of color as defined by not greater than 20% loss or shade reduction. The term %[c -æi+ or ‰¢&^••ãç^ , ^æ+ as used in the context of this warranty shall mean that the length and weight of the face varn or pile material in the synthetic turf 		 General Chemical Formula Clinoptilolite Content Cation Exchange Capacity (CEC) Form Shape 	Na6[Al6Si30O72]24H2O 97%+ 1.6 - 2.0 meg/g Granules Angular				a denier of 100 micron (before the oven) with 18oz. nylon (500 denie monofilament as a thatch zone. The fiber weight shall be not less than ounces per square yard.		
	surface shall not have been decreased by more than 8% per year according to ASTM D418, nor exceed 20% during the warranty period. In the event that the synthetic turf materials do not retain its fiber height or shock absorbency and is consequently no longer serviceable during the warranty period, the Contractor shall, at their sole expense, replace such portions of the system that are no longer serviceable.		 Color Pore Diameter Specific Gravity Bulk Density pH (natural) Alkeli Stability 	Gray - green 4.0 - 7.0 angstroms 1.89 50 - 65 lbs/ft3 7.0		 Gauge Width Fiber Denier Fiber Thickness 	ASTM D418 ASTM D418 ASTM D418	3/16" max. Slit film: 10,000 Denier Monofilament PE: 1200 Nylon thatch: 500 Slit film: 100 microns		
	 The term %A¦çãA æà ^+ in the context of this warranty shall mean that the synthetic turf material shall have a maximum GÕ+ force value according to Procedure A, B, or C of ASTM D355, not exceed 110 G's at any location upon installation and shall not exceed 140 G's thereafter throughout the life of the warranty period. This shall be determined by conducting dynamic cushioning tests at the six field locations as required per ASTM 	-	 Acid Stability Acid Stability Hardness Swelling Index 	pH of 3 - 7 4.2 - 4.5 Mohs Nil		 Fibers (Yarn): 		Monfilament PE: 230 microns Nylon thatch: 80 microns (minimum thickness before the ov		
Л	D355 procedures. $\%$ + force factor values to be determined at 70 degrees F. Any increase from 110 G's to allowable 140 G's maximum shall be at a relatively uniform rate not to exceed 10 G's in any single year.	в. 1.	Acceptable manufacturers / systems of d the impermeable liner fabric): a. UltraBase Champion series, by Ult 921-7888	rain – mat, or approved equal (to be installed over raBaseSystems, St. Petersburg, FL. (866)		a. Strenex, by Shaw: C b. Bonar Ultra HD: Colo c. Dr. Karl Wetekam & Narnberger Strate 30	olor shall be Field G or shall be Sport Gre Co. -32			
4. 5.	Contractor warrants to the City of Los Angeles that the permeable synthetic turf system shall drain vertically a minimum of 20 inches precipitation per hour for a maximum of 24		 b. Brock Systems, PowerBase Series <u>www.brockusa.com</u> ÂÇ Î Î DÂCÎ Î ĒG Î c. ProPlay 23D, by Schmidt Foam d. ThermaGreen, SportLite 23mm thic 	s, by Brock USA, Boulder, CO, ïÈÓ¦[&∖ÁÚ[, ^¦ÁЮ́æ•^kk€ÈÌÍ +Ás@æ∖ kness, (877) 782-4492	Melsungen, Hessen 34212 Germany Phone: 0049-5661-73770 d. Radici Group, Italy e. Matrix Velocity, by Hellas, Austin, TX • Secondary Backing ASTM D418 20 oz. Non-filled Polyurethane					
	nours continuously, without visible surface ponding.	2.	The dynamic cushioning of the combined not exceed a maximum of 110 G's at 70 c A at any location within 30 days of the ins	turf and in-fill system (and pad if required) shall degrees F. per ASTM 1936-98, F355, Procedure stallation. The system shall not exceed 140 G's						

			1 2 3 4	5	6	 7	
		G.	INSTALLATION OF IN-FILL				
		1.	In-fill material shall consist of and 2 LBS, per square foot Zeolite. Zeolite must be approved by the city's third party inspector prior to installation.				
	М	2.	The in-fill material shall be installed to a depth that results, after finish brushing, in an				
		3.	exposed fiber length of not less than 3/4". This contractor shall be required to return to the site after not less than 30 days to inspect				
			and add in-fill materials as needed.				
	_	4.	No in-fill materials shall be installed until the turf system is fully installed with all lines and markings.				
		5.	The entire synthetic turf installation shall be thoroughly brushed with a minimum of 10				
			passes to remove any wrinkles and defibrillate the slit film prior to the installation of the in-fill material				
		6.	The in-fill materials shall be installed in layers not to exceed 0.375 pound per square foot				
	L	7	per layer. The turf shall remain free draining at all times: before, during and after the in-fill materials				
			are installed.				
		Н.	GENERAL CLEANUP				
		1.	The site shall be kept clean and free of debris throughout the installation. Empty barrels,				
			sacks, bags and remnant materials shall be appropriately and stored or legally stored or disposed of daily.				
	ĸ	2.	After completion of the entire project, all debris remaining that is not a part of the final				
			project shall be removed from the site.				
	EET.	SECT	TION F: WARRANTY AND GUARANTEE				
	AN Sh		T I: SYNTHETIC TURF SYSTEM:				
	IIS PL	A. 1.	The Contractor shall be required to issue a non-prorated guarantee for 100% of all labor,				
	OF TH		materials, workmanship and services for the Synthetic Surface and Markings for:				
	<i>OPIES</i>	2.	Synthetic Grass System for a period of eight (8) years. This warranty will be not be subject to pro-rating of the surface for any failure due to installation or materials. The surface wear				
			will be determined by an independent consultant acceptable to all parties.				
	CTRO.	3.	The guarantee for the surface systems shall remain in force for a period of not less than eight (8) Years specified from the date of written acceptance of the work				
	IF ELE		a. The Owner will notify the contractor in writing of any issues that require remedial work				
	ESS 0		on the field area.				
	ETEN		any major defect or repair within 72 hours or as weather permits.				
	н СомрL		c. The warranty requires that the contractor shall be required to perform all required				
	OR C		repairs in a permanent and suitable manner as deemed necessary to maintain a safe playing condition at all times.				
	IRACY		d. The warranty requires that in case of any major repair or replacement, the contractor is				
	ACCL		to schedule such work as to not interfere with the Owner's primary use or schedule.				
	<i>R ТНЕ</i> 		the existing turf.				
	ΓE FO		f. Failure to service the requirements of this warranty will be charge to the contractor.				
	ONSIBI	4.	Any defects caused by delamination, peeling, normal abrasion or raveling that is not in original conformance with the testing specifications shall be repaired or replaced at no cost				
	SESPC		to the City of Los Angeles Department of Recreation and Parks during this guarantee				
	IT BE I		period. a. In addition to the Contractor's warranty, the contractor shall be required to submit the				
	DN 11		following documents in regard to the guarantee:				
	S SHA		 Provide a EIGHT (8) year warranty for the turf product from the manufacturer for all work performed under this contract 				
	GENT		2) Provide a EIGHT (8) year warranty for the fibers from the fiber manufacturer for				
	A AO S		all work performed under this contract.				
	ICERS		for the synthetic grass.				
	S OFF		4) Provide a EIGHT (8) year third party insured warranty issued by a company				
ð	OR IT		rating of A- or more. The limits of the policy shall not be less than \$5,000,000.00 per				
ES.DW	I I I I	-	year with a single limit of not less than \$500,000.00 per field (not site).				
E NOT	S ANG		 5) The City of Los Angeles shall be listed as additionally insured. 6) There will be no a deductible allowance for this policy. 				
DSCAF	01 <i>-</i> 10		7) Documents shall be submitted to the City of Los Angeles District Department of				
18 LAN	CITY		Recreation and Parks prior to final payment.				
406-L4(1	THE	5.	The Contractor will be responsible for all tests that fail the specification. The City of Los				
CDS/L4			Angeles reserves the right to submit the surface to the above tests at any time during the				
			iengin of the guarantee. Consideration will be given to the time and use of the sufface.				
D PR(6.	This warranty does not cover excessive wear of the surface caused by misuse. The City of				
ER FIEL	D)	Los Angeles will be given an instructions and caretaking procedures before final acceptance. This is to follow the maintenance guidelines as specified by the surfacing				
SOCCE			manufacturer.				
SYN.							
ALLOY		4	END OF SECTION: STNTHETIC TURF				
KEN M							
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ARTMENT OF PUBLIC W	GARY LEE MOORE, PE, ENV SPA CITY EN	ARCHITECTURAL DIVISION	ARCHITECT: JANE ADRIAN LIC. NO. 3940	DESIGNED BY: GUILLERMO BARRAGAN	DRAWN BY: GUILLERMO BARRAGAN	CHECKED BY: JANE ADRIAN	APPROVED BY: MAHMOOD KARIMZADEH, A.I.A., PRINCIPAL ARCHITECT
OS ANGELES DEP	CLIENT: RECREATION AND PARKS	GENERAL MANAGER: MICHAEL A. SHULL	SHEET TITLE: SYNTHETIC TURF SPECIFICATION,	SHEET 3		ADDRESS: 1501 W. I. STRFFT	LOS ANGELES, CA 90710
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Ð RIN NOTES: PRIOR TO THE POURING OF MOW STRIPS, PAVING, CURBS AND EDGING, CONTRACTOR SHALL CONTACT PROJECT LANDSCAPE ARCHITECT TO SECURE FINAL APPROVAL OF LAYOUT. REFER TO SHEET L402 SYNTHETIC SOCCER FIELD STANDARD PLAN STRIPPING LAYOUT. L S L **AS-BUIL** LEGEND NEW SYNTHETIC TURF FIELD EXISTING DG PATH TO REMAIN IN PLACE AND PROTECTED NEW 10'-0" TALL CHAIN LINK FENCE POINT OF BEGINNING

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REGIONAL PARK FIELD PROJECT

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WORK ORDER NO. E170384A

PRJ20761

L501

sheet sheets 21 of 24

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Sheet Version 2.2

STEEL CLAMPS

	8 9 10 11 12 13	14 15 16	
		NOTES:	
M		1. THE INSTALLING CONTRACTOR SHALL VERIFY STATIC WATER PRESSURE AND EXISTING SITE CONDITIONS BEFORE CONSTRUCTION. THE CONTRACTOR MUST ALSO MAKE ALL NECESSARY CONTACTS REGARDING THE COORDINATION OF THE VARIOUS TRADES INVOLVED IN THE PROJECT WHOSE WORK MAY CONFLICT WITH THE SCOPE OF WORK. THE	ENGINEER CITY OF LOS AN
	APPROXIMATE LOCATION OF EXISTING 4" MAINLINE TO BE ABANDONED PER AS-BUILT DRAWING ON SHEET L103. VERIFY LOCATION IN FIELD.	TO THE PROJECT ENGINEER/LANDSCAPE ARCHITECT IMMEDIATELY. IF S/HE FAILS TO DO SO, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY CHANGES AND/OR COSTS THAT OCCUR AS A RESULT CONTRACTOR SHALL VERIFY OPERATION WATER METER AND BACKFLOW PRESSURE SETTING.	U O F EN(pate: BY: BUILDING NO.
Ň		LATERAL LINES LAYOUT, PLEASE REFER TO AS-BUILT DRAWING L103.	
	132'	3. CONTRACTOR SHALL ENSURE THAT NO IRRIGATION HEADS ARE PLACED WITHIN THE PERIMETER OF THE SYNTHETIC TURF AREA. HEADS THAT ARE SHOWN SCHEMATICALLY ON THIS PLAN WITHIN THE BOUNDARY OF THE SYNTHETIC TURF ON THIS SHEET SHALL BE PLACED IN THE CLOSEST LOCATION JUST OUTSIDE THE SYNTHETIC TURF PERIMETER.	
	1" ELECT. PIPE	4. CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING AND RE-SETTING IRRIGATION BOXES, HEADS AND OTHER EXISTING EQUIPMENT TO REMAIN, THAT IS AFFECTED DURING CONSTRUCTION AND GRADING, TO PROPER HEIGHTS RELATIVE TO FINISH GRADE.	- RP 30008
	APPROXIMATE LOCATION OF EXISTING 4" MAINLINE TO BE ABANDONED PER AS-BUILT DRAWING ON SHEET L103. VERIFY LOCATION IN FIELD.	5. IRRIGATION EQUIPMENT DAMAGED DURING CONSTRUCTION BY THE CONSTRUCTION PROCESS SHALL BE REPLACED IN KIND. ALL EQUIPMENT REPLACED SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THESE CONSTRUCTION DRAWINGS.	
	EXISTING IRRIGATION HEADS AND LATERAL LINES TO REMAIN IN PLACE AND PROTECTED.	6. ALL PRESSURIZED PIPE TO BE ABANDONED SHALL CUT AND CAPPED MINIMUM OF 48" FROM THE BOUNDARY OF NEW SYNTHETIC TURF.	PRIMA PROMITECT + A PROMI P
	ADJUST LOCATION AND FINISH ELEVATION OF EACH HEAD TO MATCH NEW CONSTRUCTION IF REQUIRED.	7. ALL NEW IRRIGATION PIPE SHALL BE ROUTED AROUND BOUNDARY OF NEW SYNTHETIC TURF AREAS AND WHERE POSSIBLE LOCATED IN LANDSCAPED AREAS.	Signature Signature Renewal
	A" MAINLINE AND CONTROL WIRE, TYP. NEW ISOLATION	8. CONTRACTOR SHALL COORDINATE ALL IRRIGATION WORK WITH RAP PACIFIC MAINTENANCE SUPERVISOR AT (310)548-7644	
M-	M #22 #22 #22 #22 #22 #22 #22 #2	 9. TRENCHING: THE ROUTING OF MAINLINE AND LATERAL LINES IS INTENDED TO MINIMIZE DAMAGE TO EX. TREE ROOTS CAUSED BY TRENCHING. ANY TRENCHES DUG TO ACCOMMODATE NEW IRRIGATION PIPES THAT PASS THROUGH THE DRIPLINE OF AN EX. TREE ARE SUBJECT TO THE REQUIREMENTS SPECIFIED IN THE SECTION "TREE PROTECTION GUIDELINES" OF THE IRRIGATION CONSTRUCTION NOTES. 	JELIC
	#19 #34 PLACE AND PROTECTED #34 APPROXIMATE LOCATION OF EXISTING 4" MAINLINE	10. UPON COMPLETION OF INSTALLATION, INSTALLER SHALL CONDUCT A COVERAGE TEST AND MAKE ANY ADJUSTMENTS IN HEAD LOCATION AND SPACING OR NOZZLE SELECTION AS NECESSARY TO ACHIEVE THE BEST POSSIBLE DISTRIBUTION UNIFORMITY GIVEN EX. PARAMETERS OF AVAILABLE PRESSURE AND FLOW.	Image: Second
	Image: Second state Image: Second state PER AS-BUILT. VERIFY IN Image: Second state FIELD PRIOR TO INSTALLATION.	11. INSTALLATION FOR THE CONTROL WIRES SHALL FOLLOW MAINLINE ROUTING. SEE LANDSCAPE CONSTRUCTION NOTES.	VED BY: MA
		12. REFER TO LANDSCAPE CONSTRUCTION NOTES FOR ADDITIONAL INFORMATION REGARDING THIS SECTION OF WORK.	CHECK
	SYMBOL DESCRIPTION		2 6 일 ()
	—— —— —— EXISTING 4" PRESSURED MAINLINE (SCH. 40 PVC PLASTIC PIPE) TO BE ABANDONED	DIGALERT	ARK
	EXISTING 4" PRESSURED MAINLINE (SCH. 40 PVC PLASTIC PIPE) TO REMAIN IN PLACE AND PROTECTED.		SIONAL P
	M M NEW IRRIGATION PRESSURE MAINLINE - SIZE AS NOTED ON PLANUP TO 2": SCH. 40 PVC, SOLVENT WELD, 3" AND LARGER: CLASS 200 PVC (INSTALL MIN. 24" BELOW FINISH GRADE) . USE NON-POTALBLE PURPLE PVC PIPE. SEE DET. J5/L602 & J13/L602	Call Toll Free 1-800-227-2600 TWO WORKING DAYS BEFORE YOU	LES, CA 90710
	EXISTING IRRIGATION LATERAL LINES TO REMAIN IN PLACE AND PROTECTED	Underground Service Alert of Southern California	ATION AND GER: MICH GER: MICH IRRIGA MALLOY MALLOY THETIC \$ 1 W. L ST S ANGELI
OWN	MEW 1 ¼" SCHEDULE 40 PVC CONDUIT WITH NEW 2-WIRE CABLE BETWEEN EXISTING PULL BOXES.	N	IT TITLE: IECT: KEN SYN IESS: 150
	LEGEND		
	NEW SYNTHETIC TURF FIELD		E170384A PRJ20761 DRAWING NO.
		0 10' 20' 40' SCALE: 1" = 20'-0"	L601 SHEET SHEETS 22 OF 24
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COPIES OF THIS PLAN SHEET.	FLANGED ADAPTER: HARCO (#80460FB) WITH KNUCKLE RESTRAINT
THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC (THE CITY OF LOS ANGELES OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC (J5 RESTRAINED FITTIN N.T.S. BOE VERSION Dec/08 - RF
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PLANTING LEGEND										
ON NAME	QUANTITY	SIZE	REMARKS							
RASS AND	APPROX	HYDROSEEDING	APPROX. ± 20'-0" BORDERING AROUND CONSTRUCTION ACTIVITIES.							
UGRASS	10,650 SF		REFER TO THE METHOD "B" LAWN PLANTING NOTES ON SHEET L004							

ALL AREAS SHOWN ON PLAN AND ANY ADDITIONAL TURF AREAS ADJACENT TO WORK AREA DAMAGED BY CONSTRUCTION SHALL BE RE-SEEDED PER "METHOD B" PER LANDSCAPE CONSTRUCTION NOTES ON SHEET L004.

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ARTIMIENT OF PUBLIC WORKS	GARY LEE MOORE, PE, ENV SPA CITY ENGINEER	ARCHITECTURAL DIVISION DATE:	ARCHITECT: JANE ADRIAN LIC. NO. 3940	DESIGNED BY: GUILLERMO BARRAGAN	DRAWN BY: GUILLERMO BARRAGAN	CHECKED BY: JANE ADRIAN	APPROVED BY: MAHMOOD KARIMZADEH, A.I.A., PRINCIPAL ARCHITECT
LOS ANGELES DIEP	CLIENT: RECREATION AND PARKS	GENERAL MANAGER: MICHAEL A. SHULL	SHEET TITLE: DI ANTING DI AN			ADDRESS: 1501 W. I. STRFFT	LOS ANGELES, CA 90710
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CO & CO Request Log: Ken Malloy Synthetic Soccer Field W.O.No.: E170384

CO No	CO Req	DESCRIPTIONS	PCO ECO Date	GC Prop Amount	Proposal Date	CMD Est Amount	Apprvd Amount	Apprvd Date	Change Order Status	FCO Date	С.О. Туре	Pymt Type	Cal. Days Req.	Apv'd Comp Cal Days	Apv'd Non Comp Cal Days	REMARKS
001	001	Damaged electrical conduits T&M		\$ 7,441.53	12/08/16	\$ 7,315.00	\$ 7,315.00	02/03/17	Executed	02/08/17	U	LS	0	0	0	
006		Curb revisions at north and east side		\$ 38,351.92	12/09/16	\$ 27,834.00	\$ 27,834.00	03/10/17	Executed	03/10/17	E	LS	0	0	0	RFI #1; PC #2
002		Chain link Fence Main Gate		\$ 1,362.74	12/09/16	\$ 1,425.00	\$ 1,425.00	02/03/17	Executed	02/08/17	Е	LS	0	0	0	
003		Soccer Goals Locking Devices		\$ 4,234.47	12/09/16	\$ 3,028.00	\$ 3,446.00	02/01/17	Executed	02/24/17	E	LS	0	0	0	
004		Fence Cap		\$ 3,677.41	12/08/16	\$ 3,945.00	\$ 3,945.00	02/01/17	Executed	02/24/17	E	LS	0	0	0	
005		youth soccer Goals		\$ 14,752.16	02/01/17	\$ 13,013.00	\$ 13,013.00	02/01/17	Executed	02/24/17	S	LS	0	0	0	
-																
Ori	ginal Co	ntract Price		#REF!	Change	Executed		C.O.	U: Unforseen		\$	7,315.00	13 %		Executed (Change Orders
Ori	ginal Co	ntingency	<u> </u>	#REF!	Order	Negotiated		Type ¹	E: Errors & O	missions	\$ 3	6,650.00	64 %	1	6	\$ 56,978.00
Σ (Executed Change Orders) \$ 56,978.00		Status	Unresolved		71 -	S: Change in	Scope	\$ 1	3,013.00	23 %		Forecasted	Change Orders			
Re	vised C	ontract Price		#REF!		Canceled		Pymt	LS: Lump Sur	m	Change Order		der		0	\$-
Ou	tstandi	ng Contingency		#REF!	Approved Comp	o. Cal. Days	0	Type	TM: Time & N	TM: Time & Material Percer		Percentag	е	e Canceled		Change Orders
Nu	m. Of A	oproved Days	0	Cal. Days	Approved Non C	Comp. Cal. Days	0	. ,po	CAN: Cancele	ed		#REF!				0

Footnotes

1. Percentages of Change Order Types are based on approved dollar amounts.

2. Forecasted Change Orders = Unresolved + Negotiated