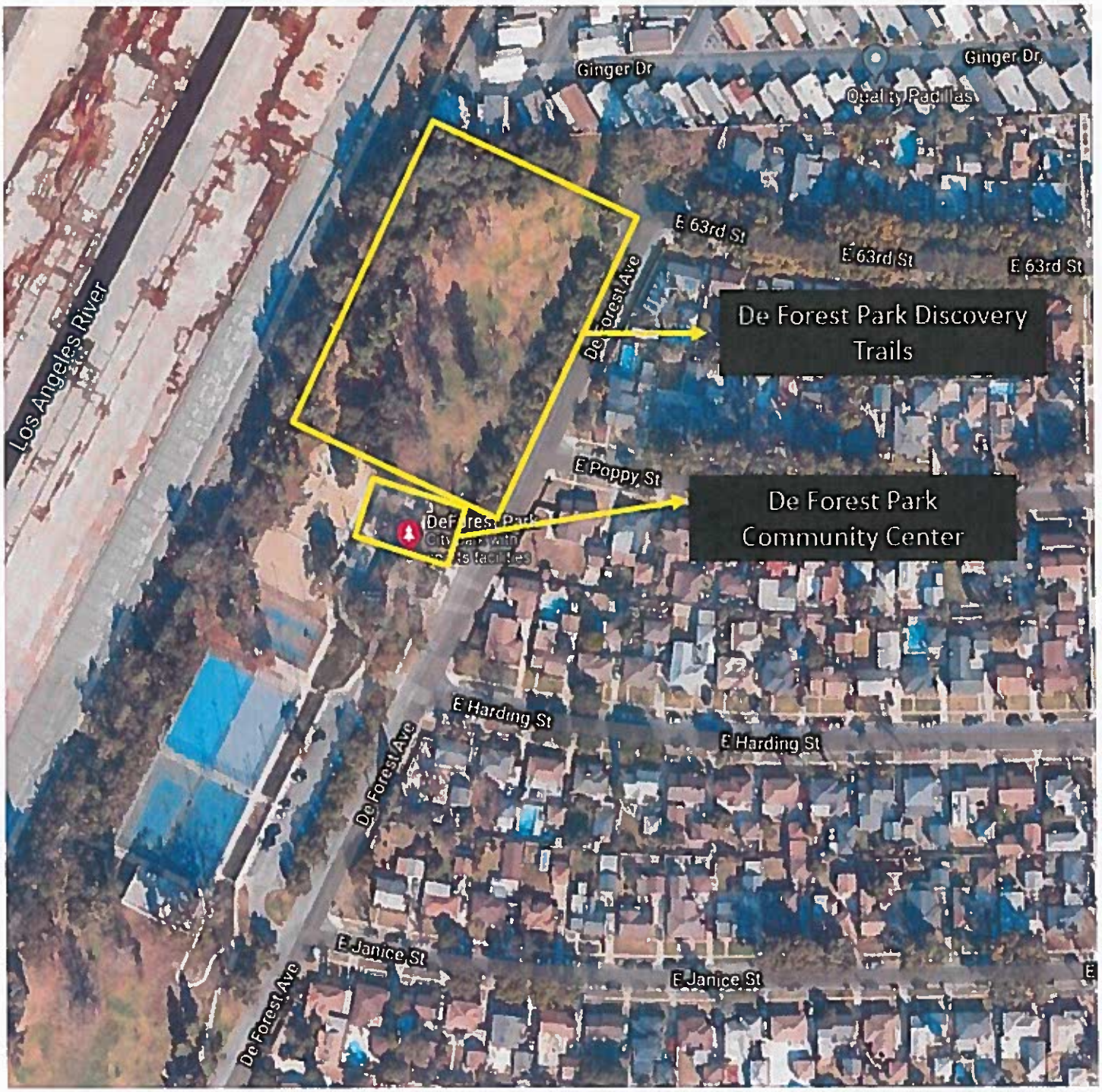
ATTACHMENT B
CAMP FIRE ANGELES

6255 DE FOREST PARK
COMMUNITY CENTER AND DISCOVERY TRAILS



CAMP SHIWAKA
AT DeFOREST PARK

6255 DeFOREST AVE., LONG BEACH, CA 90805

PROJECT DATA

PROJECT ADDRESS:	6255 DeFOREST AVE, LONG BEACH, CA 90805
LEGAL DESCRIPTION:	PART OF THE RANCHO SAN PEDRO ALLOTED TO MANUEL DOMINGUEZ ASSESSOR'S PARCEL NUMBER: 7135-007-001 TRACT 37500
PROJECT DESCRIPTION:	NEW LANDSCAPE AND ONE-QUARTER MILE OF ACCESSIBLE PAVEMENTS.
PARKING REQUIREMENTS:	NO CHANGE IN USE
ZONING:	N/A
OCCUPANCY TYPE:	N/A
CONSTRUCTION TYPE:	N/A
AGENCY JURISDICTION:	CITY OF LONG BEACH BUILDING AND SAFETY DIVISION 333 WEST OCEAN BLVD. 4TH FLOOR LONG BEACH, CA90802
REFERENCE CODES:	2016 CALIFORNIA BUILDING CODE 2016 CALIFORNIA ELECTRICAL CODE 2016 CALIFORNIA PLUMBING CODE 2016 CALIFORNIA ENERGY CODE

PROJECT DIRECTORY

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A6.1	HARDSCAPE DETAILS
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VICINITY MAP

VICINITY MAP - NOT TO SCALE

DEFERRED PERMITS

- FIRE DEPARTMENT
- LANDSCAPE IRRIGATION (HEALTH DEPARTMENT)
- PUBLIC WORKS

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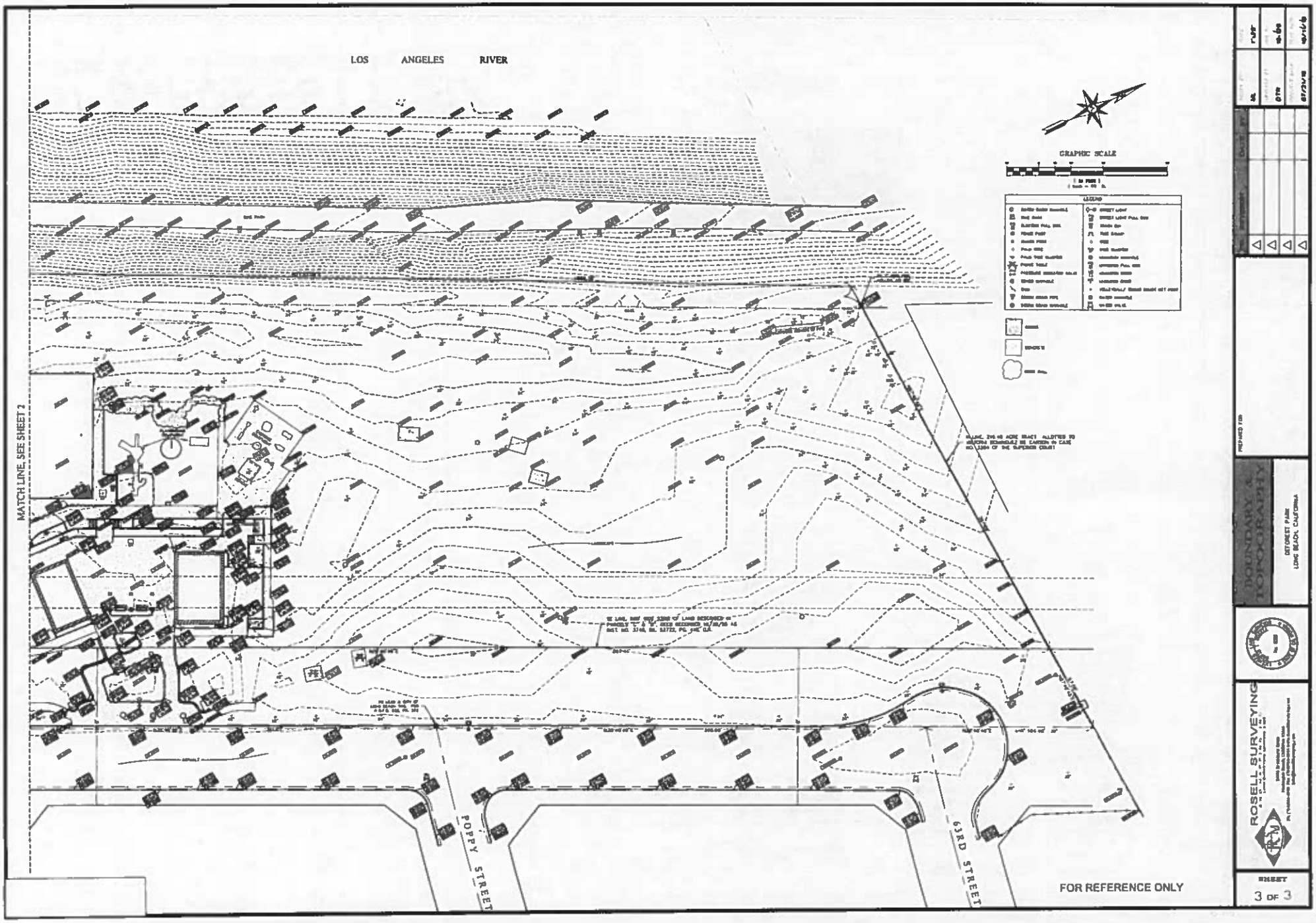
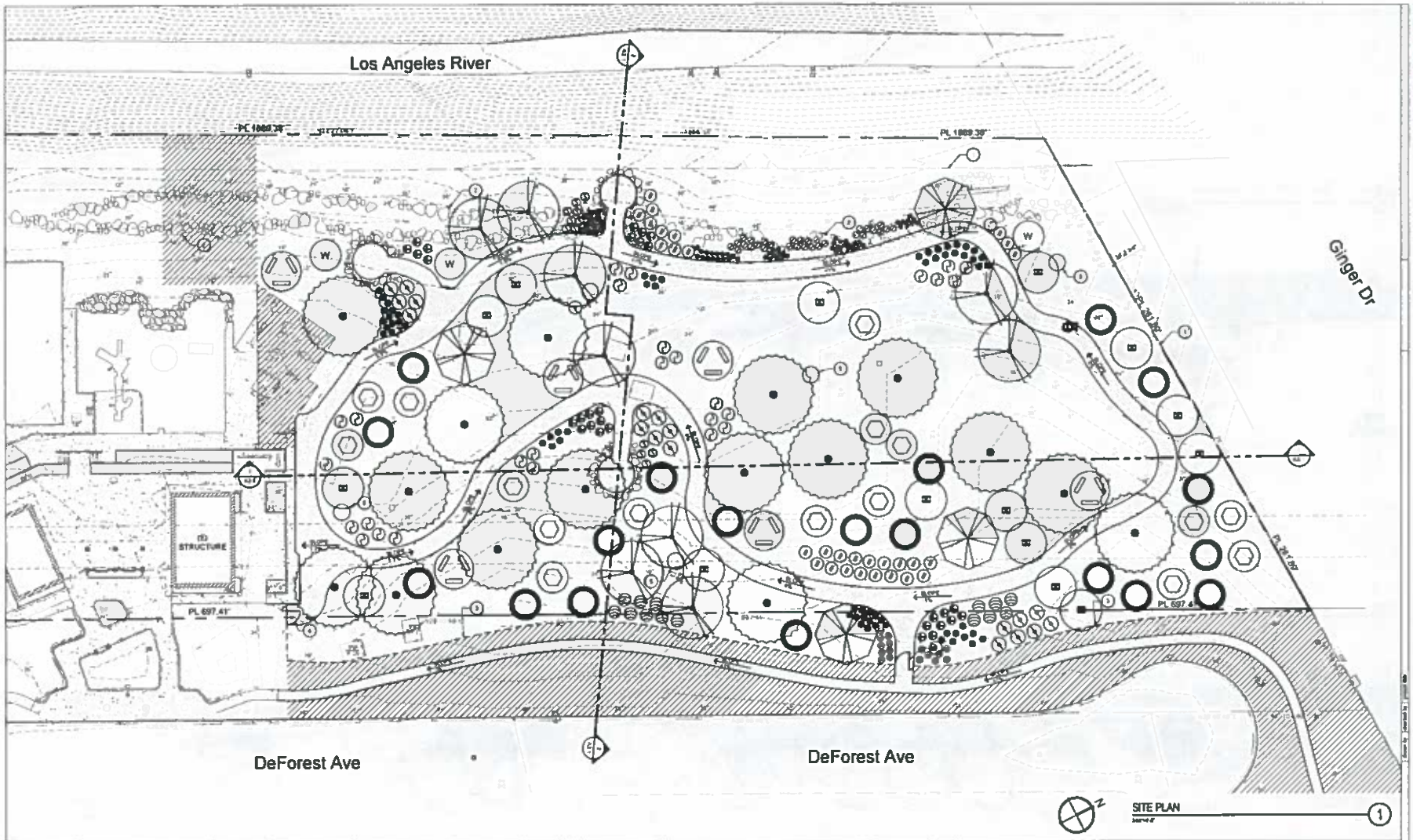
A0.0


LOS ANGELES RIVER
MATCH LINE, SEE SHEET 2
GRAPHIC SCALE
LEGEND
POPPY STREET
63RD STREET
FOR REFERENCE ONLY
BOUNDARY & TOPOGRAPHY
DEFOREST PARK
LONG BEACH, CALIFORNIA
PREPARED FOR
ROSELL SURVEYING
SHEET
3 OF 3



SITE PLAN KEY NOTES

1. (E) FENCE TO REMAIN
2. (E) DRYCREEK TO REMAIN
3. (N) FENCE
4. (N) PIVOT GATE
5. (N) WOODEN TABLE

LEGEND

- (N) MAGIC CIRCLE
- (N) FIRE PIT, SEE SHEET AS.1/4
- (N) D.G. PATH, SEE SHEET AS.2/1
- (N) WOODEN TABLE

PLANTS LEGEND

- (N) SHRUBS, SEE LANDSCAPE DWGs
- (N) BIOFILTRATION PLANTS,SEE LANDSCAPE DWGs
- (N) GRASS, SEE LANDSCAPE DWGs
- (N) PERENNIALS / UNDERSTORY,SEE LANDSCAPE DWGs
- (E) TURF AREA TO REMAIN
- (N) TREES, SEE LANDSCAPE DWGs

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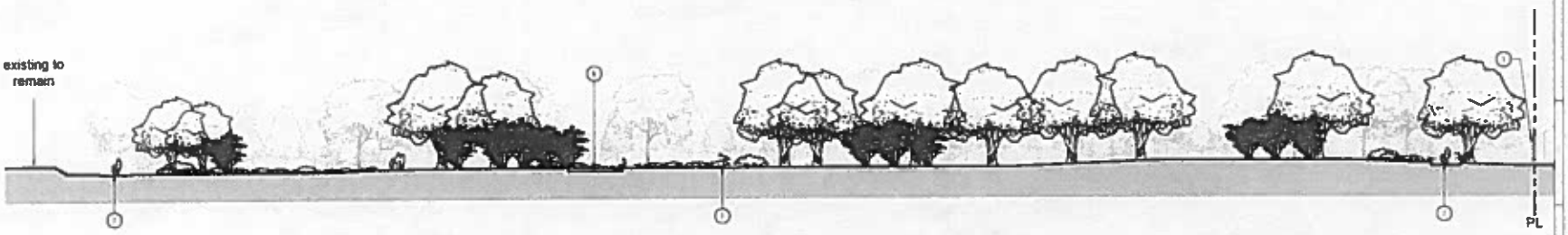
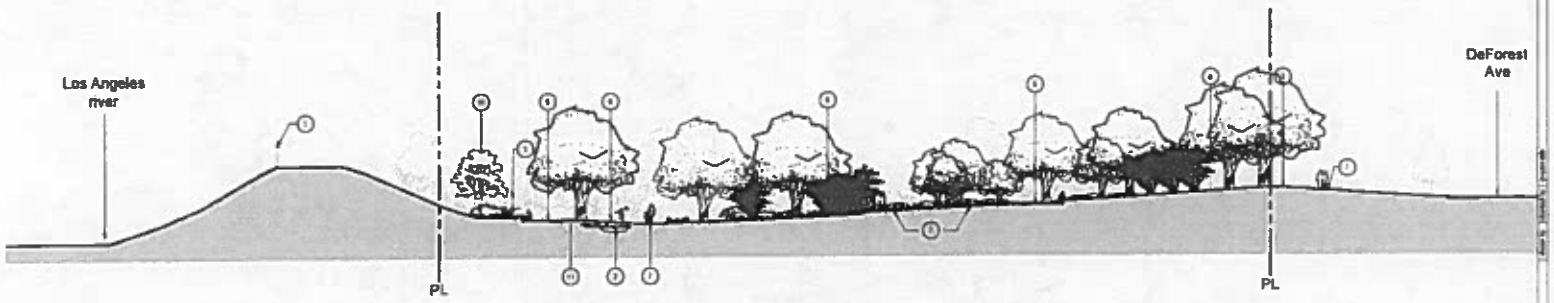
SITE PLAN

A1.1



SECTION 2-2 (2)



SECTION 1-1 (1)

SECTIONS KEY NOTES

1. (E) FENCE TO REMAIN
2. (E) DRYCREEK TO REMAIN
3. (N) FENCE
4. (N) PIVOT DOOR
5. (N) FIRE PIT
6. (N) MAGIC CIRCLE
7. (N) D.G. PATH
8. (E) LIGHT POLE
9. (N) BRIDGE
10. (N) RIPARIAN VEGETATION
11. (E) SLOPE LINE

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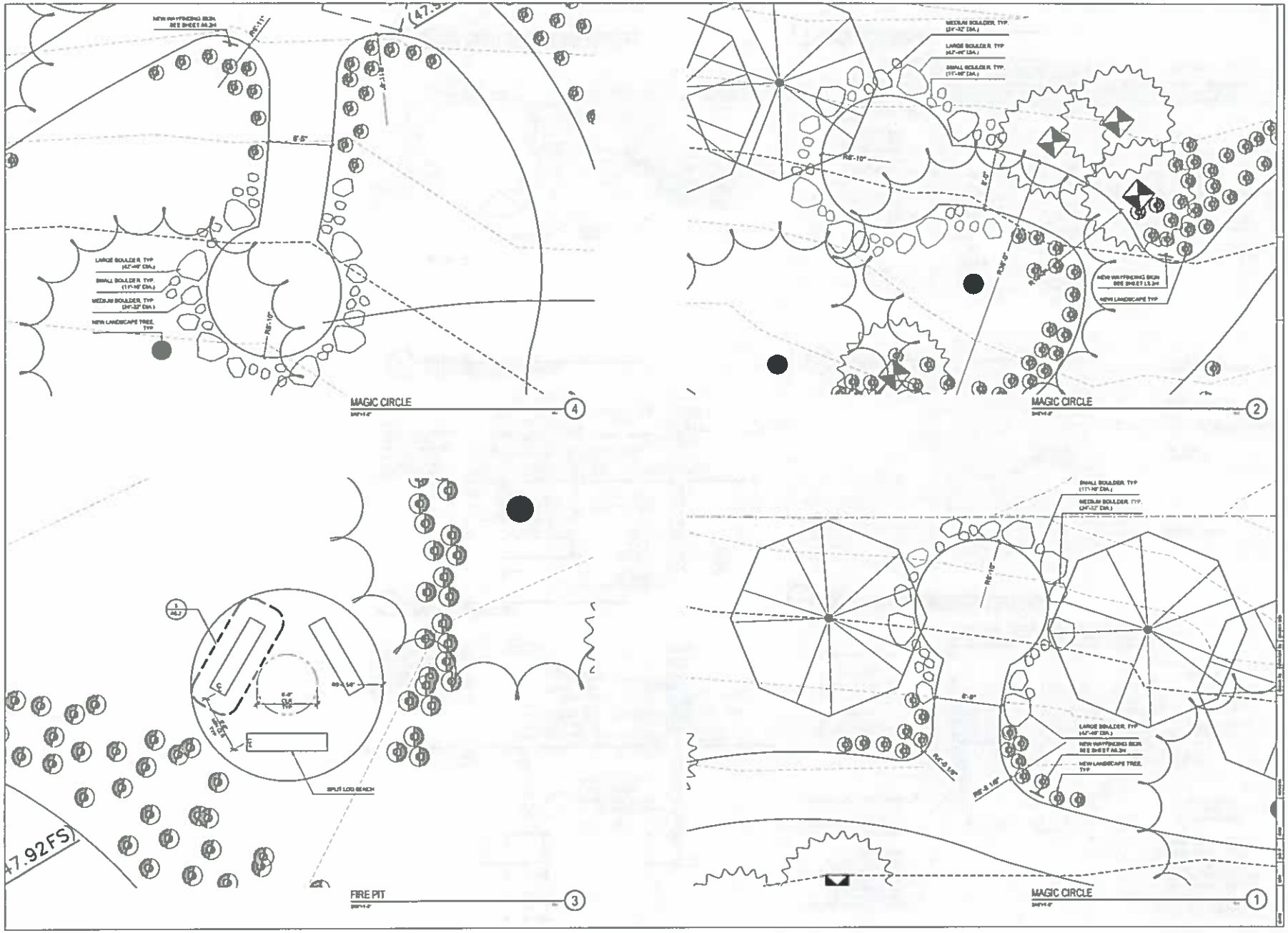
SECTIONS

A3.1



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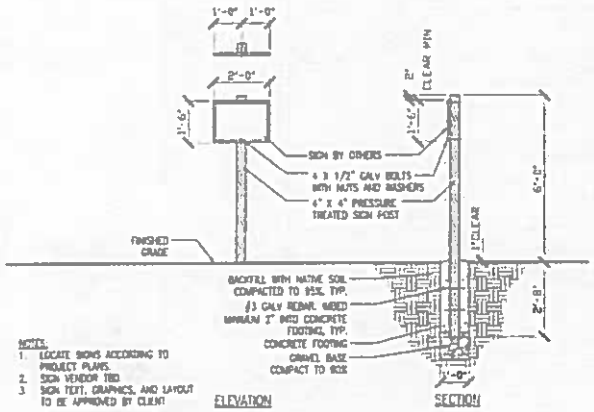
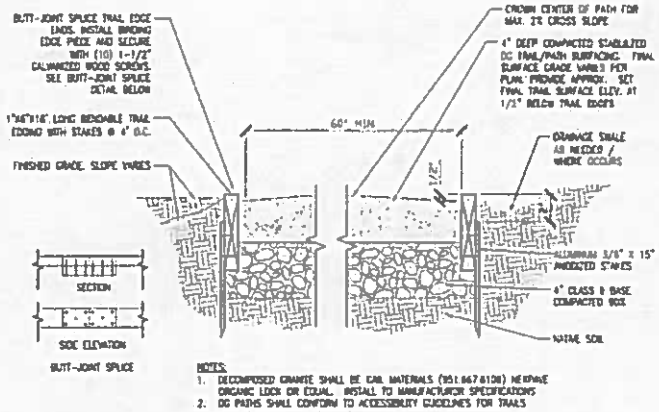
HARDSCAPE DETAILS

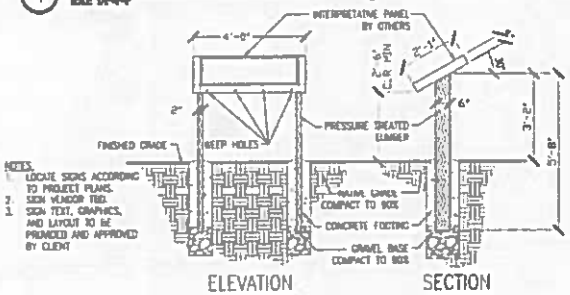
A5.1



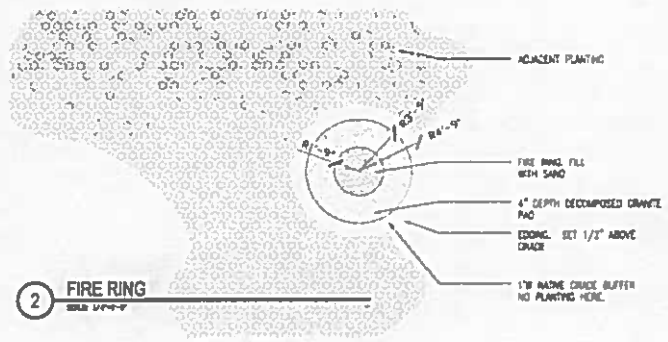
4 WAYFINDING SIGN
SCALE 1/4"=1'-0"



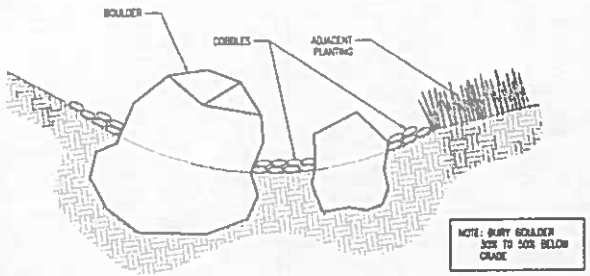
1 DECOMPOSED GRANITE PATH AND PAD
SCALE 3/4"=1'-0"



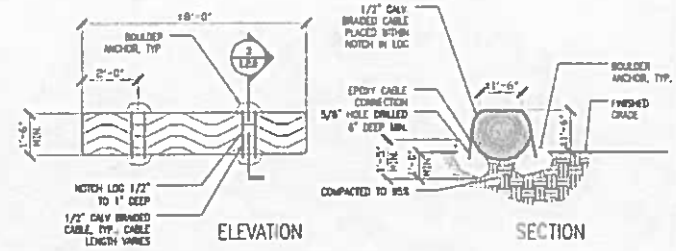
5 INTERPRETATIVE PANEL
SCALE 3/4"=1'-0"



2 FIRE RING
SCALE 1/4"=1'-0"



5 CREEK PATH / VERNAL POOL SECTION
SCALE 3/4"=1'-0"



NOTES:
1. EACH BOULDER ANCHOR CONSISTS OF TWO BOULDERS AND TWO CABLES.
2. CABLE SHALL BE SECURED TO BOULDERS THROUGH PRE-DRILLED HOLES USING HILTI-HY 150 EPOXY OR APPROVED EQUAL. DRILL HOLES SHALL BE CLEAN AND FREE OF DUST AND DEBRIS PRIOR TO APPLYING EPOXY. CABLE LENGTHS MUST BE MEASURED TO ENSURE NO SLACK OVER INSTALLED ANCHORED LOG. ANCHORS SHALL BE PLACED IN EXCAVATED TRENCHES TO ENSURE THEY HANG ON LOG. EXCAVATED TRENCHES SHALL BE BACKFILLED.
3. ANCHOR SHALL BE INSTALLED BY EXCAVATING SUFFICIENT SPACE BELOW THE LOG TO ALLOW THE BOULDER ANCHOR TO BE DRAPED OVER THE LOG AND HANG ON IT TO TENSION CABLES.

3 SPLIT LOG BENCH
SCALE 1/4"=1'-0"

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HARDSCAPE DETAILS

A5.2

GENERAL NOTES:

1. WORK SHOWN HEREON SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," LATEST EDITION AND SUPPLEMENTS, THE CALIFORNIA BUILDING CODE (EXCAVATION AND GRADING), AND CITY OF LONG BEACH LOCAL ORDINANCES AS APPLICABLE.
2. EXISTING TOPOGRAPHY SHOWN HEREON WAS TAKEN FROM A SURVEY DATED OCTOBER, 2019 BY RIDDELL SURVEYING AND MAPPING INC.
3. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.
4. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL JOB CONDITIONS FOR GRADING AND DRAINAGE. IF CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SHALL NOT BEGIN CONSTRUCTION UNTIL THE CHANGED CONDITIONS HAVE BEEN EVALUATED.
5. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
6. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
7. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
8. IF AT ANY TIME DURING GRADING OPERATIONS, ANY UNFAVORABLE GEOLOGICAL CONDITIONS ARE ENCOUNTERED, GRADING IN THAT AREA WILL STOP UNTIL APPROVED CORRECTIVE MEASURES ARE OBTAINED.
9. THE PROPOSED GRADE IS THE FINAL GRADE AND NOT THE ROUGH GRADE. THE CONTRACTOR SHALL SUBTRACT THE THICKNESS OF THE PAVED SECTION AND/OR LANDSCAPE REPOSE SECTION TO ARRIVE AT THE ROUGH GRADE ELEVATION.
10. STRAIGHT GRADE SHALL BE MAINTAINED BETWEEN CONTOUR LINES AND SPOT ELEVATIONS UNLESS OTHERWISE SHOWN ON THE PLANS.
11. ALL DEBRIS AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT APPROVED DISPOSAL SITES. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FOR THE TRANSPORTATION OF MATERIAL TO AND FROM THE SITE.
12. ALL FILL SOILS OR SOILS DISTURBED OR OVERDISTURBED DURING CONSTRUCTION SHALL BE COMPACTED PER THE REQUIREMENTS OF THE SOILS REPORT BUT NOT LESS THAN 90% MINIMUM DENSITY AS DETERMINED BY A.S.T.M. 1557, COMPACTION TEST D-1557.
13. THE CONTRACTOR SHALL OBTAIN AN O.S.H.A. PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE CONSTRUCTION OF TRENCHES OR EXCAVATIONS WHICH ARE FIVE FEET OR DEEPER.
20. CONSTRUCTION STAKING FOR IMPROVEMENTS SHOWN ON THESE PLANS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR. CONSTRUCTION STAKING SURVEYOR SHALL BE RESPONSIBLE FOR COORDINATION OF THESE PLANS WITH SOURCE DRAWINGS PREPARED BY ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER, MEP CONSULTANT AND ANY OTHER DISCIPLINE PRIOR TO START OF STAKING AND CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED.
21. THE CONTRACTOR SHALL REPLACE ALL EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION TO WHICH ENGINEERING, INCLUDING PERMANENT TRENCH RESURFACING.
22. CONTRACTOR TO CONTACT UNDERGROUND SERVICE ALERT (800-227-2600) PRIOR TO EXCAVATION.
23. ALL DIMENSIONS ARE IN FEET OR DECIMALS THEREOF.
24. ALL CURB DIMENSIONS AND TRUCK ARE TO PAVEMENT FACE OF CURB.
25. CONTRACTOR TO BE AWARE OF ALL OVERHEAD LINES AT ALL TIMES, SO AS NOT TO DISTURB THEM.
26. WATER SHALL BE PROVIDED ONSITE AND USED TO CONTROL DUST DURING CONSTRUCTION OPERATIONS.
27. CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FROM THE CITY OF [CITY NAME] FOR ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
28. STORM DRAINAGE SYSTEMS SHOWN ON THESE PLANS HAVE BEEN DESIGNED FOR THE FINAL SITE CONDITION AT COMPLETION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE OF THE SITE, DURING INTERIM CONDITIONS OF CONSTRUCTION.
29. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS, INCLUDING NPDES, FROM THE APPROPRIATE JURISDICTIONAL AGENCIES FOR DISCHARGE OF GROUNDWATER THAT MAY BE NECESSARY TO ACCOMPLISH EXCAVATIONS SHOWN ON THESE PLANS.

LEGEND:

GENERAL

- CIVIL LIMITS OF WORK
- SHEET MATCH LINE

ANNOTATION

- 150.00 EX — SURFACE ELEVATION/UTILITY ELEVATION
- 100.00EX — EXISTING SURFACE ELEVATION/UTILITY ELEVATION
- 23 — CONSTRUCTION NOTE
- 2.0% — FLOW (DIRECTION AND GRADE)
- 2:1 — SLOPE (DIRECTION AND GRADE)
- 101 — HORIZONTAL CONTROL POINT LABEL
- C3 — CURVE DATA LABEL
- FF=100.00 — PAD/FINISHED FLOOR ELEVATION

SITE

- CURB/BACK OF CURB/GUTTER
- RETAINING WALL/FIRE WALL
- PROPERTY LINE/RIGHT OF WAY
- CENTER LINE
- FENCE
- TO BE DEMOLISHED

EROSION CONTROL

- SANDBAGS
- FIBER ROLL
- PROPOSED BUILDING EXCAVATION OUTLINE
- EXISTING DRAINAGE DIRECTION OF FLOW
- PROJECT TREE IN PLACE

GRADING

- 100 — PROPOSED MAJOR CONTOUR
- 102 — PROPOSED MINOR CONTOUR
- FLOW LINE
- GRADE BREAK LINE
- RIDGE LINE
- EARTHEN BERM
- SAWCUT
- LIMITS OF GRADING
- GRADING BENCH
- TOP / BOT / HORZ — GRADED SLOPE (HORIZONTAL/VERTICAL)

UTILITY

- SS — SANITARY SEWER
- W — WATER
- DW — DOMESTIC WATER
- FW — FIRE WATER
- SD — STORM DRAIN
- G — GAS
- E — ELECTRIC
- T — TELEPHONE
- PERFORATED PIPE
- POINT OF CONNECTION
- COORDINATION POINT
- CAP OR PLUG
- UTILITY MANHOLE
- UTILITY CLEANOUT
- STORM DRAIN INLET
- AREA DRAIN/PLANTER DRAIN
- TRENCH DRAIN
- FIRE HYDRANT
- THRUST BLOCK
- FIRE DEPARTMENT CONNECTION (FDC)
- POST INDICATOR VALVE (PIV)
- WATER VALVE
- BACK-FLOW ASSEMBLY
- UTILITY METER VAULT

ABBREVIATIONS:

AC	ASPHALTIC CONCRETE	MH	MANHOLE
BCR	BEGIN CURVE RETURN	(N)	NORTH
BW	BACK OF WALK	NTS	NOT TO SCALE
BLDG	BUILDING	PA	PLANTER AREA
BM	BENCH MARK	POC	POINT OF CONNECTION
BOS	BOTTOM OF STAIRS	PIV	POST INDICATOR VALVE
BMP	BEST MANAGEMENT PRACTICES	PCC	POINT OF COMPOUND CURVE
CB	CATCH BASIN	PRC	POINT OF REVERSE CURVE
CI	CAST IRON	PRV	PRESSURE REDUCING VALVE
CL	CENTER LINE	PVC	POLYVINYL CHLORIDE
CMU	CONCRETE MASONRY UNIT	R	RADIUS
CO	CLEANOUT	RCP	RECTANGULAR CAST IRON PIPE
CONC	PORTLAND CEMENT CONCRETE	RD	ROOF DRAIN
CT	CURB FACE	RW	RIGHT-OF-WAY
DW	DOMESTIC WATER	(S)	SOUTH
(E)	EAST	S=	SLOPE EQUALS
ECR	END CURVE RETURN	SD	STORM DRAIN
EL	EDGE OF GUTTER	SDMH	SANITARY SEWER MANHOLE
EL. OR ELEV	ELEVATION	SS	SANITARY SEWER
ELEC	ELECTRIC, ELECTRICAL	STD	STANDARD
EX. OR EXIST.	EXISTING	SDMH	STORM DRAIN MANHOLE
FDC	FIRE DEPARTMENT CONNECTION	TC	TOP OF CURB
FT	FINISHED FLOOR	TEL	TELEPHONE
FG	FINISHED GRADE (LANDSCAPE)	TG	TOP OF GRATE
FS	FINISHED SURFACE (HARDSCAPE)	TOS	TOP OF STAIRS
FH	FIRE HYDRANT	TW	TOP OF WALL
FL	FLOW LINE	TS	TRAFFIC SIGNAL
FT	FOOT OR FEET	TSB	TRAFFIC SIGNAL BOX
FIX	FIXTURE LIGHTS	TYP	TYPICAL
FW	FIRE WATER	TV	TELEVISION
GPM	GALLONS PER MINUTE	VF	VERIFY IN FIELD
GV	GATE VALVE	VLT	VAULT
HDPE	HIGH DENSITY POLYETHYLENE	VCP	VITRIFIED CLAY PIPE
HP	HIGH POINT	(W)	WEST
INV.	INVERT	W	WATER
LP	LOW POINT	WM	WATER METER
MAX.	MAXIMUM	WV	WATER VALVE
MIN.	MINIMUM		

PATTERN LEGEND:

- CONCRETE PAVING (REFER TO SHEET C1.20 FOR DETAILS)
- PLANTER AREA/LANDSCAPE (REFER TO LANDSCAPING PLANS FOR DETAILS)

ESTIMATED EARTHWORK QUANTITIES

CUT	[XX,XXX] CUBIC YARDS
FILL	[XX,XXX] CUBIC YARDS
OVER EXCAVATION	[XX,XXX] CUBIC YARDS
RECOMPACTION	[XX,XXX] CUBIC YARDS
NET (CUT/FILL)	[XX,XXX] CUBIC YARDS

NOTES:

1. THE ESTIMATED QUANTITIES PROVIDED ABOVE ARE TO BE USED FOR JURISDICTIONAL PLAN CHECKING AND PERMITTING PURPOSES ONLY.
2. ESTIMATED EARTHWORK ABOVE IS BASED ON DESIGN FINISH GRADES TO EXISTING GRADES AND/OR CONTOURS AS PROVIDED ON THE BASE SURVEY. THE ESTIMATED EARTHWORK DOES NOT ACCOUNT FOR THE THICKNESS OF PAVEMENTS, FOUNDATIONS AND SLABS ON GRADE, FOOTINGS, CLEARING AND GRUBBING, OVER EXCAVATION AND RECOMPACTION, AND CONSTRUCTION MEANS AND METHODS.
3. THE ESTIMATED EARTHWORK QUANTITIES DO NOT INCLUDE SHRINKAGE AND/OR EXPANSION FACTORS DUE TO COMPACTION OR OVER EXCAVATION QUANTITIES.
4. THE CONTRACTOR SHALL CALCULATE HIS OWN EARTHWORK QUANTITIES NECESSARY FOR HIS BID AND WORK.
5. ESTIMATED EARTHWORK QUANTITIES ABOVE ASSUME THAT ALL ONSITE MATERIALS ARE SUITABLE FOR BACKFILLING. HOWEVER, ACTUAL EXISTING ONSITE MATERIALS AND IMPORTED MATERIALS MUST FIRST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION, REMOVAL, OR REPLACEMENT.

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FAX: 213.418.8291
FAX: 213.296.5294
CONTACT: [PROJECT MANAGER]

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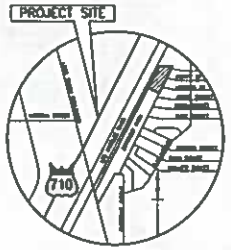
C1.41	PAVING PLAN
C3.00	CIVIL DETAILS



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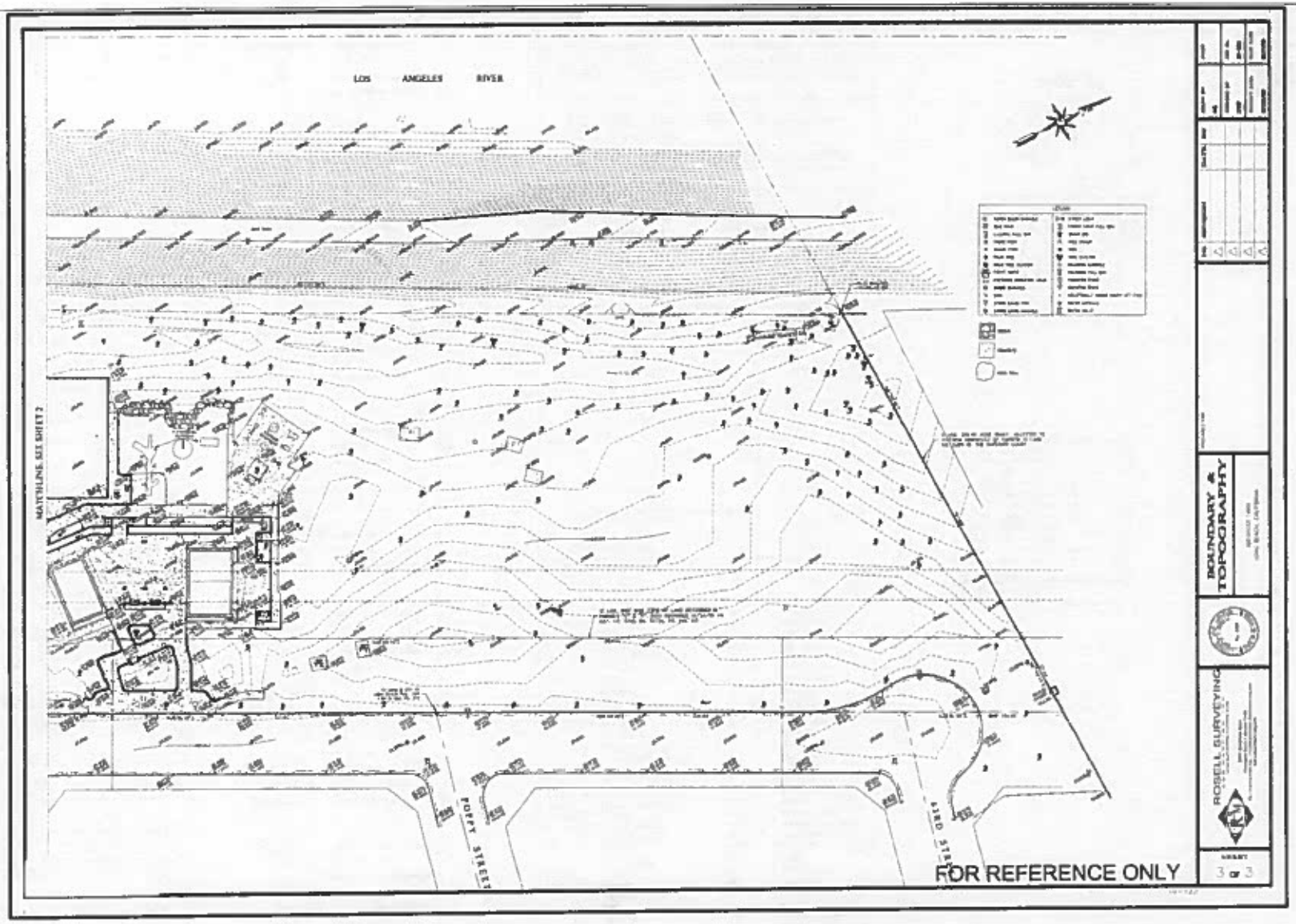
TITLE SHEET

C0.01



FOR REFERENCE ONLY

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integrated design construction management sustainability

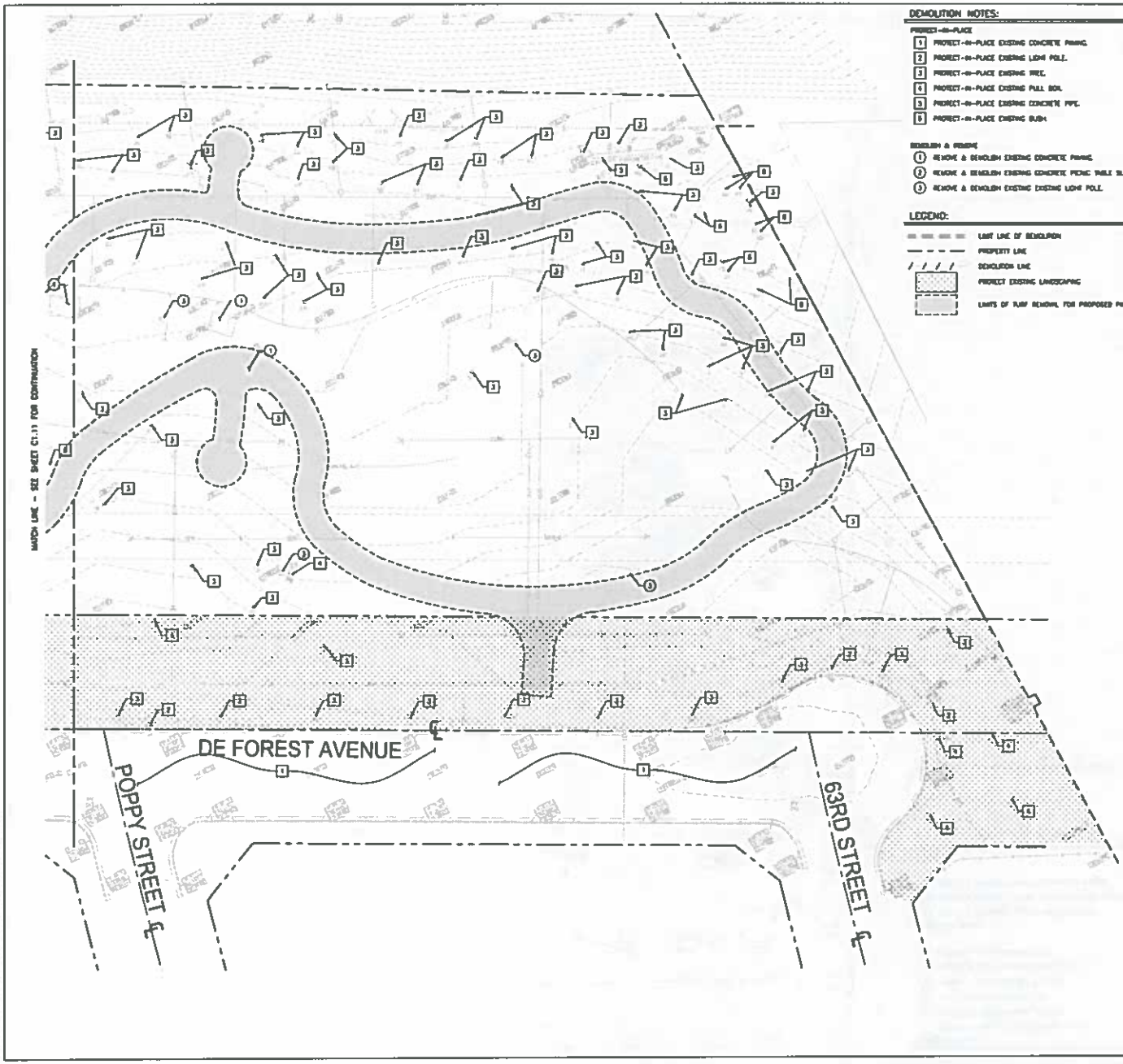
totum

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

1384

SURVEY FOR REFERENCE ONLY

C1.00



DEMOLITION NOTES:

PROJECT-IN-PLACE

1. PROJECT-IN-PLACE EXISTING CONCRETE PAVING
2. PROJECT-IN-PLACE EXISTING LIGHT POLE.
3. PROJECT-IN-PLACE EXISTING TREE.
4. PROJECT-IN-PLACE EXISTING PULL BOX.
5. PROJECT-IN-PLACE EXISTING CONCRETE PIPE.
6. PROJECT-IN-PLACE EXISTING BUSH

DEMOLISH & REMOVE

1. REMOVE & DEMOLISH EXISTING CONCRETE PAVING.
2. REMOVE & DEMOLISH EXISTING CONCRETE PICNIC TABLE SLAB.
3. REMOVE & DEMOLISH EXISTING EXISTING LIGHT POLE.

LEGEND:

- LIMIT LINE OF DEMOLITION
- PROPERTY LINE
- DEMOLITION LINE
- PROJECT EXISTING LANDSCAPING
- LIMITS OF TURF REMOVAL FOR PROPOSED PATH

GENERAL DEMOLITION NOTES:

1. CONTRACTOR TO CLEAN PROJECT SITE AREA WITHIN THE CONFINES OF THE DEMOLITION LIMIT LINE. THE CONTRACTOR SHALL DEMOLISH AND REMOVE FROM THE SITE ALL EXISTING UTILITIES, STRUCTURES, PLANTERS, TREES, AND ALL OTHER SITE FEATURES, UNLESS OTHERWISE NOTED ON THE PLAN.
2. REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIALS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS AND SHALL PAY ALL FEES NECESSARY FOR ENCROACHMENT, GRADING, DEMOLITION AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY FEDERAL, LOCAL AND STATE JURISDICTIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY ACKNOWLEDGE THE EXTENT OF THE DEMOLITION WORK.
5. THE CONTRACTOR SHALL VERIFY AND LOCATE ALL EXISTING ABOVE AND UNDERGROUND UTILITIES. LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE SHOWN FOR GENERAL INFORMATION ONLY.
6. DAMAGE TO ANY EXISTING UTILITIES AND SERVICES TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
7. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAINS, SANITARY SEWERS AND STREETS.
8. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.
9. DEMOLITION IS LIMITED TO WITHIN DEMOLITION LIMIT LINE UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL VERIFY THE LOCATION AND QUANTITY OF EXISTING SURFACE STRUCTURES AND SHALL BE SOLELY RESPONSIBLE FOR ANY UNIDENTIFIED UTILITIES, IMPROVEMENTS, TREES, ETC. TO BE DEMOLISHED AND REMOVED WITHIN THE DEMOLITION LIMIT LINE, INCLUDING APPURTENANT FOUNDATIONS OR SUPPORTS.
11. DEMOLITION CALLOUTS IN THIS SECTION ARE REPRESENTATIVE OF WHAT IS TO BE DONE, NOT AN ITEMIZED ACCOUNTING FOR EACH PIPE, CATCH BASIN, MANHOLE, VAULT, ETC. THAT IS TO BE DEMOLISHED, REMOVED AND DISPOSED OF.

WEED AND TURF ABATEMENT NOTES:

1. SUCCESSOR PHASE
   TOTAL TIME FOR WEED AND TURF ABATEMENT SHALL BE PER HERBICIDE MANUFACTURER'S RECOMMENDATIONS. TURF ABATEMENT PHASE AREAS MAY BE COMBINED WITH CONSTRUCTION SCHEDULING PER OWNER'S APPROVAL.
2. PRIOR TO DEMOLITION OF EXISTING IRRIGATION SYSTEM
   a. SUBMIT A TURF ABATEMENT PLAN TO OWNER'S REPRESENTATIVE TO INCLUDE, BUT NOT LIMITED TO: ABATEMENT SCHEDULE, PROPOSED SYSTEMIC HERBICIDE TO BE USED, VERIFICATION OF STATE OF CALIFORNIA LICENSED APPLICATOR, APPLICATION METHODS, MATERIAL SAFETY DATA SHEETS AND ANY OTHER INFORMATION FROM THE MANUFACTURER NECESSARY FOR APPROPRIATE APPLICATION OF THE HERBICIDE.
   b. REMOVE TURF AND WEEDS FROM SURFACE OF THE SITE WHICH INCLUDING TOPSOIL USING SOD CUTTER AND OTHER MECHANICAL DEVICES. DO NOT TILL THE SOIL.
   c. THOROUGHLY WATER ALL AREAS FOR A MINIMUM OF 10 MINUTES PER SETTING TWO (2) TIMES PER DAY FOR TEN (10) DAYS AND UNTIL ALL WEEDS HAVE GERMINATED. ADJUST SPRINKLER HEADS AS NEEDED TO ACHIEVE FULL COVERAGE ACROSS TURF AREA.
   d. AFTER TEN (10) DAYS SPRAY A NON-SELECTIVE HERBICIDE TO ERADICATE THE GERMINATED WEEDS. ALLOW HERBICIDE TO KILL ALL WEEDS IN AREAS DESIGNATED FOR TURF REMOVAL, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALLOW HERBICIDE TO KILL ALL WEEDS.
   e. IF PERENNIAL WEEDS OR GRASSES STILL EXIST, REPEAT THE WATERING AND HERBICIDE SPRAY ABOVE.
   f. RAKE OR HOE OFF ALL DEAD WEEDS AND REMOVAL TURF GRASS TO A DEPTH OF 3 INCH BELOW THE SURFACE OF THE SOIL.
   g. IF REMAINING VIABLE TURF AND WEEDS REMAIN, REPEAT WATERING AND HERBICIDE SPRAY ABOVE AND/OR SPOT TREAT SMALL AREAS OF EMERGING TURF AND WEEDS.
   h. PREVENT HERBICIDE DRIFT ACROSS PROPERTY LINES, TO OTHER AREAS ADJACENT TO THE WORK AREA, AND TO THE TURF THAT IS SHOWN TO REMAIN.
   i. DO NOT APPLY HERBICIDE WITHIN 25' OF EXISTING PLANT MATERIAL, TREES AND TURF. TURF SHALL BE MECHANICALLY REMOVED IN THESE AREAS.
3. REPEAT HERBICIDE APPLICATIONS THROUGHOUT THE DURATION OF THE CONSTRUCTION AND AS NEEDED, WHENEVER EMERGING WEED/TURF SEEDLINGS REACH FOUR INCHES (4"). PREVENT HERBICIDE DRIFT THROUGHOUT APPLICATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR SUCCESSFUL WEED AND TURF ABATEMENT
5. PLANT POLLINATOR SEED MIX IN THE FALL, WAITING AT LEAST 72 HOURS AFTER THE LAST HERBICIDE APPLICATION.
6. DO NOT TILL AND AVOID ANY GROUND DISTURBANCE THAT MAY BRING UP ADDITIONAL WEED SEED IN WEED AND TURF ABATEMENT AREAS UNLESS INDICATED ON THE PLANS FOR PLANTING AREAS

SCALE: 1"=20'

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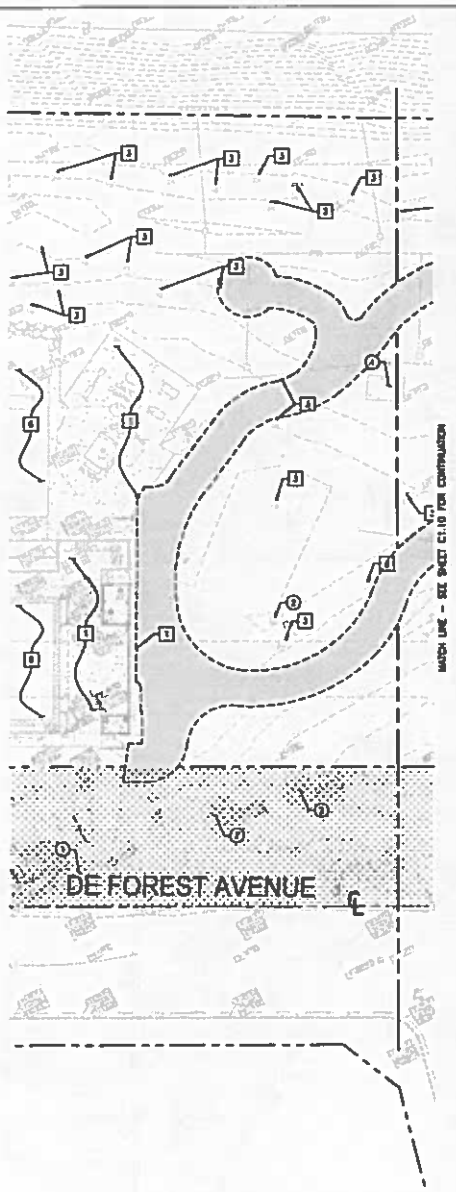
1204

DEMOLITION PLAN

C1.10



DEMOLITION NOTES:

PROJECT-IN-PLACE

1. PROJECT-IN-PLACE EXISTING CONCRETE PAVING.
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LEGEND:

- LIMIT LINE OF DEMOLISH
- PROPERTY LINE
- DEMOLISH LINE
- PROJECT EXISTING LANDSCAPING
- LIMITS OF TURF REMOVAL FOR PROPOSED PATH

GENERAL DEMOLITION NOTES:

1. CONTRACTOR TO CLEAR PROJECT SITE AREA WITHIN THE CONFINES OF THE DEMOLISH LIMIT LINE. THE CONTRACTOR SHALL DEMOLISH AND REMOVE FROM THE SITE ALL EXISTING UTILITIES, STRUCTURES, PLANTERS, TREES, AND ALL OTHER SITE FEATURES, UNLESS OTHERWISE NOTED ON THE PLAN.
2. REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIALS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS AND SHALL PAY ALL FEES NECESSARY FOR ENCROACHMENT, GRADING, DEMOLISH AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY FEDERAL, LOCAL, AND STATE JURISDICTIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY ACKNOWLEDGE THE EXTENT OF THE DEMOLISH WORK.
5. THE CONTRACTOR SHALL VERIFY AND LOCATE ALL EXISTING ABOVE AND UNDERGROUND UTILITIES. LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE SHOWN FOR GENERAL INFORMATION ONLY.
6. DAMAGE TO ANY EXISTING UTILITIES AND SERVICES TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
7. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAINS, SANITARY SEWERS AND STREETS.
8. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.
9. DEMOLISH IS LIMITED TO WITHIN DEMOLISH LIMIT LINE UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING SURFACE STRUCTURES AND SHALL BE SOLELY RESPONSIBLE FOR ANY UNDISCLOSED UTILITIES, APPURTENANCES, TREES, ETC. TO BE DEMOLISHED AND REMOVED WITHIN THE DEMOLISH LIMIT LINE, INCLUDING APPURTENANT FOUNDATIONS OR SUPPORTS.
11. DEMOLISH CALLOUTS IN THIS SECTION ARE REPRESENTATIVE OF WHAT IS TO BE DONE, NOT AN EXHAUSTIVE ACCOUNTING FOR EACH PIPE, EACH DRAIN, MANHOLE, VALVE, ETC. THAT IS TO BE DEMOLISHED, REMOVED AND DISPOSED OF.

WEED AND TURF ABATEMENT NOTES:

1. BACKGROUND INFO
   GOAL THAT FOR WEED AND TURF ABATEMENT SHALL BE PER HERBICIDE MANUFACTURER'S RECOMMENDATIONS. TURF ABATEMENT PHASE AREAS MAY BE COMBINED WITH CONSTRUCTION SCHEDULING PER OWNER'S APPROVAL.
2. PRIOR TO DEMOLISH OF EXISTING IRRIGATION SYSTEM
   a. SUBMIT A TURF ABATEMENT PLAN TO OWNER'S REPRESENTATIVE TO INCLUDE, BUT NOT LIMITED TO: ABATEMENT SCHEDULE, PROPOSED SYSTEMIC HERBICIDE TO BE USED, VERIFICATION OF SHARE OF CALIFORNIA LICENSED APPLICATOR, APPLICATION METHODS, MATERIAL SAFETY DATA SHEETS AND ANY OTHER INFORMATION FROM THE MANUFACTURER NECESSARY FOR APPROPRIATE APPLICATION OF THE HERBICIDE.
   b. REMOVE TURF AND WEEDS FROM SURFACE OF THE SITE WITHOUT DISTURBING TOPSOIL USING SOD CUTTER AND OTHER MECHANICAL DEVICES. DO NOT TILL THE SOIL.
   c. THOROUGHLY WATER ALL AREAS FOR A MINIMUM OF 10 MINUTES PER SETTING TWO (2) TIMES PER DAY FOR TEN (10) DAYS AND LABEL ALL WEEDS HAVE GERMINATED. ADJUST SPRINKLER HEADS AS NEEDED TO ACHIEVE FULL COVERAGE ACROSS TURF AREA.
   d. AFTER TEN (10) DAYS SPRAY A NON-SELECTIVE HERBICIDE TO ERADICATE THE GERMINATED WEEDS. ALLOW HERBICIDE TO KILL ALL WEEDS IN AREAS DESIGNATED FOR TURF REMOVAL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALLOW HERBICIDE TO KILL ALL WEEDS.
   e. IF PERENNIAL WEEDS OR GRASSES STILL EXIST, REPEAT THE WATERING AND HERBICIDE SPRAY AGAIN.
   f. WAIT OR NOT DIT ALL DEAD WEEDS AND REMOVAL TURF CHASE TO A DEPTH OF 5 INCH BELOW THE SURFACE OF THE SOIL.
   g. IF GERMINATE VIABLE TURF AND WEEDS REMAIN, REPEAT WATERING AND HERBICIDE SPRAY. ABOVE AND/OR SPOT WEED SHALL AREAS OF DROWNING TURF AND WEEDS.
   h. PREVENT HERBICIDE DRIFT ACROSS PROPERTY LINES, TO OTHER AREAS ADJACENT TO THE WORK AREA, AND TO THE TURF THAT IS SHOWN TO REMAIN.
   i. DO NOT APPLY HERBICIDE WITHIN 6X OF EXISTING PLANT MATERIAL, TREES AND TURF. TURF SHALL BE MECHANICALLY REMOVED IN THESE AREAS.
3. REPEAT HERBICIDE APPLICATIONS THROUGHOUT THE DURATION OF THE CONSTRUCTION AND AS NEEDED, WHENEVER EMERGING WEED/TURF SEEDLINGS REACH FOUR INCHES (4"). PREVENT HERBICIDE DRIFT THROUGHOUT APPLICATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR SUCCESSFUL WEED AND TURF ABATEMENT.
5. PLANT FOLLOWING WEED MIX IN THE FALL, WAITING AT LEAST 72 HOURS AFTER THE LAST HERBICIDE APPLICATION.
6. DO NOT TILL AND AVOID ANY GROUND DISTURBANCE THAT MAY BRING UP ADDITIONAL WEED SEED IN WEED AND TURF ABATEMENT AREAS UNLESS INDICATED ON THE PLANS FOR PLANTING AREAS.

SCALE: 1"=20'

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Camp Shiwaka
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6255 DeForest ave
long beach, ca 90805

DEMOLITION PLAN

C1.11

BMP NOTES:

THE FOLLOWING BMPS AS OUTLINED IN, BUT NOT LIMITED TO, THE BEST MANAGEMENT PRACTICE HANDBOOK, CALIFORNIA STORMWATER QUALITY TASK FORCE, SACRAMENTO, CALIFORNIA, JULY 2012, MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY CITY INSPECTORS):

EROSION CONTROL

EC1-SCHEDULING
EC2-PRESERVATION OF EXISTING VEGETATION
EC3-HYDRAULIC MULCH
EC4-HYDROSEEDING
EC5-SOIL BINDERS
EC6-STRAW MULCH
EC7-GEOTEXTILES AND MATS
EC8-WOOD MULCHING
EC9-EARTH DIKES AND DRAINAGE SWALES
EC10-VELOCITY DISSIPATION DEVICES
EC11-SLOPE DRAINS
EC12-STREAMBANK STABILIZATION
EC13-RESERVED
EC14-COMPOST BLANKET
EC15-SOIL PREPARATION/ROUGHENING
EC16-NON-VEGETATIVE STABILIZATION

TEMPORARY SEDIMENT CONTROL

SE1-SILT FENCE
SE2-SEDIMENT BASIN
SE3-SEDIMENT TRAP
SE4-CHECK DAM
SE5-FIBER ROLLS
SE6-GRAVEL BAG BERM
SE7-STREET SWEEPING AND VACUUMING
SE8-SANDBAG BARRIER
SE9-STRAW BALE BARRIER
SE10-STORM DRAIN INLET PROTECTION
SE11-ACTIVE TREATMENT SYSTEMS
SE12-MANUFACTURED LINEAR SEDIMENT CONTROLS
SE13-COMPOST SOCKS AND BERMS
SE14-BIOFILTER BAGS

EQUIPMENT TRACKING CONTROL

TC1-STABILIZED CONSTRUCTION ENTRANCE/EXIT
TC2-STABILIZED CONSTRUCTION ROADWAY
TC3-ENTRANCE/OUTLET TIRE WASH

WIND EROSION CONTROL

WE1-WIND EROSION CONTROL

NON-STORMWATER MANAGEMENT

NS1-WATER CONSERVATION PRACTICES
NS2-DEWATERING OPERATIONS
NS3-PAVING AND GRADING OPERATIONS
NS4-TEMPORARY STREAM CROSSING
NS5-CLEAR WATER DIVERSION
NS6-ILLICIT CONNECTION/DISCHARGE
NS7-POTABLE WATER/IRRIGATION
NS8-VEHICLE AND EQUIPMENT CLEANING
NS9-VEHICLE AND EQUIPMENT FUELING
NS10-VEHICLE AND EQUIPMENT MAINTENANCE
NS11-PILE DRIVING OPERATIONS
NS12-CONCRETE CURING
NS13-CONCRETE FINISHING
NS14-MATERIAL OVER WATER
NS15-DEMOLITION ADJACENT TO WATER
NS16-TEMPORARY BATCH PLANTS

WASTE MANAGEMENT & MATERIALS POLLUTION CONTROL

WM1-MATERIAL DELIVERY AND STORAGE
WM2-MATERIAL USE
WM3-STOCKPILE MANAGEMENT
WM4-SPILL PREVENTION AND CONTROL
WM5-SOLID WASTE MANAGEMENT
WM6-HAZARDOUS WASTE MANAGEMENT
WM7-CONTAMINATED SOIL MANAGEMENT
WM8-CONCRETE WASTE MANAGEMENT
WM9-SANITARY/SEPTIC WASTE MANAGEMENT
WM10-LIQUID WASTE MANAGEMENT

EROSION CONTROL NOTES:

1. TEMPORARY EROSION CONTROL DEVICES SHOWN ON THE GRADING PLAN WHICH MAY/MUST BEFORE THE WORK SHALL BE DEPLOYED OR MODIFIED AS AND WHEN THE INSPECTOR DIRECTS AS THE WORK PROGRESSES TO MEET "NO CHANGE" CONDITIONS.
2. ALL LOOSE SOIL AND DEBRIS SHALL BE REMOVED FROM THE STREET AREAS UPON STARTING OPERATIONS AND PERIODICALLY THEREAFTER AS DIRECTED BY THE INSPECTOR
3. WHEN THE INSPECTOR DIRECTS, A 12-INCH BERM SHALL BE MAINTAINED ALONG THE TOP OF THE SLOPE OF THOSE FILLS ON WHICH GRADING IS NOT IN PROGRESS.
4. STORM AND SEWER DRAIN TRENCHES THAT ARE CUT THROUGH DRAIN INLETS OR DRAIN INLET DIKES SHALL BE PLUGGED WITH SANDBAGS.
5. EXCEPT WHEN THE INSPECTOR DIRECTS OTHERWISE, ALL DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN RAIN IS FORECAST, AND SHALL BE MAINTAINED DURING THE RAINY SEASON (OCTOBER 15 TO APRIL 15).
6. SANDBAGS SHALL BE STOCKPILED ON SITE, READY TO BE PLACED IN POSITION WHEN RAIN IS FORECAST, OR WHEN THE INSPECTOR DIRECTS.
7. A "STANDBY EMERGENCY CREW" SHALL BE ALERTED BY THE PERMITTEE OR THE CONTRACTOR TO PERFORM EMERGENCY WORK DURING RAINSTORMS. THE PARTY TO BE CONTACTED IS:
   NAME: _____ (TO BE FILLED IN BY CONTRACTOR)
   PHONE NUMBER: _____

DUST CONTROL NOTES:

1. DUST SHALL BE CONTROLLED BY WATERING AND/OR APPLYING A DUST PALLIATIVE. THE DUST PALLIATIVE SHALL BE APPLIED IN THE AMOUNT AT THE LOCATIONS AS DIRECTED BY THE ENGINEER.
2. WATER FOR DUST CONTROL SHALL BE APPLIED BY MEANS OF PRESSURE TYPE DISTRIBUTORS OR PIPE LINES EQUIPPED WITH A SPRAY SYSTEM OR HOSES WITH NOZZLES THAT WILL ENSURE A UNIFORM APPLICATION OF WATER.
3. UNLESS WATER IS APPLIED BY MEANS OF PIPE LINES, AT LEAST ONE MOBILE UNIT WITH A MINIMUM CAPACITY OF 1000 GALLONS SHALL BE AVAILABLE FOR APPLYING WATER.
4. ALL SOIL MATERIALS OR DEBRIS HAULED FROM THE SITE SHALL BE COVERED AND SPRINKLED PRIOR TO ENTERING PUBLIC STREETS.
5. PROVIDE FOR WET SUPPRESSION OR CHEMICAL STABILIZING OF EXPOSED SOILS.
6. PROVIDE FOR RAPID CLEAN-UP OF SEDIMENTS DEPOSITED ON THE PAVED ROADS.
7. LIMIT THE AMOUNT OF AREAS DISTURBED BY CLEARING & EARTH MOVING OPERATIONS BY SCHEDULING THESE ACTIVITIES IN PHASES.

EROSION CONTROL NOTES:

(1) PLACE GRAVEL BAGS SINGLE ROW PER DETAIL 1, SHEET C3.05.
(2) STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 2, SHEET C3.05.

LEGEND

- LIMIT LINE OF EROSION CONTROL
- PROPERTY LINE
- GRAVEL BAGS
- FIBER ROLL
- DIRECTION OF FLOW
- PROJECT TREE IN PLACE

SCALE: 1"=20'

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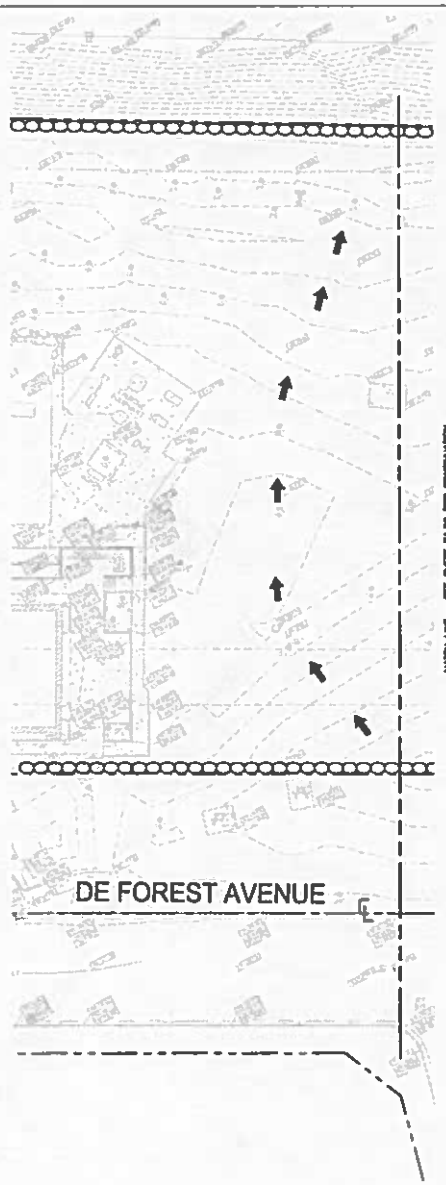
1204

EROSION CONTROL PLAN

C1.20



BMP NOTES:

THE FOLLOWING BMP'S AS OUTLINED IN, BUT NOT LIMITED TO, THE BEST MANAGEMENT PRACTICE HANDBOOK, CALIFORNIA STORMWATER QUALITY TASK FORCE, SACRAMENTO, CALIFORNIA, JULY 2012, MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY CITY INSPECTORS):

EROSION CONTROL

- EC1-SCHEDULING
- EC2-PRESERVATION OF EXISTING VEGETATION
- EC3-HYDRAULIC MULCH
- EC4-HYDROSEEDING
- EC5-SOIL BINDERS
- EC6-STRAW MULCH
- EC7-GEOTEXTILES AND MATS
- EC8-WOOD MULCHING
- EC9-EARTH DIKES AND DRAINAGE SWALES
- EC10-VELOCITY DISSIPATION DEVICES
- EC11-SLOPE DRAINS
- EC12-STREAMBANK STABILIZATION
- EC13-RESERVED
- EC14-COMPOST BLANKET
- EC15-SOIL PREPARATION/ROUGHENING
- EC16-NON-VEGETATIVE STABILIZATION

TEMPORARY SEDIMENT CONTROL

- SE1-SILT FENCE
- SE2-SEDIMENT BASIN
- SE3-SEDIMENT TRAP
- SE4-CHECK DAM
- SE5-FIBER ROLLS
- SE6-GRAVEL BAG BERM
- SE7-STREET SWEEPING AND VACUUMING
- SE8-SANDBAG BARRIER
- SE9-STRAW BALE BARRIER
- SE10-STORM DRAIN INLET PROTECTION
- SE11-ACTIVE TREATMENT SYSTEMS
- SE12-MANUFACTURED LINEAR SEDIMENT CONTROLS
- SE13-COMPOST SOCKS AND BERMS
- SE14-BIOFILTER BAGS

TRACKING CONTROL

- TC1-STABILIZED CONSTRUCTION ENTRANCE/EXIT
- TC2-STABILIZED CONSTRUCTION ROADWAY
- TC3-ENTRANCE/OUTLET TIRE WASH

WIND EROSION CONTROL

- WE1-WIND EROSION CONTROL

NON-STORMWATER MANAGEMENT

- NS1-WATER CONSERVATION PRACTICES
- NS2-DEWATERING OPERATIONS
- NS3-PAVING AND GRINDING OPERATIONS
- NS4-TEMPORARY STREAM CROSSING
- NS5-CLEAR WATER DIVERSION
- NS6-ILLICIT CONNECTION/DISCHARGE
- NS7-POTABLE WATER/IRRIGATION
- NS8-VEHICLE AND EQUIPMENT CLEANING
- NS9-VEHICLE AND EQUIPMENT FUELING
- NS10-VEHICLE AND EQUIPMENT MAINTENANCE
- NS11-PILE DRIVING OPERATIONS
- NS12-CONCRETE CURING
- NS13-CONCRETE FINISHING
- NS14-WATERING WHEN DRY
- NS15-DEMOLITION ADJACENT TO WATER
- NS16-TEMPORARY BATCH PLANTS

WASTE MANAGEMENT & MATERIAL POLLUTION CONTROL

- WM1-MATERIAL DELIVERY AND STORAGE
- WM2-MATERIAL USE
- WM3-STOCKPILE MANAGEMENT
- WM4-SPILL PREVENTION AND CONTROL
- WM5-SOLID WASTE MANAGEMENT
- WM6-HAZARDOUS WASTE MANAGEMENT
- WM7-CONTAMINATED SOIL MANAGEMENT
- WM8-CONCRETE WASTE MANAGEMENT
- WM9-SANITARY/SEPTIC WASTE MANAGEMENT
- WM10-LIQUID WASTE MANAGEMENT

EROSION CONTROL NOTES:

1. TEMPORARY EROSION CONTROL DEVICES SHOWN ON THE GRADING PLAN WHICH MAINTAIN WHEN THE WORK SHALL BE RELOCATED OR MODIFIED AS AND WHEN THE INSPECTOR SO DIRECTS AS THE WORK PROGRESSES TO MEET "AS GRADED" CONDITIONS.
2. ALL LOOSE SOIL AND DEBRIS SHALL BE REMOVED FROM THE STREET AREAS UPON COMPLETING OPERATIONS AND PERIODICALLY THEREAFTER AS DIRECTED BY THE INSPECTOR.
3. WHEN THE INSPECTOR SO DIRECTS, A 12-INCH BERM SHALL BE MAINTAINED ALONG THE TOP OF THE SLOPE OF THOSE FILLS ON WHICH GRADING IS NOT IN PROGRESS.
4. STORM AND SEWER DRAIN BRANCHES THAT ARE CUT THROUGH DRAIN DIKES OR DRAIN INLET DIKES SHALL BE PLUGGED WITH SANDBAGS.
5. EXCEPT WHEN THE INSPECTOR DIRECTS OTHERWISE, ALL DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN RAIN IS FORECAST, AND SHALL BE MAINTAINED DURING THE RAINY SEASON (OCTOBER 15 TO APRIL 15).
6. SANDBAGS SHALL BE STOCKPILED ON SITE, READY TO BE PLACED IN POSITION WHEN RAIN IS FORECAST, OR WHEN THE INSPECTOR SO DIRECTS.
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   PHONE NUMBER: _____

DUST CONTROL NOTES:

1. DUST SHALL BE CONTROLLED BY WATERING AND/OR APPLYING A DUST PALLIATIVE. THE DUST PALLIATIVE SHALL BE APPLIED IN THE AMOUNT AT THE LOCATIONS AS DIRECTED BY THE ENGINEER.
2. WATER FOR DUST CONTROL SHALL BE APPLIED BY MEANS OF PRESSURE TYPE DISTRIBUTORS OR PIPE LINES EQUIPPED WITH A SPRAY SYSTEM OR HOSES WITH NOZZLES THAT WILL ENSURE A UNIFORM APPLICATION OF WATER.
3. UNLESS WATER IS APPLIED BY MEANS OF PIPE LINES, AT LEAST ONE MOBILE UNIT WITH A MINIMUM CAPACITY OF 1000 GALLONS SHALL BE AVAILABLE FOR APPLYING WATER.
4. ALL SOIL MATERIALS OR DEBRIS TRACKED FROM THE SITE SHALL BE COVERED AND SPRINKLED PRIOR TO ENTERING PUBLIC STREETS.
5. PROVIDE FOR WET SUPPRESSION OR CHEMICAL STABILIZING OF EXPOSED SOILS.
6. PROVIDE FOR RAPID CLEAN-UP OF SEDIMENTS DEPOSITED ON THE PAVED ROADS.
7. LIMIT THE AMOUNT OF AREAS DISTURBED BY CLEARING & EARTH MOVING OPERATIONS BY SCHEDULING THESE ACTIVITIES IN PHASES.

EROSION CONTROL NOTES:

(11) PLACE GRAVEL BAGS SINGLE ROW PER DETAIL 1, SHEET C3.00.

(12) STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 2, SHEET C3.00.

LEGEND

- LIMIT LINE OF EROSION CONTROL
- PROPERTY LINE
- GRAVEL BAGS
- FIBER ROLL
- DIRECTION OF FLOW
- PROTECT TREE IN PLACE

SCALE: 1"=20'

kpff

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Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

1384

EROSION CONTROL PLAN

C1.21

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Camp Shiwaka

At DeForest Park
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long beach, ca 90805

1304

GRADING AND DRAINAGE PLAN

C1.30

LEGEND

LIMIT OF WORK
PROPERTY LINE
FLOW LINE
CURB DRAIN
RIDGE LINE
CURVED RIDGE
SWALE AND JOIN
GRADE SLOPE (HORIZONTAL:VERTICAL)
LIMIT OF GRADING
GRADING BEACH
PROPOSED SWALE CONTOUR
PROPOSED MAJOR CONTOUR

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SCALE: 1"=30'

GRADING AND DRAINAGE PLAN

C1.31

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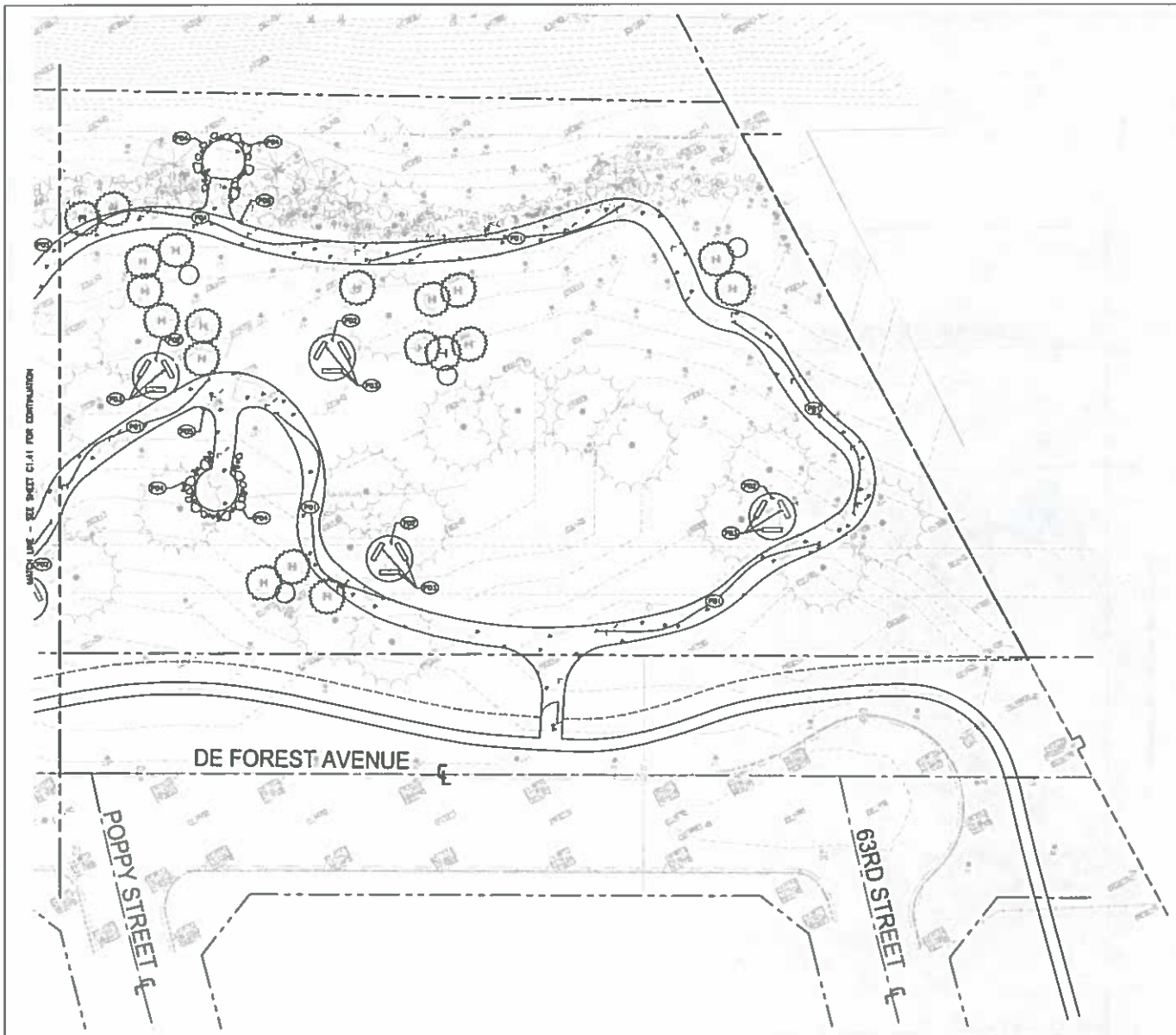

PAVING CONSTRUCTION NOTES

- (P01) DECOMPOSED GRANITE PATH AND PAD PER DETAIL 1, SHEET A5.2.
- (P02) FIRE RING PER DETAIL 2, SHEET A5.2.
- (P03) SPLIT LOG BENCH PER DETAIL 3, SHEET A5.2.
- (P04) GREEN PATH PER DETAIL 5, SHEET A5.2.
- (P05) SANITARIUM SIGN PER DETAIL 4, SHEET A5.2.

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- CONCRETE PAVING (REFER TO SHEET [C2.00] FOR DETAILS)

NOTE TO CONTRACTOR/CONSTRUCTION SURVEYOR:

CONSTRUCTION STAKING FOR IMPROVEMENTS SHOWN ON THESE PLANS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR. CONSTRUCTION STAKING SURVEYOR SHALL BE RESPONSIBLE FOR COORDINATION OF THESE PLANS WITH SOURCE DRAWINGS PREPARED BY ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER, MEP CONSULTANT AND ANY OTHER DISCIPLINE PRIOR TO START OF STAKING AND CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION TO THAT A CLARIFICATION CAN BE ISSUED.

SCALE: 1"=20'

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Camp Shiwaka

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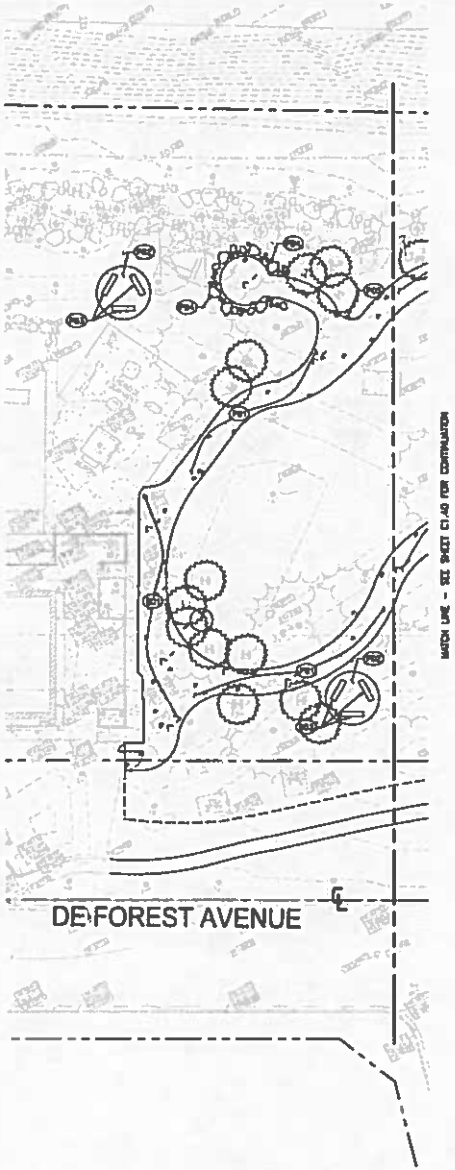
L204

PAVING PLAN

C1.40



PAVING CONSTRUCTION NOTES

1. DECOMPOSED GRANITE PATH AND PAD PER DETAIL 1, SHEET A0.2
2. FIRE RING PER DETAIL 2, SHEET A0.2
3. SPLIT LOG BENCH PER DETAIL 3, SHEET A0.2
4. CREEK PATH PER DETAIL 5, SHEET A0.2
5. WAYFINDING SIGN PER DETAIL 4, SHEET A0.2

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- CONCRETE PAVING (REFER TO SHEET (COLOR) FOR DETAILS)

NOTE TO CONTRACTOR/CONSTRUCTION SURVEYOR:

CONSTRUCTION STAKING FOR IMPROVEMENTS SHOWN ON THESE PLANS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR. CONSTRUCTION STAKING SURVEYOR SHALL BE RESPONSIBLE FOR COORDINATION OF THESE PLANS WITH SOURCE DRAWINGS PREPARED BY ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER, MEP CONSULTANT AND ANY OTHER DISCIPLINE PRIOR TO START OF STAKING AND CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED.

SCALE: 1"=30'

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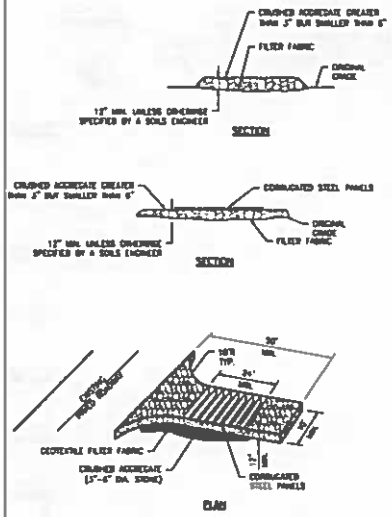
1304

PAVING PLAN

C1.41



NOTES:

1. THE CONSTRUCTION ENTRANCE ROADWAY SHALL BE STABILIZED SO AS TO PREVENT SEDIMENTS FROM BEING DEPOSITED ONTO THE PUBLIC ROADS. DEPOSITED MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS INTO THE STORM DRAIN SYSTEM.
2. STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE OR FROM A PUBLIC RIGHT OF WAY, STREET, ALLEY, AND SIDEWALK OR PARKING AREA.
3. IF A WASH RACK IS INCLUDED, A SEDIMENT TRAP OF SOME KIND MUST ALSO BE PROVIDED TO COLLECT WASH WATER RUNOFF.
4. ALL VEHICLES ACCESSING THE CONSTRUCTION SITE SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE.

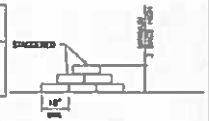
STREET MAINTENANCE NOTES

1. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS IMMEDIATELY.
2. SWEEP PAVED AREAS THAT RECEIVE CONSTRUCTION TRAFFIC WHENEVER SEDIMENT BECOMES VISIBLE.
3. PAVEMENT WASHING WITH WATER IS PROHIBITED IF IT RESULTS IN A DISCHARGE TO THE STORM DRAIN SYSTEM

2 STABILIZED CONSTRUCTION ENTRANCE n.t.s.

SLOPE INCLINATION	MAXIMUM SHEET FLOW LENGTH (PER SLOPE INCLINATION)
< 4:1 (H:V)	*20'
4:1-2:1 (H:V)	*15'
> 2:1 (H:V)	*10'

* FIRST ROW NEAR SLOPE TOE



NOTES:

1. BAG MATERIAL: BAGS SHOULD BE WOVEN POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE FABRIC, MINIMUM UNIT WEIGHT OF 4 OUNCES/YD², MINIMUM BURST STRENGTH EXCEEDING 300 LB/IN² IN CONFORMANCE WITH THE REQUIREMENTS IN ASTM DESIGNATION D3786, AND ULTRAVIOLET STABILITY EXCEEDING 70% IN CONFORMANCE WITH THE REQUIREMENTS IN ASTM DESIGNATION D4355.
2. BAG SIZE: EACH GRAVEL-FILLED BAG SHOULD HAVE A LENGTH OF 18 IN., WIDTH OF 12 IN., THICKNESS OF 3 IN., AND WEIGHT OF APPROXIMATELY 33 LBS. BAG DIMENSIONS ARE NOMINAL, AND MAY VARY BASED ON LOCALLY AVAILABLE MATERIALS.
3. FILL MATERIAL: FILL MATERIAL SHALL BE 0.5 TO 1.0 INCH CRUSHED ROCK, CLEAN AND FREE OF CLAY, ORGANIC MATTER, AND OTHER DELETERIOUS MATERIAL, OR OTHER SUITABLE OPEN-GRADED, NON-COHESIVE, POROUS GRAVEL.
4. TURN THE ENDS OF GRAVEL BAG BARRIER UP SLOPE TO PREVENT RUNOFF FROM SOME AREAS BARRIER.
5. USE PYRAMID APPROACH WHEN STACKING BAGS.

1 GRAVEL BAG BARRIER n.t.s.

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Camp Shiwaka
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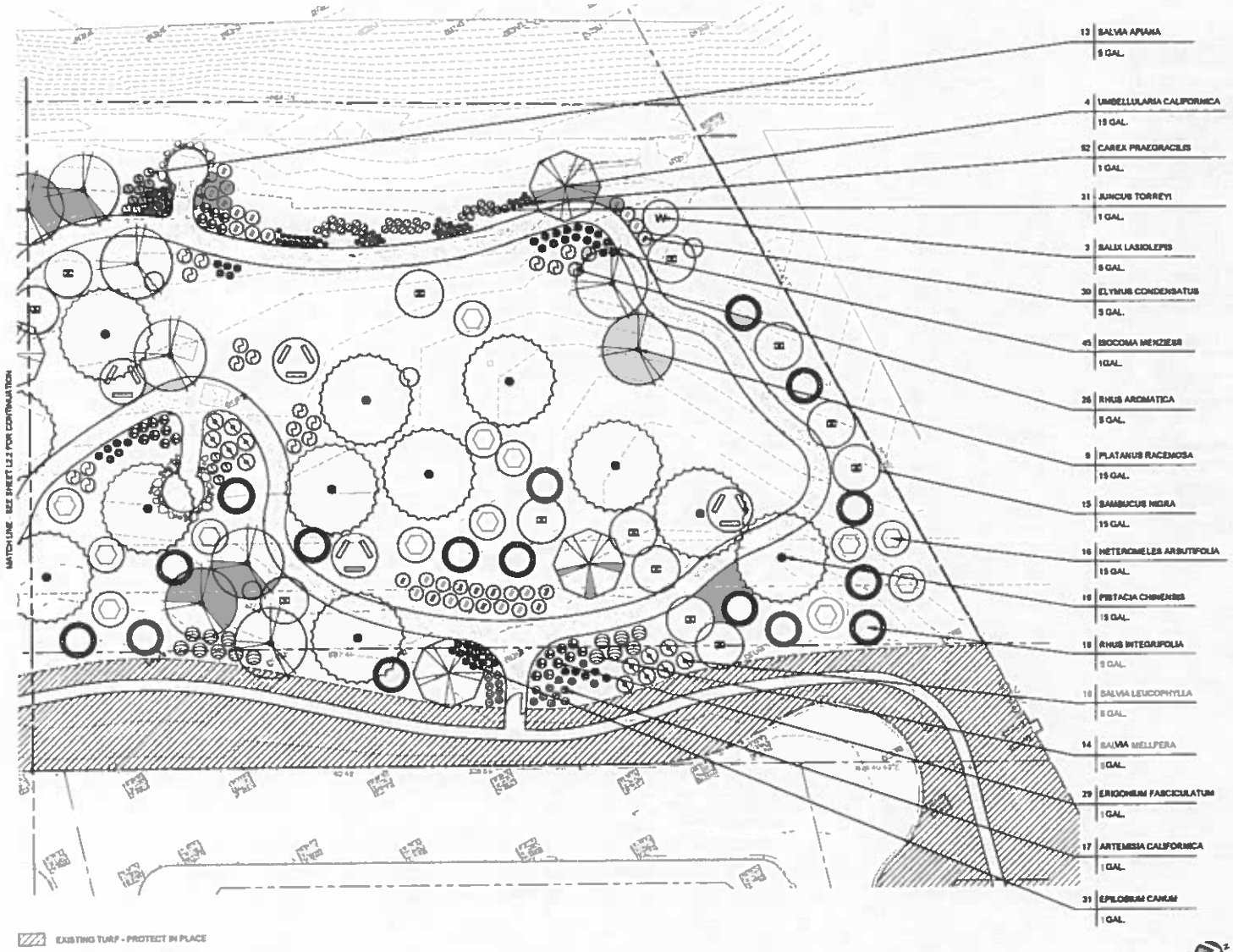
Issued for	Date
Current NPDES	
Preliminary	

1204

CIVIL DETAILS

C5.00



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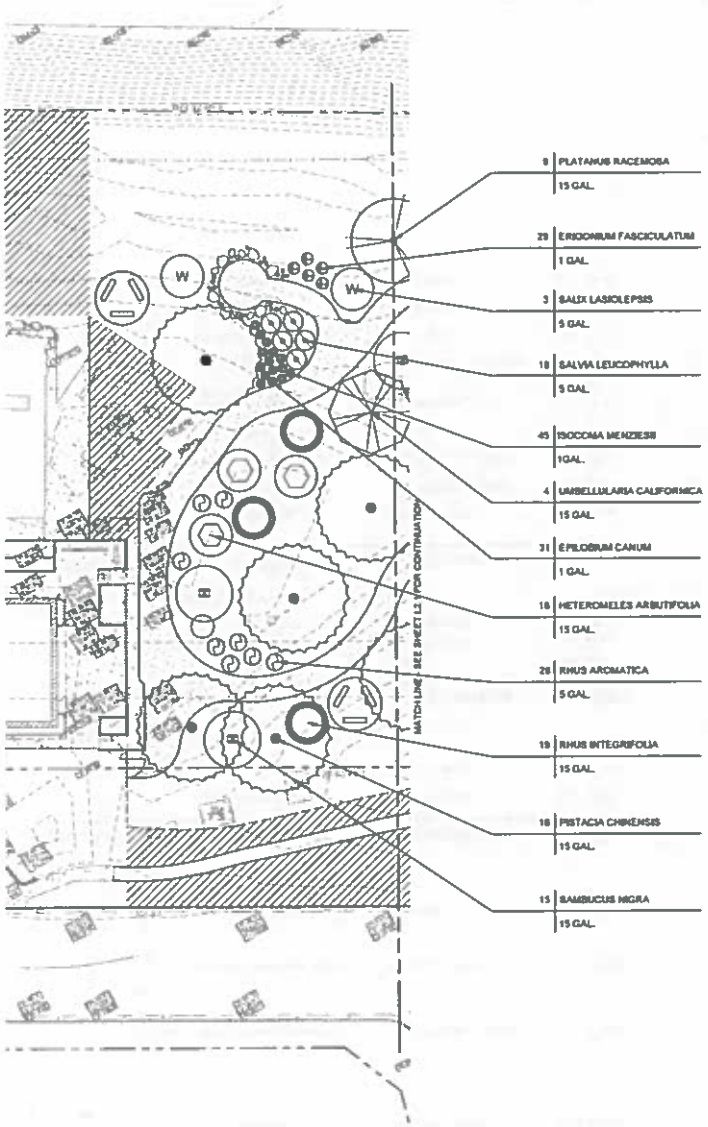
1.2.4
PLANTING PLAN

L2.1



9	PLATANUS RACEMOSA	15 GAL.
29	ERIGONUM FASCICULATUM	1 GAL.
3	SALIX LASIOLEPSIS	5 GAL.
18	SALVIA LEUCOPHYLLA	5 GAL.
45	ISOCOMA MENZIESII	1GAL.
4	UMBELLULARIA CALIFORNICA	15 GAL.
31	EPILOBIUM CANUM	1 GAL.
16	HETEROMELES ARBUTIFOLIA	15 GAL.
26	RHUS AROMATICA	5 GAL.
19	RHUS INTEGRIFOLIA	15 GAL.
16	PISTACIA CHINENSIS	15 GAL.
15	SAMBUCUS NIGRA	15 GAL.

EXISTING TURF - PROTECT IN PLACE

SCALE: 1"=20'

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L204
PLANTING PLAN
PLANTING LEGEND AND NOTES

L2.2

PLANTING LEGEND

TREE SYMBOL	BOTANICAL NAME	COMMON NAME	SPACING
	PISTACIA CHINENSIS	CHINESE PISTACHE	40' HT X 40' W
	UMBELLULARIA CALIFORNICA	CALIFORNIA BAY LAUREL	30' HT X 30' W
	SAMBUCUS MEXICANA SSP. CAERULA	MEXICAN ELDERBERRY	15' HT X 20' W
	PLATANUS RACEMOSA	SYCAMORE	15' HT X 20' W

SHRUB SYMBOL	BOTANICAL NAME	COMMON NAME	SPACING
	RHUS AROMATICA	FRAGANT SUMAC	4' HT X 6' W
W	SALIX LASIOLEPIS	ARROYO WILLOW	15' HT X 15' W

BIOFILTRATION PLANTS

SYMBOL	BOTANICAL NAME	COMMON NAME	SPACING
	JUNCUS TORREYI	RUSH	2' HT X 3' W
	CAREX PRAEGRACILIS	SLENDER SEDGE	1' HT X 2' W
	ELYMUS CONDENSATUS	GIANT WILD RYE	4' HT X 6' W

PERENNIALS / UNDERSTORY

SYMBOL	BOTANICAL NAME	COMMON NAME	
	RHUS INTEGRIFOLIA	LEMONADE BERRY	6' HT X 15' W
	ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	3' HT X 3' W
	ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT	3' HT X 4' W
	HETEROMELES ARBUTIFOLIA	TOYON	10' HT X 10' W
	ISOCOMA MENZIESII SSP. VERNONIODES	GOLDEN BUSH	3' HT X 3' W
	EPILOBIUM CANUM	HOARY CALIFORNIA FUCHIA	2' HT X 3' W
	SALVIA MELLIFERA	BLACK SAGE	5' HT X 6' W
	SALVIA LEUCOPHYLLA	PURPLE SAGE	6' HT X 7' W
	SALVIA APIANA	WHITE SAGE	3' HT X 4' W

GENERAL CONDITIONS

1. CONTRACT DOCUMENTS SHALL CONSIST OF SPECIFICATIONS, AND ITS GENERAL CONDITIONS AND THE DRAWINGS. THE INTENT OF THESE DOCUMENTS IS TO INCLUDE ALL LABOR, MATERIALS AND SERVICES NECESSARY FOR THE PROPER EXECUTION OF THE WORK. THE DOCUMENTS ARE TO BE CONSIDERED AS ONE. WHATEVER IS CALLED FOR BY ANY PARTS SHALL BE AS BINDING AS IF CALLED FOR ALL PARTS.
2. VERIFICATION THE CONTRACTOR SHALL CAREFULLY INSPECT THE SITE AND VERIFY MEASUREMENTS ON THE DRAWINGS BEFORE BEGINNING WORK. IN CASE OF ERROR OR DISCREPANCY IN THE DRAWINGS OR SPECIFICATIONS OR IN THE WORK OF OTHERS AFFECTING THE CONTRACTOR'S WORK, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY IN WRITING.
3. MATERIAL, MACHINERY AND EMPLOYEES. EXCEPT AS OTHERWISE NOTED, THE CONTRACTOR SHALL PROVIDE AND PAY FOR ALL MATERIALS, LABOR, TOOLS AND OTHER ITEMS NECESSARY AND INCIDENTAL TO THE COMPLETION OF THE WORK.
4. SURVEYS, PERMITS AND REGULATIONS THE OWNER SHALL FURNISH AN ADEQUATE SURVEY OF THE PROPERTY. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND COMPLY WITH ALL LAWS AND ORDINANCES BEARING ON THE OPERATION OR CONDUCT OF THE WORK AS DRAWN AND SPECIFIED. IF THE CONTRACTOR OBSERVES THAT A VARIANCE EXISTS THEREWITH, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING AND ANY NECESSARY CHANGES SHALL BE ADJUSTED AS PROVIDED IN THE CONTRACT FOR CHANGES IN THE SCOPE OF WORK.
5. PROTECTION OF WORK, PROPERTY AND PERSON THE CONTRACTOR SHALL ADEQUATELY PROTECT THE WORK, ADJACENT PROPERTY AND THE PUBLIC, AND SHALL BE RESPONSIBLE FOR ANY DAMAGES OR INJURY DUE TO THE CONTRACTOR'S ACTIONS
6. CHANGES IN THE WORK THE OWNER MAY ORDER CHANGES IN THE WORK, AND THE CONTRACT SUM BEING ADJUSTED ACCORDINGLY. ALL SUCH ORDERS AND ADJUSTMENTS PLUS THE CLAIMS BY THE CONTRACTOR FOR EXTRAS MUST BE MADE IN WRITINGS BEFORE EXECUTING THE WORK INVOLVED.
7. CORRECTION OF WORK. THE CONTRACTOR SHALL RE-EXECUTE ANY WORK THAT FAILS TO CONFORM TO THE REQUIREMENTS OF THE CONTRACT AND SHALL REMEDY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP UPON WRITTEN NOTICE FROM THE OWNER'S REPRESENTATIVE FOR A PERIOD OF NINETY (90) DAYS FROM THE DATE OF THE COMPLETION OF THE CONTRACT.
8. CLARIFICATION OF CONTRACT DOCUMENTS BEFORE BIDDING AFTER REVIEWING THE CONTRACT DOCUMENTS THOROUGHLY IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLARIFY WITH THE OWNER'S REPRESENTATIVE ANY QUESTIONS THE CONTRACTOR MAY HAVE REGARDING THE METHOD OF CONSTRUCTION, QUANTITIES, OR QUALITY OF MATERIALS INCLUDED OR CALLED OUT.
9. SAMPLES THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO TAKE AND ANALYZE SAMPLES OF MATERIALS FOR CONFORMITY TO SPECIFICATIONS AT ANY TIME. THE CONTRACTOR SHALL FURNISH SAMPLES UPON REQUEST BY THE OWNER'S REPRESENTATIVE. REJECTED MATERIALS SHALL IMMEDIATELY BE REMOVED FROM THE SITE AND REPLACED AT THE CONTRACTOR'S EXPENSE. THE COST OF TESTING MATERIALS NOT MEETING SPECIFICATIONS SHALL BE PAID BY THE CONTRACTOR.
10. PRE-CONSTRUCTION CONFERENCE SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE OWNER'S REPRESENTATIVE AT LEAST SEVEN (7) DAYS PRIOR TO BEGINNING WORK. THE PURPOSE OF THE CONFERENCE IS TO REVIEW ANY QUESTIONS THE CONTRACTOR MAY HAVE REGARDING THE WORK, ADMINISTRATIVE PROCEDURES DURING CONSTRUCTION AND THE WORK SCHEDULE

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DATE 2011
DRAWN BY

L.204
PLANTING LEGEND AND NOTES

L2.□

PLANTING SPECIFICATIONS

1. ALL WORK IN THE CITY OF LONG BEACH SHALL CONFORM TO APPLICABLE CITY AND COUNTY STANDARDS.
2. ALL WORK SHALL CONFORM TO THE CITY OF LONG BEACH WATER EFFICIENT LANDSCAPE ORDINANCE.
3. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CONTACT DIGALERT AND SUBMIT VERIFYING DOCUMENTATION.
4. FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PROVIDE AND INSTALL PLANT MATERIALS AS SHOWN ON THE DRAWINGS OR AS SPECIFIED HEREIN.
5. WORK INCLUDED IN THIS SECTION (ITEMS INCLUDED, BUT NOT LIMITED TO)
   a. GRADE, INCLUDING MOUNDING, MOLDING AND SHAPING SURFACE OF ALL PLANTING AREAS AS INDICATED INCLUDING THE REMOVAL OF EXISTING VEGETATION UNLESS OTHERWISE SPECIFIED.
   b. PREPARE AND TILL SOIL IN PLANTING AREAS INCLUDING FURNISHING OF ALL AMENDMENTS AS SPECIFIED. NOTE THAT AMENDMENTS INDICATED ON THE DRAWINGS (UNLESS OTHERWISE SPECIFIED) ARE FOR BID PURPOSES ONLY. ACTUAL SOIL AMENDMENTS WILL BE BASED ON THE SOILS TEST RESULTS.
   c. FURNISH AND PLANT ALL PLANT MATERIALS AS INDICATED IN THE DRAWINGS AND SPECIFICATIONS
   d. PERFORM ALL PRUNING AS REQUIRED (AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
   e. STAKE AND TIE ALL PLANT MATERIALS AS SPECIFIED.
   f. PROVIDE FOR THE MAINTENANCE OF THE PLANTING UNTIL ACCEPTANCE OF THE JOB BY THE OWNER'S REPRESENTATIVE.
   g. DISPOSE OF ALL DEBRIS AND SURPLUS MATERIALS.
   h. CLEAN-UP.
   i. GUARANTEE.
6. VERIFICATION OF SITE CONDITIONS
   a. EXCAVATION: THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL EXISTING SUB-SURFACE UTILITIES (MECHANICAL AND ELECTRICAL) PRIOR TO EXCAVATION. ANY UTILITIES, A.C. PAVING, CONCRETE WORK, ETC., DESTROYED OR DAMAGED BY ANY WORK UNDER THIS CONTRACT SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
   b. SUB-SURFACE DRAINAGE OR SOIL CONDITIONS: SHOULD SUB-SURFACE DRAINAGE OR SOIL CONDITIONS BE ENCOUNTERED WHICH WOULD BE DETRIMENTAL TO GROWTH OR SURVIVAL OF PLANT MATERIAL, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING, STATING THE CONDITIONS AND SUBMIT A PROPOSAL COVERING COST OF CORRECTION. IF THE CONTRACTOR FAILS TO NOTIFY THE OWNER'S REPRESENTATIVE OF SUCH CONDITIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANT MATERIAL UNDER THE GUARANTEE CLAUSE OF THE SPECIFICATIONS.
   c. DIMENSIONS: ALL SCALED DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH ANY WORK, THE CONTRACTOR SHALL IMMEDIATELY INFORM THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES BETWEEN THE INFORMATION ON THE DRAWINGS AND THE ACTUAL CONDITIONS, REFRAINING FROM DOING ANY WORK IN SAID AREAS UNTIL GIVEN APPROVAL TO DO SO BY THE OWNER'S REPRESENTATIVE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BACKFILL AND TRENCH COMPACTION, FINISH GRADING, DRAINAGE AT A MINIMUM OF 2% AND INSTALLATION OF ALL EQUIPMENT AND MATERIALS , AS SHOWN ON THE DRAWINGS.
8. THE CONTRACTOR SHALL REMOVE ALL WEEDS, ROCKS, DEBRIS, AND OTHER EXTRANEOUS MATERIALS LARGER THAT 1" FROM THE JOB SITE PRIOR TO PROCEEDING WITH ANY WORK. RIP ANY COMPACTED SOIL TO A DEPTH OF 12" AND AMEND ALL SOIL 12" DEEP FOR PLANT ROOTING AND ESTABLISHMENT IN THE AREAS DESIGNATED FOR PLANTING ONLY. WEED CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR DURING CONSTRUCTION AND MAINTENANCE PERIODS.
9. WEEDS SHALL BE REMOVED IN ACCORDANCE WITH THE WEED AND TURF ABATEMENT NOTES AS INDICATED ON THE DEMOLITION PLAN.
10. VERIFY ABOVE AND BELOW GROUND UTILITIES AND COORDINATE LOCATION WITH INSTALLATION OF TREES AND LANDSCAPE.
11. TREE LOCATIONS SHALL ADHERE TO CITY APPROVED MINIMUM DISTANCES TO STREET LIGHT STANDARDS, FIRE HYDRANTS, INTERSECTIONS, DRIVEWAY SETBACKS, ETC.
12. THE OWNER'S REPRESENTATIVE SHALL REVIEW ALL PLANTING WORK. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE AND COORDINATE ALL FIELD REVIEWS. THE OWNER'S REPRESENTATIVE SHALL REVIEW THE LOCATION OF ALL PLANT MATERIALS PRIOR TO EXCAVATION OF PLANT PITS.
13. PLANTS
   a. PLANT NAMES IN THE PLANT LEGEND CONFORM TO "STANDARDIZED PLANT NAMES" BY AMERICAN JOINT COMMITTEE OF HORTICULTURAL NOMENCLATURE, EXCEPT IN CASES NOT COVERED THEREIN. IN THESE INSTANCES, THE ESTABLISHED CUSTOM OF THE NURSERY TRADE IS FOLLOWED.
   b. PLANTS SHALL BE SOUND, HEALTHY, VIGOROUS, FREE FROM DISEASE AND WEEDS, INSECT PESTS OR THEIR EGGS, AND SHALL HAVE HEALTHY, NORMAL ROOT SYSTEMS, WELL FILLING THEIR CONTAINER, BUT NOT TO THE POINT OF BEING ROOT BOUND.
   c. PLANTS SHALL NOT BE PRUNED PRIOR TO DELIVERY EXCEPT AS AUTHORIZED BY THE OWNER'S REPRESENTATIVE.
   d. THE HEIGHT AND SPREAD OF ALL PLANT MATERIAL SHALL BE MEASURED WITH BRANCHES IN THEIR NORMAL POSITION.
   e. THE CALIPER OF ALL TREES SHALL BE MEASURED 6" ABOVE THE SURFACE OF THE GROUND.
   f. WHERE CALIPER OR OTHER DIMENSIONS OF ANY PLANT MATERIALS ARE OMITTED FROM THE PLANT LIST, IT SHALL BE UNDERSTOOD THAT THESE PLANT MATERIALS SHALL BE NORMAL STOCK FOR THE TYPE LISTED.
   g. PLANT MATERIAL LARGER THAN THOSE SPECIFIED MAY BE SUPPLIED IF COMPLYING IN ALL OTHER RESPECTS AND AT NO ADDITIONAL COST TO THE OWNER, UPON WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
   h. PLANT MATERIAL SHALL BE SYMMETRICAL, TYPICAL FOR VARIETY AND SPECIES, AND SHALL CONFORM TO MEASUREMENTS SPECIFIED IN THE PLANT LEGEND.
   i. ALL PLANT MATERIALS SHALL BE HANDLED OR STORED SO THAT THEY ARE ADEQUATELY PROTECTED FROM DRYING OUT, FROM SUN OR WIND BURN, OR FROM ANY OTHER INJURY.
   j. PLANTS ARE SUBJECT TO REVIEW AT NURSERY AND ON THE PROJECT SITE AT ANY TIME BEFORE OR DURING PROGRESS WORK.

ITEM NO.	DESCRIPTION	MANUFACTURER	MODEL NO.
CATCH BASIN	NDS	XX-XX	

   c. EQUIPMENT OR MATERIALS INSTALLED OR FURNISHED WITHOUT PRIOR APPROVAL OF THE ENGINEER MAY BE REJECTED AND THE CONTRACTOR WILL BE REQUIRED TO REMOVE SUCH MATERIALS FROM THE SITE AT THEIR OWN EXPENSE.
   d. APPROVAL OF ANY ITEM, ALTERNATE OR SUBSTITUTE INDICATES ONLY THAT THE PRODUCT OR PRODUCTS APPARENTLY MEET THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS ON THE BASIS OF THE INFORMATION OR SAMPLES SUBMITTED.
   e. MANUFACTURER'S WARRANTIES SHALL NOT RELIVE CONTRACTOR OF THEIR LIABILITY UNDER THE GUARANTEE. SUCH WARRANTIES SHALL ONLY SUPPLEMENT THE GUARANTEE.
37. RECORD DRAWINGS
   a. THE CONTRACTOR SHALL PROVIDE AND KEEP UP TO DATE AT ALL TIMES, A COMPLETE SET OF PRINT RECORD DRAWINGS ("AS-BUILT" DRAWINGS), WHICH SHALL BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL PLANS AND SPECIFICATIONS AND THE EXACT INSTALLED LOCATIONS, SIZES AND KINDS OF EQUIPMENT. PRINTS FOR THIS PURPOSE MAY BE OBTAINED FROM THE ENGINEER AT THE CONTRACTOR'S COST. "AS-BUILT" DRAWINGS SHALL BE KEPT ON SITE AND SHALL BE USED ONLY AS A RECORD SET.
   b. "AS-BUILT" DRAWINGS SHALL BE FULL SIZE DRAWINGS.
   c. "AS-BUILT" DRAWINGS SHALL ALSO SERVE A WORK PROGRESS SHEETS AND SHALL BE THE BASIS FOR MEASUREMENT AND PAYMENT FOR WORK COMPLETED. "AS-BUILT" DRAWINGS SHALL BE AVAILABLE AT ALL TIMES FOR OBSERVATION AND SHALL BE KEPT IN A LOCATION EASILY ACCESSIBLE TO THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT THAT THE "AS-BUILT" PROGRESS SHEETS ARE NOT AVAILABLE FOR REVIEW, OR NOT CURRENT AT THE TIME OF ANY SITE VISIT BY THE OWNER'S AUTHORIZED REPRESENTATIVE, IT WILL BE ASSUMED THAT NO WORK HAS BEEN COMPLETED AND THE CONTRACTOR WILL BE ASSESSED THE COST OF THAT SITE VISIT AT THE CURRENT BILLING RATE OF THE OWNER'S AUTHORIZED REPRESENTATIVE. NO OTHER SITE OBSERVATIONS SHALL TAKE PLACE WITHOUT PRIOR PAYMENT OF THIS ASSESSMENT.
   d. THE CONTRACTOR SHALL MAKE NEAT AND LEGIBLE NOTATIONS ON THE "AS-BUILT" DRAWING PROGRESS SHEETS DAILY AS THE WORK PROCEEDS, SHOWING THE WORK AS ACTUALLY INSTALLED. FOR EXAMPLE, SHOULD A PIECE OF EQUIPMENT BE INSTALLED IN A LOCATION THAT DOES NOT MATCH THE DRAWINGS, THE CONTRACTOR MUST INDICATE THAT EQUIPMENT HAS BEEN RELOCATED IN A GRAPHIC MANNER SO AS TO MATCH THE ORIGINAL SYMBOLS AS INDICATED IN THE IRRIGATION LEGEND. THE RELOCATED EQUIPMENT AND DIMENSIONS WILL THEN BE TRANSFERRED TO THE ORIGINAL "AS-BUILT" DRAWINGS AT THE PROPER TIME.
   e. BEFORE THE DATE OF THE FINAL WALK-THROUGH, THE CONTRACTOR SHALL TRANSFER ALL INFORMATION FROM THE "AS-BUILT" DRAWING PROGRESS SHEETS TO CONTACT MYLAR PLANS PROCURED FROM THE OWNER'S AUTHORIZED REPRESENTATIVE AT THE CONTRACTOR'S COST. DRAFTING SHALL BE DONE WITH WATERPROOF TECHNICAL PEN INK AND APPLIED TO THE CONTACT MYLAR BY TECHNICAL DRAFTING PENS MADE EXPRESSLY FOR USE ON MYLAR SURFACES. DOCUMENTING THE "AS-BUILT" DRAWINGS IN AUTOCAD, RELEASE 2016 (OR EARLIER RELEASE COMPATIBLE WITH 2016) FORMAT IS ALLOWED IN LIEU OF INK AND MYLAR DRAWINGS. DIMENSIONS SHALL BE DOCUMENTED SO AS TO BE EASILY READABLE EVEN ON THE FINAL IRRIGATION CONTROLLER CHARTS. MYLAR COMPUTER PLOTS OF THE "AS-BUILT" DRAWINGS SHALL BE SUBMITTED TO THE OWNER'S AUTHORIZED REPRESENTATIVE FOR APPROVAL PRIOR TO THE MAKING OF THE IRRIGATION CONTROLLER CHARTS.
   f. ON OR BEFORE THE DATE OF THE FINAL WALK-THROUGH, THE CONTRACTOR SHALL DELIVER THE CORRECTED AND COMPLETED MYLAR "AS-BUILT" DRAWINGS TO THE OWNER'S AUTHORIZED REPRESENTATIVE. DELIVERY OF THE "AS-BUILT" DRAWINGS WILL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING REQUIRED INFORMATION THAT MAY HAVE BEEN OMITTED FROM THE "AS-BUILT" DRAWINGS.
38. OPERATIONS AND MAINTENANCE MANUALS: PREPARE TWO (2) THREE-RING HARD COVER BINDERS EACH CONTAINING THE FOLLOWING INFORMATION
   a. INDEX SHEETS STATING THE CONTRACTOR'S ADDRESS AND TELEPHONE NUMBER AND A LIST OF EQUIPMENT WITH THE NAMES AND ADDRESSES OF LOCAL MANUFACTURERS' REPRESENTATIVES.
   b. CATALOG AND PART SHEETS FOR EACH MATERIAL AND TYPE OF EQUIPMENT INSTALLED UNDER THIS CONTRACT.
   c. GUARANTEE STATEMENT
   d. WARRANTY STATEMENTS OF IRRIGATION EQUIPMENT PROVIDED.
   e. COMPLETE OPERATING AND MAINTENANCE INSTRUCTION FOR ALL MAJOR EQUIPMENT.
39. IN ADDITION TO THE ABOVE-MENTIONED MAINTENANCE MANUAL, PROVIDE THE OWNER'S MAINTENANCE PERSONNEL WITH ON-SITE INSTRUCTIONS FOR MAJOR EQUIPMENT AND SHOW EVIDENCE IN WRITING TO THE OWNER'S AUTHORIZED REPRESENTATIVE AT THE CONCLUSION OF THE PROJECT THAT THIS SERVICE WAS RENDERED.
40. FINAL CONSTRUCTION AND FINAL MAINTENANCE INSPECTION
   a. FINAL CONSTRUCTION INSPECTION: WHEN ALL IMPROVEMENTS HAVE BEEN INSTALLED IN ACCORDANCE WITH THE PLANT AND SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE WITH A WRITTEN REQUEST OF "FINAL CONSTRUCTION" INSPECTION AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED DATE. IF THE OWNER'S REPRESENTATIVE DETERMINES THE WORK TO BE SUBSTANTIALLY COMPLETE AND IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS, THE CONTRACTOR WILL BE ADVISED IN WRITING THAT THE NINETY DAY MAINTENANCE PERIOD SHALL COMMENCE.
   b. IN ORDER TO BE SUBSTANTIALLY COMPLETE, AT LEAST THE FOLLOWING MUST HAVE BEEN FINISHED
   i. ALL FINE GRADING, INCLUDING ELIMINATION OF ALL POINTS THAT HOLD RUNOFF
   ii. A COMPLETE AND OPERABLE IRRIGATION SYSTEM
   iii. INSTALLATION OF ALL PLANT MATERIALS.
   iv. SEEDING OF ALL SEEDED AREAS.
   v. INSTALLATION OF MULCH IN PLANTED AND NON-PLANTED AREAS.

M+M LANDSCAPE ARCHITECTURE
HORTICULTURAL CONSULTING

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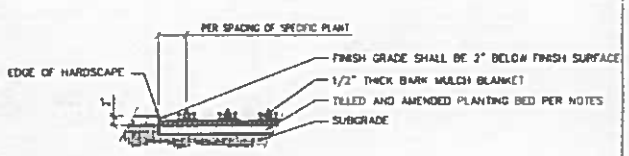
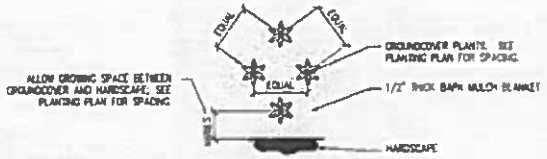
PLANTING SPECIFICATIONS

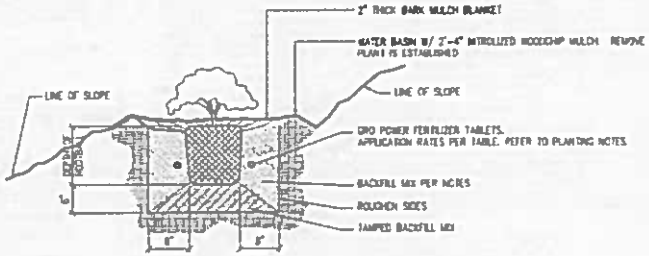
L2.□



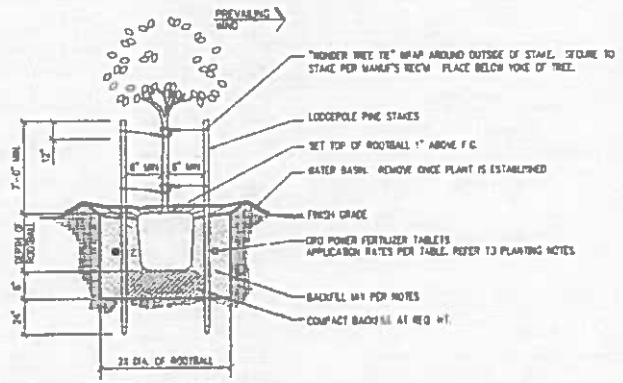
NOTE:
CROSS RIP AREAS TO RECIEVE SOIL AMENDMENTS TO A DEPTH OF 6".
BLEND SOIL AMENDMENTS INTO NATIVE SOIL TO AVOID ANY DISTINCT SOIL PROFILE.



1 GROUND COVER PLANTING



2 SHRUB PLANTING



3 TREE PLANTING / STAKING

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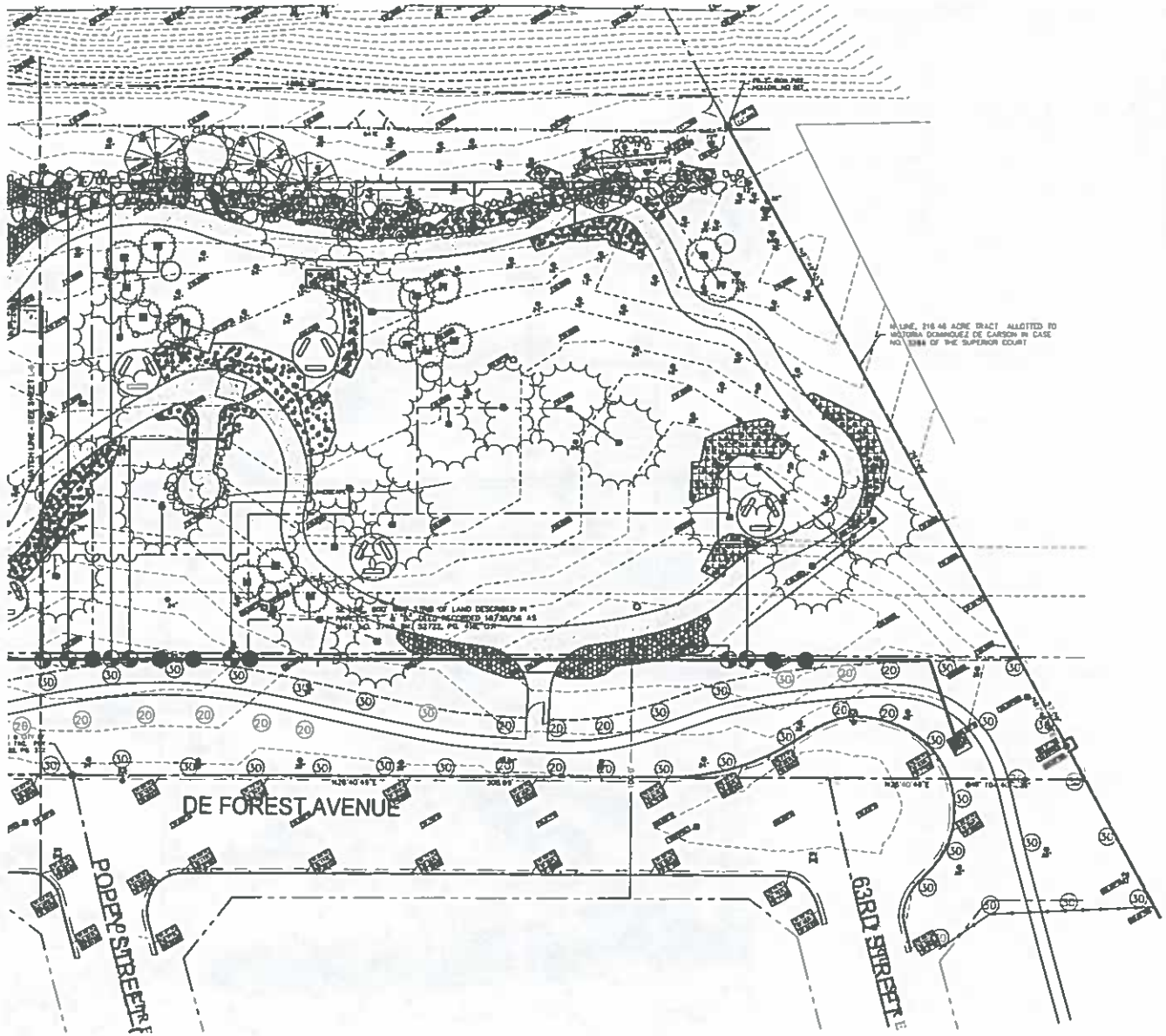
PLANTING DETAILS

L2.4



IRRIGATION SYSTEM DESCRIPTION

1. LANDSCAPE AREAS ARE IRRIGATED BY A NEW IRRIGATION SYSTEM UTILIZING SUB-SURFACE DRIPLINE, ROTARY NOZZLE SPRAYS AND LOW FLOW SUB-SURFACE TREE BUBBLERS ON SEPARATE DEDICATED CONTROL VALVES WITH PRESSURE REGULATION FOR AUTOMATIC IRRIGATION.
2. DOMESTIC WATER SUPPLIES THE EXISTING PARK IRRIGATION SYSTEMS ON AN EXISTING WATER METER. THERE IS ONE EXISTING BACKFLOW PREVENTER ON-SITE FOR IRRIGATION. THE EXISTING MAINLINE WILL BE PROTECTED IN PLACE AND CONTINUE TO SUPPLY THE ENTIRE PARK SITES IRRIGATION. EXISTING VALVES IRRIGATING THE AREA WITHIN THE SCOPE OF WORK SHALL BE CAPPED IN PLACE WITH EXISTING SPRAYS AND ROTORS REMOVED.
3. THE EXISTING IRRIGATION CONTROLLER IS TO REMAIN - PROTECT IN PLACE. NEW WIRES WILL BE REQUIRED TO CONNECT ALL NEW IRRIGATION CONTROL VALVES.

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IRRIGATION PLAN

L-4

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IRRIGATION PLAN

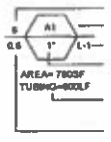
L-5

IRRIGATION EQUIPMENT LEGEND:

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION
A	EXISTING - N/A	EXISTING - N/A	EXISTING IRRIGATION "SMART" CONTROLLER MOUNTED IN FREE-STANDING FRONT ENTRY ENCLOSURE - COORDINATE NEW CONTROL AND COMMON WIRE TO CONTROLLER PEDESTAL LOCATED IN TURF AREA WHERE SHOWN ON PLANS - CONTROLLER TO REMAIN - PROTECT IN PLACE - COORDINATE ANY CONTROLLER RELATED WORK WITH CITY OF LONG BEACH PUBLIC WORKS DEPARTMENT, PARK REC & MARINE, AND PARK MAINTENANCE STAFF
	EXISTING - N/A	EXISTING - N/A	EXISTING BACKFLOW PREVENTER ASSEMBLY - CONFIRM SIZE IN FIELD - INCLUDES EXISTING LINE SIZE Y-STRAINER - ASSEMBLY LOCATED IN TURF AREA WHERE SHOWN ON PLAN - LOCATED WITHIN EXISTING METAL BACKFLOW ENCLOSURE - COORDINATE ANY BACKFLOW RELATED WORK WITH CITY OF LONG BEACH PUBLIC WORKS DEPARTMENT, PARK REC & MARINE, AND PARK MAINTENANCE STAFF
	HUNTER* LASCO HUNTER	6BV-101G-FS-AS-ADJ V-10101H-BC HY-100	DRIP ELECTRIC CONTROL VALVE ASSEMBLY - USE 1-INCH SIZE - WITH ADJUSTABLE PRESSURE REGULATOR - PROVIDE 1-INCH SIZE SCHEDULE 40 SLOW CLOSING BALL VALVE - PROVIDE DRIP Y-FILTER (120 MESH STAINLESS STEEL SCREEN / 1" OUTLET - MPT X MPT CONNECTIONS) - PROVIDE WATERPROOF WIRE SPLICE KITS - REFER TO DETAILS 3 & 5, SHEET L-7
	HUNTER* LASCO	6BV-101G-FS-AS-ADJ V-10101H-BC	ELECTRIC CONTROL VALVE ASSEMBLY - USE 1-INCH SIZE - WITH ADJUSTABLE PRESSURE REGULATOR - PROVIDE 1-INCH SIZE SCHEDULE 40 SLOW CLOSING BALL VALVE - PROVIDE WATERPROOF WIRE SPLICE KITS - REFER TO DETAILS 3 & 4, SHEET L-7
A	DIG*	18-025	AIR / RELIEF VALVE - THREADED - 1/2-INCH MPT- INSTALL WITHIN 8" ROUND VALVE BOX - REFER TO DETAIL 5, SHEET L-8
V	LASCO* GPH	V07401H GPVCAR050IRR	DRIPLINE FLUSH OUT ASSEMBLY - 1/2 INCH SCHEDULE 40 PVC BALL VALVE AND ALGAE RESISTANT PVC SUPPLY TUBING INSTALL WITHIN 8" ROUND VALVE BOX - REFER TO DETAIL 3, SHEET L-8
	DOMESTIC WATER SERVICE CONNECTION - ADDITIONAL INFORMATION NOTED WITH POC CALLOUT		
	EXISTING PRESSURE MAIN LINE PIPING - PROTECT IN PLACE - REFER TO DETAILS 1 & 2, SHEET L-7 - COORDINATE ANY MAINLINE RELATED WORK WITH CITY OF LONG BEACH PUBLIC WORKS DEPARTMENT, PARK REC & MARINE, AND PARK MAINTENANCE STAFF		
	NON-PRESSURE LATERAL LINE PIPING - INDICATES CONNECTION TO ASSIGNED DRIPLINE EMITTER SYSTEM, TYP.		SCHEDULE 40 PVC - 3/4" MINIMUM SIZE PIPING (NOTED IN INCHES) OTHER SIZES NOTED AS SHOWN ON PLAN - REFER TO DETAIL 2, SHEET L-7
	GPH GHVYC05-12-600 DRIP TUBING GPH INLINE PRO-LOCK COMP. FITTINGS GPH GDTS-140-600 STAKES GPH=GPH IRRIGATION PRODUCTS		DRIPLINE SYSTEM - PRESSURE COMPENSATING INLINE EMITTERS - 0.5 GPH @ 12-INCHES O.C. EMITTER SPACING - 16-INCHES TUBING ROW SPACING - 17MM (BLACK COLOR) 0.634" O.D. POLYETHYLENE TUBING WITH WALL THICKNESS OF 0.55" WITH COMPRESSION-TYPE FITTINGS FOR ELLS, TEES, COUPLERS AND PVC ADAPTERS - PROVIDE 9-INCH METAL HOLD DOWN STAKES EVERY 10' O.C. PRIOR TO BURYING LINE - SUB-SURFACE INSTALLATION (2"-4" DEEP) - REFER TO DRIP NOTES THIS SHEET AND DETAILS 1 & 2, SHEET L-8 AND DETAIL 2, SHEET L-7
	NOTE: DRIPLINE AREAS ARE DIAGRAMMATICALLY SHOWN WITH HATCHING TO DELINEATE VALVE STATION AREAS.		
	GPH GPC-025 (EMITTER) GPH GPBCAR050IRR (TUBING) RAIN BIRD DBC-025 (BUG CAP)		DRIP IRRIGATION SYSTEM PROVIDING TWO (2) EMITTERS PER LARGE SHRUB (5 GALLON) AND FOUR (4) OUTLETS PER TREE - LOCATE SHRUB EMITTERS EQUALLY SPACED AT 12 INCHES FROM STEM - LOCATE TREE EMITTERS EQUALLY SPACED AT 6 INCHES FROM TRUNK - INSTALL EMITTERS IN DRIPLINE AND BUG-CAPS AT EMISSION POINTS - EMITTER INSTALL PER DETAILS 6 & 7, SHEET L-8
	NON-PRESSURE LATERAL LINE PIPING - INDICATES CONNECTION TO ASSIGNED TREE BUBBLER SYSTEM, TYP.		TREE BUBBLERS - SCHEDULE 40 PVC - 3/4" MINIMUM SIZE PIPING (NOTED IN INCHES) OTHER SIZES NOTED AS SHOWN ON PLAN - PROVIDE HUNTER MODEL #RZWS-18-25-CV - PROVIDE TWO (2) ROOT ZONE WATERING SYSTEMS PER TREE - LOCATE EACH ROOT ZONE WATERING SYSTEM 2-FEET FROM THE TRUNK EQUALLY SPACED - PROVIDE PVC PIPING AS REQUIRED TO CONNECT EACH TREE TO THE NEAREST ASSIGNED VALVE STATION PER PLAN - INSTALL BUBBLERS FOR TREES PER DETAIL 4, SHEET L-8 - REFER TO DETAIL 2, SHEET L-7
	LATERAL LINE PIPING SLEEVE UNDER PAVED AREA - SCHEDULE 40 PVC - 2" MINIMUM SIZE (2-INCH ABBREVIATED ON DRAWING AS "2SL") - SIZE SLEEVING (NOTED IN INCHES) AS SHOWN ON DRAWINGS - REFER TO DETAIL 1, SHEET L-7		

NOTES:
1. *PROVIDE LANDSCAPE FABRIC MODEL NUMBER 140N, AS MANUFACTURED BY MIRAFI, OR APPROVED EQUAL.
2. ROUND AND RECTANGULAR VALVE BOXES AND COVERS ARE BLACK IN COLOR AND INCLUDE LOCKING BOLTS (EXCLUDES 8" ROUND VALVE BOX) PER SPECIFICATIONS.

VALVE CALLOUT LEGEND:



- INDICATES FLOW IN GPM FOR ELECTRIC CONTROL VALVE.
- INDICATES IRRIGATION SPRINKLER CONTROLLER STATION NUMBER.
- INDICATES PLANT WATER USE CLASSIFICATION (HYDROZONE).
- INDICATES ELECTRIC CONTROL VALVE SIZE. H=HIGH, M=MODERATE, L= LOW.
- INDICATES AREA OF COVERAGE PER STATION AND ESTIMATE OF DRIPLINE TUBING FOR ESTIMATE PURPOSES ONLY. CONTRACTOR TO PERFORM HIS OWN ESTIMATE FOR FINAL INSTALLATION. FOR TREE STATIONS NUMBER OF TREES ARE LISTED FOR REFERENCE.
- INDICATES PRECIPITATION RATE.

ROTARY SPRINKLER LEGEND:

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION	NOZZLE	RADIUS	G.P.M.	P.S.I.	PATTERN	PRECIP RATE	COLOR CODE
30F	HUNTER*	PROS-04-PRS40-CV	4" POP-UP ROTARY SPRINKLER **	MP3000	30'	3.64	40	360°	0.39	GRAY
30H	HUNTER*	PROS-04-PRS40-CV	4" POP-UP ROTARY SPRINKLER **	MP3000	30'	1.82	40	180°	0.39	BLUE
30Q	HUNTER*	PROS-04-PRS40-CV	4" POP-UP ROTARY SPRINKLER **	MP3000	30'	0.86	40	90°	0.37	BLUE
20F	HUNTER*	PROS-04-PRS40-CV	4" POP-UP ROTARY SPRINKLER **	MP2000	20'	1.46	40	360°	0.39	BLACK
20H	HUNTER*	PROS-04-PRS40-CV	4" POP-UP ROTARY SPRINKLER **	MP2000	20'	0.77	40	180°	0.41	BLACK
20Q	HUNTER*	PROS-04-PRS40-CV	4" POP-UP ROTARY SPRINKLER **	MP2000	20'	0.43	40	90°	0.41	BLACK

NOTES
* ADJUST SPRINKLERS FOR HEAD TO HEAD COVERAGE AND FOR ADJUST RADIUS CONTROL ADJACENT TO NON-IRRIGATED AREAS.
** INSTALL ROTARY SPRINKLERS PER POP-UP DETAIL 6, L-2.8.
1. PART CIRCLE NOZZLES ARE CIRCLE PATTERN ADJUSTABLE WITHIN THE RANGE OF DEGREES INDICATED BY MANUFACTURER.
2. ROTARY NOZZLES ARE HIGH EFFICIENCY NON-GEAR DRIVE NOZZLES INSTALLED ON 1/2" INLET POP-UP SPRINKLER BODIES.

LANDSCAPE MAINTENANCE SCHEDULE:

1. LANDSCAPES SHALL BE MAINTAINED TO ENSURE WATER EFFICIENCY. A REGULAR MAINTENANCE SCHEDULE SHALL BE SUBMITTED WITH THE CERTIFICATE OF COMPLETION.
2. A REGULAR MAINTENANCE SCHEDULE SHALL INCLUDE, BUT NOT BE LIMITED TO, ROUTINE INSPECTION, AUDITING, ADJUSTMENT AND REPAIR OF THE IRRIGATION SYSTEM AND ITS COMPONENTS; AERATING AND DE-THATCHING TURF AREAS; TOP-DRESSING WITH COMPOST, REPLENISHING MULCH, FERTILIZING, PRUNING, WEEDING IN ALL LANDSCAPE AREAS, AND REMOVING OBSTRUCTIONS TO EMISSION DEVICES. OPERATION OF THE IRRIGATION SYSTEM OUTSIDE THE NORMAL WATERING WINDOW IS ALLOWED FOR AUDITING AND SYSTEM MAINTENANCE.
3. REPAIR OF ALL IRRIGATION EQUIPMENT SHALL BE DONE WITH THE ORIGINALLY INSTALLED COMPONENTS OR THEIR EQUIVALENTS OR WITH COMPONENTS WITH GREATER EFFICIENCY.

SOIL SPECIFICATION/ANALYSIS SAMPLE:

1. PROVIDE SOIL SPECIFICATIONS IF IMPORT SOIL OR PROVIDE SOIL ANALYSIS IF USING ON SITE SOIL. THE SOIL INFORMATION MUST INCLUDE, SOIL TEXTURE (W/% OF ORGANIC MATTER), INFILTRATION RATE (OR ESTIMATED RANGE), PH, TOTAL SOLUBLE SALTS, SODIUM & RECOMMENDATIONS. INDICATE IF MULCH, SOIL AMENDMENTS OR OTHER MATERIAL WILL BE USED OR REQUIRED.

IRRIGATION AUDIT SCHEDULE:

1. AT A MINIMUM, AUDITS SHALL BE IN ACCORDANCE WITH THE STATE OF CALIFORNIA LANDSCAPE AUDITOR HANDBOOK.
2. AUDITS SHALL BE CONDUCTED BY A STATE CERTIFIED LANDSCAPE IRRIGATION AUDITOR AT LEAST ONCE EVERY FIVE YEARS AND SUBMITTED TO THE LOCAL WATER PURVEYOR.
3. HISTORICAL IRRIGATION SCHEDULING DOCUMENTING THE USE OF DAILY WEATHER SCHEDULING INFORMATION, AS RECORDED WITH THE CITY'S COMPUTER CENTRAL CONTROL SYSTEM, SHALL BE SUBMITTED IN LIEU OF IRRIGATION AUDIT TO VALIDATE AND VERIFY THAT THE IRRIGATION SYSTEM IS OPERATING AT OPTIMUM PERFORMANCE AS ORIGINALLY DESIGNED AND INSTALLED.

GENERAL IRRIGATION NOTES:

1. INSTALL POP-UP SPRINKLER HEADS POSITIONED WITHIN GRASS, SHRUB OR GROUND COVER AREAS WITH THE TOP OF SPRINKLER ABOVE FINISH GRADE AS SHOWN IN THE DETAILS.
2. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE OF AREA TO BE IRRIGATED UNLESS INDICATED OTHERWISE ON DRAWINGS.
3. WHEN VERTICAL OBSTRUCTIONS (FIRE HYDRANTS, TREES, LIGHT POLES, ETC.) INTERFERE WITH THE SPRINKLER HEAD PATTERN OF COVERAGE, ADJUST SPRINKLER SYSTEM LAYOUT BY INSTALLING A QUARTER CIRCLE, HALF CIRCLE OR ADJUSTABLE CIRCLE SPRINKLER HEAD ON EACH SIDE OF OBSTRUCTION IN ORDER TO PROVIDE PROPER COVERAGE. PERFORM SPRINKLER LAYOUT ADJUSTMENT AT NO COST TO THE OWNER.
4. SPRINKLER SYSTEM IS BASED ON MINIMUM PRESSURE AND MAXIMUM FLOW DEMAND SHOWN ON IRRIGATION DRAWINGS. REFER TO POINT-OF-CONNECTION NOTES. VERIFY PERMANENT WATER PRESSURE PRIOR TO COMMENCEMENT OF CONSTRUCTION. REPORT DIFFERENCES BETWEEN WATER PRESSURE INDICATED ON DRAWINGS AND ACTUAL SITE PRESSURE READING AT IRRIGATION POINT-OF-CONNECTION TO OWNER'S AUTHORIZED REPRESENTATIVE FOR RESOLUTION. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO START OF CONSTRUCTION, ASSUME FULL RESPONSIBILITY FOR REVISIONS.
5. THIS DESIGN IS DIAGRAMMATIC. PIPING, VALVES, ETC. SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY. INSTALL PIPING AND IRRIGATION FACILITIES WITHIN PLANTING AREAS WHERE POSSIBLE. AVOID CONFLICTS BETWEEN SPRINKLER SYSTEM, LANDSCAPE PLANTING AND ARCHITECTURAL FEATURES.
6. FLUSH AND ADJUST SPRINKLER HEADS FOR OPTIMUM PERFORMANCE. PREVENT OVERSPRAY ONTO WALKS, ROADWAYS, WALLS, FENCES AND BUILDINGS. SELECT THE MOST APPROPRIATE PART CIRCLE PATTERN NOZZLE TO FIT THE SITE CONDITIONS AND THROTTLE THE FLOW CONTROL ADJUSTMENT AT EACH CONTROL VALVE TO OBTAIN OPTIMUM SPRINKLER HEAD PRESSURE.
7. DO NOT WILLFULLY INSTALL SPRINKLER SYSTEM AS INDICATED ON DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT EXISTING OBSTRUCTIONS, GRADE DIFFERENCES IN AREA DIMENSIONS, AND OTHER SITE SPECIFIC INFORMATION THAT MIGHT NOT HAVE BEEN CONSIDERED DURING DESIGN. NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE OF SUCH OBSTRUCTIONS OR DIFFERENCES FOR RESOLUTION. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, ASSUME FULL RESPONSIBILITY FOR REVISIONS.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH GRADE DIFFERENCES, WALL LOCATIONS, ETC. COORDINATE WORK WITH GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE INSTALLATION OF IRRIGATION PIPE SLEEVES THROUGH WALLS, UNDER PAVEMENT AND STRUCTURES, ETC.
9. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF SUFFICIENTLY SIZED SLEEVES FOR CONTROL WIRES AND NON-PRESSURE LATERAL LINE PIPING UNDER PAVED AREAS. IN ADDITION TO CONTROL WIRES AND LATERAL LINE PIPING SLEEVES SHOWN ON THE DRAWINGS.
10. INSTALL PIPING, RELATED MATERIALS AND EQUIPMENT AS SHOWN ON THE DRAWINGS. USE TEFLON TAPE ON PVC MALE PIPE THREADS, INCLUDING SPRINKLER SWING JOINT AND VALVE ASSEMBLIES. DO NOT USE PIPE DOPE.
11. THE ESTABLISHMENT OF AUTOMATIC SEASONAL ADJUSTMENTS AND BASIC CONTROLLER PROGRAMMING IS THE RESPONSIBILITY OF THE CONTRACTOR. MAKE ARRANGEMENTS WITH AN IMPERIAL TECHNICAL SERVICES OR GREEN PRODUCT SALES FIELD TECHNICIAN FOR A SITE VISIT ON INSTRUCTION OF ESTABLISHING AUTOMATIC CONTROLLER BASIC PROGRAMMING INFORMATION AND AUTOMATIC SEASONAL SCHEDULING. CONTROLLER PROGRAMMING INFORMATION REQUIRED INCLUDES, BUT IS NOT LIMITED TO: PRECIPITATION RATES, PLANT WATER-USE FACTORS, SYSTEM EFFICIENCY RATINGS, FLOW SENSOR CALIBRATION, AND MONTHLY HISTORIC DATA. SEE IRRIGATION CONTROLLER NOTES FOR CONTACT INFORMATION.
12. MAINLINE PRESSURE TEST: AFTER WELDED JOINTS HAVE CURED FOR AT LEAST 24 HOURS, LINES FLUSHED AND OUTLETS ARE CAPPED, THE SYSTEM SHALL BE TESTED UNDER NORMAL STREET WATER PRESSURE FOR A MINIMUM OF 4 HOURS. JOINTS SHALL REMAIN EXPOSED FOR INSPECTION DURING THE PRESSURE TEST. CENTER LOADING OF PIPING WITH SMALL LOADS OF SAND BACKFILL TO PREVENT ARCHING OR SLIPPING UNDER PRESSURE IS PERMITTED. CORRECT DEFECTIVE WORK AND REPEAT TESTS UNTIL THE ENTIRE SYSTEM IS TESTED WATERTIGHT. PRESSURE TESTING RESULTS SHALL BE SUBMITTED TO OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO BACKFILLING. REFER TO SPECIFICATIONS FOR MORE INFORMATION ON MAINLINE PRESSURE TEST.

DRIP IRRIGATION NOTES:

1. PROVIDE DRIPLINE EMITTER TUBING SYSTEM TO IRRIGATE EVERY PLANT WITHIN PLANTING AREAS AS SHOWN ON DRAWINGS.
2. DRIPLINE IS SHOWN DIAGRAMMATICALLY FOR CLARITY. INSTALL DRIPLINE TUBING AND NON-PRESSURE LATERAL LEAD LINE PIPING IN LANDSCAPE AREAS AND ADJACENT TO SELECTED PLANT MATERIAL AS SHOWN IN DETAILS.
3. DRIPLINE TUBING, AS SHOWN DIAGRAMMATICALLY ON PLANS WITH THE VARIOUS HATCHES INDICATING SEPARATION FROM STATION ASSIGNMENT, CONNECTS TO THE NON-PRESSURE LATERAL LEAD LINE FROM THE ECV AND PRESSURE REGULATOR SERVING THE DESIGNATED DRIP AREA.
4. DRIPLINE VALVE STATION CALLOUTS INDICATE THE APPROXIMATE SIZE OF THE DRIPLINE AREA OF COVERAGE ASSIGNED TO EACH VALVE. THE APPROXIMATE LENGTH OF DRIPLINE TUBING ASSIGNED TO EACH VALVE STATION IS PROVIDED FOR ESTIMATE PURPOSES ONLY. CONTRACTOR SHALL PROVIDE AND INSTALL THE REQUIRED AMOUNT OF DRIPLINE TUBING AS REQUIRED TO PROPERLY IRRIGATION ASSIGNED LANDSCAPE AREAS WITH THE EMITTER SPACING AND DRIPLINE TUBING ROW SPACING AS INDICATED IN THE EQUIPMENT LEGEND ON SHEET L/1.05.
5. REFER TO PLANTING LEGEND FOR PLANT MATERIAL NAMES, ABBREVIATIONS, SPECIFIC SIZES, ON-CENTER SPACING, AND ADDITIONAL INFORMATION.
6. DO NOT INSTALL DRIPLINE TUBING UNDER PAVED SURFACES. CONNECT DRIPLINE TUBING TO SCHEDULE 40 PVC LATERAL LINE PIPING FOR ROUTING UNDER PAVED SURFACES AND SCHEDULE 80 PVC PIPING ROUTING THROUGH PLANTER WALLS. ADAPT DRIPLINE TUBING TO PVC PIPING AS REQUIRED WITH COMPRESSION ADAPTER FITTINGS.
7. CONNECT DRIPLINE PIPING TO PRESSURE REGULATOR UNITS WITH SCHEDULE 40 PVC MALE ADAPTER FITTINGS AND COMPRESSION ADAPTER FITTINGS.
8. PROVIDE COMPRESSION SERIES FITTINGS AND ADAPTERS FOR TUBING TO TUBING CONNECTIONS AND CONNECTIONS TO PVC PIPING AS INDICATED IN THE EQUIPMENT LEGEND.
9. PROVIDE TWO (2) EMISSION OUTLET EMITTERS TO EACH LARGE SHRUB (5 GALLON), SPACED EQUALLY AT 12-INCHES CLEAR FROM STEM. CONNECT DRIP EMITTERS TO DRIPLINE TUBING WITH BARBED ADAPTERS AT LOCATIONS WHERE REQUIRED.
10. PROVIDE FOUR (4) EMISSION OUTLET EMITTERS TO EACH TREE, SPACED EQUALLY AT 6-INCHES CLEAR FROM TRUNK. CONNECT DRIP EMITTERS TO DRIPLINE TUBING WITH BARBED ADAPTERS AT LOCATIONS WHERE REQUIRED.

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IRRIGATION LEGEND AND NOTES

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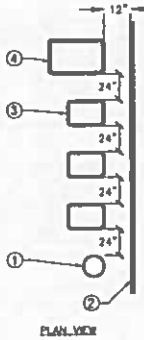


LEGEND

1. ROUND VALVE BOX.
2. EDGE OF TURF, PAVEMENT, FENCE, CURB, ETC.
3. RECTANGULAR VALVE BOX. TYP.
4. RECTANGULAR JUMBO VALVE BOX.

NOTES:

A. CENTER VALVE BOX OVER VALVE TO FACILITATE SERVICING OF VALVE.

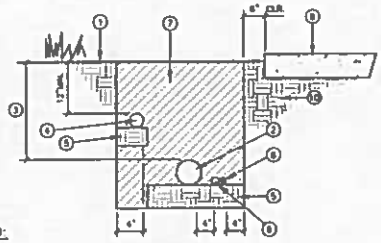
B. SET VALVE BOXES 3-INCHES MAXIMUM ABOVE GRADE IN MULCH COVER OR GROUNDCOVER/SHRUB AREAS. SET BOX 1-INCH ABOVE FINISH GRADE IN TURF AREAS.

NOTE: VALVE BOXES INSTALLED ONLY WHERE PERMITTED.

C. SET VALVE BOXES PARALLEL TO ONE ANOTHER AND PERPENDICULAR TO EDGE.

D. AVOID HEAVY COMPACTION OF SOIL AROUND VALVE BOXES TO PREVENT THE DEFORMATION/COLLAPSE OF BOX BASES.

3 VALVE BOX LAYOUT N.T.S.

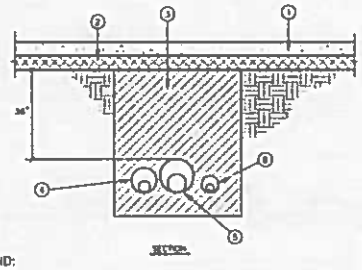


LEGEND:

1. FINISH GRADE.
2. PRESSURE MAIN LINE PIPING.
3. DEPTH OF MAIN LINE PIPING @ 18" MINIMUM DEPTH, INCLUDING BELOW PEDESTRIAN PAVEMENT.
4. NON-PRESSURE LATERAL LINE PIPING.
5. PROVIDE 3" DEPTH OF CLEAN BACKFILL BELOW PIPING. TYPICAL.
6. FLOW SENSOR SIGNAL CABLE AND CONDUIT.
7. CLEAN COMPACTED BACKFILL - SEE SPECIFICATIONS FOR BACKFILL & COMPACTION REQUIREMENTS.
8. CONTROL WIRES - BUNDLE AND TAPE EVERY 10-FEET - INSTALL ADJACENT TO PRESSURE MAIN LINE.
9. CURB, PAVING OR WALL. TYPICAL.
10. native SOIL.

NOTES:
1. LOCATE SIGNAL CABLE WITHIN MAIN LINE AND CONTROL WIRE TRENCH WHERE POSSIBLE.
2. INSTALL MAIN LINE WITH 36" SOIL COVER BELOW VEHICULAR PAVEMENT.
3. COORDINATE TRENCHING WITH ALL OTHER EXISTING/NEW UTILITIES AND UNDERGROUND STRUCTURES.

2 TRENCHING N.T.S.

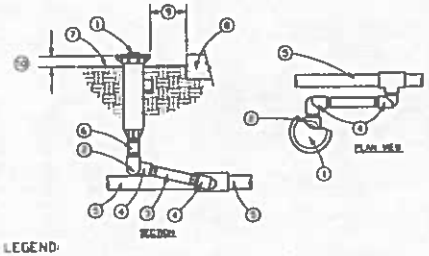


LEGEND:

1. PAVEMENT.
2. BASE MATERIAL.
3. BACKFILL MATERIAL.
4. LATERAL LINES IN SCHEDULE 40 PVC SLEEVE.
5. PRESSURE MAIN LINE IN SCHEDULE 40 PVC SLEEVE.
6. CONTROL WIRES IN SCHEDULE 40 PVC SLEEVE.

NOTES:
1. PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' INSTALLATION SPECIFICATIONS.
2. MAIN LINE, LATERAL LINES AND CONTROL WIRES SHALL BE SLEEVED BELOW HARDSCAPE ELEMENTS WITH SCHEDULE 40 PVC, 2 TIMES THE DIAMETER OF THE PIPE OR WIRE BUNDLE MINIMUM.
3. INSTALL ALL SLEEVES WITH 36" OF SOIL COVER BELOW VEHICULAR PAVEMENT.

1 SLEEVE TRENCHING N.T.S.

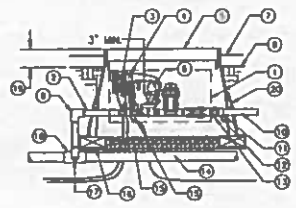


LEGEND:

1. POP-UP SPRAY HEAD.
2. SCHEDULE 40 PVC Tcf ELL.
3. SCHEDULE 80 PVC NIPPLE - 6-INCH MINIMUM, AND 12-INCHES MAXIMUM LENGTH.
4. SCHEDULE 40 PVC STREET ELL.
5. SCHEDULE 40 PVC LATERAL LINE PIPE AND FITTING.
6. SCHEDULE 80 PVC SHORT NIPPLE.
7. FINISH GRADE.
8. ADJACENT PAVING EDGE OR CURB.
9. INSTALL TOP OF SPRAY HEAD 4" AWAY FROM PAVING EDGE IN TURF AREAS AND SET 6" AWAY FROM PAVING EDGE IN PLANTING BEDS.
10. SET SPRAY HEAD 1/2-INCH ABOVE FINISH GRADE IN TURF AND 2-INCHES ABOVE GROUND IN SHRUB AND GROUND COVER PLANTING AREAS.

NOTE:
1. USE TEFLON TAPE ON THREADED FITTINGS.

6 POP-UP SPRAY HEAD N.T.S.

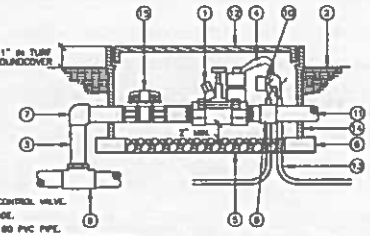


LEGEND

1. ELECTRIC CONTROL VALVE DRIP ASSEMBLY
2. SCHEDULE 80 PVC NIPPLE (TYPICAL, LENGTH AS REQUIRED)
3. 30-INCH COIL LINEAR LENGTH OF CABLE
4. WATERPROOF WIRE CONNECTORS
5. RECTANGULAR VALVE BOX - BLACK IN COLOR - HEAT BRAND VALVE STATION NUMBER ON LID IN 3" HIGH CHARACTERS.
6. CHRISTY'S LID TAG - (NUMBERED TO MATCH DRAWINGS). ATTACH TO WIRES WITH NYLON FASTENER.
7. TOP OF MULCH
8. FINISH GRADE
9. SCHEDULE 80 PVC ELL
10. SCHEDULE 40 PVC LATERAL
11. SCHEDULE 40 PVC MALE ADAPTER
12. SCHEDULE 80 PVC NIPPLE, SHORT (1 OF 3)
13. SCHEDULE 80 FULL PORT PVC UNION
14. SCHEDULE 40 PVC MAIN LINE PIPING
15. 3/4" CRUSHED ROCK - 6" DEEP
16. COMMON RED BRICK - 4 REQUIRED
17. SCHEDULE 80 PVC NIPPLE (2" LENGTH, HIDDEN) AND SCHEDULE 40 PVC ELL
18. SCHEDULE 40 PVC TEE OR ELL AS REQUIRED
19. 1-INCH IN TURF AREAS AND 3-INCH IN SHRUB AREAS.
20. LANDSCAPE FABRIC - WRAP SIDES AND BOX BOTTOM - COVER ALL OPENINGS.
21. LINE SIZE SCHEDULE 40 BALL VALVE

NOTES:
1. PROVIDE 2-FOOT CLEAR DISTANCE BETWEEN VALVES, EACH VALVE SHALL HAVE ITS OWN CONNECTION TO MAIN LINE - INSTALL NO MULTIPLE ASSEMBLIES.
2. ARRANGE VALVE BOXES AT RIGHT ANGLE TO HARDSCAPE EDGES.
3. USE TEFLON TAPE ON THREADED FITTINGS. DO NOT USE PIPE DOPE.

5 ELECTRIC CONTROL VALVE - DRIP N.T.S.



LEGEND:

1. ELECTRIC CONTROL VALVE.
2. FINISH GRADE.
3. SCHEDULE 80 PVC PIPE.
4. WIRE CONNECTOR (WATERPROOF VARIETY).
5. 3/4" CRUSHED ROCK (12" DEEP).
6. COMMON BRICK (4 REQUIRED).
7. SCHEDULE 40 PVC S x S 90 DEGREE ELBOW.
8. SCHEDULE 80 PVC T.O.E. (THREADED ONE END) NIPPLE AND SLIP-FIT COUPLING (TYPICAL)
9. SCHEDULE 40 PVC MAIN LINE FITTING WITH SOLVENT-WELD OUTLET.
10. CHRISTY'S LID TAG (NUMBERED TO MATCH DRAWINGS). ATTACH TO WIRES WITH NYLON FASTENER.
11. SCHEDULE 40 PVC PIPE TO SPRINKLERS: ANGLE PIPE TO SPECIFIED DEPTH WITH 45 DEGREE ELBOWS.
12. RECTANGULAR VALVE BOX WITH BOLT-DOWN COVER: BLACK IN COLOR - HEAT BRAND VALVE STATION NUMBER ON LID IN 3" HIGH CHARACTERS.
13. CONTROL/COMMON WIRES FROM CONTROLLER. PROVIDE 36" MINIMUM EXTRA COIL OF WIRES AT WIRE CONNECTORS.
14. LANDSCAPE FABRIC - WRAP SIDES AND BOX BOTTOM, COVER ALL OPENINGS.
15. LINE SIZE SCHEDULE 40 BALL VALVE

NOTES:
1. PROVIDE 2 FOOT CLEAR DISTANCE BETWEEN VALVES, EACH VALVE SHALL HAVE ITS OWN CONNECTION TO MAIN LINE; INSTALL NO MULTIPLE ASSEMBLIES.
2. ARRANGE VALVE BOXES AT RIGHT ANGLE TO HARDSCAPE EDGES.
3. USE TEFLON TAPE ON THREADED FITTINGS. DO NOT USE PIPE DOPE.

4 ELECTRIC CONTROL VALVE

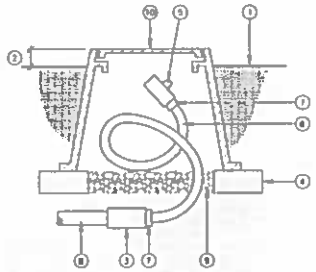
JDC CORPORATION

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

3204

IRRIGATION DETAILS

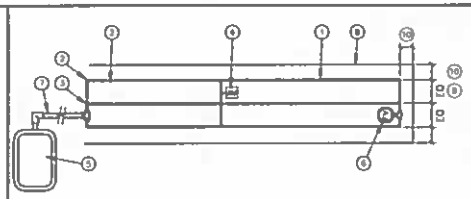
L-



LEGEND:

1. FINISH GRADE.
2. INSTALL BOX 2" ABOVE FINISH GRADE.
3. SCHEDULE 40 PVC SLIP COUPLER (LINE SIZE).
4. COMMON RED BRICK SUPPORTS (2 REQUIRED).
5. SCHEDULE 40 PVC BALL VALVE (S x S) - 1/2".
6. PVC FLEXIBLE HOSE (BLACK) - 1/2" DIAMETER (NON-PS) - 3-FT. MINIMUM LENGTH - OPH MODEL #OPVCARDSO SERIES.
7. SCHEDULE 40 PVC SLIP FIT REDUCER BUSHING (1/2 x 3/8) AS REQUIRED.
8. DRIPLINE SYSTEM PIPING.
9. 3/4" CRUSHED GRAVEL - PROVIDE 1 CUBIC FOOT.
10. ROUND VALVE BOX WITH BOLT-DOWN COVER - BLACK IN COLOR - HEAT BRAND THE LETTERS "FO" ON LID IN 2" HIGH CHARACTERS.

3 FLUSH OUT (DRIPLINE SYSTEM) N.T.S. DRIPF001

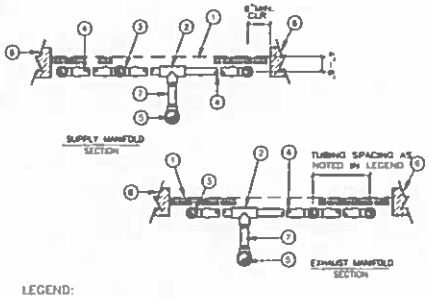


LEGEND:

1. DRIPLINE PIPING.
2. ELBOW FITTING (UNIVERSAL NUT LOCK TYPE) - TYPICAL.
3. TEE FITTING (UNIVERSAL NUT LOCK TYPE) - TYPICAL.
4. AIR/VACUUM RELIEF VALVE (WHERE REQUIRED) - CONNECT TO BLANK DRIPLINE TUBING AT EACH HIGH POINT OR AS INDICATED ON THE PLANS.
5. DRIPLINE CONTROL VALVE ASSEMBLY.
6. LINE FLUSHING VALVE.
7. SCHEDULE 40 PVC PIPING TO DRIPLINE SYSTEM.
8. EDGE OF PLANTING AREA ASSIGNED TO DRIPLINE STATION.
9. REFER TO EQUIPMENT LEGEND FOR TUBING ROW SPACING.
10. CLEARANCE FROM DRIPLINE TUBING TO EDGE OF ASSIGNED PLANTING AREA EQUAL TO 1/2 TUBING ROW SPACING UNLESS NOTED ON PLAN.

NOTES:
1. REFER TO STATION CALLOUTS ON PLANS FOR SPECIFIC PERFORMANCE REQUIREMENTS AND CONFIGURATION OF DRIPLINE LAYOUTS PER VALVE STATION.
2. PROVIDE COUPLING FITTING (UNIVERSAL NUT LOCK) - WHERE REQUIRED.

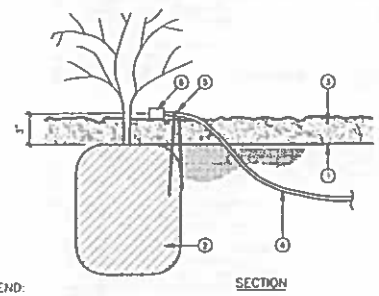
2 SCHEMATIC DRIPLINE LAYOUT - TYPICAL N.T.S. DRIPlayout1.dwg



LEGEND:

1. FINISH GRADE.
2. SCHEDULE 40 LWR-PVC TEE OR ELBOW FITTING FROM PVC RISER TO DRIPLINE TUBING. FITTING INCLUDES DRIPLINE ADAPTER(S) AS REQUIRED.
3. DRIPLINE TEE, ELL OR COUPLER FITTING (NUT LOCK TYPE) AS REQUIRED.
4. DRIPLINE EMITTER TUBING INSTALLED WITH 4"-6" OF SOIL COVER.
5. SCHEDULE 40 PVC PIPING TO ELECTRIC CONTROL VALVE.
6. LIMIT OF PLANTER OR PAVEMENT EDGE.
7. SCHEDULE 40 PVC RISER - LENGTH AS REQUIRED.

1 DRIPLINE - TYPICAL PIPING CONNECTIONS N.T.S. DRIPun1.dwg

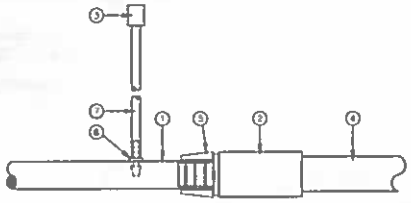


LEGEND:

1. FINISH GRADE OF SOIL.
2. PLANT MATERIAL ROOTBALL.
3. MULCH LAYER.
4. PVC DISTRIBUTION TUBING - LENGTH OF TUBING EXPOSED ABOVE MULCH LAYER SHALL NOT EXCEED 6" - LENGTH OF TUBING PER PLANT SHALL NOT EXCEED 5'.
5. DISTRIBUTION TUBING STAKE; SALCO MODEL #OTS-30-750. LOCATE STAKE WITHIN PLANT ROOTBALL; INSTALL 2-3" FROM DRIP EMITTER.
6. DRIP EMITTER - LOCATE ONE EMITTER PER PLANT ABOVE MULCH IN UNOBSTRUCTED VIEW AND LOCATED ON HIGH SIDE OF BASIN WHEN SLOPE CONDITION IS PRESENT.
7. CONNECTION TO DRIP LINE TUBING. REFER TO DRIPLINE DETAILS FOR ADDITIONAL INFORMATION.

NOTES:
REFER TO DRIP NOTES FOR ADDITIONAL INFORMATION.

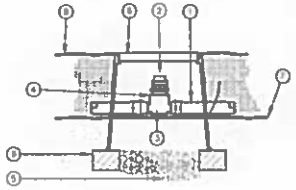
7 DRIP EMISSION OUTLET N.T.S. DRIPE02.dwg



LEGEND:

1. DRIPLINE PIPING.
2. PVC INSULATED ADAPTER FITTING FOR CONNECTION TO PVC PIPING.
3. DRIP EMITTER - REFER TO EQUIPMENT LEGEND AND DRIP NOTES.
4. SCHEDULE 40 PVC LATERAL LINE PIPING.
5. CONNECTION FITTING.
6. PLASTIC BARB ADAPTER - 1/4" - 40 BARBS PLASTIC TUBE COUPLER.
   O.D. PVC DISTRIBUTION TUBING.
7. PVC DISTRIBUTION TUBING - 6-FOO PERFORATED OPENING, PERPENDICULAR TO DRIP EMITTER BALL.
   (0.140" I.D. X 0.220" O.D.) PROVIDE 5-FEET MINIMUM LENGTH PER EMITTER.

6 DRIP EMITTER CONNECTION N.T.S. DRIPE1.dwg

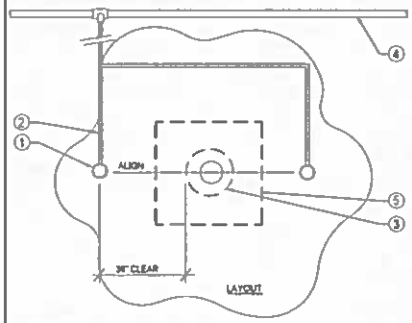


LEGEND:

1. DRIPLINE EMITTER TUBING.
2. AIR/VACUUM RELIEF VALVE.
3. DIG MODEL #15-058 UNIVERSAL NUT LOCK TEE (INS. x INS. x 3/4" FIPT)
4. REDUCING BUSHING - 3/4" MPT x 1/2" FIPT
5. 3/4" CRUSHED ROCK - 12" DEEP.
6. BOLT-DOWN ROUND VALVE BOX. HEAT BRAND THE LETTERS "AV" WITH 2" HIGH CHARACTERS ON COVER.
7. FINISH GRADE OF SOIL.
8. SET TOP OF ROUND BOX FLUSH WITH THE TOP OF MULCH
9. COMMON RED BRICK - 2 REQUIRED, TYPICAL.

NOTES:
1. USE TEFLON TAPE ON ALL MALE PIPE THREADS.

5 AIR/VACUUM RELIEF ASSEMBLY N.T.S. DRIPun1.dwg



LEGEND

1. SUB-SURFACE ROOT ZONE WATERING SYSTEM WITH FLOOD BUBBLER NOZZLE AND SWING JOINT ASSEMBLY - ALIGN SPRINKLERS ON OPPOSITE SIDES OF TREE, TYPICAL.
2. LATERAL PIPE - SCHEDULE 40 PVC - 3/4" MINIMUM SIZE.
3. TREE.
4. LATERAL LINE PIPING FROM ELECTRIC CONTROL VALVE.
5. ROOT BALL.

NOTES
1. PRESSURE COMPENSATING FLOOD BUBBLERS INCLUDED IN SYSTEM
2. PROVIDE EACH ROOT ZONE WATERING SYSTEM WITH USER INSTALLED FABRIC SLEEVE

4 TREE SPRINKLER LAYOUT N.T.S. SPY101

JDC Landscape Architecture

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

1204

IRRIGATION DETAILS

L-□

Camp Osun - Station 6174 - Long Beach - Los Angeles Basin Region - as of 2/25/21				
	Monthly Average Etp	Daily Average Etp	Monthly % (Of Total Year)	Monthly % (Of Peak Jul)
January	1.94	0.063	4.34%	34.40%
February	2.36	0.084	5.26%	41.84%
March	3.67	0.118	8.21%	65.07%
April	4.58	0.153	10.23%	81.21%
May	4.74	0.153	10.60%	84.04%
June	4.66	0.155	10.54%	83.70%
July	5.64	0.182	12.62%	100.00%
August	5.48	0.176	12.11%	96.03%
September	4.48	0.149	10.02%	79.43%
October	3.21	0.104	7.18%	56.91%
November	2.04	0.068	4.56%	36.16%
December	1.66	0.054	3.71%	29.43%
Yearly Total	44.70	0.122	100.00%	n/a

Irrigation System "A"

Maximum Applied Water Allowance

Total MAWA = [(Eto x 0.45 x LA to SA x 0.62 + [(Eto x 1.0 x SLA to SA x 0.62)] = Gallons per Year for LA+SLA

Where:

MAWA = Maximum Applied Water Allowance (gallons per year)

Eto = Reference Evapotranspiration (Appendix A) (inches per year)

0.45 = ET Adjustment Factor (ETAF) for Commercial Site

1.0 = ET Adjustment Factor (ETAF) for Special Landscape Area

LA = Landscape Area (square feet)

0.62 = Conversion factor (to gallons per square feet)

SLA = Special Landscape Area (square feet)

SA(sq feet) = 1 standard Cubic foot (SCF) or 748 gallons

MAWA Calculation

	Eto		ETAF		LA or SLA (SF)		Conversion		MAWA (Gallons per Year)
MAWA for LA =	44.70	x	0.45	x	15,525	x	0.62	=	435,448
MAWA for SLA =	44.70	x	1.00	x	0	x	0.62	=	0
			Total Area (SF) =		15,525		Total MAWA =		435,448 Gal/Yr
								=	582 Billing units

Estimated Total Water Use — Irrigation System "A"

PF = Landscape Coefficient (Plant Factor)

LA = Landscape Area (square feet)

0.62 = Conversion factor (gallons/ square feet)

IE = Irrigation Efficiency = DU x EM

DU = Irrigation Management Efficiency (100%)

EM = Distribution Uniformity of irrigation head

ETAF = IE x LA (ET Adjustment Factor)

SLA = Stress Factor (range = 0.1 to 1.0) (See WUCOLS for county region)

Area = Microclimate Factor (range = 0.5 to 1.4) (See WUCOLS)

WUCOLS - www.water.ca.gov/wuccols/docs/wuccols00.pdf

ETAF Calculations: [Eto x PF x LA to SF x 0.62 = Gallons per Year

	Eto	PF	SLA		Conversion		MAWU (Gallons Per Year)
SLA / Special Landscape Area	44.70	x	0	x	0.62	=	0
			(SLA)				

	Eto	PF	LA		Conversion		IE		MAWU (Gallons Per Year)
L-1 | Low Water Using Shrubs	44.70	x 0.30	x 11,343	x	0.62	x	0.85	=	85,730
L-2 | Low Water Using Trees (100)	44.70	x 0.30	1,000	x	0.62	x	0.85	=	6,800
Total (TWU) =			12,343				Total (MAWU) =		92,530 Gallons per year
								=	124 Billing units

SUMMARY

The (TWU) (92,530 gallons per year) is less than the MAWA (435,448 gallons per year). (21.3%)

The project's Landscape Intended Total Water Use complies with the City of Long Beach Water Efficient Landscape Ordinance

*Trees are assigned 10 s.f. per tree and are included in addition to the project MAWA landscape area of coverage

Subsidiary Hand Points	Average Precipitation Rate	Distribution Uniformity of irrigation head
Bubblers	0.50" /hr.	0.90
Sub-Surface Hand Bubblers	1.5" /hr.	0.90

ETAF Calculations

Regular Landscape Areas	
Total (ETAF x Area)	3,000.00
Total Area	12,300.00
Average ETAF	0.24
All Landscape Areas	
Total (ETAF x Area)	3,000.00
Total Area	12,300.00
Overall ETAF	0.24

JDC Landscape Architects

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

1204

IRRIGATION CALCULATIONS

L-

IRRIGATION SPECIFICATIONS

I. SCOPE OF WORK

The Contractor shall provide all labor tools, machinery and materials necessary to install a complete irrigation system as shown on the drawings and/or specified here. When completed the irrigation system shall be a 100% coverage system to the landscaping areas.

II. GENERAL REQUIREMENTS

A. VERIFICATION OF DOCUMENTS: All equipment locations are approximate. Before proceeding with any work the Contractor shall carefully check and verify all dimensions. Spacing of irrigation heads, location of valves and backflow preventers, and proposed P.O.C. shall be as indicated on the drawings. Any variation from the above must have the approval of the Owner's Representative.

B. VERIFICATION OF PLANT GRADE: The Contractor shall adjust the rim and check all head grades within the work area to ensure the proper and coverage are specified of the irrigation system plans.

C. WATER SUPPLY: The Contractor shall verify and be familiar with the source of water supply to the irrigation system as indicated on the drawings.

D. PERMITS AND FEES: The Contractor shall apply and pay for all necessary permits required in the pursuit of his work as required by the governing entity.

E. CARE OF EXISTING PLANTS, BUILDINGS AND STRUCTURES: The Contractor shall be fully responsible for the care and preservation of all existing buildings and structures on the property and adjacent premises and contiguous property. Any and all damage occasioned, damaged or destroyed because of his work shall be repaired, replaced or directed by the Contractor at his expense.

F. REPORTS OF DAMAGES: It is the Contractor's responsibility to report damages and take any steps to remove additional hazards or defects and request prior to undertaking work. If he disregards and substitutes the Contractor is responsible for full coverage of equipment as necessary at the Contractor's expense.

G. GOVERNING REGULATIONS: All work contained and data here, state and regulations governing or relating to any portion of the work and hereby incorporated into and made part of these specifications and that provisions shall be followed as if the Contractor.

H. MEASUREMENTS OF WORK: The design is diagrammatic. All pipe sizes, etc., shown either curved areas are for design distribution only and shall be followed as closely as possible. Where doubt the Contractor performance of work, design or make-up.

I. INSTALLATION: All irrigation materials shall be installed in accordance with the manufacturer and specifications set forth by each irrigation manufacturer. All personal equipment furnished shall be from manufacturers because a part of these specifications also having been approved by the authorized Owner's Representative. Such substitution provisions shall be followed only if the structures of the irrigation drawings and specifications do not thoroughly and completely cover the methods or techniques to be followed. Install all equipment and materials as shown per details.

J. SITE PROTECTION: The Irrigation Contractor shall not willfully install the irrigation system on top/below of the drawings when it is obvious at the time that from and unknown conditions, grade differences, some discrepancies in the area encounters and such conditions are brought to the attention of the Owner's Representative.

III. MATERIALS

Irrigation materials and equipment shall be of type, size and location as noted and indicated on the drawings. Unless permission to change is granted from the Owner's Representative materials are to be new and in perfect condition. No damaged here the specifications shall be allowed. The decision of the Owner's Representative shall be final in determination of the quality of materials.

IV. INSTALLATION

A. EXCAVATION

1. The Contractor shall verify locations of all existing underground utilities, underground and overhead prior to excavation. Any utilities, A.C.E. piping, sprinkler, cable, plant, cement, etc. damaged or destroyed by any work under the contract shall be repaired or replaced at the Contractor's expense.

2. Trenches for pipe shall be not to exceed 6 inches wide for the pipe to provide uniform support for the bottom of the pipe.

3. Depth of trenches shall be sufficient to provide a minimum cover above the top of the pipe as noted on the drawings.

B. JOINING PIPE

1. The Contractor is responsible to be familiar with the methods of connecting, joining, and installing the various types of pipes to be used. He will adhere to strict adherence with the manufacturer's recommended procedures.

2. PVC pipe shall not be threaded and all threaded from PVC to metal joining shall be the PVC male threaded adapter fittings.

C. BACKFILLING PROCEDURE: The backfill procedure shall operation hence shall be verified with field directing and health codes. In the event of any conflict on the drawings or the Irrigation methods, the Owner's Representative shall be notified PRIOR TO BID OPENING.

D. TESTS

1. All main line and lateral line which have been laid with joints pipe or the system shall be covered and pressure tested at 100 PSI.

2. Pressure shall be maintained at the line for not less than two (2) hours. Pipes showing the joints shall be replaced and the test repeated until the entire system is watertight.

3. Test shall be witnessed and approved by the Owner's Representative prior to backfill.

4. When the irrigation system has been completed and before planting has begun, the Contractor or the personnel of the Owner's Representative shall test the coverage of water afforded to the lawn and planting areas for complete and adequate. The Contractor shall form all expense and perform all work required to correct any inadequacies of coverage.

5. The Contractor shall advise the Owner's Representative of any discrepancies from the plan adjusting, wind planting, walk or any conditions that may be affect of ground coverage.

E. [illegible]

1. Trench and ground cover items should adjacent to valve or valve shall be installed 4" away from the work or walk and the trench shall be backfilled firmly as indicated on the drawings.

2. Trench lines trench indicated in building layout or similar structures shall be installed 4" away from the structure and the trench shall be 6" minimum above finish grade. Trench lines trench not along structures shall be no 2" above finish grade.

3. All irrigation trench are to have double lining pipe as detailed.

4. Install all irrigation heads per details.

F. [illegible]

The Irrigation Contractor shall field test and adjust all irrigation heads for uniform performance and to ground coverage with water and buildings as close as possible. This shall include adjusting the head degree of arc to fit existing site adjacent. This also includes using the appropriate spray nozzles equipment.

G. CLEANING OF UNINSPECTED AREAS

The Contractor shall not allow or cause any of his work to be covered or enclosed until it has been inspected, tested and approved by the authorized Owner's Representative. Should any of his work be enclosed or covered before such inspection and test, he shall remove the work at his own expense and after it has been inspected, tested, and approved, he shall make all repairs with the materials necessary to restore it to work and that of other Contractors to its original condition.

H. BACKFILLING

1. Backfill shall not be placed until the installed irrigation system has been inspected and approved by the Owner's Representative.

2. Trenches shall be backfilled with a minimum of 6" of fine granular material to protect the pipe from the elements or rocks. The remaining backfilled fill can be used as backfill. The Contractor shall not place dismantled material or rocks in the top 6" of backfill.

3. If settlement occurs and adjustments to pipe, sub-on irrigation heads or any other irrigation devices necessary to bring the system to proper working order. The Contractor shall do a part of the work under this contract under all the necessary adjustments without extra cost to the Owner.

I. IMPROPERLY CONTROLLED PARTS, ETC.

1. A 110 volt electrical power outlet to the controller shall be provided by others. Provided the Landscape Contractor has not installed the electrical contractor is not liable of using the irrigation Contractor shall be responsible for running this backup from the outlet to the controller.

2. All wire from the controller to electric control valves shall be both copper U.F. Direct burial shall have wire for common, blue for hose common black for valve common and red for master common. Common control wire. Include a surplus length with each pipe where possible. Tape control wire at 10' O.C. to lead the pipe. Provide minimum 18" coverage.

3. Wire connections shall be made with "Scotchlok" wire connector sealing gaskets (DBY) or Spears "Dry-Lock" wire connector (DF 300 or approved equal.

4. There shall be a control wire from each control valve running to the controller and each control valve shall be connected to the common ground wire.

5. All electrical work shall comply with the electrical codes.

6. Install all valves per sample and manufacturer recommendations.

[illegible] INSTALLATION of Applicator

1. Installations and wiring are to be done by the Contractor in accordance with installation and operating instructions provided with the electrical output and outlining and those listed differential.

2. The Contractor shall install additional [illegible] as target when field has controller in the manner across [illegible] minimum distance shown on drawings. Provide additional 50' extension hoses each season for field heading of sprayers. All sprayers are to be wired in parallel and also color code shown.

3. Install 6" minimum frame No. 10-170-[illegible] covered by Jumper green cover No. [illegible] or approved equal shall be installed as detailed.

4. All wiring connections of valve locations shall be water proof.

5. Wire splices and will be continued to properly prepare and secure the splicing connect. The splices and wiring with all printed operating instructions are to furnished to the Owner by the Contractor at bid expiration.

6. Remove hammer operating and secure instructions and equipment manual is to be placed in the controller.

7. Record depth and dimensional adjustments to program [illegible] Remote Installation and Operation Instructions or to be provided by the Operational Manufacturer.

8. Installation must be inspected and accepted by the Manufacturer Representative.

V. [illegible]

A. GENERAL

The Contractor shall prepare and keep up to date a maintenance and file system. A complete set of marked "as-built" blue line prints which shall be corrected only and show every change from the original drawings and specifications and the final "as-built" locations, sizes and depth of equipment. Prints for the purpose may be obtained from the Owner. This set of drawings shall be kept on the site and shall be open only at a closed hat. These drawings shall also have all pertinent shown and the Contractor shall make note and legible notations thereon only, on the work presented showing the work as actually installed. These drawings shall be available at the Owner by inspection and shall be kept in a location acceptable by the Owner's Representative.

B. REQUIRED INSPECTIONS

1. The Contractor shall determine from the (2) personnel points of reference, building corners, sidewalks or road intersections, etc., the location of the following items:

a. Gate valves
b. The coupling of the irrigation main lines
c. Locations to the existing water lines
d. Irrigation control valves
e. Quick coupling valves
f. Controller/equipment locations
g. Master valve or Pump

2. The drawing shall show approximate measurements of some materials and establishment's name and existing numbers.

C. DELIVERY OF DRAWINGS OF RECORD

On or before the date of final inspection the Contractor shall submit for approval and acceptance drawings to the Owner's Representative. Delivery of drawings will not relieve the Contractor of the responsibility of providing required information that may be omitted from the plans.

D. CONTROLLER CHARTS

1. Record drawings shall be reviewed and approved by the Owner's Representative prior to preparing controller charts.

2. Present one controller chart for each controller location.

3. The chart shall be a reduced drawing of the actual installed system, using a different color to indicate the area of coverage for each station.

4. When the chart is completed and approved by the Owner's Representative, it shall be permanently mounted and placed in the controller box.

VI. [illegible]

A. SCOPE AND PROCEDURE: After completion operations have been completed, remove all trash, debris and waste from property. All waste, trash or other waste in the area caused by the work shall be removed and the property left in a neat and orderly condition throughout the site. The Contractor shall pick up all debris resulting from the work on less than each Friday before leaving the site. [illegible] a clean center the last working day of each week. All trash shall be removed completely from the site.

VII. [illegible]

A. SCOPE: The entire irrigation system shall be guaranteed by the Contractor for materials and workmanship, including setting of heads, grass below grade for a period of one (1) year following the date of final acceptance of the work. If either one (1) year from date of completion, setting grass and adjustments or repairs, valves, and irrigation heads and irrigation devices or piping is necessary to bring the system, and or piping to the proper level of the development grades the Contractor as part of the work under this contract, shall make all adjustments without extra cost of the Owner including the complete restoration of all damaged planting, paving or other improvements of any kind.

B. RESPONSIBILITY: Should any operational difficulties or malfunctions with the irrigation system occur for specified guarantee period which is in the opinion of the Owner's Representative due to inferior material and/or workmanship, and difficulties shall be immediately corrected by the Contractor to the satisfaction of the Owner's Representative at no additional cost to the Owner including any and all other damage caused by such defects.

C. INSTRUCTIONS: After the irrigation system has been completed and the inspections made, the Contractor shall instruct the Owner or his representative, in the operation and maintenance of the system.

JDC

Landscape Architecture

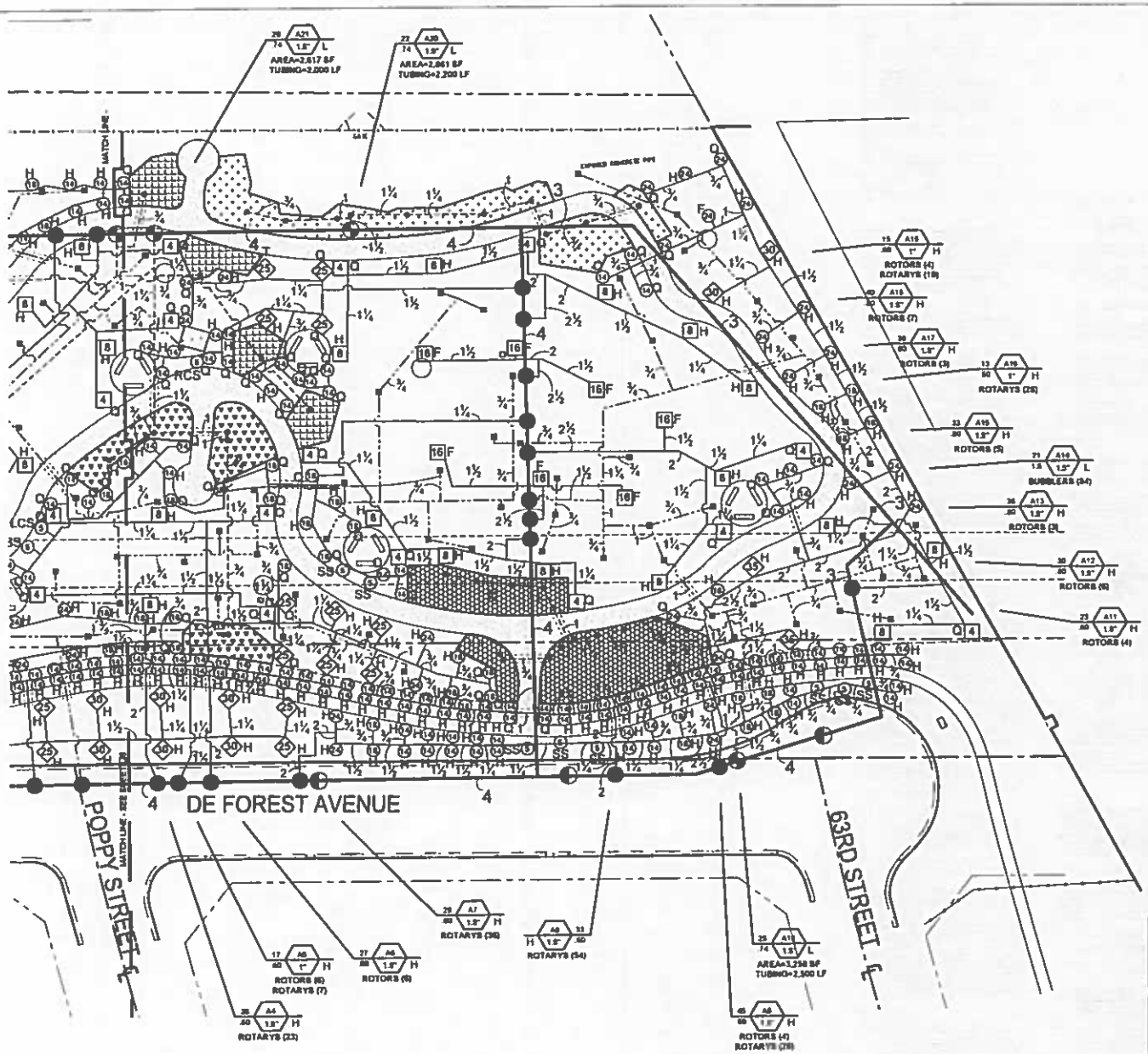
ARCLA PROJECT # 2-00
LANDSCAPE ARCHITECT: [illegible]
[illegible]
[illegible]
TELEPHONE: [illegible]
EMAIL: [illegible]

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

1204

IRRIGATION SPECIFICATIONS

L-10



LATERAL LINE SIZING TABLE.

1-3 GPMS	3/4" SIZE - SCHEDULE 40 PVC
3-10 GPMS	1" SIZE - SCHEDULE 40 PVC
11-20 GPMS	1-1/4" SIZE - SCHEDULE 40 PVC
21-30 GPMS	1-1/2" SIZE - SCHEDULE 40 PVC
30-40 GPMS	2" SIZE - SCHEDULE 40 PVC
41-60 GPMS	2-1/2" SIZE - CLASS 315 PVC
60-80 GPMS	3" SIZE - CLASS 315 PVC

NOTE: SIZING TABLE IS FOR REFERENCE AS MINIMUM ALLOWED SIZE BASED ON FLOW. LONGER RUNS REQUIRE LARGER PIPE SIZES AS NEEDED.

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422-4133

SCALE: 1"=20'

See Sheets L-1 thru L-3 for Planting Plans, Legend, Details and Notes
See Sheets L-4 thru L-11 for Irrigation Plans, Legends, Details, Notes and Calculations

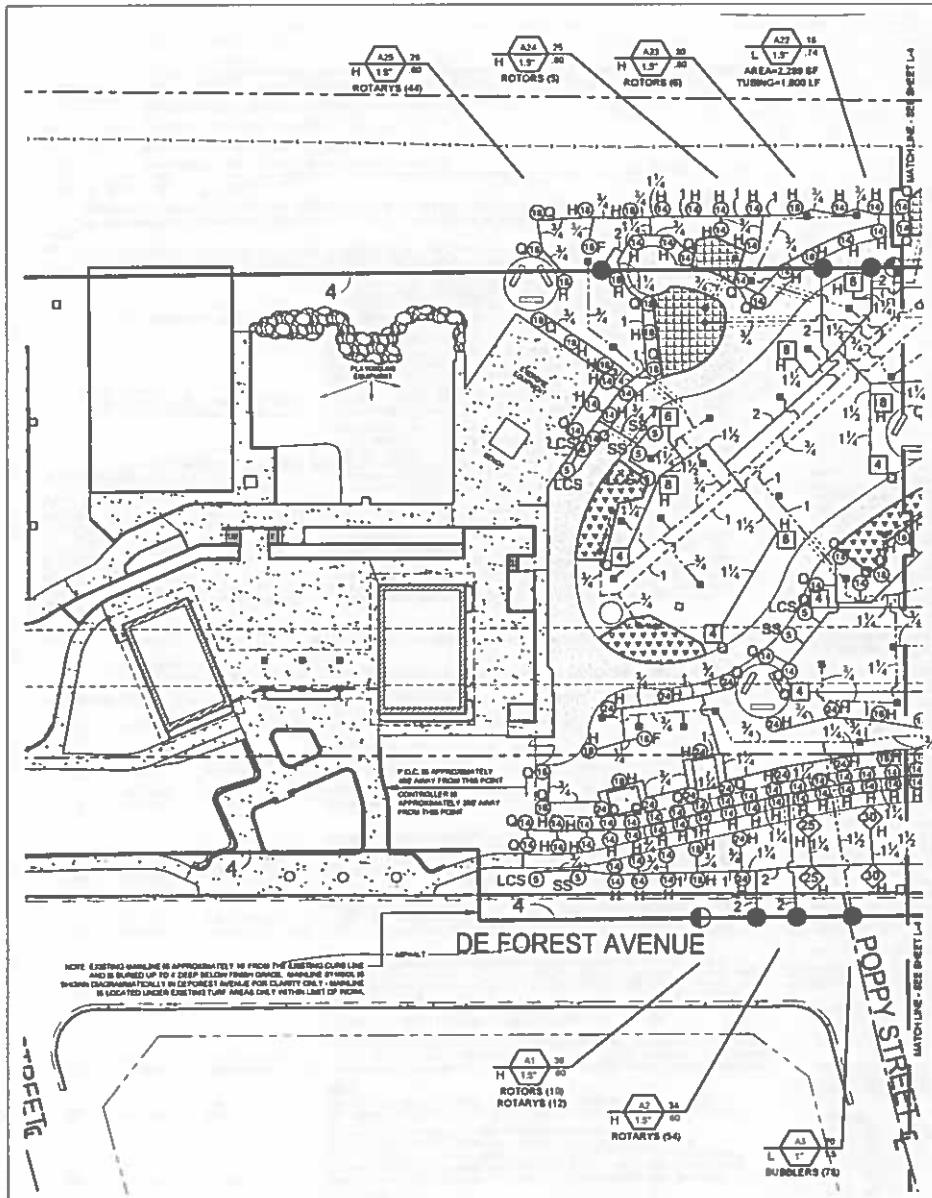
JDC Landscape Architects

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

L3H

IRRIGATION PLAN

L-4



ROTOR SPRINKLER LEGEND:

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION	NOZZLE	RADIUS	G.P.M.	P.S.I.	PATTERN	PRECIP RATE	COLOR CODE
16 F	RAIN BIRD	8504-FC-SS	4" POP-UP ROTOR SPRINKLER**	#16	40'	12.8	40	360°	0.79"	DARK BROWN
H 8	RAIN BIRD	8504-PC-SS	4" POP-UP ROTOR SPRINKLER**	#8	40'	6.6	40	180°	0.79"	GREEN
6 T	RAIN BIRD	8504-PC-SS	4" POP-UP ROTOR SPRINKLER**	#6	40'	4.9	40	120°	0.86"	LIGHT BLUE
Q 4	RAIN BIRD	8504-PC-SS	4" POP-UP ROTOR SPRINKLER**	#4	40'	3.3	40	90°	0.79"	BLACK
35 H	RAIN BIRD	9000+PCSAMRSS	6" POP-UP ROTOR SPRINKLER**	9000-MPR-35-H	35'	3.81	45	180°	0.60"	BEIGE
F 30	RAIN BIRD	9000+PCSAMRSS	6" POP-UP ROTOR SPRINKLER**	9000-MPR-30-F	30'	5.76	45	360°	0.62"	GREEN
30 H	RAIN BIRD	9000+PCSAMRSS	6" POP-UP ROTOR SPRINKLER**	9000-MPR-30-H	30'	2.96	45	180°	0.63"	GREEN
T 30	RAIN BIRD	9000+PCSAMRSS	6" POP-UP ROTOR SPRINKLER**	9000-MPR-30-T	30'	1.85	45	120°	0.58"	GREEN
30 Q	RAIN BIRD	9000+PCSAMRSS	6" POP-UP ROTOR SPRINKLER**	9000-MPR-30-Q	30'	1.40	45	90°	0.60"	GREEN
H 25	RAIN BIRD	9000+PCSAMRSS	6" POP-UP ROTOR SPRINKLER**	9000-MPR-25-H	25'	1.96	45	180°	0.61"	RED
25 T	RAIN BIRD	9000+PCSAMRSS	6" POP-UP ROTOR SPRINKLER**	9000-MPR-25-T	25'	1.30	45	120°	0.64"	RED
Q 25	RAIN BIRD	9000+PCSAMRSS	6" POP-UP ROTOR SPRINKLER**	9000-MPR-25-Q	25'	1.00	45	90°	0.62"	RED

NOTES:

* ADJUST ROTOR SPRINKLERS FOR HEAD TO HEAD COVERAGE AND ADJUST RADIUS CONTROL TO AVOID OVERSPRAY ONTO HARDSCAPE, FENCING, BUILDINGS, ETC. CAUTION: DO NOT REDUCE RADIUS MORE THAN 30% - IF 30% OR GREATER RADIUS REDUCTION IS NEEDED PROVIDE SUBSTITUTE NOZZLE

** INSTALL ROTOR SPRINKLERS PER DETAIL 1 ON SHEET L-9

1. ARC PATTERN OF ROTORS ARE ADJUSTABLE WITHIN THE RANGE OF DEGREES INDICATED BY THE MANUFACTURER.
   NOTE: PATTERNS SHOWN PROVIDE MATCHED PRECIPITATION ACROSS ROTOR SYSTEMS.
2. ROTOR ARE HIGH EFFICIENCY, STAINLESS STEEL RISER BODIES WITH NOZZLES INSTALLED ON 1" INLET POP-UP ROTOR SPRINKLER BODIES FOR FALCON 8500'S AND ARE HIGH EFFICIENCY, STAINLESS STEEL RISER, PRESSURE REGULATING BODIES INSTALLED ON 3/4" INLET POP-UP ROTOR SPRINKLER BODIES FOR 9000 SERIES'.
   NOTE: SWING JOINT ASSEMBLIES TO BE MINIMUM 1" IN SIZE FOR FALCON 8500'S AND MINIMUM 3/4" SIZE FOR 9000 SERIES'
3. MINIMUM LATERAL LINE SIZE IS 1-1/4" SCHEDULE 40 PVC FOR ALL ROTORS

ROTARY SPRINKLER LEGEND:

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION	NOZZLE	RADIUS	G.P.M.	P.S.I.	PATTERN	PRECIP RATE	COLOR CODE
24 F	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN24-360	17-24'	3.48	45	360°	0.63"	RED/RED
H 24	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN24	17-24'	1.88	45	180°	0.61"	RED/BLACK
24 Q	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN24	17-24'	0.84	45	90°	0.61"	RED/BLACK
F 18	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN18-360	12-18'	1.88	45	360°	0.62"	BEIGE/BEIGE
18 H	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN18	12-18'	1.01	45	180°	0.64"	BEIGE/BLACK
Q 18	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN18	12-18'	0.50	45	90°	0.64"	BEIGE/BLACK
14 H	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN14	8-14'	0.63	45	180°	0.62"	BLUE/BLACK
Q 14	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN14	8-14'	0.32	45	90°	0.61"	BLUE/BLACK
5 RCS	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN-RCS	5' X 15'	0.24	45	STRIP	0.62"	GRAY/BLACK
LCS 5	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN-LCS	5' X 15'	0.24	45	STRIP	0.62"	SILVER/BLACK
5 SS	RAIN BIRD	1806-SAM-PRS	6" POP-UP ROTARY SPRINKLER**	R-VAN-SS	5' X 30'	0.48	45	STRIP	0.62"	BLACK/BLACK

NOTES:

* ADJUST SPRINKLERS FOR HEAD TO HEAD COVERAGE AND ADJUST RADIUS CONTROL AND PATTERN ADJACENT TO NON-IRRIGATED AREAS TO AVOID OVERSPRAY. CAUTION: DO NOT REDUCE RADIUS MORE THAN RADIUS RANGE INDICATED - IF GREATER RADIUS REDUCTION IS NEEDED PROVIDE SUBSTITUTE NOZZLE

** INSTALL ROTARY NOZZLES ON POP-UP SPRINKLER BODIES ALONG SIDEWALK EDGE PER POP-UP DETAIL 2, SHEET L-9.

1. PART CIRCLE NOZZLES ARE CIRCLE PATTERN ADJUSTABLE WITHIN THE RANGE OF DEGREES INDICATED.
   NOTE: PATTERNS SHOWN PROVIDE MATCHED PRECIPITATION ACROSS SPRAY SYSTEMS.
2. ROTARY NOZZLES ARE HIGH EFFICIENCY NON-GEAR DRIVE NOZZLES INSTALLED ON 1/2" INLET POP-UP SPRINKLER BODIES.
   NOTE: SWING JOINT ASSEMBLIES TO BE MINIMUM 1/2" IN SIZE
3. MINIMUM LATERAL LINE SIZE IS 3/4" SCHEDULE 40 PVC

IRRIGATION SYSTEM DESCRIPTION

1. REHABILITATED LANDSCAPE AREAS ARE IRRIGATED BY A NEW IRRIGATION SYSTEM UTILIZING SUB-SURFACE DRIPLINE, ROTOR SPRINKLERS, ROTARY NOZZLE SPRAY SPRINKLERS AND LOW FLOW SUB-SURFACE TREE BUBBLERS ON SEPARATE DEDICATED CONTROL VALVES WITH PRESSURE REGULATION FOR AUTOMATIC IRRIGATION.
2. DOMESTIC WATER SUPPLIES THE IRRIGATION SYSTEM AND THE PARK SITE ON AN EXISTING WATER METER AND BACKFLOW PREVENTER. THE EXISTING IRRIGATION MAINLINE IS TO REMAIN AND WILL BE PROTECTED IN PLACE.
3. THE EXISTING IRRIGATION CONTROLLER IS BEING REPLACED AS PART OF A SEPARATE PROJECT WITH A NEW WEATHER BASED SMART IRRIGATION CONTROLLER WITH A TWO WIRE SYSTEM. NEW WIRES WILL BE REQUIRED TO CONNECT ALL NEW IRRIGATION CONTROL VALVES TO THE TWO WIRE SYSTEM WITH 2 STATION 2 WIRE DECODERS.

EXISTING IRRIGATION CONTROLLER NOTES:

EXISTING IRRIGATION CONTROLLER TO REMAIN - PROTECT IN PLACE - COORDINATE NEW 3-WIRE CONTROL AND COMMON WIRES WITH CITY OF LONG BEACH PARK REC AND MARINE DEPARTMENT TO NEW VALVES - PROVIDE SLEEVES AT ALL CONCRETE OR DO CROSSINGS AND COMPLY WITH MANUFACTURERS RECOMMENDATIONS FOR 3-WIRE SYSTEMS

EXISTING IRRIGATION POINT OF CONNECTION NOTE:

IRRIGATION POINTS-OF-CONNECTION - THE EXISTING WATER METER SUPPLIES THE ENTIRE SITE. DOMESTIC WATER SUPPLY SERVICED BY CITY OF LONG BEACH WATER DEPARTMENT. SEE ARCH AND CIVIL PLANS FOR EXISTING WATER METER LOCATIONS AND ADDITIONAL WATER SUPPLY INFORMATION. SEVERAL EXISTING BACKFLOW PREVENTER UNITS TO REMAIN - PROTECT IN PLACE - ONE (1) EXISTING REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SUPPLIES WATER AS THE POINT OF CONNECTION FOR IRRIGATION SYSTEM # WITH A 4" LOOPED MAINLINE AT 4' DEPTH

LATERAL LINE SIZING TABLE:

1-5 GPMs = 3/4" SIZE - SCHEDULE 40 PVC
3-10 GPMs = 1" SIZE - SCHEDULE 40 PVC
11-20 GPMs = 1-1/4" SIZE - SCHEDULE 40 PVC
21-30 GPMs = 1-1/2" SIZE - SCHEDULE 40 PVC
30-40 GPMs = 2" SIZE - SCHEDULE 40 PVC
41-60 GPMs = 2-1/2" SIZE - CLASS 315 PVC
60-80 GPMs = 3" SIZE - CLASS 315 PVC

NOTE: SIZING TABLE IS FOR REFERENCE AS MINIMUM ALLOWED SIZE BASED ON FLOW. LONGER RUNS REQUIRE LARGER PIPE SIZES AS NEEDED.

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SCALE: 1"=20'

See Sheets L-1 thru L-3 for Planting Plans, Legend, Details and Notes
See Sheets L-4 thru L-11 for Irrigation Plans, Legends, Details, Notes and Calculations

JDC Landscape Architecture

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

1204

IRRIGATION PLAN

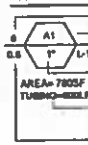
L-5

IRRIGATION EQUIPMENT LEGEND:

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION
A	EXISTING - N/A	EXISTING - N/A	EXISTING IRRIGATION "SMART" CONTROLLER MOUNTED IN FREE-STANDING FRONT ENTRY ENCLOSURE - COORDINATE NEW CONTROL AND COMMON WIRE TO CONTROLLER PEDESTAL LOCATED IN TURF AREA WHERE SHOWN ON PLANS - CONTROLLER TO REMAIN - PROTECT IN PLACE - COORDINATE ANY CONTROLLER RELATED WORK WITH CITY OF LONG BEACH PUBLIC WORKS DEPARTMENT, PARK REC & MARINE, AND PARK MAINTENANCE STAFF
	EXISTING - N/A	EXISTING - N/A	EXISTING BACKFLOW PREVENTER ASSEMBLY - CONFIRM SIZE IN FIELD - INCLUDES EXISTING LINE SIZE Y-STRAINER - ASSEMBLY LOCATED IN TURF AREA WHERE SHOWN ON PLAN - LOCATED WITHIN EXISTING METAL BACKFLOW ENCLOSURE - COORDINATE ANY BACKFLOW RELATED WORK WITH CITY OF LONG BEACH PUBLIC WORKS DEPARTMENT, PARK REC & MARINE, AND PARK MAINTENANCE STAFF
	RAIN BIRD®	44-LRC 44K	PROPOSED QUICK COUPLER VALVE - USE 1-INCH SIZE - INSTALL IN 10" ROUND VALVE BOX - LOCKING RUBBER COVER - PROVIDE QUICK COUPLER KEY - REFER TO DETAIL 6, SHEET L-7.
	RAIN BIRD® LASCO	XCZ-100-PRB-COM (1.5") V-17101N-BC (1.5")	DRIP ELECTRIC CONTROL VALVE ASSEMBLY - FOR FLOWS BETWEEN 15 AND 40 GPMS USE 1.5-INCH SIZE - WITH PRESSURE REGULATOR AND QUICK CHECK BASKET FILTER - PROVIDE 1.5-INCH LINE SIZE SCHEDULE 40 SLOW CLOSING BALL VALVE - TWO 1" OUTLETS WITH MPT X MPT CONNECTIONS - PROVIDE WATERPROOF WIRE SPLICE KITS - PROVIDE 1 TWO-WIRE DECODER FOR EVERY 2 VALVES - REFER TO DETAILS 3 & 5, SHEET L-7
	RAIN BIRD®	XCZ-100-PRB-COM (1")	DRIP ELECTRIC CONTROL VALVE ASSEMBLY - FOR FLOWS UP TO 15 GPMS USE 1-INCH SIZE - WITH PRESSURE REGULATOR AND QUICK CHECK BASKET FILTER - INCLUDES 1-INCH SIZE SCHEDULE 40 BALL VALVE - 1" OUTLET - MPT X MPT CONNECTIONS - PROVIDE WATERPROOF WIRE SPLICE KITS - PROVIDE 1 TWO-WIRE DECODER FOR EVERY 2 VALVES - REFER TO DETAILS 3 & 5, SHEET L-7
	RAIN BIRD® LASCO	150-PESB-PRS-D (1.5") V-17101N-BC (1.5")	ELECTRIC CONTROL VALVE ASSEMBLY - FOR FLOWS BETWEEN 20 AND 50 GPMS USE 1.5-INCH SIZE - WITH ADJUSTABLE PRESSURE REGULATOR - PROVIDE 1.5-INCH SIZE SCHEDULE 40 SLOW CLOSING BALL VALVE - PROVIDE WATERPROOF WIRE SPLICE KITS - PROVIDE 1 TWO-WIRE DECODER FOR EVERY 2 VALVES - REFER TO DETAILS 3 & 4, SHEET L-7
	RAIN BIRD® LASCO	100-PESB-PRS-D (1") V-10101N-BC (1")	ELECTRIC CONTROL VALVE ASSEMBLY - FOR FLOWS UP TO 30 GPMS AND UNDER USE 1-INCH SIZE - WITH ADJUSTABLE PRESSURE REGULATOR - PROVIDE 1-INCH SIZE SCHEDULE 40 SLOW CLOSING BALL VALVE - PROVIDE WATERPROOF WIRE SPLICE KITS - PROVIDE 1 TWO-WIRE DECODER FOR EVERY 2 VALVES - REFER TO DETAILS 3 & 4, SHEET L-7
A	RAIN BIRD RAIN BIRD	ARV050 SES-75B	AIR / RELIEF VALVE - THREADED - 1/2-INCH MPT- INSTALL WITHIN ROUND SUBTERRANEAN EMITTER BOX - REFER TO DETAIL 4, SHEET L-6
V	LASCO® GPH	V07491N GPVCAR050RR	DRIPLINE FLUSH OUT ASSEMBLY - 1/2 INCH SCHEDULE 40 PVC BALL VALVE AND ALGAE RESISTANT PVC SUPPLY TUBING INSTALL WITHIN 6" ROUND VALVE BOX - REFER TO DETAIL 3, SHEET L-6
	DOMESTIC WATER SERVICE CONNECTION - ADDITIONAL INFORMATION NOTED WITH FDC CALLOUT		
	EXISTING PRESSURE MAIN LINE PIPING - 4-INCH SIZE - BURIED UP TO 4' DEEP - PROTECT IN PLACE - REFER TO DETAILS 1 & 2, SHEET L-7 - COORDINATE ANY MAINLINE RELATED WORK WITH CITY OF LONG BEACH PUBLIC WORKS DEPARTMENT, PARK REC & MARINE, AND PARK MAINTENANCE STAFF - PROVIDE VERTICAL PIPING CONNECTIONS FROM EXISTING MAIN LINE TO NEW VALVES AT FINISH GRADE		
	NON-PRESSURE LATERAL LINE PIPING - SCHEDULE 40 PVC - 3/4" MINIMUM SIZE PIPING (NOTED IN INCHES) OTHER SIZES NOTED AS SHOWN ON PLAN - REFER TO DETAIL 2, SHEET L-7 INDICATES CONNECTION TO ASSIGNED DRIPLINE EMITTER SYSTEM. TYP.		
	R.B. XFS-CV-06-12-500 DRIP TUBING R.B. XF DRIPLINE INSERT FITTINGS R.B. TDS-6500		DRIPLINE SYSTEM - PRESSURE COMPENSATING INLINE EMITTERS - 0.61 GPH @ 12-INCHES O.C. EMITTER SPACING - 18-INCHES TUBING ROW SPACING - 17MM (COPPER COLOR) 0.634" O.D. POLYETHYLENE TUBING WITH WALL THICKNESS OF 0.049" WITH INSERT FITTINGS FOR ELLS, TEES, COUPLERS AND PVC ADAPTERS - PROVIDE 6-INCH GALVANIZED HOLD DOWN STAKES EVERY 10' O.C. PRIOR TO BURYING LINE - SUB-SURFACE INSTALLATION (2"-4" DEEP) - REFER TO DRIP NOTES THIS SHEET AND DETAILS 1 & 2, SHEET L-6 AND DETAIL 2, SHEET L-7
	R.B. = RAIN BIRD		
	NOTE. DRIPLINE AREAS ARE DIAGRAMMATICALLY SHOWN WITH HATCHING TO DELINEATE VALVE STATION AREAS.		
NOT SHOWN	RAIN BIRD XB-05PC (EMITTER) RAIN BIRD XQ-100 (TUBING) RAIN BIRD TB-025WCAP (STAKE/BUG CAP)		DRIP IRRIGATION SYSTEM PROVIDING TWO (2) EMITTERS PER LARGE SHRUB (5 GALLON) AND FOUR (4) OUTLETS PER TREE IN DRIP IRRIGATION AREAS - LOCATE SHRUB EMITTERS EQUALLY SPACED AT 12 INCHES FROM STEM - LOCATE TREE EMITTERS EQUALLY SPACED AT 6 INCHES FROM TRUNK - INSTALL EMITTERS IN DRIPLINE AND BUG-CAPS AT EMISSION POINTS WITH TUBING STAKE AND 1/4" DISTRIBUTION TUBING - EMITTER INSTALL PER DETAILS 5 & 6, SHEET L-6
	NON-PRESSURE LATERAL LINE PIPING - TREE BUBBLERS - SCHEDULE 40 PVC - 3/4" MINIMUM SIZE PIPING (NOTED IN INCHES) OTHER SIZES NOTED AS SHOWN ON PLAN - PROVIDE RAIN BIRD MODEL #RWB-M-B-C-1401 WITH RWS-BOCK AND RWSGRATE ACCESSORIES - PROVIDE TWO (2) ROOT WATERING SYSTEMS PER TREE - LOCATE EACH ROOT WATERING SYSTEM 2-FEET FROM THE TRUNK EQUALLY SPACED - PROVIDE PVC PIPING AS REQUIRED TO CONNECT EACH TREE TO THE NEAREST ASSIGNED VALVE STATION PER PLAN - INSTALL BUBBLERS FOR TREES PER DETAIL 3, SHEET L-6 - REFER TO DETAILS 1 & 2, SHEET L-7 INDICATES CONNECTION TO ASSIGNED TREE BUBBLER SYSTEM. TYP.		
	NON-PRESSURE LATERAL LINE PIPING - ROTORS AND SPRAYS - SCHEDULE 40 PVC FOR 2" AND SMALLER - CLASS 315 PVC FOR 3-1/2" AND LARGER - 3/4" MINIMUM SIZE PIPING (NOTED IN INCHES) FOR ROTARY SPRAYS AND 1-1/4" MINIMUM SIZE PIPING (NOTED IN INCHES) FOR ROTOR HEADS - OTHER SIZES NOTED AS SHOWN ON PLAN - REFER TO DETAIL 2, SHEET L-7		
	LATERAL LINE PIPING SLEEVE UNDER PAVED AREA - SCHEDULE 40 PVC - 2" MINIMUM SIZE (2-INCH ABBREVIATED ON DRAWING AS "2SL") - SIZE SLEEVING (NOTED IN INCHES) AS AT A MINIMUM OF DOUBLE THE LATERAL LINE PIPING SIZE - REFER TO DETAIL 1, SHEET L-7		

NOTES:
1. "PROVIDE LANDSCAPE FABRIC MODEL NUMBER 140N, AS MANUFACTURED BY MIRAFI, OR APPROVED EQUAL.
2. ROUND AND RECTANGULAR VALVE BOXES AND COVERS ARE BLACK IN COLOR AND INCLUDE LOCKING BOLTS (EXCLUDES 6" ROUND VALVE BOX) PER SPECIFICATIONS.

VALVE CALLOUT LEGEND:



- INDICATES FLOW IN GPM FOR ELECTRIC CONTROL VALVE.
- INDICATES IRRIGATION SPRINKLER CONTROLLER STATION NUMBER.
- INDICATES PLANT WATER USE CLASSIFICATION (HYDROZONE).
- INDICATES ELECTRIC CONTROL VALVE SIZE. H=HIGH, M=MODERATE, L= LOW.
- INDICATES AREA OF COVERAGE PER STATION AND ESTIMATE OF DRIPLINE TUBING FOR ESTIMATE PURPOSES ONLY. CONTRACTOR TO PERFORM HIS OWN ESTIMATE FOR FINAL INSTALLATION. FOR TREE STATIONS NUMBER OF TREES ARE LISTED FOR REFERENCE.
- INDICATES PRECIPITATION RATE.

LANDSCAPE MAINTENANCE SCHEDULE:

1. LANDSCAPES SHALL BE MAINTAINED TO ENSURE WATER EFFICIENCY. A REGULAR MAINTENANCE SCHEDULE SHALL BE SUBMITTED WITH THE CERTIFICATE OF COMPLETION.
2. A REGULAR MAINTENANCE SCHEDULE SHALL INCLUDE, BUT NOT BE LIMITED TO, ROUTINE INSPECTION, AUDITING, ADJUSTMENT AND REPAIR OF THE IRRIGATION SYSTEM AND ITS COMPONENTS, AERATING AND DE-THATCHING TURF AREAS; TOP-DRESSING WITH COMPOST, REPLENISHING MULCH; FERTILIZING; PRUNING, WEEDING IN ALL LANDSCAPE AREAS, AND REMOVING OBSTRUCTIONS TO EMISSION DEVICES. OPERATION OF THE IRRIGATION SYSTEM OUTSIDE THE NORMAL WATERING WINDOW IS ALLOWED FOR AUDITING AND SYSTEM MAINTENANCE.
3. REPAIR OF ALL IRRIGATION EQUIPMENT SHALL BE DONE WITH THE ORIGINALLY INSTALLED COMPONENTS OR THEIR EQUIVALENTS OR WITH COMPONENTS WITH GREATER EFFICIENCY.

SOIL SPECIFICATION/ANALYSIS SAMPLE:

1. PROVIDE SOIL SPECIFICATIONS IF IMPORT SOIL OR PROVIDE SOIL ANALYSIS IF USING ON SITE SOIL. THE SOIL INFORMATION MUST INCLUDE: SOIL TEXTURE (WT% OF ORGANIC MATTER), INFILTRATION RATE (OR ESTIMATED RANGE), PH, TOTAL SOLUBLE SALTS, SODIUM & RECOMMENDATIONS. INDICATE IF MULCH, SOIL AMENDMENTS OR OTHER MATERIAL WILL BE USED OR REQUIRED.

IRRIGATION AUDIT SCHEDULE:

1. AT A MINIMUM, AUDITS SHALL BE IN ACCORDANCE WITH THE STATE OF CALIFORNIA LANDSCAPE AUDITOR HANDBOOK.
2. AUDITS SHALL BE CONDUCTED BY A STATE CERTIFIED LANDSCAPE IRRIGATION AUDITOR AT LEAST ONCE EVERY FIVE YEARS AND SUBMITTED TO THE LOCAL WATER PURVEYOR.
3. HISTORICAL IRRIGATION SCHEDULING DOCUMENTING THE USE OF DAILY WEATHER SCHEDULING INFORMATION, AS RECORDED WITH THE CITY'S COMPUTER CENTRAL CONTROL SYSTEM, SHALL BE SUBMITTED IN LIEU OF IRRIGATION AUDIT TO VALIDATE AND VERIFY THAT THE IRRIGATION SYSTEM IS OPERATING AT OPTIMUM PERFORMANCE AS ORIGINALLY DESIGNED AND INSTALLED.

GENERAL IRRIGATION NOTES:

1. INSTALL POP-UP SPRINKLER HEADS POSITIONED WITHIN GRASS, SHRUB OR GROUND COVER AREAS WITH THE TOP OF SPRINKLER ABOVE FINISH GRADE AS SHOWN IN THE DETAILS.
2. SET SPRINKLER HEADS PERPENDICULAR TO FINISH GRADE OF AREA TO BE IRRIGATED UNLESS INDICATED OTHERWISE ON DRAWINGS.
3. WHEN VERTICAL OBSTRUCTIONS (FIRE HYDRANTS, TREES, LIGHT POLES, ETC.) INTERFERE WITH THE SPRINKLER HEAD PATTERN OF COVERAGE, ADJUST SPRINKLER SYSTEM LAYOUT BY INSTALLING A QUARTER CIRCLE, HALF CIRCLE OR ADJUSTABLE CIRCLE SPRINKLER HEAD ON EACH SIDE OF OBSTRUCTION IN ORDER TO PROVIDE PROPER COVERAGE. PERFORM SPRINKLER LAYOUT ADJUSTMENT AT NO COST TO THE OWNER.
4. SPRINKLER SYSTEM IS BASED ON MINIMUM PRESSURE AND MAXIMUM FLOW DEMAND SHOWN ON IRRIGATION DRAWINGS. REFER TO POINT-OF-CONNECTION NOTES. VERIFY PERMANENT WATER PRESSURE PRIOR TO COMMENCEMENT OF CONSTRUCTION. REPORT DIFFERENCES BETWEEN WATER PRESSURE INDICATED ON DRAWINGS AND ACTUAL SITE PRESSURE READING AT IRRIGATION POINT-OF-CONNECTION TO OWNER'S AUTHORIZED REPRESENTATIVE FOR RESOLUTION. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO START OF CONSTRUCTION, ASSUME FULL RESPONSIBILITY FOR REVISIONS.
5. THIS DESIGN IS DIAGRAMMATIC. PIPING, VALVES, ETC. SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY. INSTALL PIPING AND IRRIGATION FACILITIES WITHIN PLANTING AREAS WHERE POSSIBLE. AVOID CONFLICTS BETWEEN SPRINKLER SYSTEM, LANDSCAPE PLANTING AND ARCHITECTURAL FEATURES.
6. FLUSH AND ADJUST SPRINKLER HEADS FOR OPTIMUM PERFORMANCE. PREVENT OVERSPRAY ONTO WALKS, ROADWAYS, WALLS, FENCES AND BUILDINGS. SELECT THE MOST APPROPRIATE PART CIRCLE PATTERN NOZZLE TO FIT THE SITE CONDITIONS AND THROTTLE THE FLOW CONTROL ADJUSTMENT AT EACH CONTROL VALVE TO OBTAIN OPTIMUM SPRINKLER HEAD PRESSURE.
7. DO NOT WILLFULLY INSTALL SPRINKLER SYSTEM AS INDICATED ON DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT EXISTING OBSTRUCTIONS, GRADE DIFFERENCES IN AREA DIMENSIONS, AND OTHER SITE SPECIFIC INFORMATION THAT MIGHT NOT HAVE BEEN CONSIDERED DURING DESIGN. NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE OF SUCH OBSTRUCTIONS OR DIFFERENCES FOR RESOLUTION. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, ASSUME FULL RESPONSIBILITY FOR REVISIONS.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH GRADE DIFFERENCES, WALL LOCATIONS, ETC. COORDINATE WORK WITH GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE INSTALLATION OF IRRIGATION PIPE SLEEVES THROUGH WALLS, UNDER PAVEMENT AND STRUCTURES, ETC.
9. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF SUFFICIENTLY SIZED SLEEVES FOR CONTROL WIRES AND NON-PRESSURE LATERAL LINE PIPING UNDER PAVED AREAS, IN ADDITION TO CONTROL WIRES AND LATERAL LINE PIPING SLEEVES SHOWN ON THE DRAWINGS.
10. INSTALL PIPING, RELATED MATERIALS AND EQUIPMENT AS SHOWN ON THE DRAWINGS. USE TEFLON TAPE ON PVC MALE PIPE THREADS, INCLUDING SPRINKLER SWING JOINT AND VALVE ASSEMBLIES. DO NOT USE PIPE DOPE.
11. THE ESTABLISHMENT OF AUTOMATIC SEASONAL ADJUSTMENTS AND BASIC CONTROLLER PROGRAMMING IS THE RESPONSIBILITY OF THE CONTRACTOR. MAKE ARRANGEMENTS WITH AN IMPERIAL TECHNICAL SERVICES OR GREEN PRODUCT SALES FIELD TECHNICIAN FOR A SITE VISIT ON INSTRUCTION OF ESTABLISHING AUTOMATIC CONTROLLER BASIC PROGRAMMING INFORMATION AND AUTOMATIC SEASONAL SCHEDULING. CONTROLLER PROGRAMMING INFORMATION REQUIRED INCLUDES, BUT IS NOT LIMITED TO; PRECIPITATION RATES, PLANT WATER-USE FACTORS, SYSTEM EFFICIENCY RATINGS, FLOW SENSOR CALIBRATION, AND MONTHLY HISTORIC DATA. SEE IRRIGATION CONTROLLER NOTES FOR CONTACT INFORMATION.
12. MAINLINE PRESSURE TEST: AFTER WELDED JOINTS HAVE CURED FOR AT LEAST 24 HOURS, LINES FLUSHED AND OUTLETS ARE CAPPED, THE SYSTEM SHALL BE TESTED UNDER NORMAL STREET WATER PRESSURE FOR A MINIMUM OF 4 HOURS. JOINTS SHALL REMAIN EXPOSED FOR INSPECTION DURING THE PRESSURE TEST. CENTER LOADING OF PIPING WITH SMALL LOADS OF SAND BACKFILL TO PREVENT ARCHING OR SLIPPING UNDER PRESSURE IS PERMITTED. CORRECT DEFECTIVE WORK AND REPEAT TESTS UNTIL THE ENTIRE SYSTEM IS TESTED WATERTIGHT. PRESSURE TESTING RESULTS SHALL BE SUBMITTED TO OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO BACKFILLING. REFER TO SPECIFICATIONS FOR MORE INFORMATION ON MAINLINE PRESSURE TEST.

DRIP IRRIGATION NOTES:

1. PROVIDE DRIPLINE EMITTER TUBING SYSTEM TO IRRIGATE EVERY PLANT WITHIN PLANTING AREAS AS SHOWN ON DRAWINGS.
2. DRIPLINE IS SHOWN DIAGRAMMATICALLY FOR CLARITY. INSTALL DRIPLINE TUBING AND NON-PRESSURE LATERAL LEAD LINE PIPING IN LANDSCAPE AREAS AND ADJACENT TO SELECTED PLANT MATERIAL AS SHOWN IN DETAILS.
3. DRIPLINE TUBING, AS SHOWN DIAGRAMMATICALLY ON PLANS WITH THE VARIOUS HATCHES INDICATING SEPARATION FROM STATION ASSIGNMENT, CONNECTS TO THE NON-PRESSURE LATERAL LEAD LINE FROM THE ECV AND PRESSURE REGULATOR SERVING THE DESIGNATED DRIP AREA.
4. DRIPLINE VALVE STATION CALLOUTS INDICATE THE APPROXIMATE SIZE OF THE DRIPLINE AREA OF COVERAGE ASSIGNED TO EACH VALVE. THE APPROXIMATE LENGTH OF DRIPLINE TUBING ASSIGNED TO EACH VALVE STATION IS PROVIDED FOR ESTIMATE PURPOSES ONLY. CONTRACTOR SHALL PROVIDE AND INSTALL THE REQUIRED AMOUNT OF DRIPLINE TUBING AS REQUIRED TO PROPERLY IRRIGATION ASSIGNED LANDSCAPE AREAS WITH THE EMITTER SPACING AND DRIPLINE TUBING ROW SPACING AS INDICATED IN THE EQUIPMENT LEGEND ON SHEET L1.05.
5. REFER TO PLANTING LEGEND FOR PLANT MATERIAL NAMES, ABBREVIATIONS, SPECIFIC SIZES, ON-CENTER SPACING, AND ADDITIONAL INFORMATION.
6. DO NOT INSTALL DRIPLINE TUBING UNDER PAVED SURFACES. CONNECT DRIPLINE TUBING TO SCHEDULE 40 PVC LATERAL LINE PIPING FOR ROUTING UNDER PAVED SURFACES AND SCHEDULE 80 PVC PIPING ROUTING THROUGH PLANTER WALLS. ADAPT DRIPLINE TUBING TO PVC PIPING AS REQUIRED WITH COMPRESSION ADAPTER FITTINGS.
7. CONNECT DRIPLINE PIPING TO PRESSURE REGULATOR UNITS WITH SCHEDULE 40 PVC MALE ADAPTER FITTINGS AND COMPRESSION ADAPTER FITTINGS.
8. PROVIDE COMPRESSION SERIES AND INSERT FITTINGS AND ADAPTERS FOR TUBING TO TUBING CONNECTIONS AND CONNECTIONS TO PVC PIPING AS INDICATED IN THE EQUIPMENT LEGEND.
9. PROVIDE TWO (2) EMISSION OUTLET EMITTERS TO EACH LARGE SHRUB (5 GALLON), SPACED EQUALLY AT 12-INCHES CLEAR FROM STEM. CONNECT DRIP EMITTERS TO DRIPLINE TUBING WITH BARBED ADAPTERS AT LOCATIONS WHERE REQUIRED.
10. PROVIDE FOUR (4) EMISSION OUTLET EMITTERS TO EACH TREE, SPACED EQUALLY AT 6-INCHES CLEAR FROM TRUNK. CONNECT DRIP EMITTERS TO DRIPLINE TUBING WITH BARBED ADAPTERS AT LOCATIONS WHERE REQUIRED.

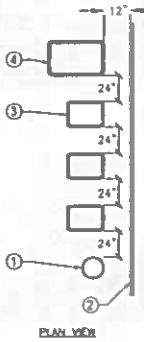
JDC LANDSCAPE ARCHITECTS

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

1304

IRRIGATION LEGEND AND NOTES

L-6



LEGEND

1. ROUND VALVE BOX.
2. EDGE OF TURF, PAVEMENT, FENCE, CURB, ETC.
3. RECTANGULAR VALVE BOX, TYP.
4. RECTANGULAR JUMBO VALVE BOX.

NOTES:

A. CENTER VALVE BOX OVER VALVE TO FACILITATE SERVICING OF VALVE.

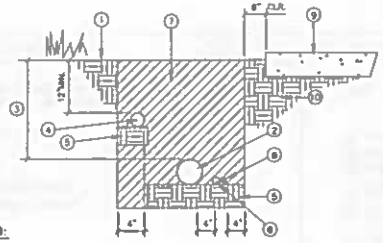
B. SET VALVE BOXES 3-INCHES MAXIMUM ABOVE GRADE IN MULCH COVER OR GROUNDCOVER/SHRUB AREAS - SET BOX 1-INCH ABOVE FINISH GRADE IN TURF AREAS.

NOTE: VALVE BOXES INSTALLED ONLY WHERE PERMITTED.

C. SET VALVE BOXES PARALLEL TO ONE ANOTHER AND PERPENDICULAR TO EDGE.

D. AVOID HEAVY COMPACTION OF SOIL AROUND VALVE BOXES TO PREVENT THE DEFORMATION/COLLAPSE OF BOX BASES.

3 VALVE BOX LAYOUT N.T.S. A001

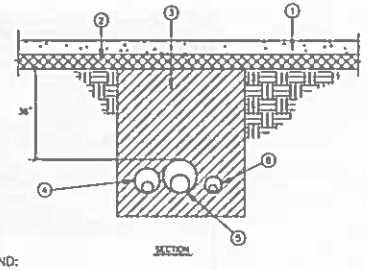


LEGEND:

1. FINISH GRADE.
2. PRESSURE MAIN LINE PIPING.
3. DEPTH OF MAIN LINE PIPING @ 18" MINIMUM DEPTH, INCLUDING BELOW PEDESTRIAN PAVEMENT.
4. NON-PRESSURE LATERAL LINE PIPING.
5. PROVIDE 2" DEPTH OF CLEAN BACKFILL BELOW PIPING TYPICAL.
6. FLOW SENSOR SIGNAL CABLE AND CONDUIT.
7. CLEAN COMPACTED BACKFILL - SEE SPECIFICATIONS FOR BACKFILL & COMPACTION REQUIREMENTS.
8. CONTROL WIRES - BUNDLE AND TAPE EVERY 10-FEET - INSTALL ADJACENT TO PRESSURE MAIN LINE.
9. CURB, PAVING OR WALL, TYPICAL.
10. NATIVE SOIL.

NOTES:
1. LOCATE SIGNAL CABLE WITHIN MAIN LINE AND CONTROL WIRE TRENCH WHERE POSSIBLE.
2. INSTALL MAIN LINE WITH 36" SOIL COVER BELOW VEHICULAR PAVEMENT.
3. COORDINATE TRENCHING WITH ALL OTHER EXISTING/NEW UTILITIES AND UNDERGROUND STRUCTURES.

2 TRENCHING N.T.S.

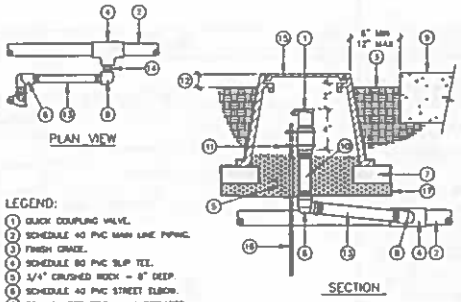


LEGEND:

1. PAVEMENT.
2. BASE MATERIAL.
3. BACKFILL MATERIAL.
4. LATERAL LINES IN SCHEDULE 40 PVC SLEEVE.
5. PRESSURE MAIN LINE IN SCHEDULE 40 PVC SLEEVE.
6. CONTROL WIRES IN SCHEDULE 40 PVC SLEEVE.

NOTES:
1. PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' INSTALLATION SPECIFICATIONS.
2. MAIN LINE, LATERAL LINES AND CONTROL WIRES SHALL BE SLEEVED BELOW HARDSCAPE ELEMENTS WITH SCHEDULE 40 PVC, 2 TIMES THE DIAMETER OF THE PIPE OR WIRE BUNDLE WIDTH.
3. INSTALL ALL SLEEVES WITH 36" OF SOIL COVER BELOW VEHICULAR PAVEMENT.

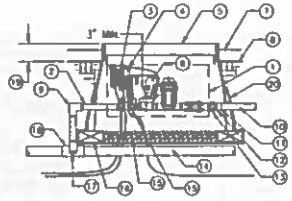
1 SLEEVE TRENCHING N.T.S. 2NP001



LEGEND:

1. QUICK COUPLING VALVE.
2. SCHEDULE 40 PVC MAIN LINE PIPING.
3. FINISH GRADE.
4. SCHEDULE 80 PVC SLIP TEE.
5. 3/4" CRUSHED ROCK - 8" DEEP.
6. SCHEDULE 40 PVC STREET ELBOW.
7. COMMON RED BRICK - 4 REQUIRED.
8. SCHEDULE 40 PVC ELBOW - 3/4"
9. CURB, WALK, OR OTHER HARDSCAPE FEATURE.
10. SCHEDULE 80 PVC 3/4" - 2" MINIMUM, LENGTH AS REQUIRED
11. STAINLESS STEEL COMPRESSION CLAMP; TWO (2) REQUIRED.
12. SET BOX FLUSH WITH FINISH GRADE OF TURF, AND SET 3" ABOVE FINISH GRADE IN GROUND COVER AREAS.
13. SCHEDULE 80 PVC NIPPLE - 6" MINIMUM, 12" MAXIMUM LENGTH.
14. SCHEDULE 80 PVC NIPPLE - 3/4" x 1" LENGTH.
15. BOLT-DOWN ROUND VALVE BOX, GREEN IN COLOR - IDENTIFY THE LETTERS "QCV" ON COVER PER SPECIFICATIONS.
16. REBAR STAKE - #4 x 36" MINIMUM LENGTH. SECURE AT QUICK COUPLER BODY ONLY.
17. LANDSCAPE FABRIC - WRAP SIDES & BOTTOM OF BOX TO COVER ALL OPENINGS.

6 QUICK COUPLING VALVE

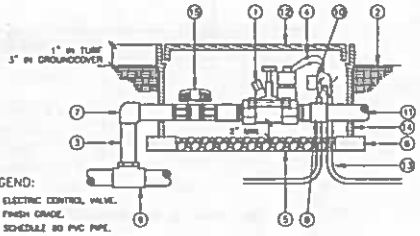


LEGEND

1. ELECTRIC CONTROL VALVE DRIP ASSEMBLY
2. SCHEDULE 80 PVC NIPPLE (TYPICAL, LENGTH AS REQUIRED)
3. 30-INCH COIL LINEAR LENGTH OF CABLE
4. WATERPROOF WIRE CONNECTORS
5. RECTANGULAR VALVE BOX - BLACK IN COLOR - HEAT BRAND VALVE STATION NUMBER ON LID IN 2" HIGH CHARACTERS.
6. CHRISTY'S LD TAG - (NUMBERED TO MATCH DRAWINGS). ATTACH TO WIRES WITH NYLON FASTENER.
7. TOP OF MULCH
8. FINISH GRADE
9. SCHEDULE 80 PVC ELL
10. SCHEDULE 40 PVC LATERAL
11. SCHEDULE 40 PVC MALE ADAPTER
12. SCHEDULE 80 PVC NIPPLE, SHORT (1 OF 3)
13. SCHEDULE 80 FULL PORT PVC UNION
14. SCHEDULE 40 PVC MAIN LINE PIPING
15. 3/4" CRUSHED ROCK - 8" DEEP
16. COMMON RED BRICK - 4 REQUIRED
17. SCHEDULE 80 PVC NIPPLE (2" LENGTH, MODEL) AND SCHEDULE 40 PVC ELL
18. SCHEDULE 40 PVC TEE OR ELL AS REQUIRED
19. 1-INCH IN TURF AREAS AND 3-INCH IN SHRUB AREAS.
20. LANDSCAPE FABRIC - WRAP SIDES AND BOX BOTTOM - COVER ALL OPENINGS.
21. LINE SIZE SCHEDULE 40 BALL VALVE

NOTES:
1. PROVIDE 2-FOOT CLEAR DISTANCE BETWEEN VALVES; EACH VALVE SHALL HAVE ITS OWN CONNECTION TO MAIN LINE - INSTALL NO MULTIPLE ASSEMBLIES.
2. ARRANGE VALVE BOXES AT RIGHT ANGLE TO HARDSCAPE EDGES.
3. USE TEFLON TAPE ON THREADED FITTINGS. DO NOT USE PIPE DOPE.

5 ELECTRIC CONTROL VALVE - DRIP N.T.S. EDV001.dwg



LEGEND:

1. ELECTRIC CONTROL VALVE.
2. FINISH GRADE.
3. SCHEDULE 80 PVC PIPE.
4. WIRE CONNECTOR (WATERPROOF VARIETY).
5. 3/4" CRUSHED ROCK (12" DEEP).
6. COMMON BRICK (4 REQUIRED).
7. SCHEDULE 40 PVC S & S 90 DEGREE ELBOW.
8. SCHEDULE 80 PVC T.O.E. (THREADED ONE END) NIPPLE AND SLIP-FIT COUPLING (TYPICAL).
9. SCHEDULE 40 PVC MAIN LINE FITTING WITH SOLVENT-WELD OUTLET.
10. CHRISTY'S LD TAG (NUMBERED TO MATCH DRAWINGS). ATTACH TO WIRES WITH NYLON FASTENER.
11. SCHEDULE 40 PVC PIPE TO SPRINKLERS. ANGLE PIPE TO SPECIFIED DEPTH WITH 45 DEGREE ELBOWS.
12. RECTANGULAR VALVE BOX WITH BOLT-DOWN COVER; BLACK IN COLOR - HEAT BRAND VALVE STATION NUMBER ON LID IN 2" HIGH CHARACTERS.
13. CONTROL/COMMON WIRES FROM CONTROLLER. PROVIDE 36" MINIMUM EXTRA COIL OF WIRES AT WIRE CONNECTORS.
14. LANDSCAPE FABRIC - WRAP SIDES AND BOX BOTTOM, COVER ALL OPENINGS.
15. LINE SIZE SCHEDULE 40 BALL VALVE

NOTES:
1. PROVIDE 2 FOOT CLEAR DISTANCE BETWEEN VALVES; EACH VALVE SHALL HAVE ITS OWN CONNECTION TO MAIN LINE; INSTALL NO MULTIPLE ASSEMBLIES.
2. ARRANGE VALVE BOXES AT RIGHT ANGLE TO HARDSCAPE EDGES.
3. USE TEFLON TAPE ON THREADED FITTINGS. DO NOT USE PIPE DOPE.

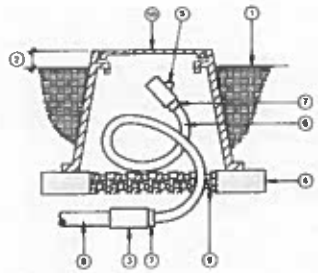
4 ELECTRIC CONTROL VALVE

JDC Landscape Architects

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

1.304
IRRIGATION DETAILS

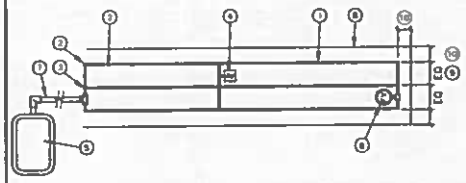
L-7



LEGEND:

1. FINISH GRADE.
2. INSTALL BOX 2" ABOVE FINISH GRADE.
3. SCHEDULE 40 PVC SLIP COUPLER (LINE SIZE).
4. COMMON RED BRICK SUPPORTS (2 REQUIRED).
5. SCHEDULE 40 PVC BALL VALVE (S X S) – 1/2".
6. PVC FLEXIBLE HOSE (BLACK) – 1/2" DIAMETER (NON-IPS) – 3-FT. MINIMUM LENGTH – DPH MODEL #DPHCAR050 SERIES.
7. SCHEDULE 40 PVC SLIP FIP REDUCER BUSHING (1/2 X 3/8) AS REQUIRED.
8. DRIPLINE SYSTEM PIPING.
9. 3/4" CRUSHED GRAVEL – PROVIDE 1 CUBIC FOOT.
10. ROUND VALVE BOX WITH BOLT-DOWN COVER – BLACK IN COLOR – HEAT BRAND THE LETTERS 'FO' ON LID IN 2" HIGH CHARACTERS.

3 FLUSH OUT (DRIPLINE SYSTEM) n.t.s. DRIPFO01

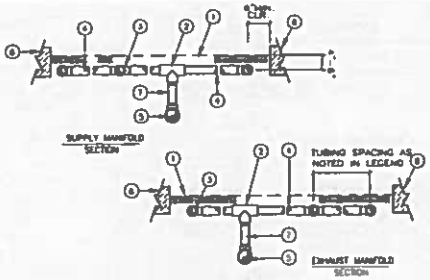


LEGEND:

1. DRIPLINE PIPING.
2. ELBOW FITTING (UNIVERSAL NUT LOCK TYPE) – TYPICAL.
3. TEE FITTING (UNIVERSAL NUT LOCK TYPE) – TYPICAL.
4. AIR/VACUUM RELIEF VALVE (WHERE REQUIRED) – CONNECT TO BLANK DRIPLINE TUBING AT EACH HIGH POINT OR AS INDICATED ON THE PLANS.
5. DRIPLINE CONTROL VALVE ASSEMBLY.
6. LINE FLUSHING VALVE.
7. SCHEDULE 40 PVC PIPING TO DRIPLINE SYSTEM.
8. EDGE OF PLANTING AREA ASSIGNED TO DRIPLINE STATION.
9. REFER TO EQUIPMENT LEGEND FOR TUBING ROW SPACING.
10. CLEARANCE FROM DRIPLINE TUBING TO EDGE OF ASSIGNED PLANTING AREA EQUAL TO 1/2 TUBING ROW SPACING UNLESS NOTED ON PLAN.

NOTES:
1. REFER TO STATION CALLOUTS ON PLANS FOR SPECIFIC PERFORMANCE REQUIREMENTS AND CONFIGURATION OF DRIPLINE LAYOUTS PER VALVE STATION.
2. PROVIDE COUPLING FITTING (UNIVERSAL NUT LOCK) – WHERE REQUIRED.

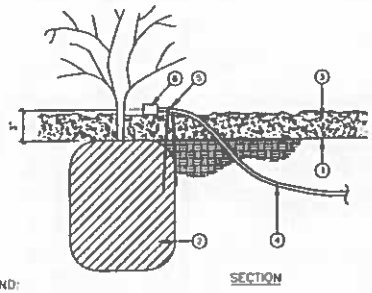
2 SCHEMATIC DRIPLINE LAYOUT - TYPICAL n.t.s. DRIPlayout1.dwg



LEGEND:

1. FINISH GRADE.
2. SCHEDULE 40 LWR-PVC TEE OR ELBOW FITTING FROM PVC RISER TO DRIPLINE TUBING. FITTING INCLUDES DRIPLINE ADAPTER(S) AS REQUIRED.
3. DRIPLINE TEE, ELL OR COUPLER FITTING (NUT LOCK TYPE) AS REQUIRED.
4. DRIPLINE EMITTER TUBING INSTALLED WITH 4"-6" OF SOIL COVER.
5. SCHEDULE 40 PVC PIPING TO ELECTRIC CONTROL VALVE.
6. LIMIT OF PLANTER OR PAVEMENT EDGE.
7. SCHEDULE 40 PVC RISER – LENGTH AS REQUIRED.

1 DRIPLINE - TYPICAL PIPING CONNECTIONS n.t.s. DRIPun1.dwg

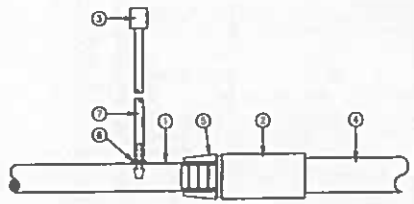


LEGEND:

1. FINISH GRADE OF SOIL.
2. PLANT MATERIAL ROOTBALL.
3. MULCH LAYER.
4. PVC DISTRIBUTION TUBING – LENGTH OF TUBING EXPOSED ABOVE MULCH LAYER SHALL NOT EXCEED 6" – LENGTH OF TUBING PER PLANT SHALL NOT EXCEED 3'.
5. DISTRIBUTION TUBING STAKE; SAUGO MODEL #DTS-30-750. LOCATE STAKE WITHIN PLANT ROOTBALL; INSTALL 2-3" FROM DRIP EMITTER.
6. DRIP EMITTER – LOCATE ONE EMITTER PER PLANT ABOVE MULCH IN UNOBSTRUCTED VIEW AND LOCATED ON HIGH SIDE OF BASIN WHEN SLOPE CONDITION IS PRESENT.
7. CONNECTION TO DRIP LINE TUBING. REFER TO DRIPLINE DETAILS FOR ADDITIONAL INFORMATION.

NOTES:
REFER TO DRIP NOTES FOR ADDITIONAL INFORMATION.

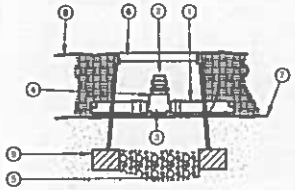
6 DRIP EMISSION OUTLET n.t.s. DRIPEO1.dwg



LEGEND:

1. DRIPLINE PIPING.
2. PVC [illegible] PIPING FOR CONNECTION TO PVC PIPING.
3. DRIP EMITTER – REFER TO EQUIPMENT LEGEND AND PLAN NOTES.
4. [illegible] PVC LATERAL LINE PIPING.
5. COMPRESSING FITTING.
6. PLASTIC BARB ADAPTER – 1/4"-IPM BARB FITTING FOR PVC COUPLING. (I.E. PVC DISTRIBUTION TUBING).
7. PVC DISTRIBUTION TUBING – IPM PLASTIC BARB (#DPC2[illegible] AND [illegible] ROLL). (I.D. [illegible] I.D. 2.2.[illegible] O.D.) PROVIDE 6-FEET MINIMUM LENGTH PER EMITTER.

5 DRIP EMITTER CONNECTION n.t.s. DRIPEL.dwg



LEGEND:

1. DRIPLINE EMITTER TUBING.
2. AIR/VACUUM RELIEF VALVE.
3. DIC MODEL #15-[illegible] UNIVERSAL NUT LOCK TEE (INS. X INS. X 3/4" FIPT).
4. REDUCING BUSHING – 3/4" MPT X 1/2" FIPT.
5. 3/4" CRUSHED ROCK – 12" DEEP.
6. BOLT-DOWN ROUND VALVE BOX. HEAT BRAND THE LETTERS "AV" WITH 2" HIGH CHARACTERS ON COVER.
7. FINISH GRADE OF SOIL.
8. SET TOP OF ROUND BOX FLUSH WITH THE TOP OF MULCH.
9. COMMON RED BRICK – 3 REQUIRED, TYPICAL.

NOTES:
1. USE TEFLON TAPE ON ALL MALE PIPE THREADS.

4 AIR/VACUUM RELIEF ASSEMBLY n.t.s. DRIPav1.dwg

JDC Landscape Architecture

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

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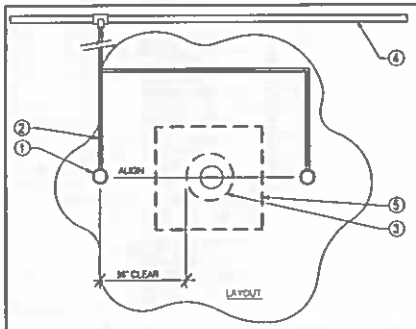
IRRIGATION DETAILS

L-8



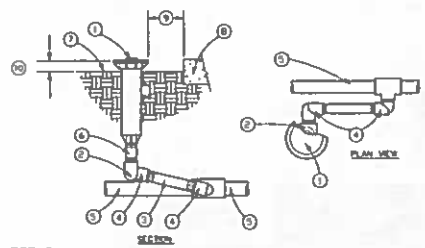
LEGEND

1. SUB-SURFACE ROOT ZONE WATERING SYSTEM WITH FLOOD BUBBLER NOZZLE AND SWING JOINT ASSEMBLY - ALIGN SPRINKLERS ON OPPOSITE SIDES OF TREE. TYPICAL.
2. LATERAL PIPE - SCHEDULE 40 PVC - 3/4" MINIMUM SIZE.
3. TREE.
4. LATERAL LINE PIPING FROM ELECTRIC CONTROL VALVE.
5. ROOT BALL.

NOTES

1. PRESSURE COMPENSATING FLOOD BUBBLERS INCLUDED IN SYSTEM
2. PROVIDE EACH ROOT ZONE WATERING SYSTEM WITH USER INSTALLED FABRIC SLEEVE

3 | TREE SPRINKLER LAYOUT | N.T.S. ZSPY01



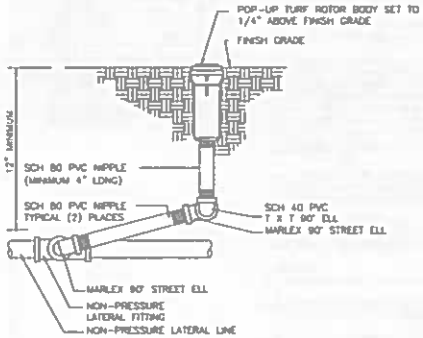
LEGEND:

1. POP-UP SPRAY HEAD.
2. SCHEDULE 40 PVC T-T ELL.
3. SCHEDULE 80 PVC NIPPLE - 6-INCH MINIMUM AND 12-INCHES MAXIMUM LENGTH.
4. SCHEDULE 40 PVC STREET ELL.
5. SCHEDULE 40 PVC LATERAL LINE PIPE AND FITTING.
6. SCHEDULE 80 PVC SHORT NIPPLE.
7. FINISH GRADE.
8. ADJACENT PAVING EDGE OR CURB.
9. INSTALL TOP OF SPRAY HEAD 4" AWAY FROM PAVING EDGE IN TURF AREAS AND SET 6" AWAY FROM PAVING EDGE IN PLANTING BEDS.
10. SET SPRAY HEAD 1/2-INCH ABOVE FINISH GRADE IN TURF AND 2-INCHES ABOVE GROUND IN SHRUB AND GROUND COVER PLANTING AREAS.

NOTE:

1. USE TEFLON TAPE ON THREADED FITTINGS.

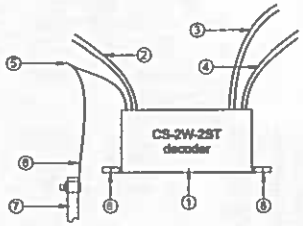
2 | POP-UP SPRAY HEAD | N.T.S. ZSPY01



NOTE:

1. LOCATE HEAD 2" TO 6" FROM WALKS, DECOMPOSED GRANITE, HARDSCAPING, MOW STRIPS, AND EDGES OF LAWN. LOCATE 2' MIN FROM STREET CURBS AND PARKING LOT EDGES.
2. USE TEFLON TAPE ON ALL MALE THREADS.
3. INSTALL SWING JOINTS AT SIZES NO SMALLER THAN INLETS ON ROTORS USED

1 | ROTOR POP-UP



LEGEND

1. TWO WIRE TWO STATION DECODER
2. RED AND BLUE WIRES TO 2-WIRE CABLE (MATCH COLORS) SECTION
3. OUTPUT A - BLACK WIRES TO SOLENOID
4. OUTPUT B - ORANGE WIRES TO SOLENOID (IF NOT USED WIRE ENDS MUST BE WATER PROOFED)
5. GREEN WIRE TO GROUND ROD WHERE NEEDED. GROUND ROD LOCATIONS: 1 AT CONTROLLER, 1 EVERY 300 FEET OR THE NEXT CLOSEST DECODER, AND 1 AT END OF EACH TWO WIRE CABLE
6. #12 BARE COPPER GROUND WIRE
7. 5/8" X 8' LONG COPPER GROUND ROD
8. MOUNTING HOLES MAY BE USED TO MOUNT DECODER TO VALVE BOX LID OR SIDE

NOTE:
MAXIMUM 100 FEET OF 14 GAUGE WIRE FROM DECODER TO SOLENOID.
IF WIRES NOT USED THE ENDS MUST BE WATER PROOFED.
USE 3M SCOTCHCAST #3570G-N EPOXY PACKS FOR ALL WIRE SPLICES

4 | 2 WIRE DECODER

JDC LANDSCAPE ARCHITECTS

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

L204
IRRIGATION DETAILS

L-9

Water Efficient Landscape Worksheet

City of Long Beach, California

Irrigation System 'A'

Maximum Applied Water Allowance

Total MAWA = (ETo × 0.62 × LA × IF × 0.62) + (ETo × LA × SLA × IF × 0.62) = Gallons per Year for LA-SLA

Where:

MAWA = Maximum Applied Water Allowance (gallons per year)

ETo = Reference Evapotranspiration (inches per month)

0.62 = IF Adjustment Factor (IFAF) for Commercial Site

LA = CI Adjustment Factor (IFAF) for Special Landscape Area

LA = Landscape Area (square feet)

0.62 = Conversion factor (to gallons per square foot)

SLA = Special Landscape Area (square feet)

Billing Unit = 1 Hundred Cubic foot (HCF) or 748 gallons

MAWA Calculations

	ETo		SLA or SLA (SF)		Conversion		MAWA (Gallons per Year)
MAWA for LA =	44.70	x	0.45	x	0.62	=	123,423
MAWA for SLA =	44.70	x	1.00	x	0.62	=	1,244,100
			Total Area (SF) =	195,616	Total MAWA =		1,367,523 Gal/Yr.
						=	1,828 Billing units

Estimated Total Water Use — Irrigation System 'A'

LA = Landscape Coefficient (Plant Factor)

LA = Landscape Area (square feet)

0.62 = Conversion factor (gallons/ square foot)

IE = Irrigation Efficiency = MLE x DU

MLE = Irrigation Management Efficiency (75%)

DU = Distribution Uniformity of Irrigation head

ETAF = IE x LA (IF) Adjustment Factor

ETAWU Calculations (ETo × IE × LA (IF) × 0.62 = Gallons per Year)

	ETo		IE		LA		Conversion		Allowed (Gallons per Year)
SLA / Special Landscape Area - Standard of Turf	44.70	x			75,000	x	0.62	=	2,233,500

(ETAF)

	ETo		IE		LA		Conversion		IE		Allowed (Gallons per Year)
I-3 Low Water Usage Shrubs	44.70	x	0.50	x	11,000	x	0.62	x	0.81	=	75,000
I-3 Low Water Usage Trees (Bio)	44.70	x	0.50	x	1,200	x	0.62	x	0.81	=	8,000
Total ETAWU =					88,200						2,308,500 Gallons per year
										Total ETAWU =	3,077 Billing units

Summary

The ETAWU (2,308,500 gallons per year) is less than the MAWA (1,367,523 gallons per year). (59.2%)

The property's Landscape Estimated Total Water Use complies with the City of Long Beach Water Efficient Landscape Ordinance

Hours are assigned to 1.0 per tree and are allocated in addition to the overall MAWA landscape area of coverage

Irrigation Input Errors	Average Precipitation Rate	Distribution Uniformity of Irrigation Head
Bubbler	0.34" /hr.	0.00
Water Rotors and Spray Jetters	0.60" /hr.	0.00
Drip Emitters	1.00" /hr.	0.00
Sub Surface Drip Schedule	1.0" /hr.	0.00

ETAF Calculations

Regular Landscape Areas	
Total ETAF x Area	2,045.73
Total Area	88,000.00
Average ETAF	0.55
All Landscape Areas	
Total ETAF x Area	2,045.73
Total Area	88,000.00
Average ETAF	0.55

Hydrozone Information Table - System 'A'

Valve #	Hydrozone	Irrigation Method	Gallons per Minute
A1	H - High	Overhead Irrigation	30
A2	H - High	Overhead Irrigation	34
A3	L - Low	Sub Surface (Bubbler)	20
A4	H - High	Overhead Irrigation	36
A5	H - High	Overhead Irrigation	17
A6	H - High	Overhead Irrigation	27
A7	H - High	Overhead Irrigation	34
A8	H - High	Overhead Irrigation	33
A9	H - High	Overhead Irrigation	45
A10	L - Low	Drip Irrigation	24
A11	H - High	Overhead Irrigation	22
A12	H - High	Overhead Irrigation	30
A13	H - High	Overhead Irrigation	36
A14	L - Low	Sub Surface (Bubbler)	21
A15	H - High	Overhead Irrigation	33
A16	H - High	Overhead Irrigation	13
A17	H - High	Overhead Irrigation	36
A18	H - High	Overhead Irrigation	40
A19	H - High	Overhead Irrigation	13
A20	L - Low	Drip Irrigation	22
A21	L - Low	Drip Irrigation	20
A22	L - Low	Drip Irrigation	18
A23	H - High	Overhead Irrigation	30
A24	H - High	Overhead Irrigation	21
A25	H - High	Overhead Irrigation	28

Spring — Camp Shiwaka - DeForest Park — Water meter Number A — Irrigation System A — Jimmy Contreras JDCLA — Recommend / Position P — Date Prepared 09/04/01

Evapotranspiration Rates

Monthly Average ETo	44.70 in / Year	High Water Use	0.7 - 1.0
Equivalent ETo in Minutes	5.00 in / Equivalent	Moderate Water Use	0.4 - 0.6
Average Hourly ETo	0.05 in / Minute	Low Water Use	0.2 - 0.3
		Very Low Water Use	0 - 0.1

Plant Factors (% of ETo) — Irrigation Efficiency (%): Overhead Irrigation Systems 0.75 (75%)

Valve #	Hydrozone	Plant Factor	Precip Rate	Emitter Type Efficiency	Gallons per Minute	Gallons per Minute	Gallons per Minute	Cycle Time	Gallons per Cycle
A1	30	0.60	0.60	0.75	10	0.60	60	5	1,215
A2	34	0.60	0.60	0.75	10	0.60	60	5	1,377
A3	20	0.30	1.00	0.81	4	0.11	5	1	91
A4	36	0.60	0.60	0.75	10	0.60	60	5	1,458
A5	17	0.60	0.60	0.75	10	0.60	60	5	688
A6	27	0.60	0.60	0.75	6	0.60	37	5	660
A7	34	0.60	0.60	0.75	10	0.60	60	5	1,458
A8	33	0.60	0.60	0.75	10	0.60	60	5	1,337
A9	45	0.60	0.60	0.75	10	0.60	60	5	1,215
A10	24	0.30	0.74	0.81	6	0.11	5	1	291
A11	22	0.60	0.60	0.75	6	0.60	37	5	891
A12	30	0.60	0.60	0.75	6	0.60	37	5	1,188
A13	36	0.60	0.60	0.75	6	0.60	37	5	1,485
A14	21	0.30	1.00	0.81	4	0.11	5	1	191
A15	33	0.60	0.60	0.75	6	0.60	37	5	1,336
A16	13	0.60	0.60	0.75	10	0.60	60	5	541
A17	36	0.60	0.60	0.75	6	0.60	37	5	1,485
A18	40	0.60	0.60	0.75	6	0.60	37	5	1,650
A19	13	0.60	0.60	0.75	10	0.60	60	5	540
A20	22	0.30	0.74	0.81	4	0.11	5	1	364
A21	20	0.30	0.74	0.81	4	0.11	5	1	165
A22	18	0.30	0.74	0.81	4	0.11	5	1	167
A23	30	0.60	0.60	0.75	6	0.60	37	5	1,188
A24	21	0.60	0.60	0.75	6	0.60	37	5	832
A25	28	0.60	0.60	0.75	10	0.60	60	5	1,361

Run Time Totals

0.72	Minutes / Week
14.33	Hours / Month
3	Days / Week
4.84	Minutes / Day

Water Use Totals

35,000	Gal / Mo	0.0700	Acre / Mo
420,000	Gal / Yrs	0.8604	Acre / Yr
338,117	Gal / Year	1.0000	Acre / Year
0.262	Gal / Day	0.0007	Acre / Day

Spring — Camp Shiwaka - DeForest Park — Water meter Number A — Irrigation System A — Jimmy Contreras JDCLA — Recommend / Position P — Date Prepared 09/04/01

Evapotranspiration Rates

Monthly Average ETo	44.70 in / Year	High Water Use	0.7 - 1.0
Equivalent ETo in Minutes	10.00 in / Equivalent	Moderate Water Use	0.4 - 0.6
Average Hourly ETo	0.05 in / Minute	Low Water Use	0.2 - 0.3
		Very Low Water Use	0 - 0.1

Plant Factors (% of ETo) — Irrigation Efficiency (%): Overhead Irrigation Systems 0.75 (75%)

Valve #	Hydrozone	Plant Factor	Precip Rate	Emitter Type Efficiency	Gallons per Minute	Gallons per Minute	Gallons per Minute	Cycle Time	Gallons per Cycle
A1	30	0.60	0.60	0.75	10	1.00	100	11	1,790
A2	34	0.60	0.60	0.75	10	1.00	100	11	2,004
A3	20	0.30	1.00	0.81	4	0.34	10	2	198
A4	36	0.60	0.60	0.75	10	1.00	100	11	2,141
A5	17	0.60	0.60	0.75	10	1.00	100	11	1,018
A6	27	0.60	0.60	0.75	8	1.00	75	11	2,136
A7	34	0.60	0.60	0.75	10	1.00	100	11	1,887
A8	33	0.60	0.60	0.75	10	1.00	100	11	1,479
A9	45	0.60	0.60	0.75	10	1.00	100	11	1,744
A10	24	[illegible]	0.74	0.81	8	0.34	20	3	404
A11	22	[illegible]	[illegible]	[illegible]	8	[illegible]	[illegible]	[illegible]	[illegible]
A12	30	0.60	0.60	0.75	8	1.00	75	11	2,373
A13	36	0.60	0.60	0.75	8	1.00	75	11	2,668
A14	21	0.30	1.00	0.81	4	0.34	10	2	396
A15	33	0.60	0.60	0.75	8	1.00	75	11	1,990
A16	13	0.60	0.60	0.75	10	1.00	100	11	1,371
A17	36	0.60	0.60	0.75	8	1.00	75	11	2,668
A18	40	0.60	0.60	0.75	8	1.00	75	11	2,963
A19	13	0.60	0.60	0.75	10	1.00	100	11	1,361
A20	22	0.30	0.74	0.81	8	0.34	20	3	436
A21	20	0.30	0.74	0.81	8	0.34	20	2	366
A22	18	0.30	0.74	0.81	8	0.34	20	2	366
A23	30	0.60	0.60	0.75	8	1.00	75	11	2,373
A24	21	0.60	0.60	0.75	8	1.00	75	11	1,677
A25	28	0.60	0.60	0.75	10	1.00	100	11	2,042

Run Time Totals

1.00	Minutes / Week
21.00	Hours / Month
5	Days / Week
12.00	Minutes / Day

Water Use Totals

53,000	Gal / Mo	0.1628	Acre / Mo
636,000	Gal / Yrs	1.9538	Acre / Yr
847,291	Gal / Year	2.6000	Acre / Year
17,010	Gal / Day	0.0522	Acre / Day

Summer — Camp Shiwaka - DeForest Park — Water meter Number A — Irrigation System A — Jimmy Contreras JDCLA — Recommend / Position P — Date Prepared 09/04/01

Evapotranspiration Rates

Monthly Average ETo	44.70 in / Year	High Water Use	0.7 - 1.0
Equivalent ETo in Minutes	10.00 in / Equivalent	Moderate Water Use	0.4 - 0.6
Average Hourly ETo	0.05 in / Minute	Low Water Use	0.2 - 0.3
		Very Low Water Use	0 - 0.1

Plant Factors (% of ETo) — Irrigation Efficiency (%): Overhead Irrigation Systems 0.75 (75%)

Valve #	Hydrozone	Plant Factor	Precip Rate	Emitter Type Efficiency	Gallons per Minute	Gallons per Minute	Gallons per Minute	Cycle Time	Gallons per Cycle
A1	30	0.60	0.60	0.75	10	1.00	100	13	2,000
A2	34	0.60	0.60	0.75	10	1.00	100	13	2,238
A3	20	0.30	1.00	0.81	4	0.34	10	2	248
A4	36	0.60	0.60	0.75	10	1.00	100	13	2,391
A5	17	0.60	0.60	0.75	10	1.00	100	13	1,138
A6	27	0.60	0.60	0.75	8	1.00	75	13	2,386
A7	34	0.60	0.60	0.75	10	1.00	100	13	2,108
A8	33	0.60	0.60	0.75	10	1.00	100	13	1,652
A9	45	0.60	0.60	0.75	10	1.00	100	13	1,948
A10	24	0.30	0.74	0.81	8	0.34	20	3	453
A11	22	0.60	0.60	0.75	8	1.00	75	13	2,650
A12	30	0.60	0.60	0.75	8	1.00	75	13	2,650
A13	36	0.60	0.60	0.75	8	1.00	75	13	2,980
A14	21	0.30	1.00	0.81	4	0.34	10	2	443
A15	33	0.60	0.60	0.75	8	1.00	75	13	2,223
A16	13	0.60	0.60	0.75	10	1.00	100	13	1,533
A17	36	0.60	0.60	0.75	8	1.00	75	13	2,980
A18	40	0.60	0.60	0.75	8	1.00	75	13	3,311
A19	13	0.60	0.60	0.75	10	1.00	100	13	1,521
A20	22	0.30	0.74	0.81	8	0.34	20	3	488
A21	20	0.30	0.74	0.81	8	0.34	20	2	366
A22	18	0.30	0.74	0.81	8	0.34	20	2	366
A23	30	0.60	0.60	0.75	8	1.00	75	13	2,650
A24	21	0.60	0.60	0.75	8	1.00	75	13	1,873
A25	28	0.60	0.60	0.75	10	1.00	100	13	2,282

Run Time Totals

1.00	Minutes / Week
21.00	Hours / Month
5	Days / Week
12.00	Minutes / Day

Water Use Totals

59,200	Gal / Mo	0.1818	Acre / Mo
710,400	Gal / Yrs	2.1816	Acre / Yr
946,176	Gal / Year	2.9000	Acre / Year
19,008	Gal / Day	0.0583	Acre / Day

Pressure Loss Calculations

Water Meter ID	A	Current Flow (GPM)	46		
Water Meter Size	2"	SCV GPM Demand	46		
W.M. Elevation		SCV Elevation			
Design Pressure	45	SCV Pressure	58		
Static Pressure	75	SCV Size	1.5"		

	Item	Description	psi	Loss
	2"	Water Service Line	3	0.1
	2"	Water Meter	3	0.1
	2"	Backflow Preventer	5	14.0
		Gate Valve	0	
	2"	100 feet of Irrigation Stepped	5	8.4
	1.5"	Electric Control Valve	6	0.5
			7	
			8	
			9	
			9	
	Total Across Primary Line (Item 1-9)		10	14.7
	Pressure Required at Remote Point		11	45.0
	Total Pressure Required (10+11)		12	61.7
	Static Water Pressure		13	75.0
	Surplus Pressure		14	13.3

IRRIGATION CONTROLLER NOTES:

IRRIGATION CONTROLLERS SYSTEM OVERVIEW

THE EXISTING IRRIGATION CONTROLLER SHALL BE REMOVED AND REPLACED WITH A NEW "SMART" IRRIGATION CONTROLLER AS PART OF A SEPARATE PARK UPDATE/UPGRADE PROJECT

COORDINATE WITH CITY OF LONG BEACH DEPARTMENT OF PUBLIC WORKS AND DEPARTMENT OF PARK REC. AND MARINE. PRM CONTACT KELLY PARKINS - PARK SUPERINTENDENT (562) 570-4885

COORDINATE WITH CALSENSE. CALSENSE CONTACT MARK HUNTZINGER - TECHNICAL SALES (760) 580-1827

THE "SMART" WEATHER-BASED IRRIGATION CONTROLLER SYSTEM IS THE CAL-SENSE CS3000 MODULAR CONTROLLER WITH REAL TIME FLOW MONITORING, TWO-WIRE/DECODER SYSTEM, AND A WIRED WEATHER SENSOR.

PROVIDE NEW TWO-WIRE TWO-STATION DECODERS AT EVERY OTHER VALVE BOX (MOUNTED) MODELS CS-2W-2ST: 2-STATION DECODER - USE 2-WIRE CABLE THAT IS 14-GAUGE SOLID COPPER AND JACKETED - NO SPLICES BETWEEN DECODER AND CONTROLLER SHALL BE PERMITTED.

IRRIGATION CONTROLLER COORDINATION NOTES

FINAL HOOK-UP OF THE TWO-WIRE CABLE FROM THE CONTROLLER TO THE VALVES SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. THE CONTROLLER ENCLOSURE ASSEMBLY IS EXISTING WITH EXISTING WIRES RUN TO THE CAMPFIRE PROJECT AREA. CONTACT LONG BEACH PARK RECREATION AND MARINE TO ARRANGE A SITE MEETING TO LOCATE EXISTING WIRE LOCATIONS AND REVIEW CONNECTIONS TO THE EXISTING CONTROLLER. COORDINATE THE VARIOUS CABLE ROUTINGS AND CONNECTIONS FROM THE DECODERS TO THE CONTROL VALVES. PROVIDE GROUND RODS PER MANUFACTURERS RECOMMENDATIONS AND DETAIL 4, SHEET L-9.

COORDINATE NEW WIRE SLEEVES FOR ANY FLOW CONTROL OR COMMON WIRES BEING RUN UNDER PAVING (ASPHALT, CONCRETE, ETC.) WITH GENERAL CONTRACTOR.

COORDINATE ANY NEW WIRES TO THE EXISTING CONTROLLER IF ADDITIONAL CONTROL/COMMON WIRES ARE NEEDED.

IRRIGATION CONTROLLER NOTE - SYSTEM 'A'

ONE EXISTING CAL-SENSE AUTOMATIC CONTROLLER 'A' MOUNTED WITHIN AN STAINLESS STEEL SECURITY CABINET (PEDESTAL MOUNTED). PROVIDE MODELS CS-2W-2ST DECODERS (1 PER 2 IRRIGATION CONTROL VALVES ASSIGNED TO EXISTING CONTROLLER)

CONTROLLER 'A' - CONNECT ALL TWENTY-FIVE (25) VALVES TO EXISTING CONTROLLER - USE 2 WIRE CABLE / DECODER SYSTEM TO ASSIGN STATIONS TO CONTROLLER

JDC Landscape Architects

Camp Shiwaka
At DeForest Park
6255 DeForest ave
long beach, ca 90805

1204

IRRIGATION CALCULATIONS AND CONTROLLER NOTES

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IRRIGATION SPECIFICATIONS

I. SCOPE OF WORK

The Contractor shall provide all labor, tools, machinery and processes necessary to install a complete irrigation system as shown on the drawings and/or specified herein. Work included in the Irrigation contract shall be a 100% coverage system by total landscape manager.

II. GENERAL REQUIREMENTS

A. VERIFICATION OF DRAWINGS: All noted dimensions are approximated. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions. Spacing of irrigation heads, placement of valves and backflow prevention ASSEMBLY PLAN shall be as indicated on the drawings. Any deviation from the plans must have the approval of the Owner's Representative.

B. VERIFICATION OF FINISH GRADE: The Contractor must adjust the site and check all finish grades after the work has to ensure the proper and coverage as specified of the irrigation system plans.

C. WATER SUPPLY: The Contractor shall verify and be familiar with the location of water supply in the irrigation system as indicated on the drawings.

D. PERMITS AND FEES: The Contractor shall verify and pay for all necessary permits required in the performance of the work as required by the governing bodies.

E. CARE OF EXISTING BUILDINGS AND SITES: The Contractor shall be held responsible for the care and preservation of all existing buildings and structures on the property and adjacent properties and contiguous property. Any part of these properties damaged, destroyed or removed because of the work shall be repaired, replaced or cleared by the Contractor at his expense.

F. REVISIONS OF DRAWINGS: It is the Contractor's responsibility to cross-compare drawings and note any areas or features requiring additional heads or valves and required pipe to operating a unit. If no changes are submitted, the Contractor is responsible for full coverage of equipment as necessary at the Contractor's expense.

G. REMOVING OBSTRUCTIONS: All trees, removed and other fixed, valve and equipment, excepting of signing or any portion of the work and having interfered into and there part of these specifications, and that provisions shall be noted and by the Irrigation Contractor.

H. DIMENSIONS OF DRAWINGS: The design is diagrammatic. All pipe, valves, etc. shown within curved areas are for graph illustrations only and shall be installed in physical areas where possible. Owner cannot the location permitting a true, true, straight or straight lines.

I. INSTALLATION: All irrigation materials shall be installed in accordance with the manufacturer and specifications and with the local respective requirements. All optional deviations therefore beyond the limits specified herein shall be approved by the authorized Owner's Representative. Such installations provisions shall be indicated only if the direction of the irrigation drawings and specifications do not thoroughly and completely cover the methods of installation in the indicated. Install all equipment and materials as shown per design.

J. SITE PROBLEMS: The Irrigation Contractor shall not exclude should the irrigation system as indicated on the drawings show it to interfere in the field but there are common obstructions, grade differences, and/or discrepancies in the area drawings and field conditions are brought to the attention of the Owner's Representative.

III. MATERIALS

Irrigation materials and equipment shall be of type, size and location as noted and indicated on the drawings. Unless permission to change is granted from the Owner's Representative materials are to be new and in perfect condition. No deviations from the specifications shall be allowed. The decision of the Owner's Representative shall be final in determination of the quality of materials.

IV. INSTALLATION

A. EXCAVATION

1. The Contractor shall verify locations of all existing subsurface utilities (underground and overhead) prior to excavation. Any utilities, D.C. piping, concrete work, plant material, etc., damaged or damaged by any work under this contract shall be repaired or replaced at the Contractor's expense.

2. Trenches for pipe shall be cut to required grade line at a true gradient to provide uniform support for the length of the pipe.

3. Depth of trenches shall be sufficient to provide a minimum cover above the top of the pipe as noted on the drawings.

B. REMOVE PIPE

1. The Contractor is responsible to be familiar with the methods of connecting, joining and installing the various types of pipes as noted. He will adhere to local ordinances with the manufacturer's recommended procedures.

2. PVC pipe shall not be threaded and all transition from PVC to metal piping shall be by PVC male threaded adapter fittings.

C. BACKFLOW PREVENTER: The backflow prevention device specified herein shall be certified with local plumbing and health codes. In the event of any conflict in the model or the prescribed methods, the Owner's Representative shall be notified PRIOR TO ANY INSTALLATION.

D. VALVES

1. All main lines and lateral lines which have direct pump under pressure of the system shall be rated and pressure tested at [illegible].

2. Pressure shall be maintained in the line for one hour for [illegible]. If there should be any loss shall be repaired and the test repeated until the entire system is satisfied.

3. Test shall be witnessed and approved by the Owner's Representative prior to backfill.

4. When the irrigation system has been completed and power planning has begun, the [illegible] in the presence of the Owner's Representative shall test the coverage of water attached to the line and starting area to monitor and adjustment. The Contractor shall locate all repairs and perform of work required to [illegible] any interpretation of coverage.

5. The Contractor shall advise the Owner's Representative of any discrepancy [illegible] pipe required to which planting work, or why [illegible] may have a effect on present coverage.

E. IRRIGATION HEAD INSTALLATION

1. Shrub and ground cover spray heads adjacent to walks or curbs shall be installed 4" away from the walk or curb and the heads shall be spaced evenly as indicated on the drawings.

2. Shrub spray heads adjacent to building, fences, or similar structures shall be installed 6" away from the structure and the nozzle shall be 1" minimum above finish grade. Shrub spray heads not near paving structures shall be set 6" above finish grade.

3. All irrigation heads are to have double swing joints as detailed.

4. Install all irrigation heads per details.

F. IRRIGATION HEAD ADJUSTMENTS

The Irrigation Contractor shall flush and adjust all irrigation heads for uniform performance and to prevent overspray onto walks and buildings as much as possible. This shall include adjusting the head degree of arc to fit exactly the adjacent, that also includes using the appropriate nozzle attachment equipment.

G. CLEANUP OF UNINSPECTED WORK

The Contractor shall not allow or cause any of his work to be covered or backfilled until it has been inspected, tested and approved by the authorized Owner's Representative. Should any of his work be covered or backfilled before such inspection and test, he shall uncover the work at his own expense, and after it has been inspected, tested and approved, he shall make all repairs with the materials necessary to replace all his work and leave all other Contractors as in original condition.

H. BACKFILLING

1. Backfill shall not be placed until the complete system system has been inspected and approved by the Owner's Representative.

2. Trenches shall be backfilled with a minimum of 6" of fine granular material to protect the pipe from the shock of stones. The remaining remainder fill can be done on locally. The Contractor must not place downspout material in excess of the top 6" of backfill.

3. If settlement occurs and adjustments or pipe return irrigation heads, or any other irrigation device necessary by doing the system to proper working order. The Contractor shall, as a part of his work under this contract make the necessary adjustments without extra cost to the Owner.

I. IMPORTED CONTROLLER AND VALVES

1. A 120 volt electrical power outlet in the controller shall be provided by others. Otherwise the Landscape Contractor has not included the electrical connection in the scope of work. The Irrigation Contractor shall be responsible for making the hookup from the outlet to the controller.

2. All wire from the controller to remote control valves shall be solid copper U.F. 2-wire AWG and direct burial type wire for economy. Use the lower economy direct for direct burial and not for direct burial. Connect wire to control valve. Install a moisture sensor with each pipe where possible. Type control wire at 18 G.A. in main line pipe. Provide minimum 18" coverage.

3. Wire connections shall be made with "Scotch-Lok" wire connector making sure PRIOR to Remove "Re-entry" with control DO NOT or improved result.

4. There shall be a control wire from each control valve running to the controller and each control valve shall be connected to the individual jumper wire.

5. All electrical work shall comply with the applicable codes.

6. Install all valves per details, and manufacturer recommendations.

VERIFYING SENSOR INSTALLATION of Contractor

1. Installation and wiring are to be done by the Contractor in accordance with installation and operating instructions contained with the Contractor review and delivered with Owner through installation.

2. The Contractor shall install 2-AWG-18 wire on longest wire from the controller to the sensor across normal distance, locations shown on drawings. Provide additional 18 equipment lead in each station for field testing of sensors. All sensors are to be wired in parallel wire wire color code shading.

3. Install 3" adjustable sensor clip, 10-32-NC-2B threaded for Sensor given upon the, 24C-24-1 Fittings or approved equal shall be complete or complete.

4. All wiring connections or splice locations shall be waterproof.

5. Give control and all to performance to properly prepare and process the electrical control. The control and wiring and all general operating instructions are to be turned to the Owner by the Contractor at final completion.

6. Remove Lamar operating and service instruction and operation manual is to be placed in the controller.

7. Provide shop and operational schematics to complete Sensor System Installation and Operation Instructions, as to be provided by the Specified Manufacturer.

8. Installation must be inspected and accepted by the Manufacturer's Representative.

V. DRAWINGS OF RECORD AS-BUILTS

A. GENERAL

The Contractor shall process and keep up to date a description with the method a complete set of record "as-built" blue line prints which shall be corrected daily and show every change from the original drawings and specifications and the exact "as-built" locations, sizes and depth of equipment. Prints for this purpose may be obtained from the Owner. The set of drawings shall be kept on the site and shall be used only as a record set. These drawings shall also show all which progress weekly and the Contractor shall make such legible notations thereon daily as the work proceeds showing the work as actually installed. Record drawings shall be available at the Owner for inspection and shall be kept in a location designated by the Owner's Representative.

B. REQUIRED NOTATIONS

1. The Contractor shall determine from use all permanent points of reference building corners, sidewalks, or road intersections etc. The Contractor of the following items:

a. Gate valves
b. The routing of the irrigation main lines
c. Connections to the existing water lines
d. Irrigation control valves
e. Quick Coupling valves
f. Controller/Sensor locations
g. Water valve to Pump

2. The drawing shall show approved substitutions of same materials, and manufacturer's name and catalog number.

C. DELIVERY OF DRAWINGS OF RECORD

Six or before the date of final inspection the Contractor shall deliver the corrected and complete drawings to the Owner's Representative. Delivery of drawings will not relieve the Contractor of the responsibility of preparing complete information that may be omitted from the prints.

D. CONTROLLER CHARTS

1. Actual Drawings shall be reviewed and approved by the Owner's Representative prior to preparing controller charts.

2. Process one controller chart for each controller supplied.

3. This chart shall be a reduced drawing of the actual control system, using a different color to indicate the area of coverage for each station.

4. When the chart is completed and approved by the Owner's Representative it shall be laminated and placed in the controller box.

VI. CLEANUP

A. DAILY AND PERIODICALLY: After installation operations have been completed remove all trash, excess and soil spilled from property. All paved, walk or other surfaces in the area covered by the work shall be repaired and the ground left in a neat and orderly condition throughout the site. The Contractor must pick up all trash resulting from his work no later than each Friday before leaving the site, over a week under the field working due of work week. All trash shall be removed completely from the site.

VII. GUARANTEE

A. SCOPE: The entire irrigation system shall be guaranteed by the Contractor as to materials and workmanship including settling of backfill areas before proof for a period of one (1) year following the date of final acceptance of the work. If within (30 d) days from date of completion, setting repairs, and adjustments or valve, valves, and irrigation heads and irrigation stations to develop a functioning in using the system, but or failing to the proper depth of the permanent grades, the Contractor, as part of his work under this contract shall make all adjustments without extra cost to the Owner including the complete replacement of all damaged planting, paving or other improvements of any kind.

B. RESPONSIBILITY: Should any operational difficulties in connection with the irrigation system within the specified guarantee period which in the opinion of the Owner's Representative due to inferior material and/or workmanship and difficulties shall be immediately repaired by the Contractor to the satisfaction of the Owner's Representative at no additional cost to the Owner including any and all other damages caused by such failure.

C. INSTRUCTIONS: After the irrigation system has been completed and the maintenance made the Contractor shall instruct the Owner or the representative in the operation and maintenance of the system.

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IRRIGATION SPECIFICATIONS

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