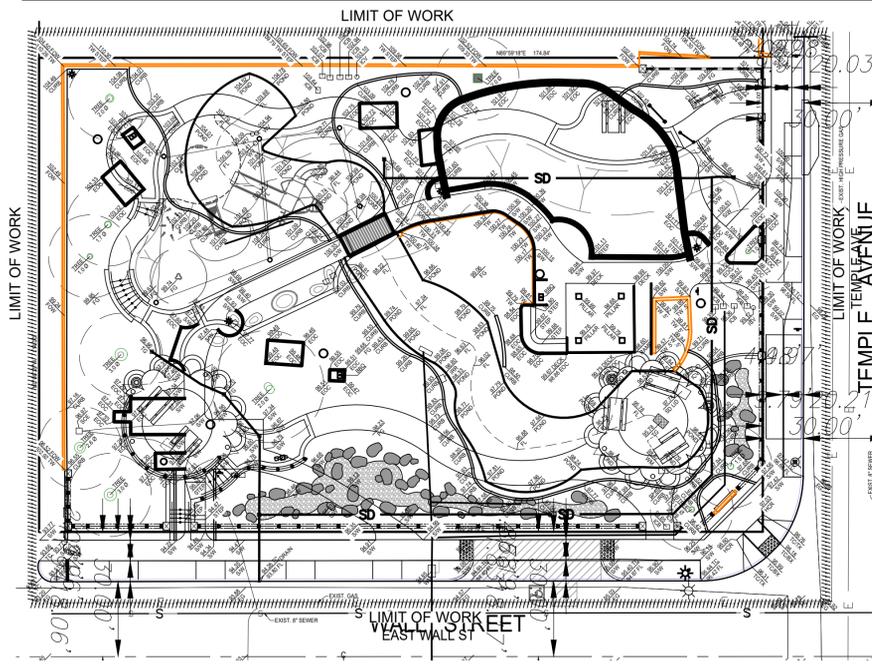
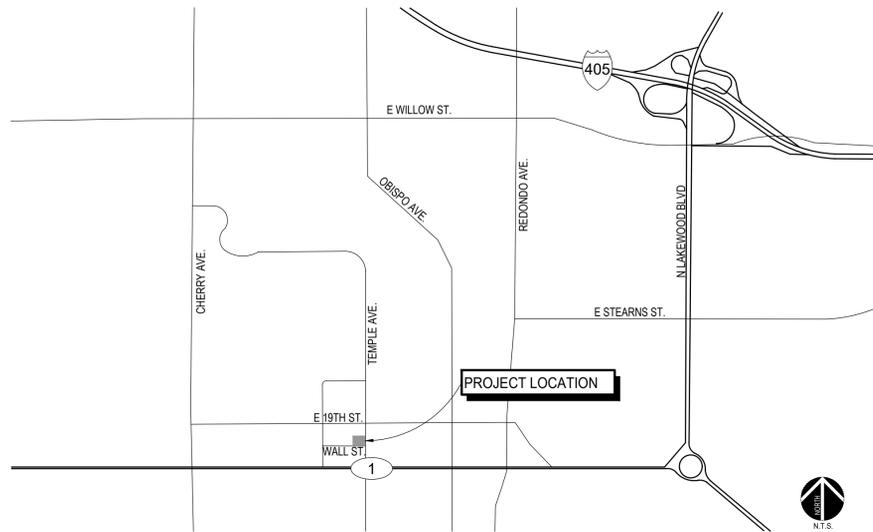


SHEET KEY MAP:



VICINITY MAP:



**BENCHMARK NO. 67: ADJ. DATE 1985
ELEVATION M.S.L. 79.497**

CITY OF SIGNAL HILL
LOCATION: WILLOW STREET EAST OF TEMPLE AVE. +
DESCRIPTION: N/SIDE WILLOW ST. L&T'1' N/O S/END OF
CONCRETE BASE OF CHAIN LINK FENCE, W/SIDE OFF
3001 E. WILLOW ST. (E/FENCE OF C.L.B. SVC. YARD)
90' +/- N/O C.L. OF WILLOW ST. C.L.B. NO. 1019



CONSTRUCTION PLANS FOR THE HILLBROOK PARK RENOVATION PROJECT

1865 TEMPLE AVE. SIGNAL HILL CA. 90755

CITY OF SIGNAL HILL

CITY:

CITY OF SIGNAL HILL
2175 CHERRY AVE. SIGNAL HILL,
CALIFORNIA, 90755
TEL: (562) 989-7361
CONTACT: PATRICK KELLEY

LANDSCAPE ARCHITECT:

ARCHITERRA DESIGN GROUP
10221-A TRADEMARK STREET
RANCHO CUCAMONGA,
CALIFORNIA, 91730
TEL: (909) 484-2800
CONTACT: ANDREW KRUMWIEDE

CIVIL ENGINEER:

MADOLE & ASSOCIATES
9302 PITTSBURGH AVENUE
RANCHO CUCAMONGA,
CALIFORNIA, 91730
TEL: (909) 481-6322
CONTACT: MARK BERTONE

ELECTRICAL ENGINEER:

JCA ENGINEERING
8048 PALM AVENUE
HIGHLAND, CALIFORNIA, 92346
TEL: (909) 864-0223
CONTACT: JAMES CORNS

ABBREVIATIONS:

A.B. ANCHOR BOLT	G.I. GALVANIZED IRON	S.F. SQUARE FOOT
A.C. ASPHALTIC CONCRETE	G.P.H. GALLONS PER HOUR	SHT. SHEET
ADJ. ADJACENT	G.P.M. GALLONS PER MINUTE	SHT. MTL. SHEET METAL
ALT. ALTERNATE	H.B. HOSE BIB	SIM. SIMILAR
ARCH. ARCHITECT	HDR. BRD. HEADER BOARD	S.L. SCORE LINE
AUTO. AUTOMATIC	H.H. HANDHOLE	SMTH. SMOOTH
BLDG. BUILDING	HORIZ. HORIZONTAL	SPECS. SPECIFICATIONS
BLK. BLACK	H.P. HIGH POINT	SPP. SPECIES
B.M. BENCH MARK	HGT. HEIGHT	SQ. SQUARE
B.S. BOTTOM OF STEPS	I.D. INSIDE DIAMETER	S.S. SANITARY SEWER
C.B. CATCH BASIN	I.C.B. IRRIGATION CONTROL BOX	STA. STATION
C.F. CUBIC FOOT	INV. INVERT	STL. STEEL
C.I. CAST IRON	INT. INTEGRAL	STD. STANDARD
C.I.P. CAST IN PLACE	J. BOX JUNCTION BOX	T.A.D. TOP AREA OF DRAIN
C.J. COLD JOINT	JTS. JOINTS	T. & B. TOP AND BOTTOM
C.L. CENTER LINE	L.A. LANDSCAPE ARCHITECT	T.B. TOP OF BERM
CLR. CLEARANCE	LIC. LICENSED	T.C. TOP OF CURB
C.O. CLEAN OUT	L.P. LOW POINT	TEX. TEXTURE(D)
C.M.U. CONCRETE MASONRY UNIT	MAX. MAXIMUM	T.G. TOP OF GRATE
COMP. COMPACTED	M.B. MACHINE BOLT	T.G.D. TOP OF GRATE DRAIN
CONC. CONCRETE	MECH. MECHANICAL	THK. THICK
COND. CONDITION	MED. MEDIUM	T.P. TOP OF PAVING
CONT. CONTINUOUS	MIN. MINIMUM	T.P.C. TOP OF POOL COPING
CTR. CENTER	M.H. MANHOLE	T.S. TOP OF STEPS
CTR. SINK COUNTER SINK	M.P.R. MATCH PRECIPITATION RATE	T.W. TOP OF WALL
D.D. DECK DRAIN	MULT. MULTIPLE	TWL. TROWEL
D.F. DOUGLAS FIR	NAT. NATURAL	TYP. TYPICAL
D.G. DECOMPOSED GRANITE	N.G. NATURAL GROUND	UV.R. ULTRAVIOLET RADIATION
DIA. DIAMETER	N.T.A. NOT TO SCALE	VERT. VERTICAL
DIM. DIMENSION	O.C. ON CENTER	W/ WITH
DTL. DETAIL	O.D. OUTSIDE DIAMETER	W/O WITHOUT
EA. EACH	O.P.T. OPTIONAL	W.P.C. WATER PRESSURE COMPENSATING
E.J. EXPANSION JOINT	P.A. PLANTER AREA	W.Q. WATER SURFACE
ELEC. ELECTRIC	P.C. POINT OF CURVATURE	(#) NUMBER / QUANTITY
ENG. ENGINEER	P.C.C. POINT OF COMPOUND CURVATURE	
ESP. ESPALIER	P.R.C. POINT OF REVERSE CURVATURE	
EQ. EQUAL	PERF. PERFORATED	
E.W. EACH WAY	P.O.C. POINT OF CONNECTION	
E.W.W.M. ELECTRIC WELDED WIRE MESH	P.L. PROPERTY LINE	
EX. EXISTING	P.S.I. POUNDS PER SQUARE INCH	
EXP. EXPOSED	P.T. PRESSURE TREATED	
F.O.C. FACE OF CURB	P.V.C. POLY VINYL CHLORIDE	
F.O.B. FACE OF BUILDING	R. RADIUS	
F.F.E. FINISHED FLOOR ELEVATION	R.C.P. REINFORCED CONCRETE PIPE	
F.G. FINISH GRADE	REBAR. REINFORCING BAR	
F.H. FIRE HYDRANT	REF. REFERENCE	
FIN. FINISH	REQ'D. REQUIRED	
F.L. FLOW LINE	RET. RETARDANT	
FLT. FLAT	R.GH. ROUGH	
F.S. FINISH SURFACE	R.S. ROUGH SAWN	
FTG. FOOTING	R.S.R. ROUGH SAWN REDWOOD	
FTN. FOUNTAIN	RWD. REDWOOD	
GA. GAUGE	R.W. RECYCLED WATER	
GALV. GALVANIZED	SCH. SCHEDULE	
G.C. GROUND COVER	S.D. STORM DRAIN	

SHEET INDEX:

NO.	SHEET	TITLE
1	L-0.0	TITLE SHEET
2	L-1.00	SURVEY & DEMOLITION PLAN
3	C-1.01	CIVIL GRADING AND DRAINAGE PLAN
4	C-1.02	CIVIL SECTIONS
5	C-1.03	CIVIL DETAILS
6	C-1.04	EROSION CONTROL PLAN
7	L-2.00	CONSTRUCTION LEGEND AND NOTES
8	L-2.01	CONSTRUCTION PLAN
9	L-2.02	TOT LOT ENLARGEMENT PLAN
10	L-2.03	CONSTRUCTION DETAILS 1
11	L-2.04	CONSTRUCTION DETAILS 2
12	L-2.05	CONSTRUCTION DETAILS 3
13	L-2.06	CONSTRUCTION DETAILS 4
14	L-2.07	CONSTRUCTION DETAILS 5
15	L-2.08	CONSTRUCTION DETAILS 6
16	L-2.09	CONSTRUCTION DETAILS 7
17	L-2.10	CONSTRUCTION DETAILS 8
18	L-3.00	IRRIGATION PLAN
19	L-3.01	IRRIGATION DETAILS 1
20	L-3.02	IRRIGATION DETAILS 2
21	L-3.03	IRRIGATION CONTROLLER CHARTS
22	L-4.00	PLANTING LEGEND AND NOTES
23	L-4.01	PLANTING PLAN
24	L-4.02	PLANTING DETAILS
25	L-4.03	AGRONOMICAL SOILS REPORT
26	E-1.0	ELECTRICAL SITE PLAN
27	E-2.0	ELECTRICAL SYMBOL LIST, SINGLE LINE DIAGRAM, LIGHTING FIXTURE SCHEDULE, GENERAL NOTES AND DETAILS
28	E-3.0	SITE LIGHTING PHOTOMETRIC ILLUMINATION PLAN

ABBREVIATION NOTES:

- A. ABBREVIATIONS MAY BE SHOWN AS EITHER UPPERCASE AND/OR LOWERCASE ON PLANS, AND WITH OR WITHOUT PERIODS.
- B. TO SHOW QUANTITIES IN THESE DOCUMENTS THE CONVENTION OF SHOWING THE NUMBER IN PARENTHESIS IS USED. EXAMPLE: "TWO TONS" MAY BE SHOWN AS '(2) TONS'.

APPROVALS:

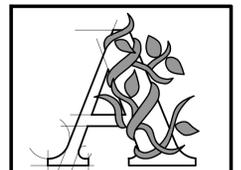
ERRORS AND OMISSIONS:

ARCHITERRA DESIGN GROUP HEREBY CERTIFIES THAT THE DESIGN, DETAILS AND SPECIFICATIONS AS REPRESENTED HEREIN MEET PROFESSIONAL LANDSCAPE ARCHITECTURAL STANDARDS. ARCHITERRA DESIGN GROUP CANNOT GUARANTEE THE QUALITY OF CONSTRUCTION, INSTALLATION OR MAINTENANCE OF IMPROVEMENTS AS DESIGNED AND/OR SPECIFIED HEREIN AND DISCLAIMS ANY FUTURE LIABILITY RESULTING FROM DEVIATIONS. ARCHITERRA DESIGN GROUP IS NOT RESPONSIBLE FOR THE AMOUNT OR FREQUENCY OF IRRIGATION WATER APPLIED TO THE PROJECT DURING CONSTRUCTION OR THEREAFTER.



JOB NUMBER:

2303-04



**ARCHITERRA
DESIGN GROUP**

REVISIONS

REFERENCES

SCALE: AS SHOWN

DATE

PREPARED UNDER THE SUPERVISION OF

R.C.E. NO. EXP

DESIGNED BY

REVIEWED BY

APPROVED CITY ENGINEER

HILLBROOK PARK RENOVATION

TITLE SHEET

CITY OF SIGNAL HILL

SHEET

L-0.0

1 OF 28 SHEETS

PLAN NUMBER

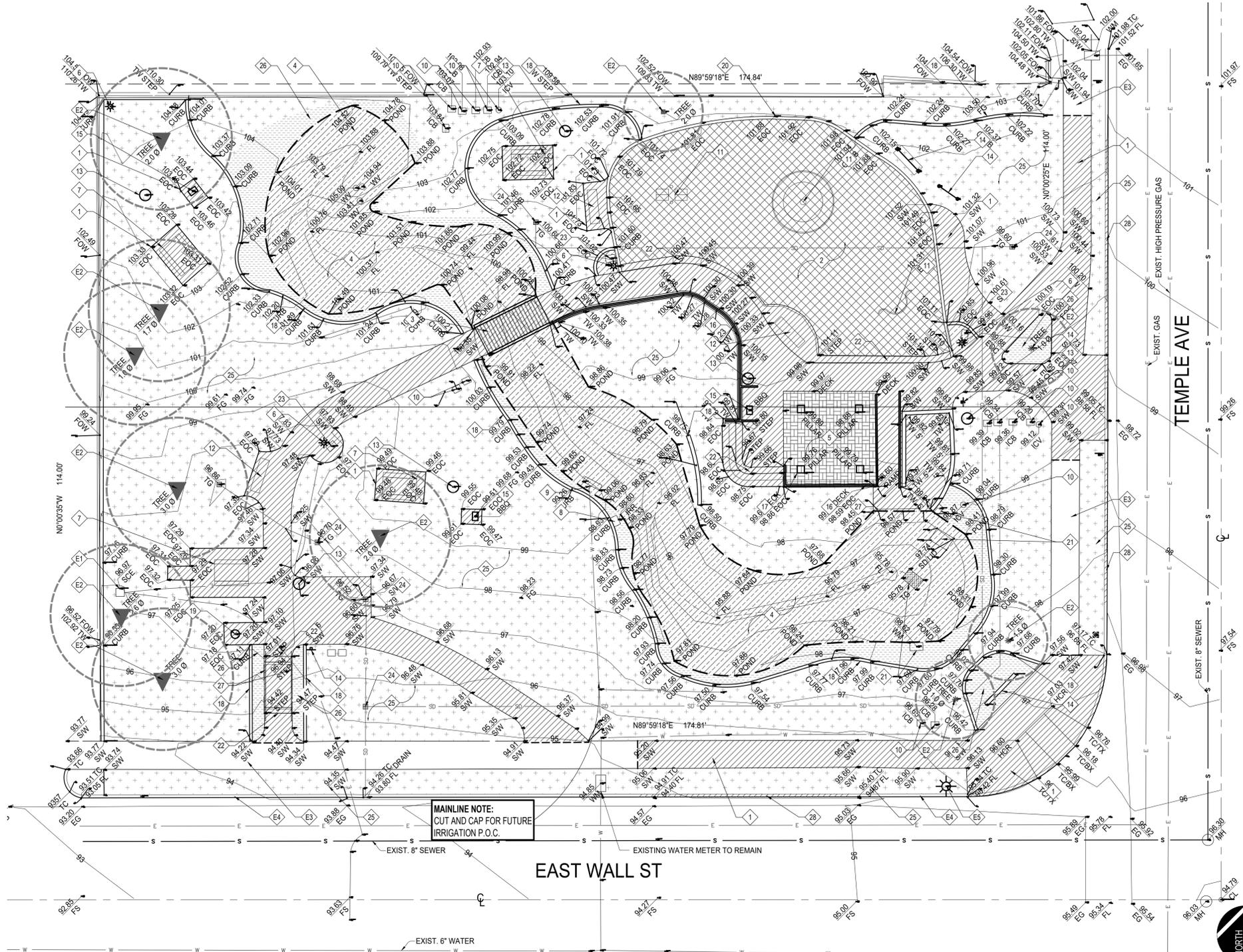
DEMOLITION NOTES:

- CONTRACTOR SHALL REPAIR AT HIS OWN EXPENSE, ANY DAMAGE, WHETHER INSIDE OR OUTSIDE OF THE PROJECT LIMITS, TO UTILITY SYSTEMS, SURFACE PAVEMENTS, FIXTURES, STRUCTURES, OR VEGETATION THAT IS NOT SPECIFICALLY INDICATED TO BE REMOVED AS PART OF THIS DEMOLITION PLAN. ALL DAMAGED ITEMS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO THE OWNER.
- EXCEPT FOR MATERIALS INDICATED TO BE SALVAGED AND RELOCATED ON SITE, ALL CLEARED MATERIALS SHALL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE REMOVED AND DISPOSED OF LEGALLY OFF-SITE. SEPARATE RECYCLABLE MATERIALS PRODUCED DURING SITE CLEARING FROM OTHER NONRECYCLABLE MATERIALS. STORE OR STOCKPILE WITHOUT INTERMIXING WITH OTHER MATERIALS AND TRANSPORT THEM TO RECYCLING FACILITIES.
- THE CONTRACTOR IS TO SUBMIT PHOTOGRAPHS OR VIDEOTAPE, SUFFICIENTLY DETAILED, OF EXISTING CONDITIONS OF TREES AND PLANTINGS, ADJOINING CONSTRUCTION, AND SITE IMPROVEMENTS THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY SITE CLEARING.
- THE CONTRACTOR IS TO SUBMIT RECORD DRAWINGS IDENTIFYING AND ACCURATELY LOCATING CAPPED UTILITIES AND OTHER SUBSURFACE STRUCTURAL, ELECTRICAL, AND MECHANICAL CONDITIONS.
- LOCATE AND CLEARLY FLAG ALL TREES AND VEGETATION TO REMAIN OR BE RELOCATED.
- PROVIDE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT SOIL EROSION AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS.
- THE EXISTENCE AND APPROXIMATE LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY THE AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD AND NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CALL TOLL FREE UNDERGROUND SERVICE ALERT TWO WORKING DAYS PRIOR TO STARTING ANY EXCAVATION WORK.
- REMOVE SLABS, PAVING, CURBS, GUTTERS, AND AGGREGATE BASE AS INDICATED. NEATLY SAW CUT EXISTING PAVEMENT TO REMAIN BEFORE REMOVING EXISTING PAVEMENT. PAINT ENDS OF STEEL REINFORCEMENT IN CONCRETE TO REMAIN TO PREVENT CORROSION.

DEMOLITION LEGEND:

DEMOLITION CALLOUTS:

-  1 REMOVE CONCRETE PAVING.
 -  2 REMOVE RUBBERIZED PLAY SURFACE.
 -  3 REMOVE BRIDGE AND CONCRETE FOOTINGS.
 -  4 REMOVE COBBLE AND BOULDERS. SALVAGE AND REUSE MORTAR FREE COBBLE AND BOULDERS FOR FUTURE INSTALLATION AT PROJECT SITE.
 -  5 REMOVE BRICK PAVING.
 -  6 REMOVE LIGHT POLE, CONCRETE FOOTING, WIRES, CAP ELECTRICAL CONDUIT AND RETURN TO CITY.
 -  7 REMOVE PRECAST CONCRETE PICNIC TABLE AND RETURN TO CITY.
 -  8 REMOVE IRRIGATION CONTROLLER RETURN TO CITY.
 -  9 REMOVE IRRIGATION BACKFLOW AND RETURN TO CITY.
 -  10 REMOVE IRRIGATION VALVES AND RETURN TO CITY. CAP AND ABANDON PIPES
 -  11 REMOVE PLAY EQUIPMENT AND RETURN TO CITY.
 -  12 REMOVE METAL BENCH AND RETURN TO CITY.
 -  13 REMOVE TRASH RECEPTACLE AND RETURN TO CITY.
 -  14 REMOVE PARK SIGN AND CONCRETE FOOTINGS.
 -  15 REMOVE METAL BARBEQUE AND CONCRETE PAD.
 -  16 REMOVE METAL GUARDRAIL.
 -  17 REMOVE OVERHEAD STRUCTURE AND CONCRETE FOOTINGS.
 -  18 REMOVE CONCRETE HEADER.
 -  19 REMOVE WATER FOUNTAIN, CAP SUPPLY AND DRAIN LINES.
 -  20 REMOVE DEEPENED CURB AT PLAY AREA PERIMETER.
 -  21 REMOVE BELOW GRADE FOUNTAIN UTILITY BOX AND ADJACENT FOUNTAIN PIPING.
 -  22 REMOVE CONCRETE STEPS.
 -  23 REMOVE ELECTRICAL UTILITY BOX.
 -  24 REMOVE CATCH BASIN AND STORM WATER PIPE.
 -  25 KILL, REMOVE AND SCALP TURF. SEE TURF REMOVAL NOTES.
 -  26 REMOVE AND GRUB PLANT MATERIAL.
 -  27 REMOVE METAL HANDRAIL.
 -  28 REMOVE CONCRETE CURB.
- EXISTING TO REMAIN:**
-  1 EXISTING ELECTRIC PEDESTAL TO REMAIN, PROTECT IN PLACE.
 -  2 EXISTING TREES TO REMAIN, PROTECT IN PLACE. SEE PROTECTION NOTE.
 -  3 EXISTING CONCRETE SIDE WALK TO REMAIN, PROTECT IN PLACE.
 -  4 EXISTING CONCRETE CURB TO REMAIN, PROTECT IN PLACE.
 -  5 EXISTING STREET LIGHT TO REMAIN, PROTECT IN PLACE.



MAINLINE NOTE:
CUT AND CAP FOR FUTURE IRRIGATION P.O.C.

BENCHMARK NO. 57: ADJ. DATE 1985
ELEVATION M.S.L. 79.497

CLEARING NOTES:

- BEFORE ANY CONSTRUCTION OPERATIONS ARE INITIATED THE INDIVIDUAL TREES TO BE PROTECTED SHALL BE CLEARLY TAGGED. THE ZONES BENEATH THE TREE CANOPY SHALL BE PROTECTED AND ARE NOT TO BE USED FOR VEHICLE ACCESS OR PARKING.
 - SHRUBS AND GROUND COVER PLANTS THAT ARE SCHEDULED FOR REMOVAL SHALL BE REMOVED COMPLETELY AND THOROUGHLY. ALL ROOTS THAT ARE OVER 1/2" IN DIAMETER SHALL BE GRUBBED AND REMOVED TO 18" BELOW GRADE MINIMUM. ALL ROOTS WITHIN THE TOP 6" OF SOIL SURFACE SHALL BE REMOVED. DO NOT DISTURB ROOTS OF TREES SHOWN TO REMAIN.
- EXPOSED ROOTS OF EXISTING TREES TO REMAIN THAT ARE OVER 1" IN DIAMETER SHALL BE INSPECTED BY A CITY-APPROVED ARBORIST TO DETERMINE IF CUTTING IS RECOMMENDED. ANY SUCH INDICATED ROOTS SHALL BE CUT CLEANLY WITH CLEAN SHARP PRUNING TOOLS AND NOT RIPPED, TORN, OR CRUSHED.

PROTECTION NOTES:

- REGARDING THE "SAFE ZONE" FOR EXISTING TREES: BEFORE BEGINNING ANY DEMOLITION OR CONSTRUCTION OPERATIONS, INSTALL A TEMPORARY PLASTIC ORANGE WEB FENCE AROUND ALL EXISTING TREES TO BE PROTECTED IN PLACE. THE FENCE SHALL BE INSTALLED AT A MINIMUM OF 15' AWAY FROM THE TRUNK (OR AS FAR AWAY FROM THE TRUNK AS POSSIBLE). PROTECTION BARRIER SHALL CONSIST OF 3" MINIMUM HIGH PLASTIC WEB FENCING ATTACHED TO #4 REBAR STAKES. ALL CONTRACTORS AND THEIR CREWS SHALL NOT BE ALLOWED INSIDE THIS "SAFE ZONE". NOR SHALL THEY BE ALLOWED TO STORE OR DUMP FOREIGN MATERIALS WITHIN THIS AREA NO WORK OF ANY KIND, INCLUDING TRENCHING, SHALL BE ALLOWED WITHIN THE SAFE ZONE EXCEPT AS DESCRIBED BELOW. THE FENCING SHALL REMAIN AROUND EACH TREE TO BE SAVED UNTIL THE COMPLETION OF CONSTRUCTION OPERATIONS.
- ALL ELEMENTS TO REMAIN AND SHALL BE PROTECTED FROM DAMAGE IN PLACE. ANY ITEMS OR MATERIALS DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN KIND, TO THE SATISFACTION OF THE OWNER.

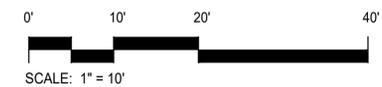
TURF REMOVAL NOTES:

- EXISTING TURF SCHEDULED FOR REMOVAL SHALL BE COMPLETELY AND THOROUGHLY KILLED PRIOR TO REMOVAL USING THE FOLLOWING STEPS:
 - FERTILIZE GRASS AREA TO BE REMOVED WITH SULFATE OF AMMONIA RATIO 21-0-0 AT A RATE OF 5# PER 1000 S.F.
 - IRRIGATE THOROUGHLY USING EXISTING IRRIGATION SYSTEM AND KEEP AREA MOIST FOR 10 DAYS.
 - APPLY SYSTEMIC TYPE HERBICIDE GRASS KILLER TO ALL AREAS. APPLY PER MANUFACTURER'S INSTRUCTIONS. THOROUGHLY WET ALL GRASS WITH HERBICIDE, AND STOP ALL IRRIGATION.
 - AFTER 10 DAYS REMOVE DEAD GRASS MATERIAL AND SCALP TO 1" DEPTH.
- CONTRACTOR TO FIELD VERIFY ALL TURF IN AREA IS COMPLETELY REMOVED.

PLAN CROSS REFERENCES:

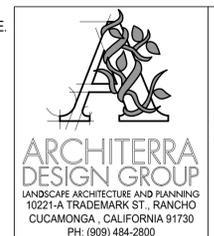
FOR NOTES AND LEGENDS, SEE THIS SHEET FOR CONSTRUCTION PLAN, SEE SHEET L-2.1 FOR CORRESPONDING IRRIGATION PLAN, SEE SHEET L-3.0 FOR CORRESPONDING PLANTING PLAN, SEE SHEET L-4.01

SCALE: AS SHOWN	DATE: 01-31-2024
PREPARED UNDER THE SUPERVISION OF	EXP
DESIGNED BY: XX	
REVIEWED BY: JRC	
APPROVED: _____	CITY ENGINEER



**HILLBROOK PARK RENOVATION
SURVEY & DEMOLITION PLAN**

CITY OF SIGNAL HILL



SHEET
L-1.00

2 OF 28 SHEETS

PLAN NUMBER

REVISIONS

REFERENCES

NO.	DATE	INITIAL	DESCRIPTION	APP.



GENERAL NOTES FOR PUBLIC WORKS CONSTRUCTION:

- ALL WORK DETAILED ON THE CONSTRUCTION DRAWINGS, EXCEPT AS OTHERWISE STATED IN THE SPECIAL PROVISIONS OF THE CONTRACT SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF SIGNAL HILL STANDARD PLANS AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
- ALL STATIONS AND DIMENSIONS ARE ALONG THE CENTERLINE OF STREET UNLESS OTHERWISE SPECIFIED.
- EXISTING UNDERGROUND UTILITIES ARE SHOWN AS PER AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION AND ELEVATION, IF REQUIRED, IN THE FIELD PRIOR TO BEGINNING CONSTRUCTION OF THE NEW FACILITIES.
- CURB DATA REFERS TO FACE OF CURB.
- ALL P.C.C. AND A.C. REMOVALS SHALL BE OUTLINED TO NECESSARY WORKING LIMITS AND SAWCUT TO MINIMUM DEPTH OF 2 INCHES PRIOR TO THE REMOVAL. UNLESS OTHERWISE STATED IN THE SPECIAL PROVISIONS, ALL DEBRIS CREATED BY THE REMOVAL OPERATIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AWAY FROM THE JOB SITE IN A MANNER AT A LOCATION ACCEPTABLE TO ALL AGENCIES AFFECTED BY THE WORK.
- TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH MANUAL), 1985 EDITION OR LATER REVISION, AND ARE SUBJECT TO THE APPROVAL OF THE AGENCY/CITY.
- IN ALL OPERATIONS, THE REQUIREMENTS OF THE STATE DIVISION OF INDUSTRY SAFETY FOR TRENCHES, EXCAVATIONS AND SHORING SHALL APPLY. SAFETY IS STRESSED. ANY OPERATION OR SITUATION THAT THREATENS THE SAFETY OF WORKERS OR THE PUBLIC, INCLUDING IMPROPER TRAFFIC CONTROL, SHALL CAUSE THE SUSPENSION OF WORK UNTIL CORRECTIONS ARE MADE.
- ALL OPEN EXCAVATIONS WITHIN A STREET SHALL BE STEEL-PLATED AT ALL TIMES, EXCEPT WHEN THE CONTRACTOR IS PHYSICALLY WORKING WITHIN THE AREA AND HAS PLACED BARRICADES TO THE SATISFACTION OF THE ENGINEER.
- THE CONTRACTOR SHALL CONDUCT CONSTRUCTION OPERATIONS IN SUCH A MANNER THAT STORM OR OTHER WATERS MAY PROCEED UNINTERRUPTED AND WITHOUT EROSION ALONG THEIR EXISTING STREET OR DRAINAGE COURSES.
- IN THE COURSE OF RUNOFF WATER CONTROL, THE CONTRACTOR SHALL PROTECT ALL WATER COURSES, THE GROUNDWATER AND BODIES OF WATER FROM POLLUTION BY FUELS, OIL, BITUMENS OR OTHER HARMFUL CHEMICALS.
- HARD HATS AND HIGH VISIBILITY ORANGE VESTS SHALL BE WORN AT ALL TIMES WHEN WORKING ON THIS PROJECT.
- BEFORE STARTING WORK, THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE CITY OF SIGNAL HILL, DEPARTMENT OF PUBLIC WORKS.
- FAILURE TO COMPLY WITH ANY OF THE ABOVE ITEMS SHALL BE SUFFICIENT CAUSE FOR THE AGENCY/CITY TO ARRANGE FOR THE NECESSARY WORK TO BE PERFORMED BY OTHERS. ANY COSTS INCURRED TO COMPLETE THE NECESSARY WORK WILL BE CHARGED TO THE CONTRACTOR.

PRIVATE ENGINEER'S NOTICE TO CONTRACTORS:

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS; TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN ON THESE DRAWINGS. THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN OR NOT SHOWN ON THESE DRAWINGS.

THE CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND SHALL REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES. **BEGINNING OF WORK MEANS ACCEPTANCE OF CONDITIONS.**

CONTRACTOR SHALL COMPLY WITH ALL N.P.D.E.S. REQUIREMENTS.

CONTRACTOR SHALL ADJUST TO FINISH GRADE ALL MANHOLE RIMS, WATER VALVE BOXES, UTILITY BOXES AND LIDS, ETC.

CONTRACTOR SHALL PROVIDE ALL THE NECESSARY PIPE FITTINGS TO COMPLETE THE WORK. THE ENGINEER PREPARING THESE PLANS SHALL NOT BE HELD RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THESE PLANS MUST BE REQUESTED IN WRITING AND MUST BE APPROVED BY THE ENGINEER OF RECORD.

QUANTITIES SHOWN HEREON ARE PROVIDED FOR PERMIT AND BONDING PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THEIR OWN QUANTITIES PRIOR TO BIDDING AND CONSTRUCTION. THE ENGINEER IS NOT RESPONSIBLE FOR DISCREPANCIES IN FINAL CONSTRUCTION QUANTITIES.

NOTICE TO CONTRACTOR:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL JOB SITE CONDITIONS IN ACCORDANCE WITH SECTION 3 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE PROTECTION AND RESTORATION OF ALL PUBLIC AND PRIVATE EXISTING IMPROVEMENT OR FACILITIES AND PROVIDE FOR PUBLIC ACCESS AND SAFETY IN ACCORDANCE WITH PART 4 OF THE STANDARD SPECIFICATIONS.

NOTICE TO CONTRACTOR:
ALL CONSTRUCTION STAKING SHALL BE PERFORMED BY A CALIFORNIA LICENSED LAND SURVEYOR. ANY REQUIRED CERTIFICATIONS SHALL BE PERFORMED AND CERTIFIED BY THE CALIFORNIA LICENSED LAND SURVEYOR.

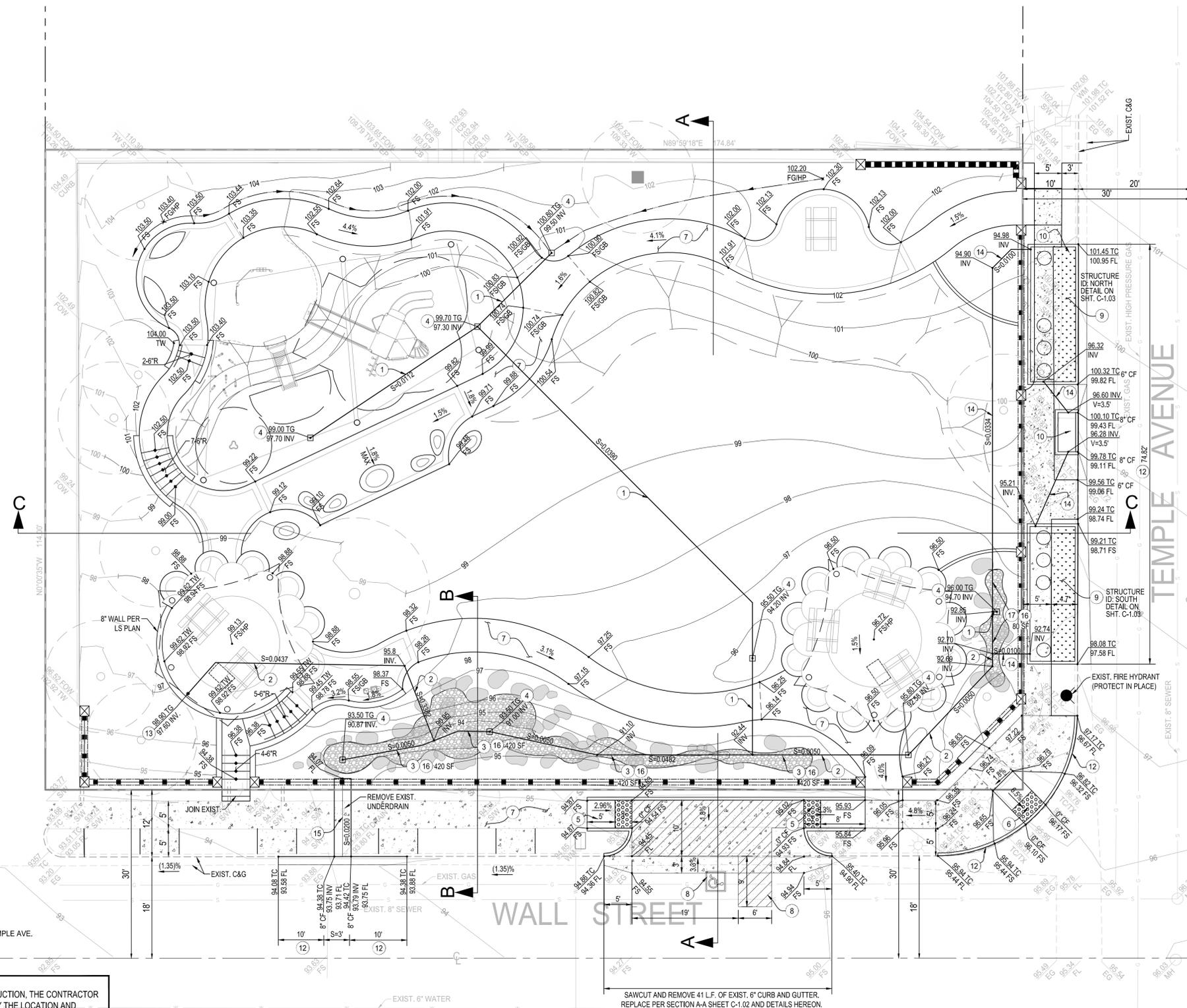
SITE ADDRESS:

NW CORNER OF E. WALL STREET AND TEMPLE AVE.
SIGNAL HILL, CA 90755

NOTICE TO CONTRACTOR:
PRIOR TO PERFORMING ANY CONSTRUCTION, THE CONTRACTOR SHALL POT-HOLE, LOCATE, AND VERIFY THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES, WATER LINES, SEWER LINES AND THE STORM DRAIN LINES NECESSARY FOR CONNECTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS.

ESTIMATED EARTHWORK QUANTITIES *

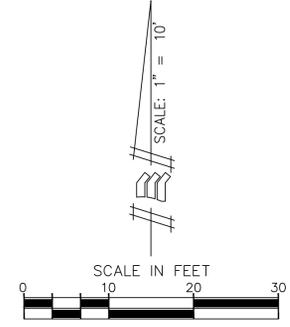
CUT296 C.Y. (RAW)
FILL152 C.Y. (RAW)



CONSTRUCTION NOTES:

- INSTALL 4" PVC SCH. 40 DRAIN PIPE ASTM D2665. 208 L.F.
- INSTALL 10" HDPE (WATER TIGHT FITTINGS AND JOINTS). 61 L.F.
- INSTALL 10" HDPE (FULLY PERFORATED) DRAIN PIPE. 92 L.F. ASTM D2665.
- INSTALL NDS (NATIONAL DIVERSIFIED SALES, INC.) 1221 OR 1222 CATCH BASIN WITH 12" GRATES (TURF AREA / NDS 1212) OR ATRIUM GRATES (PLANTER AREA / NDS 1280) OR APPROVED EQUAL. 6 EA.
- CONSTRUCT CURB RAMP PER CBC TITLE 24 STD. AND DETAILS ON SHEET 2. 2 EA.
- CONSTRUCT CURB RAMP PER CBC TITLE 24 STD. AND DETAILS ON SHEET 2. 1 EA.
- CONSTRUCT CONCRETE SIDEWALK PER LANDSCAPE ARCHITECT'S PLAN. N/A
- PAINT PARKING STALL STRIPING PER LANDSCAPE ARCHITECT'S PLAN. N/A
- INSTALL CONTECH MODULAR WETLAND SYSTEM MWS-L-8-24-V WITH ADA COMPLIANT "ANTI-SKID" MANHOLE COVERS. 2 EA.
- CONSTRUCT CURB OPENING CATCH BASIN PER SPPWC STD. PLAN No. 300-3 (W=7', V=3.5'). 1 EA.
- CONSTRUCT LOCAL DEPRESSION (CASE E) PER SPPWC STD. PLAN No. 313-3. 1 EA.
- SAWCUT REMOVE AND REPLACE 6" CURB AND GUTTER (DETAIL SHEET C-1.02). 120 L.F.
- INSTALL NDS (NATIONAL DIVERSIFIED SALES, INC.) 9188 6" ROUND BRASS GRATE OR APPROVED EQUAL. 1 EA.
- INSTALL 8" PVC SCH. 40 DRAIN PIPE ASTM D2665. 84 L.F.
- CONSTRUCT PARKWAY DRAIN PER SPPWC STD. PLAN No. 151-3 (TYPE 2). 1 EA.
- CONSTRUCT BIORETENTION WITH PERFORATED UNDERDRAIN PER DETAILS ON SHEET C-1.02. 420 SF.
- INSTALL 8" PVC (FULLY PERFORATED) DRAIN PIPE ASTM D2665. 20 L.F.

QUANTITIES



LEGEND:

- AC ASPHALTIC CONCRETE
- BW BACK OF WALK
- CB CATCH BASIN
- CF CURB FACE
- CONST. CONSTRUCT
- FL FLOW LINE
- FG FINISH GRADE
- FL FLOW LINE
- FS FINISH SURFACE
- GB GRADE BREAK
- INV INVERT
- PROP. PROPOSED
- SD STORM DRAIN
- TC TOP OF CURB
- TF TOP OF FOOTING
- TG TOP OF GRATE
- TRW TOP OF RETAINING WALL
- EG EXISTING GRADE
- TYP TYPICAL
- 1249 EXISTING CONTOUR
- 97.61 PROPOSED ELEVATION
- (97.61) EXISTING ELEVATION
- BS BOTTOM OF SLOT OPENINGS
- TR SLOPE
- RETAINING WALL

CIVIL ENGINEER:

MADOLE & ASSOCIATES, INC.
9302 PITTSBURGH AVENUE, SUITE 230 RANCHO CUCAMONGA, CA 91730
CONTACT: MARK BERTONE
PHONE: (909) 481-6322 ext. 120

BENCHMARK: #55
CITY OF SIGNAL HILL
LOCATION: PACIFIC COAST HIGHWAY AND TEMPLE AVENUE
DESCRIPTION: SE COR. BRASS CAP MON IN WELL 5' S & 22' E/O C.L. INT. (3.5' E/O C.F. & 7' S/O B.C.R.) C.L.B. NO. 104
ELEVATION: 77.441'



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES	

SCALE: AS SHOWN	DATE
PREPARED UNDER THE SUPERVISION OF	
R.C.E. NO. EXP	
DESIGNED BY	
REVIEWED BY	
APPROVED	CITY ENGINEER

HILLBROOK PARK RENOVATION
GRADING AND DRAINAGE PLAN

CITY OF SIGNAL HILL

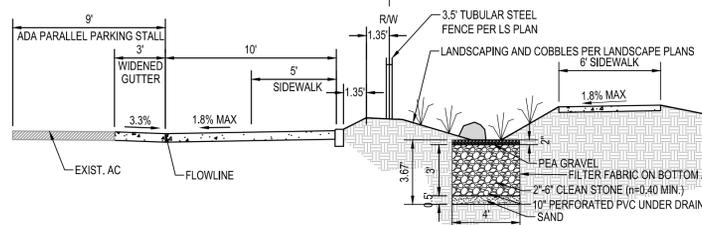
SHEET
C-1.01
OF 28 SHEETS

PLAN NUMBER

114.00'

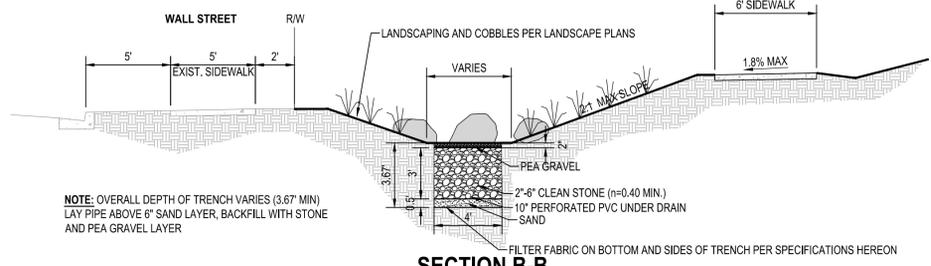
HILLBROOK PARK

EXIST. SLAT SCREEN WALL
EXIST. RET. WALL
EXIST. APARTMENT COMPLEX
POOL DECK



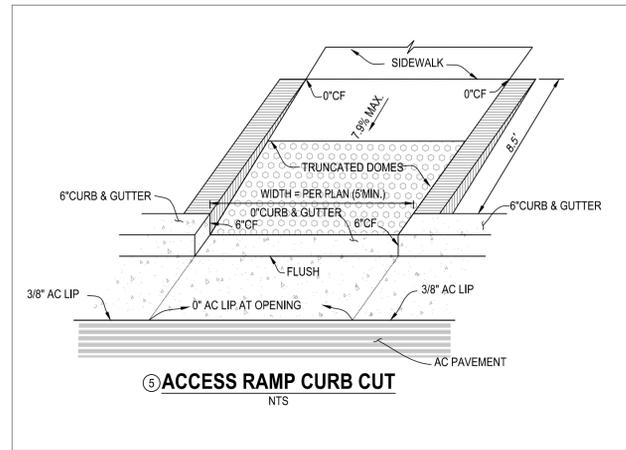
NOTE: OVERALL DEPTH OF TRENCH VARIES (3.67 MIN)
LAY PIPE ABOVE 6\"/>

SECTION A-A
SCALE: 1\"/>

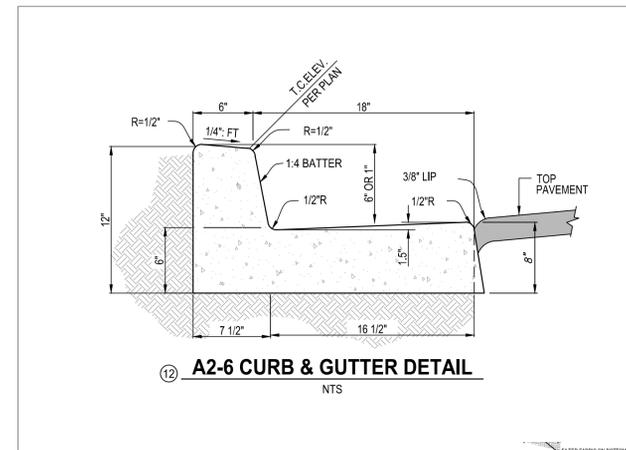


NOTE: OVERALL DEPTH OF TRENCH VARIES (3.67 MIN)
LAY PIPE ABOVE 6\"/>

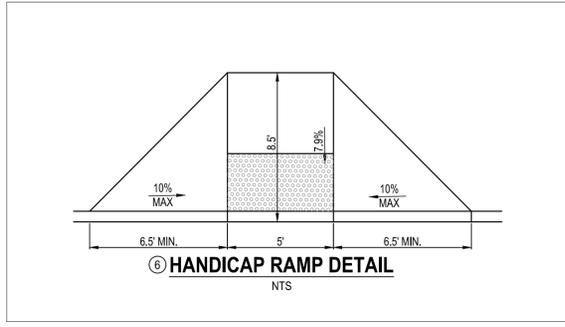
SECTION B-B
SCALE: 1\"/>



5 ACCESS RAMP CURB CUT
NTS



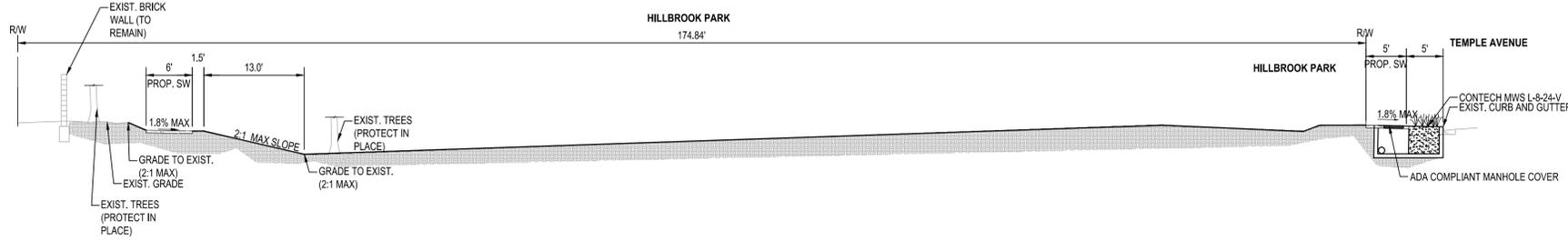
12 A2-6 CURB & GUTTER DETAIL
NTS



6 HANDICAP RAMP DETAIL
NTS

- GEOTEXTILE FILTER FABRIC:**
THE FILTER FABRIC SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION AND THE FOLLOWING:
- STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION SECTION 300-8.1.1
 - FILTER FABRIC SHALL NOT BE LEFT EXPOSED FOR MORE THAN SEVEN DAYS.
 - SURFACES TO RECEIVE FILTER FABRIC, IMMEDIATELY PRIOR TO PLACING, SHALL BE FREE OF LOOSE OR EXTRANEIOUS MATERIAL AND SHARP OBJECTS THAT MAY DAMAGE THE FILTER FABRIC DURING CONSTRUCTION.
 - SHOULD THE FABRIC BE DAMAGED DURING PLACEMENT, THE TORN OR PUNCTURED SECTION SHALL EITHER BE COMPLETELY REPLACED OR SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC LARGE ENOUGH TO COVER THE DAMAGED AREA AND OVERLAP BY A MINIMUM OF 12-INCHES.

- CONTECH C-40 OR C-45 NON-WOVEN GEOTEXTILE
- ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE
- OR CITY OF SIGNAL HILL APPROVED EQUAL



SECTION C-C
SCALE: 1\"/>



REVISIONS

NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES

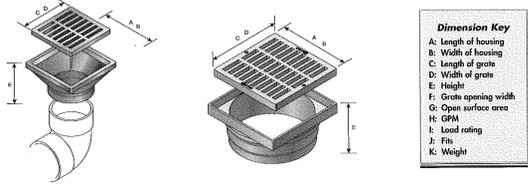
SCALE: AS SHOWN	DATE
PREPARED UNDER THE SUPERVISION OF	
R.C.E. NO. EXP	
DESIGNED BY	
REVIEWED BY	
APPROVED	CITY ENGINEER

HILLBROOK PARK RENOVATION
GRADING AND DRAINAGE PLAN

CITY OF SIGNAL HILL

SHEET
C-1.02
OF 28 SHEETS
PLAN NUMBER

Square Grates & Adapters



Dimension Key
A: Length of housing
B: Width of housing
C: Length of grate
D: Width of grate
E: Height
F: Grate opening width
G: Open surface area
H: GPM
I: Load rating
J: Fib.
K: Weight

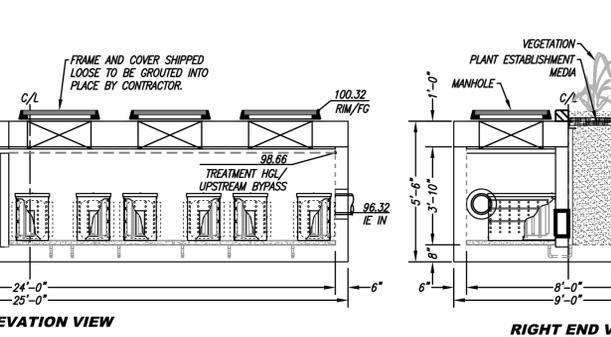
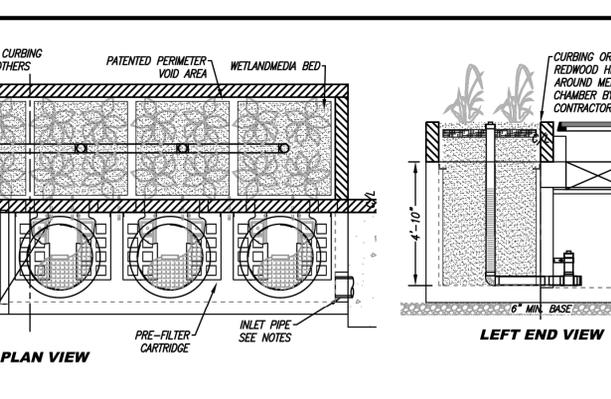
Part No.	A	B	C	D	E	F	G	H	I	J	K
1200	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88
1201	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88
1202	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88
1203	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88
1204	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88
1205	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88
1206	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88
1207	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88
1208	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88
1209	6.3176	6.3176	5.7778	5.7778	2.172	1.14	13.6154	17.83	A	3" x 4" S&B pipe, 3" x 4" corrugated pipe	.88

Load Recommendation Guide
Class A
Loads of 1-60 psi.
• Recommended for pedestrians, bicycles and wheel chair traffic.
Note: Some installations may require a concrete collar to meet load rating. Loads are based on enclosing product in concrete. Product must be installed using NDS instructions.

NDS
NDS Customer Service
851 N. Harvard Ave, Lindsay, CA 93247
Phone: (800) 726-1994 • (559) 562-9888
Fax: (800) 726-1998 • (559) 562-4888
www.NDSPRO.com

12" CATCH BASIN SERIES

Part No.	Description	Color	Pkg. Qty.	Wt. (lbs.)	Product Class	Specifications
1200	12" x 12" Alum. Grate	Green	8	2.00	10ND	NDS #1200, #1250, 12" Structural Foam Polypropylene Dome Alum. Grate with UV Inhibitor. Open surface area 50.00 square inches. 66.29 GPM.
1201	12" x 12" Alum. Grate	Black	8	2.00	10ND	NDS #1201, #1211, #1212, or #1212S, 12" Square Structural Foam Polypropylene Grate with UV Inhibitor. Open surface area 50.00 square inches. 66.29 GPM.
1210	12" x 12" Square Grate	Gray	8	2.00	10ND	NDS #1210, #1211, #1212, or #1212S, 12" Square Heavy Duty Cast Iron Grate. Open surface area 59.50 square inches. 73.95 GPM.
1211	12" x 12" Square Grate	Black	8	2.00	10ND	NDS #1211, #1212, #1213, 12" Square Heavy Duty Cast Iron Grate. Open surface area 59.50 square inches. 73.95 GPM.
1212	12" x 12" Square Grate	Green	8	2.00	10ND	NDS #1212, 12" Square Heavy Duty Cast Iron Grate. Open surface area 59.50 square inches. 73.95 GPM.
1212S	12" x 12" Square Grate	Sand	8	2.00	10ND	NDS #1212S, 12" Square Heavy Duty Cast Iron Grate with UV Inhibitor. Open surface area 59.50 square inches. 73.95 GPM.
1213	12" x 12" Square Cast Iron Grate	Black	1	15.00	10ND	NDS #1213, 12" Square Heavy Duty Cast Iron Grate. Open surface area 59.50 square inches. 73.95 GPM.
1215	12" x 12" Square Galvanized Steel Grate	Galvanized Steel	1	8.50	10ND	NDS #1215, 12" Square Heavy Duty Galvanized Steel Grate. Open surface area 122.20 square inches. 160.21 GPM.
1216	12" x 12" Square Galvanized Steel Grate	Galvanized Steel	1	8.50	10ND	NDS #1216, 12" Square Heavy Duty Galvanized Steel Grate. Open surface area 122.20 square inches. 160.21 GPM.
1214	12" x 12" Square Grate	Manganese Bronze	1	9.00	10ND	NDS #1214, 12" Square Manganese Bronze Grate and Frames. Open surface area 36.75 square inches. 46.14 GPM.
1220	12" x 12" Stump Box Cover	Black	8	2.00	10ND	NDS #1220, 12" Square Structural Foam Polypropylene Solid Cover.



TREATMENT FLOW (CFS)	0.75
OPERATING HEAD (FT)	3.7
PRETREATMENT LOADING RATE (GPM/SF)	2.2
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

MWS-L-8-24-4'-10"-V-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA

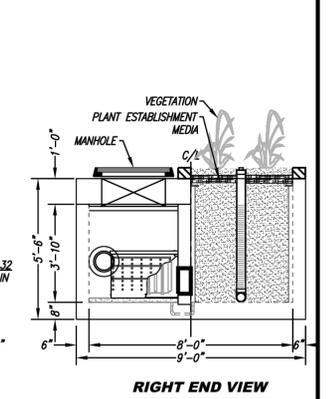
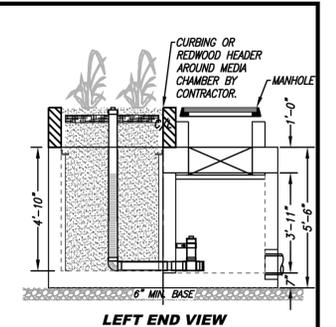
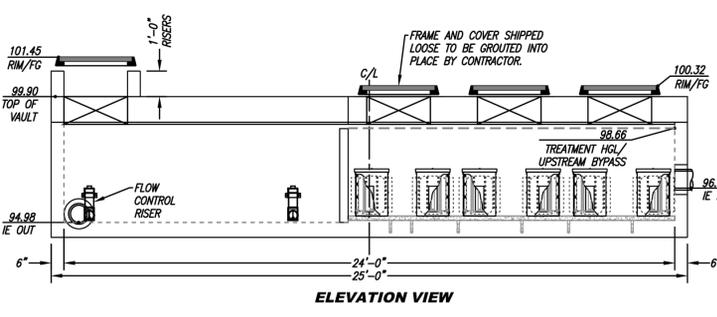
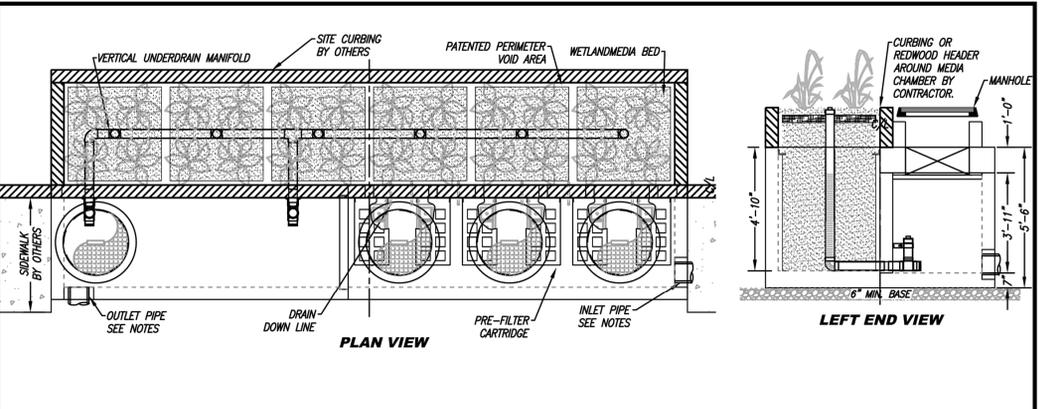
PROJECT NUMBER	787271-010
PROJECT NAME	HILLBROOK PARK RENOVATION
PROJECT LOCATION	SIGNAL HILL, CA
STRUCTURE ID	NORTH
TREATMENT REQUIRED	N/A
VOLUME BASED (CF)	FLOW BASED (CFS)
N/A	0.75
TREATMENT HGL AVAILABLE (FT)	N/A
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	OFFLINE
PIPE DATA	I.E. MATERIAL DIAMETER
INLET PIPE 1	96.32 PVC 8"
OUTLET PIPE	94.98 PVC 8"
RIM ELEVATION	SEE ELEVATION VIEW
SURFACE LOAD	PEDESTRIAN N/A PEDESTRIAN
FRAME & COVER	3EA #30" OPEN PLANTER #30"
WETLANDMEDIA VOLUME (CY)	19.42
ORIFICE SIZE (DIA. INCHES)	#2.71 EA

NOTES: PRELIMINARY NOT FOR CONSTRUCTION.

- INSTALLATION NOTES**
- CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
 - UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
 - CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
 - CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO USE GROUT AND/OR BRICKS TO MATCH COVERS WITH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
 - VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
 - CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.

GENERAL NOTES

- MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT CONTECH.



TREATMENT FLOW (CFS)	0.75
OPERATING HEAD (FT)	3.7
PRETREATMENT LOADING RATE (GPM/SF)	2.2
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

MWS-L-8-24-4'-10"-V-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

MODULAR WETLANDS
FOR PATENT INFORMATION, GO TO WWW.CONTECHES.COM

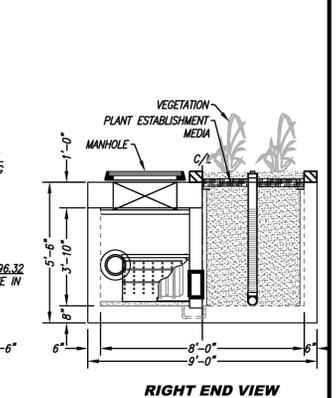
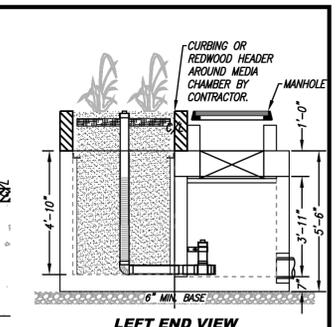
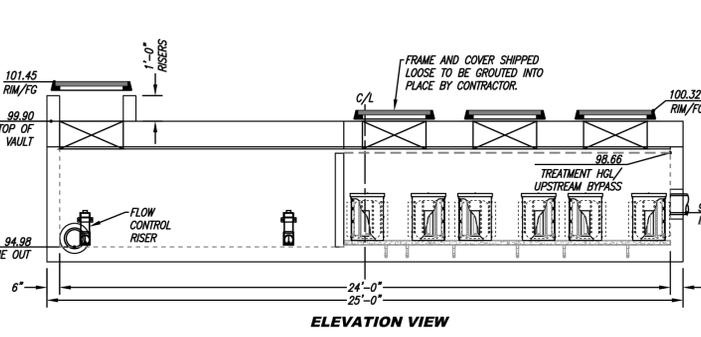
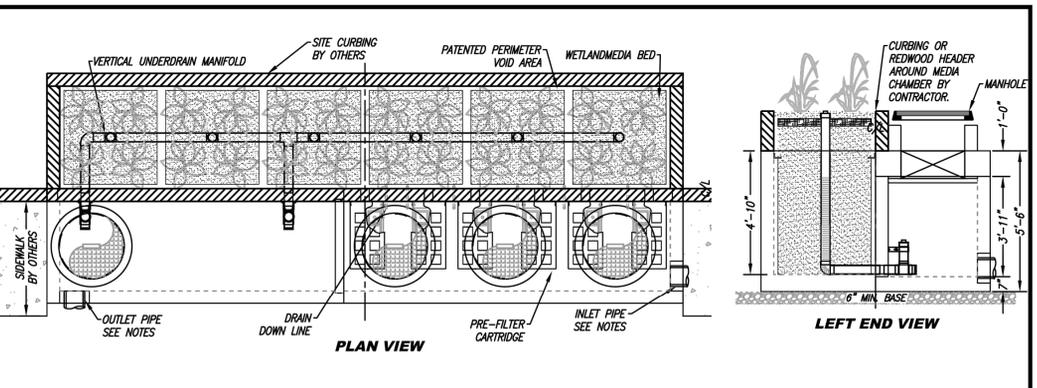
CONTECH
ENGINEERED SOLUTIONS LLC
www.ContechES.com

PROPRIETARY AND CONFIDENTIAL:
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF FORTERRA AND ITS COMPANIES. THIS DOCUMENT, NOW AND IN THE FUTURE, MAY BE USED, REPRODUCED OR MIMICED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF FORTERRA.

SITE SPECIFIC DATA

PROJECT NUMBER	787271-010
PROJECT NAME	HILLBROOK PARK RENOVATION
PROJECT LOCATION	SIGNAL HILL, CA
STRUCTURE ID	NORTH
TREATMENT REQUIRED	N/A
VOLUME BASED (CF)	FLOW BASED (CFS)
N/A	0.75
TREATMENT HGL AVAILABLE (FT)	N/A
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	OFFLINE
PIPE DATA	I.E. MATERIAL DIAMETER
INLET PIPE 1	96.32 PVC 8"
OUTLET PIPE	94.98 PVC 8"
RIM ELEVATION	SEE ELEVATION VIEW
SURFACE LOAD	PEDESTRIAN N/A PEDESTRIAN
FRAME & COVER	3EA #30" OPEN PLANTER #30"
WETLANDMEDIA VOLUME (CY)	19.42
ORIFICE SIZE (DIA. INCHES)	#2.71 EA

NOTES: PRELIMINARY NOT FOR CONSTRUCTION.



TREATMENT FLOW (CFS)	0.75
OPERATING HEAD (FT)	3.7
PRETREATMENT LOADING RATE (GPM/SF)	2.2
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

MWS-L-8-24-4'-10"-V-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

- INSTALLATION NOTES**
- CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
 - UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
 - CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
 - CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO USE GROUT AND/OR BRICKS TO MATCH COVERS WITH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
 - VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
 - CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.

GENERAL NOTES

- MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT CONTECH.

MODULAR WETLANDS
FOR PATENT INFORMATION, GO TO WWW.CONTECHES.COM

PROPRIETARY AND CONFIDENTIAL:
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF FORTERRA AND ITS COMPANIES. THIS DOCUMENT, NOW AND IN THE FUTURE, MAY BE USED, REPRODUCED OR MIMICED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF FORTERRA.

CONTECH
ENGINEERED SOLUTIONS LLC
www.ContechES.com



REVISIONS

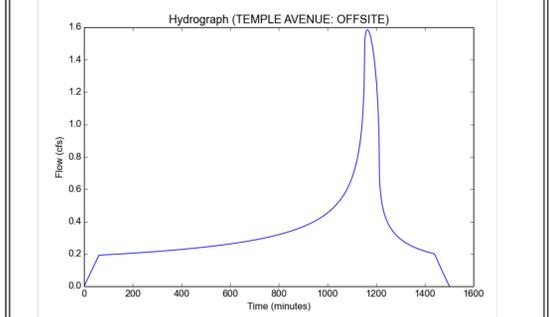
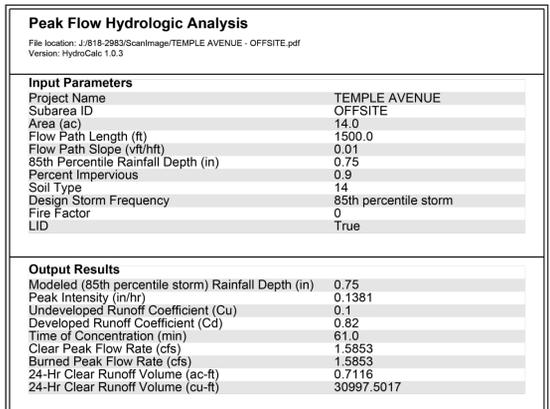
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES

SCALE: AS SHOWN
PREPARED UNDER THE SUPERVISION OF
R.C.E. NO. EXP
DESIGNED BY
REVIEWED BY
APPROVED CITY ENGINEER

HILLBROOK PARK RENOVATION
DETAIL SHEET
CITY OF SIGNAL HILL

SHEET
C-1.03
OF 28 SHEETS
PLAN NUMBER



EROSION CONTROL CONSTRUCTION NOTES:

- (A) —INSTALL GRAVEL BAGS PER DETAIL A.
- (B) —INSTALL GRAVEL BAGS WITH INLET PROTECTION AS SHOWN ON DETAIL B.
- (C) —INSTALL FIBER ROLL PER DETAIL C OR SILT FENCE
- (D) —CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE PER DETAIL D OR A RATTLE PLATE SYSTEM (SIZE DETERMINED DURING CONSTRUCTION TO SATISFACTION OF INSPECTORS).
- (E) —APPLY WIND PROTECTION AS NEEDED PER WE-1. (PER CASCPA STORM WATER BMP HANDBOOK).

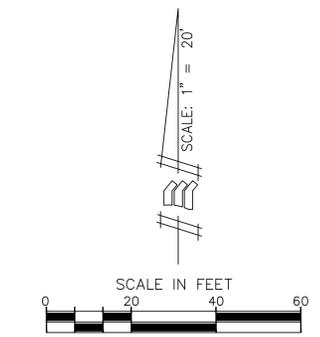
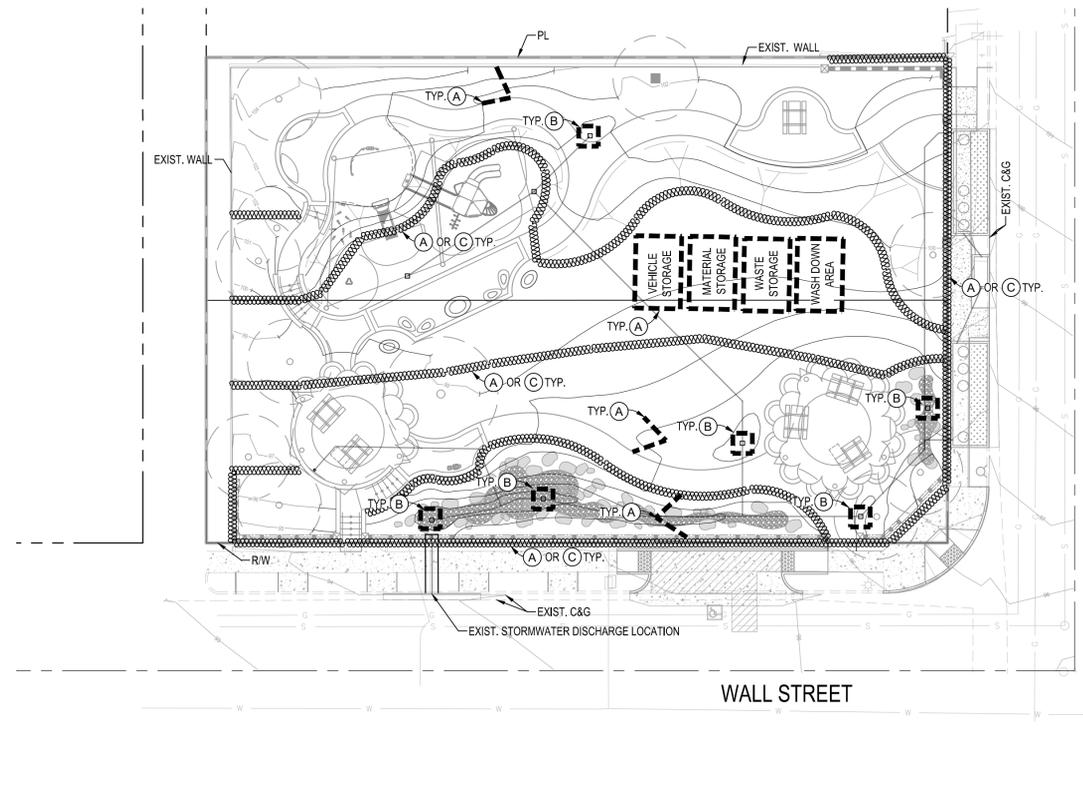
**THIS PLAN IS FOR EROSION CONTROL
DEVICE PLACEMENT ONLY. SEE
APPROPRIATE IMPROVEMENT PLAN
FOR CONSTRUCTION**

VELOCITY CHECK DAM SPACING	
STREET GRADE	INTERVAL
0% - 2%	200'
2% - 4%	100'
4% - 10%	50'

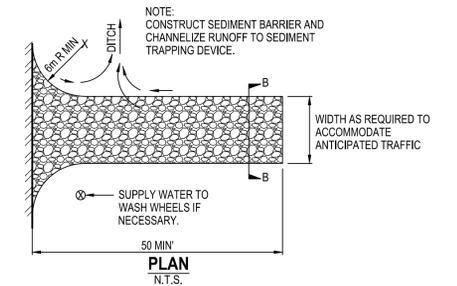
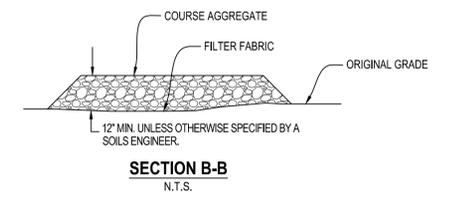
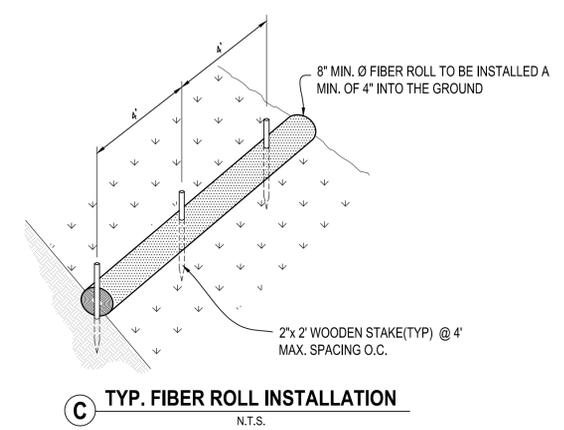
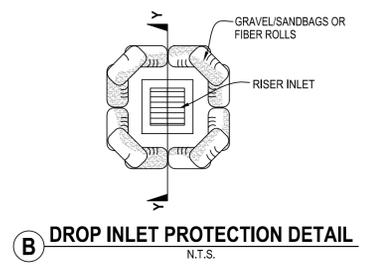
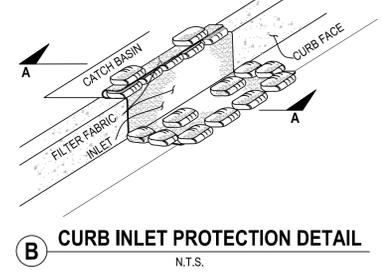
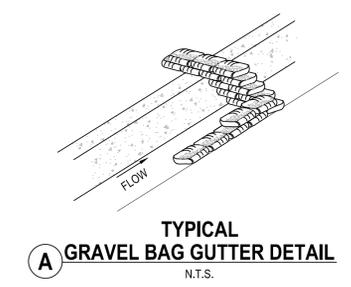
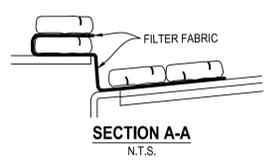
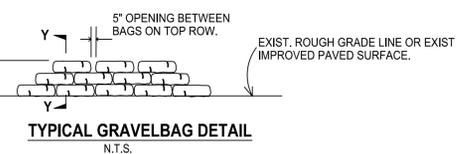
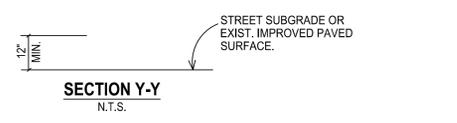
SLOPE PROTECTION AT TOE AND
FACE OF SLOPE

TABLE 1-CRITICAL SLOPE/ SHEET FLOW LENGTH COMBINATIONS

SLOPE PERCENTAGE	SHEET FLOW LENGTH NOT TO EXCEED
0% - 25%	20'
20% - 50%	15'
OVER 50%	10'



- LEGEND:**
- PROPOSED SLOPE 2:1 MAX.
 - 1710 — EXIST. CONTOUR
 - PROPOSED GRAVEL BAGS (POLY GRAVEL BAGS)
 - INLET PROTECTION
 - PROPOSED FIBER ROLL
 - TEMPORARY BMP BONDED FIBER MATRIX (BFM)



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES	

SCALE: AS SHOWN	DATE
PREPARED UNDER THE SUPERVISION OF	
R.C.E. NO. EXP	
DESIGNED BY	
REVIEWED BY	
APPROVED	CITY ENGINEER

HILLBROOK PARK RENOVATION
EROSION CONTROL PLAN

CITY OF SIGNAL HILL

SHEET
C-1.04
OF 28 SHEETS
PLAN NUMBER

SITE AMENITIES SCHEDULE:

SYMBOL	SITE FURNISHINGS DESCRIPTION	DETAIL	MANUF.	MODEL	MATERIAL COLOR 1	MATERIAL COLOR 2	MOUNTING	REMARKS
A-11	CONCRETE PICNIC TABLE	---	QCP CORP	Q-LBT-96PT	NATURAL	HONED	SET LEVEL	---
A-12	CONCRETE LEAF BENCH	DL-2.04	QCP CORP	Q-LEAF-B	NATURAL	HONED	SET LEVEL	---
A-13	DRINKING FOUNTAIN W/ BOTTLE FILLER	GL-2.04	HAWS	3611	GREEN	N/A	CAST IN ANCHORS	---
A-14	TRASH RECEPTACLE	CL-2.04	QCP CORP	QR-CE3036W-HOVER25	NATURAL	HONED	SET LEVEL	---
A-15	ADA-COMPLIANT PICNIC TABLE	---	QCP CORP	Q-LBT-102PTADA	NATURAL	HONED	SET LEVEL	---
A-16	KERNEL CONCRETE SEAT	DL-2.08	QCP CORP	Q2-KERNEL-L	NATURAL	HONED	ANCHOR BOLTS	---
A-17	PEBBLE CONCRETE SEAT 77"	EL-2.08	QCP CORP	Q-PEBBLE 7754	NATURAL	HONED	SET LEVEL	---
A-18	PEBBLE CONCRETE SEAT 56"	FL-2.08	QCP CORP	Q-PEBBLE5637	NATURAL	HONED	SET LEVEL	---
SYMBOL	PLAYGROUND EQUIPMENT DESCRIPTION	DETAIL	MANUF.	MODEL	MATERIAL COLOR 1	MATERIAL COLOR 2	MOUNTING	REMARKS
A-21	PRE-FABRICATED PLAY EQUIPMENT	AL-2.06	LANDSCAPE STRUCTURES	PER DETAIL	PER DETAIL	N/A	IN-GROUND	AVAILABLE THROUGH REC-WEST OUTDOOR PRODUCTS
SYMBOL	BOULDERS DESCRIPTION	DETAIL	MANUF.	MODEL	MATERIAL COLOR 1	MATERIAL COLOR 2	MOUNTING	REMARKS
A-61	LANDSCAPE BOULDER	HL-2.04	SOUTHWEST BOULDER & STONE	SIERRA SELECT GRANITE	GRAY	---	---	---
SYMBOL	LANDSCAPE FEATURES DESCRIPTION	DETAIL	MANUF.	MODEL	MATERIAL COLOR 1	MATERIAL COLOR 2	MOUNTING	REMARKS
A-91	FILTRATION DRY STREAM BED	EL-2.04	ROCK AVAILABLE FROM SOUTHWEST BOULDER & STONE	SIERRA COBBLE GRANITE	GRAY	---	PER DETAIL	---

FENCES & RAILS SCHEDULE:

SYMBOL	METAL DESCRIPTION	DETAIL	HEIGHT	MATERIAL	MODEL	COLOR	FINISH	REMARKS
F-41	COMBO TUBULAR STEEL FENCE & CMU WALL	IL-2.04	5'-0"	MIXED	CUSTOM	PER DETAIL	PER DETAIL	---
F-42	COMBO T.S. GUARDRAIL & CMU WALL	GL-2.08	42"	MIXED STEEL	CUSTOM	BLACK	POWDERCOAT	---
F-43	HANDRAIL	FL-2.03	36"	MIXED STEEL	CUSTOM	BLACK	POWDERCOAT	BOTH SIDES OF STAIRS

PAVING & SURFACING SCHEDULE:

SYMBOL	CONCRETE DESCRIPTION	DETAIL	MATERIAL	THICKNESS	PATTERN	EXP. JT. TYPE	EXP. JT. DETAIL	CTL. JT. TYPE	CTL. JT. DETAIL	FINISH	MATERIAL COLOR	COLOR MANUF.	REMARKS
P-11	CONCRETE PAVING	AL-2.03	CONCRETE	4"	N/A	FULL-DEPTH	DIL-2.03	TOOLED	D4L-2.03	MEDIUM BROOM	NATURAL GRAY	---	---
P-12	ENHANCED CONCRETE PAVING	B&CL-2.03	CONCRETE	4"	PER PLAN	FULL-DEPTH	DIL-2.03	TOOLED	D4L-2.03	TOP CAST 03 (VIOLET) FIELD w/ SMOOTH BAND	SAN DIEGO BUFF	DAVIS COLORS	---
SYMBOL	PLAY SURFACING DESCRIPTION	DETAIL	MATERIAL	THICKNESS	PATTERN	EXP. JT. TYPE	EXP. JT. DETAIL	CTL. JT. TYPE	CTL. JT. DETAIL	FINISH	MATERIAL COLOR	COLOR MANUF.	REMARKS
P-41	PLAYGROUND RUBBER SURFACING	AL-2.04	POURED-IN-PLACE RUBBER	PER MANUF. SPECIFICATIONS	PER DETAIL	N/A	N/A	N/A	N/A	N/A	PER DETAIL	SPECTRA-TURF	SPECTRA POUR SUPREME

SIGNAGE SCHEDULE:

SYMBOL	INFORMATIONAL DESCRIPTION	DETAIL	MODEL	FRAME / POSTS	FRAME MANUF.	FR/POST COLOR	FR/POST COLOR MANUF.	PANEL MTL. 1	REMARKS
S-41	INFORMATION KIOSK ENTRY MONUMENTATION	B/L-2.06	TMB7136Y-P4	ANODIZED ALUMINUM	ICON SHELTERS	TBD	TBD	TBD	LOCKABLE DOORS SINGLE SIDED
SYMBOL	MONUMENT SIGN DESCRIPTION	DETAIL	FRAME / POSTS	FRAME MANUF.	FR/POST COLOR	FR/POST COLOR MANUF.	PANEL MTL. 1	REMARKS	
S-61	MONUMENT SIGN	AL-2.08	COMPOSITE	CONTRACTOR	N/A	N/A	TBD	POWER TO MONUMENT SIGN. COORDINATE WITH ELECTRICAL ENGINEER'S PLANS	
SYMBOL	REGULATORY DESCRIPTION	DETAIL	FRAME / POSTS	FRAME MANUF.	FR/POST COLOR	FR/POST COLOR MANUF.	PANEL MTL. 1	REMARKS	
S-71	ACCESSIBLE PARKING ONLY SIGN	IL-2.03	METAL	N/A	GALVANIZED	N/A	ALUMINUM	SIGN SHALL MEET STANDARD REQUIREMENTS. SUPPLIER PER CONTRACTOR CHOICE	
S-72	ADA PAINTED SYMBOL	J/L-2.03	---	---	WHITE/BLUE	---	---	---	
S-73	4" WIDE STRIPING	---	---	---	WHITE	---	---	4" WIDE @ 2'-0" O.C. @ 45°	

WALLS SCHEDULE:

SYMBOL	CONCRETE MASONRY UNIT DESCRIPTION	DETAIL	HEIGHT	STRUCTURE	STRUCT. MANUF.	CAP TYPE	CAP COLOR	CAP MANUF.	GROUT COLOR	REMARKS
W-11	CMU CHEEK WALL AT STAIRS	HL-2.03	36" TO 42"	8" x 8" x 16" SINGLE-SIDED SPLIT-FACE CMU	TBD	P.I.P. CONCRETE	TBD	N/A	NATURAL GREY	---
W-12	RETAINING WALL	CL-2.08	5'-0"	8" x 8" x 16" SINGLE-SIDED SPLIT-FACE CMU	TBD	P.I.P. CONCRETE	TBD	N/A	NATURAL GREY	---
W-13	STONE COLUMN WITH CAP	J/L-2.04	5'-8"	16" x 8" x 16" PRECISION CMU COLUMN	---	PER DETAIL	NATURAL GREY	VALORI PRECAST	NATURAL GREY	---

SITE STRUCTURES SCHEDULE:

SYMBOL	OUTDOOR KITCHENS DESCRIPTION	DETAIL	DIMENSIONS	MATERIAL	PREFAB. MANUF.	PREFAB. MODEL	MATERIAL COLOR 1	COLOR APPLICATION	HARDWARE COLOR	REMARKS
SS-101	5-STAR SHADE SAIL	AL-2.07	PER DETAIL	FABRIC WITH STEEL POSTS	LANDSCAPE STRUCTURES	PER DETAIL	SEE DETAIL	POWDER COATED	PER SPECS.	AVAILABLE THROUGH REC WEST OUTDOOR PRODUCTS
SS-102	6 POST DBL HYPAR SHADE SAIL	AL-2.07 AL-2.10	PER DETAIL	FABRIC WITH STEEL POSTS	LANDSCAPE STRUCTURES	PER DETAIL	SEE DETAIL	POWDER COATED	PER SPECS.	AVAILABLE THROUGH REC WEST OUTDOOR PRODUCTS

CONSTRUCTION NOTES:

- CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO A FAILURE TO GIVE SUCH NOTIFICATION.
- WALL AND FENCE LAYOUT SHALL CONFORM TO PROPERTY LINE AND TOP OF SLOPE CONDITIONS. STAKING FOR LOCATION OF WALLS AND FENCES SHALL BE PROVIDED BY THE CIVIL ENGINEER PRIOR TO EXCAVATION OF FOOTINGS.
- ALL FORMS AND ALIGNMENTS OF PAVING, WALL / FENCE LAYOUT, AND SPECIAL PAVING AREAS SHALL BE REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO POURING (GIVE A MINIMUM OF 48 HOURS NOTICE).
- FOR SITE GRADING, SEE CIVIL ENGINEER'S GRADING PLAN.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
- CONTRACTOR SHALL COORDINATE IRRIGATION SLEEVE LOCATIONS UNDER PAVED AREAS AS REQUIRED. REFER TO IRRIGATION PLANS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH OTHER SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH CONSTRUCTION OPERATIONS AS SHOWN.
- PRIOR TO PLACING CONCRETE, THE CONTRACTOR SHALL SUFFICIENTLY COMPACT THE SUB-GRADE AND PROVIDE SUBSURFACE PREPARATION PER SPECIFICATIONS.
- CONCRETE SURFACES SHALL BE FORMED WITH LONG, SMOOTH GRADIENT TO REDUCE DIPS, ABRUPT CHANGES AND SHARP TRANSITIONS.
- ALL CURVILINEAR WALKS, CURBS, HEADER BOARDS, AND WALLS SHALL HAVE A CONTINUOUS SMOOTH CURVE WHERE APPLICABLE. ALL FORMS MUST BE INSPECTED AND APPROVED PRIOR TO BEGINNING THAT PHASE OF WORK.

STAIRS SCHEDULE:

SYMBOL	CONCRETE DESCRIPTION	DETAIL	MATERIAL	FINISH	WARNING STRIP TYPE	WARNING STRIP COLOR	REMARKS
ST-11	CONCRETE STAIRS	EL-2.03	CONCRETE	MATCH ADJACENT	SAWCUT & PAINTED	DARK BROWN	---

CURBS & EDGING SCHEDULE:

SYMBOL	CONCRETE CURBS DESCRIPTION	DETAIL	MATERIAL	PRODUCT MANUF.	MATERIAL COLOR	FINISH	REMARKS
C-12	CONCRETE HEADER	GL-2.03	CONCRETE	CUSTOM	NATURAL GRAY	MED. BROOM	---

EXISTING SCHEDULE:

SYMBOL	DESCRIPTION	NOTES
EX-101	EXISTING CMU BLOCK WALL	PROTECT IN PLACE
EX-103	EXISTING CONCRETE CURB	PROTECT IN PLACE
EX-104	EXISTING CONCRETE GUTTER	PROTECT IN PLACE

REFERENCES BY OTHERS SCHEDULE:

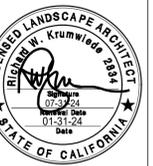
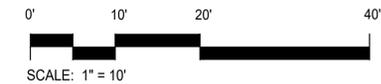
SYMBOL	DESCRIPTION	NOTES
R-101	CURB	PER CIVIL ENGINEER'S PLANS
R-102	GUTTER	PER CIVIL ENGINEER'S PLANS
R-103	RAMP	PER CIVIL ENGINEERS PLANS
R-104	MODULAR WETLAND SYSTEM	PER CIVIL ENGINEER'S PLANS
R-105	CATCH BASIN	PER CIVIL ENGINEER'S PLANS
R-106	STRIPING	PER CIVIL ENGINEER'S PLANS

BOULDER SCHEDULE:

SYMBOL	SIZE	COLOR AND TYPE
A	18" TO 24"	PER AMENITIES SCHEDULE
B	24" TO 30"	PER AMENITIES SCHEDULE
C	30" TO 36"	PER AMENITIES SCHEDULE
D	36" TO 48"	PER AMENITIES SCHEDULE
E	48" TO 60"	PER AMENITIES SCHEDULE

PLAN CROSS REFERENCES:

NOTES AND LEGENDS THIS SHEET.
FOR CONSTRUCTION DETAILS, SEE SHEET L-2.3 TO L-2.9
FOR CONSTRUCTION SPECIFICATIONS, SEE SHEET L-5.1



Know what's below.
Call before you dig.

REVISIONS

NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES

NO.	DESCRIPTION

SCALE:	AS SHOWN	DATE	01-31-2024
DESIGNED BY	JF	PREPARED UNDER THE SUPERVISION OF	07-31-2024
REVIEWED BY	JRC	EXP	
APPROVED		CITY ENGINEER	

**HILLBROOK PARK RENOVATION
CONSTRUCTION LEGEND AND NOTES**

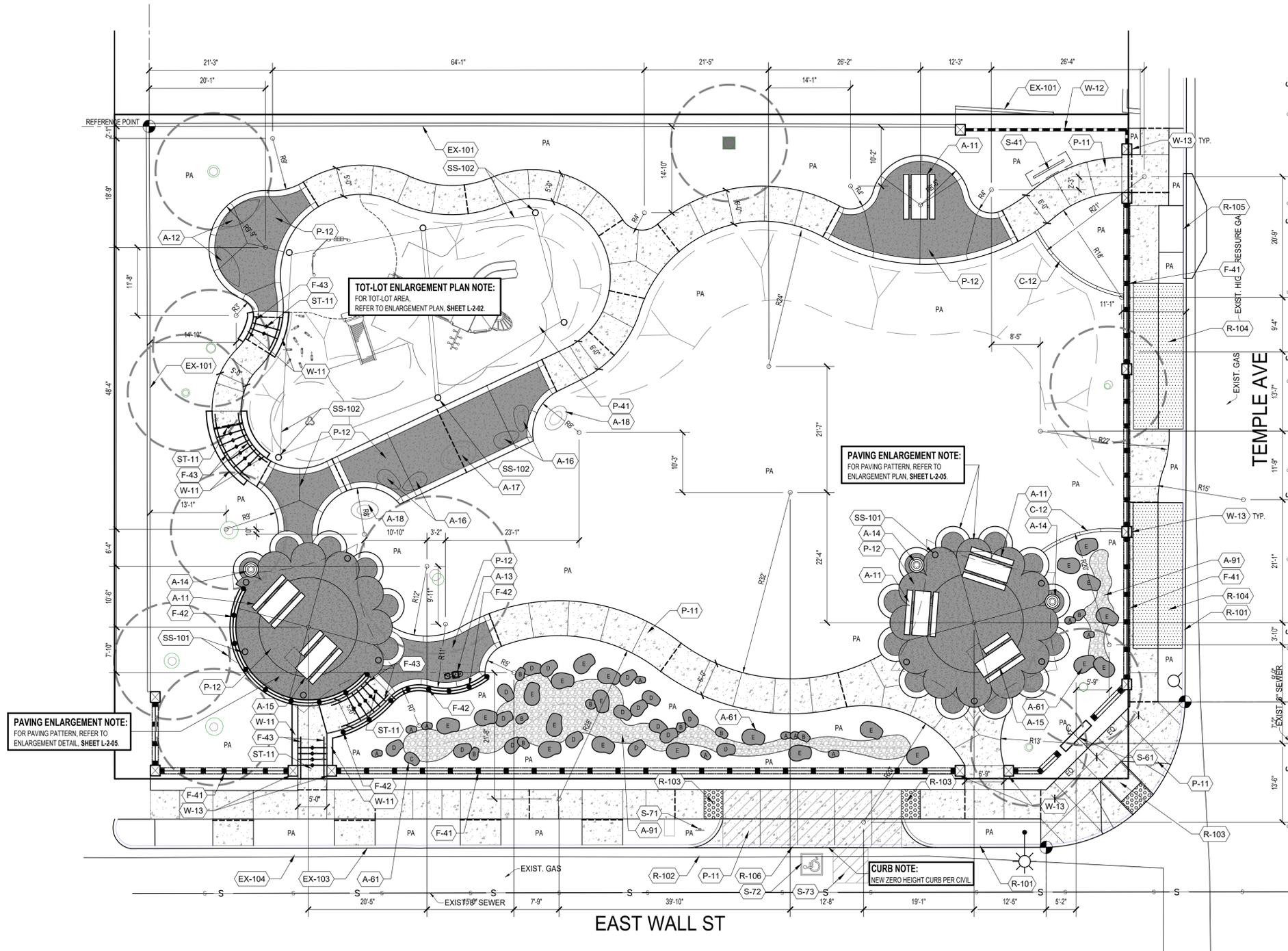
CITY OF SIGNAL HILL

SHEET

L-2.00

7 OF 28 SHEETS

PLAN NUMBER



PAVING HATCHES



BOULDER SCHEDULE:

QTY	SYMBOL	SIZE	COLOR AND TYPE
10	A	18" TO 24"	PER AMENITIES SCHEDULE
9	B	24" TO 30"	PER AMENITIES SCHEDULE
1	C	30" TO 36"	PER AMENITIES SCHEDULE
17	D	36" TO 48"	PER AMENITIES SCHEDULE
21	E	48" TO 60"	PER AMENITIES SCHEDULE

PLAN CROSS REFERENCES:
 FOR NOTES AND LEGENDS, SEE SHEET L-2.00
 FOR CONSTRUCTION DETAILS, SEE SHEET L-2.03 TO L-2.10
 FOR CORRESPONDING IRRIGATION PLAN, SEE SHEET L-3.00
 FOR CORRESPONDING PLANTING PLAN, SEE SHEET L-4.01



REVISIONS

NO.	DATE	INITIAL	DESCRIPTION	APP.

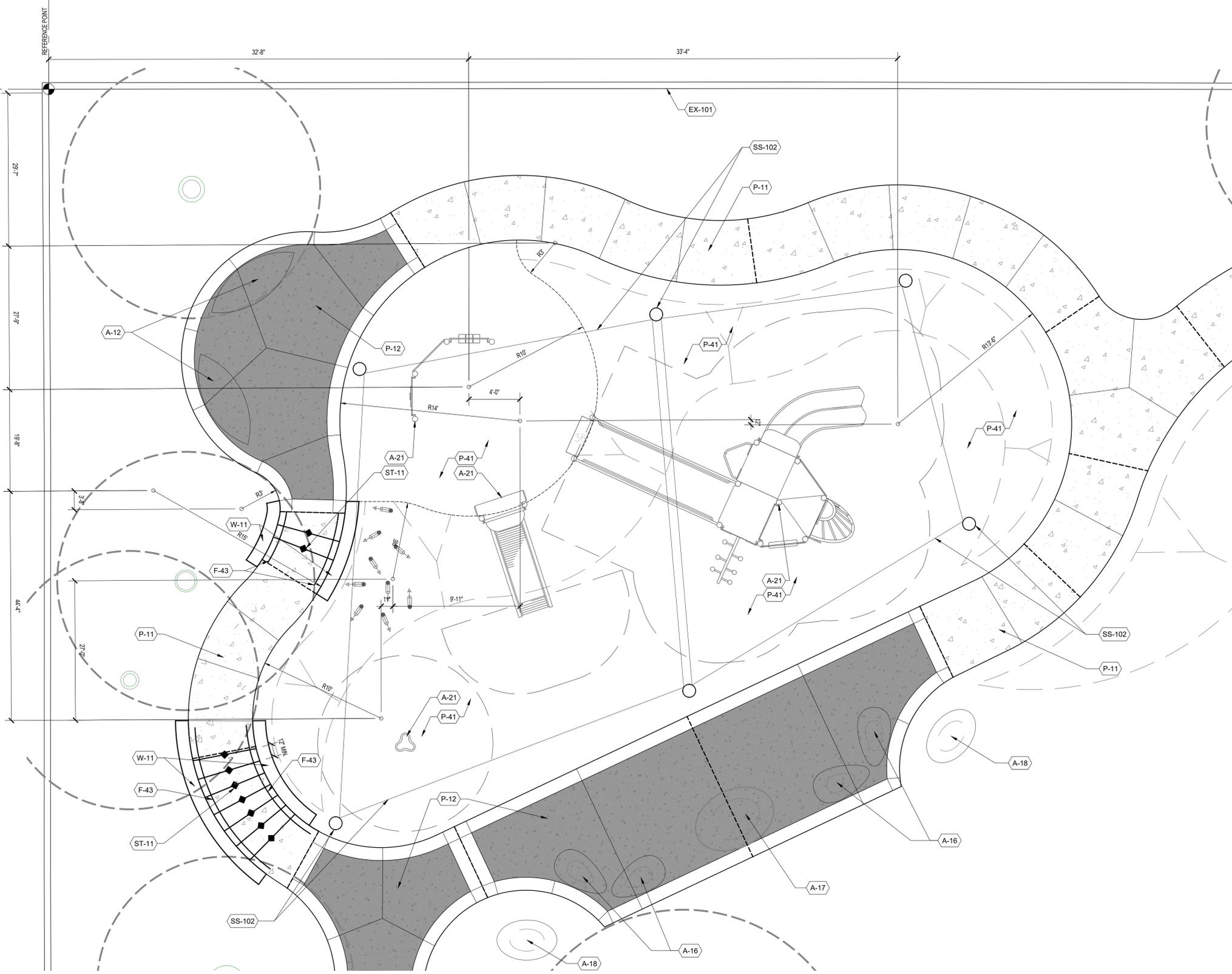
REFERENCES

NO.	DATE	INITIAL	DESCRIPTION	APP.

SCALE: AS SHOWN	DATE: 01-31-2024
PREPARED UNDER THE SUPERVISION OF	01-31-2024
DESIGNED BY: JF	EXP
REVIEWED BY: JRC	
APPROVED: _____	CITY ENGINEER

**HILLBROOK PARK RENOVATION
 CONSTRUCTION PLAN
 CITY OF SIGNAL HILL**

SHEET
L-2.01
 8 OF 28 SHEETS
 PLAN NUMBER

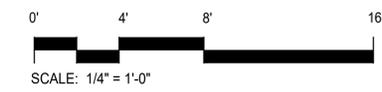


CONSTRUCTION NOTES:

1. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO A FAILURE TO GIVE SUCH NOTIFICATION.
2. WALL AND FENCE LAYOUT SHALL CONFORM TO PROPERTY LINE AND TOP OF SLOPE CONDITIONS. STAKING FOR LOCATION OF WALLS AND FENCES SHALL BE PROVIDED BY THE CIVIL ENGINEER PRIOR TO EXCAVATION OF FOOTINGS.
3. ALL FORMS AND ALIGNMENTS OF PAVING, WALL / FENCE LAYOUT, AND SPECIAL PAVING AREAS SHALL BE REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO POURING (GIVE A MINIMUM OF 48 HOURS NOTICE).
4. FOR SITE GRADING, SEE CIVIL ENGINEER'S GRADING PLAN.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
6. CONTRACTOR SHALL COORDINATE IRRIGATION SLEEVE LOCATIONS UNDER PAVED AREAS AS REQUIRED. REFER TO IRRIGATION PLANS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH OTHER SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH CONSTRUCTION OPERATIONS AS SHOWN.
8. PRIOR TO PLACING CONCRETE, THE CONTRACTOR SHALL SUFFICIENTLY COMPACT THE SUB-GRADE AND PROVIDE SUBSURFACE PREPARATION PER SPECIFICATIONS.
9. CONCRETE SURFACES SHALL BE FORMED WITH LONG, SMOOTH GRADIENT TO REDUCE DIPS, ABRUPT CHANGES AND SHARP TRANSITIONS.
10. ALL CURVILINEAR WALKS, CURBS, HEADER BOARDS, AND WALLS SHALL HAVE A CONTINUOUS SMOOTH CURVE WHERE APPLICABLE. ALL FORMS MUST BE INSPECTED AND APPROVED PRIOR TO BEGINNING THAT PHASE OF WORK.

A PLAYGROUND LAYOUT
SCALE: 1/4" = 1'-0"

PLAN CROSS REFERENCES:
FOR NOTES AND LEGENDS, SEE SHEET L-2.00
FOR CONSTRUCTION DETAILS, SEE SHEET L-2.03 TO L-2.10



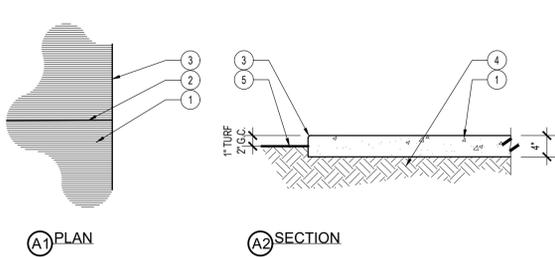
**ARCHITERRA
DESIGN GROUP**
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO
CUCAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES	

SCALE: AS SHOWN	DATE: 01-31-2024
PREPARED UNDER THE SUPERVISION OF <i>[Signature]</i> DESIGNED BY: JF REVIEWED BY: JRC	EXP: 07-31-2024
APPROVED: _____	CITY ENGINEER

<p>HILLBROOK PARK RENOVATION TOT-LOT ENLARGEMENT PLAN</p> <p>CITY OF SIGNAL HILL</p>	<p>SHEET L-2.02 9 OF 28 SHEETS</p> <p>PLAN NUMBER</p>
---	--



- LEGEND:**
- CONCRETE PAVING, 4" MIN. THICKNESS, RUN BROOM FINISH PERPENDICULAR TO EDGE OF CONCRETE / PATH OF TRAVEL.
 - 1" DEEP CONTROL JOINT, SEE CONSTRUCTION PLAN FOR LAYOUT, 5'-0" O.C. MAX.
 - EDGE OF PAVING - 1/2" RADIUS ALONG ALL EXPOSED EDGES.
 - COMPACT SUB-GRADE TO 90% RELATIVE COMPACTION UNDER PAVEMENT.
 - FINISH GRADE AT ADJACENT PLANTING AREA.

NOTES:

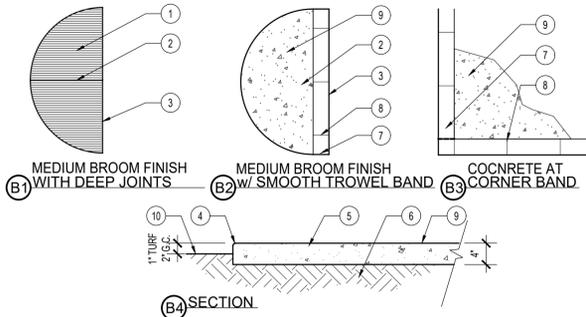
A. CONTRACTOR SHALL POUR AND FINISH A 2' x 2' SAMPLE OF EACH TYPE OF FINISH FOR APPROVAL BY OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT.

B. CONCRETE REINFORCEMENT PER GEOTECHNICAL REPORT.

CONCRETE PAVING WITH BROOM FINISH

SCALE: 3/4" = 1'-0"
REFERENCE NUMBER:

S-CONST-PAV-CONC-51



- LEGEND:**
- MEDIUM BROOM FINISH NAT. COLOR CONCRETE, RUN PERPENDICULAR TO EDGE OF CONC./PATH OF TRAVEL.
 - 1" DEEP CONTROL JOINT, SEE CONST. PLAN FOR LAYOUT.
 - EDGE OF PAVING.
 - 1/2" RADIUS AT ALL EDGES.
 - CONCRETE PAVING, SEE CONSTRUCTION PLAN FOR COLOR AND FINISH TREATMENT w/ #3 REBAR AT 18" EACH WAY.
 - COMPACT SUB-GRADE TO 90% RELATIVE COMPACTION UNDER PAVEMENT.
 - SMOOTH TROWEL BAND, SEE CONSTRUCTION PLAN FOR WIDTH.
 - CONTROL JOINT AT 5'-0" O.C. MAX.
 - CONCRETE PAVING PER PLAN.
 - ADJACENT PLANTER AREA.

NOTES:

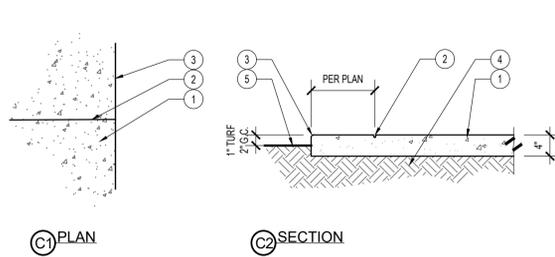
A. CONTRACTOR SHALL POUR AND FINISH A 2' x 2' SAMPLE OF EACH TYPE OF FINISH FOR APPROVAL BY OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT.

B. CONCRETE REINFORCEMENT PER GEOTECHNICAL REPORT.

CONCRETE FINISHES

SCALE: 3/4" = 1'-0"
REFERENCE NUMBER:

S-CONST-PAV-CONC-52



- LEGEND:**
- CONCRETE PAVING, 4" MIN. THICKNESS, PROVIDE A TROWEL BAND AND CREATE A TOP CAST FINISH AS PER SPECIFICATIONS.
 - 1" DEEP CONTROL JOINT, SEE CONSTRUCTION PLAN FOR LAYOUT, 5'-0" O.C. MAX.
 - EDGE OF PAVING - 1/2" RADIUS ALONG ALL EXPOSED EDGES.
 - COMPACT SUB-GRADE TO 90% RELATIVE COMPACTION UNDER PAVEMENT.
 - FINISH GRADE AT ADJACENT PLANTING AREA.

NOTES:

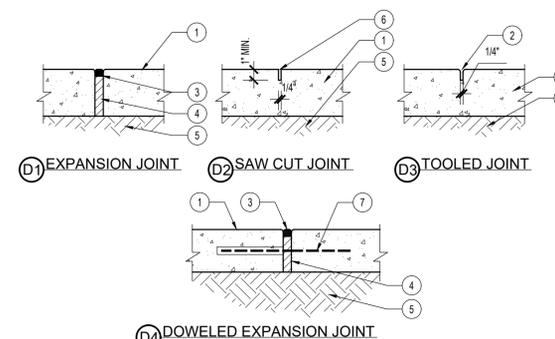
A. CONTRACTOR SHALL POUR AND FINISH A 2' x 2' SAMPLE OF EACH TYPE OF FINISH FOR APPROVAL BY OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT.

B. CONCRETE REINFORCEMENT PER GEOTECHNICAL REPORT.

CONCRETE PAVING TOP CAST FINISH WITH TROWEL BAND

SCALE: 3/4" = 1'-0"
REFERENCE NUMBER:

S-CONST-PAV-CONC-53



- LEGEND:**
- CONCRETE PAVING PER PLAN.
 - HAND TOOLED JOINT w/ 1/4" TOOLED RADIUS.
 - POLYURETHANE WATERPROOF SEALANT, COLOR TO MATCH PAVING, TO BE INSTALLED ON SUBMITTAL.
 - 1/2" EXPANSION JOINT w/ TEAR-AWAY TOP.
 - COMPACTED SUB-GRADE PER SOIL REPORT.
 - MACHINE SAW CUT JOINT, 1" DEEP MINIMUM.
 - SPEED DOWEL (Sika®), 12" LONG AT 18" O.C. INSERT ONE SIDE IN PVC SLEEVE.

NOTES:

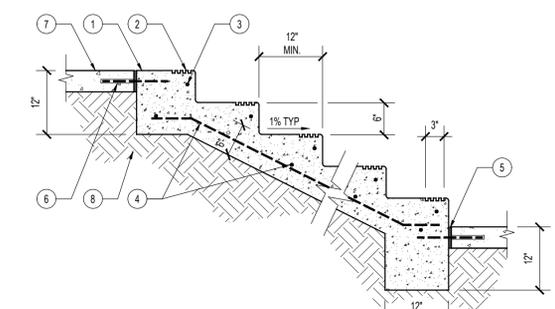
A. EXPANSION JOINTS SHALL BE PLACED A MAXIMUM OF 20' APART UNLESS OTHERWISE NOTED ON PLAN.

B. PLACE EXPANSION JOINTS AT ALL ABUTMENTS ADJACENT TO FOUNDATIONS AND SEGMENTED AREAS OF CONCRETE AND AS SHOWN ON PLAN.

EXPANSION & CONTROL JOINTS

SCALE: 1 1/2" = 1'-0"
REFERENCE NUMBER:

S-CONST-PAV-CONC-24



- LEGEND:**
- CONCRETE STEP, COLOR AND FINISH TO MATCH ADJACENT HARDSCAPE.
 - 3/8" WIDE WARNING GROOVES, PLACE ON ALL TREADS AND APPLY AMSTEP PRODUCTS NON-SLIP EPOXY COATING #S-250, 'BLACK' COLOR.
 - #3 NOSE REBAR, HOLD 2" CLEAR FROM SURFACE TYPICAL.
 - #4 REBAR AT 18" O.C. EACH WAY.
 - 1/2" THICK, FULL-DEPTH EXPANSION JOINT.
 - #4 REBAR DOWEL, 12" LONG AT 18" O.C. INSERT ONE SIDE IN PVC SLEEVE.
 - ADJACENT PAVING PER PLAN.
 - 90% MINIMUM COMPACTION SUB-GRADE.

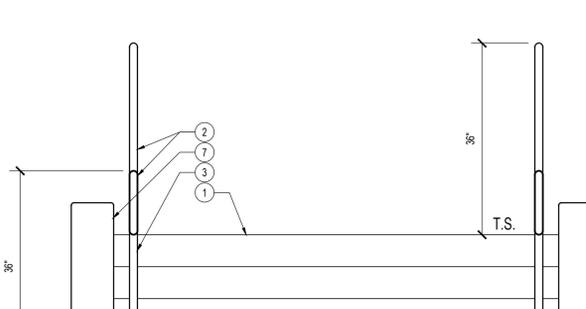
NOTE:

A. SEE CIVIL PLANS FOR NUMBER OF RISERS AT EACH LOCATION.

CONCRETE STAIRS WITH GROOVES

SCALE: 3/4" = 1'-0"
REFERENCE NUMBER: ST-11

S-CONST-PAV-CONC-08



- LEGEND:**
- CONCRETE STAIRS PER CONSTRUCTION PLAN.
 - 1 1/2" DIA. x 11 GA. POWDER COATED TUBULAR STEEL HANDRAIL, WELD TO POSTS.
 - 1" x 1/2" POWDER COATED STEEL BAR HANDRAIL END POST.
 - 1 1/2" DIA. x 11 GA. POWDER COATED RETURN WITH 3" OUTER RADIUS.
 - 3/4" RED HEAD STAINLESS STEEL ANCHOR HARDWARE AT HANDRAIL POST BASE.
 - ADJACENT PAVING PER CONSTRUCTION PLAN.
 - CMU CHEEK WALL PER CONSTRUCTION PLAN.
 - POST BASE 3" x 3-1/2" x 1/4" w/ (4) 3/8" x 3-3/4" STAINLESS STEEL SLEEVE ANCHOR.

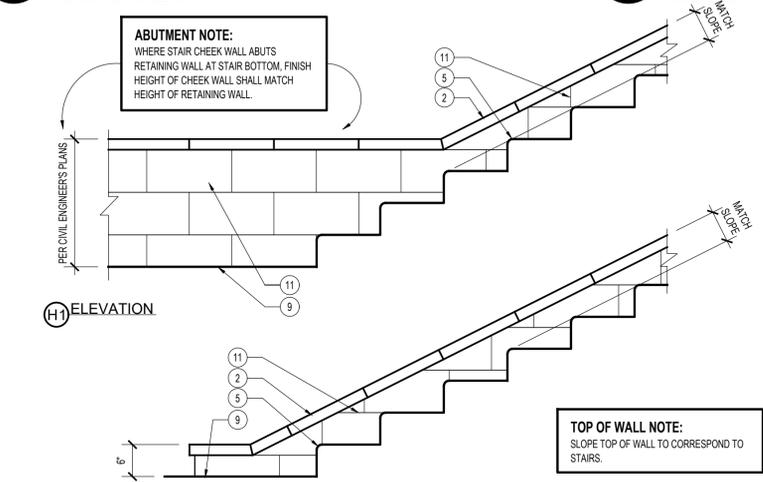
NOTE:

A. HANDRAIL SHALL HAVE A POWDER COAT COLOR FINISH PER CONSTRUCTION LEGEND.

HANDRAIL AT STAIRS

SCALE: 3/4" = 1'-0"
REFERENCE NUMBER: F-43

P-2303-CONST-11



ABUTMENT NOTE:

WHERE STAIR CHEEK WALL ABUTS RETAINING WALL AT STAIR BOTTOM, FINISH HEIGHT OF CHEEK WALL SHALL MATCH HEIGHT OF RETAINING WALL.

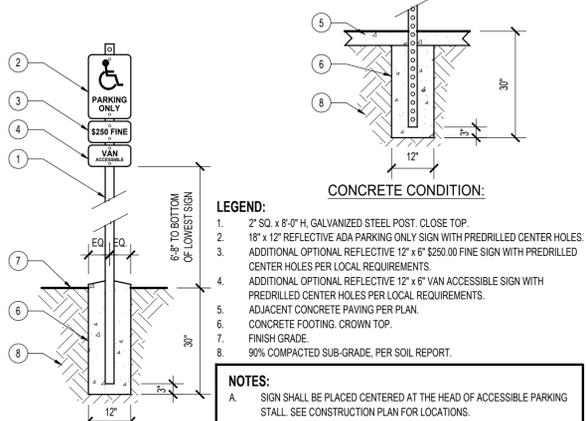
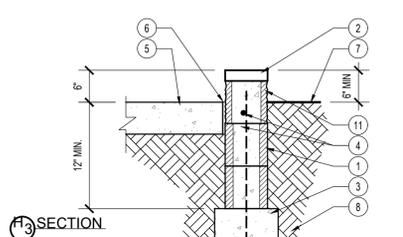
TOP OF WALL NOTE:

SLOPE TOP OF WALL TO CORRESPOND TO STAIRS.

SPLIT-FACE (VIEWABLE) CMU CHEEK WALL AT STAIRS

SCALE: 3/4" = 1'-0"
REFERENCE NUMBER:

S-CONST-WALLS-CMU-33



- LEGEND:**
- 2" SQ. x 6'-0" H. GALVANIZED STEEL POST, CLOSE TOP.
 - 18" x 12" REFLECTIVE ADA PARKING ONLY SIGN WITH PREDRILLED CENTER HOLES.
 - ADDITIONAL OPTIONAL REFLECTIVE 12" x 6" \$250.00 FINE SIGN WITH PREDRILLED CENTER HOLES PER LOCAL REQUIREMENTS.
 - ADDITIONAL OPTIONAL REFLECTIVE 12" x 6" VAN ACCESSIBLE SIGN WITH PREDRILLED CENTER HOLES PER LOCAL REQUIREMENTS.
 - ADJACENT CONCRETE PAVING PER PLAN.
 - CONCRETE FOOTING, CROWN TOP.
 - FINISH GRADE.
 - 90% COMPACTION SUB-GRADE, PER SOIL REPORT.

NOTES:

A. SIGN SHALL BE PLACED CENTERED AT THE HEAD OF ACCESSIBLE PARKING STALL. SEE CONSTRUCTION PLAN FOR LOCATIONS.

B. THE SIGN SHALL NOT BE SMALLER THAN 70 SQ. INCHES IN AREA.

C. SIGNS SHALL BE PLACED A MINIMUM OF 80" FROM THE BOTTOM OF SIGN TO THE BOTTOM OF THE PARKING SPACE FINISH GRADE IF IN THE PATH OF TRAVEL.

D. SIGNS MAY ALSO BE PLACED ON A WALL AT THE INTERIOR END OF THE PARKING STALL CENTERED ON THE SPACE AT A MINIMUM OF 36" FROM THE BOTTOM OF SIGN TO THE PARKING SPACE FINISH GRADE.

ADA PARKING STALL SIGNAGE

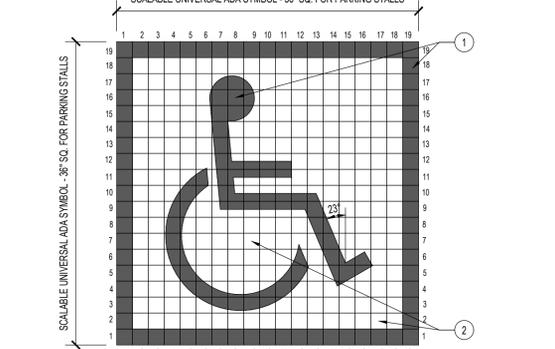
SCALE: 1/2" = 1'-0"
REFERENCE NUMBER: S-71

S-CONST-ADA-PARKSIG-02

6" W CONCRETE HEADER AT PLANTER & TURF

SCALE: 1 1/2" = 1'-0"
REFERENCE NUMBER: C-12

S-CONST-CURB-CURB-16



- LEGEND:**
- REFLECTIVE WHITE PAVEMENT PAINT TO BE USED FOR OUTLINE AND BORDER. 3" WIDE IS STANDARD FOR MOST PARKING SPACES. NOTE THE WIDTH WILL CHANGE PROPORTIONATELY WITH THE IMAGE SCALE.
 - REFLECTIVE BLUE PAVEMENT PAINT TO BE USED FOR THE BACKGROUND AND FILL AREAS WITHIN THE BORDER.

NOTES:

A. ALTHOUGH DRAWN TO A SCALE PER THIS DETAIL, THE INTERNATIONAL SYMBOL OF ACCESSIBILITY IS SHOWN TO BE DRAWN BY A GRID PROPORTIONATELY AT ANY SCALE DESIRED FOLLOWING ADA GUIDELINES PER THE INTENDED PROJECT AND USE.

B. GRID, GRID NUMBERS, AND DIMENSIONS ARE FOR DRAWING PURPOSES ONLY AND SHOULD NOT BE DRAWN IN FIELD.

INTERNATIONAL ADA SYMBOL

SCALE: 3/4" = 1'-0"
REFERENCE NUMBER: S-72

S-CONST-ADA-SYMBOL-01

ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO CUCAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

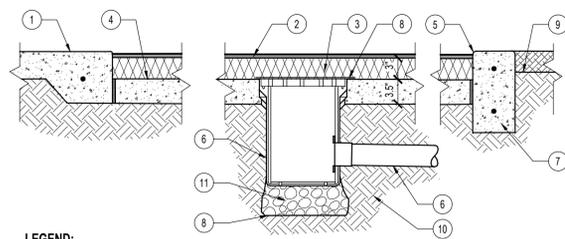
LICENCED LANDSCAPE ARCHITECT
BRUCE H. Krumholz 2024
07-31-24
01-31-24
DATE

STATE OF CALIFORNIA

REVISIONS					REFERENCES				
NO.	DATE	INITIAL	DESCRIPTION	APP.					

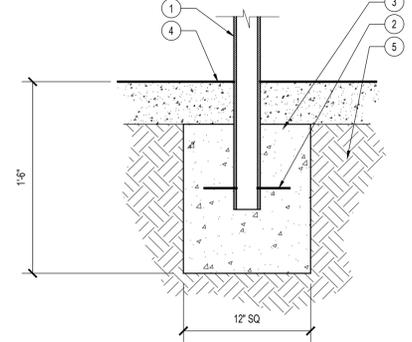
SCALE:	AS SHOWN	DATE:	01-31-2024
DESIGNED BY:	STAFF	EXP:	07-31-2024
REVIEWED BY:	JRC		
APPROVED:		CITY ENGINEER	

HILLBROOK PARK RENOVATION
CONSTRUCTION DETAILS 1
CITY OF SIGNAL HILL



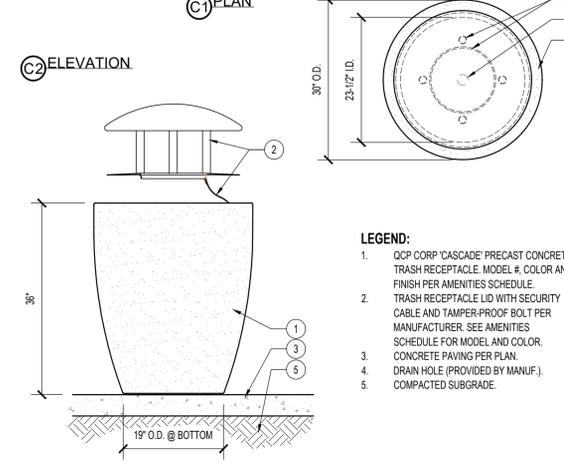
- LEGEND:**
- ADJACENT CONCRETE PAVING. SEE CONSTRUCTION PLAN AND DETAIL. THIS SHEET FOR LOCATIONS AND FINISHES.
 - 1/2" TOP RUBBER SURFACE WEAR-IN COURSE TO BE FLUSH W/ CONCRETE PERIMETER EDGE. VERIFY THICKNESS AT INSTALL WITH MANUFACTURER (SPECTRATURF).
 - RUBBER SURFACE BASE MATERIAL (SPECTRATURF). THICKNESS BASED ON 7' FALL. CONTRACTOR TO VERIFY FALL HEIGHTS WITH PLAYGROUND EQUIPMENT VENDOR, PLAY SURFACE VENDOR AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
 - CONCRETE SUBSLAB SLOPE CONCRETE MINIMUM 0.5%, MAXIMUM 1% TO DRAIN. SEE CIVIL GRADING PLAN.
 - 1/2" RADIUS AT EDGES OF CONCRETE AND AT JOINTS.
 - 12" x 12" CATCH BASIN & DRAIN PIPE. DRILL 1/4" WEEP HOLE TYPICAL (4) PLACES AT BOTTOM CORNERS.
 - CONCRETE CURB AT PLAY AREA. SEE DETAIL THIS SHEET.
 - FILTER FABRIC (MIRAFI DRAIN 140N).
 - FINISH GRADE.
 - SATURATED AND COMPACTED SUBGRADE TO 90% PRIOR PLACING CONCRETE SUBBASE. SLOPE SUBGRADE TO DRAIN PER CIVIL ENGINEER'S PLANS.
 - 4" TO 6" DEEP LAYER 3/4" GRAVEL BASE.
 - EXPANSION JOINT. SEE DETAIL B, THIS SHEET SUBSLAB AND DRAIN.

A PLAY SURFACING WITH DRAIN
- 7' FALL CONDITION
SCALE: 1" = 1'-0"
REFERENCE NUMBER: P-41
S-CONST-PAV-PLSUR-05

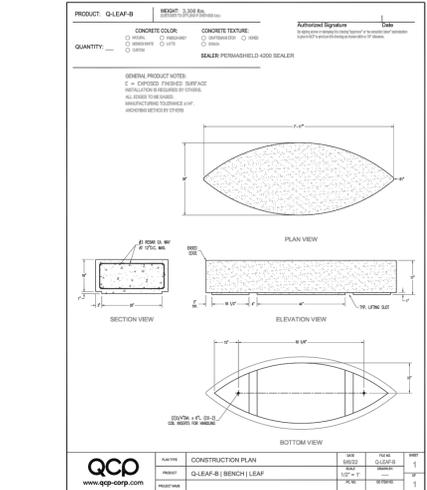


- LEGEND:**
- 2 3/8" DIA. x 40" LONG, STEEL PIPE POST FOR PARK-STYLE GRILL PER CONSTRUCTION PLAN. SET BOTTOM OF GRILL / TOP OF POST AT 30" ABOVE FINISH SURFACE.
 - 1/2" DIA. x 8" LONG REBAR THRU POST WELD IN PLACE.
 - CONCRETE FOOTINGS.
 - ADJACENT PAVING PER CONSTRUCTION PLAN.
 - COMPACTED SUB-GRADE.

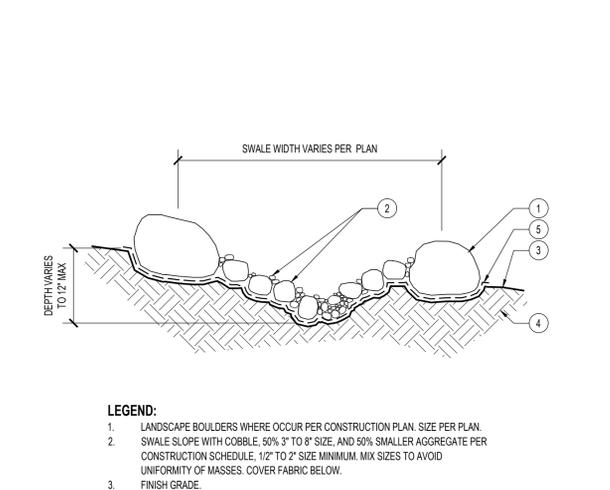
B POST MOUNT PARK BARBECUE
SCALE: 1 1/2" = 1'-0"
REFERENCE NUMBER:
S-CONST-SA-BBQ-05



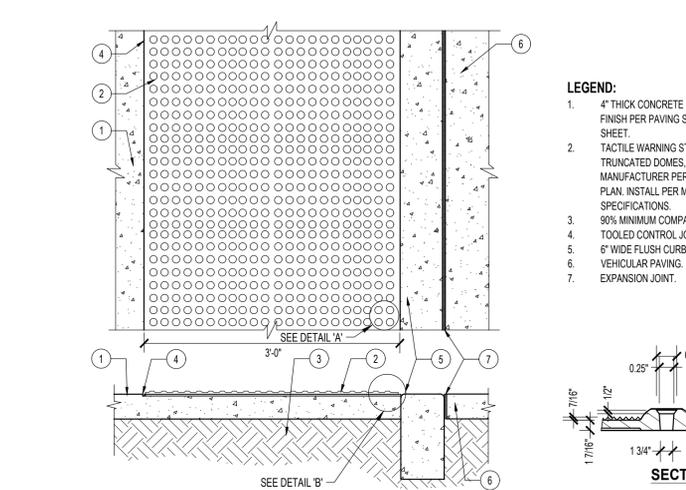
C PRECAST CONCRETE TRASH RECEPTACLE
SCALE: 3/4" = 1'-0"
REFERENCE NUMBER: A-14
S-CONST-SA-TRASH-14



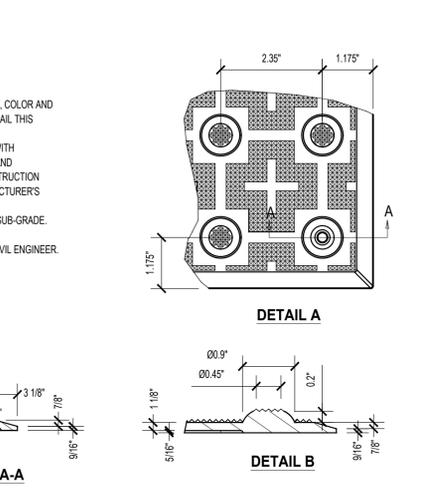
D PRECAST CONCRETE 'LEAF' BENCH
SCALE: NOT TO SCALE
S-CONST-PAV-PLSUR-05



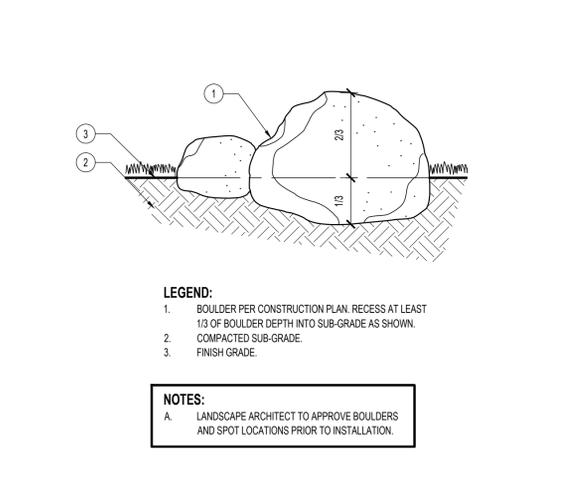
E DRY COBBLE SWALE
SCALE: 1" = 1'-0"
REFERENCE NUMBER:
S-GRA-GRA-SWAL-01



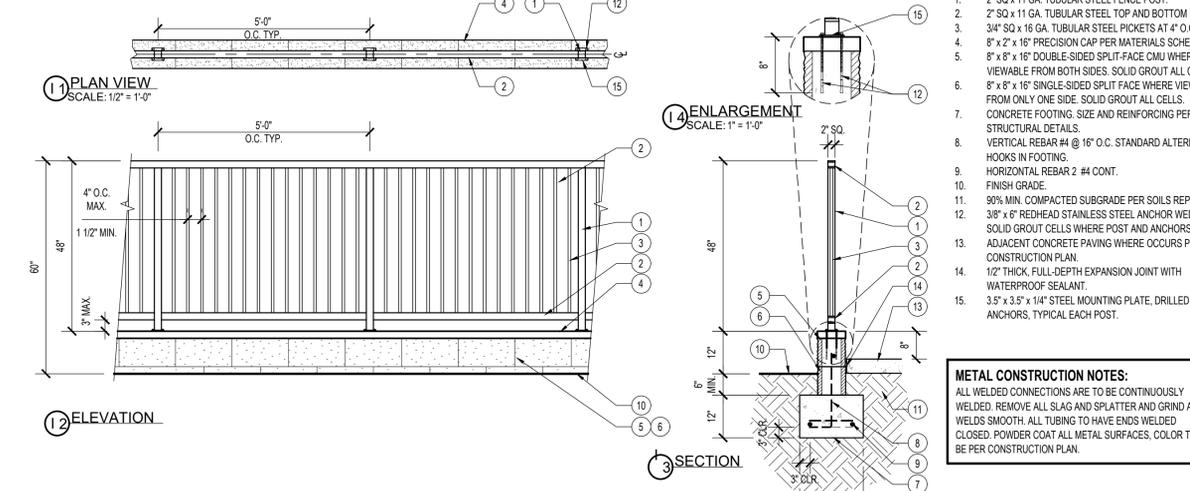
F TACTILE WARNING - SURFACE APPLIED
SCALE: 1" = 1'-0"
REFERENCE NUMBER:
S-CONST-PAV-TD-02



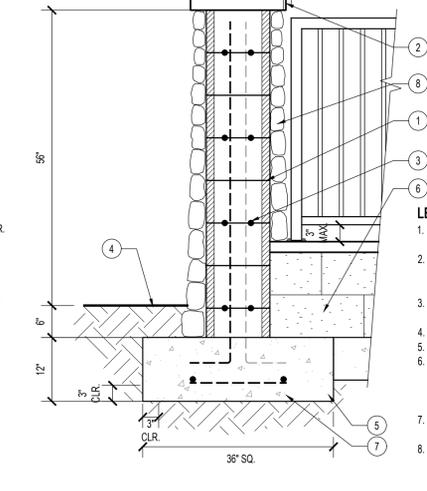
G ADA-COMPLIANT DRINK.FOUNTAIN W/ BOTTLE FILLER & DOG BOWL
SCALE: 1" = 1'-0"
REFERENCE NUMBER: A-13
S-CONST-SA-DF-12



H LANDSCAPE BOULDER
SCALE: 1" = 1'-0"
REFERENCE NUMBER: A-61
S-CONST-SA-BLDR-02

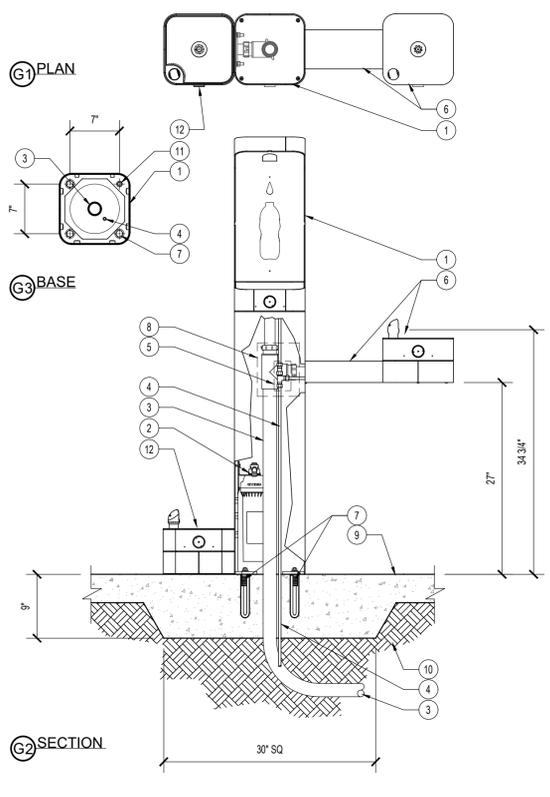


I COMBO WALL
SCALE: 1/2" = 1'-0"
REFERENCE NUMBER: F-41
P-2303-CONST-12



J CMU COLUMN WITH STONE VENEER
SCALE: 3/4" = 1'-0"
REFERENCE NUMBER: W-13
P-2303-CONST-13

- LEGEND:**
- HAWS #3611 VANDAL-RESISTANT, STAINLESS STEEL BOTTLE FILLER AND ADA-COMPLIANT DRINKING FOUNTAIN.
 - WATER FILTER KIT PER MANUFACTURER.
 - 1-1/2" PVC DRAIN PIPE. CONNECT TO DRAINAGE SUMP PER LOCAL CODES AND STANDARDS.
 - 3/8" WATER SUPPLY TUBING (SUPPLIED BY MANUFACTURER). CUT TUBING AS REQUIRED TO CONNECT FILTER. CONNECT TO POTABLE WATER SUPPLY w/ SHUTOFF BALL VALVE IN VALVE BOX.
 - COMPRESSION TEE, COMPRESSION ADAPTOR, INSERTS, FERRULES AND COMPRESSION NUTS (SUPPLIED BY MANUFACTURER).
 - ADA-COMPLIANT FOUNTAIN AND EXTENSION ARM.
 - 4X STAINLESS STEEL ANCHORS WITH 4X 5/8" NUTS AND WASHERS, PROVIDED BY MANUFACTURER.
 - 1-1/2" PVC TEE, PVC COMPRESSION TRAP ADAPTOR, 2X NUTS AND WASHERS.
 - ADJACENT CONCRETE PAVING PER CONSTRUCTION PLAN.
 - COMPACTED SUBGRADE.
 - 4X 7/8" DIA. MOUNTING HOLES. OPTIONAL TEMPLATE FOR SPACING ANCHORS AT TIME OF CONCRETE POUR AVAILABLE FROM MANUFACTURER.
 - MODEL 3670 S.S. HEAVY DUTY DOG BOWL WITH PUSH-BUTTON ACCESS.
- NOTES:**
- INSTALL BOTTLE FILLER / DRINKING FOUNTAIN PER LOCAL CODES AND STANDARDS INCLUDING A TRAP IN THE WASTE LINE AND A SCREWDRIIVER STOP IN THE SUPPLY LINE AS REQUIRED.
 - INSTALL PER MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES		

SCALE: AS SHOWN
PREPARED UNDER THE SUPERVISION OF
07-31-2024
DESIGNED BY STAFF
REVIEWED BY JRC
APPROVED CITY ENGINEER

DATE
01-31-2024

HILLBROOK PARK RENOVATION
CONSTRUCTION DETAILS 2

CITY OF SIGNAL HILL

SHEET
L-2.04
11 OF 28 SHEETS

PLAN NUMBER

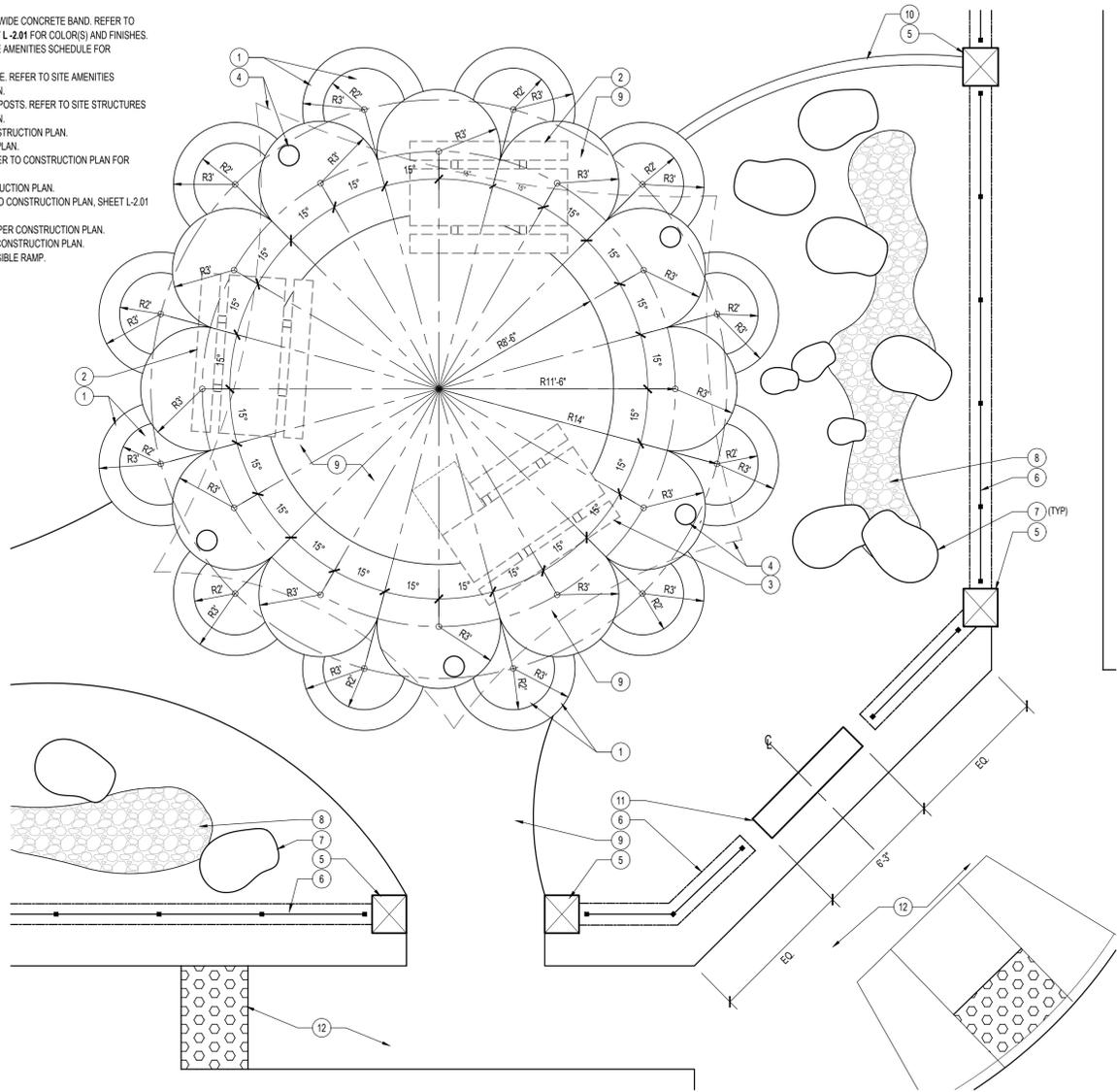
ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO CUCAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

LICENSED LANDSCAPE ARCHITECT
IRISH W. Krumwiede
07-5274
01-31-2024
DATE

STATE OF CALIFORNIA

LEGEND:

1. CONCRETE PAVING WITH 12" WIDE CONCRETE BAND. REFER TO CONSTRUCTION PLAN, SHEET L-2.01 FOR COLOR(S) AND FINISHES.
2. PICNIC TABLE. REFER TO SITE AMENITIES SCHEDULE FOR INFORMATION.
3. ADA-COMPLIANT PICNIC TABLE. REFER TO SITE AMENITIES SCHEDULE FOR INFORMATION.
4. 5-CORNER SHADE SAIL WITH POSTS. REFER TO SITE STRUCTURES SCHEDULE FOR INFORMATION.
5. COLUMN WITH CAP PER CONSTRUCTION PLAN.
6. FENCE PER CONSTRUCTION PLAN.
7. LANDSCAPE BOULDERS. REFER TO CONSTRUCTION PLAN FOR TYPE, SUPPLIER AND SIZES.
8. COBBLE SWALE PER CONSTRUCTION PLAN.
9. CONCRETE PAVING. REFER TO CONSTRUCTION PLAN, SHEET L-2.01 FOR COLOR(S) AND FINISHES.
10. 6" WIDE CONCRETE HEADER PER CONSTRUCTION PLAN.
11. PARK MONUMENT SIGN PER CONSTRUCTION PLAN.
12. CITY SIDEWALK WITH ACCESSIBLE RAMP.



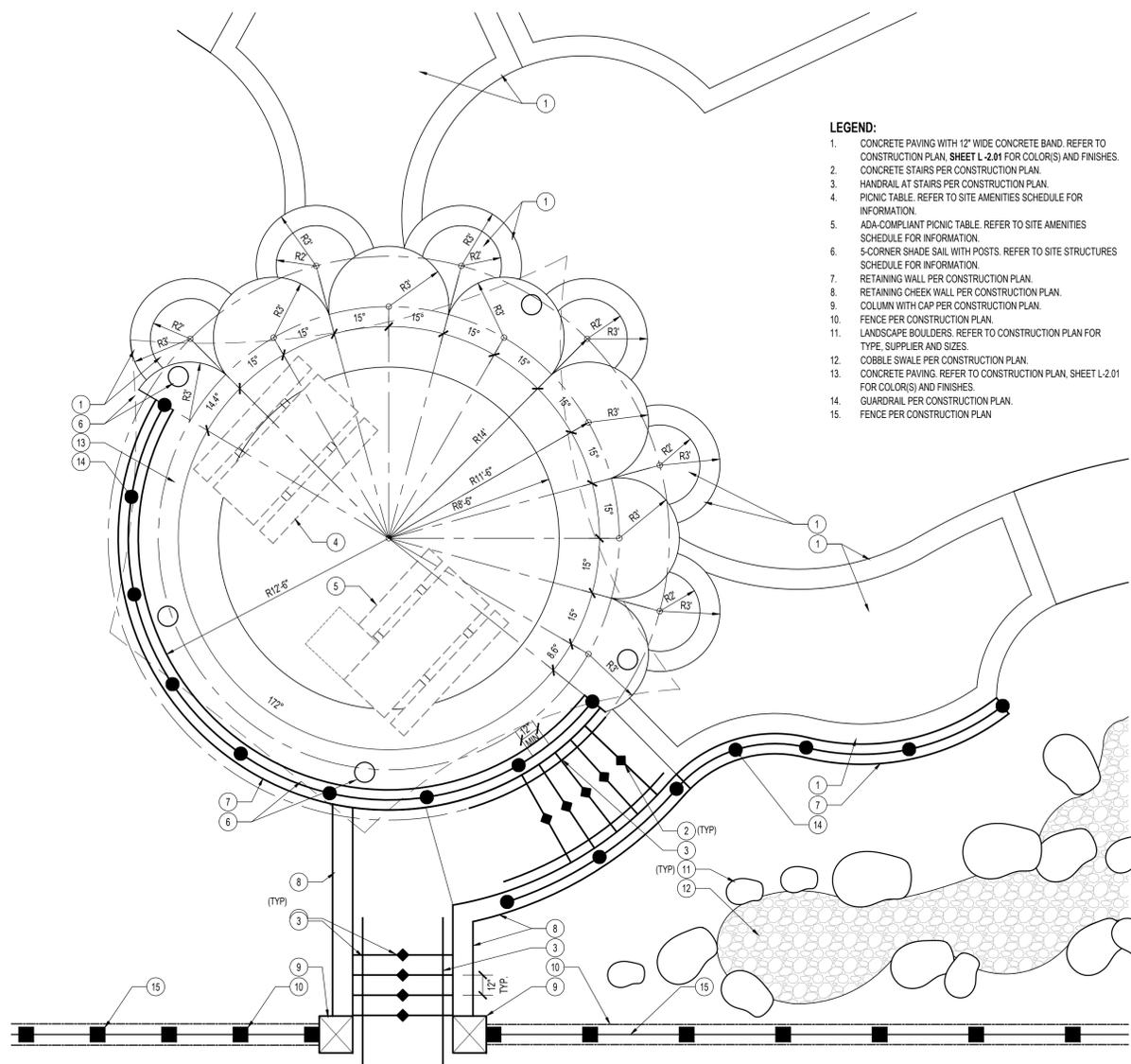
A SHADE STRUCTURE PAVING PATTERN 1

SCALE: 1/4" = 1'-0"
REFERENCE NUMBER:

P-2303-CONST-01

LEGEND:

1. CONCRETE PAVING WITH 12" WIDE CONCRETE BAND. REFER TO CONSTRUCTION PLAN, SHEET L-2.01 FOR COLOR(S) AND FINISHES.
2. CONCRETE STAIRS PER CONSTRUCTION PLAN.
3. HANDRAIL AT STAIRS PER CONSTRUCTION PLAN.
4. PICNIC TABLE. REFER TO SITE AMENITIES SCHEDULE FOR INFORMATION.
5. ADA-COMPLIANT PICNIC TABLE. REFER TO SITE AMENITIES SCHEDULE FOR INFORMATION.
6. 5-CORNER SHADE SAIL WITH POSTS. REFER TO SITE STRUCTURES SCHEDULE FOR INFORMATION.
7. RETAINING WALL PER CONSTRUCTION PLAN.
8. RETAINING CHEEK WALL PER CONSTRUCTION PLAN.
9. COLUMN WITH CAP PER CONSTRUCTION PLAN.
10. FENCE PER CONSTRUCTION PLAN.
11. LANDSCAPE BOULDERS. REFER TO CONSTRUCTION PLAN FOR TYPE, SUPPLIER AND SIZES.
12. COBBLE SWALE PER CONSTRUCTION PLAN.
13. CONCRETE PAVING. REFER TO CONSTRUCTION PLAN, SHEET L-2.01 FOR COLOR(S) AND FINISHES.
14. GUARDRAIL PER CONSTRUCTION PLAN.
15. FENCE PER CONSTRUCTION PLAN.



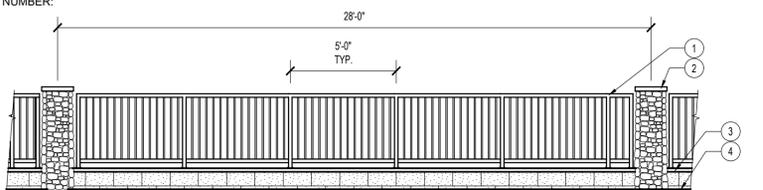
B SHADE STRUCTURE PAVING PATTERN 2

SCALE: 1/4" = 1'-0"
REFERENCE NUMBER:

P-2303-CONST-02

C1 ELEVATION

FLAT CONDITION

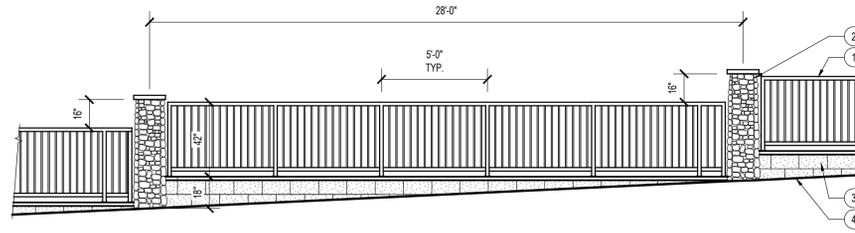


LEGEND:

1. 42" H. T.S. FENCE. SEE DETAIL I, SHEET L-2.04.
2. CMU COLUMN WITH NATURAL COBBLE VENEER AND PRECAST COLUMN CAP. SEE DETAIL J, SHEET L-2.04.
3. CMU WALL WITH CAP. SEE DETAIL I, SHEET L-2.04.
4. FINISH GRADE / FINISH SURFACE PER CONSTRUCTION PLAN.

C2 ELEVATION

SLOPED CONDITION



C PERIMETER FENCE / WALL WITH STONE VENEER COLUMNS - ELEVATIONS

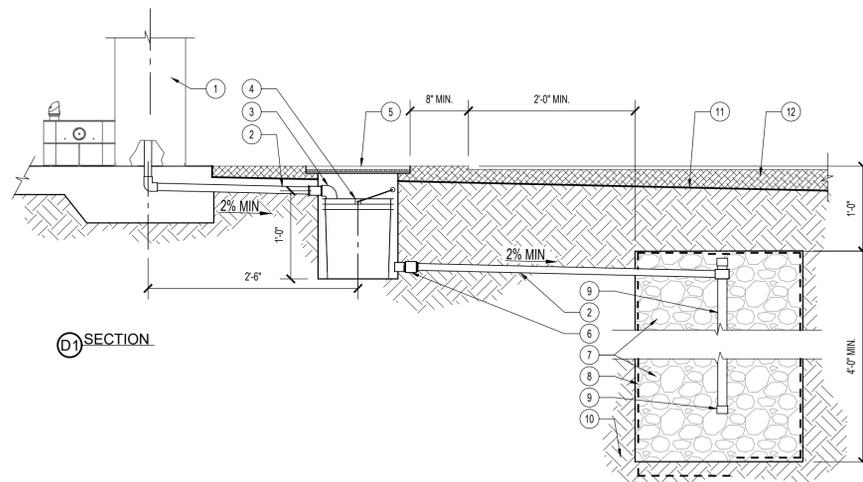
SCALE: 1/4" = 1'-0"
REFERENCE NUMBER:

P-2303-CONST-14

D DRINKING FOUNTAIN SAND TRAP AND SUMP

SCALE: 1" = 1'-0"
REFERENCE NUMBER:

S-CONST-SA-DF-13



LEGEND:

1. DRINKING FOUNTAIN SEE DETAIL ON THIS SHEET
2. 2" PVC DRAIN PIPE FROM DRINKING FOUNTAIN AT 2% MINIMUM SLOPE.
3. OUTLET ELBOW WITH IPS THREADS
4. SAND TRAP HAWS, MODEL #6511
5. COVER AS PROVIDED BY HAWS w/ (8) 1/4-20 VANDAL-PROOF SCREWS ON 12-1/2" B.C.
6. 1 1/2" PVC WASTE PIPE TO 3" PERFORATED PVC PIPE.
7. 1" DRAIN GRAVEL IN 4" DEEP X 2' SUMP PIT.
8. FILTER FABRIC, WRAP ON ALL SIDES, TOP, AND BOTTOM. (MIRAFI 140N)
9. 3" PERFORATED PVC PIPE W/ CAPS.
10. COMPACTED SUBGRADE.
11. FINISH GRADE.
12. MULCH LAYER, SEE LANDSCAPE PLAN FOR TYPE AND THICKNESS.

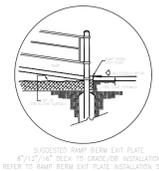
D2 PLAN VIEW w/ SAND TRAP COVER

SCALE: AS SHOWN	DATE: 01-31-2024
PREPARED UNDER THE SUPERVISION OF	07-31-2024
DESIGNER: [Signature]	EXP
STAFF	
REVIEWED BY: JRC	
APPROVED: [Signature]	CITY ENGINEER

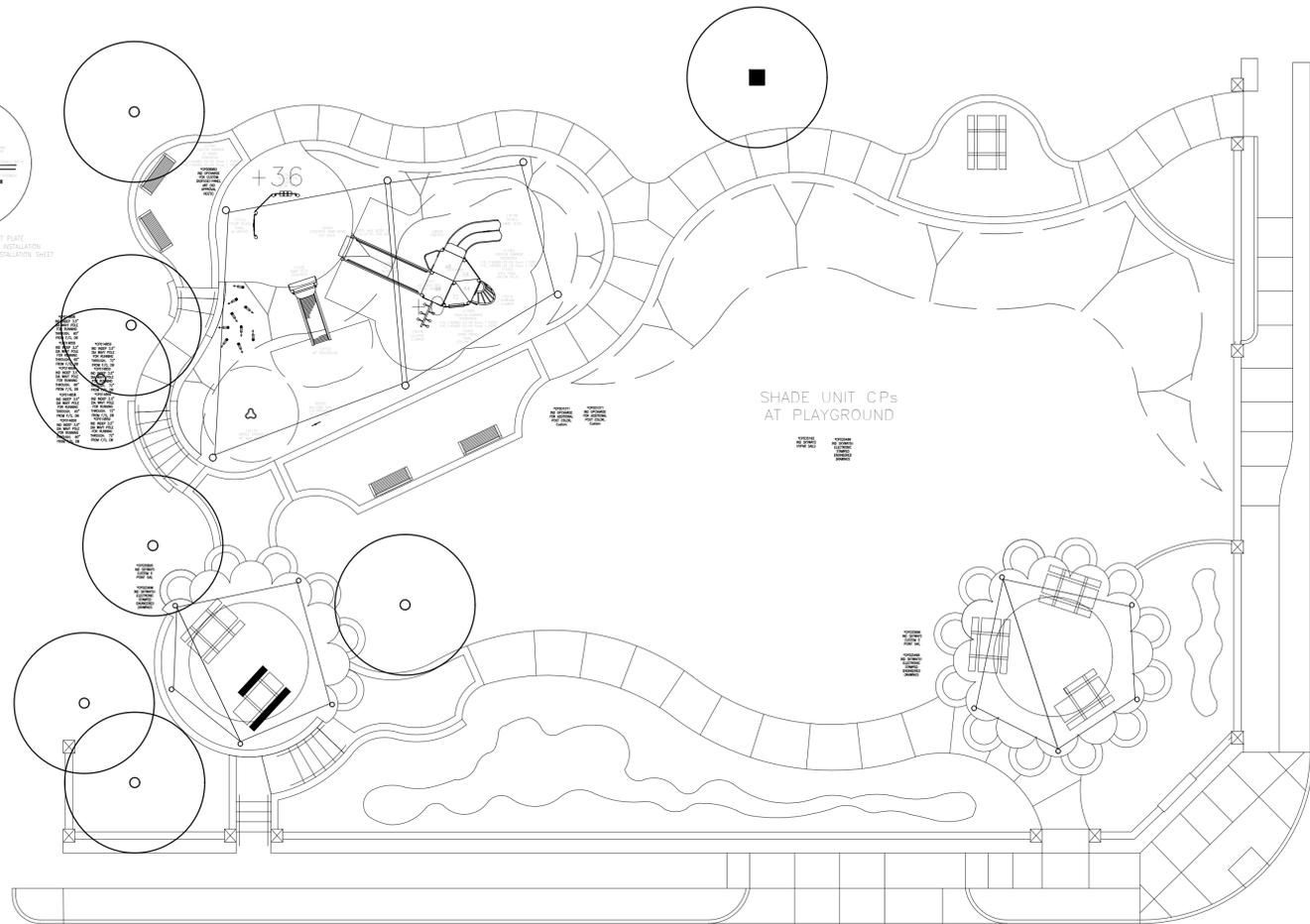
HILLBROOK PARK RENOVATION
CONSTRUCTION DETAILS 3
CITY OF SIGNAL HILL

SHEET
L-2.05
12 OF 28 SHEETS
PLAN NUMBER

REVISIONS				REFERENCES	
NO.	DATE	INITIAL	DESCRIPTION	APP.	



3/8" DIA. RAMP BEAM END PLATE
#1/2" DIA. BOLT TO FRAME FOR INSTALLATION
REFER TO RAMP BEAM END PLATE INSTALLATION SHEET



PlayBooster®
(5-12 years)
Max Fall Height: 72 inches

TOTAL ELEVATED PLAY COMPONENTS	5		
TOTAL ELEVATED COMPONENTS ACCESSIBLE BY RAMP	2	REQUIRED	0
TOTAL ELEVATED COMPONENTS ACCESSIBLE BY TRANSFER	3	REQUIRED	3
TOTAL ACCESSIBLE GROUND LEVEL COMPONENTS SHOWN	7	REQUIRED	2
TOTAL DIFFERENT TYPES OF GROUND LEVEL COMPONENTS	7	REQUIRED	7

Estimated manufacturing time:
11 weeks from the time of
order acceptance, or receipt of
materials, unless otherwise
noted on drawing.

landscape
structures



The play components shown on this plan are IPEMA certified. (Unless model number is preceded with *) The use and layout of these components conform to the requirements of ASTM F1487. To verify product certification, visit www.ipema.org.

THIS PLAY AREA & PLAY EQUIPMENT IS DESIGNED FOR AGES 5-12 YEARS (UNLESS OTHERWISE NOTED ON PLAN).

IT IS THE MANUFACTURER'S OPINION THAT THIS PLAY AREA DOES CONFORM TO THE A.D.A. ACCESSIBILITY STANDARDS, ASSUMING AN ACCESSIBLE PROTECTIVE SURFACING IS PROVIDED, AS INDICATED, OR WITHIN THE ENTIRE USE ZONE.

THIS CONCEPTUAL PLAN WAS BASED ON INFORMATION AVAILABLE TO US PRIOR TO CONSTRUCTION. DETAILED SITE INFORMATION INCLUDING SITE DIMENSIONS, TOPOGRAPHY, EXISTING UTILITIES, SOIL CONDITIONS, AND TREASURE SOLUTIONS SHOULD BE OBTAINED, EVALUATED, & UTILIZED IN THE FINAL DESIGN. PLEASE VERIFY ALL DIMENSIONS OF PLAY AREA, SIZE, ORIENTATION, AND LOCATION OF ALL EXISTING UTILITIES, EQUIPMENT, AND SITE FINISHINGS PRIOR TO ORDERING. SLIDES SHOULD NOT FACE THE HOT AFTERNOON SUN.

CHOOSE A PROTECTIVE SURFACING MATERIAL THAT HAS A CRITICAL HEIGHT VALUE TO MEET THE MAXIMUM FALL HEIGHT FOR THE EQUIPMENT (REF. ASTM F1487 STANDARD CONSUMER SAFETY PERFORMANCE SPECIFICATION FOR PLAYGROUND EQUIPMENT FOR PUBLIC USE, SECTION 6 CURRENT REVISION). THE SURFACE MUST BE WELL DRAINED. IF THE SOIL DOES NOT DRAIN NATURALLY, IT MUST BE TILED OR SURFER 1/8" TO 1/4" PER FOOT TO A STORM SEWER OR A "FRENCH DRAIN".

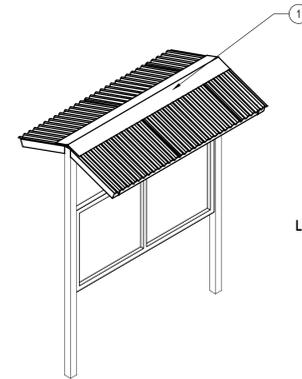
AREA OF ACCESSIBLE/PROTECTIVE SURFACING (POURED-IN-PLACE SUGGESTED)
1,957 SQFT

IT IS THE MANUFACTURER'S OPINION AND INTENT THAT THE LAYOUT OF THESE COMPONENTS CONFORM WITH THE U.S. CONSUMER PRODUCT SAFETY COMMISSION'S (CPSC) "HANDBOOK FOR PUBLIC PLAYGROUND SAFETY"

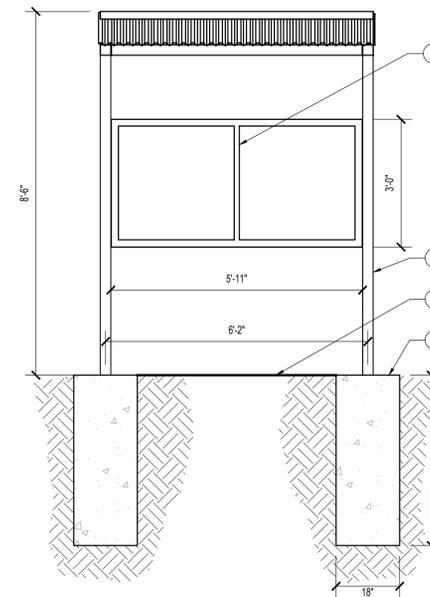
DESIGNED BY:
SP

9/26/23
LANDSCAPE STRUCTURES, INC.
601 7th STREET SOUTH • P.O. BOX 198
DUNDAS, MINNESOTA 55309
PH: 1-800-328-0925 FAX: 1-763-972-8091

9/6/23	1176744-04-02	SP
8/8/23	1176744-04-01	SP
Date	Previous Drawing #	Initials



- LEGEND:
1. ICON KIOSK MODEL # TMB7136Y-PA
 2. SATIN ANODIZED ALUMINUM FRAME
 3. LOCKABLE DOORS
 4. CONCRETE FOOTING
 5. FINISHED GRADE



B KIOSK
SCALE: 1/2" = 1'-0"
REFERENCE NUMBER:

P-2303-CONST-18

A PLAY EQUIPMENT
SCALE: NOT TO SCALE

Hillbrook Park
Signal Hill, California 90755

RecWest Outdoor
Products
Eric Lewis

SYSTEM TYPE:
PlayBooster
DRAWING #:
1176744-04-03



DEFERRED SUBMITTAL NOTE:
A. CONTRACTOR TO OBTAIN SHOP DRAWINGS, STRUCTURAL DETAILS, AND STRUCTURAL CALCULATIONS FOR PERMIT APPLICATION. THESE DRAWINGS ARE FOR DESIGN REFERENCE AND GENERAL APPROVAL ONLY.
B. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, STRUCTURAL PLANS, AND STRUCTURAL CALCULATIONS TO THE CITY, PAY FEES, AND OBTAIN PERMITS.
C. FINAL COLORS AND DESIGN TO BE APPROVED BY OWNER'S REPRESENTATIVE BEFORE ORDERING AND FINAL DRAWINGS ARE MADE.

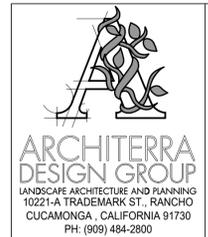
REVISIONS

REFERENCES

SCALE:	AS SHOWN	DATE:	01-31-2024
DESIGNED BY:	STAFF	PREPARED UNDER THE SUPERVISION OF:	07-31-2024 EXP
REVIEWED BY:	JRC	APPROVED:	CITY ENGINEER

HILLBROOK PARK RENOVATION
CONSTRUCTION DETAILS 4
CITY OF SIGNAL HILL

SHEET
L-2.06
13 OF 28 SHEETS
PLAN NUMBER



REVISIONS

REFERENCES

SCALE:	AS SHOWN	DATE:	01-31-2024
PREPARED UNDER THE SUPERVISION OF		07-31-2024	
DESIGNER		EXP	
DESIGNED BY	STAFF		
REVIEWED BY	JRC		
APPROVED	CITY ENGINEER		

**HILLBROOK PARK RENOVATION
 CONSTRUCTION DETAILS 5**

CITY OF SIGNAL HILL

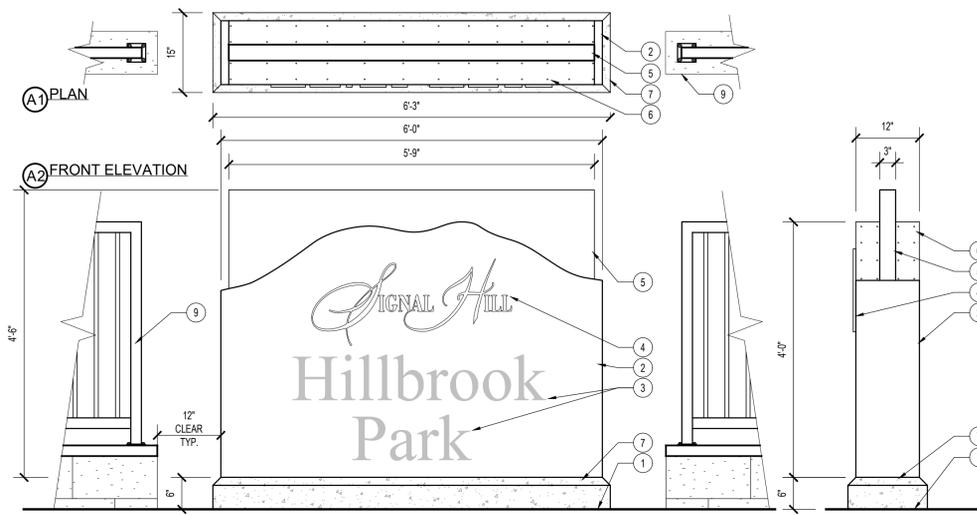
SHEET

L-2.07

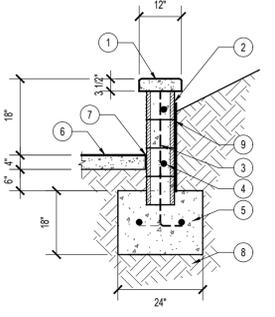
14 OF 28 SHEETS

PLAN NUMBER

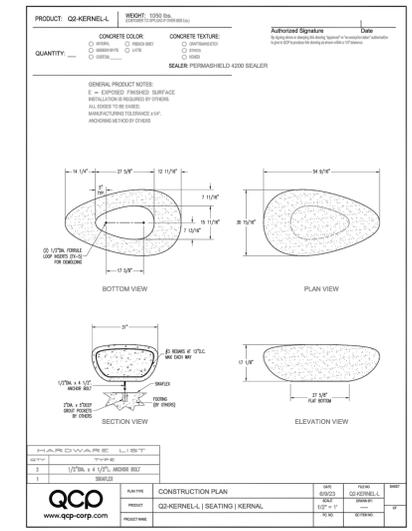
NO.	DATE	INITIAL	DESCRIPTION	APP.



- LEGEND:**
1. FINISH GRADE.
 2. ALUMINUM CABINET PAINTED COLOR TO MATCH MATTHEWS LIGHT TAN.
 3. 'HILLBROOK PARK' ROUTERED OUT OF ALUMINUM CABINET. WHITE TRANSLUCENT ACRYLIC COPY.
 4. 1/2" WHITE TRANSLUCENT ACRYLIC PUSH-THRU COPY.
 5. ALUMINUM CABINET PAINTED COLOR TO MATCH MATTHEWS TEAL.
 6. WHITE TRANSLUCENT LEXAN ATTACHED WITH SCREWS TO SIGN TOP.
 7. CONCRETE BASE, NATURAL GREY COLOR, WITH 1-1/2" CHAMFER ALONG TOP EDGES, ALL SIDES.
 8. FINISH GRADE.
 9. ADJACENT WALL AND FENCE.
- NOTES:**
- A. PROVIDE SHOP DRAWINGS FOR APPROVAL BY CITY REPRESENTATIVE AND LANDSCAPE ARCHITECT.



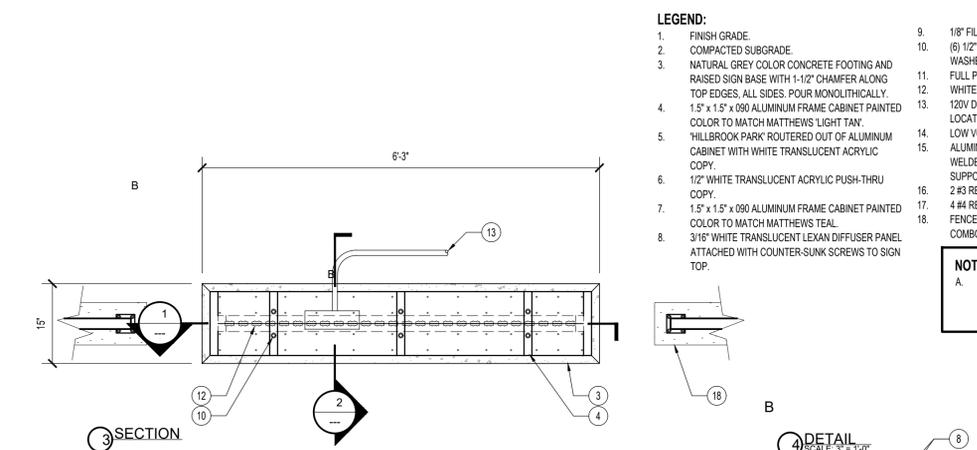
- LEGEND:**
1. 8" x 2" x 16" PRECISION CAP.
 2. 8" x 8" x 16" SPLIT FACE CMU, SOLID GROUTED.
 3. #4 REBAR, VERTICAL @ 16" O.C. WITH STANDARD, ALTERNATE HOOKS IN FOOTING.
 4. #4 REBAR, CONTINUOUS HORIZONTAL @ 16" O.C. CONCRETE FOOTING WITH (2) #4 REBAR, CONTINUOUS.
 5. ADJACENT RAMP CONCRETE PAVING PER CONSTRUCTION PLAN.
 6. 1/2" THICK, FULL-DEPTH EXPANSION JOINT WITH WATERPROOF SEALANT.
 7. 1/2" THICK, FULL-DEPTH EXPANSION JOINT WITH WATERPROOF SEALANT.
 8. COMPACTED SUBGRADE.
 9. APPLY MASTIC WATERPROOFING TO BACK SIDE OF CMU WALL.



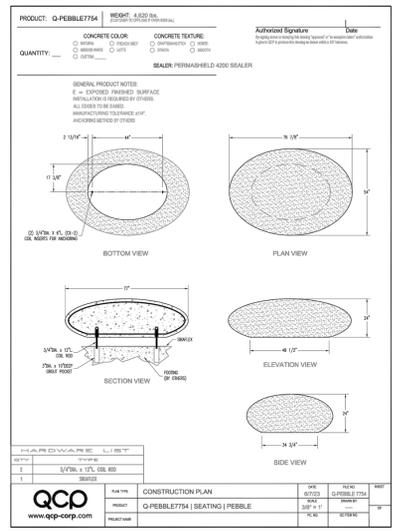
D PRECAST CONCRETE SEATING
SCALE: NOT TO SCALE

A MONUMENT SIGN PLAN & ELEVATIONS
SCALE: 3/4" = 1'-0"
REFERENCE NUMBER: S-61

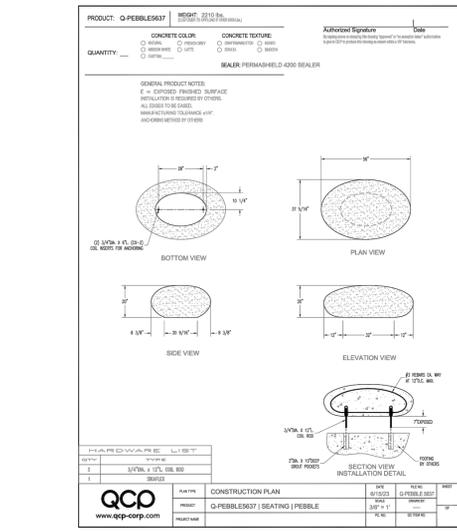
C LOW SEAT WALL - RETAINING
SCALE: 1/2" = 1'-0"
REFERENCE NUMBER: P-2303-CONST-17



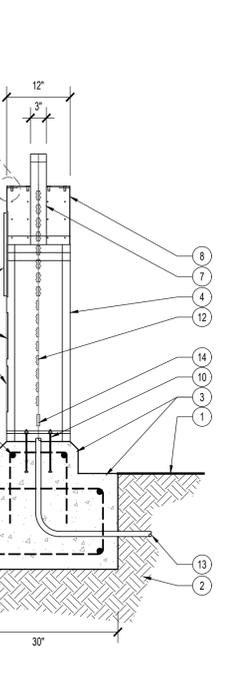
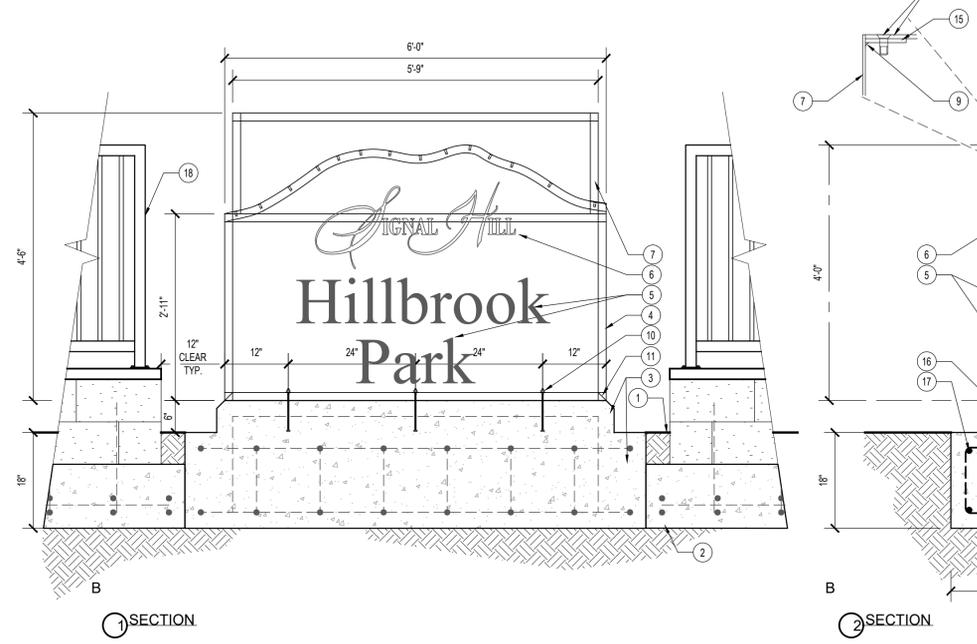
- LEGEND:**
1. FINISH GRADE.
 2. COMPACTED SUBGRADE.
 3. NATURAL GREY COLOR CONCRETE FOOTING AND RAISED SIGN BASE WITH 1-1/2" CHAMFER ALONG TOP EDGES, ALL SIDES. POUR MONOLITHICALLY.
 4. 1.5' x 1.5' x 0.90 ALUMINUM FRAME CABINET PAINTED COLOR TO MATCH MATTHEWS LIGHT TAN.
 5. 'HILLBROOK PARK' ROUTERED OUT OF ALUMINUM CABINET WITH WHITE TRANSLUCENT ACRYLIC COPY.
 6. 1/2" WHITE TRANSLUCENT ACRYLIC PUSH-THRU COPY.
 7. 1.5' x 1.5' x 0.90 ALUMINUM FRAME CABINET PAINTED COLOR TO MATCH MATTHEWS TEAL.
 8. 3/16" WHITE TRANSLUCENT LEXAN DIFFUSER PANEL ATTACHED WITH COUNTER-SUNK SCREWS TO SIGN TOP.
 9. 1/8" FILET WELD.
 10. (6) 1/2" DIA. ANCHOR BOLTS WITH NUTS AND WASHERS, WET SET EMBED 6" MIN.
 11. FULL PEN WELDS AT CABINET FRAME BASE.
 12. WHITE LED LIGHTING.
 13. 120V DEDICATED CIRCUIT POWER TO SIGN LOCATION IN CONDUIT W/ J-BOX PER LOCAL CODE.
 14. LOW VOLTAGE POWER WIRING TO LED LIGHTS.
 15. ALUMINUM STRIP CONTOURS TO HILL FORMATION WELDED TO INSIDE OF ALUMINUM SIGN FACE TO SUPPORT OUTER EDGE OF LEXAN DIFFUSER PANEL.
 16. 2 #3 REBAR CONT. #3 TIES @ 12" O.C.
 17. 4 #4 REBAR HORIZONTAL, #3 TIES @ 12" O.C.
 18. FENCE, WALL, AND FOOTING PER COMBO WALL PER COMBO WALL DETAIL.
- NOTES:**
- A. PROVIDE SHOP DRAWINGS FOR APPROVAL BY CITY REPRESENTATIVE AND LANDSCAPE ARCHITECT.



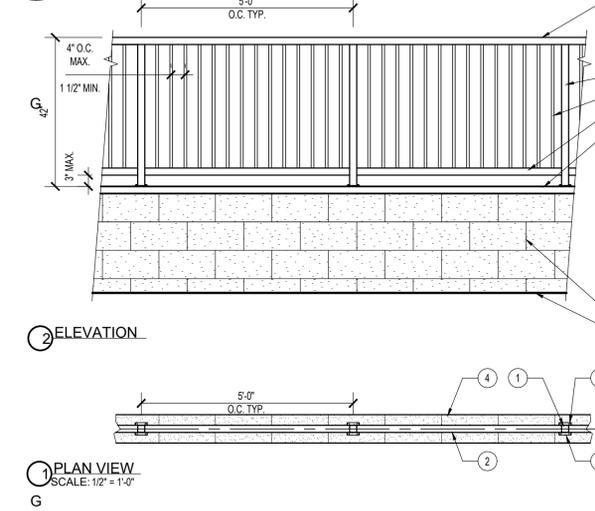
E PRECAST CONCRETE SEATING
SCALE: NOT TO SCALE



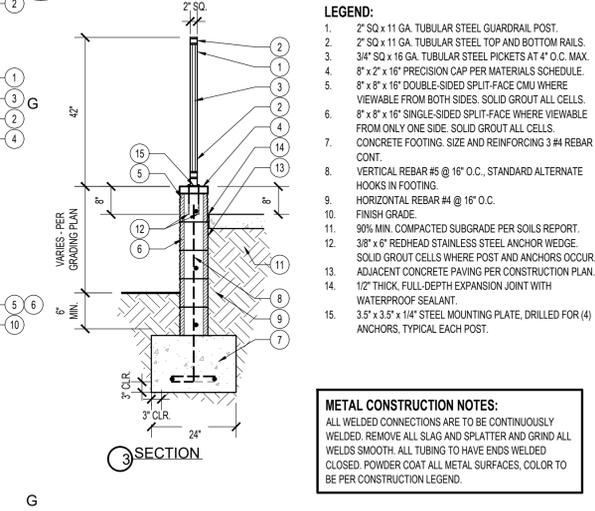
F PRECAST CONCRETE SEATING
SCALE: NOT TO SCALE



B MONUMENT SIGN SECTIONS
SCALE: 3/4" = 1'-0"
REFERENCE NUMBER: P-2303-CONST-07



G TUBULAR STEEL GUARDRAIL
SCALE: 1/2" = 1'-0"
REFERENCE NUMBER: F-42



- LEGEND:**
1. 2" SQ x 11 GA. TUBULAR STEEL GUARDRAIL POST.
 2. 2" SQ x 11 GA. TUBULAR STEEL TOP AND BOTTOM RAILS.
 3. 3/4" SQ x 16 GA. TUBULAR STEEL PICKETS AT 4" O.C. MAX.
 4. 8" x 2" x 16" PRECISION CAP PER MATERIALS SCHEDULE.
 5. 8" x 8" x 16" DOUBLE-SIDED SPLIT-FACE CMU WHERE VIEWABLE FROM BOTH SIDES. SOLID GROUT ALL CELLS.
 6. 8" x 8" x 16" SINGLE-SIDED SPLIT-FACE WHERE VIEWABLE FROM ONLY ONE SIDE. SOLID GROUT ALL CELLS.
 7. CONCRETE FOOTING: SIZE AND REINFORCING 3 #4 REBAR CONT.
 8. VERTICAL REBAR #5 @ 16" O.C., STANDARD ALTERNATE HOOKS IN FOOTING.
 9. HORIZONTAL REBAR #4 @ 16" O.C.
 10. FINISH GRADE.
 11. 90% MIN. COMPACTED SUBGRADE PER SOILS REPORT.
 12. 3/8" x 6" REDHEAD STAINLESS STEEL ANCHOR WEDGE. SOLID GROUT CELLS WHERE POST AND ANCHORS OCCUR.
 13. ADJACENT CONCRETE PAVING PER CONSTRUCTION PLAN.
 14. 1/2" THICK, FULL-DEPTH EXPANSION JOINT WITH WATERPROOF SEALANT.
 15. 3.5" x 3.5" x 1/4" STEEL MOUNTING PLATE, DRILLED FOR (4) ANCHORS, TYPICAL EACH POST.
- METAL CONSTRUCTION NOTES:**
- ALL WELDED CONNECTIONS ARE TO BE CONTINUOUSLY WELDED. REMOVE ALL SLAG AND SPLATTER AND GRIND ALL WELDS SMOOTH. ALL TUBING TO HAVE ENDS WELDED CLOSED. POWDER COAT ALL METAL SURFACES, COLOR TO BE PER CONSTRUCTION LEGEND.

F PRECAST CONCRETE SEATING
SCALE: NOT TO SCALE

REVISIONS

NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES

NO.	DATE	DESCRIPTION

SCALE: AS SHOWN

DATE: 01-31-2024

PREPARED UNDER THE SUPERVISION OF: [Signature]

DESIGNED BY: [Signature] STAFF

REVIEWED BY: JRC

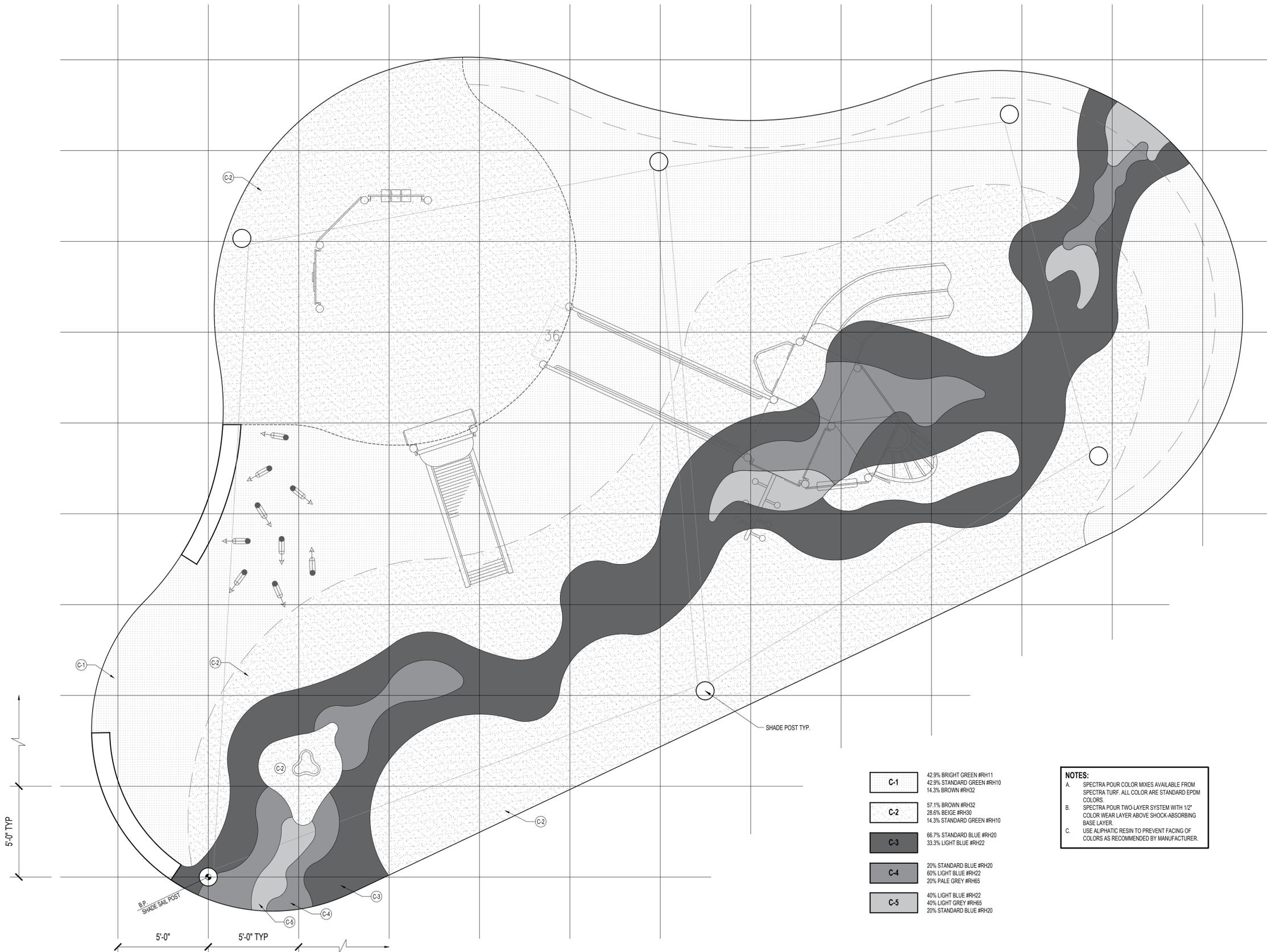
APPROVED: [Signature] CITY ENGINEER

HILLBROOK PARK RENOVATION
CONSTRUCTION DETAILS 6

CITY OF SIGNAL HILL

ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO CUCAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

LICENSED LANDSCAPE ARCHITECT
BRIAN M. KRUMHOLTZ 2016
01-31-24
01-31-24



- C-1** 42.9% BRIGHT GREEN #RH11
42.9% STANDARD GREEN #RH10
14.3% BROWN #RH32
- C-2** 57.1% BROWN #RH32
28.6% BEIGE #RH30
14.3% STANDARD GREEN #RH10
- C-3** 66.7% STANDARD BLUE #RH20
33.3% LIGHT BLUE #RH22
- C-4** 20% STANDARD BLUE #RH20
60% LIGHT BLUE #RH22
20% PALE GREY #RH65
- C-5** 40% LIGHT BLUE #RH22
40% LIGHT GREY #RH65
20% STANDARD BLUE #RH20

NOTES:
 A. SPECTRA POUR COLOR MIXES AVAILABLE FROM SPECTRA TURF. ALL COLOR ARE STANDARD EPDM COLORS.
 B. SPECTRA POUR TWO-LAYER SYSTEM WITH 1/2" COLOR WEAR LAYER ABOVE SHOCK-ABSORBING BASE LAYER.
 C. USE ALIPHATIC RESIN TO PREVENT FACING OF COLORS AS RECOMMENDED BY MANUFACTURER.

A PLAYLOT RUBBER SURFACE COLORS AND LAYOUT
 SCALE: 3/8" = 1'-0"
 REFERENCE NUMBER:

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES

SCALE: AS SHOWN	DATE: 01-31-2024
PREPARED UNDER THE SUPERVISION OF	07-31-2024
DESIGNED BY: [Signature]	EXP.
REVIEWED BY: JRC	STAFF
APPROVED: _____	CITY ENGINEER

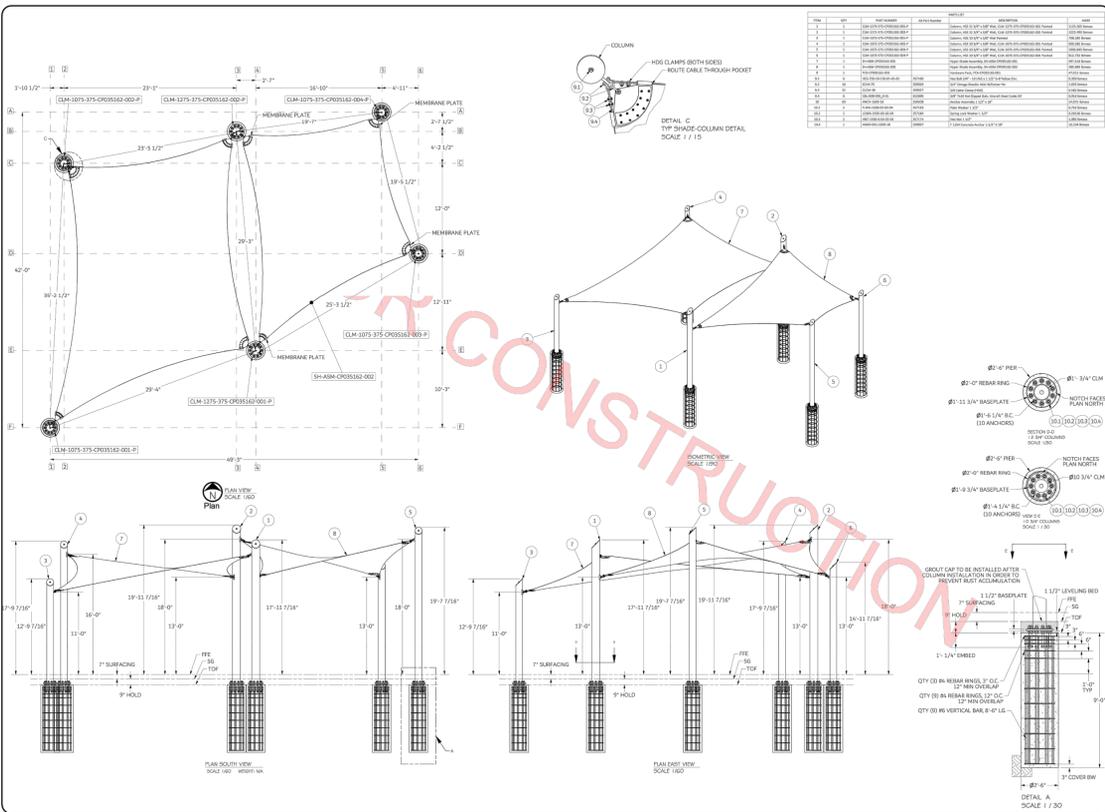
**HILLBROOK PARK RENOVATION
 CONSTRUCTION DETAILS 7**

CITY OF SIGNAL HILL



**ARCHITERRA
 DESIGN GROUP**
 LANDSCAPE ARCHITECTURE AND PLANNING
 10221-A TRADEMARK ST., RANCHO
 CUCAMONGA, CALIFORNIA 91730
 PH: (909) 484-2800





Skyways
by landscape structures
8131 Forney Rd.
Dallas TX, 75227
play@skyways.com

Project Name:
Joined Hypar Sails

Location:
Hillbrook Park

City:
... CA ...

Project No:
1176744-04-04

Sheet Title:
PLANS + SECTIONS

Sheet Size:
'D' 34"x22"

Revision Table:

Rev	Description	Date	By
1	For Approval	11/01/23	DS
2	Final	11/01/23	DS

Scale:
1" = 1'-0"

Author:
A. For Approval

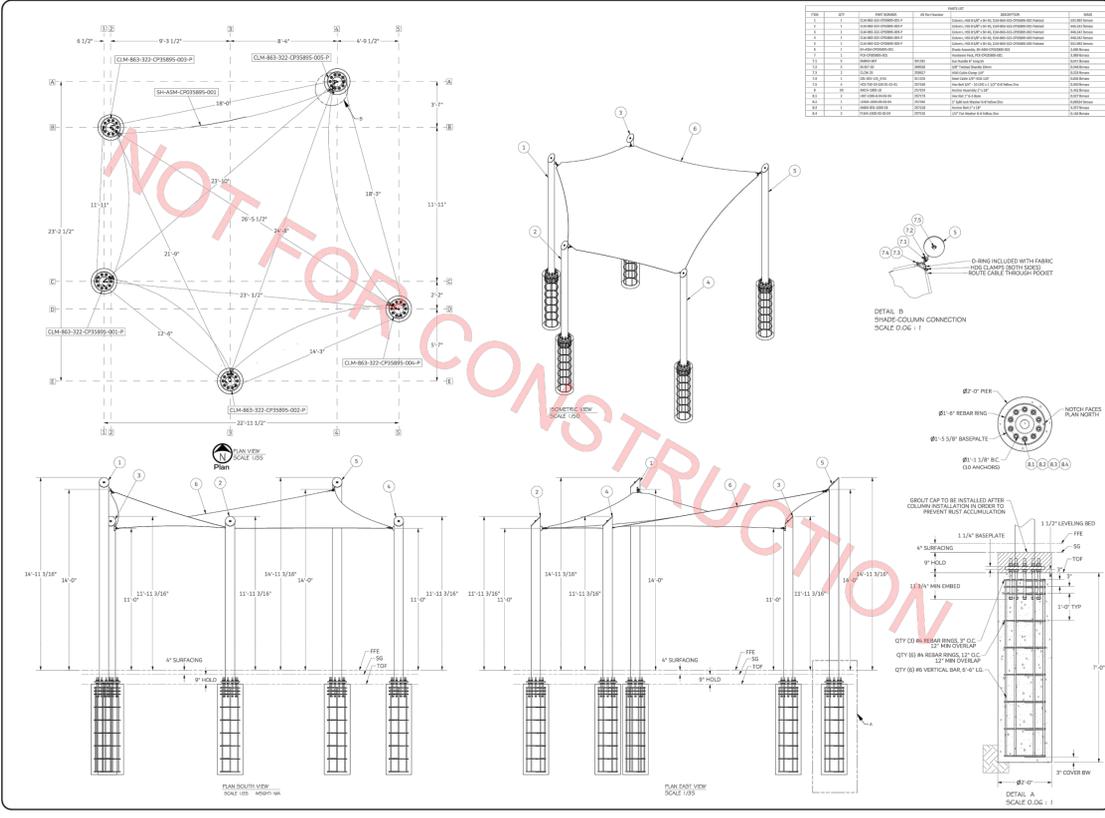
Date:
11/01/23

Drawn:
DS

Checked:
TM

Scale:
1" = 1'-0"

Sheet No.:
2



Skyways
by landscape structures
8131 Forney Rd.
Dallas TX, 75227
play@skyways.com

Project Name:
5-Point Sail

Location:
Hillbrook Park

City:
... CA ...

Project No:
1176744-04-04

Sheet Title:
PLANS + SECTIONS

Sheet Size:
'D' 34"x22"

Revision Table:

Rev	Description	Date	By
1	For Approval	11/01/23	DS
2	Final	11/01/23	DS

Scale:
1" = 1'-0"

Author:
A. For Approval

Date:
11/01/23

Drawn:
DS

Checked:
TM

Scale:
1" = 1'-0"

Sheet No.:
2

DEFERRED SUBMITTAL NOTE:
A. CONTRACTOR TO OBTAIN SHOP DRAWINGS, STRUCTURAL DETAILS, AND STRUCTURAL CALCULATIONS FOR PERMIT APPLICATION. THESE DRAWINGS ARE FOR DESIGN REFERENCE AND GENERAL APPROVAL ONLY.
B. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, STRUCTURAL PLANS, AND STRUCTURAL CALCULATIONS TO THE CITY, PAY FEES, AND OBTAIN PERMITS.
C. FINAL COLORS AND DESIGN TO BE APPROVED BY OWNER'S REPRESENTATIVE BEFORE ORDERING AND FINAL DRAWINGS ARE MADE.

A SHADE SAILS
SCALE: NOT TO SCALE

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES	

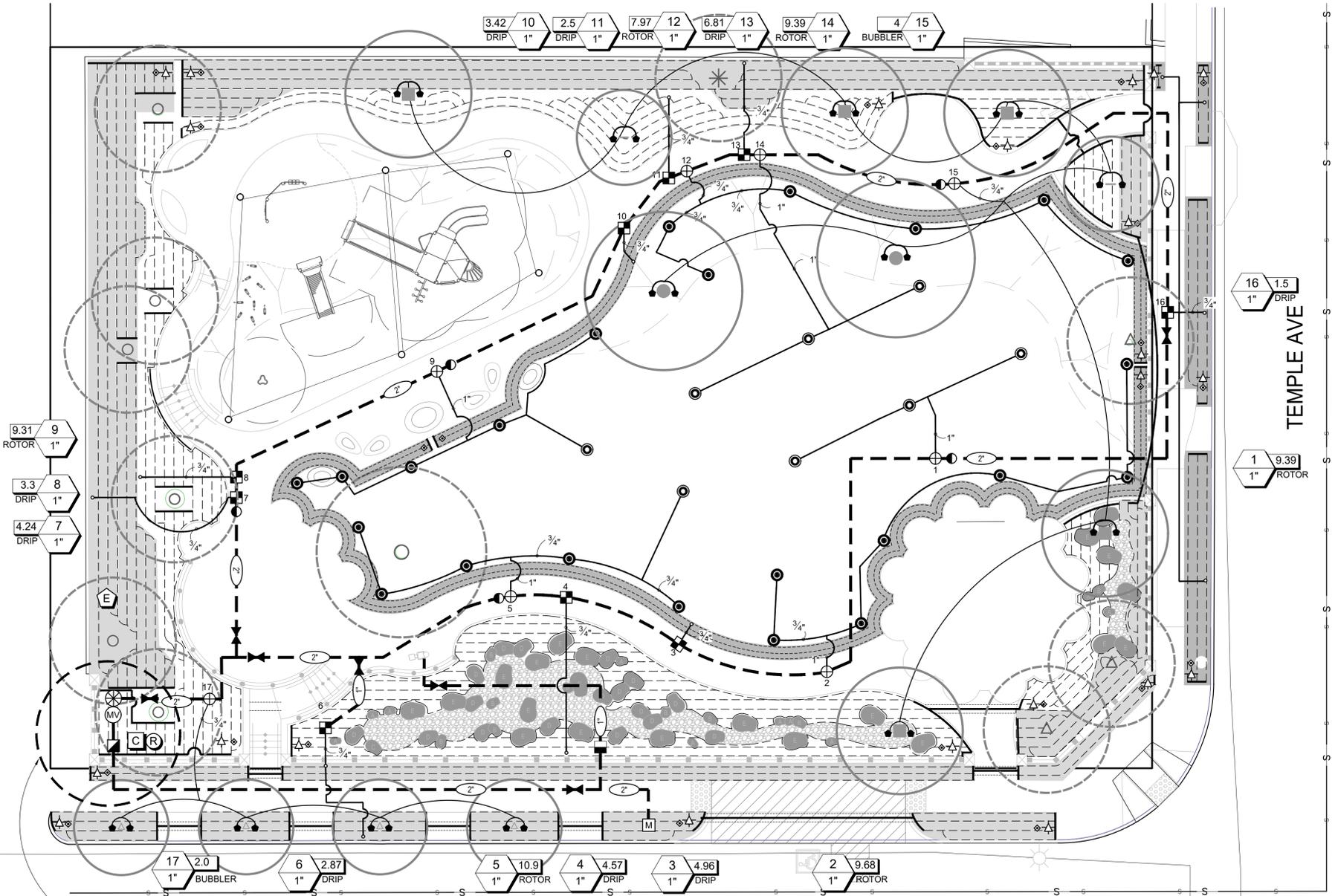
SCALE:	AS SHOWN	DATE:	01-31-2024
DESIGNED BY:	STAFF	DATE:	07-31-2024
REVIEWED BY:	JRC	EXP:	
APPROVED:	CITY ENGINEER		

HILLBROOK PARK RENOVATION
CONSTRUCTION DETAILS 8
CITY OF SIGNAL HILL

ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO CUCAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

BRIAN H. KRUMWIEDE
LICENSED LANDSCAPE ARCHITECT
STATE OF CALIFORNIA
01-31-24
01-31-24

SHEET
L-2.10
17 OF 28 SHEETS
PLAN NUMBER



IRRIGATION NOTES:

- THIS SYSTEM IS DIAGRAMMATIC. ALL PIPE, VALVES, ETC. SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHEREVER POSSIBLE.
- DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS INDICATED ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS OR GRADE DIFFERENCES EXIST AND SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR MUST ASSUME FULL RESPONSIBILITY FOR REVISIONS NECESSARY.
- SYSTEM DESIGN IS BASED ON MINIMUM OPERATING PRESSURE SHOWN AT EACH POINT OF CONNECTION WITH MAXIMUM GPM DEMAND SPECIFIED. IRRIGATION CONTRACTOR SHALL VERIFY ALL PRESSURES ON SITE PRIOR TO CONSTRUCTION AND COMMUNICATE TO OWNER'S CONSTRUCTION REPRESENTATIVE.
- IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, RETAINING WALLS, CURBS, ETC. HE SHALL COORDINATE ALL HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR LOCATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADS, PAVING AND STRUCTURES.
- MAINLINE FEEDER BETWEEN POINT OF CONNECTION, METER, AND BACKFLOW PREVENTER TO BE OF MATERIAL REQUIRED BY CURRENT WATER DISTRICT.
- FINAL LOCATION OF THE AUTOMATIC CONTROLLER ENCLOSURE AND THE BACKFLOW PREVENTION DEVICE SHALL BE APPROVED BY THE CITY'S AND OWNER'S REPRESENTATIVE, AND/OR LANDSCAPE ARCHITECT, WHERE APPLICABLE.
- IN ADDITION TO THE SLEEVES SHOWN ON THE PLAN, THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ADDITIONAL SLEEVES OF SUFFICIENT SIZE UNDER ALL PAVED AREAS PRIOR TO PAVING UPON APPROVAL OF THE OWNER'S REPRESENTATIVE, IF REQUIRED TO OPERATE SYSTEMS.
- IRRIGATION CONTRACTOR SHALL FLUSH ALL LINES AND ADJUST ALL HEADS FOR MAXIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, STREETS, AND BUILDINGS AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST NOZZLE RADIUS TO FIT UNUSUAL SITE CONDITIONS FOR APPROVAL PURPOSES AT NO EXTRA CHARGE. CALL LANDSCAPE ARCHITECT 48 HOURS IN ADVANCE FOR ANY COVERAGE TESTS.
- QUALITY CONTROL OBSERVATION SEQUENCES ARE FOUND IN THE SPECIFICATIONS.
- CLEAN-UP ON A DAILY BASIS PER OWNER'S REPRESENTATIVE'S APPROVAL.

IRRIGATION LEGEND:

DRIP AND EMITTERS:		MANUF.	MODEL #	DESCRIPTION	GPM	RADIUS	PSI	DETAIL REFERENCE
[Symbol]	[Symbol]	RAINBIRD	XFS-CV-06-18	INSTALL DRIPLINE 3" BELOW FINISH GRADE SPACE LINES 18" APART, 3" MAX FROM HARDSCAPE EDGES SECURE TUBING WITH 9" WIRE STAKES EVERY 2'-0"	0.010	DRIP	30	SEE DETAIL G, SHEET L-3.01
[Symbol]	[Symbol]	RAINBIRD	XFS-CV-06-12	INSTALL DRIPLINE 3" BELOW FINISH GRADE, SPACE LINES 12" APART, 3" MAX FROM HARDSCAPE EDGES SECURE TUBING WITH 9" WIRE STAKES EVERY 2'-0"	0.010	DRIP	30	SEE DETAIL G, SHEET L-3.01
[Symbol]	[Symbol]	RAINBIRD	RWS-M-B-C-1401	18" ROOT WATERING SYSTEM WITH 0.25 GPM BUBBLER, INSTALL (2) PER TREE	0.25	BUB	30	SEE DETAIL K, SHEET L-3.01
SPRAY:		MANUF.	MODEL#	DESCRIPTION	GPM	RADIUS	PSI	DETAIL REFERENCE
[Symbol]	[Symbol]	RAINBIRD	RD-06-P45-S R-VAN24	6" POP UP R-VAN PART CIRCLE SPRAY HEAD WITH RD-06 BODY	1.80	22	40	SEE DETAIL A, SHEET L-3.02
[Symbol]	[Symbol]	RAINBIRD	RD-06-P45-S R-VAN24-360	6" POP UP R-VAN FULL CIRCLE SPRAY HEAD WITH RD-06 BODY	3.13	22	40	SEE DETAIL A, SHEET L-3.02
EQUIPMENT:		MANUF.	MODEL #	DESCRIPTION	DETAIL REFERENCE			
[Symbol]	[Symbol]	---	---	2" EXISTING WATER METER	SEE UTILITIES PLAN.			
[Symbol]	[Symbol]	SUPERIOR	3200	1 1/2" MASTER VALVE, NORMALLY CLOSED IN VALVE BOX.	SEE DETAIL B, SHEET L-3.01			
[Symbol]	[Symbol]	FEBCO	LF-825YA	1 1/2" BACKFLOW PREVENTER W/ STRONG BOX ENCLOSURE	SEE DETAIL A, SHEET L-3.01			
[Symbol]	[Symbol]	FEBCO	LF-825YA	3/4" BACKFLOW PREVENTER W/ STRONG BOX ENCLOSURE	SEE DETAIL A, SHEET L-3.01			
[Symbol]	[Symbol]	RAINBIRD	FS100B	1" BRASS FLOW SENSOR FOR FLOWS 2 TO 40 GPM.	SEE DETAIL C, SHEET L-3.01			
[Symbol]	[Symbol]	NIBCO	T-585	LINE SIZED BRONZE FULL PORT BALL VALVE IN VALVE BOX.	SEE DETAIL D, SHEET L-3.01			
[Symbol]	[Symbol]	NETAFIM	TLSOV	1/2" MANUAL FLUSH VALVE AT EACH PLANTER AT LOWEST POINT IN VALVE BOX.	SEE DETAIL I, SHEET L-3.01			
[Symbol]	[Symbol]	RAINBIRD	44-LRC	1" POTABLE QUICK COUPLER VALVE IN ROUND VALVE BOX	SEE DETAIL E, SHEET L-3.01			
[Symbol]	[Symbol]	RAINBIRD	XICZ-100-PRB-COM	DRIPLINE KIT WITH 1" BALL VALVE AND 1" PESB VALVE IN VALVE BOX	SEE DETAIL F, SHEET L-3.01			
[Symbol]	[Symbol]	RAINBIRD	100-PESB	1" PLASTIC CONTROL VALVE IN VALVE BOX.	SEE DETAIL J, SHEET L-3.01			
[Symbol]	[Symbol]	WEATHERTRAC	ET PRO 3	ICAG-HP3-18/SP/HP3SP-SRSE/IFS-100C 120V 12 STATION CONTROLLER WITH 12 STATION EXPANSION STATION MODULES IN TOP ENTRY STAINLESS STEEL ENCLOSURE. FOR ORDERING CONTACT DARYL GREEN WITH IMPERIAL TECHNICAL SERVICES AT dgreen@gps-10.com CONNECT TO 120V POWER	SEE DETAIL D, SHEET L-3.02			
[Symbol]	[Symbol]	RAINBIRD	WR2-48	WIRELESS RAIN + FREEZE SENSOR	SEE DETAIL D, SHEET L-3.02			
[Symbol]	[Symbol]	RAINBIRD	OPERIND	DRIP SYSTEM OPERATION INDICATOR.	SEE DETAIL H, SHEET L-3.01			
[Symbol]	[Symbol]	APPROVED	SCH. 40 PVC	MAINLINE SIZED AS SHOWN, MINIMUM COVER OF 18", POTABLE WATER	SEE DETAIL C, SHEET L-3.01			
[Symbol]	[Symbol]	APPROVED	SCH. 40 PVC	LATERAL LINE SIZED AS SHOWN (MINIMUM OF 3/4"), MINIMUM COVER OF 12"	SEE DETAIL C, SHEET L-3.02			
[Symbol]	[Symbol]	APPROVED	SCH. 40 PVC	WIRE SLEEVE, SIZED AS REQUIRED BY LOCAL CODE, UNLESS OTHERWISE NOTED.	SEE DETAIL C, SHEET L-3.01			
[Symbol]	[Symbol]	APPROVED	SCH. 40 PVC	LATERAL SLEEVE, SIZED AS REQUIRED, UNLESS OTHERWISE NOTED.	SEE DETAIL C, SHEET L-3.01			

POINT OF CONNECTION NOTE:
POINT OF CONNECTION, SEE ENLARGEMENT FOR DETAILS.

FLUSH VALVE NOTE:
FLUSH VALVES TO BE INSTALLED AT FURTHEST AND LOWEST END OF EACH RUN OF DRIPLINE. FLUSH VALVES TO BE LOCATED WITHIN EACH PLANTER AREA OF DRIPLINE SYSTEM.

HYDROZONE LEGEND:



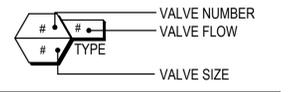
REFER TO WATER BUDGET CALCULATIONS AND CONTROLLER CHARTS ON SHEETS L-3.01 - L-3.02 FOR ADDITIONAL INFORMATION. PLEASE ALSO REFER TO VALVE CALLOUT CHARTS ON THE IRRIGATION PLANS.



Know what's below.
Call before you dig.

THIS SYSTEM IS DESIGNED TO USE WATER FROM A POTABLE WATER SOURCE

VALVE SIZING KEY:



PIPE SIZING CHART:
SCHEDULE 40 PVC

3/4"	0-8 GPM
1"	9-12 GPM
1 1/4"	13-22 GPM
1 1/2"	23-30 GPM
2"	31-50 GPM

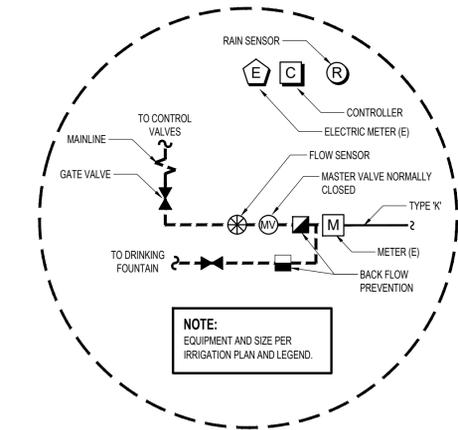
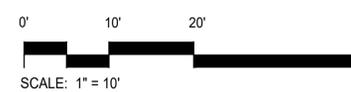
PLAN CROSS REFERENCES:

FOR NOTES AND LEGENDS, SEE THIS SHEET FOR IRRIGATION DETAILS. SEE SHEET L-3.01 - L-3.03 FOR CORRESPONDING CONSTRUCTION PLAN SEE SHEET L-2.01 FOR CORRESPONDING PLANTING PLAN SEE SHEET L- 4.01

VALVE CALLOUT CHART:

#	TYPE	PLANT	SIZE	GPM	HZ	SF
1	ROTOR	TURF	1"	9	4	941
2	ROTOR	TURF	1"	10	4	941
3	DRIPLINE	TURF	1"	5	3	496
4	DRIPLINE	SHRUB	1"	5	1	1,439
5	ROTOR	TURF	1"	11	4	941
6	DRIPLINE	SHRUB	1"	3	2	865
7	DRIPLINE	SHRUB	1"	4	2	916
8	DRIPLINE	SHRUB	1"	3	1	742
9	ROTOR	TURF	1"	9	4	941
10	DRIPLINE	TURF	1"	3	3	317
11	DRIPLINE	SHRUB	1"	3	1	690
12	ROTOR	TURF	1"	8	4	941
13	DRIPLINE	SHRUB	1"	7	2	1,022
14	ROTOR	TURF	1"	9	4	941
15	BUBBLER	TREE	1"	4	5	225
16	DRIPLINE	SHRUB	1"	2	2	334
17	BUBBLER	TREE	1"	2	5	100

REFER TO IRRIGATION LEGEND FOR CONTROL VALVE MANUFACTURER, MODEL NUMBER, AND DESCRIPTION.



POINT OF CONNECTION NOTE:
MAKE POINT OF CONNECTION IMMEDIATELY DOWNSTREAM OF NEW 2" DOMESTIC WATER METER PROVIDED BY OTHERS. REFER TO UTILITY PLANS FOR ADDITIONAL INFORMATION. EXTEND NEW TYPE 'K' COPPER PIPE TO BACKFLOW PREVENTER AS SHOWN.

STATIC WATER PRESSURE: 61 PSI
SYSTEM DESIGNED PRESSURE: 59 PSI
MAXIMUM IRRIGATION DEMAND: 11 GPM



ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO CUICAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

LICENSURE LANDSCAPE ARCHITECT
BRIAN H. KRUMWIDE 2024
01-31-24
01-31-24
STATE OF CALIFORNIA

REVISIONS

NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES

NO.	DESCRIPTION

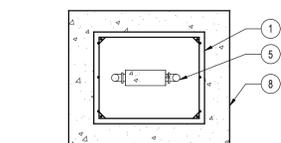
SCALE: AS SHOWN
PREPARED UNDER THE SUPERVISION OF
DESIGNED BY J/C
REVIEWED BY J/C
APPROVED CITY ENGINEER

DATE: 01-31-2024

HILLBROOK PARK RENOVATION
IRRIGATION PLAN

CITY OF SIGNAL HILL

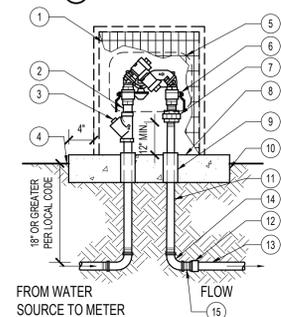
SHEET L-3.00
18 OF 28 SHEETS
PLAN NUMBER



LEGEND:

- VANDAL RESISTANT SS ENCLOSURE. PAINT GREEN PER SPECS. (STRONGBOX SBBC-22SS POF)
- CLOSE NIPPLE
- BRASS WYE STRAINER WITH 100 MESH MONEL SCREEN
- FINISH GRADE
- BACKFLOW PREVENTER (LF825YA) ASSEMBLY
- BALL VALVE (2) PLACES
- BRASS UNION
- 6" THICK X 28" WIDE X 31" LONG CONCRETE PAD (LENGTH VARIES PER SIZE/MANUFACTURER). SLOPE TO DRAIN AT MINIMUM 2%.
- PVC SLEEVE REQUIRED FOR PIPE THROUGH CONCRETE PAD.
- 90% COMPACTION REQUIRED.
- TYPE K COPPER RISER - TYPICAL (2) PLACES
- SCH 80 PVC MALE ADAPTOR (2) PLACES
- PVC LINE TO SYSTEM
- COPPER ELBOW TYPICAL (2) PLACES
- COPPER X FEMALE ADAPTER

A1 PLAN VIEW



A2 SECTION VIEW

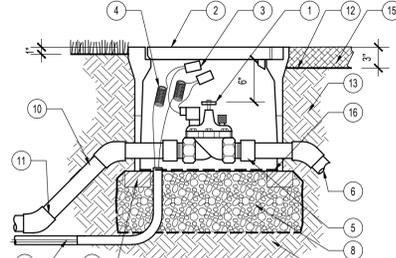
NOTES:

- INSTALL PER LOCAL CODES.
- EQUIPMENT TO BE INSTALLED AT A MINIMUM OF 24" FROM ANY STRUCTURES OR HARDSCAPING. WHEN UNIT IS NEXT TO A STRUCTURE (I.E. WALL, BUILDING, ETC.) MOUNT TEST COOKS ON OPEN OR NON-STRUCTURE SIDE.
- ORIENT UNIT PARALLEL TO STREET.
- SCREEN UNIT WITH SHRUBS WHENEVER POSSIBLE.
- DIALECTIC FITTINGS ARE REQUIRED FOR CONNECTIONS OF DISSIMILAR METALS.

A BACKFLOW PREVENTER LF825YA

SCALE: 3/4" = 1'-0"
REFERENCE NUMBER:

S-IDW-POC-9F-01



SECTION

LEGEND:

- MASTER VALVE PER IRRIGATION LEGEND.
- RECTANGULAR VALVE BOX w/ BOLT-DOWN COVER. HEAT BRAND w/ "M.V." ON LID IN 2" TEXT HEIGHT CHARACTERS.
- WATERPROOF WIRE CONNECTORS.
- #12 WIRE PER SPECIFICATIONS. 24" LENGTH COILED WIRE REQUIRED.
- PVC MALE ADAPTOR (TYPICAL).
- PVC MAINLINE TO REMOTE CONTROL VALVES. COMMON BRICK (4) REQUIRED.
- 3/4" WASHED GRAVEL ROCK 6" DEEP.
- MASTER VALVE WIRE AND COMMON WIRE FROM CONTROLLER. PROVIDE PVC CONDUIT FROM CONTROLLER TO MASTER VALVE.

- PVC MAINLINE PIPE (TYPICAL).
- PVC SVS 45 1/4 ELL (TYPICAL), SOLVENT WELD OUTLET.
- FINISH GRADE.
- SUB-GRADE.
- FILTER FABRIC (MIRAFI 140N)
- MULCH - SEE PLANTING PLAN
- 1/4" X 1/4" GALV. WIREMESH

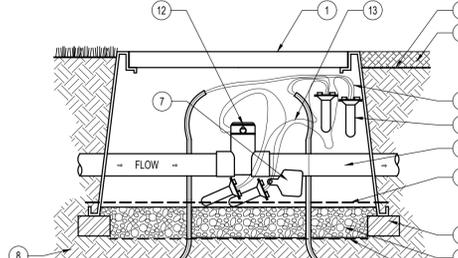
NOTE:

- USE TEFLON TAPE OR TEFLON PIPE DOPE ON ALL PVC TO PVC OR METAL TO PVC MALE PIPE THREADS.

B MASTER VALVE

SCALE: 1" = 1'-0"
REFERENCE NUMBER:

S-IDW-POC-FS-MS-04



SECTION

LEGEND:

- RECTANGULAR VALVE BOX w/BOX T-DOWN COVER. HEAT BRAND w/ "F.S." ON LID IN 2" TEXT HEIGHT CHARACTERS.
- FINISH GRADE.
- MULCH PER PLANTING SPECIFICATIONS.
- WIRE CABLE FROM CONTROLLER.
- WATERPROOF 3M DBRY SPLICER KIT WIRE CONNECTOR (1 OF 4).
- 1/4" X 1/4" GALVANIZED WIRE MESH.
- 90% COMPACTED NATIVE SUB-GRADE.
- 3/4" WASHED GRAVEL ROCK 6" DEEP.
- BRICK SUPPORT (1 OF 4).
- MAINLINE INTO VALVE.
- FLOW SENSOR PER PLAN SPECIFICATIONS.
- LOOP 24" MIN. EXTRA WIRE AROUND PERIMETER OF BOX.
- FILTER FABRIC (MIRAFI 140N).

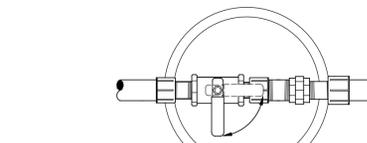
NOTES:

- INSTALL VALVES MIN. OF 2' APART, AND A MIN. OF 2' FROM STRUCTURES AND HARDSCAPE IN SHRUB AREAS.
- PLACE 3/4" CRUSHED GRAVEL PRIOR TO INSTALLATION OF VALVE BOX.
- PROVIDE PLASTIC VALVE CHRISTY I.D. TAGS PER SPECIFICATIONS.
- USE NON-HARDENING TEFLON PIPE SEALANT ON ALL THREADED CONNECTIONS.
- PROVIDE A CLEAR, UNOBSTRUCTED DISTANCE OF AT LEAST 10X'S THE PIPES DIAMETER UPSTREAM OF THE SENSOR AND AT LEAST 5X'S THE PIPES DIAMETER DOWNSTREAM OF THE SENSOR.

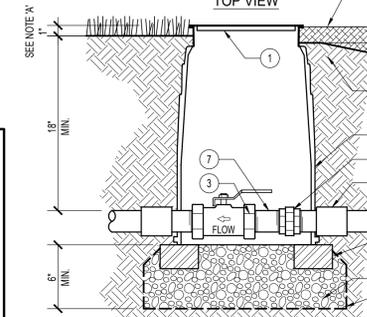
C FLOW SENSOR

SCALE: 3/4" = 1'-0"
REFERENCE NUMBER:

S-IDW-POC-FS-MS-03



TOP VIEW



SECTION VIEW

LEGEND:

- 10" ROUND PLASTIC VALVE BOX & COVER MARKED "BV"
- FINISH GRADE.
- BALL VALVE.
- 3/4" WASHED GRAVEL ROCK, 6" MIN. DEEP.
- SCH 80 PVC THREADED UNION.
- SCH 80 PVC THREADED FEMALE ADAPTOR (2).
- SCHEDULE 80 PVC THREADED NIPPLE (3 LOCATIONS).
- 12" SDR GREEN PIPE EXTENSIONS. (LENGTH AS REQUIRED)
- 8X2X4 COMMON BRICK (3)
- MULCH - SEE PLANTING PLANS
- FILTER FABRIC (MIRAFI 140N)

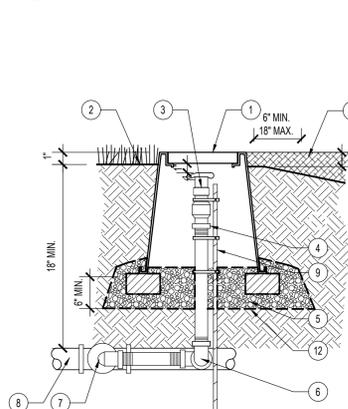
NOTES:

- PLACE AGGREGATE PRIOR TO INSTALLATION OF VALVE BOX.
- BOX TO BE INSTALLED 1" ABOVE FINISHED GRADE FOR SOD OR ARTIFICIAL TURF AND FLUSH WITH FINISHED GRADE FOR HYDROSEED OR HAND SEED.
- TOP OF BOX FLUSH WITH MULCH, TAPER FINISH GRADE 1 1/2" AWAY FROM BOX BACK TO STANDARD MULCH DEPTH.

D BALL VALVE 2" SIZE AND SMALLER

SCALE: 1 1/2" = 1'-0"
REFERENCE NUMBER:

S-IDW-VAL-BV-01



LEGEND:

- PLASTIC VALVE BOX W/ GREEN LOCKING COVER, ETCHED "QC" (CARSON OR EQUAL), FINISH GRADE.
- QUICK COUPLING VALVE W/ LOCKING RUBBER CAP PER IRRIGATION LEGEND.
- STAINLESS STEEL SCREW CLAMP, MIN. (3) PLACES.
- 3/4" WASHED GRAVEL ROCK, 6" MIN. DEEP.
- SCH. 80 PRE-MANUFACTURED SWING JOINT RISER ASSEMBLY (SPEARS).
- PRESSURE SUPPLY LINE FITTING.
- PRESSURE SUPPLY LINE.
- #8 REBAR STAKE (24" LONG), PAINT OR STRAIGHT RISER STABILIZER (RS 24, VIT PRODUCTS).
- MULCH - SEE PLANTING PLANS.
- FILTER FABRIC (MIRAFI 140N)

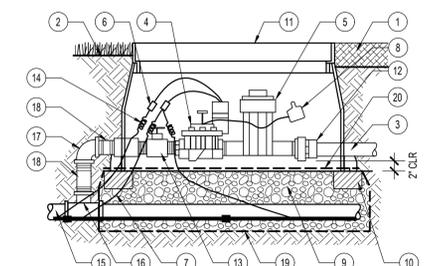
NOTES:

- PLACE AGGREGATE PRIOR TO INSTALLATION OF VALVE BOX.

E QUICK COUPLER VALVE

SCALE: 1 1/2" = 1'-0"
REFERENCE NUMBER:

S-IDW-VAL-QC-01



LEGEND:

- MULCH BED.
- FINISH GRADE.
- PVC LATERAL LINE, SIZE PER PLAN.
- AUTOMATIC CONTROL VALVE PER IRRIGATION PLAN.
- PRESSURE REGULATING, QUICK CHECK BASKET FILTER.
- WATERPROOF WIRE CONNECTORS PER IRRIGATION SPECIFICATIONS.
- PILOT WIRE.
- YELLOW PLASTIC CHRISTY VALVE I.D. TAG.
- 3/4" WASHED GRAVEL ROCK, 6" MIN. DEEP.
- BRICK SUPPORT, (4) REQUIRED.
- RECTANGULAR JUMBO SIZE VALVE BOX w/ BOLT-DOWN COVER PER SPECIFICATIONS WITH STATION NUMBER PRINTED ON IT.
- PVC UNION FOR SERVICING ASSEMBLY.
- BALL VALVE.
- CONTROL WIRE EXPANSION LOOP.

- PRESSURE MAINLINE.
- PVC SCH 80 TEE.
- PVC SCH. 80 ELBOW.
- PVC SCH. 80 NIPPLE.
- FILTER FABRIC (MIRAFI 140N)
- 1/4" X 1/4" WIREMESH.

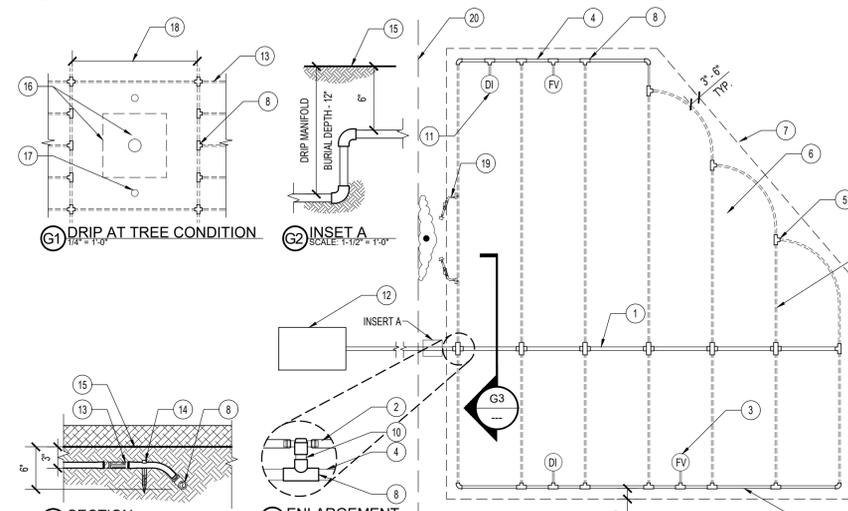
NOTES:

- INSTALL VALVES MIN. OF 2' APART, AND A MIN. OF 2' FROM STRUCTURES AND HARDSCAPE IN SHRUB AREAS.
- PLACE 3/4" CRUSHED GRAVEL PRIOR TO INSTALLATION OF VALVE BOX.
- PLACE VALVE BOX AT RIGHT ANGLE TO ADJACENT HARDSCAPE OR STRUCTURE.
- USE NON-HARDENING TEFLON PIPE SEALANT ON ALL THREADED CONNECTIONS.

F REMOTE CONTROL DRIP VALVE

SCALE: 1" = 1'-0"
REFERENCE NUMBER:

S-IDW-VAL-CV-06



G1 DRIP AT TREE CONDITION

G2 INSET A

G3 SECTION

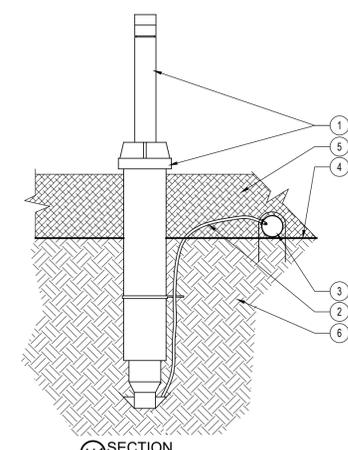
G4 ENLARGEMENT

G5 PLAN

G SUBSURFACE DRIP LAYOUT AT RECTANGULAR OR IRREGULAR PLANTER

SCALE: AS NOTED
REFERENCE NUMBER:

S-IDW-DRIP-DRIP-02



LEGEND:

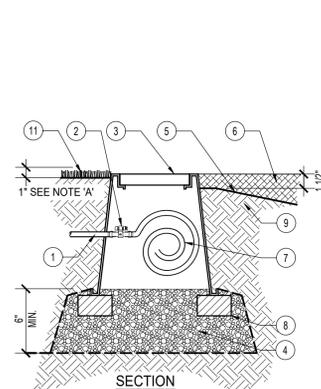
- LVR, HIGH IMPACT RESISTANT PLASTIC BODY WITH 6" POP-UP INDICATOR STEM.
- 16" LONG, 1/4" DISTRIBUTION TUBING WITH SELF-PIERCING CONNECTION.
- DRIP TUBING PER IRRIGATION PLAN.
- FINISH GRADE.
- MULCH LAYER, SEE LANDSCAPE PLAN.
- NATIVE SUBGRADE.

H2 SECTION

H SURFACE POP-UP DRIP INDICATOR

SCALE: 3" = 1'-0"
REFERENCE NUMBER:

S-IDW-DRIP-DRIP-05



LEGEND:

- 1/2" DIAMETER DRIFLINE.
- 1/2" MANUAL FLUSH VALVE w/ COMPRESSION CONNECTION.
- 10" DIAMETER PLASTIC VALVE BOX WITH GREEN LID P.V.
- 3/4" WASHED GRAVEL ROCK, 6" DEEP.
- FINISH GRADE.

- MULCH - SEE PLANTING PLANS
- 18" LONG FLEX POLY-PIPE TO DIRECT FLUSH.
- COMMON BRICK (3) REQUIRED
- SUB-GRADE
- FILTER FABRIC (MIRAFI 140N)
- TURF - SEE PLANTING PLAN

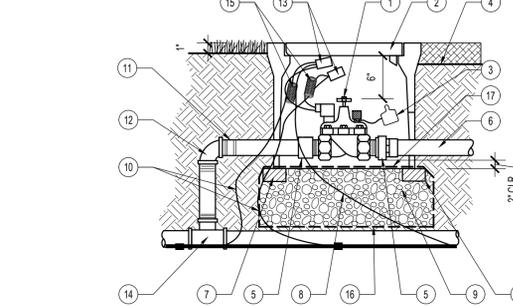
NOTES:

- BOX TO BE INSTALLED 1" ABOVE FINISHED GRADE FOR SOD OR ARTIFICIAL TURF AND FLUSH WITH FINISHED GRADE FOR HYDROSEED OR HAND SEED. TOP OF BOX FLUSH WITH MULCH, TAPER FINISH GRADE 1 1/2" AWAY FROM BOX BACK TO STANDARD MULCH DEPTH.

I MANUAL FLUSH VALVE

SCALE: 1 1/2" = 1'-0"
REFERENCE NUMBER:

S-IDW-VAL-FV-01



LEGEND:

- ELECTRIC CONTROL VALVE.
- RECTANGULAR PLASTIC VALVE BOX w/ BOLT-DOWN COVER. HEAT BRAND VALVE STATION NO. ON LID IN 2" HIGH CHARACTERS.
- APPROVED YELLOW PLASTIC CHRISTY VALVE I.D. TAG.
- FINISH GRADE.
- PVC UNION FOR SERVICING ASSEMBLY (TYP).
- PVC LATERAL LINE, SIZE PER PLAN.
- COMMON BRICK (4) REQUIRED.
- COMMON WIRE TO OTHER VALVES ON SAME CONTROLLER.
- 3/4" WASHED GRAVEL ROCK, 6" MIN. DEEP.

- CONTROL / COMMON WIRES FROM CONTROLLER.
- PVC SCH 80 NIPPLE.
- PVC SCH. 80 ELBOW.
- WIRE CONNECTOR.
- PVC SCH. 80 TEE.
- COIL WIRES PER SPECIFICATIONS.
- FILTER FABRIC (MIRAFI 140N)
- 1/4" X 1/4" WIREMESH.

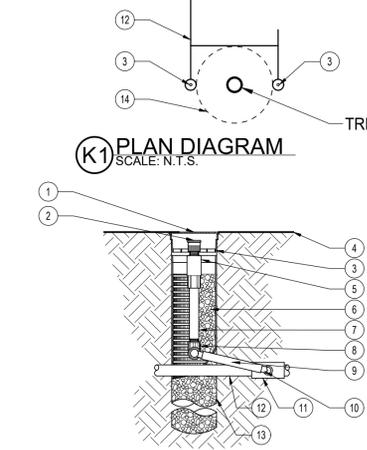
NOTES:

- USE TEFLON TAPE OR TEFLON PIPE DOPE ON ALL PVC TO PVC OR METAL TO PVC MALE PIPE THREADS.

J REMOTE CONTROL VALVE

SCALE: 1" = 1'-0"
REFERENCE NUMBER:

S-IDW-VAL-CV-05



K1 PLAN DIAGRAM

K2 SECTION

LEGEND:

- 4-INCH LOCKING GRATE.
- BUBBLER: RAINBIRD 0.25 GPM. ROOT ZONE WATERING SYSTEM, WITH RISER, SWING ASSEMBLY, LOCKING GRATE, CHECK VALVE, 1/2" MALE NPT INLET, AND BASKET CANISTER). SEE IRRIGATION LEGEND
- FINISH GRADE.
- CHECK VALVE.
- PEA GRAVEL FILL.
- 1/2-INCH PVC SCH 80 NIPPLE.
- 1/2-INCH 90-DEGREE ELBOW.
- 12-INCH SWING ASSEMBLY.
- 1/2-INCH MALE NPT INLET.
- PVC SCH 40 TEE OR ELL.
- LATERAL PIPE.
- 2-INCH BASKET WEAVE CANISTER.
- ROOTBALL

K DEEP ROOT WATERING SYSTEM

SCALE: 1 1/2" = 1'-0"
REFERENCE NUMBER:

S-IDW-BUB-01

ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO CUCAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

LICENSED LANDSCAPE ARCHITECT
BRUCE M. Krumholz 2016
01-31-24
DATE

STATE OF CALIFORNIA

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES	

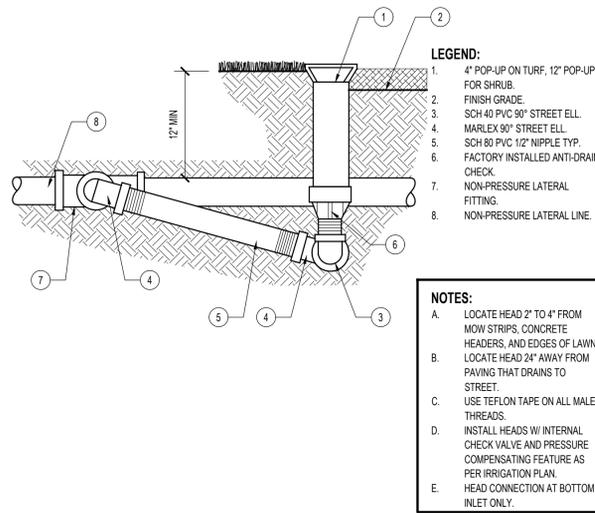
SCALE:	AS SHOWN	DATE:	01-31-2024
DESIGNED BY:	STAFF	DATE:	07-31-2024
REVIEWED BY:	JRC	EXP:	
APPROVED:		CITY ENGINEER:	

HILLBROOK PARK RENOVATION
IRRIGATION DETAILS 1

CITY OF SIGNAL HILL

SHEET
L-3.01
19 OF 28 SHEETS

PLAN NUMBER



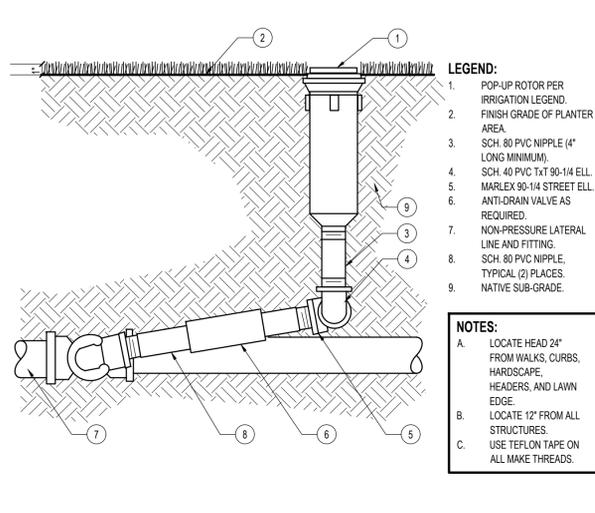
LEGEND:

- 4" POP-UP ON TURF, 12" POP-UP FOR SHRUB.
- FINISH GRADE.
- SCH 40 PVC 90° STREET ELL.
- MARLEX 90° STREET ELL.
- SCH 80 PVC 1/2" NIPPLE TYP.
- FACTORY INSTALLED ANTI-DRAIN CHECK.
- NON-PRESSURE LATERAL FITTING.
- NON-PRESSURE LATERAL LINE.

NOTES:

- LOCATE HEAD 2" TO 4" FROM MOW STRIPS, CONCRETE HEADERS, AND EDGES OF LAWN.
- LOCATE HEAD 24" AWAY FROM PAVING THAT DRAINS TO STREET.
- USE TEFLON TAPE ON ALL MALE THREADS.
- INSTALL HEADS W/ INTERNAL CHECK VALVE AND PRESSURE COMPENSATING FEATURE AS PER IRRIGATION PLAN.
- HEAD CONNECTION AT BOTTOM INLET ONLY.

A POP-UP SPRAY HEAD
SCALE: 1" = 1'-0"
REFERENCE NUMBER: S-IDW-IRH-SPRY-01



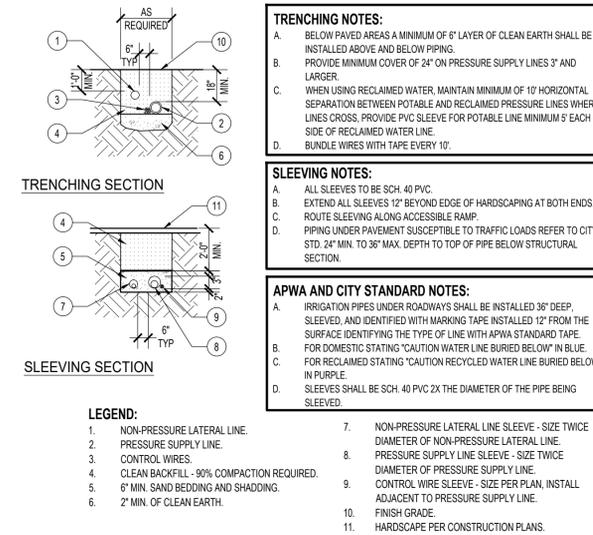
LEGEND:

- POP-UP ROTOR PER IRRIGATION LEGEND.
- FINISH GRADE OF PLANTER AREA.
- SCH. 80 PVC NIPPLE (4" LONG MINIMUM).
- MARLEX 90-1/4 STREET ELL.
- ANTI-DRAIN VALVE AS REQUIRED.
- NON-PRESSURE LATERAL LINE AND FITTING.
- SCH. 80 PVC NIPPLE, TYPICAL (2) PLACES.
- NATIVE SUB-GRADE.

NOTES:

- LOCATE HEAD 24" FROM WALKS, CURBS, HARDSCAPE, HEADERS, AND LAWN EDGE.
- LOCATE 12" FROM ALL STRUCTURES.
- USE TEFLON TAPE ON ALL MAKE THREADS.

B LARGE POP-UP ROTOR
SCALE: 3" = 1'-0"
REFERENCE NUMBER: S-IDW-IRH-RTOR-01



TRENCHING NOTES:

- BELOW PAVED AREAS A MINIMUM OF 6" LAYER OF CLEAN EARTH SHALL BE INSTALLED ABOVE AND BELOW PIPING.
- PROVIDE MINIMUM COVER OF 24" ON PRESSURE SUPPLY LINES 3" AND LARGER.
- WHEN USING RECLAIMED WATER, MAINTAIN MINIMUM OF 10" HORIZONTAL SEPARATION BETWEEN POTABLE AND RECLAIMED PRESSURE LINES WHERE LINES CROSS. PROVIDE PVC SLEEVE FOR POTABLE LINE MINIMUM 5' EACH SIDE OF RECLAIMED WATER LINE.
- BUNDLE WIRES WITH TAPE EVERY 10'.

SLEEVING NOTES:

- ALL SLEEVES TO BE SCH. 40 PVC.
- EXTEND ALL SLEEVES 12" BEYOND EDGE OF HARDSCAPING AT BOTH ENDS.
- ROUTE SLEEVING ALONG ACCESSIBLE RAMP.
- PIPING UNDER PAVEMENT SUSCEPTIBLE TO TRAFFIC LOADS REFER TO CITY STD. 24" MIN. TO 36" MAX. DEPTH TO TOP OF PIPE BELOW STRUCTURAL SECTION.

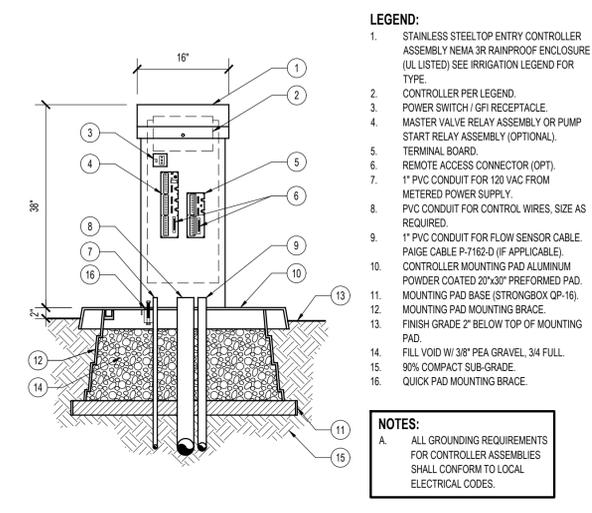
APWA AND CITY STANDARD NOTES:

- IRRIGATION PIPES UNDER ROADWAYS SHALL BE INSTALLED 36" DEEP, SLEEVED, AND IDENTIFIED WITH MARKING TAPE INSTALLED 12" FROM THE SURFACE IDENTIFYING THE TYPE OF LINE WITH APWA STANDARD TAPE. FOR DOMESTIC STATING "CAUTION WATER LINE BURIED BELOW" IN BLUE. FOR RECLAIMED STATING "CAUTION RECYCLED WATER LINE BURIED BELOW" IN PURPLE.
- SLEEVES SHALL BE SCH. 40 PVC 2X THE DIAMETER OF THE PIPE BEING SLEEVED.

LEGEND:

- NON-PRESSURE LATERAL LINE.
- PRESSURE SUPPLY LINE.
- CONTROL WIRES.
- CLEAN BACKFILL - 90% COMPACTION REQUIRED.
- 6" MIN. SAND BEDDING AND SHADING.
- 2" MIN. OF CLEAN EARTH.
- NON-PRESSURE LATERAL LINE SLEEVE - SIZE TWICE DIAMETER OF NON-PRESSURE LATERAL LINE.
- PRESSURE SUPPLY LINE SLEEVE - SIZE TWICE DIAMETER OF PRESSURE SUPPLY LINE.
- CONTROL WIRE SLEEVE - SIZE PER PLAN, INSTALL ADJACENT TO PRESSURE SUPPLY LINE.
- FINISH GRADE.
- HARDSCAPE PER CONSTRUCTION PLANS.

C TRENCHING AND SLEEVING
SCALE: 1/4" = 1'-0"
REFERENCE NUMBER: S-IDW-POC-TR-SL-01



LEGEND:

- STAINLESS STEEL TOP ENTRY CONTROLLER ASSEMBLY NEMA 3R RAINPROOF ENCLOSURE (UL LISTED) SEE IRRIGATION LEGEND FOR TYPE.
- CONTROLLER PER LEGEND.
- POWER SWITCH / GFI RECEPTACLE.
- MASTER VALVE RELAY ASSEMBLY OR PUMP START RELAY ASSEMBLY (OPTIONAL).
- TERMINAL BOARD.
- REMOTE ACCESS CONNECTOR (OPT).
- 1" PVC CONDUIT FOR 120 VAC FROM METERED POWER SUPPLY.
- PVC CONDUIT FOR CONTROL WIRES, SIZE AS REQUIRED.
- 1" PVC CONDUIT FOR FLOW SENSOR CABLE. PAIGE CABLE P-7162-D (IF APPLICABLE).
- CONTROLLER MOUNTING PAD ALUMINUM POWDER COATED 20"x30" PREFORMED PAD.
- MOUNTING PAD BASE (STRONGBOX CP-16).
- MOUNTING PAD MOUNTING BRACE.
- FINISH GRADE 2" BELOW TOP OF MOUNTING PAD.
- FILL VOID W/ 3/8" PEA GRAVEL, 3/4 FULL.
- 90% COMPACT SUB-GRADE.
- QUICK PAD MOUNTING BRACE.

NOTES:

- ALL GROUNDING REQUIREMENTS FOR CONTROLLER ASSEMBLIES SHALL CONFORM TO LOCAL ELECTRICAL CODES.

D TOP ENTRY CONTROLLER
SCALE: 3/4" = 1'-0"
REFERENCE NUMBER: S-IDW-CSYS-ONTRL-03

IRRIGATION SHALL BE MAINTAINED TO ENSURE WATER EFFICIENCY

WEEKLY ITEMS:

- VISUALLY MONITOR IRRIGATION SYSTEM FOR SUDDEN LINE BREAKS OR HEAD DAMAGE.

MONTHLY ITEMS:

- TEST AND INSPECT EACH VALVE. ADJUST AND REPAIR HEADS, VALVES, PIPING AS NEEDED TO KEEP SYSTEM IN COMPLETE WORKING ORDER.
- INSPECT RAIN SENSOR TO INSURE PROPER SHUT OFF OPERATION.
- FOR DRIP SYSTEMS, EXAMINE AND CLEAN ALL FILTERS. REPLACE FILTER SCREENS IF NECESSARY. MANUALLY FLUSH EACH DRIP VALVE. PERFORM A WALK-THROUGH TO LOOK FOR SIGNS OF PLANT WATER STRESS. ADJUST, CLEAN OR REPLACE EMISSION DEVICES AS REQUIRED.

ALL REPLACEMENT PARTS AND EQUIPMENT AS NEEDED SHALL MATCH ORIGINAL EQUIPMENT OR AN APPROVED EQUAL (CITY LANDSCAPE ARCHITECT APPROVAL).

QUARTERLY ITEMS:

- ADJUST IRRIGATION CONTROLLER PROGRAMMING AS NECESSARY TO ACCOMMODATE FOR SEASONAL WATER NEEDS.

E IRRIGATION MAINTENANCE NOTES
SCALE: N/A
REFERENCE NUMBER: S-IDW-MAIN-01



REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES	

SCALE: AS SHOWN PREPARED UNDER THE SUPERVISION OF DESIGNER: STAFF REVIEWED BY: JRC APPROVED: CITY ENGINEER	DATE: 01-31-2024 EXP: 07-31-2024	HILLBROOK PARK RENOVATION IRRIGATION DETAILS 2 CITY OF SIGNAL HILL	SHEET L-3.02 20 OF 28 SHEETS PLAN NUMBER
--	-------------------------------------	---	--

CONTROLLER WATER SCHEDULE - PLANT ESTABLISHMENT PERIOD																	AVERAGE RUN TIMES (MINUTES PER DAY)													
Valve #	Equipment	I.E.	Plant Material	Water Use	K.I.	Soil Type	Infiltration Rate Inches Per Hour	Sun Amount	Sun Exposure	Exposure Factor	Slope Percent	# of Days	P.R.	Min. a Day Jan.	Min. a Day Feb.	Min. a Day Mar.	Min. a Day Apr.	Min. a Day May.	Min. a Day June	Min. a Day July	Min. a Day Aug.	Min. a Day Sep.	Min. a Day Oct.	Min. a Day Nov.	Min. a Day Dec.	Valve #	Total Annual Minutes	Valve G.P.M.	Total Annual Gallons	Valve Area Sq. Ft.
1	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.92	8	10	15	18	21	20	25	22	17	13	8	7	1	5,517	9	49,655	941
2	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	1.02	8	9	14	16	19	18	22	20	15	12	8	6	2	4,966	10	49,655	941
3	Subsurface Drip	0.81	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.97	7	9	13	16	18	17	22	19	15	11	7	6	3	4,847	5	24,234	496
4	Subsurface Drip	0.81	GC & Shrubs	Low	0.20	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.33	5	6	10	12	13	13	16	14	11	8	5	4	4	3,515	5	17,577	1,439
5	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	1.13	7	8	13	15	17	16	20	18	14	11	7	6	5	4,514	11	49,655	941
6	Subsurface Drip	0.81	GC & Shrubs	Low & Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.33	13	16	24	29	33	32	39	35	27	21	13	11	6	8,805	3	26,415	865
7	Subsurface Drip	0.81	GC & Shrubs	Low & Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.42	11	12	19	23	26	25	31	28	22	16	11	9	7	6,993	4	27,972	916
8	Subsurface Drip	0.81	GC & Shrubs	Low	0.20	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.39	5	5	8	10	11	11	13	12	9	7	5	4	8	3,021	3	9,063	742
9	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.92	8	10	15	18	21	20	25	22	17	13	8	7	9	5,517	9	49,655	941
10	Subsurface Drip	0.81	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.91	8	9	14	17	20	19	23	20	16	12	8	7	10	5,163	3	15,489	317
11	Subsurface Drip	0.81	GC & Shrubs	Low	0.20	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.42	4	5	8	9	11	10	13	11	9	7	4	4	11	2,809	3	8,428	690
12	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.82	9	11	17	20	23	22	28	24	19	15	9	8	12	6,207	8	49,655	941
13	Subsurface Drip	0.81	GC & Shrubs	Low & Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.66	7	8	12	15	17	16	20	18	14	10	7	6	13	4,458	7	31,209	1,022
14	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.92	8	10	15	18	21	20	25	22	17	13	8	7	14	5,517	9	49,655	941
15	RWS Bubbler	0.81	Trees	Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	15	1.71	5	6	10	11	13	12	15	14	11	8	5	4	15	1,718	4	6,871	225
16	Subsurface Drip	0.81	GC & Shrubs	Low & Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	30	0.58	8	9	14	17	19	18	23	20	16	12	8	6	16	5,100	2	10,199	334
17	RWS Bubbler	0.81	Trees	Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	1.0%	15	1.93	5	5	8	10	12	11	14	12	9	7	5	4	17	1,527	2	3,054	100
Monthly Evapotranspiration Rate													1.8	2.1	3.3	3.9	4.5	4.3	5.3	4.7	3.7	2.8	1.8	1.5	Totals	80,195	97	478,443	12,792	

Run Time Formula = 2 * (60 * E.T. MONTH) * PLANT FACTOR * EXPOSURE FACTOR / (PRECIPITATION RATE * NO.OF DAYS * IRRIGATION FACTOR)
Infiltration Rate and Slope shown for reference only.

39.7 Annual Evapotranspiration Rate (Eto)

NOTE:
1. The water schedules are provided as guidelines only and are to be modified according to individual plant needs and as the weather or water requirements change.
2. It is based on the monthly evapotranspiration rates for City of Signal Hill, CA.
3. Contractor to verify run times with actual field conditions, adjust controller as needed, monitor schedule during the maintenance period, and verify controller settings with the manufacturer's representative for this region.
4. This schedule does not account for multiple run or soak cycles within the same day. Contractor to adjust the program as needed to eliminate water run-off.

CONTROLLER WATER SCHEDULE - ESTABLISHED LANDSCAPE																	AVERAGE DAILY RUN TIMES (MINUTES)													
Valve #	Equipment	I.E.	Plant Material	Water Use	K.I.	Soil Type	Infiltration Rate Inches Per Hour	Sun Amount	Sun Exposure	Exposure Factor	Slope Percent	# of Days	P.R.	Min. a Day Jan.	Min. a Day Feb.	Min. a Day Mar.	Min. a Day Apr.	Min. a Day May.	Min. a Day June	Min. a Day July	Min. a Day Aug.	Min. a Day Sep.	Min. a Day Oct.	Min. a Day Nov.	Min. a Day Dec.	Valve #	Total Annual Minutes	Valve G.P.M.	Total Annual Gallons	Valve Area Sq. Ft.
1	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.92	4	5	8	9	10	10	12	11	9	6	4	3	1	2,759	9	24,828	941
2	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	1.02	4	4	7	8	9	9	11	10	8	6	4	3	2	2,483	10	24,828	941
3	Subsurface Drip	0.81	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.97	4	4	7	8	9	9	11	10	8	6	4	3	3	2,423	5	12,117	496
4	Subsurface Drip	0.81	GC & Shrubs	Low	0.20	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.33	3	3	5	6	7	6	8	7	5	4	3	2	4	1,758	5	8,789	1,439
5	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	1.13	3	4	6	7	9	8	10	9	7	5	3	3	5	2,257	11	24,828	941
6	Subsurface Drip	0.81	GC & Shrubs	Low & Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.33	7	8	12	14	17	16	20	17	14	10	7	6	6	4,402	3	13,207	865
7	Subsurface Drip	0.81	GC & Shrubs	Low & Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.42	5	6	10	11	13	13	16	14	11	8	5	4	7	3,497	4	13,986	916
8	Subsurface Drip	0.81	GC & Shrubs	Low	0.20	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.39	2	3	4	5	6	5	7	6	5	4	2	2	8	1,511	3	4,532	742
9	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.92	4	5	8	9	10	10	12	11	9	6	4	3	9	2,759	9	24,828	941
10	Subsurface Drip	0.81	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.91	4	5	7	8	10	9	11	10	8	6	4	3	10	2,581	3	7,744	317
11	Subsurface Drip	0.81	GC & Shrubs	Low	0.20	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.42	2	2	4	5	5	6	6	4	3	2	2	2	11	1,405	3	4,214	690
12	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.82	5	5	9	10	12	11	14	12	10	7	5	4	12	3,103	8	24,828	941
13	Subsurface Drip	0.81	GC & Shrubs	Low & Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.66	3	4	6	7	8	8	10	9	7	5	3	3	13	2,229	7	15,605	1,022
14	M.P.R. Rotator	0.75	Turf	High	0.80	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.92	4	5	8	9	10	10	12	11	9	6	4	3	14	2,759	9	24,828	941
15	RWS Bubbler	0.81	Trees	Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	15	1.71	3	3	5	6	6	6	8	7	5	4	3	2	15	859	4	3,435	225
16	Subsurface Drip	0.81	GC & Shrubs	Low & Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	30	0.58	4	4	7	8	10	9	11	10	8	6	4	3	16	2,550	2	5,100	334
17	RWS Bubbler	0.81	Trees	Moderate	0.50	Grvly Loamy Sand	0.39	Full Sun	Southwest	1.00	0.01	15	1.93	2	3	4	5	6	6	7	6	5	4	2	2	17	763	2	1,527	100
Monthly Evapotranspiration Rate													1.8	2.1	3.3	3.9	4.5	4.3	5.3	4.7	3.7	2.8	1.8	1.5	Totals	40,097	97	239,221	12,792	

Run Time Formula = (60 * E.T. MONTH) * PLANT FACTOR * EXPOSURE FACTOR / (PRECIPITATION RATE * NO.OF DAYS * IRRIGATION FACTOR)
Infiltration Rate and Slope shown for reference only.

39.7 Annual Evapotranspiration Rate (Eto)

NOTE:
1. The water schedules are provided as guidelines only and are to be modified according to individual plant needs and as the weather or water requirements change.
2. It is based on the monthly evapotranspiration rates for City of Signal Hill, CA.
3. Contractor to verify run times with actual field conditions, adjust controller as needed, monitor schedule during the maintenance period, and verify controller settings with the manufacturer's representative for this region.
4. This schedule does not account for multiple run or soak cycles within the same day. Contractor to adjust the program as needed to eliminate water run-off.

A IRRIGATION CONTROLLER CHART

N.T.S.

WATER EFFICIENT LANDSCAPE WORKSHEET

Non-Residential Landscape Projects

Reference ETo for the area ETo= 39.7

Estimated Total Water Use (ETWU):
ETWU is calculated using the following formula: (Eto) (.62) (ETAF) (LA)

Hydrozone # / Planting Description	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF x Landscape Area	Estimated Total Water Use (ETWU) Gallons/Yr
Regular Landscape Areas							
H21 - Low Shrubs	0.20	Dripline	0.81	0.25	2,871	709	17,449
H22 - Med Shrubs	0.50	Dripline	0.81	0.62	3,137	1,936	47,663
H25 - Moderate Trees	0.50	Bubbler	0.81	0.62	325	201	4,938
				Totals	6,333	2,846	
Special Landscape Areas							
H23 - Recreation Turf	0.90	Dripline	0.81	1.00	813	813	20,011
H24 - High Turf	0.90	Spray	0.75	1.00	5,646	5,646	138,971
				Totals	6,459	6,459	
Estimated Total Water Use in gallons per year, ETWU Total							229,031
Max. Annual Water Allowance in gallons per year, MAWA Total							229,128
MAWA calculation: (Eto) (.62) [(ETAFxLA) + ((1-ETAF) x SLA)]							MAWA - ETWU= 97
Estimated Acre Feet per Year =							0.70
							Pass / Fail = Pass

ETAF Calculations

Regular Landscape Areas		
Total ETAF x Area	2,846	
Total Area	6,333	Average ETAF for Regular Landscape Areas must be 0.45 or below for non-residential areas.
Average ETAF	0.45	

All Landscape Areas

Total ETAF x Area	9,305
Total Landscape Area (LA)	12,792
Site-wide ETAF	0.73

B MWELO WORKSHEET

CRITICAL ANALYSIS DATE: 12/21/2023

JURISDICTIONAL ENTITY: _____ PH. NO.: _____

CONTACT PERSON: _____

MAXIMUM PRESSURE DEMAND VALVE NO.: 5 IRRIG. TYPE: MP ROTATOR GPM: 11.0

STATIC WATER PRESSURE AT WATER METER: 61.0

SIZE	DESCRIPTION	GPM	LOSS
2"	SERVICE LINE: Length 20 PSI loss/100'	25.0	0.13
2"	WATER METER: 11.0		0.10
1 1/2"	BACKFLOW PREVENTER: 11.0		11.00
1 1/2"	MASTER VALVE: 11.0		0.60
1"	FLOW SENSOR: 11.0		0.50
2"	GATE/BALL VALVE: 11.0		0.25
1 1/2"	REMOTE CONTROL VALVE: 11.0		3.50
2"	MAINLINE: Length 175 PSI loss/100'	11.0	0.19
1 1/2"	LATERAL LINE: Length 7 PSI loss/100'	11.0	0.02
3/4"	LATERAL LINE: Length 53 PSI loss/100'	11.0	1.28
TOTAL PVC LATERAL LINE LOSS:			1.50
PVC LATERAL LINE FITTING LOSS (10%):			0.15
TOTAL FRICTION LOSS:			17.7

PLANTING NOTES:

- SHRUB LAYOUT AS SHOWN ON PLAN INDICATES "SHRUB MASSES." QUANTITIES ARE AS SHOWN ON PLAN, ON-CENTER SPACING AS SHOWN ON LEGEND. CONTRACTOR TO VERIFY QUANTITIES BASED ON SPACING AND ADD ADDITIONAL PLANT MATERIAL (AT NO ADDITIONAL COST TO THE OWNER) REQUIRED TO MAINTAIN DESIGN INTENT DUE TO EXISTING SITE CONDITIONS NOT ANTICIPATED DURING DESIGN. LAYOUT/SPACING WILL EITHER BE TRIANGULAR OR LINEAR AS SHOWN ON PLAN OR LEGEND. LANDSCAPE ARCHITECT TO APPROVE FINAL LAYOUT IN FIELD PRIOR TO INSTALLATION.
- CONTRACTORS SHALL NOTIFY THE LANDSCAPE ARCHITECT OF SITE CONDITIONS WHICH PREVENT INSTALLATION PER PLANS AND SPECIFICATIONS.
- CONTRACTOR SHALL BE LIABLE FOR REMOVING AND RE-INSTALLING IRRIGATION EQUIPMENT, AND REPLANTING AREAS WHICH ARE NOT INSTALLED PER PLAN AND SPECIFICATIONS.
- REFER TO PLANTING SPECIFICATIONS FOR INSPECTION/CERTIFICATION SCHEDULE.
- IRRIGATION SYSTEM SHALL BE INSTALLED AND OPERATIONAL PRIOR TO INSTALLATION OF PLANT MATERIALS.
- TREES AND SHRUBS SHALL BE PLANTED AFTER CONCRETE PLACEMENT, BUT NOT BEFORE IRRIGATION COVERAGE TEST NO. 1 HAS BEEN APPROVED. (SEE SPECIFICATIONS).
- PLACE TREES BETWEEN IRRIGATION HEADS WHEREVER POSSIBLE.
- LANDSCAPE CONTRACTOR SHALL TAKE FOUR (4) SOIL SAMPLES FROM THE SITE AT LOCATIONS APPROVED BY THE LANDSCAPE ARCHITECT. THE SAMPLES SHALL BE TAKEN AT A DEPTH OF 12" AFTER ROUGH GRADING AND SUBMITTED TO AN APPROVED SOIL AND PLANT LABORATORY FOR AGRICULTURAL SUITABILITY TESTING. THE COST OF TESTING SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
- THE RECOMMENDATIONS OF THE SOIL REPORT SHALL SUPERSEDE THE SOIL PREPARATION AND BACKFILL MIX SPECIFICATIONS (SEE SPECIFICATIONS). THE CONTRACTOR SHALL SUBMIT A COPY OF ALL SOILS REPORTS TO THE LANDSCAPE ARCHITECT PRIOR TO MODIFICATION OF THESE SPECIFICATIONS.
- SHREDDED MULCH INSTALLATION: INSTALL SHREDDED MULCH IN ALL SHRUB AND GROUND COVER AREAS PER SPECIFICATIONS UNLESS OTHERWISE INDICATED ON PLANS.
- CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS AND/OR REPLACEMENT OF ANY DAMAGED LANDSCAPE AREAS BEYOND THE LIMIT OF WORK, INCLUDING REPAIRING ANY IRRIGATION LINES/SPRINKLER HEADS, THAT IS A DIRECT RESULT OF THE LANDSCAPE CONSTRUCTION AND/OR HIS SUB-CONTRACTOR. REPLACEMENT ITEMS SHALL BE EXACT DUPLICATION OF ORIGINAL WORK OR PLANTS, UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT.
- WHEREVER GROUND COVER AREAS ARE ADJACENT TO TURF INSTALL CONCRETE MOW STRIP OR HEADER BOARD AS INDICATED ON DRAWINGS.
- CLEAN-UP SHALL TAKE PLACE ON A DAILY BASIS UNLESS OTHERWISE APPROVED BY THE OWNER'S REPRESENTATIVE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL GRADES AND FLOW LINES AS SHOWN ON THE GRADING PLAN. WHERE SOD IS TO BE INSTALLED ON A SWALE, THE FINISH GRADE MUST BE ADJUSTED SO THE SOD DOES NOT RESTRICT THE FLOW.

PLANT SPACING NOTE:

SHRUB LAYOUT AS SHOWN ON PLAN INDICATES "SHRUB MASSES." QUANTITIES ARE AS SHOWN ON PLAN, ON-CENTER SPACING AS SHOWN ON LEGEND. CONTRACTOR TO VERIFY QUANTITIES BASED ON SPACING AND ADD ADDITIONAL PLANT MATERIAL, AT NO ADDITIONAL COST TO THE OWNER, AS REQUIRED TO MAINTAIN DESIGN INTENT DUE TO EXISTING SITE CONDITIONS NOT ANTICIPATED DURING DESIGN. LAYOUT/SPACING WILL EITHER BE TRIANGULAR OR LINEAR AS INDICATED ON PLAN OR LEGEND. LANDSCAPE ARCHITECT IS TO APPROVE FINAL LAYOUT IN FIELD PRIOR TO INSTALLATION.

LINEAR ROOT BARRIER NOTE:

ALL TREES PLANTED WITHIN 5' OF ANY HARDSCAPE WILL REQUIRE LINEAR ROOT BARRIERS, TO BE PLACED ALONG CURBS, WALKS, AND WALLS. SEE **DETAIL D, SHEET L-4.2**, FOR LINEAR ROOT BARRIER PLACEMENT.

MULCH NOTE:

CONTRACTOR SHALL INSTALL A 3" LAYER OF CHIPPED MULCH IN ALL SHRUB AREAS (3" THICK GRAVEL MULCH, 3/8" ANGULAR IN BIO-RETENTION AREA AS NOTED IN LEGEND). MULCH SHALL BE "WALK ON CHIPS" AS MADE BY EARTHWORKS, RIVERSIDE, CA. CONTACT LEFO PHORORO (951) 782-0260. GRAVEL MULCH SHALL BE "XXX" AS BY SOUTHWEST BOULDER AND STONE, COLOR TBD. SUBMIT SAMPLE OF ANY ALTERNATIVE MATERIAL PRIOR TO PURCHASE AND/OR PLACEMENT FOR OWNER'S REPRESENTATIVE'S APPROVAL.

PHOTO SUBMITTAL NOTE:

ALL PLANT MATERIAL, INCLUDING TREES, SHRUBS, AND VINES, SHALL BE INSPECTED AND APPROVED BY LANDSCAPE ARCHITECT, VIA PHOTO SUBMITTALS, PRIOR TO DELIVERY TO SITE. PHOTO SUBMITTALS SHALL INCLUDE NURSERY SUPPLIER AND DATE OF PHOTOS. ANY MATERIAL DELIVERED TO SITE WITHOUT APPROVAL IS SUBJECT TO REJECTION. PHOTO SUBMITTALS SHALL BE SENT TO LANDSCAPE ARCHITECT A MINIMUM OF 48 HOURS PRIOR TO SHIPMENT OF MATERIAL. SUBMITTALS SHOULD INCLUDE SOME TYPE OF SCALE REFERENCE IN PHOTO (I.E. PERSON, MEASURING TAPE, ETC.). TREES SHALL BE NOTED WITH HEIGHT (FROM FINISH GRADE IN CONTAINER) AND CANOPY HEAD SIZE. LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF SCHEDULED NURSERY DELIVERY TIMES A MINIMUM OF 24 HOURS PRIOR TO SHIPMENT. REFER TO PLANTING SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING QUALITY OF NURSERY STOCK.

AGRONOMICAL SOILS REPORT:

CONTRACTOR SHALL BE PROVIDED A SOILS REPORT BY LANDSCAPE ARCHITECT. SEE **DETAIL A, SHEET L-4.3**. CONTRACTOR WILL ADD AMENDMENTS TO SOIL BASED ON SOILS REPORT. CONTRACTOR TO THEN TAKE AND PROVIDE A SECOND SOIL TEST AFTER AMENDMENTS ARE ADDED TO VERIFY AMENDMENTS ARE ADEQUATE.

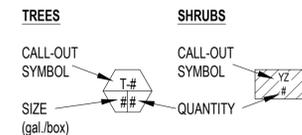
MULCH RING NOTE:

PROVIDE 3" MULCH LAYER WITH 48" DIAMETER MULCH RING AROUND EXISTING AND NEW TREES IN TURF AREA. REFER TO **DETAIL B, SHEET L-4.2**.

PLANTING LEGEND:

TREES	CODE	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	WATER USE	QTY	DETAIL
	T-01	Cercis canadensis 'Forest Pansy'	Forest Pansy Eastern Redbud	24" Box	Per Plan	Standard	L	5	CIL-4.2
	T-02	Cercis occidentalis	Western Redbud	24" Box	Per Plan	Standard, Double Staked	L	4	
	T-03	Melaleuca nesophila	Pink Melaleuca	24" Box	Per Plan	Multi-Branching	M	2	CIL-4.2
	T-04	Platanus racemosa	California Sycamore	36" Box	Per Plan	Standard	M	2	BIL-4.2
EXISTING TREES TO REMAIN	CODE	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	WATER USE	QTY	DETAIL
	XT-01	Agonis flexuosa	Peppermint Tree	Existing to Remain				7	
	XT-02	Platanus racemosa	California Sycamore	Existing to Remain				6	
	XT-03	Tabebuia impetiginosa	Pink Trumpet Tree	Existing to Remain				3	
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	WATER USE	QTY	DETAIL
	AR	Aloe arborescens	Torch Aloe	15 Gal.	60" O.C.	Triangular Spacing	L	13	EIL-4.2
	AB	Anigozanthos x 'Bush Ranger'	Bush Ranger Kangaroo Paw	1 Gal.	30" O.C.	Triangular Spacing	M	36	EIL-4.2
	IS	Ilex vomitoria 'Stokes Dwarf'	Stokes Dwarf Yaupon Holly	5 Gal.	54" O.C.	Triangular Spacing	M	22	EIL-4.2
	LH	Leucadendron x 'Jester'	Jester Conebush	5 Gal.	48" O.C.	Triangular Spacing Provide Gravel Mulch 3/8", 3" Thick within Bio-Retention Area.	L	20	EIL-4.2
	LC	Leymus condensatus 'Canyon Prince'	Canyon Prince Giant Wild Rye	5 Gal.	24" O.C.		L	59	EIL-4.2
	RC	Rosa x 'Iceberg'	Iceberg Floribunda Rose	5 Gal.	36" O.C.	Triangular Spacing	M	27	EIL-4.2
SHRUB AREAS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	WATER USE	QTY	DETAIL
	EP	Epilobium canum latifolium 'Everett's Choice'	Everett's California Fuchsia	1 Gal.	24" O.C.	Triangular Spacing	L	29	EIL-4.2
	LP	Limonium perezii	Statice	1 Gal.	24" O.C.	Triangular Spacing	L	137	EIL-4.2
	MC	Muhlenbergia capillaris	Pink Muhly Grass	1 Gal.	30" O.C.	Triangular Spacing	L	12	
	MD	Muhlenbergia dubia	Pine Muhly	1 Gal.	30" O.C.	Triangular Spacing	L	34	EIL-4.2
	SP	Salvia spathacea	Hummingbird Sage	1 Gal.	24" O.C.	Triangular Spacing	L	70	EIL-4.2
	SB	Salvia x 'Bee's Bliss'	Bee's Bliss Sage	1 Gal.	18" O.C.	Triangular Spacing	L	44	EIL-4.2
GROUND COVER	CODE	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS	WATER USE	QTY	DETAIL
	AM	Achillea x 'Moonshine'	Moonshine Yarrow	1 Gal.	24" O.C.	Triangular Spacing	L	145	FIL-4.2
	CD	Carex divulsa	European Grey Sedge	1 Gal.	18" O.C.	Triangular Spacing	L	221	FIL-4.2
	CP	Cistus x pulverulentus 'Sunset'	Sunset Rockrose	5 Gal.	30" O.C.	Triangular Spacing	L	41	FIL-4.2
	DL	Dianella revoluta 'DR5000'	Little Rev™ Flex Lily	1 Gal.	24" O.C.	Triangular Spacing Provide Gravel Mulch 3/8", 3" Thick within Bio-Retention Area.	L	115	FIL-4.2
	EC	Erigeron glaucus 'Cape Sebastian'	Cape Sebastian Seaside Daisy	1 Gal.	18" O.C.	Triangular Spacing	L	146	FIL-4.2
	JP	Juncus patens	California Gray Rush	1 Gal.	24" O.C.		L	22	FIL-4.2
	SA	Sesleria autumnalis	Autumn Moor Grass	1 Gal.	24" O.C.	Triangular Spacing	M	150	FIL-4.2
	TI	Turf Sod	Marathon II	Sod-Sig Roll (42" x 105')	Complete Coverage	Available from Southland Sod	H	6,415 sf	

SYMBOL LEGEND:



PLAN CROSS REFERENCES:

FOR NOTES AND LEGENDS, SEE THIS SHEET
FOR PLANTING DETAILS, SEE SHEET L- 4.02
FOR CORRESPONDING CONSTRUCTION PLAN SEE SHEET L-2.01
FOR CORRESPONDING IRRIGATION PLAN SEE SHEET L-3.01



Know what's below.
Call before you dig.

ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO CUCAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

REVISIONS

REFERENCES

SCALE: AS SHOWN	DATE: 01-31-2024
PREPARED UNDER THE SUPERVISION OF	07-31-2024 EXP
DESIGNED BY: LV	
REVIEWED BY: GD	
APPROVED: _____	CITY ENGINEER

**HILLBROOK PARK RENOVATION
PLANTING LEGEND AND NOTES**

CITY OF SIGNAL HILL

SHEET

L-4.00

22 OF 28 SHEETS

PLAN NUMBER

PLANTING NOTES:

- SHRUB LAYOUT AS SHOWN ON PLAN INDICATES "SHRUB MASSES" QUANTITIES ARE AS SHOWN ON PLAN, ON-CENTER SPACING AS SHOWN ON LEGEND. CONTRACTOR TO VERIFY QUANTITIES BASED ON SPACING AND ADD ADDITIONAL PLANT MATERIAL (AT NO ADDITIONAL COST TO THE OWNER) REQUIRED TO MAINTAIN DESIGN INTENT DUE TO EXISTING SITE CONDITIONS NOT ANTICIPATED DURING DESIGN. LAYOUT/SPACING WILL EITHER BE TRIANGULAR OR LINEAR AS SHOWN ON PLAN OR LEGEND. LANDSCAPE ARCHITECT TO APPROVE FINAL LAYOUT IN FIELD PRIOR TO INSTALLATION.
- CONTRACTORS SHALL NOTIFY THE LANDSCAPE ARCHITECT OF SITE CONDITIONS WHICH PREVENT INSTALLATION PER PLANS AND SPECIFICATIONS.
- CONTRACTOR SHALL BE LIABLE FOR REMOVING AND RE-INSTALLING IRRIGATION EQUIPMENT, AND REPLANTING AREAS WHICH ARE NOT INSTALLED PER PLAN AND SPECIFICATIONS.
- REFER TO PLANTING SPECIFICATIONS FOR INSPECTION/CERTIFICATION SCHEDULE.
- IRRIGATION SYSTEM SHALL BE INSTALLED AND OPERATIONAL PRIOR TO INSTALLATION OF PLANT MATERIALS.
- TREES AND SHRUBS SHALL BE PLANTED AFTER CONCRETE PLACEMENT, BUT NOT BEFORE IRRIGATION COVERAGE TEST NO. 1 HAS BEEN APPROVED. (SEE SPECIFICATIONS).
- PLACE TREES BETWEEN IRRIGATION HEADS WHEREVER POSSIBLE.
- LANDSCAPE CONTRACTOR SHALL TAKE FOUR (4) SOIL SAMPLES FROM THE SITE AT LOCATIONS APPROVED BY THE LANDSCAPE ARCHITECT. THE SAMPLES SHALL BE TAKEN AT A DEPTH OF 12" AFTER ROUGH GRADING AND SUBMITTED TO AN APPROVED SOIL AND PLANT LABORATORY FOR AGRICULTURAL SUITABILITY TESTING. THE COST OF TESTING SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
- THE RECOMMENDATIONS OF THE SOIL REPORT SHALL SUPERSEDE THE SOIL PREPARATION AND BACKFILL MIX SPECIFICATIONS (SEE SPECIFICATIONS). THE CONTRACTOR SHALL SUBMIT A COPY OF ALL SOILS REPORTS TO THE LANDSCAPE ARCHITECT PRIOR TO MODIFICATION OF THESE SPECIFICATIONS.
- SHREDDED MULCH INSTALLATION: INSTALL SHREDDED MULCH IN ALL SHRUB AND GROUND COVER AREAS PER SPECIFICATIONS UNLESS OTHERWISE INDICATED ON PLANS.
- CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS AND/OR REPLACEMENT OF ANY DAMAGED LANDSCAPE AREAS BEYOND THE LIMIT OF WORK, INCLUDING REPAIRING ANY IRRIGATION LINES/SPRINKLER HEADS, THAT IS A DIRECT RESULT OF THE LANDSCAPE CONSTRUCTION AND/OR HIS SUB-CONTRACTOR. REPLACEMENT ITEMS SHALL BE EXACT DUPLICATION OF ORIGINAL WORK OR PLANTS, UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT.
- WHEREVER GROUND COVER AREAS ARE ADJACENT TO TURF INSTALL CONCRETE MOW STRIP OR HEADER BOARD AS INDICATED ON DRAWINGS.
- CLEAN-UP SHALL TAKE PLACE ON A DAILY BASIS UNLESS OTHERWISE APPROVED BY THE OWNER'S REPRESENTATIVE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL GRADES AND FLOW LINES AS SHOWN ON THE GRADING PLAN. WHERE SOD IS TO BE INSTALLED ON A SWALE, THE FINISH GRADE MUST BE ADJUSTED SO THE SOD DOES NOT RESTRICT THE FLOW.

PHOTO SUBMITTAL NOTE:

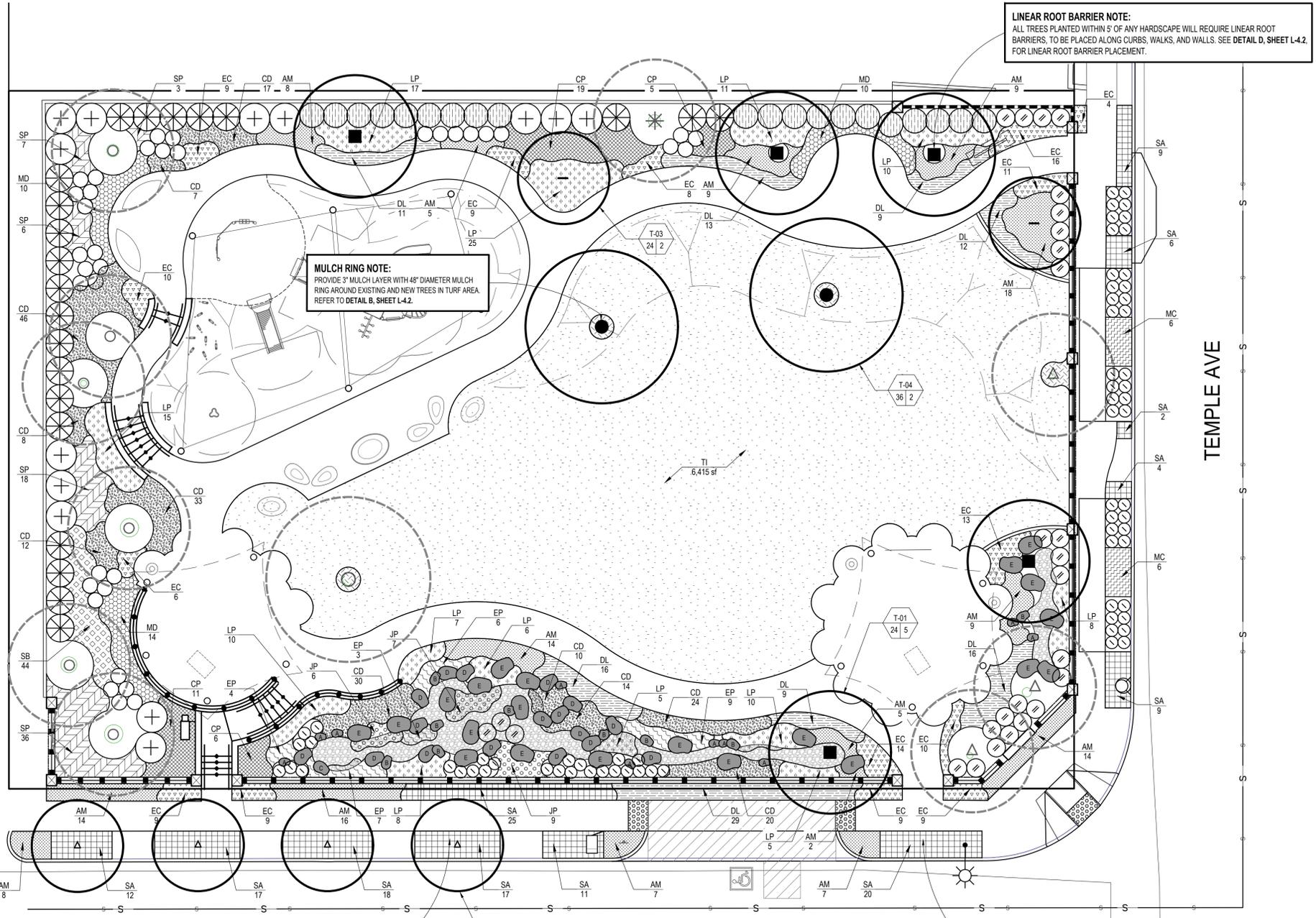
ALL PLANT MATERIAL, INCLUDING TREES, SHRUBS, AND VINES, SHALL BE INSPECTED AND APPROVED BY LANDSCAPE ARCHITECT, VIA PHOTO SUBMITTALS, PRIOR TO DELIVERY TO SITE. PHOTO SUBMITTALS SHALL INCLUDE NURSERY SUPPLIER AND DATE OF PHOTOS. ANY MATERIAL DELIVERED TO SITE WITHOUT APPROVAL IS SUBJECT TO REJECTION. PHOTO SUBMITTALS SHALL BE SENT TO LANDSCAPE ARCHITECT A MINIMUM OF 48 HOURS PRIOR TO SHIPMENT OF MATERIAL. SUBMITTALS SHOULD INCLUDE SOME TYPE OF SCALE REFERENCE IN PHOTO (I.E. PERSON, MEASURING TAPE, ETC.). TREES SHALL BE NOTED WITH HEIGHT (FROM FINISH GRADE IN CONTAINER) AND CANOPY HEAD SIZE. LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF SCHEDULED NURSERY DELIVERY TIMES A MINIMUM OF 24 HOURS PRIOR TO SHIPMENT. REFER TO PLANTING SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING QUALITY OF NURSERY STOCK.

AGRONOMICAL SOILS REPORT:

CONTRACTOR SHALL BE PROVIDED A SOILS REPORT BY LANDSCAPE ARCHITECT. SEE DETAIL A, SHEET L-4.3. CONTRACTOR WILL ADD AMENDMENTS TO SOIL BASED ON SOILS REPORT. CONTRACTOR TO THEN TAKE AND PROVIDE A SECOND SOIL TEST AFTER AMENDMENTS ARE ADDED TO VERIFY AMENDMENTS ARE ADEQUATE.

LINEAR ROOT BARRIER NOTE:
ALL TREES PLANTED WITHIN 5' OF ANY HARDSCAPE WILL REQUIRE LINEAR ROOT BARRIERS, TO BE PLACED ALONG CURBS, WALKS, AND WALLS. SEE DETAIL D, SHEET L-4.2, FOR LINEAR ROOT BARRIER PLACEMENT.

MULCH RING NOTE:
PROVIDE 3" MULCH LAYER WITH 48" DIAMETER MULCH RING AROUND EXISTING AND NEW TREES IN TURF AREA. REFER TO DETAIL B, SHEET L-4.2.



MULCH NOTE:
CONTRACTOR SHALL INSTALL A 3" LAYER OF CHIPPED MULCH IN ALL SHRUB AREAS (3" THICK GRAVEL MULCH, 38" ANGULAR IN BIO-RETENTION AREA AS NOTED IN LEGEND). MULCH SHALL BE WALK ON CHIPS AS MADE BY EARTHWORKS, RIVERSIDE, CA. CONTACT LEO PHORORO (951) 782-0290. GRAVEL MULCH SHALL BE "XXX" AS BY SOUTHWEST BOULDER AND STONE, COLOR TBD. SUBMIT SAMPLE OF ANY ALTERNATIVE MATERIAL PRIOR TO PURCHASE AND/OR PLACEMENT FOR OWNER'S REPRESENTATIVE'S APPROVAL.

PLANT SPACING NOTE:
SHRUB LAYOUT AS SHOWN ON PLAN INDICATES "SHRUB MASSES" QUANTITIES ARE AS SHOWN ON PLAN, ON-CENTER SPACING AS SHOWN ON LEGEND. CONTRACTOR TO VERIFY QUANTITIES BASED ON SPACING AND ADD ADDITIONAL PLANT MATERIAL, AT NO ADDITIONAL COST TO THE OWNER, AS REQUIRED TO MAINTAIN DESIGN INTENT DUE TO EXISTING SITE CONDITIONS NOT ANTICIPATED DURING DESIGN. LAYOUT/SPACING WILL EITHER BE TRIANGULAR OR LINEAR AS INDICATED ON PLAN OR LEGEND. LANDSCAPE ARCHITECT IS TO APPROVE FINAL LAYOUT IN FIELD PRIOR TO INSTALLATION.



SYMBOL LEGEND:

TREES	SHRUBS
CALL-OUT SYMBOL: T-#	CALL-OUT SYMBOL: YZ #
SIZE: ##	QUANTITY: #
(gal./box)	

PLAN CROSS REFERENCES:
FOR NOTES AND LEGENDS, SEE SHEET L-4.00
FOR PLANTING DETAILS, SEE SHEET L-4.02
FOR CORRESPONDING CONSTRUCTION PLAN SEE SHEET L-2.01
FOR CORRESPONDING IRRIGATION PLAN SEE SHEET L-3.01



ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO CUCAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

REVISIONS

NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES

NO.	DATE	DESCRIPTION

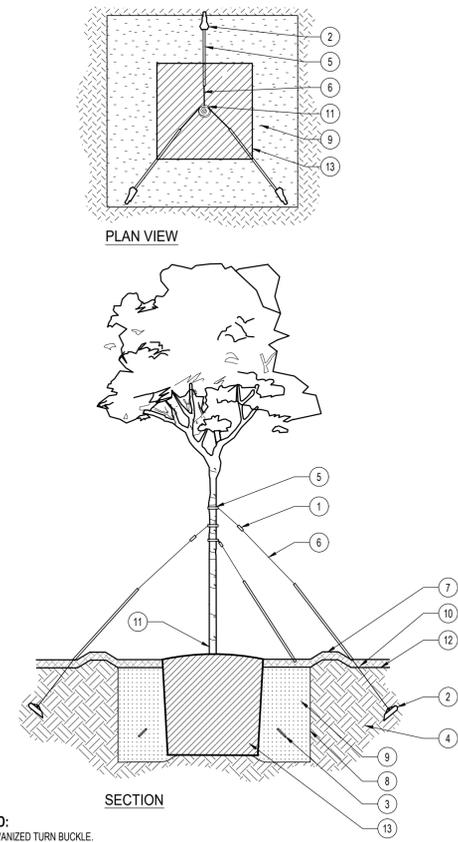
SCALE: AS SHOWN

DESIGNED BY	DATE
LV	07-31-2024
REVIEWED BY	EXP
GD	
APPROVED	CITY ENGINEER

**HILLBROOK PARK RENOVATION
PLANTING PLAN**

CITY OF SIGNAL HILL

SHEET
L-4.01
23 OF 28 SHEETS
PLAN NUMBER



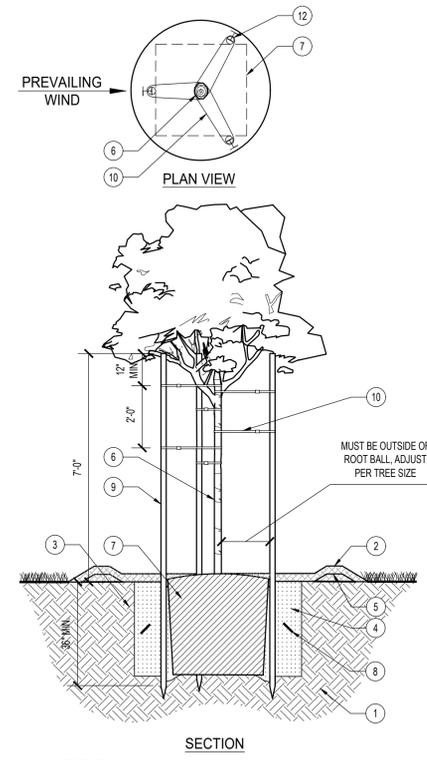
- LEGEND:**
1. GALVANIZED TURN BUCKLE.
 2. DUCKBILL EARTH ANCHORS. PLACE AT 90° TO GUY WIRE.
 3. AGRIFORM FERTILIZER TABLETS PER SPECIFICATIONS.
 4. NATIVE SUBGRADE.
 5. RUBBER HOSE OVER WIRE AT POINT OF CONTACT.
 6. GUY WIRE PER MANUFACTURER'S. MULTIPLE-STRAND GUY WIRES EQUALLY SPACED AROUND TREE. COVER W/ WHITE PVC 1/2" DIA. TUBING. LENGTH 3'-0" ±.
 7. 3" HIGH EARTH BERM WATERING BASIN.
 8. PLANT PIT TO BE 2 TIMES THE WIDTH OF ROOT BALL. SET ROOT BALL ON UNDISTURBED NATIVE SUB-GRADE.
 9. BACKFILL MIX PER SPECIFICATIONS.
 10. MULCH LAYER. SEE PLANTING PLAN FOR TYPE AND THICKNESS.
 11. MULTI STEM TREE PER PLANTING PLAN.
 12. FINISH GRADE.
 13. ROOT BALL. SET TWO INCHES ABOVE FINISH GRADE.

NOTES:

- A. INSTALL GUYS HAND-TAUT TO PREVENT DEFORMATION OF LIMBS.
- B. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

A STANDARD TREE GUYING FOR (36" BOX AND LARGER)

SCALE: 3/8" = 1'-0" REFERENCE NUMBER: S-PLA-TREE-03



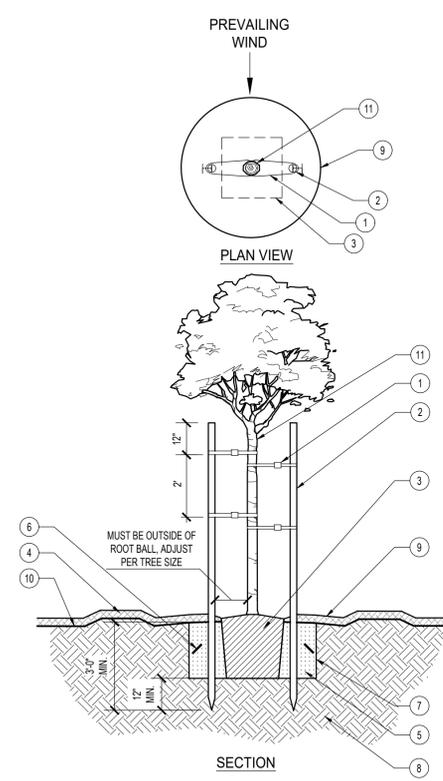
- LEGEND:**
1. NATIVE SUBGRADE.
 2. 3" MULCH LAYER, 4'-0" DIA. IN TURF AREAS. KEEP MULCH 6" AWAY FROM TRUNK. SEE PLANTING PLAN FOR TYPE AND THICKNESS.
 3. PLANT PIT TO BE 2 TIMES THE WIDTH OF THE ROOT BALL. SET ROOT BALL ON UNDISTURBED NATIVE SUBGRADE.
 4. BACKFILL MIX PER SPECIFICATIONS.
 5. EDGE OF MULCH RING TAPERED DOWN TO GRASS EDGING, HEADER, OR SHOVEL CUT EDGE.
 6. TREE PER PLANTING PLAN.
 7. ROOT BALL. SET TWO INCHES ABOVE FINISH GRADE.
 8. AGRIFORM FERTILIZER TABLETS PER SPECIFICATIONS.
 9. 2" DIA. x 10' LODGEPOLE PINE TREES STAKE.
 10. 'CINCH TIE' AS MANUFACTURED BY V.I.T. NAIL TO TREE STAKE W/ 1" GALVANIZED ROOFING NAIL.
 11. FINISH GRADE.

NOTES:

- A. UNTANGLE MATTED ROOTS BY LOOSENING ALL ROOTS AT EDGE OF ROOT BALL W/ WATER FROM HOSE. DO NOT CRACK ROOT BALL.
- B. PLACE FERTILIZER TABS IN PLANT PIT PRIOR TO PLANTING FOR OBSERVATION PURPOSES.
- C. SET STAKES PERPENDICULAR TO PREVAILING WINDS.

B TRIPLE STAKE TREE IN TURF FOR (36" BOX OR LARGER)

SCALE: 3/8" = 1'-0" REFERENCE NUMBER: S-PLA-TREE-16



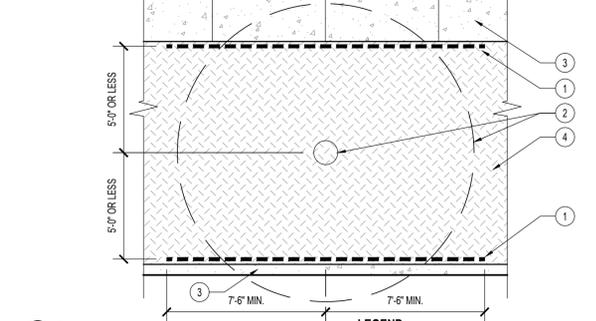
- LEGEND:**
1. 'CINCH TIE' AS MANUFACTURED BY V.I.T. CO. (2) PER POLE. SEE SPECIFICATIONS. NAIL TO TREE STAKE W/ 1" GALV. ROOFING NAIL (4) REQUIRED.
 2. 2" DIA. x 10' LODGEPOLE PINE TREE STAKE, (2) PER TREE. LOCATE OUTSIDE ROOT BALL.
 3. CONTAINER ROOT BALL. SET 2" ABOVE F.G.
 4. TEMPORARY 3" BERM TO FORM DEPRESSED WATERING BASIN. ALL SIDES.
 5. PREPARED BACKFILL MIX PER SOIL REPORT RECOMMENDATIONS.
 6. FERTILIZER TABLETS AND QUANTITY PER PLANTING SPECIFICATIONS.
 7. PLANT PIT TO BE TWICE THE ROOT BALL WIDTH AND FLUSH WITH THE BOTTOM OF THE ROOT BALL PER PLANTING SPECIFICATIONS.
 8. UNDISTURBED NATIVE SOIL.
 9. MULCH LAYER. SEE PLANTING PLAN FOR TYPE AND THICKNESS. USE WOOD MULCH WITH 3'-0" DIA. IN TURF AREAS.
 10. FINISH GRADE.
 11. TREE PER PLANTING PLAN.

NOTES:

- A. UNTANGLE MATTED ROOTS BY LOOSENING ALL ROOTS AT EDGE OF ROOT BALL W/ WATER FROM HOSE. DO NOT CRACK ROOT BALL.
- B. PLACE FERTILIZER TABS IN PLANT PIT PRIOR TO PLANTING FOR OBSERVATION PURPOSES.
- C. SET STAKES PERPENDICULAR TO PREVAILING WINDS. DO NOT STAKE THROUGH ROOTBALL.

C DOUBLE STAKE TREE PLANTING FOR 15-GAL. TO 24" BOX SIZE

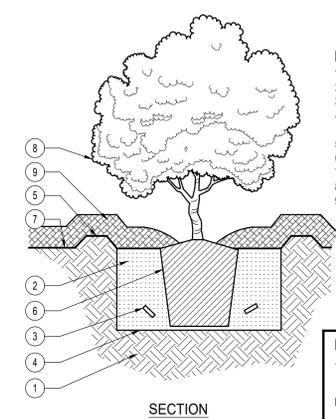
SCALE: 3/8" = 1'-0" REFERENCE NUMBER: S-PLA-TREE-01



- LEGEND:**
1. 24" DEEP x 0.080 THICK LINEAR-STYLE ROOT BARRIER. PLACE BARRIER IN TRENCH W/ THE VERTICAL RIBS FACING TOWARD TREE AND ALIGN IN A STRAIGHT FASHION. USE HARDSCAPE EDGE AS A GUIDE AND BACKFILL AGAINST THE BARRIER TO PROVIDE A CLEAN FIT. TOP OF BARRIER TO EXTEND TO 1" BELOW OF CURB OR WALK, OR 1" BELOW TOP OF MULCH LAYER OR FINISH GRADE (WHICHEVER IS HIGHEST).
 2. TREE TRUNK LOCATION (CANOPY SHOWN AS DASHED CIRCLE). TREE PER PLANTING PLAN.
 3. ADJACENT HARDSCAPE OR CURB PER PLAN.
 4. PLANTER AREA MULCH PER PLANTING PLAN.
 5. VERTICAL RIBS.
 6. COMPACTED SUB-GRADE.
 7. DOUBLE TOP EDGE.

D 24" DEEP TREE ROOT BARRIER

SCALE: 1/4" = 1'-0" REFERENCE NUMBER: S-PLA-TREE-15



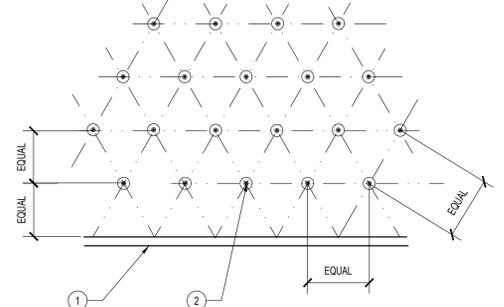
- LEGEND:**
1. UNDISTURBED NATIVE SOIL.
 2. BACKFILL MIX PER PLANTING SPECIFICATIONS.
 3. FERTILIZER TABLETS PER PLANTING SPECS.
 4. PLANT PIT TO BE TWICE ROOT BALL WIDTH AND FLUSH WITH THE BOTTOM OF THE ROOT BALL.
 5. 3" BERM TO FORM WATERING BASIN.
 6. ROOT BALL.
 7. FINISH GRADE.
 8. SHRUB PER PLANTING PLAN.
 9. MULCH LAYER. SEE PLANTING PLAN FOR TYPE AND THICKNESS.

NOTES:

- A. UNTANGLE MATTED ROOTS BY LOOSENING ALL ROOTS AT EDGE OF ROOT BALL W/ WATER FROM HOSE. DO NOT CRACK BALL OF ROOTS.
- B. PLACE FERTILIZER TABS IN PLANT CONTAINER PRIOR TO PLANTING FOR OBSERVATION PURPOSES.

E SHRUB PLANTING

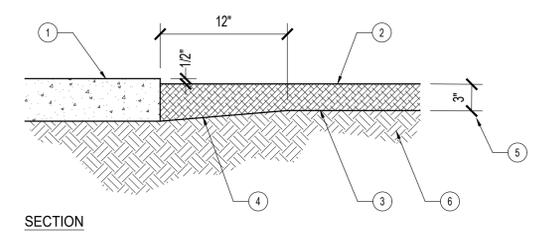
SCALE: 1" = 1'-0" REFERENCE NUMBER: S-PLA-SHRB-01



- LEGEND:**
1. BACK OF CURB OR EDGE OF PAVING.
 2. PLANT LOCATION.
- NOTES:**
- A. ALL SHRUBS AND GROUNDCOVER SHALL BE PLANTED AT EQUAL SPACING (TRIANGULAR) UNLESS OTHERWISE INDICATED ON PLANS. SEE PLANTING LEGEND FOR SPACING REQUIREMENTS.

F TRIANGULAR SHRUB & GROUNDCOVER SPACING

SCALE: 1 1/2" = 1'-0" REFERENCE NUMBER: S-PLA-GC-04



- LEGEND:**
1. HARDSCAPE OR HEADER PER CONSTRUCTION PLAN.
 2. SHREDDED MULCH (MEDIUM GRIND) PER PLANTING PLAN. DO NOT USE BARK CHIPS.
 3. FINISH GRADE.
 4. SHOVEL CUT DEEPEDED EDGE ADJACENT TO PAVING.
 5. MULCH DEPTH PER PLANTING PLAN, 3" MIN. UNLESS OTHERWISE NOTED.
 6. NATIVE AMENDED OR IMPORTED SOIL.
- NOTES:**
- A. MULCH UNDER TREES AND SHRUBS, AND BLEND INTO EDGES AT GROUNDCOVER AREAS.
 - B. GROUNDCOVER WITH TIGHT SPACING & PLUGS TO ONLY GET 1 1/2" THICK MULCH OR AS NOTED PER PLANS. KEEP MULCH 3" CLEAR OF PLANT STEM AND 6" OF TREES.
 - C.

G SHREDDED WOOD MULCH

SCALE: 1 1/2" = 1'-0" REFERENCE NUMBER: S-PLA-GC-01

- WEEKLY ITEMS:**
1. MOW GRASS TO HEIGHT OF 2" AT CONSISTENT HEIGHT. DO NOT SCALP.
 2. REMOVE LEAF LITTER, WEEDS AND DEBRIS FROM SHRUB BEDS.

- MONTHLY ITEMS:**
1. PRUNE GROWTH OF SHRUBS & GROUNDCOVER AS NECESSARY TO KEEP NEAT AND COMPACT. PRUNE TO ELIMINATE IRRIGATION APPLICATION INTERFERENCES. EDGE GROUNDCOVER PLANTS TO KEEP WITHIN PLANT ZONES.
 2. REPLACE ANY SHRUB OR GROUND COVER THAT HAS DIED OR FAILS TO THRIVE W/ IDENTICAL PLANT MATERIALS OR THOSE WITH SIMILAR WATER FORM AESTHETIC REQUIREMENTS.
 3. FERTILIZE GROUNDCOVER AREAS W/ ORGANIC FERTILIZER. REFER TO SOILS REPORT FOR APPLICATION TYPE AND RATE.
 4. REMOVE ALL WEEDS, LITTER, DEBRIS FROM SHRUB, MULCH AND GROUNDCOVER AREAS.
 5. INSPECT AND TREAT PLANT MATERIAL FOR DISEASE AND/OR PEST PROBLEMS.

- QUARTERLY ITEMS:**
1. CHECK TREE GROWTH. PRUNE TREES TO THIN STRUCTURE, SHAPE, REMOVE SUCKERS AND ANY DEAD OR BROKEN BRANCHES.
 2. AERATE AND DE-THATCH TURF AREAS.
 3. REPLENISH MULCH BEDS AS NEEDED W/ SPECIFIED MULCH TO MAINTAIN ORIGINAL THICKNESS OF 3".

- OVERALL:**
1. DEAD HEAD ANY SHRUBS / PERENNIALS THAT HAVE FINISHED BLOOMING AND/OR REMOVE DEAD BLOOMS TO ENCOURAGE MORE BUDING.
 2. DO NOT HEDGE PLANTS UNLESS SPECIFIED BY CLIENT.

H PLANT MATERIAL MAINTENANCE NOTES

SCALE: N/A REFERENCE NUMBER: S-PLA-MAIN-01

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES	

SCALE: AS SHOWN	DATE: 01-31-2024
PREPARED UNDER THE SUPERVISION OF: [Signature]	07-31-2024 EXP
DESIGNED BY: [Signature]	STAFF
REVIEWED BY: JRC	
APPROVED: [Signature]	CITY ENGINEER

HILLBROOK PARK RENOVATION
PLANTING DETAILS
CITY OF SIGNAL HILL

SHEET
L-4.02
24 OF 28 SHEETS
PLAN NUMBER





4741 East Hunter Ave./Suite A
Anaheim, CA 92807
Main 714-282-8777 * Fax 714-282-8575
www.waypointanalytical.com

Anaheim Office
Lab No: 23-214-0018
August 7, 2023

Architerra Design Group, Inc.
10221-A Trademark Street
Rancho Cucamonga, CA 91730

Project: City of Signal Hill - Hillbrook Park Job #: 2303

Attached are the results of the analysis performed on a soil sample that was collected from the above-mentioned project site from a 12-inch depth by the client and received by our laboratory on August 02, 2023. This sample was analyzed for nutrient levels, agricultural suitability, and physical characteristics in preparation for a new landscape installation.

Analytical Results and Comments

The reaction of the soil is slightly acidic at 6.9 on the pH scale with qualitative lime favorably absent. These levels are within the range preferred for most plants and no pH adjustment is suggested.

Salinity (ECe) is safely low. Sodium is slightly elevated at 13.1 meq/L. The soluble sodium present in this sample is not properly balanced by calcium and magnesium as indicated by the elevated sodium adsorption ratio (SAR) of 6.3; this imbalance could have a negative effect on soil structure and water infiltration. Thorough initial irrigations should be applied after planting to reduce the sodium and SAR in the root zone to a safe range for salt sensitive plants.

In terms of fertility, nitrogen and phosphorus are low. The remaining nutrients are well supplied. Zinc is particularly abundant indicating good reserve potential. Application of fertilizers and amendments that contain zinc should be avoided in the routine maintenance program.

The texture of the soil represented by this sample is 'gravelly loamy sand' with gravel in the 2-12 mm range comprising 23.5% of the soil by dry weight. This, in combination with a wide distribution of particle sizes in the sand category, indicates that the soil at this site may have a tendency to consolidate and compact. The estimated water infiltration rate, which may vary with the degree of soil compaction, is a favorable 0.39 inches per hour. Organic content is moderate at 2.55% on a dry weight basis.

Page 2
Architerra Design Group, Inc.
August 7, 2023

Recommendations for General Ornamentals

Surface Soil Preparation for General Ornamental Turf, Groundcover, and Mass Planting Areas

If feasible, prior to amending the areas where severe compaction exists, the surface soil should be ripped or tilled to a 9-inch depth. Uniformly broadcast and blend the following with existing soil to a 6-inch depth.

Materials	Amount per 1000 sq. ft.
**Nitrogen fortified organic amendment (compost* or redwood or fir sawdust)	4 cu. yards
15.5-0-0 Calcium Nitrate	10 lbs.
0-45-0 Triple Superphosphate	8 lbs.

**For all turf areas, limit the organic amendment rate to 3 cu. yards per 1000 sq. ft. to a depth of 6 inches.

*Rates and fertilizers may have to be adjusted depending on analysis of selected compost.

Tree and Shrub Planting Guidelines For General Ornamentals

- Excavate planting pits at least twice the diameter of the rootball.
- The top of the rootball should be at or slightly above final grade.
- Organic material is not required in the backfill; however, if you wish, the amended surface soil or a soil blend consisting of no more than 20% by volume organic matter can be placed in the upper 12 inches of backfill only. Soil below this depth should not contain any added organic matter because of the threat of plant disease and/or anaerobic soil conditions developing.
- Place slow release fertilizer tablets in the upper 12 inches of backfill at manufacturer's recommended rates. If fertilizer amended soil is used as a backfill the addition of slow release fertilizer tablets is not necessary.
- Do not cover the original rootball with other soil. Ideally, a temporary soil berm is often constructed around the outer edge of the rootball to help channel water into the rootball and then into surrounding soil until roots are established in the backfill and the rootball is no longer the sole source of water for the plant.
- Ideally, a weed and turf free zone, preferably 2-3 ft. in diameter, should be maintained just beyond the diameter of the planting hole. A 2-4 inch deep layer of coarse mulch can be placed around the tree or shrub; mulch should be kept a minimum 4-6 inches from the trunk.

Page 3
Architerra Design Group, Inc.
July 12, 2023

Maintenance Fertilization for General Ornamentals

For turf, groundcover, and mass planting areas, uniformly broadcast 15.5-0-0 Calcium Nitrate at a rate of 7 lbs. per 1000 sq. ft.. The first application should occur approximately 45 days after planting or after the first mowing in turf areas, with repeat applications every 45-60 days or as growth and color dictate. In early fall and spring, substitute a complete fertilizer such as 16-6-8, or equal, for the 15.5-0-0 Calcium Nitrate at the rate of 6 lbs. per 1000 sq. ft. to ensure continuing supplies of phosphorus and potassium. Tree and shrub plantings can be maintained with the above fertilizers; however, the frequency between applications should be every 120 days, with the first application 90 days after planting. Follow each fertilization with a thorough irrigation. When plants have become well established, fertilizer applications can be less frequent.

Recommendations for California Natives

These types of plants are often installed without the use of fertilizers and amendments, since they are well adapted to low fertility soils. However, organic content can be improved through the incorporation of 1.5 cu. yards of nitrogen fortified organic amendment per 1000 sq. ft. incorporated to a depth of 6 inches. No additional amendments are suggested for these types of plants.

Tree & Shrub Planting Guidelines for California Natives

- Excavate planting pits at least twice the diameter of the rootball.
- The top of the rootball should be at or slightly above final grade.
- Organic material is not required in the backfill.
- Do not cover the original rootball with other soil. Ideally, a temporary soil berm is often constructed around the outer edge of the rootball to help channel water into the rootball and then into surrounding soil until roots are established in the backfill and the rootball is no longer the sole source of water for the plant.
- Ideally, a weed and turf free zone, preferably 2-3 ft. in diameter, should be maintained just beyond the diameter of the planting hole. A 2-4 inch deep layer of coarse mulch can be placed around the tree or shrub; mulch should be kept a minimum 4-6 inches from the trunk.

Maintenance Fertilization for California Natives

Maintenance fertilization for California natives should be based entirely on color and growth performance. When needed, native plants can be maintained by broadcasting sulfur coated urea at the rate of 2.5 lbs. per 1000 sq. ft.

If we can be of any further assistance, please feel free to contact us.

Joe Kiefer, CCA

Architerra Design Group, Inc.
10221-A Trademark Street
Rancho Cucamonga CA 91730

Project : City of Signal Hill - Hillbrook Park
Job #: 2303

COMPREHENSIVE SOIL ANALYSIS

Report No : 23-214-0018
Purchase Order : Hillbrook Park 2303
Date Recd : 08/02/2023
Date Printed : 08/07/2023
Page : 1 of 1

Sample Description - Sample ID	Half Sat %	pH	ECe dS/m	NO ₃ -N ppm	NH ₄ -N ppm	PO ₄ -P ppm	K ppm	Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic % dry wt.	Lab No.
	TEC	Qual Lime													
Site Soil	17	6.9	1.5	9	4	3	84	1080	138	3.9	139	10	84	2.55	00246
	72	None		0.4	0.1	0.8	0.9	0.9	4.2	37.2	1.3	2.4			

Saturation Extract Values							Percent of Sample Passing 2 mm Screen							USDA Soil Classification	Lab No.
Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO ₄ meq/L	SAR	Gravel %		Sand			Silt .002-.05	Clay 0-.002		
							Coarse 5-12	Fine 2-5	Very Coarse 1-2	Coarse 0.5-1	Med. to Very Fine 0.05-0.5				
6.2	2.5	13.1	0.1	0.18	4.9	6.3	8.0	15.5	8.6	16.8	55.5	11.2	7.8	Gravelly Loamy Sand	00246

Sufficiency factor (1.0=sufficient for average crops) below each nutrient value. N factor based on 200 ppm constant feed. SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K), Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Stat. test method for salinity (ECe as dS/m), Boron (B), Sulfate(SO₄), Sodium(Na). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters. Organic percentage determined by Walkley-Black or Loss on Ignition.
* LOW , SUFFICIENT , HIGH
Page 4 of 4

4741 East Hunter Ave., Ste. A Anaheim CA 92807
(714) 282-8777 (714) 282-8575 fax
www.waypointanalytical.com
Page 1 of 4

4741 East Hunter Ave., Ste. A Anaheim CA 92807
(714) 282-8777 (714) 282-8575 fax
www.waypointanalytical.com
Page 2 of 4

4741 East Hunter Ave., Ste. A Anaheim CA 92807
(714) 282-8777 (714) 282-8575 fax
www.waypointanalytical.com
Page 3 of 4

A AGRONOMIC SOILS REPORT

ARCHITERRA DESIGN GROUP
LANDSCAPE ARCHITECTURE AND PLANNING
10221-A TRADEMARK ST., RANCHO CUCAMONGA, CALIFORNIA 91730
PH: (909) 484-2800

LICENSED LANDSCAPE ARCHITECT
BRUCE H. KRUMWIEDE 2018
07-31-24
01-31-24
DATE

STATE OF CALIFORNIA

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES	

SCALE: AS SHOWN	DATE: 01-31-2024
PREPARED UNDER THE SUPERVISION OF 	07-31-2024 EXP
DESIGNED BY: STAFF	
REVIEWED BY: JRC	
APPROVED: _____	CITY ENGINEER

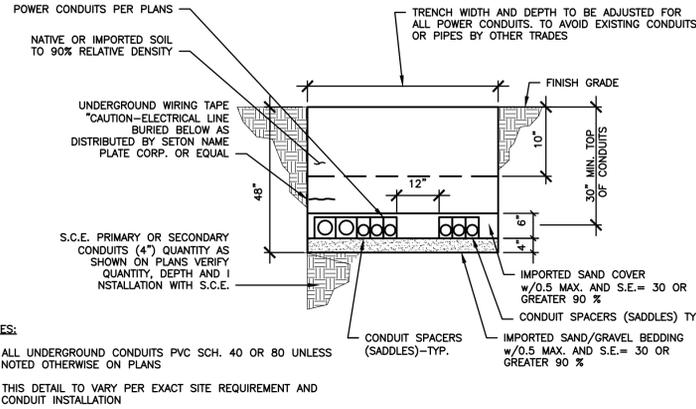
HILLBROOK PARK RENOVATION
AGRONOMICAL SOILS REPORT

CITY OF SIGNAL HILL

SHEET
L-4.03
25 OF 28 SHEETS
PLAN NUMBER

GENERAL NOTES

- THESE PLANS ARE DIAGRAMMATIC ONLY. FOLLOW AS CLOSELY AS POSSIBLE. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS, STRUCTURAL DETAILS, EXACT EQUIPMENT AND OUTLET LOCATIONS.
- DO NOT SCALE THE ELECTRICAL DRAWINGS FOR LOCATIONS OF ANY ELECTRICAL DEVICES OR EQUIPMENT.
- CONSTRUCTION TERMINOLOGY, AND THE STANDARDS OF INSTALLATION REQUIRED BY THESE CONTRACTOR DOCUMENTS ARE BASED ON PUBLISHED STANDARDS OF N.E.C.A. (NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION), NATIONAL ELECTRICAL SAFETY CODE, AMERICAN NATIONAL STANDARDS INSTITUTE DOCUMENTS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, UNDERWRITERS LABORATORIES, AND THE CALIFORNIA ELECTRICAL CODE. SUBMITTAL OF BID INDICATES THE CONTRACTOR IS FAMILIAR OF THESE STANDARDS AND THE REQUIREMENTS NECESSARY TO PERFORM ALL THE WORK AS SET FORTH IN THESE CONTRACT DOCUMENTS AND ACCEPTS THE CONDITIONS.
- CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS, SERVICE REQUIREMENTS AND EXACT LOCATIONS OF SERVICE FACILITIES BEFORE SUBMITTING BID. SUBMITTAL OF BID INDICATES CONTRACTOR ACCEPTS THE CONDITIONS UNDER WHICH HE SHALL BE REQUIRED TO PERFORM HIS WORK.
- ALL UTILITY WORK SHALL BE IN COMPLIANCE WITH THESE DRAWINGS AND THE REQUIREMENTS OF THE SERVING UTILITY COMPANY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE SERVING UTILITY TO RECEIVE COMPLETE INFORMATION ON THEIR REQUIREMENTS PRIOR TO THE SUBMISSION OF THE BID. THE ACT OF SUBMITTING THE BID SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO INSTALL SERVICE IN COMPLIANCE WITH THE SERVING UTILITY AND THESE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL INSTALL THE SERVICE IN COMPLIANCE WITH THE SERVING UTILITY COMPANY, AND SHALL PAY ALL CHARGES LEVIED BY THE SERVING UTILITY COMPANY FOR HIS SERVICE EXCEPT THE FIRST BILLING DEPOSIT. WHERE THE CONTRACT DOCUMENTS ARE MORE RESTRICTIVE THAN THE DOCUMENTS SHALL GOVERN. ALL ITEMS SUCH AS SERVICE CONDUIT, CONDUCTORS, DUCTS, CONCRETE PADS, TRANSFORMERS, RISERS, MANHOLES, PULL BOXES, AND PROTECTIVE COVERING FROM SERVICE LOCATION SHALL BE INSTALLED AND VERIFIED WITH THE SERVING UTILITY COMPANY.
- ELECTRICAL CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY BUILDING PERMITS, UTILITY COMPANY CHARGES, IF REQUIRED, CONTRACTOR SHALL COORDINATE AND PAY FOR ALL TEMPORARY ELECTRICAL SERVICE CHARGES WITH THE BUILDING DEPARTMENT, SERVING UTILITY, AND OWNER.
- SUBMIT SHOP DRAWINGS FOR ALL MAJOR PIECES OF ELECTRICAL EQUIPMENT, WHICH INCLUDES, BUT NOT LIMITED TO: PEDESTAL LIGHTING FIXTURES, CONTROL PANELS, TIME SWITCHES, AND ELECTRICAL PRODUCTS.
- SHOP DRAWINGS SHALL BE SUBMITTED WITHIN THIRTY DAYS AFTER AWARD OF THE CONTRACT. THE CONTRACTOR SHALL SUBMIT EIGHT COPIES OF A COMPLETE LIST OF MATERIALS AND EQUIPMENT INCLUDING MANUFACTURER AND MODEL NUMBER PROPOSED FOR THE JOB. SHOP DRAWINGS SHALL INCLUDE JOB DESCRIPTION, ARCHITECT AND ENGINEER IDENTIFICATION, AND ALL DATA WITH CAPACITIES, SIZES, DIMENSIONS, CATALOG NUMBERS, MANUFACTURER'S BROCHURES, AND SUPPORT DATA.
- THE CONTRACTOR SHALL HAVE THE OPTION OF ROUTING RACEWAYS UNLESS OTHERWISE NOTED AND SHALL BE COORDINATED WITH OTHER TRADES.
- CONTRACTOR SHALL PROVIDE ALL J-BOXES, PULL BOXES, ELLS, OFFSETS ETC. FOR A COMPLETE, CODE APPROVED, INSTALLATION OF ALL CONDUIT. FOOTAGE SHOWN ON ELECTRICAL SINGLE LINES AND RISER DIAGRAMS ARE FOR CALCULATION PURPOSES ONLY, AND ARE NOT FOR BIDDING PURPOSES OR MATERIAL TAKEOFF. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND TO COORDINATE WITH MECHANICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS FOR DUCTS, LINES, AND EQUIPMENT.
- THE CONTRACTOR SHALL PERFORM HIS WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY, LOCAL CODES, O.S.H.A., THE PRESENTLY ADOPTED NATIONAL ELECTRICAL CODE, AND PRESENTLY ADOPTED CALIFORNIA ELECTRICAL CODE (C.E.C.).
- THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. SUPPLY POWER AND MAKE CONNECTIONS TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON THE SINGLE LINE DIAGRAM, ELECTRICAL DRAWINGS, AND DRAWINGS OF OTHER TRADES. REVIEW THE DRAWINGS OF OTHER TRADES FOR CONTROL DIAGRAMS, SIZE AND LOCATION OF EQUIPMENT. OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGH-IN IN ALL CONDUIT TO THIS EQUIPMENT.
- CONTRACTOR SHALL USE MATERIALS THAT ARE NEW, AND OF THE SAME MANUFACTURER FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY THE (U.L.) UNDERWRITER'S LABORATORIES FOR THE USE AND ENVIRONMENT, AND SHALL BEAR THE INSPECTION LABEL WHERE SUBJECT TO APPROVAL. MATERIALS SHALL MEET WITH THE APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY, AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY A.N.S.I., U.L., N.E.M.A., AND N.B.F.U. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL EXCAVATE ALL TRENCH DEPTHS AND WIDTHS PER THE C.E.C. AND SHALL COMPACT ALL EXCAVATIONS IN A CONTINUOUS LAYER OF NOT MORE THAN 6" COMPACTED DEPTH TO THE REQUIRED DENSITY OF NINETY PERCENT (90%). THE CONTRACTOR SHALL ATTAIN THE SPECIFIED COMPACTION DENSITY BY MAINTAINING THE OPTIMUM MOISTURE CONTENT OF THE FILL MATERIAL.
- ATTENTION IS CALLED TO THE FACT THAT THERE ARE EXISTING UNDERGROUND UTILITY LINES, THEREFORE, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN TRENCHING FOR HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGES CAUSED BY HIM OR HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAW CUTTING, TRENCHING, BACKFILLING, COMPACTION, AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO PERFORM HIS WORK.
- P.V.C. CONDUIT SHALL BE USED UNDERGROUND ONLY, IF APPROVED BY LOCAL CODE. INSTALL PER ALL REQUIRED LOCAL CODES. PROVIDE YELLOW HIGH VOLTAGE METALLIC TAPE +10" ABOVE ALL UNDERGROUND CONDUITS. ALL CONDUIT SWEEPS, RISERS, AND STUBS ABOVE GRADE SHALL BE I.M.C. WITH FACTORY INSTALLED PVC COATING. SITE INSTALLED 10 MIL HALF LAPPED TAPE IS PROHIBITED.
- ALL CONDUIT SHALL BE INSTALLED CONCEALED WHERE PHYSICALLY POSSIBLE.
- ALL CONDUIT ONLY (C.O.) SHALL HAVE A 3/16" PULL WIRE OR ROPE, MINIMUM.
- ALL CONDUCTORS OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN COMPLIANCE WITH O.S.H.A.
- THE COMPLETE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH THE PRESENTLY ADOPTED EDITION OF THE C.E.C., ARTICLE #250.
- CONDUCTORS SHALL BE CODE GRADE, 600 VOLT CLASS, COPPER, MARKED 24" ALONG IT'S LENGTH SHOWING MANUFACTURER'S NAME, MAXIMUM ALLOWABLE VOLTAGE AND SIZE. CONDUCTORS SHALL BE TYPE "THWN" (WET) OR "THHN" (DRY). DELIVER CONDUCTORS TO THE JOB SITE IN UNBROKEN PACKAGES.
- ALL UNDERGROUND PULLBOXES SHALL HAVE ALL CONDUITS COMPLETELY SEALED W/ WEATHERPROOF EXPANSION FOAM AT COMPLETION OF PROJECT.
- EXACT LOCATION OF ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE COORDINATED WITH THE LANDSCAPE DETAILS, OR SECTIONS PRIOR TO INSTALLATION. ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE RECESSED IN WALLS UNLESS OTHERWISE NOTED.
- WHERE A CONFLICT OCCURS BETWEEN THESE NOTES, THE DRAWING OR BOOK SPECIFICATION ISSUED AS A PART OF THESE DOCUMENTS, THE MORE STRINGENT REQUIREMENT SHALL PREVAIL.
- AT THE COMPLETION OF THE PROJECT, PROVIDE THE OWNER WITH ONE (1) SET OF COMPLETE, UP TO DATE, "AS-BUILT" REPRODUCIBLE DRAWINGS, SHOWING ACTUAL DEPTHS OF UNDERGROUND CONDUIT RUNS AT ALL LOCATIONS. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO THE OWNER AT PROJECT COMPLETION.
- AFTER DATE OF ACCEPTANCE BY OWNER, THE COMPLETED PROJECT SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED IN A TIMELY MANNER, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
- ENGRAVED PLASTIC NAMEPLATES SHALL BE PROVIDED FOR ALL METER PEDESTAL PLATES SHALL BE 3 PLY, BLACK FACE, WHITE CORE, WITH 1/4" HIGH GOTHIC LETTERING.
- METERED PEDESTAL SHALL BE PROVIDED WITH RATINGS, COMPONENTS, AND FEATURES IN STRICT ACCORDANCE WITH THE SERVING UTILITIES AND CODE ENFORCING AGENCY, ELECTRICAL DRAWINGS AND SPECIFICATIONS. THE METERED PEDESTAL DISTRIBUTION PANELS CONSIST OF A COMPLETELY ENCLOSED SELF-SUPPORTING, FLOOR STANDING STRUCTURE, OF THE REQUIRED NUMBER OF FORMED VERTICAL PANEL SECTIONS. PROVIDE BOLTED FRAMES AND INSULATING BLOCK TO SUPPORT THE MAIN HORIZONTAL BUS FOR SHORT CIRCUIT STRESS AS INDICATED ON THE DRAWINGS. ALL BUSSING SHALL BE 100% RATED MADE WITH COPPER HAVING A CURRENT DENSITY OF 1,000 AMPS PER SQUARE INCH, METERING PEDESTAL VENTILATED ENCLOSURE WITH NEMA 3R EXTERIOR ENCLOSURE SHALL TWO COATS OF PAINT WITH VANDAL PROOF LOCKING PAD LOCK COVER



TRENCH DETAIL

SCALE: N.T.S. 4

LIGHTING FIXTURE SCHEDULE

REFER TO DIVISION 1, GENERAL REQUIREMENTS, REGARDING PRODUCT OPTIONS AND SUBSTITUTION. WHERE PRODUCTS ARE LISTED BY NAMING ONE OR MORE MANUFACTURERS, WITHOUT "OR EQUAL" PROVISION FOR SUBSTITUTION, CONTRACTOR SHALL INCLUDE ONLY SPECIFIED PRODUCTS IN BID. REQUEST FOR SUBSTITUTION WITHIN 35 DAYS FROM THE DATE OF THE NOTICE TO PROCEED WILL ONLY BE CONSIDERED IN ACCORDANCE WITH DIVISION 1 OF THESE CONTRACT DOCUMENTS.

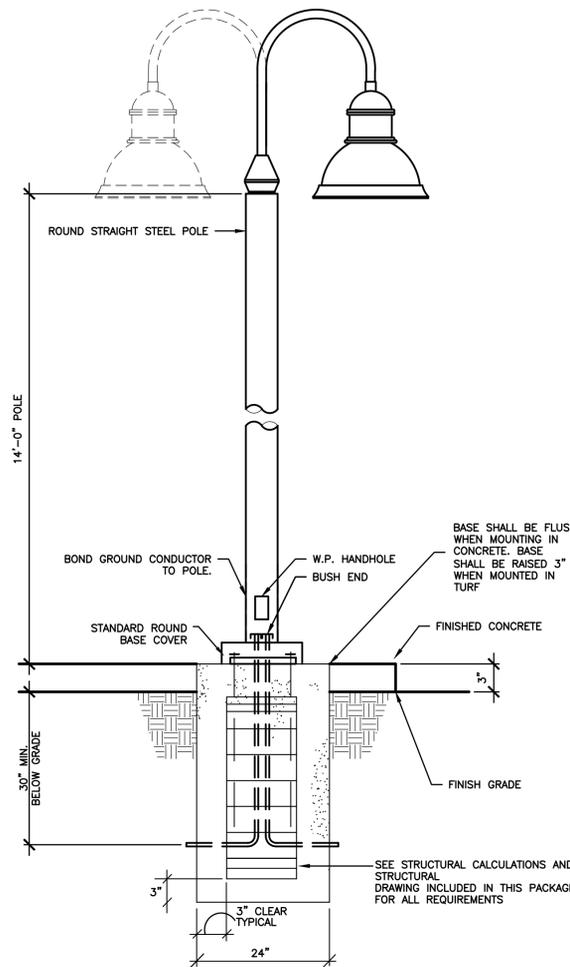
DESCRIPTION	ILLUMINATION		VOLTS	MANUFACTURER	CATALOG #	MOUNTING
	WATTS	TYPE				
1S SURFACE MOUNTED TWIN HEAD ADJUSTABLE LED UP LIGHT FIXTURE AND DOWN LIGHT FIXTURE	14	L.E.D. 40K	120	BK LIGHTING	(2)NSH-LED-X66-WFL-A9-XXX-12-360SL PM2D-CT-TR6S75-XXX-120-MB	SURFACE TO SUPPORT POST +11" BELOW BOTTOM SAIL TURN BUCKLE [1] [2] [3] [4]
1W WALKWAY L.E.D. LIGHT FIXTURE W/ TYPE TWO DISTRIBUTION, INTEGRAL MOTION SENSOR AND DECORATIVE ARM	50	L.E.D. 40K	120	PACIFIC LIGHTING & STANDARDS CO	VAB-50-EXLED-MT-4K-II-1A-CC-MOTION & RSS-11-414-XX (POLE) [1]	POLE 14'-0" A.F.G. [3]
1WS WALKWAY L.E.D. LIGHT FIXTURE W/ TYPE TWO DISTRIBUTION, INTEGRAL MOTION SENSOR, DECORATIVE ARM AND BACKSIDE SHIELD	50	L.E.D. 40K	120	PACIFIC LIGHTING & STANDARDS CO	VAB-50-EXLED-MT-4K-II-1A-CC-MOTION-HSS & RSS-11-414-XX (POLE) [1]	POLE 14'-0" A.F.G. [3]
2W DOUBLE HEAD WALKWAY L.E.D. LIGHT FIXTURE W/ (1) TYPE THREE DISTRIBUTION, (1) TYPE FOUR DISTRIBUTION, INTEGRAL MOTION SENSOR AND DECORATIVE ARM	100	L.E.D. 40K	120	PACIFIC LIGHTING & STANDARDS CO	VAB-50-EXLED-MT-4K-II-1A-CC-MOTION & RSS-11-414-XX (POLE) [1]	POLE 14'-0" A.F.G. [3]
3W WALKWAY L.E.D. LIGHT FIXTURE W/ TYPE FIVE DISTRIBUTION, INTEGRAL MOTION SENSOR AND DECORATIVE ARM	50	L.E.D. 40K	120	PACIFIC LIGHTING & STANDARDS CO	VAB-50-EXLED-MT-4K-IV-1A-CC-MOTION & RSS-11-414-XX (POLE) [1]	POLE 14'-0" A.F.G. [3]
4W WALKWAY L.E.D. LIGHT FIXTURE W/ TYPE FOUR DISTRIBUTION, INTEGRAL MOTION SENSOR AND DECORATIVE ARM	50	L.E.D. 40K	120	PACIFIC LIGHTING & STANDARDS CO	VAB-50-EXLED-MT-4K-IV-1A-CC-MOTION & RSS-11-414-XX (POLE) [1]	POLE 14'-0" A.F.G. [3]
4WS WALKWAY L.E.D. LIGHT FIXTURE W/ TYPE FOUR DISTRIBUTION, INTEGRAL MOTION SENSOR, DECORATIVE ARM AND BACKSIDE SHIELD	50	L.E.D. 40K	120	PACIFIC LIGHTING & STANDARDS CO	VAB-50-EXLED-MT-4K-IV-1A-CC-MOTION-HSS & RSS-11-414-XX (POLE) [1]	POLE 14'-0" A.F.G. [3]

NOTE:

- COLOR BY OWNER
- AIM FOR BEST COVERAGE AFTER INSTALLATION.
- PROVIDE RECESSED JUNCTION BOX AND TWISTLOCK MOUNT AT MOUNTING HOLE IN SUPPORT POST PROVIDED BY SHELTER/SAIL SHADE MANUFACTURER

SINGLE LINE DIAGRAM

SCALE: N.T.S. 2



NOTE:

VERIFY BOLT PLACEMENT W/ POLE MANUFACTURER PRIOR TO ROUGH-IN.

WALKWAY LIGHT FIXTURE

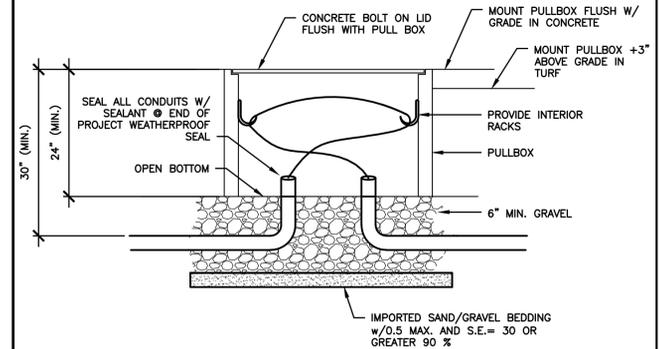
SCALE: N.T.S. 3

ELECTRICAL SYMBOLS LIST

- SINGLE HEAD POLE MOUNTED WALKWAY L.E.D. LIGHT FIXTURE. ARROW INDICATES DIRECTION OF DISTRIBUTION - REFER TO LIGHTING SCHEDULE
- SINGLE HEAD POLE MOUNTED WALKWAY L.E.D. LIGHT FIXTURE W/ BACKSIDE SHIELD. ARROW INDICATES DIRECTION OF DISTRIBUTION - REFER TO LIGHTING SCHEDULE
- DOUBLE HEAD POLE MOUNTED WALKWAY L.E.D. LIGHT FIXTURE. ARROW INDICATES DIRECTION OF DISTRIBUTION - REFER TO LIGHTING SCHEDULE
- SURFACE MOUNTED L.E.D. LIGHT FIXTURE - REFER TO LIGHTING SCHEDULE
- CONDUIT RUN CONCEALED BELOW GRADE, 3/4" MINIMUM.
- JUNCTION BOX, ACCESSIBLE AND MOUNTED FOR THE APPLICATION DENOTED ON PLANS.
- CONCRETE PULLBOX WITH BOLT-ON COVER. SIZE AS REQUIRED BE C.E.C.
- ELECTRIC METER PEDESTAL - REFER TO SINGLE LINE
- SURFACE MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
- LIGHT FIXTURE CALL OUT, "1P" INDICATES FIXTURE TYPE (REFER TO FIXTURE SCHEDULE). "120" INDICATES TOTAL FIXTURE WATTAGE. NUMBER ADJACENT INDICATES QUANTITIES (NUMBER IS SHOWN FOR BRANCH CIRCUIT PURPOSE ONLY, NOT FOR MATERIAL TAKE-OFF).
- DETAIL CALLOUT, "3" INDICATES DETAIL NUMBER "E-1" INDICATES SHEET NUMBER.
- PLAN NOTE REFERENCE.
- REVISION REFERENCE.
- CO CONDUIT ONLY, WITH PULL ROPE.
- WP WEATHERPROOF, NEMA 3R
- PROVIDE FURNISH, INSTALLED AND CONNECTED, COMPLETE.
- C CONDUIT
- E/G EQUIPMENT GROUND (GREEN)
- UG UNDERGROUND
- GEC GROUNDING ELECTRODE CONDUCTOR
- C.E.C. CALIFORNIA ELECTRICAL CODE
- U.O.N. UNLESS OTHERWISE NOTED
- G.F.I. GROUND FAULT INTERRUPTER
- A.F.G. ABOVE FINISHED GRADE

PULLBOX DETAIL

SCALE: N.T.S. 1



REVISIONS

NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES

SCALE: AS SHOWN	DATE
PREPARED UNDER THE SUPERVISION OF	
R.C.E. NO. EXP	
DESIGNED BY	
REVIEWED BY	
APPROVED	CITY ENGINEER

HILLBROOK PARK RENOVATION
SYMBOL LIST, SINGLE LINE DIAGRAM, LIGHTING
FIXTURE SCHEDULE, GENERAL NOTES AND DETAILS

CITY OF SIGNAL HILL

SHEET

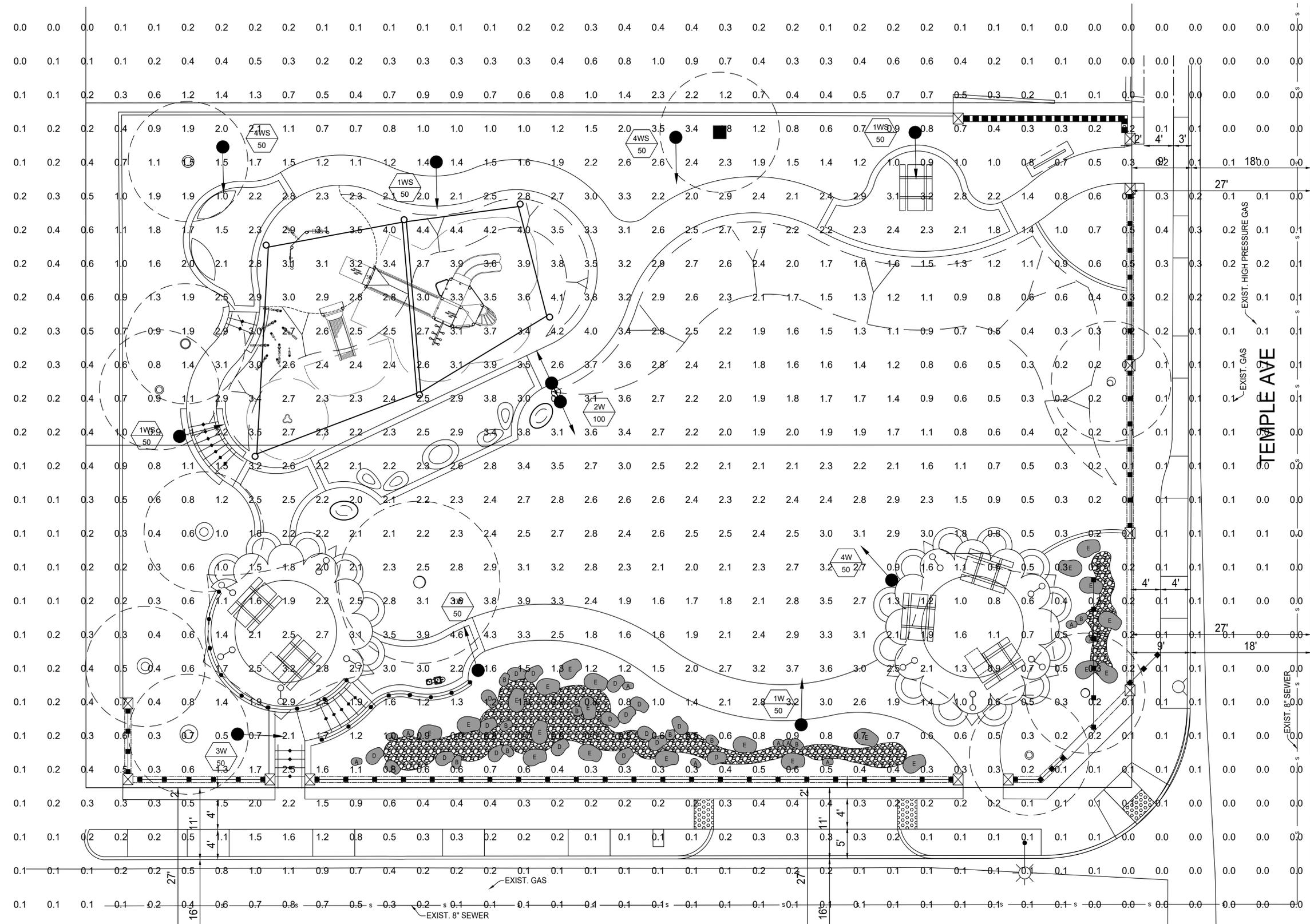
E-2.0

2 OF 3 SHEETS

PLAN NUMBER



JCA Engineering Inc.
Electrical Engineering & Consulting
8048 Palm Ave
Highland, Ca. 92346
909 864-0223
909 864-0280
james.corns@jcaeng.com



SITE LIGHTING PHOTOMETRIC ILLUMINATION PLAN

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP.

REFERENCES	

SCALE: AS SHOWN	DATE
PREPARED UNDER THE SUPERVISION OF	
R.C.E. NO. _____	EXP _____
DESIGNED BY _____	
REVIEWED BY _____	
APPROVED _____	CITY ENGINEER

HILLBROOK PARK RENOVATION
 SITE LIGHTING PHOTOMETRIC ILLUMINATION PLAN
 CITY OF SIGNAL HILL

JCA Engineering Inc.
 Electrical Engineering & Consulting
 8048 Palm Ave
 Highlands, Ca. 92346
 909 864-0223
 Fax 909 864-0280
 james.coms@jcaeng.com

Professional Engineer
 No. E 11795
 Exp. 10/04
 Electrical
 State of California

SCALE: N.T.S. **1**

SHEET **E-3.0**
 3 OF 3 SHEETS
 PLAN NUMBER