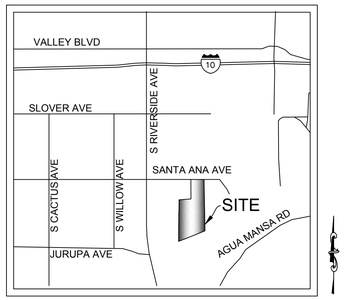
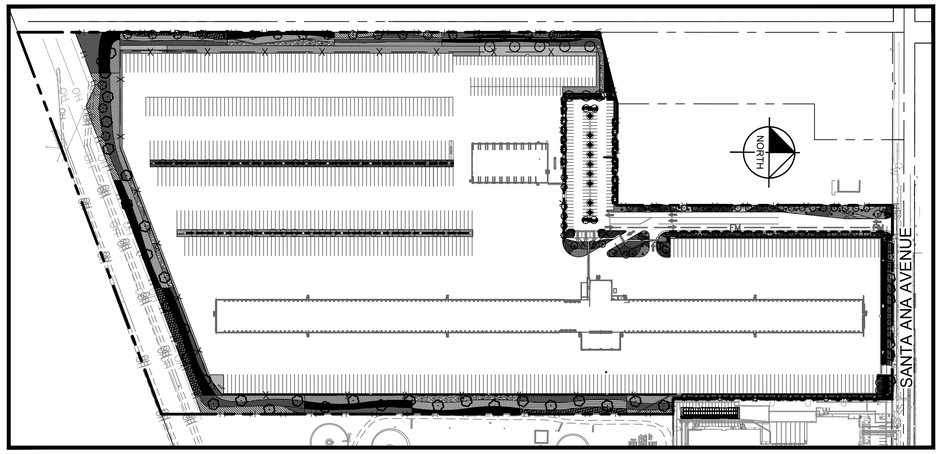
CITY OF RIALTO
LANDSCAPE AND IRRIGATION PLANS
FOR SANTA ANA TRUCK TERMINAL



VICINITY MAP
NOT TO SCALE



SITE MAP
1"=200'

GOVERNING AGENCY:

CITY OF RIALTO
DANIEL CASEY - CITY PLANNER
150 S. PALM AVENUE
RIALTO, CA 92376
PH: (909) 820-2535

CITY OF RIALTO
AARON BROWN
150 S. PALM AVENUE
RIALTO, CA 92376
PH: (909)421-7219

CITY OF RIALTO
JAMES CARO - BUILDING OFFICIAL
150 S. PALM AVENUE
RIALTO, CA 92376
PH: (909) 820-2505

CIVIL ENGINEER:

KIMLEY HORN AND ASSOCIATES, INC.
TAMMIE MORENO
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
PH: 619-744-0115

GEOTECHNICAL ENGINEER:

NORCAL ENGINEERING
KEITH D. TUCKER, G.E.
10641 HUMBOLT STREET
LOS ALAMITOS, CA 90720
PH: (562) 799-9469

OWNER/APPLICANT

ANDREW FALZARANO
CROWN ENTERPRISES, INC.
12225 STEPHENS WARREN,
MICHIGAN 48089

SURVEYOR

ARMANDO D. DUPONT, P.L.S. 7780
CALVADA SURVEYING, INC.
411 JENKS CIRCLE, SUITE 205
CORONA, CA 92878

ARCHITECT:

OKW ARCHITECTS
NICHOLAS SAHM
600 W JACKSON BLVD, SUITE 250
CHICAGO, IL 60661

LANDSCAPE ARCHITECT:

KIMLEY HORN AND ASSOCIATES, INC.
MICHAEL MADSEN
401 B STREET, SUITE 600
SAN DIEGO, CA 92101
PH: 619-744-0115

UTILITY PROVIDERS:

STORM:	SB COUNTY DEPT. OF PUBLIC WORKS	(909) 387-7910
SEWER:	CITY OF RIALTO WATER SERVICES	(909) 820-2456
TELECOMM:	AT&T	(510) 645-2929
WATER:	WEST VALLEY WATER DISTRICT	(909) 875-1804
ELECTRIC:	SOUTHERN CALIFORNIA EDISON	(800) 611-1911
GAS:	SOUTHERN CALIFORNIA GAS	(800) 423-1391

SHEET INDEX

GENERAL LANDSCAPE NOTES

1. THE WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND THE MOST CURRENT EDITION OF THE APPLICABLE CITY AND/OR REGIONAL STANDARDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN COPIES OF THESE STANDARDS, SPECIFICATIONS AND DRAWINGS, AS WELL AS ALL OTHER STANDARDS AND SPECIFICATIONS WHICH MAY BE NECESSARY TO COMPLETE AND ACCURATELY INTERPRET THESE PLANS.
2. ALL QUANTITIES LISTED IN THE LANDSCAPE SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. IN THE CASE OF ANY DISCREPANCIES, PLANS SHALL OVERRIDE THE LANDSCAPE AND BID SCHEDULE QUANTITIES. CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON THE PLANS AND BASE THEIR BID ACCORDINGLY.
3. RESPONSIBILITY FOR ESTABLISHING SUBGRADES IS NOT INCLUDED IN THIS WORK. INSPECT SUBGRADES PRIOR TO COMMENCING WORK TO CONFIRM SUBGRADE DEPTHS AND GRADES. ADVISE LANDSCAPE ARCHITECT OF DISCREPANCIES WITH DRAWINGS OR SPECIFICATIONS. ALL PLANTING AREAS SHALL BE LEFT FREE OF CONSTRUCTION DEBRIS AND/OR TOXIC MATERIAL AND GRADED TO A LEVEL TO PERMIT LANDSCAPE CONSTRUCTION. TRENCHES OR OTHER FILLED EXCAVATIONS SHALL BE COMPACTED PRIOR TO LANDSCAPE INSTALLATION.
4. SITE GRADING NECESSITATED BY THE WORK AS IT PROGRESSES AND NOT SPECIFICALLY CALLED OUT ON THE PLANS WILL BE CONSIDERED INCIDENTAL WORK.
5. ALL LANDSCAPE AREAS SHALL BE UNIFORMLY GRADED SO THAT FINISHED SURFACES CONFORM TO THE TYPICAL SECTIONS AND PROPOSED GRADES SHOWN. FINISHED SURFACES SHALL BE REASONABLY SMOOTH, COMPACTED, AND FREE FROM IRREGULAR SURFACE DRAINAGE. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING THE FINISH GRADE AND SHALL BEAR FINAL RESPONSIBILITY FOR PROPER SURFACE DRAINAGE OF PLANTED AREAS.
6. AFTER ROUGH GRADING HAS OCCURRED, CONTRACTOR SHALL OBTAIN AN AGRONOMIC SOILS REPORT AND SUBMIT TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO AMENDMENTS AND/OR PLANTING. CONTRACTOR SHALL APPLY RECOMMENDATIONS UNLESS OTHERWISE NOTED BY LANDSCAPE ARCHITECT.
7. BACKFILL MIX SHALL BE PLACED IN 6" LIFTS AND TAMPED INTO PLACE AROUND THE PLANT. NO TRANSPLANTING SHALL BE DONE WHEN SOIL IS EXCESSIVELY WET. DO NOT COUNTERSINK AROUND CACTI OR SUCCULENTS. PROVIDE POSITIVE DRAINAGE AWAY FROM PLANT.
8. ALL TREES SHALL BE PLANTED A MINIMUM OF 5 FEET, ALL SHRUBS AND ACCENTS A MINIMUM OF 24", AND ALL GROUNDCOVERS 18" FROM EDGE OF CURBS, WALKS, WALLS, PADS, ETC., UNLESS DIRECTED OTHERWISE BY THE LANDSCAPE ARCHITECT.
9. EXCAVATE PITS, AS SHOWN ON DRAWINGS AND DETAILS. LOOSEN HARD SUBSOIL IN BOTTOM OF PIT. TEST DRAINAGE OF TREE, SHRUB AND PLANT PITS BY FILLING WITH WATER TWICE IN SUCCESSION. THE RETENTION OF WATER IN PLANTING PITS FOR MORE THAN TWENTY-FOUR (24) HOURS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. SUBMIT IN WRITING A PROPOSAL FOR THE CORRECTION TO THE OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PROCEEDING WITH WORK.
10. IF ROCK, UNDERGROUND CONSTRUCTION, ADVERSE DRAINAGE CONDITIONS, OR OTHER OBSTRUCTIONS ARE ENCOUNTERED IN EXCAVATION FOR PLANTING OF ANY PLANT MATERIAL, NOTIFY THE OWNER'S REPRESENTATIVE. NEW LOCATIONS MAY BE SELECTED BY THE OWNER'S REPRESENTATIVE, OR INSTRUCTIONS MAY BE ISSUED TO DIRECT REMOVAL OF OBSTRUCTION. PROCEED WITH WORK ONLY AFTER APPROVAL OF THE OWNER'S REPRESENTATIVE.
11. DO NOT MAKE SUBSTITUTIONS. IF SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, SUBMIT PROOF OF NON-AVAILABILITY FROM AT LEAST FIVE SOURCES TO THE OWNER'S REPRESENTATIVE, TOGETHER WITH PROPOSAL FOR USE OF EQUIVALENT MATERIAL FOR FINAL APPROVAL.
12. ALL PLANT MATERIAL AND SPECIFICATIONS TO CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK STANDARDS UNLESS OTHERWISE NOTED.
13. LAY OUT INDIVIDUAL TREE AND PLANT LOCATIONS AND AREAS FOR MULTIPLE PLANTINGS, STAKE LOCATIONS AND OUTLINE AREAS AND SECURE THE OWNER'S REPRESENTATIVE'S ACCEPTANCE BEFORE START OF PLANTING WORK. MAKE MINOR ADJUSTMENTS AS DIRECTED.
14. ALL SHRUBS SHALL HAVE A FULL HEAD THAT COVERS THE CAN DIAMETER (CAN FULL) AND A MINIMUM OF THREE STEMS/BRANCHES.
15. FINISH GRADE FOR PLANTED AREAS SHALL BE 1" BELOW ALL CURBS, WALKS AND PAVING WITH SMOOTH EVEN LINES AT EDGES OF STRUCTURES.
16. FINISH LANDSCAPE GRADES SHALL SLOPE AT A 2% GRADE AWAY FROM CURBS, WALKS, AND WALLS.
17. ALL LANDSCAPE AREAS SHALL RECEIVE A 3" DEPTH OF MULCH, UNLESS OTHERWISE NOTED ON THESE PLANS. TREES TO HAVE A 6' DIAMETER RING AROUND TRUNK FREE OF MULCH. MULCH SHALL EXTEND UNDER ALL SHRUBS AND PLANTS. APPLY PRE-EMERGENT HERBICIDE PRIOR TO AND AFTER MULCH INSTALLATION.
18. PROVIDE SAMPLES OF PROPOSED MULCH SHOWING COLOR, GRADATION SIZE RANGE AND TEXTURE INCLUDING PROPOSED SOURCE. PROVIDE 1/2 CUBIC FOOT SAMPLE OF EACH.
19. ANY ROCK MULCH OR DECOMPOSED GRANITE SHALL NOT CONTAIN LUMPS OR BALLS OF CLAY, CALICHE, ORGANIC MATTER OR CALCAREOUS COATING. PROVIDE WEED BARRIER UNDER ALL DG AND/OR ROCK MULCH. THE CONTRACTOR SHALL ENSURE THAT SUFFICIENT QUANTITY IS AVAILABLE FROM A SINGLE SOURCE TO COMPLETE THE PROJECT. THE OWNER'S REPRESENTATIVE SHALL APPROVE SAMPLES PRIOR TO ORDERING.
20. NO JOB WILL BE CONSIDERED COMPLETE UNTIL ALL CURBS, PAVEMENT AND SIDEWALKS HAVE BEEN SWEPT CLEAN OF ALL DIRT AND DEBRIS ACCORDING TO PLANS.
21. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY PERMITS REQUIRED. (SEE THE CITY GENERAL CONDITIONS)
22. ALL CONSTRUCTION ROADS AND COMPACTED AREAS DEVELOPED THROUGH CONSTRUCTION THAT ARE WITHIN THE LANDSCAPE AREAS SHALL BE SCARIFIED AND LOOSENED TO A DEPTH OF 12" PRIOR TO LANDSCAPE AND IRRIGATION WORK BEGINNING
23. PLANTINGS WITHIN THE SIGHT VISIBILITY TRIANGLE LINE SHALL BE MAINTAINED SO THAT NO LIMBS HANG LOWER THAN SEVEN (7) FEET AND SHRUBS OR OTHER PLANTS PLANTED WITHIN THE SIGHT VISIBILITY TRIANGLE LINE SHALL BE NO TALLER THAN TWO (2) FEET AT FULL GROWTH.

I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AB-1881 AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLAN.

MICHAEL P. MADSEN, LLA 5798

NOTES:
1) NO EXISTING OR PROTECTED TREES ARE LOCATED ON PROJECT SITE.
2) CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THIS LANDSCAPE FOR 90 DAYS FOLLOWING FINAL ACCEPTANCE.
3) THIS PROJECT IS LOCATED IN 'WUCLOS' REGION '4-SOUTH INLAND'

WDID #: XXXXXXX

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1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER
LICENSED LANDSCAPE ARCHITECT
Michael Madsen License # 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA

DATE:10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE

RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE

APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

3880 LEMON STREET, SUITE 420, RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007-88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
LANDSCAPE COVER SHEET

1 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____

LANDSCAPE ARCHITECT NOTES

1. THE TERM "LANDSCAPE ARCHITECT" USED HEREIN SHALL MEAN THE LANDSCAPE ARCHITECT WHO HAS SIGNED AND SEALED THESE PLANS AND IS IN RESPONSIBLE CHARGE OF THE LANDSCAPE ARCHITECTURE DESIGN. THE TERM "CONTRACTOR" USED HEREIN SHALL MEAN ANY GENERAL CONTRACTOR OR SUBCONTRACTOR USING THESE PLANS. ANY AGENCY SIGNATURE OR APPROVAL ON THESE PLANS DOES NOT CONSTITUTE APPROVAL OF ANY OF THESE NOTES.

2. THE LANDSCAPE ARCHITECT WILL NOT PROVIDE, OBSERVE, COMMENT ON NOR ENFORCE ANY SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT, AND MAINTAIN ALL SAFETY MEASURES AND SHALL BE SOLELY RESPONSIBLE FOR SAME AND COMPLYING WITH ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS, AND REGULATIONS. THE CONTRACTOR AGREES THAT SHE/HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOBSITE CONDITIONS AND SAFETY OF ALL PERSONS AND PROPERTY DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

3. THE LANDSCAPE ARCHITECT SHALL HAVE NO RESPONSIBILITY FOR ANY OF THE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION, TECHNIQUES, EQUIPMENT CHOICE AND USAGE, SEQUENCE, SCHEDULE, SAFETY PROGRAMS, OR SAFETY PRACTICES, NOR SHALL THE LANDSCAPE ARCHITECT HAVE ANY AUTHORITY OR RESPONSIBILITY TO STOP OR DIRECT THE WORK OF ANY CONTRACTOR.

4. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE LANDSCAPE ARCHITECT AND OWNER, THEIR AGENTS AND EMPLOYEES, HARMLESS FROM ANY AND ALL CLAIMS, DEMANDS, JUDGMENTS, LOSS, DAMAGES, COSTS, EXPENSES, FEES OR LIABILITY WHATSOEVER, REAL OR ALLEGED, IN CONNECTION WITH, IN WHOLE OR IN PART, DIRECTLY OR INDIRECTLY, THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE LANDSCAPE ARCHITECT.

5. IF THERE ARE ANY QUESTIONS REGARDING THESE PLANS, THE CONTRACTOR SHALL REQUEST IN WRITING FROM THE LANDSCAPE ARCHITECT AND THE OWNER, AN INTERPRETATION BEFORE DOING ANY RELATED OR IMPACTED WORK.

6. THE CONTRACTOR SHALL TAKE THE NECESSARY STEPS TO PROTECT THE PROPERTY FROM ANY EROSION AND SILTATION THAT RESULT FROM CONTRACTOR OPERATIONS BY APPROPRIATE MEANS UNTIL SUCH TIME THAT THE PROJECT IS COMPLETED AND ACCEPTED FOR MAINTENANCE BY WHOMEVER IS TO BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE.

7. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO STARTING WORK NEAR THEIR FACILITIES AND SHALL COORDINATE WORK WITH UTILITY COMPANY REPRESENTATIVES.

8. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED FROM A SEARCH OF READILY AVAILABLE RECORDS. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID UTILITY INFORMATION. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHERS NOT OF RECORD OR NOT SHOWN ON THESE PLANS. ALL DAMAGES THERETO CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE APPROPRIATE SPECIFICATIONS AND STANDARDS AT THE SOLE EXPENSE OF THE CONTRACTOR.

9. THE LOCATION, ELEVATIONS, SIZE, TYPE AND CONDITION OF EXISTING IMPROVEMENTS ADJACENT TO THE PROPOSED WORK INDICATED ON THESE PLANS SHALL BE CONFIRMED BY THE CONTRACTOR BY FIELD MEASUREMENTS AND OBSERVATIONS PRIOR TO CONSTRUCTION OF NEW WORK. THE CONTRACTOR WILL IMMEDIATELY INFORM THE LANDSCAPE ARCHITECT IN WRITING IF ANY DISCREPANCIES OR CONFLICTING INFORMATION IS FOUND.

10. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES AS NEEDED, SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY DUE TO THE ACTUAL LOCATION, SIZE, TYPE, OR CONDITION OF EXISTING FACILITIES DIFFERING FROM WHAT IS SHOWN ON THESE PLANS.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY DAMAGE TO THE EXISTING IMPROVEMENTS AND REPLACEMENT TO THE SATISFACTION OF THE OWNER.

12. SHOULD CONFLICTING INFORMATION BE FOUND ON THE PLANS THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING IMMEDIATELY BEFORE PROCEEDING WITH THE WORK IN QUESTION.

13. ANYTHING MENTIONED IN THE SPECIFICATIONS, IF ANY, AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH.

PLANT SCHEDULE

SYMBOL	QTY	BOTANICAL / COMMON NAME	CONT	HEIGHT/SPREAD	CAL.	WUCOLS
TREES						
	20	ARBUTUS X 'MARINA' / MARINA STRAWBERRY TREE	24" BOX	9`-10- HT. X 2`-3` SPR.	1" CAL.	LOW
	6	KOELREUTERIA BIPINNATA / CHINESE FLAME TREE	24" BOX	9`-10` HT. X 3`-4` SPR.	1" CAL.	MODERATE
	81	PINUS CANARIENSIS / CANARY ISLAND PINE	24" BOX	8`-10` HT. X 3`-4` SPR.	1" CAL.	MODERATE
	23	PLATANUS RACEMOSA / CALIFORNIA SYCAMORE	24" BOX	9`-10` HT. X 3`-4` SPR.	1" CAL.	MODERATE
	53	PODOCARPUS GRACILIOR / FERN PINE	24" BOX	8-10` HT. X 2-4` SPR.	1" CAL.	MODERATE
	37	QUERCUS AGRIFOLIA / COAST LIVE OAK	24" BOX	8-10` HT. X 2-4` SPR.	1" CAL.	LOW
	8	QUERCUS LOBATA / VALLEY OAK	24" BOX	8-10` HT. X 2-4` SPR.	1" CAL.	LOW

SYMBOL	QTY	BOTANICAL / COMMON NAME	CONT.	SPACING	WUCOLS
SHRUBS					
	64	AGAVE ATTENUATA / FOXTAIL AGAVE	5 GAL.	AS SHOWN	LOW
	109	HETEROMELES ARBUTIFOLIA / TOYON	5 GAL.	6` O.C.	LOW
	150	LANTANA X 'NEW GOLD' / NEW GOLD LANTANA	5 GAL.	3` O.C.	LOW
	432	LEUCOPHYLLUM LANGMANIAE 'LYNN'S LEGACY' / LYNN'S LEGACY LANGMAN'S SAGE	5 GAL.	4` O.C.	LOW
	121	MUHLENBERGIA RIGENS / DEER GRASS	5 GAL.	4` O.C.	LOW
	168	RHAMNUS CALIFORNICA `EVE CASE` / EVE CASE COFFEEBERRY	5 GAL.	5` O.C.	LOW
	24	SALVIA LEUCOPHYLLA / PURPLE SAGE	5 GAL.	4` O.C.	LOW

SYMBOL	QTY	BOTANICAL / COMMON NAME	CONT.	SPACING	WUCOLS
GROUND COVERS					
	595	ACACIA REDOLENS 'LOW BOY' / LOW BOY BANK CATCLAW	5 GAL.	6` O.C.	LOW
	271	ADENOSTOMA FASCICULATUM / CHAMISE	5 GAL.	5` O.C.	LOW
	765	ARTEMISIA CALIFORNICA / CALIFORNIA SAGEBRUSH	5 GAL.	5` O.C.	LOW
	688	BACCHARIS PILULARIS `PIGEON POINT` / PIGEON POINT COYOTE BRUSH	5 GAL.	5` O.C.	LOW
	412	CEANOTHUS GRISEUS HORIZONTALIS / CARMEL CREEPER	5 GAL.	4` O.C.	LOW
	1,061	CISTUS SALVIIFOLIUS 'PROSTRATUS' / SAGELEAF ROCKROSE	5 GAL.	4` O.C.	LOW
	983	DALEA GREGGII / TRAILING INDIGO BUSH	1 GAL.	4` O.C.	LOW
	864	LANTANA MONTEVIDENSIS / PURPLE TRAILING LANTANA	5 GAL.	4` O.C.	LOW
	989	LANTANA SELLOWIANA / TRAILING LANTANA	5 GAL.	4` O.C.	LOW
	436	LARREA TRIDENTATA / CREOSOTE BUSH	5 GAL.	6` O.C.	LOW
	821	LEYMUS CONDENSATUS 'CANYON PRINCE' / CANYON PRINCE GIANT WILD RYE	5 GAL.	4` O.C.	LOW
	743	LIPPIA NODIFLORA 'KURAPIA S1' / KURAPIA®	5 GAL.	4` O.C.	LOW
	902	MYOPORUM PARVIFOLIUM `PINK` / PINK TRAILING MYOPORUM	5 GAL.	4` O.C.	LOW
	1,006	MYOPORUM PARVIFOLIUM 'PUTAH CREEK' / PUTAH CREEK TRAILING MYOPORUM	5 GAL.	3` O.C.	LOW
	479	RHAMNUS CALIFORNICA 'MOUND SAN BRUNO' / MOUND SAN BRUNO COFFEEBERRY	5 GAL.	6` O.C.	LOW
	1,011	RHUS AROMATICA `GRO-LOW` / GRO-LOW FRAGRANT SUMAC	5 GAL.	4` O.C.	LOW
	854	RIBES AUREUM / GOLDEN CURRANT	5 GAL.	5` O.C.	LOW
	10,511 SF	ROCK COBBLE 1"-3" DIA. ROCK COBBLE MAUNFACTURER: SOUTHWEST BOULDER AND STONE COLOR: SIERRA COBBLE AT 3" DEPTH MIN.	ROCK	-	-
	927	ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY	5 GAL.	4` O.C.	LOW
	422	SIMMONDSIA CHINENSIS / JOJOBA	5 GAL.	6` O.C.	LOW
	443	TEUCRIUM CHAMAEDRYS `PROSTRATUM` / PROSTRATE GERMANDER	5 GAL.	4` O.C.	LOW
	838	TEUCRIUM COSSONII MAJORICUM / GERMANDER	5 GAL.	4` O.C.	LOW

WDID #: XXXXXXX

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MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER
LICENSED LANDSCAPE ARCHITECT
Matthew Madsen License No. 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA
DATE:10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE

RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE

APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

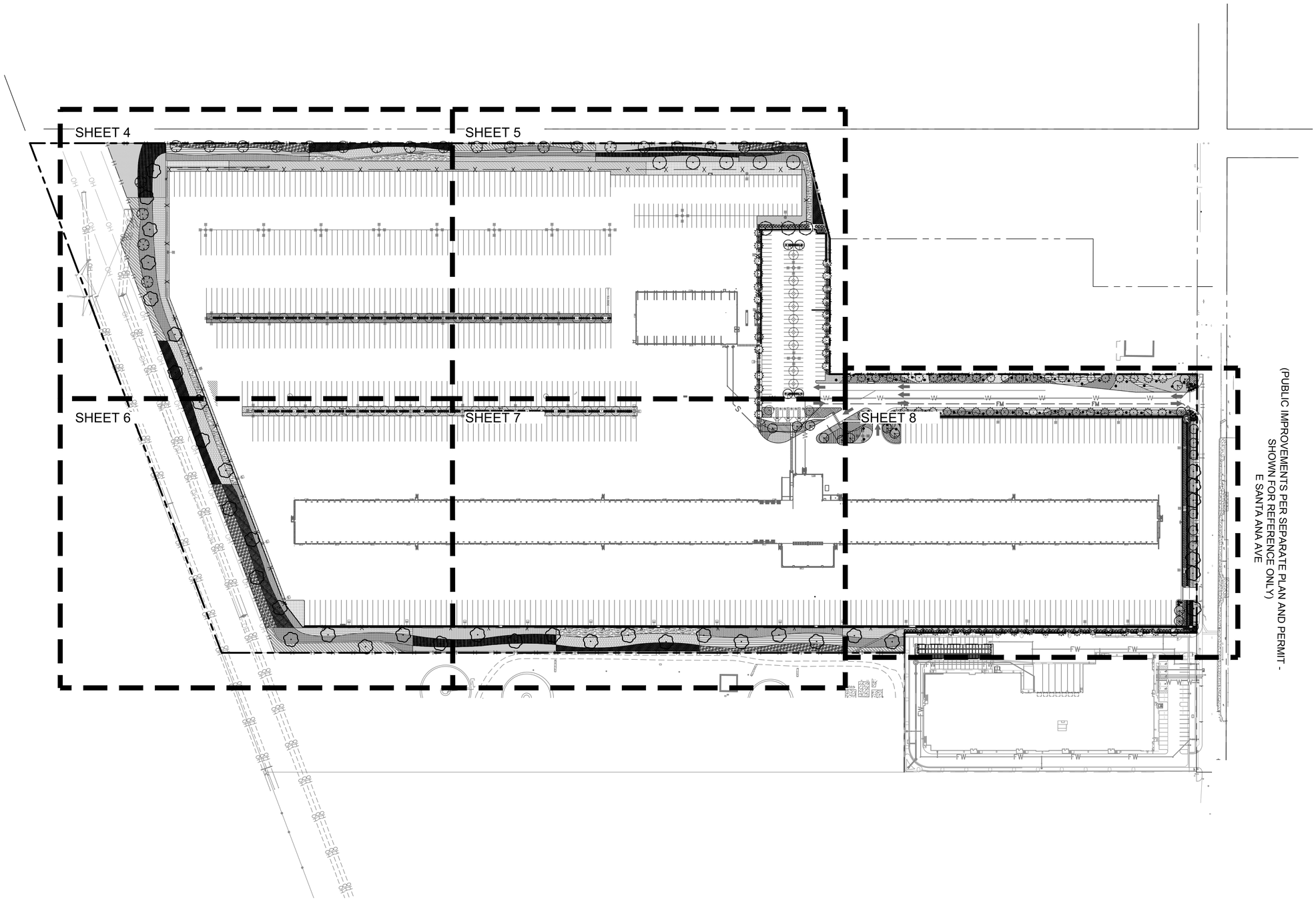
3880 LEMON STREET, SUITE 420, RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007-88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
LANDSCAPE NOTES

2 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____



NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

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DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

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CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
LANDSCAPE KEY MAP

3 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____

PROPERTY LINES (TYP)
CONCRETE SWALE, SEE CIVIL PLANS (TYP)
FENCE, SEE CIVIL PLANS (TYP)
LIGHT POLE, BY OTHERS (TYP)
LIMIT OF GRADING, SEE CIVIL PLANS (TYP)

MATCHLINE. SEE SHEET 6

MATCHLINE. SEE SHEET 5

PLANT LEGEND (FOR FULL SCHEDULE SEE SHEET 2)

SYMBOL | BOTANICAL / COMMON NAME

TREES

- ARBUTUS X 'MARINA' / MARINA STRAWBERRY TREE
- KOELREUTERIA BIPINNATA / CHINESE FLAME TREE
- PINUS CANARIENSIS / CANARY ISLAND PINE
- PLATANUS RACEMOSA / CALIFORNIA SYCAMORE
- PODOCARPUS GRACILIOR / FERN PINE
- QUERCUS AGRIFOLIA / COAST LIVE OAK
- QUERCUS LOBATA / VALLEY OAK

SHRUBS

- AGAVE ATTENUATA / FOXTAIL AGAVE
- HETEROMELES ARBUTIFOLIA / TOYON
- LANTANA X 'NEW GOLD' / NEW GOLD LANTANA
- LEUCOPHYLLUM LANGMANIAE 'LYNN'S LEGACY' / LYNN'S LEGACY LANGMAN'S SAGE
- MUHLENBERGIA RIGENS / DEER GRASS
- RHAMNUS CALIFORNICA `EVE CASE` / EVE CASE COFFEEBERRY
- SALVIA LEUCOPHYLLA / PURPLE SAGE

GROUND COVERS

- ACACIA REDOLENS 'LOW BOY' / LOW BOY BANK CATCLAW
- ADENOSTOMA FASCICULATUM / CHAMISE
- ARTEMISIA CALIFORNICA / CALIFORNIA SAGEBRUSH
- BACCHARIS PILULARIS `PIGEON POINT` / PIGEON POINT COYOTE BRUSH
- CEANOTHUS GRISEUS HORIZONTALIS / CARMEL CREEPER
- CISTUS SALVIIFOLIUS 'PROSTRATUS' / SAGELEAF ROCKROSE
- DALEA GREGGII / TRAILING INDIGO BUSH
- LANTANA MONTEVIDENSIS / PURPLE TRAILING LANTANA
- LANTANA SELLOWIANA / TRAILING LANTANA
- LARREA TRIDENTATA / CREOSOTE BUSH
- LEYMUS CONDENSATUS 'CANYON PRINCE' / CANYON PRINCE GIANT WILD RYE
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- ROCK COBBLE
  1"-3" DIA. ROCK COBBLE
  MAUNFACTURER: SOUTHWEST BOULDER AND STONE
  COLOR: SIERRA COBBLE
  AT 3" DEPTH MIN.
- ROSMARINUS OFFICINALIS 'PROSTRATUS' / DWARF ROSEMARY
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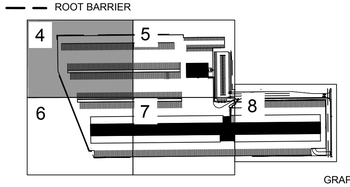

NORTH

GRAPHIC SCALE IN FEET
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MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER
LICENSED LANDSCAPE ARCHITECT
Kimberly Weston License # 6663
Signature
Renewal Date
Date
STATE OF CALIFORNIA

DATE: 10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — DATE 10/28/2024
RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE
APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

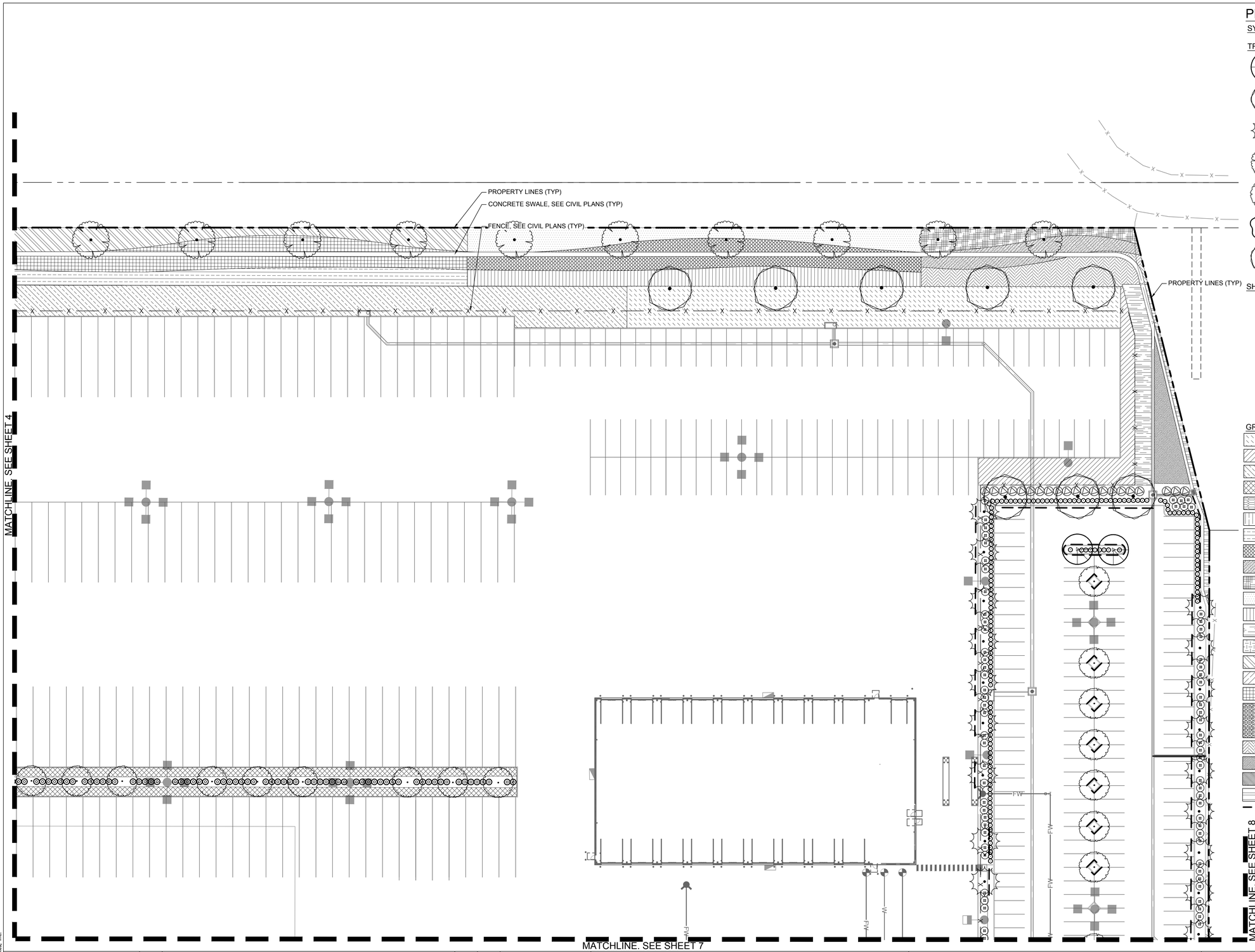
3880 LEMON STREET, SUITE 420; RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007-88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
LANDSCAPE PLAN

4 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____



PLANT LEGEND (FOR FULL SCHEDULE SEE SHEET 2)

SYMBOL | BOTANICAL / COMMON NAME

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- PINUS CANARIENSIS / CANARY ISLAND PINE
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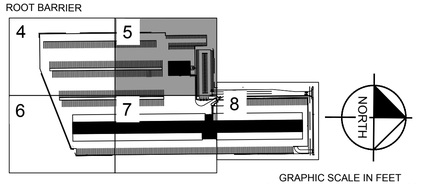

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DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER

LICENSED LANDSCAPE ARCHITECT
MICHAEL Madsen License # 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA

DATE:10/28/2024

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CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
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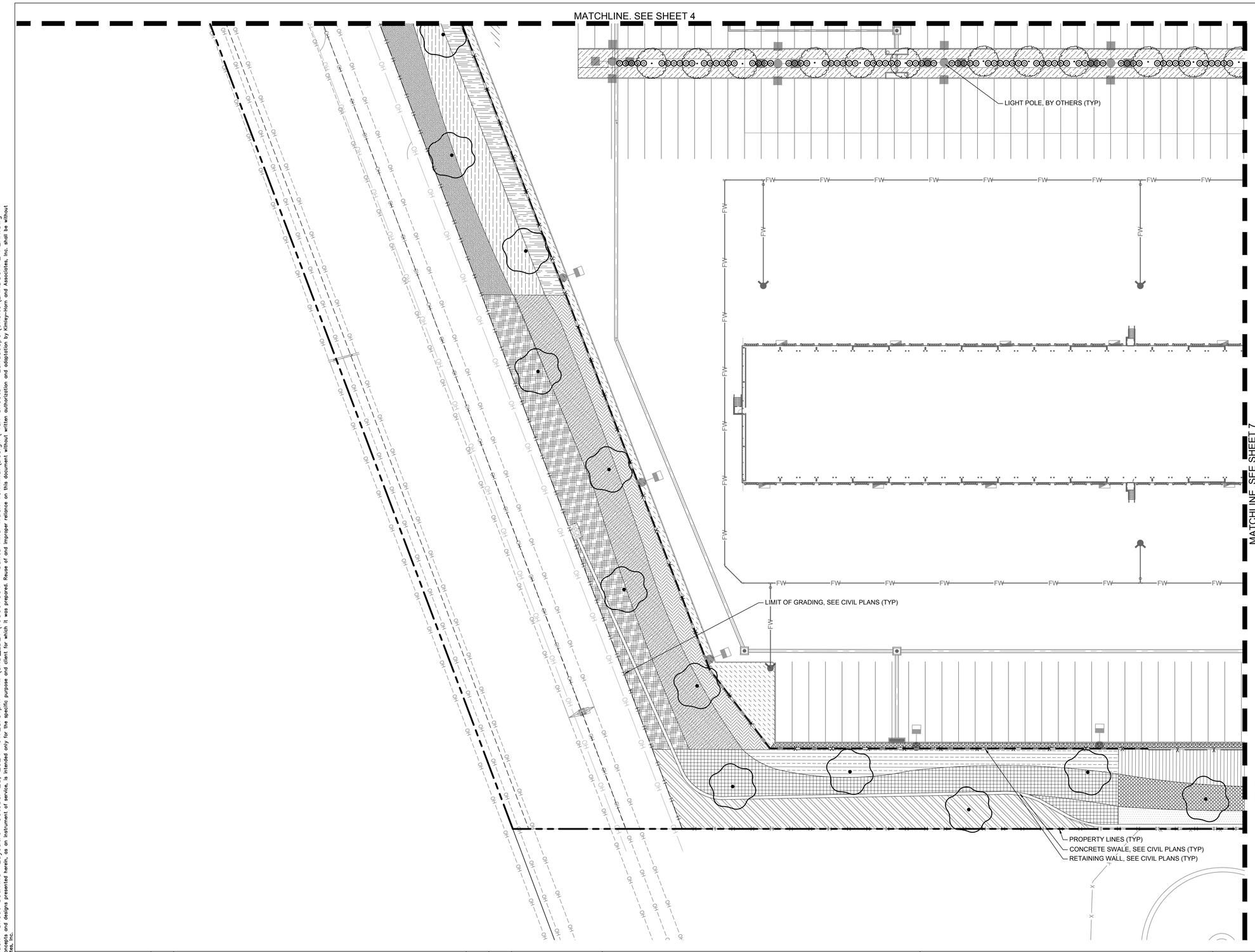
5 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____



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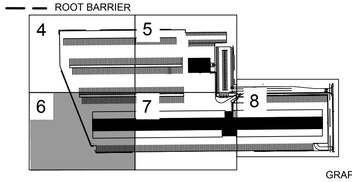

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DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER
REGISTERED LANDSCAPE ARCHITECT
RICHARD WESSEL LICENSE NO. 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA
DATE: 10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE

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RONALD J. STEIN, RCE 86877 — DATE

APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

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SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
LANDSCAPE PLAN

6 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____

MATCHLINE, SEE SHEET 5

LIGHT POLE, BY OTHERS (TYP)

MATCHLINE, SEE SHEET 6

MATCHLINE, SEE SHEET 8

PROPERTY LINES (TYP)

FENCE, SEE CIVIL PLANS (TYP)

PLANT LEGEND (FOR FULL SCHEDULE SEE SHEET 2)

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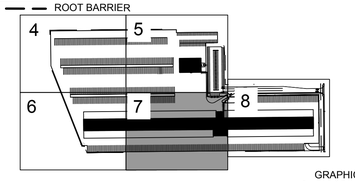

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LICENSED LANDSCAPE ARCHITECT
Michael Madsen License No. 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA

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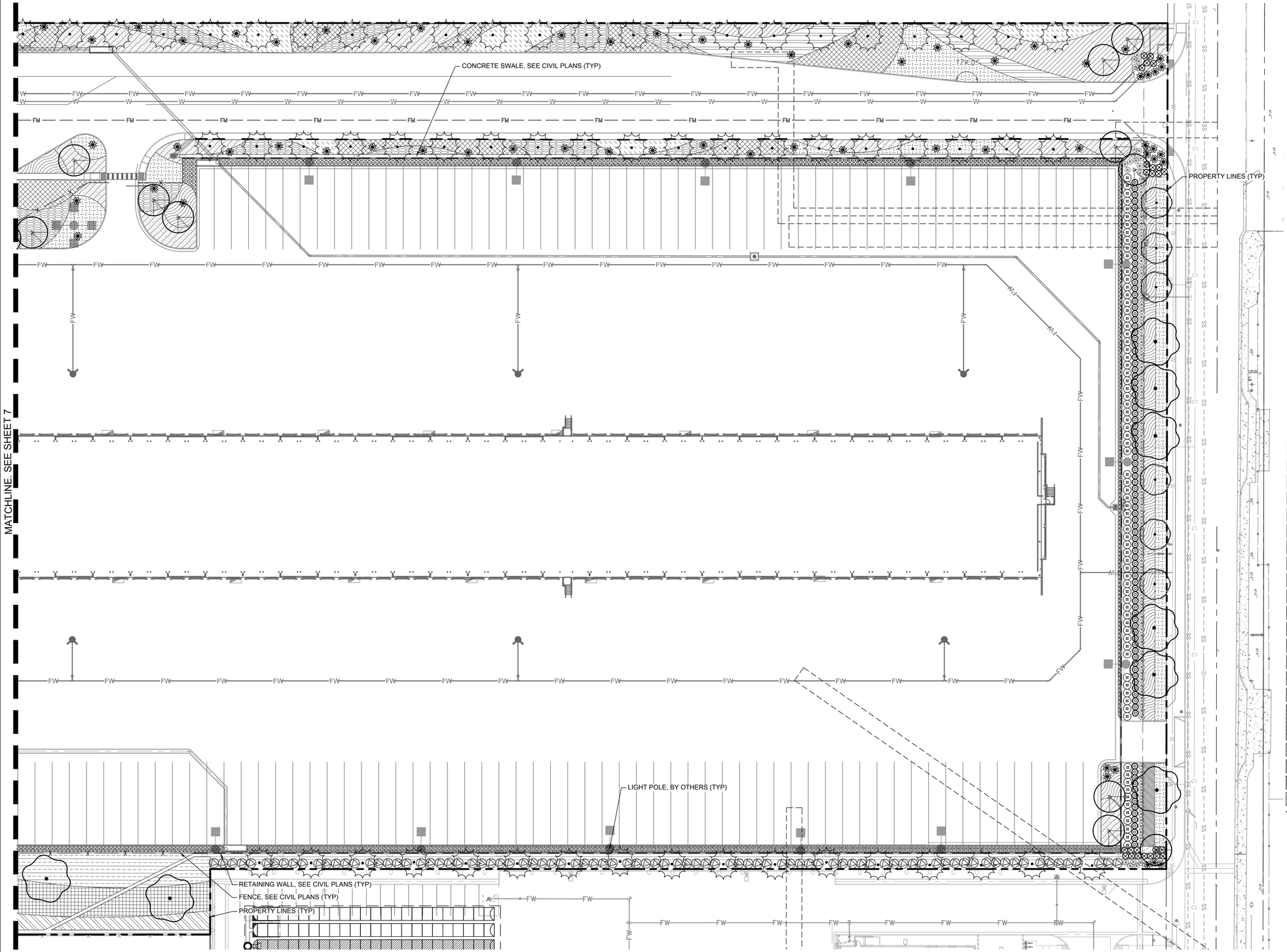
7 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____

MATCHLINE. SEE SHEET 7



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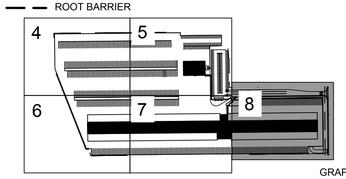

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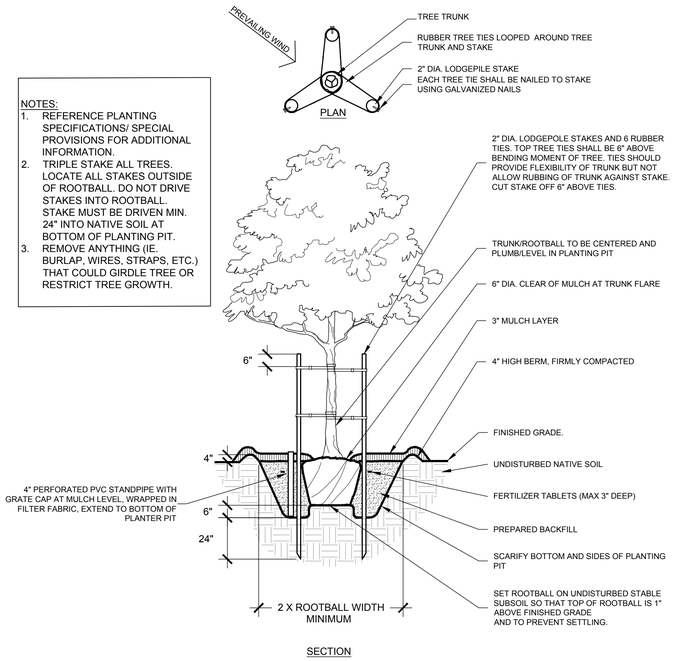
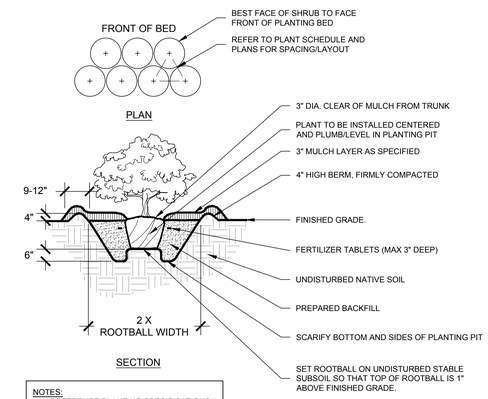


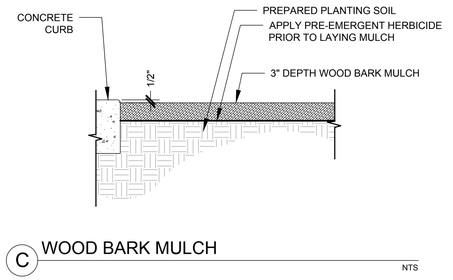
A TYPICAL TREE PLANTING

NTS



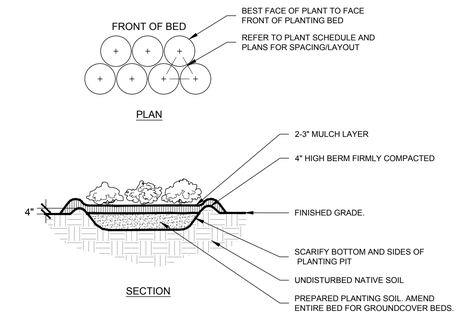
B TYPICAL SHRUB PLANTING

NTS



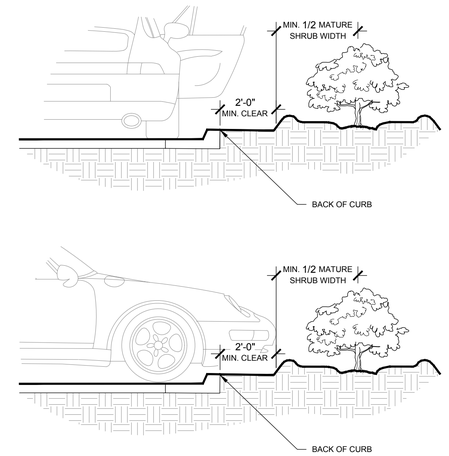
C WOOD BARK MULCH

NTS



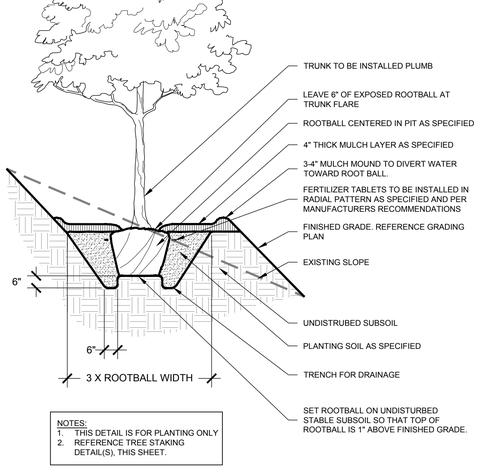
D TYPICAL GROUNDCOVER PLANTING

NTS



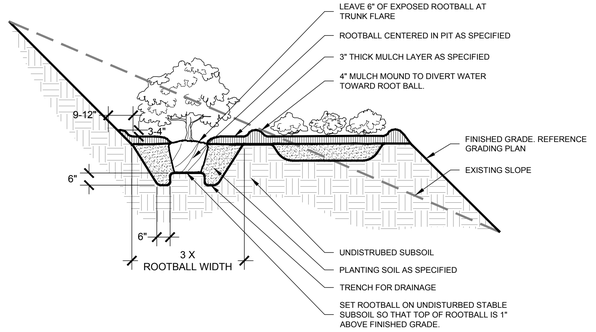
E SHRUB PLANTING AT CURB

NTS



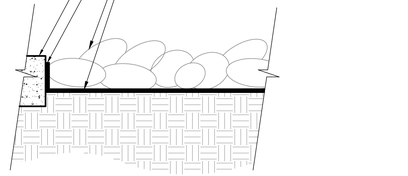
F TREE PLANTING ON SLOPE

NTS



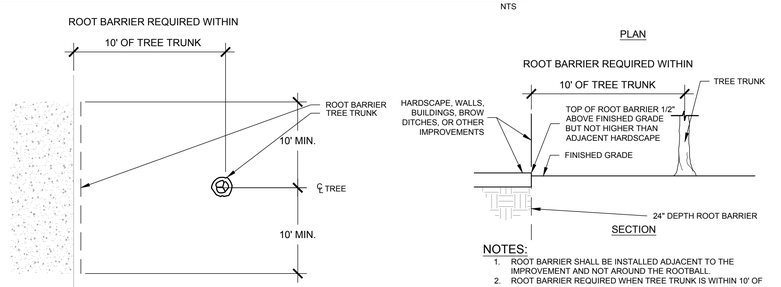
G SHRUB/GROUNDCOVER PLANTING ON SLOPE

NTS



H ROCK COBBLE

NTS



I ROOT CONTROL BARRIER

NTS

WDID #: XXXXXXX

UNDERGROUND SERVICE ALERT
CALL:TOLL FREE
1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER

LICENSED LANDSCAPE ARCHITECT — MICHAEL Madsen License No. 5798 — Signature — Renewal Date — Date — STATE OF CALIFORNIA

DATE: 10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE

RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE

APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

3880 LEMON STREET, SUITE 420; RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007-88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
LANDSCAPE DETAILS

9 OF 21 SHEETS

FOR: CROWN ENTERPRISES
PPD# 2023-0006
PLAN No. _____

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
1000	HUNTER MP1000 PROS-06-PRS30-CV TURF ROTATOR, 6IN. POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. M=MAROON ADJ ARC 90 TO 210, L=LIGHT BLUE 210 TO 270 ARC, O=OLIVE 360 ARC.	6
3000	HUNTER MP3000 PROS-06-PRS30-CV TURF ROTATOR, 6IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. B=BLUE ADJ ARC 90-210, Y=YELLOW ADJ ARC 210-270, A=GRAY 360 ARC.	26
3500	HUNTER MP3500 PROS-06-PRS30-CV TURF ROTATOR, 6IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 30 PSI, MP ROTATOR NOZZLE ON PRS30 BODY. LB=LIGHT BROWN ADJUSTABLE ARC, 90-210.	226
25Q 50Q 50H 10H 10F 20F	HUNTER PROS-PRS30-06-CV-MSBN MULTI-STREAM BUBBLER, 6IN. POP-UP, FACTORY INSTALLED DRAIN CHECK VALVE, 25=.25GPM, 50=0.5GPM, 10=1.0GPM, 20=2.0GPM.	456

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	HUNTER ICZ-101-25 DRIP CONTROL ZONE KIT. 1IN. ICV GLOBE VALVE WITH 1IN. HY100 FILTER SYSTEM. PRESSURE REGULATION: 25PSI. FLOW RANGE: 2 GPM TO 20 GPM. 150 MESH STAINLESS STEEL SCREEN.	55
A	HUNTER PLD-AVR PLD-AVR ALLOWS FOR AIR TO ESCAPE A RESIDENTIAL DRIP IRRIGATION SYSTEM TO PREVENT BLOCKAGE AND WATER HAMMERING. 1/2IN. MPT CONNECTION WITH 80 PSI MAXIMUM RATING.	55
DI	HUNTER ECO-ID-12 ECO-ID: 1/2IN. FPT CONNECTION WITH 15 PSI - 100 PSI OPERATING PRESSURE. SPECIFY WITH HUNTER SJ SWING JOINT.	55
	AREA TO RECEIVE DRIPLINE NETAFIM TLCV-06-18 TECHLINE PRESSURE COMPENSATING LANDSCAPE DRIPLINE WITH CHECK VALVE. 0.6 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. 17MM.	129,531 S.I

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	HUNTER ICV-G-DC 1IN., 1-1/2IN., 2IN., AND 3IN. PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE, WITH DC LATCHING SOLENOID FACTORY INSTALLED OPTION.	47
	HUNTER HQ-44LRC QUICK COUPLER VALVE, YELLOW RUBBER LOCKING COVER, RED BRASS AND STAINLESS STEEL, WITH 1IN. NPT INLET, 2-PIECE BODY.	21
	LANDSCAPE PRODUCTS INC. BGV 1/2IN., 3/4IN., 1IN., 1-1/4IN., 1-1/2IN., 2IN., 2-1/2IN., 3IN., 4IN. BRASS GATE VALVE. THREADED BONNET, NON-RISING STEM, PRESSURE RATED TO 200 PSI. SAME SIZE AS MAINLINE.	8
	LANDSCAPE PRODUCTS INC. CWV THREADED 1/2IN., 3/4IN., 1IN., 1-1/4IN., 1-1/2IN.,2IN. THREADED PLASTIC BALL VALVE. QUARTER-TURN SHUTOFF DESIGNED FOR IRRIGATION, SPAS, POOLS AND OTHER GENERAL COLD WATER APPLICATIONS. 125 PSI RATING. SAME SIZE AS MAINLINE.	35
MV	HUNTER IBV 1-1/2" 1IN., 1-1/2IN., 2IN., AND 3IN. BRASS ELECTRIC MASTER VALVE, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.	1
BF	BACKFLOW 1-1/2" SEE CIVIL PLANS FOR EXACT LOCATION	1
C	HUNTER A2C-150D-P 150 STATION DECODER CONTROLLER WITH (1) AC2-D75 MODULE IN AN OUTDOOR PLASTIC WALL MOUNT ENCLOSURE.	1
WS	HUNTER SOLAR-SYNC SOLAR, RAIN FREEZE SENSOR WITH OUTDOOR INTERFACE, CONNECTS TO HUNTER PCC, PRO-C, AND I-CORE CONTROLLERS, INSTALL AS NOTED. INCLUDES 10 YEAR LITHIUM BATTERY AND RUBBER MODULE COVER, AND GUTTER MOUNT BRACKET. WIRED.	1
FS	HUNTER HFS-150 FLOW SENSOR FOR USE WITH ACC CONTROLLER, 1-1/2IN. SCHEDULE 40 SENSOR BODY, 24 VAC, 2 AMP.	1
D	HUNTER ICD-100 SINGLE STATION DECODER W/ SURGE SUPRESSION AND GROUND WIRE TO BE INSTALLED ON UNIVERSAL DECODER STAKE KIT (DECSTAKE10)	24
D	HUNTER ICD-200 2-STATION DECODER W/ SURGE SUPRESSION AND GROUND WIRE TO BE INSTALLED ON UNIVERSAL DECODER STAKE KIT (DECSTAKE10)	28
D	HUNTER ICD-400 4-STATION DECODER W/ SURGE SUPRESSION AND GROUND WIRE TO BE INSTALLED ON UNIVERSAL DECODER STAKE KIT (DECSTAKE10)	4
D	HUNTER ICD-600 6-STATION DECODER W/ SURGE SUPRESSION AND GROUND WIRE TO BE INSTALLED ON UNIVERSAL DECODER STAKE KIT (DECSTAKE10)	1
M	WATER METER 1-1/2" PROPOSED IRRIGATION METER, SEE CIVIL PLANS FOR EXACT LOCATION	1

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC
1	HUNTER ICV-G-DC	2"	TURF ROTARY	20.02	36.0	52.5
2	HUNTER ICV-G-DC	2"	BUBBLER	5	33.9	46.3
3	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.74	26.5	41.1
4	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.74	26.8	41.4
5	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.54	26.2	40.3
6	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.52	26.4	40.5
7	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	4.3	21.4	33.8
8	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	2.42	18.6	30.9
9	HUNTER ICV-G-DC	2"	TURF ROTARY	35.85	35.8	61.0
10	HUNTER ICV-G-DC	2"	BUBBLER	12	35.8	49.5
11	HUNTER ICV-G-DC	2"	TURF ROTARY	12.6	35.9	49.7
12	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	17.48	27.7	43.1
13	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	2.31	20.1	32.4
14	HUNTER ICV-G-DC	2"	TURF ROTARY	20.53	36.1	52.6
15	HUNTER ICV-G-DC	2"	TURF ROTARY	25.2	36.3	55
16	HUNTER ICV-G-DC	2"	BUBBLER	18	36.6	52.3
17	HUNTER ICV-G-DC	2"	TURF ROTARY	33.39	36.4	60.4
18	HUNTER ICV-G-DC	2"	TURF ROTARY	31.36	36.7	59.5
19	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	16.48	27.4	42.6
20	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	17.1	27.7	43.0
21	HUNTER ICV-G-DC	2"	BUBBLER	21	36.1	55.9
22	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.74	26.4	41.5
23	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	7.86	24.1	37.4
24	HUNTER ICV-G-DC	2"	TURF ROTARY	24.64	36.4	55.3
25	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	16.98	27.5	42.9
26	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	19.7	29.2	45.6
27	HUNTER ICV-G-DC	2"	TURF ROTARY	24.5	35.3	54.0
28	HUNTER ICV-G-DC	2"	BUBBLER	20	36.7	53.3
29	HUNTER ICV-G-DC	2"	TURF ROTARY	30.08	36.6	58.6
30	HUNTER ICV-G-DC	2"	TURF ROTARY	30.24	36.7	58.6
31	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	18.06	27.0	42.7
32	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	11.5	25.4	39.0
33	HUNTER ICV-G-DC	2"	TURF ROTARY	12.97	33.9	47.9
34	HUNTER ICV-G-DC	2"	BUBBLER	10	36.5	49.7
35	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	14.01	27.4	41.7
36	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	8.85	23.9	36.9
37	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	8.22	22.8	35.7
38	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	1.48	18.9	31.1
39	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	6.98	23.0	35.6
40	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	8.73	25.2	38.1
41	HUNTER ICV-G-DC	1-1/2"	BUBBLER	18	37.0	52.5
42	HUNTER ICV-G-DC	1-1/2"	BUBBLER	18	37.0	52.4
43	HUNTER ICV-G-DC	1-1/2"	BUBBLER	14	37.2	51.4
44	HUNTER ICV-G-DC	1-1/2"	BUBBLER	16	37.3	52.1
45	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	7.06	24.0	36.6
46	HUNTER ICV-G-DC	2"	BUBBLER	22	36.5	54.5
47	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.73	26.2	40.4
48	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.73	26.4	40.6
49	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	3.77	20.9	33.2
50	HUNTER ICV-G-DC	2"	TURF ROTARY	30.41	36.6	58.6
51	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	4.1	21.9	34.3
52	HUNTER ICV-G-DC	2"	TURF ROTARY	26.81	36.8	56.8
53	HUNTER ICV-G-DC	1-1/2"	BUBBLER	5	35.0	47.5
54	HUNTER ICV-G-DC	2"	TURF ROTARY	18.05	36.6	52.4
55	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	5.56	20.9	33.5
56	HUNTER ICV-G-DC	2"	TURF ROTARY	21.8	36.6	54
57	HUNTER ICV-G-DC	1-1/2"	BUBBLER	7	37.4	50.2
58	HUNTER ICV-G-DC	2"	TURF ROTARY	24.19	36.5	55.0
59	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.73	26.5	41.1
60	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.73	26.7	41.3
61	HUNTER ICV-G-DC	2"	BUBBLER	20	36.6	55.7
62	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	11.09	24.8	39.2
63	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	7.71	23.6	36.9
64	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	6.46	23.1	35.8
65	HUNTER ICV-G-DC	1-1/2"	BUBBLER	11	36.1	49.5
66	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	7.83	24.6	37.4
67	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	14.02	26.3	40.7
68	HUNTER ICV-G-DC	2"	TURF ROTARY	35.65	35.8	61.2
69	HUNTER ICV-G-DC	2"	TURF ROTARY	33.41	36.5	60.4
70	HUNTER ICV-G-DC	2"	TURF ROTARY	24.64	36.0	54.2
71	HUNTER ICV-G-DC	1-1/2"	BUBBLER	10	36.8	49.9
72	HUNTER ICV-G-DC	2"	TURF ROTARY	29.92	36.7	57.6
73	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	13.32	26.8	40.8
74	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	9.46	24.0	37.1
75	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.62	25.4	38.7
76	HUNTER ICV-G-DC	1-1/2"	BUBBLER	22	37.3	53.2
77	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.62	26.6	40.0
78	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	11.24	25.1	38.4
79	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	8.29	23.0	35.7
80	HUNTER ICV-G-DC	1-1/2"	BUBBLER	20	36.6	52.3
81	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	13.53	25.6	38.9
82	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	15.9	27.1	40.8
83	HUNTER ICV-G-DC	1-1/2"	BUBBLER	24	37.4	53
84	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	8.08	22.6	35.1
85	HUNTER ICV-G-DC	1-1/2"	BUBBLER	18	36.7	50.7
86	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	10.86	25.5	38.1
87	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	10.5	25.2	37.8
88	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	11.19	25.0	37.6
89	HUNTER ICV-G-DC	1"	BUBBLER	11	38.6	51.1
90	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.66	25.5	38.2
91	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.46	26.1	38.8
92	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.66	27.2	39.9
93	HUNTER ICV-G-DC	1-1/2"	BUBBLER	8	34.2	46.5
94	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	12.04	26.1	38.7
95	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	8.26	23.2	35.5
96	HUNTER ICV-G-DC	1-1/2"	TURF ROTARY	12.26	35.3	48.6
97	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	7.49	22.7	35.3
98	HUNTER ICV-G-DC	1-1/2"	BUBBLER	18	37.4	52.3
99	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	7.12	23.1	35.5
100	HUNTER ICZ-101-25	1"	AREA FOR DRIPLINE	9.44	23.3	35.9
101	HUNTER ICV-G-DC	1-1/2"	BUBBLER	16	36.8	50.5
102	HUNTER ICV-G-DC	2"	BUBBLER	21	36.8	54.3

PIPE SCHEDULE

———	IRRIGATION LATERAL LINE: PVC SCHEDULE 40	24,675 L.F.
— — — —	IRRIGATION MAINLINE: PVC SCHEDULE 40	9,604 L.F.
= = = = = = = =	PIPE SLEEVE: PVC SCHEDULE 40	1,053 L.F.

Valve Callout
#
#"
Valve Number
Valve Flow
Valve Size

IRRIGATION MAINTENANCE SCHEDULE:

THE IRRIGATION MAINTENANCE SCHEDULE TASKS LISTED BELOW ARE INTENDED AS MINIMUM STANDARDS AND MORE FREQUENT ATTENTION MAY BE REQUIRED DEPENDING ON THE PARTICULAR SITE CONDITIONS. MAINTENANCE SHALL BE DONE TO ENSURE WATER EFFICIENCY. REPAIR OF IRRIGATION EQUIPMENT SHALL BE DONE WITH THE ORIGINALLY SPECIFIED MATERIALS OR APPROVED EQUIVALENTS.

FREQUENCY - QUARTERLY

TASK - CONTROLLER CABINET : OPEN CABINET AND CLEAN OUT DEBRIS AND REPLACE BATTERY AS NECESSARY.CHECK WIRING AND REPAIR AS NEEDED AND CHECK CLOCK AND RESET IF NECESSARY.

FREQUENCY - MONTHLY

TASK - IRRIGATION SCHEDULE: ADJUST SCHEDULE FOR SEASONAL VARIATIONS AND OTHER CONDITIONS WHICH MAY AFFECT THE AMOUNT OF WATER NEEDED TO MAINTAIN PLANT HEALTH. ADJUST AS NECESSARY.

FREQUENCY - QUARTERLY

TASK - POC: VISUALLY INSPECT COMPONENTS FOR LEAKS, PRESSURE SETTINGS, SETTLEMENT OR OTHER DAMAGE AFFECTING THE OPERATION OF A COMPONENT. REPAIR AS NEEDED.

FREQUENCY - QUARTERLY

TASK - REMOTE CONTROL VALVES : ISOLATION VALVES AND QUICK COUPLER VALVES: VISUALLY INSPECT FOR LEAKS, SETTLEMENTS, WIRE CONNECTIONS AND PRESSURE SETTINGS. REPAIR AS NEEDED.

FREQUENCY - QUARTERLY

TASK - MAINLINE AND LATERALS: VISUALLY INSPECT FOR LEAKS OR SETTLEMENTS OF TRENCH.

FREQUENCY - WEEKLY

TASK - FILTERS AND STRAINERS - VISUALLY CHECK FOR ANY BROKEN MALIGNED OR CLOGGED HEADS, HEADS WITH INCORRECT ARC, INADEQUATE COVERAGE OR OVERSPRAY AND LOW HEAD DRAINAGE. REPAIR AS NEEDED.

FREQUENCY - MONTHLY

TASK - FILTERS AND STRAINERS: VISUALLY CHECK FOR LEAKS, BROKEN FITTINGS. CLEAN AND FLUSH SCREENS.

STATE OF CALIFORNIA ESTIMATED WATER USE

TOTAL WATER USE IS CALCULATED BY SUMMING THE AMOUNT OF WATER ESTIMATED FOR EACH HYDROZONE. WATER USE FOR EACH HYDROZONE IS ESTIMATED WITH THE FOLLOWING FORMULA:

ESTIMATED TOTAL WATER USE (ETWU) = GAL / YEAR PER HYDROZONE

ET ADJUSTMENT FACTOR (ETAF) =
0.55 ETAF FOR RESIDENTIAL LANDSCAPE
0.45 ETAF FOR NON-RESIDENTIAL LANDSCAPE
0.8 ETAF FOR EXISTING NON-REHABILITATED LANDSCAPE
SPECIAL LANDSCAPE SHALL NOT EXCEED 1.0 ETAF

PLANT FACTOR (PF) = WATER USE CLASSIFICATION OF LANDSCAPE SPECIES

HYDROZONE AREA (HA) = (SF OF LANDSCAPE) OR (32 SF / TREE)

CONVERSION FACTOR (CONVERTS ACRE-INCHES PER ACRE PER YEAR TO GALLONS PER SQUARE FOOT PER YEAR = 0.62

IRRIGATION EFFICIENCY (IE) = 0.75 (OVERHEAD SPRAY) 0.81 (DRIP)

SPECIAL LANDSCAPE AREA (SLA) = SF OF EDIBLE PLANTS, RECREATIONAL AREAS, AREAS IRRIGATED WITH RECYCLED WATER, OR WATER FEATURS USING RECYCLED WATER

EVAPOTRANSPIRATION RATE (ETo) = QUANTITY OF WATER EVAPORATED FROM ADJ. SOIL AND TRANSPIRED BY PLANTS OVER A SPECIFIED TIME

ETWU = [(ETo) * (PF) * (HA) * (0.62)] / (IE)

MAWA = (ETo) * (0.62) [ETAF) * (SUM OF SLA & HA)] + [(1-ETAF) * (SLA)]

HYDROZONE "A" (DRIP)

ETO	PF	HA	CONVERSION FACTOR	IE	SLA	ETWU (GAL/YEAR)
56.80	0.20	129,531	0.62	0.81	-	1,126,312.02

HYDROZONE "B" (BUBBLER)

ETO	PF	HA	CONVERSION FACTOR	IE	SLA	ETWU (GAL/YEAR)
56.80	0.30	7,264	0.62	0.75	-	102,323.61

HYDROZONE "C" (ROTORS)

ETO	PF	HA	CONVERSION FACTOR	IE	SLA	ETWU (GAL/YEAR)
56.80	0.40	195,737	0.62	0.75	-	3,676,306.24
			ESTIMATED TOTAL WATER USE (GAL/YEAR)			**4,904,941.87**

MAXIMUM APPLIED WATER ALLOWANCE (MAWA)

ETO	SUM OF HA	CONVERSION FACTOR	ETAF	SUM OF SLA	MAWA(GAL/YEAR)
56.80	332,532.00	0.62	0.45	-	5,269,701.11
			MAXIMUM APPLIED WATER ALLOWANCE (GAL/YEAR)		**5,269,701.11**
			MAXIMUM APPLIED WATER ALLOWANCE PERCENT OF ESTIMATED TOTAL WATER USE		**93.08%**

CRITICAL ANALYSIS

Generated:	2024-07-22 17:08
P.O.C. NUMBER: 01	
Water Source Information:	proposed irrigation meter,
see civil plans for exact location	
FLOW AVAILABLE	
Water Meter Size:	1-1/2"
Flow Available	75 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	103 PSI
Elevation Change:	5.00 ft
Service Line Size:	2"
Length of Service Line:	20 ft
Pressure Available:	100 PSI
DESIGN ANALYSIS	
Maximum Station Flow:	37.8 GPM
Flow Available at POC:	75 GPM
Residual Flow Available:	37.2 GPM
Critical Station:	15
Design Pressure:	30 PSI
Friction Loss:	4.93 PSI
Fittings Loss:	0.49 PSI
Elevation Loss:	0 PSI
Loss through Valve:	0.8 PSI
Pressure Req. at Critical Station:	36.2 PSI
Loss for Fittings:	1.01 PSI
Loss for Main Line:	10.1 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	11.8 PSI
Loss for Master Valve:	0.8 PSI
Loss for Water Meter:	2.99 PSI
Critical Station Pressure at POC:	63.0 PSI
Pressure Available:	100 PSI
Residual Pressure Available:	37.0 PSI

WDID #: XXXXXXX

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1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER
LICENSED LANDSCAPE ARCHITECT
REGISTERED MUNICIPAL ENGINEER
Signature
Renewal Date
Date
STATE OF CALIFORNIA
DATE: 10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — DATE 10/28/2024
RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE
APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

3880 LEMON STREET, SUITE 420; RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007-88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
IRRIGATION NOTES

10 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____

IRRIGATION NOTES

1. THE SYSTEM HAS BEEN DESIGNED TO PROVIDE 100% COVERAGE. ANY CHANGES MADE IN THE LAYOUT DUE TO FIELD CONDITIONS SHALL BE IN ACCORDANCE WITH THESE STANDARDS. QUANTITIES IN SCHEDULE ARE ESTIMATED. PLAN SHALL TAKE PRECEDENCE.

2. ALL IRRIGATION LINES AND VALVES ARE SHOWN DIAGRAMMATICALLY. ALL LINES AND VALVES TO BE INSTALLED IN PLANTING AREAS WHERE POSSIBLE.

3. CONTRACTOR TO FIELD LOCATE ALL PROPOSED IRRIGATION WATER MAIN LINE LOCATIONS. CONTACT LANDSCAPE ARCHITECT PRIOR TO START OF WORK IF DISCREPANCIES BETWEEN THIS PLAN AND EXISTING CONDITIONS ARE FOUND.

4. LOCATE ALL VALVES INSIDE LANDSCAPE AREAS, ALLOWING ACCESS FOR MAINTENANCE PURPOSES, BUT HIDING THEM FROM PUBLIC VIEW WHENEVER POSSIBLE.

5. ALL PRESSURE MAINLINES UNDER ASPHALT PAVEMENT SHALL BE PLACED WITHIN SLEEVES AS NOTED. WHERE ELECTRIC VALVE CONTROL LINES PASS THROUGH A SLEEVE WITH OTHER MAIN OR LATERAL LINES THEY SHALL BE CONTAINED WITHIN A SEPARATE, SMALLER CONDUIT.

6. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF THE FINAL INSTALLATION TO OWNER AT SUBSTANTIAL COMPLETION BEFORE RECEIVING FINAL PAYMENT.

7. ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR, WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS-BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF EACH SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS-BUILT" DRAWINGS. ALL SLEEVES SHALL BE SIZED TWO PIPE SIZES GREATER THAN PIPE IT CARRIES.

8. ALL DRIP ZONES SHALL BE INSTALLED WITH A SELF-FLUSHING DISC FILTER, OR APPROVED EQUAL

9. IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR. WORK IN THE R.O.W. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL AND/OR STATE HIGHWAY JURISDICTION.

10. VERIFY CONTROLLER AND RAIN SENSOR LOCATION AND MAINLINE POINT OF CONNECTION AT PROJECT SITE WITH OWNER.

11. ELECTRIC SERVICE TO CONTROLLER SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

12. ALL 24 VAC WIRING SHALL BE OF DIRECT BURIAL COPPER WIRE AS FOLLOWS:
    - CONTROL WIRES - #14
    - COMMON WIRES - #12

13. INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON THE SITE.

14. COORDINATE WITH PLANTING PLAN FOR PLANTER BED LOCATIONS AND TREE LOCATIONS.

15. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH DEVELOPER FOR OPERATING PARAMETERS OF MASTER SYSTEM. THIS DESIGN REQUIRES 103 PSI TO OPERATE. IF THE MASTER SYSTEM CANNOT PROVIDE THESE PARAMETERS, CONTRACTOR SHALL MAKE ADJUSTMENTS TO THE DESIGN BY ADDING CONTROL VALVES, A BOOSTER PUMP, PRESSURE REDUCING VALVE, OR OTHER EQUIPMENT, AS NECESSARY. CONTRACTOR SHALL SUBMIT DESIGN REVISIONS TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO SUBMITTING BID.

16. A FINAL REPORT FOR THE TESTING AND ADJUSTING OF ALL NEW SYSTEMS SHALL BE COMPLETED PRIOR TO FINAL APPROVAL BY THE FIELD INSPECTOR. THIS REPORT SHALL BE SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESES SERVICES.

17. A LAMINATED DIAGRAM OF THE IRRIGATION PLAN SHOWING HYDROZONES SHALL BE KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES.

18. A CERTIFICATE OF COMPLETION SHALL BE FILLED OUT AND CERTIFIED BY EITHER THE SIGNER OF THE LANDSCAPE PLANS, THE SIGNER OF THE IRRIGATION PLANS, OR THE LICENSED LANDSCAPE CONTRACTOR FOR THE PROJECT.

19. AN IRRIGATION AUDIT REPORT SHALL BE COMPLETED AT THE TIME OF FINAL INSPECTION.

I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AB-1881 AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLAN.

MICHAEL P. MADSEN, LLA 5798

TWO-WIRE NOTES

DECODERS

CONTROLLER SHALL INTERFACE WITH HUNTER ICD DECODERS, EACH CAPABLE OF CONTROLLING 1, 2, 4, OR 6 VALVES (ICD-100, ICD-200, ICD-400, AND ICD-600)

PROVIDE AN ICD-SEN SENSOR DECODER FOR FLOW SENSOR(S) AND/OR CLIK SENSOR(S) ON TWO WIRE PATH

WIRE CONNECTIONS FROM DECODER OUTPUT TO SOLENOID SHALL BE 14 AWG, TYPE PE

WIRE DISTANCE FROM DECODER OUTPUT TO SOLENOID UNDER NORMAL CONDITIONS SHALL NOT EXCEED 150-FT [45-M]

INSTALL IN VALVE BOX ON DECODER STAKE KIT (DECSTAKE-10) WITH BOTTOM OF DECODER FACING UP

CONTRACTOR SHALL INDICATE ASSOCIATED VALVE NUMBER(S) ON MANUFACTURER PROVIDED LABEL ON DECODER WITH PERMANENT MARKER

WIRES

WIRE FOR TWO-WIRE PATH SHALL BE TWISTED AND JACKETED HUNTER IDWIRE, OR APPROVED EQUAL (PAIGE ELECTRIC P7354D); COATED WIRE SHALL NOT BE ACCEPTED AS AN EQUAL: ACCEPTABLE EQUAL PRODUCTS MUST CONSIST OF TWO SEPARATELY PE JACKETED WIRE TWISTED INSIDE OF A PE JACKET

CONTRACTOR SHALL INSTALL IDWIRE1 (14 AWG) FOR WIRE PATH LENGTH UP TO 10,000-FT [3,048-M] AND IDWIRE2 (12 AWG) FOR WIRE PATH LENGTH UP TO 15,000-FT [4,572-M], WIRE PATH LENGHTS DECREASE WITH SUBSTITUTED WIRE

WIRE JACKET COLORS SHALL BE SUCH TO FACILITATE THE IDENTIFICATION OF VARIOUS WIRE PATH ZONES; SEE WIRE JACKET CHART FOR WIRE TYPE, COLOR AND ASSOCIATED VALVES

THE CONTROLLER ALLOWS UP TO THREE (3) TWO-WIRE PATHS PER OUTPUT MODULE, CONTRACTOR SHALL NOT CONNECT ANY TWO-WIRE PATH FROM ONE OUTPUT MODULE TO ANOTHER OUTPUT MODULE

WIRE CONNECTION FROM DECODER OUTPUT TO SOLENOID SHALL BE COLORED TO MATCH THE ASSOCIATED DECODER OUTPUT STATION COLOR; RED AND BLUE COLORED WIRES SHALL NOT BE USED FOR CONNECTION BETWEEN DECODER OUTPUT AND SOLENOID

SPLICES

ALL CONNECTIONS AND SPLICES IN THE RED/BLUE TWO-WIRE PATH MUST BE MADE WITH 3M DBR/Y-6 WATERPROOF CONNECTORS INSTALLED PER MANUFACTURERS INSTRUCTIONS IN VALVE BOX WITH OPEN END OF CONNECTOR FACING DOWN

CONTRACTOR SHALL PROVIDE 36-IN [1-M] LOOP OF SLACK WIRE, MEASURED FROM TOP OF VALVE BOX, NEATLY COILED INSIDE ALL SPLICE BOXES AND VALVE BOXES

ANY SPLICES IN THE TWO-WIRE PATH NOT ASSOCIATED WITH A DECODER SHALL BE HOUSED IN SEPARATE VALVE BOXES WITH 36-IN [1-M] LOOP OF SLACK WIRE

CONTRACTOR SHALL INDICATE TWO-WIRE PATH DIRECTIONS IN PERMANENT MARKER WITHIN 6-IN [2.5-CM] OF TWO-WIRE SPLICE ON WIRE JACKET OR ID TAG ZIP TIED TO WIRE:

- INCOMING WIRE SHALL BE MARKED “CONTROLLER” ON WIRE JACKET OR ID TAG AND MUST INCLUDE ZIP-TIE ATTACHED TO WIRE JACKET
- EACH OUTGOING TWO-WIRE PATH SHALL BE MARKED WITH CONNECTED VALVES ON WIRE JACKET

CONTRACTOR SHALL ENSURE ALL CONNECTIONS TO BE WATERTIGHT WITH NO ELECTRICAL LEAKAGE TO GROUND OR SHORTING BETWEEN CONDUCTORS

GROUNDING

ALL GROUNDING AND INSTALLATION OF EQUIPMENT SPECIFIED SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS

BOTH THE CONTROLLER AND THE DECODERS SHALL BE GROUNDED TO GROUND RODS WITH LESS THAN 10 OHMS RESISTANCE

IRRIGATION CONTROLLER AND PAD SHALL NOT FALL WITHIN THE SPHERE OF INFLEUNCE OF A GROUND ROD OR PLATE

AT A MINIMUM, EARTH GROUND SHALL BE CONNECTED AT THE FIRST DECODER OF EACH WIRE PATH LEAVING THE CONTROLLER, AND EVERY 12TH VALVE/DECODER OR 1,000-FT [304-M] OF TWO-WIRE RUN (WHICHEVER IS SHORTER), AND AT THE LAST VALVE/DECODER IN ANY WIRE RUN EXCEEDING 50’ FROM MAIN WIRE PATH

FOR USE OF GROUNDING ROD:

GROUND ROD SHALL BE 5/8-IN [15-MM] DIAMETER X 8-FT [1.2-M] LONG COPPER CLAD STEEL GROUND RODS WITH 15-FT [4.5-M] PRE-WELDED #6 AWG INSULATED GREEN-YELLOW WIRE (PAIGE ELECTRIC PART # 182000IC6)

GROUND ROD SHALL BE DRIVEN INTO THE GROUND IN A VERTICAL POSITION OR AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES AT A LOCATION 10-FT [3-M] FROM THE ELECTRONIC EQUIPMENT, THE GROUND PLATE, OR THE WIRES AND CABLES CONNECTED TO EQUIPMENT BEING GROUNDED

ADDITIONAL GROUND ROD IN DAISY CHAIN INSTALLATION SHALL BE 5/8-IN [15-MM] DIAMETER X 8-FT [1.2-M] LONG COPPER CLAD STEEL GROUND RODS WITH 25-FT [4.5-M] PRE-WELDED #6 AWG INSULATED GREEN-YELLOW WIRE (PAIGE ELECTRIC PART #182007IC6)

GROUND RODS SHALL BE COVERED BY A VALVE BOX

ALL CIRCUIT COMPONENTS SHALL BE INSTALLED IN STRAIGHT LINES

GROUND ROD LOCATION

CONTRACTOR SHALL LOCATE AND INSTALL GROUND ROD IN AREA OF MOIST SOIL TO MAXIMIZE ELECTRICAL CONDUCTIVITY

SURGE PROTECTION (LIGHTING ARRESTOR)

CONTRACTOR SHALL INSTALL PAIGE ELECTRIC 250090LED LIGHTENING ARRESTOR PER MANUFACTURERS SPECIFICATIONS AS CLOSE TO CONTROLLER POWER SOURCE AS POSSIBLE TO PROTECT THE IRRIGATION CONTROLLER FROM SURGES THROUGH 120 OR 240 VAC WIRES

TURN OVER ITEMS

CONTRACTOR SHALL PROVIDE PROJECT OWNER WITH THE FOLLOWING AT PROJECT COMPLETION AND TURN OVER:

A2C-D SD CARD WITH SAVED STATION AND IRRIGATION PROGRAM INFORMATION

PRODUCT MANUALS

IN ADDITION TO IRRIGATION AS-BUILT REQUIREMENTS, THE CONTRACTOR SHALL INCLUDE IN THE AS-BUILT DRAWINGS OF IRRIGATION SYSTEM GRAPHICALLY DEPICTING LOCATION OF TWO-WIRE PATH(S), GROUNDING LOCATION AND TYPE, DECODERS, NON-DECODER WIRE SPLICES, INDICATION OF TWO-WIRE SPLICE TYPES (1-WAY, 2-WAY, 3-WAY, ETC), AND TERMINATION OF TWO-WIRE PATHS

ICD-HP HANDHELD PROGRAMMER AND DIAGNOSTIC TOOL

ROAM XL HANDHELD REMOTE AND RECEIVER

MANUFACTURER TRAINING

PRIOR TO INSTALLATION THE CONTRACTOR SHALL HAVE COMPLETED AND RECEIVED CERTIFICATION FOR THE FOLLOWING TRAINING MODULES PROVIDED BY HUNTER INDUSTRIES:

- DECODER SPECIALIST PROGRAM
- MULTIMETER BASICS COURSE
- EXPERT PROGRAM

PRE-CONSTRUCTION MEETING

PRIOR TO INSTALLATION OF TWO-WIRE IRRIGATION SYSTEM, A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED WITH PROJECT OWNER'S REPRESENTATIVE, INSTALLING CONTRACTOR, AND IRRIGATION TWO-WIRE MANUFACTURER AT NO ADDITIONAL COST FROM MANUFACTURER

TECHNICAL SUPPORT

HUNTER INDUSTRIES (800) 733-2823

WDID #: XXXXXXX

UNDERGROUND SERVICE ALERT
CALL BEFORE YOU DIG
CALL:TOLL FREE 1-800 422-4133
TWO WORKING DAYS BEFORE YOU DIG

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER

LICENSED LANDSCAPE ARCHITECT — MICHAEL PHILLIP MADSEN — No. 5798 — Signature — Renewal Date — Date — STATE OF CALIFORNIA

DATE: 10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE

RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE

APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

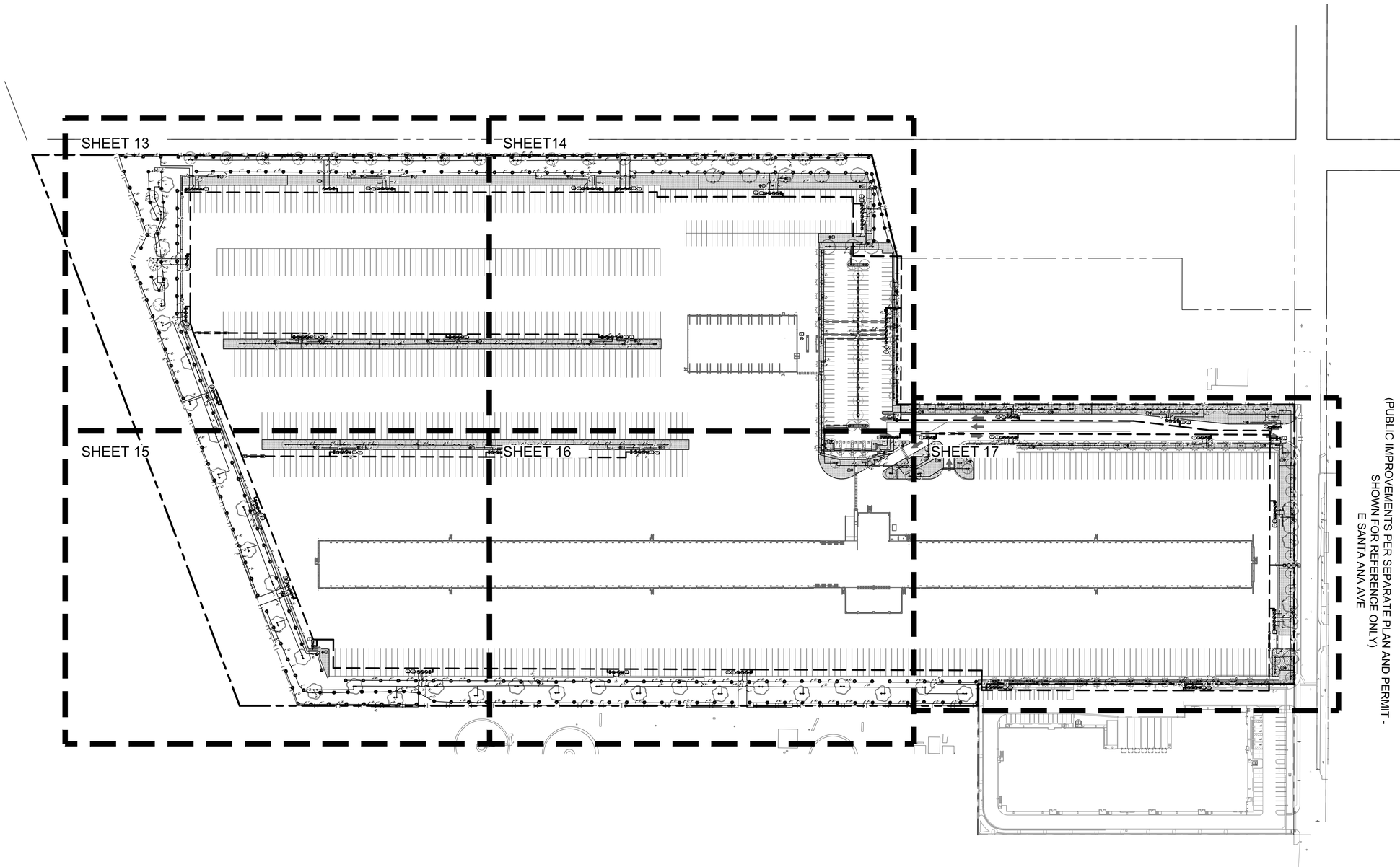
3880 LEMON STREET, SUITE 420; RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007-88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
IRRIGATION NOTES

10 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____



NORTH

GRAPHIC SCALE IN FEET
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WDID #: XXXXXXX

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DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER

LICENSED LANDSCAPE ARCHITECT
Michael Madsen License No. 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA

DATE: 10/28/2024

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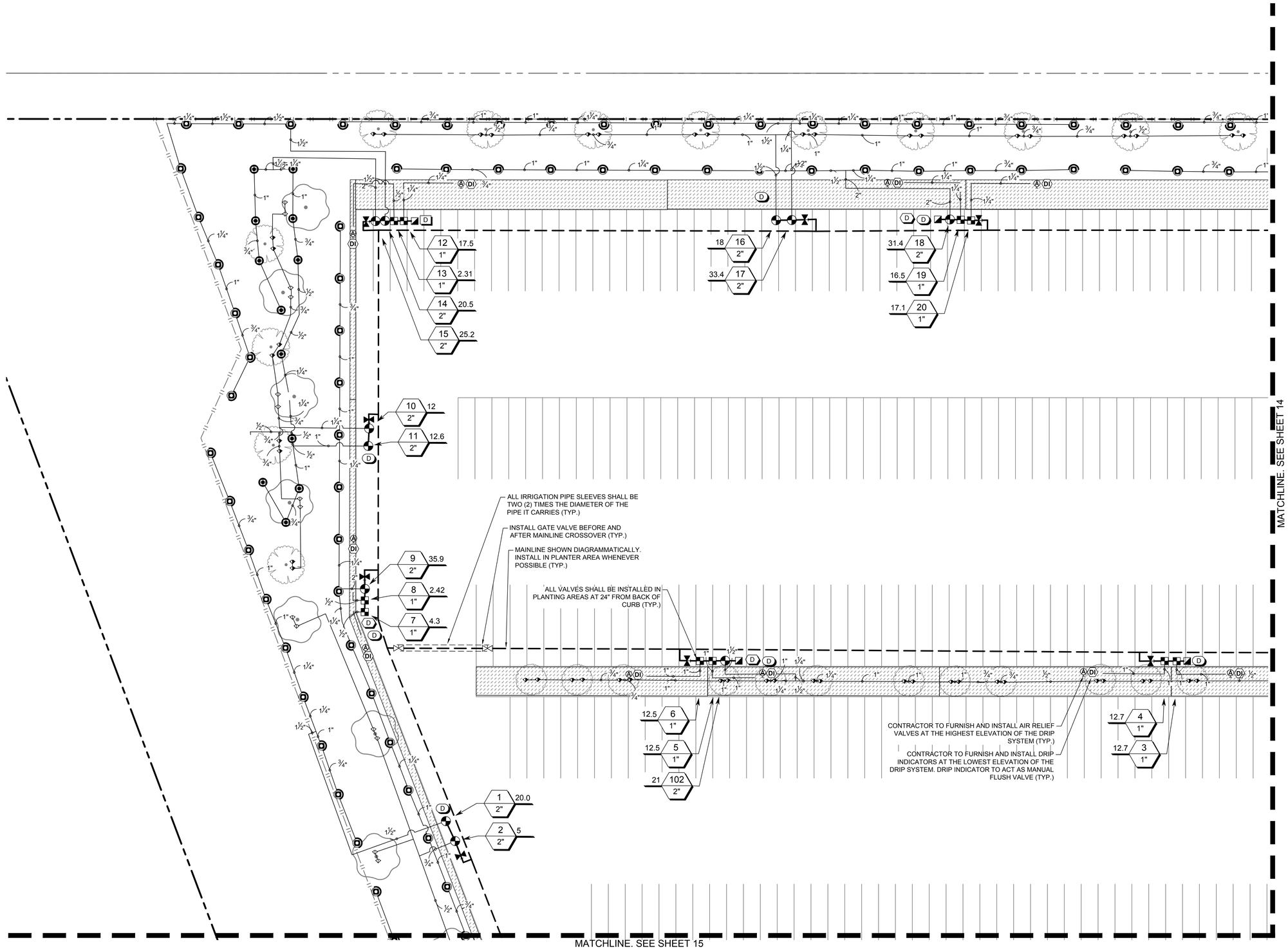
CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
IRRIGATION KEY MAP

12 OF 21 SHEETS

FOR: CROWN ENTERPRISES
PPD# 2023-0006
PLAN No. _____



IRRIGATION LEGEND (SEE SHEET 10 FOR FULL SCHEDULE)

SYMBOL	MANUFACTURER/MODEL
1000	HUNTER MP1000 PROS-06-PRS30-CV
3000	HUNTER MP3000 PROS-06-PRS30-CV
3500	HUNTER MP3500 PROS-06-PRS30-CV
25Q 50Q 50H 10H 10F 20F	HUNTER PROS-PRS30-06-CV-MSBN

SYMBOL	MANUFACTURER/MODEL
	HUNTER ICZ-101-25
A	HUNTER PLD-AVR
DI	HUNTER ECO-ID-12
	AREA TO RECEIVE DRIPLINE NETAFIM TLCV-06-18

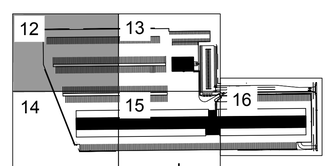
SYMBOL	MANUFACTURER/MODEL
	HUNTER ICV-G-DC
	HUNTER HQ-44LRC
	LANDSCAPE PRODUCTS INC. BGV
	LANDSCAPE PRODUCTS INC. CWV THREADED
MV	HUNTER IBV 1-1/2"
BF	BACKFLOW 1-1/2"
C	HUNTER A2C-150D-P
WS	HUNTER SOLAR-SYNC
FS	HUNTER HFS-150
D	HUNTER ICD-100
D	HUNTER ICD-200
D	HUNTER ICD-400
D	HUNTER ICD-600
M	WATER METER 1-1/2"

IRRIGATION LATERAL LINE: PVC SCHEDULE 40

IRRIGATION MAINLINE: PVC SCHEDULE 40

PIPE SLEEVE: PVC SCHEDULE 40

Valve Callout
Valve Number
Valve Flow
#" Valve Size



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

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SEAL-DESIGN ENGINEER

LICENSED LANDSCAPE ARCHITECT Stuart Madsen License #5798 Signature Renewal Date STATE OF CALIFORNIA

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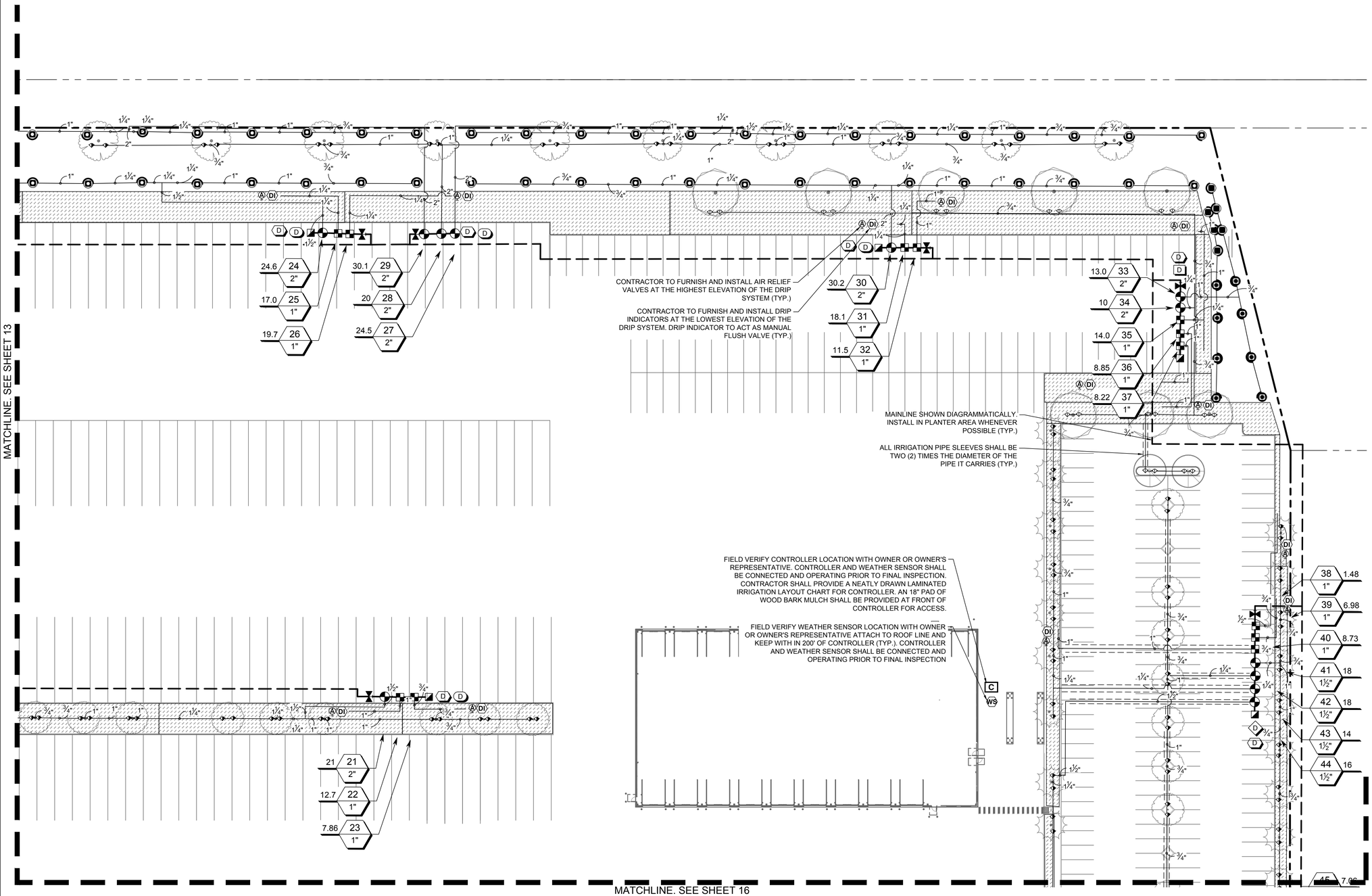
CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
IRRIGATION PLAN

13 OF 21 SHEETS

FOR: CROWN ENTERPRISES

PPD# 2023-0006

PLAN No. _____



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C	HUNTER A2C-150D-P
WS	HUNTER SOLAR-SYNC
FS	HUNTER HFS-150
D	HUNTER ICD-100
D	HUNTER ICD-200
D	HUNTER ICD-400
D	HUNTER ICD-600
M	WATER METER 1-1/2"

- IRRIGATION LATERAL LINE: PVC SCHEDULE 40
- IRRIGATION MAINLINE: PVC SCHEDULE 40
- PIPE SLEEVE: PVC SCHEDULE 40

Valve Callout
- # — Valve Number
- # — Valve Flow
- #" — Valve Size

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MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER
LICENSED LANDSCAPE ARCHITECT
Mikaela Madsen License No. 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA
DATE:10/28/2024

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CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
IRRIGATION PLAN

14 OF 21 SHEETS

FOR: CROWN ENTERPRISES
PPD# 2023-0006
PLAN No. _____

MATCHLINE. SEE SHEET 13

MATCHLINE. SEE SHEET 16

ALL IRRIGATION PIPE SLEEVES SHALL BE TWO (2) TIMES THE DIAMETER OF THE PIPE IT CARRIES (TYP.)

INSTALL GATE VALVE BEFORE AND AFTER MAINLINE CROSSOVER (TYP.)

MAINLINE SHOWN DIAGRAMMATICALLY. INSTALL IN PLANTER AREA WHENEVER POSSIBLE (TYP.)

CONTRACTOR TO FURNISH AND INSTALL AIR RELIEF VALVES AT THE HIGHEST ELEVATION OF THE DRIP SYSTEM (TYP.)

CONTRACTOR TO FURNISH AND INSTALL DRIP INDICATORS AT THE LOWEST ELEVATION OF THE DRIP SYSTEM. DRIP INDICATOR TO ACT AS MANUAL FLUSH VALVE (TYP.)

46 22 2"
47 12.7 1"
48 12.7 1"
49 3.77 1"
50 30.4 2"
51 4.1 1"
52 26.8 2"
53 5 1½"
54 18.0 2"
55 5.56 1"
21.8 56 2"
7 57 1½"
24.2 58 2"

IRRIGATION LEGEND (SEE SHEET 10 FOR FULL SCHEDULE)

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1000	HUNTER MP1000 PROS-06-PRS30-CV
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25Q 50Q 50H 10H 10F 20F	HUNTER PROS-PRS30-06-CV-MSBN

SYMBOL	MANUFACTURER/MODEL
	HUNTER ICZ-101-25
A	HUNTER PLD-AVR
DI	HUNTER ECO-ID-12
	AREA TO RECEIVE DRIPLINE NETAFIM TLCV-06-18

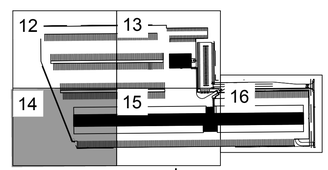
SYMBOL	MANUFACTURER/MODEL
	HUNTER ICV-G-DC
	HUNTER HQ-44LRC
	LANDSCAPE PRODUCTS INC. BGV
	LANDSCAPE PRODUCTS INC. CWV THREADED
MV	HUNTER IBV 1-1/2"
BF	BACKFLOW 1-1/2"
C	HUNTER A2C-150D-P
WS	HUNTER SOLAR-SYNC
FS	HUNTER HFS-150
D	HUNTER ICD-100
D	HUNTER ICD-200
D	HUNTER ICD-400
D	HUNTER ICD-600
M	WATER METER 1-1/2"

IRRIGATION LATERAL LINE: PVC SCHEDULE 40

IRRIGATION MAINLINE: PVC SCHEDULE 40

PIPE SLEEVE: PVC SCHEDULE 40

Valve Callout
- # — Valve Number
- # — Valve Flow
- #" — Valve Size



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

WDID #: XXXXXXX

UNDERGROUND SERVICE ALERT
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1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER

LICENSED LANDSCAPE ARCHITECT
Robert Walden License No. 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA

DATE: 10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE

RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE

APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

3880 LEMON STREET, SUITE 420; RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007-88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
IRRIGATION PLAN

15 OF 21 SHEETS

FOR: CROWN ENTERPRISES

PPD# 2023-0006

PLAN No. _____

MATCHLINE. SEE SHEET 14

MATCHLINE. SEE SHEET 15

MATCHLINE. SEE SHEET 17

ALL IRRIGATION PIPE SLEEVES SHALL BE TWO (2) TIMES THE DIAMETER OF THE PIPE IT CARRIES (TYP.)

CONTRACTOR TO FURNISH AND INSTALL DRIP INDICATORS AT THE LOWEST ELEVATION OF THE DRIP SYSTEM. DRIP INDICATOR TO ACT AS MANUAL FLUSH VALVE (TYP.)

CONTRACTOR TO FURNISH AND INSTALL AIR RELIEF VALVES AT THE HIGHEST ELEVATION OF THE DRIP SYSTEM (TYP.)

MAINLINE SHOWN DIAGRAMMATICALLY. INSTALL IN PLANTER AREA WHENEVER POSSIBLE (TYP.)

ALL VALVES SHALL BE INSTALLED IN PLANTING AREAS AT 24" FROM BACK OF CURB (TYP.)

IRRIGATION LEGEND (SEE SHEET 10 FOR FULL SCHEDULE)

SYMBOL	MANUFACTURER/MODEL
1000	HUNTER MP1000 PROS-06-PRS30-CV
3000	HUNTER MP3000 PROS-06-PRS30-CV
3500	HUNTER MP3500 PROS-06-PRS30-CV
25Q 50Q 50H 10H 10F 20F	HUNTER PROS-PRS30-06-CV-MSBN

SYMBOL	MANUFACTURER/MODEL
	HUNTER ICZ-101-25
A	HUNTER PLD-AVR
DI	HUNTER ECO-ID-12
	AREA TO RECEIVE DRIPLINE NETAFIM TLCV-06-18

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	LANDSCAPE PRODUCTS INC. BGV
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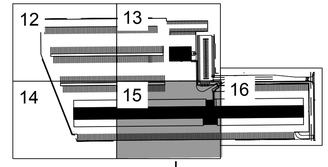
C	HUNTER A2C-150D-P
WS	HUNTER SOLAR-SYNC
FS	HUNTER HFS-150
D	HUNTER ICD-100
D	HUNTER ICD-200
D	HUNTER ICD-400
D	HUNTER ICD-600
M	WATER METER 1-1/2"

IRRIGATION LATERAL LINE: PVC SCHEDULE 40

IRRIGATION MAINLINE: PVC SCHEDULE 40

PIPE SLEEVE: PVC SCHEDULE 40

Valve Callout
- Valve Number
- Valve Flow
- Valve Size



NORTH

GRAPHIC SCALE IN FEET
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WDID #: XXXXXXX

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TWO WORKING DAYS BEFORE YOU DIG

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER
LICENSED LANDSCAPE ARCHITECT — MICHAEL MADSEN — License No. 5798 — Signature — Renewal Date — Date — STATE OF CALIFORNIA

DATE: 10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE

RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE

APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

3880 LEMON STREET, SUITE 420; RIVERSIDE, CA 92501
PHONE: 951-543-9868
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CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
IRRIGATION PLAN

16 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____

MATCHLINE. SEE SHEET 16

CONTRACTOR TO FURNISH AND INSTALL DRIP INDICATORS AT THE LOWEST ELEVATION OF THE DRIP SYSTEM. DRIP INDICATOR TO ACT AS MANUAL FLUSH VALVE (TYP.)

CONTRACTOR TO FURNISH AND INSTALL AIR RELIEF VALVES AT THE HIGHEST ELEVATION OF THE DRIP SYSTEM (TYP.)

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INSTALL GATE VALVE BEFORE AND AFTER MAINLINE CROSSOVER (TYP.)

MAINLINE SHOWN DIAGRAMMATICALLY. INSTALL IN PLANTER AREA WHENEVER POSSIBLE (TYP.)

ALL VALVES SHALL BE INSTALLED IN PLANTING AREAS AT 24" FROM BACK OF CURB (TYP.)

PROPOSED 1 1/2" IRRIGATION WATER METER AND BACKFLOW - SEE CIVIL PLANS FOR EXACT LOCATIONS

IRRIGATION LEGEND (SEE SHEET 10 FOR FULL SCHEDULE)

SYMBOL	MANUFACTURER/MODEL
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D	HUNTER ICD-200
D	HUNTER ICD-400
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IRRIGATION LATERAL LINE: PVC SCHEDULE 40

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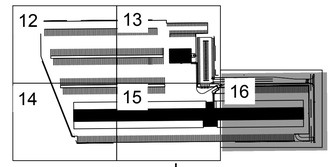

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DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER
LICENSED LANDSCAPE ARCHITECT
Michael Madsen License # 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA

DATE:10/28/2024

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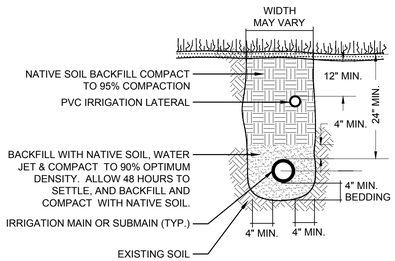
CITY OF RIALTO
SANTA ANA TRUCK TERMINAL LANDSCAPE AND IRRIGATION
IRRIGATION PLAN

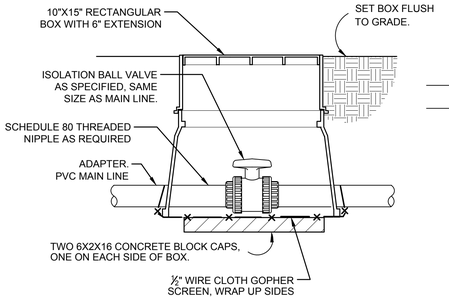
17 OF 21 SHEETS

FOR: CROWN ENTERPRISES
PPD# 2023-0006
PLAN No. _____



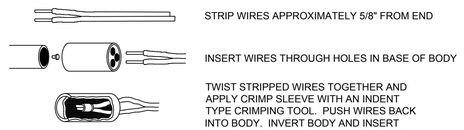
A TRENCHING DETAIL

N.T.S.



B SHUT OFF VALVE

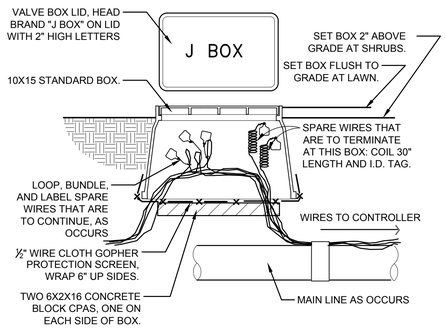
N.T.S.



NOTES:
1. ONE CONNECTOR HANDLES #10 AWG, #12 AWG AND #14 AWG WIRES.
2. WIRE CONNECTORS WILL ACCEPT THREE WIRE OR TWO WIRE CONNECTIONS.
3. WIRE CONNECTOR SHALL BE 3M DBR/DBY OR KING BROS.

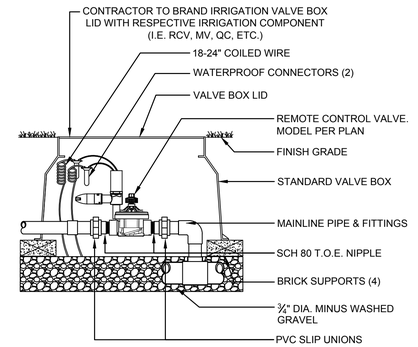
C WIRE CONNECTION

N.T.S.



D WIRE BUNDLE JUNCTION BOX

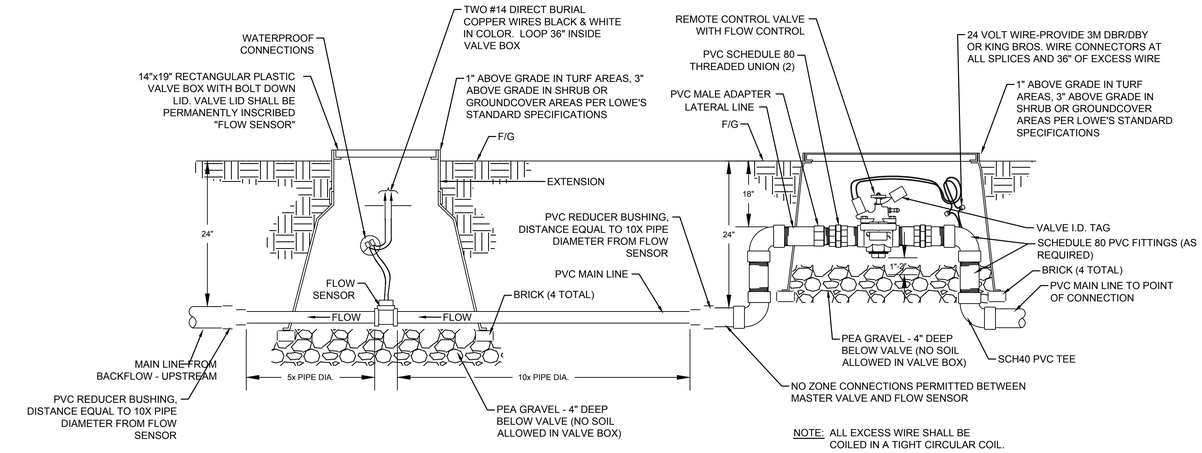
N.T.S.



NOTE: APPLY TEFLON TAPE TO ALL THREADED PIPE CONNECTIONS.

E ICV GLOBE VALVE

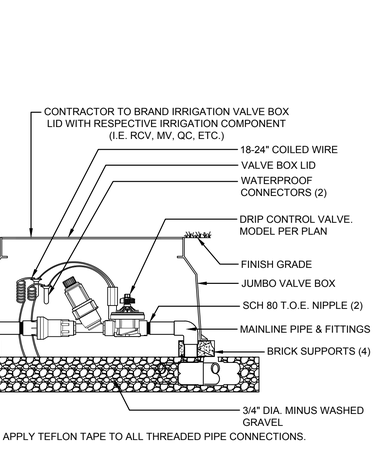
N.T.S.



NOTE: ALL EXCESS WIRE SHALL BE COILED IN A TIGHT CIRCULAR COIL.

F FLOW SENSOR AND MASTER REMOTE CONTROL VALVE INSTALLATION

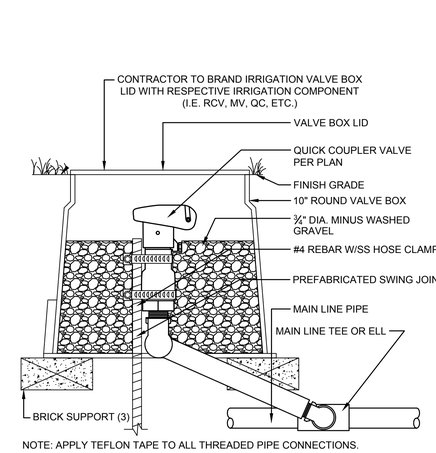
N.T.S.



NOTE: APPLY TEFLON TAPE TO ALL THREADED PIPE CONNECTIONS.

G DRIP CONTROL ZONE KIT

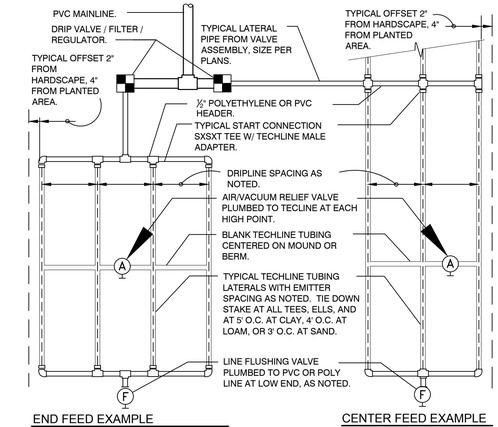
N.T.S.



NOTE: APPLY TEFLON TAPE TO ALL THREADED PIPE CONNECTIONS.

H QUICK COUPLER VALVE

N.T.S.



END FEED EXAMPLE

CENTER FEED EXAMPLE

SLOPED CONDITION NOTES:

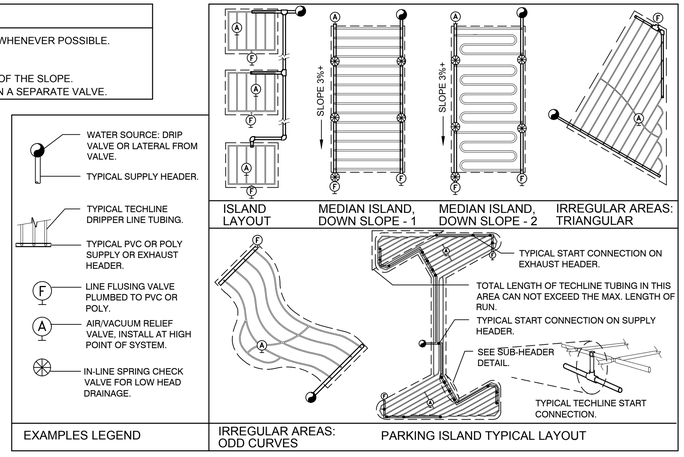
1.DRIPLINE LATERALS SHOULD FOLLOW THE CONTOURS OF THE SLOPE WHENEVER POSSIBLE.
2.INSTALL AIR RELIEF VALVE AT HIGHEST POINT.
3.TECHLINE NORMAL SPACING WITHIN THE TOP ⅔ OF SLOPE,
4.INSTALL TECHLINE AT NORMAL SPACING PLUS 25% AT THE BOTTOM ⅓ OF THE SLOPE.
5.WHEN ELEVATION CHANGE IS 10 FT OR MORE, ZONE THE BOTTOM ⅓ ON A SEPARATE VALVE.

TECHLINE MAXIMUM LENGTH OF SINGLE LATERAL (FEET)

DRIPPER SPACING		12"			18"			24"	
DRIPPER FLOW RATE (GPH)		0.4	0.6	0.9	0.4	0.6	0.9	0.6	0.9
INLET PRESSURE (PSI)	15	292	233	175	410	322	247	405	308
	25	397	321	238	558	438	335	553	423
	35	486	365	279	656	514	394	649	497
	45	520	407	311	732	574	439	725	555

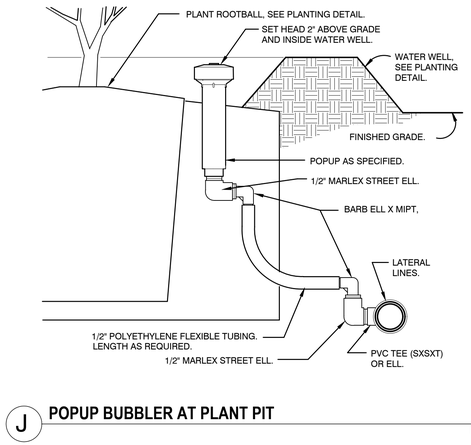
TECHLINE FLOW PER 100 FEET

DRIPPER SPACING	0.4 GPH DRIPPER		0.6 GPH DRIPPER		0.9 GPH DRIPPER	
	GPH	GPM	GPH	GPM	GPH	GPM
12"	40.00	0.67	61.00	1.02	92.00	1.53
18"	26.67	0.44	41.00	0.68	61.00	1.02
24"	N/A	N/A	31.00	0.51	46.00	0.77



I TYPICAL NETAFIM TECHLINE REQUIREMENTS

N.T.S.



J POPUP BUBBLER AT PLANT PIT

N.T.S.

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SEAL-DESIGN ENGINEER

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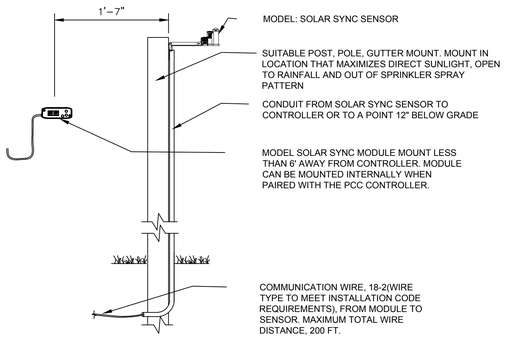
CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
IRRIGATION DETAILS

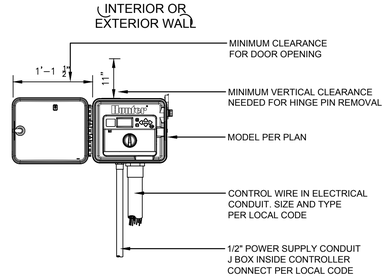
18 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No.



A WEATHER SENSOR

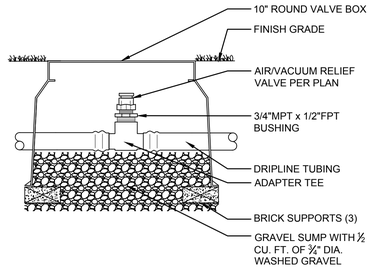
N.T.S.



NOTE
SPECIFY 6, 12, 18, 24, 30, STATION MODEL CONTROLLER. MOUNT CONTROLLER WITH LCD SCREEN AT EYE LEVEL. CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 OR 220 VAC SOURCE.

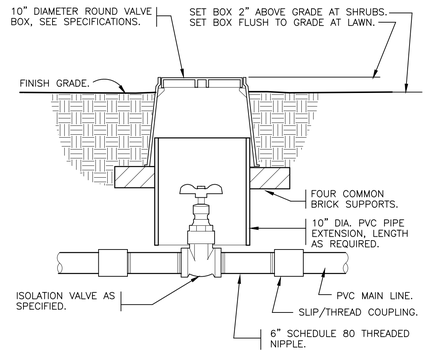
B IRRIGATION CONTROLLER

N.T.S.



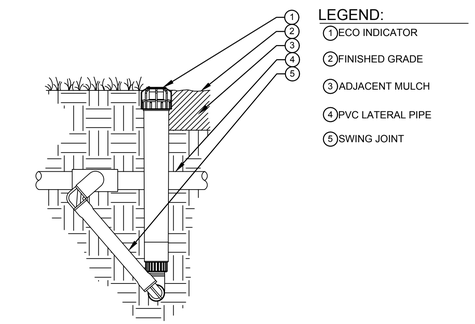
C DRIP AIR RELIEF VALVE

N.T.S.



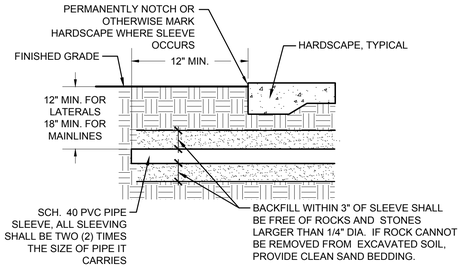
D GATE VALVE

N.T.S.



E ECO-INDICATOR ON SWING JOINT

N.T.S.



F PIPE SLEEVE

N.T.S.

DETAIL LEGEND:

1. HUNTER ICD-SENSOR DECODER PER PLAN
2. HUNTER DECODER STAKE (DECRSTAKE-10) DRIVEN INTO VALVE BOX BASE GRAVEL/SOIL. SECURE DECODER TO STAKE WITH BOTTOM OF DECODER FACING UP AND FASTENED TO STAKE USING TWO (2) PROVIDED ZIP TIES
3. INCOMING HUNTER JACKETED IDWIRE PATH PER PLAN WITH 36-IN [1m] LOOP OF SLACK WIRE, MEASURED FROM TOP OF VALVE BOX, NEATLY COILED INSIDE VALVE BOX
4. RED AND BLUE WIRES FROM DECODER TO IDWIRE SPLICES
5. BARE COPPER GROUND WIRE FROM DECODER TO GROUNDING DEVICE, ROD OR PLATE, SEE PLAN FOR GROUND LOCATIONS AND TYPE
6. STATION WIRE FROM DECODER OUTPUT TO VALVE SOLENOID WIRES
7. IDWIRE PATH SPLICE WITH DECODER OUTPUT USING 3M DBRY/6 INSTALLED PER MANUFACTURERS INSTRUCTIONS
8. VALVE SOLENOID WIRE SPLICE WITH DECODER OUTPUT USING 3M DBRY/6 INSTALLED PER MANUFACTURERS INSTRUCTIONS
9. VALVE SOLENOID WIRE WITH 18-IN [45cm] COIL TO SPLICE WITH DECODER OUTPUT
10. OUTGOING HUNTER JACKETED IDWIRE PATH PER PLAN WITH 36-IN [1m] LOOP OF SLACK WIRE, MEASURED FROM TOP OF VALVE BOX, NEATLY COILED INSIDE VALVE BOX
11. FLOW SENSOR, VALVE BOX, AND RELATED ITEMS PER IRRIGATION PLAN AND DETAILS
12. FINISHED GRADE

DETAIL NOTES:

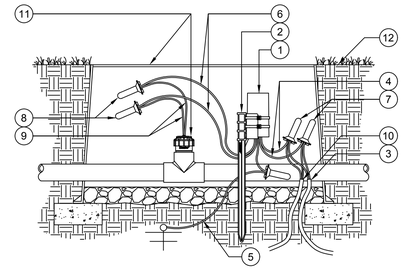
A. CONTRACTOR SHALL INDICATE ASSOCIATED VALVE NUMBER(S) ON MANUFACTURER PROVIDED LABEL ON DECODER WITH PERMANENT MARKER

B. CONTRACTOR SHALL LOCATE SPLICE WITH IDWIRE AND DECODER OUTPUT IN THE MIDDLE OF 36-IN[1m] ID WIRE LOOP IN VALVE BOX

C. CONTRACTOR SHALL CONNECT BARE COPPER GROUND WIRE FROM DECODER OUTPUT TO GROUND DEVICE WIRE USING ERICO PG11L KIT PER MANUFACTURES INSTRUCTIONS

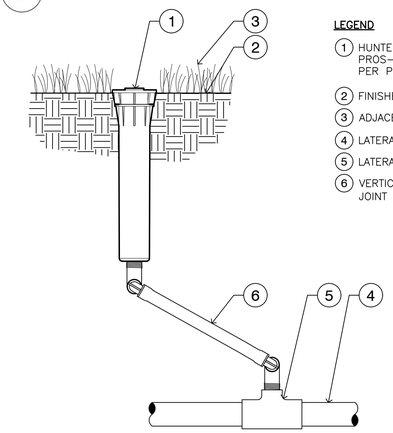
D. EARTH GROUND TO BE A MINIMUM OF 8 FEET AWAY FROM DECODER AND AT A RIGHT ANGLE TO THE TWO WIRE PATH

E. GROUNDING SHALL BE INSTALLED AT A MINIMUM OF EVERY 12TH DECODER OR 1,000', WHICHEVER OCCURS FIRST



G SENSOR DECODERS

N.T.S.



H POP UP SPRAY

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MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER
LICENSED LANDSCAPE ARCHITECT Beverly Madsen License 5798 Signature Renewal Date Date STATE OF CALIFORNIA
DATE:10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE
RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE
APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

3880 LEMON STREET, SUITE 420; RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007–88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
IRRIGATION DETAILS

19 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____

SECTION 329300
PLANTS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide planting work and planting maintenance complete as shown on the drawings and as specified including staking and layout of the landscaping.

1.2 QUALITY ASSURANCE

A. Reference Standards:

1. Ordinances and Regulations: All local, municipal and state laws, codes and regulations governing or relating to all portions of this work are hereby incorporated into and made a part of these Specifications. Anything contained in these Specifications shall not be construed to conflict with any of the above codes, regulations or requirements of the same. However, when these Specifications and Drawings call for or describe materials, workmanship or construction of a better quality, higher standard than is required by the above mentioned codes and regulations, the provisions of these Specifications and Drawings shall take precedence. Furnish without extra charge additional materials and labor required to comply with above rules and regulations.

2. CONTRACTOR shall be familiar with and follow the State of California Model Water Ordinance, California Code of Regulations, Title 23 Waters, Division 2, Department of Water Resources, Chapter 2.7. Also, the CONTRACTOR is responsible to follow all local water ordinances and the Soil Management/Analysis Report with verifying implementation.

3. "Sunset Western Garden Book," Lane Publishing Co., Menlo Park, California; current edition.

4. "American Standards for Nursery Stock," American Association of Nurseryman, 230 Southern Building, Washington, D.C. 20005.

5. US Composting Council Compost analysis Program (CAP)

6. Test Methods for the Evaluation of Composting and Compost (TMECC)

7. International Society of Arboriculture, Guide for Plant Appraisal, latest version.

8. United States Composting Council (USCC) Seal of Testing Assurance (STA) program.

9. TMECC: Refers to "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the United States Compost Council (USCC).

10. Manufacturer's recommendations.

B. Qualifications:

1. Experience: Assign a full-time employee to the job as foreman for the duration of the Contract who is certified landscape technician, certification through CLCA or minimum of four (4) years experience in landscape installation and maintenance supervision, with experience or training in turf management, entomology, pest control, soils, fertilizers and plant identification.

2. Labor Force: Provide a landscape installation and maintenance force thoroughly familiar with, and trained in, the work to be accomplished to perform the task in a competent, efficient manner acceptable to the OWNER.

C. Requirements:

1. Supervision: The foreman shall directly supervise the work force at all times and be present during the entire installation. Notify Owner's Representative of all changes in supervision.

2. Identification: Provide proper identification at all times for landscape maintenance firm's vehicles and a labor force uniformly dressed in a manner satisfactory to Owner's Representative.

3. Planting soils and organic amendments shall meet the AACWP requirement for the stormwater treatment measures used with this project work.

D. Plant Material Standards

1. Quality and Size of Plants: Conform to the State of California Grading Code of Nursery Stock, No. 1 grade and American Standards for Nursery Stock," American Association of Nurseryman. Use only nursery-grown stock which is free from insect pests and diseases.

2. Comply with federal and state laws requiring inspection for plant diseases and infestations. Submit inspection certificates required by law with each shipment of plants, and deliver certificates to the OWNER. Obtain clearance from the County Agricultural Commissioner as required by law, before planting plants delivered from outside the County in which planted.

E. Testing Agency/ Soils Report: See Section 329113 SOIL PREPARATION

F. Testing Agency/ Composted Organic Amendment: See Section 329113 SOIL PREPARATION

1.3 SUBMITTALS

A. Product Data: Manufacturer's current catalog cuts and specifications of the following:

1. Fertilizers
2. Tree Tie and Stake
3. Root Barrier
4. Iron Sulfate
5. Filter Fabric
6. 4" Perforated Pipe

B. Samples: Submit following samples along with certificates of compliance / analytical data from approved laboratory for degree of compliance:

1. Plants: Submit typical sample of each variety or entire quantity to site for approval by ENGINEER.

2. Organic Mulch: Submit 1-pint sample with list of ingredients.

3. Organic (Soil) Amendment: Submit 1/2-pint sample with Technical Data Sheet and STA certification.

4. Permeable Backfill or Drain Rock: Submit 1-pint sample.

5. Imported Planting Soil: Submit 1-pint sample

C. Delivery Receipts

1. Provide delivery receipts for quantities of organic soil amendments delivered to the site.

D. Topsoil Analysis (Soil Management) Report

1. After approval of rough grading and topsoil placement, obtain minimum of two representative one quart samples of topsoil taken from accepted site locations at depth of 4" to 6" below finish grade and submit to an accredited Soils Laboratory for evaluation of physical and chemical properties of soil including all major nutrients; pH, salinity, boron, sodium, micronutrients, copper, zinc, manganese and iron; and infiltration rate, soil texture and organic content, along with a summary describing the degree of compliance with the specified requirements. The report shall also include recommendations for modification of the soil for agricultural suitability.

2. Upon request by Owner's Representative, submit documentation verifying implementation of soil analysis report recommendations to the local agency with Certificate of Completion as required by the State of California Model Water Ordinance

E. Subsoil Analysis

1. Besides the above required soil samples, take one representative sample of any subgrade soil that is to receive a layer of imported planting soil over it. The laboratory report shall include the subgrade soil's total combined silt and clay content for determining the total desirable combined silt and clay content of the final imported planting soil cover specified herein.

F. Imported Planting Soil Analysis

1. See Imported Planting Soil Analysis requirements elsewhere in this specification for comparison to existing soil analysis.

G. Approval of Laboratory Report

1. Upon approval of the Laboratory's report by the Owner's Representative, the recommendations in the report shall become a part of the Specifications and the quantities of soil amendment, fertilizer and other additives shall be adjusted to conform with the report at no additional cost to the OWNER. Request Testing Laboratory to send one copy of test results directly to ENGINEER. Note that there is a minimum quantity of organic amendment specified elsewhere in this specification section.

1.4 PROJECT/SITE CONDITIONS

A. Site Visit: At beginning of work, visit and walk the site with the ENGINEER to clarify scope of work and understand existing project/site conditions.

1.5 WARRANTY AND REPLACEMENT

A. Pre-Emergence Weed Killer: Warrant the work against weed growth for a period of four (4) months after application.

B. Warrant all plants and planting to be in a healthy, thriving condition until the end of the maintenance period, and deciduous trees beyond that time until active growth is evident.

C. Replace all dead plants and plants not in a vigorous condition immediately upon discovery
and as directed by the Owner's Representative at CONTRACTOR's expense. Install replacement plants before the final acceptance at the size specified.

D. Warrant all plant material for a period of one year after final acceptance of the maintenance period against plant materials with defects at the time of installation.

E. Warrant plant installation and maintenance by CONTRACTOR against defects for a period of one year.

PART 2 - PRODUCTS

2.1 PLANTS

A. Plant the variety, quantity and size indicated. The total quantity tabulated on the drawings are considered approximate and furnished for convenience only. CONTRACTOR shall perform his/her own plant quantity calculations and shall provide all plants shown on the Drawings.

B. Tag plants of the type or name indicated and in accordance with the standard practice recommended by the American Association of Nurserymen.

C. Install healthy, shapely and well rooted plants with no evidence of having been root-bound, restricted or deformed.

D. Take precautions to ensure that the plants will arrive at the site in proper condition for successful growth. Protect plants in transit from windburn and sunburn. Protect and maintain plants on site by proper storage and watering.

E. Substitutions will not be permitted, except as follows:

1. If proof is submitted to the Owner's Representative that any plant specified is not obtainable, a proposal will be considered for use of nearest equivalent size or variety with an equitable adjustment of contract price.

2. Substantiate and submit proof of plant availability in writing to the Owner's Representative within 10 days after the effective date of Notice to Proceed.

F. Tree Form: Trees shall have a symmetrical form as typical for the species/cultivar and growth form.

1. Central Leader for Single Trunk Trees: Trees shall have a single, relatively straight central leader and tapered trunk, free of co dominant stems and vigorous, upright branches that compete with the central leader. Preferably, the central leader should not have been headed; however, in cases where the original leader has been remove, an upright branch at least ½ the diameter of the original leader just below the pruning point shall be present.

2. Potential Main Branches: Branches shall be evenly distributed radially around and appropriately spaced vertically along the trunk, forming a generally symmetrical crown typical for the species.

3. Headed temporary branches should be distributed around and along the trunk as noted above and shall be no greater than 3/8" diameter, and no greater than ½ diameter of the trunk at point of attachment.

G. Tree Trunk

1. Trunk diameter and taper shall be sufficient so that the tree will remain vertical without the support of a nursery stake.

2. Trunk shall be free of wounds (except properly-made pruning cuts), sunburned areas, conks (fungal fruiting-bodies), wood cracks, bleeding areas, signs of boring insects, galls, cankers and/or lesions.

3. Tree trunk diameter at 6" above the soil surface shall be within the diameter range shown for each container size below, except where shown otherwise:

Container	Trunk Diameter	Soil level from Container Top
24 inch Box	2.0" or larger	1.75 to 2.75"

4. Tree trunks shall be undamaged and uncut with all old abrasions and cuts completely callused over. Do not prune plants prior to delivery.

H. Tree Roots

1. Trunk root collar (root crown) and large roots shall be free of circling and/or kinked roots. CONTRACTOR may be required to remove soil near the root collar in order to verify that circling and/or kinked roots are not present.

2. The tree shall be well rooted in the container. When the trunk is lifted the trunk and root system shall move as one and the rootball shall remain intact.

3. The top-most roots or root collar shall be within 1" above or below the soil surface. The soil level in the container shall be within the limits shown in above table.
4. The rootball periphery shall be free of large circling and bottom-matted roots.
5. On grafted or budded trees, there shall be no suckers from the root stock.

I. Measure trees and shrubs with branches in normal position. Height and spread dimensions indicated refer to the main body of the plant, and not from branch tip to tip.

2.2 FERTILIZERS

A. Commercial fertilizer, pelleted or granular form, conform to the requirements of Chapter 7, Article 2, of the Agricultural Code of the State of California for fertilizing materials as follows:

1. 21 gram planting tablets 20% Nitrogen, 10% Phosphoric Acid and 5% Potash (20-10-5) available from Agriform or 10gm BestPacks packets 20% Nitrogen, 10% Phosphoric Acid and 5% Potash (20-10-5) available from Best Fertilizer Co.

2.3 ORGANIC AMENDMENT FOR IN SITU SOILS (ON-GRADE):

A. Ground Redwood or Ground Fir Bark with the following properties:

1. Percent Passing — Sieve Designation

100	9.51 mm	3/8"
50-60	6.35 mm	1/4"
20-40	4.76 mm	No. 4
0-20	2.38 mm	No. 8 8 mesh

Redwood Sawdust
Dry bulk density, lbs. per cu. yd., 260-280
Nitrogen stabilized - dry weight basis, min. 0.4%
Salinity (ECe): 4.0 maximum
Organic Content: 90% minimum
Reaction (pH): 4.0 minimum

Ground Fir and/or Pine Bark
Dry bulk density, lbs. per cu. yd., Min. 350
Nitrogen stabilized - dry weight basis, min. 0.5%
Salinity (ECe): 4.0 maximum
Organic Content: 90% minimum
Reaction (pH): 4.0 minimum

B. Submit sample along with analytical data from an approved laboratory for degree of compliance to the Owner's Representative within two weeks after award of Contract.

C. The above Ground Redwood or Ground Fir Bark or Ground Pine Bark (ORGANIC AMENDMENT FOR IN SITU SOILS) is the specified organic amendment material required. Acceptance of Composted Yard Waste Amendment in lieu of the above specified ORGANIC AMENDMENT FOR IN SITU SOILS (ON-GRADE) material will be considered if the in situ planting soil salinity and soil structure is favorable for the inclusion of recycled yard waste organic matter, as approved by the Owner's Representative. It is the CONTRACTOR's responsibility to secure test samples of both the planting soil and the proposed composted yard waste amendment (2 quart samples) and submit to Soils and Plant Laboratory for evaluation and recommendations. The composted yard waste amendment sample shall be a grab sample from the currently available material that has been tested within the last 30 days and shall include the composter's Compost Technical Data Sheet that includes lab analytical test results and directions for product use along with list of ingredients. The composted yard waste amendment shall be a mixture of feedstock materials including green material consisting of chipped, shredded, or ground vegetation and mixed food waste, or clean processed recycled wood products. Single source, Biosolids (sewage waste) compost will not be acceptable.

D. Based on the Soils and Plant Laboratory evaluation, the addition of composted yard waste amendment shall not be acceptable if it creates a leaching requirement.

E. The addition of the compost shall result in a final ECe of the amended soil of less than 4.0 dS/m @ 25 degrees C. as determined in a saturation extract. Use the following table to determine the maximum allowable Ece (dS/m of saturation extract) of compost at desired use rate and allowable Ece increase.

DESIRED USE RATE		MAXIMUM ALLOWABLE ECe INCREASE FROM AMENDMENT		
Cu. Yds. Amendment Per 1000 Sq. Ft. for Incorporation to 6" depth	Volume percentage of amendment	1 dS/m	2 dS/m	3 dS/m
		Maximum ECe of Compost		
1	5	14	28	42
2	11	7	14	21
3	16	5	9.5	14
4	22	3.5	7.0	10.5
5	27	3.0	5.5	8.5
6	32	2.5	4.5	7.0

1. Example: Specification calls for 6 cu. Yds. Compost per 1000 sq. ft. for incorporation to 6" depth, and site soil has an ECe of 2.0. In order to avoid exceeding ECe of 4 in final blend, compost ECe shall be less than 4.5 dS/m.

F. Composted Yard Waste Soil Amendment Properties as follows:

1. Gradation:

Percent Passing by Weight	Sieve Designation
90	1/2"
85-100	9.51 mm 3/8"
50-80 2.38 mm	No. 8 8 mesh
0-40 500 micron	No. 35 32 meshes

Maximum length 4 inches

2. Organic Content: Minimum 45% based on dry weight and determined by ash method.

3. Carbon to nitrogen ratio: Maximum 35:1 if material is claimed to be nitrogen stabilized.

4. pH: 5.5 – 8.0 as determined in saturated paste.

5. Soluble Salts: See above.

6. Moisture Content: 35-60%.

7. Physical Contaminants:
   a) The compost shall be free of contaminants such as glass, metal and visible plastic per Man Made Inert Removal and Classification: TMECC 02.02, %> 4mm fraction. Combined total less than 1.0.
   b) Man Made Inert Removal and Classification: Sharps % > 4mm fraction. (sewing needles, hypodermic needles) Non Detected.

8. Pathogens: TMECC 07.01-B Fecal Coliform Bacteria <1000 MPN/gram dry wt. <1000 (Pass)

A. General
1. Soil in all planting areas shall be moist, but not so moist that it sticks to a hand shovel, and loose and friable to a minimum depth of 12 inches with a relative maximum compaction of 85%. Rip and scarify and dry any areas that do not meet this requirement.

B. Before proceeding with the work: Carefully inspect all areas and verify all dimensions and quantities. Immediately inform the Owner's Representative of any discrepancy between the drawings and specifications and actual conditions and secure approval to proceed.

C. Planting Soil Placement Adjacent to Pavement Areas:

1. All debris shall be removed from the tree wells prior to soil backfill and proposed tree planting. Tree wells and structural soil excavations shall not be contained concrete spoils from concrete installation. Concrete deliver trucks cleaning shall be captured in CONTRACTOR furnished containers for such purposes.

2. Provide planting soil as a final lift in all planting areas within and adjacent to paved areas and other construction where native site soil has been covered by Owner's Representative fill and/or base rock. Remove all engineered fill, base rock and compacted subgrade full depth of compaction and replace with approved planting soil, a minimum lift of 12".

D. Backfill soil for tree wells shall be amended soil equal to the native soil and clean from stones greater than 3" and all construction debris.

E. All planting areas soil shall be loose and friable prior to planting. Rip any overly compacted and re-compacted planting areas in two directions full depth of compacted soil prior to planting.

F. Planting operations shall be performed only during periods when beneficial results can be obtained. When excessive moisture or other unsatisfactory conditions prevail, the work shall be stopped until conditions are satisfactory.

G. Thoroughly wet down the planting areas to settle the soil and confirm irrigation coverage and operation. Allow soil to dry so as to be workable as described herein.

H. Drag to a smooth, even surface. Grade to form all swales. Pitch grade with uniform slope to catch basins, streets, curb, etc., to ensure uniform surface drainage. Areas requiring grading include adjacent transition areas that shall be uniformly sloped between finish elevations. Slope surface away from walls so water will not stand against walls or buildings. Control surface water to avoid damage to adjoining properties or to finished work on the site. Take required remedial measures to prevent erosion of freshly graded areas and until such time as permanent drainage and erosion control features have been installed.

I. Finish Grade: Hold finish grade and/or mulch surface in planting areas 1/2-inch below adjacent pavement surfaces, tops of curbs, manholes, etc. The subgrade of the mulch in mulched planting areas shall be a minus 2 inches for a distance of 12 to 18 inch from the edge of pavement. The remainder of the planting area shall be graded to receive the required 3 inch layer of mulch.

3.2 TREE PLANTING

A. Mark tree and shrub locations on site using stakes, gypsum or similar approved means and secure location approval by the Owner's Representative before plant holes are dug. Review location of plants in relationship to irrigation heads and adjust location(s) that interfere with the function of the spray heads as accepted by the ENGINEER prior to planting.

B. Test drainage of plant beds and pits by filling with water (minimum 6"). The retention of water in planting beds and plant pits for more than two (2) hours shall be brought to the attention of the Owner's Representative. If rock, underground construction work, tree roots, poor drainage, or other obstructions are encountered in the excavation of plant pits, alternate locations may be selected by Owner's Representative.

C. Excavate tree and shrub pits as follows (Note square Tree Pit pattern required below):

Excavation for	Width	Depth
Boxed Trees	Box + 18"	Box depth
Container Trees (15 gc)	Can +12"	Can depth

D. Square Tree Pits

1. Tree pits shall be dug in a square pattern with pit walls scarified to promote root penetration into surrounding soil. Drilled tree pits shall be modified to a square shape.

E. Break and loosen the sides and bottom of the pit to ensure root penetration and water test hole for drainage as required above.

F. Backfill plant holes with mix as specified, free from rocks, clods or lumpy material. Backfill native soil free of soil amendments under rootball and foot tamp to prevent settlement. Backfill remainder of the hole with soil mix and place plant tablets or packets fertilizer 3 inches below finish grade and 1/2-inch from roots at the following rates:

Size	Rate
24" Box -	6 tablets or packet

G. Carefully remove and set plants without damaging the rootball. Superficially cut edge roots vertically on three sides. Remove bottom of plant boxes before planting. Remove sides of boxes after positioning the plant and partially backfilling.

H. Set plants in backfill with top of the rootball 2 inches above finished grade. Backfill remainder of hole and soak thoroughly by jetting with a hose and pipe section. Water backfill until saturated the full depth of the hole.

I. Stake and/or guy trees as detailed and noted herein. Drive stake(s) until solid (at least 12" beyond bottom of rootball) and remove excess stake protruding above top tree tie to prevent rubbing against branches. Avoid driving stakes through rootball. If subgrade does not accept stakes to a stable degree, delete stakes and guy the trees as specified herein and as detailed. Locate tree ties to avoid contact with tree branches. Locate top tie at tree flex point.

J. Remove any soil from top of plant rootballs and secure Owner's Representative's approval of rootball height prior to mulching.

K. After approval of rootball height, install mulch as required below.

3.3 MULCH

A. Install a 3-inch layer of bark mulch per plans in planted areas (as called out on the drawings) up to edges of pavement, curbs, headers, and project limits. Keep mulch eight (8) inches away from tree trunks.
B. Install sheet mulching underneath all areas to receive mulch with 100% complete coverage. Overlap sheets 6-8 inches.

3.4 ROOT BARRIER

A. Install in linear fashion along and adjacent to the edges of the planting area as detailed or, if not shown, in accordance with manufacturer's recommendations. Set top of barrier at finished decomposed granite surface, as accepted by Owner's Representative.

3.6 WATERING

A. Water all trees, shrubs and ground cover immediately after planting. Apply water to all plants as often and in sufficient amount as conditions may require to keep the plants in a healthy vigorous growing condition until completion of the Contract. Do supplemental hand watering of trees and shrubs during the first 3 weeks of plant establishment.

3.7 PRE-MAINTENANCE PERIOD REVIEW AND APPROVAL OF PLANTING

A. Maintain plants from time of delivery to site until final acceptance of landscape installation.

B. Receive approval of the installed planting prior to commencement of planting establishment maintenance period. Notify the Owner's Representative a minimum of seven (7) days prior to requested review. Before the review, complete the following:
1. Complete all construction work.
2. Present all planted areas neat and clean with all weeds removed and all plants installed and appearing healthy.
3. Plumb all tree stakes.
4. No partial approvals will be given.

3.8 PLANTING ESTABLISHMENT MAINTENANCE

A. General Requirements:
1. Maintenance Period: The planting establishment maintenance period required shall be 120 calendar days after all planting is complete, or if the plant material is not acceptably maintained during the maintenance period. The maintenance period may be suspended at any time upon written notice to the CONTRACTOR that the landscaping is not being acceptably maintained, and the day count suspended until the landscape is brought up to acceptable standards as determined by the Owner's Representative.

2. Planting establishment maintenance immediately follows, coincides with, and is continuous with the planting operations, and continues through turf installation, and after all planting is complete and accepted; or longer where necessary to establish acceptable stands of thriving plants.

3. Keep all walks and paved areas clean. Keep the site clear of debris resulting from landscape work and maintenance operations.

4. Check sprinkler systems at each watering; adjust coverage and clean and repair nonfunctioning heads immediately. Adjust timing of sprinkler controller to prevent runoff and flooding.

5. Maintain adequate moisture depth in soil to ensure vigorous growth, without over-watering. Check rootball of trees and shrubs independent of surrounding soils and hand water as required.

6. Keep Contract areas free from weeds by cultivating, hoeing or hand pulling. Use of chemical weed killers will not relieve the CONTRACTOR of the responsibility of keeping areas free of weeds over 1-inch high at all times.

7. One (1) Year Guarantee: Following the plant establishment period, the Contractor shall provide a warranty which guarantees all trees for one (1) year from date of final acceptance of the contract. The Contractor shall replace any tree which has died, and the tree replacement shall be the same size container as originally designated on the plans.

8. Should the Contractor fail, be neglectful, or be negligent in furnishing the required maintenance and/or maintaining the project site, the Owner may maintain these facilities. The Owner shall charge the Contractor the cost for providing the required maintenance by deducting this cost from the periodic progress payments due the Contractor as these costs are incurred by the Owner.

B. Plant Protection and Replacement
1. Protect all areas against damage, including erosion, trespass, insects, rodents, deer, disease, etc. and provide proper safeguards, including trapping of rodent and applying protective sprays and fencing to discourage deer browsing. Maintain and keep all temporary barriers erected to prevent trespass.

2. Repair all damaged planted areas. Replace plants immediately upon discovery of damage or loss.

3. Any plant material replaced within the last thirty (30) days of the plant establishment period must be maintained by the Contractor for thirty (30) days from the date of replacement

C. Tree Maintenance:

1. Maintain during the entire establishment period by regular watering, cultivating, weeding, repair of stakes and ties, and spraying for insect pests. Prune when requested by the Owner's Representative.

2. Keep watering basins in good condition and weed-free at all times.

3. Replace all damaged, unhealthy or dead trees, with new stock immediately; size as indicated on the drawings.

D. Fertilizing:
1. Observe plant's color, and if a soil pH imbalance is suspected, take soil samples and obtain laboratory analysis for confirmation. Take necessary action recommended in laboratory analysis such as top dressing with soil sulfur, leaching soil, etc.

3.9 FINAL PLANTING REVIEW AND ACCEPTANCE

A. At the conclusion of the Maintenance Period, schedule a final review with the Owner's Representative, the Owner's maintenance person, and the ENGINEER. On such date, all project improvements and all corrective work shall have been completed. If all project improvements and corrective work are not completed, continue the planting establishment, at no additional cost to the OWNER, until all work has been completed. This condition will be waived by the OWNER under such circumstances wherein the OWNER has granted an extension of time to permit the completion of a particular portion of the work beyond the time of completion set forth in the Agreement.

B. Submit written notice requesting review at least 10 days before the anticipated review.

C. Prior to review, weed and rake all planted areas, repair plant basins, plumb tree stakes, clear the site of all debris and present in a neat, orderly manner

END OF SECTION 32 93 00

WDID #: XXXXXXX

UNDERGROUND SERVICE ALERT
CALL:TOLL FREE
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TWO WORKING DAYS BEFORE YOU DIG

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER

LICENSED LANDSCAPE ARCHITECT
Michael Madsen License No. 5798
Signature
Renewal Date
Date
STATE OF CALIFORNIA

DATE: 10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE

RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE

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Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
3880 LEMON STREET, SUITE 420; RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007-88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL
LANDSCAPE AND IRRIGATION
PLANTING SPECIFICATIONS

FOR: CROWN ENTERPRISES
PPD# 2023-0006
PLAN No. _____

SECTION 328400
PLANTING IRRIGATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work in this section consists of furnishing, layout and installing an irrigation system complete, including certification of irrigation system installation as required by the State of California Model Water Ordinance described herein.

1.2 CITY REQUIREMENTS

A. CONTRACTOR shall be familiar with and follow the City or Municipality's Efficient Water Landscape Ordinance Requirements.

B. Coordination with City's Public Works Department

1. A minimum of 11 weeks prior to need for service connection, CONTRACTOR shall contact the City's Public Works Department to establish a start date to install the new water service lateral and the irrigation water meter.

2. The City will install service lateral from the water main in the street to the location shown on the plans, including the meter box. City will supply and install the irrigation meter.

3. It is the responsibility of the Contractor to furnish and install an approved Reduced Pressure Principle (RPP) type backflow prevention assembly on General Metered Service. This assembly must be installed above ground immediately following the service connections. Any deviation from the locations indicated must be approved in advance by the City Public Works Department. City requires all backflow devices to be lead free and the backflow model is to be as specified on the plans, or approved equal.

4. The RPP assembly must be installed and tested by the City before allowing water use through its services. 24 hours prior to initiating service you must contact the City Public Works Department and they will perform a field inspection and test.

1.3 QUALITY ASSURANCE

A. Manufacturer's Specifications: Follow manufacturer's current printed specifications and drawings in all cases where the manufacturers of articles used in the Contract furnish directions covering points not specified or shown in the drawings.

B. Ordinances and Regulations: All local, municipal and state laws, codes and regulations governing or relating to all portions of this work are hereby incorporated into and made a part of these Specifications. Anything contained in these Specifications shall not be construed to conflict with any of the above codes, regulations or requirements of the same. However, when these Specifications and Drawings call for or describe materials, workmanship or construction of a better quality, higher standard, or larger size than is required by the above codes and regulations, the provisions of these Specifications and Drawings shall take precedence. Furnish without extra charge additional materials and labor required to comply with above rules and regulations.

C. References, Codes and Standards:

1. City Municipal Codes

2. California Environmental Quality Act (CEQA)

3. Water Use Classification of Landscape Species (WUCOLS).

4. American Society of Irrigation Consultants (ASIC) Design Guidelines.

5. California Landscape Standards, California Landscape Contractors Association, (CLCA) Sacramento, California.

6. CAL-OSHA, title 8, Subchapter 4-Construction Safety Orders and Subchapter 7-General Industry Safety Orders.

7. California Electric Code.

8. California Plumbing Code (UPC) published by the Association of Western Plumbing Officials.

9. NFPA 24, Section 10.4, Depth of Cover.

10. Underwriters Laboratories (UL): Electrical wiring, controls, motors and devices, UL listed and so labeled.

11. American Society of Testing Materials (ASTM).

D. Furnish without extra charge any additional material and labor when required by the compliance with all above mentioned codes and regulations, though the work be not mentioned in these specifications or shown on the drawings.

E. Experience: Assign a full-time employee to the job as supervisor for the duration of the Contract with a certified landscape technician, irrigation certification through CLCA or minimum of four (4) years experience in landscape irrigation installation.

F. Labor Force: Provide a landscape installation and maintenance force thoroughly familiar with, and trained in, the work to be accomplished to perform the task in a competent, efficient manner acceptable to the Owner's Representative.

G. Explanation of Drawings:

1. Due to the scale of the Drawings, it is not possible to indicate all piping offsets, fittings, sleeves, etc., which may be required. Carefully investigate the conditions affected all of the work and plan accordingly and furnish all required fittings. Install system in such a manner to avoid conflicts with planting, utilities and architectural features.

2. Do not install the irrigation system as shown on the Drawings when it is obvious in the field that obstructions, grade differences or discrepancies in arc dimensions exist that might not have been considered in engineering. Bring such obstruction or differences to the attention of the Owner's Representative. In the event this notification is not given, the CONTRACTOR shall assume full responsibility for any revision necessary.

H. Trench Interference with Tree Root Systems:

1. Prior to trenching, layout main and lateral line locations within Drip Line of trees and review locations with ENGINEER. Relocate any lines that may interfere with existing root systems to avoid or reduce damage to root systems as accepted by Owner's Representative.

Mechanical Trenching is not allowed within dripline of existing trees to be protected except as approved by Owner's Representative

I. Coordinate plant locations with emitter locations.

1. Adjust plant locations in relation to the subsurface emitters as required to ensure that the plant roots receive the proper amount of water in order for it to thrive.

2. Coordinate planting and irrigation and provide hand watering of emitter irrigated and drip irrigated areas as required to maintain moist root zones until end of plant establishment period.

1.4 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

A. The Drawings show, if applicable, existing above and below grade structures and utilities that are known to the OWNER. Locate known existing installations before proceeding with construction operations that may cause damage to such installations. Existing installations shall be kept in service where possible and damage to them shall be repaired with no adjustment of Contract Sum.

B. If other structures or utilities are encountered, request Owner's Representative to provide direction on how to proceed with the Work. If a structure or utility is damaged, take appropriate action to ensure the safety of persons and property.

C. CONTRACTOR to ensure that existing irrigation systems mainline water sources are protected. Maintain water to existing plants served by the existing irrigation system(s). Maintain electrical low voltage conductor connections from the existing irrigation controllers to remote control valves serving existing irrigation systems within and beyond the project limits. CONTRACTOR shall be fully responsible for all repairs to existing irrigation system(s) if a list of deficiencies is not done prior to the start of construction operations and submitted to the Owner's Representative.

1.5 SUBMITTALS

A. Materials List:

1. Submit required copies of the cut sheets and a complete list of materials proposed for installation, along with any proposed substitutions clearly identified and obtain the Owner's Representative's written approval thereof before proceeding. Use only accepted materials and items of equipment.

2. List all materials by manufacturer's name and model number.

B. Substitutions:

1. If the CONTRACTOR desires to substitute a product, he shall list each item and note it as a "substitution" and provide the following information:
   a. Descriptive information describing its similarities to the specified product.

2. If the product is approved and, in the opinion of the Owner's Representative, the substituted product does not perform as well as the specified product, the CONTRACTOR shall replace it with the specified product at no additional cost to the OWNER.

C. Operations and Maintenance Manuals:

1. Prior to the final acceptance of the irrigation system, furnish three (3) individually bound Operation and Maintenance Manuals to the Owner's Representative for use by the OWNER. The manuals shall contain complete enlarged drawings, diagrams and spare parts lists of all equipment installed showing manufacturer's name and address. In addition, each Service Manual shall contain the following:
   a. Index sheet indicating the CONTRACTOR's name, address and phone number.
   b. Copy of the Landscape Irrigation Audit
   c. Copy of the 12-month irrigation schedule and estimate of annual water consumption
   d. Copies of equipment warranties and certificates.
   e. List of equipment with names, addresses and telephone numbers of all local manufacturer representatives.
   f. Complete operating and maintenance instructions in sufficient detail to permit operating personnel to understand, operate and maintain all equipment.
   g. Parts list of all equipment such as controllers, valves, solenoids and heads.

D. Record Drawings:

1. Dimension the location of the following items from two (2) permanent points of reference such as building corners, sidewalks, road intersections, etc.:
   a. Connection to existing water lines/meter.
   b. Connection to electrical power.
   c. Gate valves.
   d. Routing of sprinkler pressure lines (a dimension at least every 100 feet and as required to identify all changes in direction and location).
   e. Remote control valves.
   f. Routing of control valves.
   g. Quick coupling valves.
   h. All sleeve locations.
   i. Routing of all control wiring.
   j. Include all invert elevations below 12".

2. Deliver a reproducible record drawing to the Owner's Representative within seven (7) working days before the date of final review. Delivery of the record drawings shall not relieve the CONTRACTOR of the responsibility of furnishing required information in the future.

E. Controller Plan:

1. Provide one Irrigation Diagram plan in each controller housing. The plan shall show the area controlled by each valve in different colors and for orientation, any major permanent structure such as buildings and roads.

2. Charts to be waterproof and hermetically sealed between two pieces of transparent 10 mil thick plastic and installed in each controller on the door as accepted by the Owner's Representative no later than the time of the coverage test of the irrigation system.

F. Maintenance Material - supply the following tools to the OWNER:

1. Three (3) sets of specialized tools required for removing, disassembling and adjusting each type of sprinkler, valve or other equipment supplied on this project.

2. Two (2) keys for each type of equipment enclosure.

3. Two (2) keys for each type of automatic controller.

4. Two (2) keys for each type of valve (including square type key for valves larger than 2")

5. Two (2) quick-coupler keys and matching hose swivels for each type of quick-coupling valve installed.

6. All lock keys shall be keyed alike.

F. Irrigation Inspection Checklist - supply the attached checklist to the OWNER upon completion:

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Furnish and deliver materials in manufacturer's packaging, bearing original legible labeling.

B. The CONTRACTOR is cautioned to exercise care in handling, loading, unloading, and storing PVC pipe and fittings. All PVC pipe shall be transported in a vehicle which allows the length of the pipe to lie flat so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented, cracked, or otherwise damaged shall be discarded and, if installed, shall be replaced with new piping.

1.7 TRENCH INTERFERENCE WITH TREE ROOT SYSTEMS

A. Prior to trenching, layout main and lateral line locations within Drip Line of trees and review locations with ENGINEER. Relocate any lines that may interfere with existing root systems to avoid or reduce damage to root systems as accepted by Owner's Representative.

1.8 SEQUENCING AND SCHEDULING

A. Acceptance: Do not install main line trenching prior to acceptance by Owner's Representative of rough grades completed under another Section.

B. Coordination: Coordinate with the work of other sections to insure the following sequence of events:

1. Sleeves and Conduits: Installation of all sleeves and conduits to be located under paving and through walls prior to placement of those materials.

2. Stream Bubbler Heads: Install after placement of tree, but prior to backfill with planter soil mix.

3. Coordinate work schedule with Owner's Representative to avoid disruption of landscape maintenance of existing landscaping.

4. Install piping prior to soil preparation (planting soil amendment installation).

1.9 WARRANTY

A. In addition to manufacturer's guarantees and warranties, work shall be warranted for one (1) year from date of final acceptance against defects in material, equipment and workmanship. Warranty shall also cover repair of damage to any part of the premises resulting from leaks or other defects in materials, equipment and workmanship to the satisfaction of the Owner's Representative.

B. Include a copy of the warranty form in the Operation and Maintenance Manual.

1.10 OPERATION

A. Routine: Inspect and adjust all spray heads and control valves including raising or lowering of spray head heights to accommodate plant growth and weather conditions.

B. Controller: Inspect regularly for power interruption and reset clock as required. Adjust station timing to accommodate changes in plant growth and weather conditions.

C. System Failure: Perform all repairs within one (1) operating period. Replacements to match removed products and materials in all respects. Report promptly all damage not resulting from CONTRACTOR's operations. Repair all damage caused by CONTRACTOR at no expense to OWNER.

D. Climate Change: Set and program automatic controllers in response to seasonal requirements and requirements of newly planted materials.

PART 2 - PRODUCTS

2.1 PIPE

A. Pressure Main Line Pipe and Fittings: All PVC fittings shall bear the manufacturer's trademark name, material designation, size, applicable I.P.S. schedule and NSF seal of approval.

B. All main line pipe shall be solvent welded and shall be schedule 40 unless shown otherwise on the Drawings.

1. PVC Pressure Rated Pipe: ASTM D2241 NSF approved Type I, Grade I, solvent welded PVC with an appropriate standard dimension ratio (S.D.R.).

2. PVC Scheduled Pipe: ASTM D1785 NSF approved, Type I,

3. Grade I, solvent welded PVC.

4. PVC Solvent-weld Fittings: ASTM D2466 Schedule 40, 1-2, II-I NSF approved.

5. Solvent Cement and Primer for PVC solvent-weld pipe and fittings: Type and installation methods prescribed by the manufacturer.

6. Connections between Main Lines and RCVs: Schedule 80 PVC (threaded both ends) nipples and fittings unless required otherwise by local jurisdiction

7. Valves 2-inch and larger shall be flanged only.

8. Copper pipe shall be Type K or Red Brass where threaded joints are required and Type L otherwise.

C. All lateral line pipe shall be solvent welded and shall be schedule 40 unless shown otherwise on the Drawings.

2.2 CONTROLLER ENCLOSURES

A. Type: As shown on plans (or approved equal)

2.3 REMOTE CONTROL VALVE: As shown on Drawings and with the following minimum requirements:

A. Remote control valves shall be those normally manufactured for irrigation systems and shall have a slow, consistent speed of closure through entire closing operation, including last portion. To ensure this, the effective diaphragm working area/valve seating opening ratio must be a minimum 3 to 1.

B. Shall be mechanically self-cleaning to help prevent diaphragm or solenoid port plugging. To ensure this, the flush rod should be tapered to vary the size of the port opening as the diaphragm raises and lowers, thus allowing trapped material to escape. Rod is to be finished with a serrated surface to help scrub trapped material out. Screens not acceptable.

C. Shall have removable valve seat so valve can be repaired without removal from irrigation line.

D. Shall have ability to operate manually without the use of wrenches or special keys.

E. Shall have one-piece solenoid that attaches directly to valve without shunts or clips that can be lost.

F. Shall have cross top handle to adjust maximum travel of diaphragm to allow "tuning" of valve and closure.

2.4 BOX FOR REMOTE CONTROL VALVE

A. Valve boxes shall be rated for an h-20 traffic Loading or conform to astm d-638, tensile strength 3400 psi and impact Strength of 1.5 pounds per inch. Valve box extensions shall be of the Same type as the valve box and all covers shall be lockable and be Minimum overall size of 13" x 24" and minimum depth of 24".

2.5 CONTROLLER GROUND

A. Provide each pedestal controller with its own ground rod. Separate the ground rods by a minimum of eight feet. The ground rod shall be an eight foot long by 5/8" diameter U.L. approved copper clad rod or as recommended by controller manufacturer. Install no more than 6" of the ground rod above finish grade. Connect #8 gauge wire with a U.L. approved ground rod clamp to rod and back to ground screw at base of controller with appropriate connector. Make this wire as short as possible, avoiding any kinks or bending. Install within pedestal housing base unless otherwise noted.

B. Provide each irrigation controller with its own independent low voltage common ground wire.

2.6 GENERAL REQUIREMENTS FOR AUTOMATIC CONTROLLERS & CENTRAL:

A. Satellite Controllers: Capable of operating with manufacturer's Central Control System software.

B. Flow Sensors: Compatible with Central Control System and as recommended by Control System manufacturer.

C. Flow Monitors: Compatible with Central Control System and as recommended by manufacturer.

D. Hand Held Remote Control: Portable device as manufactured by Control System manufacturer capable of operating all control valves.

E. Master Control Valve: Master control valve shall be a 24 VAC, industrial type, solenoid control valve, Griswold 2000 series or equal. Valve shall be equipped with spring loaded peckless diaphragm, cast iron body and bronze trim. The valve shall be of the normally closed type and shall be equipped with four-prong (cross) flow control. Valve shall be slow closing without chatter settings or adjustment. Valve shall have a mechanical self-purging internal control system with tapered, serrated, scrubbing rod through diaphragm for positive, variable port opening and cleaning. No solenoid port screens. Valve solenoid shall be corrosion-proof, molded in epoxy to form one integral unit with no connection shunts and shall be 24 VAC, 3 watt maximum.

F. Controller Ground:
1. Provide each pedestal controller with its own ground rod set remote from controller as recommended by controller manufacturer. Separate the ground rod by a minimum of eight feet. The ground rod shall be an eight foot long by 5/8" diameter U.L. approved copper clad rod or as recommended by controller manufacturer. Install no more than 6" of the ground rod above finish grade. Connect #8 gauge wire with a U.L. approved ground rod clamp to rod and back to ground screw at base of controller with appropriate connector. Make this wire as short as possible, avoiding any kinks or bending. Install within pedestal housing base unless otherwise noted.

2. Provide each irrigation controller with its own independent low voltage common ground wire.

2.7 CONTROL WIRES

A. Connections between automatic controllers and the solenoid-operated electric control valves shall be made with direct burial copper wire 14- AWG-UF 600 volt (minimum size). Pilot wires shall be a color other than white, and shall be a different color for each automatic controller with wires sharing a common trench. Common wires shall be white in color, with a different color stripe for each controller with wiring sharing the same common trench. No stripe is required if multiple controller wiring is not present.

B. Size of wire shall conform to the remote control valve manufacturer's specification for control wire sizes, but in no case shall the control wire be smaller than #14. Runs over 2,000 lineal feet shall be #12- AWG-UF 600 volt copper wire.

C. All wire splices are to be made within a valve box, with a copper crimp-type connector, and a "3-M" #DBY splice kit or Rain Bird "DBTWC25".

D. Use continuous control wiring between controllers and remote control valves (no splices).

E. Provide polyurethane tag at valve solenoid control wire that shows the controller number and station number. Also refer to valve box lid identification.

F. Provide a spare control wire in each RCV box for future.

2.8 SHRUB POP UP SPRAY HEAD

A. As shown on drawings (or approved equal)

2.9 QUICK COUPLER VALVES:

A. Quick coupler valves shall be as listed on the Drawings with 10" diameter box and lid similar to isolation valve box described below.

2.10 ISOLATION VALVE:

A. Valves 3 inches and smaller: 125 lb. WSP bronze gate valve with screw-in bonnet, non-rising stem and solid wedge disc, NIBCO T-580-A (or approved equal). Valves shall be line size.

2.11 BOX FOR ISOLATION VALVE

A. 10" diameter plastic, Ametek, Brooks, Christy, Rain Bird with bolt down lid marked "irrigation," or accepted equal. Avoid locating valve in paved areas. Provide H/20 Loading concrete box with bolt-down concrete lid if valve is located in paved area. Obtain location approval by Owner's Representative.

2.12 SWING JOINTS

A. Sprinklers and Bubblers: Use Dura, Lasco, Rain Bird or equal pre-assembled swing joints with O-rings.

B. Quick Coupling Valve: Dura 1-inch 1-A2-1-11-18 pre-assembled swing joint with O-rings and Dura quick lock to receive stabilizing rod.

2.13 BACKFLOW PREVENTION DEVICE

A. As required by Code and as shown on Drawings. Provide an Anti-freeze Jacket.

B. Riser assemblies from main line burial depth to backflow preventers shall be Schedule 40 brass pipe.

C. All metallic pipe and fittings installed below grade shall be painted with two coats of Koppers #50 Bitumastic, or approved equal. Pipes may be wrapped with an approved asphaltic tape in lieu of the liquid-applied coating.

D. Backflow preventer shall receive a minimum 6 inch thick concrete coordinated to fit backflow preventer enclosure as shown and as accepted by the Owner's Representative.

2.14 BACKFLOW PREVENTION DEVICE ENCLOSURE - As shown on the drawings

2.15 CONDUIT/SLEEVES

A. Sleeving shall be Schedule 40 PVC pipe sleeves and a minimum of two times the aggregate diameter of all pipes contained within the sleeve. Provide vertical sweep for all electrical conduit on each side of hardscape and terminate ends at 12" minimum depth and 12" from hardscape surface.

2.16 RCV IDENTIFICATION TAGS: Plastic or brass tags with valve number, approximately 2" by 2" with number imprinted, as accepted by Owner's Representative.

2.17 MISCELLANEOUS INSTALLATION MATERIALS

A. Solvent Cement and Primers for Solvent-weld Joints: Make and type approved by manufacturer(s) of pipe and fittings. Maintain cement proper consistency throughout use.

B. Pipe and Joint Compound: Permatex: Do not use on sprinkler inlet port.

2.18 MISCELLANEOUS EQUIPMENT/ACCESSORIES

A. Concrete for equipment pads: Poured-in-place Class A concrete per Section 90 of the Caltrans Standard Specifications.

B. Sleeves and Conduits: See Drawings.

C. Key(s) for Quick-Coupling Valves:
1. Type: Same manufacturer as Quick-Coupling Valve.

2.26 OTHER EQUIPMENT: As shown on Drawings and required for a fully functional irrigation system.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Sleeves and Conduits: Verify that all installed sleeving and conduits are undisturbed and are free of defects or errors introduced by the work of other sections.

B. Water Meter/Water Pressure: Test and verify that existing water pressure is the minimum pressure at maximum system g.p.m. to operate the irrigation system as indicated on the drawings.

C. Stub-outs: Verify that all stub-outs to be provided under another contract are correctly sized, located and installed as noted on Drawings.

D. Notification: Submit written notification to ENGINEER within ten (10) working days of above inspections describing all acceptable and non-acceptable site conditions. Technical Specifications Invitation for Bids No. PW13-11

3.2 TRENCH INTERFERENCE WITH TREE ROOT SYSTEMS:

A. Prior to trenching, layout main and lateral line locations within Drip Line of trees and review locations with ENGINEER. Relocate any lines that may interfere with existing root systems to avoid or reduce damage to root systems as accepted by ENGINEER.

3.3 CONNECTIONS TO SERVICES

A. Provide and coordinate connection to water meter.

B. Provide and coordinate connection of irrigation controller to electrical power source.

3.4 INSTALLATION

A. Install irrigation system components in accordance with this Section, with the Drawings, with the manufacturer's recommendations, and with established industry standards. The CONTRACTOR shall do nothing that may jeopardize any manufacturer warranty.

B. Conduits and Sleeves:

1. Coordination: Provide conduits and sleeves and coordinate installation with other trades.

2. Extent: Install conduits and sleeves where control wires and pipes pass under paving or through walls as shown on Drawings. Extend twelve inches (12") beyond edges of paving and walls and cap ends until ready for use.

C. Excavating and Trenching:

1. Pipe Layout: Layout pipe lines within Spread of Tree Branches as described above in Section 1.7, TRENCH INTERFERENCE WITH TREE ROOT SYSTEMS.

2. Dig trenches wide enough to allow a minimum of three inches (3") between parallel pipe lines. Provide a minimum cover from finish grade as follows:

D. Pipeline Assembly:

1. Install pipe and fittings in accordance with manufacturer's current printed Specifications.

2. Clean all pipes and fittings of dirt, scale and moisture before assembly.

3. Solvent-welded Joints for PVC Pipes:
   a. Solvents: Use solvents and methods specified by pipe manufacturer.
   b. Curing Period: Minimum of one (1) hour before applying any external stress on the piping and at least 24 hours before placing the joint under water pressure.

4. Threaded Joints for Plastic Pipes:
   a. Use Permatex on all threaded PVC fittings except sprinkler heads and quick coupler valve ACME threads.
   b. Joining: Use strap-type friction wrench only. Do not use metal-jawed wrench. Assemble finger tight plus one or two turns.

5. Laying of Pipe:
   a. Bedding On-grade: Remove from trench all rocks or clods. Bed pipe in at least 2 inches of soil excavated from trench. Backfill on all sides of piping to provide a uniform bearing.
   b. Snaking: Snake pipe from side to side of trench bottom to allow for expansion and contraction. Minimum allowance for snaking is one (1) additional foot per 100 ft. of pipe.
   c. Moisture Restrictions: Do not lay PVC pipe when there is water in the trench. Do not assemble PVC pipe unless the pipe is dry.

E. Control Valves:

1. Install in valve boxes where shown on Drawings and group together where practical. Install box flush with finish grade, not necessarily level. If valve occurs in drainage swale, relocate out of drainage swale as approved by Owner's Representative.

2. Where two or more valves are installed adjacent to each other, provide at least six inches (6") separation. Align boxes in a row, perpendicular with pavement edge.

3. Permanently mark valve box lid with 2" black valve number and controller letter or with numbered metal tag inside box as approved by Owner's Representative.

4. Refer to control wiring for required spare wire in each valve box.

F. Sprinkler Head Installation:

1. Stream Bubblers:
   1.1. Coordinate installation with planting CONTRACTOR to insure timely and proper placement of heads at new planting.

G. Automatic Controller:

1. General: Install with lock box cutoff switch per local code and manufacturer's current printed specifications.

2. Connection to Valves: Connect remote control valves to controller in clockwise sequence to correspond with station setting beginning with Stations 1, 2, 3, etc.

3. Labeling: Affix controller letter (i.e., "A") on inside of controller cabinet door with minimum of one-inch (1") high permanent letter.

4. Irrigation Diagram: Affix a non-fading, waterproof copy of irrigation diagram to cabinet door below controller name. Irrigation diagram to be sealed between two plastic sheets, 20 mil. minimum thickness. Use a legible reduced copy of the Record Drawing for the irrigation diagram clearly showing all valves operated by the controller, station, number, valve size, and type of planting irrigated. Color code area operated by each valve.

H. Control Wiring:

1. General: Install control wires in common trenches with sprinkler mains and laterals wherever possible. Lay to the bottom side of pipe line. Provide looped slack at valves. Snake wires in trench to allow for contraction of wires. Tie wires in bundles at 10 ft. intervals.

2. Extra Length: Provide 30 inches (30") extra control wire at each remote control valve splice to facilitate the removal of the remote control bonnet to finish grade without cutting wires.

3. Spare: Install one unconnected spare control wire running from the controller through each intermediate control valve box.

4. Size: Minimum size of wire is to be determined strictly by the manufacturer's current printed specifications for remote control valves, but not smaller than #14.

5. Detection Wire: Install a bare #12 copper wire or greater on top of the PVC supply line for the purpose of possible future mine detection search. Install the control wires on the bottom of the PVC supply line with electrical tape every ten feet (10').

6. Splicing: Crimp control wire splices at remote control valves. Seal with specified splicing materials. In-line splices will be allowed only on runs exceeding 2500 feet and only in junction boxes.

I. Closing of Pipe and Flushing of Lines:

1. Capping: Cap or plug all openings as soon as lines have been installed to prevent entrance of materials that would obstruct the pipe. Leave in place until removal is necessary for completion of installation.

J. Detection Wire and Warning Tape:

1. Install a bare # 12 copper wire or greater on top of the PVC supply line for the purpose of possible future mine detection search.

2. Install a continuous PVC irrigation mainline warning tape 12" above the supply line.

K. RCV IDENTIFICATION TAGS: Install in remote control valve box as recommended by manufacturer and as accepted by Owner's Representative.

3.5 MISCELLANEOUS EQUIPMENT

A. Install miscellaneous equipment with concrete footings, brackets, etc., as required and as recommended by manufacturer.

3.6 FIELD QUALITY CONTROL

A. Testing of Irrigation System:

1. Make hydrostatic tests with risers capped when welded PVC joints have cured at least 24 hours. Center load piping with backfill to prevent pipe from moving under pressure. Keep all couplings and fittings exposed.

2. Install two (2) pressure gauges at opposite ends of main line system. Pump system up to a minimum of 125 psi the day preceding the scheduled test and verify that pressure is holding. Inspect system early following day and immediately notify Owner's Representative if the test confirmation must be postponed.

3. Apply continuous static water pressure of 125 psi in accordance with Caltrans Standard Specifications Section 20-3.03N, except after a drop in pressure (5 psi maximum), then the pressure must stabilize and remain stable for a one (1) hour minimum period before acceptance of the test.

4. Leaks detected during tests shall be repaired and test repeated until system passes tests at no additional cost to OWNER.

B. Adjustment of the System:

1. Flush and adjust all sprinkler heads for optimum performance and to prevent overspray onto walks, roadways and buildings. Adjust the arc and radius as applicable.

2. Include as a part of the work any nozzle changes or arc adjustments necessary due to daytime windy conditions during grass establishment period. After grass has been established and watering can be performed during calm early morning or evening hours, make any required adjustments to nozzles and arcs.

3. Set all sprinkler heads perpendicular to finished grades unless otherwise noted on the drawings.

4. When the landscape sprinkler system is completed and before planting, perform a coverage test in the presence of the Owner's Representative to determine if the water coverage for planting areas is adequate.

5. Test controllers individually in the presence of the Owner's Representative. Demonstrate that all control valves operate electronically. Provide vehicles and radio equipment as necessary to expedite this process.

6. Demonstrate to Owner's Representative that irrigation scheduling programmed into controller is adequate for plant requirements without causing runoff, and that scheduling capacities of controller are utilized.

3.7 IRRIGATION SCHEDULING AND CONTROLLER PROGRAMMING

A. All irrigation schedules and programs shall be developed, managed and evaluated to utilize the minimum amount of water required to maintain plant health.

3.8 BACKFILL AND COMPACTING

A. General: After system is operating and required tests and reviews have been made, backfill excavations and trenches with clean soil, free of debris.

B. Backfill for All Trenches: Regardless of the type of pipe covered, compact to minimum 95% density under pavements and 85% under planted areas.

C. Finishing: Dress off areas to finish grades. Re-dress any areas which subsequently settle.

D. OWNER's testing agency will test backfill compaction in areas under paving.

3.9 MAINTENANCE

A. The entire sprinkler irrigation system shall be under full automatic operation for a period of 2 days prior to any planting.

B. The Owner's Representative reserves the right to waive or shorten the operation period.

C. Maintain/repair system for full duration of plant maintenance period.

3.10 REVIEWS PRIOR TO ACCEPTANCE

A. Notify the Owner's Representative in advance for the following reviews, according to the time indicated:

1. Supply line pressure test and control wire installation - 72 hours.

2. Coverage and controller test - 72 hours.

3. Final review - 7 days.

B. No reviews will commence without record drawings, without completing previously noted corrections, or without preparing the system for review.

3.11 FINAL REVIEW AND CLEANUP

A. Operate each system in its entirety for the Owner's Representative at time of final review. Any items deemed not acceptable by the Owner's Representative shall be reworked to the complete satisfaction of the Owner's Representative.

B. Provide evidence to the Owner's Representative that the OWNER has received all accessories and equipment as required before final review can occur.

C. Final acceptance and start of warranty period will occur no earlier than the end of the plant maintenance period.

D. For time of final review, CONTRACTOR shall arrange a meeting with the OWNER's maintenance personnel to demonstrate the operation of the irrigation systems automatically in order to verify acceptance and to familiarize the maintenance personnel with the system and recommended programming.

END OF SECTION 32 84 00

WDID #: XXXXXXX

UNDERGROUND SERVICE ALERT
CALL: TOLL FREE 1-800 422-4133
TWO WORKING DAYS BEFORE YOU DIG

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: EL DRAWN BY: EH CHECKED BY: TM

SEAL-DESIGN ENGINEER

LICENSED LANDSCAPE ARCHITECT — Bethany Wooten Lisbon #6139 — Signature — Renewal Date — Date — STATE OF CALIFORNIA

DATE: 10/28/2024

PREPARED UNDER THE SUPERVISION OF:
MICHAEL MADSEN, PLA 5798, EXP. 8/31/2025 — 10/28/2024 DATE

RECOMMENDED FOR APPROVAL BY WILLDAN ENGINEERING:
RONALD J. STEIN, RCE 86877 — DATE

APPROVED BY:
MICHAEL ACKERMAN, ACTING CITY ENGINEER, RCE 64663 — DATE

Kimley»Horn

3880 LEMON STREET, SUITE 420; RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

BENCH MARK: CITY OF RIALTO BENCHMARK NO. "007-88" ELEVATION= 1014.39 FEET
DESCRIPTION: CITY OF RIALTO BRASS DISC IN N/W CORNER PCC CATCH BASIN 4 FT NORTH OF CURB 40 FT NORTH OF CENTERLINE SLOVER 66 FT WEST OF CENTERLINE RIVERSIDE. NGVD29

CITY OF RIALTO
SANTA ANA TRUCK TERMINAL LANDSCAPE AND IRRIGATION IRRIGATION SPECIFICATIONS

21 OF 21 SHEETS

FOR: CROWN ENTERPRISES | PPD# 2023-0006 | PLAN No. _____