



**GENERAL REQUIREMENTS**

- SITE DEVELOPMENT, INCLUDING LANDSCAPING, SHALL CONFORM TO THE APPROVED PLANS ON FILE IN THE DEPARTMENT OF PLANNING AND BUILDING. AT LEAST ONE SET OF APPROVED PLANS CONTAINING PLANNING, BUILDING, FIRE, AND IF APPLICABLE, REDEVELOPMENT AND STAMPS SHALL BE MAINTAINED AT THE JOB SITE, AT ALL TIMES FOR REFERENCE PURPOSES DURING CONSTRUCTION AND FINAL INSPECTION.
- ANY GRAFFITI FOUND ON SITE MUST BE REMOVED WITHIN 24 HOURS OF ITS APPEARANCE.
- ALL STRUCTURES SHALL CONFORM TO THE LA COUNTY BUILDING CODE REQUIREMENTS. NOTWITHSTANDING THIS SUBJECT PERMIT, ALL OTHER REQUIRED PERMITS FROM THE COUNTY OF LOS ANGELES MUST BE SECURED.
- SEPARATE BUILDING PERMITS ARE REQUIRED FOR SIGNS AND RETAINING WALLS.
- DEMOLITION, SITE PREPARATION, AND CONSTRUCTION ACTIVITIES ARE LIMITED TO THE FOLLOWING PER REDONDO BEACH, CALIFORNIA MUNICIPAL CODE (EXCEPT FOR THE POURING OF CONCRETE WHICH MAY OCCUR AS NEEDED):
  - WEEKDAYS: 7:00 A.M. TO 6:00 P.M.
  - SATURDAYS: 9:00 A.M. TO 5:00 P.M.
  - SUNDAYS AND HOLIDAYS: NOT ALLOWED.
- ANY OFF-SITE IMPROVEMENTS FOUND TO BE DAMAGED SHALL BE REPLACED TO THE SATISFACTION OF THE COUNTY ENGINEER.
- THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD HARMLESS THE COUNTY OF LOS ANGELES, ITS AGENTS, OFFICERS, AND EMPLOYEES FROM ANY CLAIM, ACTION, OR PROCEEDING AGAINST THE COUNTY OF LOS ANGELES OR ITS AGENTS, OFFICERS, OR EMPLOYEES BROUGHT TO ATTACK, SET ASIDE, VOID, OR ANNUL AN APPROVAL OF THE COUNTY OF LOS ANGELES, ITS ADVISORY AGENCIES, COMMISSIONS, OR LEGISLATIVE BODY CONCERNING THIS PROJECT. THE COUNTY OF LOS ANGELES WILL PROMPTLY NOTIFY THE APPLICANT OF ANY SUCH CLAIM, ACTION, OR PROCEEDING AGAINST THE COUNTY OF LOS ANGELES AND WILL COOPERATE FULLY IN THE DEFENSE. IF THE COUNTY OF LOS ANGELES FAILS TO PROMPTLY NOTIFY THE APPLICANT OF ANY SUCH CLAIM, ACTION OR PROCEEDING OR FAILS TO COOPERATE FULLY IN THE DEFENSE, THE APPLICANT SHALL NOT, THEREAFTER, BE RESPONSIBLE TO DEFEND, INDEMNIFY, OR HOLD HARMLESS THE COUNTY OF LOS ANGELES.
- ALL WORK EMBRACED HEREIN SHALL BE DONE IN ACCORDANCE WITH "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (GREENBOOK).

**GENERAL NOTES FOR CONSTRUCTION**

- ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE FOLLOWING:
  - LA COUNTY, DEPARTMENT OF PUBLIC WORKS STANDARD PLANS 2019 EDITION OR LATER.
  - GREENBOOK STANDARD SPECIFICATIONS AND PLANS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITIONS.
  - CALIFORNIA BUILDING CODE, 2022.
- IF A CONFLICT EXISTS AMONG STANDARDS SPECIFICATIONS, THE MORE STRINGENT SHALL APPLY.
- EXISTING UTILITIES ARE SHOWN ON THE PLANS IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS PRIOR TO COMMENCEMENT OF WORK. UNDERGROUND SERVICE ALERT SHALL BE NOTIFIED THREE (3) WORKING DAYS PRIOR TO EXCAVATION AT 1-800-227-2600.
- ALL BACKFILL MATERIALS AND COMPACTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL NOTES, APPLICABLE PUBLIC WORKS, AND GREENBOOK STANDARDS. ALL DISTURBED PAVEMENT AND GRASS AREAS WILL BE RESTORED TO THEIR PRE-CONSTRUCTION CONDITION OR BETTER. MATCH PROPOSED PAVEMENT GRADES TO EXISTING WHEREVER THEY ADJOIN.
- ALL LANDSCAPING INSTALLED UNDER THIS CONTRACT SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE BY THE COUNTY OF LOS ANGELES. ANY DEAD OR DYING PLANT MATERIALS MUST BE REPLACED PRIOR TO ACCEPTANCE BY THE COUNTY OF LOS ANGELES.
- THIS PROJECT IS LOCATED IN CLOSE PROXIMITY OF RESIDENTIAL BUILDINGS. THE CONTRACTOR SHALL PERFORM OPERATIONS IN A NEAT AND ORDERLY MANNER SO AS TO NOT BE DETRIMENTAL TO ADJACENT PROPERTIES AND OCCUPANTS. THIS SHALL INCLUDE THE MAINTENANCE OF ALL BUILDING EXTERIORS AND LANDSCAPING AROUND THE CONSTRUCTION ZONE, TO MINIMIZE DUST AND DEBRIS.
- THE CONTRACTOR SHALL SECURE THE SITE DAILY. ANY GRAFFITI THAT DOES OCCUR ON THE CONSTRUCTION SITE SHALL BE REMOVED BY THE CONTRACTOR WITHIN 24 HOURS OF ITS DISCOVERY.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS, INCLUDING ADJACENT BUILDINGS AND STRUCTURES FROM DAMAGE AS A RESULT OF CONSTRUCTION ACTIVITIES.
- ALL REQUIRED UTILITY EASEMENTS SHALL BE PROVIDED TO THE SATISFACTION OF THE CONCERNED DEPARTMENT OR AGENCY.
- SIGN VERBIAGE TO BE PROVIDED BY LA COUNTY. CONTRACTOR SHALL FURNISH AND INSTALL SIGN.
- GALVANIZE ALL REINFORCING BARS, TIE BARS, AND WELDED WIRE FABRIC.

**PROJECT SPECIFIC BEST MANAGEMENT PLANS (BMP's)**

- INFILTRATION/PERCOLATION AT THE FACE OF THE BLUFF WILL TAKE PLACE.
- VEGETATED SLOPES: WATER WILL BE FILTERED BY NEW VEGETATION ON THE BLUFF BEFORE REACHING THE V-DITCHES.
- CONSTRUCTION BMP'S: THE CALIFORNIA STORMWATER BMP HANDBOOK FOR CONSTRUCTION SHALL BE USED FOR GUIDELINES ON BMP'S TO BE IMPLEMENTED DURING CONSTRUCTION.

**EXISTING IRRIGATION NOTES**

- THE EXISTING IRRIGATION WITHIN THE PROJECT LIMITS IS DECOMMISSIONED.
- CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS, PROPERTY LINES, DIMENSIONS, ETC. PRIOR TO COMMENCING WORK. ALL EXISTING IRRIGATION SYSTEMS SHALL BE VERIFIED IN THE FIELD AT START OF CONSTRUCTIONS. ALL EXISTING MAINLINES, RCVS, BACKFLOW DEVICES, CONTROLLERS, METERS, SERVICE LINES, ETC. SHALL BE VERIFIED IN FIELD.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL EXISTING IRRIGATION EQUIPMENT AFFECTED BY THE PROPOSED IRRIGATION IMPROVEMENTS. CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE REMOVED AND DISPOSED OF IN FIELD PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR/MODIFICATION OF ALL ADJACENT IRRIGATION SYSTEM EQUIPMENT THAT IS AFFECTED BY PROPOSED IRRIGATION IMPROVEMENTS. CONTRACTOR SHALL REPAIR SAID SYSTEMS TO A LIKE NEW MANNER, PROVIDING COMPLETE 100% HEAD TO HEAD COVERAGE IN ALL AREAS WITH SYSTEM LAYOUT AS APPROVED BY LA COUNTY'S AUTHORIZED REPRESENTATIVE. CONTRACTOR SHALL CONFIRM ALL AREAS REQUIRING MODIFICATION WITH LA COUNTY'S AUTHORIZED REPRESENTATIVE PRIOR TO BIDDING WORK AND PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL ADJUST AND CAP OFF EXISTING ADJACENT IRRIGATION SYSTEM AS REQUIRED. SYSTEM SHALL PROVIDE COMPLETE 100% HEAD TO HEAD COVERAGE IN ALL AREAS AS APPROVED BY LA COUNTY'S AUTHORIZED REPRESENTATIVE. ALL LAYOUT SHALL BE CONFIRMED WITH LA COUNTY'S AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL REFER TO CORRESPONDING ON-SITE WATER AND SEWER PLAN FOR UNDERLYING WATERLINES, EASEMENTS, AND OTHER RELATED EQUIPMENT. CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS IN FIELD WITH AUTHORIZED REPRESENTATIVE AND RELATED UTILITY COMPANIES PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL MEET WITH LA COUNTY DEPT. OF BEACHES AND HARBORS AUTHORIZED REPRESENTATIVE PRIOR TO BEGINNING DEMOLITION OR ANY OTHER WORK, AND WALK SITE TO LOCATE EXISTING CONTROLLER AND LINES AND OTHER IRRIGATION TO BE PROTECTED IN PLACE.
- CONTRACTOR SHALL PROVIDE FOR THE IRRIGATION OF EXISTING PLANT MATERIAL THROUGHOUT THE CONSTRUCTION PROCESS. ANY DAMAGE DUE TO CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY TO PREVENT ANY LAPSE IN IRRIGATION OF THE EXISTING PLANT MATERIAL. ANY PLANT MATERIAL AND/OR IRRIGATION DAMAGED AS PART OF CONSTRUCTION SHALL BE REPAIRED TO A LIKE NEW CONDITION AS PART OF CONTRACT.
- ANY EXISTING IRRIGATION CONTROL VALVES CONNECTED TO THE EXISTING CONTROLLER SHALL BE RECONNECTED TO THE EXISTING CONTROLLER. CONFIRM PROPER CONTROLLER OPERATION AND INSTALLATION WITH LA COUNTY DEPT. OF BEACHES AND HARBORS AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WORK AND UPON COMPLETION OF WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ADJUSTMENT/MODIFICATION OF EXISTING IRRIGATION SYSTEM WITHIN THIS AND OTHER AREAS AFFECTED BY THE PROPOSED IMPROVEMENTS. ALL LAYOUT SHALL BE CONFIRMED WITH LA COUNTY DEPT. OF BEACHES AND HARBORS AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WORK.
- NO DISRUPTION OF THE EXISTING IRRIGATION SYSTEMS WATERING WILL BE ALLOWED DURING CONSTRUCTION. ALL ADJACENT SYSTEMS SHALL MAINTAIN AUTOMATIC PROGRAMMED WATERING SCHEDULES THROUGHOUT CONSTRUCTION.

**GENERAL GEOTECHNICAL NOTES**

- BASED ON THE RESULTS OF OUR INVESTIGATION, IT IS OUR OPINION THAT FROM A GEOTECHNICAL VIEWPOINT, IT IS FEASIBLE TO DEVELOP THE SITE AS PROPOSED. THE DENSE SANDS ENCOUNTERED AT RELATIVELY SHALLOW DEPTHS THROUGHOUT THE SITE PRESENT RELATIVELY FAVORABLE FOUNDATION SUPPORT CONDITIONS FOR THE PROPOSED IMPROVEMENTS.
- THE CONSTRUCTION AREA SHOULD BE CLEARED OF ANY PAVEMENT, FLATWORK, RETAINING WALLS, STRUCTURES, VEGETATION, TRASH AND DEBRIS, PRIOR TO COMMENCEMENT OF THE EARTHWORK. ANY SUBTERRANEAN INSTALLATIONS NOT TO BE PRESERVED, SUCH AS PIPES, UTILITY COLLECTORS, TANKS, OLDER FOUNDATIONS, ETC., SHOULD BE ABANDONED AND REMOVED PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AND IN ACCORDANCE WITH APPLICABLE REGULATIONS. ALL UNDOCUMENTED FILLS AND DISTURBED SOILS SHOULD BE REMOVED.
- NEW RAMP AND ASSOCIATED RETAINING WALLS. FOUNDATION AREAS FOR THE RETAINING WALLS AND THE RAMP PATH SHOULD BE OVEREXCAVATED 1 FOOT BELOW THE FOUNDATION SUBGRADE, OR TO COMPETENT NATIVE SOILS, WHICHEVER IS DEEPER. WHENEVER PRACTICAL, THE EXCAVATION SHOULD EXTEND A HORIZONTAL DISTANCE OF AT LEAST 1 FOOT BEYOND THE OUTSIDE PERIMETER OF THE RAMP FOOTPRINT.
- DISTURBED SOILS AT STRUCTURAL AND NON-STRUCTURAL AREAS WILL LIKELY OCCUR AFTER DEMOLITION OF EXISTING SITE IMPROVEMENTS, NAMELY THE EXISTING RAMP AND THE ASSOCIATED RETAINING WALL. THESE SOILS SHOULD BE OVEREXCAVATED AND RECOMPACTED TO THE TOTAL DEPTH OF THE DISTURBED

MATERIAL. THE SLOPE SHOULD THEN BE REBUILT AS INDICATED IN THE REBUILDING THE SLOPE AFTER REMOVAL OF EXISTING RAMP SECTION OF THIS REPORT.

- THE EXPOSED OVEREXCAVATION SUBGRADE SHOULD BE PROBED AND ACCEPTED BY THE GEOTECHNICAL ENGINEER. THE SOILS SHOULD BE SCARIFIED, THOROUGHLY WETTED FOR AT LEAST 24 HOURS AND RECOMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION PER ASTM D1557. THIS IS INTENDED TO MITIGATE NEAR SURFACE COLLAPSE POTENTIAL OF THE SUBGRADE SOILS.
- LOOSE AND/OR UNSTABLE SOILS WITHIN THE CONSTRUCTION FOOTPRINT SHOULD BE OVEREXCAVATED AND RECOMPACTED. HOWEVER, IF SUCH ZONES ARE ENCOUNTERED DURING CONSTRUCTION THAT ARE NOT PRACTICAL TO BE EXCAVATED AND PROCESSED, THE GEOTECHNICAL ENGINEER SHOULD PROVIDE APPROPRIATE MITIGATION RECOMMENDATIONS.
- ALL FILL PLACEMENT ASSOCIATED WITH THE REPLACEMENT OF OVEREXCAVATED SOILS OR TO ACHIEVE FINISH SUBGRADE SHOULD BE MOISTURE-CONDITIONED TO AT LEAST 120 PERCENT OF OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 93 PERCENT RELATIVE COMPACTION (ASTM D1557). FILL PLACED TO ACHIEVE FINISH GRADE BEHIND RETAINING WALLS OR UTILITY TRENCH BACKFILL SHOULD BE MOISTURE-CONDITIONED AT LEAST WET OF THE OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION (ASTM D1557). THE UPPER 1 FOOT OF SOILS BELOW ANY FLATWORK SHOULD BE COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION. FILL SHOULD BE PLACED IN HORIZONTAL LIFTS NOT MORE THAN 8 INCHES IN LOOSE, UNCOMPACTED THICKNESS.
- EXCAVATED ON-SITE SOILS MAY BE RE-USED AS COMPACTED FILL, PROVIDED THEY ARE FREE OF ORGANICS, DELETERIOUS MATERIALS, DEBRIS, AND PARTICLES OVER 3 INCHES IN LARGEST DIMENSION. LOCALLY, PARTICLES UP TO 6 INCHES IN LARGEST DIMENSION MAY BE INCORPORATED IN THE FILL SOILS DURING GRADING BASED ON SPECIFIC APPROVAL AND PLACEMENT RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER.
- UNSURCHARGED EXCAVATIONS COULD BE SLOPED BACK AT AN INCLINATION OF 1.5(H):1(V) OR FLATTER. HOWEVER, BECAUSE OF THE NEED TO EXCAVATE INTO THE EXISTING 2(H):1(V) AND STEEPER SLOPES, SLOPED EXCAVATION IS NOT EXPECTED TO BE PRACTICAL AND SHORING OR SLOPE REINFORCEMENT WILL BE NECESSARY AS RECOMMENDED BELOW.
- STOCKPILED MATERIALS SHOULD BE PLACED NO CLOSER THAN 5 FEET FROM THE EDGE OF THE SLOPED EXCAVATION. NO SPOILS SHOULD BE PLACED ON THE UPSLOPE SIDE OF ANY EXCAVATION. A GREATER SETBACK MAY BE NECESSARY WHEN CONSIDERING SURCHARGE LOADS FROM EQUIPMENT SUCH AS HEAVY VEHICLES, CONCRETE TRUCKS AND CRANES. TETRA TECH SHOULD BE ADVISED OF SUCH HEAVY LOADINGS SO THAT SPECIFIC SETBACK REQUIREMENTS CAN BE ESTABLISHED. ALTERNATIVELY, A SHORING SYSTEM MAY BE DESIGNED TO ALLOW REDUCTION IN THE SETBACK DISTANCE.
- IN ORDER TO MINIMIZE THE EXTENT OF EXCAVATION FOR THE FOUNDATION SUBGRADE FOR THE RETAINING WALL AND THE RAMP, THE EXISTING SLOPE ABOVE THE PROPOSED EXCAVATION MAY BE STABILIZED BY PUSH PLATE PILE SYSTEM. THIS PROPRIETARY SYSTEM IS DESIGN-BUILD BY THE SPECIALTY CONTRACTOR.
- CONTRACTOR TO REVIEW "GEOTECHNICAL DESIGN REPORT AVENUE A AND ESPLANADE" REDONDO BEACH, CA DATED MAY 30, 2023. GEOTECHNICAL DESIGN AND CONSTRUCTION RECOMMENDATIONS APPLY.

**SPECIAL CONDITIONS**

- CONTRACTOR MUST SUBMIT TO LA COUNTY'S BUILDING DEPARTMENT AND WATER DEPARTMENT SEPARATE APPLICATIONS AND MUST OBTAIN SEPARATE PERMITS FOR SIGNS, FENCES, AND RETAINING WALLS. HEALTH AND WATER DEPARTMENT APPROVALS ARE REQUIRED FOR BACKFLOW PREVENTER AND DRINKING FOUNTAIN.
- LA COUNTY TO PAY FOR ALL PERMITS. CONTRACTOR TO PULL ALL PERMITS AND OBTAIN APPROVALS FOR INSTALLATION/CONSTRUCTION.
- SITE SECURITY - TO INCLUDE 6' CHAIN LINK FENCE AROUND ALL WORK AREAS. NO TRESPASSING AND APPLICABLE CODE REFERENCES TO BE POSTED ON ALL FENCE ENCLOSURES.
- CONTRACTOR SHALL SUPPLY AND IMPLEMENT ALL BMP REQUIREMENTS DURING ENTIRE CONSTRUCTION DURATION.
- CONTRACTOR SHALL SCHEDULE AND COORDINATE CONSTRUCTION AND DEMOLITION/REMOVAL WITH THE COUNTY AND CITY.

**STRUCTURAL OBSERVATION**

DURING CONSTRUCTION, INTERMITTENT STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BUY A LICENSED CIVIL/STRUCTURAL ENGINEER AT VARIOUS STAGES DURING CONSTRUCTION, AS FOLLOWS:

- DURING PLATE PILE DRIVING.

**SPECIAL DEPUTY INSPECTIONS**

THE FOLLOWING ITEMS WILL REQUIRE "SPECIAL INSPECTION" PRIOR TO FINAL INSTALLATION AND ACCEPTANCE OF WORK:

- GRADING / COMPACTION
- PLATE PILE INSTALLATION
- RETAINING WALL FOOTING EXCAVATION AND COMPACTION
- CONCRETE
- REINFORCING STEEL

CONTRACTOR SHALL NOTIFY THE COUNTY PRIOR TO START OF INSTALLATION OF THESE ITEMS TO PERMIT EXECUTION OF THE REQUIRED "SPECIAL INSPECTIONS".

DESIGNED BY: RAFAEL HOLCOMBE	DRAWN BY: JONATHAN COBER	REVISIONS	APPROVAL	DESCRIPTION
		No.	DATE	SHEET
				REF.
				AS-BUILT:



**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
**GENERAL NOTES (1 OF 2)**



PAGE

FIELD BOOK



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PLACEHOLDER FOR PERMIT REQUIREMENTS

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REDONDO BEACH AVE. A ACCESS PATH  
REDONDO BEACH, CALIFORNIA 90277  
PERMIT PLACEHOLDER



DESIGNED BY:  
RAFAEL HOLCOMBE

DRAWN BY:  
JONATHAN COBER

REVISIONS

No.	DATE	SHEET	APPROVAL	DESCRIPTION

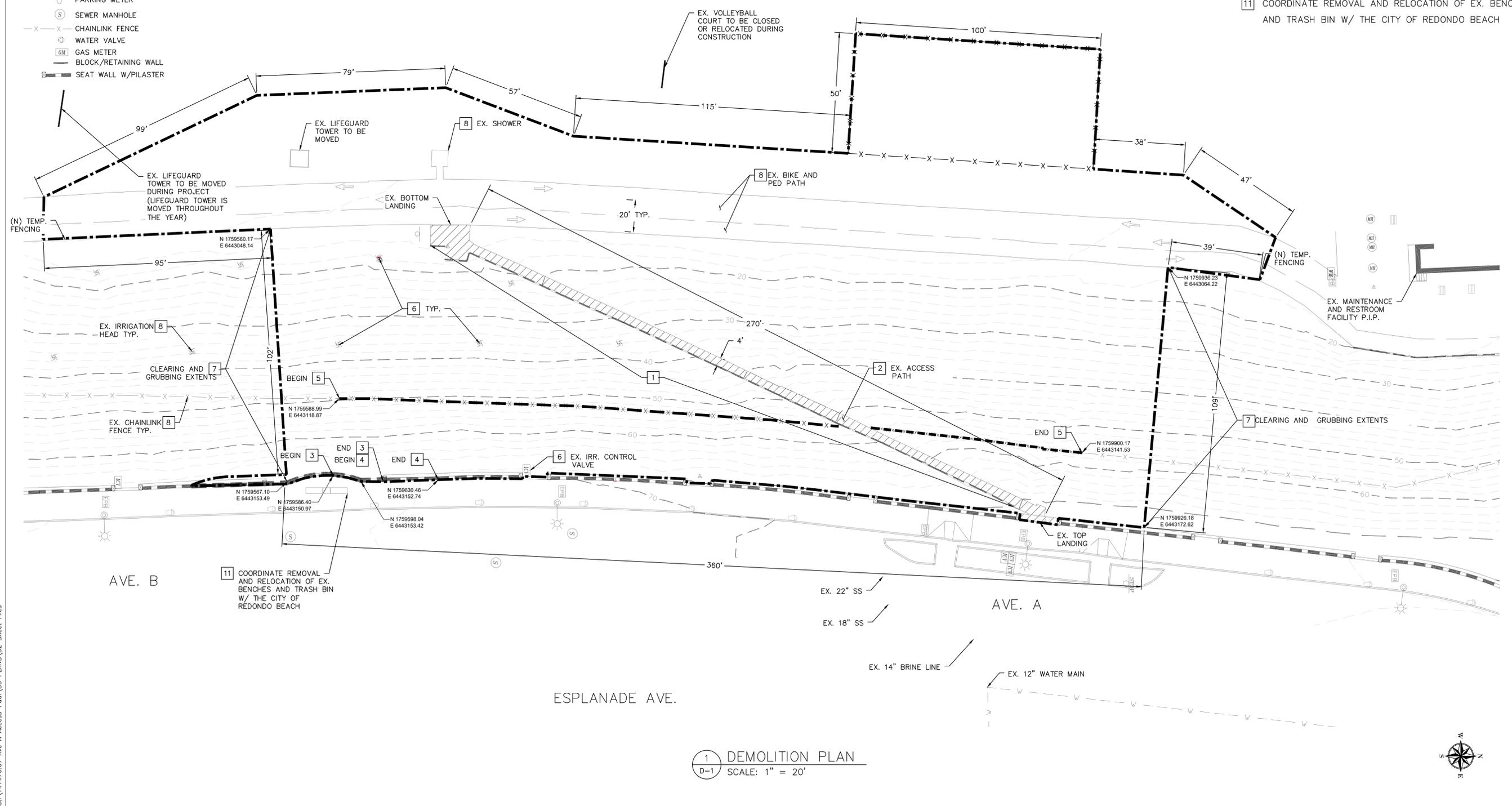
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**LEGEND**

- DIRECTION ARROW
- BIKE PATH
- ELECTRIC PULL BOX
- WATER METER
- MANHOLE
- GRATE
- SIGN
- IRRIGATION HEAD
- LIGHT POLE
- PARKING METER
- SEWER MANHOLE
- CHAINLINK FENCE
- WATER VALVE
- GAS METER
- BLOCK/RETAINING WALL
- SEAT WALL W/PILASTER
- DEMO PCC
- CLEARING AND GRUBBING
- TEMP. BIKE PATH/CONTRACTOR STAGING AREA
- PROJECT LIMITS

**DEMOLITION NOTES:**

- 1 REMOVE EX. CMU BLOCK WALL AND FOUNDATION
- 2 REMOVE EX. PCC ACCESS PATH
- 3 REMOVE EX. PCC CURB
- 4 REMOVE EX. MASONRY SEAT WALL AND FOUNDATION
- 5 REMOVE EX. CHAINLINK FENCE
- 6 REMOVE EX. IRRIGATION
- 7 CLEAR AND GRUB EX. BLUFF
- 8 PROTECT-IN-PLACE
- 11 COORDINATE REMOVAL AND RELOCATION OF EX. BENCHES AND TRASH BIN W/ THE CITY OF REDONDO BEACH



1 DEMOLITION PLAN  
D-1 SCALE: 1" = 20'

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**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
DEMOLITION PLAN

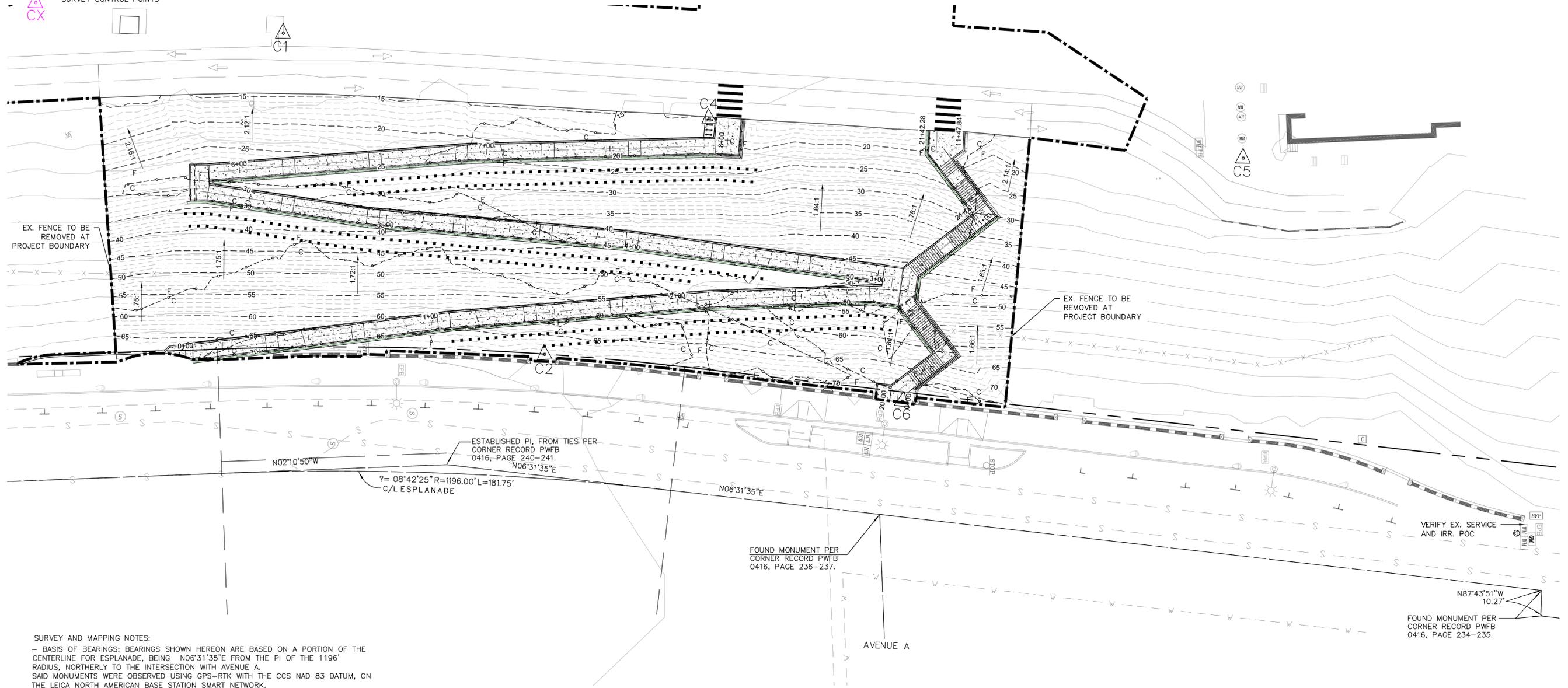
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**LEGEND**

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- GAS METER
- BLOCK/RETAINING WALL
- SEAT WALL W/PILASTER
- (N) BOLLARD LIGHTING
- (N) SRT GEOPIER PILES
- STAIRCASE AND WALKWAY CENTERLINE POINTS
- GEOPIER POINTS - SEE SHEET C-6 FOR POINT TABLE
- SURVEY CONTROL POINTS



**SURVEY AND MAPPING NOTES:**

- BASIS OF BEARINGS: BEARINGS SHOWN HEREON ARE BASED ON A PORTION OF THE CENTERLINE FOR ESPLANADE, BEING N06°31'35"E FROM THE PI OF THE 1196' RADIUS, NORTHERLY TO THE INTERSECTION WITH AVENUE A. SAID MONUMENTS WERE OBSERVED USING GPS-RTK WITH THE CCS NAD 83 DATUM, ON THE LEICA NORTH AMERICAN BASE STATION SMART NETWORK.

- BASIS OF COORDINATES:  
STATION CAPE-SAN PEDRO, CA. - RTCM ID# 3261 NAD83 EPOCH 2021.750  
LATITUDE 33°44'47.64"N, LONGITUDE 118°16'48.20"W;  
CALIFORNIA ZONE V, N 1730270.410, E 6476524.201.

- BENCH MARK : LOS ANGELES COUNTY BENCH MARK NUMBER QY8369  
ELEVATION=71.348 NAVD88 (FT) DATUM, QUAD YEAR 2013  
USC & GS BR DISC MON FL 12FT W/O W'LY CF ESPLANADE 47FT W/O C/L & 11FT N/O C/L PROD AVE A MKD (REDONDO 1972) [SIC]

- THIS TOPOGRAPHIC SURVEY WAS DONE WITHOUT BENEFIT OF A CURRENT TITLE REPORT. EASEMENT(S) OF TITLE AND OTHER ENCUMBRANCES MAY EXIST. A CURRENT TITLE SEARCH OF THE SUBJECT PROPERTY WOULD DISCLOSE SUCH INSTRUMENT(S) OF RECORD.

**1 SURVEY CONTROL PLAN**  
V-1 SCALE: 1" = 20'

**CONTROL POINTS:**

Point	Northing	Easting	Elevation	Description
C1	1759634.7821	6443022.3864	14.05	EX. LIFEGUARD TOWER TO BE REMOVED
C2	1759740.1503	6443151.3567	69.01	TOP SLOPE ACCROSS PARKING METER #19013
C4	1759806.6501	6443056.4126	15.52	BOTTOM SLOPE @ BIKE RACK
C5	1760022.3860	6443072.4064	17.72	SET+ @ SE CORNER RESTROOM
C6	1759884.7988	6443170.2584	71.348	USC&GS BRASS DISK BENCH MARK @ TOP RAMP. LA COUNTY # QY8369



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**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
SURVEY CONTROL PLAN

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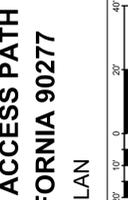
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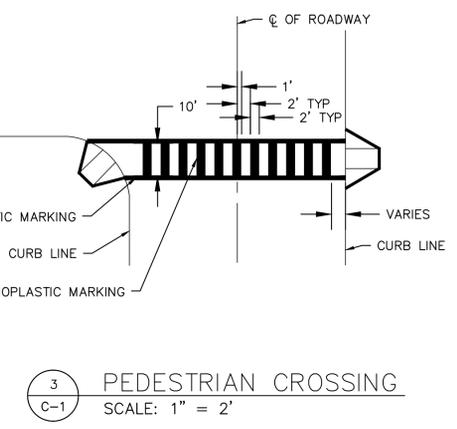
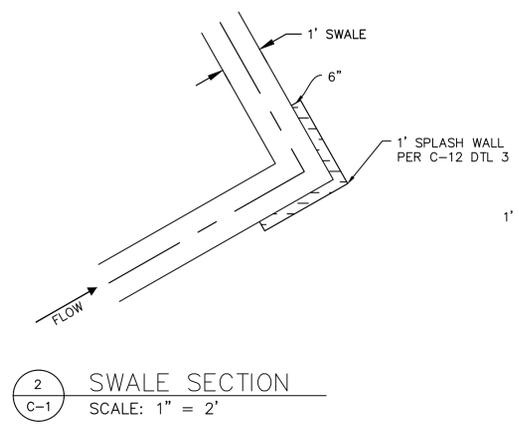
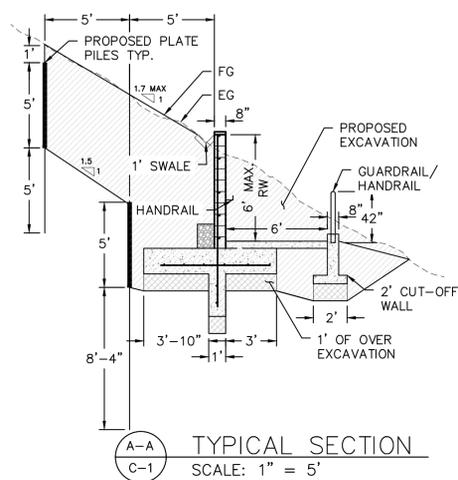
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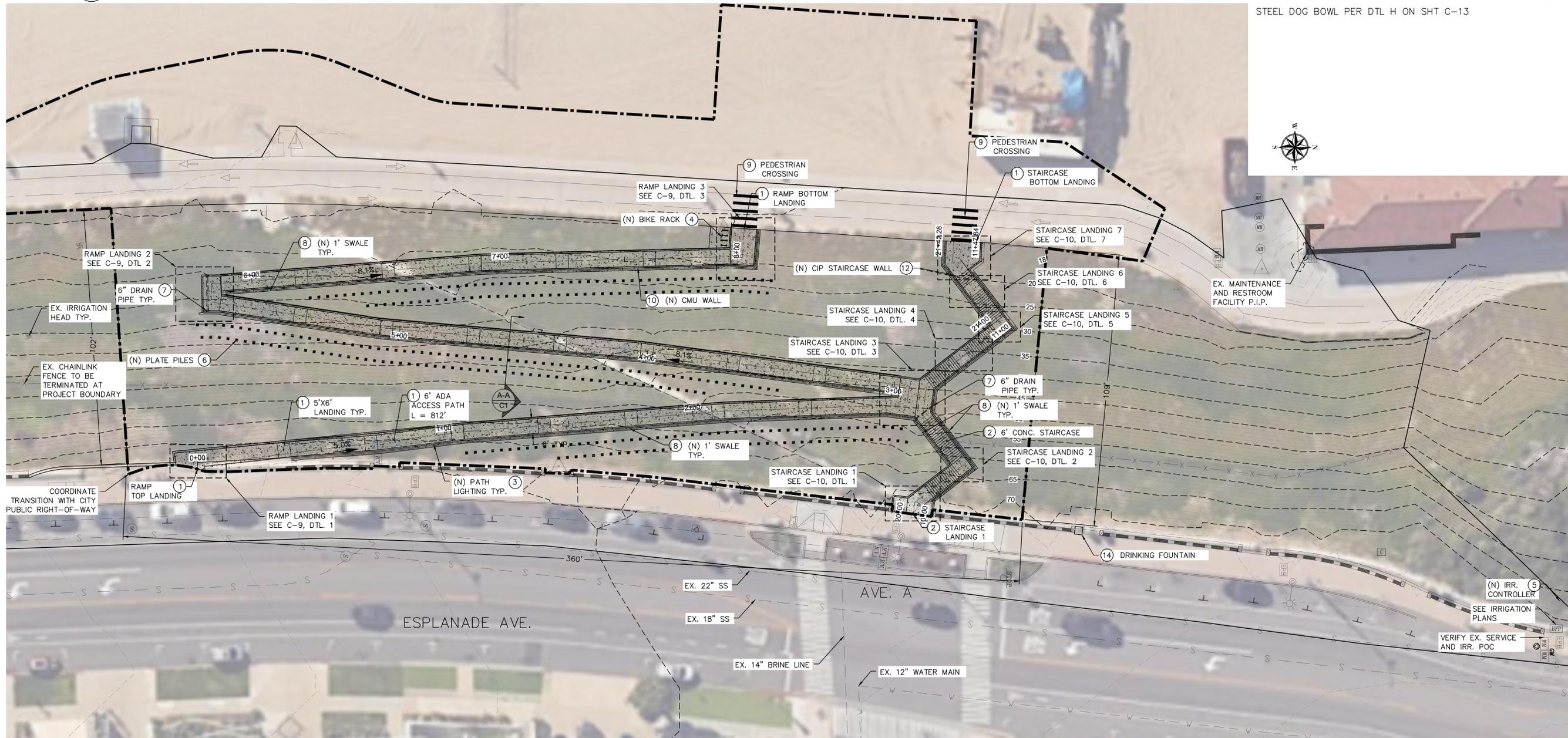
GRAPHIC SCALE  
0 20' 40'  
1" = 20'

PAGE FIELD BOOK



- LEGEND**
- DIRECTION ARROW
  - BIKE PATH
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  - BLOCK/RETAINING WALL
  - SEAL WALL W/PILASTER
  - (N) PLATE PILES
  - (N) CONCRETE
  - PROJECT LIMITS

- CONSTRUCTION NOTES:**
- 1 INSTALL 6' WIDE CONC. ADA ACCESS PATH, CMU WALL, AND SWALE PER C-11, DTL. 1
  - 2 INSTALL 6' WIDE CONC. STAIR PER C-12, DTL. 1
  - 3 INSTALL PATH LIGHTING PER ELECTRICAL SHEETS.
  - 4 INSTALL BIKE RACK PER C-11, DTL. 5
  - 5 INSTALL IRR. CONTROLLER, SEE IRRIGATION PLANS
  - 6 INSTALL PLATE PILES PER C-11, DTL. 6
  - 7 INSTALL 6" PVC PIPE PER PLAN AND C-12, DTL. 5
  - 8 INSTALL 1' PCC SWALE PER PLAN AND C-11, DTL. 3
  - 9 INSTALL PEDESTRIAN CROSSING STRIPING PER C-1, DTL. 3
  - 10 INSTALL CMU WALL PER PLAN AND C-11 - C-13 AND C-14
  - 11 INSTALL CIP STAIRCASE WALL PER PLAN AND C-11 - C-13 AND C-15
  - 12 INSTALL GUARDRAIL PER PLAN AND C-11 - C-13
  - 13 INSTALL HANDRAIL PER PLAN AND C-11 - C-13
  - 14 INSTALL STAINLESS STEEL HAWS MODEL 3612F FILTERED BOTTLE FILLER & DUAL FOUNTAIN WITH HAWS 3670 STAINLESS STEEL DOG BOWL PER DTL H ON SHT C-13



DESIGNED BY: RAFAEL HOLCOMBE	DRAWN BY: JONATHAN GOBER	APPROVAL:	DESCRIPTION:
REVISIONS:	DATE:	SHEET:	AS-BUILT:
No.:			REF.:

REGISTERED PROFESSIONAL ENGINEER  
RAFAEL J. HOLCOMBE  
CIVIL  
STATE OF CALIFORNIA

**REDONDO BEACH AVE. ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**

SITE PLAN

FIELD BOOK PAGE

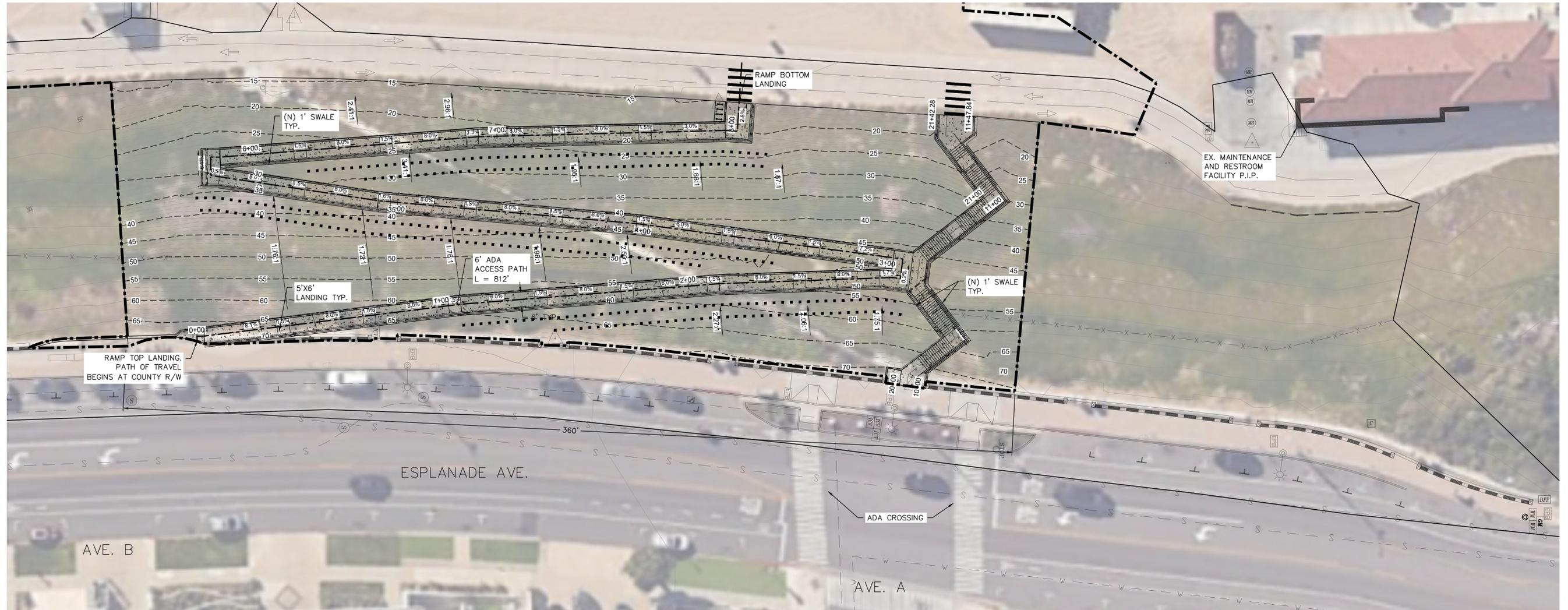
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SHEET 07 OF 37  
PROJECT I.D. 2242

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**LEGEND**

- DIRECTION ARROW
- BIKE PATH
- ELECTRIC PULL BOX
- WATER METER
- MANHOLE
- GRATE
- SIGN
- IRRIGATION HEAD
- LIGHT POLE
- PARKING METER
- SEWER MANHOLE
- CHAINLINK FENCE
- WATER VALVE
- GAS METER
- BLOCK/RETAINING WALL
- SEAT WALL W/PILASTER
- (N) PLATE PILES
- (N) CONCRETE
- ADA PATH OF TRAVEL



1 ADA PATH OF TRAVEL PLAN  
C-2 SCALE: 1" = 20'

NOTE: SEE C-4 AND C-5 FOR LANDING CLEARANCE DIMENSIONS.



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No.	DATE	SHEET	

DESIGNED BY:  
RAFAEL HOLCOMBE

DRAWN BY:  
JONATHAN COBER



**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
ADA PATH OF TRAVEL PLAN



PAGE

FIELD BOOK

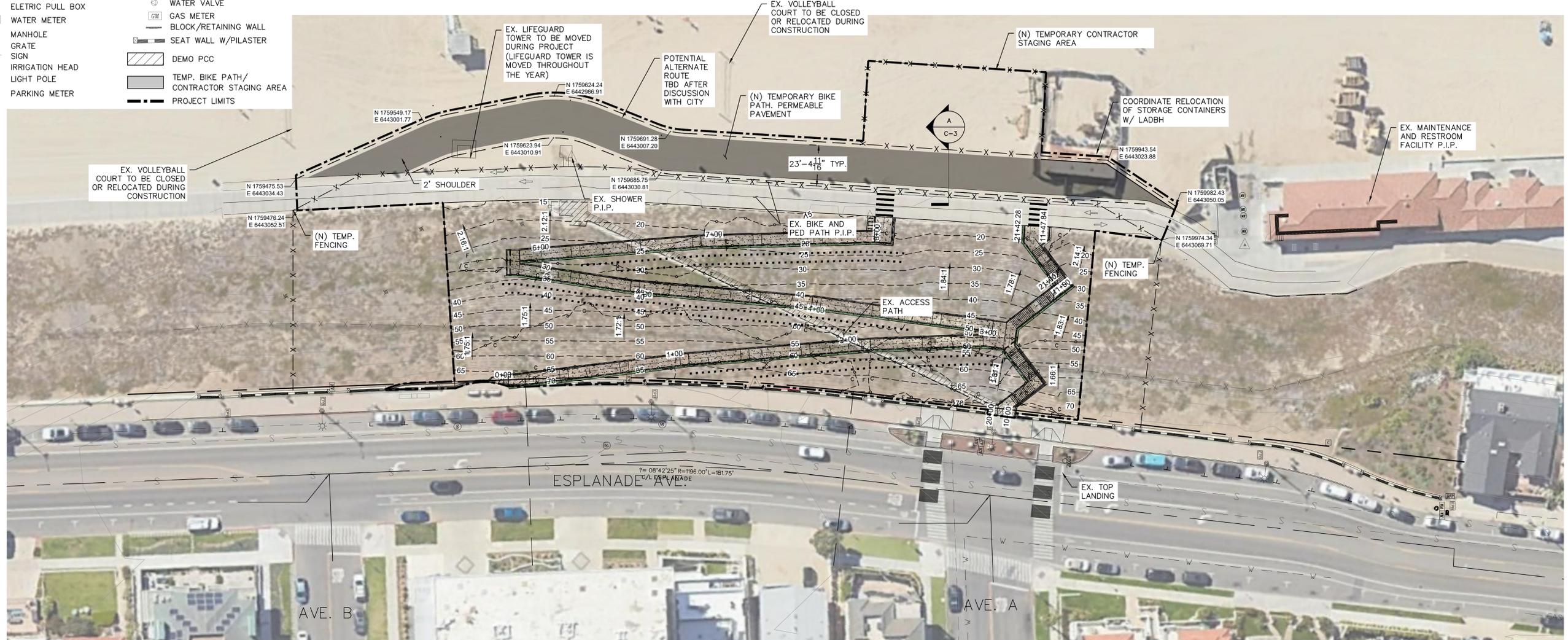


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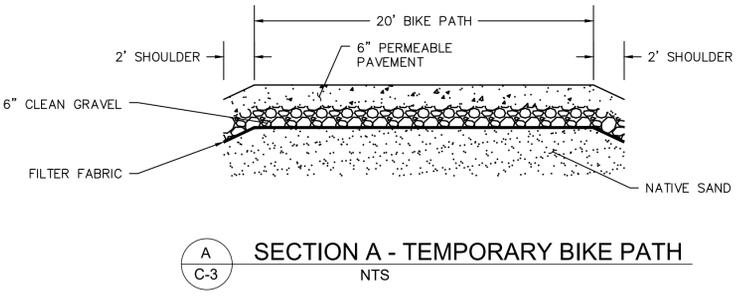
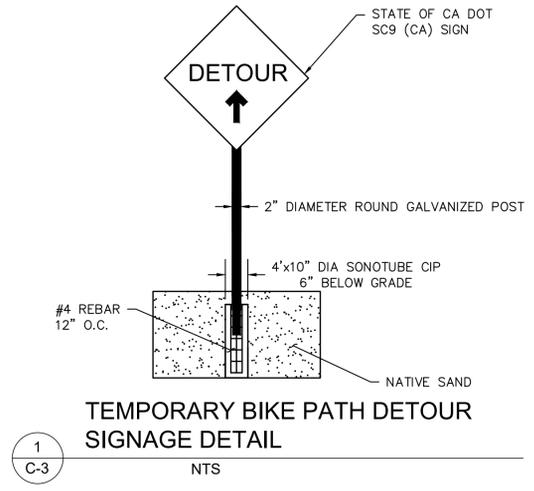
**LEGEND**

- DIRECTION ARROW
- BIKE PATH
- ELECTRIC PULL BOX
- WATER METER
- MANHOLE
- GRATE
- SIGN
- IRRIGATION HEAD
- LIGHT POLE
- PARKING METER
- SEWER MANHOLE
- TEMPORARY FENCE
- WATER VALVE
- GAS METER
- BLOCK/RETAINING WALL
- SEAT WALL W/PILASTER
- DEMO PCC
- TEMP. BIKE PATH/ CONTRACTOR STAGING AREA
- PROJECT LIMITS



**1**  
C-3 TEMPORARY BIKE AND PEDESTRIAN ROUTING PLAN  
SCALE: 1" = 20'

- NOTES:
1. BEACH SAND IN THE PROJECT AREA MUST BE PROTECTED FROM CONTAMINANTS.
  2. PLASTIC SHEETING (POLYETHYLENE) AND DRIP PANS MUST BE PLACED UNDER ALL EQUIPMENT STORED ON THE BEACH.
  3. ANY MATERIALS OR CONSTRUCTION SUPPLIES MUST BE STORED ON PALLETS.



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DRAWN BY:  
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**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
TEMPORARY BIKE AND PEDESTRIAN ROUTING PLAN

GRAPHIC SCALE: 1" = 20'

PAGE: 06 OF 37

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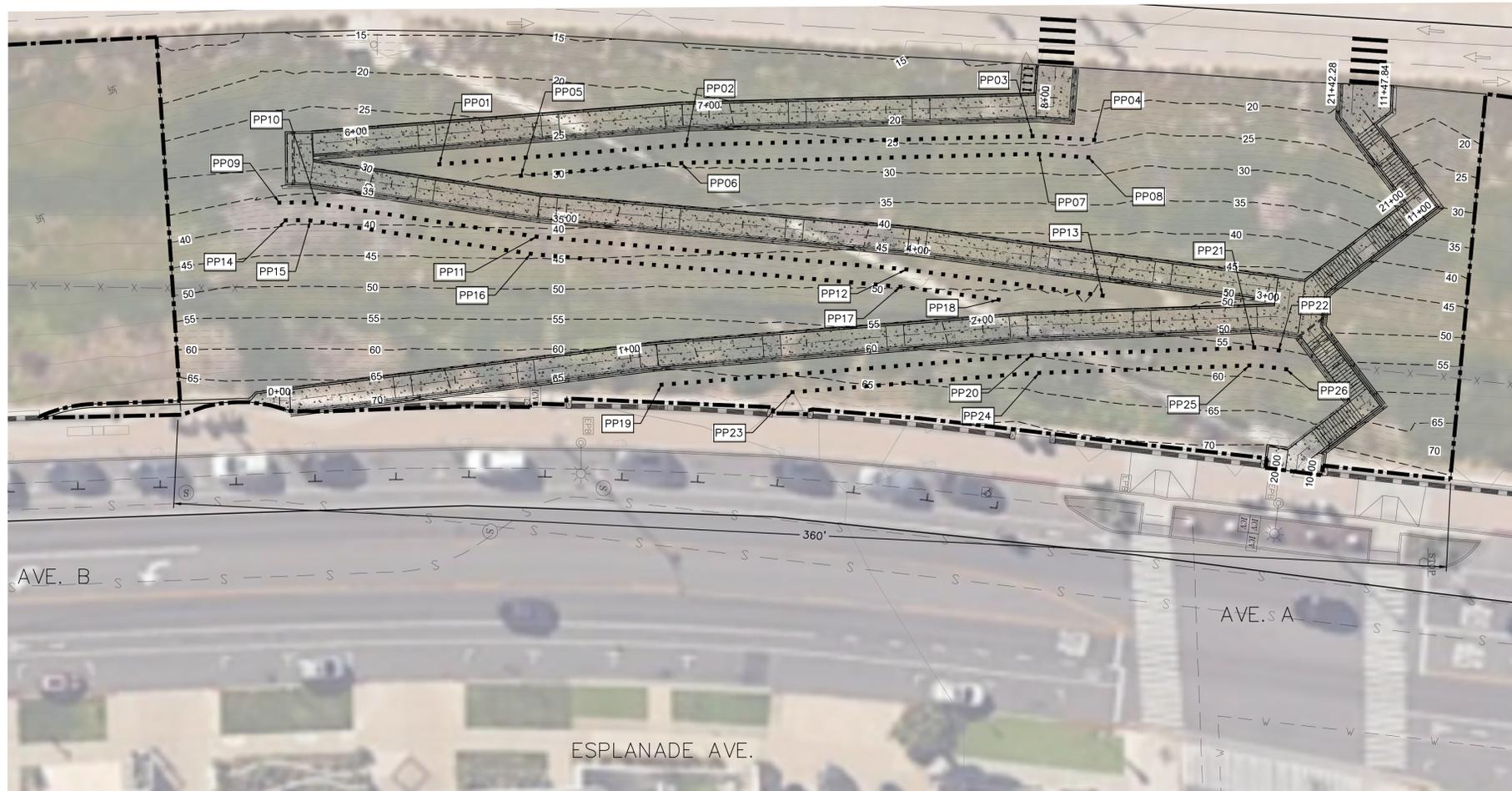
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**LEGEND**  
 ■ PLATE PILE

Point Table			
Point #	Northing	Easting	Elevation
PP01	1759641.46	6443078.84	29.42
PP02	1759711.25	6443073.43	26.74
PP03	1759809.22	6443070.93	21.37
PP04	1759826.68	6443072.00	21.81
PP05	1759664.53	6443082.05	28.69
PP06	1759709.90	6443078.52	27.50
PP07	1759811.10	6443075.98	23.70
PP08	1759825.07	6443076.90	24.30
PP09	1759596.18	6443089.65	31.94
PP10	1759606.66	6443089.86	34.94
PP11	1759668.96	6443099.22	39.58
PP12	1759773.55	6443108.43	47.01
PP13	1759829.07	6443115.80	50.53
PP14	1759597.99	6443094.62	35.36
PP15	1759604.98	6443094.67	35.93
PP16	1759667.28	6443104.03	41.24
PP17	1759771.87	6443113.30	47.94
PP18	1759799.63	6443116.94	49.39
PP19	1759704.30	6443140.89	65.75
PP20	1759808.98	6443132.64	58.32
PP21	1759871.94	6443130.41	53.61
PP22	1759878.89	6443131.22	53.50
PP23	1759741.33	6443142.98	64.64
PP24	1759811.12	6443137.56	59.59
PP25	1759870.58	6443135.46	55.30
PP26	1759881.01	6443136.54	54.92

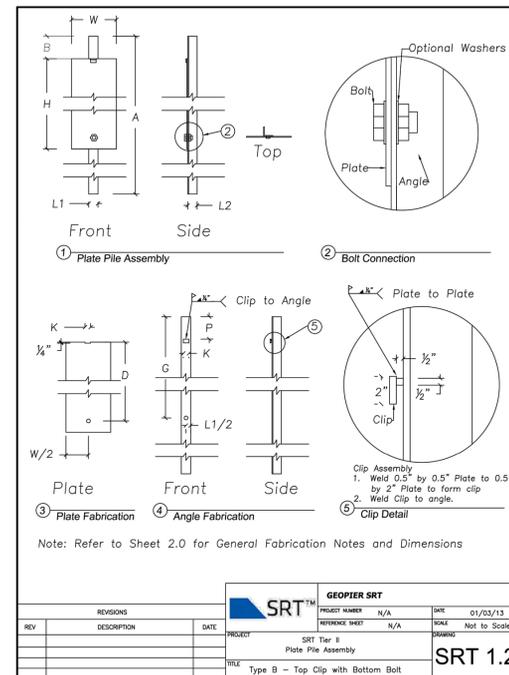
\* LOCATION OF PATH ALIGNMENT CHANGES SHOWN

**1**  
 C-5 PLATE PILE LAYOUT PLAN  
 SCALE: 1" = 20'



**NOTES:**

- SEE SHEET V-1 FOR HORIZONTAL AND VERTICAL CONTROL.
- 3.5' SPACING BETWEEN PLATE PILES.
- PP # = PLATE PILE CONTROL POINTS
- PROPOSED PLATE PILES = 321



Note: Refer to Sheet 2.0 for General Fabrication Notes and Dimensions

REV	DESCRIPTION	DATE	PROJECT	SCALE	DATE
			SRT Tier II Plate Pile Assembly	SRT 1.2	01/03/13

Table 1.1 - Plate Pile Materials - 50 Year Design Life													
Description	Angle Dimensions			Plate Dimensions			Bottom Clip Edge Distance from Top of Angle			Width of Clip	Bolt Diameter	Bolt Length	Number of Bolts
	L1	L2	T	W	H	T	J	K	L				
6" Plate Pile	2 1/2	2 1/2	5/16	12	24	5/16	27	2	1/2	2 1/2	2	2	
8" Plate Pile - 1	2 1/2	2 1/2	5/16	12	24	5/16	27	2	1/2	2 1/2	2	2	
8" Plate Pile - 2	3	3	5/16	12	36	5/16	39	2 1/2	3/4	2 1/2	2	2	
10" Plate Pile	3	3	5/16	12	36	5/16	39	2 1/2	3/4	3	2	2	
12" Plate Pile	3	3	5/16	12	48	5/16	51	2 1/2	3/4	3	3	3	
14" Plate Pile	3	3	5/16	12	48	5/16	51	2 1/2	3/4	3	3	3	

Table 1.2 - Plate Pile Materials - 100 Year Design Life													
Description	Angle Dimensions			Plate Dimensions			Bottom Clip Edge Distance from Top of Angle			Width of Clip	Bolt Diameter	Bolt Length	Number of Bolts
	L1	L2	T	W	H	T	J	K	L				
6" Plate Pile	2 1/2	2 1/2	7/16	12	24	7/16	27	2	1/2	2 1/2	2	2	
8" Plate Pile - 1	2 1/2	2 1/2	7/16	12	24	7/16	27	2	1/2	2 1/2	2	2	
8" Plate Pile - 2	3	3	7/16	12	36	7/16	39	2 1/2	3/4	2 1/2	2	2	
10" Plate Pile	3	3	7/16	12	36	7/16	39	2 1/2	3/4	3	2	2	
12" Plate Pile	3	3	7/16	12	48	7/16	51	2 1/2	3/4	3	3	3	
14" Plate Pile	3	3	7/16	12	48	7/16	51	2 1/2	3/4	3	3	3	

Table 2.0 - Fabrication Dimensions									
Description	Overall Angle Length	Distance from Top of Angle to Top of Plate		Top Bolt Edge Distance from Top of Plate	Bottom Bolt Edge Distance from Top of Plate	Top Bolt Edge Distance from Top of Angle	Bottom Bolt Edge Distance from Top of Angle	Top Clip Edge Distance from Top of Angle	Bottom Clip Edge Distance from Top of Angle
		A	B						
6" Plate Pile	72	6	3	21	9	27	6	30	30
8" Plate Pile - 1	96	6	3	21	9	27	6	30	30
8" Plate Pile - 2	96	6	3	33	9	39	6	42	42
10" Plate Pile	120	6	3	33	9	39	6	42	42
12" Plate Pile	144	6	3	45	9	51	6	54	54
14" Plate Pile	168	6	3	45	9	51	6	54	54

- Fabrication and Assembly Notes**
- All steel plates and angles shall be ASTM A572, Grade 50 (FY = 50 ksi).
  - All welding shall be in accordance with AWS D1.1 specifications.
  - All bolts shall be hot dip galvanized.
  - Fillet welds shall use SMAW process with E70XX low hydrogen electrodes.
  - All bolts shall be either Gr 5, ASTM A 307, or equivalent.
  - In hard driving conditions ASTM A325 or ASTM A409 bolts may be required.
  - Bolts holes shall be 1/8" larger than the nominal bolt diameter.
  - Plate Pile material dimensions are preliminary and should be confirmed in the project review.
  - Plate Pile material dimensions are minimal nominal dimensions. Larger sections may be considered depending on material availability.

REV	DESCRIPTION	DATE	PROJECT	SCALE	DATE
			SRT Tier II Plate Pile Assembly	SRT 2.0	01/03/13

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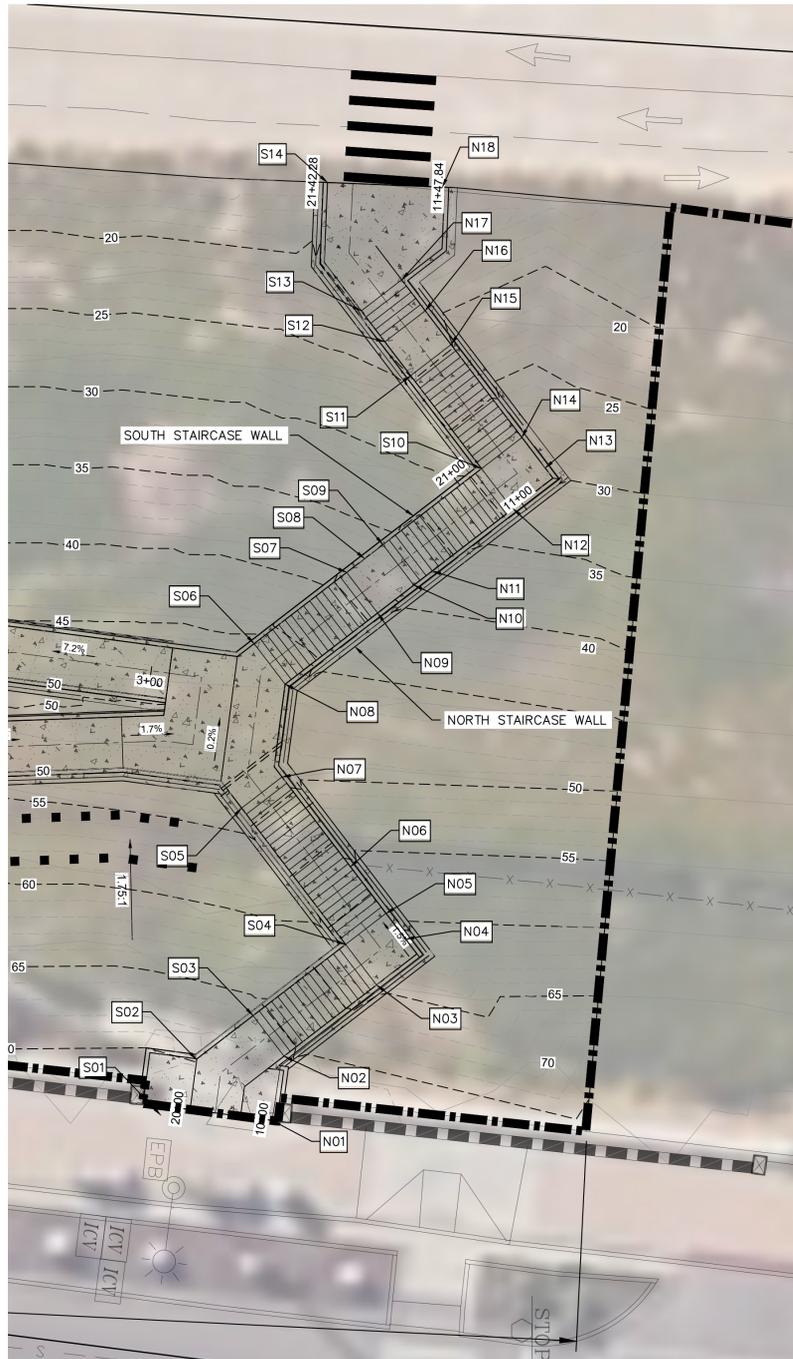
**1**  
 C-5 PLATE PILE  
 SCALE: N.T.S.  
 NOTE: SIZE TBD

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 PLATE PILE LAYOUT



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1 STAIRCASE CIP RETAINING WALL PLAN  
 C-7 SCALE: 1" = 10'

- NOTES:  
 1. SEE SHEET V-1 FOR HORIZONTAL AND VERTICAL CONTROL.  
 2. [X##] = STAIRCASE CONTROL POINTS



Point #	Stationing	Northing	Easting	Finished Surface	Top of Wall	Top of Footing
N01	10+00	1759890.45	6443166.26	71.30	72.30	69.80
N02	10+07.58	1759891.84	6443158.71	71.20	72.20	69.70
N03	10+21.64	1759902.76	6443150.35	61.95	62.95	60.45
N04	10+30.64	1759906.18	6443144.96	61.95	62.95	55.35
N05	10+34.80	1759903.87	6443141.94	61.95	62.95	55.35
N06	10+41.32	1759899.70	6443136.49	57.28	58.28	55.35
N07	10+55.01	1759891.60	6443125.93	48.52	49.52	47.02
N08	10+65.56	1759891.96	6443115.03	48.34	49.34	46.03
N09	10+78.74	1759902.88	6443106.68	39.00	40.00	37.93
N10	10+84.12	1759907.14	6443103.40	38.94	39.94	36.85
N11	10+86.96	1759909.33	6443101.73	36.61	38.24	31.28
N12	10+98.79	1759918.87	6443094.41	29.10	33.58	26.34
N13	11+07.40	1759922.63	6443089.63	28.98	29.98	26.64
N14	11+12.29	1759919.91	6443086.07	28.92	29.92	26.83
N15	11+26.04	1759911.54	6443075.15	19.69	20.69	18.21
N16	11+31.04	1759908.49	6443071.19	19.62	20.62	17.54
N17	11+33.33	1759905.71	6443067.55	16.54	19.07	15.21
N18	11+47.11	1759910.55	6443056.67	16.13	17.5	15.00

Point #	Stationing	Northing	Easting	Finished Surface	Top of Wall	Top of Footing
S01	20+00	1759880.76	6443164.98	71.33	71.33	69.83
S02	20+05.77	1759881.55	6443159.03	71.27	71.27	67.36
S03	20+14.73	1759888.19	6443153.96	71.11	71.11	62.83
S04	20+27.86	1759899.10	6443145.58	61.86	61.86	55.81
S05	20+47.74	1759886.84	6443129.58	48.44	54.71	47.01
S06	20+69.42	1759888.32	6443110.27	46.83	48.70	33.76
S07	20+83.16	1759899.23	6443101.91	38.93	38.93	37.44
S08	20+85.33	1759901.32	6443100.31	37.90	38.90	33.76
S09	20+88.55	1759903.50	6443098.64	38.85	38.85	33.76
S10	21+02.62	1759915.14	6443089.72	28.92	29.22	23.35
S11	21+15.77	1759906.77	6443078.81	19.53	25.45	18.04
S12	21+20.77	1759903.75	6443074.84	19.53	24.40	14.57
S13	21+25.35	1759900.95	6443071.20	16.45	24.11	14.57
S14	21+42.34	1759896.97	6443056.13	16.07	16.51	14.57

DESCRIPTION

APPROVAL

SHEET

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 STAIRCASE CIP RETAINING WALL PLAN



PAGE

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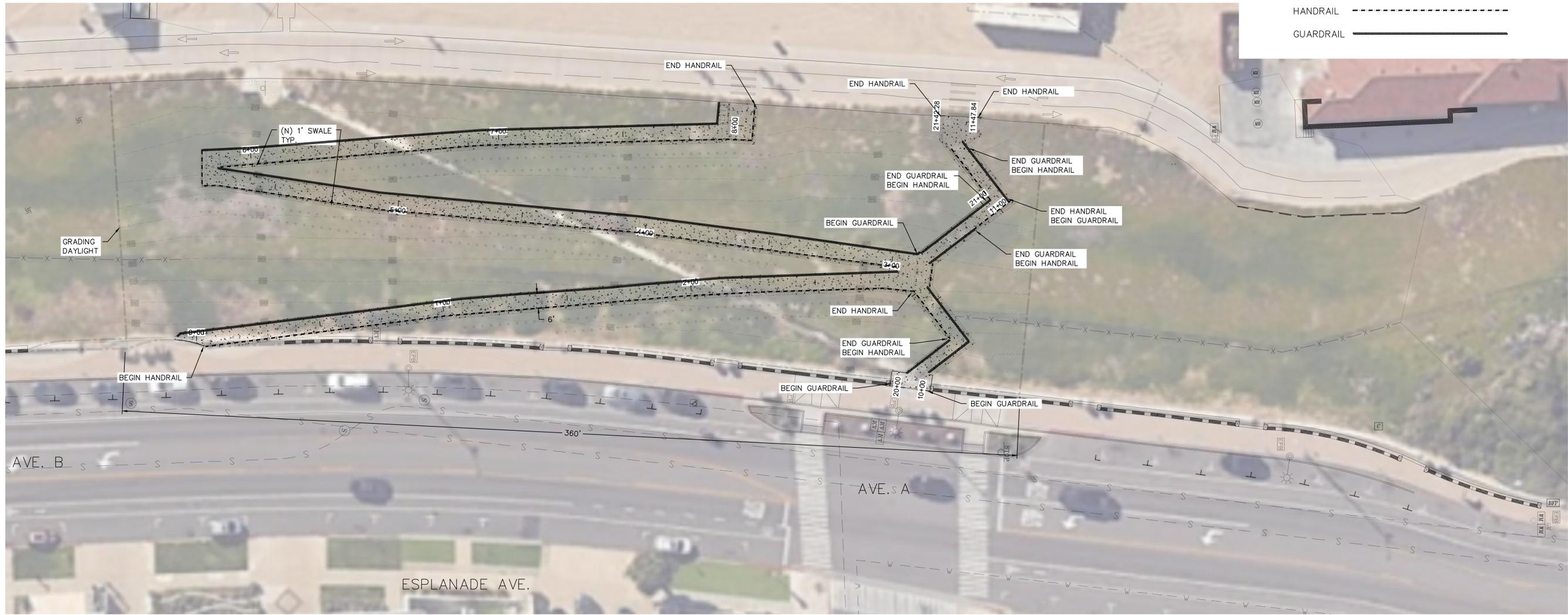
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LEGEND

HANDRAIL - - - - -

GUARDRAIL ————

1 GUARDRAIL AND HANDRAIL PLAN  
 C-8 SCALE: 1" = 20'



- NOTES:
- SEE SHEET V-1 FOR HORIZONTAL AND VERTICAL CONTROL.
  - SEE SHEET C-13 FOR GUARDRAIL AND HANDRAIL DETAILS.

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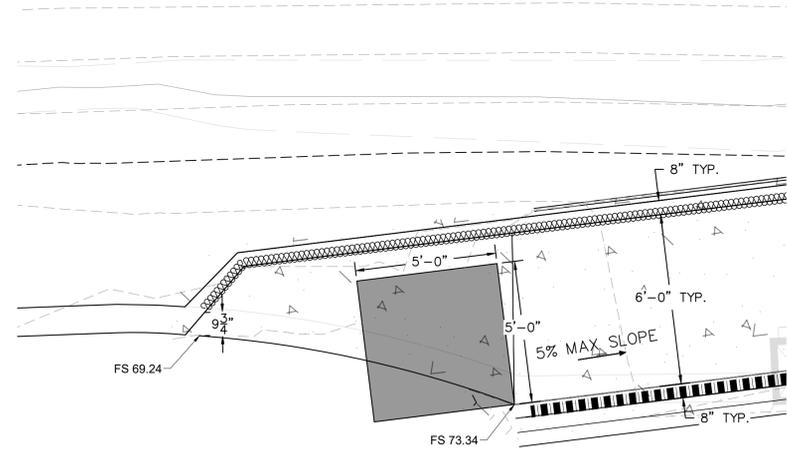
REDONDO BEACH AVE. A ACCESS PATH  
 REDONDO BEACH, CALIFORNIA 90277  
 GUARDRAIL AND HANDRAIL PLAN



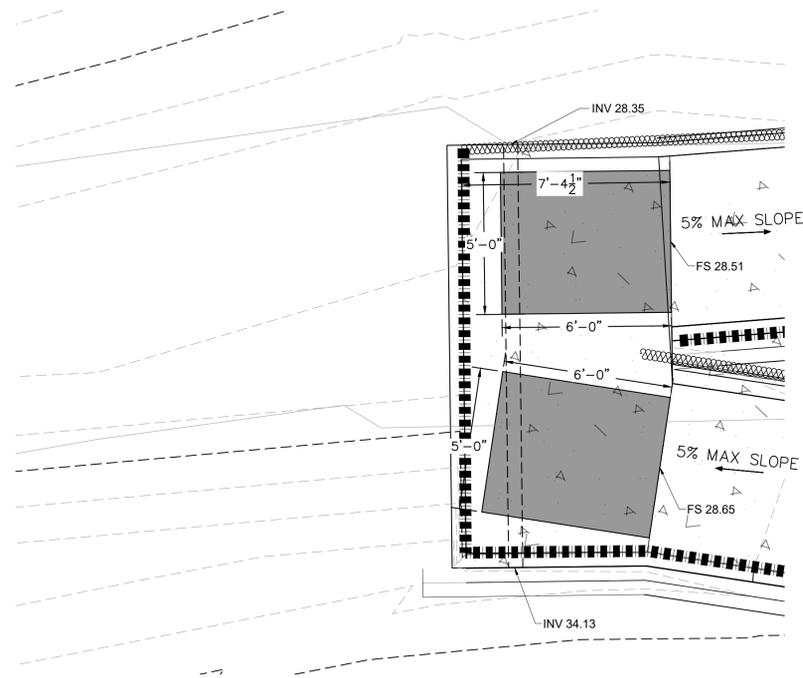
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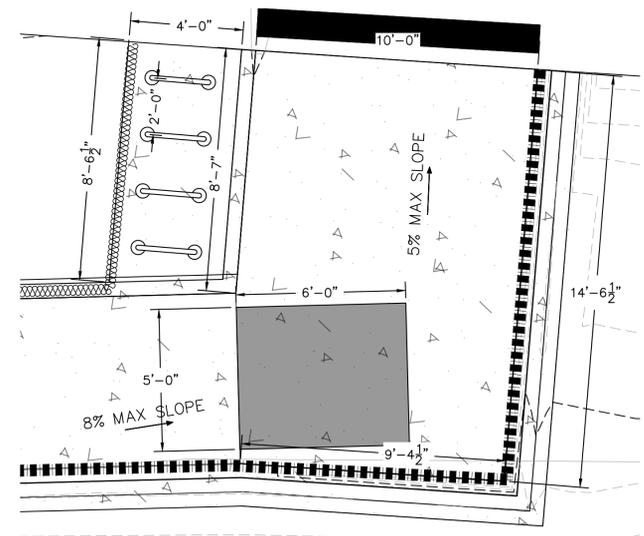
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RAMP LANDING 1 (TOP)  
 SCALE: 1" = 3'



RAMP LANDING 2  
 SCALE: 1" = 3'



RAMP LANDING 3 (BOTTOM)  
 SCALE: 1" = 3'

LEGEND

HANDRAIL [Symbol: Dashed line with vertical bars]

GUARDRAIL [Symbol: Zigzag line]

NOTES: SEE SHEET V-1 FOR  
 HORIZONTAL AND VERTICAL CONTROL.

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 SITE PLAN ENLARGEMENTS (1 OF 2)



PAGE

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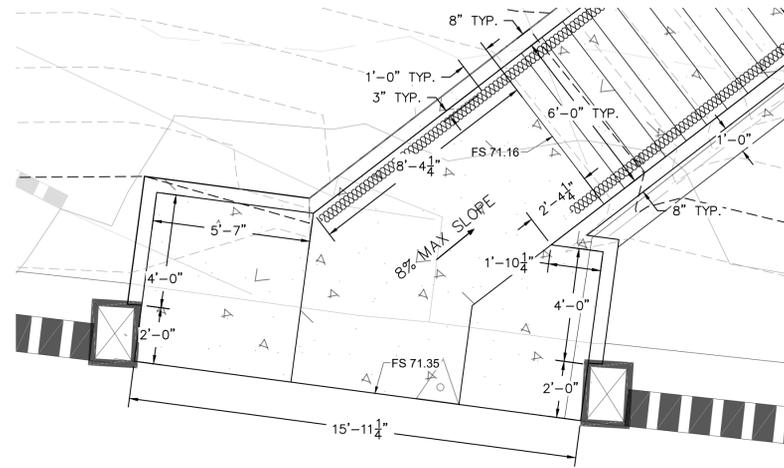
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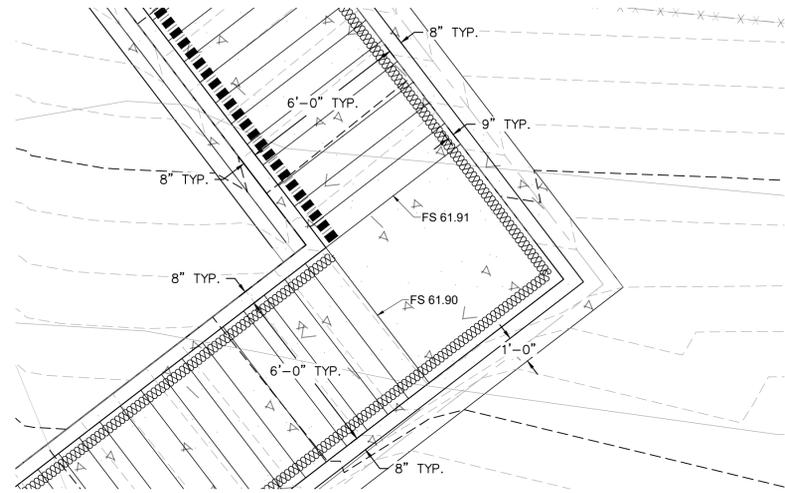
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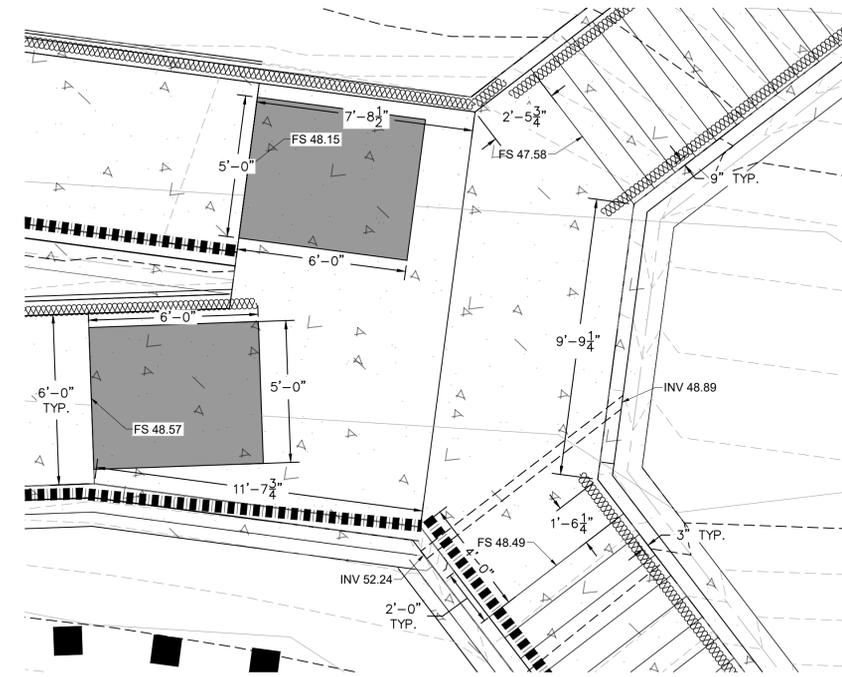
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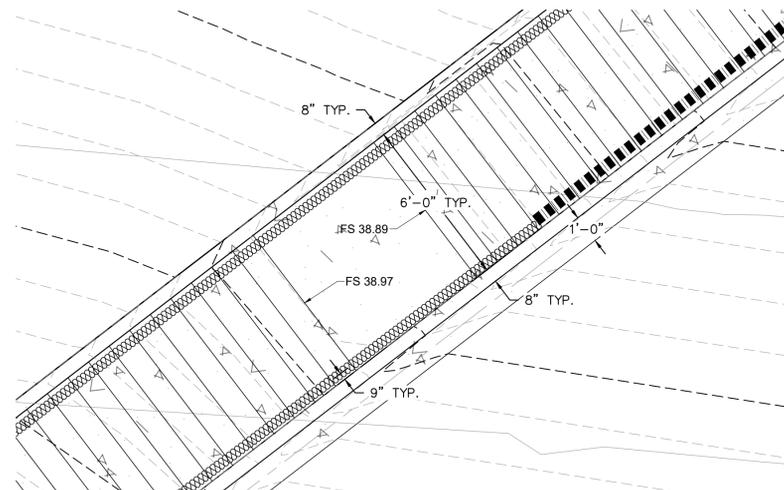
STAIRCASE  
LANDING 1 (TOP)  
SCALE: 1" = 3'



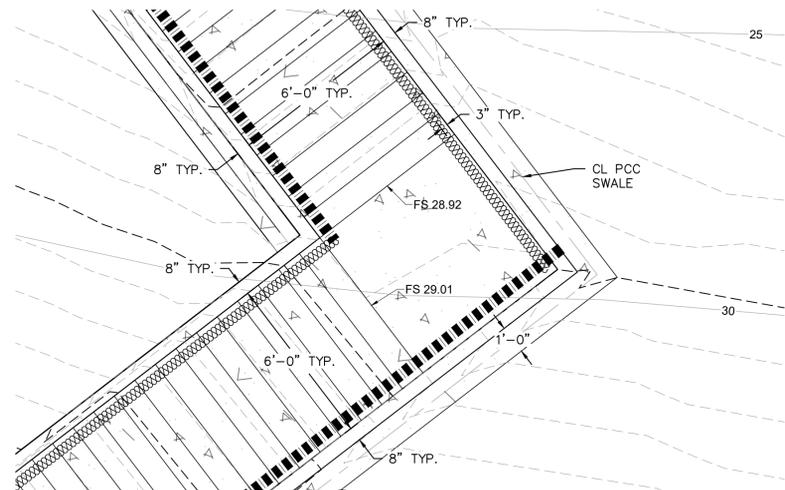
STAIRCASE  
LANDING 2  
SCALE: 1" = 3'



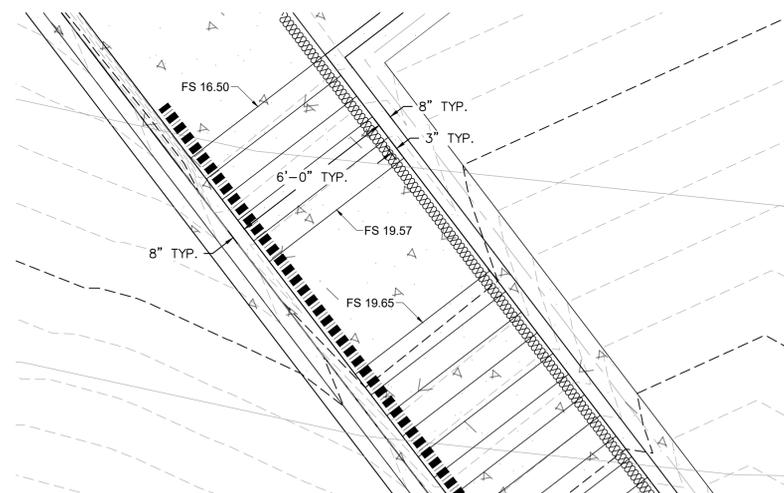
STAIRCASE  
LANDING 3  
SCALE: 1" = 3'



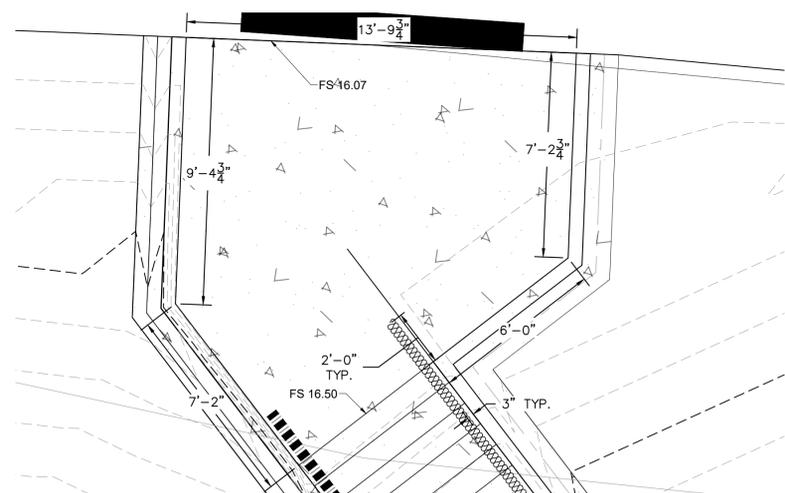
STAIRCASE  
LANDING 4  
SCALE: 1" = 3'



STAIRCASE  
LANDING 5  
SCALE: 1" = 3'



STAIRCASE  
LANDING 6  
SCALE: 1" = 3'



STAIRCASE  
LANDING 7 (BOTTOM)  
SCALE: 1" = 3'

LEGEND  
HANDRAIL [hatched pattern]  
GUARDRAIL [wavy pattern]  
NOTES: SEE SHEET V-1 FOR HORIZONTAL AND VERTICAL CONTROL.

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SITE PLAN ENLARGEMENTS (STAIRCASE LANDING)

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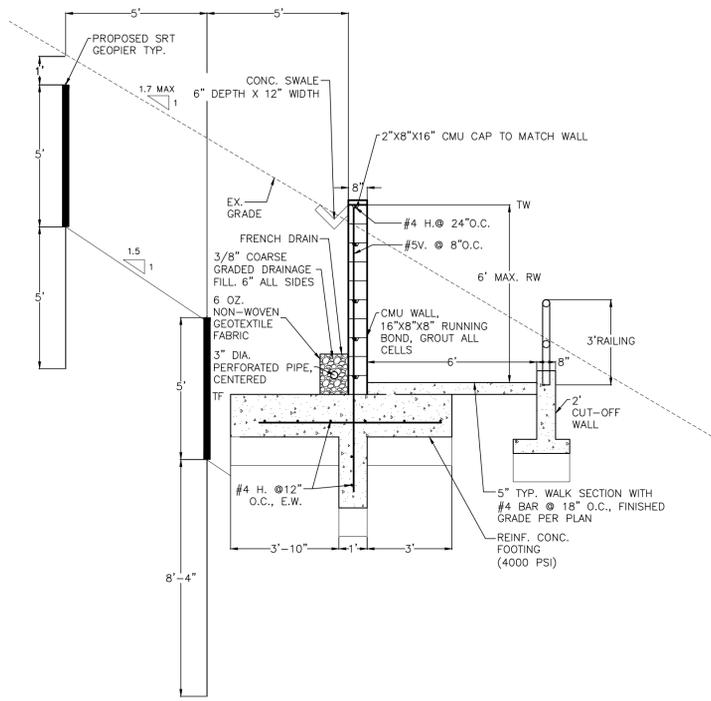
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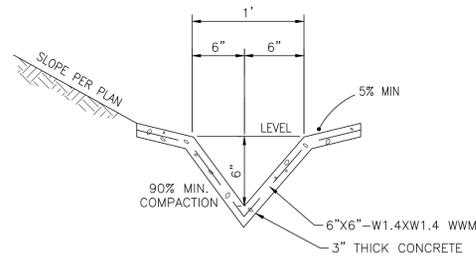
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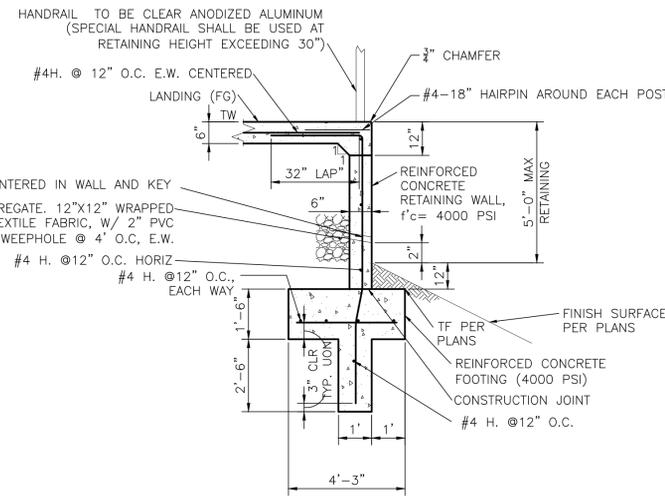
1 ACCESS PATH AND RETAINING WALL  
SCALE: N.T.S.

- NOTES:
1. CMU SPECS - 8"x16"x8"
  2. BOND BEAM SPLIT 1-SIDE
  3. COLOR: NATURAL GRAY

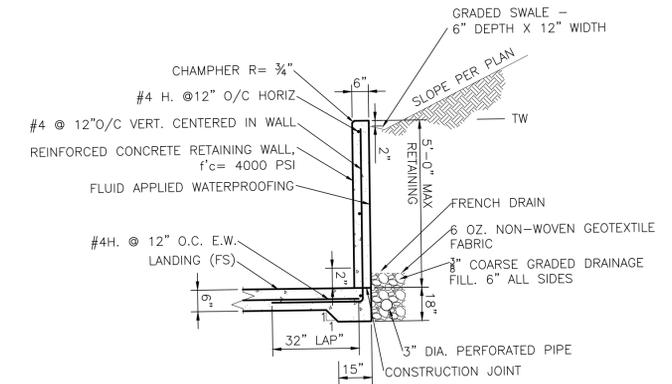


4 SWALE/TERRACE DRAIN  
SCALE: N.T.S.

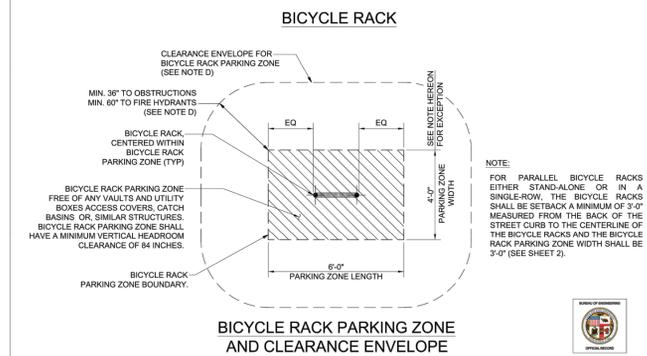
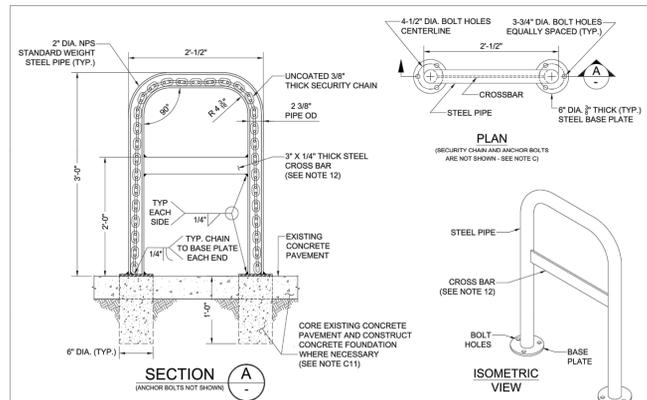
- NOTES:
1. CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS OF 4000 P.S.I. CONCRETE MAY BE PNEUMATICALLY PLACED AND SHALL CONFORM TO SECTION 1905 OF THE CALIFORNIA BUILDING CODE.
  2. REINFORCING SHALL BE 6"x6"-W1.4XW1.4 WWM OR APPROVED EQUAL, EPOXY COATED.
  3. PRE-WET AND COMPACT SUBGRADE TO 90% COMPACTION PRIOR TO PLACE OF CONCRETE. APPLY CURING COMPOUND PER SPECIFICATION 03301.



2 STAIR RETAINING WALL  
(FINISHED GRADE BELOW LANDING)  
SCALE: N.T.S.



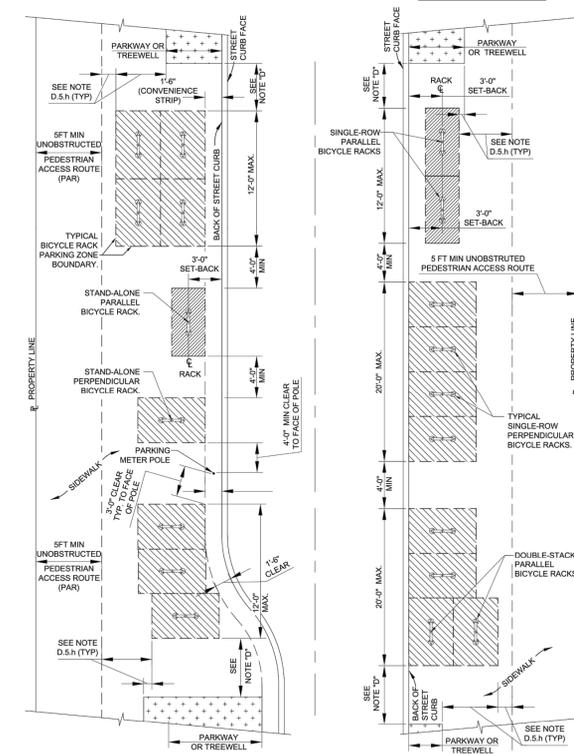
3 STAIR RETAINING WALL  
(FINISHED GRADE ABOVE LANDING)  
SCALE: N.T.S.



BUREAU OF ENGINEERING		DEPARTMENT OF PUBLIC WORKS		CITY OF LOS ANGELES	
<b>BICYCLE RACK</b>					
PREPARED MARIAS FARRAN BUREAU OF ENGINEERING	SUBMITTED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	SUPERSEDES S-671-0	REFERENCES S-470	
CHECKED RAFI MASSARI BUREAU OF ENGINEERING	EDWARD ARRINGTON, S.E. ENGINEER OF DESIGN	<i>[Signature]</i>	VAULT INDEX NUMBER: <b>B-4783</b>		
PAULINE CHAN CITY OF LOS ANGELES DEPARTMENT OF TRANSPORTATION (LACT)	KENNETH R. REDO, P.E. SENIOR CITY ENGINEER	GARY LEE MOORE, P.E. CITY ENGINEER	SHEET 1 OF 4 SHEETS		

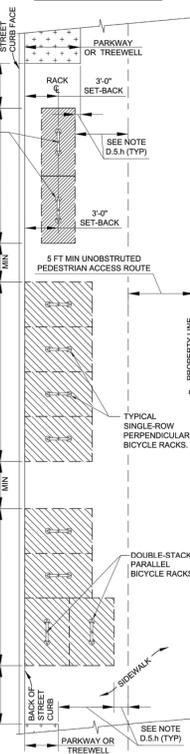
BICYCLE RACK PARKING ZONE LAYOUTS

ON-STREET PARKING PERMITTED



NOTE: BICYCLE RACK PARKING ZONE LAYOUTS SHALL BE ARRANGED TO ENSURE THAT THE REQUIRED CLEAR PATH PER NOTE D.5.h IS PROVIDED.

ON-STREET PARKING NOT PERMITTED



LEGEND  
38'x72' BICYCLE PARKING ZONE  
48'x72' BICYCLE PARKING ZONE

STANDARD PLAN NO. S-671-1 VAULT INDEX NUMBER edit SHEET 2 OF 4 SHEETS

5 BIKE RACK  
SCALE: N.T.S.

REVISIONS	DATE	SHEET	APPROVAL	DESCRIPTION
No.				
				REF.
AS-BUILT:				

DESIGNED BY: RAFAEL HOLCOMBE  
DRAWN BY: JONATHAN COBER



REDONDO BEACH AVE. A ACCESS PATH  
REDONDO BEACH, CALIFORNIA 90277

DETAILS

PAGE 17 OF 37

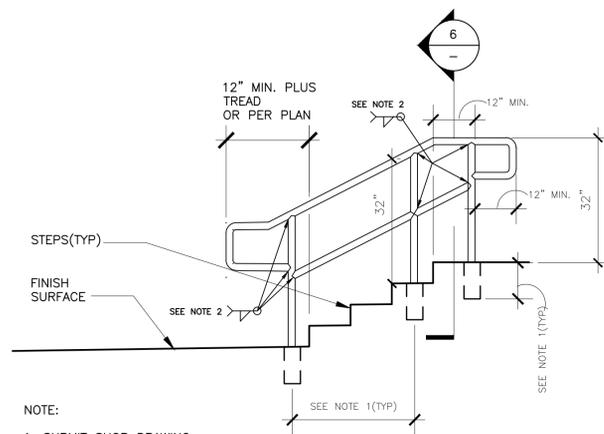
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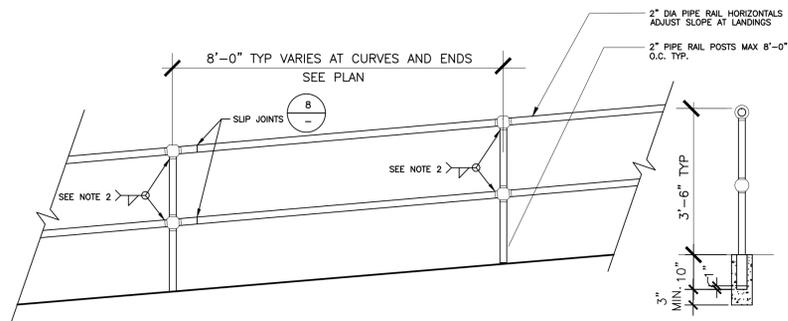
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SHEET 17 OF 37  
DRAWING NO.



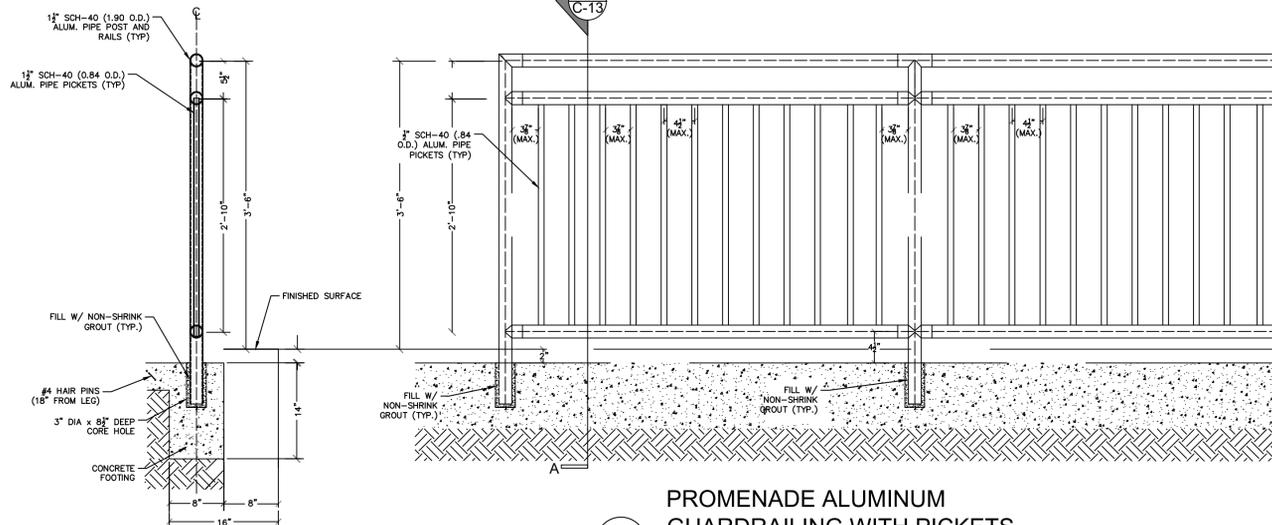
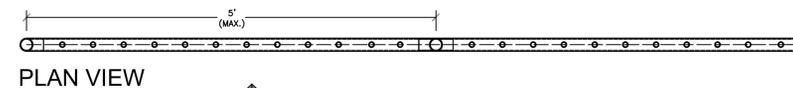


NOTE:  
1. SUBMIT SHOP DRAWING

**A**  
**C-8** STAIR HANDRAIL (TYP)  
SCALE: 1/2" = 1'-0"

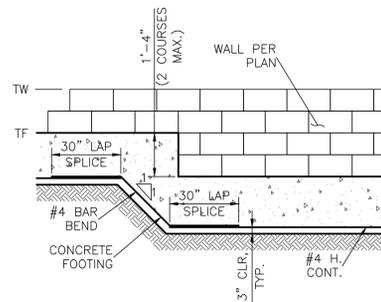


**A**  
**C-8** SAFETY RAIL AT WALKWAY  
SCALE: 1/2" = 1'-0"

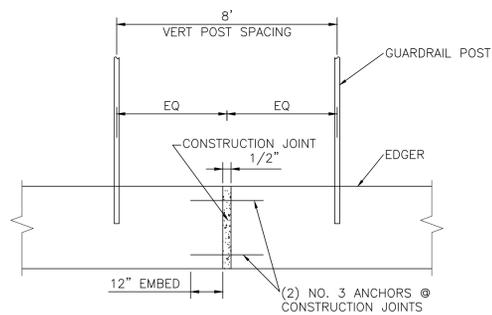


**A-A**  
**C-8** HANDRAIL (TYP)  
SCALE: 1/2" = 1'-0"

**A**  
**C-8** PROMENADE ALUMINUM  
GUARDRAILING WITH PICKETS  
SCALE: 1/2" = 1'-0"

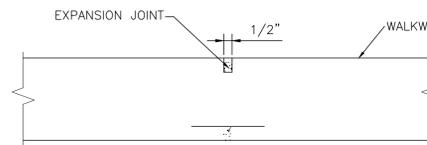


**A**  
**C-8** FOOTING TRANSITION DETAIL  
N.T.S.



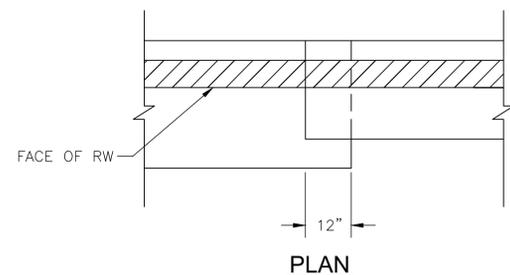
**B**  
**C-12** CONSTRUCTION JOINT DETAIL  
N.T.S.

- NOTES:
- CONSTRUCTION JOINTS CAN BE USED IN LIEU OF EXPANSION JOINTS AND SHALL NOT EXCEED A WIDTH OF 1/2".
  - CONSTRUCTION JOINT MATERIAL SHALL CONSIST OF 1/2" EXPANSION JOINT FILLER CONFORMING TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PREFORMED SPONGE RUBBER AND CORK EXPANSION JOINT FILLERS FOR CONCRETE PAVING AND STRUCTURAL CONSTRUCTION, AASHTO DESIGNATION: M153, TYPES I, II, OR III OR THE SPECIFICATION FOR PREFORMED EXPANSION JOINT FILLERS FOR CONCRETE PAVING AND STRUCTURAL CONSTRUCTION, AASHTO DESIGNATION: M213, AS PER STATE D.O.T. STANDARD SPECIFICATION LATEST DESIGNATION.



**C**  
**C-8** EXPANSION JOINT DETAIL  
N.T.S.

- NOTES:
- EXPANSION JOINT MATERIAL SHALL CONSIST OF 1/2" EXPANSION JOINT FILLER CONFORMING TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PREFORMED SPONGE RUBBER AND CORK EXPANSION JOINT FILLERS FOR CONCRETE PAVING AND STRUCTURAL CONSTRUCTION, AASHTO DESIGNATION: M153, TYPES I, II, OR III OR THE SPECIFICATION FOR PREFORMED EXPANSION JOINT FILLERS FOR CONCRETE PAVING AND STRUCTURAL CONSTRUCTION, AASHTO DESIGNATION: M213, AS PER STATE D.O.T. STANDARD SPECIFICATION LATEST DESIGNATION.



**D**  
**C-8** STEP FOOTING DETAILS  
N.T.S.

REVISIONS	DATE	SHEET	APPROVAL	DESCRIPTION
No.				

DESIGNED BY:  
RAFAEL HOLCOMBE

DRAWN BY:  
JONATHAN GOBER



REDONDO BEACH AVE. A ACCESS PATH  
REDONDO BEACH, CALIFORNIA 90277

DETAILS 3

PAGE

GRAPHIC SCALE

FIELD BOOK

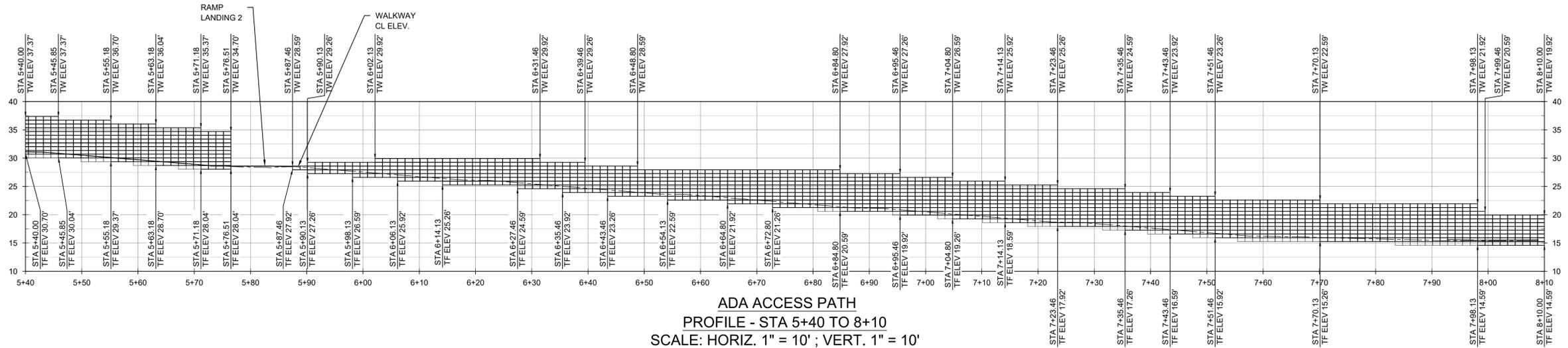
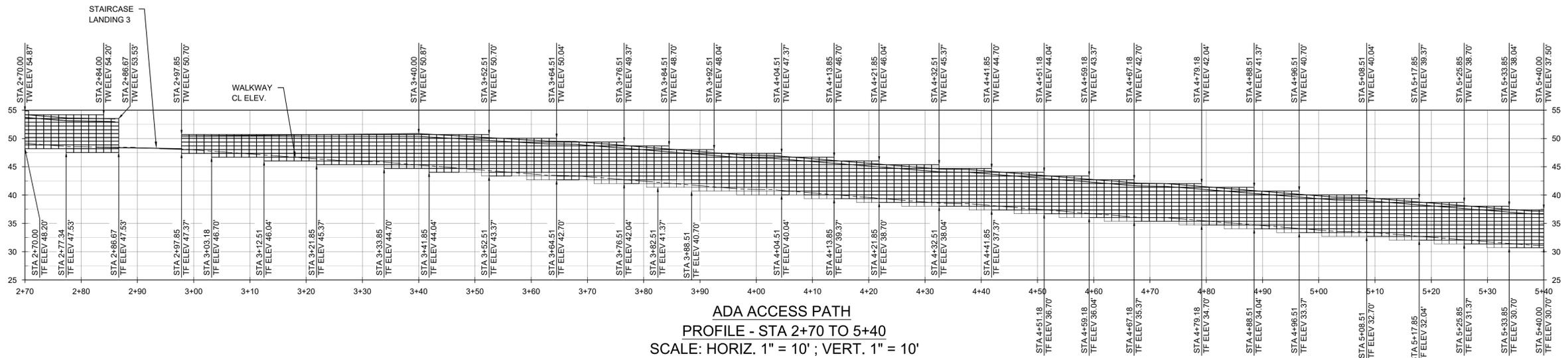
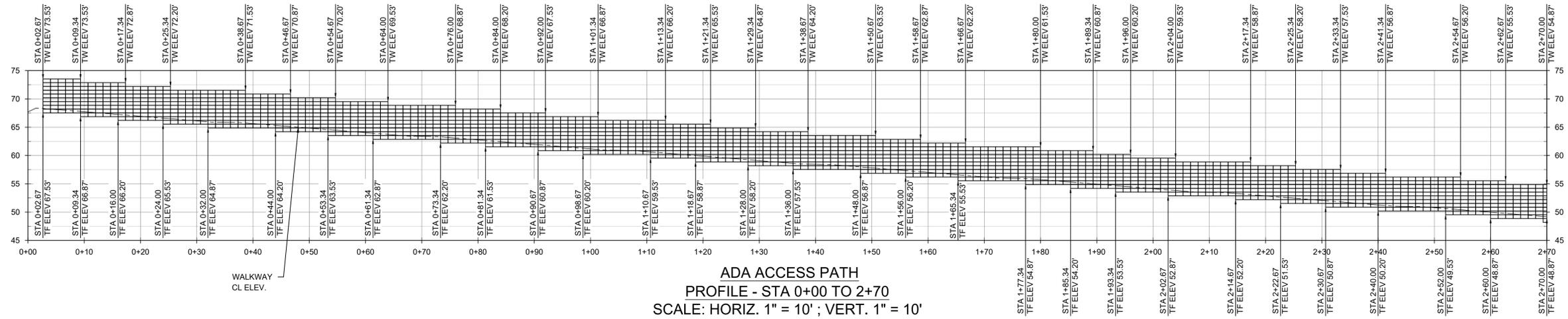


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DRAWING REF.  
C-13

SHEET  
19 OF 37

DRAWING NO.



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DRAWN BY: JONATHAN COBER		No.	DATE
		SHEET	DESCRIPTION
FIELD BOOK PAGE		AS-BUILT:	REF.



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 SHEET 20 OF 37  
 DRAWING NO.

**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
 ACCESS PATH RETAINING WALL PROFILES





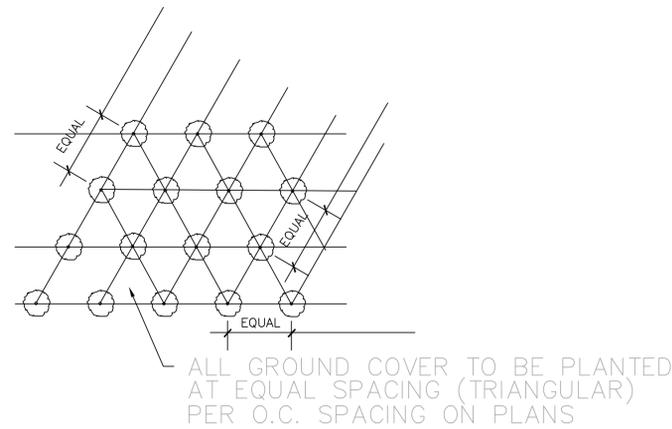
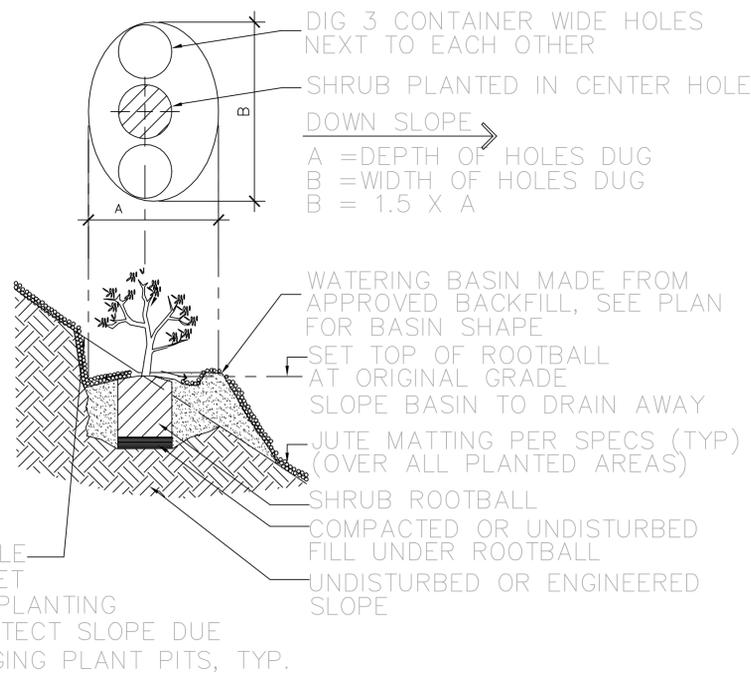






SHRUB/GROUND COVER PLANTING LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	WUCOL	QTY.	SIZE	SIZE @ INSTALLATION		ULTIMATE SIZE		YEAR TO MATURITY	REMARKS
						HEIGHT	WIDTH	HEIGHT	WIDTH		
✱	ATRIPLEX LENTIFORMIS	BIG SALT BUSH	LOW	130	1 GAL	6-8"	6-8"	5'	5'	3-5 YRS	-
◦	CAMISSONIA CHIERANTHIFOLIA	BEACH EVENING PRIMROSE	LOW	302	1 GAL	2-4"	6-8"	6-12"	2'	3-5 YRS	-
•	DUDLEYA CAESPITOSA	SEA LETTUCE	LOW	420	1 GAL	2-4"	2-4"	4-8"	4-8"	3-5 YRS	-
⊕	ENCELIA CALIFORNICA	BUSH SUNFLOWER	LOW	55	1 GAL	6-8"	6-8"	3-4'	5'	3-5 YRS	-
⊙	ERIOGONUM LATIFOLIUM	COAST BUCKWHEAT	LOW	92	1 GAL	6-8"	6-8"	1-2'	2-3'	3-5 YRS	-
⊙	ERIOGONUM PARVIFOLIUM	SEACLIFF BUCKWHEAT	LOW	236	1 GAL	6-8"	6-8"	2'	2'	3-5 YRS	-
◦	EXTRIPLEX CALIFORNICA	CALIFORNIA SALT BUSH	LOW	151	1 GAL	6-8"	6-8"	1-2'	30-36"	3-5 YRS	-
Ⓢ	SALVIA MELLIFERA REPENS	CREEPING BLACK SAGE	LOW	52	1 GAL	6-8"	6-8"	1-2'	5-6'	3-5 YRS	-
	BACCHARIS PILULARIS	COYOTE BUSH	LOW		1 GAL	6-8"	6-8"	3-4'	4-6'	3-5 YRS	PLANT 3' APART



 SHRUB PLANT'G ON SLOPE  
NO SCALE

 GROUND COVER PLANTING  
NO SCALE

**1** PLANT LEGEND & DETAILS  
NOT TO SCALE

REVISIONS		DATE	SHEET	APPROVAL	DESCRIPTION
No.	AS-BUILT:				
					REF.

DESIGNED BY: RAFAEL HOLCOMBE  
DRAWN BY: JONATHAN GOBER



REDONDO BEACH AVE. ACCESS PATH  
REDONDO BEACH, CALIFORNIA 90277  
PLANT LEGEND & DETAILS

DRAWING REF. L-4  
SHEET 26 OF 37  
DRAWING NO.

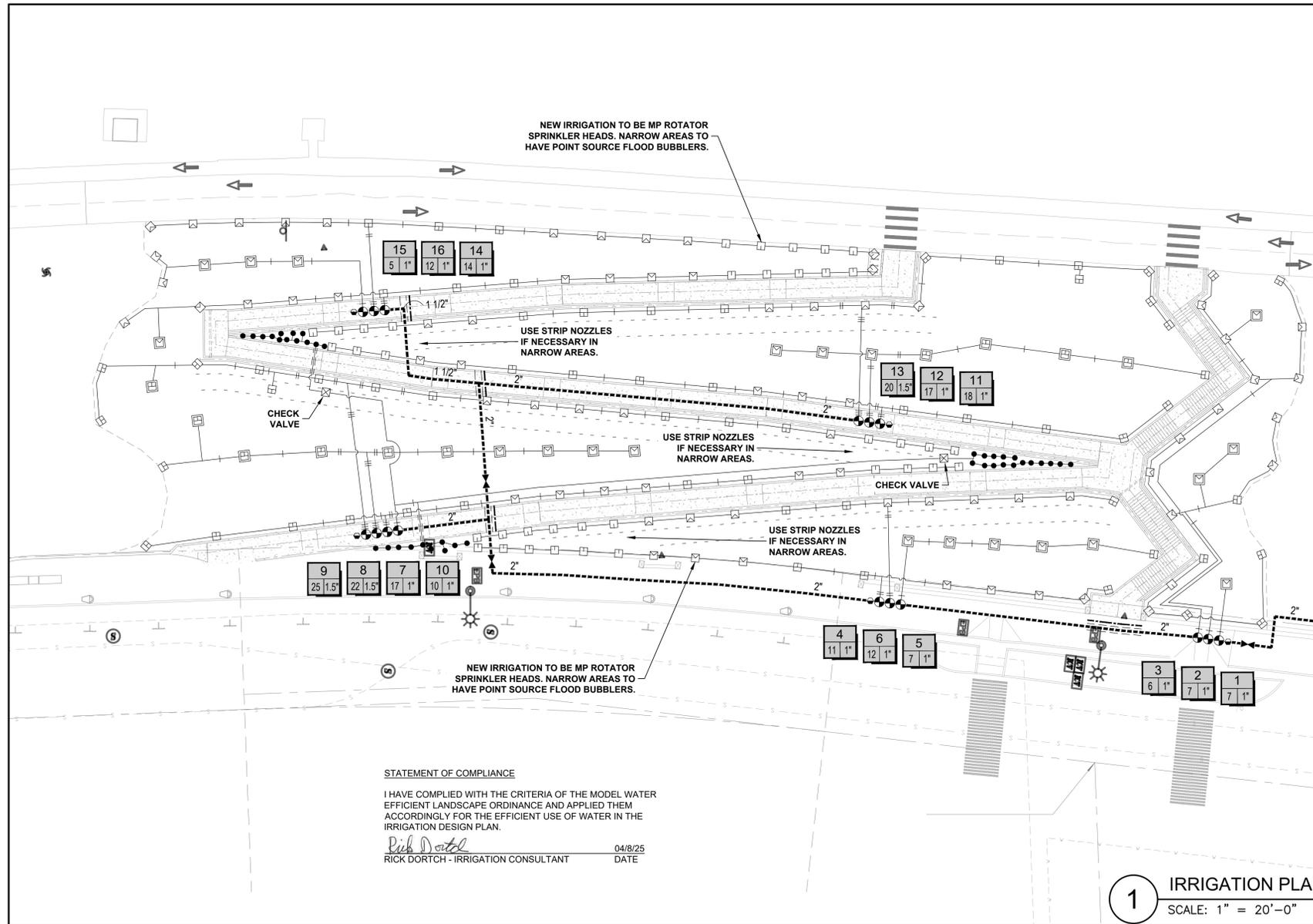
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LAST SAVED BY: ryan.cheyne  
PLOT DATE: 7/14/25  
SAVED PATH: C:\Users\Nancyz\Downloads\01\_Basefiles

IRRIGATION SPECIFICATIONS (AS APPLICABLE):																						
1. SCOPE OF WORK																						
1.1.	THE WORK CONSISTS OF FURNISHING LABOR, TOOLS, MACHINERY, MATERIALS, AND PROCEDURE REQUIRED TO COMPLETE THE SPRINKLER SYSTEM, INSTALLED READY FOR USE WITHOUT FURTHER COST IN LABOR OR MATERIALS TO THE COUNTY.	7.3.	THE CHART SHALL BE A REDUCTION OF THE ACTUAL "AS-BUILT" SYSTEM DRAWING. IF THE CONTROLLER SEQUENCE IS NOT LEGIBLE WHEN THE DRAWINGS IS REDUCED, ENLARGE IT TO A SIZE THAT WILL BE READABLE WHEN REDUCED.	9.13.5.	PRESSURE REGULATOR: A PRESSURE REGULATOR SHALL BE INSTALLED AT EACH ZONE VALVE OR ON THE MAIN LINE TO ENSURE OPERATING PRESSURES DO NOT EXCEED SYSTEM REQUIREMENTS. THE PRESSURE REGULATOR SHALL BE AS CALLED FOR ON THE PLANS.	10.10.2.	QUICK COUPLING VALVES SHALL BE SET IN VALVE BOXES APPROXIMATELY 12" FROM WALKS, CURBS, HEADER BOARDS, OR PAVED AREAS WHERE APPLICABLE. VERTICAL POSITIONING OF QUICK COUPLING VALVES SHALL BE SUCH THAT SLEEVE TOP WILL BE FLUSH WITH THE SETTLED FINISH GRADE AS DETERMINED AFTER THE TURF IS ESTABLISHED AND 2" ABOVE GRADE IN GROUND COVER AREAS.															
1.2.	WHEN NOT OTHERWISE SPECIFIED, WORKMANSHIP AND MATERIAL SHALL CONFORM TO THE LOCAL PLUMBING CODE.	7.4.	CHART SHALL BE BLACK-LINE PRINT AND A DIFFERENT PASTEL COLOR USED TO SHOW AREA OF COVERAGE FOR EACH STATION.	9.13.6.	SYSTEM FILTER: A Y-FILTER OR DISC FILTER SHALL BE INSTALLED AT EACH ZONE VALVE AS CALLED FOR ON THE PLANS. A SYSTEM (MAIN LINE) FILTER SHALL ALSO BE INSTALLED TO ENSURE ADDED PROTECTION.	10.11.	VALVE BOXES															
1.3.	THE CONTRACTOR SHALL APPLY FOR ALL NECESSARY PERMITS AND PAY FOR SAME.	7.5.	WHEN COMPLETED AND APPROVED, HERMETICALLY SEAL THE CHART BETWEEN TWO PIECES OF PLASTIC, EACH PIECE BEING A MINIMUM TWENTY (20) MIL THICKNESS.	9.14.	ANY OTHER EQUIPMENT NOT SPECIFICALLY NOTED HEREIN BUT REQUIRED BY THE PLANS, DETAILS, OR LEGENDS SHALL BE SUPPLIED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. IF ANY QUESTION ARISES AS TO PROPER PROCEDURE, IT SHALL BE RESOLVED WITH THE LANDSCAPE ARCHITECT BEFORE INSTALLATION.	10.11.1.	VALVE BOXES SHALL BE SET ONE-HALF INCH (1/2") ABOVE THE DESIGNATED FINISH GRADE IN LAWN AREAS AND ONE INCH (1") ABOVE FINISH GRADE IN GROUND COVER AREAS.															
1.4.	THE CONTRACTOR SHALL KEEP THE PREMISES CLEAN AND FREE OF EXCESS EQUIPMENT, MATERIALS AND RUBBISH INCIDENTAL TO THIS WORK.	7.6.	CHARTS SHALL BE COMPLETED AND APPROVED PRIOR TO FINAL INSPECTION OF THE IRRIGATION SYSTEM.			10.11.2.	VALVE BOXES INSTALLED NEAR WALKS, CURBS, HEADER BOARDS AND PAVING SHALL ABOUT THOSE ITEMS. TOP SURFACES SHALL BE FLUSH WITH ITEMS LISTED ABOVE.															
1.5.	THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO INDICATE AND SPECIFY A COMPLETE SPRINKLER SYSTEM, INSTALLED AND READY FOR USE WITHOUT FURTHER COST IN LABOR OR MATERIALS TO COUNTY.			10. INSTALLATION		10.12.	AUTOMATIC CONTROLLER LOCATION AND INSTALLATION															
1.6.	ANY ITEM SHOWN OR WRITTEN ON THE DRAWINGS OR IN THESE SPECIFICATIONS SHALL BE CONSIDERED TO APPEAR ON BOTH.	8. OPERATION AND MAINTENANCE MANUALS		10.1.	SITE CONDITIONS	10.12.1.	THE AUTOMATIC CONTROLLER SHALL BE INSTALLED AT THE APPROXIMATE LOCATION SHOWN ON THE PLAN. VERIFY EXACT LOCATION WITH THE OWNER.															
1.7.	IN THE EVENT OF "CONFLICT" BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE LANDSCAPE ARCHITECT SHALL BE CONSULTED.	8.1.	PREPARE AND DELIVER TO THE LANDSCAPE ARCHITECT WITHIN TEN (10) CALENDAR DAYS PRIOR TO COMPLETION OF CONSTRUCTION. ALL REQUIRED AND NECESSARY DESCRIPTIVE MATERIAL IN COMPLETE DETAIL AND SUFFICIENT QUANTITY, PROPERLY PREPARED IN FOUR INDIVIDUALLY BOUND COPIES. DESCRIBE THE MATERIAL INSTALLED IN SUFFICIENT DETAIL TO PERMIT OPERATING PERSONNEL TO UNDERSTAND, OPERATE AND MAINTAIN ALL EQUIPMENT. INCLUDE SPARE PARTS LIST AND RELATED MANUFACTURER INFORMATION FOR EACH EQUIPMENT ITEM INSTALLED. EACH MANUAL SHALL INCLUDE THE FOLLOWING:  INDEX SHEET STATING SUBCONTRACTOR'S ADDRESS AND TELEPHONE NUMBER. DURATION OF GUARANTEE PERIOD. LIST OF EQUIPMENT WITH NAMES AND ADDRESSES OF MANUFACTURER'S LOCAL REPRESENTATIVES. COMPLETE OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL MAJOR EQUIPMENT.	10.1.1.	ALL SCALED DIMENSIONS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON THE SITE PRIOR TO PROCEEDING WITH WORK UNDER THIS CONTRACT.	10.12.2.	ALL LOCAL AND OTHER APPLICABLE CODES SHALL TAKE PRECEDENCE IN CONNECTING THE 110 VOLT ELECTRICAL SERVICE TO CONTROLLER. OWNER SHALL PROVIDE POWER TO CONTROLLER. CONTRACTOR SHALL COMPLETE HOOK-UP TO CONTROLLER.															
1.8.	PRIOR TO SUBMISSION OF HIS BID, THE CONTRACTOR SHALL EXAMINE THE SITE, THE COMPLETE DRAWINGS OF THE PROJECT AND THE SPECIFICATIONS OF SAME, IN ADDITION TO THE DRAWINGS AND SPECIFICATIONS FOR THE SPRINKLER IRRIGATION PORTION OF THE WORK.	8.2.	IN ADDITION TO THE MAINTENANCE MANUALS, PROVIDE THE MAINTENANCE PERSONNEL WITH INSTRUCTIONS FOR MAJOR EQUIPMENT AND SHOW WRITTEN EVIDENCE AT THE END OF THE PROJECT THAT THIS SERVICE HAS BEEN RENDERED.	10.1.2.	EXTREME CARE SHALL BE EXERCISED IN EXCAVATING AND WORKING NEAR EXISTING UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY FACILITIES. SHOULD UTILITIES NOT LOCATED OR MARKED BE FOUND DURING EXCAVATION, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER AND SHALL DISCONTINUE WORK WITH WORK IN THE AREA EXCEPT NECESSARY EMERGENCY WORK NECESSARY TO REPAIR OR PREVENT DAMAGE UNTIL INSTRUCTIONS ARE RECEIVED.	10.12.3.	THERE SHALL BE ADEQUATE COVERAGE OF EARTH (18" MINIMUM) OVER THE 24-VOLT CONTROL WIRE. INSTALL WIRE IN TRENCH AND TAPE TO MAIN LINES ON SIDE OF PIPE AT 10' INTERVALS.															
		9. MATERIALS		10.1.3.	FAILURE TO NOTIFY THE OWNER OF DISCOVERY OF SUCH UTILITIES OR DAMAGE THERETO WILL RESULT IN THE CONTRACTOR BEING LIABLE FOR ANY AND ALL DAMAGE CAUSED TO THE UTILITIES AS A RESULT OF HIS ACTIONS.	10.13.	CONTROL WIRE															
		9.1.	USE NEW MATERIALS OF THE BEST GRADE OF EACH RESPECTIVE KIND AND OF THE SAME MANUFACTURERS FOR ALL ITEMS OF ONE TYPE.	10.1.4.	THE CONTRACTOR SHALL, BEFORE STARTING WORK ON THE SPRINKLER SYSTEM, CAREFULLY CHECK ALL FINISH GRADES TO SATISFY HIMSELF THAT HE MAY PROCEED WITH THE WORK.	10.13.1.	ALL ELECTRICAL EQUIPMENT AND WIRING SHALL COMPLY WITH LOCAL AND STATE CODES AND BE INSTALLED BY THOSE SKILLED AND LICENSED IN THE TRADE.															
		9.2.	STEEL PIPE	10.1.5.	THE CONTRACTOR SHALL, BEFORE STARTING WORK ON THE SPRINKLER SYSTEM, CAREFULLY CHECK ALL FINISH GRADES TO SATISFY HIMSELF THAT HE MAY PROCEED WITH THE WORK.	10.13.2.	CONNECTING AND SPLICING OF WIRE AT THE VALVES OR IN THE FIELD SHALL BE MADE USING A DRI-SPLICE CONNECTOR OR EQUAL.															
		9.2.1.	STEEL PIPE AND STEEL FITTINGS WHERE INDICATED ON THE DRAWINGS OR SPECIFIED SHALL BE SCHEDULE 40 GALVANIZED MILD STEEL THREADED PIPE AND BEADED GALVANIZED MALLEABLE IRON THREADED FITTINGS, EXCEPT COUPLINGS WHICH SHALL BE A.P.I. (AMERICAN PIPE INSTITUTE) STEEL COUPLINGS. THREAD ON PIPE AND FITTINGS SHALL BE OF TAPER TYPE.	10.2. WATER SUPPLY		10.14.	PRESSURE TEST															
		9.2.2.	ALL UNIONS TWO (2) INCHES AND SMALLER SHALL BE GROUND JOINT PATTERN. UNIONS LARGER THAN TWO (2) INCHES SHALL BE FLANGED UNIONS. ALL FLANGED UNIONS SHALL BE PLACED WITH ONE-SIXTEENTH (1/16) INCH THICK ASBESTOS FIBER GASKETS. RIGHT AND LEFT COUPLINGS SHALL BE USED INSTEAD OF GROUND JOINT UNIONS IN ALL UNDERGROUND LINES, EXCEPT AT VALVES.	10.2.1.	THE CONTRACTOR SHALL ARRANGE FOR THE PROVISION OF THE WATER SUPPLY AND COORDINATE WITH THE OWNER AS NECESSARY.	10.14.1.	ALL PRESSURE LINES SHALL BE TESTED UNDER PRESSURE WITH WATER AND AIR OF ONE-HUNDRED FIFTY (150) POUNDS PER SQUARE INCH, AND ALL NON-PRESSURE LINES SHALL BE TESTED UNDER THE EXISTING STATIC PRESSURE, AND BOTH BE PROVEN WATERTIGHT.															
		9.2.3.	STEEL STREET ELBOWS, BUSHINGS, CLOSE NIPPLES, AND LONG SCREWS SHALL NOT BE USED IN THE WORK.	10.2.2.	THE CONTRACTOR SHALL CONNECT TO THE WATER SOURCE AS INDICATED ON THE DRAWINGS.	10.14.2.	PRESSURE SHALL BE SUSTAINED IN THE LINES FOR A 24 HOUR PERIOD. IF LEAKS DEVELOP, THE JOINTS SHALL BE REPLACED AND THE TEST REPEATED UNTIL THE ENTIRE SYSTEM IS PROVEN WATERTIGHT.															
		9.3.	PLASTIC PIPE	10.2.3.	THE CONTRACTOR SHALL CONNECT TO THE WATER SOURCE AS INDICATED ON THE DRAWINGS.	10.14.3.	TEST SHALL BE OBSERVED AND APPROVED BY THE OWNER PRIOR TO BACKFILL.															
		9.3.1.	PLASTIC PIPE SHALL BE EXTRUDED FROM VIRGIN PVC (POLYVINYL CHLORIDE) TYPE 1, GRADE 11 (CLASS 1220) AS MANUFACTURED BY LASCO INDUSTRIES, BALDWIN, PACIFIC WESTERN, JOHNS-MANVILLE OR EQUAL. CLASS SCHEDULE AS INDICATED IN THE LEGEND.	10.3. ELECTRICAL		10.14.4.	UPON COMPLETION OF EACH PHASE OF THE WORK, THE CONTRACTOR SHALL CHECK AND ADJUST EACH SPRINKLER HEAD TO MEETING THE SITE REQUIREMENTS.															
		9.3.2.	ALL PLASTIC PIPE SHALL BE CONTINUOUSLY AND PERMANENTLY MARKED WITH THE FOLLOWING INFORMATION: MANUFACTURER'S NAME, NOMINAL PIPE SIZE, PVC 1220, S.D.R. (STANDARD DIMENSION RATIOS, OR THE PRESSURE RATING IN POUNDS PER SQUARE INCH) AND THE N.S.F. (NATIONAL SANITATION FOUNDATION).	10.3.1.	THE OWNER SHALL ARRANGE FOR THE PROVISION OF THE ELECTRICAL SUPPLY. POWER SOURCES SHALL BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL CONNECT AT THE POINT SHOWN ON THE DRAWINGS.	10.15.	COVERAGE TEST - UPON COMPLETION OF ALL SYSTEMS, THE CONTRACTOR, IN THE PRESENCE OF THE ARCHITECT, SHALL PERFORM A COVERAGE TEST TO DETERMINE IF THE COVERAGE OF WATER AFFORDED ALL AREAS IS COMPLETE AND ADEQUATE. THE CONTRACTOR SHALL CHANGE ANY HEADS, NOZZLES, OR ORIFICES AS MAY BE REQUIRED TO PROVIDE COVERAGE AS INDICATED ON THE DRAWINGS AND AS SPECIFIED.															
		9.3.3.	PLASTIC FITTINGS SHALL BE PVC 11, I.P.S. (INTERNATIONAL PIPE SOCIETY), SCHEDULE 40, N.S.F., SCHEDULE 80, N.S.F., AND SCHEDULE 80 THREADED FITTINGS AS SHOWN IN THE DETAILS AS MANUFACTURED BY SLOANE MANUFACTURING CO. SOLVENT AND PRIMER ARE TO BE PER PIPE MANUFACTURER'S RECOMMENDATIONS.	10.3.2.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ELECTRICAL CONNECTIONS TO THE AUTOMATIC CONTROLLERS. ALL WIRING SHALL BE ROUTED AS SHOWN ON PLANS. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH ALL LOCAL OR COUNTY ORDINANCES.	10.16.	LOWERING OF HEADS - UNLESS OTHERWISE NOTED, ALL SPRINKLERS INSTALLED IN LAWN AREAS SHALL BE LOWERED TO FINISH GRADE WITHIN FIVE DAYS FOLLOWING NOTIFICATION BY THE COUNTY. AT THE TIME OF LOWERING HEADS, THE CONTRACTOR SHALL COMPLETELY CHECK AND ADJUST THE ENTIRE SYSTEM AND MAKE ANY REPAIRS THAT ARE NECESSARY TO COMPLETE THIS WORK TO THE SATISFACTION OF THE COUNTY, LANDSCAPE ARCHITECT AND/OR OWNER'S CHOSEN REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING UPON COMPLETION OF THIS WORK.															
		9.4.	PVC PRESSURE RATED PIPE TYPE 1220 (PVC CLASS 160, 200 & 315) AND TYPE 1120 (PVC SCHEDULE 40 & PVC SCHEDULE 80)	10.4.	EXISTING UTILITIES - THE CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING UTILITIES SUCH AS POWER, TELEPHONE, DOMESTIC WATER AND TILE DRAINS. EXTREME CARE SHALL BE TAKEN BY THE CONTRACTOR WHEN EXCAVATING OR WORKING IN THESE AREAS AND COORDINATION AND COOPERATION WITH OTHER CONTRACTOR IS REQUIRED AS THE WORK PROGRESSES TO THESE AREAS.	10.17.	WORKMANSHIP AND PROCEDURE															
		9.4.1.	TYPE I GRADE II PRESSURE RATED PIPE.	10.5. TRENCHES IN GENERAL		10.17.1.	THE ROUTING OF THE PRESSURE SUPPLY LINES AS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. THE CONTRACTOR SHALL INSTALL LINES IN A MANNER THAT CONFORMS WITH THE VARIOUS DETAILS. WITHOUT OFFSETTING THE VARIOUS ASSEMBLIES FROM THE PRESSURE SUPPLY LINE.															
		9.4.2.	MATERIALS SHALL MEET THE REQUIREMENTS SET FORTH IN ASTM D1784-60T.	10.5.1.	TRENCHES SHALL BE DUG STRAIGHT, AND PIPE SHALL HAVE THE CONTINUOUS SUPPORT FOR THE DITCH BOTTOM AND SHALL BE LAID TO AN EVEN GRADE.	10.17.2.	NO MULTIPLE ASSEMBLIES SHALL BE INSTALLED ON PLASTIC LINES. EACH ASSEMBLY SHALL BE PROVIDED WITH ITS OWN OUTLET.															
		9.4.3.	OUTSIDE DIAMETER OF PIPE SHALL BE THE SAME SIZE AS IRON PIPE.	10.5.2.	TRENCHING EXCAVATION SHALL FOLLOW THE LAYOUT INDICATED ON THE DRAWINGS. ALL PRESSURE SUPPLY LINES SHALL HAVE A MINIMUM DEPTH OF EIGHTEEN (18) INCHES MINIMUM UNLESS OTHERWISE NOTED.	10.17.3.	ALL ASSEMBLIES SPECIFIED HEREIN SHALL BE INSTALLED IN ACCORDANCE WITH THE RESPECTIVE DETAIL. IN THE ABSENCE OF DETAIL DRAWINGS OR SPECIFICATIONS PERTAINING TO THE SPECIFIC ITEMS REQUIRED TO COMPLETE THE WORK, THE CONTRACTOR SHALL PERFORM SUCH WORK IN ACCORDANCE WITH THE BEST STANDARD PRACTICE AND TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT/CONTRACTOR.															
		9.4.4.	PIPE SHALL BE MARKED AT INTERVALS WITH THE FOLLOWING INFORMATION (NOT TO EXCEED 5'): MANUFACTURER'S NAME, NOMINAL SIZE, PVC TYPE AND GRADE (I.E., PVC 1220) SDR RATING CLASS, NSF APPROVAL AND COMMERCIAL STANDARD DESIGNATION.	10.5.3.	ALL NON-PRESSURE SUPPLY LINES SHALL HAVE A MINIMUM DEPTH OF TWELVE (12) INCHES MINIMUM AS SHOWN IN THE DETAILS.																	
		9.4.5.	PVC FITTINGS SHALL BE PVC TYPE II, SCHEDULE 40 NSF, SCHEDULE 80 NSF, OR APPROVED.	10.5.4.	ALL LINES SHALL HAVE A MINIMUM CLEARANCE OF SIX (6) INCHES FROM EACH OTHER AND FROM LINES OF OTHER TRADES.																	
		9.4.6.	SOLVENT SHALL BE #175 GRAY NSF APPROVED AS MANUFACTURED BY INDUSTRIAL POLYCHEMICAL SERVICE, GARDENA CALIFORNIA.	10.5.5.	NO LINE SHALL BE INSTALLED DIRECTLY OVER ANOTHER LINE.																	
		9.4.7.	CAUTIONED SHALL BE UTILIZED IN HANDLING TYPE I PIPE DUE TO THE POSSIBILITY OF CRACKING OR OF SPLITTING WHEN DROPPED OR HANDLED CARELESSLY.	10.5.6.	IF NECESSARY, CALL UNDERGROUND ALERT, OR SIMILAR COMPANY.																	
		9.4.8.	WHEN CONNECTION IS PLASTIC TO METAL, MALE ADAPTERS SHALL BE HAND TIGHTENED, PLUS ONE TURN WITH A STRAP WRENCH. JOINT COMPOUND SHALL BE PERMATIX TYPE II.	10.6. BACKFILLING																		
		9.5.	SPRINKLER HEADS	10.6.1.	BACKFILL FOR TRENCHING SHALL BE COMPACTED TO DRY DENSITY EQUAL TO THE ADJACENT UNDISTURBED SOIL, AND SHALL CONFORM TO THE ADJACENT GRADES WITHOUT DIPS, SUNKEN AREAS, HUMPS OR OTHER IRREGULARITIES. INITIAL BACKFILL ON ALL LINES SHALL BE OF A FINE GRANULAR MATERIAL WITH NO FOREIGN MATTER LARGER THAN ONE-HALF (1/2) INCH IN SIZE.																	
		9.5.1.	SPRINKLER HEADS SHALL BE AS SHOWN ON PLAN.	10.6.2.	IF, IN THE OPINION OF THE CONTRACTOR/LANDSCAPE ARCHITECT, THE EXCAVATED MATERIAL IS NOT SATISFACTORY FOR USE AS BACKFILL, THE CONTRACTOR SHALL DISPOSE OF THIS UNSATISFACTORY MATERIAL.																	
		9.6.	VALVES	10.6.3.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SETTling OF TRENCHES FROM HIS WORK.																	
		9.6.1.	REMOTE CONTROL VALVES - ELECTRIC REMOTE CONTROL VALVES SHALL BE AS SHOWN ON PLAN.	10.7. PVC PIPE																		
		9.6.2.	QUICK COUPLING VALVES - QUICK COUPLING VALVES SHALL BE AS INDICATED ON PLANS AND SHALL HAVE A LOCKING COVER. EACH QUICK COUPLER VALVE SHALL HAVE A MOLDED VINYL COVER, YELLOW IN COLOR (PURPLE WHERE CALLED FOR IN RECYCLED WATER SYSTEMS). ALL QUICK COUPLER VALVES KEYS AND HOSE SWIVELS SHALL BE OF SAME MANUFACTURER AS THE QUICK COUPLER.	10.7.1.	PVC PIPE SHALL BE INSTALLED IN A MANNER WHICH WILL PROVIDE FOR EXPANSION AND CONTRACTION AS RECOMMENDED BY THE PIPE MANUFACTURER.																	
		9.7.	AUTOMATIC CONTROLLERS - AUTOMATIC CONTROLLERS SHALL BE AS SHOWN ON PLANS AND DETAILS.	10.7.2.	ALL PLASTIC TO METAL JOINTS SHALL BE MADE WITH PLASTIC MALE ADAPTERS, UNLESS OTHERWISE SHOWN IN DETAILS.																	
		9.8.	CONTROL WIRES FOR RCVS - ALL WIRING TO BE USED FOR CONNECTING THE AUTOMATIC CONTROLLER TO THE ELECTRICAL SOLENOID ACTUATED BY REMOTE CONTROL VALVE SHALL BE SOLID COPPER, PVC INSULATION, SINGLE CONDUCTOR, UL APPROVED UNDERGROUND FEEDER CABLE. EACH PILOT OR "HOT" WIRE SHALL BE BLACK OR COLOR-CODED WITH THE COMMON WIRE BEING WHITE.	10.7.3.	THE JOINTS SHALL BE ALLOWED TO SET AT LEAST TWENTY-FOUR (24) HOURS BEFORE PRESSURE IS APPLIED TO THE SYSTEM ON PVC PIPE.																	
		9.9.	RUN TWO SPARE CONTROL WIRES TO THE FARTHEST VALVE IN EACH MAINLINE DIRECTION. SHOW ON AS-BUILTS. COLOR CODE DIFFERENT THAN PILOT AND COMMON WIRES.	10.7.4.	AFTER ALL NEW SPRINKLER PIPING AND RISERS ARE IN PLACE AND CONNECTED, AND ALL NECESSARY WORK AS BEEN COMPLETED AND PRIOR TO THE INSTALLATION OF SPRINKLER HEADS, CONTROL VALVES SHALL BE OPENED AND A FULL HEAD OF WATER USED TO FLUSH OUT THE SYSTEM, AFTER THE SYSTEM IS THOROUGHLY FLUSHED, RISERS SHALL BE CAPPED OFF AND THE SYSTEM PRESSURE TESTED.																	
		9.10.	WIRING FOR FLOW SENSORS AND MASTER VALVES SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND SHALL BE COLOR CODED DIFFERENTLY THAN COMMON WIRE, CONTROL WIRES, AND SPARE WIRES.	10.7.5.	SPRINKLER LINES SHALL BE TESTED IN PLACE BEFORE BACKFILLING FOR A PERIOD OF NOT LESS THAN TWENTY-FOUR (24) HOURS AND SHALL SHOW NO LEAKAGE OR LOSS OF PRESSURE. DURING THE TEST PERIOD, MINIMUM TEST PRESSURE AT THE HIGHEST POINT OF THE SECTION BEING TESTED, SHALL BE 100 POUNDS PER SQUARE INCH.																	
		9.11.	VALVE BOXES - ALL REMOTE CONTROL VALVES, SHUT-OFF VALVES, FLOW SENSORS, AND QUICK COUPLING VALVES SHALL BE INSTALLED IN SUITABLE VALVE BOXES AS SHOWN IN DETAILS, COMPLETE WITH LOCKING COVERS. ALL SHALL BE N.D.S. OR APPROVED EQUAL AND SHALL BE IDENTIFIED ON THE LID WITH HEAT-BRANDED NUMBERS / LETTERS IN 2" HIGH BLOCK LETTERS AS SHOWN ON THE DETAILS. ALL BOXES SHALL HAVE GREEN COVERS (PURPLE FOR RECYCLED WATER SYSTEMS).	10.7.6.	AT THE CONCLUSION OF THE PRESSURE TEST, THE HEAD SHALL BE INSTALLED AND TESTED FOR OPERATION IN ACCORDANCE WITH DESIGN REQUIREMENTS UNDER NORMAL OPERATING PRESSURE. CONTRACTOR SHALL VERIFY HEAD PRESSURES WITH PITOT TUBE OR PRESSURE GAUGE ASSEMBLY, AND ADJUST VALVE TO CORRESPOND WITH DESIGN PRESSURE.																	
		9.12.	BACKFLOW PREVENTION UNITS THE BACKFLOW PREVENTION UNITS SHALL BE AS SHOWN ON PLANS AND DETAILS.	10.8. SPRINKLERS																		
		9.13.	DRIP LINE AND INTEGRAL DRIP LINE COMPONENTS - THE DRIP LINE SHALL BE TECHLINE CV AS MANUFACTURED BY METAFIM IRRIGATION, INC. DRIPPER FLOW RATE AND SPACING SHALL BE AS INDICATED ON DRAWINGS.	10.8.1.	ALL POP-UP SPRINKLERS SHALL BE PROVIDED WITH SWING JOINTS AND SHALL BE ADJUSTED TO THE PROPER HEIGHT. ALL NOZZLES SHALL BE ADJUSTED FOR PROPER THROW RADIUS FOR EFFICIENT COVERAGE.																	
		9.13.1.	TECHLINE CV FITTINGS: ALL TECHLINE CV CONNECTIONS SHALL BE MADE WITH APPROVED TECHLINE CV INSERT FITTINGS.	10.8.2.	SPRINKLER HEADS AND RISERS SHALL BE INSTALLED ACCORDING TO DETAILS.																	
		9.13.2.	SOIL STAPLES (T56): ALL ON-SURFACE/UNDER MULCH TECHLINE CV INSTALLATIONS SHALL BE HELD IN PLACE WITH TECHLINE SOIL STAPLES SPACED EVENLY EVERY 3' - 5' ON CENTER, AND WITH TWO STAPLES ON EACH CHANGE OF LOCATION.	10.9.	DRIP LINE INSTALLATION																	
		9.13.3.	LINE FLUSHING VALVES: ALL TECHLINE CV SYSTEMS SHALL BE INSTALLED WITH MANUAL FLUSHING VALVE AS INDICATED ON DRAWINGS. TECHLINE CV ZONES DO NOT REQUIRE AN AUTOMATIC LINE FLUSHING VALVES, BUT MUST HAVE A MANUAL FLUSHING PORT(S) IN THE POSITION THAT AN AUTOMATIC FLUSH VALVE WOULD BE POSITIONED.	10.9.1.	INSTALL ALL DRIP LINE AS INDICATED ON DRAWINGS. USE ONLY TEFLON TAPE ON ALL THREADED CONNECTIONS.																	
		9.13.4.	AIR/VACUUM RELIEF VALVES: EACH INDEPENDENT TECHLINE SUBSURFACE IRRIGATION ZONE SHALL BE INSTALLED WITH AN AIR/VACUUM RELIEF VALVE AT THE ZONE'S HIGHEST POINT(S). TECHLINE CV ZONES DO NOT REQUIRE AN AIR/VACUUM RELIEF VALVE WHEN NOT BURIED.	10.9.2.	CLAMP TECHLINE CV FITTINGS WITH OETIKER CLAMPS WHEN OPERATING PRESSURE EXCEEDS SPECIFIC DRIP LINE FITTING REQUIREMENTS.																	
				10.9.3.	WHEN INSTALLING TECHLINE CV ON-SURFACE, INSTALL SOIL STAPLES AS LISTED BELOW:  SANDY SOIL - ONE STAPLE EVERY THREE (3) FEET AND TWO (2) STAPLES ON EACH CHANGE OF DIRECTION (TEE, ELBOW, OR CROSS). LOAM SOIL - ONE STAPLE EVERY FOUR (4) FEET AND TWO (2) STAPLES ON EACH CHANGE OF DIRECTION (TEE, ELBOW, OR CROSS). CLAY SOIL - ONE STAPLE EVERY FIVE (5) FEET AND TWO (2) STAPLES ON EACH CHANGE OF DIRECTION (TEE, ELBOW, OR CROSS).																	
				10.9.4.	CAP OR PLUG ALL OPENINGS AS SOON AS LINES HAVE BEEN INSTALLED TO PREVENT THE INTRUSION OF MATERIALS THAT WOULD OBSTRUCT THE PIPE. LEAVE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION.																	
				10.9.5.	THOROUGHLY FLUSH ALL WATER LINES BEFORE INSTALLING VALVES AND OTHER HYDRANTS.																	
				10.9.6.	TEST IN ACCORDANCE WITH HYDROSTATIC TESTS AS RECOMMENDED BY THE MANUFACTURER.																	
				10.10. VALVES																		
				10.10.1.	REMOTE CONTROL VALVES SHALL BE ADJUSTED SO THAT THE MOST REMOTE SPRINKLER HEADS OPERATE AT THE PRESSURE RECOMMENDED BY THE HEAD MANUFACTURER. REMOTE CONTROL VALVES SHALL BE ADJUSTED SO THAT A UNIFORM DISTRIBUTION OF WATER IS APPLIED BY THE SPRINKLER HEADS TO THE PLANTING AREAS FOR EACH INDIVIDUAL VALVE SYSTEM.																	

DESIGNED BY: <b>RAFAEL HOLCOMBE</b>	DRAWN BY: <b>JONATHAN GOBER</b>	REVISIONS	DATE	SHEET	APPROVAL	DESCRIPTION
		No.				
		AS-BUILT:		REF.		
<b>REDONDO BEACH AVE. A ACCESS PATH</b> <b>REDONDO BEACH, CALIFORNIA 90277</b> <b>IRRIGATION SPECIFICATIONS</b>						

LAST SAVED BY: rckd  
PLOT DATE: May, 20, 25  
SAVED PATH: E:\Production\Steven Ormeny\2025\3026 Redondo Beach V2 CDA\_20250520



MWEO - WATER EFFICIENT LANDSCAPE WORKSHEET : NON-RESIDENTIAL (NO SLA) - ETAF = 0.45						
Reference Evapotranspiration (Eto)		42.6	(REDONDO BEACH)		MAWA = Eto X 0.62 X (0.45 X LA)	
Hydrozone Number	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	(PF/IE)	Landscape Area (sq. ft.)	Estimated Total Water Use (ETWU)
REGULAR LANDSCAPE AREAS						
HZ 1 Top of Slope	0.30	Sprinkler	0.75	0.40	11,001	4,400
HZ 2 Middle of Slope	0.30	Sprinkler	0.75	0.40	9,395	3,758
HZ 3 Base of Slope	0.30	Sprinkler	0.75	0.40	12,187	4,875
HZ 4 Shrub Bubblers	0.30	Bubbler	0.81	0.37	390	144
					<b>Total</b>	<b>13,178</b>
					<b>ETWU TOTAL</b>	<b>348,048</b>
					<b>MAXIMUM APPLIED WATER ALLOWANCE (MAWA)</b>	<b>391,897</b>

HYDROZONE INFORMATION MATRIX									
Hydrozone Number	Station Number	Area (sq. ft.)	Percent of Area	Description / Plant Type	Plant Factor (WUCOLS)	Irrigation Type	Zone Flow (GPM)	Precipitation Rate (in./hr.)	Zone Pressure
1	1	1,200	3.6%	Top of Slope	Low	MP Rotator	7	0.40	30 psi
2	2	1,200	3.6%	Middle of Slope	Low	MP Rotator	7	0.40	30 psi
3	3	1,028	3.1%	Bottom of Slope	Low	MP Rotator	6	0.40	30 psi
1	4	1,784	5.4%	Top of Slope	Low	MP Rotator	11	0.40	30 psi
2	5	1,135	3.4%	Middle of Slope	Low	MP Rotator	7	0.40	30 psi
3	6	1,946	5.9%	Bottom of Slope	Low	MP Rotator	12	0.40	30 psi
1	7	2,528	7.7%	Top of Slope	Low	MP Rotator	17	0.40	30 psi
2	8	3,271	9.9%	Middle of Slope	Low	MP Rotator	22	0.40	30 psi
3	9	3,717	11.3%	Bottom of Slope	Low	MP Rotator	25	0.40	30 psi
4	10	390	1.2%	Shrubs with Bubblers	Low	Bubbler	10	2.50	30 psi
1	11	3,114	9.4%	Top of Slope	Low	MP Rotator	18	0.40	30 psi
2	12	2,941	8.9%	Middle of Slope	Low	MP Rotator	17	0.40	30 psi
3	13	3,460	10.5%	Bottom of Slope	Low	MP Rotator	20	0.40	30 psi
1	14	2,375	7.2%	Top of Slope	Low	MP Rotator	14	0.40	30 psi
2	15	848	2.6%	Middle of Slope	Low	MP Rotator	5	0.40	30 psi
3	16	2,036	6.2%	Bottom of Slope	Low	MP Rotator	12	0.40	30 psi
<b>TOTAL = 32,973</b>							<b>100.0%</b>	<b>Peak Flow = 25</b>	

**1 IRRIGATION PLAN**  
SCALE: 1" = 20'-0"

**POINT OF CONNECTION**  
MAKE IRRIGATION POINT OF CONNECTION INTO WATER LINE DIRECTLY DOWN STREAM OF EXISTING IRRIGATION WATER METER. VERIFY EXACT LOCATION IN THE FIELD AND ADJUST AS NECESSARY. INSTALL SHUT-OFF VALVE AT POC FOR IRRIGATION SYSTEM ISOLATION. INSTALL BACKFLOW PREVENTER DOWN STREAM OF SHUT-OFF VALVE PER ALL LOCAL CODES. INSTALL IN ENCLOSURE AS CALLED FOR IN THE IRRIGATION LEGEND. FINAL BACKFLOW PREVENTER LOCATION TO BE APPROVED IN THE FIELD BY THE OWNER OR AUTHORIZED REPRESENTATIVE. PIPING BETWEEN THE WATER METER AND THE BACKFLOW PREVENTER ASSEMBLY TO BE SCH 80 PVC. INSTALL MASTER VALVE DOWN STREAM OF BACKFLOW DEVICE AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. INSTALL FLOW SENSOR DOWN STREAM OF MASTER VALVE AND WIRE TO CONTROLLER PER MANUFACTURER'S DIRECTIONS. MAXIMUM DEMAND IS 25 GPM. STATIC PRESSURE AT METER IS 6 PSI (INFORMATION FROM CIVIL ENGINEER BY EMAIL ON APRIL 2, 2025). CONTRACTOR SHALL VERIFY STATIC PRESSURE AT METER PRIOR TO START OF WORK AND NOTIFY THE LANDSCAPE ARCHITECT IN WRITING IMMEDIATELY IF A DISCREPANCY IS FOUND. DO NOT PROCEED WITH ANY IRRIGATION INSTALLATION WORK UNTIL ANY AND ALL WATER SUPPLY AND PRESSURE ISSUES HAVE BEEN RESOLVED.

**CONTROLLER**  
INSTALL IRRIGATION CONTROLLER AS SHOWN ON THE PLANS. FINAL CONTROLLER LOCATION TO BE APPROVED IN THE FIELD BY THE OWNER OR AUTHORIZED REPRESENTATIVE. THE IRRIGATION CONTRACTOR SHALL COORDINATE 120V AC POWER TO THE FINAL CONTROLLER LOCATION WITH GENERAL CONTRACTOR AND/OR ELECTRICAL CONTRACTOR AS NECESSARY. THE OWNER SHALL PAY ALL ASSOCIATED COSTS. THE IRRIGATION CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS PER LOCAL CODES. MOUNT, GROUND, AND WIRE ALL THE CONTROL EQUIPMENT PER THE MANUFACTURER'S DIRECTIONS, THESE PLANS, AND PER ALL LOCAL CODES. CONTRACTOR TO PROVIDE TO OWNER A COMPLETE HAND-HELD MAINTENANCE REMOTE CONTROL KIT FOR THE CONTROLLER AS PROVIDED BY THE CONTROLLER MANUFACTURER.

**WEATHER SENSOR (ET SENSOR / RAIN SHUT-OFF DEVICE)**  
INSTALL THE WEATHER SENSOR IN THE APPROXIMATE LOCATION SHOWN ON THE PLANS. LOCATE AND MOUNT PER MANUFACTURER'S DIRECTIONS. FINAL WEATHER SENSOR LOCATION TO BE DETERMINED IN THE FIELD AND PRE-APPROVED BY THE OWNER AND/OR ARCHITECT PRIOR TO MOUNTING. ENSURE THE SENSOR IS LOCATED WITHIN WIRELESS RANGE OF THE IRRIGATION CONTROLLER. TEST THE SIGNAL STRENGTH OF THE WIRELESS COMMUNICATION PRIOR TO MOUNTING. IT IS SUGGESTED TO NOT USE THE AUTOMATIC ET ADJUSTING FUNCTIONS OF THE CONTROL SYSTEM UNTIL THE PLANT MATERIAL IS FULLY ESTABLISHED.

**SLEEVING**  
MAINLINE AND VALVES MAY BE SHOWN OUTSIDE OF PLANTED AREAS FOR CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT IN ADJACENT PLANTED AREAS EXCEPT WHERE SLEEVING IS SHOWN ON THE PLANS. ALL PIPES AND WIRES THAT MUST RUN UNDER HARDSCAPE TO BE SLEEVED IN PVC SLEEVES ACCORDING TO THE LEGEND AND SLEEVING CHART, OR AS NOTED ON THE PLANS.

**CHECK VALVES**  
INSTALL IN-LINE CHECK VALVES FOR THE SHRUB BUBBLER SYSTEMS SO THAT THE BUBBLERS LINES DO NOT DRAIN EVERY TIME THE VALVE CYCLES. INSTALL THE BUBBLERS IN A 10" ROUND VALVE BOX. SEE LOCATION ON THE PLANS. ADD MORE CHECK VALVES TO THE BUBBLER SYSTEM AND / OR THE ROTATOR SYSTEMS AS NEEDED (NOT SHOWN) TO MINIMIZE LOW PIPE DRAINAGE.

SPRINKLER LEGEND - POINT SOURCE BUBBLER										
SYMBOL	MANUFACTURER / MODEL NUMBER	NOZZLE	RAD	PSI	FLOW - GPM					DETAIL
					Q	T	H	TT	TQ	
FLOOD BUBBLER ON FLEXIBLE PVC RISER										
●	RAIN BIRD 1401 SERIES BUBBLER	1 PER PLANT	N/A	20	2 GPH					L / M
NOTE: INSTALL ONE BUBBLER FOR EACH SHRUB IN THE NARROW AREAS ONLY.										

SPRINKLER LEGEND - ROTATOR NOZZLES											
SYMBOL	MANUFACTURER / MODEL NUMBER	NOZZLE	RAD	PSI	FLOW - GPM					DETAIL	
					Q	T	H	TT	TQ		F
SHRUB HI-POP HEADS WITH HUNTER MP ROTATOR NOZZLE, CHECK VALVE, AND PRESSURE REGULATION											
□	HUNTER PROS-12-PRS30-CV SERIES	MPCORNER	8'-12"	30	0.17						
□	HUNTER PROS-12-PRS30-CV SERIES	MP1000-90-210 MP1000-210-270	8'-12"	30	0.16	0.21	0.32	0.37	0.48		
□	HUNTER PROS-12-PRS30-CV SERIES	MP1000-360	8'-12"	30						0.65	
□	HUNTER PROS-12-PRS30-CV SERIES	MP2000-90-210 MP2000-210-270	13'-17"	30	0.33	0.42	0.63	0.74	0.95		N
□	HUNTER PROS-12-PRS30-CV SERIES	MP2000-360	13'-17"	30						1.27	
□	HUNTER PROS-12-PRS30-CV SERIES	MP3000-90-210 MP3000-210-270	18'-27"	30	0.74	1.05	1.58	1.84	2.37		
□	HUNTER PROS-12-PRS30-CV SERIES	MP3000-360	18'-27"	30						3.15	

LATERAL PIPE SIZING	
—	3/4" PIPE
—	1" PIPE
—	1 1/4" PIPE
—	1 1/2" PIPE
—	2" PIPE
—	2 1/2" PIPE
—	3" PIPE
—	4" PIPE

LATERALS TO BE SCH 40 PVC.  
NO 1/2" PIPING ALLOWED.

SCH 40 PVC SLEEVING CHART		
1 1/4" SLEEVE	1-8 WIRES	1/2" PIPE
1 1/2" SLEEVE	9-16 WIRES	3/4" PIPE
2" SLEEVE	17-26 WIRES	1" PIPE
2 1/2" SLEEVE	27-38 WIRES	1 1/4" PIPE
3" SLEEVE	39-54 WIRES	1 1/2" PIPE
4" SLEEVE	55-100 WIRES	2" PIPE
6" SLEEVE	100+ WIRES	3" PIPE

PIPE SLEEVES TO BE A MIN. 2x LINE SIZE.  
WIRE SLEEVES TO BE A MIN. 1OF 2x WIRE BUNDLE SIZE.



EQUIPMENT LEGEND			
SYMBOL	MANUFACTURER / MODEL NUMBER	SIZE	DETAIL
[M]	EXISTING SITE WATER METER - VERIFY LOCATION IN THE FIELD AND ADJUST AS NECESSARY	2"	N/A
[BP]	FEBCO LF825YA REDUCED PRESSURE BACKFLOW PREVENTER + WYE STRAINER + REGULATOR	1 1/2"	A
[MV]	SUPERIOR 3200-100 SERIES NORMALLY CLOSED BRASS MASTER CONTROL VALVE	1 1/2"	B
[FS]	FLOWMEC QS-200-15 ULTRASONIC FLOW SENSOR IN SCH 80 PVC TEE	1 1/2"	C
[V]	NIBCO T-580-70 TWO-PIECE BRONZE BALL VALVE - FULL PORT	LINE SIZE	D
[C]	HUNTER HQ33D-LRC SERIES QUICK COUPLING VALVE WITH LOCKING YELLOW VINYL COVER	3/4"	E
[E]	HUNTER ICV-101G SERIES ELECTRIC CONTROL VALVE WITH FLOW CONTROL	PLAN SIZE	F
[P]	SCH 80 PVC MAINLINE BETWEEN WATER METER AND BACKFLOW PREVENTER	2"	G
[M]	SCH 40 PVC IRRIGATION PRESSURE MAINLINE (1 1/2" AND SMALLER) - 18" MINIMUM COVER CLASS 315 PVC IRRIGATION PRESSURE MAINLINE (2" AND LARGER) - 24" MINIMUM COVER	PLAN SIZE	G
[L]	SCH 40 PVC NON-PRESSURE LATERAL LINE - 12" MINIMUM COVER	PLAN SIZE	G
[S]	SCH 40 PVC PIPE SLEEVING - EXTEND 6" BEYOND EDGE OF HARDSCAPE - 18" MINIMUM COVER	PLAN SIZE	H
[W]	SCH 40 PVC WIRE SLEEVING - EXTEND 6" BEYOND EDGE OF HARDSCAPE - 18" MINIMUM COVER	PLAN SIZE	H
[C]	HUNTER 'ACC2' A2C-1200-P+(2)A2M-600+A2-WIFI AUTOMATIC WEATHER-BASED ET CONTROLLER WITH MODULAR STATION CAPABILITY - MOUNT SOLAR SYNC ON CABINET IN WR-GUARD	24 STATION	I
[ET]	HUNTER 'SOLAR SYNC' WSS-SEN WIRELESS RAIN SENSOR / ET SENSOR OWNER	N/A	J
[W]	UF DIRECT BURIAL CONTROL WIRE WITH WATERPROOF CONNECTIONS	14 GA UF	K

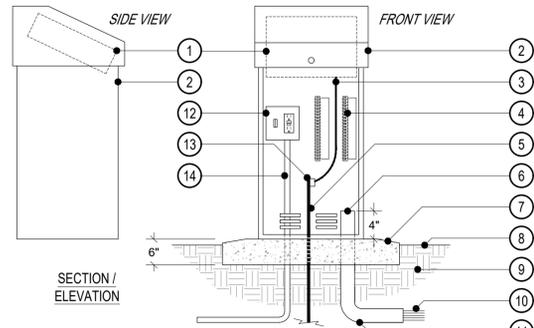
DESIGNED BY: RAFAEL HOLCOMBE  
 DRAWN BY: JONATHAN GOBER  
 REVISIONS: No. DATE SHEET APPROVAL REF.  
 AS-BUILT:

REDONDO BEACH AVE. A ACCESS PATH  
 REDONDO BEACH, CALIFORNIA 90277  
 IRRIGATION PLAN

GRAPHIC SCALE  
 PAGE

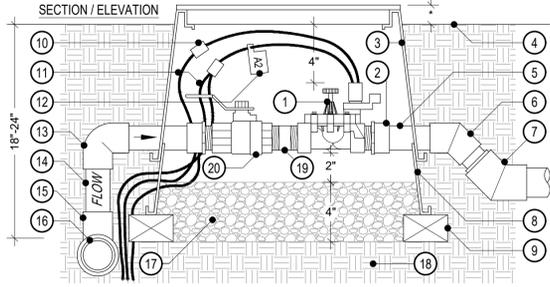
FIELD BOOK

DRAWING REF. I-2  
 SHEET 28 OF 37  
 DRAWING NO.



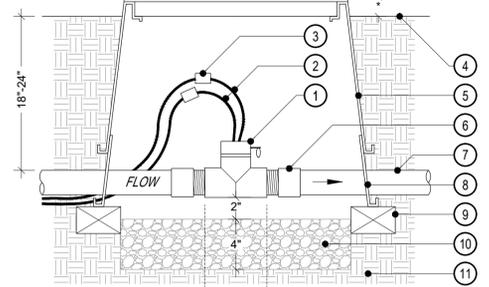
1. AUTOMATIC CONTROLLER PER LEGEND
2. STAINLESS STEEL V.I.T. CONTROLLER ENCLOSURE PER LEGEND AND/OR NOTES
3. #6 AWG BARE COPPER WIRE TO GROUND ROD (PAIGE #160635)
4. TERMINAL STRIPS (PART OF V.I.T. CSA OPTION)
5. 5/8"x10" SOLID COPPER GROUNDING ROD (PAIGE #182007)
6. 3" SCH 40 PVC CONDUIT FOR CONTROL WIRES - EXTEND ABOVE PAD
7. POURED IN PLACE CONCRETE PAD - SLOPE EDGES 1% FOR DRAINAGE
8. FINISH GRADE - 2" BELOW TOP OF CONCRETE PAD
9. NATIVE SOIL
10. DIRECT BURIAL CONTROL WIRES TO VALVES
11. USE LONG PVC SWEEP ELLS FOR WIRES
12. 120V AC OUTLET AND SWITCH (PART OF V.I.T. CSA OPTION)
13. CADWELD #GR1161G "ONE-SHOT" WELDING KIT (PAIGE #1820037P)
14. PVC CONDUIT WITH 120V AC POWER WIRES TO ELECTRICAL SOURCE

**AUTOMATIC CONTROLLER | I**



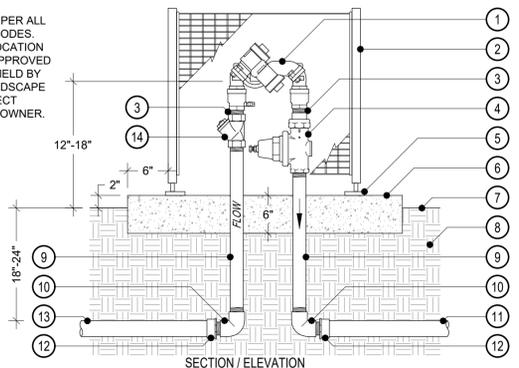
1. REMOTE CONTROL VALVE PER IRRIGATION LEGEND
2. SCH 40 PVC MALE ADAPTER (2 REQUIRED) VALVE SIZE
3. RECTANGULAR PLASTIC VALVE BOX WITH LOCKING LID (NDS PRO-SPEC SERIES) HEAT BRAND STATION NUMBER ON LID IN 2" HIGH BLOCK LETTERS
4. FINISH GRADE
5. PVC LATERAL LINE PER IRRIGATION LEGEND (VALVE SIZE)
6. SCH 40 PVC 45 DEGREE ELL
7. SCH 40 PVC 45 DEGREE ELL (BUSH UP TO LATERAL LINE PLAN SIZE)
8. RECTANGULAR PLASTIC VALVE BOX EXTENSION AS REQUIRED
9. COMMON BRICK SUPPORTS (4 REQUIRED)
10. WATER PROOF WIRE CONNECTORS (2 REQUIRED)
11. #14 UF WIRES TO CONTROLLER (COLOR CODED)
12. I.D. TAG WITH STATION NUMBER PRINTED ON IT (CHRISTY'S #ID-STD-Y1)
13. SCH 40 PVC ELL (VALVE SIZE)
14. MAINLINE PIPING PER IRRIGATION LEGEND (VALVE SIZE)
15. SCH 40 PVC TEE (OUTLET TO BE VALVE SIZE)
16. MAINLINE PIPING PER IRRIGATION LEGEND (PLAN SIZE)
17. FILL BASE OF BOX WITH PEA GRAVEL
18. NATIVE SOIL
19. SCH 80 PVC THREADED NIPPLE (3")
20. BALL VALVE PER IRRIGATION LEGEND (SAME SIZE AS RCV)

**ELECTRIC CONTROL VALVE | F**



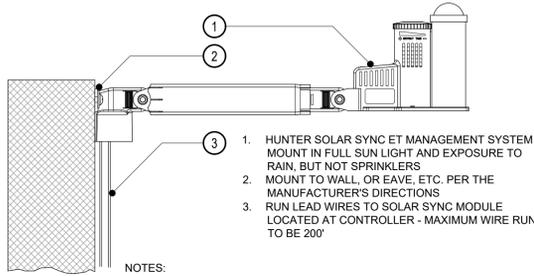
1. FLOW SENSOR PER IRRIGATION LEGEND
2. #14 UF WIRES TO CONTROLLER (COLOR CODE DIFFERENTLY THAN COMMON WIRE, CONTROL WIRES, AND MASTER VALVE WIRES)
3. WATERPROOF WIRE CONNECTORS (2 REQUIRED)
4. FINISH GRADE
5. RECTANGULAR PLASTIC VALVE BOX WITH LOCKING LID (NDS PRO-SPEC SERIES) HEAT BRAND "FS" ON LID IN 2" HIGH BLOCK LETTERS
6. SCH 40 MALE ADAPTERS (SENSOR SIZE, 2 REQUIRED) NOT REQUIRED FOR PVC SENSORS - REFER TO EQUIPMENT LEGEND
7. MAINLINE PIPING PER IRRIGATION LEGEND (SENSOR SIZE)
8. RECTANGULAR PLASTIC VALVE BOX EXTENSION AS REQUIRED
9. COMMON BRICK SUPPORTS (4 REQUIRED)
10. FILL BASE OF BOX WITH PEA GRAVEL
11. NATIVE SOIL

**FLOW SENSOR | C**



1. REDUCED PRESSURE BACKFLOW PREVENTER PER IRRIGATION LEGEND
2. LOCKING STAINLESS STEEL V.I.T. BACKFLOW PREVENTER ENCLOSURE (#SBBBC-30S)
3. SCH 40 PVC MALE ADAPTER (BUSH UP TO MAINLINE PLAN SIZE WHERE R/P DEVICE IS SMALLER THAN MAINLINE SIZE)
4. MOUNT ENCLOSURE TO CONCRETE PAD PER MANUFACTURER
5. 6" THICK CONCRETE PAD
6. FINISH GRADE
7. NATIVE SOIL
8. NATIVE SOIL
9. BRASS NIPPLE (R/P SIZE) LENGTH AS REQUIRED
10. BRASS ELL (R/P SIZE)
11. MAINLINE PIPING PER IRRIGATION LEGEND (TO SYSTEM)
12. SCH 40 PVC MALE ADAPTER (BUSH UP TO MAINLINE PLAN SIZE WHERE R/P DEVICE IS SMALLER THAN MAINLINE SIZE)
13. MAINLINE PIPING PER IRRIGATION LEGEND (FROM P.O.C.)
14. WILKINS YBP-80 STRAINER (R/P SIZE)

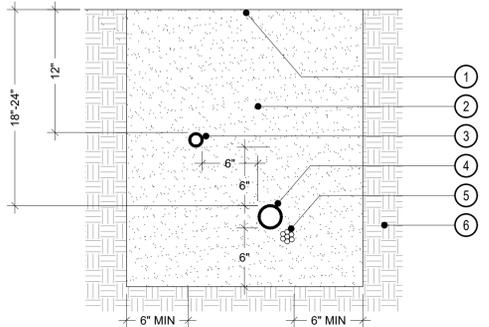
**BACKFLOW PREVENTER / LOCKING ENCLOSURE | A**



1. HUNTER SOLAR SYNC ET MANAGEMENT SYSTEM - MOUNT IN FULL SUN LIGHT AND EXPOSURE TO RAIN, BUT NOT SPRINKLERS
2. MOUNT TO WALL, OR EAVE, ETC. PER THE MANUFACTURER'S DIRECTIONS
3. RUN LEAD WIRES TO SOLAR SYNC MODULE LOCATED AT CONTROLLER - MAXIMUM WIRE RUN TO BE 200'

- NOTES:
- INSTALL, MOUNT, AND WIRE THE SOLAR SYNC PER THE MANUFACTURER'S DIRECTIONS.
  - FINAL SOLAR SYNC LOCATION TO BE DETERMINED IN THE FIELD AND APPROVED BY THE OWNER.
  - FINAL SOLAR SYNC LOCATION SHALL BE IN A LOW VISIBILITY AREA WITH MAXIMUM VANDAL RESISTANCE.
  - FOR MOST ACCURATE TEMPERATURE SENSING, LOCATE THE SOLAR SYNC SO THAT IT IS EXPOSED TO SUN AS MUCH AS POSSIBLE.
  - THE SOLAR SYNC HAS AN INTEGRATED BRACKET FOR MOUNTING. USE ANY COMBINATION OF ADAPTERS / FITTINGS AS MAY BE REQUIRED TO MOUNT IN THE SPECIFIC LOCATION FOR THIS SITE.
  - ALL WIRING FROM THE STATION TO THE CONTROLLER SHALL BE IN CONDUIT.
- ADAPT AS NECESSARY TO MOUNT IN VANDAL RESISTANT ENCLOSURE ON SIDE OF THE CONTROLLER CABINET.

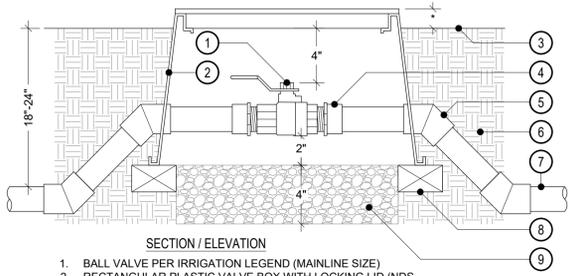
**RAIN SENSOR / ET SENSOR - WIRELESS | J**



1. FINISH GRADE
2. CLEAN BACKFILL WITH ALL ROCKS 1" OR LARGER REMOVED - 90% COMPACTION REQUIRED - SEE SPECS
3. NON-PRESSURE LATERAL LINE PER LEGEND (SNAKE IN TRENCH)
4. PRESSURE MAINLINE PER LEGEND (SNAKE IN TRENCH)
5. CONTROL WIRES - INSTALL BELOW PRESSURE MAINLINE
6. UNDISTURBED NATIVE SOIL

NOTES:  
BUNDLE AND TAPE WIRES AT 10' O.C. PITLAL AND LOOP WIRES AT ALL CHANGES IN DIRECTION. SPLICING OF WIRE RUNS IS NOT PERMITTED WITHOUT PRIOR APPROVAL FROM OWNER AND LANDSCAPE ARCHITECT. RUN CONTROL WIRES IN SAME TRENCH AS MAINLINE WHERE POSSIBLE. INSTALL 12"x12"x12" CONCRETE THRUST BLOCKS AT ALL CHANGES IN DIRECTION OF PRESSURE MAINLINE (45'S, 90'S, TEES, ETC.) AND AT ALL TERMINAL POINTS.

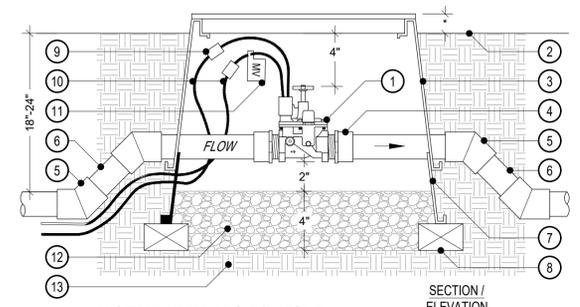
**TRENCHING | G**



1. BALL VALVE PER IRRIGATION LEGEND (MAINLINE SIZE)
2. RECTANGULAR PLASTIC VALVE BOX WITH LOCKING LID (NDS PRO-SPEC SERIES) HEAT BRAND "BV" ON LID IN 2" HIGH BLOCK LETTERS
3. FINISH GRADE
4. SCH 40 PVC MALE ADAPTER (2 REQUIRED)
5. SCH 40 PVC 45 DEGREE ELL (4 REQUIRED)
6. NATIVE SOIL
7. MAINLINE PIPING PER IRRIGATION LEGEND
8. COMMON BRICK SUPPORTS (4 REQUIRED)
9. FILL BASE OF BOX WITH PEA GRAVEL

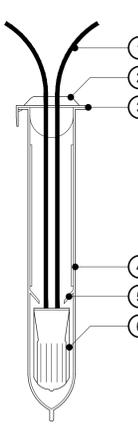
NOTES:  
OFF-SET VALVE BOX AROUND BALL VALVE TO ALLOW SPACE FOR FULL MOVEMENT OF THE BALL VALVE HANDLE.

**BALL VALVE | D**



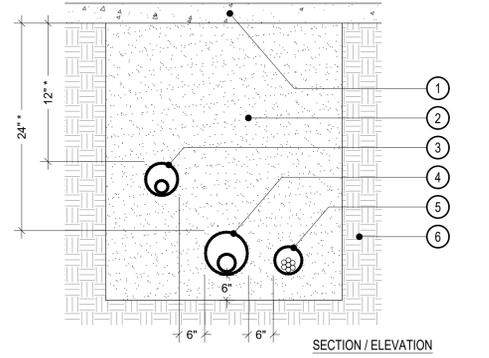
1. MASTER VALVE PER IRRIGATION LEGEND
2. FINISH GRADE
3. RECTANGULAR PLASTIC VALVE BOX WITH LOCKING LID (NDS PRO-SPEC SERIES) HEAT BRAND "MV" ON LID IN 2" HIGH BLOCK LETTERS
4. SCH 40 PVC MALE ADAPTER (2 REQUIRED) USE REDUCING ADAPTERS WHERE MAINLINE IS LARGER THAN VALVE
5. SCH 40 PVC 45 DEGREE ELL (4 REQUIRED)
6. MAINLINE PIPING PER IRRIGATION LEGEND (PLAN SIZE)
7. RECTANGULAR PLASTIC VALVE BOX EXTENSION AS REQUIRED
8. COMMON BRICK SUPPORTS (4 REQUIRED)
9. WATERPROOF WIRE CONNECTORS (2 REQUIRED)
10. #14 UF TAG WITH "MV" PRINTED ON IT (CHRISTY'S #ID-STD-Y1)
11. I.D. TAG WITH "MV" PRINTED ON IT (CHRISTY'S #ID-STD-Y1)
12. FILL BASE OF BOX WITH PEA GRAVEL
13. NATIVE SOIL

**MASTER VALVE | B**



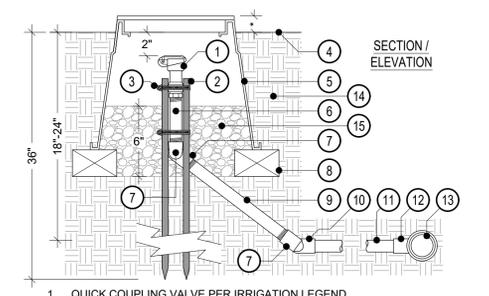
1. LOW VOLTAGE WIRES - 3 MAXIMUM
  2. WIRES PASS THROUGH GROOVES IN TUBE LID TO ALLOW LID TO CLOSE
  3. CLOSE TUBE LID AFTER WIRE IS INSERTED INTO TUBE
  4. POLY TUBE PRE-FILLED WITH WATERPROOF GEL
  5. LOCK TABS PREVENT WIRE REMOVAL ONCE CONNECTOR IS INSERTED
  6. SCOTCHLOK ELECTRICAL SPRING CONNECTOR - WIRES SHALL BE PRE-STRIPPED OF 1/2" OF THE INSULATION PRIOR TO INSERTION INTO THE CONNECTOR - TWIST CONNECTOR ONTO WIRES TO SEAT FIRMLY
- INSERT SCOTCHLOK CONNECTOR AND WIRES INTO TUBE UNTIL THE CONNECTOR PASSES THE LOCK TABS.
- NOTES:  
WIRE CONNECTOR SHALL BE A 3M DBY DIRECT BURY SPLICE KIT.
- KIT SHALL INCLUDE A SCOTCHLOK SPRING CONNECTOR, A POLYPROPYLENE TUBE AND A WATERPROOF SEALING GEL. TUBE SHALL BE SUPPLIED PRE-FILLED WITH GEL.
- DIRECT BURY SPLICE KIT SHALL BE USED TO ELECTRICALLY CONNECT 2-3 #14 OR 2 #12 PRE-STRIPPED COPPER WIRES. LARGER OR GREATER QUANTITIES OF WIRES SHALL REQUIRE A LARGER APPROVED WIRE CONNECTOR.

**WATERPROOF WIRE CONNECTOR | K**



1. HARDSCAPING AND AGGREGATE (TYPICAL)
  2. CLEAN SAND BACKFILL - COMPACT TO MATCH DENSITY OF NATIVE SOIL
  3. LATERAL LINE IN SCH 40 PVC SLEEVE
  4. PRESSURE MAINLINE IN SCH 40 PVC SLEEVE
  5. CONTROL WIRES IN SCH 40 PVC SLEEVE
  6. UNDISTURBED NATIVE SOIL
- NOTES:  
SIZE ALL SLEEVES PER THE IRRIGATION PLANS. EXTEND SLEEVES 6" MINIMUM BEYOND EDGE OF HARDSCAPE (AT EACH END) INTO THE PLANTING AREAS.
- \* SLEEVING UNDER ALL VEHICULAR ACCESS WAYS TO HAVE 36" MINIMUM COVER FROM TOP OF SLEEVE TO BOTTOM OF AGGREGATE BASE.

**SLEEVING | H**



1. QUICK COUPLING VALVE PER IRRIGATION LEGEND
2. #4x36" REBAR SUPPORT STAKE (2 REQUIRED)
3. STAINLESS STEEL CLAMP (2 REQUIRED)
4. FINISH GRADE
5. 10" ROUND PLASTIC VALVE BOX WITH LOCKING LID (NDS PRO-SPEC SERIES) HEAT BRAND "QC" ON LID IN 2" HIGH BLOCK LETTERS
6. 3/4"x6" SCH 80 PVC NIPPLE
7. 3/4" SCH 40 PVC STREET ELL (3 REQUIRED)
8. COMMON BRICK SUPPORTS (3 REQUIRED)
9. 3/4"x12" SCH 80 PVC NIPPLE
10. 3/4" SCH 40 PVC ELL (SxT)
11. 3/4" SCH 40 PVC MAINLINE (12" MINIMUM LENGTH)
12. SCH 40 PVC MAINLINE FITTING (TEE OR ELL) WITH 3/4" SLIP OUTLET
13. MAINLINE PIPING PER IRRIGATION LEGEND (PLAN SIZE)
14. NATIVE SOIL
15. FILL BASE OF BOX WITH PEA GRAVEL

**QUICK COUPLING VALVE | E**

REV. NO.	DATE	SHEET	APPROVAL	DESCRIPTION

DESIGNED BY: RAFAEL HOLCOMBE  
DRAWN BY: JONATHAN GOBER



**REDONDO BEACH AVE. ACCESS PATH  
REDONDO BEACH, CALIFORNIA 90277**  
IRRIGATION DETAILS



LAST SAVED BY: rckkd  
PLOT DATE: May, 20, 25  
SAVED PATH: E:\Production\Steven Ormeny\2025\3026 Redondo Beach V2 CDA\20250520

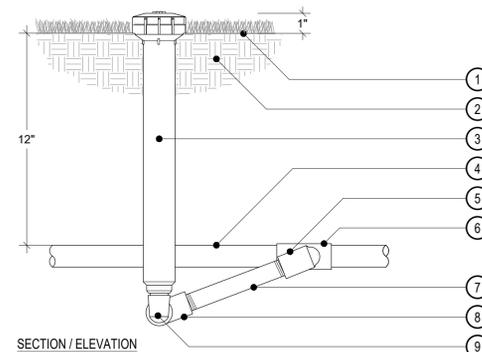
LAST SAVED BY: rickd  
 PLOT DATE: May, 20, 25 SAVED PATH: E:\Production\Steven Ormeny\2025\3026 Redondo Beach V2 CDA\20250520

PRESSURE LOSS CALCULATIONS				
VALVE : #9 - 25 GPM				
WORST CASE HYDRAULIC CONDITION : HIGHEST FLOW				
STATIC PRESSURE AT POC : 60				
EQUIPMENT	SIZE	LENGTH	LOSS	Remaining PSI
Service Line	2"	50'	0.4	59.6
Water Meter	2"	-	1.0	58.6
Sch 80 PVC Line to R/P	2"	50'	0.3	58.3
Pressure Entering Backflow Preventer Assembly				58.3
Pressure Regulator Setting at R/P Assembly				n/a
Backflow Preventer	1 1/2"	-	12.0	46.3
Master Valve	1 1/2"	-	0.8	45.5
Flow Sensor	1 1/2"	-	1.0	44.5
CL315 PVC Main	2"	600'	3.8	40.7
Electric Control Valve	1 1/2"	-	1.5	39.2
Lateral Lines	Misc.	Misc.	2.0	37.2
Misc. Losses (10%)	n/a	-	2.3	34.9
SUBTOTAL PRESSURE AVAILABLE :				34.9
Elevation Losses				Feet : 0 0.433 0.0
PRESSURE AVAILABLE AT SPRINKLER HEAD / EMITTER :				34.9
PRESSURE REQUIRED AT SPRINKLER HEAD / EMITTER :				30.0
RESIDUAL PRESURE :				4.9

**IRRIGATION NOTES (AS APPLICABLE) :**

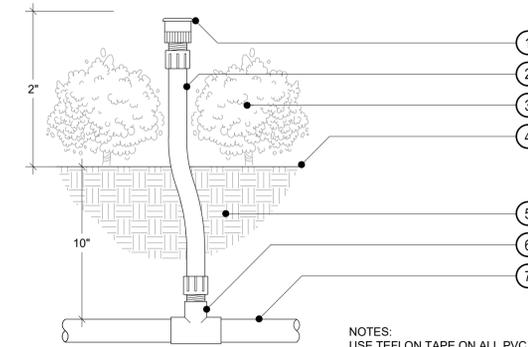
- GENERAL - ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND THESE PLANS. THE CONTRACTOR SHALL APPLY FOR ALL PERMITS AND PAY SAME.
  - THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS AT THE SITE PRIOR TO COMMENCEMENT OF ANY WORK UNDER THIS CONTRACT.
  - THE CONTRACTOR SHALL CARRY ALL WORKERS COMPENSATION, PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE, AS REQUIRED BY THE OWNER AND/OR GOVERNING AGENCY.
- SCOPE OF WORK - UNLESS OTHERWISE SPECIFIED, THE CONSTRUCTION OF IRRIGATION SYSTEMS SHALL INCLUDE THE FURNISHING, INSTALLING AND TESTING OF ALL POINTS OF CONNECTION, BACKFLOW DEVICES, AND MAINLINE; AND THE FURNISHING AND INSTALLING OF CONTROLLERS, ELECTRIC CONTROL VALVES, OTHER SPECIFIED VALVES, LATERAL LINES, RISERS AND FITTINGS, SPRINKLER HEADS, AND DRIP LINES; AND EXCAVATION AND BACKFILL AND ALL OTHER WORK IN ACCORDANCE WITH THESE PLANS, DETAILS, AND NOTES. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT PROPERTY, TRANSPORTATION, AND PERFORM ALL OPERATIONS REQUIRED FOR A COMPLETE AND OPERABLE IRRIGATION SYSTEM AS INDICATED ON, OR REASONABLY IMPLIED BY THE DRAWINGS, DETAILS, AND NOTES. INCLUDED AS A PART OF THE IRRIGATION WORK, BUT NOT LIMITED BY IT, ARE THE FOLLOWING:
  - INSTALL COMPLETE OPERABLE INDEPENDENT IRRIGATION SYSTEMS PER THE PLANS, DETAILS, LEGENDS, AND NOTES.
  - ALL IRRIGATION WORK SHALL BE GUARANTEED BY THE CONTRACTOR AS TO MATERIAL AND WORKMANSHIP, INCLUDING SETTling OF BACKFILLED TRENCHES BELOW GRADE FOR A PERIOD OF ONE YEAR FOLLOWING THE DATE OF FINAL ACCEPTANCE OF THE WORK.
- CHECK AND VERIFY ALL SITE CONDITIONS AND UTILITY LOCATIONS PRIOR TO ANY SITE WORK. IF IT IS FOUND THAT THE SITE VARIES FROM THE DRAWINGS, NOTIFY THE LANDSCAPE ARCHITECT. THE LANDSCAPE ARCHITECT SHALL DECIDE ALL QUESTIONS RELATING TO THE INTERPRETATION OF THE DRAWINGS AND THE ACCEPTABLE FULFILLMENT OF THE CONTRACT.
- COORDINATE ALL IRRIGATION WORK WITH PLANTING AND GRADING OPERATIONS TO AVOID ANY CONFLICT WITH PLANTING PITS, DRAINAGE SWALES, ETC.
- PIPING SHOWN ON THE PLANS IS ESSENTIALLY DIAGRAMMATIC. CONTRACTOR SHALL ROUTE PIPING TO AVOID CONFLICT WITH STATIONARY ELEMENTS AND IN SUCH A MANNER AS TO CONFORM WITH THE VARIOUS DETAILS AND DESIGN INTENT OF THESE PLANS. WHERE TREES, LIGHT STANDARDS, OR OTHER PHYSICAL OBSTRUCTIONS EXIST, THE PIPING AND SPRINKLER HEAD LOCATIONS SHALL BE ADJUSTED AND / OR RELOCATED AS NECESSARY TO OBTAIN FULL COVERAGE WITH MINIMAL OVER SPRAY.
- THE CONTRACTOR SHALL AT ALL TIMES PROTECT HIS WORK FROM DAMAGE AND THEFT AND REPLACE ALL DAMAGED OR STOLEN PARTS AT HIS EXPENSE UNTIL THE WORK IS ACCEPTED IN WRITING BY THE OWNER AND/OR GOVERNING AGENCY.
- EXTREME CARE SHALL BE EXERCISED IN EXCAVATING AND WORKING NEAR EXISTING UTILITIES. CONTRACTOR SHALL VERIFY THE LOCATION AND CONDITION OF ALL UTILITIES AND BE RESPONSIBLE FOR ANY DAMAGE. CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT A MINIMUM OF TWO WORKING DAYS PRIOR TO DIGGING.
- THE CONTRACTOR SHALL KEEP THE PREMISES CLEAN AND FREE OF EXCESS EQUIPMENT, MATERIALS, AND RUBBISH INCIDENTAL TO HIS WORK.
- THE IRRIGATION DESIGN IS BASED ON THE METER AND/OR POINT OF CONNECTION SIZE AND WATER PRESSURE INDICATED ON THE WATER SOURCE / POINT OF CONNECTION NOTE ON THE PLANS. CONTRACTOR SHALL VERIFY THE PRESSURE PRIOR TO CONSTRUCTION. SHOULD A DISCREPANCY EXIST, NOTIFY THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING CONSTRUCTION. DO NOT PROCEED WITH ANY IRRIGATION INSTALLATION WORK UNTIL ANY AND ALL WATER SUPPLY AND PRESSURE ISSUES HAVE BEEN RESOLVED.
- CONTRACTOR SHALL MAKE POINT(S) OF CONNECTION (POC) AS NOTED ON THE PLANS. ALL FEES AND LOCAL REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
- IRRIGATION CONTRACTOR SHALL COORDINATE 120V AC POWER TO FINAL CONTROLLER LOCATION WITH GENERAL CONTRACTOR AND/OR ELECTRICAL CONTRACTOR AS NECESSARY. IRRIGATION CONTRACTOR SHALL PAY ALL ASSOCIATED FEES FOR ELECTRICAL SERVICE. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL FINAL CONTROLLER CONNECTIONS PER LOCAL CODES.
- CONTRACTOR SHALL PROVIDE ALL EQUIPMENT REQUIRED TO PERFORM A MAINLINE PRESSURE TEST. THE HYDROSTATIC TEST SHALL HOLD A MINIMUM OF 150 PSI FOR 3 HOURS OR MORE. CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE A MINIMUM OF 48 HOURS IN ADVANCE OF THE TEST FOR CERTIFICATION.
- CONTRACTOR SHALL THOROUGHLY FLUSH THE ENTIRE MAINLINE PRIOR TO INSTALLING REMOTE CONTROL VALVES. ALL LATERAL LINES SHALL BE COMPLETELY FLUSHED PRIOR TO INSTALLING HEADS AND NOZZLES. FOR DRIP SYSTEMS, ALL PIPING / TUBING DOWNSTREAM OF THE CONTROL VALVE SHALL BE THOROUGHLY FLUSHED PRIOR TO 'CLOSING' SYSTEM (FOR GRID SYSTEMS), OR BEFORE INSTALLING FLUSH VALVES.
- ALL WIRES SHALL BE SOLID COPPER, PLASTIC INSULATED, U.F. DIRECT BURIAL WIRE. ALL COMMON WIRE SHALL BE AWG #12 WHITE; ALL CONTROL WIRES SHALL BE AWG #14 RED OR BLACK. CONTROLLERS SHALL HAVE SEPARATE COLOR CODED COMMON WIRES AND CONTROL WIRES WHEN TWO OR MORE CONTROLLERS ARE ON THE PROJECT.
- ALL CONTROL WIRES AND IRRIGATION PIPING THAT RUNS UNDER HARDSCAPE / PAVING SHALL BE ENCASED IN PVC SLEEVES PER THE LEGEND. SLEEVES SHALL BE SIZED ACCORDING TO THE SLEEVING CHART ON THE PLANS. SLEEVES SHALL BE STRAIGHT RUNS OF PVC PIPE WITH NO FITTINGS INSTALLED UNDER HARDSCAPED AREAS. IF WIDTH OF HARDSCAPE EXCEEDS A FULL LENGTH OF PIPE, USE BELLED END CONNECTION OR COUPLER WITHIN SLEEVE, ENSURING SLEEVE IS LARGE ENOUGH FOR THE ADDED DIAMETER OF THE CONNECTION.
- THE FINAL LOCATION FOR CONTROL VALVES AND QUICK COUPLERS SHALL BE APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT OR THE OWNER'S AUTHORIZED REPRESENTATIVE. ALL VALVES AND QUICK COUPLERS SHALL BE LOCATED IN SHRUB AREAS WHEREVER POSSIBLE.
- THE CONTRACTOR SHALL HEAT BRAND VALVE NUMBERS OR OTHER MARKINGS AS CALLED FOR IN THE IRRIGATION DETAILS ON INSIDE AND OUTSIDE OF ALL VALVE BOX LIDS.
- ALL BRASS OR GALVANIZED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE OR APPROPRIATE PIPE JOINT COMPOUND. ALL PVC TO PVC THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE. NO PIPE DOPE IS ALLOWED AT VALVE OR SPRINKLER HEAD CONNECTIONS. ANY PVC TO METAL CONNECTIONS SHALL BE MADE WITH A MALE THREADED PVC FITTING AND A FEMALE THREADED METAL FITTING.
- ALL PVC SOLVENT-WELD CONNECTIONS SHALL BE MADE WITH SOLVENT-WELD MATERIALS AS RECOMMENDED BY THE PIPE MANUFACTURER. SOLVENT-WELD PRIMER SHALL BE APPLIED AT ALL CONNECTIONS.
- LOW HEAD DRAINAGE WILL NOT BE ALLOWED. CONTRACTOR TO DETERMINE IN THE FIELD WHICH HEADS DRAIN AFTER THE VALVE IS SHUT OFF. CONTRACTOR SHALL PROVIDE AND INSTALL ADDITIONAL IN-LINE CHECK VALVES AS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
- ALL PRESSURE SUPPLY LINES AND CONTROL WIRES TO HAVE 18"-24" MINIMUM COVER. ALL LATERAL LINES TO HAVE 12" MINIMUM COVER. FOR RECYCLED WATER SYSTEMS, PIPE DEPTH TO BE DETERMINED BY THE LOCAL GOVERNING AGENCY.
- MAINLINE AND WIRE SLEEVING TO HAVE 24" MINIMUM COVER FROM TOP OF SLEEVE TO BOTTOM OF AGGREGATE BASE. MAINLINE AND WIRE SLEEVING UNDER ALL VEHICULAR ACCESS WAYS TO HAVE 36" MINIMUM COVER FROM TOP OF SLEEVE TO BOTTOM OF AGGREGATE BASE. LATERAL LINE SLEEVING TO HAVE 12" MINIMUM COVER FROM TOP OF SLEEVE TO BOTTOM OF AGGREGATE BASE. LATERAL LINE

- SLEEVING UNDER ALL VEHICULAR ACCESS WAYS TO HAVE 36" MINIMUM COVER FROM TOP OF SLEEVE TO BOTTOM OF AGGREGATE BASE. CONTRACTOR SHALL INSTALL SLEEVING UNDER ALL HARDSCAPE 36" WIDE OR GREATER. DUE TO GRAPHIC CLARITY, NOT ALL SLEEVES MAY BE SHOWN ON THE PLANS. CONTRACTOR SHALL INSTALL ALL SLEEVING PRIOR TO HARDSCAPE AND PAVING INSTALLATION.
- THE RADIUS OF EACH HEAD IS TO BE ADJUSTED SO THAT HEAD-TO-HEAD COVERAGE IS MAINTAINED, BUT OVER SPRAY ON BUILDINGS, WALKS, WALLS, AND OTHER HARD SURFACES IS MINIMIZED. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO USING THE BEST NOZZLE RADIUS AND PATTERN, USING PRESSURE COMPENSATING DEVICES FOR NOZZLES, USING ADJUSTABLE NOZZLES, OR USING THE RADIUS ADJUST SCREW ON INDIVIDUAL NOZZLES.
- FINE TUNE EACH CONTROL VALVE FOR OPTIMUM OPERATION. THIS SHALL BE DONE BY TURNING DOWN THE FLOW CONTROL OF THE VALVE UNTIL SYSTEM PERFORMANCE STARTS TO SUFFER. AT THAT POINT, OPEN UP VALVE FLOW CONTROL ABOUT ONE-HALF TURN OR UNTIL THE VALVE IS JUST OPEN ENOUGH FOR DESIRED OPERATION.
- CONTRACTOR SHALL INSTALL 2 EXTRA WIRES FROM CONTROLLER(S) TO EACH END OF THE MAINLINE. WIRES SHALL COME UP INTO ALL VALVE BOXES ALONG THE MAINLINE PATH WITH 36" EXPANSION COILS IN EACH BOX. SPARE WIRES SHALL BE COLOR-CODED DIFFERENTLY THAN OTHER CONTROL WIRES FOR EACH CONTROLLER.
- UPON COMPLETION OF THE PROJECT, THE CONTRACTOR IS TO TURN OVER TO THE OWNER THE FOLLOWING:
  - A REPRODUCIBLE SET OF "AS-BUILT" DRAWINGS AND CONTROLLER CHART.
  - 2 KEYS FOR EACH CONTROLLER / CONTROLLER ENCLOSURE (AS APPLICABLE).
  - 2 KEYS FOR BACKFLOW PREVENTER ENCLOSURE.
  - 2 QUICK COUPLER KEYS AND MATCHING HOSE SWIVELS.
  - 4 OF EACH SPRINKLER HEAD SPECIFIED (AS APPLICABLE).
  - 100' OF EACH DRIP LINE TUBING SPECIFIED (AS APPLICABLE).
  - 10' OF EACH DRIP EMITTER / FLUSH VALVE / DRIP SYSTEM APPARATUS SPECIFIED (AS APPLICABLE).
- RECORD DRAWINGS - THE CONTRACTOR SHALL PROVIDE AND KEEP UP TO DATE A COMPLETE RECORD SET OF PRINTS WHICH SHALL BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL DRAWINGS. PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL TRANSCRIBE ALL INFORMATION FROM THE RECORD SET TO A BLACK-LINE PRINT PROCURED FROM THE OWNER. ALL WORK SHALL BE NEAT AND LEGIBLE. LOCATING THE FOLLOWING ITEMS FROM PERMANENT POINTS OF REFERENCE: SHUT-OFF VALVES, MAINLINE AND CONTROL WIRE ROUTING, POC, BACKFLOW DEVICE, CONTROL VALVES, CONTROLLER, QUICK COUPLING VALVES, AND OTHER PERTINENT UNDERGROUND ITEMS.
- "CONTROLLER CHART" - UPON APPROVAL OF THE FINAL RECORD DRAWINGS, PROVIDE ONE CHART FOR EACH CONTROLLER INSTALLED.
  - THE CHART IS TO BE A REDUCED COPY OF THE APPROVED RECORD DRAWING (A BLACK-LINE PRINT REDUCED TO THE MAXIMUM SIZE THE CONTROLLER DOOR WILL ALLOW, COLORED WITH A DIFFERENT COLOR FOR EACH VALVE STATION'S AREA OF COVERAGE).
  - WHEN COMPLETED AND APPROVED, THE CHART SHALL BE LAMINATED BETWEEN TWO (2) PIECES OF 20 MIL. CLEAR PLASTIC AND MOUNTED ON THE INSIDE OF THE CONTROLLER DOOR USING VELCRO TAPE OR EQUAL.
- BUBBLER IRRIGATION
  - THE BUBBLER SYMBOLS ARE SHOWN FOR CLARITY ONLY. REFER TO THE LEGEND AND NOTES FOR NUMBER OF BUBBLERS PER PLANT / PLANT SIZE. REFER TO THE PLANTING PLAN FOR THE QUANTITY, TYPE, AND SIZE OF THE PLANT MATERIALS. ALL PLANT MATERIALS SHALL RECEIVE THE CORRECT QUANTITY AND SIZE OF BUBBLERS TO MAINTAIN OPTIMUM PLANT HEALTH.
    - EACH PLANT IS TO RECEIVE ONE (1) FLOOD BUBBLER.
    - USE DIFFERENT FLOW BUBBLERS FOR SHRUBS THAT NEED MORE WATER THAN THE 0.25 GPM FLOW RATES SPECIFIED.
    - FOR ALL PLANT MATERIAL INSTALLED ON SLOPES. LOCATE THE BUBBLER ON THE UP-HILL SIDE OF THE SLOPE AT THE EDGE OF THE ROOTBALL.
  - VELOCITY OF WATER IN ALL AREAS OF SYSTEM INCLUDING POLYETHYLENE PIPE SHALL NOT EXCEED 4 FEET PER SECOND. VERIFY CHARACTERISTICS WITH MANUFACTURER.
  - CONTRACTOR SHALL FLUSH ENTIRE ZONE PRIOR TO INSTALLATION OF ANY BUBBLERS. CONTRACTOR SHALL FURTHER FLUSH ALL ZONES AND INSPECT FOR CLOGGED OR BROKEN OR MISSING BUBBLERS AT LEAST EVERY TWO WEEKS AS PART OF REGULAR MAINTENANCE DURING MAINTENANCE PERIOD.
  - CONTRACTOR SHALL NOT REPAIR OR ATTEMPT TO CLEAN ANY BUBBLER ORIFICE; RATHER CONTRACTOR SHALL REPLACE ENTIRE BUBBLER.



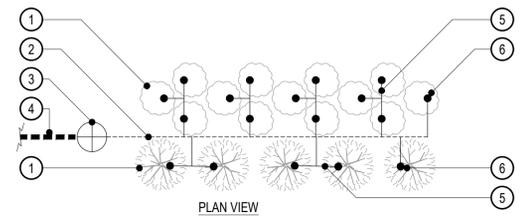
- FINISH GRADE
  - NATIVE SOIL / BACKFILL PER SPECIFICATIONS
  - 12" HI-POP SPRAY HEAD & NOZZLE PER LEGEND
  - LATERAL LINE PIPING PER LEGEND
  - 1/2" MARLEX STREET ELL
  - SCH 40 PVC LATERAL LINE FITTING WITH 1/2" FEMALE THREADED OUTLET
  - 1/2"x12" MIN. SCH 80 PVC THREADED NIPPLE
  - 1/2" SCH 40 PVC STREET ELL TXT
  - 1/2" MARLEX STREET ELL
- NOTES:  
 USE TEFLON TAPE ON ALL PVC TO PVC CONNECTIONS; NO PIPE DOPE ALLOWED. SET PERIMETER HEADS 4"-6" FROM CURBS AND WALKS AND 6"-12" FROM VERTICAL OBJECTS SUCH AS FENCES AND WALLS, ETC. ONLY USE BOTTOM INLET OF HEAD.

**SHRUB HI-POP SPRINKLER HEAD** N



- BUBBLER HEAD PER LEGEND
  - FLEXIBLE PVC RISER ASSEMBLY WITH FACTORY INSTALLED 1/2" MALE ADAPTERS ON EACH END (12" LENGTH)
  - PLANT MATERIAL PER PLANTING PLAN (TYP)
  - FINISH GRADE
  - NATIVE SOIL / BACKFILL PER SPECIFICATIONS
  - SCH 40 PVC LATERAL LINE FITTING WITH 1/2" FEMALE THREADED OUTLET
  - LATERAL LINE PIPING PER LEGEND
- NOTES:  
 USE TEFLON TAPE ON ALL PVC TO PVC CONNECTIONS; NO PIPE DOPE ALLOWED. SET BUBBLERS AT THE EDGE OF THE ROOTBALL. LOCATE BUBBLERS ON UP-HILL SIDE OF THE PLANT WHEN LOCATED ON SLOPE. DO NOT USE FIXED RISER HEADS IN AREAS SUBJECT TO TRAFFIC, VANDALISM, OR IN ANY SITUATION WHERE A FIXED RISER HEAD COULD BE A SAFETY LIABILITY. LOW HEAD DRAINAGE IS NOT ALLOWED. INSTALL ADDITIONAL IN-LINE CHECK VALVES AS NEEDED AT NO ADDITIONAL COST TO THE OWNER.

**WATERPROOF WIRE CONNECTOR** L



- TYPICAL SHRUB PER PLANTING PLAN
  - PVC LATERAL LINE "TRUNK LINE" PER IRRIGATION LEGEND (PLAN SIZE)
  - DRIP VALVE ASSEMBLY PER IRRIGATION LEGEND
  - PVC MAINLINE PER IRRIGATION LEGEND (PLAN SIZE)
  - 1/2" SCH 40 PVC LATERAL LINE "SPUR"
  - BUBBLER PER IRRIGATION LEGEND
- NOTES:  
 RUN LATERAL "TRUNK LINE" THROUGH THE APPROXIMATE CENTER OF PLANTS TO BE IRRIGATED. LOCATE "TRUNK LINE" TO AVOID ANY TREES. "TEE OFF" "TRUNK LINE" AS NECESSARY TO EXTEND PVC "SPURS" TO BUBBLER LOCATIONS. MAXIMUM NUMBER OF PLANTS TO BE IRRIGATED BY ANY SINGLE "SPUR" SHALL NOT EXCEED 4. INSTALL FLUSH VALVE AT THE TERMINAL END OF "TRUNK LINE" IF USING DRIP EMITTERS IN LIEU OF BUBBLERS. WHEN "TRUNK LINE" RUNS IN MULTIPLE DIRECTIONS, INSTALL A FLUSH VALVE AT THE END OF EACH AND EVERY "TRUNK LINE" IF USING DRIP EMITTERS.

**BUBBLER SYSTEM - TYPICAL LAYOUT** M

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**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
 IRRIGATION DETAILS

DRAWING REF:  
 I-4

SHEET  
 30 OF 37

DRAWING NO.

DESIGNED BY:  
 RAFAEL HOLCOMBE  
 DRAWN BY:  
 JONATHAN GOBER



GRAPHIC SCALE

PAGE

FIELD BOOK

REVISIONS	DATE	SHEET	APPROVAL	DESCRIPTION
No.				

AS-BUILT: REF.

ELECTRICAL SYMBOLS - PLANS	
SYMBOL	SYMBOL DESCRIPTION
	DUPLEX RECEPTACLE (WP, GFCI AS INDICATED)
	JUNCTION BOX
	SWITCH (3 = 3-WAY SWITCH, 4 = 4-WAY SWITCH, ETC.)
	LED LUMINAIRE
	LED LUMINAIRE W/ EMERGENCY BATTERY PACK
	EMERGENCY LIGHT
	WALL MOUNTED LUMINAIRE
	EXIT LIGHT
	DOWN LIGHT
	POLE MOUNTED LUMINAIRE
	LUMINAIRE TYPE LAMP WATTAGE
	CONDUIT REFERENCE A = ANALOG SIGNAL C = CONTROL D = DATA LINK F = FIBER OPTIC P = POWER T = TELEPHONE
	UNDERGROUND CONDUIT
	EXPOSED CONDUIT
	GROUNDING CONDUCTOR 30" BELOW GRADE
	HOMERUN TO PANEL "A", CIRCUIT 3
	CONDUIT STUBBED AND CAPPED
	CONDUIT BENDS TOWARD OBSERVER
	CONDUIT BENDS AWAY FROM OBSERVER
	FLEXIBLE CONDUIT CONNECTION (FROM COUPLING/STUB-UP OR JBOX)
	PANELBOARD
	DISCONNECT SWITCH
	COMBINATION STARTER & DISCONNECT SWITCH
	HANDHOLE OR PULL BOX
	SMOKE DETECTOR
	FIRE ALARM MANUAL PULL STATION
	FIRE ALARM STROBE
	TELEPHONE OUTLET
	DATA OUTLET
	CONDUIT SEAL
	CONDUIT & WIRE FOR FIRE ALARM SYSTEM
	ELECTRONIC KEYPAD
	FIRE ALARM CONTROL PANEL
	LOCAL CONTROL SWITCH
	THERMOSTAT
	INTRUSION SWITCH
	MOTOR (NUMBER INDICATES HORSEPOWER)
	GROUND WELL

ELECTRICAL SYMBOLS - SCHEMATIC DIAGRAMS		
NORMALLY OPEN	NORMALLY CLOSED	SYMBOL DESCRIPTION
		CONTACT
		TIMED CONTACT, CONTACT ACTION REVERSES ON ENERGIZATION (ON DELAY)
		TIMED CONTACT, CONTACT ACTION REVERSES ON DE-ENERGIZATION (OFF DELAY)
		LEVEL SWITCH
		PRESSURE SWITCH
		TEMPERATURE SWITCH
		LIMIT SWITCH
		FLOW SWITCH
		PUSH BUTTON SINGLE CIRCUIT MOMENTARY CONTACT
		SELECTOR SWITCH HOA: HAND-OFF-AUTO (HOA SHOWN IN HAND MODE) HO: HAND-OFF HOR: HAND-OFF-REMOTE R-O: REMOTE-OFF
		PILOT LIGHT A= AMBER, G= GREEN, R= RED, W= WHITE
		CONTROL RELAY
		TIME DELAY RELAY
		MOTOR OR STARTER COIL
		SOLENOID OPERATED VALVE
		ELAPSED TIME METER
		FUSE
		CONTROL POWER TRANSFORMER
		GROUND
		MOTOR SPACE HEATER

**SYMBOL NOTES**

- THIS DRAWING CONTAINS INDUSTRY STANDARD SYMBOLS. NOT ALL SYMBOLS SHOWN ARE USED ON THIS PROJECT.
- FOR HOA SWITCHES, "XOO" INDICATES THAT THE TOP CONTACT IS CLOSED WHEN THE SWITCH IS SET TO HAND MODE, AND ALL OTHER SWITCH CONTACTS ARE OPEN; "OXO" INDICATES THAT THE MIDDLE CONTACT IS CLOSED WHEN THE SWITCH IS SET TO OFF MODE, AND ALL OTHER SWITCH CONTACTS ARE OPEN; "OOX" INDICATES THAT THE BOTTOM CONTACT IS CLOSED WHEN SWITCH IS IN AUTO MODE, ALL OTHER SWITCH CONTACTS ARE OPEN.

**ANSI/IEEE C37.2 STANDARD DEVICE NUMBERS**

THE FOLLOWING IS A LIST OF TYPICAL DEVICE NUMBERS. SEE ANSI/IEEE C37.2 FOR A COMPLETE LIST OF DEVICES.

- |    |  |
|----|--|
| 11 | MULTI-FUNCTION DEVICE                          |
| 27 | UNDERVOLTAGE RELAY                             |
| 32 | DIRECTIONAL POWER RELAY OR REVERSE POWER RELAY |
| 37 | UNDERCURRENT OR UNDERPOWER RELAY               |
| 42 | RUNNING CIRCUIT BREAKER                        |
| 47 | PHASE SEQUENCE OR PHASE-BALANCE VOLTAGE RELAY  |
| 50 | INSTANTANEOUS OVERCURRENT RELAY                |
| 51 | AC INVERSE TIME OVERCURRENT RELAY              |
| 52 | AC CIRCUIT BREAKER                             |
| 55 | POWER FACTOR RELAY                             |
| 57 | SHORT-CIRCUITING OR GROUNDING DEVICE           |
| 59 | OVERVOLTAGE RELAY                              |
| 67 | AC DIRECTIONAL OVERCURRENT RELAY               |
| 86 | LOCKOUT RELAY                                  |
| 87 | DIFFERENTIAL PROTECTIVE RELAY                  |

ELECTRICAL SYMBOLS - SINGLE LINE DIAGRAM	
DEVICE	SYMBOL DESCRIPTION
	DRY TYPE TRANSFORMER
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	FUSE
	MOTOR, 40 HORSEPOWER
	GROUNDING ELECTRODE
	LOW VOLTAGE CIRCUIT BREAKER MCCB UON
	MEDIUM VOLTAGE CIRCUIT BREAKER, DRAW-OUT TYPE SEE ANSI/IEEE C37.2 STANDARD DEVICE NUMBERS LIST THIS SHEET
	VARIABLE FREQUENCY DRIVE
	SOLID STATE STARTER (SOFT STARTER)
	SURGE PROTECTION DEVICE
	POWER QUALITY MONITOR
	SOLID STATE TRIP
	MOTOR PROTECTION RELAY
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	VALVE MOTOR AND ACTUATOR
	MOTOR OVERLOAD HEATER
	MAGNETIC MOTOR STARTER FVNR = FULL VOLTAGE NON-REVERSING
	PROTECTION RELAY SEE ANSI/IEEE C37.2 STANDARD DEVICE NUMBERS LIST
	METER, ELECTRIC UTILITY

**ELECTRICAL ABBREVIATIONS**

A	AMPERES, ANALOG SIGNAL
AC	ALTERNATING CURRENT
AF	AMPERES FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CAPACITY
AT	AMPERES TRIP
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
BFG	BELOW FINISHED GRADE
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CORRELATED COLOR TEMPERATURE
CO	CONDUIT ONLY
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CRI	COLOR RENDERING INDEX
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DSB	DISTRIBUTION SWITCHBOARD
EF	EXHAUST FAN
ELEV	ELEVATION
ETM	ELAPSED TIME METER
EW	ELECTRIC WATER HEATER
EXST	EXISTING
FIT	FLOW INDICATING TRANSMITTER
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FPF	FIBER OPTIC PATCH PANEL
FFR	FEDER PROTECTION RELAY
FUT	FUTURE
FVNR	FULL VOLTAGE NON-REVERSING STARTER
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HMI	HUMAN MACHINE INTERFACE
HCA	HAND / OFF / AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HS	HAND SWITCH
JB, JBOX	JUNCTION BOX
KAIC	KILOAMPERES INTERRUPTING CAPACITY
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KWH	KILOWATT-HOUR
LED	LIGHT EMITTING DIODE
LCP	LOCAL CONTROL PANEL
LIT	LEVEL INDICATING TRANSMITTER
LOS	LOCKOUT STOP SWITCH
LSLL	LEVEL SWITCH LOW-LOW
LV	LOW VOLTAGE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MPR	MOTOR PROTECTION RELAY
MXR	MIXER
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
P	POLE
PB	PUSHBUTTON, PULLBOX
PCS	PVC COATED STEEL
PFR	PHASE FAILURE RELAY
PH	PHASE
PIT	PRESSURE INDICATING TRANSMITTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PQM	POWER QUALITY MONITOR
PSH	PRESSURE SWITCH HIGH
PT	POTENTIAL TRANSFORMER
REC.	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
SCCR	SHORT CIRCUIT CURRENT RATING
SPD	SURGE PROTECTION DEVICE
SSS	SOLID STATE STARTER (SOFT STARTER)
SWBD	SWITCHBOARD
TEMP	TEMPERATURE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLT(S)
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER

**GENERAL ELECTRICAL NOTES**

- REFER TO ELECTRICAL SPECIFICATIONS FOR FURTHER DETAIL AS TO SCOPE, MATERIALS, AND EXECUTION OF ELECTRICAL WORK.
- WIRING NOT EXPLICITLY SHOWN ON DRAWINGS SHALL BE ACCORDING TO THE REQUIREMENTS OF NATIONAL ELECTRICAL CODE (NEC) FOR THE SPECIFIC APPLICATION AND CONDITIONS.
- ALL CONDUCTORS SHALL BE COPPER (MINIMUM SIZE #10 AWG UNLESS SPECIFICALLY NOTED OTHERWISE).
- CONTRACTOR SHALL SUBMIT SEISMIC ANCHORAGE CALCULATIONS IN CONFORMANCE WITH CODE REQUIREMENTS AND PROVIDE SEISMIC ANCHORAGE MEANS FOR EQUIPMENT IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE.
- THE ELECTRICAL CONTRACTOR SHALL CONFORM WITH ALL LOCAL CODES AND ORDINANCES, THE STATE OF CALIFORNIA ELECTRICAL SAFETY ORDERS, THE NATIONAL ELECTRICAL CODE AND ANY ADDITIONAL JURISDICTIONS RELATING TO THE WORK.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, WIRE, SERVICES, SWITCHBOARDS, AND VFD'S REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM.
- IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS, OR WITH CODE REQUIREMENTS, THE NOTE, SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR HIGHER STANDARD SHALL PREVAIL.
- ALL ELECTRICAL EQUIPMENT EXPOSED TO THE CLIMATE SHALL BE WEATHERPROOF.
- ALL ELECTRICAL EQUIPMENT IN THIS PROJECT SHALL BE U.L. LISTED.
- ALL UNDERGROUND CONDUITS NOT SPECIFIED IN THE PLANS SHALL BE INSTALLED AT 30" BELOW FINISHED GRADE MINIMUM.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UNDERGROUND FACILITIES AND PROTECTING THESE FACILITIES FROM DAMAGE.
- THE ELECTRICAL CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED BY FIELD CONDITIONS.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UNDERGROUND FACILITIES.
- CONTRACTOR SHALL PROVIDE ALL NEEDED CHANNELS, ANGLES, AND ANY OTHER MATERIALS REQUIRED TO SUPPORT LUMINAIRES, CONDUIT, AND ELECTRICAL EQUIPMENT IN THE LOCATIONS SHOWN ON THE DRAWINGS.
- CONTRACTOR SHALL NOT CUT ANY STRUCTURAL MEMBERS OR USE ANY ATTACHMENTS THAT WOULD IMPAIR THEIR STRENGTH.
- CONTRACTOR SHALL DESIGN SUPPORTS IN BETWEEN THE STRUCTURAL SUPPORT MEMBERS AND SUBMIT THE DESIGN AS A SHOP DRAWING SUBMITTAL.
- INSTRUMENTATION IS SHOWN IN THE GENERAL VICINITY OF THE INTENDED LOCATION AND MAY NOT NECESSARILY MATCH LOCATIONS ON THE PLANS. VERIFY ACTUAL LOCATIONS OF INSTRUMENTS AND RUN ASSOCIATED CONDUITS AS REQUIRED.
- ELECTRICAL EQUIPMENT AND MATERIAL TO BE LISTED, LABELED AND INSTALLED PER THE CALIFORNIA ELECTRICAL CODE, THE INSTALLATION STANDARDS/MANUFACTURER'S RECOMMENDATIONS AND, IF REQUIRED, A RECOGNIZED ELECTRICAL TESTING LABORATORY.
- ALL EXPOSED CONDUITS TO BE GALVANIZED RIGID STEEL FOR DRY LOCATIONS AND PVC COATED GALVANIZED RIGID STEEL IN WET AND CORROSIVE LOCATIONS UNLESS OTHERWISE STATED ON THE PLANS.

REDONDO BEACH AVE. A ACCESS PATH  
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 ELECTRICAL SYMBOLS AND ABBREVIATIONS

FN: E-1  
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 31 OF 37

DRAWING NO.

DESIGNED BY:  
 RAFAEL HOLCOMBE

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REVISIONS

DATE

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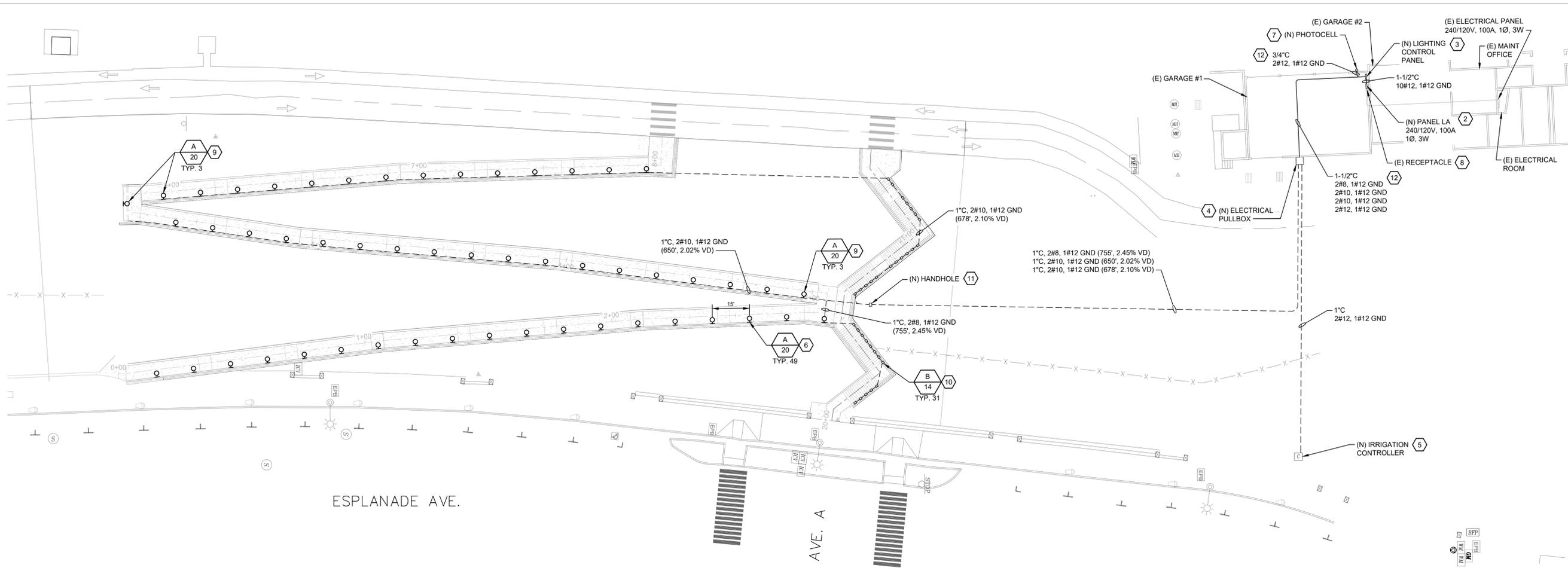
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FIELD BOOK

SCALE



**1 SITE PLAN**  
E-2 SCALE: 1" = 20'

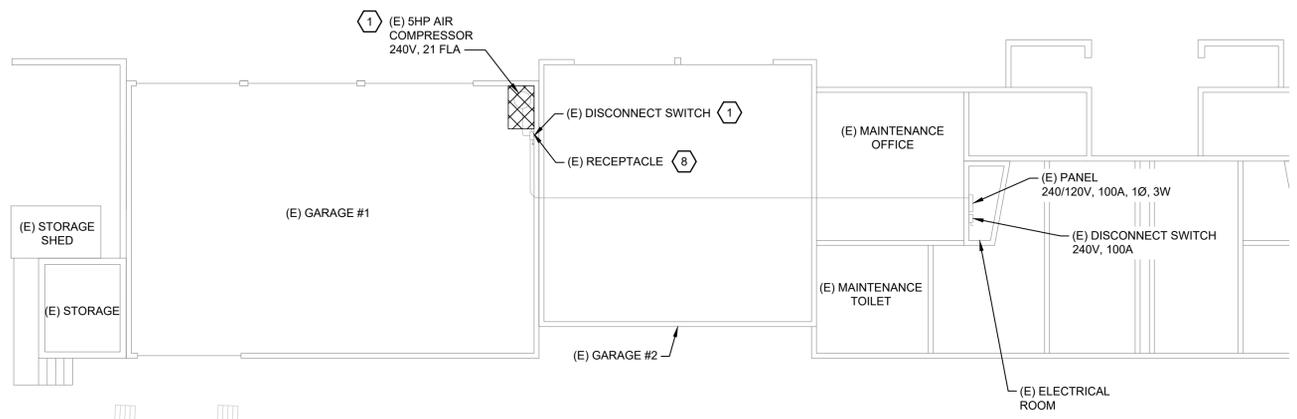


**GENERAL NOTES**

1. THE SCOPE OF WORK IS TO REMOVE THE EXISTING COMPRESSOR AND COMPRESSOR DISCONNECT. INSTALL A NEW PANELBOARD AND NEW LIGHTING CONTROL PANEL TO PROVIDE POWER TO THE NEW WALL-RECESSED LED FIXTURES AND THE NEW IRRIGATION CONTROLLER.
2. (N) IRRIGATION CONTROLLER SPEC HUNTER 'ACC2' A2C-1200-P+(2)A2M-600+A2-WIFI

**CONSTRUCTION NOTES**

- 1 EXISTING AIR COMPRESSOR AND DISCONNECT SWITCH SHALL BE REMOVED AND DISPOSED.
- 2 NEW PANEL LA SHALL BE INSTALLED AND CONNECTED TO THE EXISTING PANEL. PULL NEW 1#6 NEUTRAL WIRE FROM THE EXISTING PANEL THROUGH EXISTING CONDUIT FOR NEW PANEL LA.
- 3 NEW LIGHTING CONTROL PANEL SHALL BE INSTALLED AND CONNECTED TO PANEL LA PER DETAIL 3 ON SHEET E-4.
- 4 INSTALL NEW 12"x12"x6" NEMA 3R STAINLESS STEEL PULLBOX ON THE WALL CLOSE TO THE ROOF. SEE DETAIL 2 ON DRAWING E-4.
- 5 NEW LOCKABLE WEATHERPROOF 20A GFCI RECEPTACLE SHALL BE INSTALLED FOR THE IRRIGATION CONTROLLER.
- 6 NEW WALL-RECESSED LED FIXTURE SHALL BE INSTALLED 4' AFF AND CONNECTED TO THE LIGHTING CONTROL PANEL.
- 7 NEW PHOTOCELL SHALL BE INSTALLED AND CONNECTED TO THE LIGHTING CONTROL PANEL.
- 8 EXISTING 240V RECEPTACLE SHALL BE PROTECTED IN PLACE AND CONNECTED TO THE NEW PANEL LA.
- 9 NEW WALL-RECESSED LED FIXTURE SHALL BE INSTALLED 18" AFF AND CONNECTED TO THE LIGHTING CONTROL PANEL.
- 10 NEW WALL-RECESSED LED FIXTURE SHALL BE INSTALLED 10" ABOVE THE STAIRS AND CONNECTED TO THE LIGHTING CONTROL PANEL.
- 11 INSTALL NEW 16"x12"x12" CONCRETE HANDHOLE.
- 12 EXPOSED CONDUITS SHALL BE PVC COATED RIGID STEEL CONDUITS.



**2 DEMOLITION FLOOR PLAN**  
E-2 SCALE: 1" = 10'

REVISIONS	DATE	SHEET	APPROVAL	DESCRIPTION
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DESIGNED BY: RAFAEL HOLCOMBE  
DRAWN BY: JONATHAN GOBER  
AS-BUILT: REF.

**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
**ELECTRICAL SITE PLAN**

GRAPHIC SCALE: 1" = 20'

PAGE: 32 OF 37

FIELD BOOK

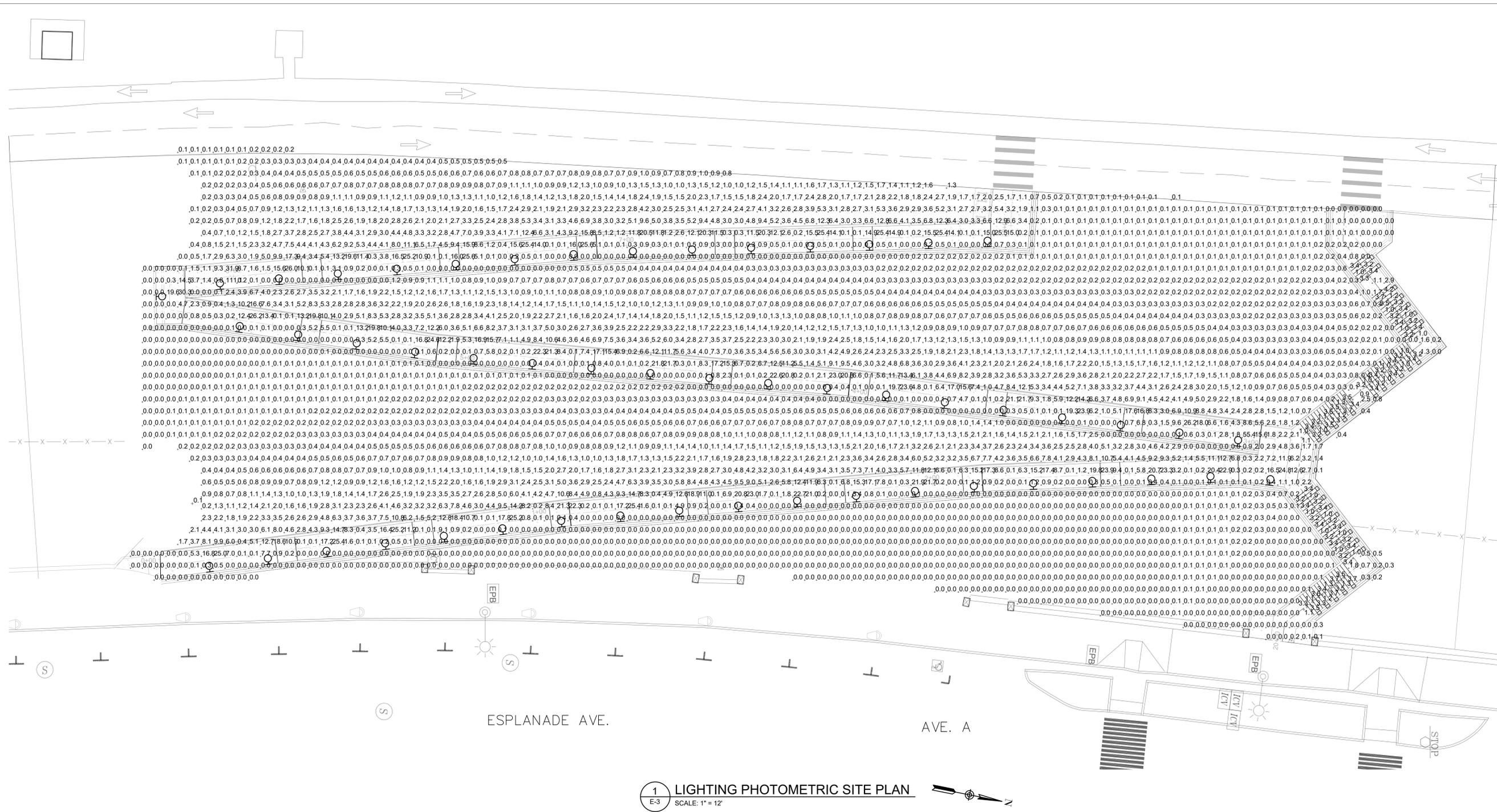
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1 LIGHTING PHOTOMETRIC SITE PLAN  
 E-3 SCALE: 1" = 12'

FIXTURE I.D.	FIXTURE				VOLTS	LAMPS		FIXTURE				DESCRIPTION AND VARIATIONS	MANUFACTURER AND CATALOG NO.
	INCAND.	FLUOR.	H.P.S.	MET. HAL.		NO	WATTS AND TYPE	RECESS SURFACE	PEND.	WALL	POLE		
A 20				●	240	1	20					WALL RECESSED MARINE GRADE ALUMINUM HOUSING WITH CLEAR TEMPERED IMPACT RESISTANT GLASS LENS. 4000K COLOR TEMPERATURE. IP65 RATED FOR WET LOCATIONS.	LIGMAN URA-40701-20W-W40-06-120/277-DIM OR APPROVED EQUAL
B 14				●	240	1	14					WALL RECESSED MARINE GRADE ALUMINUM HOUSING WITH CLEAR TEMPERED IMPACT RESISTANT ACRYLLIC LENS. 4000K COLOR TEMPERATURE. IP65 RATED FOR WET LOCATIONS.	LIGMAN ULE-40621-13.5W-W40-06-120/277-DIM OR APPROVED EQUAL

FN: E-1  
 DATE: 3/23/22

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 PHONE: (949) 809-5000

**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
 LIGHTING PHOTOMETRIC SITE PLAN

DESIGNED BY: RAFAEL HOLCOMBE  
 DRAWN BY: JONATHAN GOBER

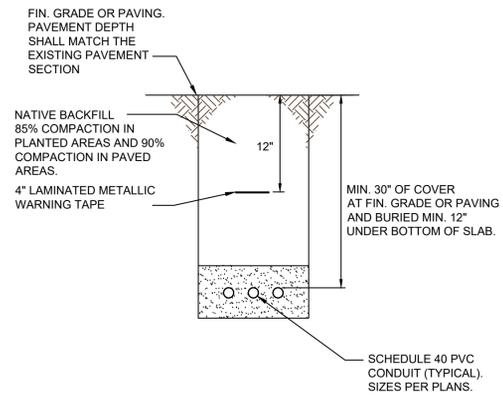
REVISIONS: No. DATE DESCRIPTION

AS-BUILT: REF.

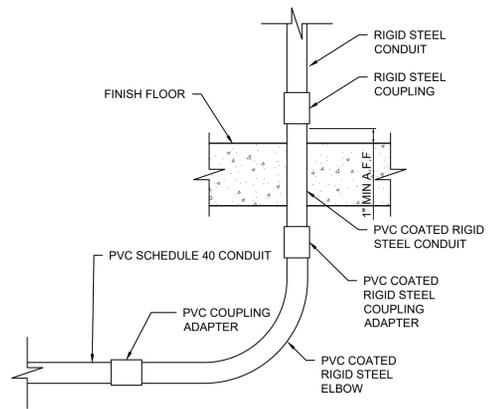
GRAPHIC SCALE: 1" = 12'

PAGE: 33 OF 37

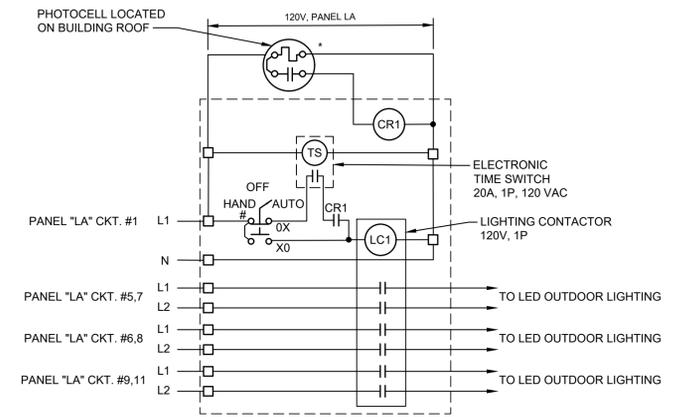
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 SHEET 33 OF 37  
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**1**  
E-4  
**TYPICAL TRENCH DETAIL**  
SCALE: N.T.S.



**2**  
SCALE: N.T.S.  
**CONDUIT STUB-UP DETAIL**



**3**  
E-4  
**EXTERIOR LIGHTING CONTROL PANEL CONTROL SCHEMATIC**  
SCALE: N.T.S.

REVISIONS	DATE	DESCRIPTION
No.		

DESIGNED BY:  
RAFAEL HOLCOMBE  
DRAWN BY:  
JONATHAN GOBER  
AS-BUILT: REF.

**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
**ELECTRICAL DETAILS**

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Panel:	PNL LA		Phase:	1	Location:	GARAGE #1						Main:	50A													
Volts:	240/120V		Wire:	3	Enclosure:	NEMA 1						Bus:	100A													
			Mounting:			SURFACE						SCCR:	10,000A													
			Quantity						Quantity																	
Description	Volt-Amps		LTG	REC	Misc	Breaker Amp	Pole	Circuit	Circuit	Pole	Breaker Amp	LTG	REC	Misc	Volt-Amps		Description									
	A	B													A	B										
(N) LIGHTING CONTROL PANEL	500				1	20	1	1	2								(E) RECEPTACLE									
(N) IRRIGATION CONTROLLER RECEPTACLE		240		1		20	1	3	4	2	20		1													
(N) OUTDOOR LIGHTS CKT 1	347		32			20	2	5	6	2	20	32			327		(N) OUTDOOR LIGHTS CKT 3									
		347						7	8							327										
(N) OUTDOOR LIGHTS CKT 2	238		19			20	2	9	10																	
		238						11	12																	
								13	14																	
								15	16																	
								17	18																	
								19	20																	
								21	22																	
								23	24																	
VOLT-AMPS SUBTOTAL															1,085	825								327	327	
LCL:															A		B		Panel Volt-Amps =		2,563					
Total Volt-Amps:															1,412		1,152		FLA =		11		A @240V			

REVISIONS	DATE	SHEET	APPROVAL	DESCRIPTION
No.				

DESIGNED BY:  
 RAFAEL HOLCOMBE  
 DRAWN BY:  
 JONATHAN GOBER  
 AS-BUILT: REF.

**REDONDO BEACH AVE. A ACCESS PATH**  
**REDONDO BEACH, CALIFORNIA 90277**  
 PANEL SCHEDULE

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STATE OF CALIFORNIA  
**Outdoor Lighting**  
 NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.2, §140.7, and §141.0(b)(2) for outdoor lighting scopes using the prescriptive path.  
 Project Name: Redondo Beach Access Path Report Page: Page 1 of 6  
 Project Address: 809 Esplanade, Redondo Beach, CA 90277 Date Prepared: 03/21/2025

**A. GENERAL INFORMATION**

01 Project Location (city) Redondo Beach 04 Total Illuminated Hardscape Area (ft²) 34,000  
 02 Climate Zone 6  
 03 Outdoor Lighting Zone per Title 24, Part 1 §10-114 or as designated by Authority Having Jurisdiction (AHJ):  
 LZ-0: Very Low - Undeveloped Parkland  LZ-2: Moderate - Rural Areas  LZ-4: High - Must be reviewed by CA Energy Commission for Approval  
 LZ-1: Low - Developed Parkland  LZ-3: Moderately High - Urban Areas

**B. PROJECT SCOPE**  
 Table Instructions: Include any outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)(2) for alterations.  
 My project consists of:  
 New Lighting System Must Comply with Allowances from §140.7.  
 Altered Lighting System Is your alteration increasing the connected lighting load (Watts)?  Yes  No  
 03 % of Existing Luminaires Being Altered 04 Sum Total of Luminaires Being Added or Altered 05 Calculation Method  
 \*FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100

**C. COMPLIANCE RESULTS**  
 Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.  
 Calculation of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)(2)  
 Compliance Results

01	02	03	04	05	06	07	08	09
General Hardscape Allowance §140.7(d)(1) (See Table I)	Per Application §140.7(d)(2) (See Table J)	Sales Frontage §140.7(d)(2) (See Table K)	Ornamental §140.7(d)(2) (See Table L)	Per Specific Area §140.7(d)(2) (See Table M)	Existing Power §141.0(b)(2) (See Table N)	Total Allowed (Watts)	Total Actual (Watts)	07 Must be ≥ 08
2,061.6						2,061.6	1,458.5	COMPLIES
Cutoff Compliance (See Table G for Details)						Not Applicable		
Controls Compliance (See Table H for Details)						COMPLIES with Exceptional Conditions		

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2019standards> January 2021

STATE OF CALIFORNIA  
**Outdoor Lighting**  
 NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 Project Name: Redondo Beach Access Path Report Page: Page 3 of 6  
 Project Address: 809 Esplanade, Redondo Beach, CA 90277 Date Prepared: 03/21/2025

\*FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)  
 For linear luminaires, wattage should be indicated as W/ft instead of Watts/luminaire. Total linear feet for the luminaire should be indicated in column 05 instead of number of luminaires.  
 Select "New" for new luminaires in a new outdoor lighting project or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope  
 Compliance with mandatory cutoff requirements is required for luminaires with initial lumen output ≥ 6,200 unless exempted by §130.2(b).

**G. CUTOFF REQUIREMENTS (BUG)**  
 This Section Does Not Apply

**H. OUTDOOR LIGHTING CONTROLS**  
 Table Instructions: Complete this table demonstrating compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.  
 When an option having a \* is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank. For each requirement in columns 02 through 04, do not leave the field blank, instead select NA or Exempt\* from the dropdown list to indicate not applicable or an exemption.

**Mandatory Controls**

01	02	03	04	05
Area Description	Shut-Off §130.2(c)(1)	Auto-Schedule §130.2(c)(2)	Motion Sensor §130.2(c)(3)	Field Inspector
Redondo Beach	Photocontrol	Yes	Exempt *	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

\*NOTES: Controls with a \* require a note in the space below explaining how compliance is achieved.  
 EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to §130.2(c).  
 Redondo Beach EXCEPTION 1 to Section 130.2(c)3 - Luminaire rated less than 40 watts

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2019standards> January 2021

STATE OF CALIFORNIA  
**Outdoor Lighting**  
 NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 Project Name: Redondo Beach Access Path Report Page: Page 2 of 6  
 Project Address: 809 Esplanade, Redondo Beach, CA 90277 Date Prepared: 03/21/2025

**D. EXCEPTIONAL CONDITIONS**  
 This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.  
 Table H. Outdoor Lighting Controls Permit Applicant Notes:  
 Redondo Beach: EXCEPTION 1 to Section 130.2(c)3 - Luminaire rated less than 40 watts  
 Total Hardscape Area in Table A does not match the areas entered in Table I. Please review for compliance.  
 Selections made in Table O have been changed by the permit applicant. See Table E. Additional Remarks for permit applicant's explanation.

**E. ADDITIONAL REMARKS**  
 This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

**F. OUTDOOR LIGHTING FIXTURE SCHEDULE**  
 Table Instructions: For new or altered lighting systems demonstrating compliance with §140.7 (ie Table I has expanded for input), include all luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)(2) (ie Table N has expanded for input), include only new luminaires being installed and replacement luminaires being installed as part of the project scope (ie, do not include existing luminaires remaining or existing luminaires being moved).  
 Designed Wattage:

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Complete Luminaire Description	Watts per luminaire <sup>2</sup>	How Wattage is determined	Total number luminaires <sup>2</sup>	Luminaire Status <sup>3</sup>	Excluded per §140.7(a)	Design Watts	Cutoff Req. ≥ 6,200 initial lumen output §130.2(b) <sup>4</sup>	Field Inspector
A-20	Recessed Wall Light <input type="checkbox"/> Linear	20	Mfr. Spec <sup>1</sup>	52	New	<input type="checkbox"/>	1,040	NA: <6,200 lumens	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
B-14	Step Light <input type="checkbox"/> Linear	13.5	Mfr. Spec <sup>1</sup>	31	New	<input type="checkbox"/>	418.5	NA: <6,200 lumens	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Total Designed Watts:							1,458.5		

\* NOTES: Selections with a \* require a note in the space below explaining how compliance is achieved.  
 EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(b).

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2019standards> January 2021

STATE OF CALIFORNIA  
**Outdoor Lighting**  
 NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE**  
 Project Name: Redondo Beach Access Path Report Page: Page 4 of 6  
 Project Address: 809 Esplanade, Redondo Beach, CA 90277 Date Prepared: 03/21/2025

Table Continued  
 Table Instructions: Please complete this table for areas using the allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7.A while "Use it or lose it" Allowances are per Table 140.7.B. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

**01 "Use it or lose it" Allowances (select all that apply)**

General Hardscape Allowance  
 Per Application  Sales Frontage  Ornamental  Per Specific Area

Table I (below) Table J Table K Table L Table M

Calculated General Hardscape Lighting Power Allowance per Table 140.7.A (LZ 2 & 3)

02	03	04	05	06	07	08	09	10
Area Description	Surface Type	Area Wattage Allowance (AWA) Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (ft)	Linear Wattage Allowance (LWA) Allowed Density (W/ft)	Linear Allowance (Watts)	Total General AWA + LWA (Watts)
Redondo Beach Access Path	Concrete	45,000	0.03	1,350	904	0.4	361.6	1,711.6
Initial Wattage Allowance for Entire Site (Watts):								350
Total General Hardscape Allowance (Watts):								2,061.6

**J. LIGHTING ALLOWANCE: PER APPLICATION**  
 This Section Does Not Apply

**K. LIGHTING ALLOWANCE: SALES FRONTAGE**  
 This Section Does Not Apply

**L. LIGHTING ALLOWANCE: ORNAMENTAL**  
 This Section Does Not Apply

**M. LIGHTING ALLOWANCE: PER SPECIFIC AREA**  
 This Section Does Not Apply

**N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)**  
 This Section Does Not Apply

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2019standards> January 2021

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DESIGNED BY: RAFAEL HOLCOMBE				
DRAWN BY: JONATHAN GOBER				

REDONDO BEACH AVE. A ACCESS PATH  
 REDONDO BEACH, CALIFORNIA 90277  
 TITLE 24 NRCC-LTO-E NEW EXTERIOR LIGHTING

FN: E-1  
 DATE: 3/23/22

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STATE OF CALIFORNIA  
**Outdoor Lighting**

NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRCC-LTO-E

Project Name: Redondo Beach Access Path Report Page: Page 5 of 6

Project Address: 809 Esplanade, Redondo Beach, CA 90277 Date Prepared: 03/21/2025

**Q. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at [https://www.energy.ca.gov/title24/2019standards/2019\\_compliance\\_documents/Nonresidential\\_Documents/NRCL/](https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCL/)

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
<input type="radio"/>	<input checked="" type="radio"/>	NRCL-LTO-01-E - Must be submitted for all buildings.	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="radio"/>	<input type="radio"/>	NRCL-LTO-02-E - Must be submitted for a lighting control system; or for an Energy Management Control System (EMCS), to be recognized for compliance.	<input type="checkbox"/>	<input type="checkbox"/>

**P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: <http://www.energy.ca.gov/title24/attcp/providers.html>

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
<input checked="" type="radio"/>	<input type="radio"/>	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls area added to ≤ 20 luminaires.	<input type="checkbox"/>	<input type="checkbox"/>

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2019standards> January 2021

STATE OF CALIFORNIA  
**Outdoor Lighting**

NRCC-LTO-E (Created 01/21) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRCC-LTO-E

Project Name: Redondo Beach Access Path Report Page: Page 6 of 6

Project Address: 809 Esplanade, Redondo Beach, CA 90277 Date Prepared: 03/21/2025

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**

I certify that this Certificate of Compliance documentation is accurate and complete

Documentation Author Name: Johnson Le Documentation Author Signature: *Johnson Le*

Company: Tetra Tech Signature Date: 03/21/2025

Address: 17885 Von Karman Ave, Suite 500 CEA/ HERS Certification Identification (if applicable):

City/State/Zip: Irvine/CA/92614 Phone: 949-809-5083

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**

I certify the following under penalty of perjury, under the laws of the State of California:

- The information provided on this Certificate of Compliance is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
- The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
- The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
- I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Mazen Kassar Responsible Designer Signature: *Mazen Kassar*

Company: Tetra Tech Date Signed: 03/21/2025

Address: 17885 Von Karman Ave, Suite 500 License: E-15809

City/State/Zip: Irvine/CA/92614 Phone: 949-809-5137

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2019standards> January 2021

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TITLE 24 NRCC-LTO-E NEW EXTERIOR LIGHTING

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37 OF 37

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RAFAEL HOLCOMBE

DRAWN BY:  
JONATHAN GOBER

REVISIONS

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