FAX. (310) 399-1541

NO. DATE BY DESCRIPTION

SHEET AND NOTES

# RAIN WATER HARVESTING SYSTEM PICO BRANCH LIBRARY 2201 PICO BLVD. SANTA MONICA, CA 90404

### **GENERAL NOTES**

#### RAIN WATER HARVESTING SYSTEM GENERAL NOTES

- 1. WHEN APPLICABLE, WORK SHOWN HEREON SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," LATEST EDITION AND SUPPLEMENTS, THE UNIFORM BUILDING CODE (EXCAVATION AND GRADING), AND CITY OF SANTA MONICA ORDINANCES AS APPLICABLE
- 2. RAIN WATER HARVESTING SYSTEM PLANS ARE BASED UPON THE FOLLOWING: A. ARCHITECTURAL PLANS PROVIDED BY KONING EIZENBERG ARCHITECTURE, DATED
- B. GRADING AND DRAINAGE PLANS PROVIDED BY KPFF CONSULTING ENGINEERS, DATED AUGUST 25, 2003 AND FEBRUARY 21, 2012. C. PLUMBING PLANS PROVIDED BY GLUMAC, DATED FEBRUARY 21, 2012. D. ELECTRICAL PLANS PROVIDED BY GLUMAC, DATED FEBRUARY 21, 2012.
- 3. EXISTING TOPOGRAPHY SHOWN HEREON WAS PROVIDED BY OWNER. 4. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING
- 5. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS FOR GRADING, DRAINAGE AND UNDERGROUND UTILITIES INCLUDING LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AT CROSSINGS WITH PROPOSED UNDERGROUND UTILITIES. IF CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SHALL NOT BEGIN CONSTRUCTION UNTIL THE CHANGED CONDITIONS HAVE BEEN EVALUATED
- 6. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
- 7. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NONE ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK
- 8. THE EXISTENCE, LOCATION AND CHARACTERISTICS OF UNDERGROUND UTILITY INFORMATION SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM A REVIEW OF AVAILABLE RECORD DATA. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID UTILITY INFORMATION. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS
- 9. IF AT ANY TIME DURING GRADING OPERATIONS. ANY UNFAVORABLE GEOLOGICAL CONDITIONS ARE ENCOUNTERED, GRADING IN THAT AREA WILL STOP UNTIL APPROVED CORRECTIVE MEASURES ARE OBTAINED
- 10. ALL DEBRIS AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT APPROVED DISPOSAL SITES. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FOR THE TRANSPORTATION OF MATERIAL TO AND FROM THE
- 11. ALL FILL SOILS OR SOILS DISTURBED OR OVEREXCAVATED DURING CONSTRUCTION SHALL BE COMPACTED PER THE REQUIREMENTS OF THE SOILS REPORT BUT NOT LESS THAN 90% MAXIMUM DENSITY AS DETERMINED BY A.S.T.M. SOIL COMPACTION
- 12. THE CONTRACTOR SHALL OBTAIN AN O.S.H.A. PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE CONSTRUCTION OF TRENCHES OR EXCAVATIONS WHICH ARE FIVE FEET OR DEEPER
- 13. ALL STORM DRAIN AND SANITARY SEWER PIPE, FITTINGS AND JOINTS SHALL BE POLYVINYL CHLORIDE SDR 35 OR SCH 80 IN ACCORDANCE WITH SECTION 207-17 OF THE STANDARD SPECIFICATIONS, UNLESS OTHERWISE NOTED
- 14. ALL WATER LINES SHALL BE POLYVINYL CHLORIDE CLASS 150 AND SHALL MEET THE REQUIREMENTS OF AWWA C900 PVC PRESSURE PIPE, UNLESS OTHERWISE
- 15. THRUST BLOCKS SHALL BE INSTALLED AT WATERLINE HORIZONTAL AND VERTICAL BENDS, TEES, CAPPED ENDS AND REDUCERS ACCORDING TO THE STANDARD PLAN METRIC 508-1 THRUST BLOCKS FOR PLASTIC PIPE.
- 16. THE CONTRACTOR SHALL REPLACE ALL EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION TO MATCH EXISTING, INCLUDING PERMANENT TRENCH RESURFACING. 17. CONTRACTOR TO BE AWARE OF ALL OVERHEAD LINES AT ALL TIMES, SO AS NOT
- 18. WATER SHALL BE PROVIDED ONSITE AND USED TO CONTROL DUST DURING
- CONSTRUCTION OPERATIONS 19. CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FROM THE APPROPRIATE
- LOCAL REGULATOR FOR ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY. 20. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS, INCLUDING NPDES, FROM THE APPROPRIATE JURISDICTIONAL AGENCIES FOR DISCHARGE OF GROUNDWATER THAT MAY BE NECESSARY TO ACCOMPLISH EXCAVATIONS SHOWN ON THESE PLANS.
- 21. THE CONTRACTOR SHALL PROVIDE AND PAY FOR ALL CONSTRUCTION SURVEYING THAT MAY BE REQUIRED. ALL CONSTRUCTION STAKING, AS REQUIRED, SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR. THE WORK SHALL BE CERTIFIED IN WRITING AS TO LINE AND GRADE PER APPROVED PLANS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL
- 22. THE DRAWINGS AND SPECIFICATIONS BY THE ENGINEER REPRESENT THE COMPLETED CONSTRUCTION. ALL BRACING, TEMPORARY SUPPORTS, SHORING, ETC., IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. OBSERVATION VISITS TO THE JOB SITE BY THE ENGINEER SHALL NOT INCLUDE INSPECTION OF CONSTRUCTION METHODS AND SAFETY CONDITIONS AT THE WORK SITE. THESE VISITS SHALL NOT BE CONSTRUED AS CONTINUOUS AND DETAILED INSPECTIONS
- 23. ALL PIPING ABOVE-GRADE FOR THE PUMPS AND EQUIPMENT, AND PIPING MANIFOLDS, SHALL BE STRUCTURALLY SUPPORTED BY ADEQUATE PIPE SUPPORTS OR HANGERS, PER LOCAL CODES AND ORDINANCES
- 24. ALL PIPE AND CONDUIT TRENCH BACKFILL, MATERIAL, AND COMPACTION SHALL CONFORM TO LOCAL STANDARDS. BORING OR TUNNELING UNDER EXISTING IMPROVEMENTS IS NOT ALLOWED. NO OPEN EXCAVATIONS SHALL BE ALLOWED OVERNIGHT. BEFORE THE END OF EVERY WORK DAY, THE CONTRACTOR SHALL BACKFILL OR PLATE OVER ALL OPEN EXCAVATIONS, TO THE SATISFACTION AND APPROVAL OF THE OWNER AND/OR ENGINEER.
- 25. ALL PIPING SHALL BE COMPLETELY CONCEALED, WHEREVER POSSIBLE. ANY EXPOSED PVC PIPE AND FITTINGS SHALL BE ULTRAVIOLET—RESISTANT (UVR—PVC) OR SHALL BE PAINTED, SUBJECT TO APPROVAL OF THE ENGINEER
- 26. ALL PUMPS, VAULTS, VALVE BOXES, OTHER STRUCTURES, PIPELINES, ETC., MUST BE INSTALLED OUTSIDE OF THE UTILITY EASEMENTS, AND OUTSIDE OF ANY OTHER PROHIBITED EASEMENTS AND AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME KNOWLEDGEABLE OF, AND TO COMPLETELY UNDERSTAND, THESE EASEMENTS AND AREAS, AND TO AVOID CONSTRUCTION THEREIN; AS POSSIBLE. FOR THE SAKE OF CLARITY IN THESE DESIGN PLANS, PUMPS, VAULTS, VALVE BOXES, PIPELINES, ETC., MAY NOT ALL BE SHOWN OUTSIDE OF THE EASEMENTS, AS SUCH DEPICTIONS ARE SCHEMATIC ONLY.
- 27. ALL PIPING LOCATIONS SHOWN ON THESE DESIGN PLANS ARE SCHEMATIC ONLY, AND ARE SUBJECT TO MINOR RELOCATION(S). PIPELINE CIRCUITRY/LAYOUT (BRANCHING), HOWEVER, SHALL BE EXACTLY AS PER THE PLANS. PIPELINES SHOULD BE INSTALLED IN THE MOST DIRECT ROUTE(S) POSSIBLE: FROM INTAKES TO PUMPS, AND FROM PUMPS TO DISCHARGE POINTS. A COPY OF AS-BUILT CONDITIONS SHALL BE MAINTAINED ON THE JOB SITE. AND SHALL BE DELIVERED TO THE OWNER AND TO THE ENGINEER WHENEVER REQUESTED, AND WHEN CONSTRUCTION IS COMPLETED; FOR APPROVAL.

- 28. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. 29. PIPING SHALL BE INSTALLED IN TRENCHES IN THE MOST UNIFORM GRADE AS IS POSSIBLE, AND SHALL HAVE NO LOCAL HIGH OR LOW POINTS.
- 30. HORIZONTAL PIPE RUNS SHALL HAVE 18" MINIMUM COVER WHEN UNDER PAVED SURFACES AND 12" MINIMUM COVER OTHERWISE
- 31. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT, AT (800) 227-2600, AT LEAST TWO WORKING DAYS BEFORE ANY DIGGING. NOTE THAT THE USA CENTER ONLY NOTIFIES THOSE UTILITIES BELONGING TO THE CENTER. THERE MAY BE OTHER UTILITIES PRESENT AT THE WORK SITE. THE CENTER WILL INFORM YOU OF WHOM THEY WILL NOTIFY.
- 32. ALL WORK SPECIFIED HEREIN SHALL, AT ALL TIMES, COMPLY WITH ALL APPLICABLE CURRENT BUILDING CODES, PLUMBING CODES, ELECTRICAL CODES, ADA REQUIREMENTS, AND WITH ALL LOCAL REGULATIONS AND ORDINANCES. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT CALIFORNIA AND UNIFORM BUILDING CODE (CBC, UBC) AS TO DESIGN AND CONSTRUCTION, TITLE 24 PERTAINING TO "DISABLED ACCESS REGULATIONS."
- 33. ANY INCIDENTAL INSTALLATION PROCEDURE, MATERIAL, OR EQUIPMENT NOT MENTIONED IN THESE CONSTRUCTION DOCUMENTS, INCLUDING THE PLANS AND SPECIFICATIONS, WHICH MAY BE NECESSARY FOR COMPLETION AND SATISFACTORY OPERATION OF THE DESIGN OR SYSTEM, SHALL BE FURNISHED AND INSTALLED, AS BASED ON THE INDUSTRY STANDARDS; AS THOUGH SHOWN OR PROVIDED FOR IN THE CONSTRUCTION DOCUMENTS.
- 34. INTERPRETATION OF THE DESIGN DOCUMENTS, INCLUDING PLANS AND SPECIFICATIONS, SHALL BE MADE BY THE AUTHOR, ARCHITECT, OR ENGINEER OF RECORD OF THE RESPECTIVE DOCUMENT. SUCH INTERPRETATION(S) SHALL BE CONSIDERED FINAL. ANY POSSIBLE AMBIGUITY SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR PRIOR TO SUBMITTING FORMAL BIDS. ALL CLARIFICATIONS SHALL BE PREPARED IN WRITING BY THE ARCHITECT OR ENGINEER OF RECORD PRIOR TO BIDDING. THE CONTRACTOR SHALL ACCEPT THE INTERPRETATION(S) OF THE ARCHITECT OR ENGINEER OF RECORD AS THE CORRECT AND FINAL
- INTERPRETATION(S). 35. ALL OMISSIONS, DISCREPANCIES, ERRORS, AND CONFLICTS IN THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER, THE OWNER, AND ITS DESIGNATED REPRESENTATIVE(S) INTENT BEFORE PROCEEDING WITH WORK
- 36. THESE CONSTRUCTION DOCUMENTS, INCLUDING ALL PLANS, NOTES, DETAILS, AND SPECIFICATIONS, ARE INTENDED TO FACILITATE THE INSTALLATION CONTRACTOR, BY PROVIDING GENERAL GUIDELINES OF THE DESIGN INTENT. IT IS THE GOAL OF THE DOCUMENTS THAT THE CONSTRUCTION WORK BE COMPLETED WITHOUT CHANGE ORDERS. ALL QUANTITIES SHOWN IN THE DOCUMENTS ARE ESTIMATES ONLY, AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL SUPPLY ALL MATERIALS, LABOR, AND EQUIPMENT IN ORDER TO FULFILL THE DESIGN INTENT
- 37. THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY PROTECTIVE FENCING FOR OPEN TRENCH EXCAVATION AND AS REQUIRED IN WORK AREAS FOR PEDESTRIAN AND VEHICULAR SAFETY, TO SECURE EQUIPMENT AND PERSONNEL FROM PUBLIC AT ALL TIMES FOR JOBSITE SECURITY. NEW OR USED MATERIAL MAY BE FURNISHED.
- 38. CONTRACTOR SHALL PROVIDE AND INSTALL SIGNAGE TO PROVIDE DIRECTIONAL, IDENTIFICATION, AND CONTACT INFORMATION TO CONSTRUCTION PERSONNEL AND PUBLIC.
- 39. EPD CONSULTANTS, INC ASSUMES NO LIABILITY, REAL OR ALLEGED, REGARDING THE ACCURACY OF THE TOPOGRAPHIC INFORMATION SHOWN.
- 40. CONTRACTOR SHALL BE APPROPRIATELY LICENSED WITH THE STATE OF CALIFORNIA TO PERFORM THE WORK OUTLINED IN THESE PLANS. NO WORK IS TO PROCEED WITHOUT OBTAINING A VALID PERMIT FROM THE LOCAL DEPARTMENT OF ENVIRONMENTAL HEALTH.
- 41. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT; EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
- 42. SANITARY WASTEWATER AND PROCESS WASTEWATER SYSTEMS TO OBSERVE ALL SETBACKS REQUIRED BY THE CITY DEPARTMENT OF ENVIRONMENTAL HEALTH.
- 43. NO VEHICULAR TRAFFIC, CUTS OR FILLS TO OCCUR WITHIN THE BOUNDARY OF CONSTRUCTION FENCING, CONSTRUCTION FENCING TO REMAIN IN PLACE FOR THE DURATION OF CONSTRUCTION PROJECT.
- 44. ENGINEERS APPROVED SUBMITTALS PRIOR TO ORDERING RAIN WATER HARVESTING SYSTEM SHALL BE AS FOLLOWS:
- (a) SELECT FILL MATERIAL, (b) PIPING AND APPURTENANCES, (c) GRAVITY FLOW LINES FROM ALL PIPE CONNECTIONS AND TANKS TO INVERTS, (d) TANKS AND APPURTENANCES, (e) NOT USED, (f) TREATMENT SYSTEM & PUMPS, (g) CONTROL PANEL(S), (h) A WRITTEN REPORT OF THE HYDROSTATIC AND LEAKAGE TEST PROCEDURE AND RESULTS, (i) WATER TABLE ANALYSIS TO WAIVE TANK ANCHOR REQUIREMENT OR INSTALLATION OF CONCRETE DEADMEN ANCHORS.
- 45. ENGINEER REQUIRED INSPECTIONS: (a) SEE CONSTRUCTION NOTE (L) PER SHEET W-2. IF SYSTEM DESIGNER (EPD) DOES NOT OBSERVE THE CONSTRUCTION, ALL LIABILITY IS RELEASED TO THE INSTALLER, (b) PRIOR TO ORDERING THE RAIN WATER HARVESTING SYSTEM COMPONENTS, A PRE CONSTRUCTION MEETING SHALL TAKE PLACE AT THE JOBSITE TO DETERMINE FINAL ELEVATIONS AND LOCATIONS OF ALL RAIN WATER HARVESTING SYSTEM COMPONENTS.

#### RAIN WATER HARVESTING SYSTEM SPECIAL NOTES:

- 46. EXISTING UNDERGROUND UTILITIES: BEFORE STARTING ANY UNDERGROUND WORK, THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A COMPANY CERTIFIED TO PERFORM UNDERGROUND SCANNING SERVICES ALONG THE SITE UTILITY TRENCH FOR THE PURPOSE OF ESTABLISHING THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY LINES. APPROPRIATE DIGGING METHODS AND TOOLS SHALL BE UTILIZED TO AVOID DAMAGE TO THE EXISTING UTILITY LINES. IN THE EVENT THAT DURING THE UNDERGROUND WORK, THE CONTRACTOR WILL DAMAGE ANY OF EXISTING LINES, IT WILL BE HIS RESPONSIBILITY TO DO ALL NECESSARY REPAIR WORK REPAIR WORK AT HIS EXPENSES
- 47. CROSSING UNDERGROUND UTILITIES: IN MOST CASES CROSSING AT EXISTING UNDERGROUND UTILITIES SHALL BE RUN UNDER THE EXISTING LINES. ACTION REQUIRED FOR UNFORESEEN CONDITIONS AND LINES NOT INDICATED ON PLANS SHALL BE VERIFIED WITH THE DISTRICT INSPECTOR AND THE ENGINEER.
- 48. THE EXISTING CONDITIONS ABOVE GROUND: STRUCTURES SUCH AS BUILDINGS, FENCES, CONCRETE PAVEMENT AND SLABS, EQUIPMENT SUPPORT PADS AND DRIVEWAY AS SHOWN ON THE PLANS ARE TAKEN FROM EXISTING RECORD DRAWINGS AND VERIFIED BY FIELD OBSERVATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY LOCATE ANY ABOVE GROUND STRUCTURE THAT MAY INTERFERE WITH THE INSTALLATION OF THE WORK. ANY DAMAGE TO EXISTING STRUCTURES RESULTING FROM THIS WORK SHALL BE REPAIRED TO MATCH EXISTING AT NO ADDITIONAL COST TO THE PICO BRANCH LIBRARY.

- 49. PEDESTRIAN AND VEHICULAR PATH OF TRAVEL: CONTRACTOR TO LOCATE SITE PATH OF TRAVEL FOR BOTH PEDESTRIAN & VEHICULAR TRAFFIC OVER THE SITE UTILITY TRENCHES. CONTRACTOR TO USE STEEL PLATES OF SUFFICIENT WIDTH AND THICKNESS TO COVER THE TRENCH. FURTHERMORE, THE CONTRACTOR SHALL PROVIDE CHAIN LINK FENCING ON EACH SIDE OF THE PATH OF TRAVEL. THE CONTRACTOR SHALL COOPERATE WITH THE SCHOOL ADMINISTRATORS AND THE PICO BRANCH LIBRARY REPRESENTATIVES AT ALL TIMES TO MAINTAIN ACCESS TO THE SITE. WIDTH OF PATHS OF TRAVEL FOR PEDESTRIAN AND VEHICULAR TRAFFIC SHALL BE DETERMINED BY THE CONSTRUCTION MANAGER.
- 50. SHORING REQUIREMENTS: ANY PROPOSED SHORING SHALL BE SUBMITTED FOR ENGINEERS APPROVAL PRIOR TO CONSTRUCTION AND SHALL COMPLY WITH ALL APPLICABLE REGULATIONS AND THE RECOMMENDATIONS OF THE PROJECT SOILS ENGINEER.
- 51. PAVING REPAIR: SAWCUT EXISTING PAVEMENT FOR NEW INSTALLATION WHERE REQUIRED. UP ON COMPLETION OF THE INSTALLATION OF THE SEPTIC SYSTEM, BACKFILL AND RE-PAVE TO MATCH EXISTING SURROUNDINGS

<u>STORM WATER POLLUTION CONTROL REQUIREMENTS FOR CONSTRUCTION ACTIVITIES.</u> MINIMUM WATER QUALITY PROTECTION REQUIREMENTS FOR ALL CONSTRUCTION PROJECTS/CERTIFICATION STATEMENT

THE FOLLOWING SHALL BE EITHER INCORPORATED OR ATTACHED TO THE APPROVED CONSTRUCTION/GRADING PLANS AND REPRESENT THE MINIMUM STANDARDS OF GOOD HOUSEKEEPING WHICH MUST BE IMPLEMENTED IN ALL CONSTRUCTION PROJECTS CONSTRUCTION INCLUDES ACTIVITIES SUCH AS CONSTRUCTING, CLEARING, GRADING OR EXCAVATION THAT RESULTS IN SOIL DISTURBANCE. CONSTRUCTION INCLUDES STRUCTURE TEARDOWN. IT DOES NOT INCLUDE ROUTINE MAINTENANCE TO MAINTAIN THE ORIGINAL LINE AND GRADE, HYDRAULIC CAPACITY, OR ORIGINAL PURPOSE OF FACILITIES; EMERGENCY CONSTRUCTION ACTIVITIES REQUIRED TO IMMEDIATELY PROTECT PUBLIC HEALTH AND SAFETY; INTERIOR REMODELING WITH NO OUTSIDE EXPOSURE OF CONSTRUCTION MATERIAL OR CONSTRUCTION WASTE TO STORM WATER; MECHANICAL PERMIT WORK; OR SIGN PERMIT WORK.

-ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSE OR WIND.

-STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIAL MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY WIND OR WATER.

-FUELS, OIL'S, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LIST AND NOT TO CONTAMINATE THE SOIL OR THE SURFACE WATER. ALL APPROVED TOXIC STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.

-NON-STORM WATER RUNOFF FROM EQUIPMENTS AND VEHICLE WASHING AND ANY OTHER ACTIVITY SHALL BE CONTAINED AT THE PROJECT SITE.

-EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTE ON-SITE UNTIL THEY CAN BE APPROPRIATELY DISPOSED OF OR RECYCLED.

-TRASH AND CONSTRUCTION-RELATED WASTE MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.

-SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAYS. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR BY ANY OTHER MEANS.

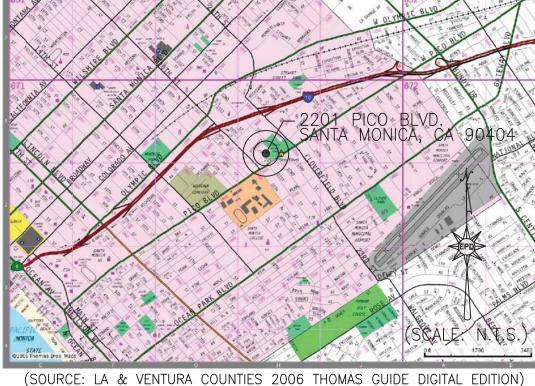
AS A PROJECT OWNER OR AUTHORIZED AGENT OF THE OWNER I HAVE READ AND UNDERSTAND THE REQUIREMENTS, LISTED ABOVE, NECESSARY TO CONTROL STORM WATER POLLUTION FROM SEDIMENTS, EROSION, AND CONSTRUCTION MATERIALS, AND I CERTIFY THAT I WILL COMPLY WITH THESE REQUIREMENTS.

(OWNER OR AUTHORIZED AGENT OF THE OWNER)

(OWNER OR AUTHORIZED AGENT OF THE OWNER)

## **PRELIMINARY** NOT FOR CONSTRUCTION

# VICINITY MAP



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## DRAWING INDEX

RAINWATER HARVESTING TITLE SHEET & NOTES

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TITLE SHEET EROSION CONTROL PLAN C1.00 C1.10 DEMOLITION PLAN **GRADING AND DRAINAGE PLAN** C1.21 **GRADING AND DRAINAGE PLAN** C1.30 HORIZONTAL CONTROL AND PAVING PLAN C1.40 UTILITY PLAN C5.00 CIVIL DETAILS CIVIL DETAILS

PLUMBING LEAD SHEET PLUMBING SCHEDULES PLUMBING PLANS PLUMBING ROOF PLAN

SINGLE LINE DIAGRAM E0.2 ELECTRICAL SITE PLAN ELECTRICAL PANEL SCHEDULES

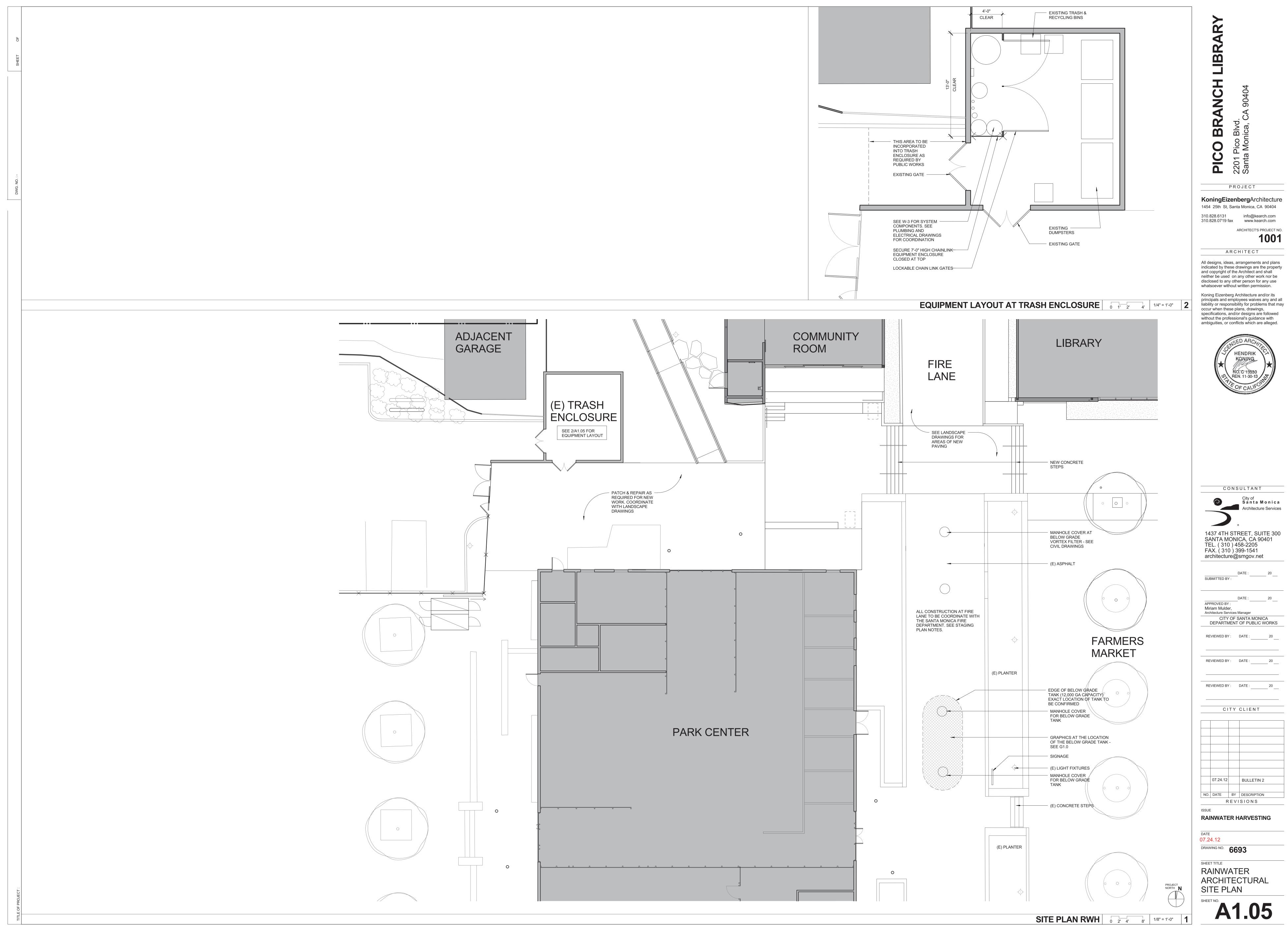
**GRAPHICS & SIGNAGE** 

PLUMBING PLAN ENLARGED **ELECTRICAL LEAD SHEET** 

07.24.12

RAIN WATER HARVESTING TITLE

W-1



1. THESE PLANS ARE ACCURATE FOR RAIN WATER HARVESTING SYSTEM ONLY. 2. RAIN WATER HARVESTING SYSTEM PLANS ARE BASED ON THE FOLLOWING: (A) ARCHITECTURAL PLANS PROVIDED BY KONING EIZENBERG ARCHITECTURE, DATED MAY 7, 2012; (B) GRADING AND DRAINAGE PLANS PROVIDED BY KPFF CONSULTING ENGINEERS, DATED AUGUST 25, 2003 AND FEBRUARY 21, 2012; (C) PLUMBING PLANS PROVIDED BY GLUMAC, DATED FEBRUARY 21, 2012; (D) ELECTRICAL PLANS PROVIDED BY

3. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. THE CONTRACTOR IS CAUTIONED THAT ONLY EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. HOWEVER, THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES, OR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH ARE NOT SHOWN ON THESE DRAWINGS.

4. IN THE EVENT THAT THE SUBSURFACE OR LATENT PHYSICAL CONDITIONS. DOCUMENTS, AND DIFFERING MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERENT IN THE CHARACTER OF WORK COVERED IN THESE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROMPTLY, AND BEFORE SUCH CONDITIONS ARE DISTURBED, NOTIFY THE ENGINEER IN WRITING OF SUCH CHANGED

5. PROVIDE SCREEN ON VENT(S) SO THAT VENT(S) ARE PROTECTED FROM

VERMIN/ MOSQUITOES 6. REFER TO ALL GENERAL NOTES ON THE TITLE SHEET W-1 AND

**GENERAL NOTES** 

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PROJECT

ARCHITECT

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ARCHITECT'S PROJECT NO

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(A) EXACT MATERIALS LIST AND SPECIFICATIONS ARE PROVIDED BY THE MANUFACTURER. MATERIALS SPECIFICATIONS PER THESE PLANS ARE INTENDED TO ASSIST THE CONTRACTOR IN THE SELECTION OF MATERIALS NECESSARY AND APPROPRIATE TO COMPLETE THE INSTALLATION OF A RAIN WATER HARVESTING SYSTEM AT THE SUBJECT PROPERTY. ADDITIONAL COMPONENTS WILL BE NECESSARY, THAT INCLUDE BUT ARE NOT LIMITED TO PIPING, ELECTRICAL CONDUIT, FITTINGS, AGGREGATE MATERIALS AND MULCH, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY ESTIMATE THE TYPE AND QUANTITY OF MATERIALS THAT WILL BE NECESSARY TO COMPLETE THE INSTALLATION PER THE SYSTEM DESIGNER'S, MANUFACTURER'S, AND PERTINENT REGULATORY AGENCIES SATISFACTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUBMIT SHOP DRAWINGS AND A LIST OF ALL MATERIALS TO THE SYSTEM DESIGNER FOR APPROVAL PRIOR TO PURCHASE.

MATERIALS LIST

Scale: N.T.S.

(A) INSPECT AND CLEAN FILTER AND SCREENS, AND REPLACE (IF NECESSARY) EVERY 3 MONTHS MINIMUM.

(B) INSPECT AND VERIFY THAT DISINFECTION, FILTERS AND WATER QUALITY TREATMENT DEVICES AND SYSTEMS ARE OPERATIONAL AND MAINTAINING MINIMUM WATER QUALITY REQUIREMENTS AS DETERMINED BY THE AUTHORITY HAVING JURISDICTION, AND IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

(C) INSPECT AND CLEAR DEBRIS FROM RAIN WATER GUTTERS, DOWNSPOUTS,

AND ROOF WASHERS EVERY 6 MONTHS MINIMUM. (D) INSPECT AND CLEAR DEBRIS FROM ROOF AND OTHER ABOVE GROUND

RAIN WATER COLLECTION SURFACES EVERY 6 MONTHS MINIMUM.

(E) REMOVE TREE BRANCHES AND VEGETATION OVERHANGING ROOF OR OTHER ABOVE GROUND RAIN WATER COLLECTION SURFACES AS NEEDED.

(F) INSPECT PUMPS AND VERIFY OPERATION AFTER INITIAL INSTALLATION AND EVERY 12 MONTHS THERE AFTER.

(G) INSPECT VALVES AND VERIFY OPERATION AFTER INITIAL INSTALLATION AND EVERY 12 MONTHS THERE AFTER.

(H) INSPECT PRESSURE TANKS AND VERIFY OPERATION AFTER INITIAL INSTALLATION AND EVERY 12 MONTHS THERE AFTER.

(I) CLEAR DEBRIS FROM AND INSPECT STORAGE TANKS, LOCKING DEVICES AND VERIFY OPERATION AFTER INITIAL INSTALLATION AND EVERY 12 MONTHS THERE AFTER.

(J) INSPECT CAUTION LABELS AND MARKINGS AFTER INITIAL INSTALLATION AND EVERY 12 MONTHS THERE AFTER.

(K) INSPECT AND MAINTAIN MULCH BASINS AS NEEDED TO MAINTAIN MULCH DEPTH AND PREVENT PONDING AND RUNOFF.

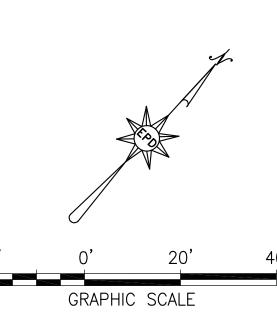
(L) INSPECT CROSS CONNECTIONS AND TEST AFTER INITIAL INSTALLATION AND EVERY 12 MONTHS THERE AFTER. THE CROSS CONNECTION TEST SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE PLUMBING CODE.

(M) TEST WATER QUALITY OF RAIN WATER CATCHMENT SYSTEMS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION PROCEDURES TO MAINTAIN A MINIMUM WATER QUALITY EVERY 3 TO 12 MONTHS, OR AFTER ANY SYSTEM RENOVATION OR REPAIR.

> RWS MINIMUM SOURCE TESTING, INSPECTION, AND MAINTENANCE

Scale: N.T.S.

PROPRIETARY MANUFACTURER NOTES: 1. ALL PROPRIETARY SPECIFICATIONS ARE "OR EQUAL" SUBJECT TO WRITTEN APPROVAL OF SUBMITTAL BY ENGINEER.



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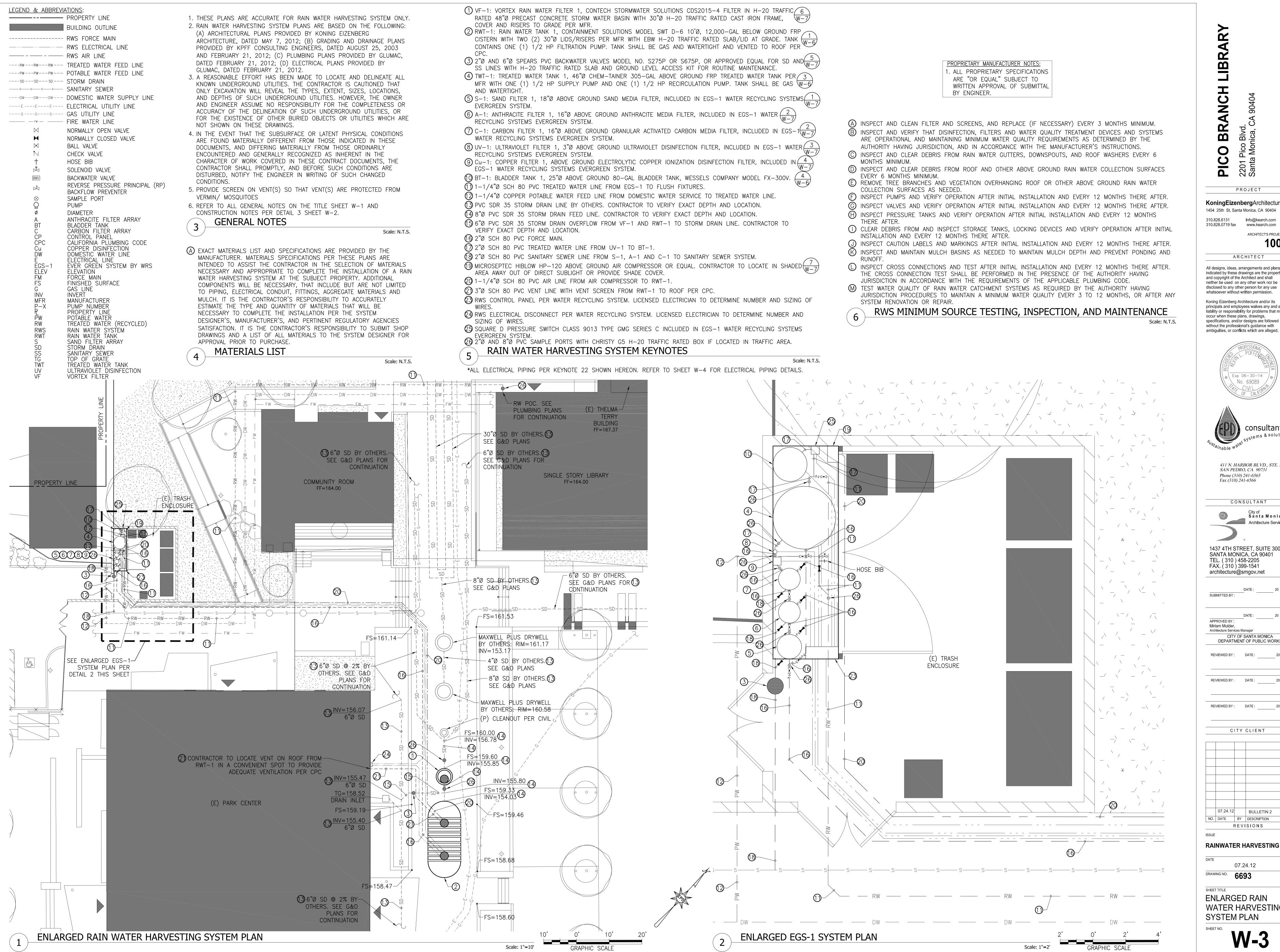
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07.24.12 BULLETIN 2 NO. DATE BY DESCRIPTION REVISIONS

RAINWATER HARVESTING

07.24.12 DRAWING NO. 6693

SHEET TITLE RAIN WATER HARVESTING SYSTEM SITE PLAN



**LIBRA** C Z 4 **B**及 0 **1** 

PROJECT

info@kearch.com 310.828.0719 fax www.kearch.com

ARCHITECT

ARCHITECT'S PROJECT NO.

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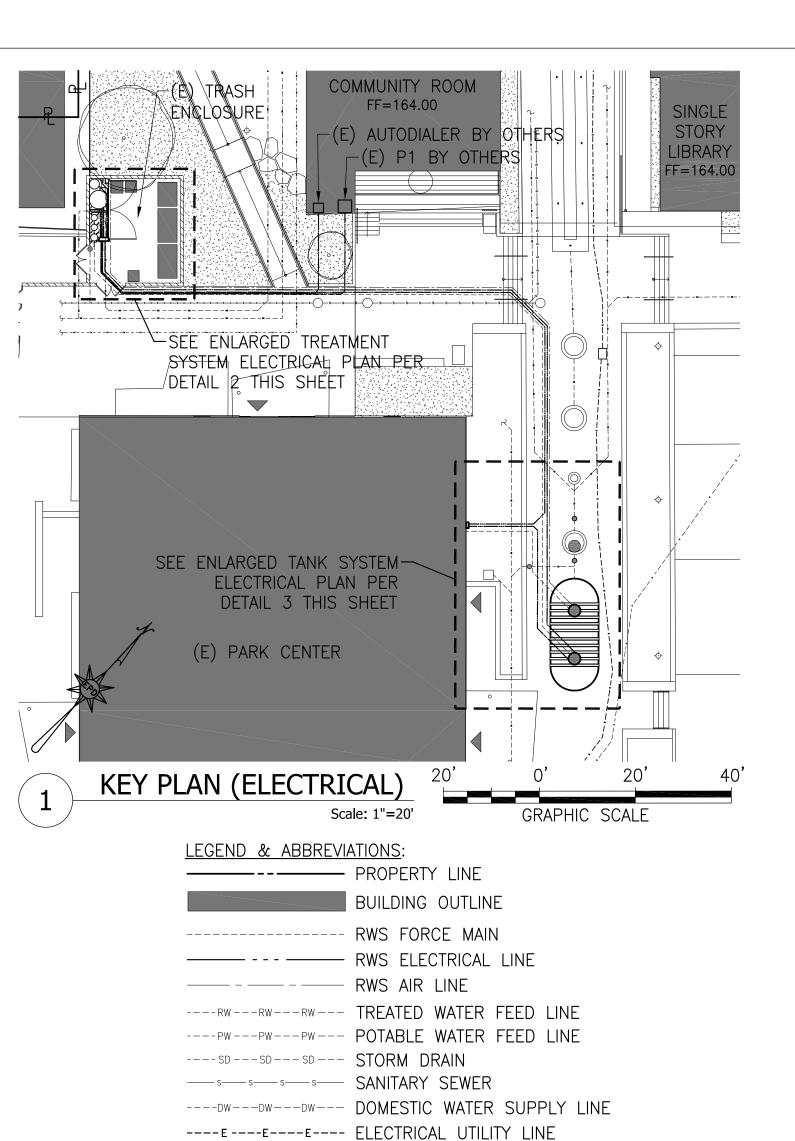
07.24.12 BULLETIN 2 NO. DATE BY DESCRIPTION REVISIONS

RAINWATER HARVESTING

07.24.12

6693 DRAWING NO.

SHEET TITLE **ENLARGED RAIN** WATER HARVESTING SYSTEM PLAN



----G----G----GAS UTILITY LINE

----- FIRE WATER LINE

⋈ NORMALLY OPEN VALVE

BALL VALVE

CHECK VALVE HOSE BIB

SAMPLE PORT

BLADDER TANK CONTROL PANEL

PUMP

DIAMETER

SOLENOID VALVE BACKWATER VALVE

BACKFLOW PREVENTER

ANTHRACITE FILTER ARRAY

CARBON FILTER ARRAY

COPPER DISINFECTION

DOMESTIC WATER LINE

ECTRICAL LINE

FINISHED SURFACE

ELEVATION

GAS LINE

FORCE MAIN

MANUFACTURE

PUMP NUMBER

PROPERTY LINE

POTABLE WATER

RAIN WATER SYSTEM

SAND FILTER ARRAY

TREATED WATER TANK

ULTRAVIOLET DISINFECTION

RAIN WATER TANK

SANITARY SEWER

STORM DRAIN

TOP OF GRATE

VORTEX FILTER

CALIFORNIA PLUMBING CODE

EVER GREEN SYSTEM BY WRS

TREATED WATER (RECYCLED)

NORMALLY CLOSED VALVE

REVERSE PRESSURE PRINCIPAL (RP)

GRAPHIC SCALE FOR CONTINUATION OF-ELECTRICAL LINES TO FOR CONTINUATION OF (E) P1 AND AUTODIALER TANK SYSTEM\_SEE DETAIL 3 THIS SHEET ENLARGED RAIN WATER HARVESTING ELECTRICAL PLAN (TREATMENT SYSTEM) 1. THESE PLANS ARE ACCURATE FOR RAIN WATER HARVESTING SYSTEM ONLY. 2. RAIN WATER HARVESTING SYSTEM PLANS ARE BASED ON THE FOLLOWING: (A) ARCHITECTURAL PLANS PROVIDED BY KONING EIZENBERG ARCHITECTURE, DATED MAY 7, 2012; (B) GRADING AND DRAINAGE PLANS PROVIDED BY KPFF CONSULTING ENGINEERS, DATED AUGUST 25, 2003 AND FEBRUARY 21 2012; (C) PLUMBING PLANS PROVIDED BY GLUMAC, DATED FEBRUARY 21, 2012; (D) ELECTRICAL PLANS PROVIDED BY GLUMAC, DATED FEBRUARY 21, 2012. 3. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. THE CONTRACTOR IS CAUTIONED THAT ONLY EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS, AND DEPTHS OF SUCH UNDERGROUND UTILITIES. HOWEVER, THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES, OR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH ARE NOT SHOWN ON THESE DRAWINGS. 4. IN THE EVENT THAT THE SUBSURFACE OR LATENT PHYSICAL CONDITIONS ARE FOUND MATERIALLY DIFFERENT FROM THOSE INDICATED IN THESE DOCUMENTS, AND DIFFERING MATERIALLY FROM THOSE ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERENT IN THE CHARACTER OF WORK COVERED IN THESE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROMPTLY, AND BEFORE SUCH CONDITIONS ARE DISTURBED, NOTIFY THE ENGINEER IN WRITING OF SUCH CHANGED CONDITIONS. 5. REFER TO ALL GENERAL NOTES ON THE TITLE SHEET W-1 AND CONSTRUCTION NOTES PER DETAIL 3

> PROPRIETARY MANUFACTURER NOTES: 1. ALL PROPRIETARY SPECIFICATIONS ARE "OR EQUAL" SUBJECT TO

> > WRITTEN APPROVAL OF SUBMITTAL

BY ENGINEER.

Scale: N.T.S.

(E) TRASH

**ENCLOSURE** 

Scale: N.T.S.

(1) VF-1: VORTEX RAIN WATER FILTER 1, CONTECH STORMWATER SOLUTIONS CDS2015-4 FILTER IN H-20 TRAFFIC 6RATED 48"Ø PRECAST CONCRETE STORM WATER BASIN WITH 30"Ø H-20 TRAFFIC RATED CAST IRON FRAME, COVER AND RISERS TO GRADE PER MFR.

SHEET W-2.

**GENERAL NOTES** 

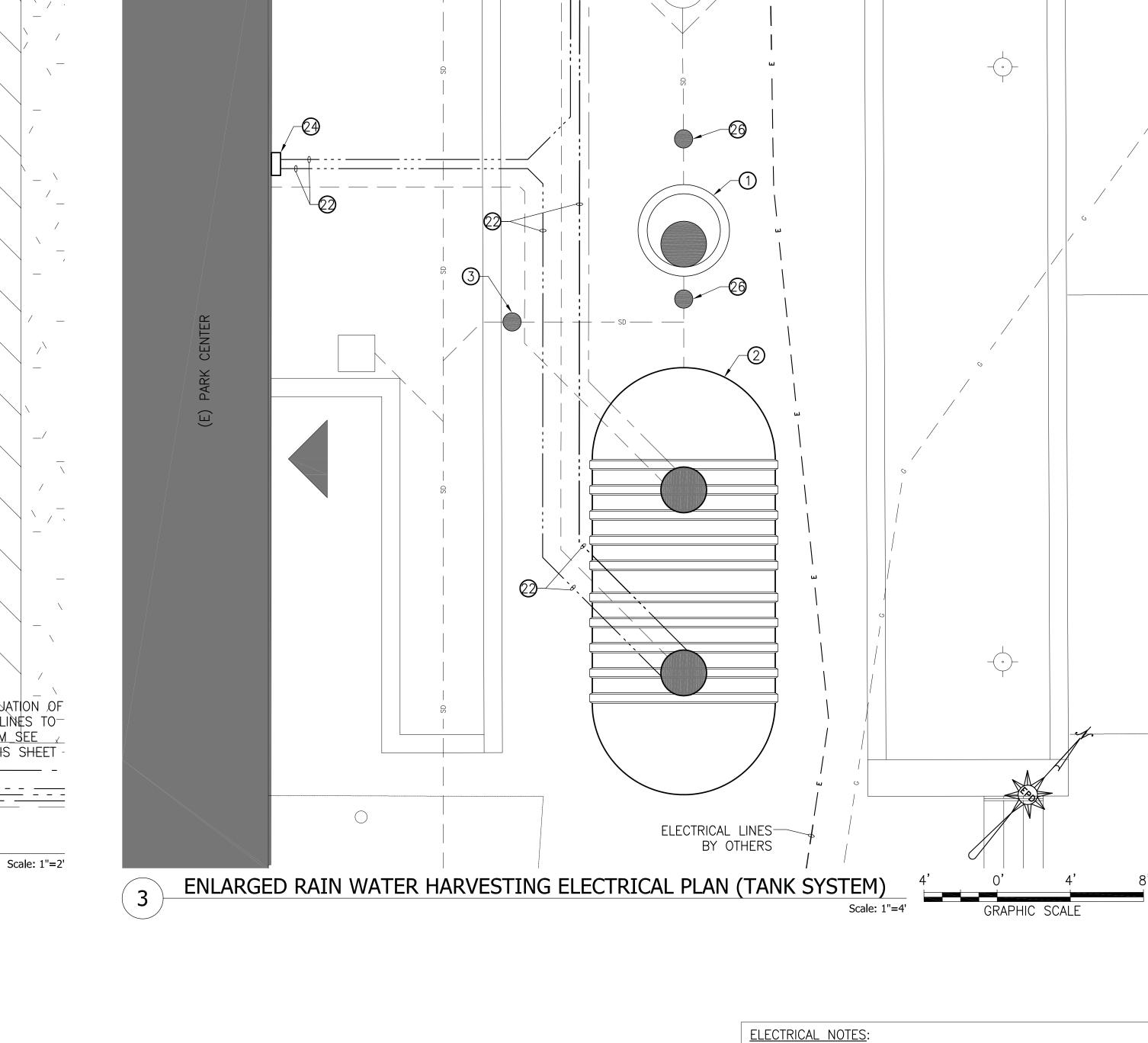
(2) RWT-1: RAIN WATER TANK 1, CONTAINMENT SOLUTIONS MODEL SWT D-6 10'Ø, 12,000-GAL BELOW GROUND FRP CISTERN WITH TWO (2) 30"Ø LIDS/RISERS PER MFR WITH EBW H-20 TRAFFIC RATED SLAB/LID AT GRADE. TANK (-1) CONTAINS ONE (1) 1/2 HP FILTRATION PUMP. TANK SHALL BE GAS AND WATERTIGHT AND VENTED TO ROOF PER

3 2"Ø AND 6"Ø SPEARS PVC BACKWATER VALVES MODEL NO. S275P OR S675P, OR APPROVED EQUAL FOR SD AND W-7 SS LINES WITH H-20 TRAFFIC RATED SLAB AND GROUND LEVEL ACCESS KIT FOR ROUTINE MAINTENANCE.

- (4) TWT-1: TREATED WATER TANK 1, 46"Ø CHEM-TAINER 305-GAL ABOVE GROUND FRP TREATED WATER TANK PER / 3 MFR WITH ONE (1) 1/2 HP SUPPLY PUMP AND ONE (1) 1/2 HP RECIRCULATION PUMP. TANK SHALL BE GAS  $\overline{\mathbb{W}}-\overline{6}$ AND WATERTIGHT
- (5) S-1: SAND FILTER 1, 18"Ø ABOVE GROUND SAND MEDIA FILTER, INCLUDED IN EGS-1 WATER RECYCLING SYSTEMS  $\left(\frac{1}{W-7}\right)$ EVERGREEN SYSTEM.
- 6 A-1: ANTHRACITE FILTER 1, 16"Ø ABOVE GROUND ANTHRACITE MEDIA FILTER, INCLUDED IN EGS-1 WATER  $\frac{2}{W-7}$ RECYCLING SYSTEMS EVERGREEN SYSTEM.  $\bigcirc$  C-1: CARBON FILTER 1, 16"Ø ABOVE GROUND GRANULAR ACTIVATED CARBON MEDIA FILTER, INCLUDED IN EGS-1 $\bigcirc$  W-7
- WATER RECYCLING SYSTEMS EVERGREEN SYSTEM. (8) UV-1: ULTRAVIOLET FILTER 1, 3"Ø ABOVE GROUND ULTRAVIOLET DISINFECTION FILTER, INCLUDED IN EGS-1 WATER  $\frac{3}{1000}$
- RECYCLING SYSTEMS EVERGREEN SYSTEM.  $\bigcirc$  Cu-1: COPPER FILTER 1, ABOVE GROUND ELECTROLYTIC COPPER IONIZATION DISINFECTION FILTER, INCLUDED IN  $\bigcirc$ EGS-1 WATER RECYCLING SYSTEMS EVERGREEN SYSTEM.
- (0) BT-1: BLADDER TANK 1, 25"Ø ABOVE GROUND 80-GAL BLADDER TANK, WESSELS COMPANY MODEL FX-300V.
- 19 MICROSEPTEC HIBLOW HP-120 ABOVE GROUND AIR COMPRESSOR OR EQUAL. CONTRACTOR TO LOCATE IN SHADED 7 AREA AWAY OUT OF DIRECT SUBLIGHT OR PROVIDE SHADE COVER.
- 2) 1"Ø SCH 80 PVC RWS ELECTRICAL LINES. CONTRACTOR SHALL HAVE LICENSED ELECTRICIAN DETERMINE THE NUMBER AND SIZING OF WIRES. (23) RWS CONTROL PANEL PER WATER RECYCLING SYSTEM. LICENSED ELECTRICIAN TO DETERMINE NUMBER AND SIZING OF
- (24) RWS ELECTRICAL DISCONNECT PER WATER RECYCLING SYSTEM. LICENSED ELECTRICIAN TO DETERMINE NUMBER AND SIZING OF WIRES.
- (25) SQUARE D PRESSURE SWITCH CLASS 9013 TYPE GMG SERIES G INCLUDED IN EGS-1 WATER RECYCLING SYSTEMS EVERGREEN SYSTEM.
- (26) 2"Ø AND 8"Ø PVC SAMPLE PORTS WITH CHRISTY G5 H-20 TRAFFIC RATED BOX IF LOCATED IN TRAFFIC AREA.

RAIN WATER HARVESTING SYSTEM KEYNOTES

\*ALL PROCESS PIPING PER KEYNOTES 11-18, 20-21 SHOWN HEREON. REFER TO SHEET W-3 FOR PROCESS PIPING DETAILS.

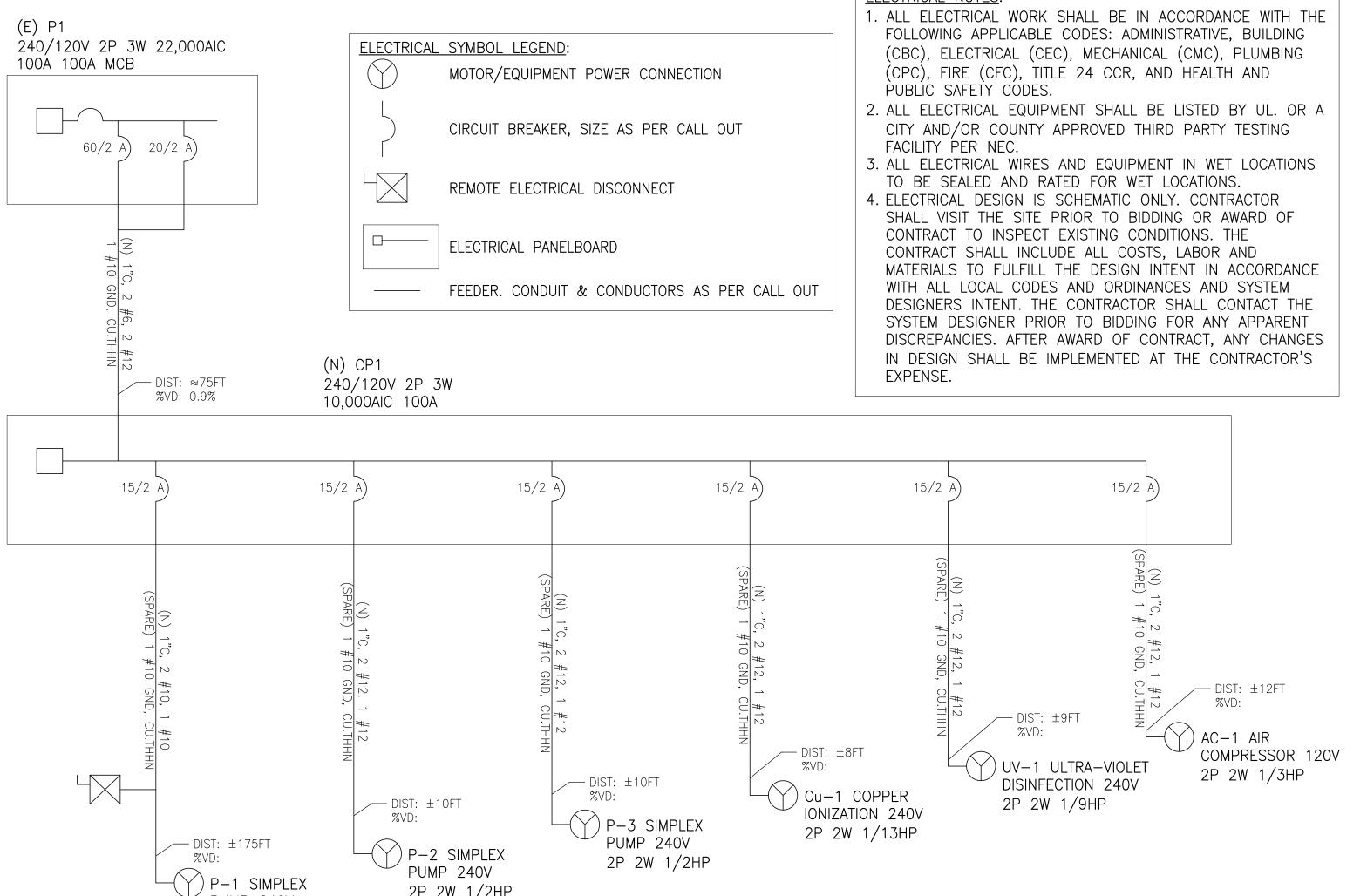


BY OTHERS

FOR CONTINUATION OF

ELECTRICAL LINES TO TREATMENT SYSTEM SEE

DETAIL 2 THIS SHEET



2P 2W 1/2HP

RAIN WATER HARVESTING SYSTEM PARTIAL SINGLE LINE DIAGRAM

PUMP 240V

2P 2W 1/2HP

ANC BR A PIC PROJECT

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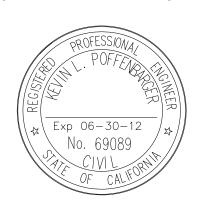
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07.24.12 BULLETIN 2 NO. DATE BY DESCRIPTION REVISIONS

ISSUE RAINWATER HARVESTING

07.24.12 DRAWING NO.

SHEET TITLE **ENLARGED RAIN** WATER HARVESTING **ELECTRICAL PLAN** 

W-4

Scale: N.T.S.

LEGEND & ABBREVIATIONS:

— — — — — RWS FORCE MAIN

----- - RWS AIR LINE

------ S------ RWS SANITARY SEWER

----- RWS ELECTRICAL LINE

->> TREATED WATER FEED LINE

--- POTABLE WATER FEED LINE

— STORM DRAIN

----- W ----- DOMESTIC WATER SUPPLY LINE

BALL VALVE

HOSE BIB

CHECK VALVE

SOLENOID VALVE

SAMPLE PORT

BLADDER TANK

CONTROL PANEL

PUMP

DIAMETER

BACKWATER VALVE

BACKFLOW PREVENTER

ANTHRACITE FILTER ARRAY

CALIFORNIA PLUMBING CODE

EVER GREEN SYSTEM BY WRS

CARBON FILTER ARRAY

COPPER DISINFECTION

DOMESTIC WATER LINE

LECTRICAL LINE

FINISHED SURFACE

ELEVATION

GAS LINE

PROCESS FLOW SCHEMATIC / ISOMETRIC

FORCE MAIN

MANUFACTURER PUMP NUMBER PROPERTY LINE POTABLE WATER

NORMALLY OPEN VALVE

NORMALLY CLOSED VALVE

REVERSE PRESSURE PRINCIPAL (RP)

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APPROVED BY : Miriam Mulder, Architecture Services Manager CITY OF SANTA MONICA DEPARTMENT OF PUBLIC WORKS REVIEWED BY : DATE : \_\_\_\_\_\_ 20 \_\_

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07.24.12 BULLETIN 2 NO. DATE BY DESCRIPTION REVISIONS

**RAINWATER HARVESTING** 

07.24.12 DRAWING NO. 6693

PROCESS FLOW SCHEMATIC/ISOMETRIC

Scale: N.T.S.

EQUIPMENT TABLE TYPE SIZE | MANUFACTURER |PRODUCT # | 1–1/4" | SPEARS PVC TRUE UNION BALL VALVE BALL VALVE USA BLUEBOOK STOCK #76903 USA BLUEBOOK STOCK #76905 BALL VALVE SPEARS PVC TRUE UNION BALL VALVE | 1-1/4" | SPEARS PVC TRUE UNION CHECK VALVE |SPEARS #2223-012 CHECK VALVE SPEARS PVC TRUE UNION CHECK VALVE SPEARS #2223-020 CHECK VALVE USA BLUEBOOK STOCK #72699 SOLENOID VALVE 1-1/4" | BURKERT BRASS SOLENOID VALVE USA BLUEBOOK STOCK #28282 BACKWATER VALVE SPEARS PVC BACKWATER VALVE WITH EXTENSIONS BACKWATER VALVE SPEARS PVC BACKWATER VALVE WITH EXTENSIONS USA BLUEBOOK STOCK #28285 3/4" | J.R. SMITH NON-FREEZE ABOVE GROUND HYDRANT J.R. SMITH MODEL #5616 HOSE BIB BACKFLOW PREVENTER |1-1/4"| WILKINS 975XL RPZ BRASS BACKFLOW PREVENTER USA BLUEBOOK STOCK #15873

ALL RAIN WATER HARVESTING EQUIPMENT COMPONENTS LISTED IN THE EQUIPMENT TABLE ARE "OR EQUAL" SUBJECT TO WRITTEN APPROVAL OF SUBMITTAL BY ENGINEER.

PROPRIETARY MANUFACTURER NOTES:

BY ENGINEER.

1. ALL PROPRIETARY SPECIFICATIONS ARE "OR EQUAL" SUBJECT TO WRITTEN APPROVAL OF SUBMITTAL ① VF-1: VORTEX RAIN WATER FILTER 1, CONTECH STORMWATER SOLUTIONS CDS2015-4 FILTER IN H-20 TRAFFIC 6RATED 48"Ø PRECAST CONCRETE STORM WATER BASIN WITH 30"Ø H-20 TRAFFIC RATED CAST IRON FRAME,

COVER AND RISERS TO GRADE PER MFR. 2 RWT-1: RAIN WATER TANK 1, CONTAINMENT SOLUTIONS MODEL SWT D-6 10'Ø, 12,000-GAL BELOW GROUND FRP CISTERN WITH TWO (2) 30"Ø LIDS/RISERS PER MFR WITH EBW H-20 TRAFFIC RATED SLAB/LID AT GRADE. TANK CONTAINS ONE (1) 1/2 HP FILTRATION PUMP. TANK SHALL BE GAS AND WATERTIGHT AND VENTED TO ROOF PER CPC.

(3) 2"Ø AND 6"Ø SPEARS PVC BACKWATER VALVES MODEL NO. S275P OR S675P, OR APPROVED EQUAL FOR SD AND  $\frac{3}{W}$ SS LINES WITH H-20 TRAFFIC RATED SLAB AND GROUND LEVEL ACCESS KIT FOR ROUTINE MAINTENANCE.

(4) TWT-1: TREATED WATER TANK 1, 46"Ø CHEM-TAINER 305-GAL ABOVE GROUND FRP TREATED WATER TANK PER 3 MFR WITH ONE (1) 1/2 HP SUPPLY PUMP AND ONE (1) 1/2 HP RECIRCULATION PUMP. TANK SHALL BE GAS  $\overline{W}-\overline{6}$ AND WATERTIGHT.

 $\bigcirc$  S-1: SAND FILTER 1, 18"Ø ABOVE GROUND SAND MEDIA FILTER, INCLUDED IN EGS-1 WATER RECYCLING SYSTEMS  $\bigcirc$ EVERGREEN SYSTEM.

6 A-1: ANTHRACITE FILTER 1, 16"Ø ABOVE GROUND ANTHRACITE MEDIA FILTER, INCLUDED IN EGS-1 WATER  $(-\frac{2}{W-7})$ RECYCLING SYSTEMS EVERGREEN SYSTEM.

(7) C-1: CARBON FILTER 1, 16"Ø ABOVE GROUND GRANULAR ACTIVATED CARBON MEDIA FILTER, INCLUDED IN EGS-1 $(\frac{2}{W}$ WATER RECYCLING SYSTEMS EVERGREEN SYSTEM.  $\otimes$  UV-1: ULTRAVIOLET FILTER 1, 3"Ø ABOVE GROUND ULTRAVIOLET DISINFECTION FILTER, INCLUDED IN EGS-1 WATER (w)

RECYCLING SYSTEMS EVERGREEN SYSTEM.  $\bigcirc$  Cu-1: COPPER FILTER 1, ABOVE GROUND ELECTROLYTIC COPPER IONIZATION DISINFECTION FILTER, INCLUDED IN  $\bigcirc$ 

EGS-1 WATER RECYCLING SYSTEMS EVERGREEN SYSTEM.  $\bigcirc$  BT-1: BLADDER TANK 1, 25"Ø ABOVE GROUND 80-GAL BLADDER TANK, WESSELS COMPANY MODEL FX-300V. $\bigcirc$ 

(9) MICROSEPTEC HIBLOW HP-120 ABOVE GROUND AIR COMPRESSOR OR EQUAL. CONTRACTOR TO LOCATE IN SHADED  $\frac{\prime}{W-}$ AREA AWAY OUT OF DIRECT SUBLIGHT OR PROVIDE SHADE COVER.

23 RWS CONTROL PANEL PER WATER RECYCLING SYSTEM. LICENSED ELECTRICIAN TO DETERMINE NUMBER AND SIZING OF WIRES.

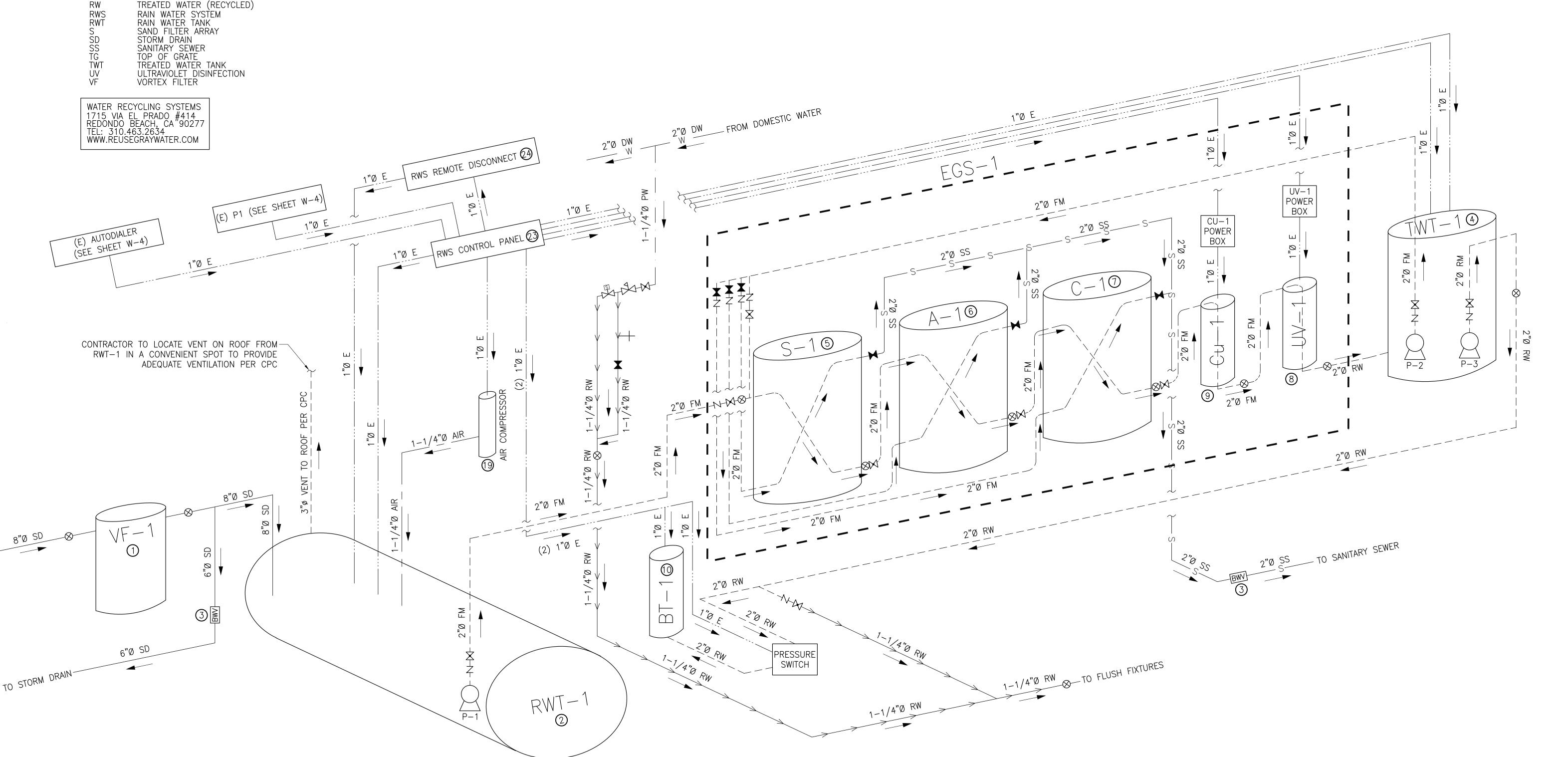
RWS ELECTRICAL DISCONNECT PER WATER RECYCLING SYSTEM. LICENSED ELECTRICIAN TO DETERMINE NUMBER AND SIZING OF WIRES.

25 SQUARE D PRESSURE SWITCH CLASS 9013 TYPE GMG SERIES C INCLUDED IN EGS-1 WATER RECYCLING SYSTEMS

20 2"Ø AND 8"Ø PVC SAMPLE PORTS WITH CHRISTY G5 H-20 TRAFFIC RATED BOX IF LOCATED IN TRAFFIC AREA.

RAIN WATER HARVESTING SYSTEM KEYNOTES

Scale: N.T.S.



PROPRIETARY MANUFACTURER NOTES: 1. ALL PROPRIETARY SPECIFICATIONS ARE "OR EQUAL" SUBJECT TO WRITTEN APPROVAL OF SUBMITTAL BY ENGINEER.

BLADDER --

WATER

1. CONTRACTOR SHALL FOLLOW TANK MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR COMPLETE DESIGN AND PRODUCT

2. THE ABOVE GROUND TANK SHALL BE ANCHORED TO THE GROUND OR PAVING PER TANK MANUFACTURER'S

CHARGING VALVE

— LIFTING HANDLES

∠ MOUNTING LEGS PER

MFR (TYP. OF 3)

-PAVING BY

OTHERS

(TYP. OF 2)

PFR MFR

PER MFR

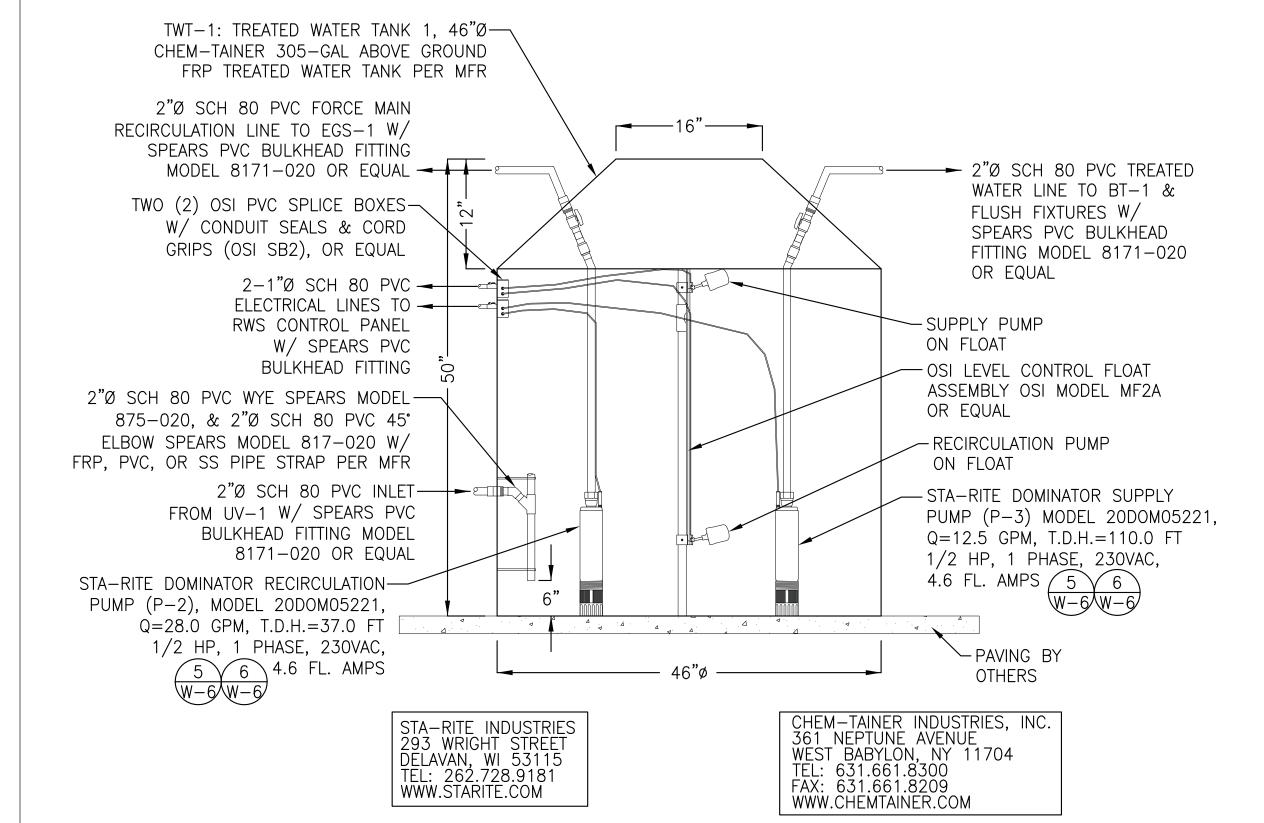
1/2" NPT AUXILIARY-

CONNECTION PER MFR

1-1/2" SYSTEM CONNECTION-

INFORMATION CONTACT WESSELS COMPANY OR WATER RECYCLING SYSTEMS.

PER MFR FROM TWT-1



#### GENERAL NOTES:

- 1. CONTRACTOR SHALL FOLLOW TANK MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR COMPLETE DESIGN AND PRODUCT
- INFORMATION CONTACT CHEM-TAINER INDUSTRIES, INC. OR WATER RECYCLING SYSTEMS. 2. THE ABOVE GROUND TANK SHALL BE ANCHORED TO THE GROUND OR PAVING PER TANK MANUFACTURER'S
- RECOMMENDATIONS. 3. REFER TO TANK NOTES PER DETAIL 2 THIS SHEET.
- 4. TANK SHALL BE PERMANENTLY MARKED WITH THE FOLLOWING, "RAIN WATER HARVESTING SYSTEM, CAUTION—UNSAFE WATER."
- 5. ALL PUMPS, FLOATS AND CONTROL PANEL WIRING SUBMITTALS SHALL BE PROVIDED BY THE CONTRACTOR TO THE SYSTEM DESIGNER PRIOR TO COMMENCEMENT OF ELECTRICAL WORK.

TWT-1: TREATED WATER TANK 1 DETAIL

BT-1: BLADDER TANK 1 DETAIL

CONTRACTOR. (B) CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FROM TANK MANUFACTURER DETAILING TANK PENETRATIONS, BRACKETS, & OTHER APPURTENANCES PRIOR TO TANK CONSTRUCTION.

(A) TANKS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND CERTIFIED BY MANUFACTURER AND/OR

(C) IF THE SOIL HAS LESS THAN 750 LBS./SQ.FT. COHESION AS CALCULATED FROM AN UNCONFINED COMPRESSION TEST; OR IN SOILS HAVING AN ULTIMATE BEARING CAPACITY OF LESS THAN 3,500 LBS./SQ. FT.: OR WHERE SOIL WILL NOT MAINTAIN A VERTICAL WALL, THE EXCAVATION MUST ALLOW A MINIMUM SPACE EQUAL TO HALF THE DIAMETER OF THE TANK BETWEEN THE SIDE AND THE ENDCAP OF THE TANK, AND THE EXCAVATION WALL TO ENHANCE LATERAL

RESISTANCE (D) A REINFORCED CONCRETE SLAB MAY BE REQUIRED UNDER THE TANK AS A FOUNDATION IN THE EXCAVATION WHERE THE BOTTOM IS UNSTABLE. ASPHALT AND CONCRETE SLABS MUST EXTEND A MINIMUM OF 12" BEYOND THE TANK IN ALL DIRECTIONS.

(E) TANKS SHALL BE ANCHORED PER MANUFACTURER'S RECOMMENDATIONS IN INSTALLATIONS IN WHICH THE TANK COULD BE EXPOSED TO WATER. SITES SHALL BE THOROUGHLY EVALUATED FOR THE POTENTIAL OF A RISE IN THE LOCAL WATER TABLE OR OF TRAPPED WATER. CONTRACTOR OR SOILS ENGINEER SHALL PROVIDE

EVALUATION TO SYSTEM DESIGNER FOR REVIEW PRIOR TO INSTALLATION OF TANK (H) THE MAXIMUM DESIGNED TANK BURY DEPTH IS 7' OF COVER OVER THE TOP OF THE TANK PER MANUFACTURER. ANY TANK BURIED BEYOND RANGE NEEDS TO

BE ANALYZED BY A CIVIL/ GEOTECHNICAL ENGINEER PER MANUFACTURER (I) ACCESS RISERS TO BE SET/GLUED IN FIELD BY CONTRACTOR AND WATER TESTED AFTER INSTALLATION IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS AND IN THE PRESENCE OF ENGINEER, OWNER, OR OWNER'S AGENT. LIDS SHALL BE LOCKING AND MARKED "RAIN WATER HARVESTING SYSTEM, CAUTON—UNSAFE

(J) IF THERE IS AN UNATTACHED RISER OVER AN ACCESS OPENING, IT MUST NOT TRANSMIT LOAD FROM THE ASPHALT OR CONCRETE SLAB TO THE TANK. A

MINIMUM SPACE OF 6" MUST EXIST BETWEEN THE BOTTOM OF THE RISER AND THE TOP OF THE TANK. (K) IF THERE IS AN ATTACHED RISER ON AN ACCESS OPENING, IT MUST NOT TRANSMIT LOAD FROM THE ASPHALT OR CONCRETE SLAB TO THE TANK. A MINIMUM

SPACE OF 3" MUST EXIST BETWEEN THE RISER OR SUMP AND THE SLAB (I) TANKS SUBJECTED TO TRAFFIC LOADS (H-20 LOADS) MUST HAVE A COVER DEPTH OF AT LEAST 18" OF BACKFILL (36" FOR 12' TANKS) PLUS 6" OF REINFORCED CONCRETE OR 9" OF ASPHALT. TANKS NOT SUBJECTED TO TRAFFIC LOADS MUST HAVE A COVER DEPTH OF AT LEAST 24" OF BACKFILL (48" FOR 12' TANKS) OR 12" OF BACKFILL (36" FOR 12' TANKS) PLUS 4" OF REINFORCED CONCRETE OR 6" OF ASPHALT.

(M) ALL PENETRATIONS THROUGH TANK AND ACCESS RISERS SHALL BE GAS AND WATERTIGHT. INSTALLER SHALL USE EPOXY, GROMMETS, OR OTHER APPROVED

METHODS. (N) EACH CONDUIT RUN TO CONTROL PANEL SHALL BE INSTALLED WITH TWO (2) CONDUIT SEALS (0-Z/GEDNEY CAT NO EYA-125), ONE (1) EACH AT CONTROL PANEL AND SPLICE BOX.

(O) ACCESS RISERS AND COVERS SHALL BE GAS-TIGHT, AND WATER TESTED AFTER INSTALLATION IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS AND IN THE PRESENCE OF DESIGNER, OWNER, OR OWNER'S AGENT

(P) A 24-HOUR WATERTIGHT TEST SHALL BE CONDUCTED ON ALL GRAYWATER SYSTEM COMPONENTS PER CONSTRUCTION SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR WATER TESTING THE TANKS ONCE THE TANKS INSTALLATION HAS BEEN COMPLETED AND ALLOWED TO SET OVERNIGHT. WATER TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM C1227.9.2. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CLEAN WATER FOR THE TESTING, FILLING THE TANKS, AND PUMPING THE TANKS DRY ONCE TESTING IS COMPLETE.

(Q) TANKS SHALL BE INSTALLED WITH A MINIMUM OF 12" OF COMPACTED CRUSHED STONE BEDDING. SELECT FILL SHALL BE USED IF BACKFILLING AROUND TANKS NATIVE MATERIAL MAY BE USED IF APPROVED BY THE DESIGN ENGINEER.

(R) CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL EXTERIOR PIPING PER INSTALLATION DRAWINGS.

(S) ALL ELECTRICAL WORK IS THE RESPONSIBILITY OF THE CONTRACTOR'S LICENSED ELECTRICIAN AND IS NOT PROVIDED BY SYSTEM ENGINEER. SYSTEM CONTROLLER. IF APPLICABLE. SHOULD BE INSTALLED IN A HEATED BUILDING WHERE AN AMBIENT TEMPERATURE RANGE OF 60 TO 90° F IS MAINTAINED. IF THE CONTROL PANEL MUST BE LOCATED OUTSIDE AND FREEZING TEMPERATURES ARE ANTICIPATED, NOTIFY MANUFACTURER SO A HEATER MAY BE INSTALLED WITHIN THE ENCLOSURE.

(T) CONTRACTOR IS RESPONSIBLE FOR INSTALLING A DEDICATED ANALOG PHONE LINE, IF APPLICABLE, TO THE CONTROL PANEL FOR THE AUTODIALER/MODEM. PHONE LINE MUST BE INSTALLED AND WORKING IN ORDER TO HAVE ANY WORK PERFORMED UNDER WARRANTY. ANY WORK PERFORMED ON THE SYSTEM WITHOUT THE INSTALLATION OF THE PHONE LINE SHALL BE AT THE SOLE EXPENSE OF THE OWNER.

TANK NOTES

RWT-1 FILTRATION PUMP (P-1)TWT-1 RECIRCULATION PUMP (P-2)TWT-1 SUPPLY PUMP (P-3) SYSTEM PUMP CALCULATIONS: SYSTEM PUMP CALCULATIONS: SYSTEM PUMP CALCULATIONS

RWT-1 FILTRATION PUMP (P-1)SYSTEM PUMP SPECIFICATIONS:

STA-RITE DOMINATOR MODEL NO: 20D0M05221 28.0 GPM 62.0 TDH  $1/2 \, HP$  1 PH <u>60</u>HZ <u>230</u>V ELEC: <u>4.6</u> FL AMPS

TWT-1 RECIRCULATION PUMP (P-2) SYSTEM PUMP SPECIFICATIONS:

STA-RITE DOMINATOR MODEL NO: 20D0M05221 RATING: <u>28.0</u> GPM <u>37.0</u> TDH <u>1/2</u>HP <u>1</u>PH 60 HZ <u>230</u> V

<u>4.6</u> FL AMPS

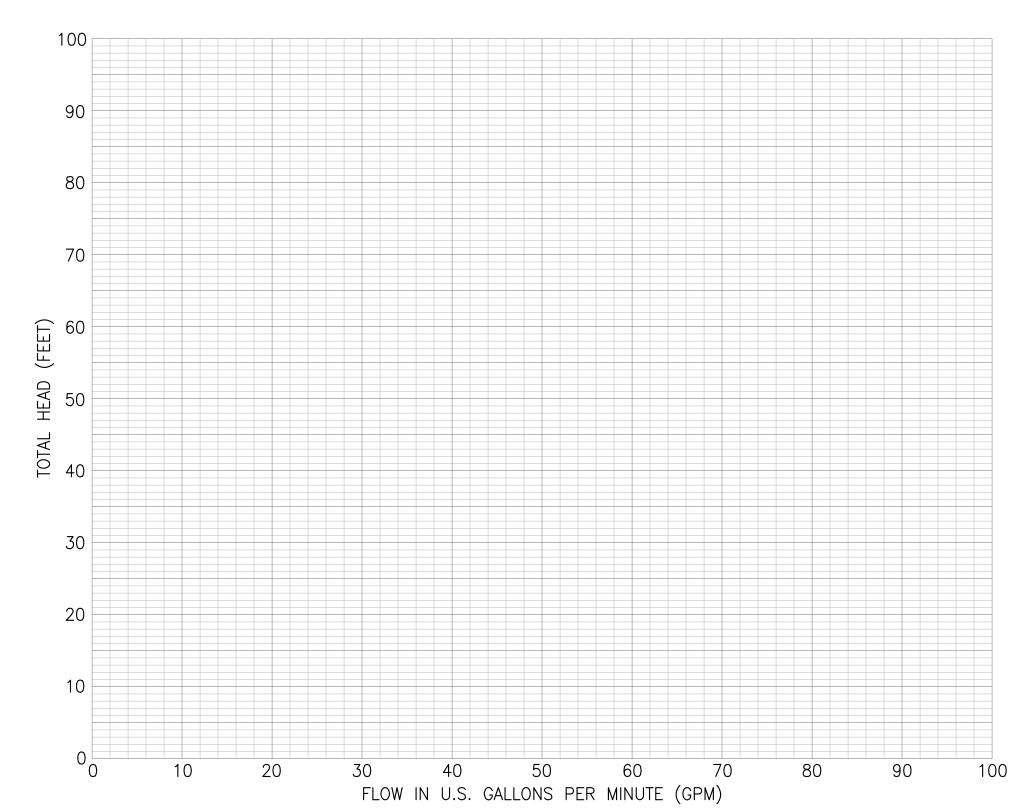
TWT-1 SUPPLY PUMP (P-3)

SYSTEM PUMP SPECIFICATIONS: STA-RITE DOMINATOR MODEL NO: 20D0M05221 <u>12.5</u> GPM <u>110.0</u> TDH <u>1/2</u> HP <u>1</u> PH ELEC: ELEC: <u>4.6</u> FL AMPS

Scale: N.T.S.

RAIN WATER HARVESTING SYSTEM PUMP CALCULATIONS & SPECIFICATIONS

ELEC:



RAIN WATER HARVESTING SYSTEM PUMP CURVES

Scale: N.T.S.

R C **N** 品品 ٥

PROJECT

KoningEizenbergArchitectur 1454 25th St, Santa Monica, CA 90404

info@kearch.com 310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO. ARCHITECT

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Scale: N.T.S.



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FAX. (310) 399-1541 architecture@smgov.net

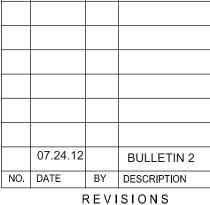
APPROVED BY Miriam Mulder,

Architecture Services Manager CITY OF SANTA MONICA DEPARTMENT OF PUBLIC WORKS

REVIEWED BY: DATE:

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CITY CLIENT



ISSUE

RAINWATER HARVESTING

07.24.12 DRAWING NO.

SHEET TITLE RAIN WATER HARVESTING SYSTEM **DETAILS** 

Scale: N.T.S.

3. REFER TO TANK NOTES PER DETAIL 2 THIS SHEET.

BT-1: BLADDER TANK 1,-

25"Ø WESSELS COMPANY

GROUND STEEL HYDRO

PER MFR

MODEL FX-300V 80-GAL

PNEUMATIC BLADDER TANK

150 PSI DEEP DRAW ABOVE

WESSELS COMPANY 101 TANK STREET

FAX: 317.888.9988

| WWW.WESTANK.COM

RECOMMENDATIONS.

**GENERAL NOTES:** 

GREENWOOD IN 46143 FI: 317.888.9800

TRIDENT FILTRATION, INC. 4270 PROMENDAE WAY SUITE D MARINA DEL RAY, CA 90290 TEL: 310.577.7060 WWW.TRIDENTFILTRATION.COM

715 VIA EL PRADO #414 REDONDO BEACH, CA''90277 310.463.2634 WWW.REUSEGRAYWATER.COM 1. CONTRACTOR SHALL FOLLOW FILTER VESSEL MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR

WATER RECYCLING SYSTEMS

-TOP MOUNTED 6 POSITION MULTIPORT WITH

AND INTEGRAL SIGHT GLASS FOR BACKWASH

2"Ø SCH 80 PVC UNION CONNECTIONS.

CLARITY CONFIRMATION PER MFR

**OTHERS** 

PRESSURE GAUGE, AUTOMATIC AIR BLEED

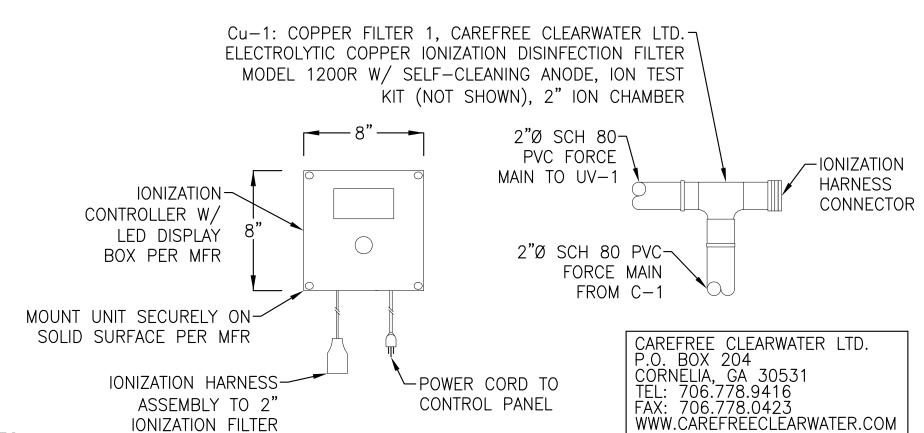
COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT TRIDENT FILTRATION, INC. OR WATER 2. THE FILTER VESSEL SHOULD BE PLACED ON A LEVEL CONCRETE SLAB, VERY FIRM GROUND, OR EQUIVALENT. POSITION THE FILTER SO THAT THE PIPING CONNECTIONS, CONTROL VALVE, ARE CONVENIENT AND ACCESSIBLE

FOR OPERATION AND SERVICE. 3. LOADING THE FILTER VESSEL WITH MEDIA SHALL BE PERFORMED IN ACCORDANCE WITH THE MFR SPECIFICATIONS.

4. ALL CONNECTIONS TO FILTER VESSEL SHALL BE WATERTIGHT PER MFR. 5. THE FILTER VESSEL OPERATES UNDER HIGH PRESSURE, PRIOR TO SERVICING FILTER VESSEL, TURN PUMP OFF TO PREVENT DAMAGE TO THE SYSTEM.

S-1: SAND FILTER VESSEL 1 DETAIL

N.T.S.



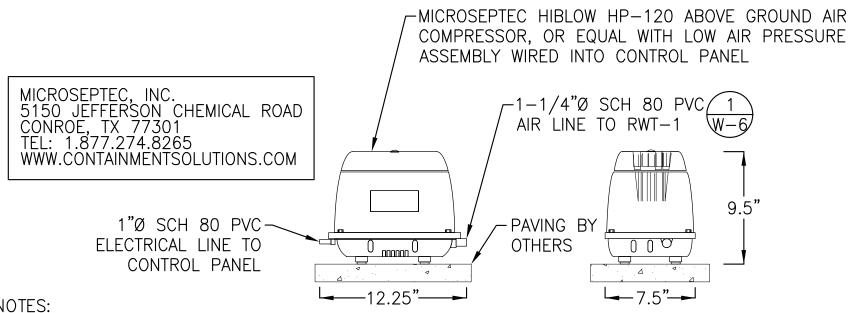
CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT CAREFREE CLEARWATER LTD. OR WATER RECYCLING SYSTEMS. . IONIZER UNIT IS PROVIDED NEMA 4X AND UL 508—4X RATED WATERPROOF ENCLOSURE, GASKET SEALED CLEAR

ACRYLIC VIEW COVER, TAMPER PROOF. 3. IONIZER UNIT REQUIRES PERIODIC OXIDIZING AND MAINTAINING NORMAL WATER BALANCE PER MANUFACTURER

4. Cu-1 UNIT IS PROVIDED AS PART OF THE PACKAGE FOR THE WATER RECYCLING RAIN WATER HARVESTING SYSTEM.

Cu-1: COPPER FILTER 1 DETAIL

SCALE: N.T.S.



1. CONTRACTOR SHALL FOLLOW AIR COMPRESSOR MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR

COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT MICROSEPTEC. 2. CONTRACTOR TO LOCATE IN SHADED AREA AWAY OUT OF DIRECT SUBLIGHT OR PROVIDE SHADE COVER. COMPRESSORS SHOULD BE LOCATED IN A WELL-VENTILATED SHADY PLACE. AN INDOOR LOCATION LIKE A SHED OR GARAGE IS IDEAL.

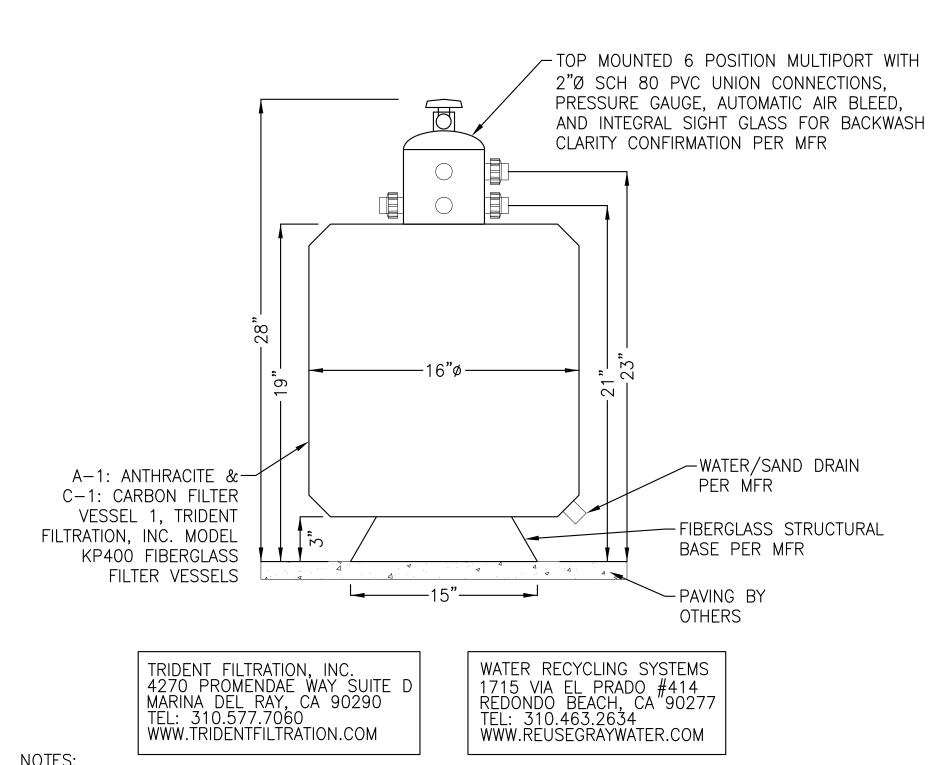
3. COMPRESSORS MUST BE ELEVATED OFF THE GROUND SO THAT SURFACE WATER CANNOT ENTER THE ELECTRICAL TERMINALS WITHIN THE COMPRESSOR.

4. COMPRESSORS SHOULD BE LOCATED AS CLOSE TO THE TANK AS POSSIBLE. DO NOT EXCEED 50' DISTANCE FROM TANK.

5. 1" SCH 80 PVC PIPE IS REQUIRED FOR PLUMBING THE COMPRESSOR(S) TO THE CISTERN; ONE PIPE PER COMPRESSOR. THE PIPE MUST FALL TOWARD THE TANK WITH NO LOW POINTS. COMPRESSORS MUST BE

LOCATED AT THE SAME ELEVATION OR HIGHER THAN TOP OF CISTERN. MICROSEPTEC AIR COMPRESSOR DETAIL

SCALE: N.T.S.



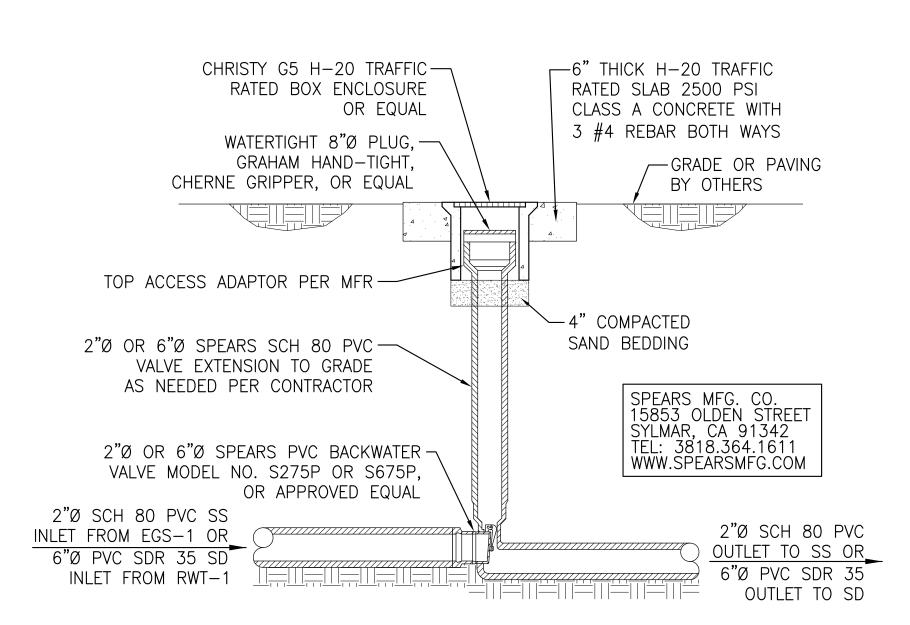
1. CONTRACTOR SHALL FOLLOW FILTER VESSEL MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT TRIDENT FILTRATION, INC. OR WATER

2. THE FILTER VESSEL SHOULD BE PLACED ON A LEVEL CONCRETE SLAB, VERY FIRM GROUND, OR EQUIVALENT. POSITION THE FILTER SO THAT THE PIPING CONNECTIONS, CONTROL VALVE, ARE CONVENIENT AND ACCESSIBLE FOR OPERATION AND SERVICE.

3. LOADING THE FILTER VESSEL WITH MEDIA SHALL BE PERFORMED IN ACCORDANCE WITH THE MFR SPECIFICATIONS.

4. ALL CONNECTIONS TO FILTER VESSEL SHALL BE WATERTIGHT PER MFR. 5. THE FILTER VESSEL OPERATES UNDER HIGH PRESSURE, PRIOR TO SERVICING FILTER VESSEL, TURN PUMP OFF TO PREVENT DAMAGE TO THE SYSTEM.

A-1 AND C-1: ANTHRACITE AND CARBON FILTER VESSEL 1 DETAIL



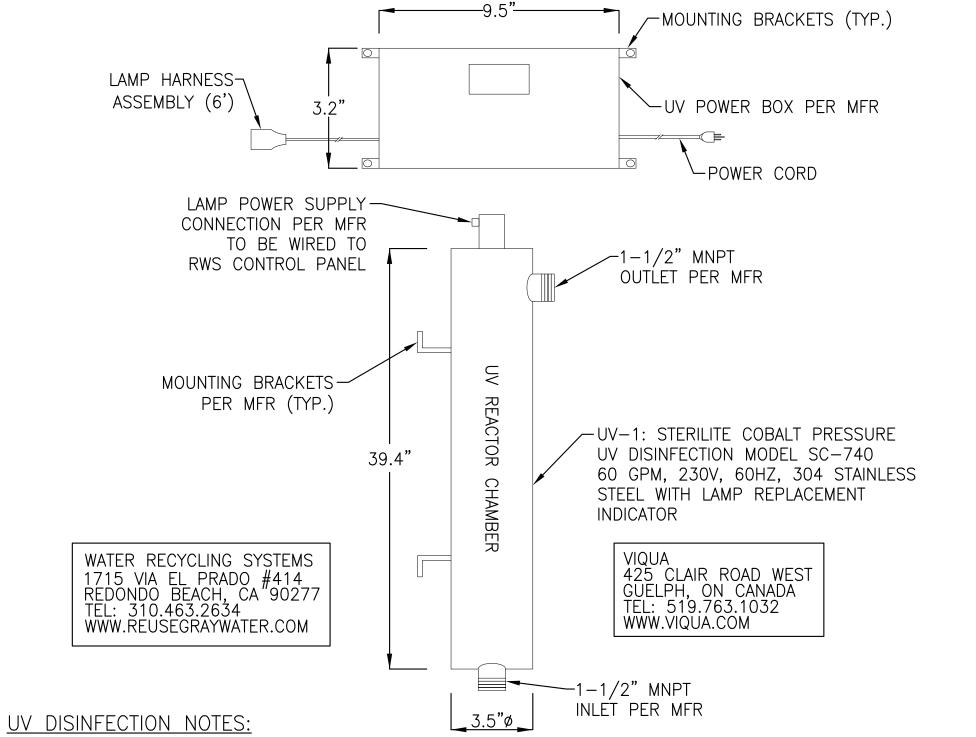
1. CONTRACTOR SHALL FOLLOW BACKWATER MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT SPEARS MFG. CO.

2. BACKWATER VALVES OFFER PROTECTION AGAINST BACKWATER SURGES. BACKFLOW IS PREVENTED WHEN VALVE IS NOT OBSTRUCTED BY DEBRIS OR SLUDGE. USE FOR GRAVITY FLOW ONLY, NOT FOR PRESSURIZED APPLICATIONS.

3. IF BACKWATER VALVES ARE LOCATED IN NON TRAFFIC AREA, CONTRACTOR MAY SUBSTITUTE ALTERNATIVE NON-TRAFFIC RATED INSTALLATION WITH ENGINEER APPROVED EQUAL

BWV: BACKWATER VALVE DETAIL

PROPRIETARY MANUFACTURER NOTES: ALL PROPRIETARY SPECIFICATIONS ARE "OR EQUAL" SUBJECT TO WRITTEN APPROVAL OF SUBMITTAL BY ENGINEER.



CONTRACTOR SHALL FOLLOW UV MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR COMPLETE DESIGN AND PRODUCT

INFORMATION CONTACT VIQUA. OR WATER RECYCLING SYSTEMS. 2. UV DISINFECTION UNIT NEEDS TO BE MAINTAINED. CHANGE YOUR LAMP ON A YEARLY BASIS OR PER MANUFACTURER'S RECOMMENDATIONS TO INSURE THAT THE QUARTZ SLEEVE IS CLEAN ON A REGULAR BASIS.

3. THE ELECTRONICS HAVE BEEN DESIGNED TO WORK WITH STANDARD POWER SUPPLIES. SINCE THE UNIT IS SUSCEPTIBLE TO POWER FLUCTUATIONS, WE RECOMMEND THAT THE SYSTEM BE KEPT OFF ANY LINES WHERE THERE ARE SURGES. THIS INCLUDES PUMPS OR MOTORS. IF THERE ARE FLUCTUATIONS, PLEASE USE A SURGE SUPPRESSOR

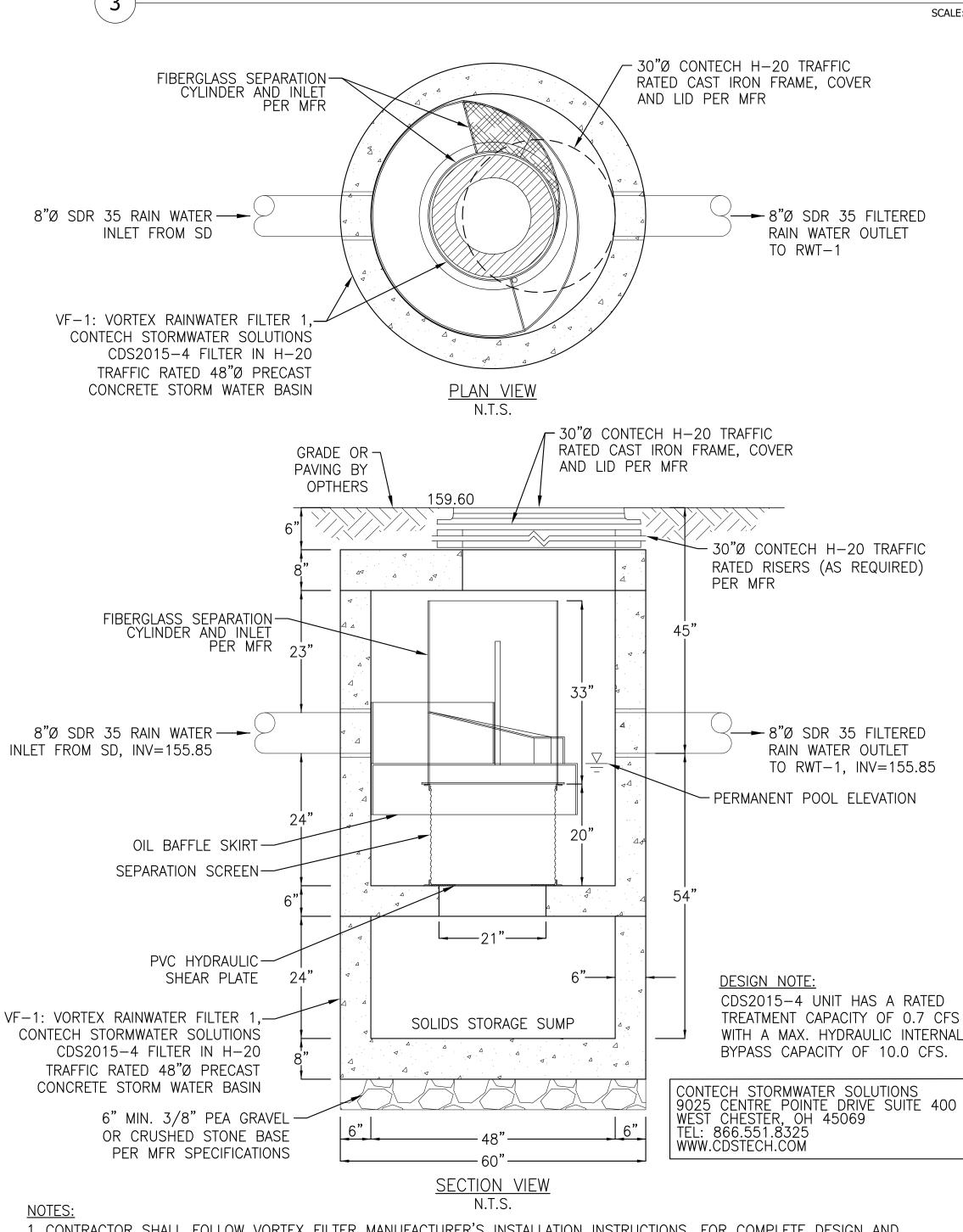
SEE MANUFACTURER'S RECOMMENDATIONS. 4. WHEN INSTALLING, REMEMBER THAT YOU WILL NEED TO BE ABLE TO REMOVE LAMPS AND QUARTZ AS PART OF MAINTENANCE SCHEDULE. ALLOW YOURSELF ENOUGH ROOM TO ACCOMPLISH THESE TASKS. UNIT IS DESIGNED TO BE MOUNTED VERTICALLY AND SECURED TO WALL OR SOLID SURFACE. CONTRACTOR SHALL VERIFY UV UNIT HAS ENOUGH CLEARANCE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

UV-1: UV DISINFECTION 1 DETAIL

N.T.S.

SCALE: N.T.S.

SCALE: N.T.S.



1. CONTRACTOR SHALL FOLLOW VORTEX FILTER MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT CONTECH STORMWATER SOLUTIONS.

6. CONTRACTOR TO ASSEMBLE STRUCTURE AND ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS.

7. CONTRACTOR SHALL ENSURE THAT COMPLETE UNIT IS INSTALLED AS GAS AND WATERTIGHT.

2. VORTEX FILTER IS LOCATED IN TRAFFIC AREA AND SHALL BE INSTALLED WITH PRECAST CONCRETE MANHOLE STRUCTURE AS SHOWN AND SHALL BE ABLE TO WITHSTAND H-20 TRAFFIC LOADING CONDITIONS.

3. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

4. CONTRACTOR SHALL PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED PER MFR). 5. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT ALL PIPES WITH ELEVATIONS AS SHOWN.

8. UNIT SHALL BE PERMANENTLY MARKED WITH THE FOLLOWING, "RAIN WATER HARVESTING SYSTEM, CAUTION—UNSAFE WATER." VF-1: VORTEX RAIN WATER FILTER 1 DETAIL

SCALE: N.T.S.

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PROJECT

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KoningEizenbergArchitecture

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ARCHITECT'S PROJECT NO.

ARCHITECT

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Miriam Mulder, Architecture Services Manage CITY OF SANTA MONICA

DEPARTMENT OF PUBLIC WORKS REVIEWED BY : DATE : \_\_\_\_\_\_ 20 \_\_

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REVIEWED BY: DATE:

CITY CLIENT

07.24.12 BULLETIN 2 NO. DATE BY DESCRIPTION

REVISIONS

RAINWATER HARVESTING

07.24.12 DRAWING NO.

SHEET TITLE RAIN WATER HARVESTING SYSTEM **DETAILS** 

SHEET NO.

#### **GENERAL NOTES:**

- WORK SHOWN HEREON SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," LATEST EDITION AND SUPPLEMENTS, THE CALIFORNIA BUILDING CODE (EXCAVATION AND GRADING), AND CITY OF SANTA MONICA LOCAL ORDINANCES AS APPLICABLE.
- 2. ALL GRADING WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS AND RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL ENGINEERING SERVICES BY GEO DESIGN, INC. DATED OCTOBER 8, 2010.
- 3. EXISTING TOPOGRAPHY SHOWN HEREON WAS TAKEN FROM A SURVEY DATED FEBRUARY 8, 2011 BY JMC<sup>2</sup>
- 4. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.
- PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL JOIN CONDITIONS FOR GRADING, DRAINAGE AND UNDERGROUND FACILITIES INCLUDING LOCATION AND ELEVATION OF EXISTING UNDERGROUND FACILITIES AT CROSSINGS WITH PROPOSED UNDERGROUND FACILITIES. IF CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SHALL NOT BEGIN CONSTRUCTION UNTIL THE CHANGED CONDITIONS HAVE BEEN EVALUATED.
- 6. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
- 7. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
- 8. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
- 9. THE EXISTENCE, LOCATION AND CHARACTERISTICS OF UNDERGROUND UTILITY INFORMATION SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM A REVIEW OF AVAILABLE RECORD DATA. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID UTILITY INFORMATION. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE
- 10. IF AT ANY TIME DURING GRADING OPERATIONS, ANY UNFAVORABLE GEOLOGICAL CONDITIONS ARE ENCOUNTERED, GRADING IN THAT AREA WILL STOP UNTIL APPROVED CORRECTIVE MEASURES ARE OBTAINED.
- 11. THE PROPOSED GRADE IS THE FINAL GRADE AND NOT THE ROUGH GRADE. THE CONTRACTOR SHALL SUBTRACT THE THICKNESS OF THE PAVED SECTION AND/OR LANDSCAPE TOPSOIL SECTION TO ARRIVE AT THE ROUGH GRADE
- 12. STRAIGHT GRADE SHALL BE MAINTAINED BETWEEN CONTOUR LINES AND SPOT ELEVATIONS UNLESS OTHERWISE SHOWN ON THE PLANS.
- 13. ALL DEBRIS AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT APPROVED DISPOSAL SITES. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FOR THE TRANSPORTATION OF MATERIAL TO AND FROM
- 14. ALL FILL SOILS OR SOILS DISTURBED OR OVEREXCAVATED DURING CONSTRUCTION SHALL BE COMPACTED PER THE REQUIREMENTS OF THE SOILS REPORT BUT NOT LESS THAN 90% MAXIMUM DENSITY AS DETERMINED BY A.S.T.M. SOIL COMPACTION TEST D-1557.
- 15. THE CONTRACTOR SHALL OBTAIN AN O.S.H.A. PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE CONSTRUCTION OF TRENCHES OR EXCAVATIONS WHICH ARE FIVE FEET OR DEEPER.
- DIMENSIONS TO PIPELINES ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 17. ALL WATER LINES SHALL BE INSTALLED WITH 36" MINIMUM COVER FROM TOP
- OF PIPE TO FINISHED GRADE, UNLESS OTHERWISE NOTED. 18. THRUST BLOCKS SHALL BE INSTALLED AT WATERLINE HORIZONTAL AND VERTICAL BENDS, TEES, CAPPED ENDS AND REDUCERS ACCORDING TO THE
- DETAILS PROVIDED ON THESE PLANS. 19. CONSTRUCTION STAKING FOR IMPROVEMENTS SHOWN ON THESE PLANS SHALL
- 20. THE CONTRACTOR SHALL REPLACE ALL EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION TO MATCH EXISTING, INCLUDING PERMANENT TRENCH RESURFACING.
- 21. CONTRACTOR TO CONTACT UNDERGROUND SERVICE ALERT (800-227-2600) PRIOR TO EXCAVATION.
- 22. ALL DIMENSIONS ARE IN FEET OR DECIMALS THEREOF.

BE PERFORMED BY A LICENSED LAND SURVEYOR.

- 23. ALL CURB DIMENSIONS AND RADII ARE TO PAVEMENT FACE OF CURB.
- 24. CONTRACTOR TO BE AWARE OF ALL OVERHEAD LINES AT ALL TIMES, SO AS NOT TO DISTURB THEM.
- 25. WATER SHALL BE PROVIDED ONSITE AND USED TO CONTROL DUST DURING CONSTRUCTION OPERATIONS.
- 26. CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FROM THE CITY OF SANTA MONICA FOR ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
- 27. STORM DRAINAGE SYSTEMS SHOWN ON THESE PLANS HAVE BEEN DESIGNED FOR THE FINAL SITE CONDITION AT COMPLETION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE OF THE SITE, DURING INTERIM CONDITIONS OF CONSTRUCTION.
- 28. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS, INCLUDING NPDES, FROM THE APPROPRIATE JURISDICTIONAL AGENCIES FOR DISCHARGE OF GROUNDWATER THAT MAY BE NECESSARY TO ACCOMPLISH EXCAVATIONS SHOWN ON THESE PLANS.

#### CITY OF SANTA MONICA PUBLIC WORKS GENERAL NOTES:

- 1. NO WORK SHALL BE DONE WITHIN THE PUBLIC RIGHT OF WAY WITHOUT THE PRIOR APPROVAL AND PERMIT FROM PUBLIC WORKS DEPARTMENT -ADMINISTRATIVE SERVICES, ROOM 113.
- OWNER IS RESPONSIBLE FOR REPAIR OF ALL DAMAGE TO OFFSITE IMPROVEMENTS CAUSED BY CONSTRUCTION. CALL PUBLIC WORKS INSPECTOR FOR INSPECTION OF OFFSITE IMPROVEMENTS AT SUBSTANTIAL COMPLETION OF ONSITE WORK AT (310) 458-8737.
- NEW PROPOSED IMPROVEMENTS SHALL NOT OBSTRUCT DRAINAGE OR DRAIN INTO NEIGHBORING PRIVATE PROPERTIES.
- WATER SHALL BE DRAINED AWAY FROM THE FOUNDATION AND SHALL BE MITIGATED FROM PERMEATING INTO FOUNDATION WALL AND FOOTING OF THE NEW PROPOSED IMPROVEMENTS.
- 5. NO CONSTRUCTION DEBRIS SHALL BE SPILLED OR STORED ONTO PUBLIC RIGHT-OF-WAY.
- 6. NO RUNOFF OF SEDIMENT OR WASTES IS ALLOWED IN WATER LEAVING THE
- ALL SITE UTILITIES SHALL BE CONSTRUCTED UNDERGROUND TO THE NEAREST OFFSITE UTILITY POLE. CONTRACTOR/DEVELOPER HAS MADE ARRANGEMENTS WITH THE UTILITY COMPANIES TO PLACE ALL OVERHEAD UTILITIES
- 8. THE CITY STRONGLY URGES THE APPLICANT TO INSPECT THE EXISTING SEWER CONNECTION. IF THE CONNECTION IS DAMAGED OR OVER 30 YEARS OLD, THE CITY RECOMMENDS THAT THE APPLICANT SHOW ON THE PLANS THE CONSTRUCTION OF A NEW 6-INCH DIAMETER VCP SANITARY SEWER CONNECTION FROM PROPERTY LINE TO SANITARY SEWER MAIN IN ACCORDANCE WITH CITY OF SANTA MONICA STANDARDS. (SEWER PERMIT REQUIRED).
- 9. ALL LABOR, EQUIPMENT AND MATERIAL REQUIRED FOR OFF-SITE IMPROVEMENTS ARE THE RESPONSIBILITY OF THE DEVELOPER.
- 10. ALL OFFSITE WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS/DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION AS AMENDED BY THE CITY OF SANTA MONICA AND CITY OF SANTA MONICA STANDARDS.
- 11. OWNER/CONTRACTOR SHALL COMPLY WITH THE UTILITY DIVISION CROSS CONNECTION GUIDELINES. PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY, CROSS CONNECTION CONTROL INSPECTION MUST BE COMPLETED. CONTACT THE CITY WATER DIVISION AT (310) 458-8531.
- 12. PRIOR TO INSTALLATION OF ANY CROSS-CONNECTION DEVICE, PLEASE CONTACT THE CITY'S CROSS-CONNECTION INSPECTOR AT (310) 458-8535.
- 13. PRIOR TO BACKFILLING OR COVERING UP ANY URBAN RUNOFF MITIGATION RELATED EXCAVATIONS AND/OR STRUCTURES. CONTACT THE CITY URBAN RUNOFF COORDINATOR AT (310) 458-8223 FOR INSPECTION.
- 14. PRIOR TO COMMENCING ANY UNDERGROUND UTILITY WORK, OBTAIN SEPARATE UTILITY EXCAVATION PERMITS AND STREET USE PERMITS FOR UTILITY EXCAVATION. CONTACT PW ADMINISTRATIVE SERVICES, ROOM 113.
- 15. THE SITE MUST COMPLY WITH SMMC CHAPTER 7.10.060 URBAN RUNOFF POLLUTION ORDINANCE FOR CONSTRUCTION ACTIVITIES AND TEMPORARY BMPS.

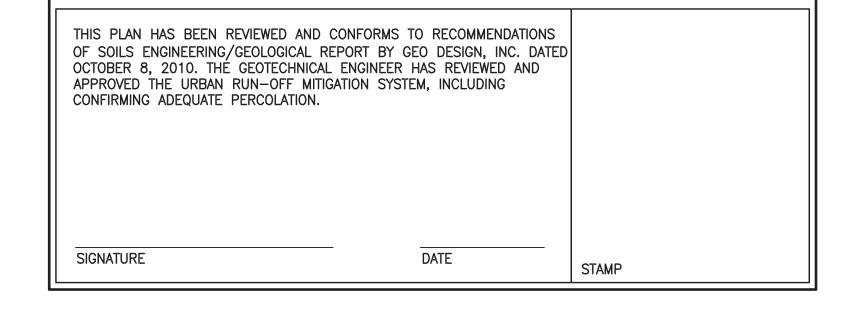
#### TREE PROTECTION ZONE (TPZ) GUIDELINES:

- TREES WITHIN THE PUBLIC RIGHT-OF-WAY MAY NOT BE REMOVED FOR ANY REASON AND ARE TO BE PROTECTED FROM INJURY OR DAMAGE DURING CONSTRUCTION. THIS TREE IS A SIGNIFICANT TREE IN THE CITY OF SANTA MONICA. PRUNING SHALL ONLY BE DONE BY CITY TREE TRIMMERS TO PROVIDE CLEARANCE FOR CONSTRUCTION ACTIVITIES. ALL QUESTIONS REGARDING STREET TREES ARE TO BE DIRECTED TO THE COMMUNITY FORESTER.
- THE TYPICAL TPZ SHOULD ENCOMPASS THE CANOPY PLUS AN ADDITIONAL RADIAL WIDTH OF TEN FEET (10'). HOWEVER, SINCE THESE CONDITIONS ARE UNIQUE, THE APPLICATION SHOULD BE EVALUATED WITH THE FINAL LIMITS OF THE TPZ BEING ESTABLISHED BY THE COMMUNITY FORESTER.
- MULCH THE ENTIRE AREA OF THE TPZ IN AN EFFORT TO IMPROVE THE GROWING ENVIRONMENT FOR THE ROOTS. DURING CONSTRUCTION PHASE MAINTAIN A FOUR TO SIX INCH LAYER OF CHIP MULCH OVER THE SOIL SURFACE TO REDUCE SOIL COMPACTION, IMPROVE AERATION, ENHANCE MOISTURE RETENTION AND REDUCE TEMPERATURE EXTREMES. MULCH GENERALLY CONSISTS OF SHREDDED LEAVES OR BARK, PINE STRAW, PEAT MOSS, WOOD CHIPS OR COMPOSTED GREENWASTE.
- 4. FENCE THE TPZ WITH SUITABLE FENCING MATERIAL TO PREVENT WOUNDS TO THE TREE AND SOIL COMPACTION WITHIN THE ROOT ZONE. POST THE FENCE WITH A SIGN STATING "TREE PROTECTION ZONE - KEEP OUT".
- SHOULD IT BE NECESSARY TO TRENCH WITHIN THE TPZ ALL TRENCHES SHALL BE HAND DUG. NO ROOTS LARGER THAN TWO INCHES (2") SHALL BE CUT UNLESS NO OTHER ALTERNATIVE IS FEASIBLE. ALL SMALLER ROOTS THAT REQUIRE CUTTING SHALL BE CUT WITH PRUNING SAWS. CUTS SHALL BE MADE FLUSH WITH THE SIDE OF THE TRENCH. IF AT ANY TIME TWENTY-FIVE PERCENT (25%) OF THE AREA WITHIN THE TPZ IS BEING SEPARATED FROM THE TREE BY A TRENCH, THEN THE LINE SHALL BE EITHER RELOCATED OF INSTALLED BY BORING.
- 6. REMOVAL OF HARDSCAPE MATERIALS FROM WITHIN THE TPZ SHALL BE DONE MANUALLY.
- 7. THE MINIMUM DISTANCE BETWEEN AN OPEN TRENCH AND ANY THREE SHALL BE BETWEEN SIX INCHES (6") TO ONE FOOT (1') FOR EVERY INCH OF TRUNK DIAMETER MEASURED AT FOUR AND A HALF FEET (4 1/2") ABOVE EXISTING GRADE, DEPENDING ON THE SPECIES OF TREE. MINIMUM CLEARANCE SHALL BE TEN FEET (10') FROM THE TRUNK OF THE TREE.
- 8. IN THE EVENT ROOT PRUNING IS REQUIRED TO ACCOMMODATE GRADE CHANGES OR THE INSTALLATION OF HARDSCAPE FEATURES THE ROOT PRUNING PROCEDURES DESCRIBED IN THIS OUTLINE SHOULD BE FOLLOWED.
- 9. AT NO TIME SHALL ANY EQUIPMENT, MATERIALS, SUPPLIES OR FILL SOIL BE ALLOWED IN THE TPZ.
- 10. PRUNE AND FERTILIZE THE TREES AFTER THE COMPLETION OF ALL EXTERIOR WORK ON THE BUILDING AND AT THE BEGINNING OF THE LANDSCAPE PHASE.
- 11. CALL THE COMMUNITY FORESTERS OFFICE TO SET A SITE VISIT TO DETERMINE THE EXACT LOCATION OF THE TPZ FENCE BEFORE START OF WORK. (310)
- 12. ALL QUESTIONS REGARDING THE CITY TREE ADJACENT TO YOUR PROJECT MAY BE DIRECTED TO THE COMMUNITY FORESTER, WALT WARRINER AT (310)



1-800-227-2600 CALL USA/SC FOR UNDERGROUND LOCATING 48 HOURS BEFORE YOU

IMPORTANT NOTICE SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIGALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIGALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT TOLL FREE 1-800-227-2600 TWO WORKING DAYS BEFORE YOU DIG



#### LEGEND: <u>GENERAL</u> CIVIL LIMITS OF WORK

**ANNOTATION** SURFACE ELEVATION/UTILITY ELEVATION (100.00 XX) EXISTING SURFACE ELEVATION/UTILITY ELEVATION

CONSTRUCTION NOTE FLOW (DIRECTION AND GRADE) 2.0% SLOPE (DIRECTION AND RUN:RISE) HORIZONTAL CONTROL POINT LABEL

CURVE DATA LABEL FF=100.00 PAD/FINISHED FLOOR ELEVATION

CURB/BACK OF CURB/GUTTER RETAINING WALL/SITE WALL

PROPERTY LINE/RIGHT OF WAY CENTER LINE FENCE TO BE DEMOLISHED

**EROSION CONTROL** 

SANDBAGS EXISTING DRAINAGE DIRECTION OF FLOW

GRADE BREAK LINE R-----RIDGE LINE

<u>UTILITY</u> 

UTILITY CLEANOUT

TRENCH DRAIN

STORM DRAIN INLET AREA DRAIN/PLANTER DRAIN

ESTIMATED EARTHWORK QUANTITIES

THE ESTIMATED QUANTITIES PROVIDED ABOVE ARE TO BE USED FOR JURISDICTIONAL PLAN

2. ESTIMATED EARTHWORK ABOVE IS BASED ON DESIGN FINISH GRADES TO EXISTING GRADES

FOOTINGS, CLEARING AND GRUBBING, OVER EXCAVATION AND RECOMPACTION, AND

FACTORS DUE TO COMPACTION OR OVER EXCAVATION QUANTITIES.

AND/OR CONTOURS AS PROVIDED ON THE BASE SURVEY. THE ESTIMATED EARTHWORK DOES

NOT ACCOUNT FOR THE THICKNESS OF PAVEMENTS, FOUNDATIONS AND SLABS ON GRADE,

THE ESTIMATED EARTHWORK QUANTITIES DO NOT INCLUDE SHRINKAGE AND/OR EXPANSION

4. THE CONTRACTOR SHALL CALCULATE HIS OWN EARTHWORK QUANTITIES NECESSARY FOR HIS BID

ESTIMATED EARTHWORK QUANTITIES ABOVE ASSUME THAT ALL ONSITE MATERIALS ARE SUITABLE FOR BACKFILLING. HOWEVER, ACTUAL EXISTING ONSITE MATERIALS AND IMPORTED MATERIALS

6. THE ESTIMATED QUANTITIES PROVIDED ABOVE INCLUDE EXCAVATION FOR THE PROPOSED POOL

MUST FIRST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION, REMOVAL,

CUT:

FILL:

NET CUT:

CHECKING AND PERMITTING PURPOSES ONLY.

CONSTRUCTION MEANS AND METHODS.

AND WORK.

OR REPLACEMENT.

540 CUBIC YARDS

395 CUBIC YARDS

145 CUBIC YARDS

# ---- PERFORATED PIPE CAP OR PLUG

#### **ABBREVIATIONS:**

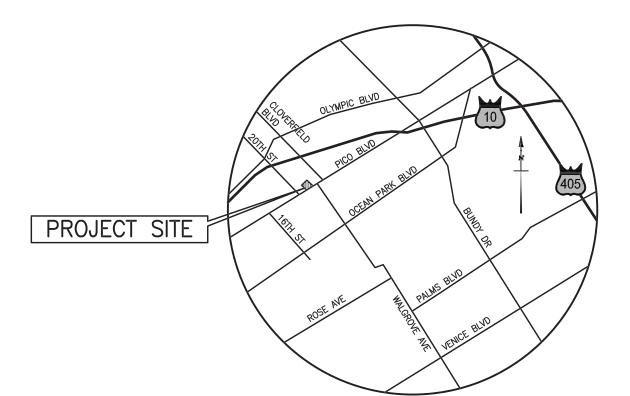
AC	ASPHALTIC CONCRETE	(N)	NORTH
BW	BACK OF WALK	NTS	NOT TO SCALE
BLDG	BUILDING	PA	PLANTER AREA
ВМ	BENCH MARK	POC	POINT OF CONNECTION
BOS	BOTTOM OF STAIRS	PIV	POST INDICATOR VALVE
ВМР	BEST MANAGEMENT PRACTICES	PCC	PORTLAND CEMENT CONCRETE
СВ	CATCH BASIN	PRV	PRESSURE REDUCING VALVE
CI	CAST IRON	PVC	POLYVINYL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

CO.10 TITLE SHEET

C1.20

C1.40 UTILITY PLAN

C5.00 CIVIL DETAILS C5.01 CIVIL DETAILS



VICINITY MAP NOT TO SCALE THOMAS GUIDE LOS ANGELES EDITION

PAGE: 671 GRID: H1

SHEET INDEX: CIVIL DRAWINGS C1.00 EROSION CONTROL PLAN C1.10 DEMOLITION PLAN GRADING AND DRAINAGE PLAN GRADING AND DRAINAGE PLAN HORIZONTAL CONTROL AND PAVING PLAN

Architecture Services Manager CITY OF SANTA MONICA DEPARTMENT OF PUBLIC WORKS REVIEWED BY : DATE : \_\_\_\_\_ REVIEWED BY: DATE:

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Architecture Services

neither be used on any other work nor be disclosed to any other person for any use

CITY CLIENT

07.24.12 BULLETIN 2 NO. DATE BY DESCRIPTION REVISIONS

RAINWATER HARVESTING

07.24.12

DRAWING NO. 6693 SHEET TITLE Title Sheet

BMP NOTES:

THE FOLLOWING BMPS AS OUTLINED IN, BUT NOT LIMITED TO, THE BEST MANAGEMENT PRACTICE HANDBOOK, CALIFORNIA STORMWATER QUALITY TASK FORCE, SACRAMENTO, CALIFORNIA, NOVEMBER 2009, MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY CITY INSPECTORS):

EROSION CONTROL

EC1-SCHEDULING EC2-PRESERVATION OF EXISTING VEGETATION EC3-HYDRAULIC MULCH EC4-HYDROSEEDING

EC5-SOIL BINDERS -EC6-STRAW MULCH EC7-GEOTEXTILES AND MATS -EC8-WOOD MULCHING EC9-EARTH DIKES AND DRAINAGE SWALES EC10-VELOCITY DISSIPATION DEVICES EC11-SLOPE DRAINS EC12-STREAMBANK STABILIZATION EC13-RESERVED -EC14-COMPOST BLANKET

-EC15-SOIL PREPARATION/ROUGHENING -EC16-NON-VEGETATIVE STABILIZATION

#### TEMPORARY SEDIMENT CONTROL

SE1-SILT FENCE

SE2-SEDIMENT BASIN SE3-SEDIMENT TRAP SE4-CHECK DAM -SE5-FIBER ROLLS SE6-GRAVEL BAG BERM SE8-SANDBAG BARRIER SE9-STRAW BALE BARRIER

SE7-STREET SWEEPING AND VACUUMING SE10-STORM DRAIN INLET PROTECTION SE11-ACTIVE TREATMENT SYSTEMS SE12-TEMPORARY SILT DIKE SE13-COMPOST SOCKS AND BERMS SE14-BIOFILTER BAGS

#### **EQUIPMENT TRACKING CONTROL**

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

#### WIND EROSION CONTROL

WE1-WIND EROSION CONTROL

NON-STORMWATER MANAGEMENT

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

#### WASTE MANAGEMENT & MATERIALS POLLUTION CONTROL

NS16-TEMPORARY BATCH PLANTS

WM10-LIQUID WASTE MANAGEMENT

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

#### **EROSION CONTROL NOTES:**

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

\_\_\_ (TO BE FILLED IN BY CONTRACTOR) PHONE NUMBER:

#### **EROSION CONTROL NOTES:**

- 1. DUST SHALL BE CONTROLLED BY WATERING AND/OR APPLYING A DUST PALLIATIVE. THE DUST PALLIATIVE SHALL BE APPLIED IN THE AMOUNT AT THE LOCATIONS AS DIRECTED BY THE ENGINEER.
- WATER FOR DUST CONTROL SHALL BE APPLIED BY MEANS OF PRESSURE TYPE DISTRIBUTORS OR PIPE LINES EQUIPPED WITH A SPAY SYSTEM OR HOSES WITH NOZZLES THAT WILL INSURE A UNIFORM APPLICATION OF WATER.
- 3. UNLESS WATER IS APPLIED BY MEANS OF PIPE LINES, AT LEAST ONE MOBILE UNIT WITH A MINIMUM CAPACITY OF 100 GALLONS SHALL BE AVAILABLE FOR APPLYING
- 4. ALL SOIL MATERIALS OR DEBRIS TRUCKED FROM THE SITE SHALL BE COVERED AND SPRINKLED PRIOR TO ENTERING PUBLIC STREETS.
- 5. PROVIDE FOR WET SUPPRESSION OR CHEMICAL STABILIZING OF EXPOSED SOILS. 6. PROVIDE FOR RAPID CLEAN-UP OF SEDIMENTS DEPOSITED ON THE PAVED ROADS.
- 7. LIMIT THE AMOUNT OF AREAS DISTURBED BY CLEARING & EARTH MOVING OPERATIONS
- **EROSION CONTROL CONSTRUCTION NOTES:**

BY SCHEDULING THESE ACTIVITIES IN PHASES.

- (E1) PROVIDE INLET PROTECTION PER DETAIL 1, ON SHEET C5.00.
- (E2) PLACE SANDBAGS TRIPLE ROW PER DETAIL 2, ON SHEET C5.00.
- (E3) STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 3, ON SHEET C5.00.
- (E4) 6' CHAIN LINK FENCE AROUND PARKWAY, TREE PROTECTION ZONE, PER CITY OF SANTA MONICA STANDARDS.

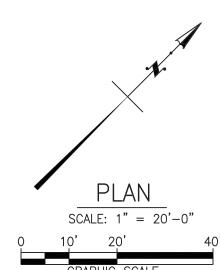
#### LEGEND:

LIMIT LINE OF EROSION CONTROL

FLOW ARROWS

6' CHAIN LINK FENCE AROUND CITY STREET TREES PROTECTION ZONE DURING ALL STAGES OF CONSTRUCTION

TREE PROTECTION ZONE, SEE SHEET CO.10 FOR ADDITIONAL DETAILS



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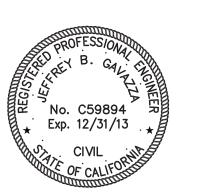
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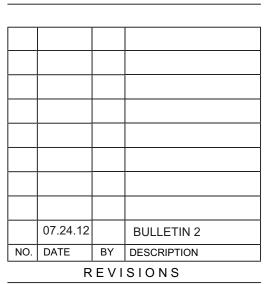
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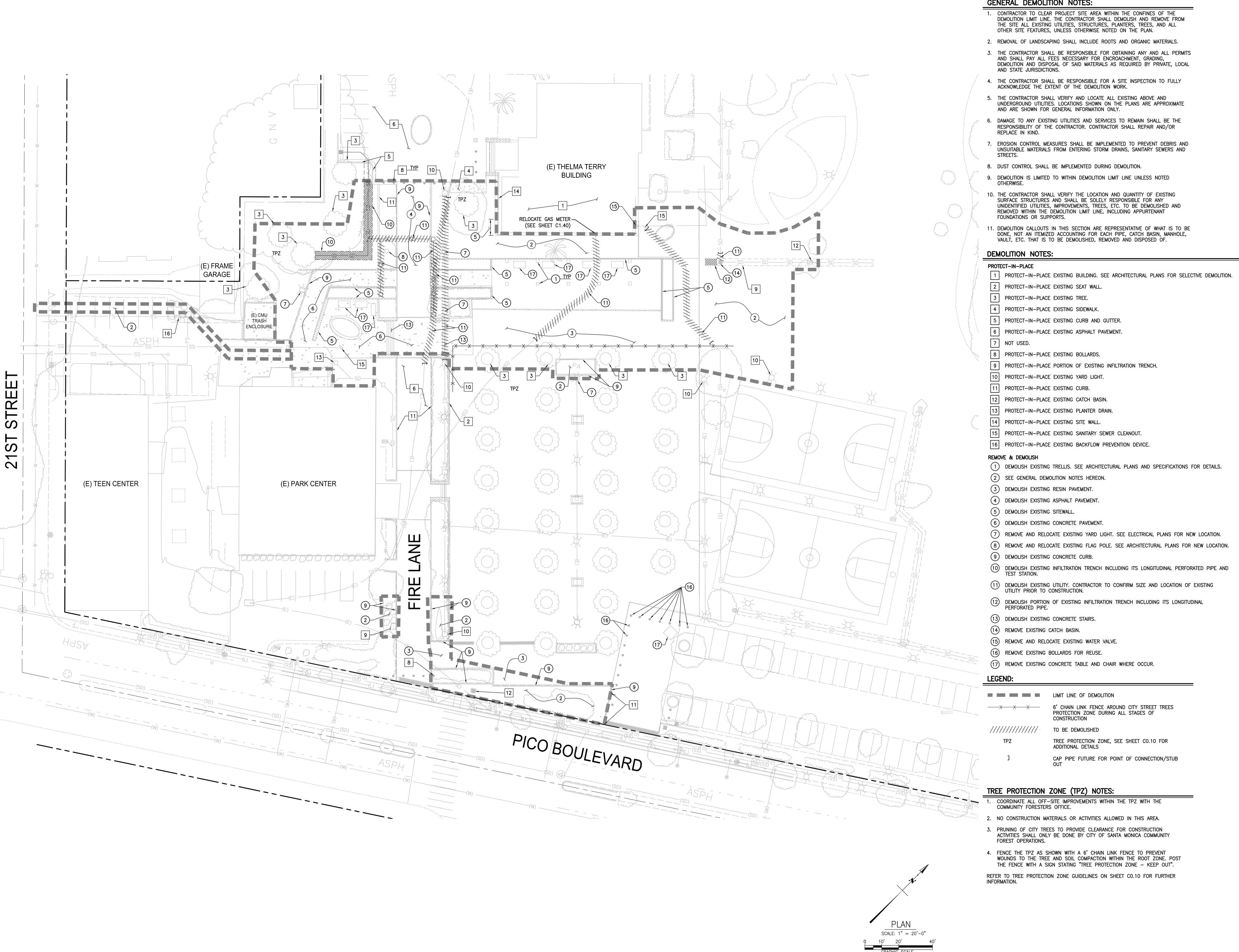
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RAINWATER HARVESTING

07.24.12 DRAWING NO. 6693

SHEET TITLE **Erosion Control** 



#### **GENERAL DEMOLITION NOTES:**

 $\Box$  PROJECT

**IBRA** 

C

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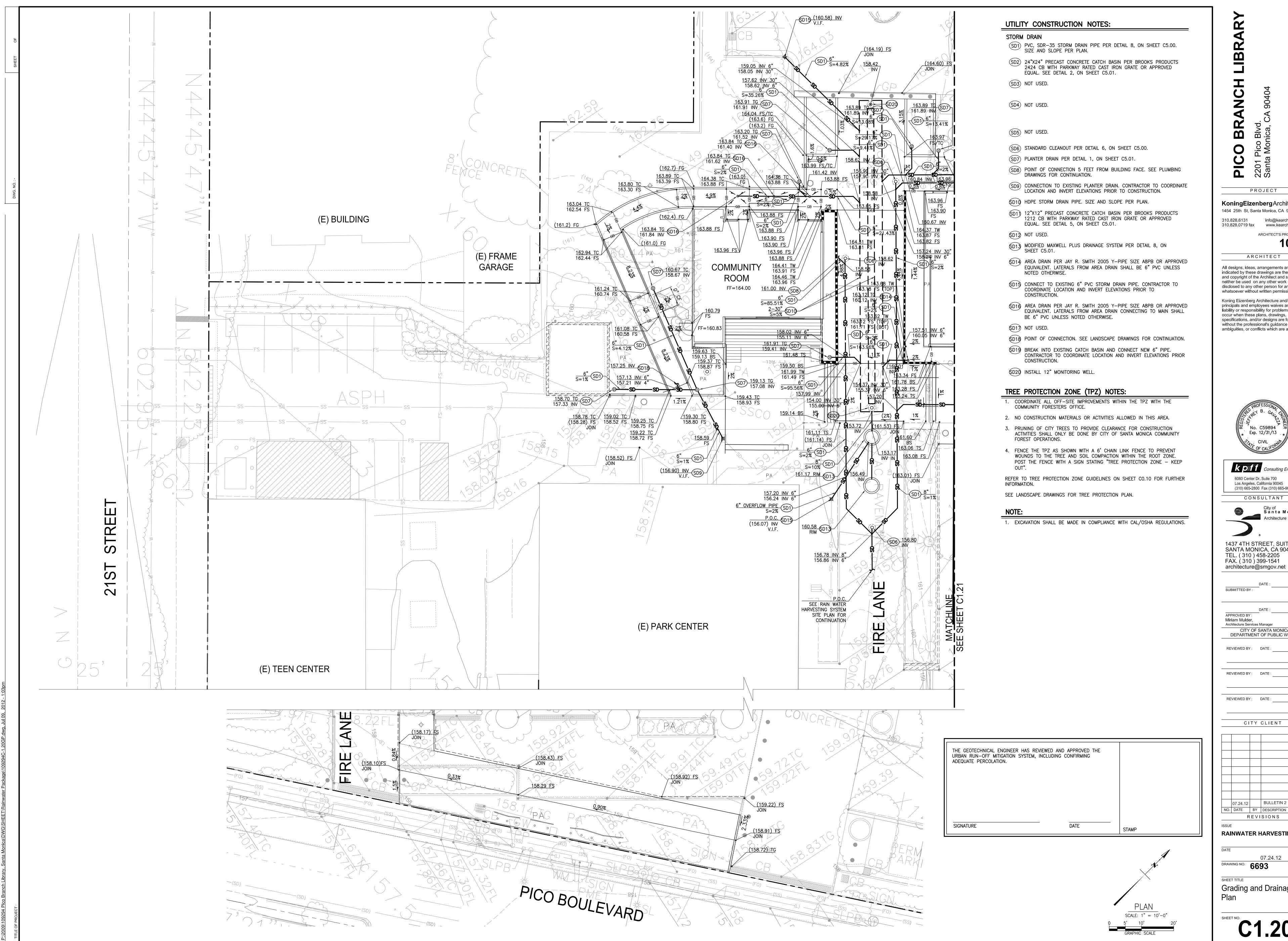
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07.24.12 BULL BULLETIN 2 NO. DATE BY DESCRIPTION

REVISIONS **RAINWATER HARVESTING** 

07.24.12

**Demolition Plan** 



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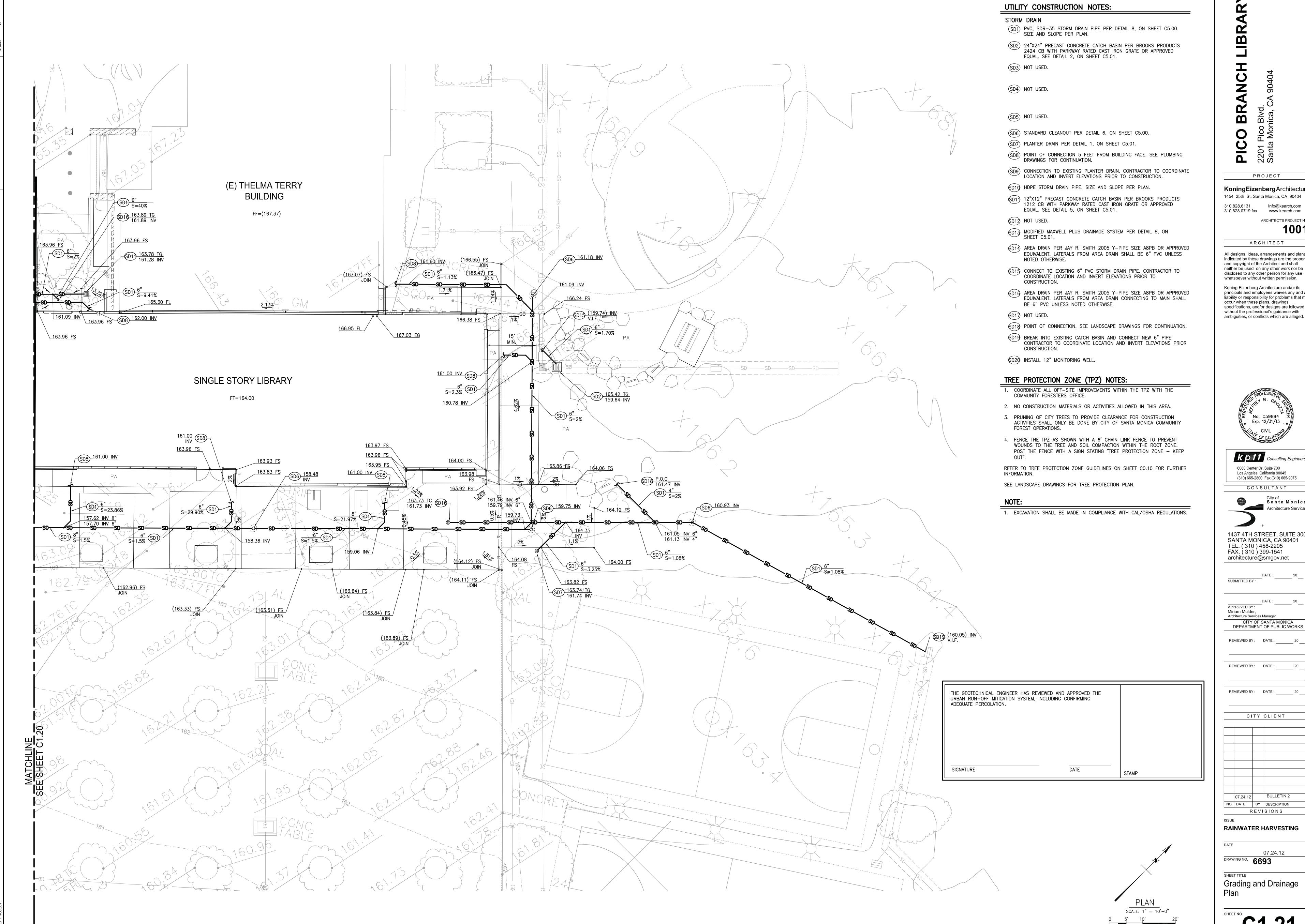
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RAINWATER HARVESTING

07.24.12

Grading and Drainage

C1.20



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RAINWATER HARVESTING

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Grading and Drainage

PICO BRANCH

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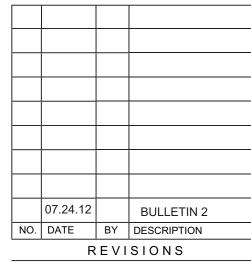
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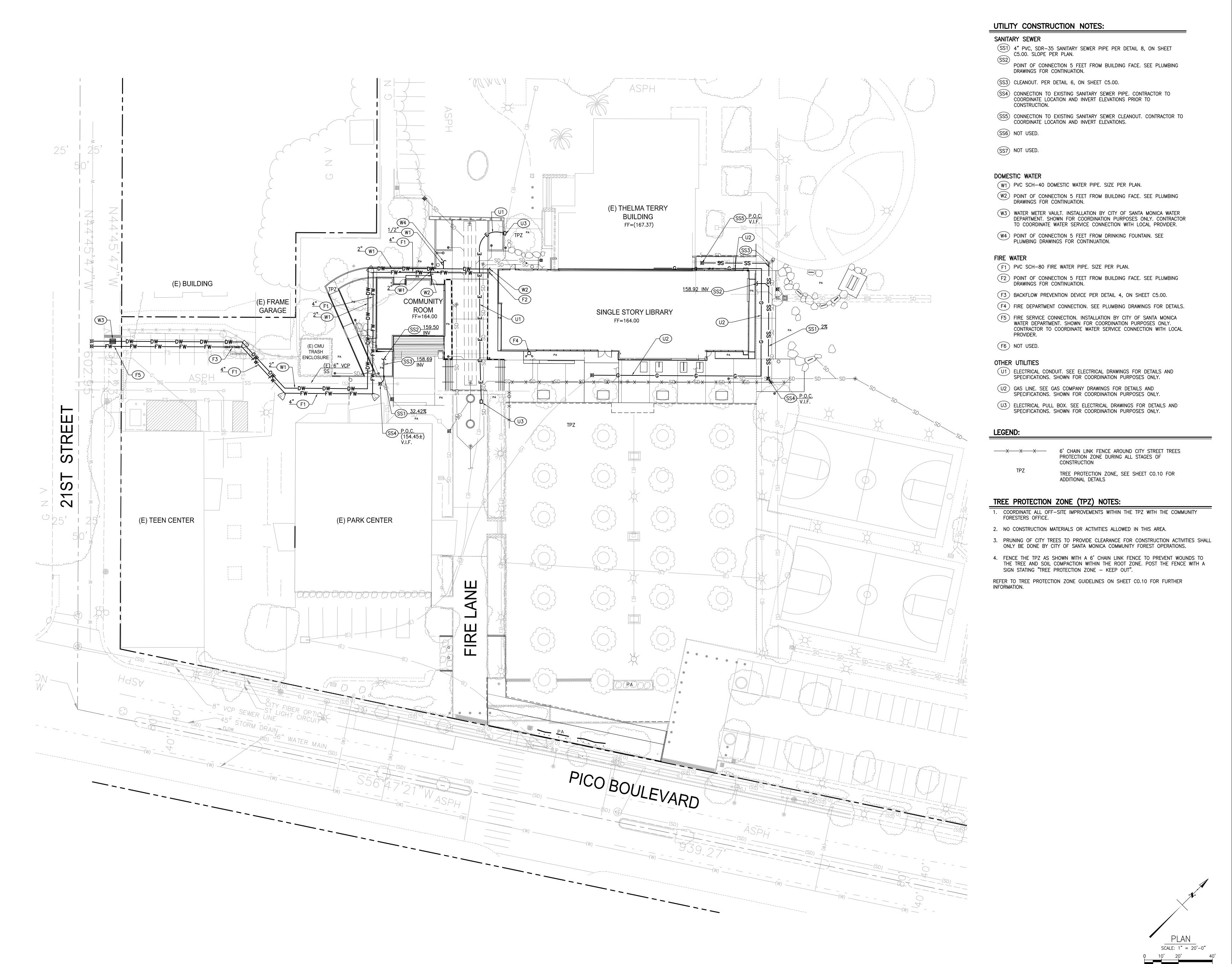


RAINWATER HARVESTING

07.24.12

Paving and
Horizontal
Control Plan

C1.30



**IBRA** 

C Z

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RAINWATER HARVESTING

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**Utility Plan** 

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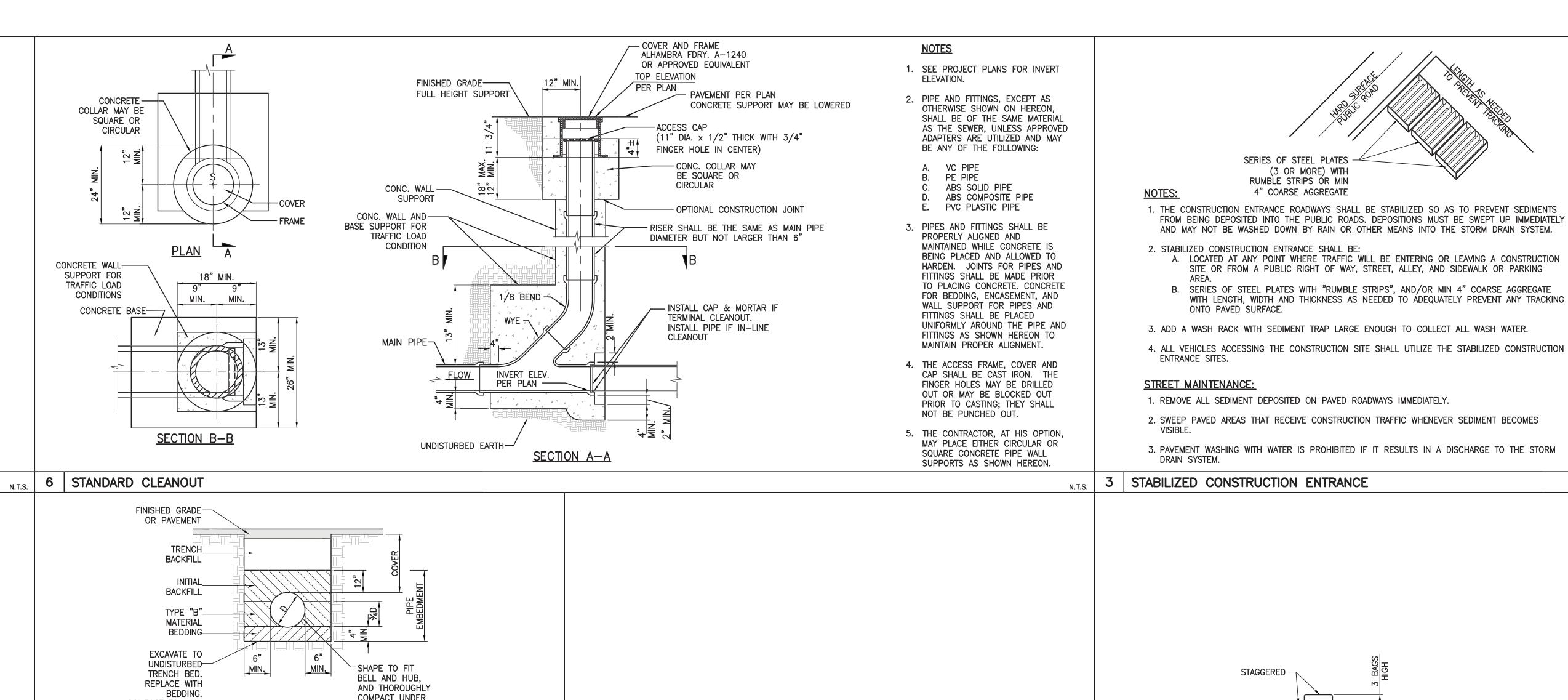
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**RAINWATER HARVESTING** 

07.24.12 DRAWING NO. 6693



RECOMPACTED COURSE SUBGRADE CONCRETE A.C. PAVEMENT TYPE (INCHES) (INCHES) (INCHES) VEHICULAR PARKING 18" HEAVY TRUCK TRAFFIC

ASPHALT CONCRETE PAVEMENT

- 95% COMPACTED CRUSHED AGGREGATE OR MISCELLANEOUS BASE COURSE

- 95% RECOMPACTED SUBGRADE

- #3 BARS @ 18" O.C. BOTH WAYS

CONCRETE PAVEMENT

OR MISCELLANEOUS BASE COURSE

- 95% RECOMPACTED SUBGRADE

1. PAVEMENT SECTIONS ARE BASED ON RECOMMENDATIONS

2. REFER TO LANDSCAPE PLANS FOR CONCRETE COLOR,

FROM THE PROJECT GEOTECHNICAL REPORT.

3. SEE PLAN FOR LOCATION OF CONTROL JOINTS.

PATTERN, TEXTURE, AND FINISH.

10 REINFORCED CONCRETE PAVEMENT

9 ASPHALT PAVEMENT SECTION

- 95% COMPACTED CRUSHED AGGREGATE

1. PAVEMENT SECTIONS ARE BASED ON RECOMMENDATIONS FROM THE PROJECT GEOTECHNICAL REPORT.

COMPACT UNDER COMPACT TO 90%. PIPE. SEE NOTE I.

FOR GRAVITY FLOW SAN, SEWERS AND DRAINAGE P.V.C. CONFORMING TO A.S.T.M. D-3034 MAXIMUM SDR 35. GASKETED JOINTS FOR 4" TO 15" DIA PIPE AND ASTM F-679 FOR 18" DIA AND LARGER.

BEDDING CLEAN COARSE SAND. NATIVE MATERIAL - MAXIMUM SIZE NOT TO EXCEED 1 1/2".

NATIVE MATERIAL - 90% COMPACTION MIN. (95% COMPACTION IN UPPER 3.0' OF PAVED AREAS). UP TO CLASS IV SOILS, TYPE ML, CL. FINE GRAINED, LL<50, MEDIUM TO NO PLASTICITY. NOTE, IF CLASS IV SOIL, TYPE MH OR ALL CLASS V SOILS THEN USE CLEAN COURSE SAND.

SHALL CONFORM TO THE REQUIREMENTS OF SAND FOR PORTLAND CEMENT CONCRETE AS SPECIFIED IN COURSE SECTION 200-1.5.5 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION. SAND

SHALL BE ONE OF THE FOLLOWING: 1. NATIVE FREE DRAINING MATERIAL OR CRUSHED ROCK CONFORMING TO SUBSECTION 200-1.2 OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" WITH 1/2" MAXIMUM ROCK GRADATION. 2. CLEAN COARSE SAND.

BACKFILL

. EXCAVATE FOR BELLS OR HUBS SO FULL LOAD IS CARRIED BY PIPE BARRELS.

2. TYPE "B" MATERIAL SHALL BE PLACED IN A MANNER SUCH AS SLICING SHOVEL—SPADING, OR SHOVEL RODDING TO INSURE COMPLETE FILLING OF THE "HAUNCH AREAS" BELOW THE PIPE. (JETTING OF TYPE "B" MATERIAL IS NOT AUTHORIZED UNLESS PREVIOUSLY APPROVED).

TRENCH BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 306-1.3 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION. WATER DENSIFIED BACKFILL SHALL NOT BE USED.

N.T.S. 8 | FLEXIBLE PIPE BEDDING DETAIL (FOR SDR-35 PIPE ONLY)

N.T.S. 5 NOT USED

**ELEVATION** 

LENGTH VARIES DEPENDING ON SIZE AND TYPE OF ASSEMBLY <u>PLAN</u>

(1) 90° D.I. ELL x PUSH-ON (7) CONCRETE FOOTING

(8) TEMPORARY D.I. BLIND FLANGE, AS REQUIRED (9) BY-PASS METER ASSEMBLY 10) THRUST BLOCK

SIZED PER DETAIL 7 ON PER MANUFACTURER'S RECOMMENDATION 3. USE COMPACT TYPE IF REQUIRED.

1. INSTALLATION SHALL

COMPLY WITH THE LATEST

APPLICABLE LOCAL AGENCY

PLUMBING CODES AND

REQUIREMENTS. 2. THRUST BLOCKS SHALL BE

4 TYPICAL DOUBLE DETECTOR CHECK VALVE ASSEMBLY

N.T.S. | 1 | STORM DRAIN INLET PROTECTION

AND DELETERIOUS MATERIAL.

TIGHTLY TOGETHER. 7. LEAVE GAP OF ONE BAG ON THE TOP ROW TO SERVE AS A SPILLWAY.

CONTROL PANEL, WHEN APPLICABLE

7 NOT USED

**MATERIAL** 

(2) 90° D.I. ELL FLG x FLG (3) D.I. (CL) SPOOL FLG x FLG (4) 90° D.I. (CL) ELL FLG x FLG

> (5) U.S.C.—APPROVED SHUT—OFF (11) GALVANIZED ADJUSTABLE PIPE SUPPORT VALVES. SEE SPECIFICATIONS (6) APPROVED DOUBLE CHECK (12) TAMPER SWITCH WIRED TO FIRE ALARM VALVES (SIZE PER PLAN)

2 SANDBAG BARRIER

NOTES:

1. SANDBAG SHALL BE FILLED WITH NON-COHESIVE, CLASS 1 OR CLASS 2, PERMEABLE MATERIAL FREE FROM CLAY AND

MIN

- 2 BAGS HIGH & STAGGERED ROWS

OF SANDBAGS (12" MINIMUM WIDTH & 12" MINIMUM HEIGHT)

DROP INLET W/ GRATE

1. PLACE WIRE MESH OVER AND 1' (MINIMUM) BEYOND THE INLET STRUCTURE. (MESH OPENINGS NOT TO EXCEED

3. PLACE 3/4" TO 3" GRAVEL OVER THE FILTER FABRIC/WIRE MESH (12" MINIMUM DEPTH OVER THE ENTIRE INLET

4. SAND BAG MATERIAL: POLYPROPYLENE, POLYETHYLENE OR POLYMIDE WOVEN FABRIC, MINIMUM UNIT WEIGHT 4

5. SAND BAG SHALL BE FILLED WITH NON-COHESIVE, CLASS 1 OR CLASS 2 PERMEABLE MATERIAL FREE FROM CLAY

OUNCES PER SQUARE YARD, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY

6. PLACE SEVERAL LAYERS OF SAND BAGS (12" MINIMUM HIGH) OVERLAPPING THE BAGS AND PACKING THEM

SIZED PER PLÂN

- GRAVEL OVER ENTIRE FILTER FABRIC/WIREMESH - 3/4" TO 3" GRAVEL (12" MIN. DEPTH)

─ FILTERED WATER

WIRE MESH (1/2" OPENINGS) WITH FILTER FABRIC ON TOP

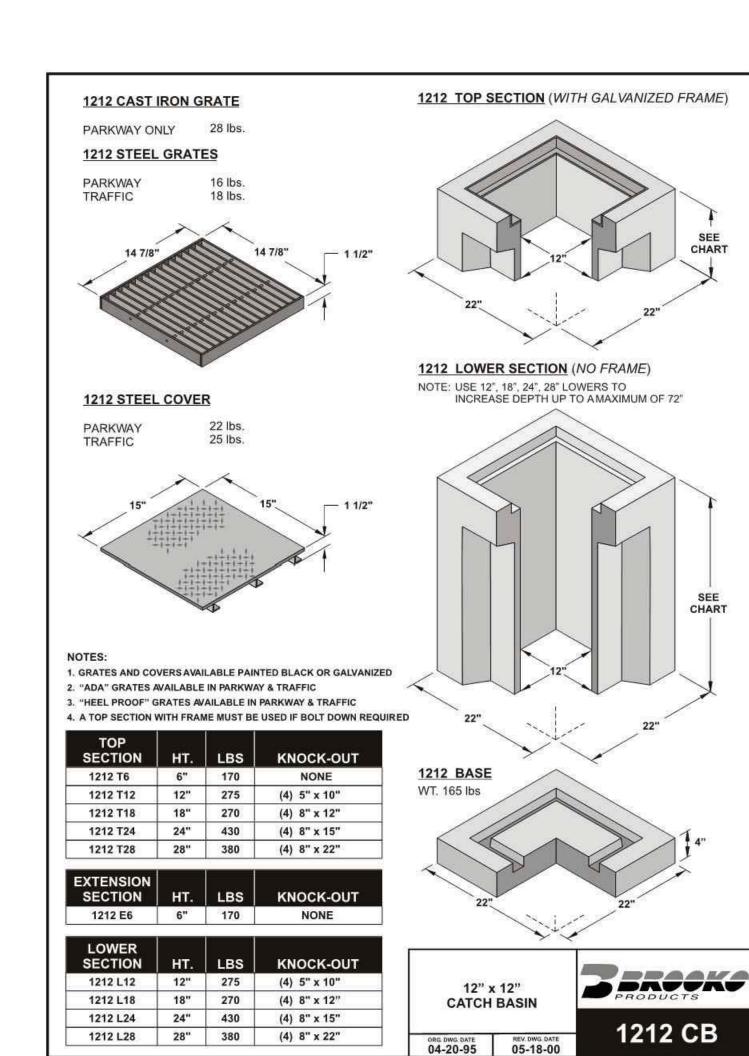
DELETERIOUS MATERIAL.

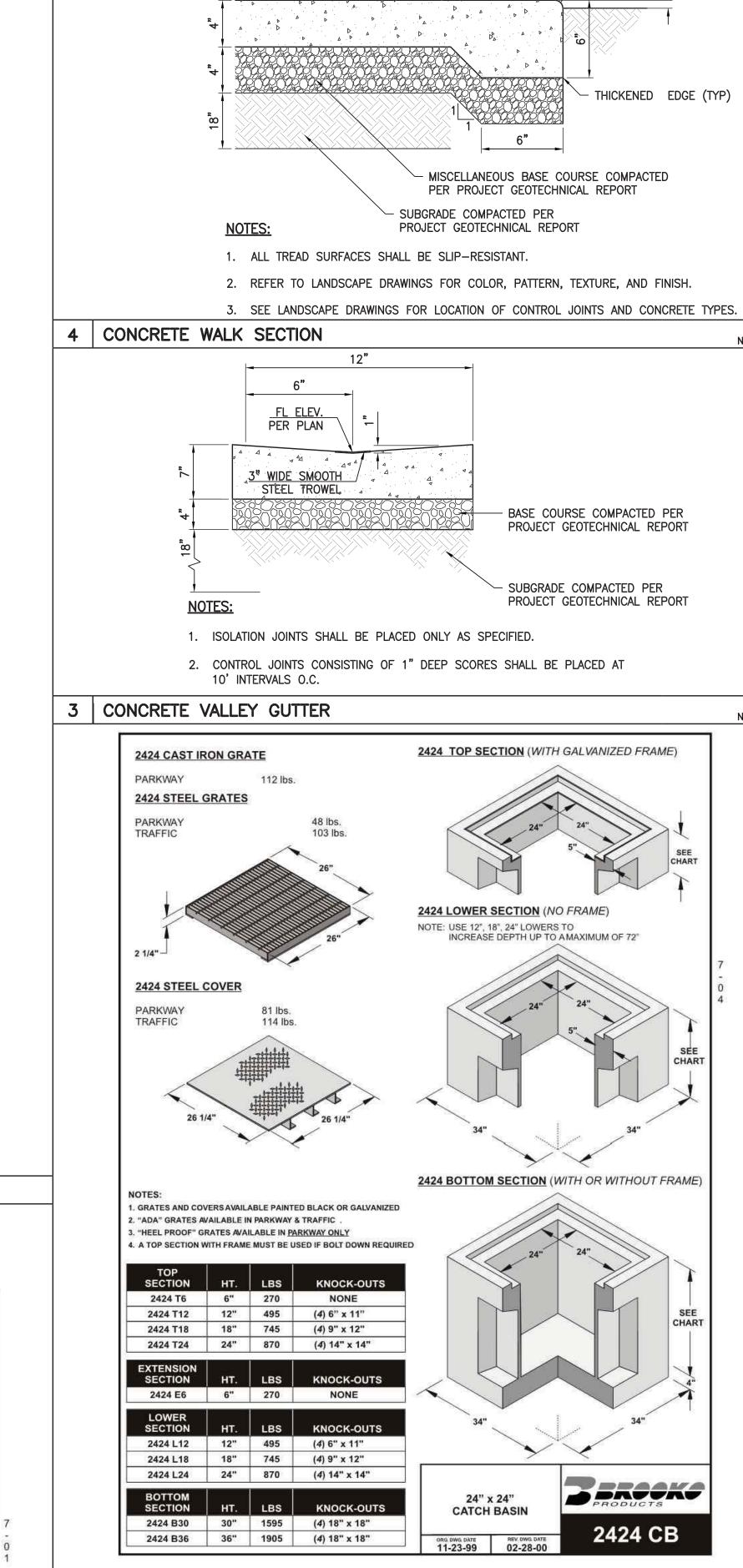
1/2" x 1/2" WIRE)

OPENING).

2. PLACE FILTER FABRIC OVER WIRE MESH.

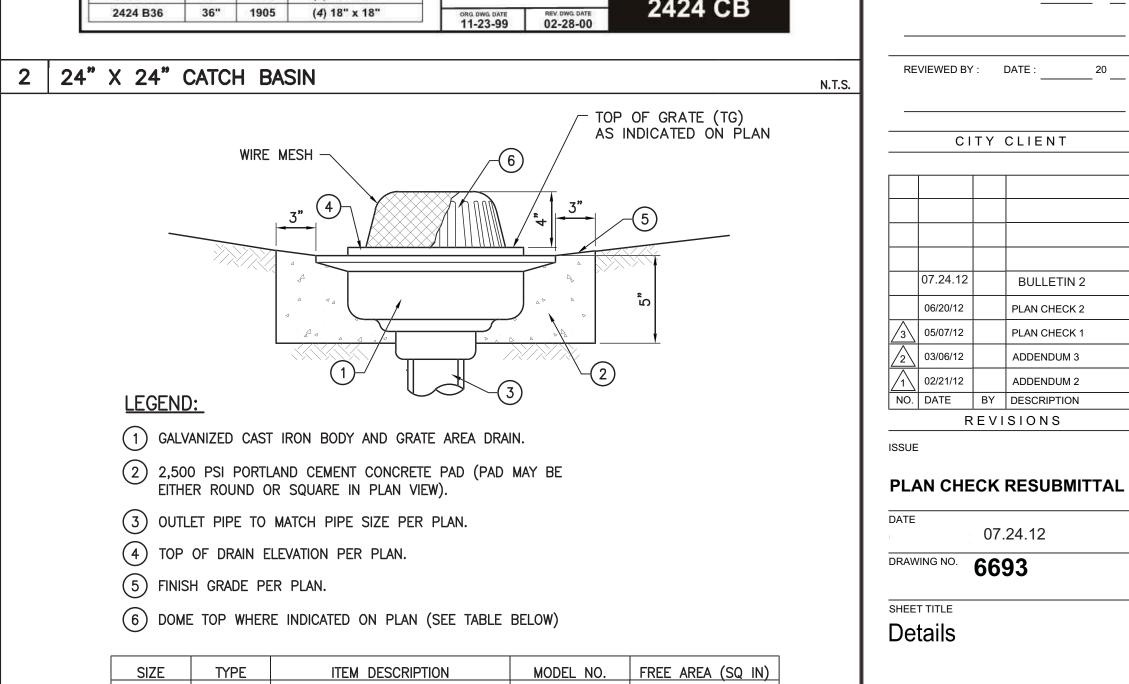
COMPACTED -BACKFILL





- FLUSH WITH ADJACENT PAVING WHERE OCCURS

CONCRETE PAVEMENT SEE LANDSCAPE PLANS



ZURN PLUMBING PRODUCTS

JAY R. SMITH MFG. CO.

**△** PROJECT **KoningEizenberg**Architecture 1454 25th St, Santa Monica, CA 90404 info@kearch.com 310.828.0719 fax www.kearch.com ARCHITECT'S PROJECT NO. ARCHITECT All designs, ideas, arrangements and plans indicated by these drawings are the property and copyright of the Architect and shall neither be used on any other work nor be disclosed to any other person for any use whatsoever without written permission. Koning Eizenberg Architecture and/or its principals and employees waives any and all liability or responsibility for problems that may occur when these plans, drawings, specifications, and/or designs are followed without the professional's guidance with ambiguities, or conflicts which are alleged. 6080 Center Dr. Suite 700 Los Angeles, California 90045 (310) 665-2800 Fax (310) 665-9075 CONSULTANT Sánta Monica 1437 4TH STREET, SUITE 300 SANTA MONICA, CA 90401 TEL. (310) 458-2205 FAX. (310) 399-1541 architecture@smgov.net Miriam Mulder. Architecture Services Manager CITY OF SANTA MONICA DEPARTMENT OF PUBLIC WORKS REVIEWED BY: DATE: REVIEWED BY: DATE: REVIEWED BY: DATE: CITY CLIENT **BULLETIN 2** PLAN CHECK 2 /3\ | 05/07/12 | PLAN CHECK 1 1 02/21/12 ADDENDUM 2 NO. DATE BY DESCRIPTION REVISIONS

**IBRA** 

Z

1

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1" FOR LANDSCAPE

7 THRUST AND ANCHOR BLOCK DETAILS

**GENERAL NOTES:** 

3"X1/4".

VALVE ANCHORS

1. ALL THRUST/ANCHOR BLOCKS SHALL BEAR AGAINST UNDISTURBED SOIL.

2. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.

3. ALL ANCHOR RODS AND ANCHOR BOLTS SHALL BE MINIMUM 5/8" DIA. & ANCHOR STRAPS SHALL BE

VALUES AND THE POSITION AND SIZE OF BEARING AREAS, BASED UPON N.F.P.A. 24.

5. THE RATIO OF WIDTH TO HEIGHT OF THRUST BLOCKS SHALL NOT EXCEED 1.5 TO 1.

4. THRUST BLOCK DESIGN IS BASED ON A WATER PRESSURE OF 150 P.S.I., AND A MINIMUM ALLOWABLE SOIL

BEARING VALUE OF 2000 P.S.F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING SOIL BEARING

**ELEVATION** 

N.T.S. 5 12" X 12" CATCH BASIN

- COUPLING

- NORMAL

BOTTOM

➤ 5/8" THREADED

ANCHOR RODS

10" PIPE - 5'-0"

6" PIPE - 3'-0"

SQUARE CONC FOOTING

VERTICAL BEND

N.T.S. | 1 | PLANTER DRAIN DETAIL

12" DIA.

12" DIA.

DOME

DOME

53

Z121-VP-G

2675-G

Details

07.24.12

	PLUME	SING LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
Ф——	BALL VALVE		DIRECTION OF SLOPE
	BUTTERFLY VALVE	<del>-</del>	DIRECTION OF FLOW
	GATE VALVE	o	PIPE UP PIPE DOWN
<u>*</u> ———	ANGLE GATE VALVE		PIPE DROP
			TOP CONNECTION — BRANCH LINE
—————————————————————————————————————	OS & Y GATE VALVE	<del></del>	BOTTOM CONNECTION — BRANCH LINE
<b>&amp;</b>	OS & Y GATE VALVE WITH TAMPER SWITCH	——————————————————————————————————————	FIRE MAIN AUTOMATIC WET SPRINKLER
<u>&amp;</u>	SOLENOIDE VALVE	<del></del>	COLD WATER
<u></u> ——  →	LUBRICATED PLUG VALVE		HOT WATER (120°F) HOT WATER CIRC (120°F)
	CHECK VALVE	140 <del></del>	HOT WATER (140°F)
<b>*</b>	PRESSURE REDUCING VALVE	140 SAN	HOT WATER CIRC (140°F) SANITARY SEWER
<b>*</b>	RELIEF VALVE	SD	STORM DRAIN
<b>↑</b>	VACUUM RELIEF VALVE		PIPING BELOW GRADE
' <b>≱</b> ──	PRESSURE & TEMPERATURE RELIEF VALVE		WASTE VENT
\ \ \ <del>\ \</del>	AUTOMATIC AIR VENT		ROOF DRAIN PIPING
	CIRCUIT SETTER	OD	OVERFLOW DRAIN PIPING
	BACKWATER VALVE	——————————————————————————————————————	PUMPED DISCHARGE INDIRECT DRAIN LINE
[DDCV]	DOUBLE DETECTOR CHECK VALVE ASSEMBLY	IW	INDUSTRIAL WASTE
DDCV——	DOUBLE CHECK VALVE ASSEMBLY		GREASY WASTE NATURAL GAS (7"W.C.)
DCV DCV	REDUCED PRESSURE BACKFLOW PREVENTER	—— м ——	MEDIUM PRESSURE GAS (2#)
RPBFP Ps	PRESSURE SWITCH	——————————————————————————————————————	PROCESS COMPRESSED AIR
P <sub>FA</sub>	FLOW ALARM	——— (E) ———	EXISTING PIPE PIPING TO BE REMOVED
TFS	FLOW SWITCH		
——————————————————————————————————————	UNION		
	STRAINER STRAINER WITH BLOW OFF		
——————————————————————————————————————	PIPE ANCHOR		
<del></del>	PIPE ALIGNMENT GUIDE		
——————————————————————————————————————	EXPANSION JOINT  FLEXIBLE CONNECTOR		
	CAP OR PLUG		
	BLIND FLANGE		
—————————————————————————————————————	CONCENTRIC REDUCER  ECCENTRIC REDUCER		
$\Diamond$	AQUASTAT		
<sup>'</sup> ₽ wha	WATER HAMMER		
Q PG	PRESSURE GAUGE WITH COCK		
T 国 T	THERMOMETER		
——————————————————————————————————————			
FCO <b>ф</b>	CLEANOUT PLUG FLOOR CLEANOUT		
YCO	YARD CLEANOUT		
Ļπ	TEST TEE		
	WALL HYDRANT		
— <b>щ</b> ₩H	HOSE BIBB		
□ YH	YARD HYDRANT		
	THRUST BLOCK		
FDC }	FIRE DEPARTMENT CONNECTION		
⊗—	FIRE RISER		
FDV +o	FIRE DEPARTMENT VALVE		
+0	FIRE DEPARTMENT VALVE CABINET		
Q <sup>*</sup>	SIEMESE FIRE DEPT. CONN.		
$\overline{\chi}$	FIRE ALARM BELL		
Ø FD	FLOOR DRAIN		
FS FS	FLOOR SINK		
©	HUB DRAIN		
€	FIRE RISER		

#### **ABBREVIATIONS**

	ABBREVIATIONS
ф	SQUARE FEET
•	POINT OF CONNECTION
&	AND
0. (0)	AT
#	POUNDS
#	NUMBER
"/	PER
ABV	ABOVE
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG AP	ABOVE FINISHED GRADE ACCESS PANEL
ARCH	ARCHITECT
AS	AUTOMATIC FIRE SPRINKLER SYSTEM
BEL	BELOW
BFV	BUTTERFLY VALVE
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
CD CFH	CONDENSATE DRAIN CUBIC FEET PER HOUR
CI	CAST IRON
CLG	CEILING
CO	CLEANOUT
CONTR	CONTRACTOR
CONT CV	CONTINUATION CHECK VALVE
CM	COLD WATER
DN	DOWN
DFU	DRAINAGE FIXTURE UNIT
HWR DIA	HOT WATER RECIRC DIAMETER
DSN	DOWNSPOUT NOZZLE
D D	DRAIN
DSP	DRY STANDPIPE SYSTEM
DWV	DRAINAGE WASTE AND VENT
EXIST	EXISTING
ELEC	ELECTRICAL
FA FCO	FLOW ALARM FLOOR CLEANOUT
FDC	FIRE DEPARTMENT CONNECTION
FDVC	FIRE DEPARTMENT VALVE CABINET
FH	FIRE HYDRANT
FIN	FINISHED
FL	FLOOR
FM	FROM
FO FPS	FUEL OIL FEET PER SECOND
FF3 FT	FEET FER SECOND
FU	FIXTURE UNIT
^	CAC

GARBAGE DISPOSER

GATE VALVE HUB DRAIN HORSEPOWER HOT WATER

GALLONS PER HOUR GALLONS PER MINUTE

GPH

GV

#### **ABBREVIATIONS**

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS INVERT ELEVATION POUNDS (UNIT OF FORCE) MAXIMUM
POUNDS (UNIT OF FORCE) MAXIMUM
MAXIMUM
THOUSANDS BTU/HR
PLUMBING
MANUFACTURER
MANHOLE  NATIONAL FIRE PROTECTION ASSOCIATION
OIL WASTE
PRESSURE SWITCH
PRESSURE TEMPERATURE TRAP (PETE'S PLUG)
PLUG VALVE
ROUGH IN AND CONNECT
REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
SHEET
SHUT-OFF VALVE
SPRINKLER
THRUST BLOCK
THERMOSTATIC MIXING VALVE
TRAP PRIMER
TAMPER SWITCH
TEST TEE
TYPICAL
UNION
VACUUM BREAKER
VENT
VOLTS
VENT THROUGH ROOF
WASTE
WALL CLEANOUT
WITH
WEIGHT
WET STANDPIPE
YARD BOX

#### GENERAL NOTES

- 1. ALL WORK AND MATERIAL SHALL BE IN ACCORDANCE WITH DIVISION 22 SPECIFICATIONS.
- 2. AS-BUILT RECORD DOCUMENTS: AT PROJECT CLOSEOUT, CONTRACTOR SHALL SUBMIT DETAILED INSTALLATION DRAWINGS, CHANGE ORDERS AND SPECIFICATION CHANGES TO ARCHITECT FOR APPROVAL. REFER TO SPECIFICATIONS FOR ADDITIONAL
- 3. CONTRACTOR TO COORDINATE INSTALLATION OF GAS SERVICE WITH LOCAL GAS COMPANY, CONTACT ENGINEERING DEPARTMENT. ALL EXTERIOR GAS PIPING SHALL BE PAINTED.
- 4. DETAILED INVESTIGATION OF EXISTING CONDITIONS ARE PART OF THE CONTRACT WORK. VISIT THE JOB SITE PRIOR TO BID. REVIEW AVAILABLE EQUIPMENT LAYOUTS, ASSEMBLY DRAWINGS AND INSTALLATION SCHEDULES.
- 7. CONTRACTOR SHALL COORDINATE ALL UTILITY LINES EXITING OR ENTERING BUILDING WITH DIVISION 22 SPECIFICATIONS AND CIVIL ENGINEER'S UTILITY PLAN DRAWINGS AND OTHER TRADES.
- 8. BARRIER FREE REQUIREMENTS: PROVISIONS HAVE BEEN DESIGNED TO PROVIDE FIXTURES IN ACCORDANCE WITH A.D.A., ANSI AND STATE OF CALIFORNIA REGULATIONS. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS AND REPORT TO ARCHITECT OR OWNER'S REPRESENTATIVE WHEN FIELD CONDITIONS PREVENT CORRECT INSTALLATION.
- 9. DOMESTIC HOT WATER IS SUPPLIED TO LAVATORIES AT A MAXIMUM TEMPERATURE OF 110°F IN PUBLIC AREAS.
- 10. ALL STORM DRAIN & OVERFLOW DRAIN PIPING ABOVE FLOOR & CEILING SHALL BE DWV COPPER (TRANSITION FROM DWV COPPER TO CAST-IRON BELOW GRADE)
- 11. SEE ARCHITECTURAL DWGS FOR EXACT LOCATION OF THE PLUMBING FIXTURES AND EQUIPMENTS.
- 12. PROVIDE S.O.V. ON THE COLD WATER BRANCHES, WALL CLEANOUTS FOR SINKS, LAVATORIES WATER CLOSETS AND SERVICE SINKS PER CITY STANDARDS.

#### PLUMBING DRAWING LIST

- P.01 PLUMBING LEAD SHEET P.02 PLUMBING SCHEDULES
- P2.0 PLUMBING PLAN ENLARGED
- P2.1 PLUMBING PLANS P2.2 PLUMBING ROOF PLAN

PROJECT

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ARCHITECT

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DATE: \_\_\_\_\_ 20 \_\_\_ Miriam Mulder, Architecture Services Manager

CITY OF SANTA MONICA DEPARTMENT OF PUBLIC WORKS

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CITY CLIENT

07.24.12 BULLETIN 2 NO. DATE BY DESCRIPTION

REVISIONS

**RAINWATER HARVESTING** 

07.24.12 DRAWING NO. 6693

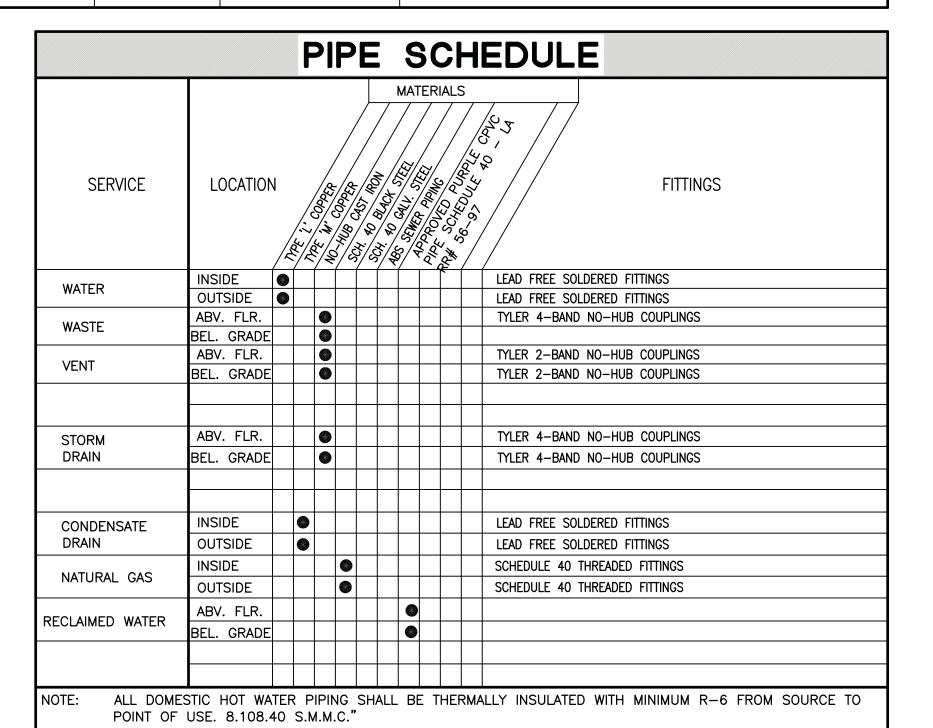
SHEET TITLE **PLUMBING LEAD SHEET** 

			DI		VIC FI	VTII	
		I	<u> </u>	UMDII	YG FJ	X I UI	RES SCHEDULE
ITEM	DESCRIPTION	TRAP ARM	WASTE	VENT	CW	HW	REMARKS
WC-1	WATER CLOSET	INT	4"	2"	1-1/2"		"AMERICAN STANDARD" MODEL # 3351.128 "AFWALL" ELONGATED WALL MOUNT, 1.28 GPF TOILET WITH "SLOAN" ROYAL MODEL #111-1.28 HIGH-EFFICIENCY MANUAL FLUSHOMETER VALVE, 1.28 GPF, OLSONITE #95 OPEN FRONT ONSONITE #95CC-SS SEAT LESS COVER
WC-2	WATER CLOSET ADA	INT	4"	2"	1-1/2"		"AMERICAN STANDARD" MODEL # 3351.128 "AFWALL" ELONGATED WALL MOUNT, 1.28 GPF TOILET WITH "SLOAN" ROYAL MODEL #111-1.28 HIGH-EFFICIENCY MANUAL FLUSHOMETER VALVE, 1.28 GPF, OLSONITE #95 OPEN FRONT ONSONITE #95CC-SS SEAT LESS COVER
U-1	URINAL	INT	2"	2"	1-1/2"		"SLOAN" #WES-1000.1001-0.13 WALL HUNG HEU URINAL, WITH "SLOAN" MODEL # WEUS-1000.1201-0.13 SOLIS, SOLAR POWERED HEU FLUSHOMETER.
L-1	LAVATORY ADA	1½"	2"	1½"	1/2"	1/2"	"AMERICAN STANDARD" 0356.028 "LUCERNE" VITREOUS CHINA, WALL HUNG, 8" CENTERS. FAUCET: 0.5 GPM. STOPS BRASSCRAFT #ST-CR19 W/ BC #5130 SUPPLIES. ADA COMPLIANCE.
L-2	LAVATORY ADA	11/4"	1½"	1½"	1/2"	1/2"	"KOHLER" LADENA MODEL #K2214 VITREOUS CHINA, WITH OVERFLOW WALL HUNG, 8" CENTERS. FAUCET: SLOAN SOLIS 0.5 GPM. STOPS BRASSCRAFT #ST-CR19 W/ BC #5130 SUPPLIES. ADA COMPLIANCE. COLOR TO BE SELECTED
SS-1	SERVICE SINK	3"	3"	2"	3/4"	3/4"	"FLOORSTONE", MODEL # 80. FAUCET: "JUST" #JVB-1200, WALL MOUNT, VACUUM BREAKER SPOUT W/ PAIL HOOK AND WALL BRACE AND 3/4" MALE THREADED OUTLET.
S-1	SINK	2"	2"	2"	3/4"	3/4"	"JUST" MODEL # S-L-ADA-2233-A-GR, COUNTER MOUNT SINGLE 5" DEEP BOWL, 18 GAUGE TYPE 304, 18-8, STAINLESS STEEL. W/ CENTER REAR DRAIN. FAUCET: GROHE, MINTA #32319 DUAL SPRAY PULL DOWN.
S-2	SINK	2"	2"	2"	3/4"	3/4"	"JUST" MODEL # HCL-23520-S WALL MOUNTED SINK. WITH SENSOR OPERATED FAUCET. ADA COMPLIANT. FAUCET: "JUST" MODEL # JSGN-AAC SENSOR OPERATED FAUCET WITH CONTROL MODULE.
FD-1	FLOOR DRAIN	2"/3"	2"/3"	1½"			"J.R. SMITH" 2005(-SS) WITH TRAP PRIMER CONNECTION. TRAP PRIMER MAY BE PROVIDED BY A FLUSH VALVE ATTACHEMENT OR A "PPP" PR-500 RECESSED IN WALL BEHIND ACCESS PANEL WITH A 1/2" BALL VALVE PRECEEDING THE TRAP PRIMER, BOTH BEHIND ONE ACCESS PANEL.
EWC-1	ELECTRIC WATER COOLER	2"	2"	2"	1/2"	_	"HAWS" #1011, "HI-LO" BARRIER FREE DUAL HEIGHT, WALL MOUNTED, 18 GAUGE, TYPE 304 STAINLESS STEEL, PUSH-BUTTON VALVES FRONT ACCESSIBLE S/S BACK PANEL AND LOUVERED GRILL WITH #6426 IN-LINE FILTER. 120 VOLT.
DF-1	DRINKING FOUNTAIN	_	_	_	1/2"	_	"HAWS" MODEL 3380G BARRIER FREE PEDESTAL MOUNTED DRINKING FOUNTAIN W/DRY WELL
TP-1	PRESSURE DROP TRAP PRIMER				1/2"		PPP #P-2, COPPER BODY COMPLETE 1/2" COPPER TYPE "L" PIPE TO RECECPTOR(S). INSTALL PER MANUF. RECOMMENDATIONS AND PROVIDE ACCESS PANEL
HB-1	HOSE BIBB				3/4"		"J.R. SMITH" #5906 NON FREEZE ROOF HYDRANT.
HB-2	HOSE BIBB				3/4"		"J.R. SMITH" #5810 NON FREEZE GROUND HYDRANT.
GD-1	GARBAGE DISPOSER						"IN-SINK-ERATOR" MODEL # SS-50. 1/2 HP DISPOSER.

				GAS	WAT	ER H	EATER	SCHEDUI	<b>.E</b>	
ITEM	LOCATION	SERVICE	TYPE	HOT WATER CAPACITY AT 60°F	BTU/HR INPUT	ELECTR VOLT	ICAL DATA HZ	MANUFACTURER & MODEL NO.	OPERATING WEIGHT LBS.	REMARKS
GWH 1	ROOF	DOMESTIC HOT WATER	TANKLESS/ OUTDOOR	4.8 GPM	199,000	120	60	NORITZ NC 199–OD	110	23.6"(HEIGHT) X 13.8"(WIDTH) X 10.6"(DEPTH), SC-201-6M MULTI-SYSTEM CONTROLLER (SINGLE MANIFOLD), 120 VAC. SET @ 122°F
GWH 2	ROOF	DOMESTIC HOT WATER	TANKLESS/ OUTDOOR	4.8 GPM	199,000	120	60	NORITZ NC199-OD	110	23.6"(HEIGHT) X 13.8"(WIDTH) X 10.6"(DEPTH), SC-201-6M MULTI-SYSTEM CONTROLLER (SINGLE MANIFOLD), 120 VAC.

				PUN	MP SCH	EDUL	E.				
ITEM	SERVICE	MANUFACTURER AND MODEL	TYPE	GPM	CAPACITY HEAD, FT	HP	RPM	VOLTS	PHASE	WGT	REMARKS
CPR 1	HOT WATER GWH-1	B&G SERIES PR	INLINE	5	15	1/6	1750	120	1	50	INLINE CIRCULATING PUMP FOR DOMESTIC HOT WATER WITH TC-1 (AUTOMATIC TIMER KIT) AND AQ (AQUATAT).

			EXPANSI	ON TA	NK SC	HEDULE	
ITEM	SERVICE	MANUFACTURER AND MODEL	TANK VOL.	OPER. WT.	MAX. TEMP	DIMENSIONS	REMARKS
ET 1	DOMESTIC HOT WATER GWH-1	WATTS PLT-5	2.1 GAL	5.5 LBS	200°F	8" DIA., 11" LONG	DRAWN STEEL W/BUTYL DIAPHRAGM
ET 2	DOMESTIC HOT WATER GWH-2	WATTS PLT-5	2.1 GAL	5.5 LBS	200 <b>°</b> F	8" DIA., 11" LONG	DRAWN STEEL W/BUTYL DIAPHRAGM



	E UNIT CHART C & UPC.	
FIXTURE	CW FU	HW FU
WC (WATER CLOSET) FLUSH VALVE	5	-
L (LAVATORY)	1	1
S (SINK)	2	2
SS (SERVICE SINK)	3	3
HB (HOSE BIBB)	2.5	-
EACH ADDITIONAL HB	1	

PIPING: TYPE 'L' COPPER.

DRAINAGE FIXTURE U 2010 CPC &	
FIXTURE	FU
WC (WATER CLOSET)	4
L (LAVATORY)	1
S (SINK)	2
SS (SERVICE SINK)	3
FD	2
FS	1

#### RECLAIMED WATER PIPE SIZING CALCULATION RECLAIMED WATER STATIC PRESSURE=70 PSI

39 FU, FLUSH VALVE = 44 GPM PRESSURE DROPS RESIDUAL PRESSURE 2" METER 2" BACKFLOW DEVICE 13 ELEVATION 15' X .433 = 6.5 TOTAL 50.3 PRESSURE AVAILABLE: 70 PSI - 50.3 PSI = 19.7 PSI

DEVELOPED LENGTH: 635 FT X 1.15 = 730 FT <u>19.7 X 100</u> = 2.69 PSI DROP PER 100 FT. 730 AVAILABLE TO OVERCOME FRICTION.

PIPING: TYPE 'L' COPPER.

		PIPE SIZE CHART	Г		
	SIZE	RECLAIMED WATER	GPM		
	SIZE	F.V.	GFM		
	1/2"	0	0		
	3/4"	0	0		
	1"	0	0		
	1-1/4"	0	0		
	1-1/2"	8	25		
ł	2"	52	52		

ALL PIPE SIZING BASED ON 2.6 PSI PER 100 FT. FRICTION LOSS.

DOMESTIC WATER PIPE SIZING CALCULATION LOW PRESS. = 75 PSI HIGH PRESS. = 80 PSI INFORMATION RECEIVED FROM KPFF JULY 03, 2012 20.5 FU, FLUSH TANK = 18 GPM PIPE SIZE CHART PRESSURE DROPS RESIDUAL PRESSURE F.T. F.T. ELEVATION 15' X .433 = 6.5 TOTAL 41.5 1 1 6 6 5 PRESSURE AVAILABLE: 75 PSI - 41.5 PSI = 33.5 PSI 1-1/4" 30 29 20 DEVELOPED LENGTH: 635 FT X 1.15 = 730 FT 1-1/2" 58 <u>41.5 X 100</u> = 5.68 PSI DROP PER 100 FT. 730 AVAILABLE TO OVERCOME MAX. VELOCITY MAX. VELOCITY C.W.(8 F.P.S.) H.W.(5 F.P.S.) FRICTION. ALL PIPE SIZING BASED ON 4.0 PSI PER 100 FT. FRICTION LOSS.

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07.24.12 BULLETIN 2 NO. DATE BY DESCRIPTION REVISIONS

RAINWATER HARVESTING

07.24.12 DRAWING NO. 6693

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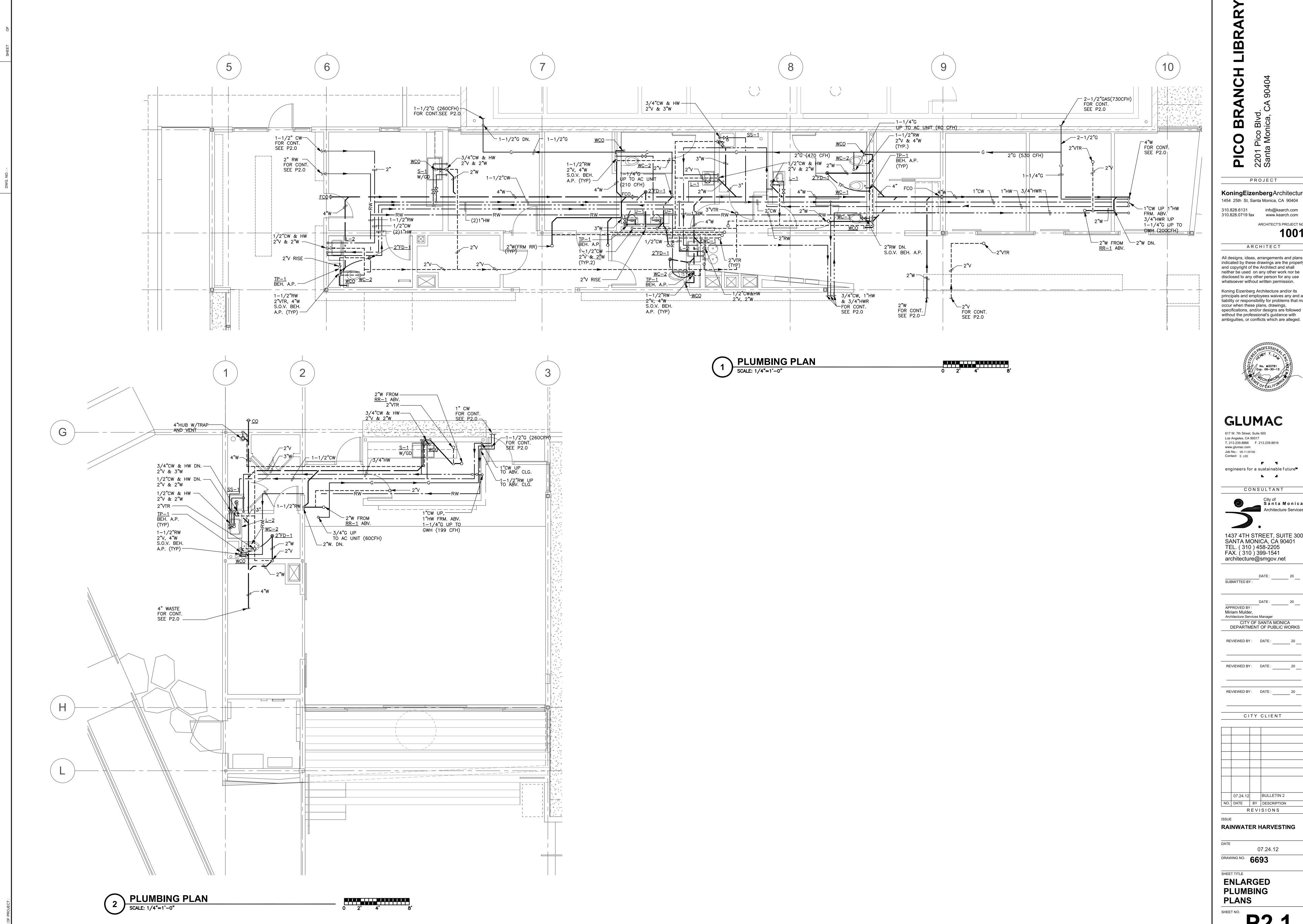
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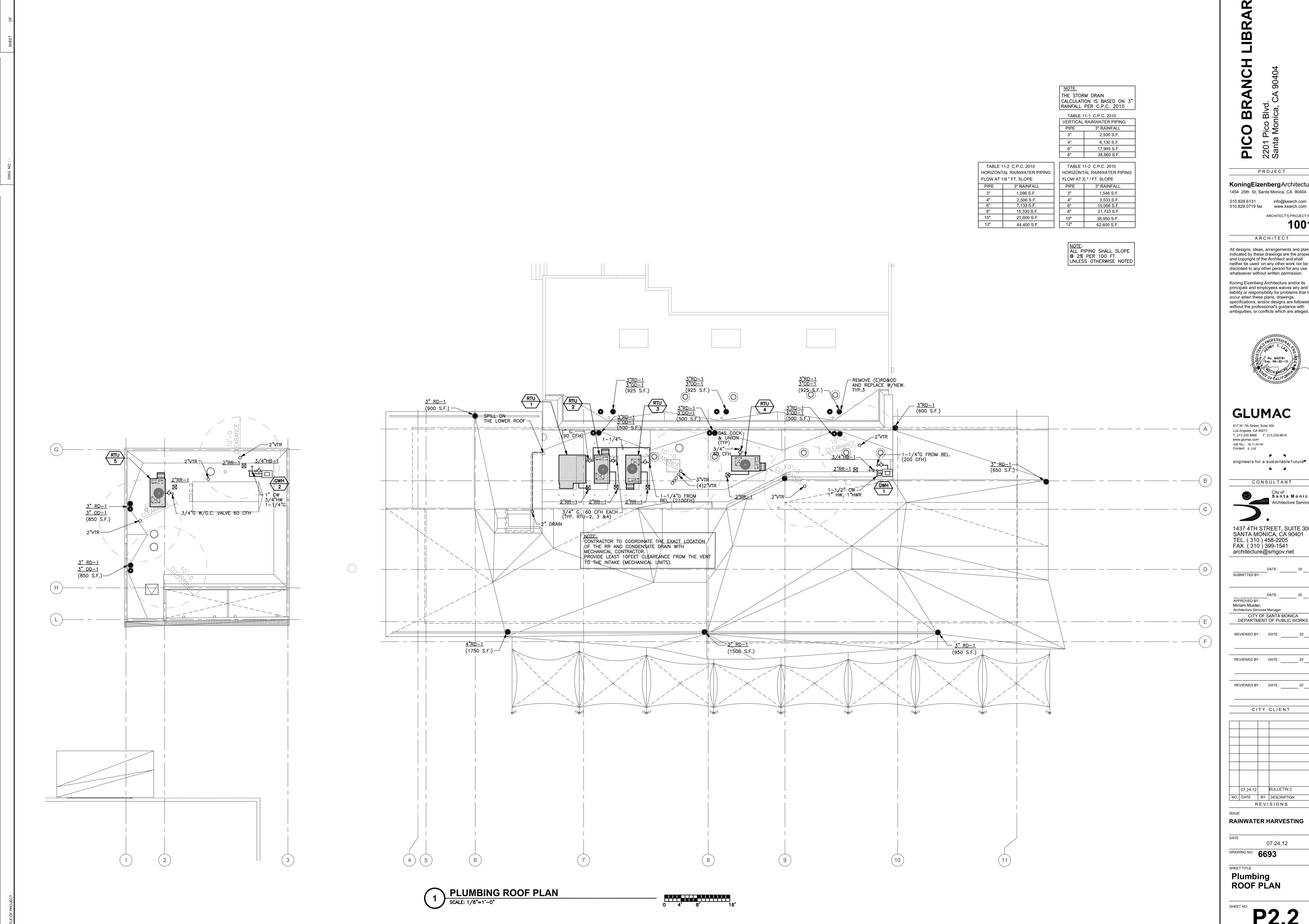
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**Plumbing ROOF PLAN** 

- 1. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT A COMPLETE AND WORKABLE ELECTRICAL INSTALLATION BE PROVIDED FOR THE EQUIPMENT DESCRIBED OR SHOWN AS BEING IN THIS CONTRACT. PROVIDE LABOR AND TOOLS NECESSARY AND INSTALL APPARATUS, MATERIALS, AND EQUIPMENT IN A FASHION COMPLYING WITH ALL APPLICABLE CODES, INCLUDING ITEMS REQUIRED BUT NOT NECESSARILY SHOWN, SUCH AS LAMPS, COUPLINGS, HANGERS, BRACKETS, CLAMPS, BOXES, CONNECTORS,
- 2. EXAMINE ALL CONTRACT DOCUMENTS AND VERIFY ALL DIMENSIONS AND CONDITIONS, SUCH AS CABINETS, BEAMS, FURRING, DOOR SWINGS, DUCTS, PIPES, CEILINGS AND BRING ANY DISCREPANCIES TO THE ATTENTION OF THE GENERAL CONTRACTOR PRIOR TO COMMENCING ANY WORK. SWITCHES CONTROLS, ACCESS DOORS ON ELECTRICAL EQUIPMENT, SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING AND REPAIRING.
- 3. REFER TO MECHANICAL DRAWING AND OTHER MANUFACTURERS INFORMATION WIRING DIAGRAMS FOR ITEMS AND DEVICES TO BE FURNISHED. INSTALLED AND/OR CONNECTED BY ELECTRICAL CONTRACTOR FOR A COMPLETE AND OPERABLE HEATING, VENTILATING AND AIR CONDITIONING SYSTEM AND OTHER EQUIPMENT. VERIFY EXACT LOCATION OF EQUIPMENT AND CONDUIT TERMINATION AT EQUIPMENT WITH MECHANICAL. PLUMBING AND MANUFACTURES SUB-CONTRACTOR. PROVIDE CONDUITS AND JUNCTION BOXES FOR CONTROL WIRING AND THERMOSTATS AND OTHER CONTROL DEVICES. THE CONTRACTOR SHALL EXTEND WIRING FROM LOCAL DISCONNECT SWITCHES TO
- 4. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE LOCATION OF OUTLETS AND EQUIPMENT AND THE CIRCUIT ARRANGEMENT OF THE REQUIRED WIRING, AND THOUGH NOT NECESSARILY INDICATING THE ACTUAL ROUTES OF CONDUITS, THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS PROPER COORDINATION WITH THE WORK OF OTHER TRADES AND SPACE WILL PERMIT. SIMPLIFY INSTALLATION WHEREVER POSSIBLE BUT SUBJECT TO APPROVAL OF THE ENGINEER FOR VISUAL AND STRUCTURAL REASONS. IT IS NOT WITHIN THE SCOPE OF THE DRAWINGS TO SHOW NECESSARY OFFSETS. BENDS. PULL BOXES AND OBSTRUCTIONS. THE DRAWINGS ARE NOT INTENDED TO BE SCALED AND THE ELECTRICAL CONTRACTOR SHALL REFER TO THE ARCHITECTURAL CONSTRUCTION DRAWINGS FOR DIMENSIONS.
- 5. THE ELECTRICAL WORK SHALL BE INSTALLED IN STRICT COMPLIANCE WITH NEC 2005, CEC 2007, LAEC 2008, T-24 REGULATION AND ORDINANCES, AND AUTHORITIES HAVING JURISDICTION.
- 6. ERECT AND MAINTAIN SUITABLE BARRIERS, PROTECTIVE DEVICES, LIGHTS AND WARNING SIGNS WHERE REQUIRED FOR THE PROTECTION OF THE PUBLIC AND EMPLOYEES ABOUT THE
- WHEN CONCRETE WORK IS INCLUDED IN THE SCOPE OF WORK, THE MATERIALS. PROPORTIONING. MIXING. CONVEYING. PLACING. CURING AND PROTECTION OF THE CONCRETE WORK SHALL BE IN ACCORDANCE TO "ACI" STANDARD 301.
- 8. UNLESS OTHERWISE SHOWN OR SPECIFIED, CONDUIT SHALL BE CONCEALED IN WALLS OR ABOVE FINISHED CEILING.
- A) CONCEALED CONDUIT SHALL BE RUN IN AS DIRECT A LINE AS POSSIBLE. BENDS SHALL BE OF LONG SWEEP TYPE.
- B) EXPOSED CONDUIT SHALL BE RUN PARALLEL TO, OR AT RIGHT ANGLES WITH THE LINES OF THE BUILDING. BEND SHALL BE FREE FROM DENTS OR FLATTENING. CONDUIT SHALL BE SUPPORTED AND SECURELY FASTENED.
- C) CONDUIT SHALL BE INSTALLED AS A COMPLETE SYSTEM BEFORE WIRE OR CONDUCTORS ARE PULLED IN.
- D) CONDUIT SHALL BE INSTALLED ENTIRELY FREE FROM OTHER PIPING, VALVES OR OTHER MECHANICAL EQUIPMENT, AND SHALL NOT BE INSTALLED WITHIN 6 INCHES OF HOT WATER OR STEAM PIPING OR HEATING FLUES.
- E) POCKETS OR TRAPS IN ALL CONDUIT RUNS WHERE MOISTURE MAY COLLECT SHALL BE AVOIDED. WHERE DIPS ARE UNAVOIDABLE. A PULL BOX SHALL BE LOCATED AT EACH LOW POINT IN ORDER TO PROVIDE A MEANS OF
- F) THE CONDUIT SYSTEM AND CONDUCTING WIRE ENCLOSURES SHALL BE SECURELY BONDED TOGETHER SO THAT FOR EVERY CONDUCTING COMPONENT IS PROVIDED WITH A LOW RESISTANCE PATH TO GROUND.
- G) DOUBLE LOCKNUTS SHALL BE USED FOR SECURING CONDUIT AT A BOX OR CABINET UNLESS A THREADED HUB IS PROVIDED AS PART OF THE BOX OR CABINET.
- H) RUNNING THREADS SHALL NOT BE USED ON CONDUIT FOR CONNECTION AT COUPLINGS. WHERE 2 LENGTHS OF CONDUIT MUST BE COUPLED TOGETHER, AND IT IS IMPOSSIBLE TO SCREW BOTH LENGTHS INTO AN ORDINARY COUPLING, THEN THE "ERICKSON" TYPE OF COUPLING MUST BE USED IN ORDER TO PROVIDE A RIGID JOINT THAT WILL BOTH MECHANICALLY AND ELECTRICALLY EFFECTIVE.
- I) PROTECT CONDUIT FROM DAMAGE AND THE ENTRANCE OF WATER AND FOREIGN MATTER DURING THE CONSTRUCTION PERIOD. WATERTIGHT STOPPERS OR CAPS SHALL BE INSTALLED IMMEDIATELY AFTER THE CONDUIT IS INSTALLED. REMOVED ONLY WHEN WIRE IS TO BE INSTALLED.
- J) THOROUGHLY CLEAN THE INSIDE OF CONDUITS TO ASCERTAIN FOREIGN MATERIALS ARE REMOVED BEFORE PULLING WIRE OR CABLE.
- K) COUPLING AND CONNECTORS USED ON ELECTRIC METALLIC TUBING SHALL BE SET SCREW TYPE, COMPRESSION FOR 2" AND LARGER.
- L) CONDUIT SHALL BE TERMINATED WITH SUITABLE BUSHINGS OR EQUIVALENT DEVICES WHICH SHALL PROTECT THE ENCLOSED WIRES FROM ABRASION AT THE ENDS. INSULATED BUSHINGS SHALL BE USED ON CONDUIT 1-1/4" SIZE AND
- M) CONDUIT SIZES SHALL BE MINIMUM OF 3/4" AND IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE
- N) IN EACH CONDUIT WITHOUT CONDUCTORS, PROVIDE ONE #12 TW PULL STRING WITH A TAG IDENTIFYING LOCATION OF OPPOSITE END.
- O) PROVIDE SLEEVES, NIPPLES, AND COUPLINGS REQUIRED FOR THE INSTALLATION OF CONDUIT. SLEEVES SHALL PROJECT 2" ABOVE FLOOR.
- P) FLEXIBLE CONDUIT SHALL BE PROVIDED TO CONNECT MOTORS ON SLIDING BASES, TO CONTROLS, AND TO VIBRATING EQUIPMENT.
- 9. PROVIDE HANGERS SUPPORT AND FASTENERS AS REQUIRED.
- A) INSTALLATION OF HANGERS AND SUPPORTS SHALL BE MADE TO THE STRUCTURAL STEEL, MASONRY AND POURED CONCRETE. HANGERS AND SUPPORTS SHALL NOT BE INSTALLED TO PRE-CAST CONCRETE, METAL DECKS, STEEL BRACING OR BRIDGING, PIPING OR OTHER CONDUIT.
- B) FASTENERS FOR SUPPORTS AND HANGERS SHALL BE MADE WITH BEAM CLAMPS, U-BOLTS, STUD WELDING OR OTHER APPROVED DEVICES. FASTENERS FOR SUPPORTS AND MALLEABLE IRON OR WROUGHT STEEL INSERTS WITH LONG RADIUS NECKS AND KEYHOLE SLOTS FOR ATTACHMENT IN FORMS, WITH SELF DRILLING TYPE EXPANSION SHIELDS WITH INSIDE THREADS AND EXPANSION PLUGS, OR WITH OTHER APPROVED TYPE DEVICES.
- C) INSTALLATION SHALL BE SUCH SO AS TO SUPPORT CONDUIT WITHOUT SAGGING AND SHALL BE CLEAR OF THE WORK OF OTHER TRADES. PROVISION FOR EXPANSION AND CONTRACTION SHALL BE MADE.
- D) SPACING OF SUPPORTS FOR EXPOSED HORIZONTAL CONDUIT RUNS SHALL BE AS FOLLOWS.

CONDUIT LOCATION SPACING CONDUITS IN (INCHES) (FEET) RUN 3/4 | 1 OR 2 | ON A FLAT CEILING/WALL WHERE IT IS DIFFICULT PROVIDE SUPPORTS 1 OR 2 EXCEPT AT INTERVALS FIXED BY BUILDING CONSTRUCTION 3/4 | 3 OR MORE ANY LOCATION 1 & LARGER | 1 OR 2 | ON A FLAT CEILING/WALL WHERE IT IS DIFFICULT 1 PROVIDE SUPPORTS & LARGER 1 OR 2 EXCEPT AT INTERVALS 10 FIXED BY BUILDING CONSTRUCTION 1 & LARGER 3 OR MORE ANY LOCATION 10

MAXIMUM

SUPPORT

**ELECTRICAL NOTES** 

NUMBER

OF

SIZE OF

E) SPACING OF SUPPORTS FOR EXPOSED VERTICAL CONDUIT RUNS SHALL BE AS FOLLOWS.

SIZE OF CONDUIT (INCHES)	MAXIMUM SUPPORT SPACING (FEET)
3/4	7
1 AND 1-1/4	8
1-1/2 AND LARGER	10

- F) ELECTRICAL ENCLOSURES SHALL BE FURRED FROM OUTSIDE WALLS OF WET AREAS.
- 10. EXACT LOCATION OF EQUIPMENT AND OUTLETS SHALL BE VERIFIED IN FIELD. COORDINATE INSTALLATION OF ELECTRICAL SYSTEM WITH THAT OF ALL OTHER TRADES. PRIOR TO COMPLETION OF AFFECTED WORK, ELECTRICAL CONTRACTOR SHALL INSTRUCT THE OWNER ON THE USE AND MAINTENANCE OF THE ELECTRICAL SYSTEM. CONTRACTOR SHALL INCLUDE ALL THE ELECTRICAL EQUIPMENT, LIGHT LUMINAIRES TO BE RELOCATED WITHIN 20 FEET RADIUS BOTH HORIZONTAL AND VERTICAL FROM WHERE THE DEVICES ARE SHOWN ON THE DRAWINGS.
- 11. PROVIDE A CODE APPROVED DISCONNECT SWITCH OR BREAKER WITHIN SIGHT OF EVERY MOTOR. FOR MOTORS NOT EQUIPPED WITH "BUILT IN" PROTECTION, PROVIDE MAGNETIC OR MANUAL MOTOR STARTER WITH OVERLOAD HEATERS, SIZED TO COMPLY WITH MOTOR MANUFACTURERS RECOMMENDATIONS AND APPLICABLE CODES. VERIFY FUSE SIZE WITH MANUFACTURER RECOMMENDATIONS.
- 12. SIZE OUTLET BOXES IN CONFORMITY WITH CODE FOR NUMBER AND GAUGE OF CONDUCTORS THEREIN. EXCEPT WHERE NOTED TO BE LARGER, MINIMUM BOX SIZE SHALL BE 4" SQUARE BY 1-1/4" DEEP. JUNCTION BOXES SHALL BE LABELED WITH RESPECTIVE CIRCUIT NUMBERS.
- 13. OUTLET BOXES SHALL BE FLUSH WITH THE FINISHED SURFACE OF WALLS AND CEILINGS OF COMBUSTIBLE MATERIALS.
- 14. OPENINGS IN BOXES, CONDUIT BODIES AND FITTINGS SHALL BE ADEQUATELY CLOSED.
- 15. SURFACE MOUNTED BOXES AND CABINETS MOUNTED IN WET AND DAMP LOCATIONS SHALL BE WEATHERPROOF AND SHALL HAVE AT LEAST 1/4 INCH AIR SPACE BETWEEN THE BOX AND MOUNTING
- 16. ENTRANCE TO ROOMS AND OTHER GUARDED LOCATIONS THAT CONTAIN LIVE PARTS SHALL BE MARKED WITH A CONSPICUOUS WARNING SIGN FORBIDDING UNQUALIFIED PERSONS TO ENTER.

SURFACE

- 17. CUT FLOORS, CEILINGS AND WALLS AS REQUIRED FOR INSTALLATION OF ELECTRICAL WORK. APPROVED PENETRATION THROUGH CONCRETE WALLS OR CEILINGS SHALL BE PROVIDED BY MEANS OF SLEEVES OR CORE DRILLING, CONTRACTOR SHALL COORDINATE WITH OTHER TRADES, INCLUDING THE STRUCTURAL ENGINEER, REGARDING CONDUITS PENETRATING STRUCTURAL SLAB AND WALL, WORK SHALL BE PATCHED AND REPAIRED AS DIRECTED BY OWNER.
- 18. BEFORE ORDERING THE LIGHTING FIXTURES, VERIFY WITH THE ARCHITECT, OR AT THE JOB SITE, THE EXACT CEILING BEING FURNISHED, AND PROVIDE THE NECESSARY HARDWARE FOR A COMPLETE INSTALLATION.
- 19. INSTALL LIGHTING FIXTURES SO AS TO CLEAR PIPING, DUCTS, AIR DIFFUSERS, GRILLES, ACCESS PANELS & OTHER DEVICES, PROVIDE HANGERS TO SUPPORT FIXTURES WITHOUT CAUSING SAGGING OR DISTORTION TO THE FIXTURES, INSTALL FIXTURES SYMMETRICAL TO CEILING TILES AND OR DIMENSIONS SHOWN, PROVIDE FIRE RATED ENCLOSURE OVER LIGHT FIXTURES RECESSED IN FIRE RATED WALLS OR CEILINGS. REPLACE ALL DAMAGED OR DEFECTIVE FIXTURES INCLUDING GLASSWARE. PLASTICS OR DIFFUSERS UP TO THE TIME OF FINAL INSPECTION AND ACCEPTANCE BY THE OWNER.
- 20. USE THHN/THWN COPPER WIRES FOR ALL BRANCH CIRCUIT WIRING WITH A SEPARATE GREEN GROUNDING CONDUCTOR. SIZE PER CEC 250-122.
- . TELEPHONE WIRE AND CABLE INSTALLATION, SPLICING, FERMINATING, AND EQUIPMENT SHALL BE IN CONFORMITY WITH THE REQUIREMENTS AND SUBJECT TO APPROVAL OF THE DISTRICT'S COMMUNICATION PERSONAL.
  - A) SIZE TELEPHONE CABINETS TO HOUSE CABLING, SPLICING,
  - B) PROVIDE TELEPHONE CONDUIT SYSTEM SEPARATE AND INDEPENDENT FROM OTHER SYSTEMS.
- 22. THE NON-CURRENT CARRYING METALLIC PARTS OF ALI ELECTRICAL EQUIPMENT AND ENCLOSURES, INCLUDING CONDUITS, SUPPORTS, CABINETS, MOTOR FRAMES, SWITCHBOARD ENCLOSURES, CONTROL PANELS AND ASSOCIATED EQUIPMENT. WHICH ARE INSTALLED OR CONNECTED UNDER THIS CONTRACT, SHALL BE PROPERLY GROUNDED BY CONNECTION TO THE GROUNDING SYSTEM, REGARDLESS OF WHETHER OR NOT THESE CONNECTIONS ARE SHOWN ON THE DRAWINGS.
- A) THE GROUNDING INSTALLATION SHALL HAVE PROVISIONS FOR BOTH SYSTEM AND EQUIPMENT GROUNDS AS DEFINED BY THE "CEC" THESE GROUNDING SYSTEMS ARE TO BE EFFECTIVELY INSULATED FROM EACH OTHER EXCEPT AT THE SERVICE CONNECTION.
- B) GROUNDING SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF "CEC" AND THE "NEC". LOCAL REQUIREMENTS OF THE INSPECTION AUTHORITY HAVING JURISDICTION SHALL GOVERN IN ALL MATTERS OF INTERPRETATION.
- C) IF WATER SERVICE IS USED FOR GROUNDING POINT, IT SHALL BE ASCERTAINED THAT THE WATER PIPING IS ELECTRICALLY CONTINUOUS AT JOINTS WITHIN 5FT OF BUILDING AND IS OF CONDUCTING MATERIAL. WATER PIPING WITH SWEATED JOINTS IN ELECTRICAL PATH SHALL HAVE SUCH JOINTS BONDED.
- D) WHERE GROUND CABLES ENTER AND LEAVE FERROUS CONDUITS, THEY SHALL BE MECHANICALLY CONNECTED TO THE END OF THE RACEWAY. WHERE GROUND CABLE PASSES THROUGH FERROUS FLOORING OR FRAMING, CONNECTION SHALL BE MADE TO SUCH METAL.
- 23. THE CONTRACTOR SHALL KEEP ALL PARTS OF THE BUILDING AND SITE FREE FROM ANY ACCUMULATIONS OF RUBBISH OR WASTE MATERIALS CAUSED BY HIS WORKMEN. AND SHALL REMOVE SUCH ACCUMULATIONS FROM THE BUILDING, SITE AND PROPERTY. JOB SITE SHALL BE CLEANED AT THE END OF EACH WORKING DAY.
- MATERIAL INSTALLED UNDER THIS SECTION. SURFACES OF EXPOSED CONDUIT SHALL BE CLEANED OF CEMENT, PLASTER, DIRT, RUST, GREASE, AND OTHER FOREIGN MATTER. AND BE LEFT IN CONDITION SUITABLE TO THE CONTRACTOR AND ACCEPTABLE FOR PAINTING.

24. THOROUGHLY CLEAN ALL PARTS OF THE EQUIPMENT AND

- A) EQUIPMENT FURNISHED WITHOUT SHOP APPLIED FINISH SHALL BE FIELD PAINTED.
- B) CONCEALED SURFACES OF METAL RACKS, FRAMES, AND BOXES SHALL BE PAINTED BEFORE MOUNTING.
- C) AFTER TESTS HAVE BEEN COMPLETED, CLEAN ALL LIGHTING FIXTURES AND EQUIPMENT WITH SOAP AND WATER, LEAVING EVERYTHING IN WORKING ORDER AT THE COMPLETION OF THE ELECTRICAL WORK.

THE TWO SHALL BE USED. 25. WIRING AND CONNECTIONS SHALL BE TESTED FOR CONTINUITY, GROUNDS, SHORT CIRCUITS, AND OTHER DEFECTS BEFORE ANY EQUIPMENT OR FIXTURES ARE CONNECTED THERETO. CABLES SHALL BE CHECKED FOR CONTINUITY, SHORTS, INSULATION RESISTANCE, AND PROPER PHASING. CONTRACTOR SHALL

TERMINATE ALL CABLES & WIRES WITH TERMINAL LUGS

NOTE: IF CONFLICTS OCCUR BETWEEN DRAWING SPECIFICATION

AND BOOK SPECIFICATION. THE MORE STRINGENT OF

26. INSULATION SHALL BE TESTED BEFORE AND AFTER INSTALLATION, AND BEFORE ENERGIZING.

(SUPPLIED BY CONTRACTOR).

- A) RUBBER INSULATION SHALL BE TESTED FOR ACCEPTANCE BY APPLYING DIRECT CURRENT POTENTIAL NOT OVER 3 TIMES THE RATIO OF DIRECT CURRENT TO 60% OF EQUIVALENT "RMS" ALTERNATING CURRENT FACTORY TEST VOLTAGE FOR 5 MINUTES.
- B) VARNISHED CAMBRIC, PAPER, AND OTHER INSULATION SHALL BE TESTED IN THE MANNER DIRECTED BY AND UP TO THE LIMITS RECOMMENDED BY THE MANUFACTURER.
- C) INSULATION RESISTANCE SHALL BE TESTED BY MEGGER OF NOT LESS THAN 600 VOLTS OUTPUT FOR CIRCUITS 480 VOLTS AND LESS. ANY CIRCUIT SHOWING AN INSULATION RESISTANCE OF LESS THAN 1 MOHM SHALL BE INVESTIGATED AND THE WEEK POINT CORRECTED. CORRECT OR REPLACE ANY CIRCUIT DEFECTIVE OR GROUNDED AND MAKE WIRE-BY-WIRE TEST.
- 27. THE ENTIRE SYSTEM SHALL BE PLACED IN PROPER OPERATING CONDITION.
- A) OVERLOAD DEVICES SHALL BE ADJUSTED AND SET TO SUIT THE LOADS WHICH THEY CONTROL.
- B) LOADS ON ALL PARTS OF SYSTEMS SHALL BE BALANCED, INSOFAR AS IS PRACTICAL.
- C) ALL CHANGES SHALL BE MADE THAT ARE NECESSARY FOR ADJUSTING, SETTING AND BALANCING.
- D) PHASE ROTATION AT ALL BUSES, PANELS, SWITCHBOARD ETC., SHALL BE CHECKED TO SEE IF IT CONFORMS WITH RECOGNIZED STANDARDS.
- READINGS FOR RECORDS, AND TO ASCERTAIN THAT THEY MEET DESIGN AND CODE REQUIREMENTS. F) CONTROL CIRCUITS SHALL BE CHECKED OUT FOR PROPER

FUNCTIONING AND FAIL-SAFE QUALITIES.

E) GROUND TESTS SHALL BE MADE WITH THE 3 ELECTRODE

"AC" OR "DC" VOLTAGE DROP METHOD TO ESTABLISH INITIAL

- G) RECEPTACLES SHALL BE CHECKED OUT FOR CORRECT AND CONSTANT PHASE POSITION, AND GROUNDED RECEPTACLES SHALL BE TESTED FOR LOCATION AND EFFECTIVENESS OF GROUNDED PIN.
- H) LIGHTING SWITCHING SHALL BE TESTED FOR CORRECT OPERATIONS ESPECIALLY WHERE 3 AND 4 WAY OPERATION IS DESIGNATED.
- I) CONTROL DEVICES SUCH AS LIMIT SWITCHES, LEVEL CONTROLS, PRESSURE CONTROLS, THERMOSTATS, SHALL BE SET FOR OPERATING CONDITIONS. COORDINATE WITH MECHANICAL CONTRACTOR.
- J) RUNNING LOADS OF MOTORS SHALL BE CHECKED AGAINST NAMEPLATE DATA. OVERLOADS SHALL BE REPORTED.
- 28. NO PIPING DUCT OR EQUIPMENT FOREIGN TO ELECTRICAL SHALL BE PERMITTED TO BE LOCATED WITH THE DEDICATED SPACE ABOVE THE ELECTRICAL EQUIPMENT.
- 29. ALL NEW ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF LOS ANGELES RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.

#### FIRE ALARM

- INSTALLATION OF THIS SYSTEM SHALL COMPLY WITH ALL APPLICABLE GOVERNING THIS TYPE OF SYSTEM AS ENFORCED BY THE LOCAL "AUTHORITY HAVING JURISDICTION". SYSTEM SHALL ABIDE BY ALL REQUIREMENTS IMPOSED BY LOCAL JURISDICTION HAVING AUTHORITY.
- 2. ALL MATERIALS AND METHODS USED IN THIS INSTALLATION SHALL CONFORM WITH THE APPLICABLE SECTIONS.
- . OF CALIFORNIA BUILDING, FIRE AND ELECTRICAL CODE. ARTICLE 760.
- 4. PRIOR TO REQUEST FOR FINAL APPROVAL/ACCEPTANCE, PROVIDE STATEMENT OF COMPLIANCE AS NOTED IN CFC 901.2.1 & NFPA 72 CHAP. 4. THEN, A TEST SHALL BE CONDUCTED IN THE PRESENCE OF THE ENFORCING AGENCY AND SHALL BE PASSED TO THEIR SATISFACTION.
- INSTALLER SHALL PROVIDE OWNER "RECORD DRAWING" (AS-BUILTS) PER CFC 901.6.2; NFPA 72 CHAP. 4.9.10 UPON COMPLETION AND PRIOR TO
- ALL DEVICES AND WIRING IN THIS SYSTEM ARE REQUIRED TO BE SUPERVISED FOR FAULT AND FAILURE. INSTALLER IS TO BE THOROUGHLY COMPETENT IN THE METHOD OF WIRING FOR SUPERVISION AS COVERED BY N.F.P.A ARTICLE 72. AS WELL AS CALIFORNIA ELECTRICAL CODE. ARTICLE 760. ALL WIRING MUST BE TESTED PRIOR TO CONNECTION TO CONTROL EQUIPMENT. TEST FOR: GROUND FAULT, OPEN CIRCUIT AND SHORT CIRCUIT.
- ANY PENETRATION TO FIRE RATED ASSEMBLY BY WIRING FOR THIS SYSTEM, IT TO BE FIRE STOPPED USING U.L. APPROVED METHOD. IF WIRING IS TO PENETRATE RATED PARTITIONS AND DETAILS OF THROUGH PENETRATIONS IS NOT INCLUDED WITHIN THIS SET, CONTACT ENGINEERING DEPARTMENT FOR APPLICABLE INFORMATION.
- 8. DO NOT RUN WIRING EXPOSED SO AS TO BE DAMAGED BY OCCUPANTS. USE METALLIC RACEWAY WHEN INSTALLING BELOW 8'-0". WHEN USING METALLIC RACEWAYS FOR WIRING, ENSURE THAT THE WIRE FILL DOES NOT EXCEED THE LISTED CAPACITY AS LISTED IN C.E.C. CONDUIT NOT APPROVED AS PATH TO GROUND. USE #12 GA. TO WATER PIPE OR OTHER RECOGNIZED METHOD.
- . WHERE PERMITTED, "OPEN WIRE" MAY BE EMPLOYED. ENSURE THAT THE JACKETED CABLE IS LISTED FOR THE INTENDED APPLICATION. WHEN SUSPENDING JACKETED CABLE, USE CABLE FASTENERS AND SUSPENSION SYSTEMS AS REQUIRED BY CODE.
- 10. DEVICES USED IN THIS SYSTEM MAY HAVE STRICT REQUIREMENTS THAT GOVERN THEIR MOUNTING HEIGHTS AND LOCATION. INSTALLER IS TO BE THOROUGHLY COMPETENT IN THE INSTALLATION OF THE DEVICES THAT ARE COVERED BY THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT AS THEY PERTAIN TO THE SYSTEM DESCRIBED ON THESE DRAWINGS.
- 1. NOTIFICATION APPLIANCES SHALL PROVIDE MINIMUM AUDIBILITY OF 15DB ABOVE AMBIENT LEVELS. CONTRACTOR TO FURNISH SOUND LEVEL METER AT THE TIME OF INSPECTION IF REQUIRED BY THE TESTING AGENCY. NOTIFICATION APPLIANCES SHALL BE SYNCHRONIZED IF MORE THAN TWO DEVICES ARE EITHER SEEN OR HEARD FROM ONE LOCATION.
- 12. CIRCUIT DISCONNECTION MEANS SHALL HAVE RED MARKING, SHALL BE ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL, AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT." THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT (NFPA 72-2007, 4.4.1.4.2)
- 13. IT IS UNLAWFUL TO OCCUPY ANY PORTION OF BLDG/STRUCTURE UNTIL REQUIRED FIRE ALARM SYSTEM HAS BEEN TESTED AND APPROVED, PER CBC 901.5; 3312; CFC 901.5.1; 14
- 14. RECORDS OF ALL INITIAL INSPECTIONS, TESTS, MAINTENANCE REQUIRED BY REGULATION/STANDARD AND INSTALLING CONTRACTOR, TYPE OF COMPONENTS INSTALLED, MANUFACTURER OF COMPONENTS, LOCATIONS NUMBER PER FLOOR SHALL BE MAINTAINED ON PREMISES FOR A MINIMUM OF 3 YEARS. (CFC 901.6.2, NFPA 72 CHAP. 4.10)
- 15. REACCEPTANCE TESTING OF EXISTING SYSTEM SHALL BE PERFORMED IN ADHERANCE WITH NFPA 72 CHAPTER 10; CFC 901.4.1; 90720
- 16. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING SCOPE OF WORK.

#### ELECTRICAL LEGEND NOT ALL SYMBOLS, ABBREV., ETC. ARE NECESSARILY USED ON THIS PROJECT **ELECTRICAL DESIGN CRITERIA** 2010 CALIFORNIA ELECTRICAL CODE (CEC) BASED ON 2008 NATIONAL **POWER DEVICES** ELECTRIC CODE WITH STATE AMENDMENTS. WIRING 2010 TITLE 24. PART 6 CALIFORNIA ENERGY EFFICIENCY STANDARDS FOR DESCRIPTION **DESCRIPTION** SYMBOL SYMBOL RESIDENTIAL AND NON-RESIDENTIAL BUILDINGS. WIRING CONCEALED IN CEILING OR WALL LINE DUPLEX RECEPTACLE - WALL MOUNTED AT 18" AFF . FIRE ALARM CODE VERSION USED: NFPA 2005 ..... WEIGHT TOP TO BOTTOM = NEW, EXITING TO U.O.N. 20 AMP, 120 VOLT, COVER PLATE PER REMAIN, FUTURE. CONTRACTOR MAY RUN WIRING ARCHITECT INSTRUCTION 4. CALIFORNIA BUILDING CODE (CBC): 2010 IN WALLS, UNDERGROUND, OR IN RAISED FLOOR MARK AS-BUILTS ACCORDINGLY. DUPLEX RECEPTACLE - CEILING MOUNTED, 20 AMP, AMERICAN WITH DISABILITIES ACT, (ADA) 120 VOLT, COVER PLATE PER ARCHITECT INSTRUCTION ---- WIRING CONCEALED IN FLOOR OR UNDER GRADE DOUBLE DUPLEX RECEPTACLE - WALL MOUNTED AT LIGHTING CRITERIA USED, BASED ON RECOMMENDED LEVELS BY ILLUMINATING OR ROUTED IN CEILING SPACE OF FLOOR BELOW. \_.\_.. 18" AFF U.O.N. 20 AMP, 120 VOLT, COVER PLATE ENGINEERING SOCIETY (IES) LINE WEIGHT TOP TO BOTTOM= NEW, EXISTING PER ARCHITECT INSTRUCTION. TO REMAIN, FUTURE CORRIDORS $\overline{X}$ $\overline{X}$ $\overline{X}$ | EXISTING WIRING TO BE REMOVED DOUBLE DUPLEX RECEPTACLE - CEILING MOUNTED, ELEVATOR PIT AMP, 120 VOLT, COVER PLATE PER ARCHITECT ELEVATOR MACHINE — 20 FC TELEPHONE SYSTEM CONDUIT INSTRUCTION. OFFICES | MEDIUM VOLTAGE CONDUIT RESTROOMS SPECIAL PURPOSE RECEPTACLE -WALL MOUNTED AT PARKING LOT 18" AFF U.O.N. NEMA CONFIGURATION AS NOTED ON \_\_\_\_G\_\_\_\_ BARE GROUNDING GRID OR CONDUCTORS, UON. GARAGE GROUNDING CONDUCTOR(S) ROUTED IN CODE SIZED ——GC — WALKWAYS CONDUIT, UON. SPECIAL PURPOSE RECEPTACLE -CEILING MOUNTED. LIGHTING CONTROLS: L5-15R NEMA CONFIGURATION AS NOTED ON DRAWINGS. HOME RUN WIRING TO INDICATED DESTINATION, LOW VOLTAGE CONTROLS FOR SWEEP-OFF FUNCTIONS IN OFFICE AREAS. 3/4"C. MIN. OR AS OTHERWISE NOTED. CONTRACTOR OCCUPANCY SENSORS IN CONFERENCE RMS, STORAGE ROOMS, RESTROOMS, RECEPTACLE TYPE SHOWN -WALL -ABOVE COUNTER SHALL USE CIRCUIT SIZES NOTED IN RESPECTIVE SMALL OFFICES BACKSPLASH. SEE ARCHITECTURAL DRAWINGS. SCHEDULES AND INFORMATION IN THE FEEDER AND PHOTOCELL ON & OFF- EXTERIOR LIGHTING BRANCH CIRCUIT SCHEDULES. CONTRACTOR MAY SHADED RECEPTACLES NOTED "ON ALT." ABOVE ARE "ON ALT." COMBINE HOMERUNS UP TO A MAXIMUM OF (6) CONNECTED TO ALTERNATE POWER SOURCE (EMERG 10. POWER DENSITY IN OFFICE AREAS: 6 WATTS/SQFT. CIRCUITS, FOLLOW CODE FOR DERATING & RESIZE STANDBY, UPS, ETC.) PER CIRCUITING INDICATED WIRE & CONDUIT SIZES. I. MAX. NUMBER OF WORKSTATIONS PER 20A CIRCUIT: 4 DUPLEX RECEPTACLE — WALL — WITH INTEGRAL CONDUIT STUBBED OUT AT LOCATION SHOWN. GROUND FAULT CIRCUIT INTERRUPTER PROVIDE INSULATED BUSHING & PULLROPE. RECEPT. TYPE SHOWN W/ WEATHERPROOF COVER AND INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER FELEPHONE/DATA SLEEVE THROUGH WALL, ABOVE CEILING. EXTEND TO ACCESSIBLE TILE CLG. BOTH SIDES. TERMINATE WITH BUSHINGS. (1) 1.25" CO RECEPT. TYPE SHOWN AT SPECIAL HEIGHT AS +42" INDICATED ON DRAWINGS. LION. COORDINATE LOCATIONS WITH CABLE EXISTING TO REMAIN (E) INSTALLER(S) PRIOR TO ROUGH-IN. ISOLATED GROUND RECEPTACLE **FUTURE** RECEPTACLE SYMBOL TO MATCH DESCRIPTION ABOVE EXISTING TO BE REMOVED JUNCTION BOXES, WALL, CONCELAED IN CEILING AND EXISTING TO BE RELOCATED FLOOR MOUNTED. 4" SQ. BOX MIN., LARGER IF PDU UNDER FLOOR POWER DISTRIBUTION UNIT. ABOVE COUNTER BACKSPLASH HAWORTH OR EQUAL. ALTERNATING CURRENT PULL BOX, MIN. SIZE PER NEC., UON. UNDERFLOOR RACEWAY RAISED FLOOR OUTLET BOX, TYPE AS AMPERE (RATED) FUSE OR CB FRAME SHOWN ABOVE. OUTLET BOX TO BE FLEXIBLE CONDUIT CONNECTION **~~~~** ABOVE FINISHED FLOOR COMPATIBLE WITH PDU & HAVE JUMPERED AFC ABOVE FINISHED COUNTER POWER CONNECTION TO DIV 15 FIRE/SMOKE DAMPER. CONNECTIONS. EQUIPMENT SHORT CIRCUIT REFER TO FSD CONNECTION DETAIL IF NOT SHOWN AIC INTERRUPT RATING (RMS SYM. AMPS) GROUND ROD CONNECTION ALTERNATE GROUND ROD CONNECTION WITH TEST WELL BOX AMPERE (RATED) SWITCH **SWITCHING CONTROLS** CIRCUIT BRKR TRIP SETTING (AMPS) LIGHTNING SYSTEM AIR TERMINAL ATS AUTOMATIC TRANSFER SWITCH DESCRIPTION SYMROL AUTO AUTOMATIC

STWIDGE	DESCIAII HON	
Sa	SWITCH, FLUSH IN WALL, TOGGLE, SINGLE—POLE, SINGLE THROW +42"AFF U.O.N. (SUBSCRIPT DENOTES UNIT CONTROLLED)	BRANC
S <sub>2</sub>	SWITCH, FLUSH IN WALL, TOGGLE, TWO-POLE SINGLE THROW +42"AFF U.O.N.	———— 3/ ————— 3/

- SWITCH, FLUSH IN WALL, THREE WAY +42"AFF U.O.N. (CONNECT TO MATCHING SWITCH FOR 3-WAY SWITCH, FLUSH IN WALL, FOUR WAY +42"AFF U.O.N.
- (CONNECT TO MATCHING SWITCH FOR 3-4 WAY USE) SWITCH, FLUSH IN WALL, KEY OPERATED +42"AFF
- FLUORESCENT DIMMER SWITCH, FLUSH IN WALL, TOGGLE +42"AFF U.O.N., SINGLE-POLE. SINGLE-THROW. SUBSCRIPT DENOTES UNIT CONTROLLED.)
- LOW VOLTAGE MOMENTARY CONTACT SWITCH +42"AFF U.O.N. SUPERSCRIPT DENOTES RELAY NUMBER. SEE LIGHTING CONTROLS SCHEDULES FOR MORE DETAILS.
- WEATHERPROOF SWITCH MOTOR-RATED THERMAL OVERLOAD SWITCH
- (POLES NOTED, HORSEPOWER RATED) PHOTOCELL
- TIME CLOCK WALL MOUNTED DUAL—TECHNOLOGY OCCUPANCY
- SENSOR WITH INTEGRAL POWER UNITS CEILING MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR WITH INTEGRAL POWER UNITS
- LIGHTING CONTROL PANEL AND ASSOCIATED COMPONENTS. PROVIDE 120V OR 277V CONTROL POWER AS REQUIRED OR AS INDICATED.
- REMOTE MOUNTED LINE TO LOW-VOLTAGE FUSED TRANSFORMER. CONCEAL FROM VIEW.

#### **DISTRIBUTION & EQUIPMENT**

SYMBOL	DESCRIPTION
	BRANCH CIRCUIT PANELBOARDS, SURFACE AND RECESS MOUNTED, SOLID= 120/280V, HATCHED= 277/480V, DASHED EQUIP. = FUTURI
1 1 1	MOTOR CONTROL CENTER W/ CODE CLEARANCES SHOWN, DASHED EQUIP. = FUTURE

TRANSFORMER WITH CODE CLEARANCES SHOWN SERVICE AND/OR DISTRIBUTION EQUIPMENT WITH CODE CLEARANCES SHOWN

- CONNECTION TO MOTOR PROVIDED BY OTHERS REQUENCY DRIVE WITH INTEGRAL DISCONNECT DIV. 16 TO INSTALL VFD EQUIPMENT
- SHOWN SIZE PER CONNECTED MOTOR SIZE AND MOTOR DISCONNECT SCHEDULE USED DISCONNECT SWITCH, SIZE AS NOTED. SIZE FUSE PER MANUFACTURER'S RECOMMENDATIONS ENCLOSED CIRCUIT BREAKER DISCONNECT 60AT SWITCH, TRIP SIZE AS NOTED.
- DISCONNECT W/ MAGNETIC MOTOR STARTER CONTROLLER) OR CONTACTOR. SIZE PER ÒOAD SERVED. NEMA SIZE #1 MINIMUM. MAGNETIC MOTOR STARTER (CONTROLLER) OR CONTACTOR. SIZE PER LOAD SERVED.
- NEMA SIZE #1 MINIMUM. DIV. 16 CONNECTION TO EQUIPMENT PROVIDED BY OTHERS. SHADED = ON ALT. POWER SOURCE NOTED DIV. 16 CONNECTION TO EQUIPMENT WITH INTEGRAL DISCONNECT THAT IS PROVIDED BY OTHERS. SHADED = ON ALT. POWER SOURCE NOTED

SURFACE AND RECESS MOUNTED

EQUIPMENT OR TERMINAL ENCLOSURE AS NOTED,

#### FIRE ALARM

FIRE ALARM SYSTEM TO BE DONE DESIGN-BUILD BY CONTRACTOR.

# CH CIRCUIT WIRING LEGEND 3/4" CONDUIT WITH 2#12 WIRES AND 1#12 GND.

# 3/4" CONDUIT WITH 3#12 WIRES AND 1#12 GND.

- —HH 3/4" CONDUIT WITH 4#12 WIRES AND 1#12 GND. -HH+ 3/4" CONDUIT WITH 5#12 WIRES AND 1#12 GND.  $\frac{1}{1}$  3/4" CONDUIT WITH 6#12 WIRES AND 1#12 GND. #10 NUMBER INDICATES GAUGE OF NEUTRAL WIRE. ALL OTHER WIRES #12 UON.
- CONDUIT-ONLY WITH #12 NYLON PULL-WIRE (3/4" MINIMUM SIZE, UNLESS NOTED OTHERWISE) SHADED DOT INDICATES ISOLATED GROUND WIRE. SIZE

TO BE VERIFIED WITH FEEDER SCHEDULE E0.2.

EQUIP NAME

—**®**—

ALL WIRING TO BE COPPER THHN INSULATION & GROUND PER NEC 250-122(B) CONCEALED IN WALL OR CEILING.

#### **GROUNDING SYSTEM**

SYMBOL	DESCRIPTION
GC	BARE GROUNDING GRID OR CONDUCTORS, UON. GROUNDING CONDUCTOR(S) ROUTED IN CODE SIZE CONDUIT, UON.
•	GROUND GRID BOND POINT 24" GROUND BAR
	60" GROUND BAR

#### REFERENCE SYMBOLS

_	
SYMBOL	DESCRIPTION
12	SHEET NOTE REFERENCE
125.4	BRANCH CIRCUIT OR FEEDER NOMINAL AMPACITY OF TYPE; REFER TO BRANCH CIRCUIT AND FEEDER SCHEDULES FOR WIRE AND CONDUIT SIZES & QT
1 E4.1	REFER TO DETAIL NO. ON DRAWING INDICATED NOT ALL DETAIL REFERENCES ARE SHOWN. ALL DETAILS APPLY TO ALL APPLICABLE SITUATIONS, U
CH	MECHANICAL EQUIPMENT IDENTIFICATION TAG

#### DIAGRAMS

EQUIPMENT BY OTHERS IDENTIFICATION TAG

ı	SYMBOL	DESCRIPTION
	.``	SWITCH
		BUS BAR PIPE GROUND
	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
	ψ	CURRENT TRANSFORMER
	MM	UTILITY CO. APPROVED SOCKET WITH METER INSTALLED. SQUARE = REMOTE MOUNTED
	DMU	DIGITAL METER UNIT. REFER TO SPECIFICATIONS.
	Δ	DELTA CONNECTION
	l A <del>Ť</del>	GROUNDED WYE CONNECTION
1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CONNECTION TO GROUND
] ¬	100AT 225AF	CIRCUIT BREAKER, WITH TRIP & FRAME AMPERE RATING
	225AF 400AS	FUSED SWITCH, WITH FUSE AND SWITCH AMPERE

GROUND FAULT TRIP UNIT

KEY INTERLOCK

GENERATOR

SHUNT TRIP UNIT, 120VAC OR VOLTAGE AS NOTED

ELECTRICAL LEAD SHEET SINGLE LINE DIAGRAM ELECTRICAL SITE PLAN ELECTRICAL PANEL SCHEDULES

## **ELECTRICAL DRAWING LIST**

15 FC

- 55 FC

20 FC

4 FC

4 FC

AUXILIARY

BATTERY

CIRCUIT

CEILING

COPPER

DISCONNECT

DIAMETER

DIVISION

DWG DRAWING

E.EMERG EMERGENCY

AMERICAN WIRE GAUGE

CIRCUIT BREAKER

CONDUIT ONLY

DIRECT CURRENT

DISTRIBUTION PANEL

DPDT DOUBLE POLE DOUBLE THROW

ELECTRICAL METALLIC TUBING

GROUND FAULT CIRCUIT INTERRUPTER

ELECTRIC WATER COOLER

ELECTRIC WATER HEATER

FURNISHED BY OTHERS

FLUSH FLOOR MOUNTED

FULL LOAD AMPERES

FIRE/SMOKE DAMPER

HIGH POWER FACTOR

ISOLATED GROUND

KILOVOLT-AMPERES

MANUFACTURER

MISCELLANEOUS

MAIN LUGS ONLY

NORMALLY OPEN

OUTSIDE DIAMETER

OCCUPANCY SENSOR

NOT TO SCALE

NAMEPLATE

PUSHBUTTON

HERTZ (CYCLES PER SECOND)

THOUSAND CIRCULAR MILS

LIGHTING CONTROL PANEL

NATIONAL ELECTRICAL CODE

NIGHT LIGHT (UNSWITCHED)

NATIONAL ELECTRICAL MFGR'S ASSOC.

ILLUMINATING ENGINEERING SOCIETY

DPST DOUBLE POLE SINGLE THROW

EXHAUST FAN

FOOT CANDLES

GENERATOR

HORSEPOWER

KNOCK OUT

KILOWATTS

LIGHTING

MAXIMUM

MINIMUM

MOUNTED

MOTOR

CONDUIT (CIRCULAR RACEWAY)

CUBIC FEET PER MINUTE

AUX

AWG

BAT

CB

CFM

CLG

CKT

CO

CU

DC

DIA

DIV

FBO

FLA

FSD

GEN

FU

GFI

GND

IES

KO

KVA

LTG

LCP

MAX

MFR

MTD

NTS

OD

PB

MIN

KCMIL

DISC

**ABBREVIATIONS** 

PH, ø PHASE

+,POS POSITIVE

PANEL

RIGID NON-METALLIC

CONDUIT (PVC)

REMOTE STATION

RAPID START

TRANSMITTER

SECONDARY

SHEET NOTE

SINGLE POLE

SINGLE POLE

**SWITCHBOARD** 

SWITCHGEAR

**TELEPHONE** 

TYPICAL

NOTED

VOLTS

WATT

W/ WITH

Z ZONE

'. FT FEET

", IN INCHES

PHASE

< LESS THAN

> GREATER THAN

EQUAL TO

GREATER THAN OR

1sc SHORT CIRCUIT CURRENT

W/O WITHOUT

VA VOLT-AMPERES

WP WEATHERPROOF.

XFMR TRANSFORMER

DOUBLE THROW

SINGLE THROW

UNDERWRITERS LAB

UNLESS OTHERWISE

UPS UNINTERRUPTIBLE POWER

PNL

SN

SPDT

SWBD

SWGR

UON

– 2 FC

- 5 FC

PROJECT

 $\mathbf{m}$ 

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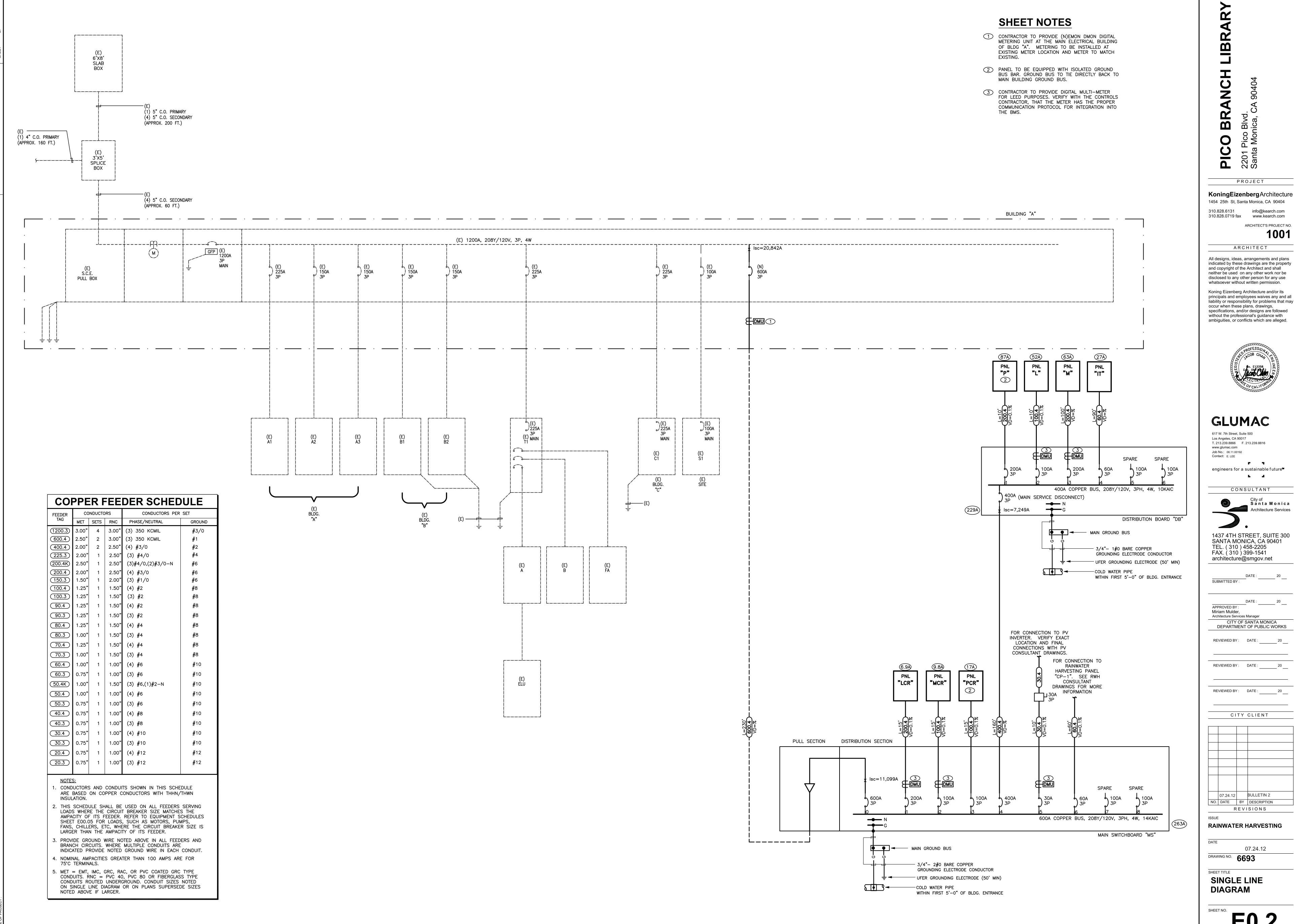
**BULLETIN 2** 07.24.12 NO. DATE BY DESCRIPTION REVISIONS

**RAINWATER HARVESTING** 

DRAWING NO. **6693** SHEET TITLE **ELECTRICAL** 

LEAD SHEET

07.24.12



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RAINWATER HARVESTING

07.24.12 DRAWING NO. 6693

SHEET TITLE SINGLE LINE

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07.24.12 BULLETIN 2

NO. DATE BY DESCRIPTION REVISIONS

RAINWATER HARVESTING

07.24.12

**ELECTRICAL** 

SITE PLAN

E1.0

SHEET

ATE:				13-Jul-12				PANEL	VOLTAG	SE:		208/120\	/	CIRCU	IIT COD	E: 1=(CONTINUOUS)				
OCATIO	ON:							PHASE	& WIRE	:		3PH. 5W	ſ			2=(NON-CONTINUOUS)				
ANEL:				PCR				COPPE	R BUS:			225A				3=(RECEPTACLES)				
IC RAT	ING:			10000				MAINS	CB:			200A				4=(KITCHEN)	NO.	OF EQ	UIP=	
СКТ		СВ		LOAD DESIGNAT	ION			LOAD		PHASES		LOAD			LOA	D DESIGNATION	С	В	СК	T
o. cor	E TR	RIP P	OLE	DESCRIPTION	MISC	REC	LITE	VA	Α	В	С	VA	LITE	REC	MISC	DESCRIPTION	POLE	TRIP	CODE	NO
1 3	20	0	1	COMM RM 124 FLOOR OUTLETS		2		720	1080			360		2		PANTRY RM 125 RECEPTS	1	20	3	2
3 3	20	0	1	COMM RM 124 FLOOR OUTLETS		1		360		720		360		2		PANTRY RM 125 RECEPTS	1	20	3	4
5 3	20	0	1	COMM RM 124 FLOOR OUTLETS		1		360			720	360		1		AV RM 127 REC	1	20	3	6
7 3	20	0	1	COMM RM 124 RECEPTS		1		360	720			360		1		AV RM 127 REC	1	20	3	8
9 2	20	0	1	COMM RM 124 PROJ. SCREEN	1			360		720		360		1		AV RM 127 REC	1	20	3	10
1 3	20	0	1	STOR. RM 130,131 RECEPTS	3			540			1260	720		4		ROOF RECEPTS	1	20	3	12
3 3	20	0	1	RM. 130 VIDEO PROJECTOR		1		180	540			360		2		RM 128, 129 RECEPTS	1	20	3	14
5 1	20	0	1	RWS CONTROL PANEL	1			1000		1540		540		3		COMM RM 124 GEN. REC.	1	20	3	16
7	20	0	1	SPARE							0					SPARE	1	20		18
9	20	0	1	SPARE					0							SPARE	1	20		20
21	20	0	1	SPARE						0						SPARE	1	20		22
23	20	0	1	SPARE							0					SPARE	1	20		24
25	20	0	1	SPARE					0							SPARE	1	20		26
27	20	0	1	SPARE						0						SPARE	1	20		28
29				SPACE							0					SPARE	1	20		30
31				SPACE					0							SPACE				32
33				SPACE						0						SPACE				34
5				SPACE							0					SPACE				36
37				SPACE					0							SPACE				38
9				SPACE						0						SPACE				40
11				SPACE							0					SPACE				42
								TOTAL	2340	2980	1980	CONNE	CTED I	ΚVA		8.9				
												CONN.	(VA (C	ODE 1)		1.0				
												CONN.	(VA (C	ODE 2)		0.4				
												CONN. F	(VA (C	ODE 3)		5.9				
												CONN. F	(VA (C	ODE 4)		0.0				
												TENAN'	T ALLC	WANC	E KVA	0.0				
												SPARE	(DECIN	ЛAL)			SPARE	KVA	0.0	
												FEEDER	R DEMA	AND KV	/Δ	7.6				

FEEDER DEMAND AMPS

X'FMR. KVA

21.0

#### **LEGEND**

PCR

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City of Santa Monica
Architecture Services

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DATE: 20 \_\_\_\_SUBMITTED BY:

DATE: \_\_\_\_\_ 20 \_\_\_
APPROVED BY:
Miriam Mulder,
Architecture Services Manager

CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY: DATE: \_\_\_\_\_\_20 \_\_\_\_

REVIEWED BY: DATE: \_\_\_\_\_\_20 \_\_\_\_

07.24.12 BULLETIN 2

NO. DATE BY DESCRIPTION

R E V I S I O N S

CITY CLIENT

ISSUE RAINWATER HARVESTING

DATE 07.24.12

DRAWING NO. 6693

SHEET TITLE

PANELBOARD SCHEDULES

EET NO.

4"w x 6"h x 1/4" thick

Second surface custom background color

Second surface silkscreened graphics, one custom color

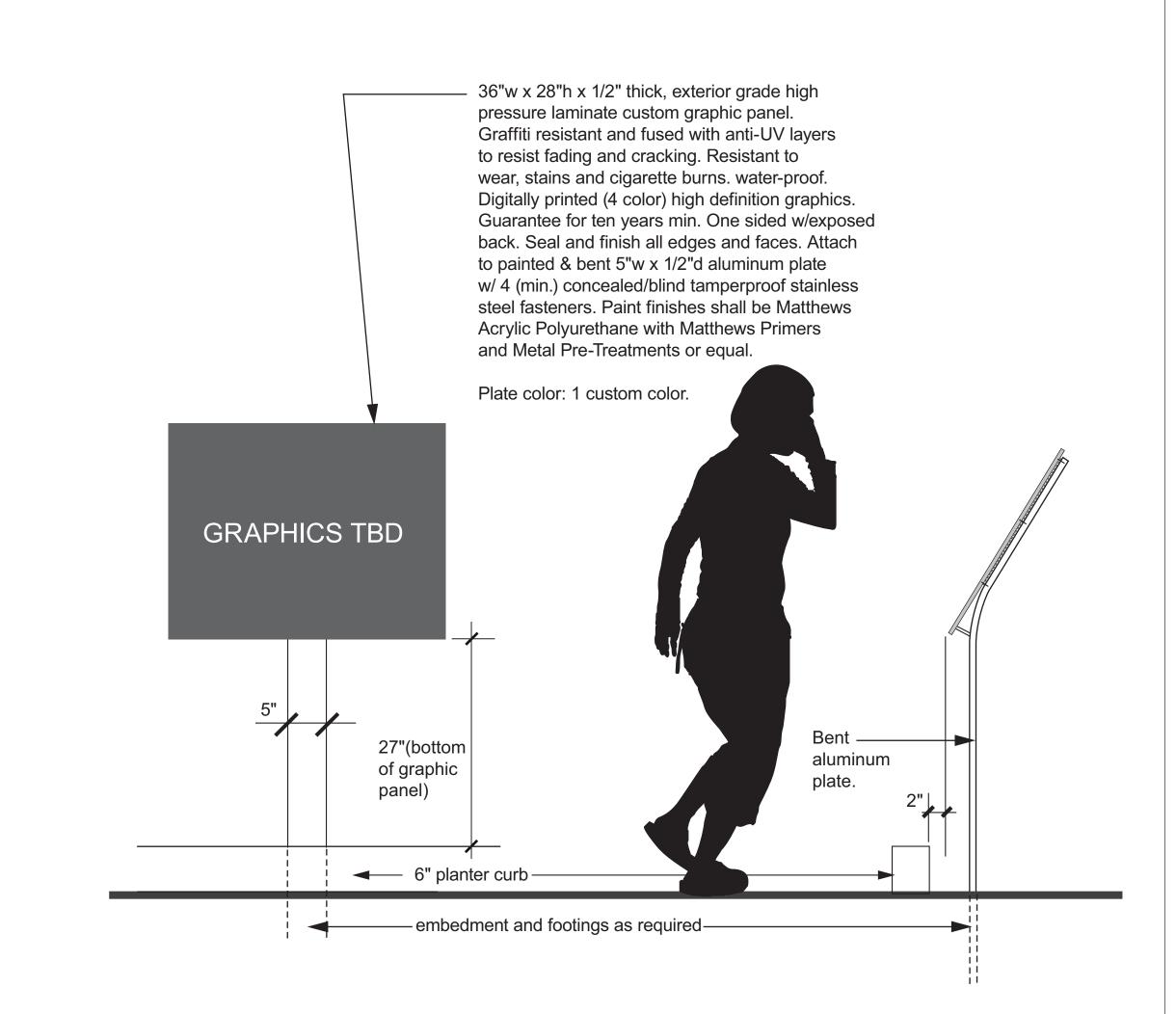
Attach to wall with VHB tape & silicone

One piece construction

Quantity: TBD

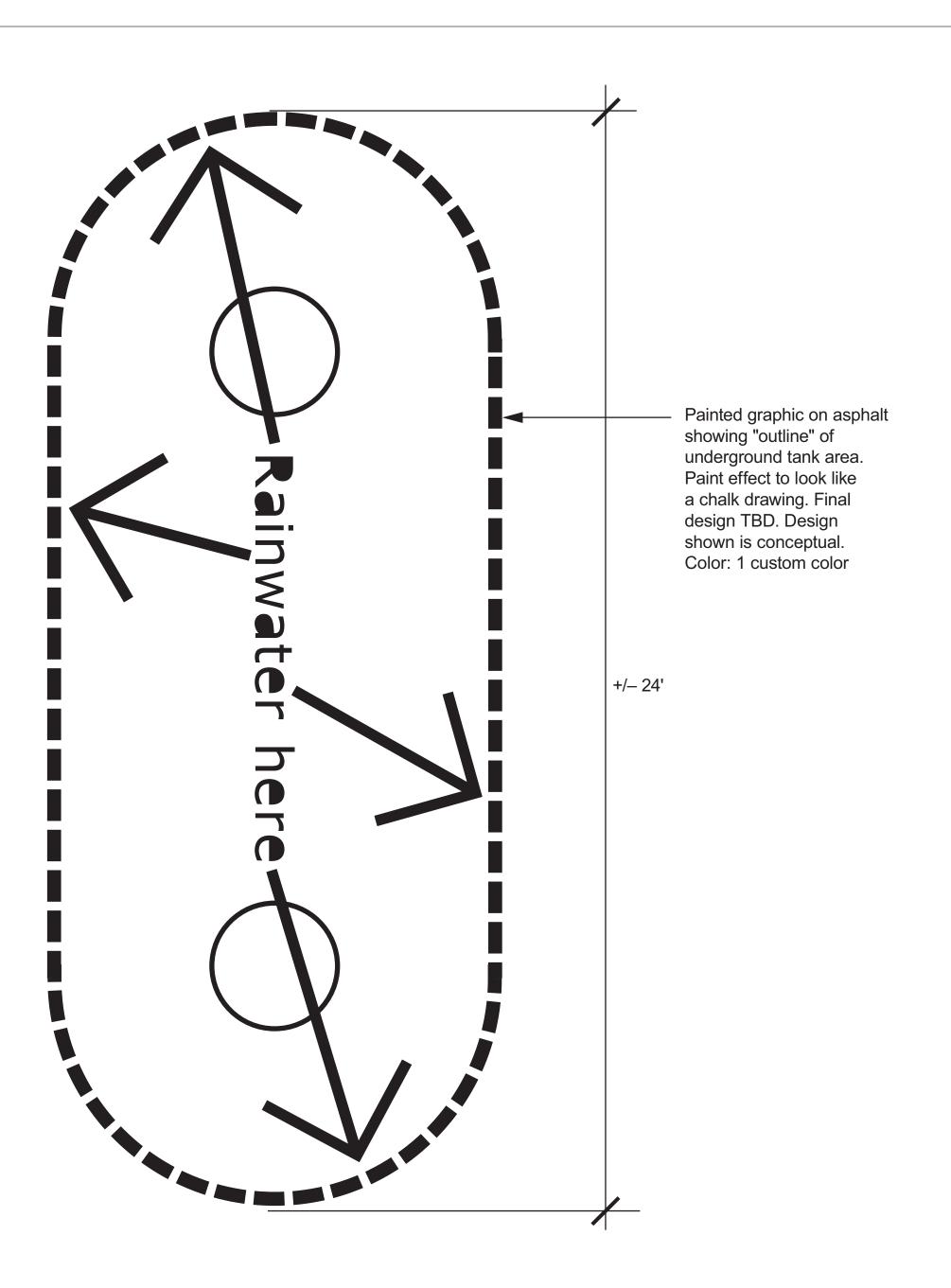
#### 4 RAIN WATER HARVEST INFO PLAQUE

0 .25" .5" 1" FULL SIZE



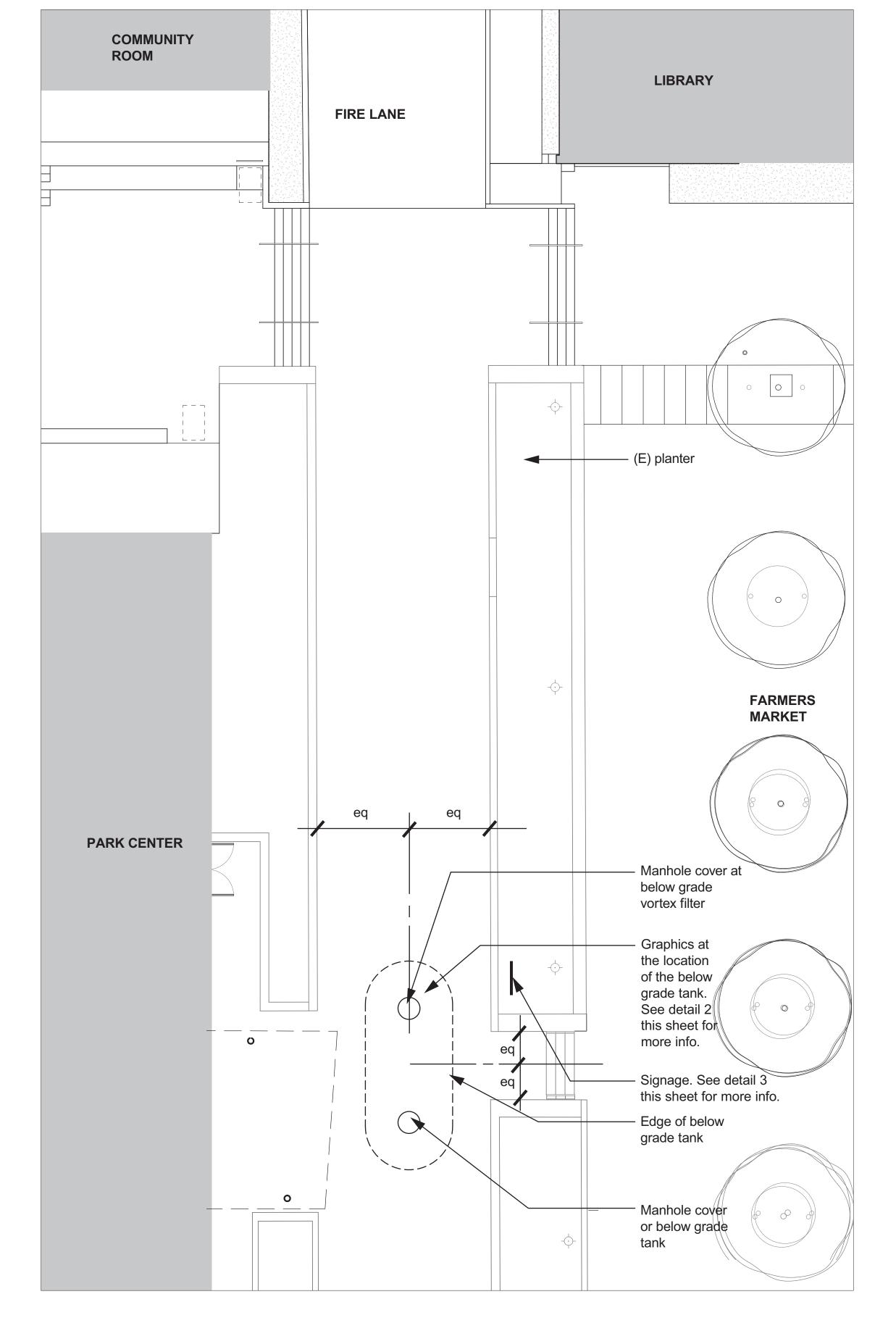
#### 3 RAIN WATER HARVEST EXHIBIT PANEL

0 .25' .5' 1' 1" = 1'-0"



#### 2 ENLARGED GROUND GRAPHIC

0 .5' 1' 2' 1/2" = 1'-0"



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KoningEizenbergArchitecture 1454 25th St, Santa Monica, CA 90404

info@kearch.com 310.828.0719 fax www.kearch.com ARCHITECT'S PROJECT NO.

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NEWSOM D E S I G N

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CITY CLIENT

07.24.12 BULLETIN 2 NO. DATE BY DESCRIPTION REVISIONS

RAINWATER HARVESTING

07.24.12

PROJECT NORTH **N** 

**GRAPHICS & SIGNAGE** 

0 2' 4' 8' 1/8" = 1'-0"