ATTACHMENT E
APPLICATION PLANS FOR CONDITIONAL USE PERMIT #6222

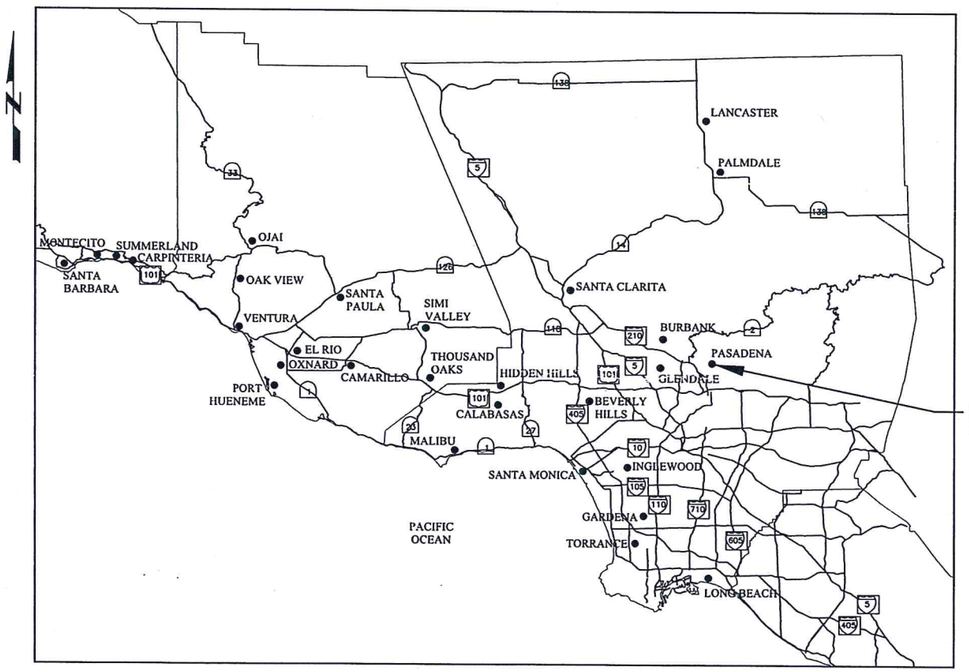
AREA	APN	ADDRESS*
1	5863-001-908 5863-022-902	3501 Arroyo Seco Road
2	5830-001-906	3375 Arroyo Seco Road
3	5830-001-906 5823-015-902	3337 Arroyo Seco Road

** Addresses are unofficial and based on nearby known addresses.*

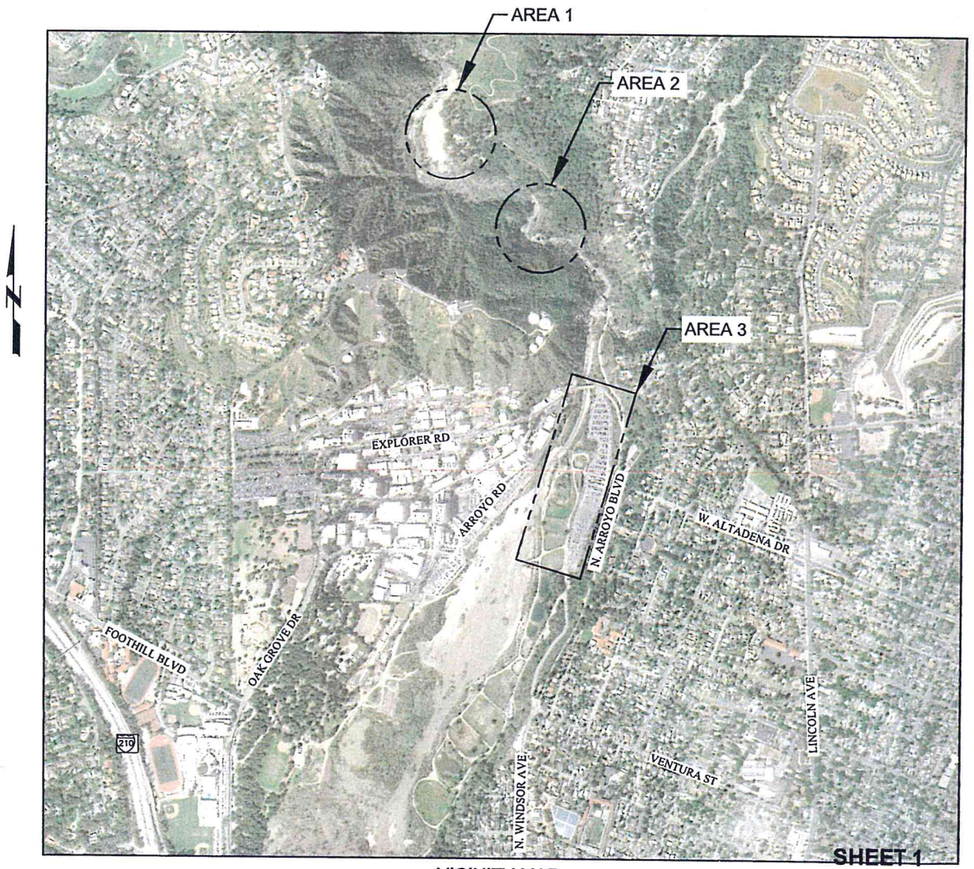
PASADENA WATER & POWER
ARROYO SECO CANYON PROJECT

DRAFT
For Conditional Use Permit

90% SUBMITTAL



LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

SHEET 1

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
NAME PE
APPROVED: DATE
APPROVED: DATE

carollo

D.S.–206 TO 209
DATE MARCH 2014
SCALE AS SHOWN
DRAWN BY SDW
DESIGNED BY SJS
CHECKED BY JED
SUBMITTED BY —
FIELD BOOKS
CALC BOOKS
APPROVED
APPROVED

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
TITLE SHEET, VICINITY MAP, AND LOCATION MAP

SHEET NO — OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 00G-01 (E-1757)
REVISION

LAST SAVED BY: trea
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.18176:1
User: TRea Plot Date: 18-APR-2014 3:47:26 PM

9137A10 9137A10 FILE NAME: 9137A1000G01.dgn

GENERAL NOTES

1. THESE PLANS AND SPECIFICATIONS REPRESENT THE DESIGN INTENT OF THE ENGINEER, AS APPROVED BY THE OWNER, CITY OF PASADENA. THE CONTRACTOR IS RESPONSIBLE FOR ALL ITEMS SHOWN ON THESE PLANS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR ANY DEVIATIONS FROM THESE PLANS AND ASSOCIATED RISK AND EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A COPY OF THE APPROVED PLANS AND SPECIFICATIONS AND ANY ADDENDA AT THE JOB SITE AT ALL TIMES. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY CITY OF PASADENA OF ANY UNFORESEEN CIRCUMSTANCES OR CONDITIONS THAT WOULD ALTER THESE PLANS AND SPECIFICATIONS FOR APPROVAL OF MODIFICATIONS TO THE INTENDED DESIGN.
2. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING FACILITIES AND UTILITIES SHOWN OR NOT SHOWN WHICH ARE TO REMAIN IN PLACE FROM DAMAGE. ALL FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED TO THE CITY'S SATISFACTION AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
3. PROVIDE A MINIMUM OF 36 INCHES COVER ON ALL PIPELINES UNLESS OTHERWISE NOTED OR DIRECTED. INSTALL ALL PIPING AND PAVEMENT PER CITY OF PASADENA STD. PLAN S-407.
4. STRAIGHT ALIGNMENT AND UNIFORM SLOPES OF PIPES SHALL BE MAINTAINED BETWEEN INVERTS SHOWN. EXISTING UTILITIES SHALL BE VERIFIED IN ADVANCE OF PIPELINE PLACEMENT. CITY SHALL BE NOTIFIED IMMEDIATELY OF ANY EXISTING UTILITIES AFFECTING PIPELINE ALIGNMENT OR SLOPE.
5. ADJUST ALL VALVE BOXES, VAULTS, PULL BOXES AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR DIRECTED.
6. ALL DEBRIS FROM DEMOLITION TO BE DISPOSED OF PROPERLY OFFSITE. ANY SALVAGEABLE MATERIALS OR EQUIPMENTS SHALL BE THE PROPERTY OF THE CITY AND MOVED TO THE CITY OF PASADENA WATER AND POWER MAINTENANCE YARD.
7. CONTRACTOR SHALL PROVIDE A STORM WATER POLLUTION CONTROL PLAN (PREPARED BY A CALIFORNIA REGISTERED CIVIL ENGINEER) FOR WORK DURING CONSTRUCTION CONFORMING TO THE NPDES PERMIT REQUIREMENTS.
8. THE CONTRACTOR SHALL SHORE, SUPPORT AND PROTECT EXISTING STRUCTURES AND FACILITIES IN ACCORDANCE WITH SECTION 02260.
9. WHERE REPLACING EXISTING PAVEMENT, MATCH EXIST GRADE AT EXISTING STRUCTURES AND BUILDINGS, EXCEPT WHERE NOTED OTHERWISE.
10. CONTRACTOR SHALL USE MECHANICAL RESTRAINT SYSTEMS, NOT THRUST BLOCKS, UNLESS NOTED OTHERWISE.
11. ALL EXISTING VALVES TO BE OPERATED BY CITY PERSONNEL ONLY. NOTIFY CITY 24 HOURS PRIOR TO NEED FOR VALVE OPERATION.
12. FOR CONNECTIONS TO EXISTING PIPES, CUT EXISTING PIPES SQUARE AND REPAIR ANY DAMAGE TO THE EXISTING LINING AND COATING.
13. ALL PIPE DIAMETERS ARE NOMINAL ID.
14. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL CONSTRUCTION SURVEYING AND STAKING. VERIFY ALL EXISTING HORIZONTAL AND VERTICAL INFORMATION PRIOR TO DOING ANY WORK.
15. CONTRACTOR SHALL WORK WITHIN LIMITS OF WORK.
16. ALL TRENCHING AND BACKFILL SHALL BE IN ACCORDANCE WITH CONTRACT DOCUMENTS.
17. ALL ABOVE GROUNDPIPING SHALL BE SUPPORTED WHETHER EXPLICITLY NOTED OR NOT. PROVIDE PIPE SUPPORTS EVERY 2 FT UNLESS EXPLICITLY NOTED OTHERWISE ON THE PLANS.
18. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM HIS OPERATIONS, WHETHER OR NOT SUCH FACILITIES ARE SHOWN ON THESE PLANS.
19. THE CONTRACTOR'S ATTENTION IS EXPRESSLY DIRECTED TO ALL THE REQUIREMENTS AND PROVISIONS OF THE STATE OF CALIFORNIA SAFETY REGULATIONS. CONFORMANCE SHALL BE STRICTLY ENFORCED DURING THE ENTIRE LIFE OF THE CONTRACT AND/OR PROJECT. AN EXCAVATION PERMIT WILL BE REQUIRED FOR TRENCHES IN EXCESS OF 5.0 FEET IN DEPTH FROM CAL-OSHA.
20. THE CONTRACTOR SHALL DISPOSE OF ALL SURPLUS EXCAVATION AND DEMOLITION DEBRIS CONFORMING TO LOCAL CODES AND REGULATION.
21. THE CONTRACTOR SHALL REPLACE IN KIND, TO THE SATISFACTION OF THE CITY, ANY PAVING, OR OTHER IMPROVEMENTS CUT, REMOVED OR DAMAGED IN CONJUNCTION WITH THIS PROJECT.
22. PIPE DELIVERED TO THE SITE SHALL BE PROTECTED BY THE CONTRACTOR FROM DUST OR CONTAMINATION PRIOR TO PLACING IN TRENCH, DURING INSTALLATION AND TESTING. PIPE IS TO BE STORED TO PREVENT DAMAGE IN ACCORDANCE WITH MANUFACTURING RECOMMENDATIONS AND PROCEDURES. RECEIVING, STORAGE, AND HANDLING OF ALL POTABLE WATER PIPE AND APPURTENANCES SHALL BE IN ACCORDANCE WITH AWWA STANDARDS AND PROCEDURES.
23. THE CONTRACTOR SHALL ENSURE THAT ALL OPENINGS INTO ALL PIPELINES ARE PROTECTED AND AT THE END OF EACH WORK DAY SECURELY PLUGGED AND STOPPED SO THAT NO ANIMAL, FOWL OR RODENT CAN ENTER THE PIPELINE.
24. NO PIPELINE SHALL BE INSTALLED ON FILL MATERIAL WITHOUT FIRST MEETING IN-PLACE DENSITY TESTS REQUIRED.
25. ALL PERMITS REQUIRED BY LAW SHALL BE ACQUIRED BY CONTRACTOR BEFORE COMMENCING WORK. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
26. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT POTHOLE LOCATION DRAWINGS TO THE CITY FOR REVIEW PRIOR TO SUBMITTAL OF SHOP DRAWINGS. SUBMITTAL OF PROPOSED POTHOLE LOCATIONS TO THE CITY SHALL NOT RELIEVE CONTRACTOR OF ITS DUTY AND RESPONSIBILITY FOR REPAIRING DAMAGE TO UTILITIES FROM CONTRACTOR'S WORK OR MAKING FIELD ADJUSTMENTS TO PROPOSED PIPELINE ALIGNMENTS AND CONNECTIONS PENDING WRITTEN APPROVAL BY THE CITY.
27. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF THE PRESENCE AND LOCATION OF ALL EXISTING SURFACE FEATURES, WHETHER SHOWN OR NOT HEREIN.
28. PRIOR TO SUBMITTAL OF PIPE SHOP DRAWINGS, THE CONTRACTOR SHALL FIELD POTHOLE TO VERIFY THE INVERT ELEVATION, OUTSIDE DIAMETER, LOCATION AND MATERIAL OF ALL EXISTING PIPELINES TO WHICH NEW PIPELINES WILL BE CONNECTED, AND SUBMIT THE INFORMATION WITH THE PIPE SUBMITTAL.

GENERAL NOTES

29. PROVIDE CONCRETE ENCASEMENT FOR ALL PIPING BENEATH STRUCTURES, PADS, VAULTS, AND ANY OTHER FACILITIES PER TYPICAL DETAIL P040.
30. ALL BUILDING COORDINATES ARE TO OUTSIDE CORNER OF COLUMN OR BUILDING WALL, UNLESS OTHERWISE INDICATED.
31. SMALL YARD PIPING (10 INCHES AND LESS INSIDE DIAMETER) IS SHOWN AS A CENTERLINE ON THE PLANS TO SCALE BUT IS NOT DIMENSIONED. THE CONTRACTOR SHALL FIELD INSTALL THE SMALL YARD PIPING ON LINE AND GRADE WITH MINIMUM COVER UNLESS OTHERWISE INDICATED CONFLICTS BETWEEN PIPES SHALL BE RESOLVED AS FOLLOWS: GRAVITY LINES HAVE PRIORITY. PRESSURE PIPELINES SHALL BE ROUTED UNDER OR OVER GRAVITY LINES AS NECESSARY WITH SETBACKS AND INSTALLATION PER CDPH STANDARDS AND GUIDELINES.
32. PRIOR TO PAVING, ALL UNDERGROUND FACILITIES INCLUDING, BUT NOT LIMITED TO SEWER, WATER, TELEPHONE, CABLE, POWER, INSTRUMENTATION, AND GAS SHALL BE IN PLACE AND TESTED.
33. OVER EXCAVATE 5 FT (MIN) HORIZONTALLY FROM FOUNDATION FOR ALL NEW STRUCTURES. OVER EXCAVATE 3 FT (MIN) VERTICALLY BENEATH FOUNDATION FOR ALL NEW STRUCTURES.
34. PROVIDE CONCRETE EQUIPMENT BASE PAD UNDER ALL EQUIPMENT. REFER TO STRUCTURAL TYPICAL DETAILS.
35. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING GROUNDWATER ENCOUNTERED AND SECURING APPROPRIATE DISCHARGE PERMITS. CONTRACTOR SHALL SUBMIT DEWATERING PLAN TO ENGINEER FOR APPROVAL. DEWATERING SHALL BE IN ACCORDANCE WITH SECTION 02240.
36. THE CONTRACTOR SHALL NOT SHUT OFF ANY WATER OR ELECTRICAL SERVICE AT THE CURB AT ANY TIME. SHOULD THE CONTRACTOR REQUIRE THE WATER OR ELECTRICAL SERVICE TO BE SHUT OFF TO THE PRIVATE PROPERTY, ARRANGEMENTS SHALL BE MADE SOLELY BY THE CONTRACTOR WITH THE PROPERTY OWNER AND THE CONTRACTOR SHALL PROVIDE THE PROPERTY OWNER WITH AT LEAST 48 HOURS PRIOR NOTICE.
37. USE CURRENT REVISIONS AND VERSIONS FOR ALL REFERENCED APWA STANDARD PLANS.
38. IF THE CONTRACTOR PROPOSES TO TRIM TREES OR SHRUBS THAT FACILITATE HIS CONSTRUCTION ACCESS, SUCH PROPOSALS SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND WRITTEN APPROVAL TWO WEEKS IN ADVANCE OF THE WORK. TRIMMING WORK SHALL BE DESIGNED AND SUPERVISED BY A LICENSED ARBORIST. THE CONTRACTOR SHALL NOTIFY AND RECEIVE WRITTEN APPROVAL PRIOR TO REMOVING ANY TREES WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING TREES OR SHRUBS AND SHALL REPLACE ANY DAMAGED LANDSCAPE IN ACCORDANCE WITH CITY OF PASADENA REQUIREMENTS.
39. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CITY OR THE ENGINEER.
40. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK SITE FOR THE DURATION OF THE CONTRACT.
41. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND APPROVAL OF TRAFFIC CONTROL BY CITY OF PASADENA TRANSPORTATION DEPARTMENT.
42. A COPY OF ALL PERMITS MUST BE KEPT ON-SITE DURING ALL PERIODS OF OPERATION.
43. THE FOLLOWING NOTES APPLY TO THE STRUCTURAL AND/OR GRADING PERMITS:
    A. CONTRACTOR MUST SUBMIT FINAL EXCAVATION DETAILS OF AREA AND CROSS SECTION OF EXCAVATION INCLUDING CALCULATED AMOUNTS OF CUT, FILL, AND EXPORT IN CUBIC YARDS FOR APPROVAL BY CITY OF PASADENA, DEPARTMENT OF BUILDING AND SAFETY.
    B. CONTRACTOR MUST FULFILL ANY OTHER CONDITIONS THAT ARE REQUIRED FOR PERMIT APPROVAL BY THE CITY OF PASADENA.
44. FURNISH AND INSTALL TRACER WIRE AND WARNING TAPE FOR ALL BURIED PIPE.
45. CONTRACTOR SHALL COORDINATE WITH CITY OF PASADENA WATER AND POWER DURING THE DEMOLITION PHASE OF THIS PROJECT AND SALVAGE ALL MATERIALS AND EQUIPMENT AS REQUIRED. SALVAGED EQUIPMENT WILL BE DELIVERED TO THE OWNERS SPECIFIED LOCATION.
46. PROVIDE A MINIMUM OF 10-FEET HORIZONTAL SEPARATION BETWEEN POTABLE AND NON-POTABLE PIPELINES IN ACCORDANCE WITH CDPH REQUIREMENTS.
47. PRIOR TO BACK FILLING PIPE TRENCHES, CONTRACTOR SHALL FIELD SURVEY AND PROVIDE AS BUILT COORDINATES FOR ALL NEW STRUCTURES, PIPELINES, AND APPURTENANCES.
48. ALL PAVEMENT REPLACEMENT SHALL BE DONE IN ACCORDANCE WITH CITY OF PASADENA PUBLIC WORKS DEPARTMENT STANDARDS. REFER TO CITY OF PASADENA STD. PLANS S-415, S-416, AND S-417.
49. CONTRACTOR SHALL BE RESPONSIBLE TO POT HOLE AND FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES REMAINING IN SERVICE THAT WILL BE CROSSED, OR WITHIN 4-FEET HORIZONTALLY, OF THE PROPOSED PIPELINES.
50. CONTRACTOR SHALL PROVIDE AND MAINTAIN ACCESS FOR PEDESTRIANS AND TRAFFIC THROUGH AREAS 2 AND 3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL DELINEATION'S, BARRICADES, TEMPORARY SIGNAGE, FLAGGERS, ETC. AS REQUIRED IN ACCORDANCE WITH CITY AND MUTCD STANDARDS.
51. CONTRACTOR IS REQUIRED TO OBTAIN ALL PERMITS WITH THE CITY, COUNTY, AND STATE PRIOR TO STARTING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO DEMOLITION, GRADING, PAVING, BUILDING, ELECTRICAL, AND MECHANICAL.
52. THE CONTRACTOR MUST RECEIVE APPROVAL FROM THE CITY OF PASADENA ARBORIST PRIOR TO TRIMMING ANY TREES WITHIN THE CONSTRUCTION AREA. CONTRACTOR SHALL ALLOW 3 TO 4 WEEKS FOR CITY APPROVAL. ALL WORK MUST BE IN ACCORDANCE WITH THE TREE PROTECTION PLAN APPROVED BY THE CITY FORESTRY ADVISORY COMMITTEE. ALL EXCAVATION WITHIN TREE DRIP LINES MUST BE DONE BY HAND.
53. IT IS ANTICIPATED THAT A SIGNIFICANT AMOUNT OF LARGE ROCKS "BOULDERS" MAY BE ENCOUNTERED DURING THE EXCAVATION AND CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL MAKE SPECIAL PROVISIONS REUSING, STOCK PILING, OR DISPOSING AT AN OFF-SITE LOCATION.
54. SOME OF THE HILLSIDE SLOPES WITHIN THE PROJECT AREA ARE PRONE TO ROCK SLIDES. CONTRACTOR SHALL TAKE CAUTION AND PROVIDE SPECIAL PROTECTION WHEN WORKING IN THESE AREAS.
55. THERE ARE SPECIAL PROVISIONS AND WORK RESTRICTIONS TO PROTECT NESTING BIRD HABITATS WITHIN THE PROJECT AREA. REFER TO TECHNICAL SPECIFICATIONS SECTION 01140 FOR ADDITIONAL REQUIREMENTS.
56. CONTRACTOR SHALL PROVIDE BRIDGE PROTECTION AND TEMPORARY ACCESS PLAN FOR ALL BRIDGES WHICH MAY BE IMPACTED BY CONSTRUCTION EQUIPMENT.
57. CONTRACTOR MAY REUSE ALL COBBLE AND ROCK BOULDERS GREATER THAN 18" OD FOR RIP RAP IF APPROVED BY ENGINEER.
58. THE PROPOSED IMPROVEMENTS SHOWN ON THESE DRAWINGS ARE SUPERIMPOSED ON A BASE MAP. THIS BASE MAP IS COMPILED FROM AERIAL AND GROUND SURVEYS, AND OTHER DATA AS MADE AVAILABLE TO THE ENGINEER, WHO SHALL NOT BE HELD LIABLE FOR CHANGES, INACCURACIES, OMISSIONS OR OTHER ERRORS ON THESE DOCUMENTS. THE COMPOSITE BASE MAP IS PROVIDED AS AN AID ONLY AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THESE DOCUMENTS AND INCORPORATING/INTEGRATING ALL CONSTRUCTION AS REQUIRED TO ACCOMMODATE THE SAME. NONE OF THE INCLUDED DRAWINGS DEPICT A BOUNDARY SURVEY ALTHOUGH A PARTIAL ALTA SURVEY WAS PERFORMED ALONG A PORTION OF THE UP ROW. BOUNDARY LINES SHOWN ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY.
59. IN THE EVENT THAT SUBGRADE OBSTRUCTIONS ARE ENCOUNTERED OR DISCREPANCIES ARE FOUND BETWEEN THE DRAWINGS AND FIELD CONDITIONS, NOTIFY ENGINEER OR CITY OF PASADENA FOR DIRECTIONS. DO NOT PROCEED WITH THE WORK WITHOUT DIRECTION FROM THE ENGINEER.
60. CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY COMPANIES IN THE PROJECT AREA A MINIMUM OF THREE (3 WORKING DAYS PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR MUST INVESTIGATE AND VERIFY THE LOCATION OF ANY EXISTING UTILITIES WITHIN THE PROJECT AREA. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY, LOCATE, AND PROTECT ALL UNDERGROUND UTILITIES. ANY UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE CONSIDERED TENTATIVE AND APPROXIMATIONS AND THEREFORE, NO WARRANTY EXPRESSED OR IMPLIED IS MADE AS TO THE COMPLETENESS OR CORRECTNESS OF THEIR LOCATION. THE UTILITY COMPANIES ARE THOUGHT TO BE MEMBERS OF THE UNDERGROUND SERVICE ALERT (U.S.A.) ON-CALL PROGRAM. THE CONTRACTOR SHALL NOTIFY U.S.A. 72-HOURS IN ADVANCE OF PERFORMING EXCAVATION WORK AT 811 FROM 7:00 AM TO 5:00 PM, MONDAY THROUGH FRIDAY. EXISTING PUBLIC UTILITIES SHALL BE KEPT IN SERVICE AT ALL TIMES. UTILITIES THAT INTERFERE WITH THE WORK TO BE PERFORMED SHALL BE PROTECTED AS REQUIRED BY CITY OF PASADENA AND ALL OTHER AFFECTED ENTITIES. DAMAGE TO UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO CITY TO THE SATISFACTION OF THE ENGINEER AND OWNER. POTHOLING IS REQUIRED. ANY EXCAVATION WITHIN FIVE (5) FEET OF THE EXISTING GAS TRANSMISSION PIPE SHALL BE DUG BY HAND IN THE PRESENCE OF UTILITY INSPECTOR.
61. CITY OF PASADENA WILL PROVIDE A QUALIFIED BIOLOGICAL/ARCHEOLOGICAL MONITOR THAT WILL INITIALLY REVIEW SITE CONSTRUCTION PROTOCOLS WITH ALL CONSTRUCTION CONTRACTOR EMPLOYEES AT A PRE-CONSTRUCTION MEETING THAT WILL BE SPECIFICALLY HELD ON RESOURCE PROTECTION. EACH EMPLOYEE ASSIGNED TO THIS PROJECT MUST ATTEND IN THIS PRE-CONSTRUCTION MEETING AND DISCUSSION OF ADJACENT SENSITIVE RESOURCES, AND SIGN A STATEMENT INDICATING THAT THEY HAVE READ AND UNDERSTOOD THE PROTOCOLS AND AGREE TO ADHERE TO THEM. SIGNIFICANT BREACHES OF PROTOCOL AND FAILURE TO ADEQUATELY PROVIDE THE DEGREE OF RESOURCE PROTECTION REQUIRED BY THIS PROJECT WILL RESULT IN THE ISSUANCE OF A STOP WORK ORDER BY THE ENGINEER OR BY THE MONITOR. CITY OF PASADENA PROVIDED MONITOR WILL CAREFULLY INSPECT ALL WORK AREAS FOR THE PRESENCE OF WILDLIFE OR CULTURAL RESOURCES PRIOR TO INSTALLATION OF PROTECTIVE BARRIER FENCING AND FIELD FENCING, AND PRIOR TO INITIATION OF CONSTRUCTION EACH DAY. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PENALTIES AND ALL REPAIRS AND MITIGATIONS IMPOSED DUE TO BREACH OF PROTOCOL.
62. BY ENTERING INTO THIS CONTRACT WITH CITY OF PASADENA, THE CONTRACTOR AGREES TO HAVING EXAMINED THE SITE, COMPARING THE SITE CONDITIONS WITH THE DRAWINGS AND SPECIFICATIONS AND HAS CAREFULLY EXAMINED ALL OF THE CONTRACT DOCUMENTS AND IS SATISFIED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. NO ALLOWANCE SHALL BE MADE SUBSEQUENTLY ON BEHALF OF THE CONTRACTOR DUE TO FAILURE TO BE ACQUAINTED WITH THE CONDITIONS OF THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH ALL CONSTRUCTION OPERATIONS. CONTRACTOR SHALL PROTECT ALL EXISTING ON-SITE AND OFF-SITE IMPROVEMENTS AGAINST DAMAGE RESULTING FROM OPERATIONS. RESPONSIBILITY EXTENDS TO THE CONTRACTOR'S WORKERS, SUBCONTRACTORS AND OTHERS PROVIDING SERVICES. CONTRACTOR SHALL REPAIR AND/OR REPLACE DAMAGE AT THEIR OWN EXPENSE AND TO THE SATISFACTION OF THE ENGINEER AND CITY OF PASADENA. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD CITY OF PASADENA AND THE ENGINEER (QUESTA ENGINEERING CORPORATION) HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FROM LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF CITY OF PASADENA OR THE ENGINEER. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
63. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. TRAFFIC CONTROL, ACCESS TO AND FROM ADJOINING DRIVEWAYS AND STREETS, AND ANY LANE CLOSURES. TRASH GENERATED BY THIS WORK (CONSTRUCTION DEBRIS, PAPER, BOTTLES, CIGARETTES, ETC) SHALL BE REMOVED ON A DAILY BASIS. CONTRACTOR SHALL CONTROL DUST AT ALL TIMES WITH WATER.
64. ALL WORK SHALL BE IN COMPLIANCE WITH APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS AS SET FORTH BY THE FEDERAL DEPARTMENT OF LABOR AND/OR THE STATE OF CALIFORNIA AND CITY OF PASADENA. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CALTRANS MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE OF WORK ZONES. ALL SIGNS SHALL BE APPROPRIATELY CONSTRUCTED WITH REFLECTIVE MATERIAL ON A BACKING OF METAL OR FABRIC (NO WOOD OR PLASTIC ALLOWED) AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION TO PROVIDE PROPER VISIBILITY, PER SECTION 12 OF THE CALTRANS SPECIAL PROVISIONS. THE CONTRACTOR SHALL MAINTAIN REASONABLE ACCESS TO ALL ROADWAYS DURING CONSTRUCTION.
65. REFER TO THE SPECIFICATIONS THAT ARE A PART OF THESE CONTRACT DOCUMENTS. COMPLY WITH ALL REGULATIONS AND CODES GOVERNING WORK PERFORMED UNDER THIS CONTRACT. REFER TO CALTRANS STANDARD PLANS AND SPECIFICATIONS AS REQUIRED.
66. WRITTEN DIMENSIONS ALWAYS TAKE PRECEDENCE OVER SCALED DIMENSIONS IF THERE IS A CONFLICT. THE CONTRACTOR SHALL CONTACT CITY OF PASADENA TO OBTAIN ADDITIONAL CLARIFICATION. NO DEVIATION OR SUBSTITUTION SHALL BE ALLOWED WITHOUT OBTAINING PRIOR WRITTEN APPROVAL FROM CITY OF PASADENA AND THE ENGINEER.

ABBREVIATIONS

AB	ANCHOR BOLT	MAX	MAXIMUM
ABC	AGGREGATE BASE COURSE	ME	MATCH EXISTING
AC	ASPHALTIC CONCRETE OR ASBESTOS CEMENT	MFRS	MANUFACTURER'S
ADD'L	ADDITIONAL	MH	MANHOLE
ALT	ALTERNATE	MI	MALLEABLE IRON
ALUM	ALUMINUM	MIN	MINIMUM
APWA	AMERICAN PUBLIC WORKS ASSOCIATION (SOUTHERN CALIFORNIA CHAPTER)	MJ	MECHANICAL JOINT
		MPT	MALE PIPE THREAD
AVAR	AIR VACUUM AIR RELEASE		
AVE	AVENUE	N	NORTH
		NB	NORTH BOUND
BC	BEGINNING OF CURVE	NG	NATURAL GAS
BF	BLIND FLANGE	NIC	NOT IN CONTRACT
BLDG	BUILDING		
B.O.P.	BEGINNING OF PAVEMENT	OD	OUTSIDE DIAMETER
		OPP	OPPOSITE
CA	CALIFORNIA		
CB	CATCH BASIN	P	POLE
CDPH	CALIFORNIA DEPT. OF PUBLIC HEALTH	PC	POINT OF CURVATURE (BEGIN CURVE)
CFS	CUBIC FEET PER SECOND	PE	PLAIN END
CJ	CONSTRUCTION JOINT	PL	PROPERTY LINE, PLATE
CL	CENTER LINE	POC	POINT OF COMMENCEMENT
CLR	CLEAR	PP	POWER POLE
CML&C	CEMENT MORTAR LINED AND COATED	PT	POINT OF TANGENCY (END CURVE)
CMU	CONCRETE MASONRY UNIT	PVC	POLYVINYL CHLORIDE
CO	CLEANOUT	PVDF	POLYVINYLIDENE FLUORIDE
COL	COLUMN	PVMT	PAVEMENT
CONC	CONCRETE	PWP	PASADENA WATER AND POWER
CONT.	CONTINUED		
COR	CORNER	R	RADIUS
CPLG	COUPLING	RCP	REINFORCED CONCRETE PIPE
CY	CUBIC YARDS	RD	ROAD
		RDCR	REDUCER
DEG	DEGREE	REINF	REINFORCEMENT
DET	DETAIL	REQMTS	REQUIREMENTS
DI	DUCTILE IRON	RES	RESERVOIR
DIA	DIAMETER	RP	RADIUS POINT
DIP	DUCTILE IRON PIPE	R/W	RIGHT-OF-WAY
DOT	DEPARTMENT OF TRANSPORTATION	RT	RIGHT
DWLS	DOWELS		
DWG(S)	DRAWING(S)	S	SOUTH, SLOPE OR SEWAGE
E	EAST OR ELECTRICAL	SB	SOUTH BOUND
EA	EACH	SCE	SOUTHERN CALIFORNIA EDISON
ECC	ECCENTRIC	SD	STORM DRAIN
EDB	ELECTRICAL DUCT BANK	SIM	SIMILAR
EF	EACH FACE	SPEC	SPECIFICATION
EL OR ELEV	ELEVATION	SQ	SQUARE
ELEC	ELECTRICAL	SST	STAINLESS STEEL
EMH	ELECTRICAL MANHOLE	ST	STREET
EOP	EDGE OF PAVEMENT	STL	STEEL
EP	EDGE OF POND	STA	STATION
EQUIP	EQUIPMENT	SY	SQUARE YARDS
EVC	END VERTICAL CURVE		
EW	EACH WAY	T	TELEPHONE
EXIST	EXISTING	TB	THRUST BLOCK
EXT	EXTERIOR	TBC	TOP BACK OF CURB
		TC	TOP OF CURB
FC	FLEXIBLE COUPLING	TBM	TEMPORARY BENCH MARK
FCA	FLANGED COUPLING ADAPTER	TEL	TELEPHONE
FF	FINISHED FLOOR	TOC	TOP OF CONCRETE
FG	FINISHED GRADE	TOE	TOE OF SLOPE (BOTTOM)
FH	FIRE HYDRANT	TOG	TOP OF GRATE / GRATING
FIN	FINISHED	TOS	TOP OF SLOPE (GRADE BREAK), TOP OF STEEL DECK
FL	FLOW LINE		
FLG	FLANGE	TOW	TOP OF WALL
FPS	FEET PER SECOND	TPOB	TRUE POINT OF BEGINNING
FPT	FEMALE PIPE THREAD	TYP	TYPICAL
FS	FORGED STEEL		
FT	FEET	UE	UNDERGROUND ELECTRICAL (DUCT BANK)
FTG	FOOTING	UNO	UNLESS NOTED OTHERWISE
G/B OR GB	GRADE BREAK	VC	VICTUAL COUPLING / VERTICAL CURB
GR	GRADE	VERT	VERTICAL
HDPE	HIGH DENSITY POLYETHYLENE	W	WEST
HP	HIGH POINT	WP	WATER PROOF
HORIZ	HORIZONTAL	WSP	WELDED STEEL PIPE
		WSTP	WATERSTOP
ID	INSIDE DIAMETER	W/	WITH
IE	INVERT ELEVATION		
INV	INVERT		
INSTR	INSTRUMENTATION		
INT	INTERIOR		
IRR	IRRIGATION		
JS	JUNCTION STRUCTURE		
LACFCD	LOS ANGELES COUNTY FLOOD CONTROL DISTRICT		
LDG	LANDING		
LEV	LEVEL		
LF	LINEAR FEET		
LG	LIP OF GUTTER		
LH	LAMP HOLE		
LLV	LONG LEG VERTICAL		
LP	LIGHT POLE OR LIQUID PROPANE		
LS	LUMP SUM		
LT	LEFT		

SURVEY DATA

BASIS OF BEARING:
CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE 5, NAD83 USING THE CAL TECH REAL TIME STATION IN PASADENA. EPOCH DATE OF 2011.

BENCHMARK:
BM NUMBER Y 7717 (NAVD 88 DATUM).
L&BN IN E CB 600MM (2FT) S/O C.B. @ NE COR VENTURA ST & STERLING PL MKD (BM)

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SHEET 2

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209
DATE: MARCH 2014
SCALE: AS SHOWN
DRAWN BY: SDW
DESIGNED BY: SJS
CHECKED BY: JED
SUBMITTED BY: —
FIELD BOOKS
CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
ABBREVIATIONS AND GENERAL NOTES

SHEET NO — OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 00G-03 (E-1757)
APPROVED
APPROVED
REVISION

CIVIL SYMBOLS

- HORIZONTAL AND VERTICAL CONTROL POINT
- NEW STRUCTURE OR FACILITY
- EXISTING STRUCTURE OR FACILITY
- FUTURE STRUCTURE OR FACILITY
- CONTRACTOR STAGING OR EXCAVATION SPOILS AREA
- DEMOLITION
- NEW AC PAVEMENT
- NEW SIDEWALK, CONCRETE FLATWORK
- 5100 — INDEX CONTOUR LINE, FINISHED GRADE
- 5101 — INTERMEDIATE CONTOUR LINE, FINISHED GRADE
- INDEX CONTOUR LINE, EXISTING GROUND
- INTERMEDIATE CONTOUR LINE, EXISTING GROUND
- 5100.00 — FINISHED ELEVATION
- OR — DRAINAGE FLOW OR PIPE FLOW DIRECTION
- X — NEW CHAIN LINK FENCE
- EXISTING FENCE
- NEW PRECAST MASONRY FENCE
- 4:1 OR (TOP / TOE) — CUT OR FILL SLOPE
- FH — NEW FIRE HYDRANT
- CO — NEW CLEANOUT
- EXISTING MANHOLE
- NEW MANHOLE
- NEW GUARD POST (BOLLARD)
- NEW WATER VALVE
- EXISTING VALVE
- EXISTING POWER POLE
- EXISTING LIGHT POLE
- EXISTING UNDERGROUND VALVE
- EXISTING HYDRANT
- EXISTING GUARD POST
- NEW SIGN

- EXISTING PIPE (SINGLE LINE)
- EXISTING PIPE (TRIPLE LINE)
- NEW PIPELINE (TRIPLE LINE)
- NEW PIPELINE (SINGLE LINE)
- CENTERLINE
- PROPERTY LINE
- 36" BW — NEW PIPE CALLOUT
- EX 36" BW — EXISTING PIPE CALLOUT

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NOTE:
ALL SYMBOLS SHOWN MAY NOT BE INCLUDED WITHIN THIS PROJECT OR SHOWN ON THE PLANS OR DRAWINGS. ALL SCREENED SYMBOLS SHOWN ON THE DRAWINGS REPRESENT EXISTING OR DISCIPLINE BACKGROUND (TYP).

SHEET 3

X-XX

REVISION

NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

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APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
MARCH 2014	AS SHOWN		
DRAWN BY SDW			
DESIGNED BY SJS		ARROYO SECO CANYON PROJECT	WORK ORDER 03055 / FILE NUMBER 00G-04 (E-1757)
CHECKED BY JED		SYMBOLS 1	
SUBMITTED BY —			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 9137A1000G04.dgn

Plot Date: 16-APR-2014 3:48:07 PM
User: TRea
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.18176:1
LAST SAVED BY: trea

GENERAL MATERIAL IN CROSS SECTION

- STEEL
- CAST IRON OR FIBERGLASS
- BRONZE OR ALUMINUM
- MASONRY
- INSULATION
- PLASTIC, RUBBER OR NEOPRENE
- GRAVEL
- CONCRETE
- SOIL
- SAND
- WOOD (FINISH)

GENERAL MATERIAL IN PLAN

- ALUMINUM OR METAL DECKING
- CHECKERED PLATE
- SPAN — GRATING

GENERAL PLUMBING - SINGLE LINE PIPING

- WCO — WALL CLEANOUT
- FCO — FLOOR CLEANOUT
- BLOW OFF ASSEMBLY
- HUB DRAIN
- FLOOR DRAIN
- FLOOR SINK
- DRAIN TRAP

MISCELLANEOUS

- CHANGE IN PIPING MATERIAL
- ROUND OR DIAMETER
- SQUARE
- AT
- ANGLE
- DRAIN - SCHEMATIC
- (1) NEW STRUCTURAL COLUMN LINE NUMBER
- SLG-1500 EQUIPMENT CALLOUT (SEE EQUIPMENT SCHEDULE)
- 30" SW PIPE CALLOUT (SEE PIPE SCHEDULE)

GENERAL EQUIPMENT - SINGLE LINE

- STOP GATE
- SLIDE GATE
- SLUICE GATE
- AIR VACUUM AND AIR RELEASE ASSEMBLY
- THERMOMETER
- INJECTOR OR EDUCTOR
- FA — FLAME ARRESTER
- CENTRIFUGAL PUMP OR FAN
- VERTICAL TURBINE PUMP (PLAN)
- METERING PUMP
- PROGRESSING CAVITY, POSITIVE DISPLACEMENT PUMP
- BLOWER OR COMPRESSOR
- FLOW TUBE
- M — MAGNETIC METER
- ORIFICE PLATE AND FLANGES
- ROTAMETER
- T — CONDENSATE TRAP
- PIPE SUPPORT (IN PLAN ONLY)
- PIPE ANCHOR
- PULSATION DAMPENER
- EXPANSION CHAMBER WITH RUPTURE DISC
- RUPTURE DISC
- GAUGE: x = G - GENERIC, x = P - PRESSURE, x = V - VACUUM, x = C - COMBINATION, x = S - PRESSURE SWITCH
- GAUGE WITH DIAPHRAGM SEAL: x = G - GENERIC, x = P - PRESSURE, x = V - VACUUM, x = C - COMBINATION, x = S - PRESSURE SWITCH

GENERAL PIPING

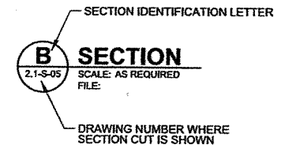
DOUBLE LINE		SINGLE LINE
	FLANGED JOINT	
R R R	MECHANICAL JOINT (MJ) (R=RESTRAINED)	R
	WELDED JOINT (STANDARD)	
	FABRICATED JOINT	
	PUSH ON JOINT (BELL AND SPIGOT)	
	THREADED JOINT	
	SOCKET JOINT (PVC SOLVENT WELD)	
	FLEXIBLE TYPE COUPLING	
	FLANGED COUPLING ADAPTER	
	GROOVED TYPE COUPLING (RIGID)	
	HARNESS ASSEMBLY (RESTRAINED JOINT)	
	CUT PIPE	
	FLEXIBLE CONNECTION	
	QUICK DISCONNECT	
	UNION	
	CONCENTRIC REDUCER	
	ECCENTRIC REDUCER	
	CAPPED END OR PLUGGED END	
	BLIND FLANGE	
	STRAINER	
	BUBBLER LEVEL CONTROL	B
	HOSE BIBB (HB)	
	FLOW SIGHT GLASS	FG, X

GENERAL VALVES

DOUBLE LINE		SINGLE LINE
	GATE VALVE	
	GATE VALVE, BURIED W/ VALVE BOX	
	BUTTERFLY VALVE	
	BUTTERFLY VALVE, BURIED W/ VALVE BOX	
	ECENTRIC PLUG VALVE	
	ECENTRIC PLUG VALVE, BURIED W/ VALVE BOX	
	LUBRICATED PLUG VALVE	
	LUBRICATED PLUG VALVE, BURIED W/ VALVE BOX	
	GLOBE VALVE	
	BALL VALVE	
	ANGLE VALVE	
	DIAPHRAGM VALVE	
	SWING CHECK VALVE	
	FLAP CHECK VALVE	
	DOUBLE FLAP CHECK VALVE	
	BALL CHECK VALVE	
	PINCH VALVE	
	FLOAT OPERATED VALVE	
	NEEDLE VALVE	
	MUD VALVE	
	4-WAY VALVE	
	3-WAY VALVE	
	PRESSURE REGULATING VALVE	
	BACK-PRESSURE VALVE	
	REDUCED PRESSURE BACKFLOW PREVENTER	
	PRESSURE RELIEF VALVE	
	MOTOR OPERATOR FOR VALVES (M = ELECTRIC, P = PNEUMATIC)	M, P
	SOLENOID VALVE	S
	TEMPERATURE CONTROL VALVE	T

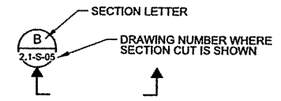
DRAWING CROSS REFERENCE DETAIL

PLAN IDENTIFICATION



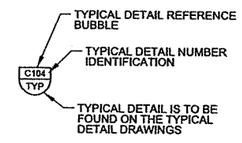
SECTION IDENTIFICATION

DETAIL IDENTIFICATION



SECTION CUT DESIGNATION

PHOTOGRAPH DESIGNATION



TYPICAL DETAIL IDENTIFICATION

IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A HORIZ. LINE.

PREFIX LETTER INDICATES THE FOLLOWING: C-CIVIL, T-TYPICALS, A-ARCHITECTURAL, S-STRUCTURAL, M-MECHANICAL, E-ELECTRICAL, I-INSTRUMENTATION, D-CORROSION PROTECTION AND P-PIPING

ALL PLAN, SECTION AND DETAIL CALLOUTS WHICH REPRESENT EXTERNAL REFERENCE FILES LIST XREF FILENAME WITH EXTENSION JUST BELOW THE SCALE DESIGNATION.

NOTES:

1. THE SYMBOLS DRAWING IS A STANDARD DRAWING, THEREFORE, ALL SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT BE INCLUDED WITHIN THIS PROJECT OR SHOWN ON THE PLANS OR DRAWINGS.
2. ALL SCREENED SYMBOLS SHOWN ON THE DRAWINGS REPRESENT EXISTING OR DISCIPLINE BACKGROUND (TYP)
3. SEE GENERAL DISCIPLINE DRAWINGS FOR DISCIPLINE SPECIFIC NOTES AND SYMBOLS.
4. FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS, SEE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL

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SHEET 4

X-XX

REVISION

NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
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APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY: SDW		ARROYO SECO CANYON PROJECT SYMBOLS 2	WORK ORDER: 03055
DESIGNED BY: SJS			FILE NUMBER: 00G-05 (E-1757)
CHECKED BY: JED			
SUBMITTED BY: —			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 9137A1000G05.dgn

LAST SAVED BY: trea
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 0.181818:1
User: TRea
Plot Date: 18-APR-2014 3:48:19 PM

PIPE SCHEDULE

ABBREVATION (SEE NOTE 3)	SERVICE	TEST METHOD (SEE NOTE 1, 4)	DESIGN PRESSURE (PSI)
BPS	BOOSTER PUMP STATION	-	-
BW	BACKWASH WASTE	HH	150
BWS	BACKWASH SUPPLY	HH	150
BY	BYPASS	HH	150
DR	DRAIN - EQUIPMENT	GR	NOTE 2
FM	FORCE MAIN	HH	150
IN	INFLUENT	HH	150
OF	OVERFLOW	-	-
OUT	OUTLET TO TANK	HH	150
OVF	OVERFLOW	HH	150
PD	PUMP DISCHARGE	HH	150
PS	PUMP SUCTION	-	-
PW	POTABLE WATER	HH	150
RW	RAW WATER	-	-
SA	SAMPLE LINE	HH	50
SD	STORM DRAIN	-	-
SH	SODIUM HYPOCHLORITE	HH	150
SL	SLUDGE	GR	
SS	SANITARY SEWER	HH	
TD	TANK DRAIN	HH	150
TO	TANK OVERFLOW	HH	150
TW	TREATED WATER	HH	150
UC	UNDERDRAIN COLLECTION	GR	
UW	UTILITY WATER	HH	150
VAC	VACUUM		
VNT	VENT	HH	150
WW	WELL WATER	-	250

NOTE 1: SEE SPEC SECTION 15956

NOTE 2: TEST IN ACCORDANCE WITH APPLICABLE PLUMBING CODE

NOTE 3: PIPE SCHEDULE INCLUDES SOME DESIGNATIONS NOT INCLUDED WITHIN THIS PROJECT OR DESIGNATED IN THE PLANS OR SECTIONS

NOTE 4: PRESSURE TEST AT 1.25 TIMES DESIGN PRESSURE.

VALVES (4-INCHES AND LARGER)

TAG NUMBER	SIZE (INCHES)	MATERIAL	VALVE TYPE	VALVE ENDS	CLASS	OPERATOR	LOCATION	REMARKS
VAL-100	4	CI	GV	FLANGED	150	BVB	AREA 3	
VAL-101	6	CI	GV	FLANGED	150	BVB	AREA 3	
VAL-102	8	CI	PV	FLANGED	150	BVB	AREA 3	
VAL-104	8	CI	PV	FLANGED	150	BVB	AREA 3	
VAL-150	12	CI	GV	FLANGED	150	NUT	AREA 3	
VAL-103	24	CI	BFV	FLANGED	150	NUT	AREA 3	
VAL-105	24	CI	BFV	FLANGED	150	NUT	AREA 3	
VAL-106	24	CI	BFV	FLANGED	150	NUT	AREA 3	
VAL-107	24	CI	BFV	FLANGED	150	BVB	AREA 3	
VAL-108	30	CI	BFV	FLANGED	150	BVB	AREA 3	
VAL-109	30	CI	BFV	FLANGED	150	BVB	AREA 3	

NOTES:

MATERIAL: CI = CAST IRON; PVC = POLYVINYL CHLORIDE; SS = STAINLESS STEEL

TYPE: BFV - BUTTERFLY VALVE, BV- BALL VALVE, SP - SPECIAL, CV = CHECK VALVE, GV = GATE VALVE, PV = PLUG VALVE

OPERATOR: BVB = BURIED VALVE BOX WITH NUT; CWO = CHAIN WHEEL OPERATOR; E/D = MOTORIZED OPERATOR; HLO = HAND LEVER OPERATOR; HWO = HAND WHEEL OPERATOR; NUT = OPERATING NUT WITH STEM EXTENSION; PNO = PNEUMATIC OPERATOR

PIPE MATERIAL SCHEDULE

ABBRV.	MATERIAL	FITTINGS
C1	CONCRETE CYLINDER PIPE	-
C2	REINFORCED CONCRETE PIPE (ASTM C-76, CLASS IV)	REINFORCED CONCRETE
D1	DUCTILE IRON, AWWA, C150, PC150, CEMENT MORTAR LINED, RESTRAINED	DUCTILE IRON, AWWA C110, CL 150
P1	POLYVINYL CHLORIDE, SCH. 80	PVC, SCH. 80, SOLVENT WELD SOCKET (NOTE 1)
P2	POLYVINYL CHLORIDE, SCH. 40	PVC, SCH. 40, SOLVENT WELD SOCKET
P3	POLYVINYL CHLORIDE, SDR 35	PVC, SDR. 35, GASKETED
S1	STEEL, SCHED. 40, GALVANIZED	THREADED OR FLANGED, GALVANIZED
S2	WELDED STEEL, AWWA C200, MORTAR LINED, EPOXY COATED	STEEL, AWWA C208, MORTAR LINED
S3	WELDED STEEL, AWWA C200, MORTAR LINED AND COATED	STEEL, AWWA C208
S5	STAINLESS STEEL, TYPE 316L, SCH. 10 OR HIGHER, FINISHED ACCORDING TO SPEC.	STAINLESS STEEL
S6	STEEL, ASTM A106 OR 53, SCH. 80, SEAMLESS, BLACK	THREADED, SOCKET, BUTT-WELD OR FLANGED W/AMMONIA UNIONS
S7	STEEL, ASTM A53, SCH. 40, BLACK (NATURAL GAS)	MALLEABLE 150 PSI THRD. 2" SMALLER, GREATER THAN 2" WELD
S8	STEEL, ASTM A106 OR 53, SCH. 40, SEAMLESS, BLACK	STEEL ANSI B16.9 BUTT-WELDED, FORGED STEEL, SOCKET WELD, ANSI B16.11, OR STEEL ANSI B16.5, 150LB FLANGE.
CU1	COPPER, SOFT TEMPERED, TYPE K	COPPER, SOLDER JOINTS

NOTES:

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SHEET 5

X-XX

REVISION						
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APPROVED: DATE

APPROVED: DATE

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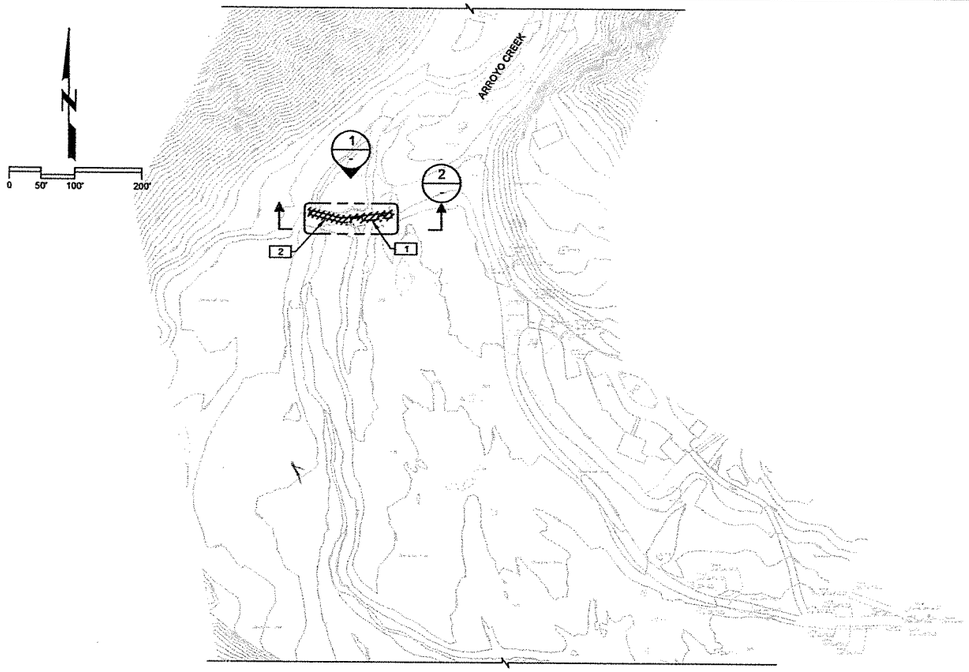
CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO – OF XX SHEETS
DRAWN BY: SDW DESIGNED BY: SJS CHECKED BY: JED SUBMITTED BY: –		ARROYO SECO CANYON PROJECT PIPE AND VALVE SCHEDULES	WORK ORDER: 03055 FILE NUMBER: 00G-06 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED / REVISION

9137A10 9137A10 FILE NAME: 9137A1000G06.dgn



A AREA 1 - DEMOLITION PLAN
SCALE: 1" = 100'
FILE: FILE

DEMOLITION KEY TABLE			
MARK	ITEM	DESCRIPTION	ACTION
1	HEADWORKS	50' X 10' (L X W) OF TIMBER, STEEL I-BEAMS AND CONCRETE	B
2	WEIR	80' x 10' (L X W) OF REINFORCED CONCRETE	B

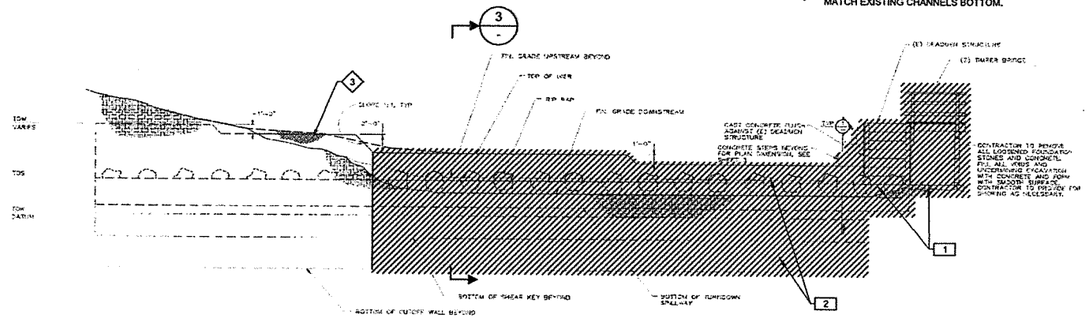
NOTES:
A REMOVE AND RETURN TO OWNER
B REMOVE AND DISCARD

GENERAL NOTES:

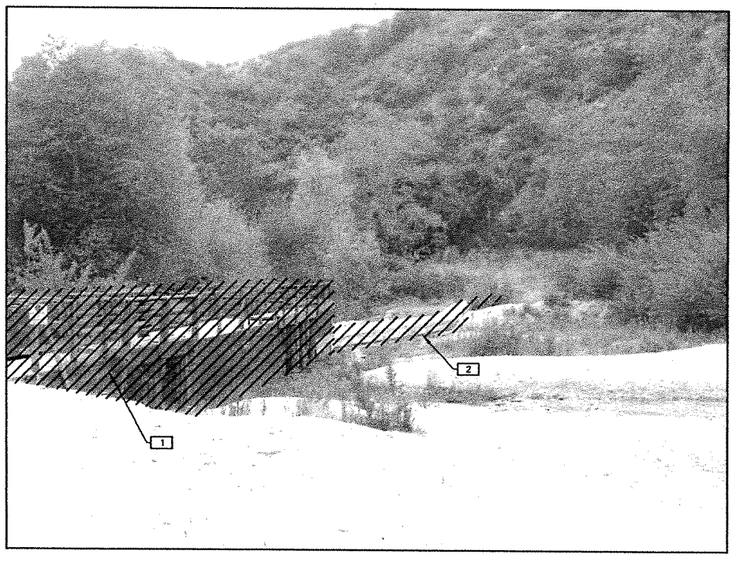
1. REFER TO CONSTRUCTION DRAWINGS ("CONCRETE WEIR CONSTRUCTION", DATED JUNE 1, 1994) FOR ADDITIONAL DETAIL ON THE CONCRETE WEIR STRUCTURE. SEE APPENDIX IN SPECIFICATIONS.
2. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY ACCESS FOR RECREATIONAL USERS DURING CONSTRUCTION.
3. ALL DEMOLITION QUANTITIES LISTED ON THIS PLAN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.

KEY NOTES:

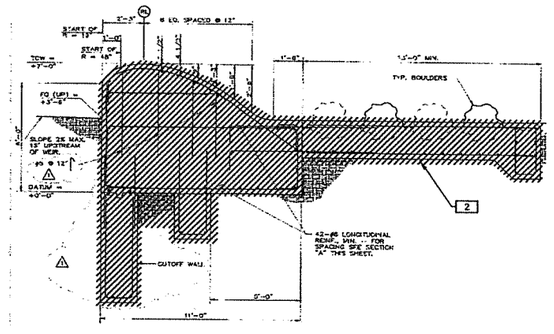
1. NOT USED.
2. REMOVE AND DISPOSE EXISTING CONCRETE WEIR STRUCTURE AND FOUNDATION TO LIMITS SHOWN ON PLAN. CLEANLY SAWCUT CONCRETE AT ALL LIMITS. MATERIALS CONSIST OF CONCRETE AND STEEL REINFORCEMENT.
3. REMOVE EXISTING SOIL TO EXPOSE STRUCTURE. BACK FILL AND RE-GRADE TO MATCH EXISTING CHANNELS BOTTOM.



2 AS-BUILT WEIR SECTION
SCALE: NO SCALE
FILE: -



1 DEMOLITION PHOTO
SCALE: NO SCALE
FILE: -



3 AS-BUILT WEIR SECTION
SCALE: NO SCALE
FILE: -

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811
OR
1-800-227-2600

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SHEET 6

X-XX

REVISION						
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APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY: SDW		ARROYO SECO CANYON PROJECT AREA 1 – DEMOLITION PLAN	WORK ORDER: 03055
DESIGNED BY: SJS			FILE NUMBER: 01D-01 (E-1757)
CHECKED BY: JED			
SUBMITTED BY: SUB			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

LAST SAVED BY: tsa
9137A10 9137A10 FILE NAME: 9137A1001D01.dgn

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User: TRea
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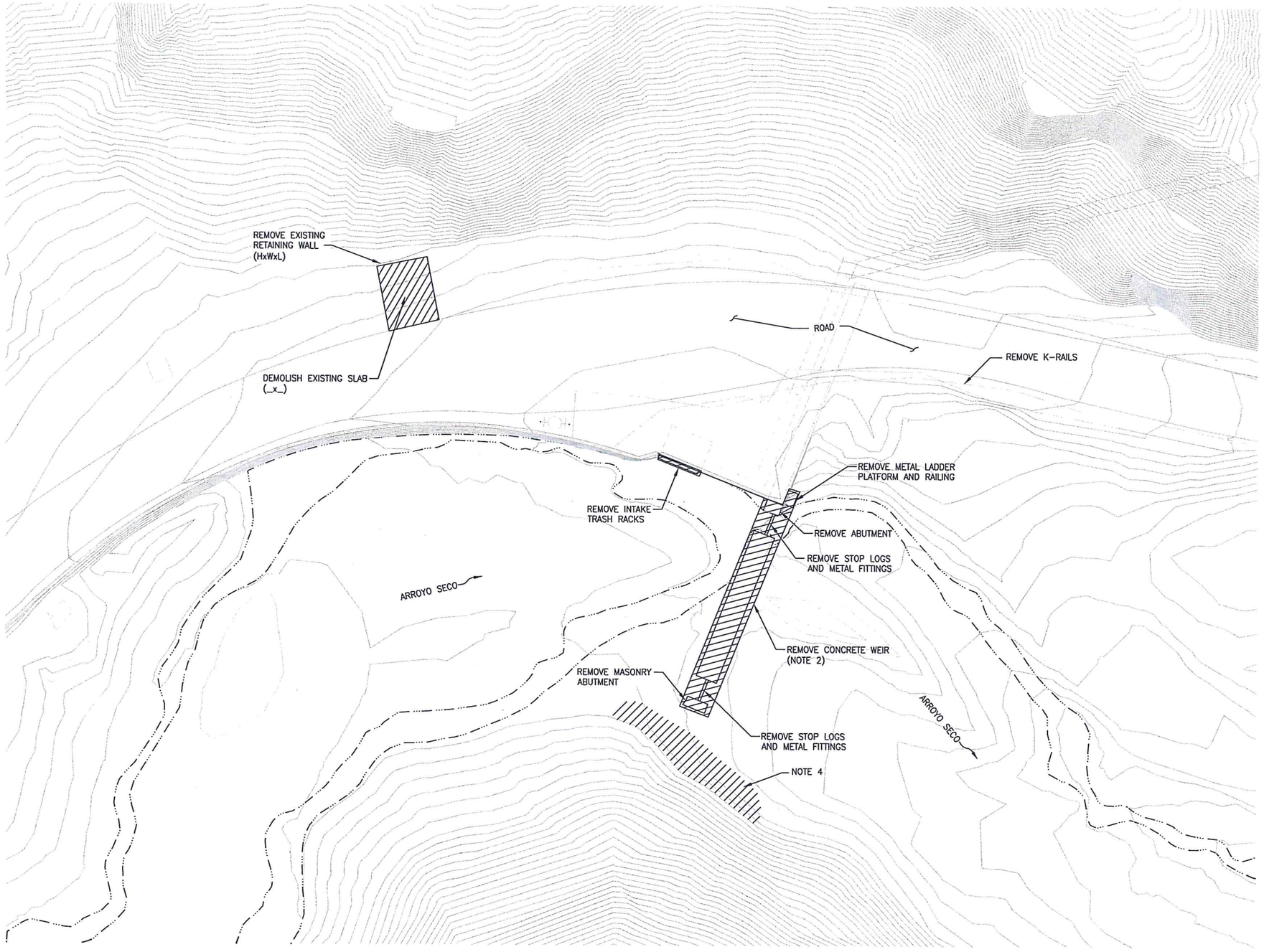

0 5' 10' 20'

GENERAL NOTES:

1. ALL OTHER STRUCTURES AND APPURTENANCES SHALL BE PRESERVED AND PROTECTED.
2. THE CONCRETE WEIR SHALL BE REMOVED COMPLETELY WIDTH = 4'-5", DEPTH = XX.
3. CONTRACTOR SHALL SITE CONFIRM QUANTITIES PRIOR TO BID.
4. CONTRACTOR SHALL MAINTAIN SLOPE DURING DEMOLITION AND CONSTRUCTION.
5. SEE 02D-02 FOR CONTINUATION.
6. CONTRACTOR SHALL DISPOSE OF ALL DEMOLITION DEBRIS IN AN APPROVED LANDFILL

811 Know what's **below.** **Call** before you dig.

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SHEET 7

D-01

REVISION						
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NAME
APPROVED: DATE
APPROVED: DATE

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DEERE & AULT CONSULTANTS, INC.

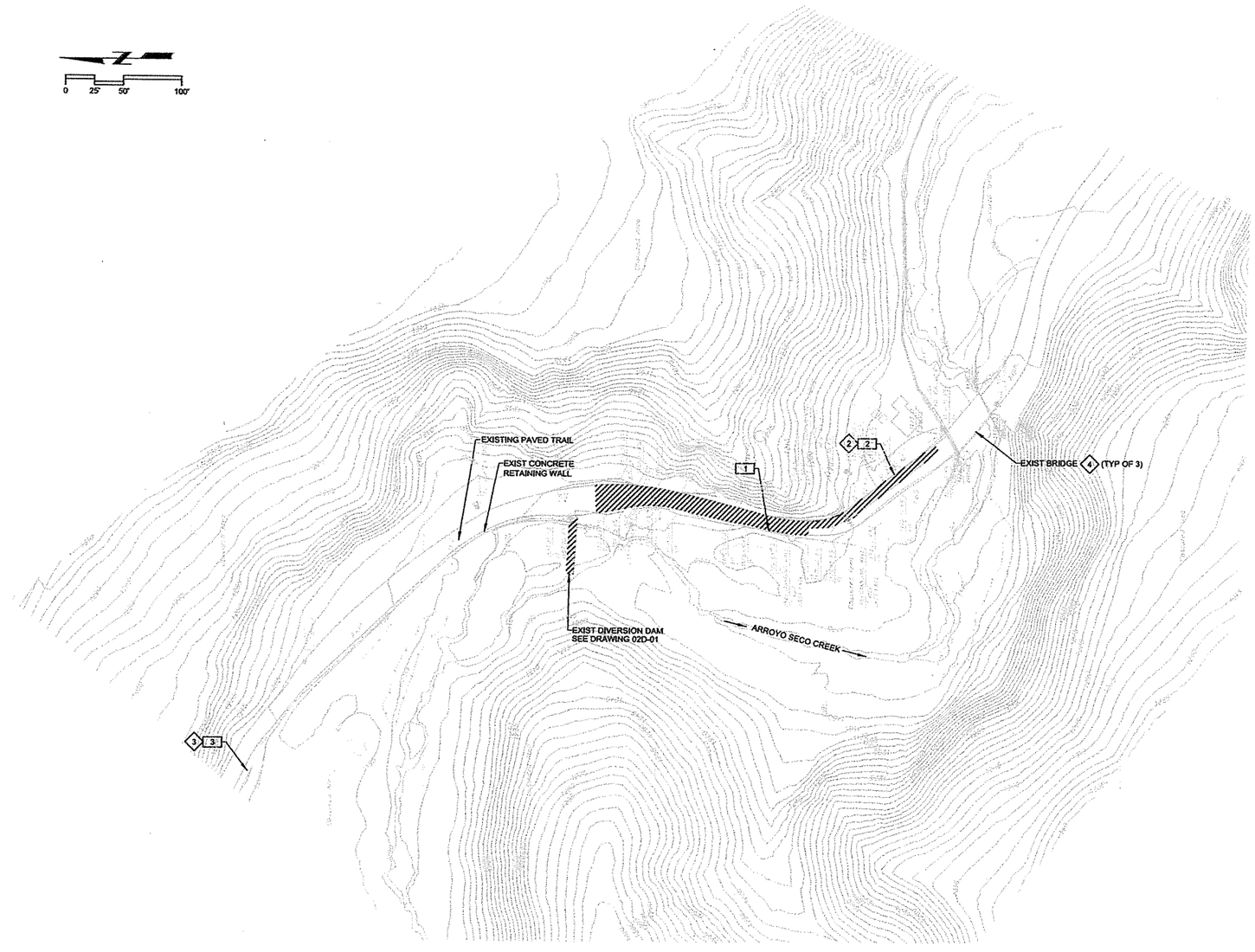
CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: APRIL 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO OF XX SHEETS
DRAWN BY: PDH	DESIGNED BY: JRE	ARROYO SECO CANYON PROJECT AREA 2 - DEMOLITION PLAN FOR WEIR AND INTAKE	WORK ORDER: 03055
CHECKED BY: KTF	SUBMITTED BY:		FILE NUMBER: 02D-01
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

LAST SAVED BY: PHUNTER 4/16/2014 11:27 AM B:\Carollo\Arroyo Seco\DWG\02D-01.dwg

9137A10 9137A10 FILE NAME: 02D-01.DWG



A AREA 2 - DEMOLITION PLAN

SCALE: 1" = 50'
FILE: FILE

GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY ACCESS FOR RECREATIONAL USERS DURING CONSTRUCTION.
2. ALL DEMOLITION QUANTITIES LISTED ON THIS PLAN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.

KEY NOTES:

1. CLEANLY SAWCUT ROAD (MIN 3 FT WIDE). REFER TO ELEC DWGS FOR EXTENTS OF REMOVAL AND WHERE NEW ELEC DUCTBANK IS LOCATED.
2. CLEANLY SAWCUT ROAD. REFER TO DWG 02C-01 FOR EXTENTS OF REMOVAL AND WHERE NEW PAVING IS INSTALLED.
3. LIMITS EXTEND FROM END OF EXISTING RETAINING WALL IN AREA 2 TO AREA 1.
4. CONTRACTOR SHALL SUBMIT PLANS AND CALCULATIONS FOR REVIEW TO PROVIDE TEMPORARY CONSTRUCTION ACCESS ACROSS EXISTING BRIDGE. BRIDGE CANNOT SUPPORT H20 LOADS. REFER TO DRAWING 00C-01 FOR LOCATION OF OTHER BRIDGES.

DEMOLITION KEY TABLE

MARK	ITEM	DESCRIPTION	ACTION
1	K- RAILS	CONCRETE (QTY = 10, 10 FT EACH)	B
2	AC PAVEMENT	THICKNESS 4" QTY = 42 CY	B
3	CHAIN LINK FENCE	HEIGHT = 5', LENGTH = 400 FT	B

NOTES:
A REMOVE AND RETURN TO OWNER
B REMOVE AND DISCARD

DRAFT
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SHEET 8

X-XX

REVISION

NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
PE
NAME
APPROVED: DATE
APPROVED: DATE

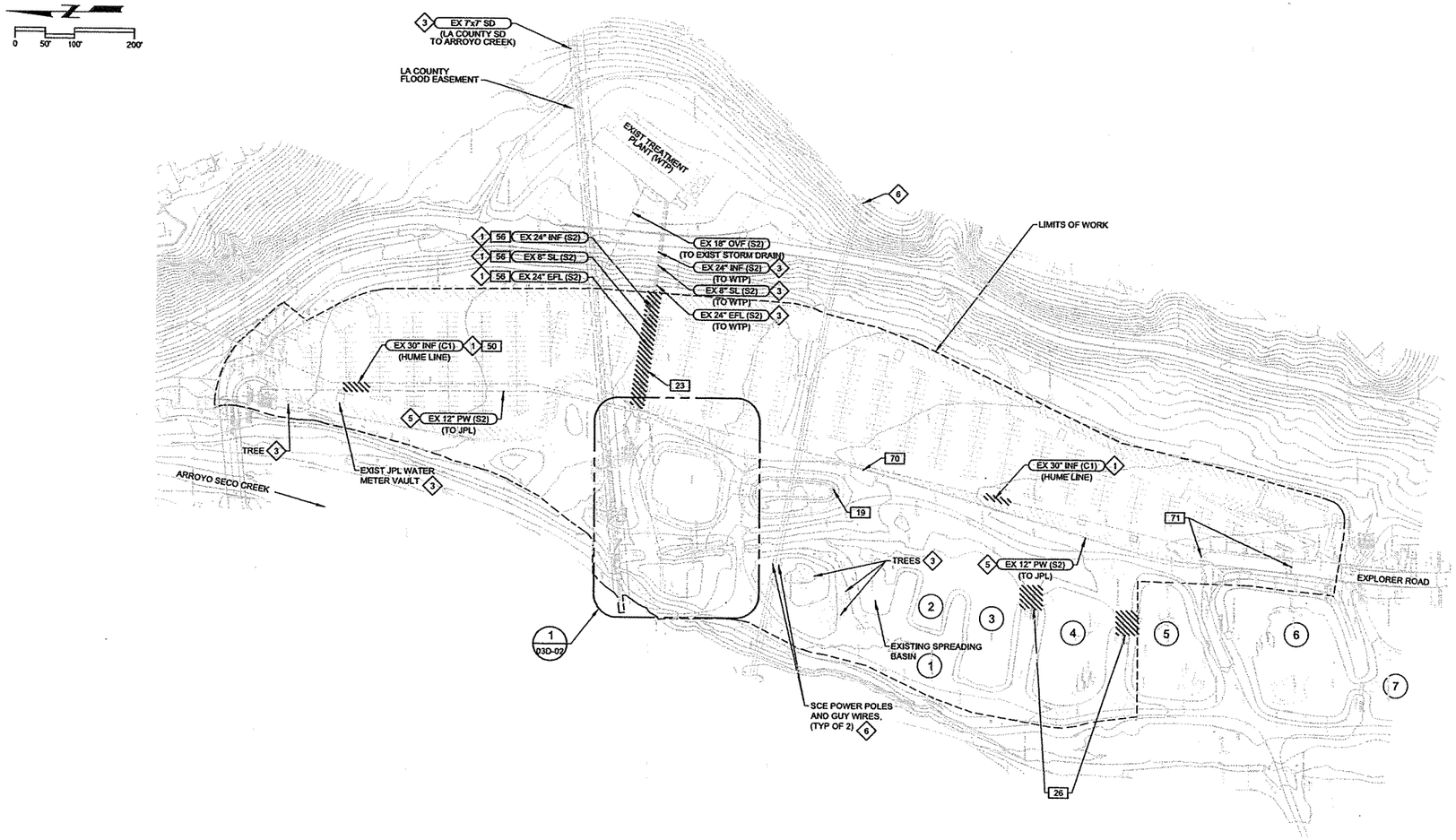
carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE		
MARCH 2014	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY SDW DESIGNED BY SJS CHECKED BY JED SUBMITTED BY —		ARROYO SECO CANYON PROJECT AREA 2 — DEMOLITION PLAN (CIVIL)	WORK ORDER 03055 / FILE NUMBER 02D-02 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 9137A1002D02.dgn



A AREA 3 - DEMOLITION PLAN

SCALE: 1" = 100'
FILE: FILE

GENERAL NOTES:

1. ALL KEY NOTES MAY NOT BE APPLICABLE TO THIS DRAWING.
2. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY ACCESS FOR RECREATIONAL USERS DURING CONSTRUCTION.
3. ALL DEMOLITION QUANTITIES LISTED ON THIS PLAN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
4. ALL EXISTING CONCRETE HAS REINFORCING STEEL.
5. IN GENERAL ALL EXISTING PIPES, VAULTS, CONCRETE STRUCTURES AND FENCING WITHIN LIMITS OF WORK SHALL BE REMOVED UNLESS NOTED FOR TO PROTECT.

KEY NOTES:

1. SEE DRAWING 03C-05, 06, 07, AND 08 FOR EXTENT OF PIPE DEMOLITION.
2. NOT USED.
3. RETAIN AND PROTECT. SEE DRAWING 03C-06 FOR EXTENT OF PIPE DEMOLITION.
4. CONTRACTOR SHALL TRENCH TO VERIFY LOCATION OF EXISTING 12" JPL POTABLE LINE, BEFORE DEMOLITION WORK.
5. CONTRACTOR SHALL PROTECT EXISTING 12" JPL POTABLE MAIN UNTIL NEW 12" JPL LINE IS INSTALLED, PRESSURE TESTED, DISINFECTED, BACTERIA TESTED, AND PWP VERIFIES THAT NEW MAIN IS READY FOE SERVICE. AFTER NEW JPL POTABLE MAIN IS IN SERVICE, CONTRACTOR SHALL REMOVE AND DISCARD EXISTING.
6. RETAIN AND PROTECT EXISTING OVERHEAD SCE POWER LINES. COORDINATE WITH SCE FOR ALL WORK AROUND AND UNDER POWER LINES.

DEMOLITION KEY TABLE

MARK	ITEM	DESCRIPTION	ACTION
19	DRYING BED OUTLET	30 CY CONCRETE PIPING AND VALVES	B
20	DRYING BED INLET	30 CY CONCRETE PIPING AND VALVES	B
21	CONCRETE BOX	7' X 7' X 25' (W X H X L)	B
22	ELECTRICAL BUILDING	METER, PANELS, AND SWITCHGEAR	A
23	CONCRETE DRY VAULTS	10' X 10' X 6' (W X L X D) QTY = 2	B A (FLOW METER)
24	CONCRETE FLUME	60 CY CONCRETE	B
25	HEADWORKS	TIMBERS AND STEEL SUPPORTS	B
26	SPREADING BASIN OUTLET	TIMBERS, HANDRAIL, DECK AND CMP	B
27	GAUGING STATION	MISC STEEL & CMP	B
50	PIPE AND VALVES	REINFORCED CONCRETE PIPE	B
51	PIPE AND VALVES	300 LF	B
52	ANCHOR/THRUST BLOCKS	2 CY CONCRETE	B
53	PIPE AND VALVES	200 LF	B
54	PIPE AND VALVES	100 LF	B
55	PIPE AND VALVES	500 LF	B
56	PIPE AND VALVES	600 LF	B
57	PIPE AND VALVES	150 LF	B
70	CHAIN LINK FENCE	HEIGHT = 6 FT LENGTH = 5,400 LF	B
71	GATE	WIDTH = 12 FT QTY = 2	B
72	SIDEWALK	30 FT OF CONC AND HANDRAIL	B

NOTES:
A REMOVE AND RETURN TO OWNER
B REMOVE AND DISCARD

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811
or
1-800-227-2600

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SHEET 9

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
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APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE MARCH 2014	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY SDW DESIGNED BY SJS CHECKED BY JED SUBMITTED BY SUB		ARROYO SECO CANYON PROJECT AREA 3 – DEMOLITION PLAN	WORK ORDER 03055 / FILE NUMBER 03D-01 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 9137A1003D01.dgn

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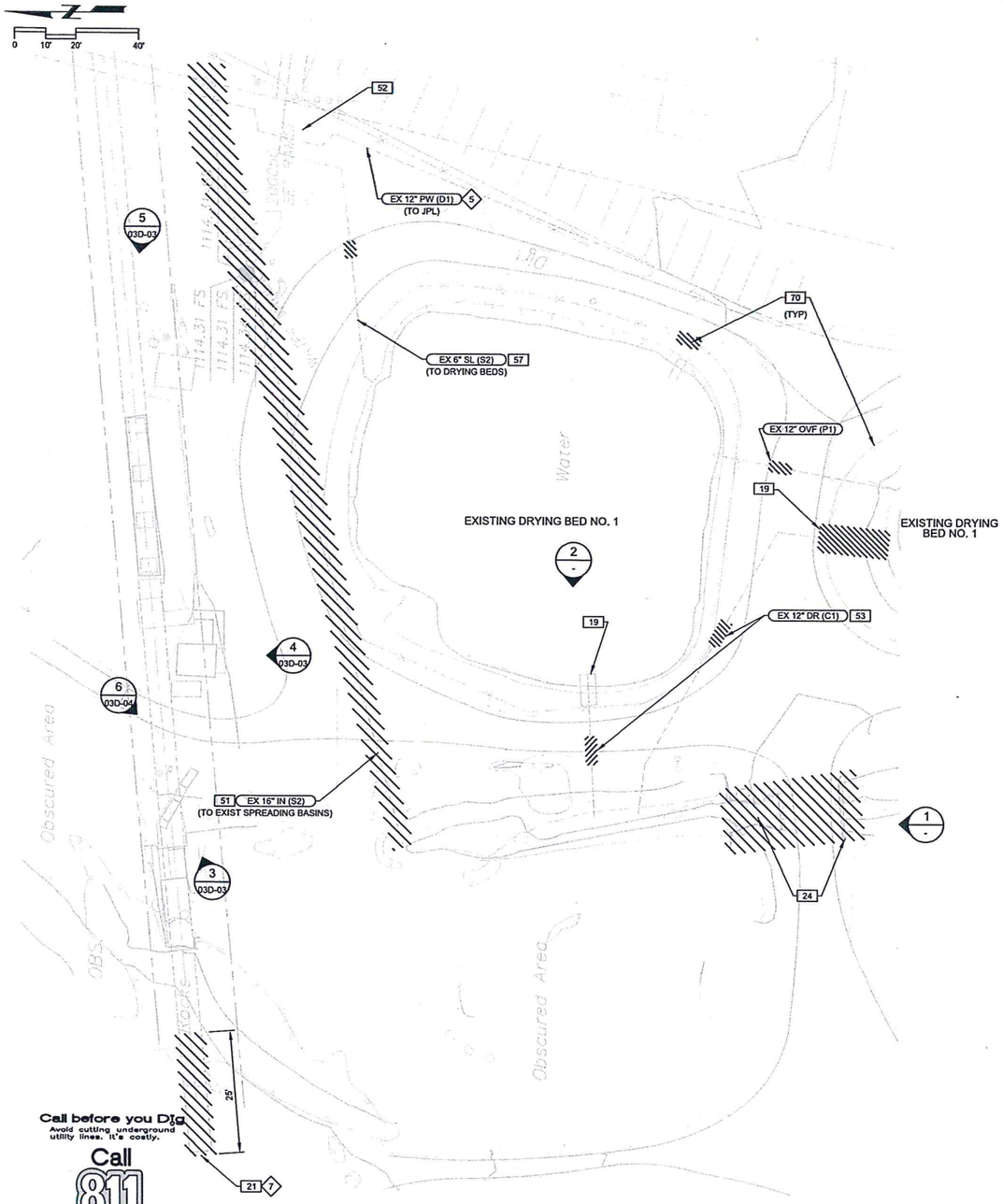

1 / 03D-02 DETAIL
SCALE: 1" = 20'
FILE: FILE

1 / - DEMOLITION PHOTO 1
SCALE: NO SCALE
FILE: FILE

2 / - DEMOLITION PHOTO 2
SCALE: NO SCALE
FILE: FILE

GENERAL NOTES:

1. ALL KEY NOTES MAY NOT BE APPLICABLE TO THIS DRAWING.
2. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY ACCESS FOR RECREATIONAL USERS DURING CONSTRUCTION.
3. ALL DEMOLITION QUANTITIES LISTED ON THIS PLAN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
4. TO PROVIDE CLARITY, NOT ALL AREAS TO BE DEMOLISHED ARE HATCHED IN EVERY VIEW/ PHOTO/ PLAN.

KEY NOTES:

1. SEE DRAWING 03C-05, 06, 07, AND 08 FOR EXTENT OF PIPE DEMOLITION.
2. NOT USED.
3. RETAIN AND PROTECT. SEE DRAWING 03C-06 FOR EXTENT OF PIPE DEMOLITION.
4. CONTRACTOR SHALL TRENCH TO VERIFY LOCATION OF EXISTING 12" JPL POTABLE LINE, BEFORE DEMOLITION WORK.
5. CONTRACTOR SHALL PROTECT EXISTING 12" JPL POTABLE MAIN UNTIL NEW 12" JPL LINE IS INSTALLED, PRESSURE TESTED, DISINFECTED, BACTERIA TESTED, AND PWP VERIFIES THAT NEW MAIN IS READY FOE SERVICE. AFTER NEW JPL POTABLE MAIN IS IN SERVICE, CONTRACTOR SHALL REMOVE AND DISCARD EXISTING.
6. RETAIN AND PROTECT EXISTING OVERHEAD SCE POWER LINES. COORDINATE WITH SCE FOR ALL WORK AROUND AND UNDER POWER LINES.
7. CUT BACK EXISTING REINFORCING STEEL 1 1/2-INCHES AND FILL WITH EPOXY GROUT. ENTIRE CUT FACE SHALL BE FINISHED WITH EPOXY GROUT.

DEMOLITION KEY TABLE

MARK	ITEM	DESCRIPTION	ACTION
19	DRYING BED OUTLET	30 CY CONCRETE PIPING AND VALVES	B
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21	CONCRETE BOX	7' X 7' X 25' (W X H X L)	B
22	ELECTRICAL BUILDING	METER, PANELS, AND SWITCHGEAR	A
23	CONCRETE DRY VAULTS	10' X 10' X 6' (W X L X D) QTY = 2	B A (FLOW METER)
24	CONCRETE FLUME	60 CY CONCRETE	B
25	HEADWORKS	TIMBERS AND STEEL SUPPORTS	B
26	SPREADING BASIN OUTLET	TIMBERS, HANDRAIL, DECK AND CMP	B
27	GAUGING STATION	MISC STEEL & CMP	B
50	PIPE AND VALVES	REINFORCED CONCRETE PIPE	B
51	PIPE AND VALVES	300 LF	B
52	ANCHOR/THRUST BLOCKS	2 CY CONCRETE	B
53	PIPE AND VALVES	200 LF	B
54	PIPE AND VALVES	100 LF	B
55	PIPE AND VALVES	500 LF	B
56	PIPE AND VALVES	600 LF	B
57	PIPE AND VALVES	150 LF	B
70	CHAIN LINK FENCE	HEIGHT = 6 FT LENGTH = 5,400 LF	B
71	GATE	WIDTH = 12 FT QTY = 2	B
72	SIDEWALK	30 FT OF CONC AND HANDRAIL	B

NOTES:
A REMOVE AND RETURN TO OWNER
B REMOVE AND DISCARD

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SHEET 10

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209
DATE: MARCH 2014 | SCALE: AS SHOWN
DRAWN BY: SDW
DESIGNED BY: JED
CHECKED BY: –
SUBMITTED BY: –
FIELD BOOKS | CALC BOOKS | APPROVED | APPROVED

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
AREA 3 – DEMOLITION PLAN & PHOTOS

SHEET NO – OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 03D-02 (E-1757)
REVISION

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User: TRea
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.1817:1
LAST SAVED BY: trea

3 03D-02 **DEMOLITION PHOTO 3**
SCALE: NO SCALE
FILE: FILE

4 03D-02 **DEMOLITION PHOTO 4**
SCALE: NO SCALE
FILE: FILE

5 03D-02 **DEMOLITION PHOTO 5**
SCALE: NO SCALE
FILE: FILE

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24	CONCRETE FLUME	60 CY CONCRETE	B
25	HEADWORK	TIMBERS AND STEEL SUPPORTS	B
50	30" INF LINE	REINFORCED CONCRETE PIPE	B
51	PIPE AND VALVES	700 LF OF PIPE AND VALVES	B
52	ANCHOR/THRUST BLOCKS	2 CY CONCRETE	B
53	PIPE	200 LF	B
54	PIPE AND VALVES	100 LF	B
70	CHAIN LINK FENCE	HEIGHT = 6 FT LENGTH = 5,400 LF	B
71	GATE	WIDTH = 12 FT QTY = 2	B
72	SIDEWALK	30 FT OF CONC AND HANDRAIL	B

NOTES:
A REMOVE AND RETURN TO OWNER
B REMOVE AND DISCARD

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SHEET 11

X-XX

LAST SAVED BY: trea

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
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APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY: SDW DESIGNED BY: JED CHECKED BY: — SUBMITTED BY: —		ARROYO SECO CANYON PROJECT AREA 3 — DEMOLITION PHOTOS	WORK ORDER: 03055 FILE NUMBER: 03D-03 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED
			REVISION

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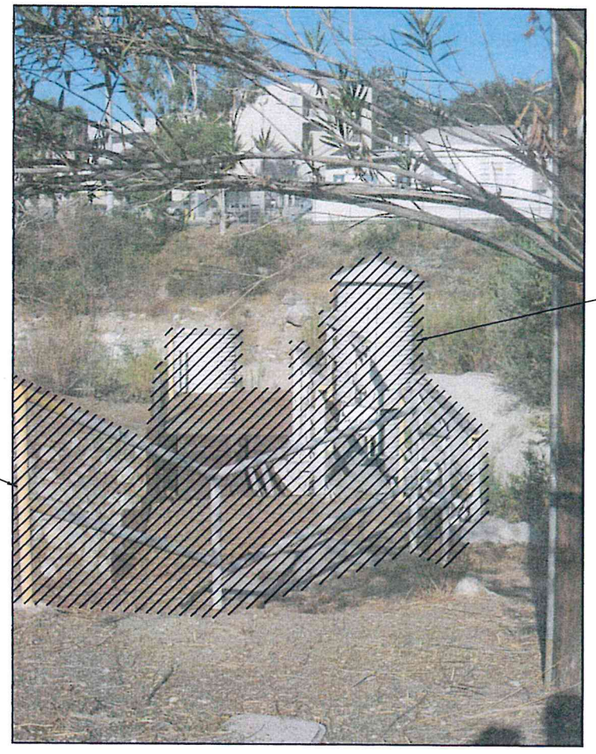

6 DEMOLITION PHOTO 6
03D-02
SCALE: NO SCALE
FILE: FILE

GENERAL NOTES:

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50	PIPE AND VALVES	REINFORCED CONCRETE PIPE	B
51	PIPE AND VALVES	300 LF	B
52	ANCHOR/THRUST BLOCKS	2 CY CONCRETE	B
53	PIPE AND VALVES	200 LF	B
54	PIPE AND VALVES	100 LF	B
55	PIPE AND VALVES	500 LF	B
56	PIPE AND VALVES	600 LF	B
57	PIPE AND VALVES	150 LF	B
70	CHAIN LINK FENCE	HEIGHT = 6 FT LENGTH = 5,400 LF	B
71	GATE	WIDTH = 12 FT QTY = 2	B
72	SIDEWALK	30 FT OF CONC AND HANDRAIL	B

NOTES:
A REMOVE AND RETURN TO OWNER
B REMOVE AND DISCARD

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SHEET 12

X-XX

REVISION

NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

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APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209
DATE: MARCH 2014
SCALE: AS SHOWN
DRAWN BY: SDW
DESIGNED BY: JED
CHECKED BY: --
SUBMITTED BY: --
FIELD BOOKS
CALC BOOKS
APPROVED
APPROVED

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
AREA 3 - DEMOLITION PHOTOS

SHEET NO - OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 03D-04 (E-1757)
REVISION

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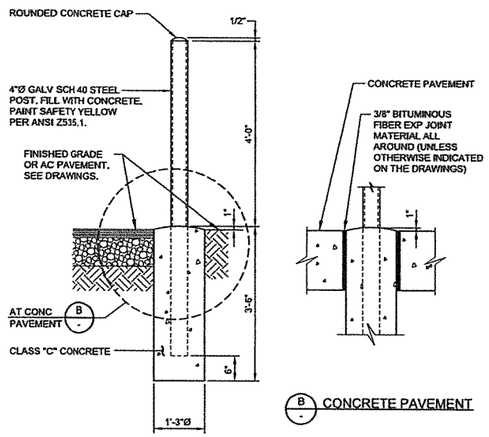
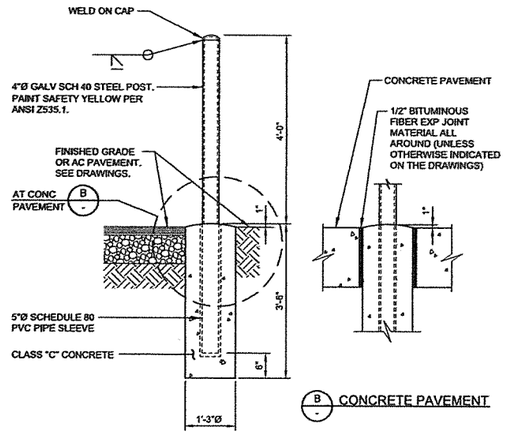


A - AC PAVEMENT OR FINISHED GRADE

B - CONCRETE PAVEMENT

C160 TYP N GUARD POST

01/13/14

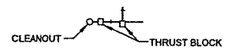


A - AC PAVEMENT OR FINISHED GRADE

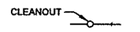
B - CONCRETE PAVEMENT

C161 TYP N REMOVABLE GUARD POST

01/13/14



SCHEMATIC PLAN



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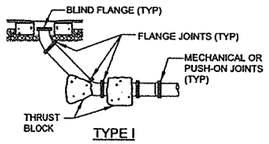

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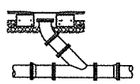

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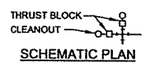
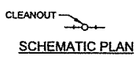
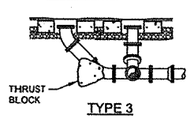


SCHEMATIC PLAN



SCHEMATIC PLAN



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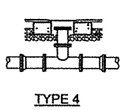

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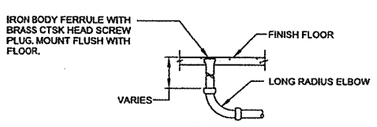
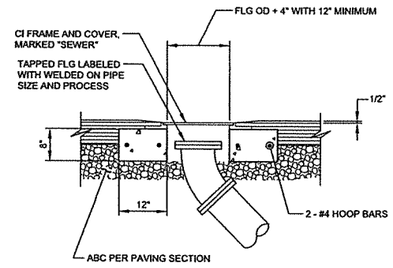


TYPE 5

P004 TYP S CLEANOUTS

SHEET 1 OF 2 07/31/08

TYPICAL Architectural Units



TERMINATION IN PAVEMENT
ALL TYPES FOR 4"Ø TO 12"Ø

NOTES:

1. ALL THRUST BLOCKS SHALL BE PLACED PER P102 TYP.
2. CONCRETE RING SHALL BE PLACED AFTER PAVEMENT PLACEMENT.
3. ALL FLANGES CAST IN CONCRETE SHALL BE TAPPED TO ALLOW THE INSTALLATION OF BLIND FLANGES WITH BOLTS.
4. CLEANOUT PIPE SHALL BE SAME SIZE AS LINE PIPE.
5. FOR CLEANOUTS IN YARD AREA, PLACE 12" SQUARE BY 4" THICK CONCRETE PAD.

P004 TYP S CLEANOUTS

SHEET 2 OF 2 07/31/08

DRAFT
For Conditional Use Permit

SHEET 13

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE
MARCH 2014	AS SHOWN

DRAWN BY SDW
DESIGNED BY JED
CHECKED BY JED
SUBMITTED BY —
FIELD BOOKS | CALC BOOKS | APPROVED | APPROVED

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
TYPICAL DETAILS – 1

SHEET NO — OF XX SHEETS

WORK ORDER 03055 | FILE NUMBER 00TD-01 (E-1757)

REVISION

LAST SAVED BY: trea
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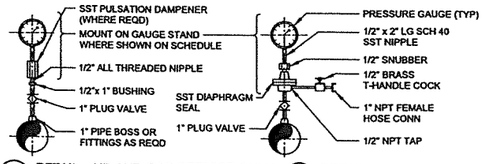
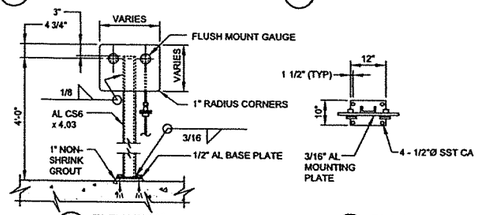
Plot Date: 16-APR-2014 3:50:12 PM
User: TRea

9137A10 9137A10 FILE NAME: 9137A1000TD01.dgn



A DETAIL - AIR AND GAS SERVICE ONLY B DETAIL - LIQUID SERVICE



C ELEVATION D PLAN

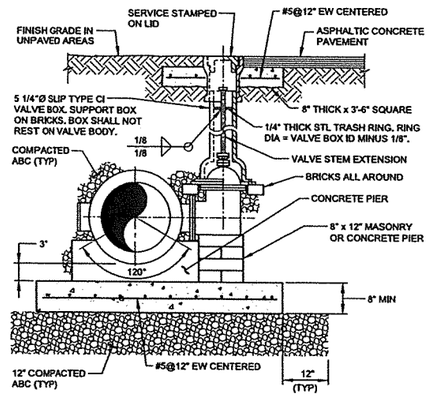
GAUGE STAND

NOTES:

1. ALL GAUGES SHALL BE DUAL SCALE. SCALES ON THE GAUGE FACE SHALL BE MARKED IN PSIG AND FEET OF WATER (FOR POSITIVE READINGS) OR INCHES OF MERCURY (FOR VACUUM READINGS).
2. MOUNTING PLATE DIMENSIONS VARY ACCORDING TO SIZE AND NUMBER OF GAUGES REQUIRED.
3. AT GAUGE STAND, DIAPHRAGM SHALL BE LOCATED BELOW THE MOUNTING PLATE. ONE INCH PIPE SHALL BE ROUTED BETWEEN DIAPHRAGM AND SERVICE PIPE PLUG VALVE. CROSSES WITH THREADED PLUGS SHALL BE USED IN LIEU OF 90° ELBOWS, WITH AT LEAST ONE UNION PER CROSS.
4. COAT ALUMINUM IN CONTACT WITH CONCRETE AS SPECIFIED.

M294 TYP S PRESSURE GAUGE DETAILS

08/01/05



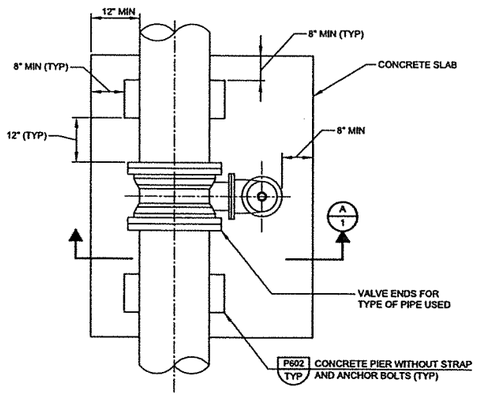
A/2 SECTION

NOTES:

1. ALL BURIED VALVES SHALL BE PROVIDED WITH EXTENSION STEM OPERATOR WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. INDICATE ON NUT DIRECTION OF ROTATION TO OPEN VALVE.
2. COAT BURIED PIPE AND VALVE BOX PER SPECIFICATIONS.
3. CLEAN VALVE BOX OF ALL DEBRIS AND SOIL.

P026 TYP S BURIED BUTTERFLY VALVE

SHEET 1 OF 2 11/30/08



PLAN

P026 TYP S BURIED BUTTERFLY VALVE

SHEET 2 OF 2 11/30/08

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For Conditional Use Permit

SHEET 14

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

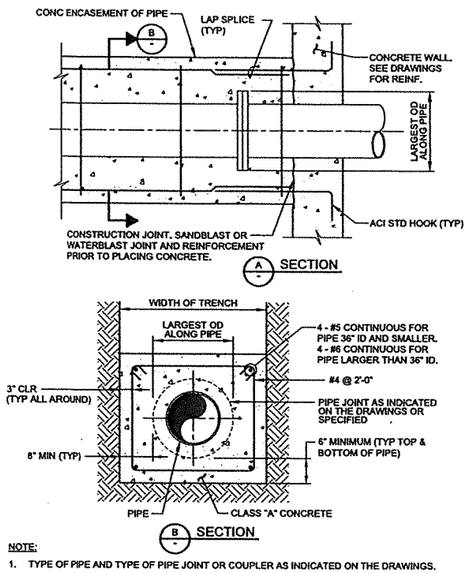
carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
MARCH 2014	AS SHOWN		
DRAWN BY SDW DESIGNED BY JED CHECKED BY JED SUBMITTED BY —		ARROYO SECO CANYON PROJECT TYPICAL DETAILS – 2	WORK ORDER 03055 / FILE NUMBER 00TD-02 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 9137A1000TD02.dgn

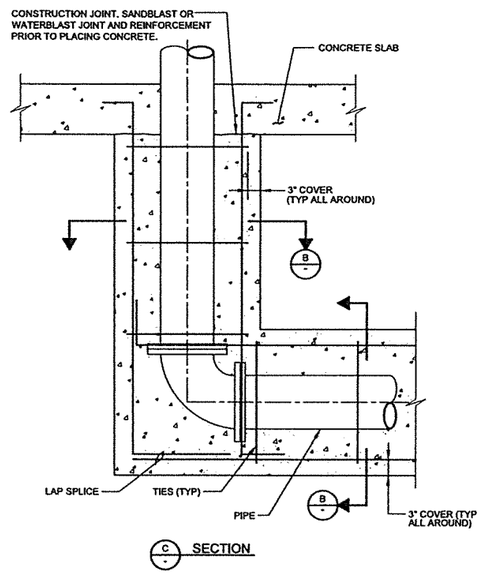


NOTE:

1. TYPE OF PIPE AND TYPE OF PIPE JOINT OR COUPLER AS INDICATED ON THE DRAWINGS.

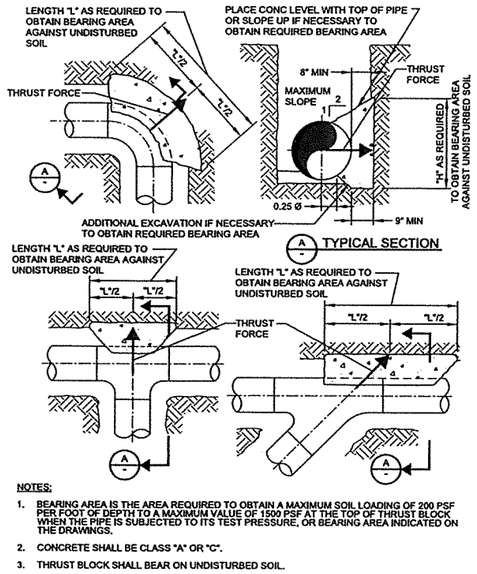
P040 TYP CONCRETE ENCASEMENT OF PIPE

NS SHEET 1 OF 2 03/16/09



P040 TYP CONCRETE ENCASEMENT OF PIPE

NS SHEET 2 OF 2 03/16/09

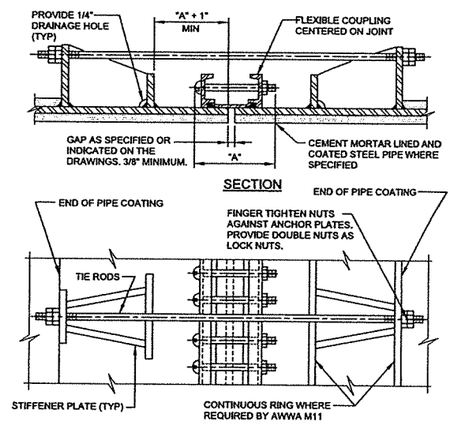


NOTES:

1. BEARING AREA IS THE AREA REQUIRED TO OBTAIN A MAXIMUM SOIL LOADING OF 200 PSF PER FOOT OF DEPTH TO A MAXIMUM VALUE OF 1500 PSF AT THE TOP OF THRUST BLOCK WHEN THE PIPE IS SUBJECTED TO ITS TEST PRESSURE, OR BEARING AREA INDICATED ON THE DRAWINGS.
2. CONCRETE SHALL BE CLASS "A" OR "C".
3. THRUST BLOCK SHALL BEAR ON UNDISTURBED SOIL.

P102 TYP PIPE THRUST BLOCK

NS 08/01/05

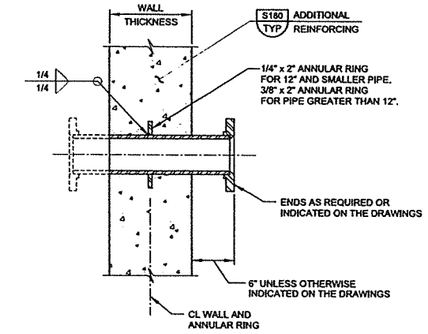


NOTES:

1. ALL EXPOSED FLEXIBLE COUPLINGS SHALL HAVE TIE RODS UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.
2. BASE PIPE THRUST ON TEST PRESSURE.
3. PIPE THRUST = $0.7854 \times D^2 \times$ TEST PRESSURE, WHERE "D" IS PIPE "OD".
4. ANCHOR LUGS AND TIE RODS SHALL BE DESIGNED BY PIPE MANUFACTURER IN ACCORDANCE WITH AWWA M11 STEEL PIPE MANUAL.
5. GRIND ALL CORNERS SMOOTH.
6. COAT ALL EXPOSED STEEL SURFACES WITH EPOXY IN ACCORDANCE WITH SPECIFICATIONS.

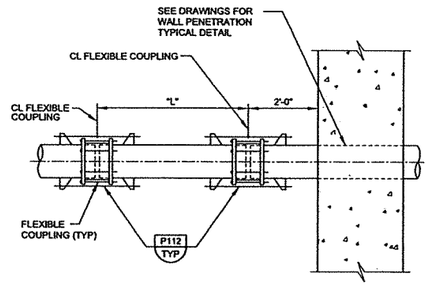
P112 TYP STEEL PIPE FLEXIBLE COUPLING TIE DOWN

N 07/16/13



P310 TYP WALL THIMBLE FOR STEEL PIPE

N 03/01/10



NOMINAL PIPE DIAMETER IN INCHES	"L"
LESS THAN 31"	5'-0"
GREATER THAN 31" - 42"	5'-6"

NOTE:

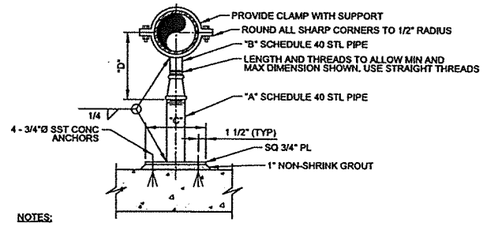
1. PIPES SHALL BE INSTALLED STRAIGHT WITHOUT HORIZONTAL OR VERTICAL OFFSET. DO NOT USE JOINT ANGULAR DEFLECTION TO MAKE UP FOR MISALIGNED PIPE.

P346 TYP RESTRAINED STEEL PIPE FLEXIBLE CONNECTION AT WALL PENETRATION

N 08/01/05

ADJUSTABLE PIPE SADDLE SUPPORT SCHEDULE (INCHES)

SIZE OF SUPPORTED PIPE **	PIPE SIZE "A"	PIPE SIZE "B"	"C"	"D" MINIMUM	"D" MAXIMUM
2 1/2 *	2 1/2	1 1/2	12	8	13
3	2 1/2	1 1/2	12	8 1/2	13 1/2
3 1/2	2 1/2	1 1/2	12	8 1/2	13 1/2
4	3	2 1/2	12	9 1/2	14
6	3	2 1/2	12	10 1/2	15 1/2
8	3	2 1/2	12	11 1/2	16 1/2
10	3	2 1/2	12	13 1/2	18 1/2
12	3	2 1/2	12	15	19 1/2
14	4	3	12	16 1/2	20 1/2
16	4	3	12	17 1/2	22 1/2
18	6	3 1/2	14	19 1/2	24
20	6	3 1/2	14	21	25 1/2
24	6	4	14	23 1/2	28 1/2
30	6	4	14	27	31 1/2
32	6	4	14	28 1/2	32 1/2
36	6	4	14	30 1/2	34 1/2



NOTES:

1. HOT-DIP GALVANIZED SUPPORT AFTER FABRICATION.
2. * = USE 2 1/2" SUPPORTS FOR PIPES LESS THEN 2 1/2"Ø.
3. ** = NOMIAL PIPE SIZE.

P624 TYP ADJUSTABLE PIPE SUPPORT

NS 09/04/13

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SHEET 15

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY: _____ PE _____
NAME
APPROVED: _____ DATE
APPROVED: _____ DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209
DATE: MARCH 2014 | SCALE: AS SHOWN
DRAWN BY SDW
DESIGNED BY JED
CHECKED BY JED
SUBMITTED BY —
FIELD BOOKS | CALC BOOKS | APPROVED | APPROVED

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
TYPICAL DETAILS – 3

SHEET NO — OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 00TD-03 (E-1757)
REVISION

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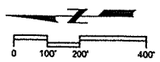
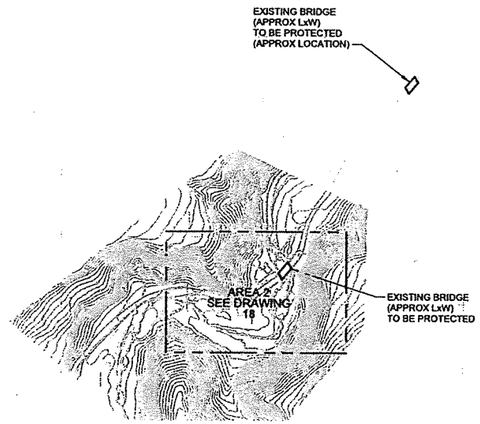
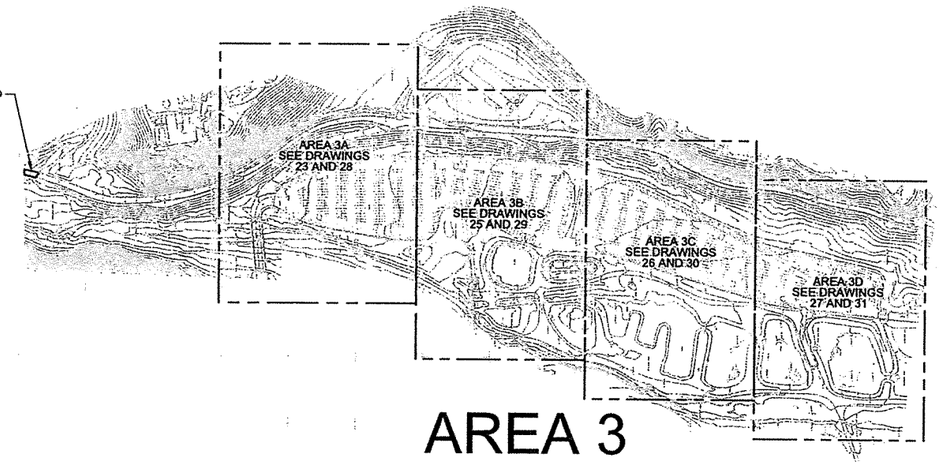




AREA 2



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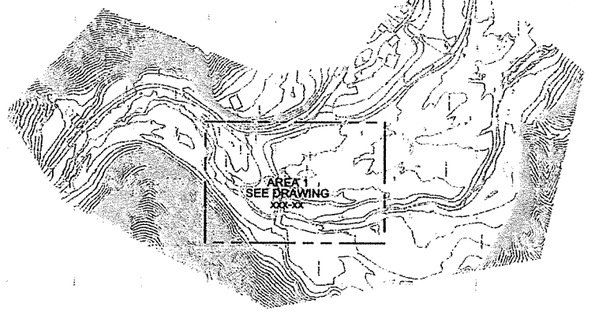

AREA 1

A OVERALL SITE PLAN

SCALE: 1" = 200'
FILE: FILE

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SHEET 16

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:

PE _____

NAME

APPROVED: _____ DATE

APPROVED: _____ DATE

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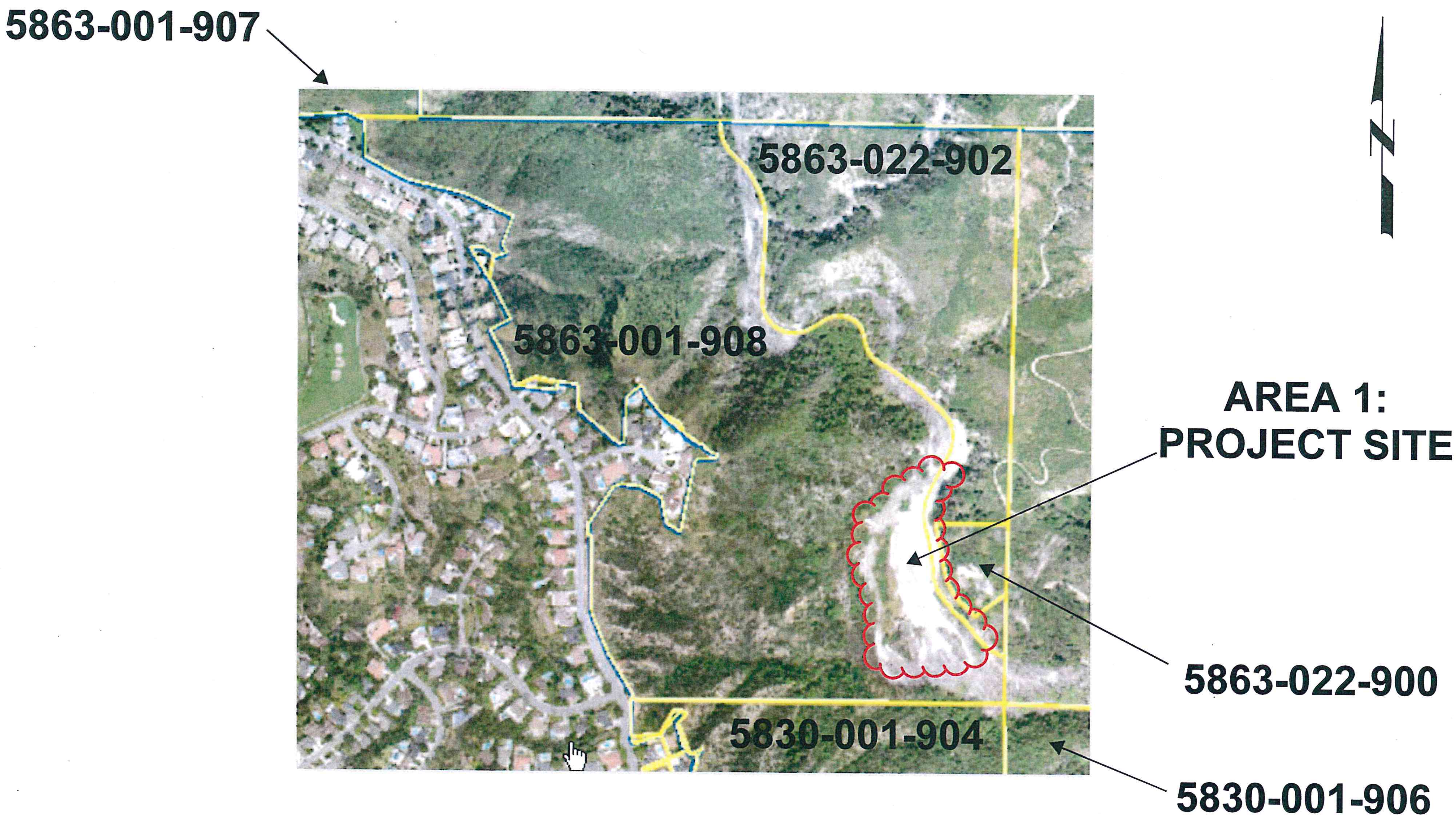
CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE		
MARCH 2014	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY SDW			
DESIGNED BY SJS		ARROYO SECO CANYON PROJECT	WORK ORDER 03055 / FILE NUMBER 00C-01 (E-1757)
CHECKED BY JED		OVERALL SITE PLAN	
SUBMITTED BY —			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 9137A1000C01.dgn



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SHEET 17

NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

Carollo

D.S.-206 TO 209

DATE	SCALE	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO – OF XX SHEETS	
MARCH 2014	AS SHOWN		WORK ORDER	FILE NUMBER
DRAWN BY SDW DESIGNED BY SJS CHECKED BY JED SUBMITTED BY SUB		ARROYO SECO CANYON PROJECT PROPERTY LINE (AREA 1 PROJECT SITE)	03055	00C-02
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION	

LAST SAVED BY: [illegible]

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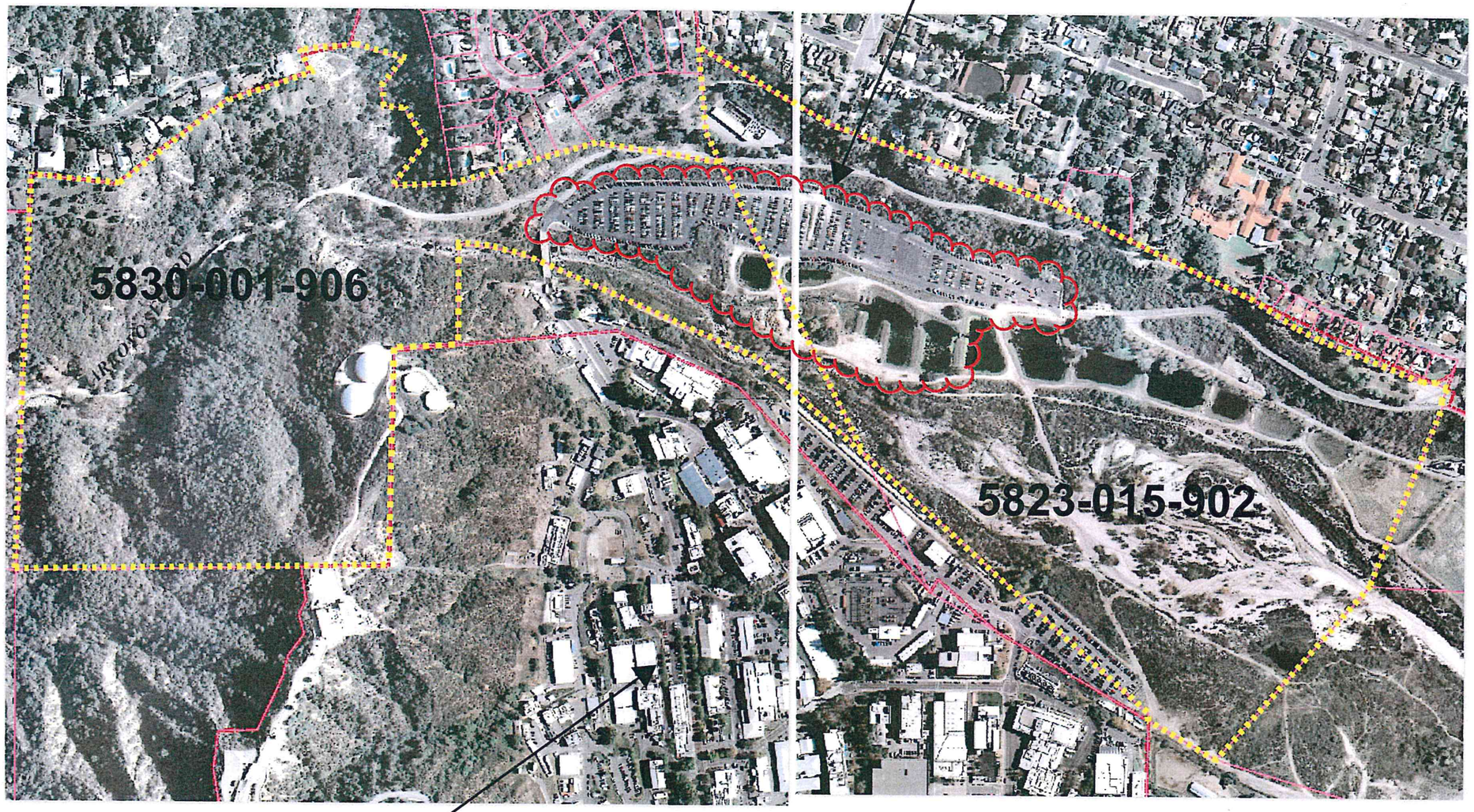
AREA 3: PROJECT SITE



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~~SHEET 18~~

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED 1886

D.S.-206 TO 209

DATE	SCALE		
MARCH 2014	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO – OF XX SHEETS
DRAWN BY SDW DESIGNED BY SJS CHECKED BY JED SUBMITTED BY SUB		ARROYO SECO CANYON PROJECT PROPERTY LINE (AREA 3 PROJECT SITE)	WORK ORDER 03055 / FILE NUMBER 00C-03
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

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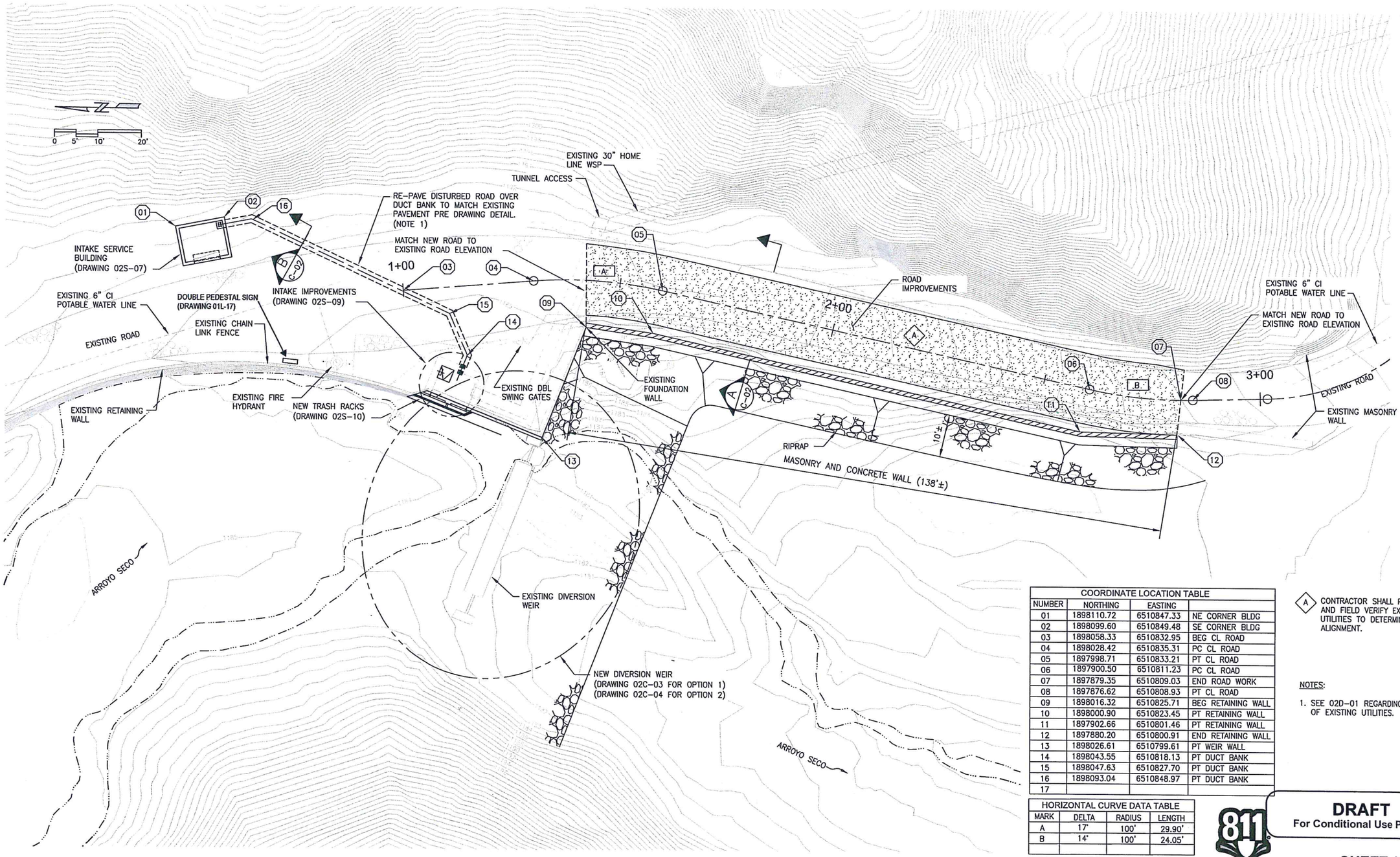

COORDINATE LOCATION TABLE			
NUMBER	NORTHING	EASTING	
01	1898110.72	6510847.33	NE CORNER BLDG
02	1898099.60	6510849.48	SE CORNER BLDG
03	1898058.33	6510832.95	BEG CL ROAD
04	1898028.42	6510835.31	PC CL ROAD
05	1897998.71	6510833.21	PT CL ROAD
06	1897900.50	6510811.23	PC CL ROAD
07	1897879.35	6510809.03	END ROAD WORK
08	1897876.62	6510808.93	PT CL ROAD
09	1898016.32	6510825.71	BEG RETAINING WALL
10	1898000.90	6510823.45	PT RETAINING WALL
11	1897902.66	6510801.46	PT RETAINING WALL
12	1897880.20	6510800.91	END RETAINING WALL
13	1898026.61	6510799.61	PT WEIR WALL
14	1898043.55	6510818.13	PT DUCT BANK
15	1898047.63	6510827.70	PT DUCT BANK
16	1898093.04	6510848.97	PT DUCT BANK
17			

HORIZONTAL CURVE DATA TABLE			
MARK	DELTA	RADIUS	LENGTH
A	17°	100'	29.90'
B	14°	100'	24.05'

(A) CONTRACTOR SHALL POT HOLE AND FIELD VERIFY EXISTING UTILITIES TO DETERMINE FINAL ALIGNMENT.

NOTES:

1. SEE 02D-01 REGARDING LOCATION OF EXISTING UTILITIES.

811 Know what's below. Call before you dig.

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SHEET 19

C-01

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
PE
NAME
APPROVED: DATE
APPROVED: DATE

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DEERE & AULT CONSULTANTS, INC.

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE		
APRIL 2914	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO OF XX SHEETS
DRAWN BY PDH			
DESIGNED BY JRE		ARROYO SECO CANYON PROJECT AREA 2 – SITE PLAN	WORK ORDER 03055 / FILE NUMBER 02C-01
CHECKED BY KTF			
SUBMITTED BY			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 02C-01.DWG

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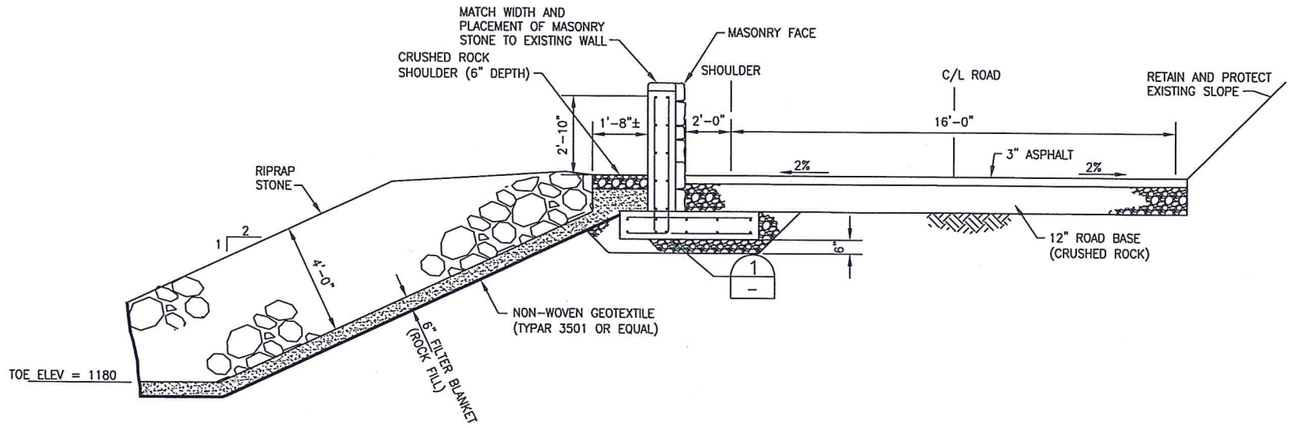
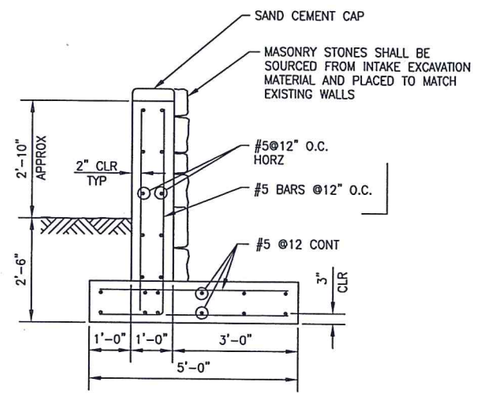


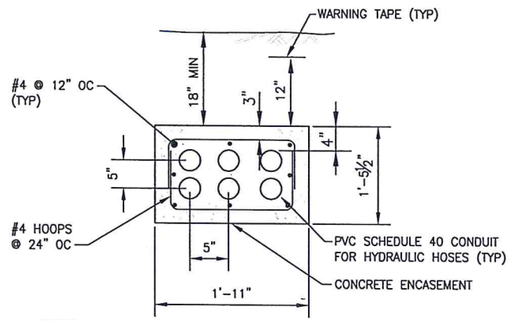
SECTION A
SCALE: 1/2"=1'-0"
C-01



NOTES:

1. PLACE ½" PJF JOINT @ 30'-0" O.C.
2. CONTRACTOR SHALL CLOSELY MATCH SIZE AND PATTERN OF STONE TO EXISTING.
3. ANCHOR STONE MASONRY TO CONCRETE PER REQUIREMENTS.
4. CONTRACTOR SHALL COORDINATE SELECTION OF MASONRY STONES TO MATCH WIDTH OF EXISTING MASONRY WALL.

DETAIL 1
SCALE: 3/4"=1'-0"



NOTES:

1. AT INTERSECTIONS WITH STRUCTURES HOOK #4'S INTO THE FOOTING OR WALL. (TYP)
2. LOCATE EXISTING UTILITIES AND NOTIFY ENGINEER IN THE EVENT OF CONFLICTS.

TYPICAL DUCT BANK ENCASEMENT/REINFORCEMENT B
C-01

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SHEET 20

C-02

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
PE
NAME
APPROVED: DATE
APPROVED: DATE

DEERE & AULT CONSULTANTS, INC.

D.S.-206 TO 209

DATE: APRIL 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO OF XX SHEETS
DRAWN BY: PDH DESIGNED BY: JPE CHECKED BY: KTF SUBMITTED BY:		ARROYO SECO CANYON PROJECT AREA 2 – SECTIONS AND DETAILS	WORK ORDER: 03055 FILE NUMBER: 02C-02
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 02C-02.DWG

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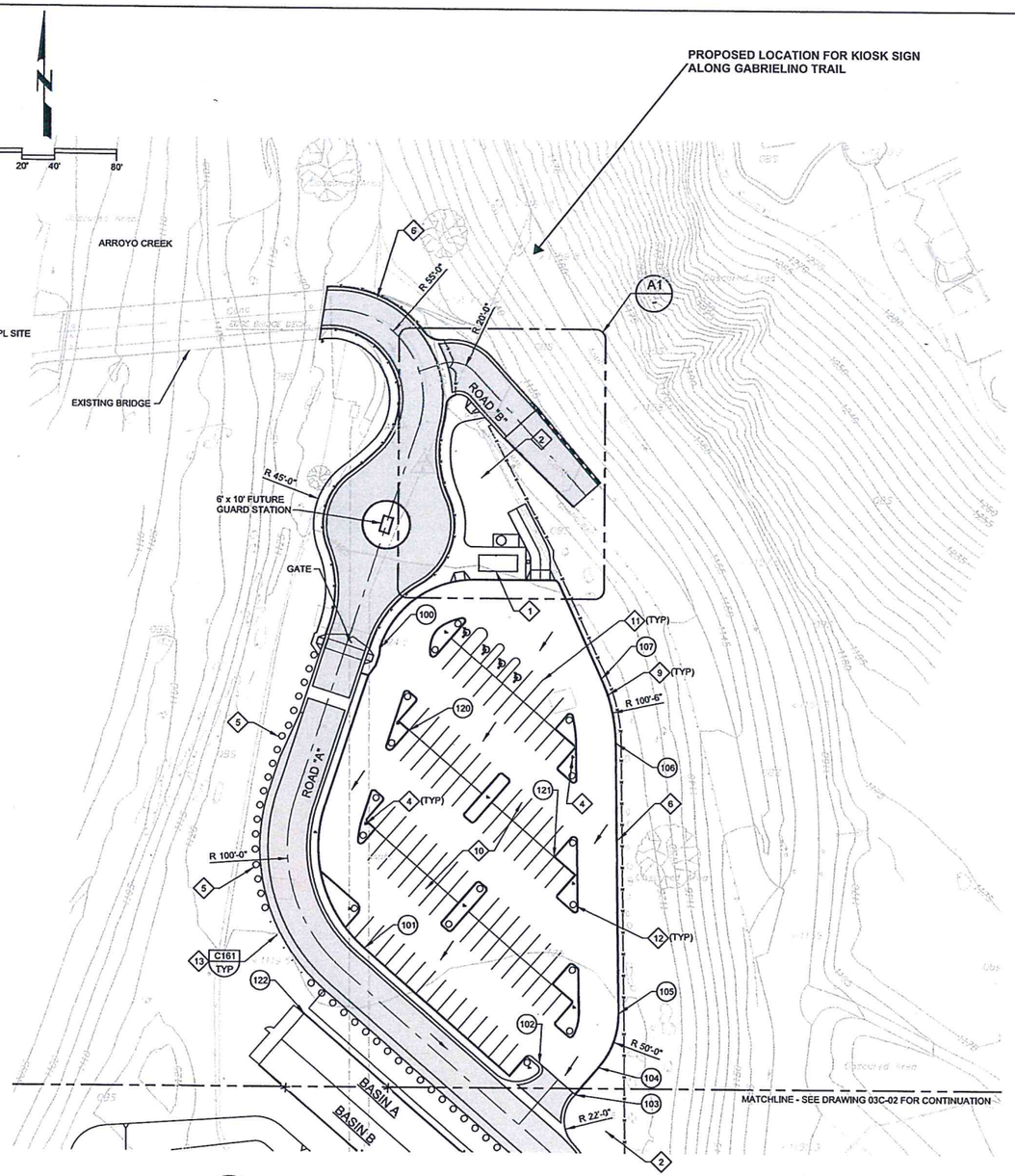
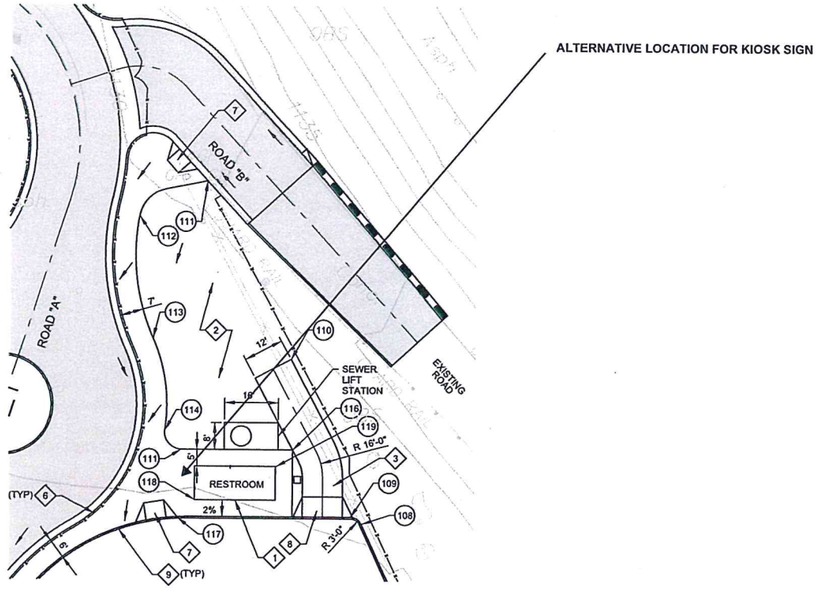


A AREA 3A - BASIN SITE AND GRADING PLAN

SCALE: 1" = 40'
FILE: FILE



A1 RESTROOM ENLARGED GRADING PLAN

SCALE: 1" = 20'
FILE: -

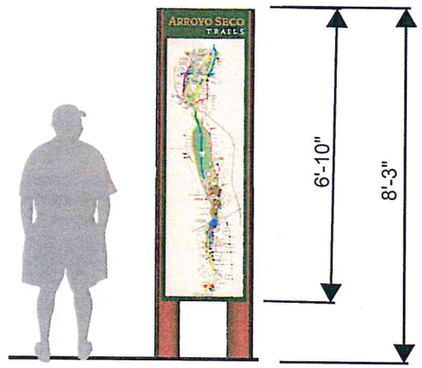
COORDINATE LOCATION TABLE				
MARK	NORTHING	EASTING	ELEV	DESCRIPTION
100	1896093.23	6511448.77	XX	XX
101	1895906.94	6511439.49	XX	XX
102	1895836.21	6511548.50	XX	XX
103	1895817.11	6511570.47	XX	XX
104	1895833.93	6511585.09	XX	XX
105	1895867.46	6511597.35	XX	XX
106	1896035.00	6511594.89	XX	XX
107	1896075.19	6511585.86	XX	XX
108	1896134.09	6511559.03	XX	XX
109	1896136.14	6511555.84	XX	XX
110	1896182.97	6511537.89	XX	XX
111	1896236.01	6511512.89	XX	XX
112	1896225.59	6511492.64	XX	XX
113	1896189.22	6511496.80	XX	XX
114	1896161.90	6511500.48	XX	XX
115	1896156.14	6511505.42	XX	XX
116	1896156.14	6511538.49	XX	XX
117	1896136.07	6511504.20	XX	XX
118	1896141.14	6511509.49	1126.10	FF SW CORNER OF RESTROOM
119	1896151.14	6511533.49	1126.10	FF NE CORNER OF RESTROOM
120	1896042.22	6511466.98	XX	XX
121	1895964.15	6511556.79	XX	XX
122	1895866.31	6511402.60	XX	TOW NE CORNER OF BASIN

GENERAL NOTES:

1. REFER TO ROAD PLAN AND PROFILE DRAWINGS FOR ALL FINISHED GRADE ELEVATIONS.
2. REFER TO LANDSCAPE PLANS FOR ALL PLANTING SCHEDULES AND IRRIGATION DESIGN.

KEY NOTES:

1. FABRICATED RESTROOM. REFER TO SECTION 13100.
2. LANDSCAPE AREA. REFER TO LANDSCAPE PLANS.
3. CONSTRUCT GRAVEL ACCESS DRIVE. 4" AGGREGATE OVER 8" ABC.
4. PARKING FOR RECREATIONAL USE SIGN. TYP OF 10 IN PARKING AREA.
5. INSTALL ROCK BOULDER ALONG EDGE OF ROADWAY. EACH BOULDER SHALL BE APPROX 1/2 TON W / 6-FOOT SPACING ON CENTER.
6. NEW FENCING PER APWA 600 (H = 6').
7. INSTALL 6' WIDE RAMP PER CITY STD. PLAN S-414.
8. CONSTRUCT 10' WIDE DRIVEWAY APPROACH PER APWA STD. PLAN 110-1, TYPE B.
9. CONSTRUCT 6" VERTICAL CURB PER APWA STD. PLAN 120-1, TYPE A1.
10. INSTALL 6" DECOMPOSED GRANITE OVER COMPACTED BASE.
11. PAINTED 8'-6" x 18' PARKING STALL.
12. PROVIDE ROCK / BOULDER AT PARKING STALL ENDS. REFER TO LANDSCAPE PLANS.
13. INSTALL REMOVABLE GUARD POST. INSTALL 5 @ 4'-0" O.C. FOR 20-FEET.



KIOSK SIGN

NOT TO SCALE

SIGN SHOWN FOR ILLUSTRATION ONLY. TEXT AND GRAPHICS TO BE DETERMINED.

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811
OR
1-800-227-2600

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SHEET 21

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE		
MARCH 2014	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO – OF XX SHEETS
DRAWN BY SDW			
DESIGNED BY SJS		ARROYO SECO CANYON PROJECT	WORK ORDER 03055
CHECKED BY JED		AREA 3A – BASIN SITE AND GRADING PLAN	FILE NUMBER 03C-01 (E-1757)
SUBMITTED BY –			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

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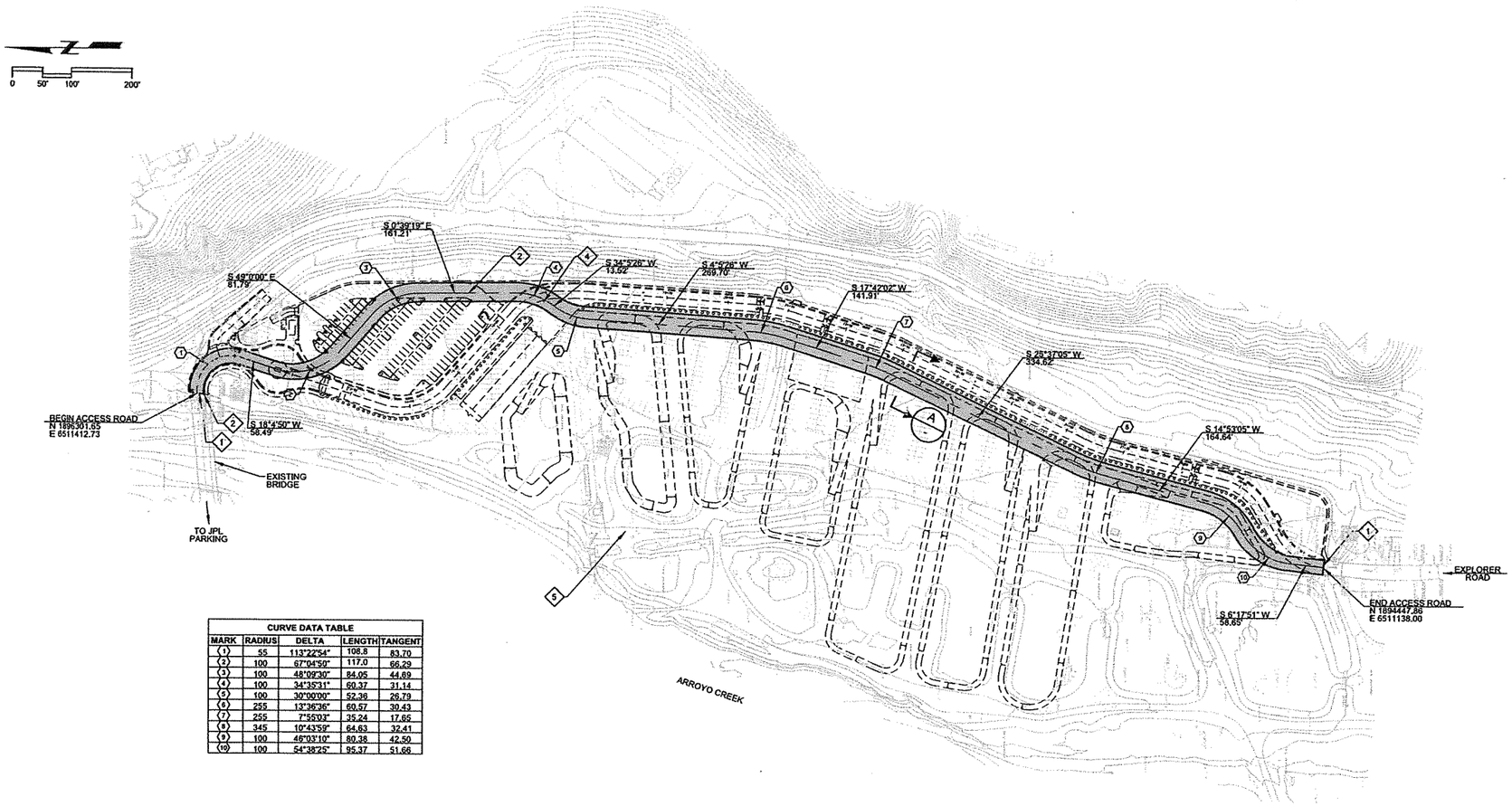


CURVE DATA TABLE				
MARK	RADIUS	DELTA	LENGTH	TANGENT
(1)	55	113°22'54"	108.8	83.70
(2)	100	67°04'50"	117.0	66.29
(3)	100	48°09'30"	84.05	44.69
(4)	100	34°35'31"	60.37	31.14
(5)	100	30°00'00"	52.36	26.79
(6)	255	13°36'36"	60.57	30.43
(7)	255	7°55'03"	35.24	17.65
(8)	345	10°43'59"	64.63	32.41
(9)	100	46°03'10"	80.38	42.50
(10)	100	54°38'25"	95.37	51.66

AREA 3 - TEMPORARY ACESS ROAD PLAN

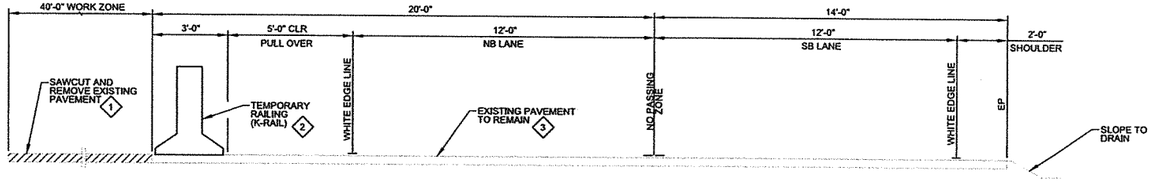
SCALE: 1" = 100'
FILE:

GENERAL NOTES:

1. IT IS CRITICAL OF THIS PROJECT THAT THE CONTRACTOR MAINTAIN A CONTINUOUS TEMPORARY ACCESS ROAD FOR VEHICLE AND PEDESTRIAN TRAFFIC FROM EXPLORER ROAD TO THE EXISTING JPL BRIDGE. CONTRACTOR SHALL RETAIN THE EXISTING PAVEMENT SECTION AS SHOWN ON THIS PLAN FOR ACCESS.
2. PROVIDE 24-HOUR POSTED NOTIFICATION FOR ALL TEMPORARY ACCESS ROAD CLOSURES.
3. MAINTAIN APPROPRIATE SITE DISTANCES AROUND ALL HORIZONTAL CURVES ALONG TEMPORARY ACCESS ROAD.
4. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH CITY AND MUTCD STANDARDS.
5. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN TO CITY DEPARTMENT OF TRANSPORTATION FOR REVIEW AND APPROVAL PRIOR TO STARTING WORK.

KEY NOTES:

1. SAWCUT EXISTING PAVEMENT TO FULL DEPTH IN NEAT LINES.
2. OMIT K-RAIL BARRIER FROM JPL BRIDGE TO NEW ROAD CROSSING.
3. REMOVE OR COVER ALL EXISTING PAVEMENT STRIPING. SANDBLASTING WILL NOT BE ALLOWED.
4. PROVIDE CONTINUOUS ACCESS THROUGH INTERSECTION.
5. REFER TO DWG 03C-02 FOR DETAILS ON CONTRACTOR LAY DOWN AND CONSTRUCTION TRAILER AREA.



A TEMPORARY ACCESS ROAD SECTION

SCALE: 3/8" = 1'-0"
FILE: FILE

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SHEET 22

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

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NAME
APPROVED:
DATE
APPROVED:
DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE
MARCH 2014	AS SHOWN

DRAWN BY SDW
DESIGNED BY SJS
CHECKED BY JED
SUBMITTED BY
FIELD BOOKS | CALC BOOKS | APPROVED | APPROVED

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
AREA 3-TEMPORARY ACCESS ROAD PLAN

SHEET NO — OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 03C-01A (E-1757)
REVISION

9137A10 9137A10 FILE NAME: 9137A1003C01A.dgn

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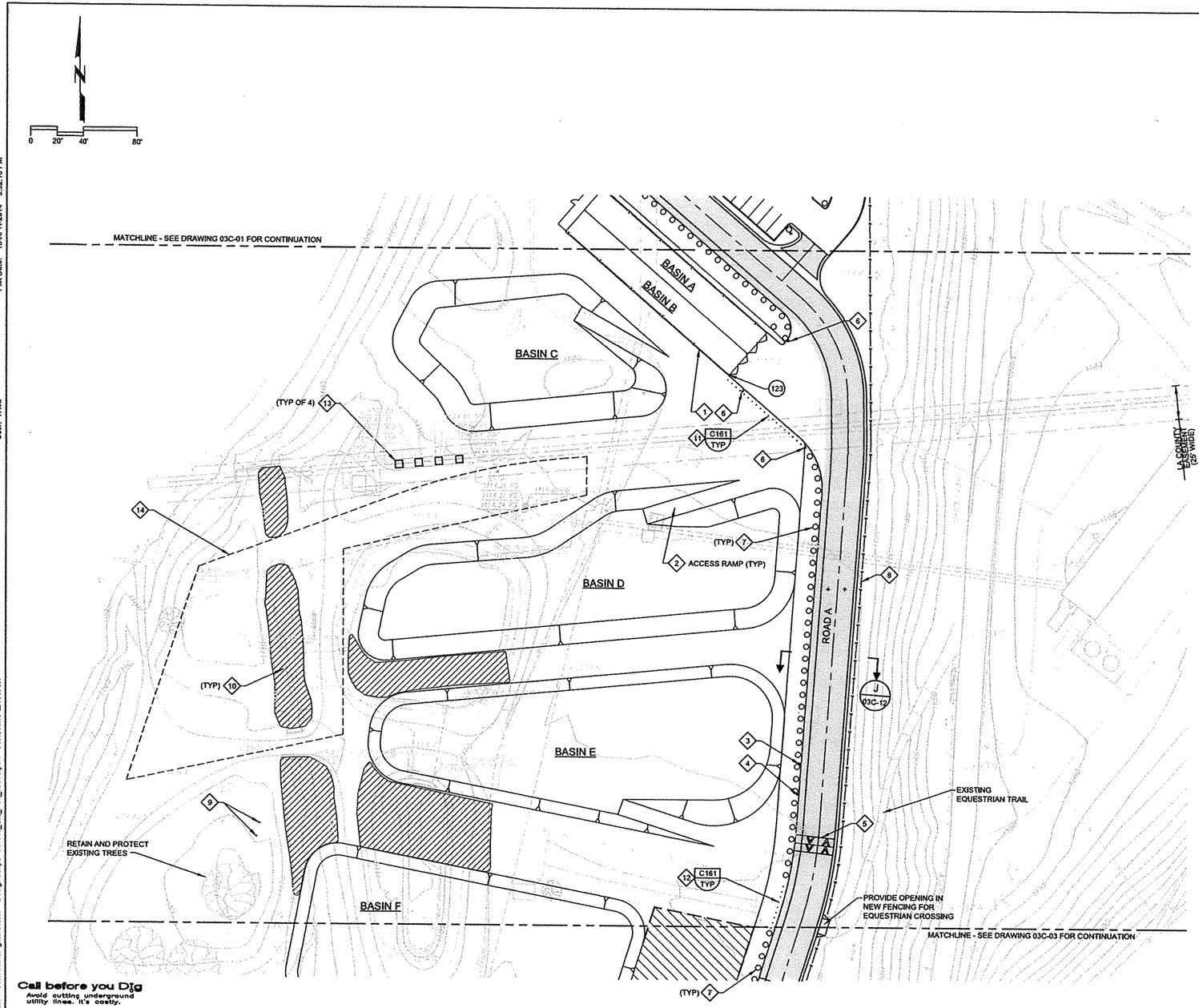

COORDINATE LOCATION TABLE				
MARK	NORTHING	EASTING	ELEV	DESCRIPTION
123	1895728.40	6511496.60	XX	TOW SW CORNER OF BASIN
200	####	####	XX	CORNER OF BASIN A
201	####	####	XX	CORNER OF BASIN B
202	####	####	XX	BC, EOP
203	####	####	XX	BC, EOP
204	####	####	XX	BC, EOP
205	####	####	XX	BC, EOP
206	####	####	XX	BC, ROAD CL
207	####	####	XX	BC, ROAD CL
208	####	####	XX	BC, EOP
209	####	####	XX	BC, EOP
210	####	####	XX	BC, ROAD CL
211	####	####	XX	BC, EOP
212	####	####	XX	BC, ROAD CL
213	####	####	XX	BC, ROAD CL
214	####	####	XX	BC, ROAD CL
215	####	####	1119.00	TOP OF RAMP
216	####	####	1119.00	MIDPOINT OF RADIUS
217	####	####	1119.00	MIDPOINT OF RADIUS
218	####	####	1119.00	MIDPOINT OF RADIUS
219	####	####	1119.00	MIDPOINT OF RADIUS
220	####	####	1119.00	MIDPOINT OF RADIUS
221	####	####	1114.00	BOTTOM OF RAMP
222	####	####	1117.00	TOP OF RAMP
223	####	####	1117.00	MIDPOINT OF RADIUS
224	####	####	1117.00	MIDPOINT OF RADIUS
225	####	####	1117.00	MIDPOINT OF RADIUS
226	####	####	1117.00	MIDPOINT OF RADIUS
227	####	####	1117.00	MIDPOINT OF RADIUS
228	####	####	1117.00	MIDPOINT OF RADIUS
229	####	####	1117.00	MIDPOINT OF RADIUS
230	####	####	1112.00	BOTTOM OF RAMP
231	####	####	1113.00	MIDPOINT OF RADIUS
232	####	####	1113.00	MIDPOINT OF RADIUS
233	####	####	1113.00	MIDPOINT OF RADIUS
234	####	####	1113.00	TOP OF RAMP
235	####	####	1110.00	BOTTOM OF RAMP
236	####	####	1113.00	MIDPOINT OF RADIUS
237	####	####	1107.00	MIDPOINT OF RADIUS
238	####	####	1107.00	MIDPOINT OF RADIUS
239	####	####	1107.00	MIDPOINT OF RADIUS
240	####	####	1107.00	MIDPOINT OF RADIUS
241	####	####	1107.00	MIDPOINT OF RADIUS
242	####	####	1107.00	MIDPOINT OF RADIUS
243			XX	XX

GENERAL NOTES:

1. REFER TO ROAD PLAN AND PROFILE DRAWINGS FOR ALL FINISHED GRADE ELEVATIONS.
2. REFER TO LANDSCAPE PLANS FOR ALL PLANTING SCHEDULES AND IRRIGATION DESIGN.

KEY NOTES:

1. FURNISH AND INSTALL CHAIN LINK FENCE (H=6') AROUND PERIMETER OF BASIN A AND BASIN B PER APWA STANDARD PLAN 600. PROVIDE ONE WALK GATE (WIDTH = 4') AND TWO DOUBLE LEAF DRIVE GATES (WIDTH = 20'). FIELD VERIFY FINAL DIMENSIONS.
2. PROVIDE 8% (APPROX) LONGITUDINAL SLOPE AND 2% CROSS SLOPE. COMPACTED NATIVE MATERIAL SHALL BE USED.
3. SPEED BUMP SIGN. REFER TO MUTCD W8-1. (QUANTITY 6)
4. EQUESTRIAN CROSSING AHEAD SIGN. REFER TO MUTCD W11-7. (QUANTITY 2)
5. SPEED BUMP PER PWS STANDARD.
6. "NO PARKING" SIGN. REFER TO MUTCD R7-1. (QUANTITY 3)
7. INSTALL ROCK BOULDER ALONG EDGE OF ROADWAY. EACH BOULDER SHALL BE APPROX 1/2 TON W / 6-FOOT SPACING ON CENTER.
8. NEW CHAIN LINK FENCING PER APWA 600 (H = 6').
9. RETAIN AND PROTECT EXISTING POWER POLE, GUY WIRES, AND OVER HEAD POWER LINES. REFER TO ALL SCE SAFETY REQUIREMENTS WHEN OPERATING AROUND SCE EQUIPMENT.
10. FILL IN USED BASINS, DEPRESSIONS, AND CHANNELS. GRADE EVENLY TOWARDS BASINS NOT TO EXCEED 5% SLOPE.
11. INSTALL REMOVABLE GUARD POST. INSTALL 19 @ 4'-0" O.C. FOR 72-FEET.
12. INSTALL REMOVABLE GUARD POST. INSTALL 9 @ 4'-0" O.C. FOR 36-FEET.
13. FURNISH AND INSTALL COATED STEEL PLATES OVER EXISTING OPENING IN STORM DRAIN BOX (APPROX. 9' X 9' X 1") BEFORE BACKFILLING TO REACH GRADE.
14. CONTRACTOR LAY DOWN AND CONSTRUCTION TRAILER AREA.

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811
OR
1-800-227-2600

B AREA 3B - BASIN SITE AND GRADING PLAN

SCALE: 1" = 40'
FILE: FILE

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SHEET 23

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
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NAME
APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE		
MARCH 2014	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY SDW DESIGNED BY SJS CHECKED BY JED SUBMITTED BY —		ARROYO SECO CANYON PROJECT AREA 3B – BASIN SITE AND GRADING PLAN	WORK ORDER 03055 / FILE NUMBER 03C-02 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

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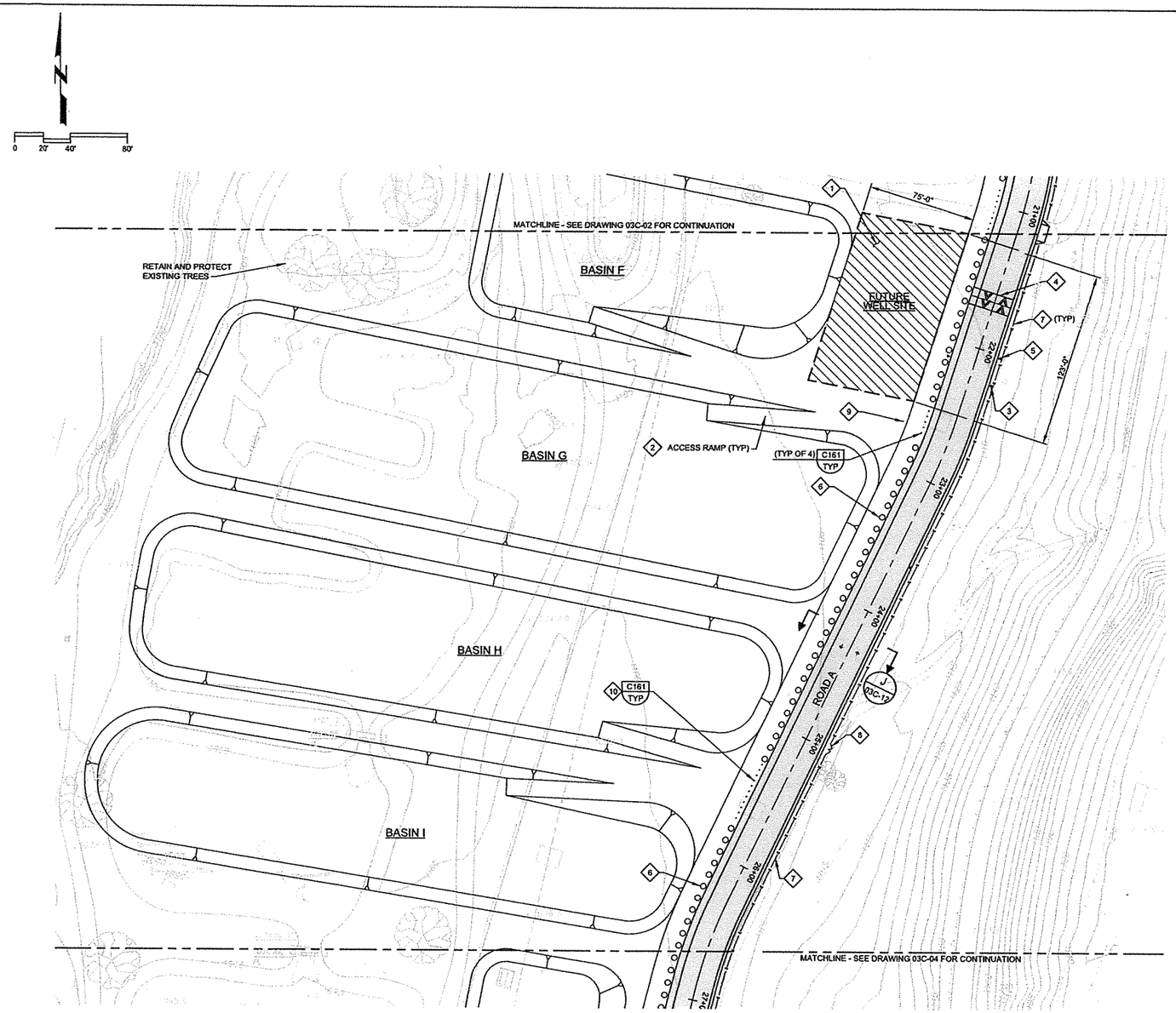

COORDINATE LOCATION TABLE				
MARK	NORTHING	EASTING	ELEV	DESCRIPTION
300	####	####	XX	BC, ROAD CL
301	####	####	XX	BC, ROAD CL
302	####	####	XX	BC, ROAD CL
303	####	####	XX	BC, ROAD CL
304	####	####	1107.00	MIDPOINT OF RADIUS
305	####	####	1107.00	TOP OF RAMP
306	####	####	1104.00	BOTTOM OF RAMP
307	####	####	1107.00	MIDPOINT OF RADIUS
308	####	####	1105.00	TOP OF RAMP
309	####	####	1105.00	MIDPOINT OF RADIUS
310	####	####	1105.00	MIDPOINT OF RADIUS
311	####	####	1105.00	MIDPOINT OF RADIUS
312	####	####	1105.00	MIDPOINT OF RADIUS
313	####	####	1102.00	BOTTOM OF RAMP
314	####	####	1103.00	MIDPOINT OF RADIUS
315	####	####	1103.00	MIDPOINT OF RADIUS
316	####	####	1103.00	MIDPOINT OF RADIUS
317	####	####	1103.00	TOP OF RAMP
318	####	####	1100.00	BOTTOM OF RAMP
319	####	####	1103.00	MIDPOINT OF RADIUS
320	####	####	1101.00	TOP OF RAMP
321	####	####	1101.00	MIDPOINT OF RADIUS
322	####	####	1101.00	MIDPOINT OF RADIUS
323	####	####	1101.00	MIDPOINT OF RADIUS
324	####	####	1101.00	MIDPOINT OF RADIUS
325	####	####	1098.00	BOTTOM OF RAMP
326			XX	XX
327			XX	XX

GENERAL NOTES:

1. REFER TO ROAD PLAN AND PROFILE DRAWINGS FOR ALL FINISHED GRADE ELEVATIONS.
2. REFER TO LANDSCAPE PLANS FOR ALL PLANTING SCHEDULES AND IRRIGATION DESIGN.

KEY NOTES:

1. AREA RESERVED FOR FUTURE GROUND WATER WELL.
2. PROVIDE 8% (APPROX) LONGITUDINAL SLOPE AND 2% CROSS SLOPE. COMPACTED NATIVE MATERIAL SHALL BE USED.
3. SPEED BUMP SIGN. REFER TO MUTCD W8-1. (QUANTITY 6)
4. SPEED BUMP PER PWP STANDARD.
5. EQUESTRIAN CROSSING AHEAD SIGN. REFER TO MUTCD W11-7. (QUANTITY 2)
6. INSTALL ROCK BOULDER ALONG EDGE OF ROADWAY. EACH BOULDER SHALL BE APPROX 1/2 TON W / 6-FOOT SPACING ON CENTER.
7. NEW CHAIN LINK FENCING PER APWA 600 (H = 6').
8. MAINTENANCE ACCESS GATE (APWA 600, DOUBLE LEAF, H=6')
9. INSTALL 15-FOOT WIDE ACCESS INTO BASIN AREA. INSTALL 4 REMOVABLE GUARD POSTS. SPACE EVENLY ACROSS OPENING.
10. INSTALL REMOVABLE GUARD POST. INSTALL 11 @ 4'-0" O.C. FOR 40-FEET.

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811 OR 1-800-227-2600

C AREA 3C - BASIN SITE AND GRADING PLAN

SCALE: 1" = 40'
FILE: FILE

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SHEET 24

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

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NAME
APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO SHTOF XX SHEETS
DRAWN BY: SDW DESIGNED BY: SJS CHECKED BY: JED SUBMITTED BY: --		ARROYO SECO CANYON PROJECT AREA 3C - BASIN SITE AND GRADING PLAN	WORK ORDER: 03055 FILE NUMBER: 03C-03 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED / REVISION

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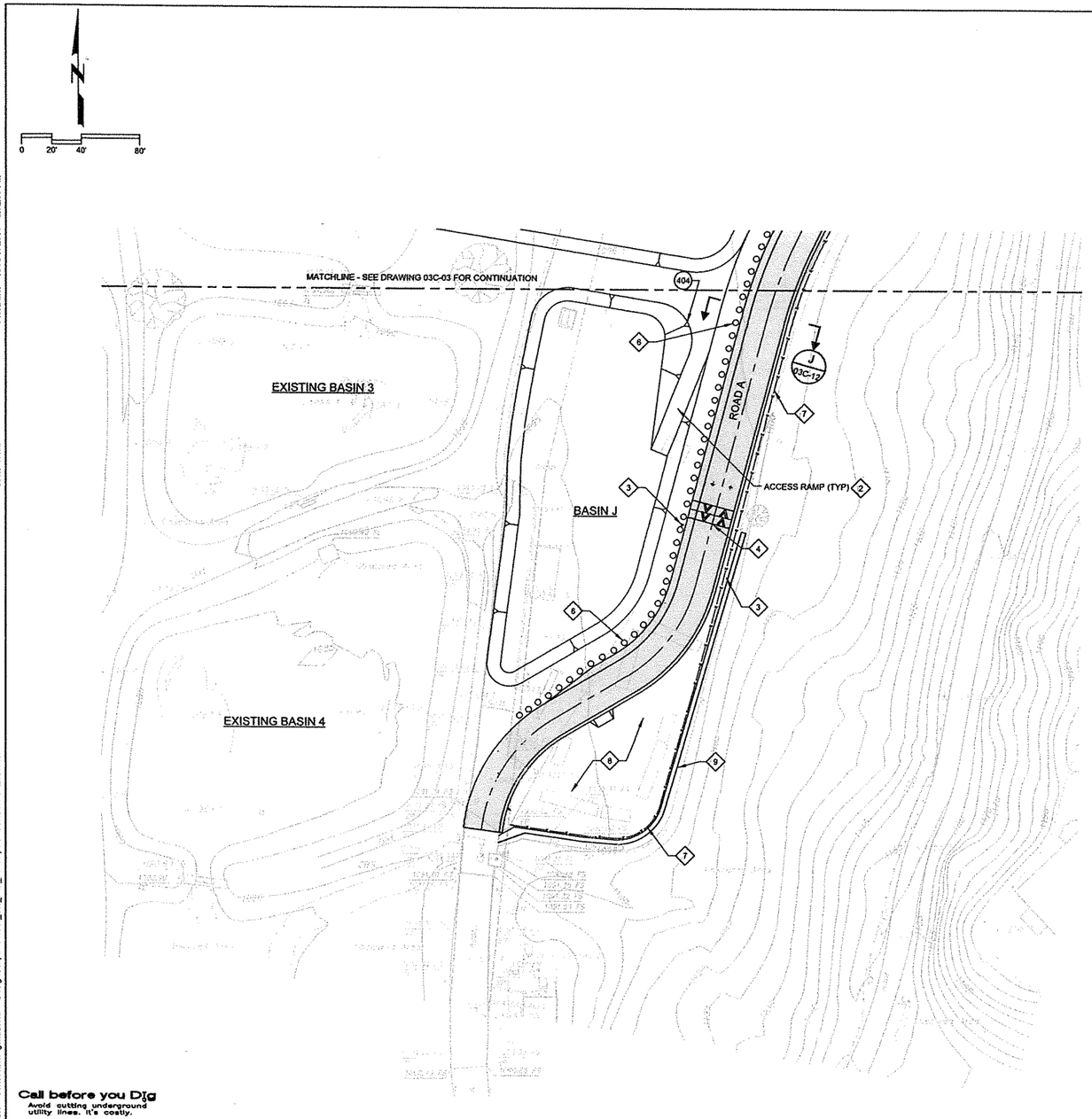

COORDINATE LOCATION TABLE				
MARK	NORTHING	EASTING	ELEV	DESCRIPTION
400	####	####	XX	BC, ROAD CL
401	####	####	XX	BC, ROAD CL
402	####	####	XX	BC, ROAD CL
403	####	####	XX	BC, ROAD CL
404	####	####	1098.00	MIDPOINT OF RADIUS
405	####	####	1098.00	MIDPOINT OF RADIUS
406	####	####	1098.00	MIDPOINT OF RADIUS
407	####	####	1098.00	MIDPOINT OF RADIUS
408	####	####	1098.00	TOP OF RAMP
409	####	####	1095.00	BOTTOM OF RAMP
410			XX	XX
411			XX	XX

GENERAL NOTES:

1. REFER TO ROAD PLAN AND PROFILE DRAWINGS FOR ALL FINISHED GRADE ELEVATIONS.
2. REFER TO LANDSCAPE PLANS FOR ALL PLANTING SCHEDULES AND IRRIGATION DESIGN.

KEY NOTES:

1. NOT USED
2. PROVIDE 8% (APPROX) LONGITUDINAL SLOPE AND 2% CROSS SLOPE. COMPACTED NATIVE MATERIAL SHALL BE USED.
3. SPEED BUMP SIGN. REFER TO MUTCD W8-1. (QUANTITY 6)
4. SPEED BUMP PER PWP STANDARD.
6. INSTALL ROCK BOULDER ALONG EDGE OF ROADWAY. EACH BOULDER SHALL BE APPROX 1/2 TON W / 6-FOOT SPACING ON CENTER.
7. NEW CHAIN LINK FENCING PER APWA 600 (H = 6').
8. INSTALL 6" DECOMPOSED GRANITE OVER COMPACTED BASE. APPROX. 8,700 S.F.
9. REMOVE AND RECONSTRUCT CONCRETE DRAINAGE GUTTER PER DETAIL J, SHEET 03C-12.

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811
OR
1-800-227-2600

D AREA 3D - BASIN SITE AND GRADING PLAN

SCALE: 1" = 40'
FILE: FILE

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SHEET 25

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
PE
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE		
MARCH 2014	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO – OF XX SHEETS
DRAWN BY SDW			
DESIGNED BY SJS		ARROYO SECO CANYON PROJECT	WORK ORDER 03055
CHECKED BY JED		AREA 3D – BASIN SITE AND GRADING PLAN	FILE NUMBER 03C-04 (E-1757)
SUBMITTED BY –			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

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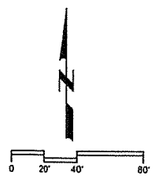

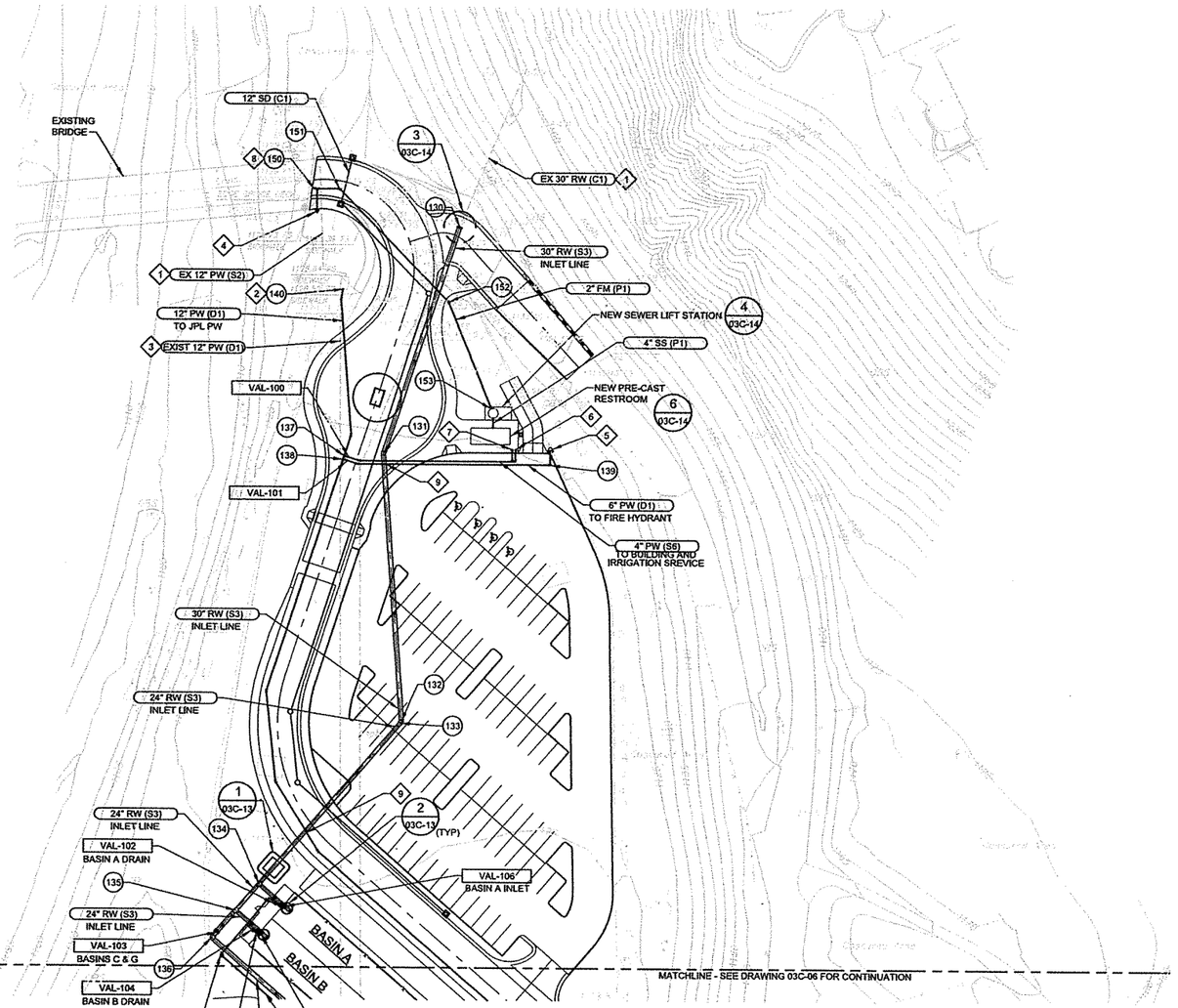

E **AREA 3A - PIPING PLAN**
SCALE: 1" = 40'
FILE: FILE

COORDINATE LOCATION TABLE				
MARK	NORTHING	EASTING	ELEV	DESCRIPTION
130	1896273.51	6511502.36	1121.8±	CONNECT TO EXISTING
131	1896135.17	6511456.02	XX	CL, 30" 22.5° ELBOW
132	1895970.80	6511467.51	XX	CL, 30" 45° ELBOW
133	1895969.99	6511466.80	XX	30" x 24" REDUCER
134	1895871.30	6511380.55	XX	CENTER, 24" TEE
135	1895855.11	6511366.41	1115.00	CENTER, 24" TEE
136	1895838.40	6511351.80	XX	CL, 30" 90° ELBOW
137	1896133.58	6511431.96	XX	CL, 12"x12"x4" TEE
138	1896131.46	6511431.27	XX	CL, 12"x12"x6" TEE
139	1896128.64	6511558.00	XX	CL, 6" 90° ELBOW
140	1896235.19	6511430.89	1122.1±	CONNECT TO EXISTING
150	1896296.41	6511413.06	XX	CAP, 2" SS LINE
151	1896296.41	6511428.52	XX	CL, 2" 45° ELBOW W/ WYE & CLEANOUT
152	1896227.74	6511495.70	XX	CL, 2" 22.5° ELBOW
153	1896162.92	6511522.09	XX	2" SS LINE CONN. @ LIFT STATION

NOTE:
1. ELEVATIONS SHOWN FOR PIPE ARE AT PIPE INVERT.

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND TIE-IN CONNECTION POINTS. SUBMIT FIELD DATA TO ENGINEER.
2. CONTRACTOR SHALL NOT DISRUPT WATER SERVICE TO JPL AND PROTECT MAIN WHILE WORK OCCURS.
3. CONTRACTOR SHALL SUBMIT 2 WEEKS IN ADVANCE A SCHEDULE TO PWP WHEN THE NEW JPL POTABLE LINE IS READY FOR CONNECTION TO THE EXISTING JPL METER. CONNECTION TO THE METER SHALL BE PERMITTED FOLLOWING PASSING OF THE MAIN PRESSURE TEST, DISINFECTION, AND PASSING OF THE BACTERIOLOGICAL TESTING.
4. CONTRACTOR SHALL PROVIDE AT ALL TIMES NORTH BOUND AND SOUTH BOUND VEHICLE ACCESS IN AREA 3. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL THAT CONFORMS TO MUTCD AND THE CITY'S DEPARTMENT OF TRANSPORTATION.
5. REFER TO ROAD PLAN AND PROFILE DRAWINGS FOR STORM DRAIN PIPE DESIGN.

KEY NOTES:

1. RETAIN AND PROTECT EXISTING PIPING.
2. CONNECTION TO EXISTING METER VAULT BY PWP.
3. THE EXISTING 12" PW (D1) LINE SHALL REMAIN IN SERVICE UNTIL SWITCH OVER TO NEW 12" PW (D1). REFER TO SPECIFICATIONS FOR SCHEDULE CONSTRAINTS AND WORK RESTRICTIONS.
4. INSTALL 1" COMBINATION AIR RELEASE AND VACUUM VALVE ASSEMBLY.
5. INSTALL FIRE HYDRANT PER PWP STD PLAN C-1327 WITH GUARD POST PER TYP DETAIL C160.
6. INSTALL 2" WATER SERVICE CONNECTION PER PWP STD PLAN W-102 FOR IRRIGATION CONNECTION.
7. INSTALL 2" WATER SERVICE CONNECTION PER PWP STD PLAN W-102 FOR POTABLE WATER GOING TO RESTROOM.
8. ROUTE 2" FORCE MAIN TO EDGE OF EXIST. BRIDGE. PROVIDE CAP AND MARK AT GROUND SURFACE FOR FUTURE CONNECTION TO CITY SEWER EXTENSION.
9. POTABLE AND VERTICAL PIPE CROSSING. PROVIDE AS REQUIRED PER CITY AND CDPH REQUIREMENTS.
10. FURNISH AND INSTALL 8-INCH DRAIN (JOSAM SERIES 32300 OR EQUAL) W/ 15 FT OF SST CHAIN TO ELEVATED DECK. SECURE CHAIN TO HOOK MOUNTED AT END OF DECK. PROVIDE FOUR- 1/2" DIA SST HOOKS EQUALLY SPACED ACROSS THE END OF DECK.
11. PROVIDE CLEANOUTS EVERY 100 FT ON 8" DR LINE.

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SHEET 26

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
PE
NAME
APPROVED: DATE
APPROVED: DATE

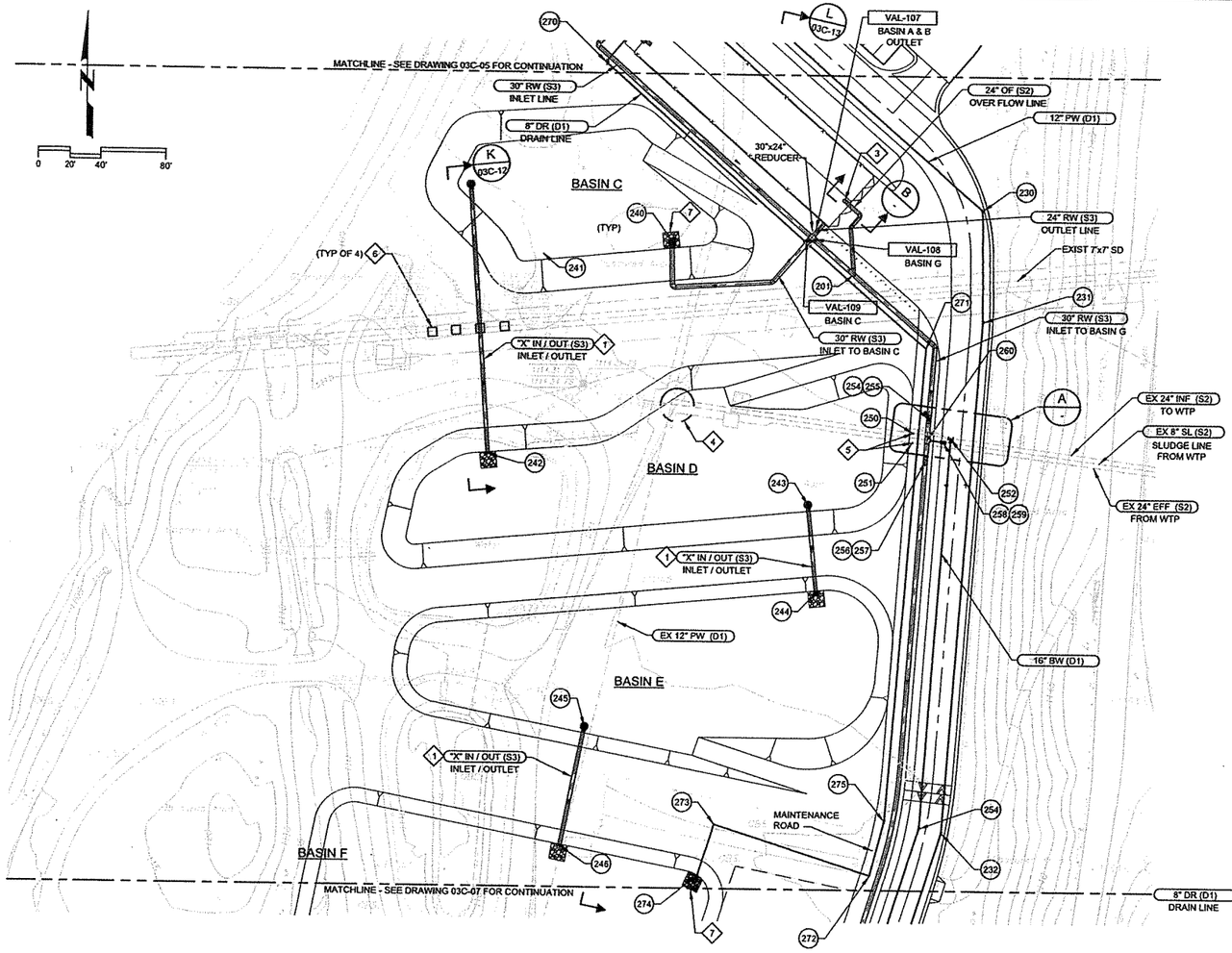
carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY: SDW DESIGNED BY: JED CHECKED BY: JED SUBMITTED BY: —		ARROYO SECO CANYON PROJECT AREA 3A — PIPING PLAN	WORK ORDER: 03055 FILE NUMBER: 03C-05 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED / REVISION

9137A10 9137A10 FILE NAME: 9137A1003C05.dgn



F AREA 3B - PIPING PLAN

SCALE: 1" = 40'
FILE: FILE

COORDINATE LOCATION TABLE				
MARK	NORTHING	EASTING	ELEV	DESCRIPTION
230	1895738.84	6511591.91	XX	CL, 12" 45° ELBOW
231	1895669.67	6511592.62	XX	CL, 12" 11.25° ELBOW
232	1895352.76	6511569.98	XX	CL, 12" 22.5° ELBOW
240	1895717.69	6511399.54	XX	INV, BASIN C INLET
241	1895709.63	6511319.72	XX	INV, BASIN C OUTLET
242	1895585.08	6511286.80	XX	INV, BASIN D INLET
243	1895555.83	6511485.64	XX	INV, BASIN D OUTLET
244	1895501.69	6511491.12	XX	INV, BASIN E INLET
245	1895416.69	6511348.21	XX	INV, BASIN E OUTLET
246	1895342.13	6511333.60	XX	INV, BASIN F INLET
250	1895600.85	6511550.10	XX	24" CAP
251	1895594.85	6511549.67	XX	24" CAP
252	1895597.87	6511573.45	XX	CONNECT NEW 16" TO EXIST 24"
253	1895355.42	6511556.14	XX	INV, 16" 22.5° ELBOW
254	1895609.71	6511559.78	1112.50	INV, 30" 90° ELBOW
255	1895609.71	6511559.78	1109.00	INV, 30" 90° ELBOW
256	1895583.68	6511557.87	1112.50	INV, 30" 90° ELBOW
257	1895583.68	6511557.87	1108.5	INV, 30" 90° ELBOW
258	1895595.68	6511568.68	1114.30	INV, 8" 90° ELBOW
259	1895595.68	6511568.68	1110.30	INV, 8" 90° ELBOW
260	1895596.71	6511558.83	1110.00	INV, 30"x30"x8" TEE
270	1895827.91	6511357.38	XX	INV, 8" 90° ELBOW
271	1895653.01	6511557.51	XX	INV, 8" 45° ELBOW
272	1895325.87	6511525.89	XX	INV, 8" 90° ELBOW
273	1895356.73	6511429.20	XX	INV, 8" 90° ELBOW
274	1895325.21	6511419.14	XX	8" DRAIN DAYLIGHT INTO BASIN F
275	1895359.56	6511534.63	XX	CL, 8" 45° ELBOW

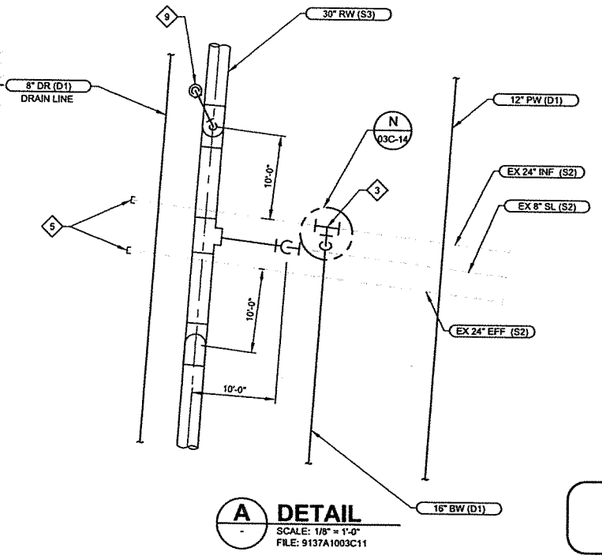
NOTE:
1. ELEVATIONS SHOWN FOR PIPE ARE AT PIPE INVERT.

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND TIE-IN CONNECTION POINTS. SUBMIT FIELD DATA TO ENGINEER.
2. CONTRACTOR SHALL NOT DISRUPT WATER SERVICE TO JPL AND PROTECT MAIN WHILE WORK OCCURS.
3. ALL WORK ON THE POTABLE WATER SYSTEM SHALL BE IN ACCORDANCE WITH PWP STANDARDS.
4. CONTRACTOR SHALL PROVIDE AT ALL TIMES NORTH BOUND AND SOUTH BOUND VEHICLE ACCESS IN AREA 3.

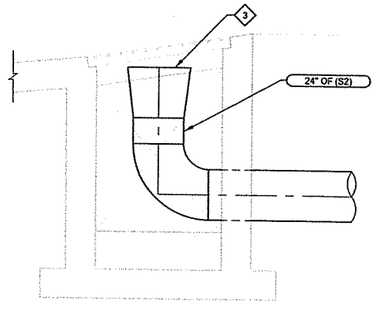
KEY NOTES:

1. REFER TO DETAIL K ON DRAWING 03C-11 FOR PIPE SIZING.
2. (NOT USED).
3. FURNISH AND INSTALL 30" x 24" REDUCER AT TOP OF OVERFLOW STANDPIPE.
4. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY AND CONFIRM LOCATION OF EXISTING JPL POTABLE WATER MAIN IN THIS AREA PRIOR TO REMOVING EXISTING DRAINS. THE CONTRACTOR SHALL CAREFULLY EXPOSE THE MAIN FOR PWP TO VISUALLY INSPECT. PWP WILL INITIALLY IDENTIFY AND MARK THE APPROXIMATE LOCATION OF THE JPL MAIN DURING THE UTILITY ALERT.
5. CUT AND CAP EXISTING 24" INFLUENT AND 24" EFFLUENT PIPELINE W / BLIND FLANGE AT WEST EDGE OF NEW MAINTENANCE ROAD.
6. FURNISH AND INSTALL 3/4" THICK STEEL PLATE OVER EXISTING OPENINGS IN STORM DRAIN. PLATE SHALL BE 2-INCHES LARGER THAN EXISTING OPENINGS. PLATE SIZE IS APPROXIMATELY 5'-4" x 5'-4". COAT PLATES AS SPECIFIED IN SECTION 09660.
7. CONSTRUCT OUTLET SIMILAR TO STANDPIPE DETAIL K ON SHEET 03C-11.
8. CUT-IN NEW 24" X 16" WSP TEE. ROTATE 45° DOWN TO PROVIDE ADEQUATE VERTICAL CLEARANCE.
9. FURNISH AND INSTALL 1" COMBINATION AIR RELEASE AND VACUUM VALVE ASSEMBLY SIM TO PWP STD PLAN G-1084. VALVE ENCLOSURE (PIPELINE PRODUCTS 16" DIA. X 30" H, STEEL W/ POWDER COAT) AND MOUNTED ON CONC PAD PER TYP DET S306.



A DETAIL

SCALE: 1/8" = 1'-0"
FILE: 9137A1003C11



B SECTION

SCALE: 3/8" = 1'-0"
FILE: 9137A1003C12

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SHEET 27

X-XX

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811 OR 1-800-227-2600

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	MARCH 2014	SCALE	AS SHOWN
DRAWN BY	SDW		
DESIGNED BY	JED		
CHECKED BY	JED		
SUBMITTED BY	SUB		
FIELD BOOKS		CALC BOOKS	

PASADENA WATER & POWER
CITY OF PASADENA

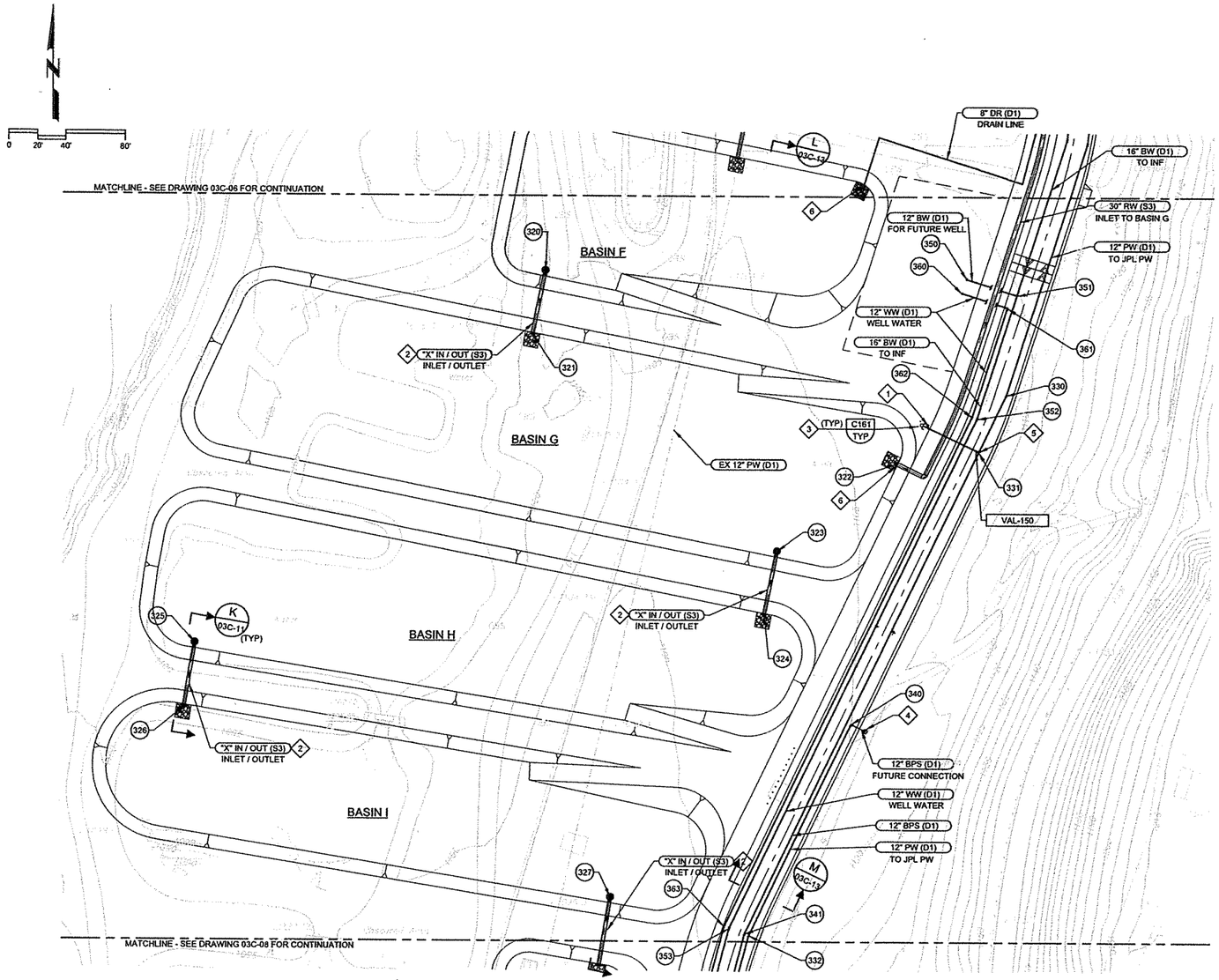
ARROYO SECO CANYON PROJECT
AREA 3B - PIPING PLAN

SHEET NO - OF XX SHEETS

WORK ORDER	FILE NUMBER
03055	03C-06 (E-1757)

APPROVED | APPROVED | REVISION

9137A10 9137A10 FILE NAME: 9137A1003C06.dgn



GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND TIE-IN CONNECTION POINTS. SUBMIT FIELD DATA TO ENGINEER.
2. CONTRACTOR SHALL NOT DISRUPT WATER SERVICE TO JPL AND PROTECT MAIN WHILE WORK OCCURS.
3. ALL WORK ON THE POTABLE WATER SYSTEM SHALL BE IN ACCORDANCE WITH PWP STANDARDS.
4. CONTRACTOR SHALL PROVIDE AT ALL TIMES NORTH BOUND AND SOUTH BOUND VEHICLE ACCESS IN AREA 3.

KEY NOTES:

1. INSTALL 6"x6"x4" TEE AND CAP FOR FUTURE CONNECTION.
2. REFER TO DETAIL K ON DRAWING 03C-12 FOR PIPE SIZING.
3. INSTALL FIRE HYDRANT WITH GUARD POST PER PWP STD PLAN C-1374.
4. INSTALL VALVE AND VALVE CAN AT END OF 12" BPS LINE PER PWP STD PLANS G-1224 AND G-1225
5. INSTALL 6"x12"x12" TEE W/ 6" GATE VALVE.
6. DAYLIGHT LINE INTO BOTTOM OF BASIN. TERMINATE PER DETAIL K, SHEET 03C-12.

COORDINATE LOCATION TABLE				
MARK	NORTHING	EASTING	ELEV	DESCRIPTION
320	1895266.24	6511204.21	XX	CL, BASIN F OUTLET
321	1895223.08	6511195.76	XX	CL, BASIN G INLET
322	1895136.54	6511441.96	XX	CL, BASIN G INLET
323	1895077.19	6511361.44	XX	CL, BASIN G OUTLET
324	1895034.00	6511352.96	XX	CL, BASIN H INLET
325	1895013.62	6510968.40	XX	CL, BASIN H OUTLET
326	1894970.24	6510961.22	XX	CL, BASIN I INLET
327	1894842.25	6511249.77	XX	CL, BASIN I OUTLET
330	1895182.79	6511515.73	XX	CL, 12" 11.25° ELBOW
331	1895144.50	6511497.37	XX	CL, 12"x12"x6" TEE
332	1894816.51	6511343.37	XX	CL, 12" 11.25° ELBOW
340	1894959.76	6511412.08	XX	CL, 12" 90° ELBOW
341	1894817.55	6511340.54	XX	CL, 12" 11.25° ELBOW
350	1895261.21	6511488.54	XX	16" BLIND FLANGE
351	1895250.34	6511522.60	XX	CL, 16"x16"x12" TEE
352	1895166.83	6511495.94	XX	CL, 16" 11.25° ELBOW
353	1894821.34	6511330.14	XX	CL, 16" 11.25° ELBOW
360	1895251.69	6511485.50	XX	12" BLIND FLANGE
361	1895241.88	6511516.22	XX	CL, 12" 90° ELBOW
362	1895168.12	6511492.68	XX	CL, 12" 11.25° ELBOW
363	1894822.64	6511326.90	XX	CL, 12" 11.25° ELBOW

NOTE:
1. ELEVATIONS SHOWN FOR PIPE ARE AT PIPE INVERT.

G AREA 3C - PIPING PLAN

SCALE: 1" = 40'
FILE: FILE

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811
OR
1-800-227-2600

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SHEET 28

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY: SDW DESIGNED BY: JED CHECKED BY: JED SUBMITTED BY: —		ARROYO SECO CANYON PROJECT AREA 3C – PIPING PLAN	WORK ORDER: 03055 FILE NUMBER: 03C-07 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED / REVISION

9137A10 9137A10 FILE NAME: 9137A1003C07.dgn

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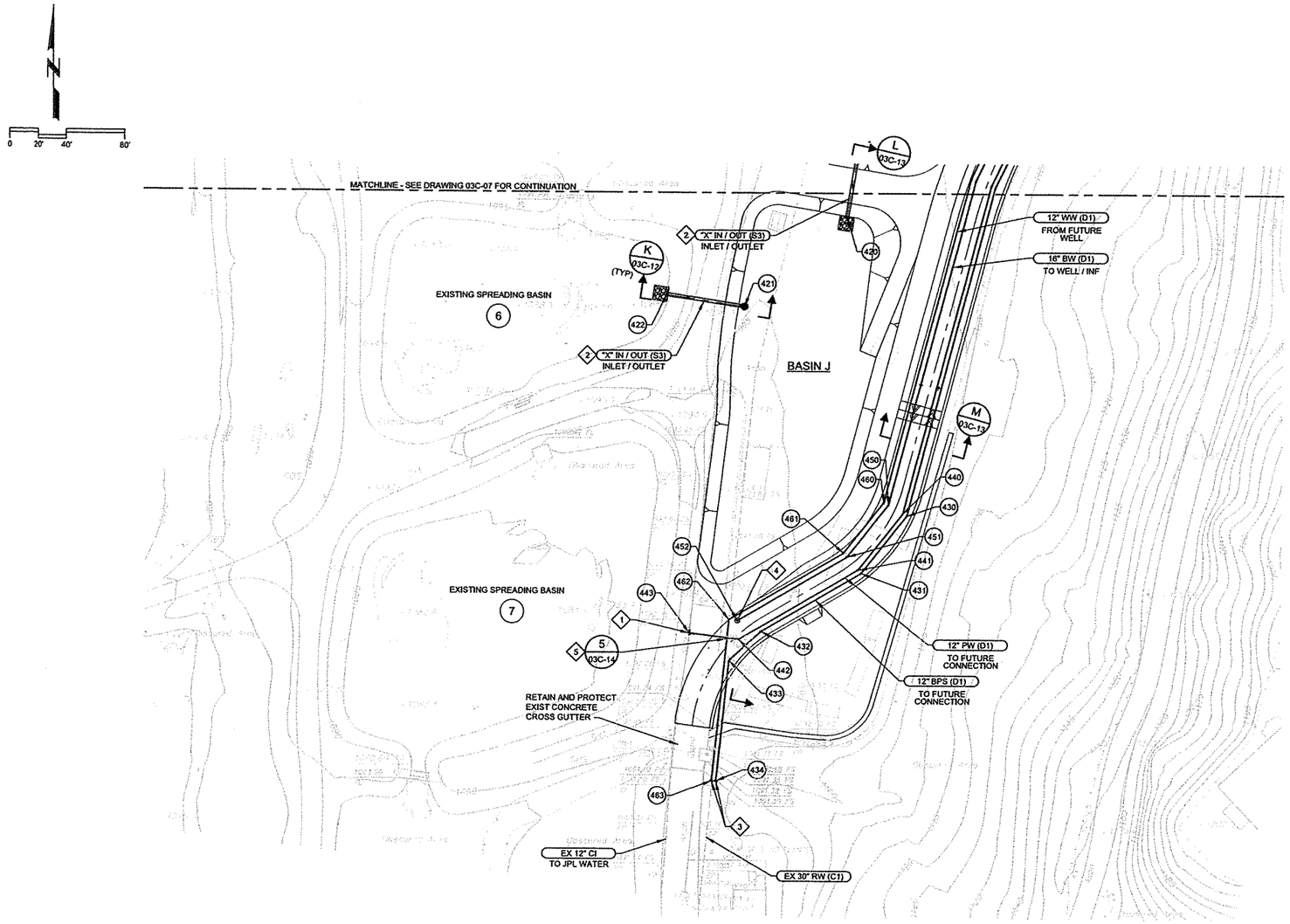

H AREA 3D - PIPING PLAN

SCALE: 1" = 40'
FILE: FILE

COORDINATE LOCATION TABLE				
MARK	NORTHING	EASTING	ELEV	DESCRIPTION
420	1894795.96	6511242.11	XX	CL, BASIN J INLET
421	1894734.78	6511172.44	XX	CL, BASIN J OUTLET
422	1894742.84	6511119.45	XX	CL, EXISTING BASIN INLET
430	1894592.57	6511283.86	XX	CL, 12" 22.5° ELBOW
431	1894553.23	6511252.79	XX	CL, 12" 22.5° ELBOW
432	1894513.01	6511184.51	XX	CL, 12" 11.25° ELBOW
433	1894492.99	6511162.86	XX	CL, 12" 45° ELBOW
434	1894410.27	6511154.15	XX	12" CAP
440	1894593.94	6511281.12	XX	CL, 12" 22.5° ELBOW
441	1894555.53	6511250.78	XX	CL, 12" 22.5° ELBOW
442	1894507.53	6511169.30	XX	CL, 12" 45° ELBOW
443	1894511.55	6511135.68	1088.0±	CL, 12"x12"x12" SST TAPPING SLEEVE
450	1894600.04	6511271.28	XX	CL, 16" 22.5° ELBOW
451	1894564.35	6511243.09	XX	CL, 16" 22.5° ELBOW
452	1894520.31	6511168.34	XX	CL, VALVE CAN
460	1894601.64	6511268.09	XX	CL, 12" 22.5° ELBOW
461	1894567.03	6511240.75	XX	CL, 12" 22.5° ELBOW
462	1894521.11	6511162.80	XX	CL, 12" 45° ELBOW
463	1894410.52	6511151.16	XX	12" CAP

NOTE:
1. ELEVATIONS SHOWN FOR PIPE ARE AT PIPE INVERT.

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND TIE-IN CONNECTION POINTS. SUBMIT FIELD DATA TO ENGINEER.
2. CONTRACTOR SHALL NOT DISRUPT WATER SERVICE TO JPL AND PROTECT MAIN WHILE WORK OCCURS.
3. ALL WORK ON THE POTABLE WATER SYSTEM SHALL BE IN ACCORDANCE WITH PWP STANDARDS.
4. CONTRACTOR SHALL PROVIDE AT ALL TIMES NORTH BOUND AND SOUTH BOUND VEHICLE ACCESS IN AREA 3.

KEY NOTES:

1. HOT TAP EXISTING 12" WATER MAIN WITH 12"x12"x12" SST TAPPING SLEEVE. INSTALL 12" GATE VALVE W/ VALVE BOX PER PWP STD PLAN G-1224. WORK TO BE DONE BY CITY.
2. REFER TO DETAIL K ON DRAWING 03C-12 FOR PIPE SIZING.
3. TERMINATE W/ BLIND FLANGE. PROVIDE MARKER THAT EXTENDS FROM PIPE FLANGE TO GROUND SURFACE.
4. INSTALL VALVE AND VALVE CAN FOR 16" BW LINE PER PWP STD PLAN G-1224.
5. PROVIDE 1-FOOT VERTICAL SEPARATION AT CROSSING PER CDPH REQUIREMENTS.

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811
OR
1-800-227-2600

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SHEET 29

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
PE
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY: SDW			
DESIGNED BY: JED		ARROYO SECO CANYON PROJECT	WORK ORDER: 03055
CHECKED BY: JED		AREA 3D — PIPING PLAN	FILE NUMBER: 03C-08 (E-1757)
SUBMITTED BY: SUB			
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED / REVISION

9137A10 9137A10 FILE NAME: 9137A1003C08.dgn

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Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.181761
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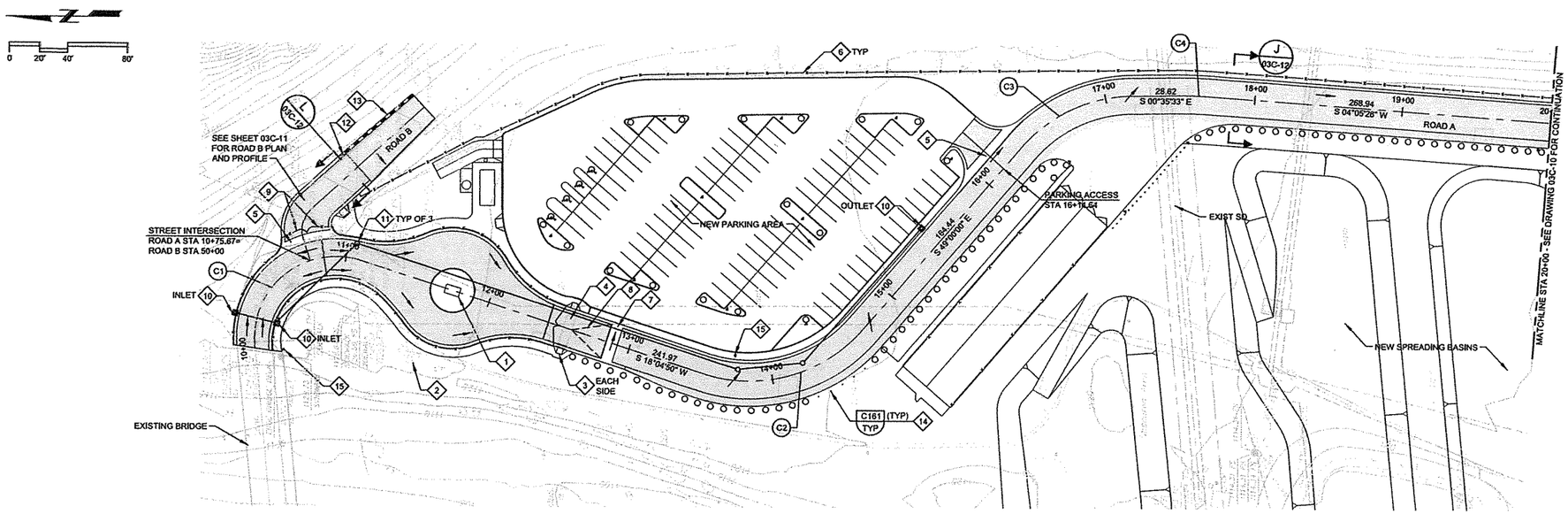
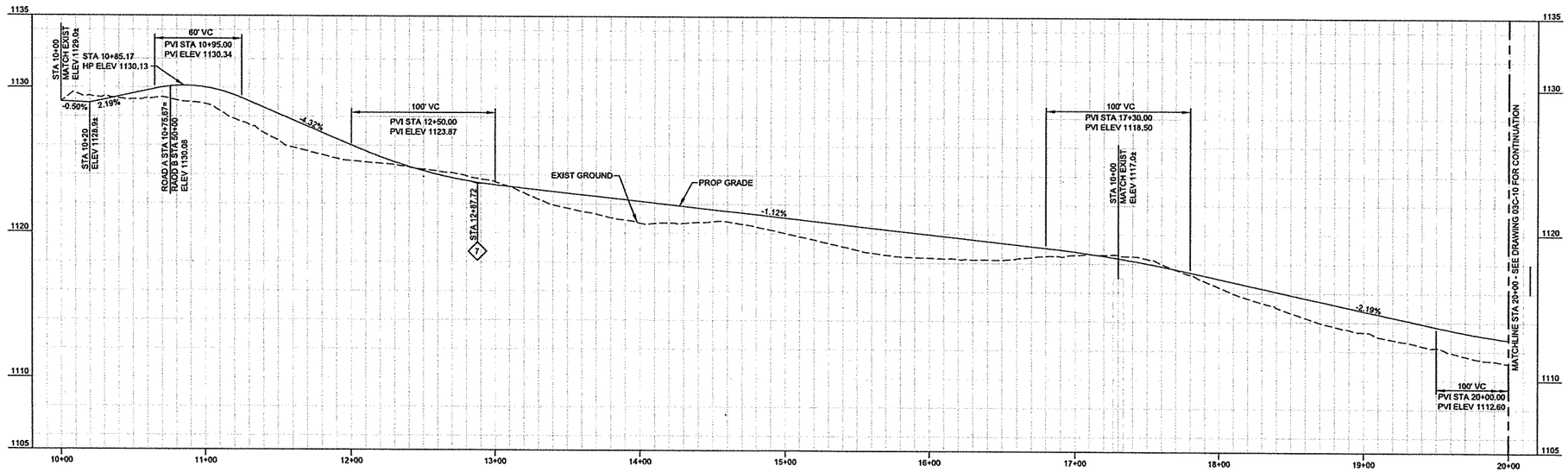


ROAD A PLAN

SCALE: 1" = 40'
FILE: 9137A1000C101



ROAD A PROFILE

HORIZ SCALE: 1"=40'
VERT SCALE: 1"=4'
FILE: 9137A1000C101

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND TIE-IN CONNECTION POINTS. SUBMIT FIELD DATA TO ENGINEER.
2. ALL PAVEMENT MARKING, STRIPING AND DELINEATION SHALL BE PER MUTCD STANDARDS UNLESS NOTED OTHERWISE.

KEY NOTES:

1. NEW GUARD STATION, BY OTHERS.
2. PROTECT-IN-PLACE.
3. CONSTRUCT CURB RAMP PER APWA STD PLAN 111-3, TYPE 1.
4. PROVIDE PEDESTRIAN CROSS WALK PER CITY STD PLAN S-706.
5. CONSTRUCT CONCRETE CROSS GUTTER PER CITY STD PLAN S-420.
6. INSTALL CHAIN LINK FENCE PER APWA STD PLAN 600-2.
7. CONSTRUCT 8' WIDE CONCRETE CROSS GUTTER SIM TO CITY STD PLAN S-420.
8. CONSTRUCT 25' ASPHALT CROWN TRANSITION.
9. INSTALL (2)-12' WIDE LOCKABLE CHAIN LINK SWING GATES. SWING TOWARDS ACCESS ROAD B.
10. CONSTRUCT CURB OPENING CATCH BASIN PER APWA STD PLAN 300-2, W=3, B=3.
11. CONSTRUCT CONCRETE MANHOLE PER APWA STD PLAN 320-1.
12. CONSTRUCT 5' TRANSITION TO VERTICAL CURB & GUTTER.
13. CONSTRUCT ARROYO STONE GRAVITY RETAINING WALL PER CITY STD PLAN S-639.
14. INSTALL REMOVABLE GUARD POST. INSTALL 5 @ 4'-0" O.C. FOR 20-FEET.
15. INSTALL 20 MPH SPEED LIMIT SIGN PER MUTCD.

CURVE DATA				
NO.	RADIUS	DELTA	LENGTH	TANGENT
C1	55	115°13'53"	110.61	86.72
C2	100	67°04'50"	117.08	66.29
C3	100	48°24'27"	84.49	44.95
C4	300	4°40'59"	24.52	12.27

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SHEET 30

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY: BWH DESIGNED BY: JED CHECKED BY: JED SUBMITTED BY: —		ARROYO SECO CANYON PROJECT AREA 3A – ROAD PLAN AND PROFILE	WORK ORDER: 03055 FILE NUMBER: 03C-09 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

LAST SAVED BY: bhawes
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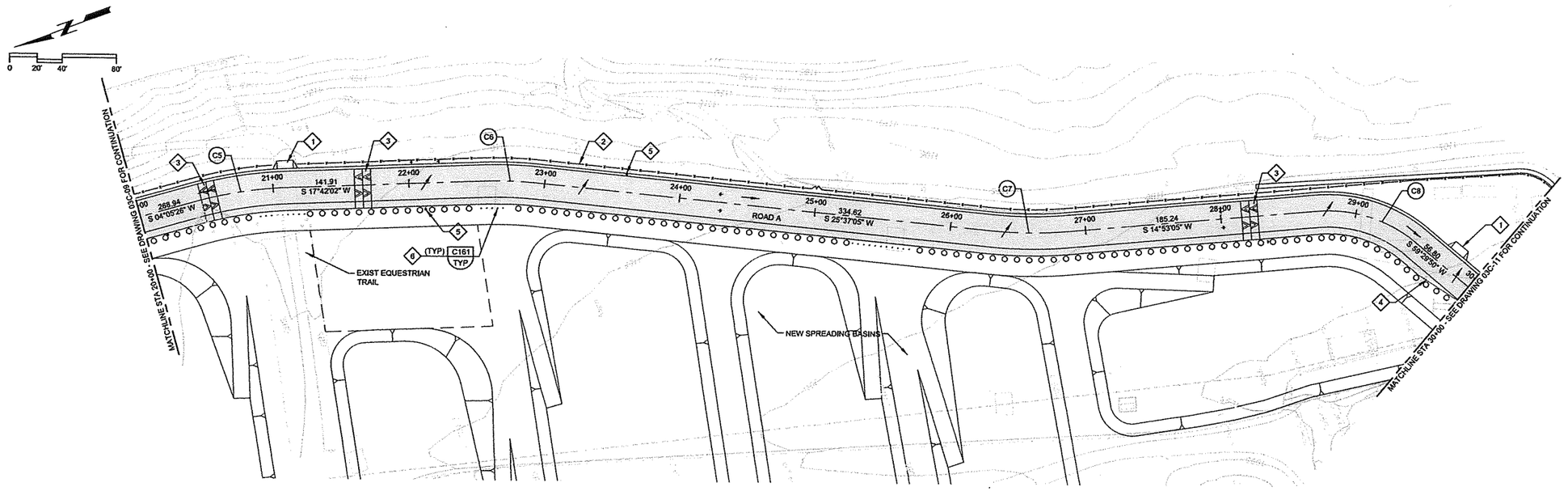
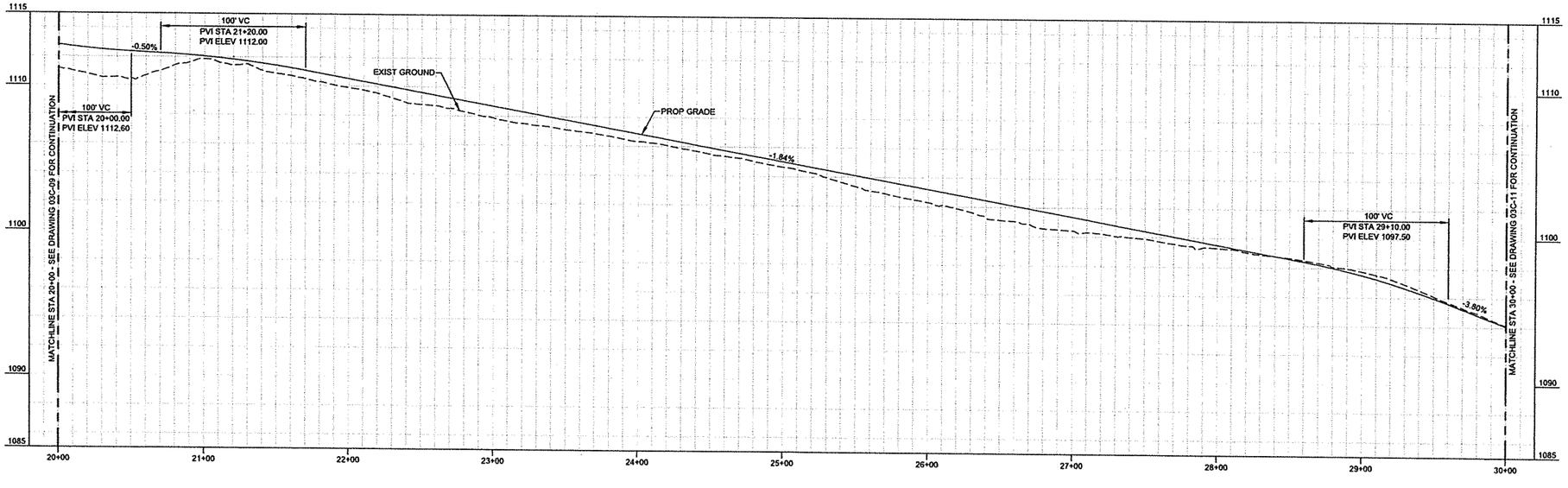


ROAD A PLAN

SCALE: 1" = 40'
FILE: 9137A1000C101



ROAD A PROFILE

HORIZ SCALE: 1"=40'
VERT SCALE: 1"=4'
FILE: 9137A1000C101

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND TIE-IN CONNECTION POINTS. SUBMIT FIELD DATA TO ENGINEER.
2. ALL PAVEMENT MARKING, STRIPING AND DELINEATION SHALL BE PER MUTCD STANDARDS.

KEY NOTES:

1. CONSTRUCT 12' WIDE DRIVEWAY APPROACH, TYPE B PER APWA STD PLAN 110-1.
2. INSTALL CHAIN LINK FENCE PER APWA 600-2.
3. CONSTRUCT SPEED HUMP PER CITY STD DETAIL S-707.
4. CONSTRUCT 40' LONG AC TRANSITION FROM 5' WIDE TO 0' WIDE.
5. INSTALL 20 MPH SPEED LIMIT SIGN PER MUTCD.
6. INSTALL (2)-12' WIDE LOCKABLE CHAIN LINK SWING GATES, SWING TOWARDS ACCESS ROAD A.

CURVE DATA				
NO.	RADIUS	DELTA	LENGTH	TANGENT
C5	300	13°36'36"	71.26	35.80
C6	300	7°55'03"	41.46	20.76
C7	300	10°43'59"	56.2	28.18
C8	100	44°36'45"	77.86	41.03

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SHEET 31

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209
DATE: MARCH 2014
SCALE: AS SHOWN
DRAWN BY: BWH
DESIGNED BY: JED
CHECKED BY: JED
SUBMITTED BY: --
FIELD BOOKS | CALC BOOKS | APPROVED | APPROVED

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
AREA 3A - ROAD PLAN AND PROFILE

SHEET NO - OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 03C-10 (E-1757)
REVISION

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LAST SAVED BY: bhieves
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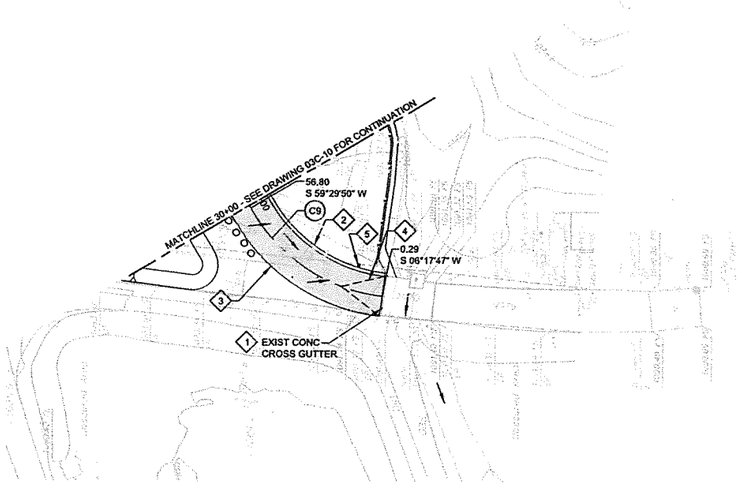
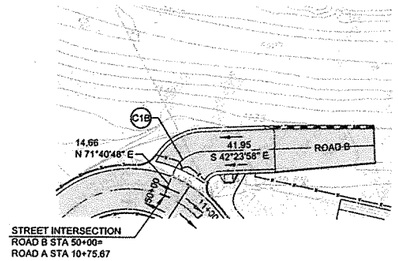
User: TRea

0 20' 40' 80'



0 20' 40' 80'



GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND TIE-IN CONNECTION POINTS. SUBMIT FIELD DATA TO ENGINEER.
2. ALL PAVEMENT MARKING, STRIPING AND DELINEATION SHALL BE PER MUTCD STANDARDS.

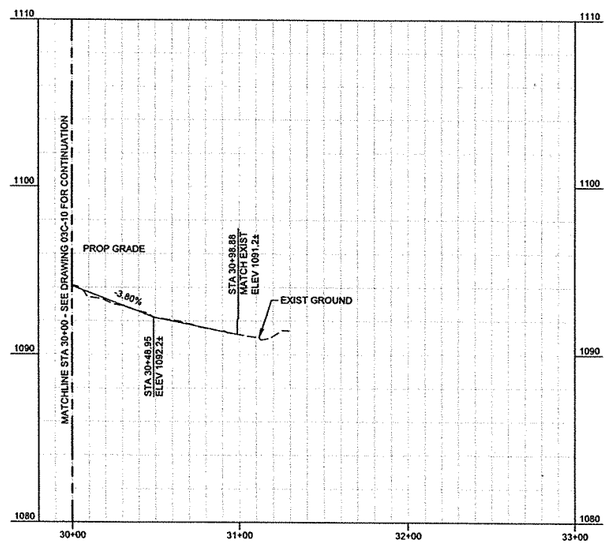
KEY NOTES:

1. PROTECT-IN-PLACE.
2. TRANSITION FLOWLINE OFF NEW GUTTER TO MATCH EXISTING DRAINAGE CHANNEL.
3. TRANSITION AC ALONG CURVE RADIUS TO MATCH EXIST ROAD WIDTH.
4. CONSTRUCT 25' LONG AC TRANSITION OF ROAD CROSS SLOPE TO MATCH EXIST CROSS GUTTER GRADES.
5. INSTALL 20 MPH SPEED LIMIT SIGN PER MUTCD.

CURVE DATA				
NO.	RADIUS	DELTA	LENGTH	TANGENT
C9	100	53°12'03"	92.85	50.08
C1B	20	65°55'14"	23.01	12.97

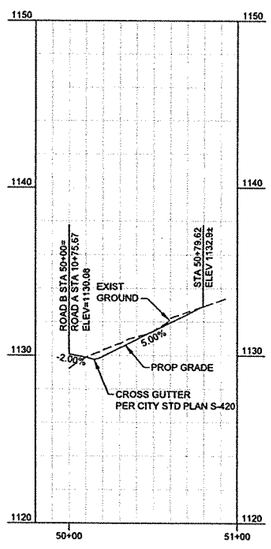
ROAD A PLAN

SCALE: 1" = 40'
FILE: 9137A1000C101



ROAD B PLAN

SCALE: 1" = 40'
FILE: 9137A1000C101



ROAD A PROFILE

HORIZ SCALE: 1"=40'
VERT SCALE: 1"=4'
FILE: 9137A1000C101

ROAD B PROFILE

HORIZ SCALE: 1"=40'
VERT SCALE: 1"=4'
FILE: 9137A1000C101

Call before you Dig
Avoid cutting underground utility lines. It's easily.
Call 811
OR
1-800-227-2600

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SHEET 32

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
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NAME
APPROVED: DATE
APPROVED: DATE

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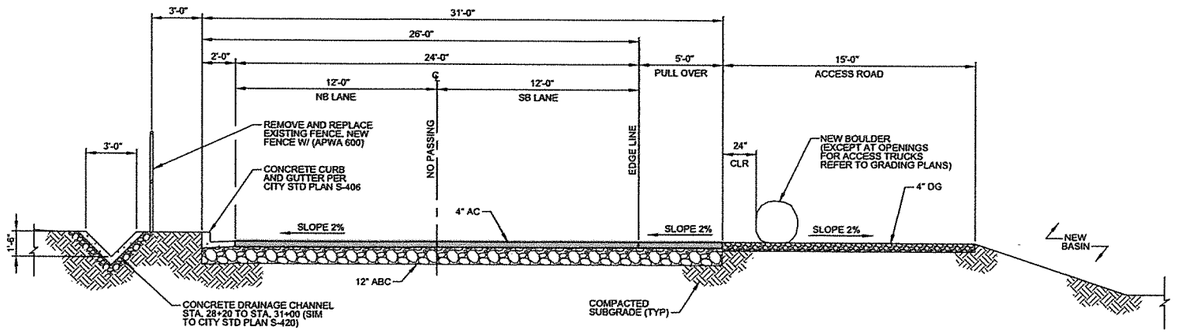
CITY OF PASADENA INCORPORATED JUNE 1886

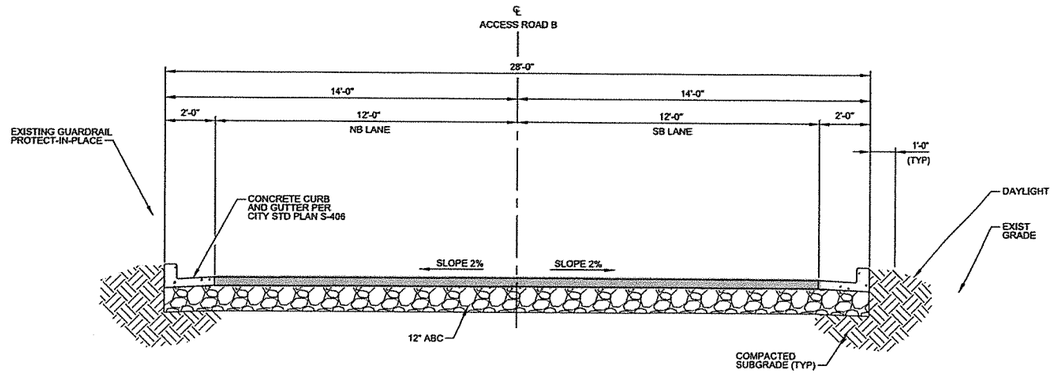
D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO — OF XX SHEETS
DRAWN BY: BWH DESIGNED BY: JED CHECKED BY: JED SUBMITTED BY: --		ARROYO SECO CANYON PROJECT AREA 3A – ROAD PLAN AND PROFILE	WORK ORDER: 03055 FILE NUMBER: 03C-11 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

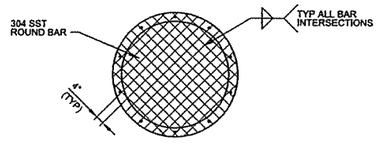
9137A10 9137A10 FILE NAME: 9137A1003C11.dgn



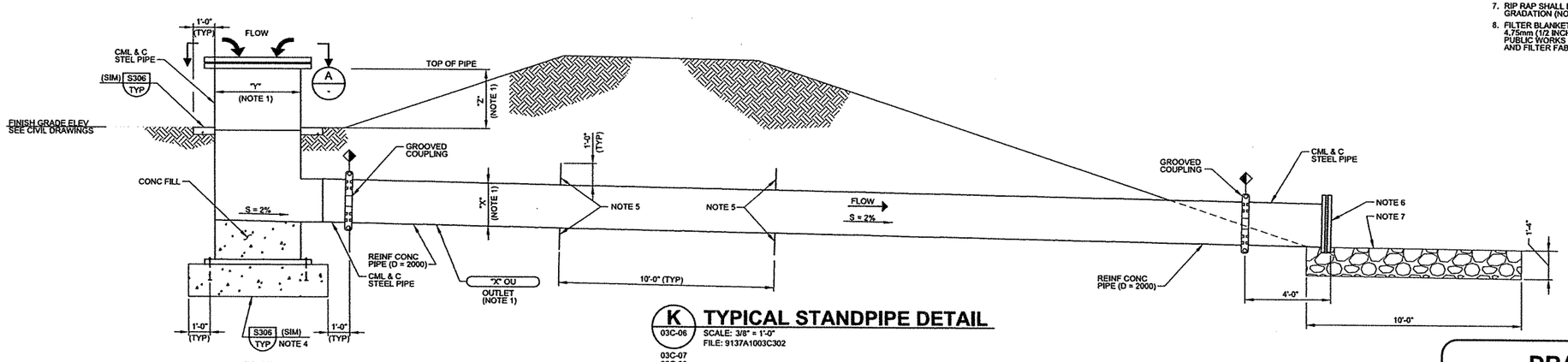
J 03C-02 — **ROAD A TYPICAL ROAD SECTION STA. 13+40 - STA. 30+00**
SCALE: 1/4" = 1'-0"
FILE: 9137A1003C301
03C-03
03C-04



L 03C-09 — **ROAD B TYPICAL ROAD SECTION STA. 50+00 - STA. 50+79**
SCALE: 3/8" = 1'-0"
FILE: 9137A1003C301



A - **SECTION**
SCALE: 3/8" = 1'-0"
FILE:



K 03C-06 — **TYPICAL STANDPIPE DETAIL**
SCALE: 3/8" = 1'-0"
FILE: 9137A1003C302
03C-07
03C-08

NOTES:

1. DIMENSION VARIES FOR EACH BASIN. REFER TO TABLE 1 IN THIS DETAIL.
2. SIMILAR TO APWA STD PLAN 204.
3. 12" x 12" TRAFFIC RATED GRATE (ALHAMBRA A-344 OR EQUAL).
4. FURNISH AND INSTALL 5/8" Ø BOLTS WITH 9" EMBEDMENT AND 2"x2"x3/8" PLATE WASHERS AT EMBEDDED END OF EACH ANCHOR.
5. FURNISH AND INSTALL ANTI-SEEP COLLARS BETWEEN TOE OF SLOPES FOR EACH BASIN. EACH COLLAR SHALL BE RECTANGULAR W / EACH SIDE A MINIMUM OF PIPE DIAMETER PLUS 24-INCHES AND WELDED TO PIPE. COLLAR THICKNESS SHALL BE 1/2" AND WELDED W / FULL PENETRATION AROUND PIPE CIRCUMFERENCE.
6. FURNISH AND INSTALL FLANGES SET W / SST HARDWARE. INSTALL WELDED WIRE SST MESH BETWEEN FLANGES. (MINIMUM DIA OF 0.063" AND 4" x 4" OPENINGS)
7. RIP RAP SHALL BE QUARRY STONE (COBBLES NOT ACCEPTABLE) WITH THE FOLLOWING GRADATION (NO. 2 BACKING), SHOWN ON TABLE 2.
8. FILTER BLANKET SHALL BE PLACED UNDER EXTENT OF RIP RAP AND SHALL CONSIST OF 4.75mm (1/2 INCH) CRUSHED ROCK PER "GREENBOOK" STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2006 EDITION, SECTION 200-1.2, TABLE 200-1.2(A) AND FILTER FABRIC (SEE SPECIFICATIONS).

TABLE 1

BASIN	"X" (IN)	"Y" (IN)	"Z" (IN)
C	24	48	36
D	24	48	36
E	24	48	12
F	24	48	12
G	24	48	12
H	24	48	12
I	24	48	12
J	24	48	12

TABLE 2

ROCK SIZES	PERCENTAGE LARGER THAN
75 POUNDS	0 - 5
25 POUNDS	25 - 75
5 POUNDS	90 - 100

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X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
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APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE
MARCH 2014	AS SHOWN

DRAWN BY SDW
DESIGNED BY SJS
CHECKED BY JED
SUBMITTED BY —

FIELD BOOKS | CALC BOOKS | APPROVED | APPROVED

PASADENA WATER & POWER
CITY OF PASADENA

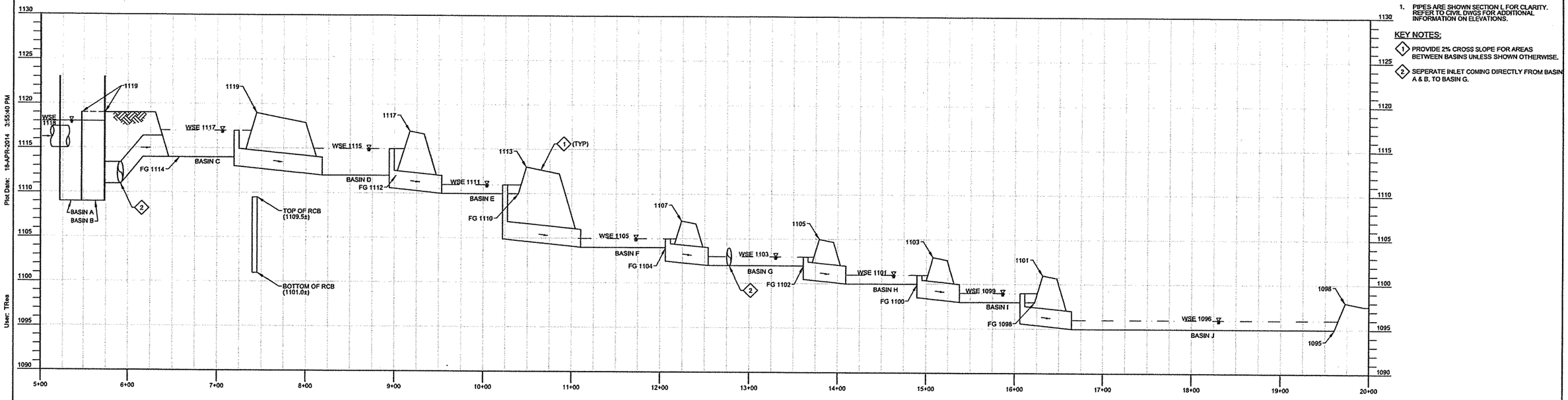
ARROYO SECO CANYON PROJECT
AREA 3 – DETAILS AND SECTIONS 1

SHEET NO – OF XX SHEETS

WORK ORDER 03055
FILE NUMBER 03C-12 (E-1757)
REVISION

9137A10 9137A10 FILE NAME: 9137A1003C12.dgn

Plot Date: 16-APR-2014 3:55:25 PM
User: TRea
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.18176:1
LAST SAVED BY: trea



GENERAL NOTES:

1. PIPES ARE SHOWN SECTION L FOR CLARITY. REFER TO CIVIL DWGS FOR ADDITIONAL INFORMATION ON ELEVATIONS.

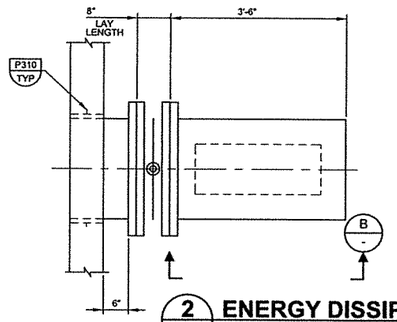
KEY NOTES:

1. PROVIDE 2% CROSS SLOPE FOR AREAS BETWEEN BASINS UNLESS SHOWN OTHERWISE.
2. SEPERATE INLET COMING DIRECTLY FROM BASIN A & B, TO BASIN G.

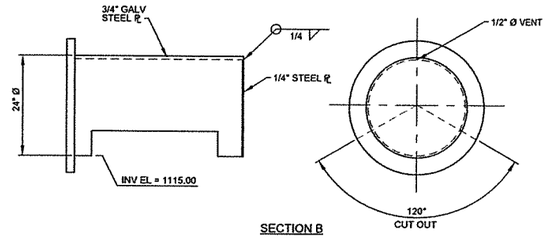
KEY NOTES:

1. FURNISH AND INSTALL ALUMINUM ACCESS HATCH, WITH LOCKING CLASP (48"x72", H-20 RATED).
2. FURNISH AND INSTALL DRAIN GRATE W / 4'x4'x4' OF DRAIN ROCK BENEATH GRATE.
3. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
4. FURNISH AND INSTALL STEEL LADDER (COATED) W / SAFETY POST (BILCO LADDER UP OR EQUAL).
5. FURNISH AND INSTALL MAGNETIC FLOW METER.
6. FURNISH AND INSTALL PRESSURE GAUGE PER TYPICAL DETAIL M294. (0 - 30 PSI)
7. SLOPE FLOOR SLAB A MINIMUM OF 1% TO ALLOW COMPLETE DRAINAGE OF FLOOR SLAB.
8. FURNISH AND INSTALL PIPE SUPPORT PER TYPICAL DETAIL P624.
9. INSTALL TOTALIZER IN SST WEATHER PROOF LOCK BOX (HOFFMAN TYPE 12 OR EQUAL). INSTALL CONC PAD PER TYP DETAIL S306.

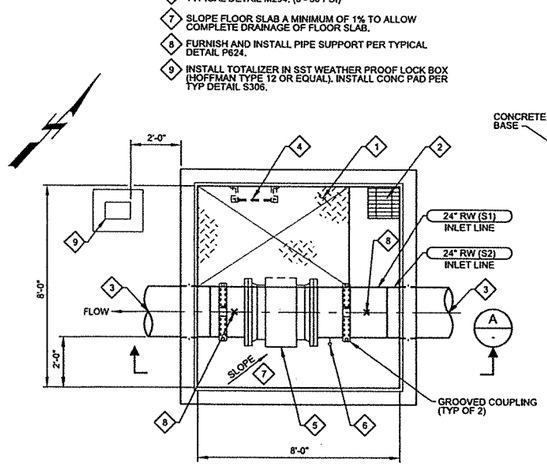
L SECTION
03C-06 | 03C-07 | 03C-08
SCALE: H = 1"=50, V = 1"=5'
FILE: 9137A1003C501



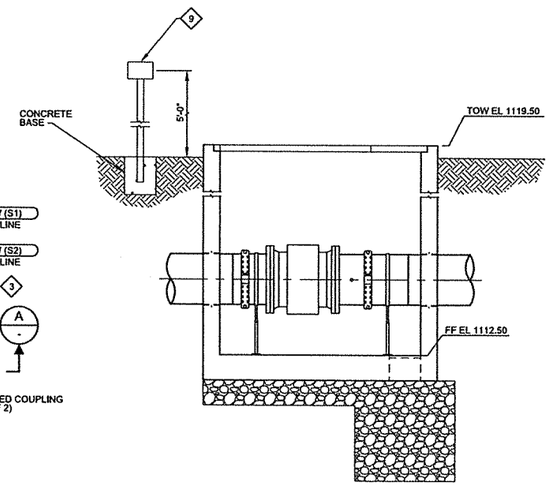
2 ENERGY DISSIPATOR DETAIL
03C-05
SCALE: 3/4" = 1'-0"
FILE: 9137A1003C305



SECTION B

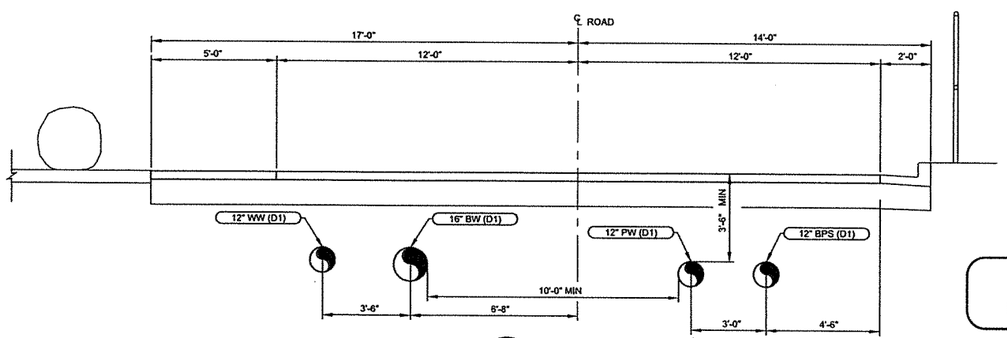


PLAN



SECTION A

1 DETAIL
03C-05
SCALE: 3/8" = 1'-0"
FILE: 9137A1003C303



M SECTION
03C-08 | 03C-07
SCALE: 3/8" = 1'-0"
FILE: 9137A1003C304

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REVISION						
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PE #
NAME
APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

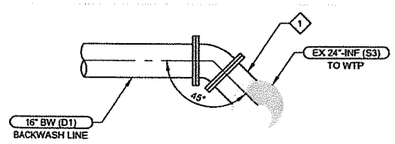
DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO SHTOF XX SHEETS
DRAWN BY: SDW		ARROYO SECO CANYON PROJECT AERA 3 – DETAILS AND SECTIONS 2	WORK ORDER: 03055
DESIGNED BY: JED			FILE NUMBER: 03C-13 (E-1757)
CHECKED BY: JED			
SUBMITTED BY: --			
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED / REVISION

PROJECT NO. 9137A10 FILE NAME: 9137A1003C13.dgn

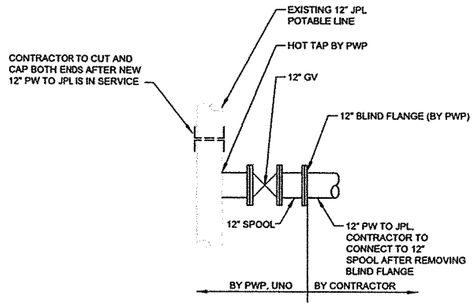
Plot Date: 18-APR-2014 3:55:40 PM
User: TRea
Model: Layout1 ColorTable: gstlade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.18176:1
LAST SAVED BY: trea

KEY NOTES:

1. CUT INTO EXISTING 24" INF LINE AND INSTALL16-INCH TEE PER SPECIFICATION.



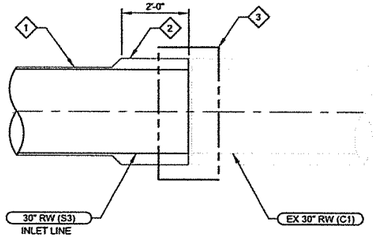
N SECTION
03C-06 SCALE: 3/8" = 1'-0"
FILE: 9137A1003C307



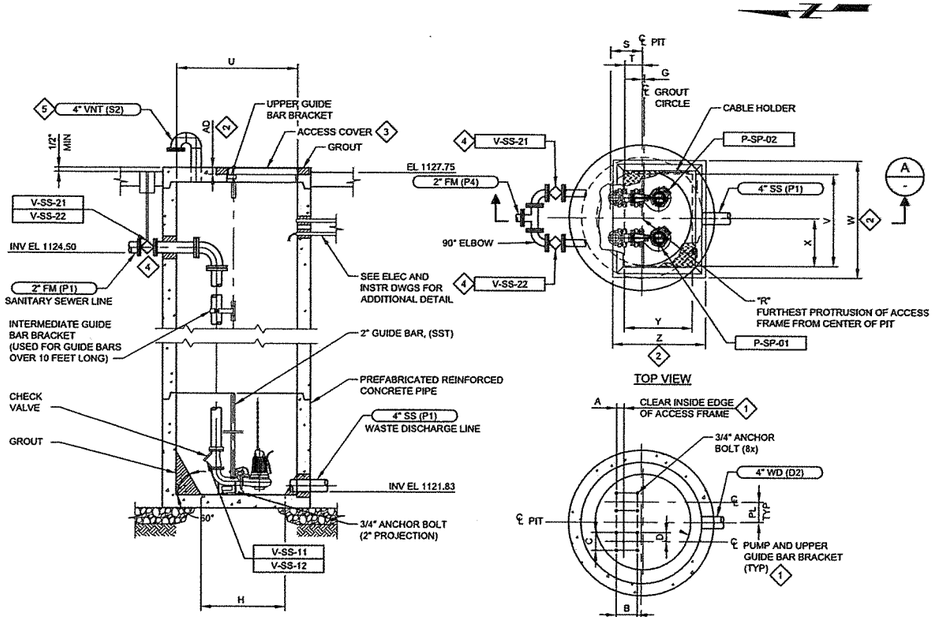
5 12" POTABLE WATER CONNECTION
03C-06 SCALE: 3/8" = 1'-0"
FILE: 9137A1003C310

KEY NOTES:

1. STANDARD CEMENT MORTAR COATING THICKNESS.
2. THICKENED MORTAR COATING. FIELD VERIFY O.D. OF 30" RW (C1) AND MATCH 30" RW (S3) O.D.
3. FURNISH AND INSTALL FLEX COUPLING (VICTUALIC STYLE 230 OR EQUAL). PROVIDE PE WRAP, SST HARDWARE, NEOPRENE GASKET, AND COATING OF FUSION BOND EPOXY. HAND FINISH NEW AND EXISTING MORTAR PER COUPLING SUPPLIER'S INSTRUCTIONS BEFORE INSTALLING COUPLING.



3 DETAIL
03C-05 SCALE: 1/2" = 1'-0"
FILE: 9137A1003C308



A SECTION

TOP VIEW

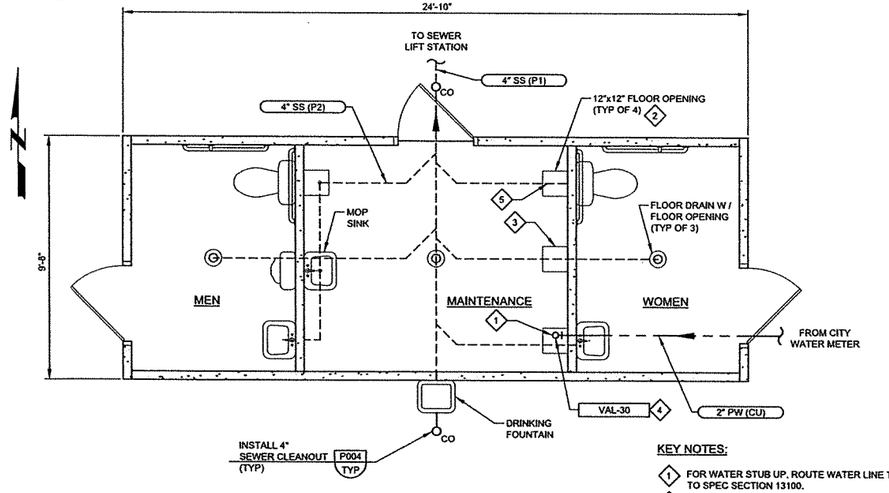
BASE SECTION

ALL DIMENSIONS IN INCHES

DIMENSIONAL CHART																		
STATION												COVER						
A	B	C	D	G	H	R	S	T	U	PL	SIZE	V	W	X	Y	Z	AD
4 1/4	11	10	5	1	52	46 1/2	14	5 3/4	72	11	FLED-13 36 x 60	57	70	27 1/2	32	46	4

KEY NOTES:

1. LOCATE ANCHOR BOLTS USING CLEAR INSIDE EDGE OF FRAME AND CENTER LINE OF PUMP AS REFERENCE POINT. BOLT LOCATIONS MUST BE HELD TO MAINTAIN EXACT POSITION OF PUMP RELATIVE TO ACCESS FRAME.
2. GROUT OPENING FOR ACCESS FRAME.
3. FURNISH AND INSTALL SST HATCH (H20 RATED). REFER TO SPECIFICATIONS.
4. INSTALL VALVE BOX SIM TO TYP DET P026.
5. INSTALL FLANGE SET W/ INSECT SCREEN ON END OF ELBOW (SST, 8 X 8 MESH).



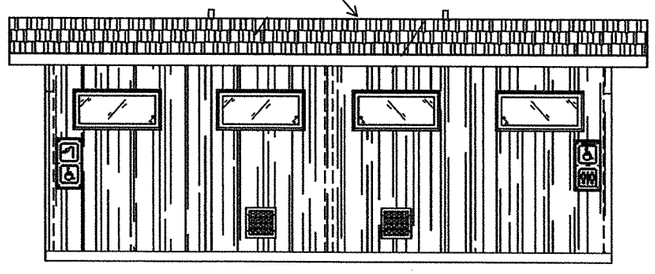
6 RESTROOM UTILITY PLAN
03C-05 SCALE: 3/8" = 1'-0"
FILE: 9137A1003C310

KEY NOTES:

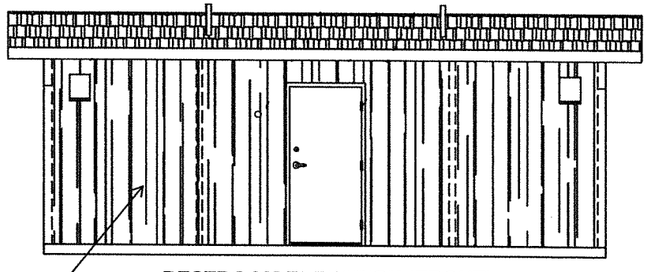
1. FOR WATER STUB UP, ROUTE WATER LINE TO FIXTURES. REFER TO SPEC SECTION 13100.
2. PROVIDE 4" CRUSHED ROCK INSIDE FLOOR OPENING.
3. FOR ELECTRICAL CONDUIT STUB UP, ROUTE CONDUIT TO POWERED DEVICES. REFER TO SECTION 13100.
4. MOUNT VALVE IMMEDIATELY IN VICINITY OF STUB UP. ALL DOWNSTREAM WATER FIXTURES SHALL BE ISOLATED W/ THIS VALVE. VALVE SHALL CLOSE AUTOMATICALLY UPON LOSS OF POWER TO THE BUILDING. PROVIDE NECESSARY FLANGES/ADAPTERS FOR CONNECTING TO LINE.
5. FOR SEWER STUB UP, ROUTE SEWER LINE TO TOILETS. REFER TO SPEC SECTION 13100.

ROOF TEXTURES AVAILABLE IN CEDAR SHAKE, DELTA, EXPOSED AGGREGATE, TILE, AND RIBBED METAL (CEDAR SHAKE SHOWN FOR ILLUSTRATION ONLY)

4 DETAIL
03C-05 SCALE: NOT TO SCALE
FILE: 9137A1003C309



RESTROOM ELEVATION (BACK)
(FOR ILLUSTRATION ONLY)
NOT TO SCALE



RESTROOM ELEVATION (FRONT)
(FOR ILLUSTRATION ONLY)
NOT TO SCALE

WALL TEXTURES AVAILABLE IN STUCCO, EXPOSED AGGREGATE, SPLIT FACE ROCK, NAPA VALLEY STONE, RIVER ROCK, FIELD STONE, HORIZONTAL LAP SIDING, BOARD AND BAT, BARNWOOD, AND BRICK (BARNWOOD IS SHOWN ONLY FOR VISUAL ILLUSTRATION)

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X-XX

REVISION						
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APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209
DATE: MARCH 2014
SCALE: AS SHOWN
DRAWN BY: SDW
DESIGNED BY: JED
CHECKED BY: --
SUBMITTED BY: --
FIELD BOOKS
CALC BOOKS
APPROVED
APPROVED

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
AREA 3 – DETAILS AND SECTIONS 3

SHEET NO – OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 03C-14 (E-1757)
REVISION

9137A10 9137A10 FILE NAME: 9137A1003C14.dgn

Plot Date: 18-APR-2014 3:55:58 PM
User: TRea
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.18176:1
LAST SAVED BY: trea

ELECTRICAL PLAN SYMBOLS

IDENTIFICATION SYMBOLS

EQUIP # — EQUIPMENT AND INSTRUMENT IDENTIFICATION

EQUIPMENT/INSTRUMENT LOCATOR

LUMINAIRE IDENTIFICATION
a = CIRCUIT DESIGNATION
b = DEVICE SWITCHED FROM
c = MOUNTING HEIGHT IN FEET TO BOTTOM OF FIXTURE

XXXX — CONDUIT IDENTIFICATION
XXXX = CONDUIT NUMBER, REFER TO CONDUIT SCHEDULE
UNLESS OTHERWISE NOTED, GROUPED CONDUITS ARE LABELED LEFT TO RIGHT OR TOP TO BOTTOM.

INDICATES KEYNOTE X (PERTAINS ONLY TO SHEET WHERE NOTE IS FOUND)

EQUIPMENT ENCLOSURE

DISCONNECT SWITCH
a = TYPE, REFER TO DISCONNECT SCHEDULE

GROUNDING

UNDERGROUND GROUND CABLE #4/0 SDBC UNLESS OTHERWISE NOTED

GROUND ROD

GROUND ROD AND GROUND WELL

GROUND CONNECTION

LUMINAIRES

2', 4', OR 8' STRIP

2' X 2' LAY-IN TROFFER

2' X 4' LAY-IN TROFFER

LUMINAIRE POLE MOUNTED

STROBE
a = COLOR
R = RED
G = GREEN
A = AMBER

LUMINAIRE, EMERGENCY BATTERY-POWERED

LUMINAIRE, EMERGENCY/EXIT BATTERY-POWERED

LUMINAIRE, EMERGENCY BATTERY-POWERED REMOTE

LUMINAIRE, SURFACE OR PENDANT MOUNTED

LUMINAIRE, WALL MOUNTED

LUMINAIRE, FLOOD/SPOT

LUMINAIRE, EXIT ONE OR TWO FACES AS INDICATED. ARROW POINTS IN DIRECTION OF EGRESS.

LUMINAIRE, WALL WASHER

PE — PHOTOCELL

SWITCHES/RECEPTACLES

SINGLE POLE SWITCH
a = CIRCUIT DESIGNATION
b = DEVICE SWITCHED DESIGNATION

c = TYPE
2 = DOUBLE POLE SWITCH
3 = THREE-WAY SWITCH
4 = FOUR-WAY SWITCH
K = KEY OPERATED SWITCH
F = SWITCH AND FUSESTAT HOLDER
P = SWITCH AND PILOT LIGHT
T = THERMOSTAT
D = DIMMER SWITCH
L = LOW VOLTAGE LIGHT SWITCH
M = MANUAL MOTOR STARTER

OCCUPANCY SENSOR
a = CIRCUIT DESIGNATION
b = DEVICE SWITCHED DESIGNATION

SWITCH AND SINGLE RECEPTACLE
a = CIRCUIT DESIGNATION
b = DEVICE TYPE DESIGNATION

DUPLEX RECEPTACLE
a = CIRCUIT DESIGNATION
b = DEVICE TYPE DESIGNATION

QUADRUPLEX RECEPTACLE
a = CIRCUIT DESIGNATION
b = DEVICE TYPE DESIGNATION

IN FLOOR DUPLEX RECEPTACLE
a = CIRCUIT DESIGNATION
b = DEVICE TYPE DESIGNATION

IN FLOOR QUADRUPLEX RECEPTACLE
a = CIRCUIT DESIGNATION
b = DEVICE TYPE DESIGNATION

DUPLEX RECEPTACLE w/SPLIT WIRE
a = CIRCUIT DESIGNATION
b = DEVICE TYPE DESIGNATION

APPLIANCE RECEPTACLE
a = CIRCUIT DESIGNATION
b = DEVICE TYPE DESIGNATION

WELDING RECEPTACLE
a = CIRCUIT DESIGNATION
b = DISCONNECT TYPE

SPECIAL PURPOSE RECEPTACLE
a = CIRCUIT DESIGNATION
b = DEVICE TYPE DESIGNATION

TWIST LOCK RECEPTACLE
a = AMP RATING

TELEPHONE OUTLET
a = CIRCUIT DESIGNATION
b = MOUNTING HEIGHT

DATA COMMUNICATIONS OUTLET
a = CIRCUIT DESIGNATION
b = MOUNTING HEIGHT

FIRE ALARM

SMOKE DETECTOR
a = TYPE
I = IONIZATION
P = PHOTOELECTRIC
d = DUCT DETECTOR

FACP — FIRE ALARM CONTROL PANEL

FIRE ALARM PULL STATION

FIRE ALARM HORN/STROBE COMBINATION

FIRE ALARM STROBE

FIRE SPRINKLER
F = FLOW SWITCH
T = TAMPER SWITCH

RACEWAY

EXPOSED CONDUIT

BREAK AND CONTINUATION IN CONDUIT RUN

EXPOSED CONDUIT HIDDEN BEHIND WALLS, FLOORS OR OTHER STRUCTURES

UNDERGROUND CONDUIT, DIRECT BURIED OR IN DUCTBANK

CONDUIT IN SLAB

CONDUIT VERTICAL CHANGE IN DIRECTION

CONDUIT CAP

JUNCTION BOX

CONDUIT SEAL

CONDUIT TEE

DUCTBANK
APPROXIMATE DIMENSIONS SHOWN ON DUCTBANK SCHEDULE

CONDUIT SIZE AND CONDUCTORS

INDIVIDUAL CONDUCTORS

W"C-(3-X (Ø), 1-Y (N) & 1-Z (G))

W"C (WHERE INDICATED): W = CONDUIT TRADE SIZE

3-X (Ø):
3 = QUANTITY
X = SIZE OF CONDUCTORS
(Ø) = DESIGNATES PHASE CONDUCTORS

1-Y (N)(WHERE INDICATED):
1 = QUANTITY
Y = SIZE OF CONDUCTORS
(N) = DESIGNATES NEUTRAL CONDUCTORS

1-Z (G)(WHERE INDICATED):
1 = QUANTITY
Z = SIZE OF CONDUCTORS
(G) = DESIGNATES GROUND CONDUCTORS

U(3-X (Ø) & 1-X (G))

U = NUMBER OF PARALLEL RUNS

MULTI CONDUCTOR CABLES

K/2/C#16S
K (WHERE INDICATED) = NUMBER OF PAIRS
2/C#16S = TWO CONDUCTOR, 16 GAUGE, TWISTED SHIELDED PAIR

K/3/C#16S
K (WHERE INDICATED) = NUMBER OF TRIPLETS
3/C#16S = THREE CONDUCTOR, 16 GAUGE, TWISTED SHIELDED TRIPLETS

N/CX
N = NUMBER OF CONDUCTORS IN THE CABLE
X = SIZE OF CONDUCTORS

FIBER OPTIC CABLES

FO/N
N = NUMBER OF INDIVIDUAL FIBERS

ELECTRICAL ONE-LINE SYMBOLS

MEDIUM VOLTAGE

CIRCUIT BREAKER, MEDIUM VOLTAGE
a = CIRCUIT BREAKER NUMBER
b = FRAME SIZE

ANSI RELAY DEVICE
a = ANSI DEVICE FUNCTION
b = QUANTITY

MEDIUM VOLTAGE DISCONNECT SWITCH NON-FUSED CUT OUT

MEDIUM VOLTAGE DISCONNECTING FUSE SINGLE FUSE CUT OUT

MEDIUM VOLTAGE DISCONNECTING FUSE DOUBLE FUSE CUT OUT

MEDIUM VOLTAGE SINGLE FUSE

MEDIUM VOLTAGE DOUBLE FUSE

MEDIUM VOLTAGE LIVE FRONT TERMINATOR

MEDIUM VOLTAGE ELBOW

MEDIUM VOLTAGE TEE

MEDIUM VOLTAGE CONTACTOR

MEDIUM VOLTAGE STARTER

MOV-ELBOW ARRESTER

LOW VOLTAGE

LOW VOLTAGE CIRCUIT BREAKER
a = TYPE
MCP = MOTOR CIRCUIT PROTECTOR
TM = THERMAL MAGNETIC
SS = SOLID STATE
b = FRAME SIZE (MANUFACTURER TO DETERMINE FRAME SIZE UNLESS INDICATED)
c = NUMBER OF POLES
d = TRIP SETTING (AT = AMP TRIP) (AC = MCP CONTINUOUS RATING)
e = DESIGNATION
f = INTERRUPTING RATING

LOW VOLTAGE CIRCUIT BREAKER AUXILIARY OPERATOR
= S = SHUNT TRIP
= G = GROUND FAULT INTERRUPTER
= V = SOLENOID KEY RELEASE

DISCONNECT SWITCH
A = TYPE, REFER TO DISCONNECT SCHEDULE

FUSED DISCONNECT SWITCH
B = TYPE, REFER TO DISCONNECT SCHEDULE
b = FUSE RATING

FUSE

COMBINATION STARTER WITH CONTROL POWER TRANSFORMER
a = CIRCUIT BREAKER DISCONNECT, TYPE AS NOTED
b = STARTER TYPE
c = NEMA STARTER SIZE
d = OVERLOAD HEATERS

VARIABLE FREQUENCY DRIVE WITH FEATURES AS SHOWN
a = INPUT CONTACTOR
b = OUTPUT CONTACTOR
c = BYPASS STARTER
d = INPUT CIRCUIT BREAKER

LR — LINE REACTOR

LL — LOAD REACTOR

REDUCED VOLTAGE SOLID STATE STARTER WITH FEATURES AS SHOWN
BS = BYPASS STARTER

MISCELLANEOUS

MOTOR
HP = HORSEPOWER RATING
FULL LOAD AMPS AS NOTED

PACKAGED EQUIPMENT
LOAD RATING AS INDICATED
a = RATED LOAD
b = UNIT(HP, KW, KVA) AS INDICATED

TRANSFORMER
a = DEVICE I.D.
b = KVA RATING
c = NUMBER OF PHASES
d = PRIMARY VOLTAGE
e = SECONDARY VOLTAGE
f,g = CONNECTION TYPE SYMBOL
h = IMPEDANCE

GROUNDED WYE CONNECTION

DELTA CONNECTION

ENGINE-GENERATOR RATINGS AS INDICATED ON THE DRAWINGS
a = KVA/KW
b = VOLTAGE/CONNECTION
c = PHASE
d = WIRE
e = PF

CURRENT TRANSFORMER WITH SHORTING TERMINAL BLOCK
a = QUANTITY
b = RATIO

POTENTIAL TRANSFORMER
a = QUANTITY
b = RATIO
c,d = CONNECTION TYPE SYMBOL

SSM — SOLID STATE MULTIFUNCTION METER

ATP — AMPERE TEST POINT

VTP — VOLTAGE TEST POINT

UTILITY METER

LIGHTNING ARRESTER

SPD — SURGE PROTECTIVE DEVICE

DRAWOUT CONNECTION

GROUND

CAPACITOR

BATTERY

KIRK KEY INTERLOCK

LOAD BANK

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SHEET 36

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
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NAME — PE #
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D.S.–206 TO 209
DATE: MARCH 2014 — SCALE: AS SHOWN
DRAWN BY: AD
DESIGNED BY: IRV
CHECKED BY
SUBMITTED BY
FIELD BOOKS — CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
LEGENDS

SHEET NO — OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 00GE-01 (E-1757)

9137A10 9137A10 FILE NAME: 9137A1000GE01.dgn

LAST SAVED BY: adiaz

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.18176:1

ABBREVIATIONS

A	AMP
ABS	ABSOLUTE
AC	ALTERNATING CURRENT
ACK	ACKNOWLEDGE
ACTR	ACTUATOR
AF	AMP FRAME
AFC	AUTOMATIC FREQUENCY CONTROL
AIC	AMP INTERRUPTING CAPACITY
AM	AMMETER
ANN	ANNUNCIATOR
ANT	ANTENNA
APU	AUXILIARY POWER UNIT
ARM	ARMORED CABLE
AS	AMMETER SWITCH
ASYM	ASYMMETRICAL
AT	AMP TRIP
ATO	AUTOMATIC THROW OVER
ATP	AMMETER TEST POINT
ATS	AUTOMATIC TRANSFER SWITCH
AUTO XFMR	AUTOMATIC TRANSFORMER
AUX	AUXILIARY
AWG	AMERICAN WIRE GAGE
B	BELL
BAT	BATTERY
BFG	BELOW FINISHED GRADE
BHP	BRAKE HORSEPOWER
BKR	BREAKER
BRF	BELOW RAISED FLOOR
C	CONDUIT / CONTINUOUS LOAD
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CCW	COUNTER CLOCKWISE
CKT	CIRCUIT
COAX	COAXIAL CABLE
COM	COMMON
COMM	COMMUNICATION
CPT	CONTROL POWER TRANSFORMER
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CV	CONTROL VALVE
CW	CLOCKWISE / COOL WHITE
DC	DIRECT CURRENT
DCS	DISTRIBUTED CONTROL SYSTEM
DCU - X	DISTRIBUTED CONTROL UNIT NO. X
DEMO	DEMOLITION
DISC	DISCONNECT SWITCH
DM	DEMAND METER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DS	DOOR SWITCH
E/G	EMERGENCY GENERATOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ENG	ENGINE
ENT	ELECTRICAL NON-METALLIC TUBING
EP	EXPLOSION PROOF
ETM	ELAPSED TIME METER
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FDR	FEEDER
FLA	FULL LOAD AMPS
FLX	FLEXIBLE CONDUIT
FO	FIBER OPTIC
FRC	FIBERGLASS RIGID CONDUIT
FREQ	FREQUENCY
FU	FUSE
FU	SW FUSED SWITCH
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
FWD	FORWARD
G	GROUND / EQUIPMENT GROUND / GROUND FAULT
GEN	GENERATOR
GRC	GALVANIZED STEEL RIGID CONDUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER (RECEPTACLE)
GFI	GROUND FAULT INTERRUPTER (BREAKER)
GFR	GROUND FAULT RELAY
H	HOT-LEG
HF	HIGH FREQUENCY
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HSTAT	HUMIDISTAT
HV	HIGH VOLTAGE
HVAC	HEATING/VENTILATION/AIR CONDITIONING
HZ	HERTZ
I	INSTANTANEOUS LOAD
IC	INTERRUPTING CAPACITY
IJB	INSTRUMENT JUNCTION BOX
IMC	INTERMEDIATE METAL CONDUIT
INST	INSTANTANEOUS
INT	INTERLOCK
INTERCOM	INTERCOMMUNICATION
J	JUNCTION BOX
K	KEY INTERLOCK
KA	KILOAMP
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAR	KILOVAR (REACTANCE)
KW	KILOWATT
KWD	KILOWATT DEMAND
KWH	KILOWATT HOUR
L	LONG-TIME
L-B	LINE-BUS
L-G	LINE-GROUND
LA	LIGHTNING ARRESTOR
LBL	LABEL
LC	LIGHTING CONTACT OR
LCP- X	LOCAL CONTROL PANEL NO. X
LL	LEAD-LAG LOAD REACTOR
LP	LIGHT POLE
LP - X	LIGHTING PANEL NO. X
LTG	LIGHTING
LV	LOW VOLTAGE
LVL	LEVEL
M-X	MOTOR CONTROLLER NO. X
MA	MILLIAMPERE
MCA	MOTOR CIRCUIT AMPS
MCC - X	MOTOR CONTROL CENTER NO. X
MCP	MOTOR CIRCUIT PROTECTOR
MH	MANHOLE / MOUNTING HEIGHT
MLO	MAIN LUGS ONLY
MOD	MOTOR OPERATED DAMPER
MOV	METAL OXIDE VARISTOR
MRP	MOTOR PROTECTION RELAY
MS-X	MOTOR STARTER NO. X
MSP	MOTOR STARTING PANEL
MTO	MANUAL THROW OVER
MTR-X	MOTOR NO. X
MTS	MANUAL TRANSFER SWITCH
MV	MEGAVOLT
MVA	MEGAVOLT-AMPERES
MVS	MEDIUM VOLTAGE SWITCH
MW	MEGAWATT
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NFC	NONMETALLIC FLEXIBLE CONDUIT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NP	NAMEPLATE
O	OPEN OR OPENED
OH	OVERHEAD
OL	OVERLOAD RELAY
P	POLE
PA	PUBLIC ADDRESS
PB	PUSHBUTTON / PULL BOX
PCS	PVC COATED GALVANIZED STEEL CONDUIT
PCM	PROCESS CONTROL MODULE
PE	PHOTOCELL
PF	POWER FACTOR
PFCC	POWER FACTOR CORRECTION CAPACITOR
PFR	PHASE FAILURE RELAY
PH	PHASE
PNL	PANEL
PPX	POWER PANEL NO. X
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE RIGID PLASTIC CONDUIT
PWR	POWER
RAC	RIGID ALUMINUM CONDUIT
RECPT	RECEPTACLE
REV	REVERSE
RF	RADIO FREQUENCY
RMS	ROOT MEAN SQUARED
RVAT	REDUCED VOLTAGE AUTO TRANSFORMER
RVNR	REDUCED VOLTAGE NON-REVERSING
RVSS	REDUCED VOLTAGE SOLID STATE
S	SHIELD / SHORT-TIME
SA	SURGE ARRESTER
SC	SHORT CIRCUIT
SDBC	SOFT DRAWN BARE COPPER
SFL	SUB FEED LUGS
SLT	SEALTIGHT LIQUIDTIGHT FLEXIBLE CONDUIT
SM	SURFACE MOUNTED
SP	SINGLE POLE
SPD	SURGE PROTECTIVE DEVICE
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SPKR	SPEAKER
SS	SOLID STATE
STB	SHORTING TERMINAL BLOCK
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
TACH	TACHOMETER
TB - X	TERMINAL BLOCK - UNIT X
TC	THERMOCOUPLE / TIME CLOCK / TRAY CABLE
TD	TEMPERATURE DETECTOR RELAY
TE	TOTALLY ENCLOSED
TEFC	TOTALLY ENCLOSED FAN COOLED
TENV	TOTALLY ENCLOSED NON-VENTILATED
TERM	TERMINAL
TJB	TERMINAL JUNCTION BOX
TM	THERMAL MAGNETIC
TP	TWISTED PAIR
TS	TEMPERATURE SWITCH
TS1W	TWO SPEED CONSEQUENT POLE, ONE WINDING
TS2W	TWO SPEED SEPARATE WINDING
TSTAT	THERMOSTAT
UHF	ULTRA HIGH FREQUENCY
UNG	UNGROUNDED
UPS	UNINTERRUPTABLE POWER SUPPLY
UVR	UNDER VOLTAGE RELAY
V	VOLT
VA	VOLT AMPERE
VAR	VARMETER
VCP	VENDOR CONTROL PANEL
VFD	VARIABLE FREQUENCY DRIVE
VHF	VERY HIGH FREQUENCY
VM	VOLTMETER
VP	VAPORPROOF
VR	VOLTAGE REGULATOR
VS	VOTAGE SWITCH
VT	VOLTAGE TRANSFORMER
VTP	VOLTAGE TEST POINT
W	WATT / WEST
WT	WATER TIGHT
WP	WEATHER PROOF
XFMR	TRANSFORMER

NOTES:

1. REFER TO SPECIFICATIONS OTHER DRAWINGS FOR ADDITIONAL ABBREVIATIONS.

POWER DEVICE FUNCTION NUMBERS

1	MASTER ELEMENT
2	TIME-DELAY STARTING OR CLOSING RELAY
3	CHECKING OR INTERLOCKING RELAY
4	MASTER CONTACTOR
5	STOPPING DEVICE
6	STARTING CIRCUIT BREAKER
7	ANODE CIRCUIT BREAKER
8	CONTROL POWER DISCONNECTING DEVICE
9	REVERSING DEVICE
10	UNIT SEQUENCE SWITCH
11	MULTIFUNCTION DEVICE
12	OVER-SPEED DEVICE
13	SYNCHRONOUS-SPEED DEVICE
14	UNDER-SPEED DEVICE
15	SPEED OR FREQUENCY MATCHING DEVICE
16	DATA COMMUNICATIONS DEVICE
17	SHUNTING OR DISCHARGE SWITCH
18	ACCELERATING OR DECELERATING DEVICE
19	STARTING-TO-RUNNING TRANSITION CONTACTOR
20	ELECTRICALLY OPERATED VALVE
21	DISTANCE RELAY
22	EQUALIZER CIRCUIT BREAKER
23	TEMPERATURE CONTROL DEVICE
24	VOLTS PER HERTZ RELAY
25	SYNCHRONIZING OR SYNCHRONISM-CHECK DEVICE
26	APPARATUS THERMAL DEVICE
27	UNDERVOLTAGE RELAY
27N	GROUND FAULT UNDERVOLTAGE RELAY
28	FLAME DETECTOR
29	ISOLATING CONTACTOR
30	ANNUNCIATOR RELAY
31	SEPARATE EXCITATION DEVICE
32	DIRECTIONAL POWER RELAY
33	POSITION SWITCH
34	MASTER SEQUENCE DEVICE
35	BRUSH-OPERATING OR SLIP-RING SHORT-CIRCUITING DEVICE
36	POLARITY DEVICE
37	UNDERCURRENT OR UNDERPOWER RELAY
38	BEARING PROTECTIVE DEVICE
39	MECHANICAL CONDITION MONITOR
40	FIELD RELAY
41	FIELD CIRCUIT BREAKER
42	RUNNING CIRCUIT BREAKER
43	MANUAL TRANSFER OR SELECTOR DEVICE
44	UNIT SEQUENCE STARTING RELAY
45	ABNORMAL ATMOSPHERIC CONDITION MONITOR
46	REVERSE-PHASE OR BALANCE CURRENT RELAY
47	PHASE-BALANCE OR PHASE-SEQUENCE VOLTAGE RELAY
48	INCOMPLETE SEQUENCE RELAY
49	MACHINE OR TRANSFORMER THERMAL RELAY
50	INSTANTANEOUS OVERCURRENT RELAY
51	AC TIME OVERCURRENT RELAY
52	AC CIRCUIT BREAKER
53	FIELD EXCITATION RELAY
54	TURNING GEAR ENGAGING DEVICE
55	POWER FACTOR RELAY
56	FIELD APPLICATION RELAY
57	SHORT-CIRCUITING OR GROUNDING DEVICE
58	RECTIFICATION FAILURE RELAY
59	OVERVOLTAGE RELAY
60	VOLTAGE OR CURRENT BALANCE RELAY
61	DENSITY SWITCH OR SENSOR
62	TIME-DELAY STOPPING OR OPENING RELAY
63	PRESSURE SWITCH
64	GROUND DETECTOR RELAY
65	GOVERNOR
66	NOTCHING OR JOGGING DEVICE
67	AC DIRECTIONAL OVERCURRENT RELAY
68	BLOCKING OR OUT OF STEP RELAY
69	PERMISSIVE CONTROL DEVICE
70	RHEOSTAT
71	LIQUID LEVEL SWITCH
72	DC CIRCUIT BREAKER
73	LOAD-RESISTOR CONTACTOR
74	ALARM RELAY
75	POSITION CHANGING MECHANISM
76	DC OVERCURRENT RELAY
77	TELEMETERING DEVICE
78	PHASE-ANGLE MEASURING RELAY
79	AC RECLOSING RELAY
80	FLOW SWITCH
81	FREQUENCY RELAY
82	DC LOAD MEASURING RECLOSING RELAY
83	AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY
84	OPERATING MECHANISM
85	PILOT COMMUNICATIONS, CARRIER OR PILOT-WIRE RELAY
86	LOCKOUT RELAY
87	DIFFERENTIAL PROTECTIVE RELAY
88	AUXILIARY MOTOR OR MOTOR GENERATOR
89	LINE SWITCH
90	REGULATING DEVICE
91	VOLTAGE DIRECTIONAL RELAY
92	VOLTAGE AND POWER DIRECTIONAL RELAY
93	FIELD-CHANGING CONTACTOR
94	TRIPPING OR TRIP-FREE RELAY

COMMONLY USED SUFFIX LETTERS APPLIED TO POWER DEVICE FUNCTION NUMBERS

A	ALARM ONLY
B	BUS PROTECTION
G	GROUND FAULT PROTECTION (RELAY CT IN A SYSTEM NEUTRAL CIRCUIT OR GENERATOR PROTECTION)
GS	GROUND FAULT PROTECTION (RELAY CT IN TOROIDAL OR GROUND SENSOR TYPE)
L	LINE PROTECTION
M	MOTOR PROTECTION
N	GROUND FAULT PROTECTION (RELAY COIL CONNECTED IN RESIDUAL CT CIRCUIT)
T	TRANSFORMER PROTECTION
V	VOLTAGE
P	PHASE PROTECTION

ABBREVIATIONS

AFD	- ARC FLASH DETECTOR
CLK	- CLOCK OR TIMING SOURCE
DDR	- DYNAMIC DISTURBANCE RECORDER
DFR	- DIGITAL FAULT RECORDER
ENV	- ENVIRONMENTAL DATA
HIZ	- HIGH IMPEDANCE FAULT DETECTOR
HMI	- HUMAN MACHINE INTERFACE
HST	- HISTORIAN
LGC	- SCHEME LOGIC
MET	- SUBSTATION METERING
PDC	- PHASOR DATA CONCENTRATOR
PMU	- PHASOR MEASUREMENT UNIT
PQM	- POWER QUALITY MONITOR
RIO	- REMOTE I/O DEVICE
RTU	- DATA CONCENTRATOR
SER	- SEQUENCE OF EVENTS RECORDER
TCM	- TRIP CIRCUIT MONITOR

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SHEET 37

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
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NAME
APPROVED: DATE
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D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO OF XX SHEETS
DRAWN BY: AD DESIGNED BY: IRV CHECKED BY: SUBMITTED BY:		ARROYO SECO CANYON PROJECT ABBREVIATIONS	WORK ORDER: 03055 FILE NUMBER: 00GE-02 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED / REVISION

9137A10 9137A10 FILE NAME: 9137A1000GE02.dgn

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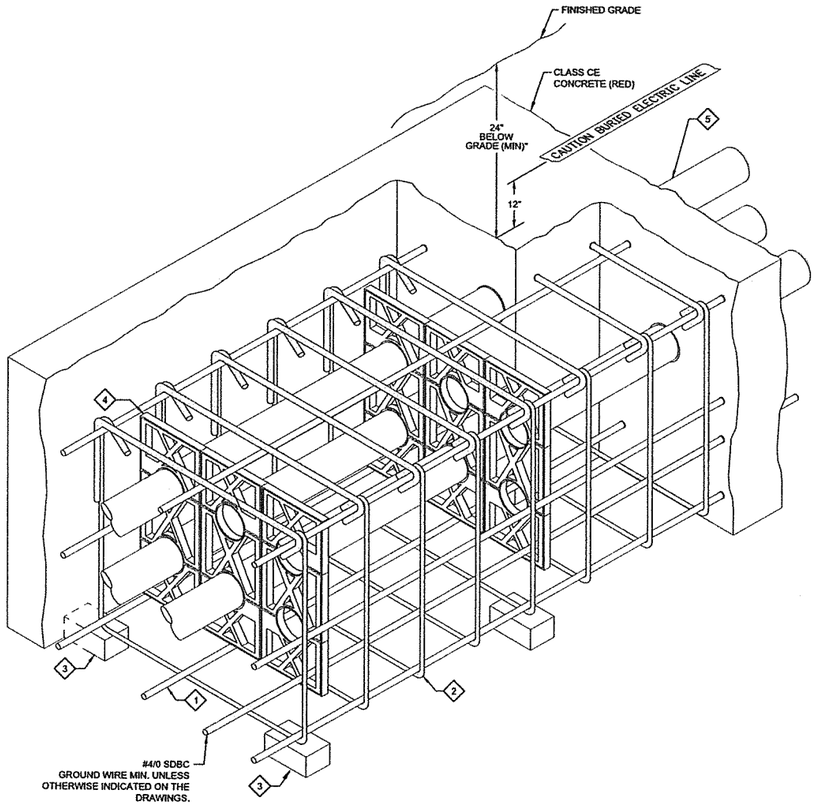
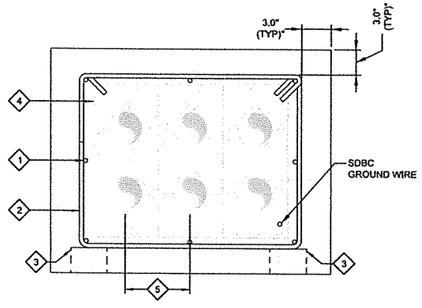


NOTES:

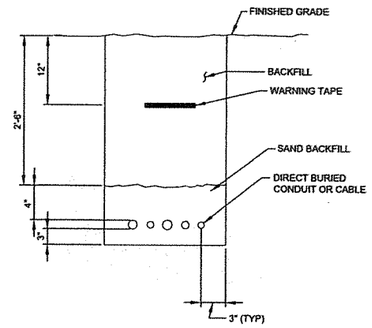
1. DIMENSIONS SHOWN ARE MINIMUM.
2. ADJUST SIZE OF DUCT BANK BASED UPON THESE GUIDELINES AND THE DUCT BANK SPECIFICATION TO ACCOMMODATE ACTUAL NUMBER OF CONDUITS WITHIN DUCT BANK. REFER TO DUCT BANK SECTIONS, AND CONDUIT SCHEDULE FOR NUMBER AND SIZE OF CONDUITS.
3. MAKE PROVISIONS TO PREVENT CONDUIT FLOTATION DURING CONCRETE PLACEMENT & CURING.

KEY NOTES:

1. #4 REINFORCING STEEL 12" MAXIMUM ON CENTER AROUND ENTIRE PERIMETER OF DUCT BANK.
2. #4 REINFORCING STEEL STIRRUPS MAXIMUM 24" ON CENTER ALONG LENGTH OF DUCT BANK.
3. MINIMUM OF TWO PRECAST CONCRETE BAR SUPPORTS PLACED UNDER A STIRRUP AT EACH PVC CONDUIT SPACER ALONG LENGTH OF DUCT BANK.
4. PVC CONDUIT SPACERS ON 8'-0" CENTERS (MAXIMUM) LOCATE 12" FROM STIRRUPS.
5. REFER TO DUCT BANK SECTIONS AND CONDUIT SCHEDULES FOR CONDUIT REQUIREMENTS.



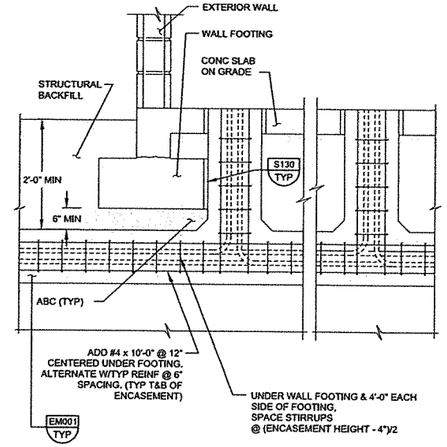
EM001 TYP S REINFORCED CONCRETE DUCT BANK



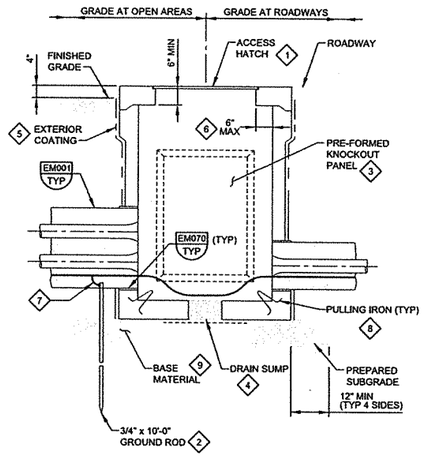
NOTES:

1. ALL DIMENSIONS ARE MINIMUM UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
2. REFER TO THE SPECIFICATIONS FOR TRENCH BACKFILL REQUIREMENTS.

EM015 TYP S DIRECT BURIED CONDUIT OR CABLE



EM030 TYP S ENCASED ELECTRICAL CONDUITS LOCATED UNDER STRUCTURES (EXTERIOR)



NOTES:

1. PROVIDE MINIMUM INTERIOR DIMENSIONS AS SHOWN IN THE ELECTRICAL HANDHOLE AND MANHOLE SCHEDULE (MAXIMUM INTERIOR DIMENSIONS: 48"WIDE x 48"LONG x 48"DEEP)
2. BOND ALL METALLIC ITEMS INSIDE HANDHOLE TO GROUND ROD USING #4 AWG BARE COPPER CABLE.
3. SEE DRAWINGS FOR ORIENTATION, NUMBER, AND SIZE OF DUCT BANKS AT EACH HANDHOLE.

KEY NOTES:

1. SEE THE MANHOLE AND HANDHOLE SCHEDULE FOR REQUIRED LOAD RATING OF HATCH.
2. BOND DUCT BANK GROUND CABLE TO GROUND ROD. REFER TO THE SPECIFICATIONS FOR CONNECTION REQUIREMENTS.
3. INSTALL DUCT BANKS ONLY THROUGH CAST-IN OPENINGS OR PREFORMED KNOCKOUT PANELS. PROVIDE KNOCKOUTS ON EACH WALL AROUND HANDHOLE.
4. PROVIDE MINIMUM 4 INCH DIAMETER, GRAVEL FILLED PENETRATION THROUGH FLOOR OF HANDHOLE. SET SUMP OPENING OVER MINIMUM 18" SQUARE FILTER FABRIC TO ISOLATE GRAVEL FROM BASE MATERIAL BELOW.
5. COAT EXTERIOR WALLS BELOW GRADE WITH BITUMINOUS DAMPROOFING.
6. MAXIMUM TOP SLAB OVERHANG IS TYPICAL AROUND 4 SIDES OF HANDHOLE.
7. GROUNDING CABLE CONNECTION. REFER TO THE SPECIFICATIONS FOR CONNECTION REQUIREMENTS.
8. PROVIDE ONE PULLING IRON ON EACH WALL OF HANDHOLE.
9. BASE MATERIAL: PROVIDE MIN 12" COMPACTED AGGREGATE BASE COURSE.

EM056 TYP S ELECTRICAL HANDHOLE: PRECAST CONCRETE W/HATCH

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SHEET 38

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
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NAME
APPROVED: DATE
APPROVED: DATE

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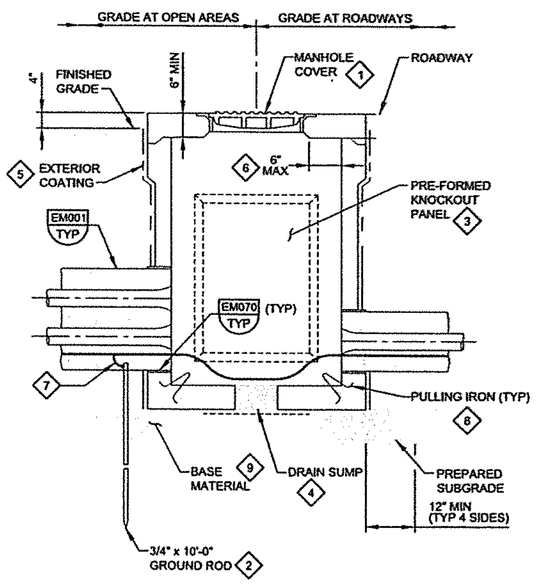
D.S.-206 TO 209

DATE	SCALE	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO SHT OF XX SHEETS
MARCH 2014	AS SHOWN		
DRAWN BY AD		ARROYO SECO CANYON PROJECT	WORK ORDER 03055
DESIGNED BY IRV		ELECTRICAL TYPICAL DETAILS - 1	FILE NUMBER 00ET-01 (E-1757)
CHECKED BY			
SUBMITTED BY			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 9137A1000ET01.dgn



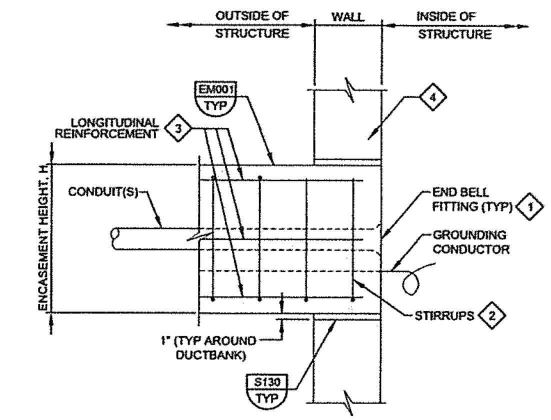
NOTES:

1. PROVIDE MINIMUM INTERIOR DIMENSIONS AS SHOWN IN THE ELECTRICAL HANDHOLE AND MANHOLE SCHEDULE (MAXIMUM INTERIOR DIMENSIONS: 48"WIDE x 48"LONG x 48"DEEP)
2. BOND ALL METALLIC ITEMS INSIDE HANDHOLE TO GROUND ROD USING #4 AWG BARE COPPER CABLE.
3. SEE DRAWINGS FOR ORIENTATION, NUMBER, AND SIZE OF DUCT BANKS AT EACH HANDHOLE.

KEY NOTES:

1. PROVIDE 36"Ø EMBEDDED TOP FLANGE FRAME AND MANHOLE COVER.
2. BOND DUCT BANK AND INTERIOR GROUND CABLE TO GROUND ROD LOCATED OUTSIDE OF DUCT BANK. REFER TO THE SPECIFICATIONS FOR CONNECTION REQUIREMENTS.
3. INSTALL DUCT BANKS ONLY THROUGH CAST-IN OPENINGS OR PREFORMED KNOCKOUT PANELS. PROVIDE KNOCKOUTS ON EACH WALL AROUND HANDHOLE.
4. PROVIDE MINIMUM 4 INCH DIAMETER, GRAVEL FILLED PENETRATION THROUGH FLOOR OF HANDHOLE. SET SUMP OPENING OVER MINIMUM 18" SQUARE FILTER FABRIC TO ISOLATE GRAVEL FROM BASE MATERIAL BELOW.
5. COAT EXTERIOR WALLS BELOW GRADE WITH BITUMINOUS DAMPPROOFING.
6. MAXIMUM TOP SLAB OVERHANG IS TYPICAL AROUND 4 SIDES OF HANDHOLE.
7. GROUNDING CABLE CONNECTION. REFER TO THE SPECIFICATIONS FOR CONNECTION REQUIREMENTS.
8. PROVIDE ONE PULLING IRON ON EACH WALL OF HANDHOLE.
9. BASE MATERIAL: PROVIDE MIN 12" COMPACTED AGGREGATE BASE COURSE.

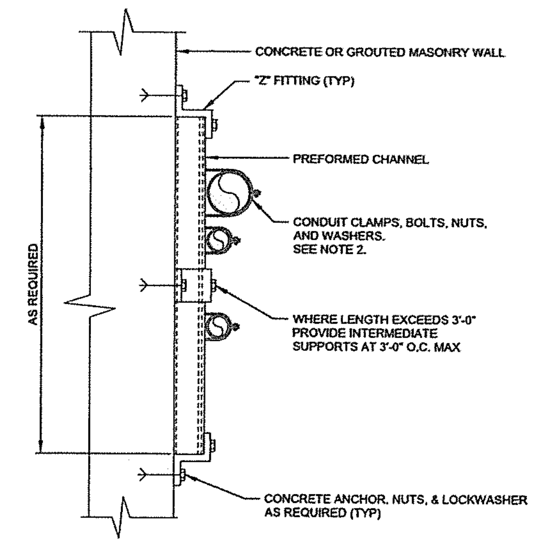
EM058 TYP S — ELECTRICAL HANDHOLE: PRECAST CONCRETE W/ MANHOLE COVER



KEY NOTES:

1. PROVIDE GROUNDING FITTING FOR METALLIC CONDUITS ENTERING MANHOLE. BOND GROUNDING FITTING TO DUCTBANK GROUNDING CONDUCTOR.
2. FOR FIRST 12'-0" FROM INSIDE FACE OF STRUCTURE, STIRRUP SPACING IN INCHES = (H-4)/2 WHERE H = CONCRETE ENCASEMENT HEIGHT IN INCHES.
3. ADDITIONAL #4 x 12'-0" @ 12" ON ALL FOUR FACES OF ENCASEMENT. ALTERNATE WITH TYPICAL REINFORCEMENT FOR 6" SPACING.
4. PROVIDE ADDITIONAL REINFORCEMENT AROUND OPENING AS REQUIRED. FOR CAST-IN-PLACE STRUCTURES, PROVIDE REINFORCEMENT PER S180 TYP

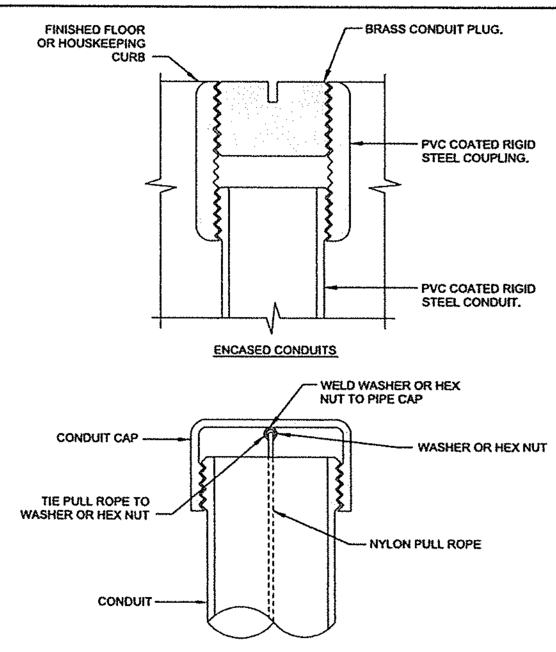
EM070 TYP S — ENCASED CONDUITS AT MANHOLES OR STRUCTURES - W/O WATERSTOP



NOTES:

1. THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
2. MATERIAL FOR PREFORMED CHANNEL, FITTINGS, AND CLAMPS SHALL BE PER THE SPECIFICATIONS.
3. SUPPORTS TO BE SPACED IN ACCORDANCE WITH NEC REQUIREMENTS FOR THE SMALLEST CONDUIT ATTACHED.

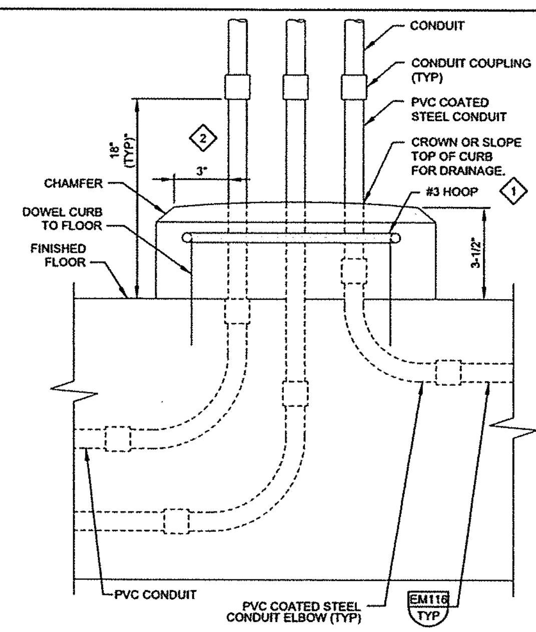
EM101 TYP S — CONDUIT SUPPORT



NOTES:

1. PROVIDE 2" MIN CLEAR BETWEEN ADJACENT CONDUITS

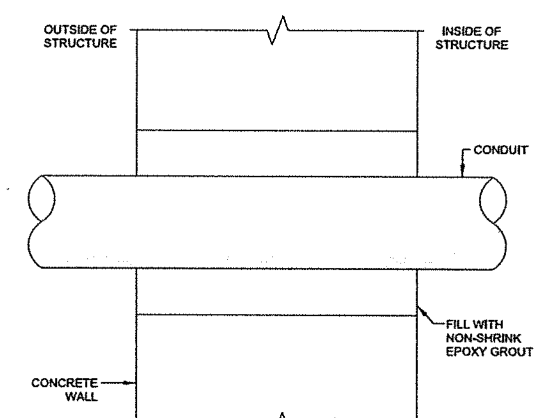
EM105 TYP S — SPARE CONDUIT DETAIL



KEY NOTES:

1. COORDINATE REINFORCING STEEL REQUIREMENTS WITH THE GENERAL CONTRACTOR.
2. TYPICAL BOTH SIDES, FRONT AND REAR.

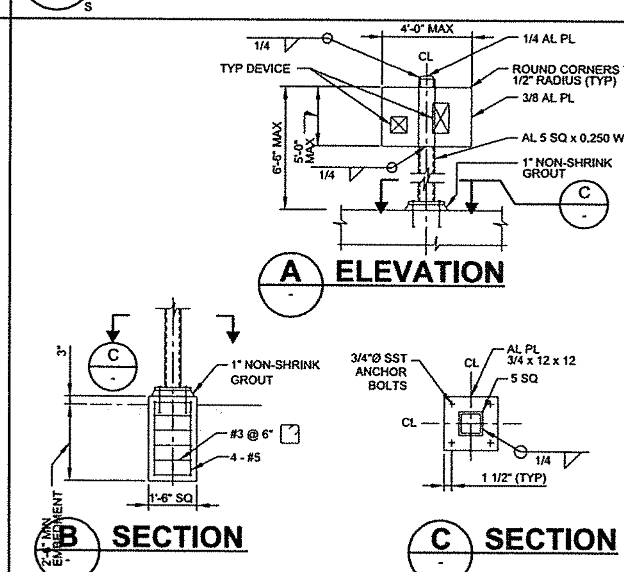
EM107 TYP S — CONDUIT HOUSEKEEPING CURB



NOTES:

1. ROUGHEN SURFACE OF OPENING AND APPLY EPOXY CEMENT BONDING AGENT IMMEDIATELY PRIOR TO GROUTING.

EM138 TYP S — CORE HOLE CONDUIT WALL PENETRATION



NOTES:

1. WHERE SEPARATE FOUNDATION IS REQUIRED, SEE SECTION B.
2. COAT ALUMINUM SURFACES IN CONTACT W/ CONCRETE PER SPECIFICATIONS.
3. USE STAINLESS STEEL FASTENERS FOR MOUNTING DEVICES.
4. WEIGHT OF DEVICE(S) SHALL NOT EXCEED 300 POUNDS.

EM202 TYP S — DEVICE SUPPORT AND MOUNTING

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SHEET 39

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
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APPROVED BY: NAME PE # APPROVED: DATE APPROVED: DATE

carollo

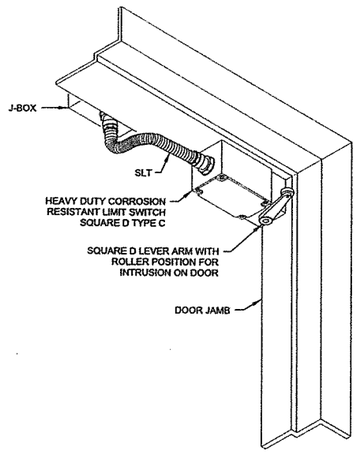
D.S.-206 TO 209
DATE: MARCH 2014 — SCALE: AS SHOWN
DRAWN BY: AD
DESIGNED BY: IRV
CHECKED BY
SUBMITTED BY
FIELD BOOKS — CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
ELECTRICAL TYPICAL DETAILS - II

SHEET NO SHT of XX SHEETS
WORK ORDER 03055
FILE NUMBER 00ET-02 (E-1757)

9137A10 9137A10 FILE NAME: 9137A1000ET02.dgn

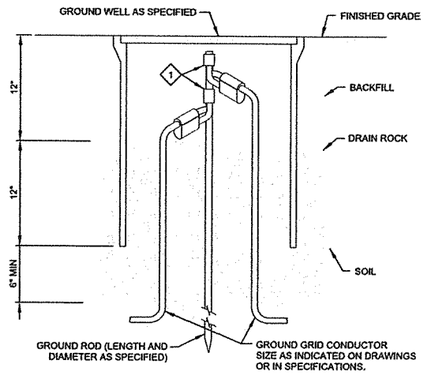
Plot Date: 18-APR-2014 10:53:09 AM User: ADiaz Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.181761
LAST SAVED BY: tmorabito



NOTES:

1. MOUNT LIMIT SWITCH ON INTERIOR SIDE OF DOOR, OPPOSITE OF THE HINGES. WHEN USING WITH DOUBLE DOORS MOUNT IN THE CENTER OF THE DOOR FRAME WITH ACTUATION ON LAST DOOR TO CLOSE. CONTRACTOR TO FIELD VERIFY.

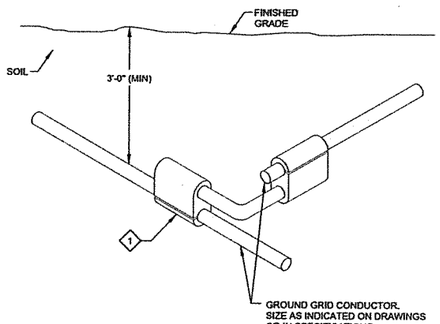
EM751 TYP S — INTRUSION SWITCH MOUNTING DETAIL



KEY NOTES:

1. GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER CONNECTOR MANUFACTURERS GUIDELINES.

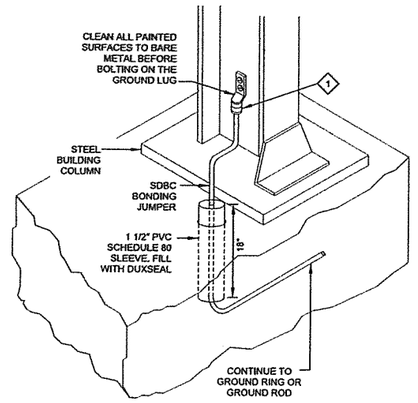
EG001 TYP S — GROUND ROD AND GROUNDWELL COMPRESSION CONNECTION



KEY NOTES:

1. GROUND GRID CROSS CONNECTOR. SIZE FOR CABLE PER CONECTOR MANUFACTURERS GUIDELINES.

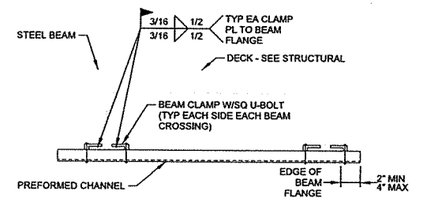
EG101 TYP S — COPPER GROUNDING CABLE CONNECTION COMPRESSION CONNECTION



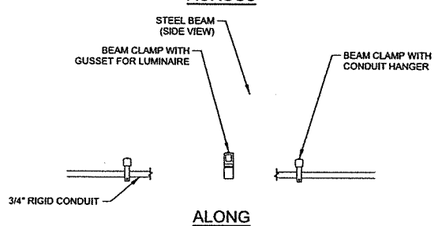
KEY NOTES:

1. HEAVY DUTY COMPRESSION TERMINAL

EG301 TYP S — BUILDING STRUCTURE GROUNDING COMPRESSION CONNECTION

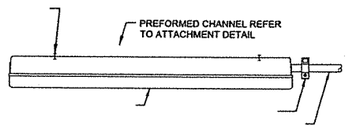


ACROSS

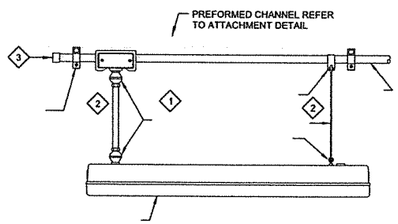


ALONG

EL030 TYP S — ATTACHMENT TO STEEL BEAMS



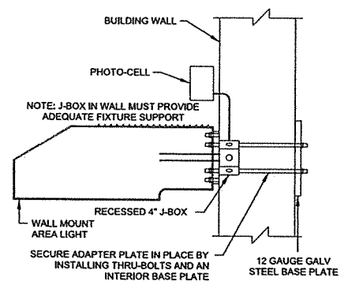
FLUSH MOUNTED



SUSPENDED

1
2
3

EL200 TYP S — FLUORESCENT LUMINAIRE MOUNTING



NOTES:

1. MOUNT LUMINAIRE NEAR ROOF LINE OF BUILDING.
2. DETAILS ARE TYPICAL. ACTUAL CONDITIONS MAY VARY. CONTRACTOR IS REQUIRED TO SUBMIT ALL DRAWINGS FOR APPROVAL BEFORE CONSTRUCTION.

EL308 TYP S — WALL MOUNT AREA LIGHT DETAIL

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SHEET 40

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
NAME PE
APPROVED: DATE
APPROVED: DATE

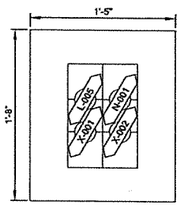
carollo

D.S.-206 TO 209

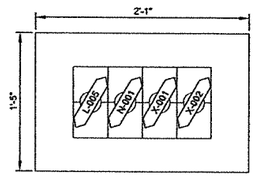
DATE MARCH 2014	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO SHTOF XX SHEETS
DRAWN BY AD DESIGNED BY IRV CHECKED BY SUBMITTED BY		ARROYO SECO CANYON PROJECT ELECTRICAL TYPICAL DETAILS - III	WORK ORDER 03055 / FILE NUMBER 00ET-03 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

GENERAL NOTES:

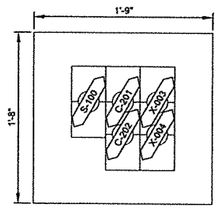
1. CONSTRUCT DUCTBANK IN ACCORDANCE WITH EM001 UNLESS OTHERWISE INDICATED.



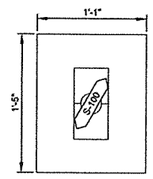
A DUCT BANK SECTION
02E-01



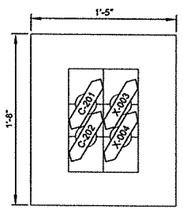
B DUCT BANK SECTION
02E-01



C DUCT BANK SECTION
02E-02



D DUCT BANK SECTION
02E-02



E DUCT BANK SECTION
02E-02

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SHEET 41

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
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NAME PE
APPROVED: DATE
APPROVED: DATE

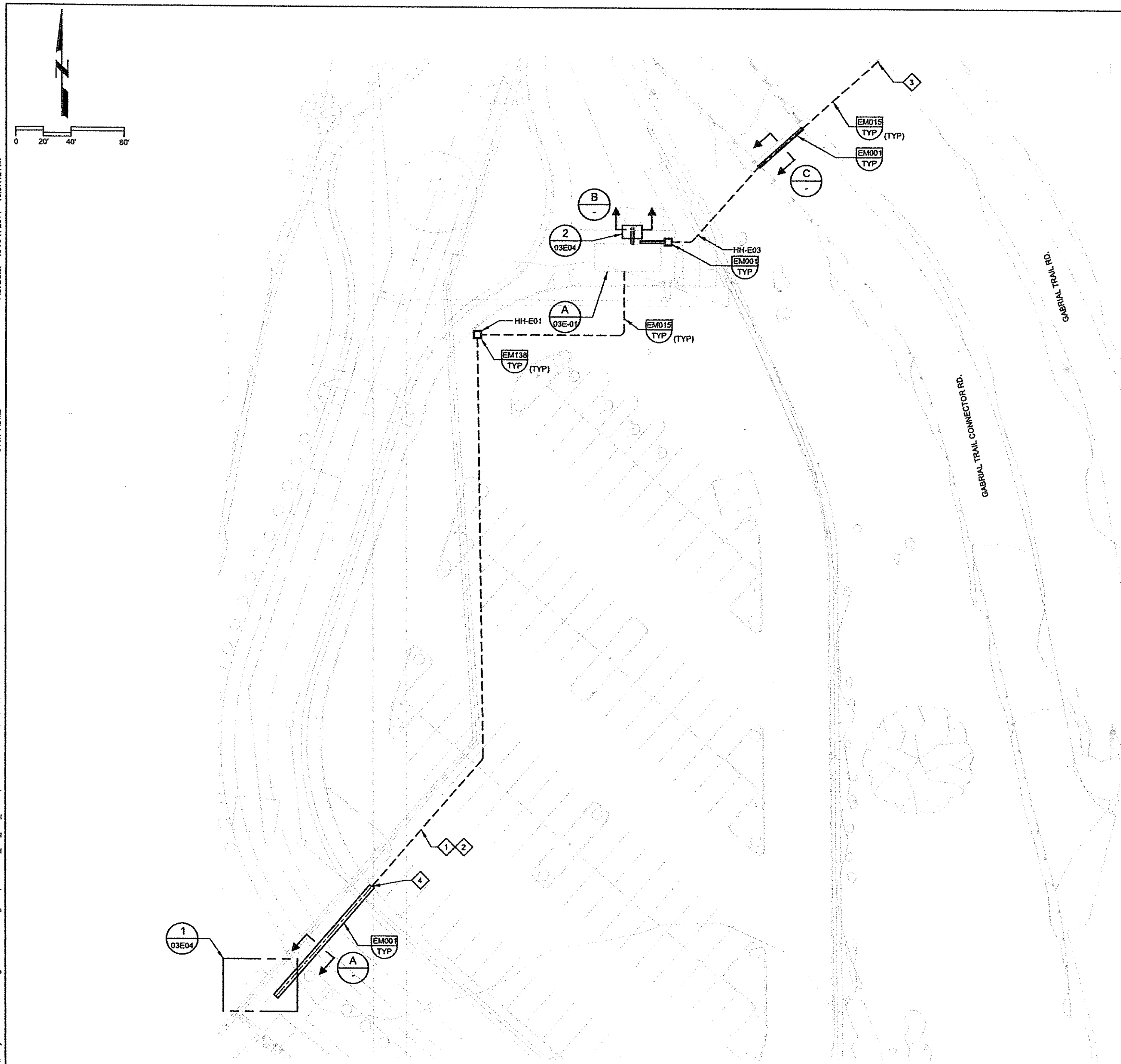
D.S.-206 TO 209

DATE MARCH 2014	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO OF XX SHEETS
DRAWN BY AD DESIGNED BY IRV CHECKED BY SUBMITTED BY		ARROYO SECO CANYON PROJECT AREA 2 – DUCT BANKS	WORK ORDER 03055 / FILE NUMBER 02E-04 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

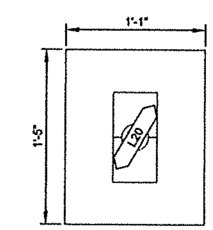
LAST SAVED BY: adiaz
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.18176:1
9137A10 9137A10 FILE NAME: 9137A1002E04.dgn

KEY NOTES:

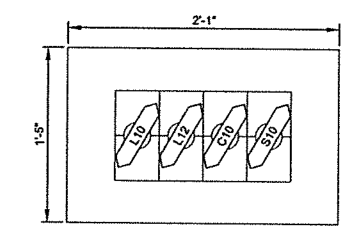
1. ROUTE CONDUIT IN COMMON TRENCH WITH MAIN PIPING TO MAGMETER. PER DETAIL EM015.
2. REFERENCE DRAWING 03C-03 FOR AREA 3A PIPING PLAN.
3. PASADENA WATER AND POWER POWER POLE.
4. CONNECT PCS CONDUIT TO PVC CONDUIT IN CONCRETE ENCASED DUCTBANK. EXTEND PCS CONDUIT 10' OUT IN THE TRENCH PRIOR TO CONNECTING TO PVC CONDUIT IN TRENCH. TYPICAL ALL LOCATIONS INTERCONNECT BETWEEN CONCRETE ENCASED DUCTBANK CONDUITS AND DIRECT BURIED CONDUITS.



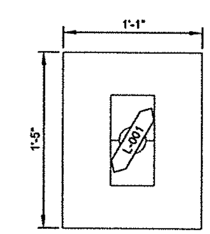
A PLAN
SCALE: 1" = 20'
FILE: 9137A1003E101



A DUCT BANK SECTION
03E-01



B DUCT BANK SECTION
03E-01



C DUCT BANK SECTION
03E-01

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SHEET 42

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY: PE
NAME
APPROVED: DATE
APPROVED: DATE

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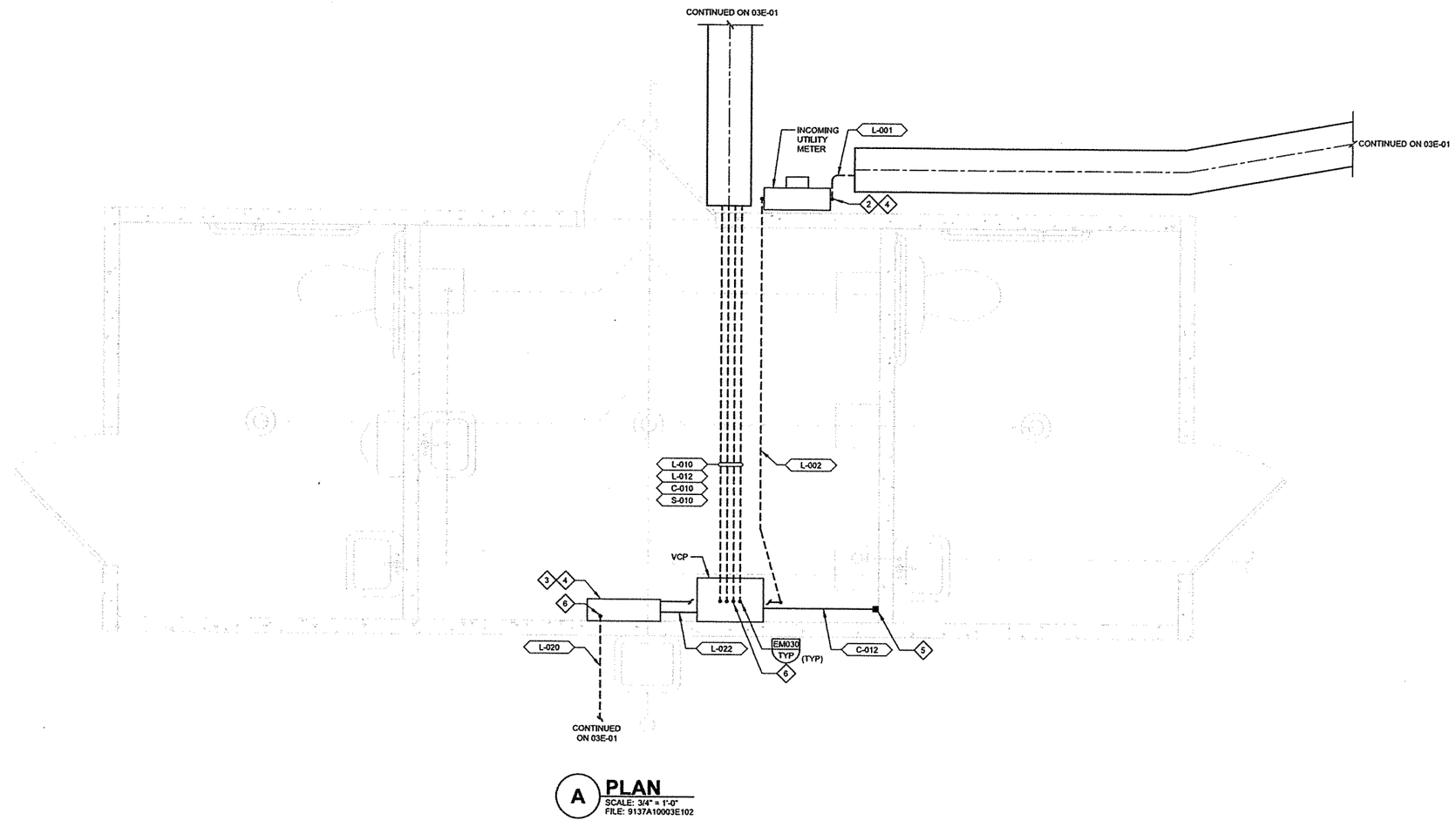
D.S.-206 TO 209

DATE	SCALE		
MARCH 2014	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO OF XX SHEETS
DRAWN BY AD DESIGNED BY IRV CHECKED BY SUBMITTED BY		ARROYO SECO CANYON PROJECT AREA 3 – ELECTRICAL SITE PLAN	WORK ORDER 03055 / FILE NUMBER 03E-01 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

Plot Date: 18-APR-2014 10:37:12 AM User: ADiaz Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.18176:1

LAST SAVED BY: adiaz

9137A10 9137A10 FILE NAME: 9137A1003E01.dgn



A **PLAN**
SCALE: 3/4" = 1'-0"
FILE: 9137A10003E102

KEY NOTES:

1. NOT USED.
2. SIMILAR TO TYPICAL DETAIL EM032.
3. TOILET LIGHTING AND POWER PANEL PROVIDED BY TOILET VENDOR. PANEL SCHEDULE PROVIDED BY VENDOR. ALL ELECTRICAL CONDUIT AND WIRE INSIDE TOILET PROVIDED BY VENDOR WITH EXCEPTION OF ITEMS NOTED ON THE CONTRACT DOCUMENTS (THIS DRAWING).
4. GROUND PER UTILITY STANDARDS.
5. RESTROOM WATER SHUTOFF VALVE ACTUATOR PRECISE LOCATION TO BE DETERMINED IN THE FIELD.
6. FOR PRECISE LOCATION OF CONDUIT STUB UPS COORDINATE WITH TOILET VENDOR.

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SHEET 43

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

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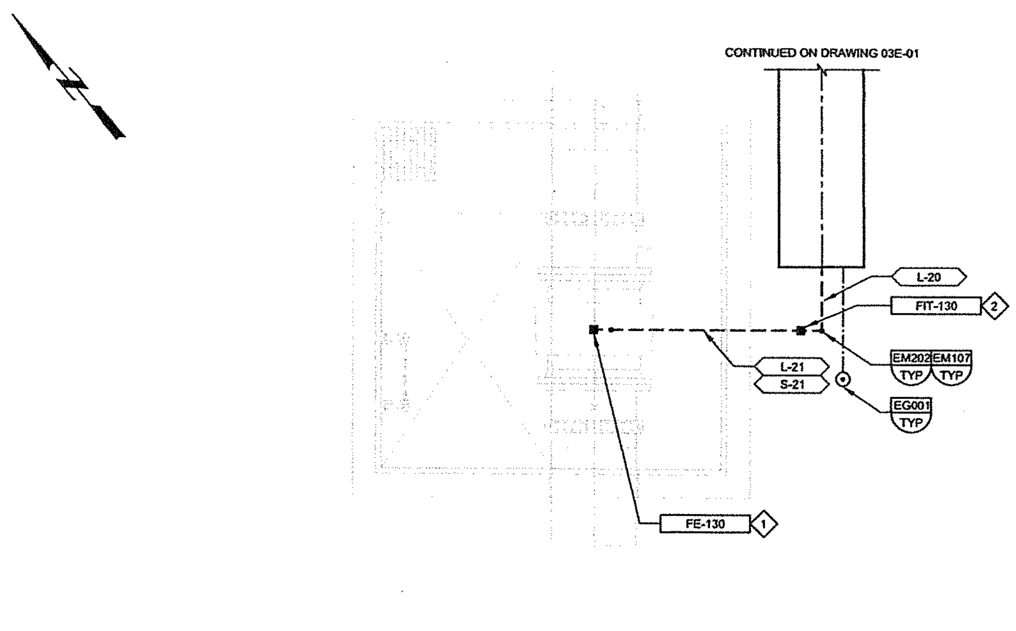
CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209
DATE: MARCH 2014 | SCALE: AS SHOWN
DRAWN BY: AD
DESIGNED BY: IRV
CHECKED BY: CHK
SUBMITTED BY: SUB
FIELD BOOKS | CALC BOOKS | APPROVED | APPROVED

PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
AREA 3 – TOILET

SHEET NO SHTOF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 03E-02 (E-1757)
REVISION

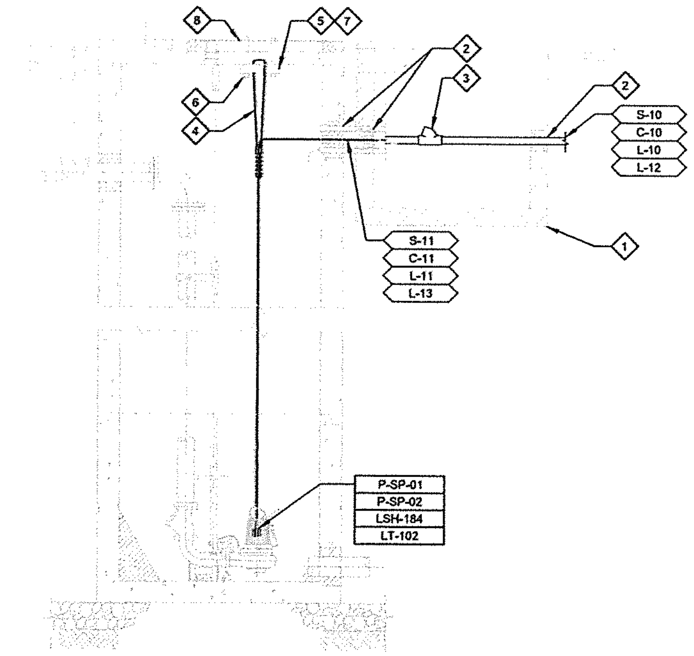
9137A10 9137A10 FILE NAME: 9137A1003E02.dgn



1 DETAIL
SCALE: 1/2" = 1'-0"
FILE: 9137A1000E401

KEY NOTES:

1. GROUND MAGMETER ELEMENT PER TYPICAL DETAIL NF-135.
2. MOUNT FIT-130 MAGMETER POWER DISCONNECT "TYPE A" ALONG SIDE TRANSMITTER ON EM107.



2 DETAIL
SCALE: 3/4" = 1'-0"
FILE: 9137A1000E401

KEY NOTES:

1. HANDHOLE HH-E02.
2. CORE DRILL WALL OF WET WELL AND SEAL PER DETAIL EM138. PRECISE LOCATION TO BE DETERMINED IN FIELD.
3. INSTALL CONDUIT SEALS FOR DIV 1 BOUNDARY.
4. INSTALL KELLUMS PULLING GRIP CABLE HANGER TO SIDE OF ACCESS COVER WITHIN 1' DISTANCE.
5. P1000 UNISTRUT.
6. SUPPORT BOLTS (AS NEEDED).
7. SIMILAR TO TYPICAL DETAIL EM101.
8. WETWELL ACCESS COVER.

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SHEET 44

X–XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

carollo

D.S.–206 TO 209
DATE: MARCH 2014 SCALE: AS SHOWN
DRAWN BY: AD
DESIGNED BY: IRV
CHECKED BY:
SUBMITTED BY:
FIELD BOOKS CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
AREA 3 – DETAILS

APPROVED APPROVED

SHEET NO OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 03E-03 (E-1757)
REVISION

9137A10 9137A10 FILE NAME: 9137A1003E03.dgn

Plot Date: 18-APR-2014 10:05:08 AM User: ADiaz Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2.18176:1 LAST SAVED BY: adiaz

CONDUIT SCHEDULE AREA XX

4/17/14

Arroyo Seco Canyon Project

City of Pasadena

CONDUIT			CONDUCTORS			GROUND				
NUMBER	DWG	SIZE	#	SIZE	TYPE	#	SIZE	TYPE	DESCRIPTION	CONNECTING SEGMENTS
C-010	03E-01	2"	4	MFR	CABLE				FR: VCP TO: HH-E02 4 MFR >> CNTRL: LSHH/LSH-101, LSL/LSLL-101	
C-011	03E-01	2"	4	MFR	CABLE				FR: HH-E02 TO: LIFT STATION WETWELL 4 MFR >> CNTRL: LSHH/LSH-101, LSL/LSLL-101	
C-012	03E-02	0.75"	2	#14	XHHW-2	1	#14	XHHW-2	FR: VCP TO: WATER SHUT OFF VALVE 2 #14 >> CONTROL: SHUT OFF VALVE	
C-101	02E-03	0.75"	2	#14	XHHW-2	1	#14	XHHW-2	FR: PLC TO: AIR COMPRESSOR 2 #14 >> CONTROL: AIR COMPRESSOR	
C-102	02E-03	0.75"	2	#14	XHHW-2	1	#14	XHHW-2	FR: PLC TO: HYDRAULIC UNIT 2 #14 >> CONTROL: HYDRAULIC UNIT	
C-103	02E-03	0.75"	2	#14	XHHW-2	1	#14	XHHW-2	FR: PLC TO: APC CONTROL CABINET 2 #14 >> CONTROL; APC CABINET	
C-104	02E-03	0.75"	2	#14	XHHW-2	1	#14	XHHW-2	FR: PLC TO: INTRUSION DETECTOR SENSOR JB 2 #14 >> CONTROL: INTRUSION DETECTOR	
C-201	02-E02	2"	2	#12	XHHW-2	1	#12	XHHW-2	FR: PHASE 2 SERVICE BUILDING TO: RM-001 VIA HH-E13 2 #12 >> CONTROL: RM-001	
C-202	02-E02	2"	2	#12	XHHW-2	1	#12	XHHW-2	FR: PHASE 2 SERVICE BUILDING TO: RM-002 VIA HH-E13 2 #12 >> CONTROL: RM-002	
L-001	03E-01	2"	3	#1/0	XHHW-2				FR: UTILITY POWER POLE ON SAN GABRIAL TRAIL RD TO: UTILITY METER CAN AT TOILET VIA HH-E03 3 #1/0 >> UTILITY: 220V, 1PHASE POWER	
L-002	03E-02	2"	3	#1/0	XHHW-2				FR: UTILITY METER CAN AT TOILET TO: TOILET POWER PANEL 3 #1/0 >> UTILITY: 220V, 1PHASE POWER	
L-003	02E-04	2"	3	#4/0	XHHW-2				FR: UTILITY POWER POLE ON SAN GABRIAL TRAIL RD TO: UTILITY METER CAN ON TRAVELLING SCREEN BUILDING 3 #4/0 >> UTILITY: 220V, 1PHASE POWER	
L-004	02E-04	2"	3	#4/0	XHHW-2				FR: TRAVELING SCREEN BUILDING METER CAN TO: TRAVELING SCREEN BUILDING POWER PANEL 3 #4/0 >> UTILITY: 220V, 1PHASE POWER	
L-005	02E-04	2"	3	#1/0	XHHW-2	1	#8	XHHW-2	FR: TRAVELING SCREEN BUILDING POWER PANEL TO: P/BOX AREA 2 SERVICE BUILDING VIA MH-E10,11& 12 3 #1/0 >> POWER: AREA 2 SERVICE BLDG	
L-006	02E-03	1.5"	3	#1/0	XHHW-2	1	#8	XHHW-2	FR: P/BOX AREA 2 SERVICE BUILDING VIA MH-E10,11& 12 TO: LP-B 3 #1/0 >> POWER:AREA 2 SERVICE BLDG	
L-010	03E-01 03E-02	2"	1	MFR	CABLE				FR: VCP TO: HH-E02 1 MFR >> POWER: PMP-110	
L-011	03E-04	2"	1	MFR	CABLE				FR: HH-E02 TO: LIFT STATION WETWELL 1 MFR >> POWER:PMP-110	
L-012	03E-01 03E-12	2"	1	MFR 1	CABLE				FR: VCP TO: HH-E02 1 MFR >> POWER:PMP-110	
L-013	03-E04	2"	1	MFR	CABLE				FR: HH-E02 TO: LIFT STATION WETWELL 1 MFR >> POWER:PMP-120	
L-020	03E-01	2"	2	#12	XHHW-2	1	#12	XHHW-2	FR: VCP TO: FIT-130 VIA HH-E01& DISCONNECT 2 #12 >> POWER: FIT-130	
L-021	03-E04	2"	1	MFR	CABLE				FR: FIT-130 TO: FE-130 1 MFR >> POWER: FE-130	
L-022	03E-02	0.75"	2	#6	XHHW-2	1	#10	XHHW-2	FR: TOILET POWER PANEL TO: VCP 2 #6 >> POWER: VCP	
L-100	02E-02	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: LP-B TO: PLC CABINET 2 #12 >> POWER:PLC	
L-101	02E-03	0.75"	2	#8	XHHW-2	1	#10	XHHW-2	FR: LP-B TO: AIR COMPRESSOR 2 #8 >> POWER: AIR COMPRESSOR	
L-102	02-03	0.75"	2	#10	XHHW-2	1	#10	XHHW-2	FR: LP-B TO: HYDRAULIC UNIT STARTER 2 #10 >> POWER: HYDRAULIC UNIT	
L-103	02E-03	0.75"	2	#12	XHHW-2	1	#12	XHHW-2	FR: LP-B TO: APC CONTROL CABINET 2 #12 >> POWER: APC CONTROL CABINET	
N-001	02E-01	2"	1	PULL	ROPE				FR: TRAVELING SCREEN BUILDING TO: AREA 2 SERVICE BUILDING VIA MH-10, 11& 12 1 PULL >> DATA: AREA PHASE 2 BUILDING	
S-010	03E-01 03E-02	2"	1	MFR	CABLE				FR: VCP TO: HH-S01 1 MFR >> SIGNAL: LT-102	
S-011	03E-04	2"	1	MFR	CABLE				FR: HH-S01 TO: LIFT STATION WETWELL 1 MFR >> SIGNAL: LT-102	
S-021	03-E04	2"	1	MFR	CABLE				FR: FIT-130 TO: FE-130 1 MFR >> SIGNAL: FE-130	
S-100	02-E02	2"	1	MFR	CABLE				FR: PHASE 2 SERVICE BUILDING TO: LEVEL TRANSMITTER VIA HH-S02 1 MFR >> SIGNAL: LEVEL TRANSMITTER	
X-001	02E-01	2"	1	PULL	ROPE				FR: TRAVELING SCREEN BUILDING TO: PHASE 2 SERVICE BUILDING VIA MH-E10,11 AND 12 1 PULL >> SPARE CONDUIT	
X-002	02E-01	2"	1	PULL	ROPE				FR: TRAVELING SCREEN BUILDING TO: PHASE 2 SERVICE BUILDING VIA MH-E10,11 AND 12 1 PULL >> SPARE CONDUIT	
X-003	02-E02	2"	1	PULL	ROPE				FR: PHASE 2 SERVICE BUILDING TO: EAST SIDE OF DAM VIA HH-E-13 1 PULL >> SPARE CONDUIT	
X-004	02-E02	2"	1	PULL	ROPE				FR: PHASE 2 SERVICE BUILDING TO: WEST SIDE OF DAM VIA HH-E13 1 PULL >> SPARE CONDUIT	

END OF CONDUIT SCHEDULE

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X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

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D.S.–206 TO 209

DATE	SCALE		
MARCH 2014	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO SHT OF XX SHEETS
DRAWN BY AD DESIGNED BY IRV CHECKED BY CHK SUBMITTED BY SUB		ARROYO SECO CANYON PROJECT CONDUIT SCHEDULES	WORK ORDER 03055 FILE NUMBER 04E-01 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

9137A10 9137A10 FILE NAME: 9137A1004E01.dgn

Plot Date: 18-APR-2014 10:22:25 AM User: ADiaz PlotScale: 2.18176:1 DesignScript: Carollo_Std_Pen_v0905.pen ColorTable: gshade.ctb Model: Layout1

LAST SAVED BY: adiaz

ELECTRICAL HANDHOLE AND MANHOLE SCHEDULE

4/17/2014

TAG NO	MINIMUM INTERIOR DIMENSIONS (INCHES)			CONSTRUCTION	TYPICAL DETAIL	SURFACE LOADING	COMMENTS
	WIDTH	LENGTH	DEPTH				
HH-E01	24	24	36	PRE CAST	EM056	ROADWAY	
HH-E02	24	36	36	PRE CAST	EM056	ROADWAY	ALONGSIDE LIFT PUMP PIT FOR SEAL OFFS
HH-E03	24	24	36	PRE-CAST	EM056	ROADWAY	MAIN INCOMING UTILITY POWER CABLE
MH-E10	24	24	36	PRE CAST	EM058	ROADWAY	ALONGSIDE ROADWAY PHASE 2
MH-E11	24	24	36	PRE CAST	EM058	ROADWAY	ALONGSIDE ROADWAY PHASE 2
MH-E12	24	24	36	PRE CAST	EM058	ROADWAY	ALONGSIDE ROADWAY PHASE 2
HH-E13	36	36	36	PRE CAST	EM056	ROADWAY	ALONGSIDE INTAKE VALVE AREA
HH-S02	24	36	36	PRE CAST	EM056	ROADWAY	ALONGSIDE INTAKE VALVE AREA

NOTES:

1. SEE SPECIFICATION 02581 FOR PRECAST ELECTRICAL HANDHOLES AND MANHOLES.

PANEL LP-A

4/9/2014

LOCATION: TRAVELLING SCREEN BUILDING
VOLTS: 240 / 120
PHASE & WIRE: 1PH 3W
INTERRUPT: 18 KAIC
OPTIONS: SPD

NEMA: 1
FEED: BOTTOM
MTG. SURFACE
BUS RATING: 225
MAIN: CB
MAIN RATING 225 AF 225 AT

PH A WEIGHTED VA 18750
PH B WEIGHTED VA 18750
EQUIP SIZING VA 37500
PANEL AMPS 156.3

I/C/F	DESCRIPTION	LOAD (VA)	BKR	CIR	Ø	CIR	BKR	LOAD (VA)	DESCRIPTION	I/C/F
C	LP-B (PHASE 2 SERVICE BUILDING)	7500	100A-2P	1	A	2	100A-2P	7500	TRAVELING SCREEN BLDG LIGHTING PANEL	C
C		7500		3	B	4		7500	(FUTURE LOAD)	C
	SPACE			5	A	6			SPACE	
	SPACE			7	B	8			SPACE	
	SPACE			9	A	10			SPACE	
	SPACE			11	B	12			SPACE	

PANEL LP-B

4/9/2014

LOCATION: PHASE 2 SERVICE BUILDING
VOLTS: 240 / 120
PHASE & WIRE: 1PH 3W
INTERRUPT: 18 KAIC

NEMA: 1
FEED: BOTTOM
MTG. SURFACE
BUS RATING: 100
MAIN: CB
MAIN RATING 100 AF 100 AT

PH A WEIGHTED VA 5985
PH B WEIGHTED VA 5900
EQUIP SIZING VA 11970
PANEL AMPS 49.9

I/C/F	DESCRIPTION	LOAD (VA)	BKR	CIR	Ø	CIR	BKR	LOAD (VA)	DESCRIPTION	I/C/F
I	RECEPTACLES	360	20A/1P	1	A	2	40A/2P	2500	AIR COMPRESSOR	C
C	LIGHTING	360	20A/1P	3	B	4		2500		C
C	APC CONTROLS CABINET	500	20A/1P	5	A	6	30A/2P	1500	HYDRAULIC POWER UNIT	C
C	PLC	360	20A/1P	7	B	8		1500		C
	SPARE		20A/1P	9	A	10	20A/1P		SPARE	
	SPARE		20A/1P	11	B	12	20A/1P		SPARE	
	SPARE		20A/1P	13	A	14	20A/1P		SPARE	
	SPACE			15	B	16			SPACE	
	SPACE			17	A	18			SPACE	

DISCONNECT SCHEDULE

4/17/2014

		A	
VOLTAGE	120 VAC		
	240 VAC	XXX	
	600 VAC		
	125 VDC		
	250 VDC		
	500 VDC		
POLES	1P		
	2P	XXX	
	3P		
	6P		
	NEUT.		
	GND.		
AMPS	30A	XXX	
	60A		
	100A		
	200A		
	400A		
	600A		
	1200A		
NEMA CLASS	1		
	2		
	3		
	3R		
	4		
	4X	XXX	
	4X-SS		
	7		
	9		
	12		
TYPE	NON-FUSED	XXX	
	FUSED		
	CIRCUIT BREAKER		
	MAN. START w/ OL		
	MAN. STARTER w/o OL		
RATINGS	HORSEPOWER		
	FUSE SIZE		
	BREAKER AF/AT		
ACCESSORIES			

ACCESSORY CODE: 1=
2=
3=
4=
5=

LUMINAIRE SCHEDULE

4/11/2014

ITEM	DESCRIPTION	MOUNTING METHOD	LAMP		LUMINAIRE SPECIFICATIONS			
			QUANTITY	TYPE	MANUFACTURER	CATALOG	VOLTS	VA
A	CEILING MOUNTED 2'x4' FLUORESCENT LIGHT FIXTURE, ELECTRONIC BALLAST, WITH INTEGRAL MOTION SENSOR. SUITABLE FOR WET LOCATIONS	CEILING MOUNTED	1	1-F32W/T8 FLUORESCANT	HOLOPHANE LIGHTING	EMS SERIES	120	40W
B	WALL MOUNT LED FIXTURE, ONE LIGHT ENGINE, TYPE III MEDIUM LIGHT DISTRIBUTION, EPOXY POWDER COAT FINISH COLOR PER CLIENT. NEMA 4X, COMPLETE WITH INTEGRAL MOTION/AMBIANT LIGHT SENSOR.VANDAL RESISTANT. CALGREEN COMPLIANT.	WALL MOUNT	-	LED	COOPER LIGHTING	FAIL SAFE SERIES	120	40W

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X-XX

REVISION							
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE		
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION						

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

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CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209
DATE: MARCH 2014 SCALE: AS SHOWN
DRAWN BY AD
DESIGNED BY IRV
CHECKED BY CHK
SUBMITTED BY SUB
FIELD BOOKS CALC BOOKS APPROVED APPROVED

PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
SCHEDULES

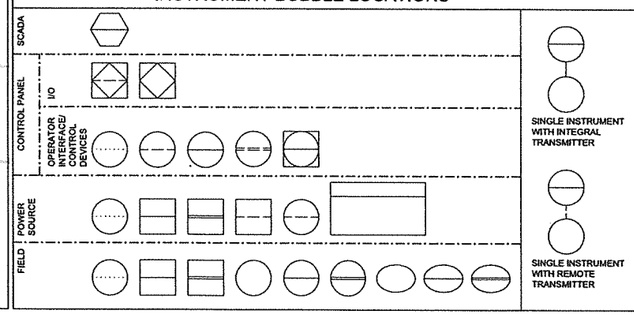
SHEET NO SHT OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 04E-02 (E-1757)
REVISION

9137A10 9137A10 FILE NAME: 9137A1004E02.dgn

SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6
SCADA SYSTEM OPERATOR INTERFACE TERMINAL 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - NOT IN PROJECT	REFER 1 2	REFER 3	ACTION ALARM NUM - NUMERIC SP - SET POINT STATUS TREND	DESCRIPTION 2 5	DESCRIPTION	E - EXISTING F - FUTURE
HARDWIRED I/O POINT 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - NOT IN PROJECT	REFER 1 2 4	REFER 3	AI - ANALOG INPUT AO - ANALOG OUTPUT DI - DISCRETE INPUT DO - DISCRETE OUTPUT HSC - HIGH SPEED COUNTER INPUT RTD - RTD INPUT	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE
DIGITAL BUS I/O REGISTER (FIELDBUS I/O) 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - NOT IN PROJECT	REFER 1 2	REFER 3	BUS ID CNET - CONTROLNET DNET - DEVICENET ENET - ETHERNET/IP FF - FOUNDATION FIELDBUS MB - MODBUS RTU MB+ - MODBUS PLUS MBTCP - MODBUS TCP DP - PROFIBUS DP PA - PROFIBUS PA PNET - PROFINET SERIAL - PROPRIETARY PROTOCOL	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE
HUMAN MACHINE INTERFACE 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - NOT IN PROJECT	REFER 1 2	REFER 3	ACTION ALARM NUM - NUMERIC SP - SET POINT STATUS	DESCRIPTION 2 5	HMI - HUMAN MACHINE INTERFACE NO. LCP - LOCAL CONTROL PANEL NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE
PILOT DEVICE OPERATOR INTERFACE 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - NOT IN PROJECT	REFER 1 2	REFER 3	AM - AUTO/MANUAL BYPASS - BYPASS CL - CLOSE E-STOP - EMERGENCY STOP FRLR - FIXED RATE/LEVEL RATE HOA - HAND /OFF/AUTO JOHC - JOG OPEN/HOLD/CLOSE JOJC - JOG OPEN/JOG CLOSE LH - LOW/HIGH LOR - LOCAL/OFF/REMOTE LOS - LOCK OUT STOP LS - LEAD/STANDBY LSR - LOCAL/STOP/REMOTE NOOT - NO OFFLINE/OFFLINE TRANSITION OC - OPEN/CLOSE OLOL - ON LINE/OFF LINE OO - OFF/ON OP - OPEN OSC - OPEN/STOP/CLOSE RST - RESET SAAM - SEMI AUTO/AUTO/MANUAL SEL - SELECT SP - STOP SPD - SPEED SS - START/STOP ST - START	DESCRIPTION	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. RVSS - REDUCED VOLTAGE SOLID STARTER NO. VCP - VENDOR CONTROL PANEL NO. VFD - VARIABLE FREQUENCY DRIVE NO.	E - EXISTING F - FUTURE
POWER DEVICE PRIMARY FUNCTION OPERATOR ACCESSIBLE 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE/PHASE 5 - LOCATION 6 - NOT IN PROJECT	CB - CIRCUIT BREAKER DISC - DISCONNECT FU - FUSE	REFER 3	TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 3P 240VAC - 2P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE
POWER DEVICE AUXILIARY FUNCTION FOR OPERATOR ACCESSIBLE DEVICES 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - DESCRIPTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - NOT IN PROJECT	DISC - DISCONNECT	REFER 3	DESCRIPTION	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE
POWER DEVICE PRIMARY FUNCTION OPERATOR INACCESSIBLE 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE/PHASE 5 - LOCATION 6 - NOT IN PROJECT	CB - CIRCUIT BREAKER FU - FUSE	REFER 3	MCP - MOTOR CIRCUIT PROTECTOR SS - SOLID STATE CIRCUIT BREAKER TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE

SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6
INSTRUMENT PRIMARY ELEMENT 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - NOT IN PROJECT	REFER 1	REFER 3	DESCRIPTION 5	DESCRIPTION 6	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE
INSTRUMENT/CONTROL ELEMENT PRIMARY FUNCTION OPERATOR ACCESSIBLE 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - NOT IN PROJECT	REFER 1	REFER 3	DESCRIPTION 5	DESCRIPTION 6	DESCRIPTION	E - EXISTING F - FUTURE
INSTRUMENT/CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR ACCESSIBLE 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - NOT IN PROJECT	REFER 1	REFER 3	DESCRIPTION	DESCRIPTION 6	DESCRIPTION	E - EXISTING F - FUTURE
INSTRUMENT/CONTROL ELEMENT PRIMARY FUNCTION OPERATOR INACCESSIBLE 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - NOT IN PROJECT	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY IR - INTERPOSING RELAY	REFER 3	DESCRIPTION	DESCRIPTION 6	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE
INSTRUMENT/CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR INACCESSIBLE 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - NOT IN PROJECT	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY IR - INTERPOSING RELAY	REFER 3	DESCRIPTION	DESCRIPTION 6	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE
FIELD EQUIPMENT NON-POWERED 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION/SIZE 4 - FURNISHED BY 5 - LOCATION 6 - NOT IN PROJECT	REFER 3	REFER 3	DESCRIPTION	DESCRIPTION 6	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE
FIELD EQUIPMENT PRIMARY FUNCTION POWERED 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - NOT IN PROJECT	REFER 3	REFER 3	DESCRIPTION	DESCRIPTION 6	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE
FIELD EQUIPMENT AUXILIARY FUNCTION POWERED 6 1 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - NOT IN PROJECT	MWH - MOTOR WINDING HEATER TSH - TEMPERATURE SWITCH XSH - TORQUE SWITCH	REFER 3	DESCRIPTION	DESCRIPTION 6	DESCRIPTION	E - EXISTING F - FUTURE
FIELD EQUIPMENT STARTER/DRIVE CUBICLE/CABINET 6 1 - 2 3 4 5	1 - TAG 2 - LOOP NUMBER 3 - TYPE 4 - VOLTAGE/PHASE 5 - LOCATION 6 - NOT IN PROJECT	MS - MOTOR STARTER RVAT - REDUCED VOLTAGE AUTO TRANSFORMER STARTER RVSS - REDUCED VOLTAGE SOLID STATE STARTER VFD - VARIABLE FREQUENCY DRIVE	REFER 3	FVNR - FULL VOLTAGE NON-REVERSING STARTER FVR - FULL VOLTAGE REVERSING STARTER PWS - PART-WINDING STARTER RVAT - REDUCED VOLTAGE AUTO TRANSFORMER STARTER RVSS - REDUCED VOLTAGE SOLID STATE STARTER TS1W - TWO SPEED SINGLE WINDING TS2W - TWO SPEED TWO WINDINGS VFD - VARIABLE FREQUENCY DRIVE	120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE

INSTRUMENT BUBBLE LOCATIONS



NOTES

1. INSTRUMENT TAG IDENTIFICATION LETTERS TABLE
2. OPERATOR PILOT DEVICE LEGEND
3. EQUIPMENT TAGGING TABLE
4. I/O TYPE DESIGNATIONS TABLE
5. INSTRUMENT TYPE DESIGNATIONS TABLE
6. FURNISHED BY: FBO FURNISHED BY OWNER; FBV FURNISHED BY VENDOR

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REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

REGISTERED PROFESSIONAL ENGINEER — JAN R. VAN ECK — ELECTRICAL — STATE OF CALIFORNIA

APPROVED BY:
PE # _____
NAME
APPROVED: _____ DATE
APPROVED: _____ DATE

carollo

CITY OF PASADENA — INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE		
MARCH 2014	AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO SHTOF XX SHEETS
DRAWN BY DKI DESIGNED BY DEB CHECKED BY SUBMITTED BY		ARROYO SECO CANYON PROJECT SYMBOLS AND ABBREVIATIONS - I	WORK ORDER 03055 / FILE NUMBER 00NG-01 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED / REVISION

LAST SAVED BY: dmada
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 0.083333:1
Plot Date: 18-APR-2014 10:47:09 AM
User: ADiaz

9137A10 9137A10 FILE NAME: 9137A1000NG001.dgn

INSTRUMENT TAG IDENTIFICATION LETTERS

MEASURED VARIABLE \ INSTRUMENT FUNCTION		ELEMENT	TRANSMITTER	INDICATING TRANSMITTER	CONVERTER TRANSDUCER, RELAY SPECIAL DEVICES	INDICATOR	RECORDER	CONTROLLER	INDICATING CONTROLLER	RECORDING CONTROLLER	SWITCH	SWITCH LOW LOW	SWITCH LOW	SWITCH HIGH	SWITCH HIGH HIGH	SWITCH COMBINATION HIGH/ LOW	ACTION	ALARM LOW LOW	ALARM LOW	ALARM HIGH	ALARM HIGH HIGH	TOTALIZE INDICATOR TRANSMITTER	VALVE	GAUGE	LIGHT	SPEED SETTING
A	ANALYSIS	AE	AT	AIT	AY	AI	AR	AC	AIC	ARC	AS	ASLL	ASL	ASH	ASHH	ASHL		AALL	AAL	AAH	AAHH				AL	
B	BURNER FLAME	BE	BT	BIT	BY	BI	BR	BC	BIC	BRC	BS	BSLL	BSL	BSH	BSHH			BALL	BAL	BAH	BAHH				BL	
C	CONDUCTIVITY	CE	CT	CIT	CY	CI	CR	CC	CIC	CRC	CS	CSLL	CSL	CSH	CSHH	CSHL		CALL	CAL	CAH	CAHH				CL	
D	DENSITY	DE	DT	DIT	DY	DI	DR	DC	DIC	DRC	DS	DSLL	DSL	DSH	DSHH	DSHL		DALL	DAL	DAH	DAHH				DL	
E																										
F	FLOW	FE	FT	FIT	FY	FI	FR	FC	FIC	FRC	FS	FSLL	FSL	FSH	FSHH	FSHL		FALL	FAL	FAH	FAHH	FQI	FCV	FG	FL	
FF	FLOW RATIO				FFY	FFI		FFC	FFIC		FFS														FFL	
G	GAUGING (DIMENSION)																									
H	HAND (MANUAL)*							HC			HS*						HA*						HV		HL	HSS
I	CURRENT		IT	IIT	IY	II	IR	IC	IIC	IRC	IS	ISLL	ISL	ISH	ISHH			IALL	IAL	IAH	IAHH				IL	
J	POWER																									
K	TIME				KY	KI	KR	KC	KIC	KRC	KS	KSLL	KSL	KSH	KSHH			KALL	KAL	KAH	KAHH		KV		KL	
L	LEVEL	LE	LT	LIT	LY	LI	LR	LC	LIC	LRC	LS	LSLL	LSL	LSH	LSHH	LSHL		LALL	LAL	LAH	LAHH		LCV	LG	LL	
M	MOISTURE OR HUMIDITY	ME	MT	MIT	MY	MI	MR	MC	MIC	MRC	MS	MSLL	MSL	MSH	MSHH			MALL	MAL	MAH	MAHH				ML	
N	EMERGENCY SHUTDOWN																									
O																										
P	PRESSURE OR VACUUM	PE	PT	PIT	PY	PI***	PR	PC	PIC	PRC	PS****	PSLL	PSL	PSH	PSHH	PSHL		PALL	PAL	PAH	PAHH		PCV		PL	
PD	DIFFERENTIAL PRESSURE		PDT	PDIT	PDY	PDI	PDR	PDC	PDIC	PDRC	PDS	PDSLL	PDSL	PDSH	PDSHH			PDALL	PDAL	PDAH	PDAHH		PDCV		PDL	
Q	QUANTITY	QE	QT	QIT	QY	QI	QR				QS	QSLL	QSL	QSH	QSHH			QALL	QAL	QAH	QAHH					
R	RADIOACTIVITY																									
S	SPEED	SE	ST	SIT	SY	SI	SR	SC	SIC	SRC	SS	SSLL	SSL	SSH	SSHH			SALL	SAL	SAH	SAHH					
T	TEMPERATURE	TE	TT	TIT	TY	TI	TR	TC	TIC	TRC	TS	TSLL	TSL	TSH	TSHH	TSHL		TALL	TAL	TAH	TAHH		TCV		TL	
TD	DIFFERENTIAL TEMPERATURE		TDT	TDIT	TDY	TDI	TDR	TDC	TDIC	TDRC	TDS	TDSLL	TDSL	TDSH	TDSHH			TDALL	TDAL	TDAH	TDAHH		TDCV		TDL	
U	MULTIVARIABLE					UI	UR	UC	UIC	URC	US														UL	
V	VISCOSITY	VE	VT	VIT	VY	VI	VR	VC	VIC	VRC	VS	VSLL	VSL	VSH	VSHH			VALL	VAL	VAH	VAHH				VL	
W	WEIGHT	WE	WT	WIT	WY	WI	WR				WS	WSLL	WSL	WSH	WSHH			WALL	WAL	WAH	WAHH					
X	UNCLASSIFIED	XE	XT	XIT	XY	XI	XR	XC	XIC	XRC	XS	XSLL	XSL	XSH	XSHH			XALL	XAL	XAH	XAHH		XCV	XG	XL	
XV	VIBRATION	XVE	XVT		XVY	XVI	XVR				XVS			XVSH	XVSHH					XVAH	XVAHH				XVL	
Y	STATUS***					YI***																			YL	
Z	POSITION	ZE	ZT	ZIT	ZY	ZI					ZS**												ZV		ZL**	

* REFER TO OPERATOR PILOT DEVICE LEGEND
** LETTER INDICATES POSITION (O=OPEN, C=CLOSED, R=RAISE, L=LOWER, ETC)
*** PI# # = 1,2,3 ETC. AND REPRESENTS A UNIQUE IDENTIFIER AND IS APPLICABLE TO ALL ITEMS IN THE TABLE ABOVE

**** COULD ALSO BE PIS - FOR PRESSURE INDICATING SWITCH

OPERATOR PILOT DEVICE LEGEND

DEVICE TYPE \ PILOT DEVICE FUNCTION	LOCAL-OFF-REMOTE (LOR) OR LOCAL-STOP-REMOTE (LSR)	STOP (SP)	START (ST)	HAND-OFF-AUTO (HOA)	OFF-ON (OO)	SELECT (SEL)	OPEN-STOP-CLOSE (OSC)	JOG OPEN-HOLD-CLOSE (JOHC)	SEMIAUTO-AUTO-MANUAL (SAAM)	LEAD-LAG-STANDBY (LLGS)	JOG OPEN-JOG CLOSE (JOJC)	ONLINE-OFFLINE (OLOF)	AUTO-MANUAL (AM)	FIXED RATE-LEVEL RATE (FRLR)	OPEN-CLOSE (OC)	NO OFFLINE-OFFLINE TRANSITION (NOOT)	LOW-HIGH (LH)	RESET (RST)	SPEED (SPD)	START-STOP (STSP)	E-STOP (E-SP)	BYPASS (BYP)			POSITION (POS)
PILOT DEVICE TAG (HAND SWITCHES)	HSA*	HSB	HSC	HSD*	HSE	HSF	HSG*	HSH*	HSI	HSJ*	HSK*	HSL*	HSM*	HSN	HSO*	HSP	HSQ*	HSR	HSS	HST*	HSU	HSV	HSW	HSX	HSY	HSZ
SCADA/HMI TAG (HAND ACTION)	HAA	HAB	HAC	HAD	HAE	HAF	HAG	HAH	HAI	HAJ	HAK	HAL	HAM	HAN	HAO	HAP	HAQ	HAR	HAS	HAT	HAU	HAV	HAW	HAX	HAY	HAZ

HSA* SELECTOR SWITCH POSITION EG: HSA(R) R = REMOTE, HSD(A) A = AUTO, ETC

I/O TYPE DESIGNATIONS

AUX1	RUNNING	MSC	VALVE CLOSE
AUX2	FAILED/FAULT	MSF	MOTOR START FORWARD
AUXF1	RUNNING FORWARD	MSH	MOTOR START HIGH
AUXH1	RUNNING HIGH	MSL	MOTOR START LOW
AUXL1	RUNNING LOW	MSM	VALVE MODULATE
AUXR1	RUNNING REVERSE	MSO	VALVE OPEN
AUX3	RUN LATCH	MSP	MOTOR STOP
SVC	SOLENOID VALVE CLOSE	MSR	MOTOR START REVERSE
SVO	SOLENOID VALVE OPEN	MST	MOTOR START
MS	RUN	SS	SPEED SIGNAL

INSTRUMENT TYPE DESIGNATIONS

AM	AMMONIA	O3	OZONE	SC	STREAMING CURRENT
CAP	CAPACITANCE	ORP	OXIDATION REDUCTION POTENTIAL	SH	SODIUM HYPOCHLORITE
CG	COMBUSTIBLE GAS	P	PRESSURE	TDR	TIME DOMAIN REFLECTOMETRY
CL	CHLORINE	P-SUB	PRESSURE SUBMERSIBLE	TH	THERMAL
COND	CONDUCTIVITY	PC	PARTICLE COUNTER	TSS	TOTAL SUSPENDED SOLIDS
DO	DISSOLVED OXYGEN	PO	PHOSPHOROUS	TURB	TURBIDITY
FMCW	FREQ. MODULATED CONT. WAVE	PTOF	PULSE TIME OF FLIGHT	US	ULTRASONIC
HSF	FLUORIDE	R/I	RESISTANCE TO CURRENT	UVI	UV INTENSITY
IS	INTRINSIC SAFETY BARRIER	ROT	ROTAMETER	UVT	UV TRANSMITTANCE
LEL	LOWER EXPLOSIVE LIMIT	RTD	RESISTANCE TEMP DETECTOR	VAC	VACUUM
MAG	MAGNETIC				

SPECIFIC ABBREVIATIONS

APH	A PHASE	MWH	MOTOR WINDING HEATER
BPH	B PHASE	SSG	SECONDARY SWITCHGEAR
BRB	BEARING BOTTOM	SV*	SOLENOID VALVE
BRT	BEARING TOP	SPD	SURGE PROTECTIVE DEVICE
BTFLY	BUTTERFLY	UPS	UNINTERRUPTIBLE POWER SUPPLY
CPH	C PHASE	YA	STATUS AUTO
CC*	CALIBRATION COLUMN * = 1, 2, 3, ETC.	YR	STATUS REMOTE
HTR	HEATER	Y1	STATUS RUNNING
HTU	HEAT TRACE UNIT	Y2	ALARM FAILED/FAULT

* CC# AND SV# # = 1, 2, 3 ETC. AND REPRESENTS A UNIQUE IDENTIFIER

INSTRUMENT LINE SYMBOLS

INSTRUMENT OR CONNECTION TO PROCESS
PNEUMATIC SYMBOL
ELECTRIC SYMBOL
HYDRAULIC SYMBOL
CAPILLARY TUBE
ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)
ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)
INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)
COPPER ETHERNET
FIBER OPTIC ETHERNET
WIRELESS ETHERNET
PROFIBUS DP
PROFIBUS PA
DEVICENET
FOUNDATION FIELDBUS

PROCESS LINE SYMBOLS

PRIMARY PROCESS FLOW IN PIPE
SECONDARY PROCESS FLOW IN PIPE
PRIMARY PROCESS FLOW IN CHANNEL
SECONDARY PROCESS FLOW IN CHANNEL

DESIGNATIONS

FUTURE
OR
FUTURE
EQUIPMENT ENCLOSURE
EXISTING
OR
EXISTING
ADDITION OR NEW THIS CONSTRUCTION

MISCELLANEOUS P&ID SYMBOLS

CHEMICAL INJECTION POINT
CHEMICAL SHEET NO.
CONTINUATION TAG
CONTINUATION FROM SHEET
UNIQUE IDENTIFIER
CONTINUATION TO SHEET
PIPE CALLOUT
PIPE SIZE

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SHEET 48

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

REGISTERED PROFESSIONAL ENGINEER — IAN A. VARLEY — ELECTRICAL — STATE OF CALIFORNIA

APPROVED BY:
PE
NAME
APPROVED: DATE
APPROVED: DATE

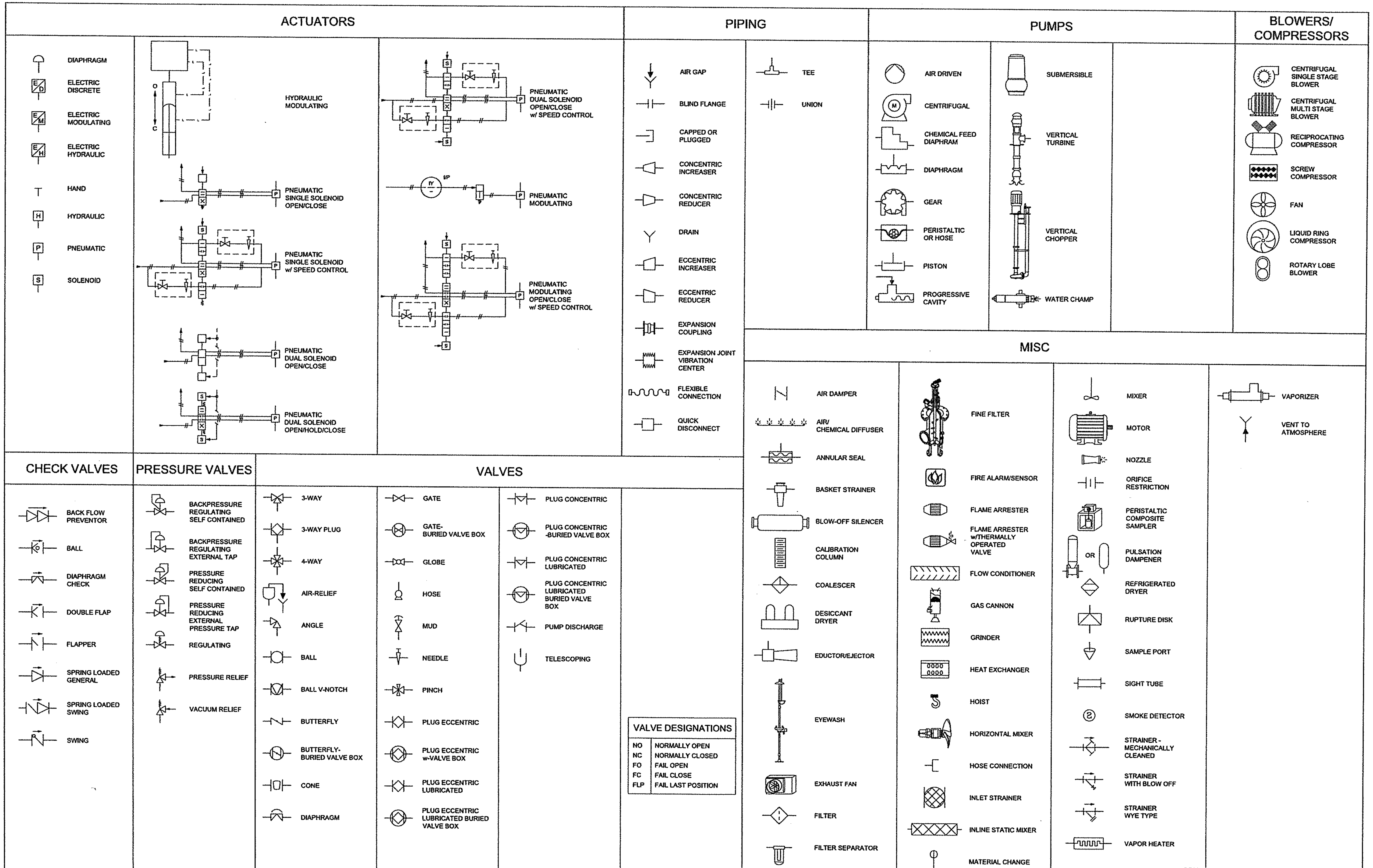
carollo

CITY OF PASADENA — INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE MARCH 2014	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO SHTOF XX SHEETS
DRAWN BY DKI		ARROYO SECO CANYON PROJECT SYMBOLS AND ABBREVIATIONS – II	WORK ORDER 03055
DESIGNED BY DEB			FILE NUMBER 00NG-02 (E-1757)
CHECKED BY			
SUBMITTED BY			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

Plot Date: 18-APR-2014 10:47:17 AM User: ADiaz Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 0.083333:1



ACTUATORS
DIAPHRAGM
ELECTRIC DISCRETE
ELECTRIC MODULATING
ELECTRIC HYDRAULIC
HAND
HYDRAULIC
PNEUMATIC
SOLENOID
HYDRAULIC MODULATING
PNEUMATIC SINGLE SOLENOID OPEN/CLOSE
PNEUMATIC SINGLE SOLENOID w/ SPEED CONTROL
PNEUMATIC DUAL SOLENOID OPEN/CLOSE
PNEUMATIC DUAL SOLENOID OPEN/HOLD/CLOSE
PNEUMATIC DUAL SOLENOID OPEN/CLOSE w/ SPEED CONTROL
PNEUMATIC MODULATING
PNEUMATIC MODULATING OPEN/CLOSE w/ SPEED CONTROL
PIPING
AIR GAP
BLIND FLANGE
CAPPED OR PLUGGED
CONCENTRIC INCREASER
CONCENTRIC REDUCER
DRAIN
ECCENTRIC INCREASER
ECCENTRIC REDUCER
EXPANSION COUPLING
EXPANSION JOINT VIBRATION CENTER
FLEXIBLE CONNECTION
QUICK DISCONNECT
TEE
UNION
PUMPS
AIR DRIVEN
CENTRIFUGAL
CHEMICAL FEED DIAPHRAM
DIAPHRAGM
GEAR
PERISTALTIC OR HOSE
PISTON
PROGRESSIVE CAVITY
SUBMERSIBLE
VERTICAL TURBINE
VERTICAL CHOPPER
WATER CHAMP
BLOWERS/ COMPRESSORS
CENTRIFUGAL SINGLE STAGE BLOWER
CENTRIFUGAL MULTI STAGE BLOWER
RECIPROCATING COMPRESSOR
SCREW COMPRESSOR
FAN
LIQUID RING COMPRESSOR
ROTARY LOBE BLOWER
CHECK VALVES
BACK FLOW PREVENTOR
BALL
DIAPHRAGM CHECK
DOUBLE FLAP
FLAPPER
SPRING LOADED GENERAL
SPRING LOADED SWING
SWING
PRESSURE VALVES
BACKPRESSURE REGULATING SELF CONTAINED
BACKPRESSURE REGULATING EXTERNAL TAP
PRESSURE REDUCING SELF CONTAINED
PRESSURE REDUCING EXTERNAL PRESSURE TAP
REGULATING
PRESSURE RELIEF
VACUUM RELIEF
VALVES
3-WAY
3-WAY PLUG
4-WAY
AIR-RELIEF
ANGLE
BALL
BALL V-NOTCH
BUTTERFLY
BUTTERFLY-BURIED VALVE BOX
CONE
DIAPHRAGM
GATE
GATE-BURIED VALVE BOX
GLOBE
HOSE
MUD
NEEDLE
PINCH
PLUG ECCENTRIC
PLUG ECCENTRIC w-VALVE BOX
PLUG ECCENTRIC LUBRICATED
PLUG ECCENTRIC LUBRICATED BURIED VALVE BOX
PLUG CONCENTRIC
PLUG CONCENTRIC -BURIED VALVE BOX
PLUG CONCENTRIC LUBRICATED
PLUG CONCENTRIC LUBRICATED BURIED VALVE BOX
PUMP DISCHARGE
TELESCOPING
MISC
AIR DAMPER
AIR/ CHEMICAL DIFFUSER
ANNULAR SEAL
BASKET STRAINER
BLOW-OFF SILENCER
CALIBRATION COLUMN
COALESCER
DESICCANT DRYER
EDUCTOR/EJECTOR
EYEWASH
EXHAUST FAN
FILTER
FILTER SEPARATOR
FINE FILTER
FIRE ALARM/SENSOR
FLAME ARRESTER
FLAME ARRESTER w/THERMALLY OPERATED VALVE
FLOW CONDITIONER
GAS CANNON
GRINDER
HEAT EXCHANGER
HOIST
HORIZONTAL MIXER
HOSE CONNECTION
INLET STRAINER
INLINE STATIC MIXER
MATERIAL CHANGE
MIXER
MOTOR
NOZZLE
ORIFICE RESTRICTION
PERISTALTIC COMPOSITE SAMPLER
OR
PULSATION DAMPENER
REFRIGERATED DRYER
RUPTURE DISK
SAMPLE PORT
SIGHT TUBE
SMOKE DETECTOR
STRAINER - MECHANICALLY CLEANED
STRAINER WITH BLOW OFF
STRAINER WYE TYPE
VAPOR HEATER
VAPORIZER
VENT TO ATMOSPHERE

VALVE DESIGNATIONS

NO	NORMALLY OPEN
NC	NORMALLY CLOSED
FO	FAIL OPEN
FC	FAIL CLOSE
FLP	FAIL LAST POSITION

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SHEET 49

X-XX

REVISION

NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY: PE / NAME APPROVED: DATE APPROVED: DATE

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D.S.-206 TO 209
DATE MARCH 2014 SCALE AS SHOWN
DRAWN BY DKI
DESIGNED BY DEB
CHECKED BY
SUBMITTED BY
FIELD BOOKS CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
SYMBOLS AND ABBREVIATIONS - III

APPROVED APPROVED

SHEET NO SHT OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 00NG-03 (E-1757)
REVISION

LAST SAVED BY: dimada

9137A10 9137A10 FILE NAME: 9137A1000NG003.dgn

GATES

SIDE VIEW	PLAN VIEW
SLIDE	FLAP
SLUICE	KNIFE
STOP	SLIDE
	SLUICE
	STOP
	WEIR

FLUMES

- LEOPOLD-LAGCO
- PALMER-BOWLUS
- PARSHALL
- REGULAR CUTTHROAT
- TRAPEZOIDAL

WEIRS

- RECTANGULAR w/o END CONTRACTIONS
- RECTANGULAR w/ END CONTRACTIONS
- V-NOTCH (TRIANGULAR)
- TRAPEZOIDAL (CIPOLLETTI)

FLOW

- BATCH
- CORIOLIS
- MAGNETIC
- ORIFICE
- PADDLE WHEEL
- PITOT TUBE AVERAGING
- PITOT TUBE/ ANNUBAR
- POSITIVE-DISPLACEMENT
- PROPELLER-TURBINE
- ROTAMETER
- THERMAL
- ULTRASONIC DOPPLER
- ULTRA-SONIC TRANSIT TIME
- V-CONE
- VENTURI TUBE OR FLOW NOZZLE
- VORTEX

LEVEL

- BUBBLER
- CAPACITANCE
- DIFFERENTIAL PRESSURE (TANK, PDE, LDIT)
- ELECTRODE
- FLOAT
- INVERTED COLUMN
- RADAR PTOF
- RADAR TDR
- SUSPENDED/ SUBMERSIBLE
- ULTRASONIC

TEMPERATURE

- TEMPERATURE w/THERMOWELL
- TEMPERATURE GAUGE
- THERMOMETER

WEIGHT

- HYDRAULIC
- STRAIN GAUGE

PRESSURE/VACUUM

PRESSURE

- GAUGE (PI)
- MANOMETER
- PRESSURE SWITCH (PSH, PE)
- PRESSURE TRANSMITTER (PIT, PE)

DIFFERENTIAL PRESSURE

- GAUGE DIFFERENTIAL INDICATOR (PDI)
- DIFFERENTIAL PRESSURE SWITCH (PDSL, PDE)
- DIFFERENTIAL PRESSURE TRANSMITTER (PDIT, PDE)

PRESSURE SEALS

- SEAL ANNULAR
- SEAL DIAPHRAGM
- SEAL SANITARY

EXAMPLE

- PRESSURE SWITCH (PSH, PE)

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SHEET 50

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
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REGISTERED PROFESSIONAL ENGINEER — JAN R. VARLEY — No. 12829 — ELECTRICAL — STATE OF CALIFORNIA

APPROVED BY:
PE
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA — INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE: MARCH 2014	SCALE: AS SHOWN	PASADENA WATER & POWER, CITY OF PASADENA	SHEET NO SHTOF XX SHEETS
DRAWN BY: DKI		ARROYO SECO CANYON PROJECT	WORK ORDER: 03055
DESIGNED BY: DEB		SYMBOLS AND ABBREVIATIONS – IV	FILE NUMBER: 00NG-04 (E-1757)
CHECKED BY:			
SUBMITTED BY:			
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED
			REVISION

9137A10 9137A10 FILE NAME: 9137A1000NG004.dgn

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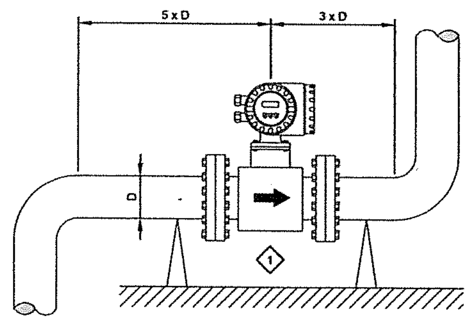


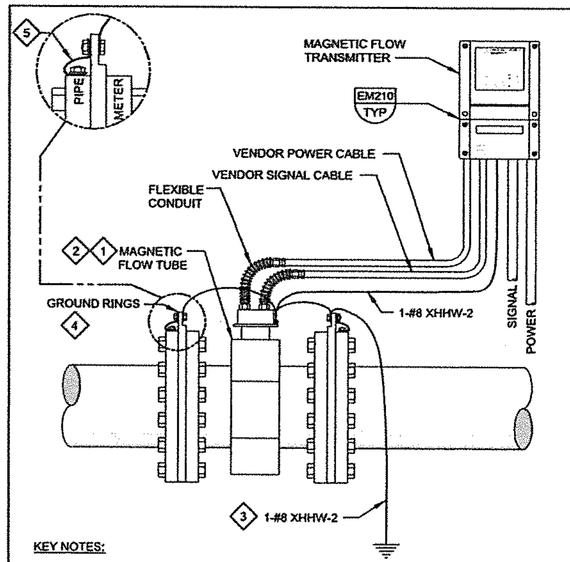
NOTES:

1. FOLLOW MANUFACTURER'S RECOMMENCED MAXIMUM TORQUE SETTING. DO NOT OVER-TORQUE FLANGE BOLTS. OVERTIGHTENING THE FASTENERS WILL DEFORM SEALING FACES OR DAMAGE THE LINE.
2. ALWAY TIGHTEN FLANGE BOLTS UNIFORMLY AND IN DIAGONALLY OPPOSITE SEQUENCE.
3. MOUNT METER SO THAT IT REMAINS FULLY FLOODED.
4. INSTALL METER SUCH THAT THERE ARE NO PIPE BENDS FOR 5 PIPE DIAMETERS UPSTREAM AND 3 PIPE DIAMETERS DOWNSTREAM OF THE METER.

KEY NOTES:

(1) PIPE SUPPORTS BY MECHANICAL CONTRACTOR. NO SUPPORTS SHALL BE INSTALLED AT THE METER HOUSING.

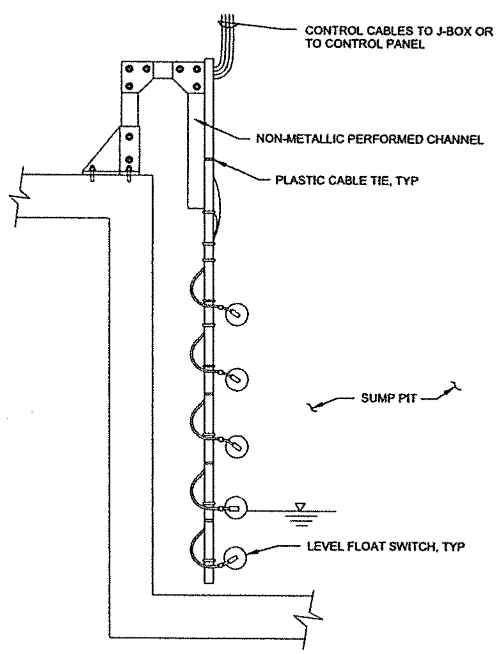
NF130 TYP S — MAGNETIC FLOW MOUNTING DETAIL



KEY NOTES:

(1) CONTRACTOR SHALL VERIFY ZERO POTENTIAL BETWEEN FLOW TUBE, EARTH GROUND AND TRANSMITTER GROUND TERMINAL.
(2) CONNECT TRANSMITTER GROUND TERMINAL TO GROUND RINGS.
(3) CONNECT METER BODY TO EARTH GROUND POTENTIAL.
(4) EQUALIZE POTENTIAL VIA GROUND RINGS BETWEEN FLUID AND MAGMETER.
(5) PROVIDE BONDING JUMPER ON CONDUCTIVE PIPES.

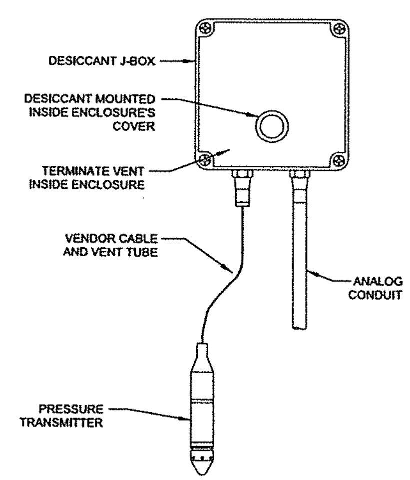
NF135 TYP S — REMOTE TRANSMITTER MAGNETIC FLOWMETER GROUNDING DETAIL



NOTES:

1. EXACT NUMBER OF FLOATS VARIES PER INSTALLATION, VERIFY WITH P&IDs.

NL107 TYP S — SUMP PUMP FLOAT MOUNTING DETAIL



NL132 TYP S — DROP-IN PRESSURE TRANSMITTER DESICCANT J-BOX DETAIL

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SHEET 51

X-XX

REVISION					
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LAST SAVED BY: dmada

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NAME PE #
APPROVED: DATE
APPROVED: DATE

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D.S.-206 TO 209
DATE: MARCH 2014 — SCALE: AS SHOWN
DRAWN BY: DKI
DESIGNED BY: DEB
CHECKED BY:
SUBMITTED BY:
FIELD BOOKS — CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
TYPICAL DETAILS - I
APPROVED — APPROVED

SHEET NO. OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 00NT-01 (E-1757)
REVISION

9137A10 9137A10 FILE NAME: 9137A1000NT01.dgn

SCADA

CONTROL PANEL

PLC I/O

OPERATOR INTERFACE/ CONTROL DEVICES

POWER SOURCE

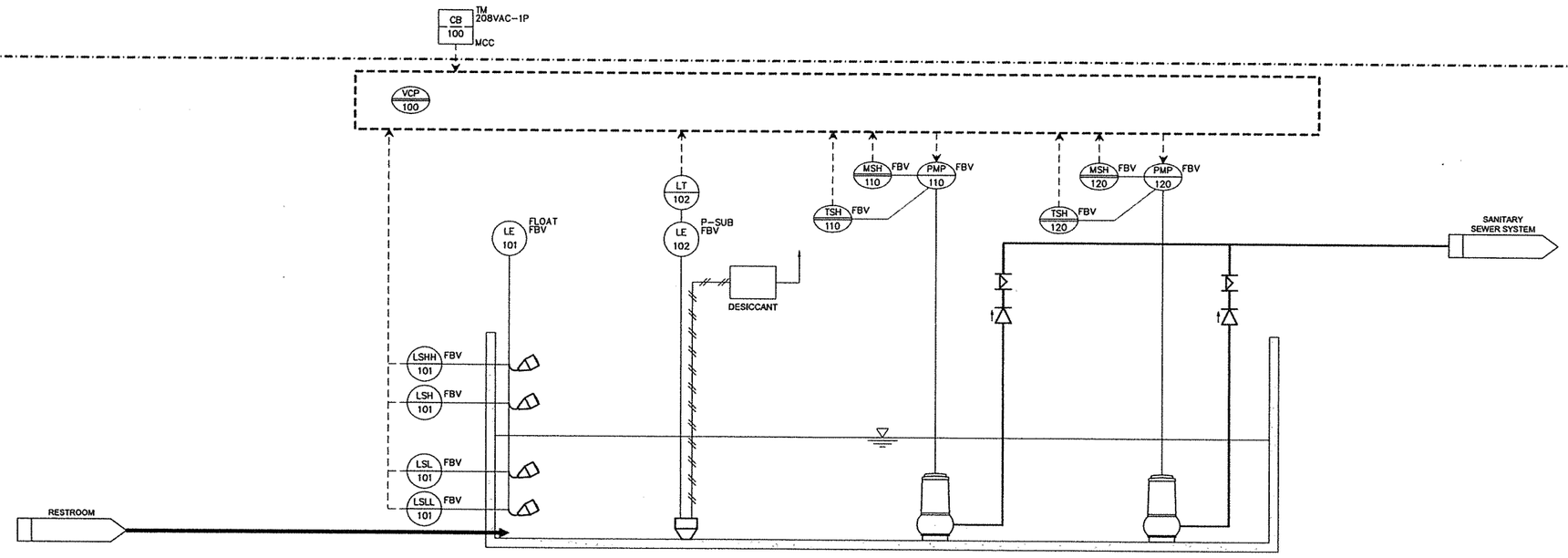
FIELD

GENERAL NOTES

1. SAMPLE

KEY NOTES

(1) SAMPLE



LE–101
RESTROOM SUMP LEVEL–FLOAT NL107 TYP

LE–102
RESTROOM LEVEL SUBMERSIBLE 0–12 FT NL132 TYP

PMP–110
RESTROOM SUMP PUMP NO. 1

PMP–120
RESTROOM SUMP PUMP NO. 2

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For Conditional Use Permit

SHEET 52

X–XX

LAST SAVED BY: dmada

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

REGISTERED PROFESSIONAL ENGINEER JOHN R. VARELA ELECTRICAL STATE OF CALIFORNIA

APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

carollo

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.–206 TO 209

DATE	MARCH 2014
SCALE	AS SHOWN
DRAWN BY	DKI
DESIGNED BY	DEB
CHECKED BY	
SUBMITTED BY	
FIELD BOOKS	
CALC BOOKS	
APPROVED	
APPROVED	

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
RESTROOM PUMPS

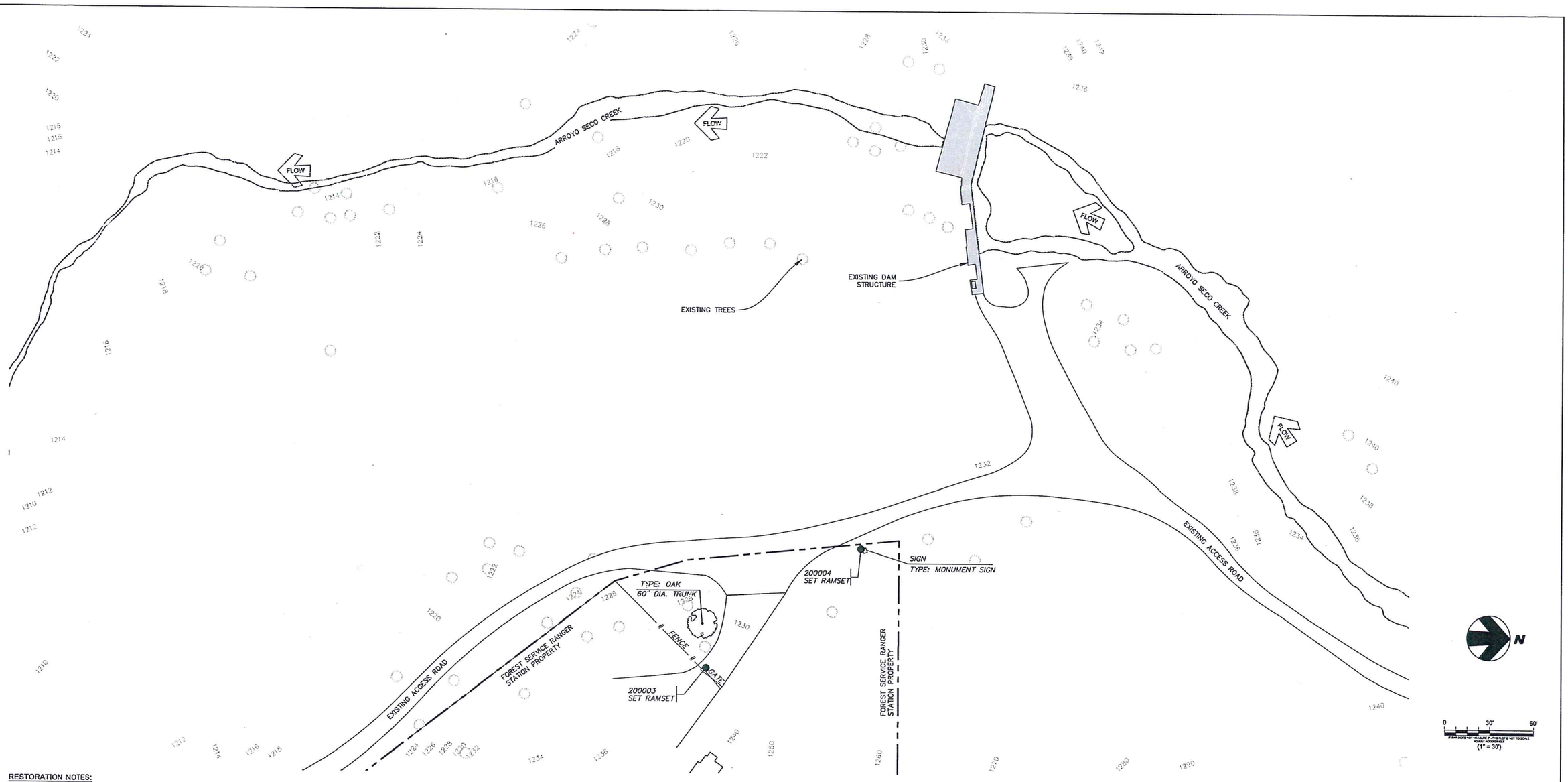
SHEET NO SHT OF XX SHEETS

WORK ORDER 03055

FILE NUMBER 10N–01 (E–1757)

REVISION

PROJECT NO. 9137A10 FILE NAME: 9137A1010N001.dwg



RESTORATION NOTES:

1. **RESOURCE PROTECTION:** THE CONTRACTOR IS ADVISED OF THE PRESENCE OF SENSITIVE RESOURCES LOCATED NEAR PROJECT WORK AREAS. THE LIMITS OF WORK ARE SHOWN ON THE DRAWINGS. ALL CONTRACTOR ACTIVITIES, INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION ACTIVITIES, VEHICLE MAINTENANCE, AND MATERIALS AND EQUIPMENT STORAGE AND STAGING, MUST BE STRICTLY CONFINED TO THE WORK AREAS SHOWN ON THE DRAWINGS. THE LIMITS OF WORK WILL BE CAREFULLY LOCATED IN THE FIELD BY THE CONTRACTOR AND ENGINEER OF RECORD, AND ALL WORK LIMIT AREAS WILL BE PROTECTED BY SILT FENCING AS SHOWN ON THE DRAWINGS.

SURVEY CONTROL POINTS:

POINT #	EASTING	NORTHING	ELEVATION
200003	1898819.7016	-6509963.5684	1231.5958
200004	1898923.1840	-6509883.5012	1231.1558

SURVEY DATUM:

HORIZONTAL: NAD83 CALIFORNIA STATE PLANE, ZONE V, US FOOT
VERTICAL: UNKONWN, CONFIRM WITH SURVEYOR

RESTORATION QUANTITIES QUANTITIES:

EARTHWORK CUT: 4000 CY
EARTHWORK FILL: 4000 CY
OFFHAUL: ~500 CY CONCRETE RUBBLE
IMPORT: 100 CY AB; 100 CY TOPSOIL;
950 CY RIPRAP;

DETAIL DRAWING DESIGNATION FOR AREA 1 SHEETS

X — DETAIL NO.
SHEET NO.

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SHEET 53

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

RECEIVED PROFESSIONAL ENGINEER — No. 59695 — 12-31-15 EXPIRES — CIVIL — STATE OF CALIFORNIA

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

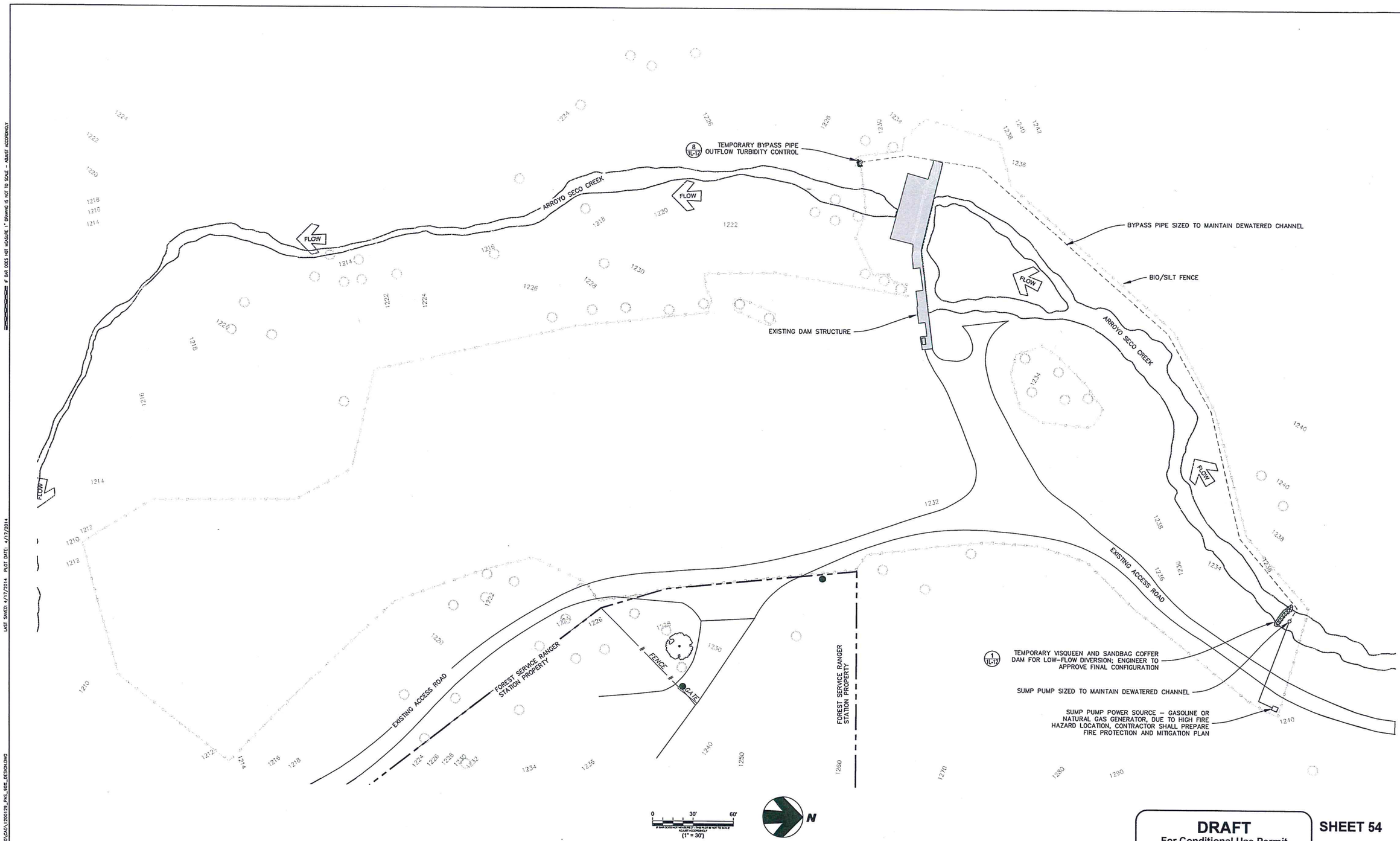
DATE	DECEMBER 2013	SCALE	AS SHOWN
DRAWN BY	JM		
DESIGNED BY	ST		
CHECKED BY	ST		
SUBMITTED BY			
FIELD BOOKS		CALC BOOKS	

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
AREA 1 EXISTING CONDITIONS & NOTES

SHEET NO XX OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 01L-01 (E-1757)
APPROVED
APPROVED
REVISION

P:\2012\1200129_PASADENA_ARROYO_SECO\CAD\1200129_PAS_90%_DESIGN.DWG
LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014 PLOT STYLE: QUESTA-GRAYSCALE-255.CTB
PORSCHE IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY



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SHEET 54

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
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REGISTERED PROFESSIONAL ENGINEER — No 59695 — 12-31-15 EXPIRES — CIVIL — STATE OF CALIFORNIA

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

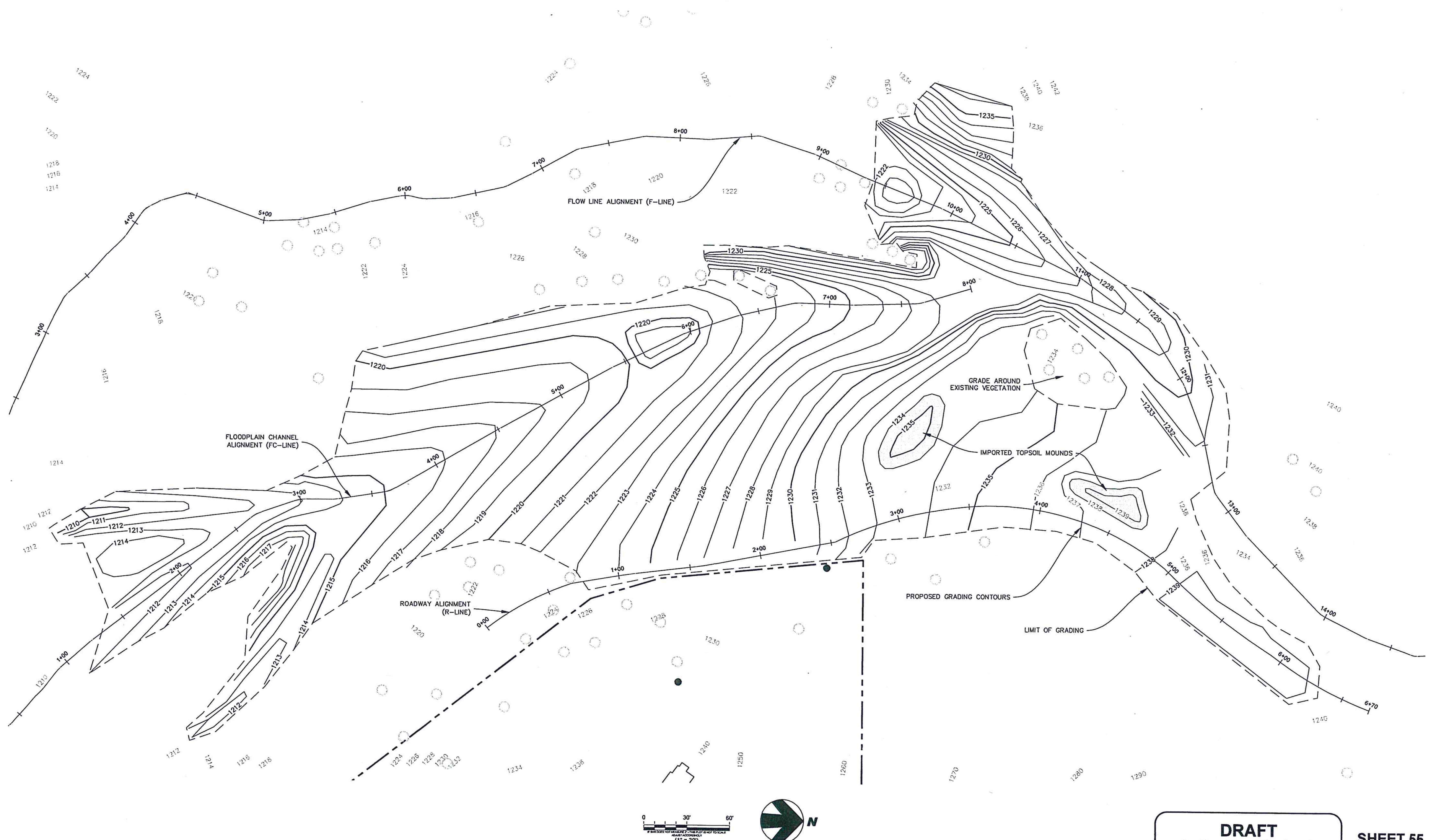
QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE DECEMBER 2013	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO XX OF XX SHEETS
DRAWN BY JM DESIGNED BY ST CHECKED BY ST SUBMITTED BY		ARROYO SECO CANYON PROJECT AREA 1 SITE PROTECTION AND DEWATERING	WORK ORDER 03055 / FILE NUMBER 01L-02 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN



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SHEET 55

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

APPROVED BY: PE #
NAME
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP

D.S.-206 TO 209
DATE: DECEMBER 2013 SCALE: AS SHOWN
DRAWN BY JM
DESIGNED BY ST
CHECKED BY ST
SUBMITTED BY
FIELD BOOKS CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
AREA 1 GRADING PLAN

APPROVED APPROVED

SHEET NO XX OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 01L-03 (E-1757)
REVISION

IF BAR DOES NOT MEASURE 1" ON THIS SHEET DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

LAST SAVED: 1/17/2014 PLOT DATE: 1/17/2014

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SHEET
01L-06

SHEET
01L-07

SHEET
01L-05

NEW NATURE TRAIL; CLEAR BRUSH/DEBRIS AND CONSTRUCT 3' WIDE FOOTPATH ON EXISTING GROUND

ROAD/TRAIL MAX SLOPE 5%; SURFACE 625' SEGMENT WITH 4" THICK GRAVEL FROM ONSITE COMPACTED TO 95%

WORK AROUND EXISTING VEGETATION

GRADING CONTOURS

EXISTING CULVERTS

0 30' 60'

N

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SHEET 56

X–XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

APPROVED BY:

PE

NAME

APPROVED: DATE

APPROVED: DATE

QUESTA ENGINEERING CORP

D.S.–206 TO 209

DATE	DECEMBER 2013	SCALE	AS SHOWN
DRAWN BY	JM		
DESIGNED BY	ST		
CHECKED BY	ST		
SUBMITTED BY			
FIELD BOOKS		CALC BOOKS	

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
AREA 1 RESTORATION AND LANDSCAPE OVERVIEW

APPROVED | APPROVED

SHEET NO XX OF XX SHEETS

WORK ORDER 03055 | FILE NUMBER 01L-04 (E–1757)

REVISION

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY

LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014

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LEGEND

- BOULDER REVETMENT
- BIO-BLOCK REVETMENT
- WILLOW BAFFLE
- IMPORTED TOPSOIL
- IMPORTED AGGREGATE BASE
- BOULDERS
- LARGE WOOD STRUCTURE
- FOREST SERVICE PROPERTY
- NATURE TRAIL
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE TO BE PRESERVED

6+00
7+00
2+00
3+00
4+00
5+00
12+00
13+00
14+00
1225
1226
1227
1228
1229
1230
1231
1232
1233
1234
1235
1236
1237
1238
1239
1240

1 TL-13 WILLOW BAFFLE
4 TL-12 COIR BIO-BLOCK REVETMENT
2 TL-13 STEPS
PARK BENCH 1 TL-16
PICNIC TABLES 1 TL-15
IMPORTED TOPSOIL
TWO-LOG LARGE WOOD STRUCTURES 5 TL-17
FLOW LINE ALIGNMENT
PARK BENCH 1 TL-16
1 TL-15 PICNIC TABLE
IMPORTED TOPSOIL
TRASH CAN WITH BEAR-PROOF LID; PILOT ROCK (WWW.PIOLOTROCK.COM) MODEL BPR2/CN-72 OR EQUIVALENT
1 TL-18 PARK BENCH
REVETMENT ENHANCEMENT LARGE WOOD STRUCTURES 1 TL-11
OVAL GALVANIZED STOCK TANK 2'X2'X4' WITH ALUMINUM AUTOMATIC FLOAT VALVE (FROM MARTIN RANCH SUPPLY OR EQUIVALENT)
EQUESTRIAN HITCHING RAIL 5 TL-13
ROADWAY ALIGNMENT
DOUBLE LEG PEDESTAL 1 TL-17
PLANTED BOULDER REVETMENT 5 TL-17

0 30' 60'
(1" = 30')

N

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SHEET 57

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

REGISTERED PROFESSIONAL ENGINEER — No 59695 — 12-31-15 — CIVIL — STATE OF CALIFORNIA

APPROVED BY:
PE # ____
NAME
APPROVED: ____ DATE
APPROVED: ____ DATE

QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209
DATE: DECEMBER 2013 | SCALE: AS SHOWN
DRAWN BY: JM
DESIGNED BY: ST
CHECKED BY: ST
SUBMITTED BY:
FIELD BOOKS | CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
PICNIC AREA FEATURES

APPROVED | APPROVED

SHEET NO XX OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 01L-05 (E-1757)
REVISION

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

LEGEND

- BOULDER REVETMENT
- BIO-BLOCK REVETMENT
- WILLOW BAFFLE
- IMPORTED TOPSOIL
- IMPORTED AGGREGATE BASE
- BOULDERS
- LARGE WOOD STRUCTURE
- FOREST SERVICE PROPERTY
- NATURE TRAIL
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE TO BE PRESERVED

FLOW LINE ALIGNMENT

8+00

9+00

10+00

11+00

FLOW CONSTRICTOR LARGE WOOD STRUCTURE; COMBINATION OF DIFFERENT LARGE WOOD STRUCTURES SHOWN ON SHEET 01L-11; STRUCTURE SHALL UTILIZE ~15 PIECES OF WOOD AND 250 TONS OF RIPRAP ROCK AND SHALL BE INSTALLED AS DIRECTED IN FIELD BY ENGINEER

COIR BIO-BLOCK REVETMENT (4 / 1L-12)

WILLOW BAFFLE (1 / 1L-13)

BOULDER CLUSTER (7 / 1L-12)

BOULDER CLUSTER WITH LOG (7 / 1L-12)

7+00

6+00

5+00

4+00

NEW NATURE TRAIL; CLEAR BRUSH/DEBRIS AND CONSTRUCT 3' WIDE FOOTPATH ON EXISTING GROUND

THREE-LOG FLOODPLAIN LARGE WOOD STRUCTURE (3 / 1L-11)

FLOOD CHANNEL ALIGNMENT

WILLOW BAFFLES (1 / 1L-13)

1220 1222 1225 1226 1227 1228 1230 1234 1235

0 30' 60'
(1" = 30')

N

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SHEET 58

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

REGISTERED PROFESSIONAL ENGINEER — No. 59995 — 12-31-15 EXPIRES — CIVIL — STATE OF CALIFORNIA

APPROVED BY:

NAME PE

APPROVED: DATE

APPROVED: DATE

QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	DECEMBER 2013
SCALE	AS SHOWN
DRAWN BY	JM
DESIGNED BY	ST
CHECKED BY	ST
SUBMITTED BY	
FIELD BOOKS	
CALC BOOKS	

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
POOL AND UPPER FLOODPLAIN FEATURES

APPROVED | APPROVED | REVISION

SHEET NO XX OF XX SHEETS

WORK ORDER 03055

FILE NUMBER 01L-06 (E-1757)

LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014

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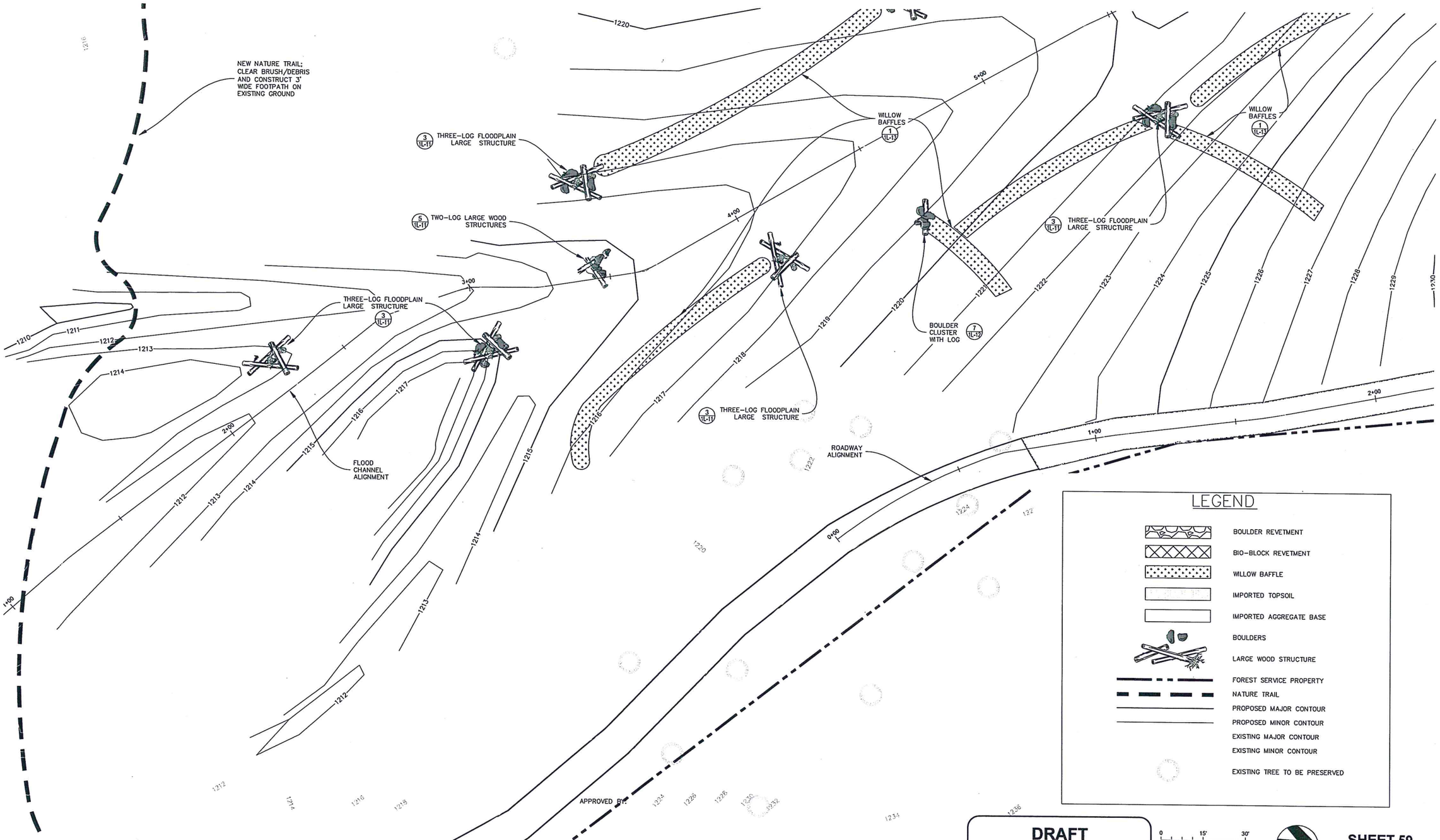
IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY



IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014

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X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
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PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

REGISTERED PROFESSIONAL ENGINEER No. 59695 12-31-15 EXPIRES CIVIL STATE OF CALIFORNIA

NAME PE
APPROVED: DATE
APPROVED: DATE

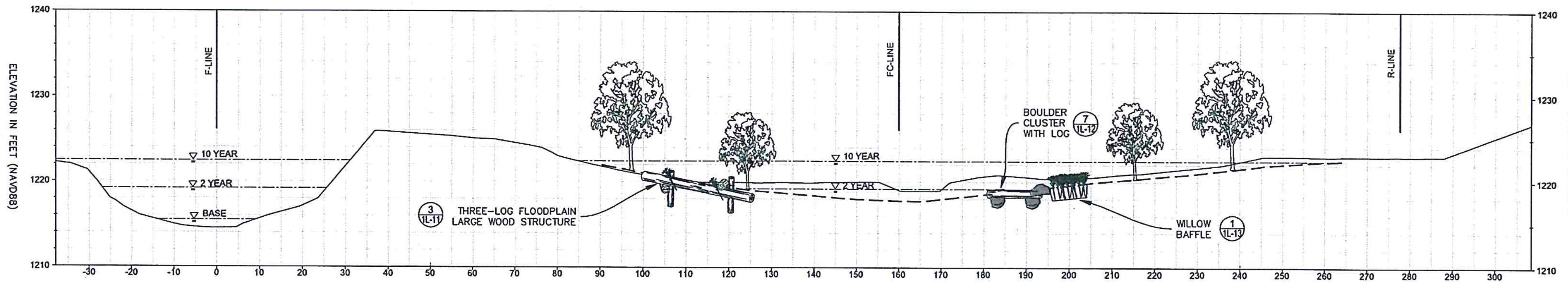
QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

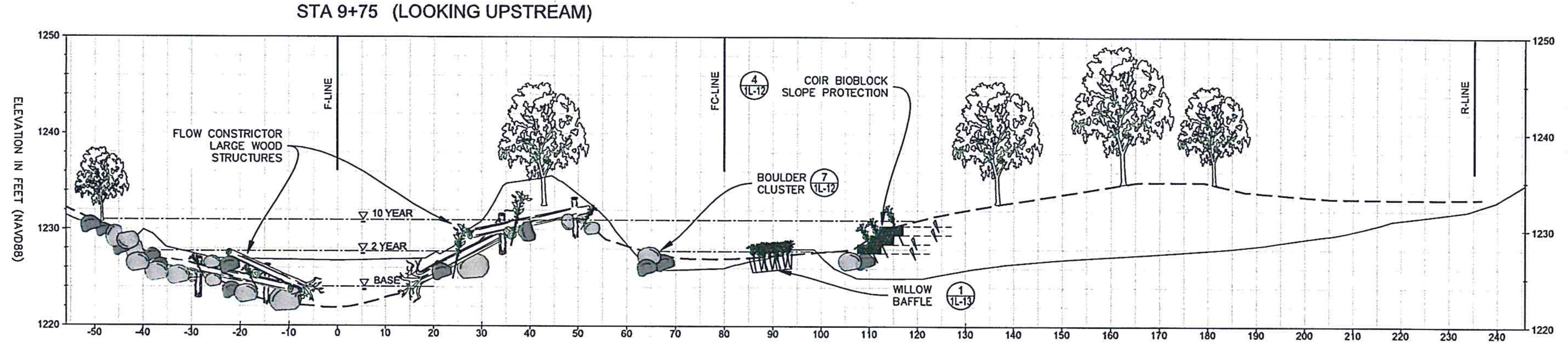
D.S.-206 TO 209

DATE DECEMBER 2013	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO XX OF XX SHEETS
DRAWN BY JM DESIGNED BY ST CHECKED BY ST SUBMITTED BY		ARROYO SECO CANYON PROJECT LOWER FLOODPLAIN FEATURES	WORK ORDER 03055 / FILE NUMBER 01L-07 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

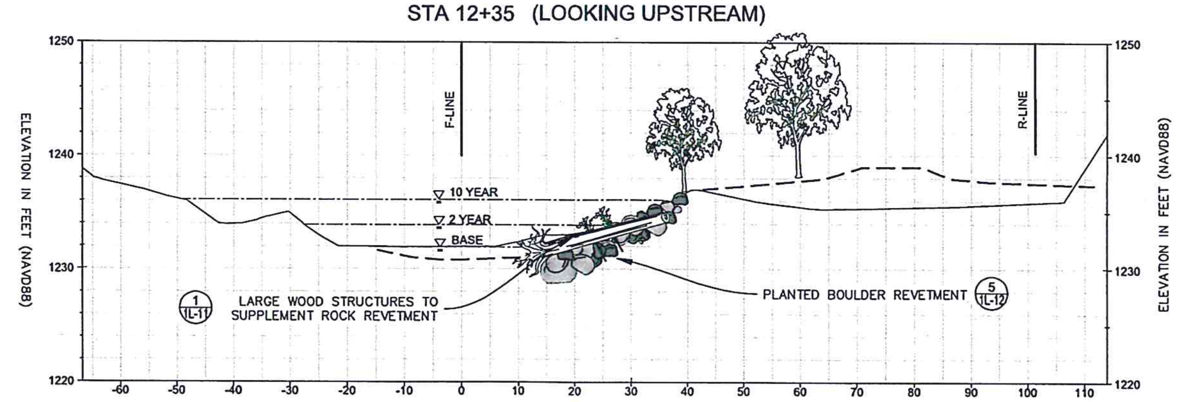
STA 6+55 (LOOKING UPSTREAM)



STA 9+75 (LOOKING UPSTREAM)



STA 12+35 (LOOKING UPSTREAM)



LEGEND

———	EXISTING GRADE
— — —	PROPOSED GRADE

HORIZONTAL SCALE: 0 15' 30' (1" = 15')

VERTICAL SCALE: 0 30' 60' (1" = 30')

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SHEET 60

X–XX

REVISION				
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

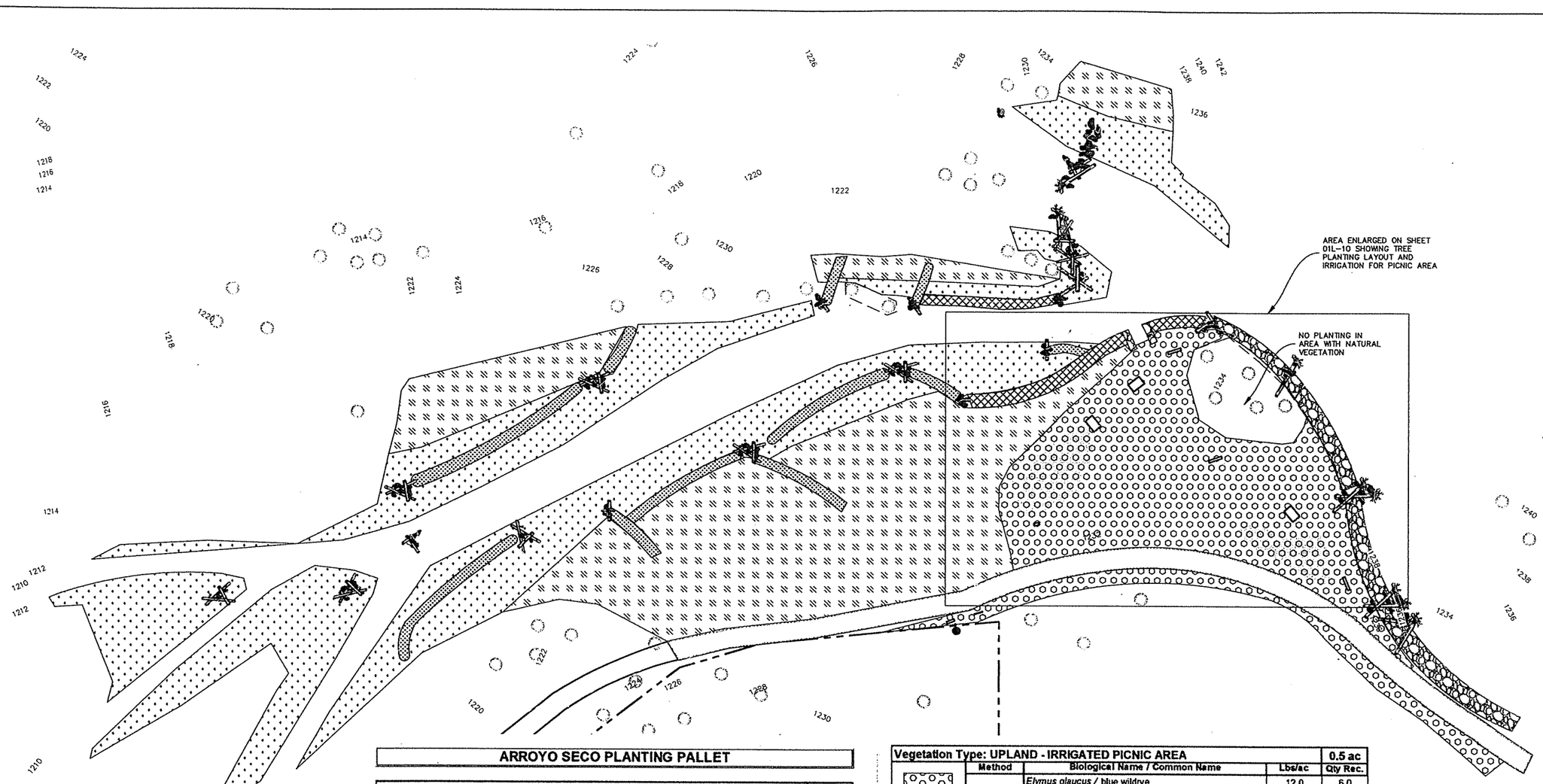
D.S.–206 TO 209
DATE: DECEMBER 2013 | SCALE: AS SHOWN
DRAWN BY JM
DESIGNED BY ST
CHECKED BY ST
SUBMITTED BY
FIELD BOOKS | CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
CROSS SECTIONS
APPROVED | APPROVED

SHEET NO XX OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 01L-08 (E-1757)
REVISION

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014



ARROYO SECO PLANTING PALLET

Vegetation Type: RIPARIAN FLOODPLAIN — 1.5 ac

Method	Biological Name / Common Name	Lbs/ac	Qty Rec.
Broadcast Seeded	*Atriplex argentea mohavensis* / Mohave orach	2.0	3.0
	Juncus bufonius / toad rush	7.0	10.5
	Deschampsia danthonioides / Annual hairgrass	5.0	7.5
	Ambrosia psilostachya / Western ragweed	2.0	3.0
	Baccharis salicifolia / Mulefat	12.0	18.0
	Alnus rhombifolia / White Alder	12.0	18.0
	Lastheniaca californica / California goldfields	2.0	3.0
	Total Pounds Seed:	**42.0**	**63.0**

Vegetation Type: NATURAL UPLANDS — 0.8 ac

Method	Biological Name / Common Name	Lbs/ac	Qty Rec.
Broadcast Seeded	*Elymus glaucus* / blue wildrye	20.0	16.0
	Artemisia californica / California sagebrush	4.0	3.2
	Deinandra fasciculata / Tarweed	2.0	1.6
	Eschoitzia californica / California Poppy	2.0	1.6
	Rosa californica / California wild rose	2.0	1.6
	Baccharis pilularis / Coyote Brush	6.0	4.8
	Ceanothus gnseus / Ceanothus	6.0	4.8
	Total Pounds Seed:	**42.0**	**33.8**

Vegetation Type: UPLAND - IRRIGATED PICNIC AREA — 0.5 ac

Method	Biological Name / Common Name	Lbs/ac	Qty Rec.
Broadcast Seeded	*Elymus glaucus* / blue wildrye	12.0	6.0
	Nasella pulchra / Purple Needlegrass	12.0	6.0
	Iris douglasiana / Pacific Coast Iris	4.0	2.0
	Bromus carinatus / California brome	12.0	6.0
	Total Pounds Seed:	**40.0**	**20.0**
Container D40	*Umbellularia californica* / California Bay	See Sh 01L-10	
	Quercus lobata / Valley Oak	See Sh 01L-10	
	Populus fremontii / Fremont Cottonwood	See Sh 01L-10	
	Platanus racemosa / Western Sycamore	See Sh 01L-10	
	Total Plants:	**42**	

Vegetation Type: WILLOW BAFFLES — 900'

Cutting Size	Biological Name/ Common Name	Spacing	Qty Rec.
6' to 14' Length; 1" to 2" Diameter	*Salix lasiolepis* / arroyo willow	1'	900
	Salix laevigata / red willow	1'	900
	Total Cuttings:		**1800**

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SHEET 61

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
NAME PE
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP.

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO XX OF XX SHEETS
DECEMBER 2013	AS SHOWN		
DRAWN BY JM		ARROYO SECO CANYON PROJECT	WORK ORDER 03055
DESIGNED BY ST		AREA 1 PLANTING PLAN	FILE NUMBER 01L-09 (E-1757)
CHECKED BY ST			
SUBMITTED BY			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014

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IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

IRRIGATION SYMBOLOGY AND MATERIALS:

STANDARD SYMBOL	DESCRIPTION	MANUFACTURER	MODEL # (if applicable)	COMMENTS	DETAIL (see sheet xx)
	Irrigation Trench - Mainline	Sch. 40 PVC		24" below fin. grade	1
	Irrigation Trench - Lateral line	Sch. 40 PVC		18" below fin. grade	1
	Sleeves	Class 315 PVC		24"/18" below fin. grade	1
	Quick-Coupling Valve (in box)	Rainbird	44LRC - 1" key		3
	Quick-Coupling Valve Box	Carson-Brooks	910 Lockable	10" Round box w/ lid	3
	Emitters*	Rainbird	Xeri-Bug 10-32 Threaded Inlet XB-20PC-1032	Four per tree	5
	Dripline Tubing	Rainbird	Black Stripe Tubing; 1/2" polyethylene pipe	Extend from lateral PVC and connect to emitter	5
	Gate Valve (in box)	Nibco	T-113		2
	Gate Valve Box	Carson	910 Lockable		2
	Remote Control Valve (in box)	Rainbird	XCZ-100-PRB-COM		4
	Remote Control Valve Box	Rainbird	Valve box with cover : Rainbird VB-STD		4

*Emitters not shown on plan

1 — STATION
9 — GALLONS/HR

POC — POINT OF CONNECTION (TO BE DETERMINED)

TREES TO BE PLANTED (D40 CONTAINERS):

OAK — Quercus lobata / Valley Oak (4 TOTAL)

SYC — Platanus racemosa / Western Sycamore (16 TOTAL)

COT — Populus fremontii / Fremont Cottonwood (16 TOTAL)

BAY — Umbellularia californica / California Bay (6 TOTAL)

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SHEET 62

X-XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

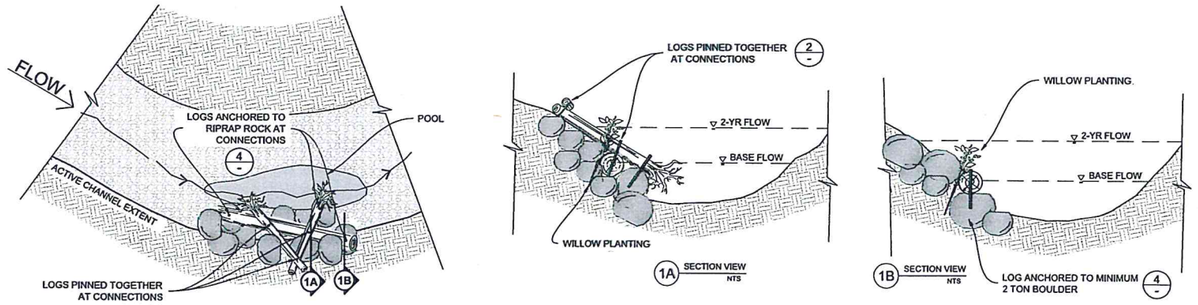
APPROVED BY:
NAME PE
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

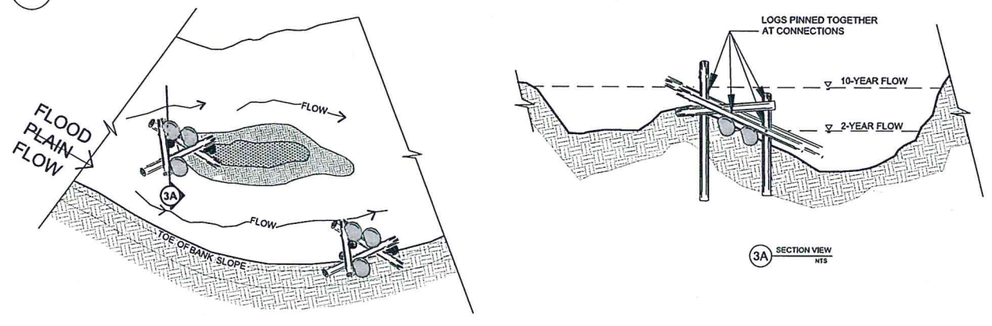
D.S.-206 TO 209

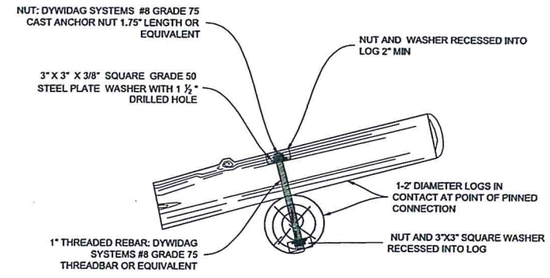
DATE: DECEMBER 2013	SCALE: AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO XX OF XX SHEETS
DRAWN BY: JM			
DESIGNED BY: ST		ARROYO SECO CANYON PROJECT	WORK ORDER: 03055
CHECKED BY: ST		PICNIC AREA IRRIGATION AND TREE PLANTING	FILE NUMBER: 01L-10 (E-1757)
SUBMITTED BY:			
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION



1 ROCK REVETMENT ENHANCEMENT LARGE WOOD STRUCTURE

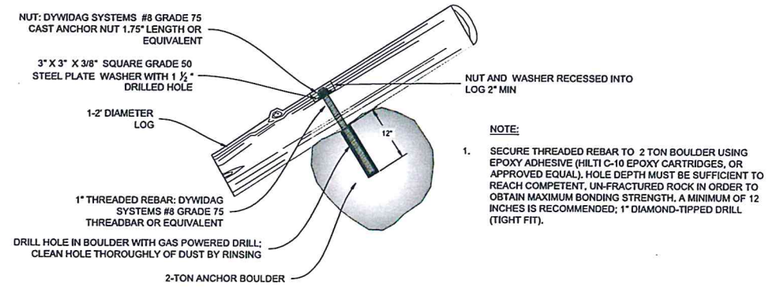
NTS





2 LOG-LOG ANCHORING

NTS

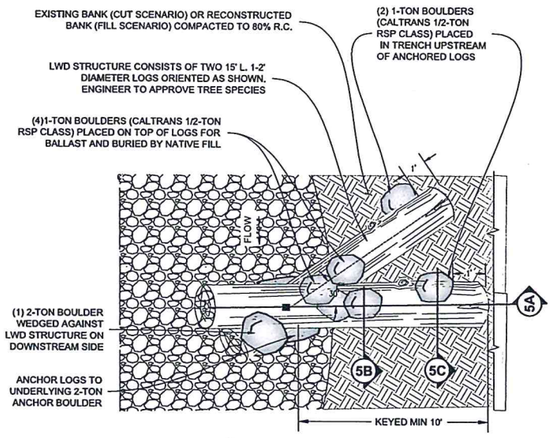


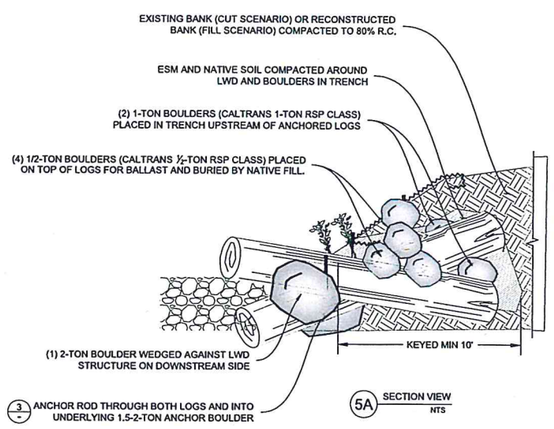
NOTE:

1. SECURE THREADED REBAR TO 2 TON BOULDER USING EPOXY ADHESIVE (HILTI C-10 EPOXY CARTRIDGES, OR APPROVED EQUAL). HOLE DEPTH MUST BE SUFFICIENT TO REACH COMPETENT, UN-FRACTURED ROCK IN ORDER TO OBTAIN MAXIMUM BONDING STRENGTH. A MINIMUM OF 12 INCHES IS RECOMMENDED; 1" DIAMOND-TIPPED DRILL (TIGHT FIT).

3 FLOODPLAIN THREE LOG LARGE WOOD STRUCTURE

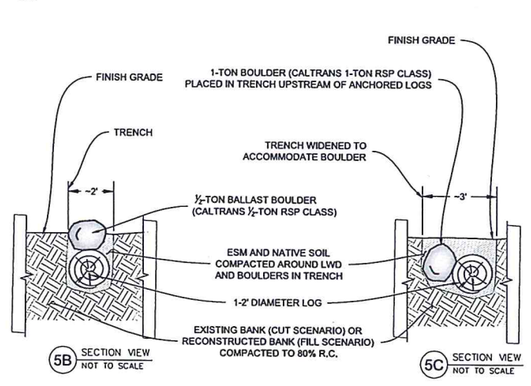
NTS





4 LOG-BOULDER ANCHORING

NTS



5 2-LOG LARGE WOOD STRUCTURE

NTS

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SHEET 63

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

APPROVED BY:
NAME PE
APPROVED: DATE
APPROVED: DATE

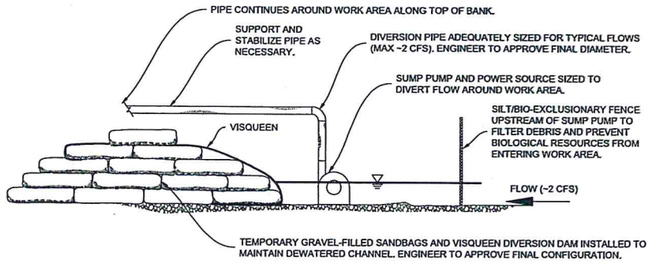
QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

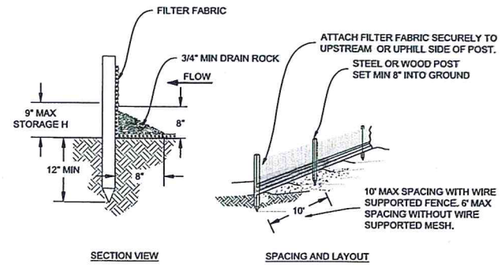
DATE DECEMBER 2013	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO XX OF XX SHEETS
DRAWN BY JM DESIGNED BY ST CHECKED BY ST SUBMITTED BY		ARROYO SECO CANYON PROJECT DETAILS - LARGE WOOD STRUCTURES	WORK ORDER 03055 / FILE NUMBER 01L-11 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN



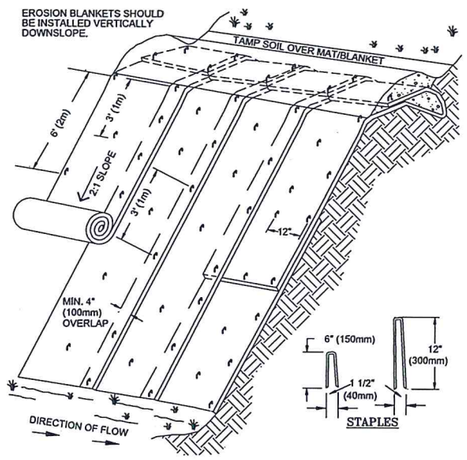
1 VISQUEEN AND SANDBAG COFFER DAM

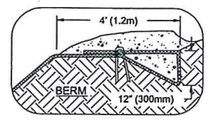
NTS



2 SILT/BIO-EXCLUSIONARY FENCING

NTS





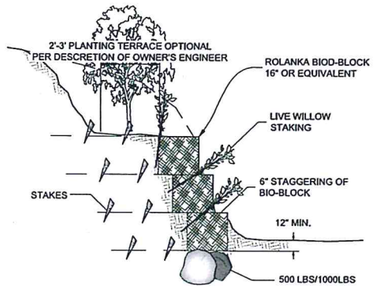
NOT TO SCALE

EROSION BLANKETS & TURF REINFORCEMENT MATS SLOPE INSTALLATION

NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/ BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

3 EROSION CONTROL FABRIC

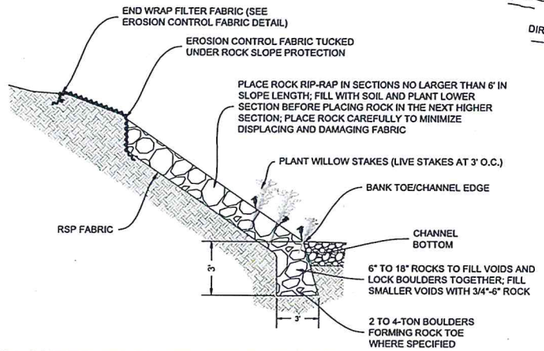
NTS



NOTE: KEY IN BIO-BLOCK UPSTREAM AND DOWNSTREAM EXTENT WITH BOULDER CLUSTER OR LARGE WOOD STRUCTURE

4 BANK STABILIZATION WILLOW BAFFLE DETAIL

NTS



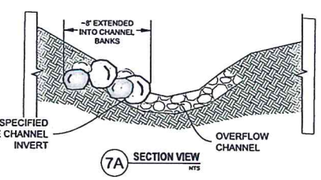
5 PLANTED ROCK REVETMENT DETAIL

NTS

BOULDERS CLUSTER
½ - 3 TON _____ 18" - 65"
TOTAL: 25 CY; 50 TN
ANCHOR BOULDERS FOR LARGE WOOD STRUCTURES
2 - 4 TON _____ 40" - 72"
TOTAL: 175 CY; 350 TN
ROCK REVETMENT
½ - 4 TON _____ 18" - 72"
TOTAL: 750 CY; 1500 TN
TOTAL VOLUME OF ROCK
BOULDERS (1/2 - 4 TON): 950 CY; 1900 TN BASE ROCK: 100 CY

6 ROCK SIZING AND VOLUMES

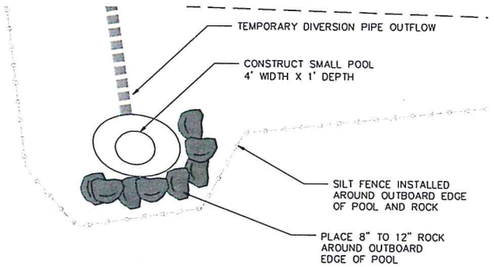
NTS



NOTE: WHERE SHOWN ON THE PLANS, INCORPORATE ONE LOG INTO BOULDER CLUSTER PER SHEET 13 DETAILS 4 & 5

7 BOULDER CLUSTER DETAIL

NTS



NOTE:
ENGINEER TO APPROVE FINAL CONFIGURATION OF DIVERSION OUTFLOW

7 DIVERSION PIPE OUTFLOW DETAIL

NTS

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SHEET 64

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

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PE #
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APPROVED: DATE
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QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	SCALE	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO XX OF XX SHEETS
DECEMBER 2013	AS SHOWN		
DRAWN BY JM DESIGNED BY ST CHECKED BY ST SUBMITTED BY		ARROYO SECO CANYON PROJECT DETAILS - CHANNEL AND BANK FEATURES	WORK ORDER 03055 FILE NUMBER 01L-12 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014

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IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014

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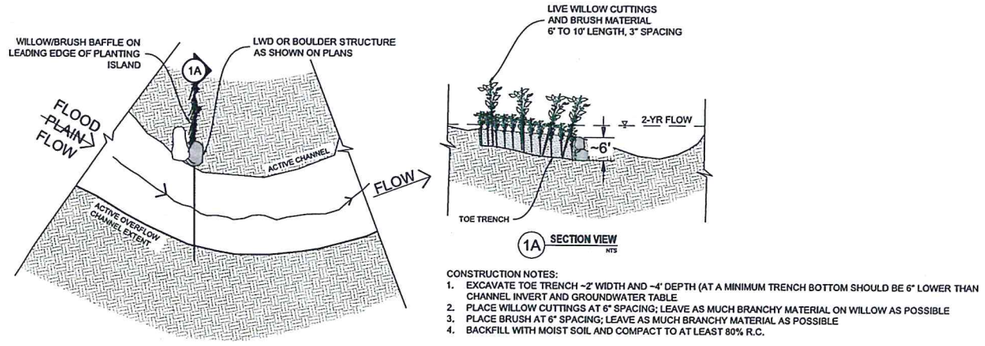
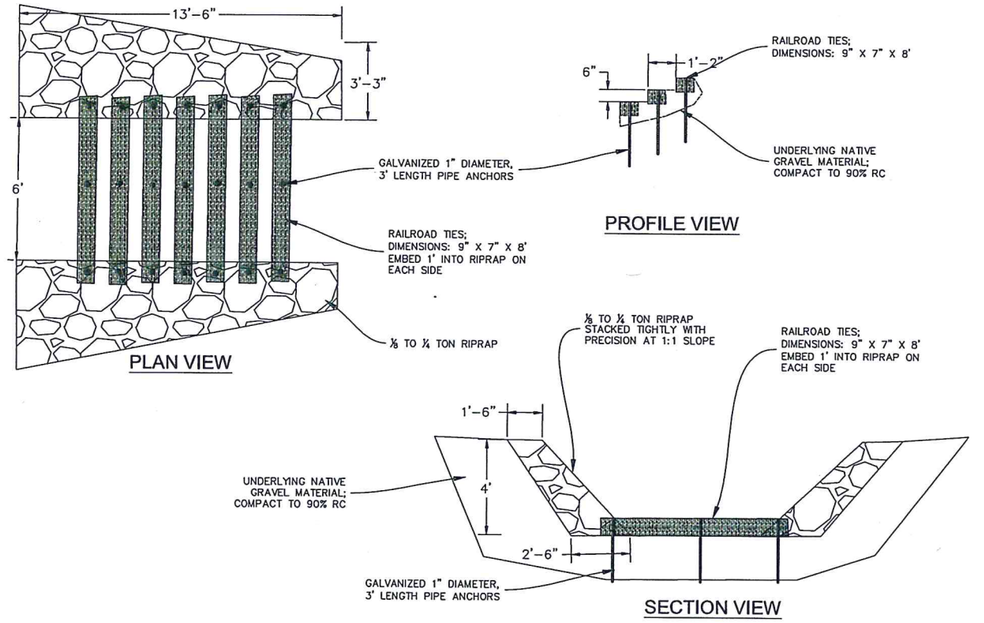


CONSTRUCTION NOTES:
1. EXCAVATE TOE TRENCH ~2' WIDTH AND ~4' DEPTH (AT A MINIMUM TRENCH BOTTOM SHOULD BE 6" LOWER THAN CHANNEL INVERT AND GROUNDWATER TABLE
2. PLACE WILLOW CUTTINGS AT 6" SPACING; LEAVE AS MUCH BRANCHY MATERIAL ON WILLOW AS POSSIBLE
3. PLACE BRUSH AT 6" SPACING; LEAVE AS MUCH BRANCHY MATERIAL AS POSSIBLE
4. BACKFILL WITH MOIST SOIL AND COMPACT TO AT LEAST 80% R.C.

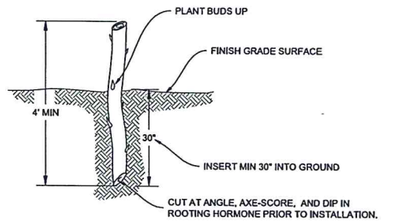
1 BANK STABILIZATION WILLOW BAFFLE DETAIL

NTS



2 TRAIL STEPS

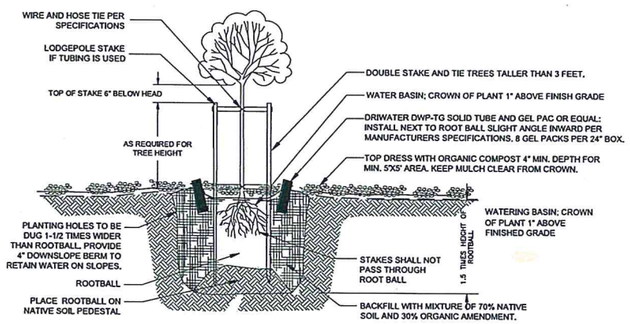
NTS



NOTE:
1. WILLOW STAKE SPECIES SHALL BE A MIX OF SPECIES PRESENT AT AND ADJACENT TO THE WORK SITE
2. CONTRACTOR RESPONSIBLE FOR PROVIDING SOURCE DOCUMENTATION TO ENGINEER
3. EACH STAKE SHALL BE 1.5" - 3" DIAMETER AT THE BOTTOM TO FACILITATE ROOT GROWTH AFTER TREATMENT WITH ROOTING HORMONE.
4. INSERT MIN 30" INTO GROUND
5. FOR WILLOW STAKES IN ROCK TOE AND WILLOW PLANTED RSP, INSTALL STAKES AND ROCK CONCURRENTLY AND THEN BACKFILL WITH NATIVE SOIL TO PROMOTE ROOTING

3 LIVE WILLOW CUTTINGS

NTS



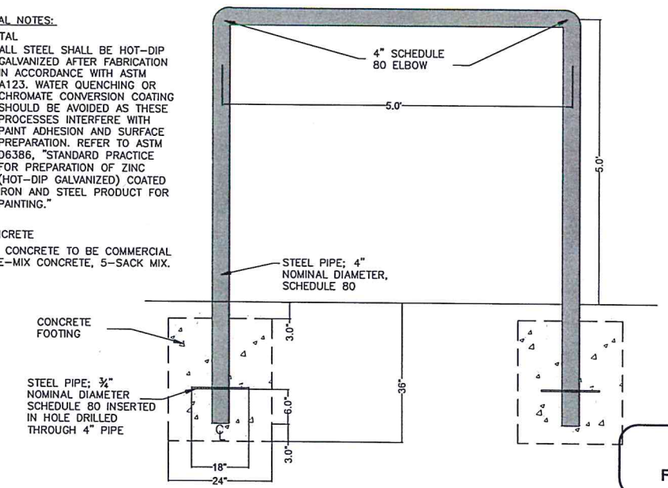
4 TREE PLANTING
TREE POTS

NTS

GENERAL NOTES:

A. METAL
1. ALL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. WATER QUENCHING OR CHROMATE CONVERSION COATING SHOULD BE AVOIDED AS THESE PROCESSES INTERFERE WITH PAINT ADHESION AND SURFACE PREPARATION. REFER TO ASTM D6386, "STANDARD PRACTICE FOR PREPARATION OF ZINC (HOT-DIP GALVANIZED) COATED IRON AND STEEL PRODUCT FOR PAINTING."

B. CONCRETE
1. CONCRETE TO BE COMMERCIAL PRE-MIX CONCRETE, 5-SACK MIX.



5 EQUESTRIAN HITCHING RAIL

NTS

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X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

REGISTERED PROFESSIONAL ENGINEER SIDNEY A. TYLER No. 59695 12-31-15 EXPIRES CIVIL STATE OF CALIFORNIA

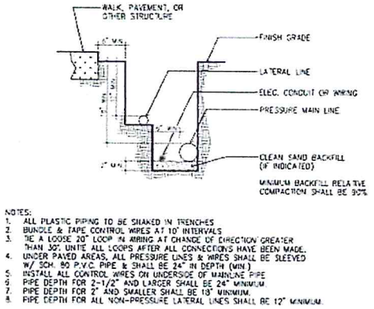
APPROVED BY:
NAME PE
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP.

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

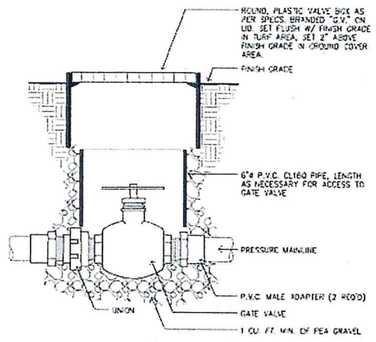
DATE DECEMBER 2013	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO XX OF XX SHEETS
DRAWN BY JM DESIGNED BY ST CHECKED BY ST SUBMITTED BY		ARROYO SECO CANYON PROJECT DETAILS - PLANTING & STEPS	WORK ORDER 03055 / FILE NUMBER 01L-13 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION



NOTES:
1. ALL PLASTIC PIPING TO BE SNAKED IN TRENCHES
2. BUNDLE & TAPE CONTROL WIRES AT 10' INTERVALS
3. TIE A LOOSE 20" LOOP IN WIRING AT CHANGE OF DIRECTION GREATER THAN 30°. UNTIE ALL LOOPS AFTER ALL CONNECTIONS HAVE BEEN MADE.
4. UNDER PAVED AREAS, ALL PRESSURE LINES & WIRES SHALL BE SLEEVED W/ SCH. 80 P.V.C. PIPE & SHALL BE 24" IN DEPTH (MIN.)
5. INSTALL ALL CONTROL WIRES ON UNDERSIDE OF MAINLINE PIPE
6. PIPE DEPTH FOR 2-1/2" AND LARGER SHALL BE 24" MINIMUM
7. PIPE DEPTH FOR 2" AND SMALLER SHALL BE 18" MINIMUM.
8. PIPE DEPTH FOR ALL NON-PRESSURE LATERAL LINES SHALL BE 12" MINIMUM.

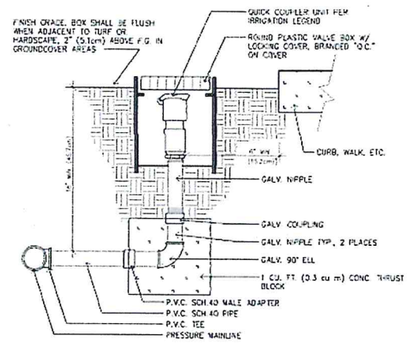
1 TRENCHING DETAILS

NTS



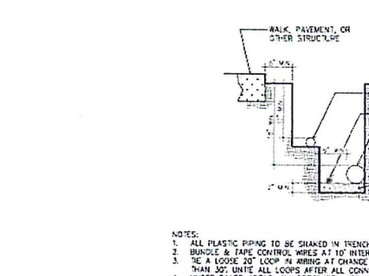
2 GATE VALVE DETAIL

NTS



3 QUICK CONNECT FAUCET AND VALVE

NTS



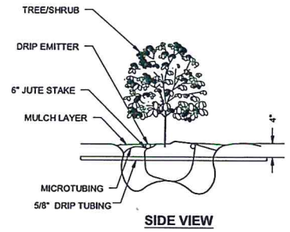
SIDE VIEW

1. FINISH GRADE
2. STANDARD VALVE BOX WITH COVER: RAIN BIRD VB-STD
3. WATERPROOF CONNECTION: RAIN BIRD DB SERIES
4. VALVE ID TAG
5. 30-INCH LINEAR LENGTH OF WIRE, COILED
6. PRESSURE REGULATING FILTER: RAIN BIRD PRF-100-RBY (INCLUDED IN XCZ-100-PRF KIT)
7. PVC SCH 40 FEMALE ADAPTOR
8. LATERAL PIPE
9. REMOTE CONTROL VALVE: RAIN BIRD 100-DV (INCLUDED IN XCZ-100-PRF KIT)
10. PVC SCH 40 TEE OR ELL TO MANIFOLD
11. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
12. MANIFOLD PIPE AND FITTINGS
13. HUNTER NODE-200 FIXED TO SIDE OF BOX

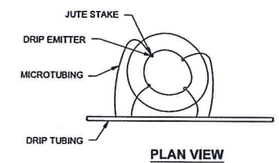
TOP VIEW

4 REMOTE CONTROL VALVE, BOX, FILTER/PRESSURE REGULATOR & CONTROLLER

NTS



SIDE VIEW



PLAN VIEW

5 DRIP IRRIGATION

NTS

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X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
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NAME PE #
APPROVED: DATE
APPROVED: DATE

D.S.-206 TO 209

DATE DECEMBER 2013	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO XX OF XX SHEETS
DRAWN BY JM DESIGNED BY ST CHECKED BY ST SUBMITTED BY 2014-2-24		ARROYO SECO CANYON PROJECT DETAILS - IRRIGATION	WORK ORDER 03055 / FILE NUMBER 01L-14 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED	APPROVED / REVISION

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014

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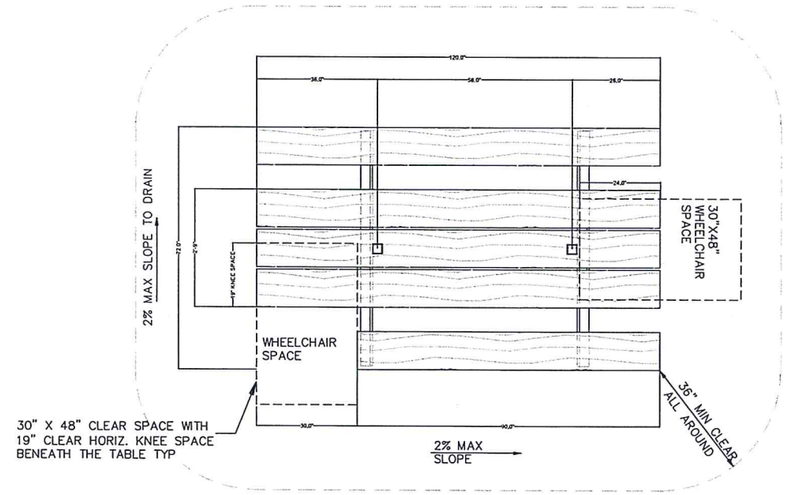
IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

ACCESSIBILITY NOTES

1. THE ACCESSIBLE PICNIC SITES MUST BE CONNECTED TO AN OUTDOOR RECREATION ACCESS ROUTE
2. THE ACCESSIBLE PICNIC SITES SHALL HAVE A SURFACE AREA WITH NO GREATER THAN A 2% SLOPE.
3. THE SURFACE AROUND THE ACCESSIBLE PICNIC TABLE SHALL BE FIRM AND STABLE.
4. WHEELCHAIR SPACE OF 30" X 48" SHALL BE PROVIDED AT ONE END OF THE PICNIC TABLE SO THAT A WHEELCHAIR USER MAY BE SEATED SHOULDER-TO-SHOULDER WITH AN INDIVIDUAL SEATED ON THE BENCH.
5. NUMBER OF WHEELCHAIR SEATING SPACES SHALL BE PROVIDED IN RELATION TO THE TABLE TOP PERIMETER. 25 LF TO 44LF TABLE TOP PERIMETER SHALL HAVE 2 WHEELCHAIR SEATING SPACES.

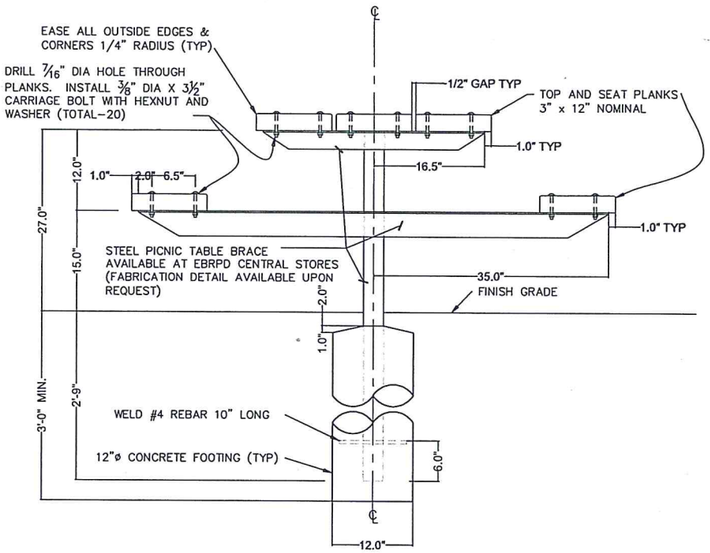


PLAN
SCALE: NO SCALE

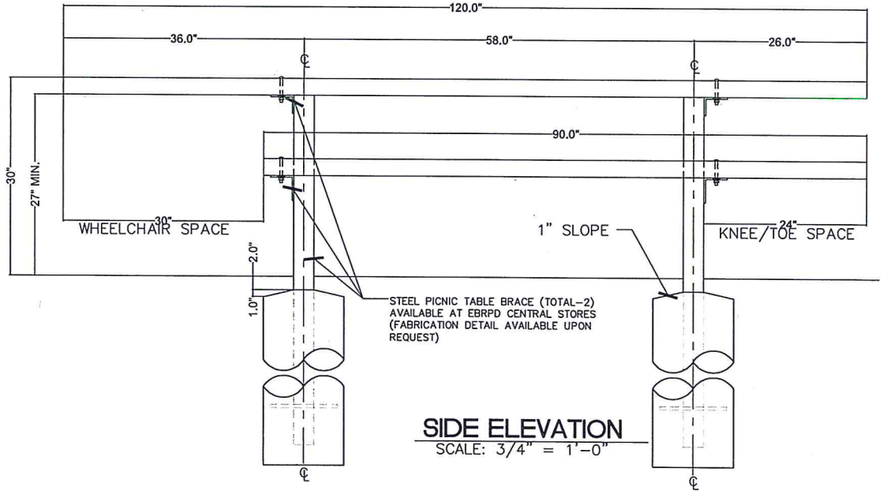
1 PICNIC TABLE PLAN VIEW
SCALE: NOT TO SCALE

GENERAL NOTES:

1. WOOD SHALL BE SUSTAINABLY HARVESTED, FSC CERTIFIED OR EQUIVALENT STANDARD CERTIFICATION SYSTEM. CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF ALL APPLICABLE ENVIRONMENTAL COMPLIANCE DOCUMENTATION FROM EITHER FOREST STEWARDSHIP COUNCIL (FSC) OR APPROVED EQUAL.; WESTERN RED CEDAR, NO.2 CLEAR OR BETTER, SEASONED DRY, DRESSED S4S, EE, 19% MAX MOISTURE CONTENT AT TIME OF DRESSING
2. CUT ENDS OF WOOD PLANKS SHALL BE EASED ¼" RADIUS (DURING TABLE INSTALLATION)
3. WOOD SHALL REMAIN UNFINISHED (DO NOT SEAL, STAIN OR PAINT) TO WEATHER NATURALLY TO A SILVER-GRAY PATINA.
4. FASTENERS SHALL BE HOTDIPPED GALVANIZED PER ASTM 153.
5. CONCRETE TO BE COMMERCIAL PRE-MIX CONCRETE, 5-SACK MIX.
6. PRIMING, PAINTING, AND/OR TOUCH-UP OF STEEL BRACE SHALL BE PER DISTRICT SPECIFICATIONS.
7. WESTERN RED CEDAR NOMINAL 3" x 12"
   - 3PCS. 3X12 X 10' LENGTH
   - 2PCS. 3X12 X 7'-6" LENGTH



END ELEVATION
SCALE: 1" = 1'-0"



SIDE ELEVATION
SCALE: 3/4" = 1'-0"

2 PICNIC TABLE DETAILS
SCALE: NOT TO SCALE

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X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
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APPROVED BY:
NAME PE
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP

D.S.-206 TO 209

DATE DECEMBER 2013	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO XX OF XX SHEETS
DRAWN BY JM DESIGNED BY ST CHECKED BY ST SUBMITTED BY		ARROYO SECO CANYON PROJECT DETAILS - PICNIC TABLE	WORK ORDER 03055 / FILE NUMBER 01L-15 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

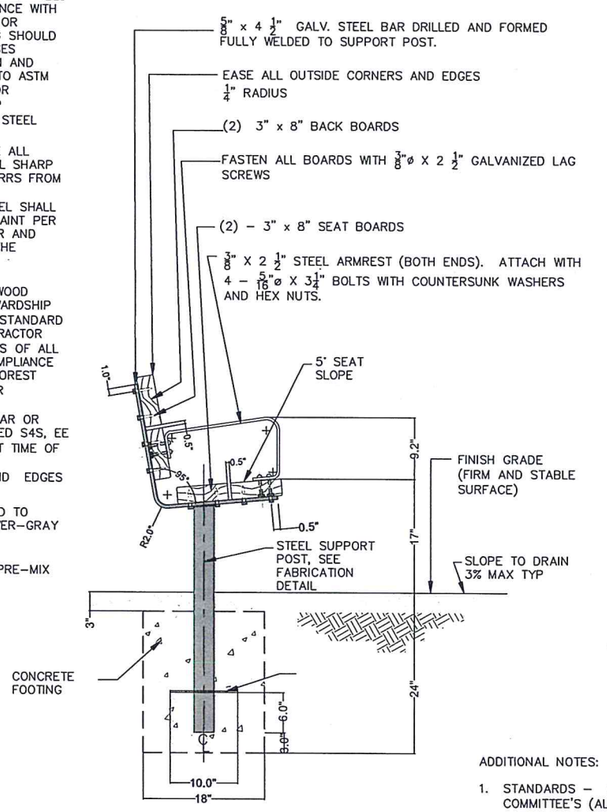
PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

GENERAL NOTES:

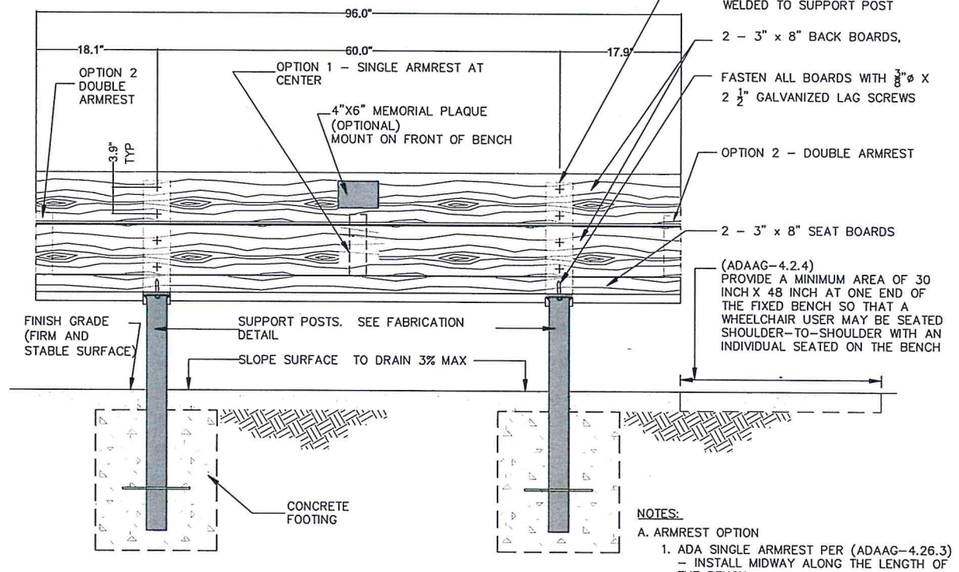
A. METAL
1. ALL STEEL SHALL BE HOT–DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. WATER QUENCHING OR CHROMATE CONVERSION COATING SHOULD BE AVOIDED AS THESE PROCESSES INTERFERE WITH PAINT ADHESION AND SURFACE PREPARATION. REFER TO ASTM D6386, "STANDARD PRACTICE FOR PREPARATION OF ZINC (HOT–DIP GALVANIZED) COATED IRON AND STEEL PRODUCT FOR PAINTING."
2. PRIOR TO GALVANIZING, REMOVE ALL FLASH FROM WELDS, RADIUS ALL SHARP CORNERS, AND REMOVE ALL BURRS FROM DRILLED AND CUT PIECES.
3. EXCEPT WHERE NOTED, ALL STEEL SHALL BE COATED WITH PRIMER AND PAINT PER DISTRICT SPECIFICATIONS. PRIMER AND PAINT SHALL BE SUPPLIED BY THE FABRICATOR.

B. WOOD
1. USE SUSTAINABLY HARVESTED WOOD CERTIFIED BY THE FOREST STEWARDSHIP COUNCIL (FSC) OR EQUIVALENT STANDARD CERTIFICATION SYSTEMS. CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF ALL APPLICABLE ENVIRONMENTAL COMPLIANCE DOCUMENTATION FROM EITHER FOREST STEWARDSHIP COUNCIL (FSC) OR APPROVED EQUAL.
2. WESTERN RED CEDAR, NO.2 CLEAR OR BETTER, SEASONED DRY, DRESSED S4S, EE
3. 19% MAX MOISTURE CONTENT AT TIME OF DRESSING
4. EASE ALL OUTSIDE CORNERS AND EDGES $\frac{1}{4}$" RADIUS
5. WOOD SHALL REMAIN UNFINISHED TO WEATHER NATURALLY TO A SILVER–GRAY PATINA.

C. CONCRETE
1. CONCRETE TO BE COMMERCIAL PRE–MIX CONCRETE, 5–SACK MIX.



1 **SECTION**
SCALE: NONE



2/37 **FRONT ELEVATION**
SCALE: NONE

NOTES:
A. ARMREST OPTION
1. ADA SINGLE ARMREST PER (ADAAG–4.26.3) – INSTALL MIDWAY ALONG THE LENGTH OF THE BENCH
2. DOUBLE ARMREST – INSTALL AT OPPOSITE ENDS OF THE BENCH AS SHOWN IN PLAN.

ADDITIONAL NOTES:

1. STANDARDS – COMPLY WITH DOC PS 20 AMERICAN SOFTWOOD LUMBER STANDARD AND WITH APPLICABLE GRADING RULES OF INSPECTION AGENCIES CERTIFIED BY AMERICAN LUMBER STANDARDS COMMITTEE'S (ALSC) BOARD OF REVIEW
2. INSPECTION AGENCIES: INSPECTION AGENCIES AND THE ABBREVIATIONS USED TO REFERENCE THEM, INCLUDE THE FOLLOWING:
   - NLGA – NATIONAL LUMBER GRADES AUTHORITY (CANADIAN)
   - WWPA – WESTERN WOOD PRODUCTS ASSOCIATION
4. GRADE STAMPS: PROVIDE LUMBER WITH EACH PIECE FACTORY MARKED WITH GRADE STAMP OF INSPECTION AGENCY EVIDENCING
5. COMPLIANCE WITH GRADING RULE REQUIREMENTS AND IDENTIFYING GRADING AGENCY, GRADE, SPECIES, MOISTURE CONTENT AT TIME OF SURFACING, AND MILL.
   - SPECIES AND GRADE: WESTERN RED CEDAR, A GRADE PER NLGA OR WWPA RULES.
6. WHEN UNSEASONED WOOD IS CUT THE END GRAINS SHALL BE BRUSHED TO DRIP WITH "ANCHORSEAL" EMULSION WAX END SEALER.
7. THE SURFACE AROUND THE ACCESSIBLE BENCH SHALL BE FIRM AND STABLE.
8. A MINIMUM AREA OF 30 INCHES X 48 INCHES SHALL BE PROVIDED AT ONE END OF THE FIXED BENCH SO THAT A WHEELCHAIR USER MAY BE SEATED SHOULDER–TO–SHOULDER WITH AN INDIVIDUAL SEATED ON THE BENCH
9. CLEAR SPACES SHALL HAVE A SLOPE THAT DOES NOT EXCEED 2% IN ANY DIRECTION (IF NECESSARY FOR PROPER DRAINAGE, 3% MAXIMUM IS ALLOWED).
10. IT IS RECOMMENDED THAT BENCHES BE PLACED 12 INCHES OFF ANY PATHWAY SO THAT A SEATED PERSON DOES NOT OBSTRUCT THE PATH OF TRAVEL.

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SHEET 68

X–XX

REVISION						
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE	
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION					

PROJECT NO. 1200129 FILE NAME: 1200129_PAS_90%_DESIGN

REGISTERED PROFESSIONAL ENGINEER SYDNEY A. LEGLER No. 59695 12–31–15 EXPIRES CIVIL STATE OF CALIFORNIA

APPROVED BY:
PE #
NAME
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP

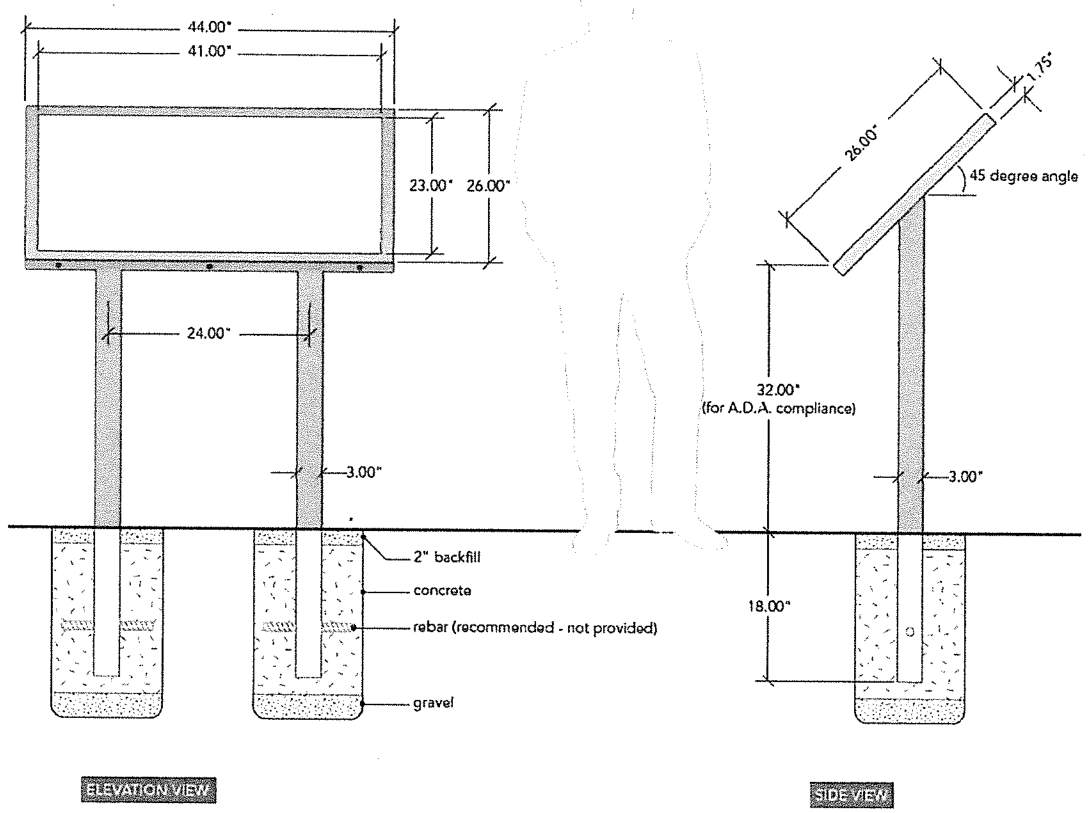
CITY OF PASADENA INCORPORATED JUNE 1886

D.S.–206 TO 209
DATE DECEMBER 2013 SCALE AS SHOWN
DRAWN BY JM
DESIGNED BY ST
CHECKED BY ST
SUBMITTED BY
FIELD BOOKS CALC BOOKS APPROVED APPROVED

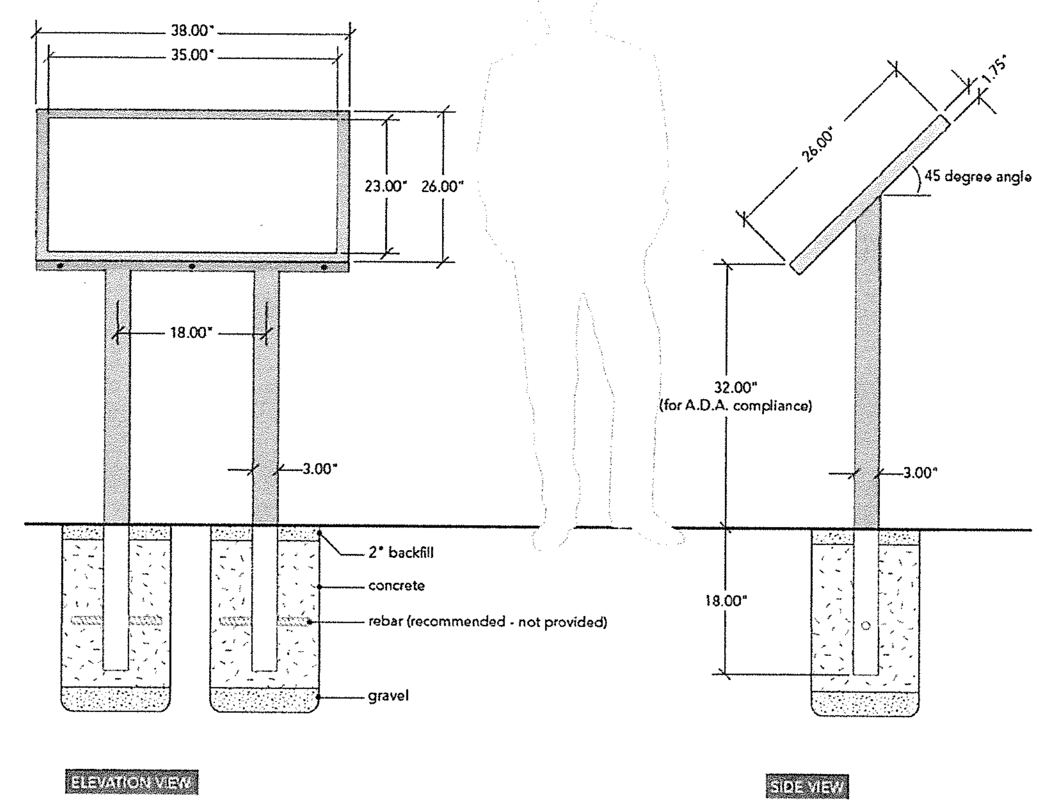
PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
DETAILS – PICNIC TABLE

SHEET NO XX OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 01L-16 (E–1757)
REVISION

LAST SAVED: 1/17/2014 PLOT DATE: 1/17/2014
P:\2012\1200129_PASADENA_ARROYO_SECO\CAD\1200129_PAS_90%_DESIGN.DWG
IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY



LARGE DOUBLE LEG PEDESTAL (CANTILEVER)
DIMENSIONS MAY VARY FROM ACTUAL
(NOT TO SCALE)



MEDIUM DOUBLE LEG PEDESTAL (CANTILEVER)
DIMENSIONS MAY VARY FROM ACTUAL
(NOT TO SCALE)

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SHEET 69

NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE
	90% DESIGN SUBMITTAL NOT FOR CONSTRUCTION				

REVISION

APPROVED BY: NAME PE # APPROVED: DATE APPROVED: DATE

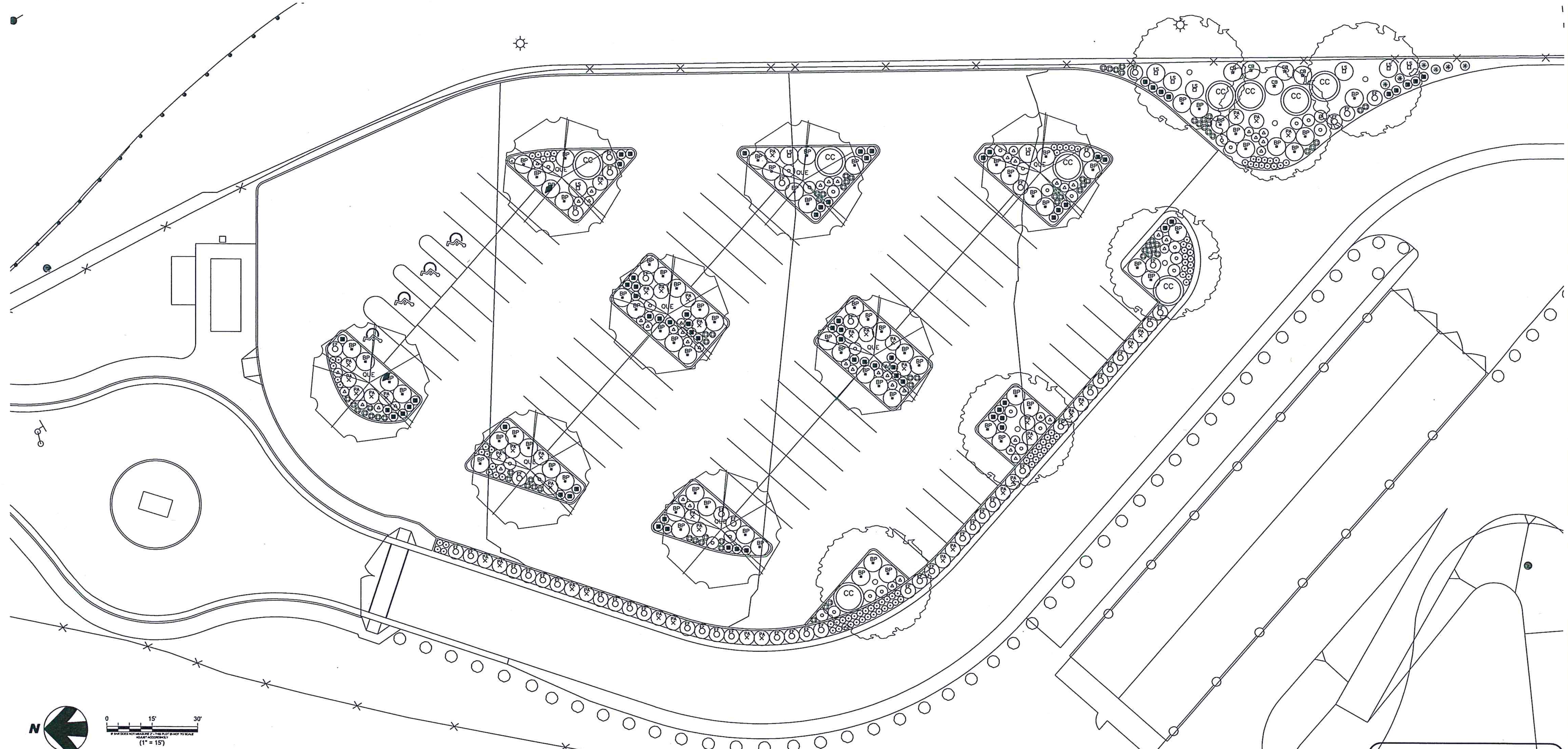
Carollo

D.S.-206 TO 209
DATE: MARCH 2014 | SCALE: AS SHOWN
DRAWN BY SDW | DESIGNED BY SJS | CHECKED BY JED | SUBMITTED BY SUB
FIELD BOOKS | CALC BOOKS | APPROVED | APPROVED

PASADENA WATER & POWER
CITY OF PASADENA
ARROYO SECO CANYON PROJECT
SIGN DETAIL

SHEET NO – OF XX SHEETS
WORK ORDER 03055
FILE NUMBER 01L-17 E-1757
REVISION

9137A10 9137A10 FILE NAME: 9137A1003D01.dgn



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PLANT LEGEND

TREES:

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	HEIGHT (FT)	SPREAD (FT)
PLA	*PLATANUS RAACEMOSE*	SYCAMORE	6	24" BOX	40	40
QUE	*QUERCUS AGRIFOLIA*	COAST LIVE OAK	8	24" BOX	40	40
		TOTAL TREES:	14			

SHRUBS:

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	HEIGHT (FT)	SPREAD (FT)
CC	*CEANOTHUS CRASSIFOLIUS*	HOARYLEAF CEANOTHUS	9	5 G	10	10
CB	*CERCOCARPUS BETULOIDES*	MOUNTAIN MAHOGANY	5	5 G	15	6
EF	*ERIOGONUM FASICULATUM*	BUCKWHEAT	50	1 G	3	5
ET	*ERIODICTYON TRICHOCALYX*	HAIRY YERBA SANTA	50	1 G	5	3
LS	*LEPIDOSPARTUM SQUAMATUM*	SCALE BROOM	9	1 G	4	6
PA	*PERITOMA ARBOREA*	BLADDERPOD	42	1 G	4	5
		TOTAL SHRUBS:	165			

GROUNDCOVER:

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	HEIGHT (FT)	SPREAD (FT)
BP	*BACCHARIS PILUARIS CONSANGUINEA 'POZO SURF'*	PROSTRATE COYOTE BRUSH	72	5 G	2	6
CP	*CYLINDROPUNTIA CALIFORNICA VAR. PARKERI*	VALLEY CHOLLA	6	1 G	2	3
EC	*ESCHSCHOLZIA CALIFORNICA*	CALIFORNIA POPPY	70	1 G	1	2
PH	*PENSTEMON HETEROPHYLLUSVAR. AUSTRALIS*	FOOTHIL PENSTEMON	97	1 G	2	2
PS	*PENSTEMON SPECTABILIS*	SHOWY PENSTEMON	71	1 G	3	3
SA	*SALVIA APIANA*	WHITE SAGE	30	1 G	3	4
		TOTAL GROUNDCOVER:	346			

NOTE:
ENTIRE PLANTING AREA TO RECEIVE SHEET MULCHING WITH 3" MIN DEPTH OF MULCH ON OF CARDBOARD LAYER.

SHEET 70

X–XX

REVISION

NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE

REGISTERED PROFESSIONAL ENGINEER SYDNEY A. TEMPLE No. 59695 12-31-15 EXPIRES CIVIL STATE OF CALIFORNIA

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

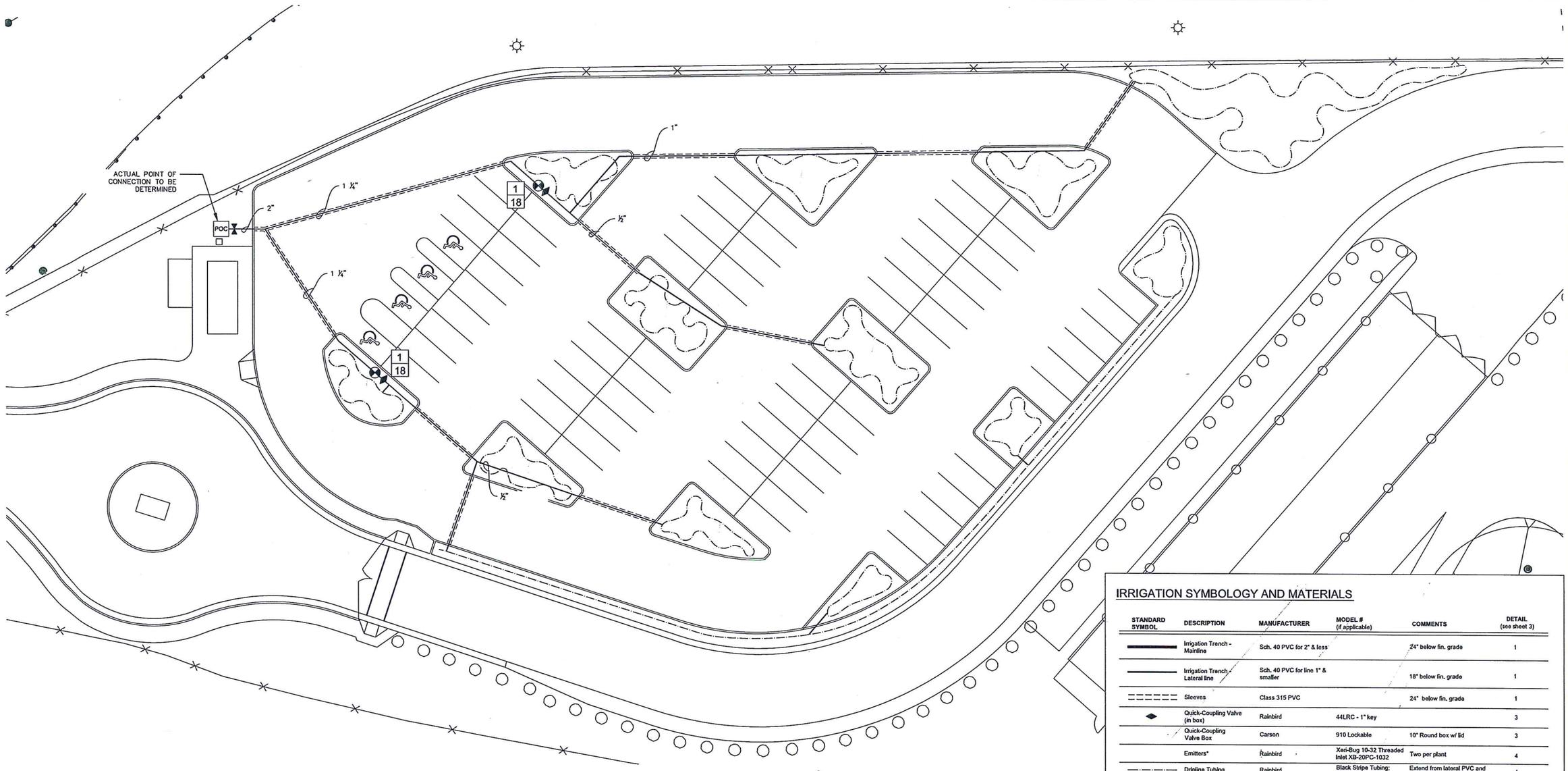
D.S.–206 TO 209
DATE: MARCH 2014
SCALE: AS SHOWN
DRAWN BY: OR
DESIGNED BY: ST
CHECKED BY: ST
SUBMITTED BY:
FIELD BOOKS
CALC BOOKS

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
AREA 3 PLANTING PLAN

APPROVED
APPROVED

SHEET NO OF XX SHEETS
WORK ORDER: 03055
FILE NUMBER: 03L-01 (E–1757)
REVISION



IRRIGATION SYMBOLOGY AND MATERIALS

STANDARD SYMBOL	DESCRIPTION	MANUFACTURER	MODEL # (if applicable)	COMMENTS	DETAIL (see sheet 3)
	Irrigation Trench - Mainline	Sch. 40 PVC for 2" & less		24" below fin. grade	1
	Irrigation Trench - Lateral line	Sch. 40 PVC for line 1" & smaller		18" below fin. grade	1
	Sleeves	Class 315 PVC		24" below fin. grade	1
	Quick-Coupling Valve (in box)	Rainbird	44LRC - 1" key		3
	Quick-Coupling Valve Box	Carson	910 Lockable	10" Round box w/ lid	3
	Emitters*	Rainbird	Xeri-Bug 10-32 Threaded Inlet XB-20PC-1032	Two per plant	4
	Dripline Tubing	Rainbird	Black Stripe Tubing; 1/2" polyethylene pipe	Extend from lateral PVC and connect to emitter	4
	Gate Valve (in box)	Nibco	T-113		5
	Gate Valve Box	Carson	910 Lockable		5
	Remote Control Valve (in box)	Rainbird	XCZ-100-PRB-COM		4
	Remote Control Valve Box	Rainbird	Valve box with cover : Rainbird VB-STD		4

*Emitters not shown on plan

1 — STATION
9 — GALLONS/MIN

POC — POINT OF CONNECTION (TO BE DETERMINED)

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SHEET 71

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE

REGISTERED PROFESSIONAL ENGINEER — SIDNEY A. TOMLINSON — No. 59695 — EXPIRES 12-31-15 — CIVIL — STATE OF CALIFORNIA

APPROVED BY:
NAME PE #
APPROVED: DATE
APPROVED: DATE

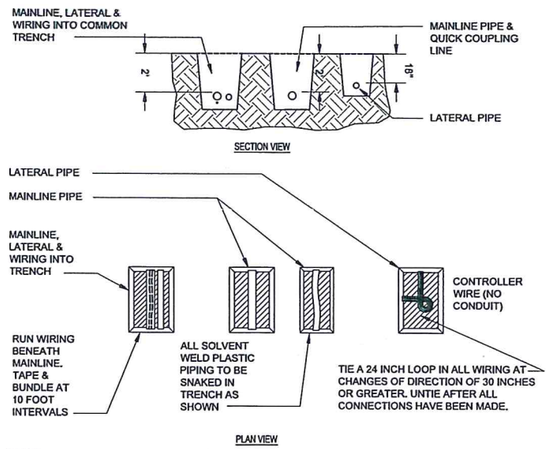
QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

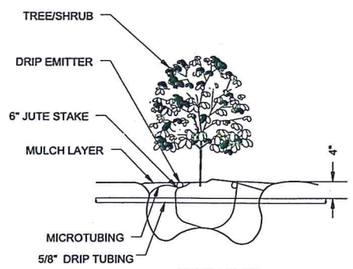
DATE MARCH 2014	SCALE AS SHOWN	PASADENA WATER & POWER CITY OF PASADENA	SHEET NO OF XX SHEETS
DRAWN BY OR DESIGNED BY ST CHECKED BY ST SUBMITTED BY		ARROYO SECO CANYON PROJECT AREA 3 IRRIGATION PLAN	WORK ORDER 03055 / FILE NUMBER 03L-02 (E-1757)
FIELD BOOKS	CALC BOOKS	APPROVED / APPROVED	REVISION

P:\2012\120129_PASADENA_ARROYO_SECO\CAD\120129_AREA_3_PARKING AREA_PLANTING.DWG
LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014
IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

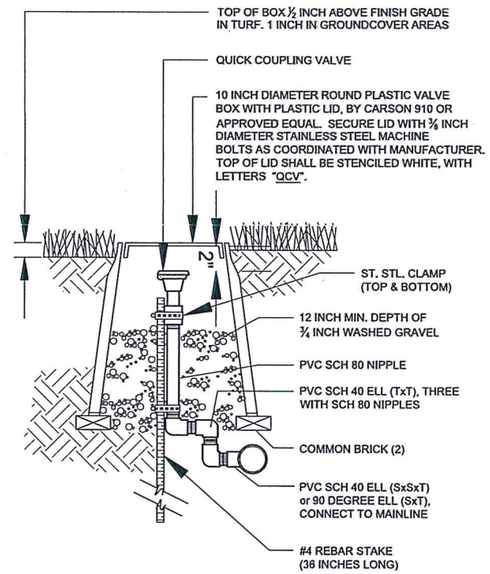


NOTES:
1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH CLASS 315 PVC TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN; BURIAL DEPTH FOR SLEEVES BELOW FINISHED GRADE ARE AS FOLLOWS:
   - 42 INCH MINIMUM UNDER THOROUGHFARE
   - 24 INCH MINIMUM UNDER PLANTER AREA
   - 24 INCH MINIMUM UNDER PARKING LOT
   - 18 INCH MINIMUM UNDER SIDEWALK
   - 36 INCH MINIMUM UNDER TRAFFIC CIRCLES (RESIDENTIAL AREAS)
2. ALL SLEEVE BELOW HARDSCAPE SHALL EXTEND 24 INCHES BEYOND HARD SURFACES EDGES.
3. FOR PIPE AND WIRE BURIAL DEPTHS, SEE SPECIFICATIONS.
4. SCH 40 PVC FOR MAINLINE 2 INCHES OR SMALLER.
5. CLASS 315 PVC FOR MAINLINE 2½ INCHES AND LARGER.
6. CLASS 200 PVC FOR 2 INCH LATERAL LINES AND SMALLER.
7. SCH 40 PVC FOR QUICK COUPLING LINE 1 INCH MIN. TO 2 INCH MAXIMUM
8. TRENCH BACKFILL SHALL BE NATIVE MATERIAL. COMPACT TO 90% MINIMUM, RELATIVE COMPACTION.

1 IRRIGATION TRENCHING
N.T.S.



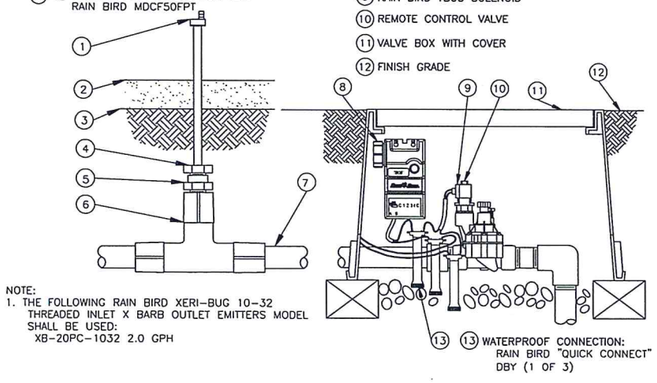
2 ON-SURFACE DRIPLINE RISER ASSEMBLY
N.T.S.



NOTE:
1. CONTRACTOR SHALL PROVIDE:
   - (2) VALVE KEYS
   - (2) SWIVEL HOSE-ELLS
2. ALL BOXES SHALL BE OFFSET 12 INCHES FROM ANY SIDEWALK, CURB OR HEADER.

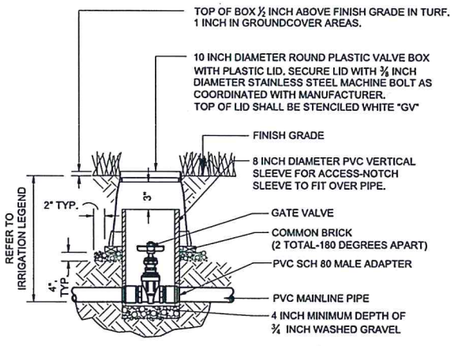
3 QUICK COUPLING VALVE AND BOX
N.T.S.

1. SINGLE-OUTLET 10-32 THREADED INLET X BARB OUTLET EMITTER: RAIN BIRD XERI-BUG 1032 EMITTER
2. TOP OF MULCH
3. FINISH GRADE
4. POLYFLEX RISER AND ADAPTER ASSEMBLY: RAIN BIRD PFR-FRA
5. ½" FEMALE PIPE THREAD ADAPTER: RAIN BIRD MDCF50FPT
6. ½" COMPRESSION FITTING TEE: RAIN BIRD MDCFTEE
7. ½" POLYETHYLENE TUBING: RAIN BIRD XF SERIES TUBING OR RAIN BIRD XT-700 XERI-TUBE OR RAIN BIRD XBS BLACK STRIPE TUBING
8. RAIN BIRD TBOS CONTROL MODULE
9. RAIN BIRD TBOS SOLENOID
10. REMOTE CONTROL VALVE
11. VALVE BOX WITH COVER
12. FINISH GRADE
13. WATERPROOF CONNECTION: RAIN BIRD "QUICK CONNECT" DBY (1 OF 3)

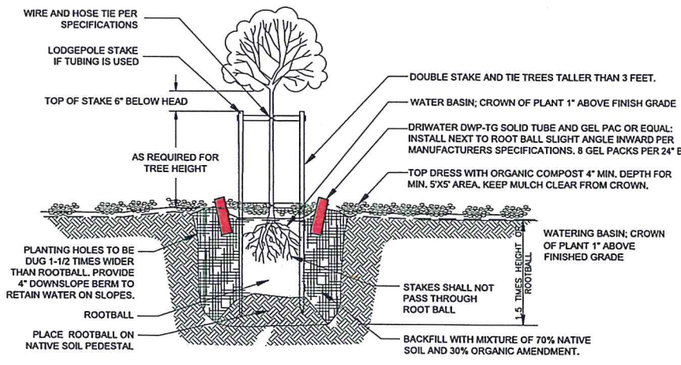


NOTE:
1. THE FOLLOWING RAIN BIRD XERI-BUG 10-32 THREADED INLET X BARB OUTLET EMITTERS MODEL SHALL BE USED: XB-20PC-1032 2.0 GPH

4 BATTERY OPERATED CONTROLLER WITH REMOTE CONTROL VALVE
N.T.S.



5 GATE VALVE
N.T.S.



6 TREE PLANTING
N.T.S.

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SHEET 72

X-XX

REVISION					
NO.	DESCRIPTION	DATE	NO.	DESCRIPTION	DATE

RECYCLED PROFESSIONAL ENGINEER — No. 59695 — 12-31-13 EXPIRES — CIVIL — STATE OF CALIFORNIA

APPROVED BY:
NAME PE
APPROVED: DATE
APPROVED: DATE

QUESTA ENGINEERING CORP

CITY OF PASADENA INCORPORATED JUNE 1886

D.S.-206 TO 209

DATE	MARCH 2014	SCALE	AS SHOWN
DRAWN BY	OR		
DESIGNED BY	ST		
CHECKED BY	ST		
SUBMITTED BY			
FIELD BOOKS		CALC BOOKS	

PASADENA WATER & POWER
CITY OF PASADENA

ARROYO SECO CANYON PROJECT
PLANTING & IRRIGATION DETAILS

SHEET NO	OF XX SHEETS
WORK ORDER	FILE NUMBER
03055	03L-03 (E-1757)
APPROVED	APPROVED
REVISION	

LAST SAVED: 4/17/2014 PLOT DATE: 4/17/2014
P:\2012\1200129_PASADENA_ARROYO_SECO\CAD\1200129_AREA_3_PARKING AREA_PLANTING.DWG
BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY