

DANA POINT HARBOR REVITALIZATION

Dana Point, CA

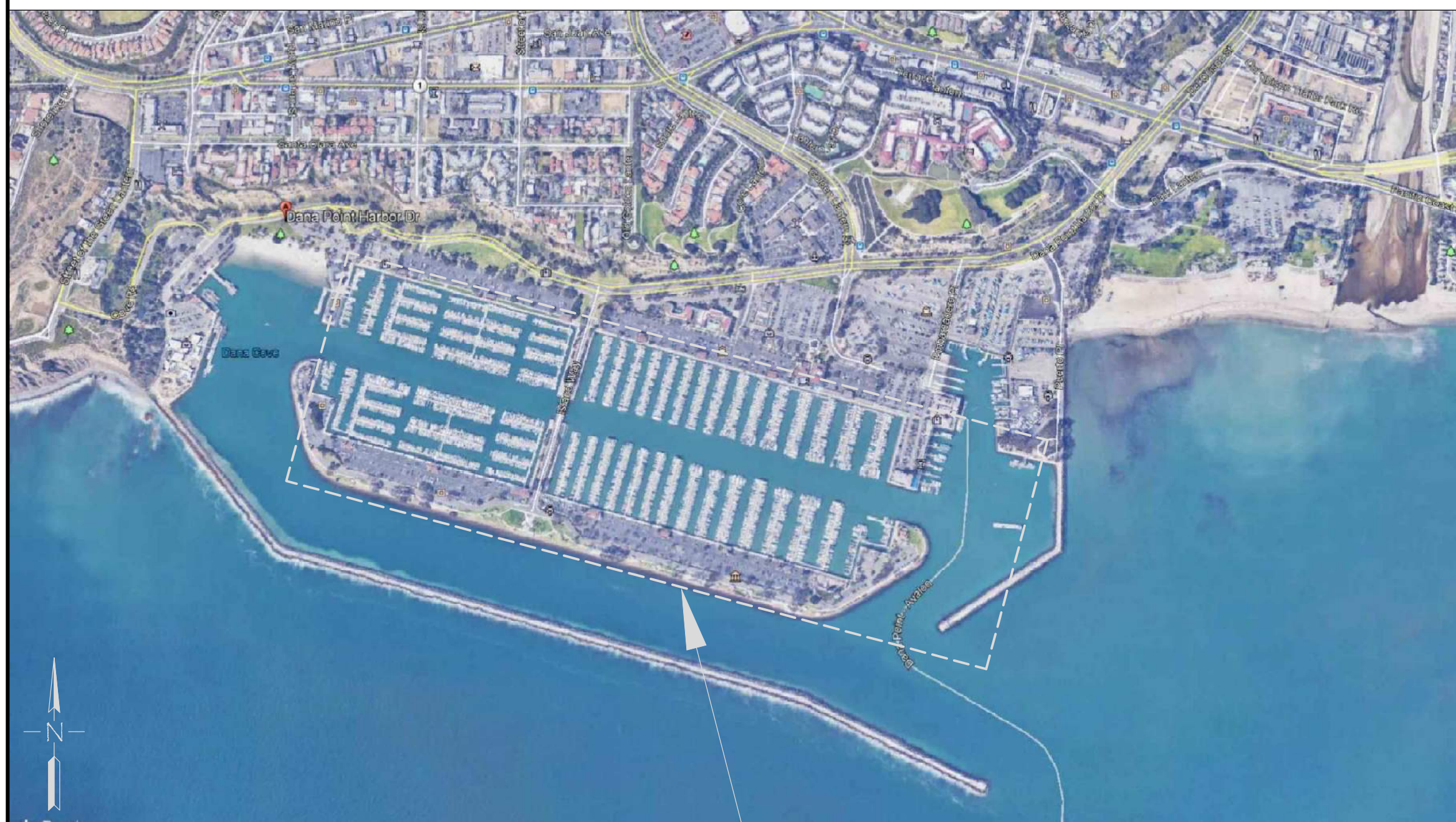
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

VICINITY MAP



PROJECT LOCATION

SITE MAP



AREA OF WORK

UNIFLOAT
 Precision Engineered Flotation Systems

CAUTION:
 FLOAT SYSTEMS ARE UNSTABLE WHEN PLACED IN WATER PRIOR TO ASSEMBLY IN THEIR FINAL INTENDED CONFIGURATION. MODULES OR SUBASSEMBLIES SHOULD BE HANDLED WITH CARE DURING INSTALLATION AND SHOULD NEVER BE STOOD OR WALKED UPON PRIOR TO FINISHED ASSEMBLY.

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DANA POINT MARINA - PROPOSED SLIP MIX CHART											
LENGTH	Min Slip Width	WEST COVE	WEST ISLAND	EAST COVE	EAST ISLAND	CHARTER DOCK	ADA SLIPS	TOTAL	LF BERTHING	%	
15 FT	7 ft	0	0	0	0	0	0	37	555	1.63%	
20 FT	9 ft	7	2	0	0	0	0	9	180	0.40%	
21 FT	9.5 ft	17	8	0	22	0	0	47	987	2.07%	
24 FT	11 ft	10	0	0	5	0	0	15	360	0.66%	
25 FT	11.5 ft	267	106	0	326	0	0	699	17475	30.81%	
26 FT	12 ft	22	9	0	20	0	0	51	1326	2.25%	
28 FT	12.5 ft	95	0	0	51	0	0	146	4088	6.43%	
30 FT	13.5 ft	194	91	1	190	0	0	476	14280	20.98%	
31 FT	13.75 ft	0	5	0	13	0	0	18	558	0.79%	
32 FT	14 ft	0	0	0	8	0	0	8	256	0.35%	
33 FT	14.25 ft	0	1	0	1	0	0	2	66	0.09%	
34 FT	14.5 ft	0	0	0	2	0	0	2	68	0.09%	
35 FT	14.75 ft	0	109	34	105	0	8	248	8680	10.93%	
36 FT	15 ft	0	0	4	0	0	0	4	144	0.18%	
38 FT	15.5 ft	0	0	1	0	0	0	1	38	0.04%	
40 FT	16 ft	0	0	138	0	0	10	138	5520	6.08%	
41 FT	16 ft	0	1	2	0	0	0	3	123	0.13%	
42 FT	16 ft	0	0	27	0	0	0	27	1134	1.19%	
44 FT	16.5 ft	0	0	1	8	0	0	9	396	0.40%	
45 FT	16.5 ft	0	18	107	16	0	10	141	6345	6.21%	
48 FT	17 ft	0	0	25	0	0	0	25	1200	1.10%	
50 FT	17 ft	0	45	0	0	5	6	50	2500	2.20%	
55 FT	17.75 ft	0	0	0	0	0	0	0	0	0.00%	
56 FT	18 ft	0	21	0	0	0	3	21	1176	0.93%	
58 FT	18 ft	0	0	51	0	0	4	51	2958	2.25%	
60 FT	18.5 ft	0	0	0	8	0	0	8	480	0.35%	
65 FT	19 ft	0	0	23	0	0	0	23	1495	1.01%	
100 FT	25 ft	0	0	0	0	10	10	10	1000	0.44%	
TOTALS =		612	416	451	775	15	51	2269	73388	100.00%	
									OVERALL AVERAGE LENGTH =	32	ft

NOTE: MINIMUM NUMBER OF ADA SLIPS PER TABLE 11B-235.2 IS 25

PROJECT DESCRIPTION

CONSTRUCTING NEW FLOATING DOCK SYSTEM AS FOLLOWS:
 1.) DESIGN, PROCUREMENT, MANUFACTURE, & INSTALLATION OF NEW, PRE-FABRICATED DOCKS.

CONTACT INFORMATION

PROJECT ADDRESS:
 DANA POINT HARBOR DRIVE
 DANA POINT, CA 92629

OWNER:
 ATTN: JOE UEBERROTH
 610 NEWPORT CENTER DRIVE, #490
 NEWPORT BEACH, CA 92660

CONTRACTOR:
 BELLINGHAM MARINE INDUSTRIES, INC. (SW)
 ATTN: ERIC NOEGEL, GENERAL MANAGER
 8810 SPARLING LANE
 DIXON, CA 95620
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 TEL: 360.676.2800

GEOTECHNICAL ENGINEER:
 ENGENO
 320 GODDARD WAY, SUITE 100
 IRVINE, CA 92618
 TEL: 949.529.3479

County of Orange - OC Public Works
 OC Development Services
APPROVED

This set of plans and specifications must be kept on the job at all times. It is unlawful to alter or make alterations to these plans without written permission from OC Public Works. The stamping of these plan specifications SHALL NOT be a permit or be an approval of the project. Reinforced, reinforcement Ordinance or State law.

- ABBREVIATIONS**
- & at
 - A.C.O.E. Army Corps of Engineers
 - ALUM. Aluminum
 - A.S. Anti-Skid
 - x by
 - CB Carriage Bolt
 - CL Center Line
 - C.C. Center to Center
 - C.F. Cubic Foot/Feet
 - C.I.P. Cast in Place
 - CLR. Clear
 - CW Cleat Washer
 - CONC. Concrete
 - CONT. Continuous
 - C.Y. Cubic Yard
 - Degrees
 - D.F. Douglas Fir
 - DWG DWG
 - D.L. Dead Load
 - DET. Detail
 - Ø or DIA. Diameter
 - ELEV. or EL. Elevation
 - EXIST. or (E) Existing
 - EA. Each
 - Fab. Fabrication
 - F.B. Flat Bar
 - FH Flat Head
 - FT. Foot
 - FW Flat Washer
 - GA. Gage
 - GALV. Galvanized
 - GLB Glue Laminated Beam
 - HB Hex Bolt
 - H.D. Heavy Duty
 - HDG Hot Dip Galvanized
 - HDPE High Density Polyethylene
 - HH Hex Head
 - HW Hardware
 - HN Hex Nut
 - IN. Inch(es)
 - LBS. or # pound(s)
 - LAM Laminated
 - LIN Linear/lineal
 - LG Long
 - L.L. Live Load
 - LW Lock Washer
 - MLLW Mean Lower Low Water
 - MAX. Maximum
 - MB Machine Bolt
 - MDPE Medium Density Polyethylene
 - MFR Manufacturer
 - MM Millimeter
 - MIN. Minimum
 - N.I.C. Not In Contract
 - NO. or # Number
 - (N) New
 - NTS Not To Scale
 - O.A. Overall
 - O.C. On Center
 - OPP. Opposite
 - % Percent
 - ± Plus or Minus
 - PL. Plate
 - PCF Pounds per Cubic Foot
 - P.O.C. Point of Connection
 - PSI Pounds per Square Inch

- P.T. Pressure Treated
- PVC Polyvinyl Chloride
- Plate Washer
- Plate written permission
- OC Development Services
- OC Public Works
- Quantity
- Reinforced, reinforcement
- REQD. Required
- SG. Square
- SQUARE WASHER
- S.F. Square Foot
- SIM. Similar
- SHT. Sheet
- SS Stainless Steel
- T.O.C. Top of Concrete
- T.O.S. Top of Slope
- TS Tube Steel
- TYP. Typical
- THK. Thick
- U.N.O. Unless Otherwise Noted
- UHMW Ultra High Molecular Weight
- VERT. Vertical
- W.W.F. Welded Wire Fabric
- W.W.M. Welded Wire Mesh
- w/ with
- W. Wide, Width
- X.H.W. Extreme High Water
- X.L.W. Extreme Low Water

PERMIT DRAWING

NO.	DATE	DESCRIPTION	BY
B	5-10-22	ADDED CHART	KG
A	2-25-22	ADDED "PRE-FABRICATION" TO NOTE	KG
REVISIONS			



SOUTHWEST DIVISION
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

TITLE SHEET



Craig S Funston
 2022.05.13
 12:22:27-07'00"

SCALE: NTS
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: T1

SHEET NO.: 1

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

PERMIT DRAWING

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County of Orange Public Works
OC Development Services
APPROVED

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BUILDING OFFICIAL

NO.	DATE	DESCRIPTION	BY
REVISIONS			



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 DIXON, CA 95620
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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DRAWING SET INDEX



Craig S
 Funston
 2022.09.14
 16:45:50-07'00'

SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	IDX1
SHEET NO.:	2

PERMIT DRAWING

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TAIT (LANDSIDE DRAWINGS)			
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			Zoning: CanningK 9/14/2022
			Building&Safety: Roshanak Amirazizi 9/14/2022
			Permits: BNR21-0604- ELE22-0113- PLB22-0127
			<p style="text-align: center;">County of Orange - OC Public Works OC Development Services APPROVED</p> <p style="font-size: 8px;">This set of plans and specifications must be kept on the job at all times. It is unlawful to make any changes or alterations to these plans without written permission from OC Public Works, OC Development Services of Orange County. The stamping of these plan specifications SHALL NOT be held to permit or be an approval of the violation of any provisions of any County Ordinance or State law.</p> <p style="text-align: center;">Hadi Tabatabaee BUILDING OFFICIAL</p>

NO.	DATE	DESCRIPTION	BY
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Harbor Drive
 Dana Point, CA 92629

DRAWING SET INDEX



Craig S Funston
 2022.09.14
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SCALE: NTS (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: IDX2
 SHEET NO.: 3

DESIGN STANDARDS

- 1. 2019 CALIFORNIA BUILDING CODE
2. ASCE 7-16, MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES
3. ACI 318-14, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
4. ACI 440.1R-15, GUIDE FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL CONCRETE REINFORCED WITH FIBER-REINFORCED POLYMER BARS
5. AISC STEEL CONSTRUCTION MANUAL 15TH EDITION
6. ADM-2015, ALUMINUM DESIGN MANUAL
7. "LAYOUT DESIGN GUIDELINES FOR SMALL CRAFT BERTHING FACILITIES" PREPARED BY CALIFORNIA STATE PARKS DIVISION OF BOATING AND WATERWAYS (IDBAW)
8. CITY OF NEWPORT BEACH WATERFRONT PROJECT GUIDELINES AND STANDARDS, HARBOR DESIGN CRITERIA COMMERCIAL AND RESIDENTIAL FACILITIES, 2017 EDITION

FLOATING DOCK DESIGN CRITERIA

- 1. RISK CATEGORY = II
LIVE LOAD
a. UNIFORM LL = 40 PSF MARINA, 65 PSF OUTER BASIN DOCKS
b. CONCENTRATED LL = 400 LBS
c. UNIFORM LL ON GANGWAY = 100 PSF
WIND LOAD
a. FACTORED WIND SPEED = 95 MPH 3 SEC GUST
b. EXPOSURE CATEGORY = D
WAVE LOAD
a. INNER BASIN SIGNIFICANT WAVE HEIGHT, Hs = 1.0 FT
b. INNER BASIN WAVE LENGTH = 30 FT
c. OUTER BASIN SIGNIFICANT WAVE HEIGHT, Hs = 2.1 FT
d. OUTER BASIN WAVE LENGTH = 50 FT

FLOATING DOCK MATERIALS

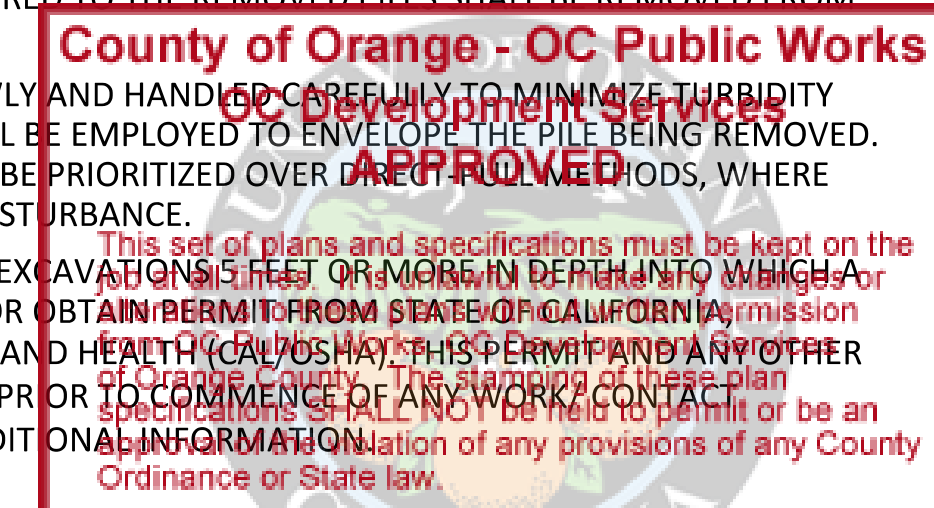
- 2. CONCRETE AND REINFORCEMENT:
a. CONCRETE SHALL HAVE A MINIMUM TWENTY EIGHT DAY COMPRESSIVE STRENGTH OF 5000 PSI, MAX WATER/CEMENT RATIO OF 0.40.
b. REINFORCE CONCRETE WITH SOLID ROUND FIBERGLASS REBAR BARS COMPLYING WITH ASTM D7957.
c. PROVIDE A MINIMUM OF 3/4" CONCRETE COVER OVER FRP REINFORCEMENT, CONCRETE COVER MAY BE REDUCED TO 1/2" WHEN CAST AGAINST EPS FOAM CORE.
d. PROVIDE A FLOAT DECK SURFACE IS FINISHED WITH A STEEL TROWEL AND TEXTURED WITH A MEDIUM BROOM FINISH THAT IS EVEN AND CONSISTENT ON ALL DECK SURFACES.
2. EXPANDED POLYSTYRENE CORE (EPS):
a. CLOSED CELL EPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-578, TYPE 1 FOR DENSITY, COMPRESSIVE, FLEXURAL STRENGTHS AND WATER ABSORPTION.
b. EPS FOAM DENSITY WEIGHT SHALL BE A MINIMUM OF 0.95 PCF AND A MAXIMUM OF 1.0 PCF.
3. WALERS, FASCIA BOARDS AND THROUGH RODS:
a. ALL STRUCTURAL WALERS AND THROUGH RODS SHALL BE FRP.
b. NON STRUCTURAL FASCIA AND RUB BOARDS SHALL BE FRP OR PLASTIC LUMBER.
c. THE PROJECT SHALL CONTAIN NO TREATED TIMBER.
4. STRUCTURAL STEEL:
a. SHAPES AND PLATE: ASTM A36
b. HSS: ASTM A500 GR. C
c. ALL WELDMENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.
5. ALUMINUM:
a. PLATES AND EXTRUSIONS: 6061 T6
b. PROVIDE MINIMUM OF (2) COATS OF BITUMINOUS PAINT ON CONCRETE OR ALUMINUM AT ALL ALUMINUM CONTACT SURFACES.

GENERAL CONSTRUCTION NOTES

- 1. ACCESS TO THE MARINA SERVICES COMMERCIAL AREAS SHALL BE MAINTAINED DURING ALL CONSTRUCTION PHASES.
2. DURING CONSTRUCTION AND GRADING, THE CONTRACTOR SHALL KEEP THE SITE CLEAR OF ALL TRASH, WEEDS AND DEBRIS.
3. THE CONTRACTOR SHALL NOT CREATE LARGE STOCKPILES OF DEBRIS OR SOILS, BUT SHALL SEEK TO PLACE SMALLER PILES ADJACENT TO EACH OTHER TO MINIMIZE VISUAL IMPACTS.
4. STAGING AREAS SHALL BE LOCATED WHERE IMPACTS UPON PUBLIC ACCESS, WATER QUALITY, AND SENSITIVE BIOLOGICAL RESOURCES ARE AVOIDED.
5. CONTRACTOR TO PROVIDE SCREENED CONSTRUCTION FENCING AROUND CONSTRUCTION AREA BOUNDARIES TO TEMPORARILY SCREEN VIEWS OF THE CONSTRUCTION SITE.
6. CONTRACTOR SHALL MAINTAIN COMPLIANCE WITH SCAQMD RULES 402 AND 403:

- a. ALL ACTIVE PORTIONS OF THE CONSTRUCTION SITE SHALL BE WATERED TO PREVENT EXCESSIVE AMOUNTS OF DUST.
b. ON-SITE VEHICLES SPEED SHALL BE LIMITED TO 15 MPH.
c. ALL MATERIAL EXCAVATED OR GRADED SHALL BE SUFFICIENTLY WATERED TO PREVENT EXCESSIVE AMOUNTS OF DUST. WATERING, WITH COMPLETE COVERAGE, SHALL OCCUR AT LEAST TWICE DAILY, PREFERABLY IN THE LATE MORNING AND AFTER WORK IS DONE FOR THE DAY.
d. IF DUST IS VISIBLY GENERATED THAT TRAVELS BEYOND THE SITE BOUNDARIES, CLEARING, GRADING, EARTH MOVING OR EXCAVATION ACTIVITIES THAT ARE GENERATING DUST SHALL CEASE DURING PERIODS OF HIGH WINDS.
e. ALL MATERIAL TRANSPORTED OFF SITE SHALL BE EITHER SUFFICIENTLY WATERED OR SECURELY COVERED TO PREVENT EXCESSIVE AMOUNTS OF DUST.
f. OZONE PRECURSOR EMISSIONS FROM CONSTRUCTION EQUIPMENT VEHICLES SHALL BE CONTROLLED BY MAINTAINING EQUIPMENT ENGINES IN GOOD CONDITION AND IN PROPER TUNE PER MANUFACTURER'S SPECIFICATIONS, USING CATALYTIC CONVERTERS ON GASOLINE POWERED EQUIPMENT AND USING REFORMULATED, LOW-EMISSION DIESEL FUELS.
7. AVOID EQUIPMENT IDLING MORE THAN TWO MINUTES AND AVOIDANCE OF UNNECESSARY DELAY OF TRAFFIC ON OFF-SITE ACCESS ROADS BY HEAVY EQUIPMENT BLOCKING TRAFFIC.
8. CONTRACTOR SHALL ORGANIZE CONSTRUCTION ACTIVITIES SO AS NOT TO INTERFERE SIGNIFICANTLY WITH PEAK HOUR TRAFFIC AND MINIMIZE OBSTRUCTION OF THROUGH TRAFFIC LANES ADJACENT TO THE SITE; IF NECESSARY, A FLAG PERSON SHALL BE RETAINED TO MAINTAIN SAFETY ADJACENT TO EXISTING ROADWAYS.
9. CONTRACTOR SHALL PROVIDE RIDESHARING AND TRANSIT INCENTIVES FOR THE CONSTRUCTION CREW, SUCH AS FREE BUS PASSES AND PREFERRED CARPOOL PARKING.
10. CONTRACTOR SHALL UTILIZE ELECTRIC- OR DIESEL-POWERED STATIONARY EQUIPMENT IN LIEU OF GASOLINE POWERED ENGINES WHERE FEASIBLE.
11. CONTRACTOR SHALL SHUT OFF EQUIPMENT WHEN NOT IN USE.
12. CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO 7:00 A.M. TO 8:00 P.M. ON WEEKDAYS, INCLUDING SATURDAYS AND NO CONSTRUCTION ON SUNDAYS AND HOLIDAYS.
13. A TRASH AND DEBRIS CONTAINMENT BOOM SHALL BE IMPLEMENTED DURING ALL DOCK REMOVAL AND REPLACEMENT ACTIVITIES IN ORDER TO REDUCE IMPACTS TO WATER QUALITY TO THE MAXIMUM EXTENT PRACTICABLE.
14. NO CONSTRUCTION MATERIALS, EQUIPMENT, DEBRIS, OR WASTE SHALL BE PLACED OR STORED WHERE IT MAY BE SUBJECT TO TIDAL EROSION AND DISPERSION. CONSTRUCTION MATERIALS WILL NOT BE STORED IN CONTACT WITH THE SOIL.
15. HAZARDOUS WASTE AND OIL SPILL CONTINGENCY PLANS AND SPILL RESPONSE EQUIPMENT SHALL BE KEPT ON SITE DURING CONSTRUCTION.
16. ANY CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE. ALL TRASH SHALL BE DISPOSED OF IN THE PROPER TRASH RECEPTACLES AT THE END OF EACH CONSTRUCTION DAY.
17. FLOATING BOOMS SHALL BE USED TO CONTAIN DEBRIS DISCHARGED, AND ANY DEBRIS DISCHARGED, INCLUDING CONSTRUCTION DEBRIS FROM THE SEA FLOOR, SHALL BE REMOVED NO LATER THAN THE END OF EACH DAY. A POST-CONSTRUCTION BOTTOM SURVEY SHALL BE CONDUCTED TO ENSURE THAT ALL MATERIAL HAS BEEN SUCCESSFULLY REMOVED FROM CONSTRUCTION AREAS.
18. WHERE FEASIBLE, SILT CURTAINS WILL BE DEPLOYED AROUND WORK BARGES AND THE PILE REMOVAL AND PLACEMENT OPERATIONS IN ORDER TO MINIMIZE THE SPREAD OF TURBID WATERS OUTSIDE THE PROJECT AREA.
19. STOCKPILING AND VEHICLE STAGING AREAS SHALL BE LOCATED AS FAR AS PRACTICAL FROM NOISE-SENSITIVE SENSITIVE RECEPTORS DURING CONSTRUCTION ACTIVITIES.
20. ALL CONSTRUCTION VEHICLES AND EQUIPMENT, FIXED OR MOBILE OPERATED WITHIN 1,000 FEET OF A DWELLING, SHALL BE EQUIPPED WITH PROPERLY OPERATING AND MAINTAINED MUFFLERS.
21. ALL OPERATIONS SHALL COMPLY WITH THE COUNTY'S NOISE ORDINANCE.
22. STOCKPILING AND/OR VEHICLE STAGING AREAS SHALL BE LOCATED AS FAR AS PRACTICABLE FROM DWELLINGS.
23. RESIDENCES WITHIN 1,000 FEET OF A CONSTRUCTION AREA SHALL BE NOTIFIED OF THE CONSTRUCTION SCHEDULE IN WRITING, PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL DESIGNATE A NOISE DISTURBANCE COORDINATOR WHO WOULD BE RESPONSIBLE FOR RESPONDING TO COMPLAINTS REGARDING CONSTRUCTION NOISE. THE COORDINATOR SHALL DETERMINE THE CAUSE OF THE COMPLAINT AND ENSURE THAT REASONABLE MEASURES ARE IMPLEMENTED TO CORRECT THE PROBLEM. A CONTACT NUMBER FOR THE NOISE DISTURBANCE COORDINATOR SHALL BE CONSPICUOUSLY PLACED ON CONSTRUCTION SITE FENCES AND WRITTEN INTO THE CONSTRUCTION NOTIFICATION SCHEDULE SENT TO NEARBY RESIDENCES.
24. FOR PROJECTS WITHIN 1,000 FEET OF SENSITIVE RECEPTORS, IMPACT EQUIPMENT (E.G., JACK HAMMERS, PAVEMENT BREAKERS, AND ROCK DRILLS) USED FOR CONSTRUCTION SHALL BE HYDRAULICALLY OR ELECTRICAL POWERED WHEREVER POSSIBLE TO AVOID NOISE ASSOCIATED WITH COMPRESSED AIR EXHAUST FROM PNEUMATICALLY POWERED TOOLS. HOWEVER, WHERE USE OF PNEUMATICALLY POWERED TOOLS IS UNAVOIDABLE, AN EXHAUST MUFFLER ON THE COMPRESSED AIR EXHAUST SHALL BE USED.
25. NEW UTILITIES WILL BE LOCATED UNDERGROUND TO THE EXTENT FEASIBLE AS PART OF THE PROJECT DEVELOPMENT. UTILITY UNDERGROUNDING ACTIVITIES WILL BE COORDINATED WITH THE UTILITY PROVIDERS TO ENSURE THAT SERVICE TO ADJOINING UTILITY CUSTOMERS IS NOT INTERRUPTED.
26. CONSTRUCTION LIMITS SHALL BE FENCED OR FLAGGED ADJACENT TO PRESERVED TREES AND/OR SENSITIVE HABITATS TO AVOID DIRECT IMPACTS.
27. REMOVAL OF EXISTING PILES SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
a. WORK SHALL OCCUR DURING FAVORABLE TIDAL, OCEAN, AND WEATHER CONDITIONS THAT WILL ENHANCE THE ABILITY TO REMOVE, TO THE MAXIMUM EXTENT, THE FULL LENGTH OF THE PILE AND ANY ASSOCIATED DEBRIS GENERATED DURING DEMOLITION.

- b. REMOVED PILES AND DEBRIS SHALL BE REMOVED FROM THE CONSTRUCTION SITE OR CONTAINER SUITABLE FOR TRANSPORT TO LAND THEN OFF-SITE.
c. DEGRADED PILE SECTIONS THAT CANNOT BE RECOVERED BY THE SUBSTRATE SHALL BE CUT AT THE DEEPEST FEASIBLE ELEVATION TO MAXIMIZE PARTIAL RETRIEVAL.
d. ALL REMOVED PILES AND DEBRIS SHALL BE MOVED TO AN OFFSITE, AUTHORIZED DISPOSAL SITE. SEDIMENT ADHERED TO THE REMOVED PILES SHALL BE REMOVED FROM COASTAL WATERS.
e. PILES SHALL BE REMOVED SLOWLY AND HANDLED CAREFULLY TO MINIMIZE TURBIDITY AND TURBIDITY CURTAINS SHALL BE EMPLOYED TO ENVELOPE THE PILE BEING REMOVED. VIBRATORY EXTRACTION SHALL BE PRIORITIZED OVER OTHER METHODS, WHERE FEASIBLE, IN ORDER TO LIMIT DISTURBANCE.
28. THERE SHALL BE NO TRENCHES OR EXCAVATIONS DEEPER THAN 12 FEET INTO WHICH A PERSON IS REQUIRED TO DESCEND, OR TO OBTAIN INFORMATION FROM THE CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (CAL/OSHA). THIS PERMIT AND ANY OTHER SAFETY PERMIT SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF ANY WORK CONTACT WITH CAL/OSHA AT 714-558-4451 FOR ADDITIONAL INFORMATION of any provisions of any County Ordinance or State law.



BIOLOGICAL BMPS

- 1. TO REDUCE POTENTIAL CONSTRUCTION IMPACTS TO SENSITIVE HABITATS AND ENDANGERED SPECIES, A QUALIFIED MARINE BIOLOGIST WILL CONDUCT A PRE-CONSTRUCTION MARINE BIOLOGICAL SURVEY TO IDENTIFY SENSITIVE MARINE BIOLOGICAL RESOURCES (I.E., EELGRASS, REEFS AND KELP BEDS, AND SEABIRDS). THIS SURVEY SHALL BE USED TO PREPARE A MARINE BIOLOGICAL IMPACT REDUCTION PLAN TO MAP SENSITIVE BIOLOGICAL RESOURCES AND MINIMIZE CONSTRUCTION IMPACTS TO MARINE RESOURCES. THE MARINE BIOLOGIST SHALL ALSO MEET WITH THE CONSTRUCTION CREWS PRIOR TO THE ISSUANCE OF ANY CONSTRUCTION PERMITS OR ANY CONSTRUCTION ACTIVITIES TO REVIEW SENSITIVE AREAS TO AVOID AND TO REVIEW PROPER CONSTRUCTION TECHNIQUES. THE MARINE BIOLOGIST SHALL PERFORM THE FOLLOWING TASKS:
a. BRIEF CONSTRUCTION AND WORK VESSEL CREWS ON THE POTENTIAL FOR SEA TURTLES TO BE PRESENT AND PROVIDE CREWS WITH THE IDENTIFICATION CHARACTERISTICS OF SEA TURTLES (SEA TURTLES MAY OCCASIONALLY BE MISTAKEN FOR SEALS OR SEA LIONS).
b. PREPARE AN INCIDENT REPORT OF ANY GREEN SEA TURTLE ACTIVITY IN THE PROJECT AREA AND INFORM THE CONSTRUCTION MANAGER TO HAVE THE CREW AWARE OF THE POTENTIAL FOR ADDITIONAL SIGHTINGS. THE REPORT SHALL BE PROVIDED WITHIN 24 HOURS TO THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE AND NMFS.
c. THE MARINE BIOLOGIST OR A QUALIFIED BIOLOGICAL MONITOR SHALL BE PRESENT ON SITE DURING THE START-UP OF EACH CONSTRUCTION PHASE AND PERIODICALLY THROUGHOUT CONSTRUCTION ACTIVITIES TO MONITOR THE PRESENCE OF ENDANGERED SPECIES (SEABIRDS, MARINE MAMMALS, AND SEA TURTLES). IN THE EVENT THAT AN ENDANGERED SPECIES IS SIGHTED WITHIN 500 METERS OF THE CONSTRUCTION ZONE, ALL CONSTRUCTION ACTIVITY SHALL BE TEMPORARILY STOPPED UNTIL THE ANIMAL IS SAFELY OUTSIDE THE OUTER PERIMETER OF CONSTRUCTION. THE ON-SITE MARINE BIOLOGIST OR BIOLOGICAL MONITOR SHALL HAVE THE AUTHORITY TO HALT CONSTRUCTION OPERATION AND DETERMINE WHEN OPERATION CAN PROCEED.
d. IN THE EVENT A MARINE MAMMAL IS INJURED OR KILLED AS A CONSEQUENCE OF A VESSEL COLLISION, NMFS SHALL BE IMMEDIATELY NOTIFIED BY THE MARINE BIOLOGICAL, BIOLOGICAL MONITOR, OR OTHER CONSTRUCTION STAFF.
e. MONITOR THE CONSTRUCTION PROCESS ON A REGULAR BASIS TO VERIFY THAT ALL WATER QUALITY BMPS ARE IMPLEMENTED.
2. IF CONSTRUCTION ACTIVITIES ARE PERFORMED DURING THE BREEDING AND NESTING SEASON OF SPECIAL STATUS BIRD SPECIES (JANUARY THROUGH SEPTEMBER), A PRE-CONSTRUCTION SURVEY WITHIN 500 FEET OF THE SITE FOR NESTS SHALL BE PERFORMED BY A QUALIFIED BIOLOGIST AT LEAST 15 DAYS PRIOR TO CONSTRUCTION TO DOCUMENT THE PRESENCE/ABSENCE OF ALL THESE SPECIES. IF AN ACTIVE NEST OF ANY BIRD SPECIES LISTED PURSUANT TO THE FEDERAL OR CALIFORNIA ENDANGERED SPECIES ACT, CALIFORNIA BIRD SPECIES OF SPECIAL CONCERN, OR A WADING BIRD (HERONS OR EGRETS), AS WELL AS OWLS OR RAPTORS, IS FOUND, CONSTRUCTION ACTIVITIES WITHIN 300 FEET (500 FEET FROM ANY IDENTIFIED RAPTOR NEST) SHALL NOT EXCEED NOISE LEVELS OF 65-DECIBEL (DB) PEAK UNTIL THE NEST IS VACATED AND JUVENILES HAVE FLEDGED AND THERE IS NO LONGER EVIDENCE OF A SECOND ATTEMPT AT NESTING. THE QUALIFIED BIOLOGIST SHALL MONITOR ACTIVE NEST SITES ON A WEEKLY BASIS. IF THE BIOLOGIST NOTES THAT ALL YOUNG HAVE FLEDGED FROM THE NEST, THEN THE NOISE RESTRICTION NEAR THE NEST IS NO LONGER REQUIRED.
3. PRE-CONSTRUCTION AND POST-CONSTRUCTION EELGRASS AND CAULERPA MONITORING SURVEYS SHALL BE CONDUCTED IN ACCORDANCE WITH THE MOST CURRENTLY APPROVED NMFS CONTROL PROTOCOL AND THE CEMP AS ADOPTED BY NMFS. THE SURVEY SHALL BE CONDUCTED DURING THE ACTIVE GROWTH PERIOD (TYPICALLY MARCH THROUGH OCTOBER) WHEN POSSIBLE. THE PRE-CONSTRUCTION SURVEY REPORTS SHALL BE COMPLETED WITHIN 30 DAYS PRIOR TO CONSTRUCTION ACTIVITIES, AND THE POST-CONSTRUCTION SURVEY REPORTS SHALL BE COMPLETED WITHIN 30 DAYS OF COMPLETION OF EACH PHASE OF THE PROJECT THE SURVEY SHALL PROVIDE RECOMMENDATIONS TO AVOID AREAS OF EELGRASS IF DETERMINED TO BE PRESENT AND/OR PROVIDE RECOMMENDATIONS FOR APPROPRIATE MITIGATION. AN EELGRASS MITIGATION PLAN SHALL BE DEVELOPED BASED UPON THE RESULTS OF PRE-CONSTRUCTION AND POST-CONSTRUCTION SURVEYS. THE PLAN SHALL REQUIRE THAT DIRECT LOSSES, IF ANY, TO EELGRASS VEGETATION SHALL BE MITIGATED AT A RATIO OF 1.38:1 (MITIGATION TO IMPACT), AND POTENTIAL EELGRASS HABITAT SHALL BE MITIGATED AT A RATIO OF 1:1 ACCORDING TO REQUIREMENTS OF THE CEMP. AS DETAILED IN THE CEMP, THE ACTUAL AMOUNT OF EELGRASS TO BE MITIGATED SHALL DEPEND ON PRE-CONSTRUCTION AND POST-CONSTRUCTION SURVEYS.
4. IN THE EVENT THAT CAULERPA IS DETECTED, DISTURBANCE SHALL NOT BE CONDUCTED UNTIL SUCH TIME AS THE INFESTATION HAS BEEN ISOLATED, TREATED, OR THE RISK OF SPREAD FROM THE PROPOSED DISTURBING ACTIVITY IS ELIMINATED IN ACCORDANCE WITH THE 2008 NMFS CAULERPA CONTROL PROTOCOL (NMFS 2008).
5. TO ENSURE THAT POTENTIAL PILE-DRIVING NOISE IMPACTS TO MARINE MAMMALS AND SEA TURTLES REMAIN LESS THAN SIGNIFICANT, THE FOLLOWING MEASURES SHALL BE IMPLEMENTED:

- a. SOUND ABATEMENT TECHNIQUES SHALL BE EMPLOYED TO REDUCE NOISE AND VIBRATIONS FROM PILE-DRIVING ACTIVITIES. RECOMMENDED SOUND ABATEMENT TECHNIQUES SHALL INCLUDE, BUT ARE NOT LIMITED TO, VIBRATION OR HYDRAULIC INSERTION TECHNIQUES, DRILLED OR AUGURED HOLES FOR CAST-IN-PLACE PILES, BUBBLE CURTAIN TECHNOLOGY, AND SOUND APRONS IF FEASIBLE FOR THE PROJECT.
b. AT THE INITIATION OF EACH PILE-DRIVING EVENT AND AFTER BREAKS OF MORE THAN 15 MINUTES, THE PILE DRIVING SHALL EMPLOY A SOFT START IN WHICH THE HAMMER IS OPERATED AT LESS THAN FULL CAPACITY (I.E., APPROXIMATELY 40% TO 60% ENERGY LEVELS) WITH NO LESS THAN A 1-MINUTE INTERVAL BETWEEN EACH STRIKE FOR A 5-MINUTE PERIOD. THE OPERATION OF THE HAMMER AT 40% TO 60% ENERGY LEVEL DURING THE SOFT START OF PILE DRIVING IS EXPECTED TO RESULT IN SIMILAR LEVELS OF NOISE REDUCTION (40% TO 60%) UNDERWATER.

ADA AND PATH OF TRAVEL
FOR ACCESSIBILITY AND PATH OF TRAVEL, PLEASE SEE GRADING PERMIT GRD22-0067

SPECIAL INSPECTIONS

- 1. WELDING: ALL WELDMENTS SHALL BE PRE-FABRICATED IN APPROVED FABRICATION SHOPS. WHERE UNFORSEEN FIELD WELDING IS REQUIRED, SUCH AS FOR REPAIRS, THAT FIELD WELDING SHALL BE INSPECTED IN ACCORDANCE WITH 2019 CBC 1705.2 AND AISC 360.
2. PILE DRIVING: A LOG OF PILE DRIVING SHALL BE KEPT BY THE CONTRACTOR AND A COPY SUBMITTED TO THE AHJ ALONG WITH WRITTEN CERTIFICATION THAT THE WORK SUPERVISED MEETS THE REPORT.
3. CONCRETE AND REINFORCING STEEL:
a. ALL FLOATING DOCK ELEMENTS SHALL BE PRE-FABRICATED IN APPROVED FABRICATION SHOPS.
b. CAST IN PLACE ITEM SUCH AS THE GANGWAY ABUTMENT SHALL HAVE PERIODIC INSPECTION FOR REBAR PLACEMENT AND FORMWORK PLACEMENT IN ACCORDANCE WITH ACI 318.
4. SPECIAL INSPECTION TO BE PERFORMED BY GMU.

DEFERRED SUBMITTALS

- 1. STORE BUILDING ON FUEL DOCK
2. ALUMINUM GANGWAY
3. SECURITY GATES

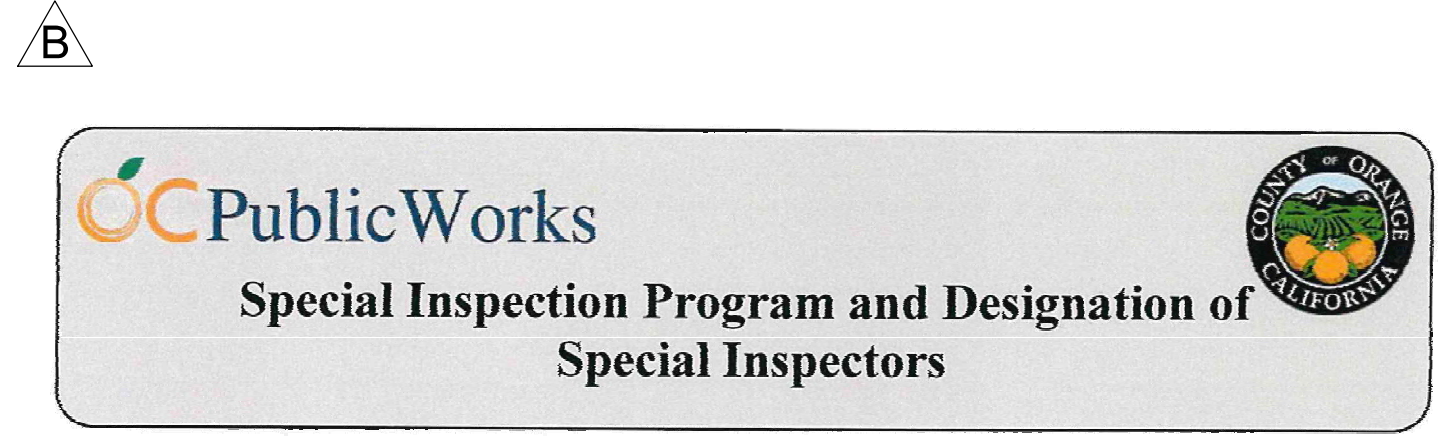


Table with 2 columns: INSPECTION ITEMS and SPECIAL INSPECTOR(S) NAME, PHONE NUMBER, REGISTRATION #. Lists various inspection items like Concrete, Bolts, Reinforcing Steel, etc., and their corresponding inspectors.

DECLARATION BY OWNER OR ARCHITECT/ENGINEER OF RECORD:
I, the Owner or Engineer or Architect of record, declare that the above listed Special Inspector(s) is/are hired by me.

Signature of Joseph Weberoth, Date 3.2.22

601 N. Ross Street, Santa Ana, CA 92701
P.O. Box 4048, Santa Ana, CA 92702-4048
www.ocpublicworks.com
714.667.8888 | myOCeServices.ocgov.com

Table with 4 columns: NO., DATE, DESCRIPTION, BY. Contains revision entries for ADA and path of travel notes.

Bellingham MARINE logo and contact information: SOUTHWEST DIVISION, CA LICENSE #442499, 8810 SPARLING LANE, DIXON, CA 95620.

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Project information: PROJECT NUMBER: 7341, ENGINEER / DESIGNER: Harbor Drive Dana Point, CA 92629, PROJECT MANAGER: DESIGN CRITERIA & GENERAL NOTES, CHECKED BY: SCALE: NTS (Sheet Size 24" x 36"), DRAWN BY: KG, DATE: 5/10/2022, DRAWING: N1, SHEET NO.: 4.

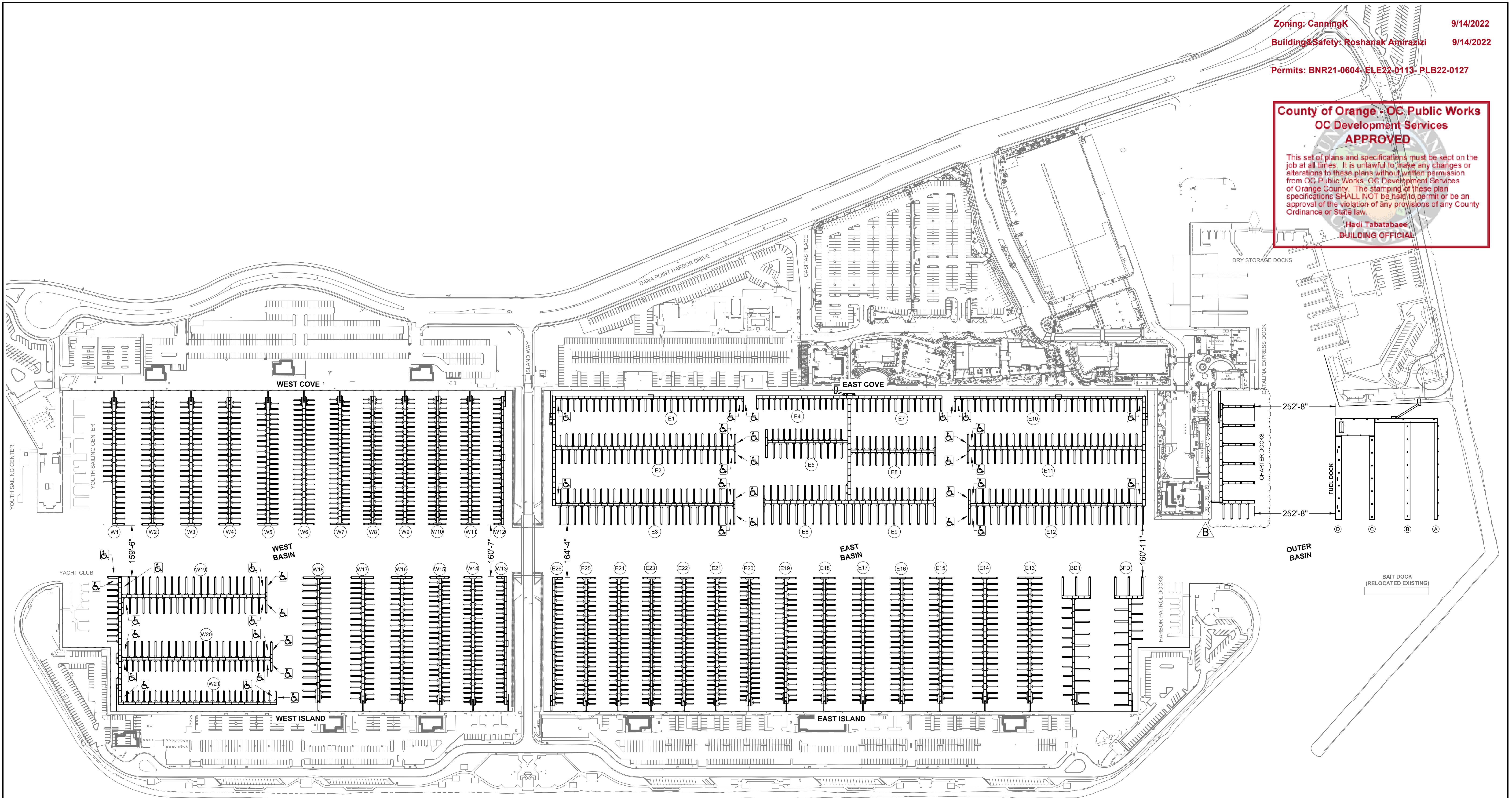
Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604-ELE22-0113-PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

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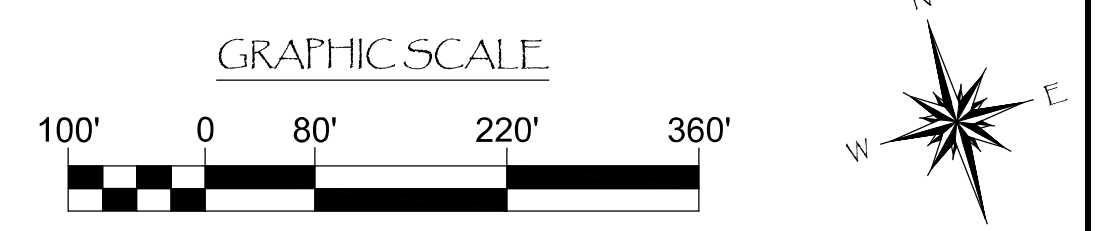
**Hadi Tabatabaee
 BUILDING OFFICIAL**

PERMIT DRAWING



FOR ACCESSIBILITY AND PATH OF TRAVEL, PLEASE SEE GRADING PERMIT GRD22-0067

= ADA COMPLIANT BERTH



NO.	DATE	DESCRIPTION	BY
C	9-13-22	ADDED ADA AND PATH OF TRAVEL NOTE	DS
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	ADDED CHART AND ADA BERTHS	KG
REVISIONS			



SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
NEW PROPOSED OVERALL SITE PLAN



Craig S Funston
 2022.09.14
 08:21:59-07'00"

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

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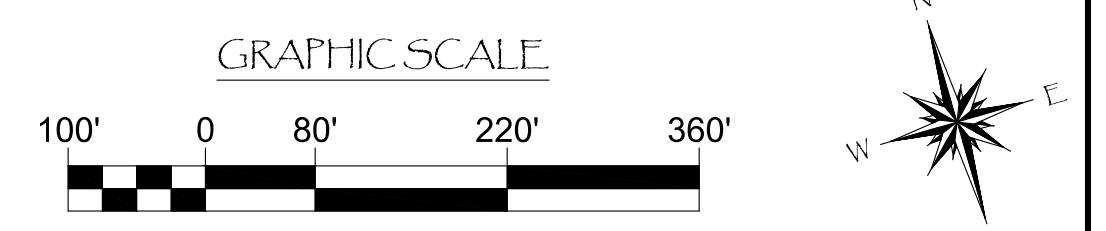
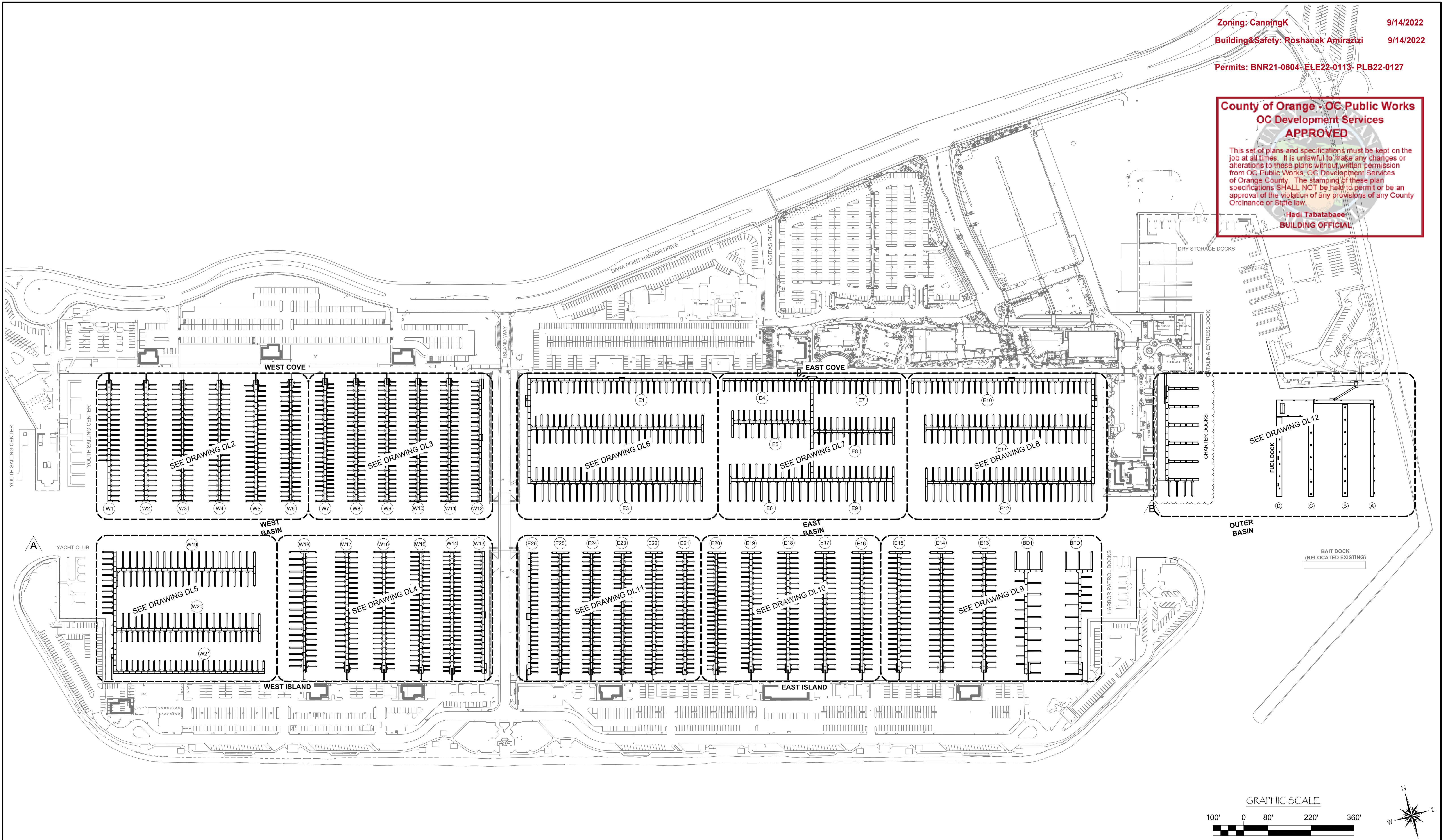
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**Hadi Tabatabaee
 BUILDING OFFICIAL**

PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED YACHT CLUB	KG
REVISIONS			

Bellingham MARINE

THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

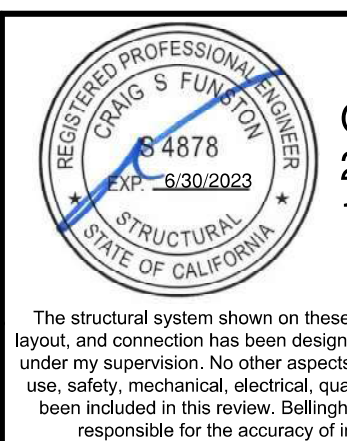
PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DIMENSIONAL LAYOUTS INDEX



Craig S Funston
 2022.05.13
 12:23:18-07'00"

SCALE: 1" = 140'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: DL1

SHEET NO.: 6

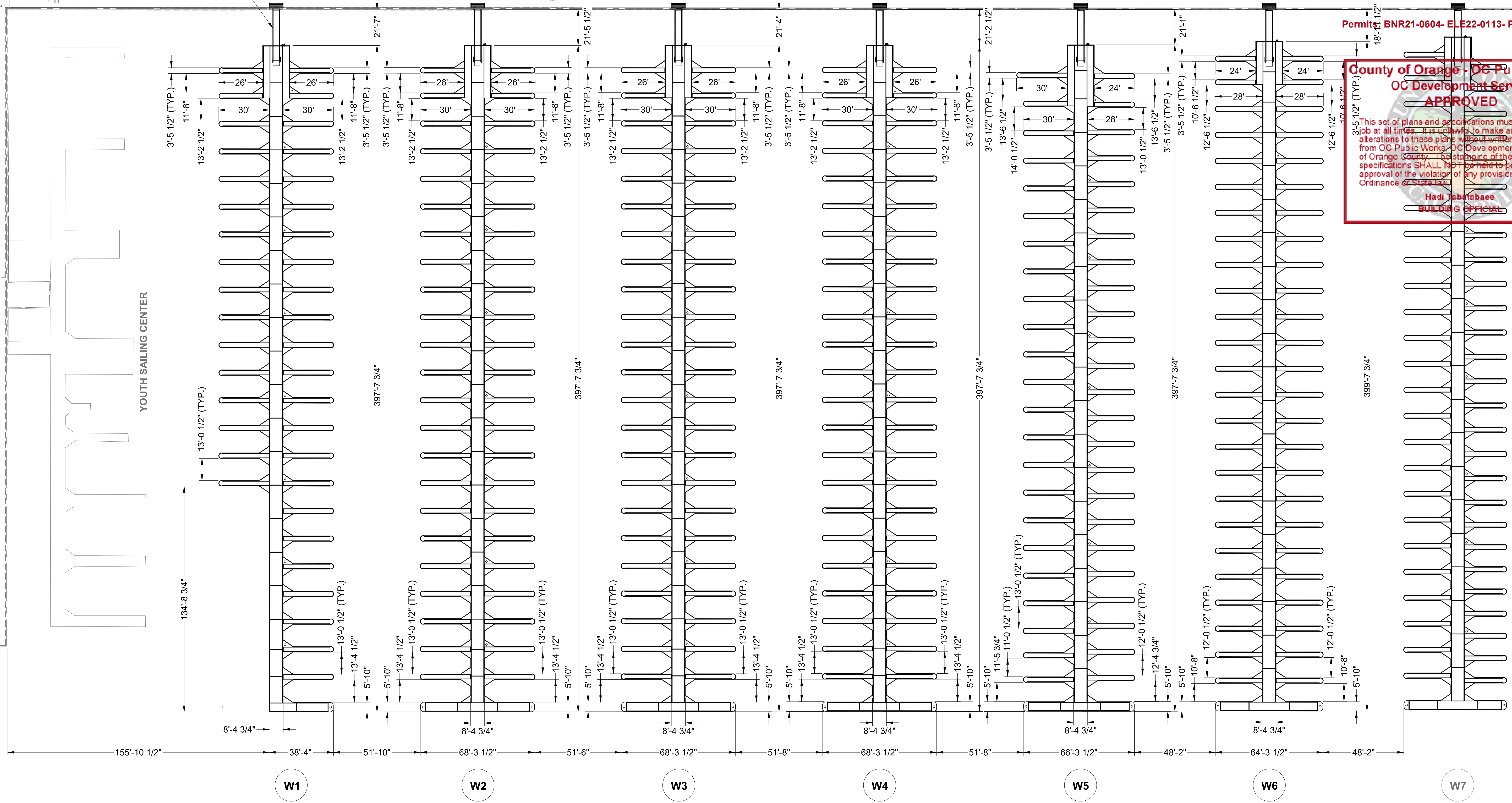
PERMIT DRAWING

30' ALUMINUM GANGWAY
w/ SECURITY GATE (TYP.)

WEST COVE

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permit: BNR21-0604- ELe22-0113- PLB22-0127

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 Hadi Jabartabae
 BUILDING OFFICIAL



GRAPHIC SCALE



NO.	DATE	DESCRIPTION	BY
REVISIONS			

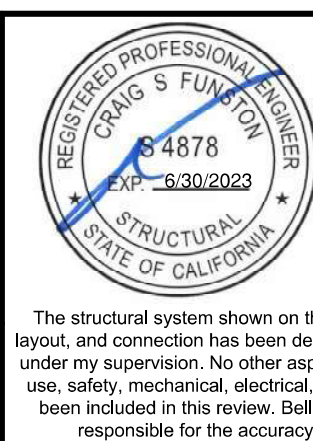


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 SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
DIMENSIONAL LAYOUT FOR DOCKS W1 - W6



Craig S Funston
 2022.05.13
 12:23:29-07'00"

SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: DL2
 SHEET NO.: 7

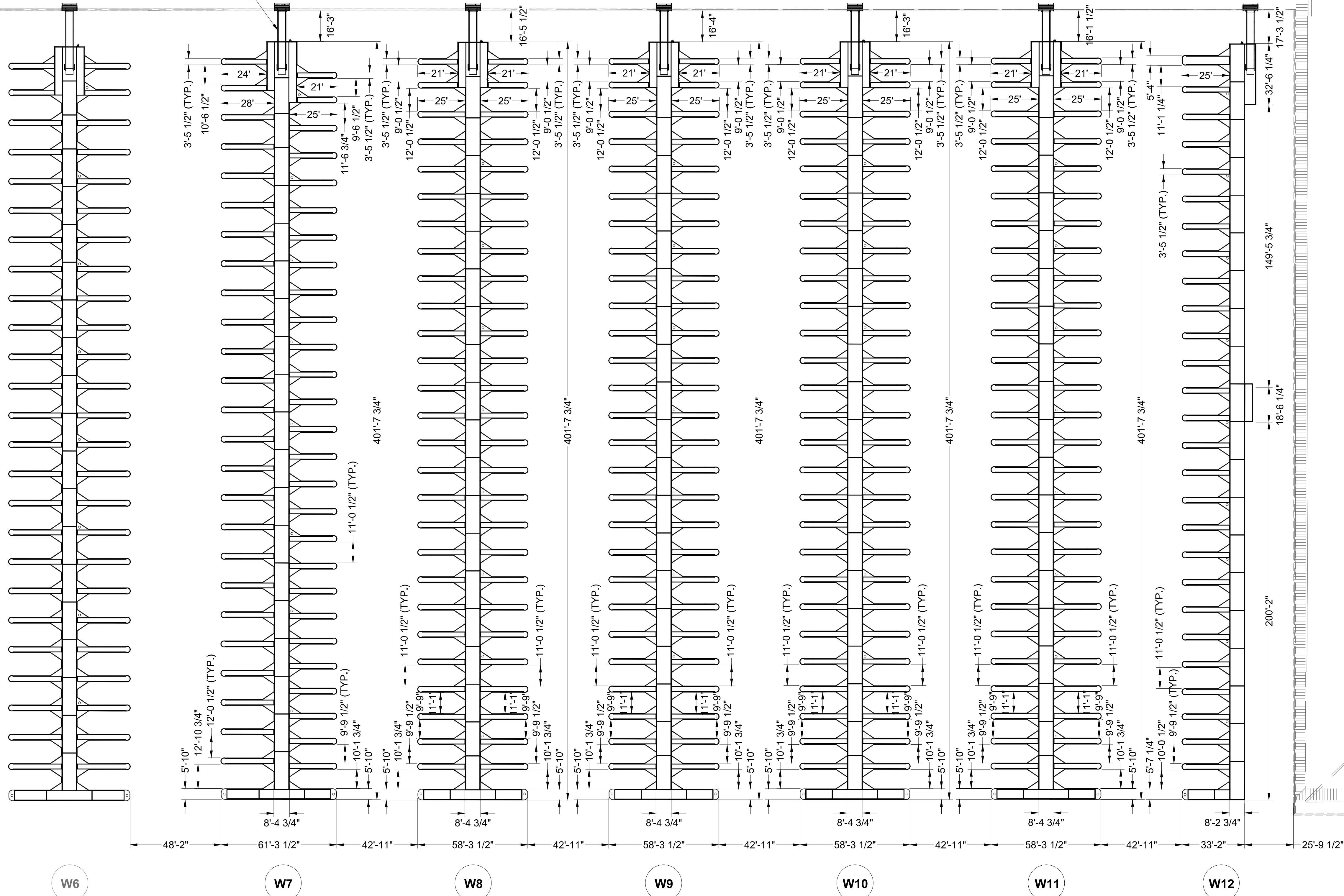
PERMIT DRAWING

30' ALUMINUM GANGWAY
w/ SECURITY GATE (TYP.)

WEST COVE

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 Hadi Tabatabaee
 BUILDING OFFICIAL



GRAPHIC SCALE



NO.	DATE	DESCRIPTION	BY
REVISIONS			



THE WORLD'S MOST
COMPREHENSIVE
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SOUTHWEST DIVISION
CA LICENSE #442499
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DIXON, CA 95620
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MARINE INDUSTRIES, INC.

PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

DIMENSIONAL LAYOUT FOR DOCKS W7 - W12



Craig S Funston
2022.05.13
12:23:41-07'00"

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DL3
SHEET NO.:	8

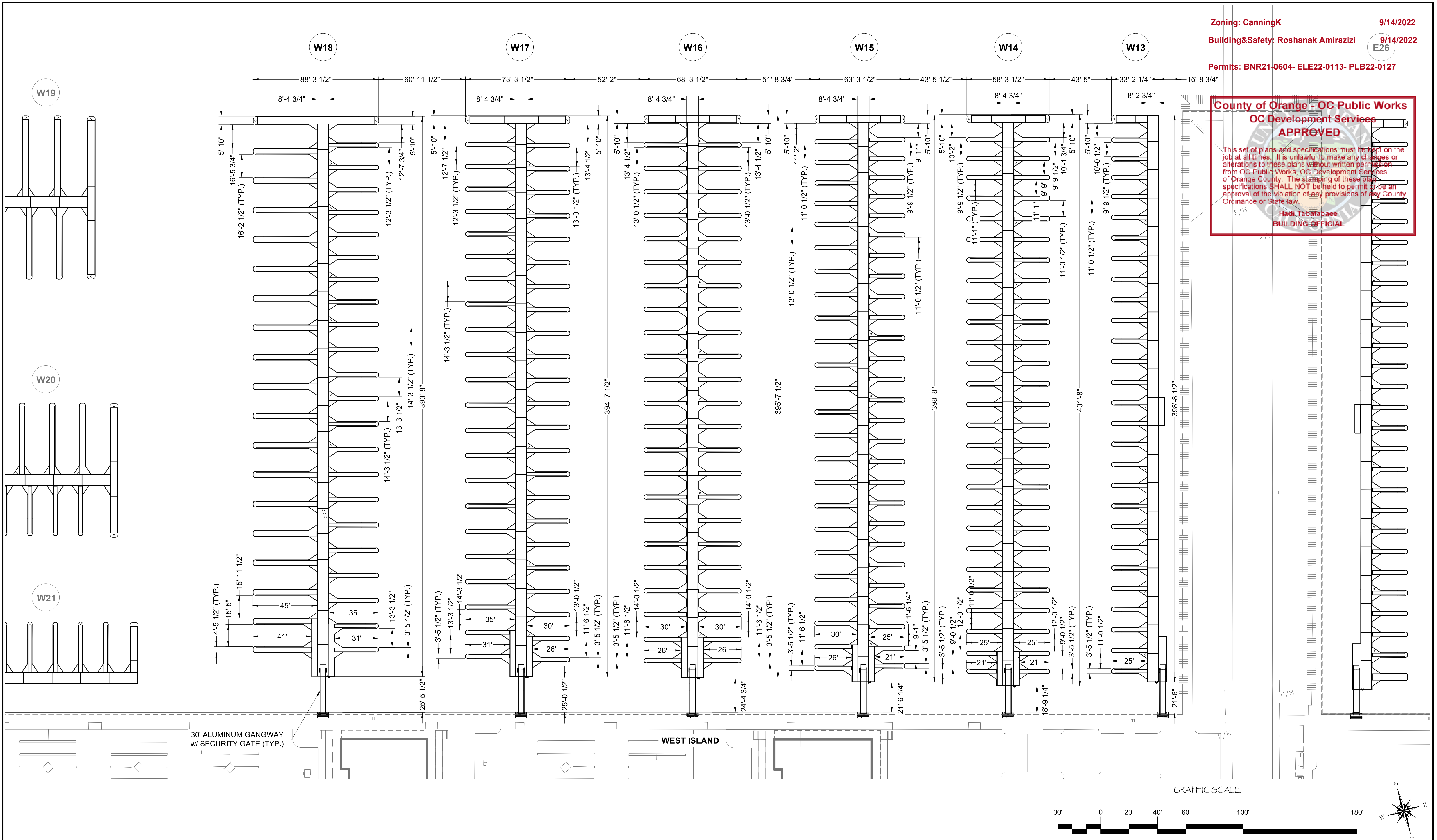
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 E26
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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Hadi Tabatabaee
 BUILDING OFFICIAL

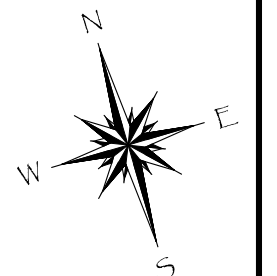
PERMIT DRAWING



30' ALUMINUM GANGWAY
 w/ SECURITY GATE (TYP.)

WEST ISLAND

GRAPHIC SCALE



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DIMENSIONAL LAYOUT FOR DOCKS W13 - W18

Craig S Funston
 2022.05.13
 12:23:53-07'00"

REGISTERED PROFESSIONAL ENGINEER
 CRAIG S FUNSTON
 4878
 5-30-2022
 STRUCTURAL
 STATE OF CALIFORNIA

SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DL4
SHEET NO.:	9

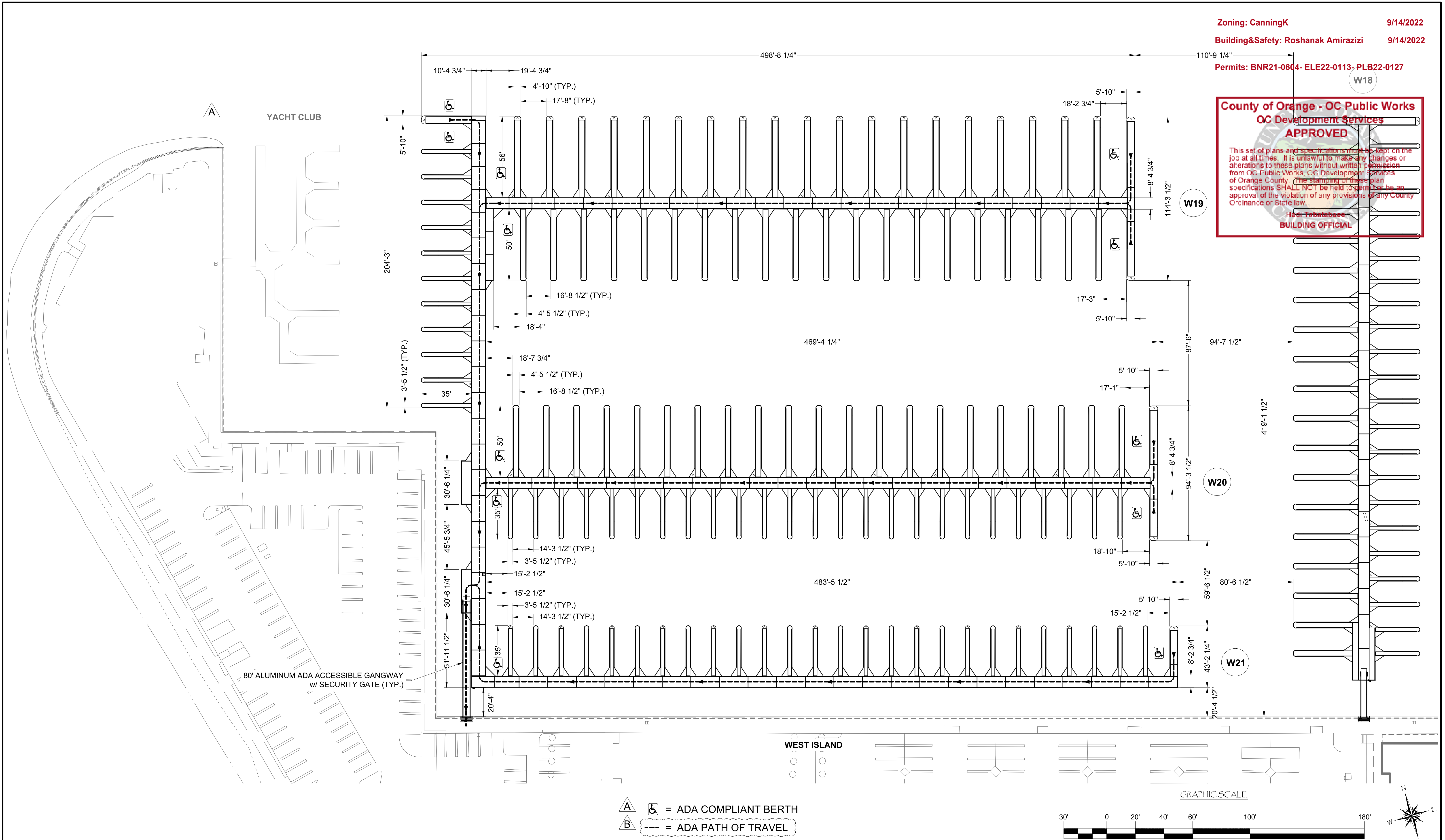
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED

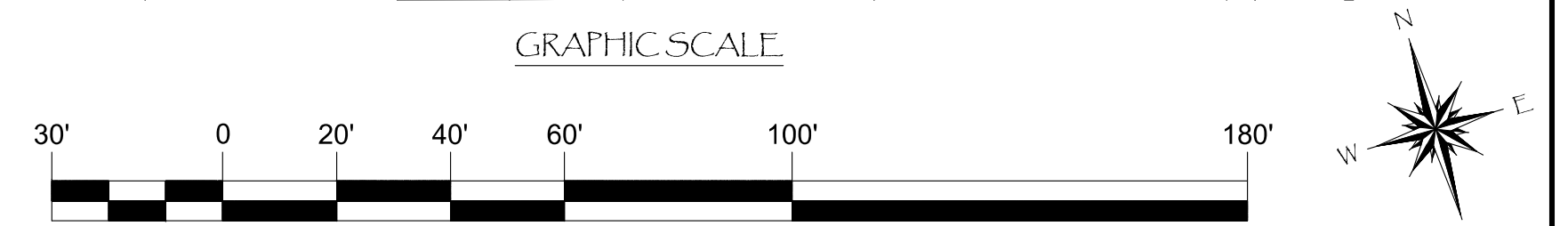
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Hadi Tabatabaee
 BUILDING OFFICIAL

PERMIT DRAWING



A = ADA COMPLIANT BERTH
 B = ADA PATH OF TRAVEL



NO.	DATE	DESCRIPTION	BY
B	5-10-22	ADDED ADA PATH OF TRAVEL	KG
A	2-25-22	REMOVED YACHT CLUB/ ADDED ADA BERTHS	KG
REVISIONS			

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

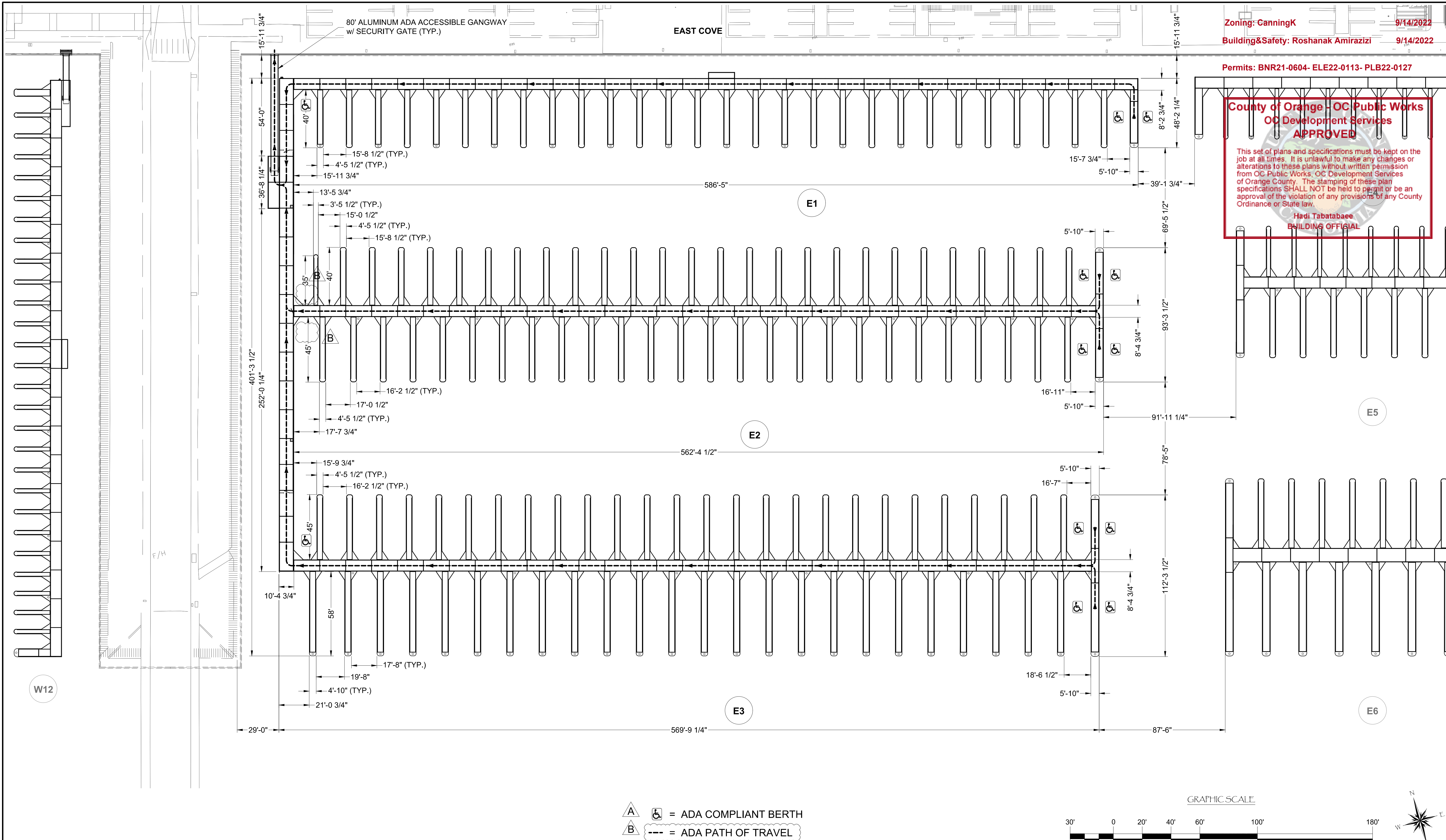
DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
 DIMENSIONAL LAYOUT FOR DOCKS W19 - W21

Craig S Funston
 2022.05.13
 12:24:04-07'00"

REGISTERED PROFESSIONAL ENGINEER
 CRAIG S. FUNSTON
 4878
 30202023
 STRUCTURAL
 STATE OF CALIFORNIA

SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: DL5
 SHEET NO.: 10

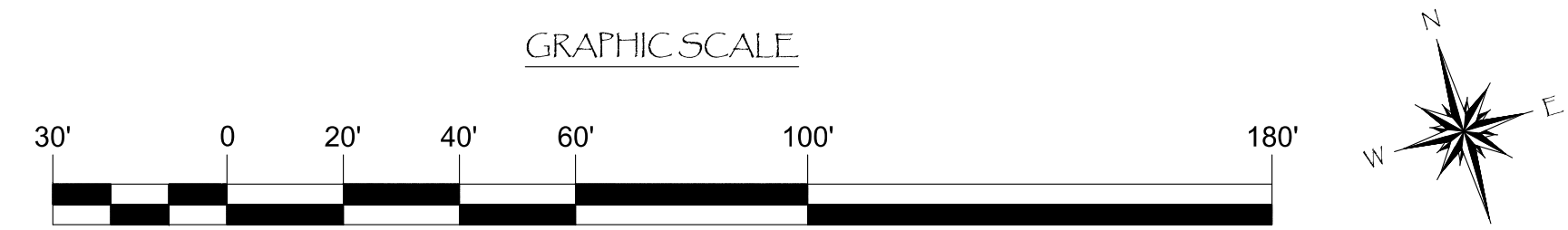
PERMIT DRAWING



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 Hadi Tabatabaee
 BUILDING OFFICIAL

A ♿ = ADA COMPLIANT BERTH
B --- = ADA PATH OF TRAVEL



NO.	DATE	DESCRIPTION	BY
B	5-10-22	ADDED ADA PATH OF TRAVEL	KG
A	2-25-22	ADDED ADA BERTHS	KG

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
DIMENSIONAL LAYOUT FOR DOCKS E1 - E3

Craig S Funston
 2022.05.13
 12:24:17-07'00"

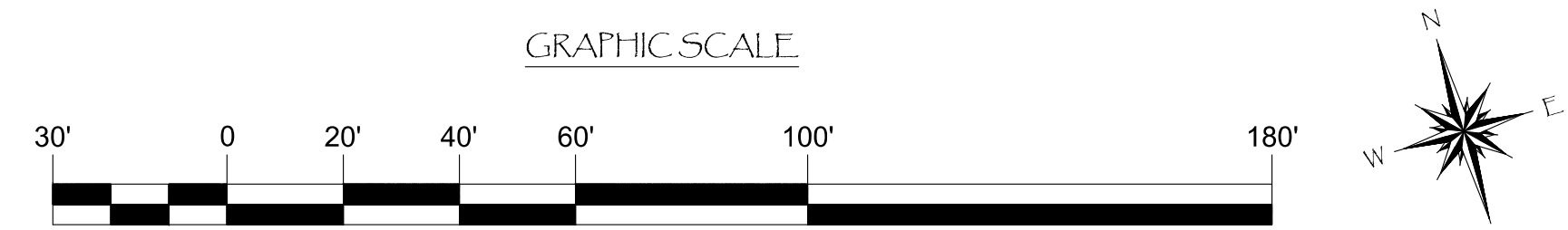
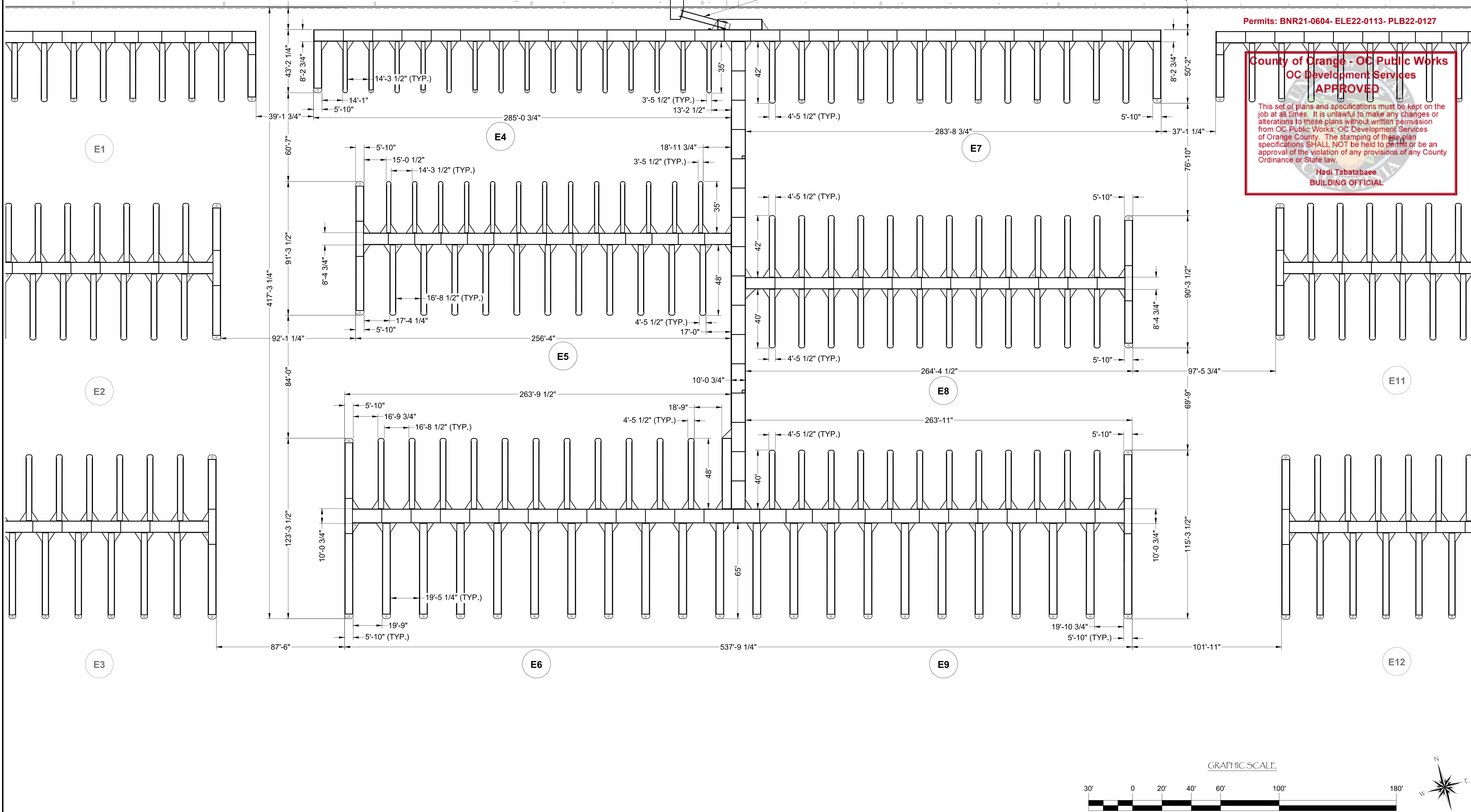
SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: DL6
 SHEET NO.: 11

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**Hadi Tabatabaee
 BUILDING OFFICIAL**

PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
REVISIONS			



Bellingham
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

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DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DIMENSIONAL LAYOUT FOR DOCKS E4 - E9



Craig S Funston
 2022.05.13
 12:24:28-07'00"

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SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

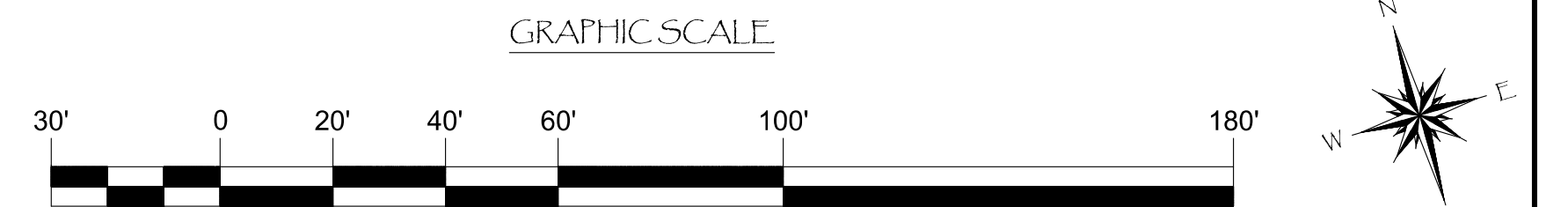
DRAWING: DL7

SHEET NO.: 12

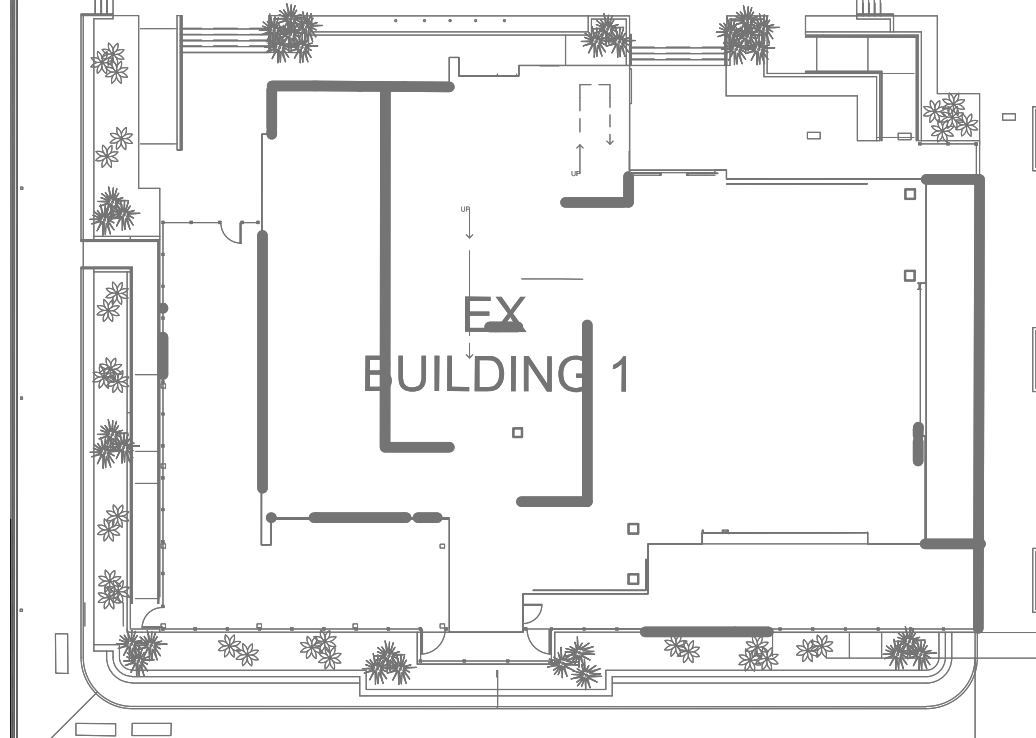
PERMIT DRAWING



A = ADA COMPLIANT BERTH
B = ADA PATH OF TRAVEL



Zoning: CanningK
 Building&Safety: Roshanak Amirazizi
 Permits: BNR21-0604- ELE22-0113- PLB22-0127
 9/14/2022
 9/14/2022
County of Orange - OC Public Works
OC Development Services
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Hadi Tabatabaee
BUILDING OFFICIAL



NO.	DATE	DESCRIPTION	BY
B	5-10-22	ADDED ADA PATH OF TRAVEL	KG
A	2-25-22	ADDED ADA BERTHS	KG
REVISIONS			

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
DIMENSIONAL LAYOUT FOR DOCKS E10 - E12

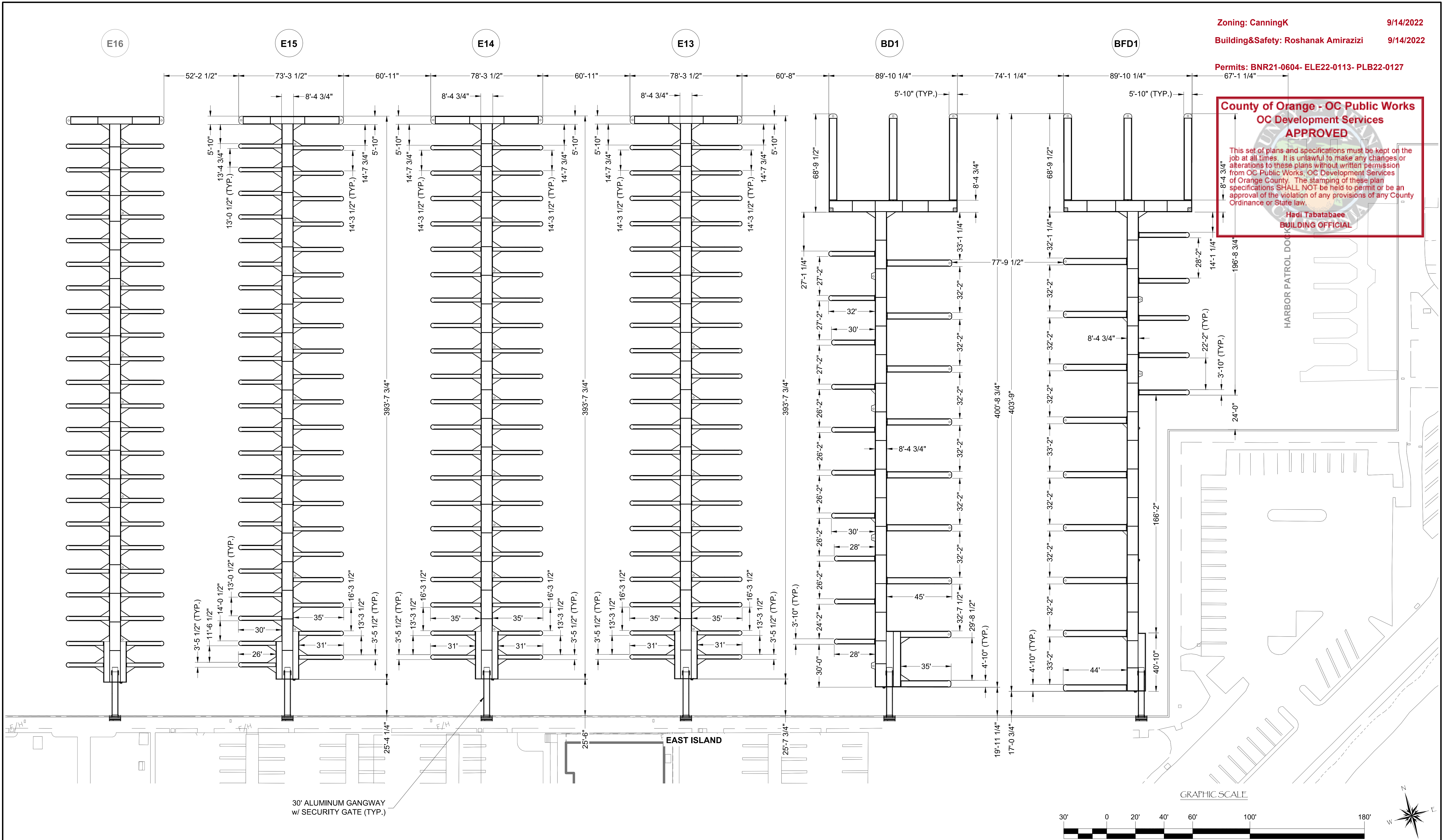
Craig S Funston
 2022.05.13
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SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: DL8
 SHEET NO.: 13

PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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Hadi Tabatabaee
BUILDING OFFICIAL



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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 FAX: (707) 678-1760

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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

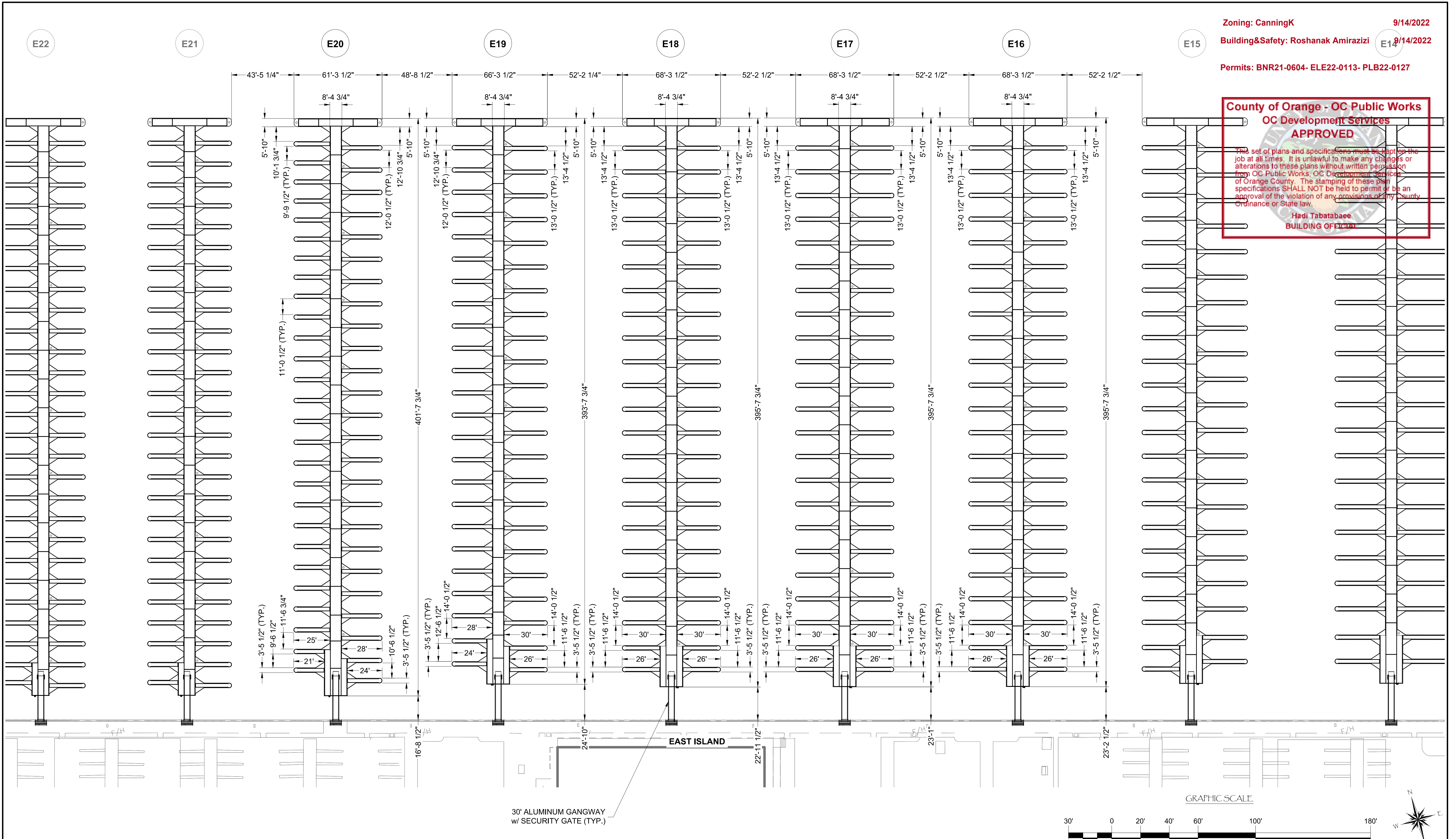
Harbor Drive
 Dana Point, CA 92629

DIMENSIONAL LAYOUT FOR DOCKS BFD1, BD1, & E13 - E15

Craig S Funston
 2022.05.13
 12:24:50-07'00"

SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DL9
SHEET NO.:	14

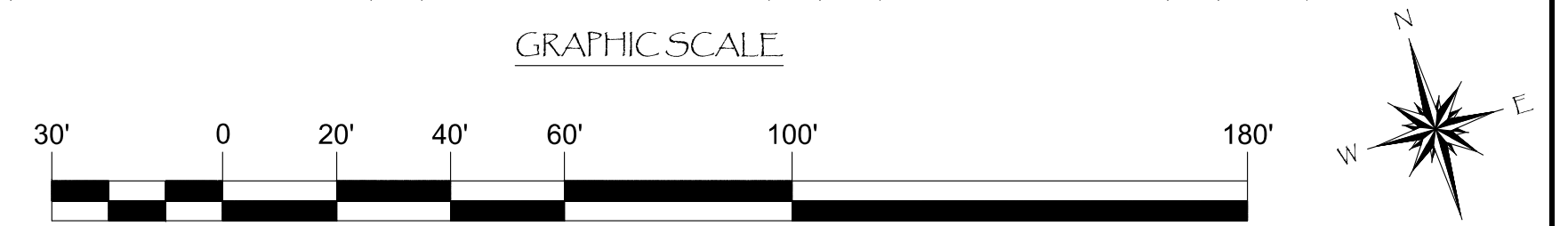
PERMIT DRAWING



Zoning: CanningK
 Building&Safety: Roshanak Amirazizi
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 Hadi Tabatabaee
 BUILDING OFFICER

30' ALUMINUM GANGWAY
 w/ SECURITY GATE (TYP.)



NO.	DATE	DESCRIPTION	BY

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 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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 FAX: (707) 678-1760

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DIMENSIONAL LAYOUT FOR DOCKS E16 - E20

Craig S Funston
 2022.05.13
 12:25:00-07'00'

REGISTERED PROFESSIONAL ENGINEER
 C-4878
 5-30-2022
 STRUCTURAL
 STATE OF CALIFORNIA

SCALE: 1" = 30' (Sheet Size 24" x 36")
DRAWN BY: KG
DATE: 5/10/2022
DRAWING: DL10
SHEET NO.: 15

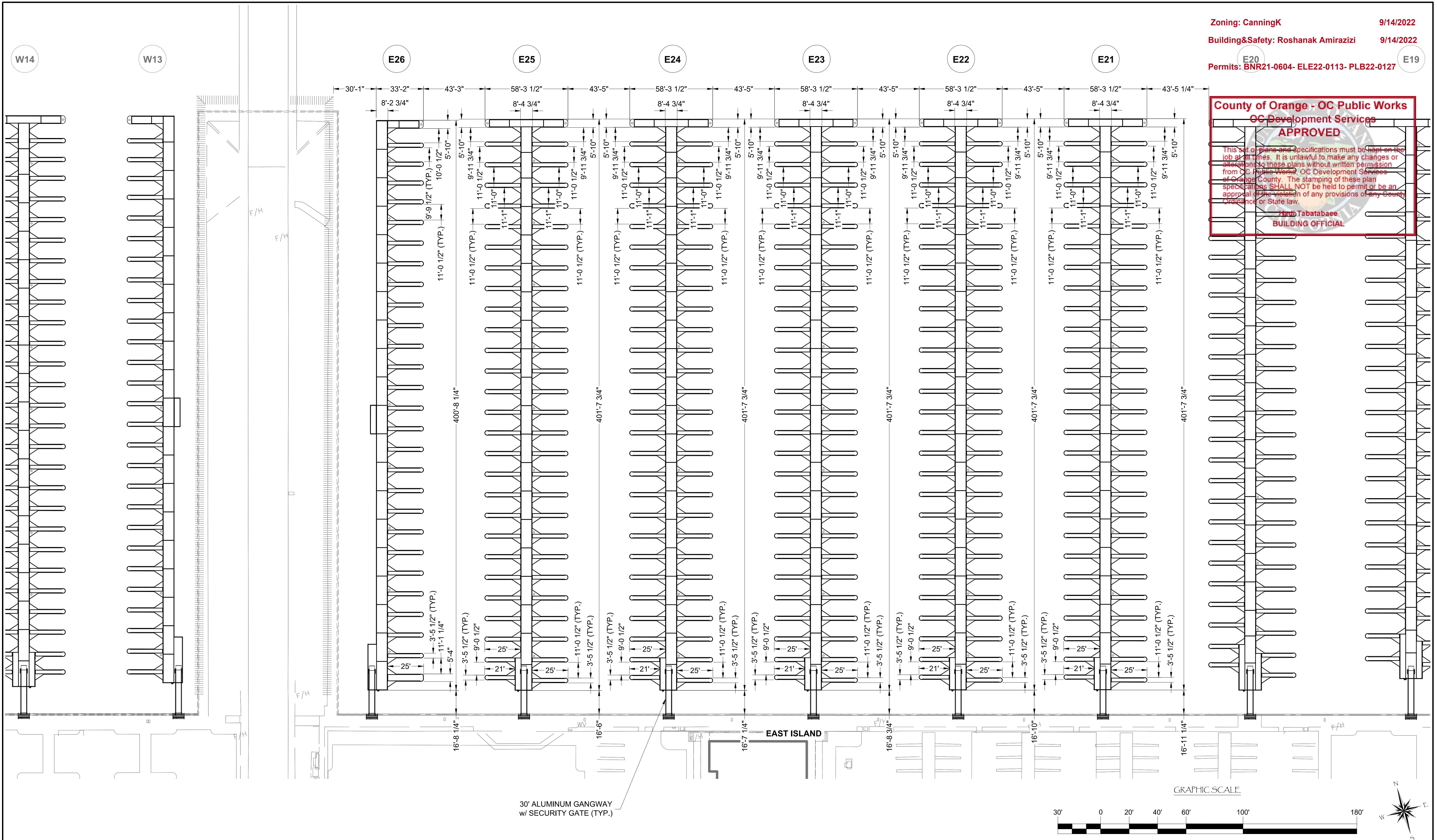
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: E20 BNR21-0604- ELE22-0113- PLB22-0127 E19

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Ham Tabatabaee
BUILDING OFFICIAL

PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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 CA LICENSE #442499
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 DIXON, CA 95620
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DIMENSIONAL LAYOUT FOR DOCKS E21 - E26

Craig S Funston
 2022.05.13
 12:25:10-07'00'

REGISTERED PROFESSIONAL ENGINEER
 C-4878
 8-20-2022
 STRUCTURAL
 STATE OF CALIFORNIA

SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: DL11

SHEET NO.: 16

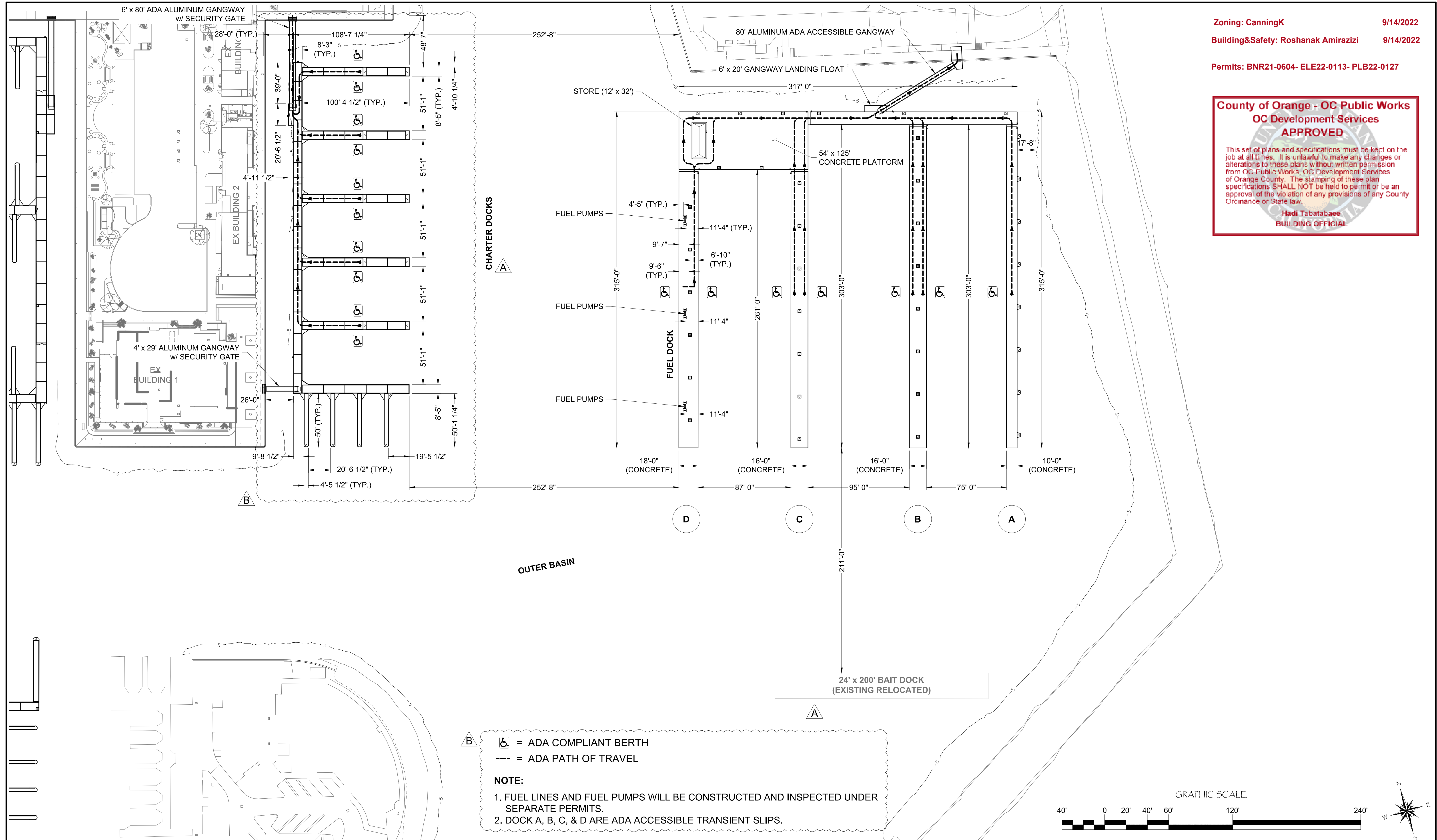
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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Hadi Tabatabaee
 BUILDING OFFICIAL

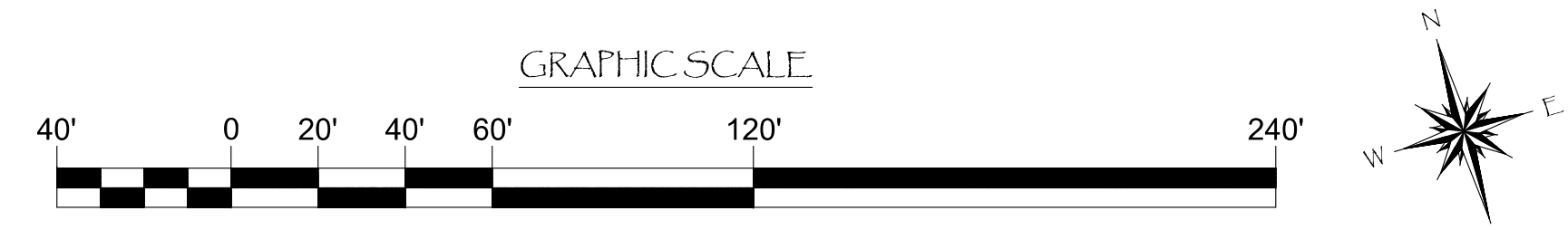


LEGEND

♿ = ADA COMPLIANT BERTH
 --- = ADA PATH OF TRAVEL

NOTE:

- FUEL LINES AND FUEL PUMPS WILL BE CONSTRUCTED AND INSPECTED UNDER SEPARATE PERMITS.
- DOCK A, B, C, & D ARE ADA ACCESSIBLE TRANSIENT SLIPS.



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS, ADDED NOTES, ADA , & PATH OF TRAVEL	KG
A	2-25-22	REMOVED SPORTFISHING/ ADDED EXISTING RELOCATED	KG

Bellingham MARINE

THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DIMENSIONAL LAYOUT FOR OUTER BASIN DOCKS

Craig S Funston
 2022.05.13
 12:25:20-07'00'

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

SCALE: 1" = 40'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: DL12

SHEET NO.: 17

THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

Taylor Jeff Strack

TAYLOR JEFF STRACK
PE 87513

06-10-2022
DATE



Greg A. Spaulding

GREG A. SPAULDING
CEG 1863

06-10-2022
DATE



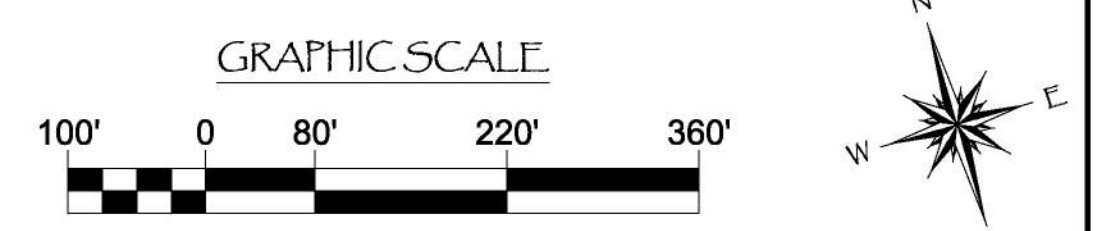
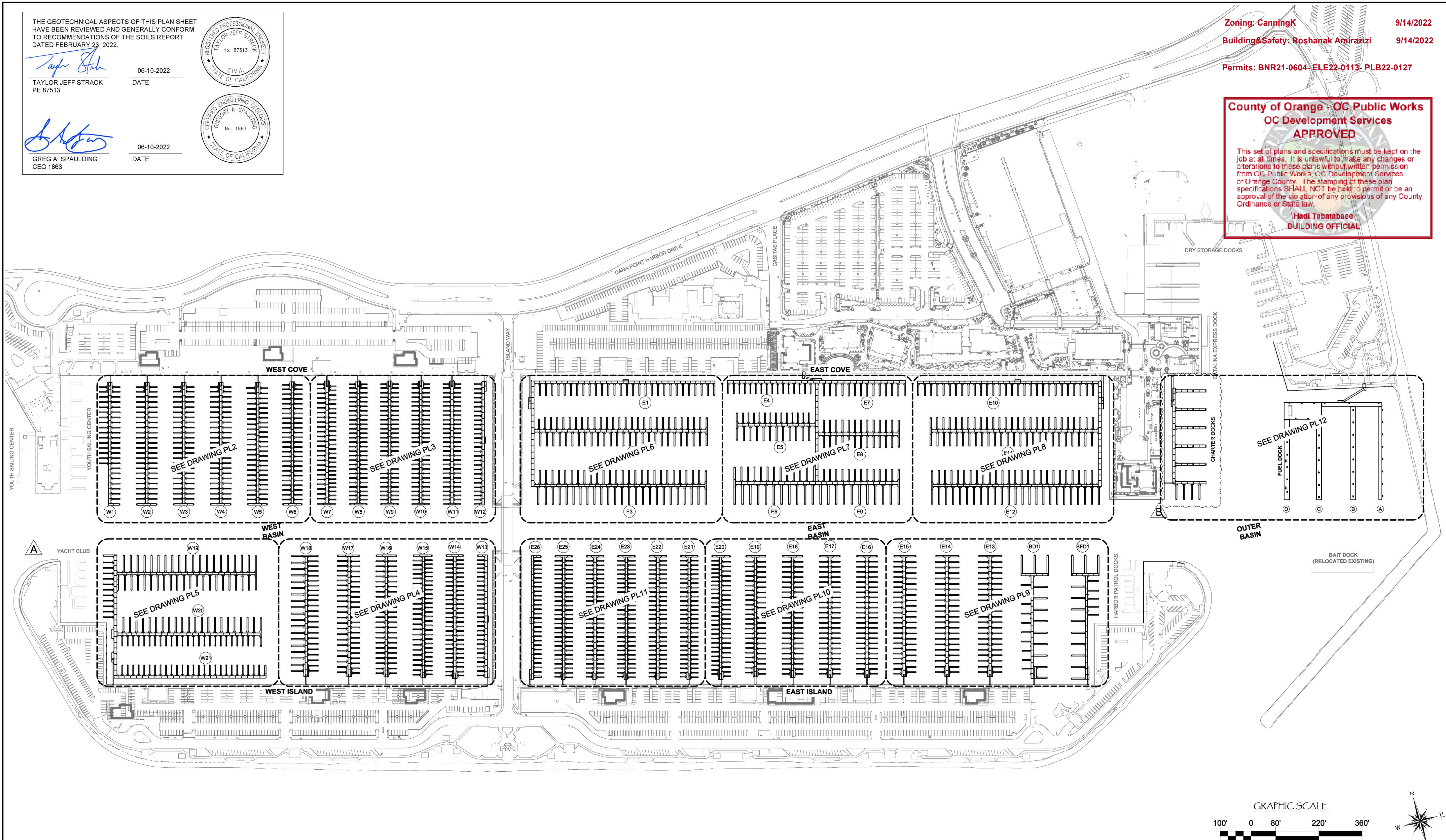
Zoning: CanningK 9/14/2022
Building & Safety: Roshanak Amirazizi 9/14/2022
Permits: BNR21-0604-ELE22-0113-PLB22-0127

**County of Orange - OC Public Works
OC Development Services
APPROVED**

This set of plans and specifications must be kept on the job at all times. It is unlawful to make any changes or alterations to these plans without written permission from OC Public Works, OC Development Services of Orange County. The stamping of these plan specifications SHALL NOT be held to permit or be an approval of the violation of any provisions of any County Ordinance or State law.

**Hadi Tabatabaee
BUILDING OFFICIAL**

PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED YACHT CLUB	KG
REVISIONS			

Bellingham MARINE
THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

PILE LAYOUTS INDEX

Craig S Funston
2022.05.13
12:25:30-07:00'

SCALE: 1" = 140'
(Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: PL1

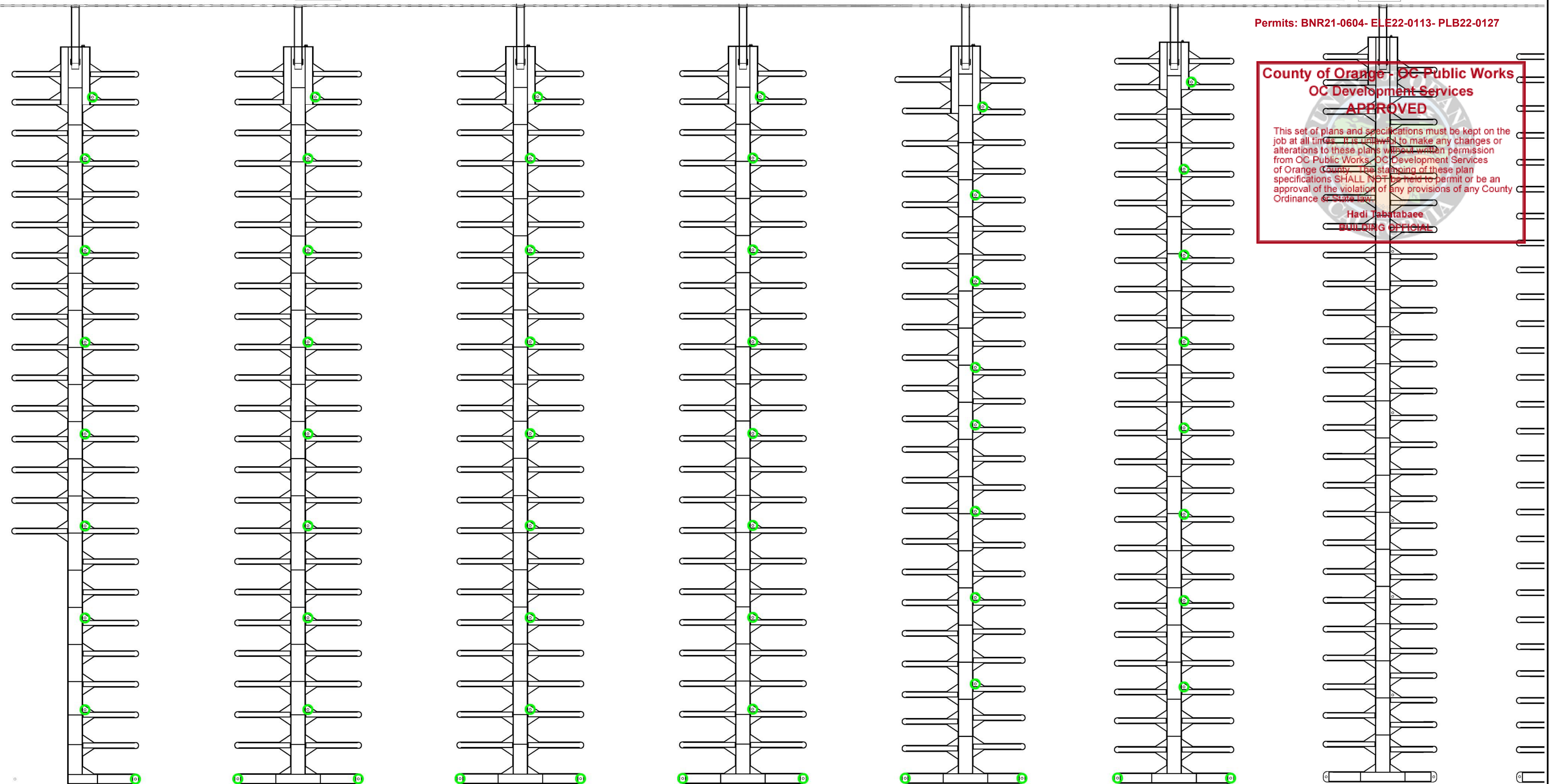
SHEET NO.: 18

PERMIT DRAWING

WEST COVE

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

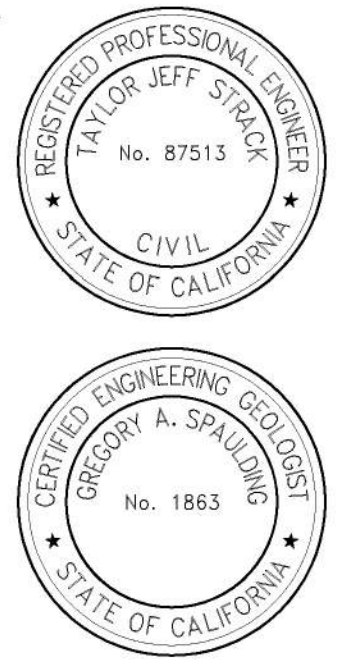
County of Orange - OC Public Works
OC Development Services
APPROVED
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 Hadi Jabartabae
 BUILDING OFFICIAL



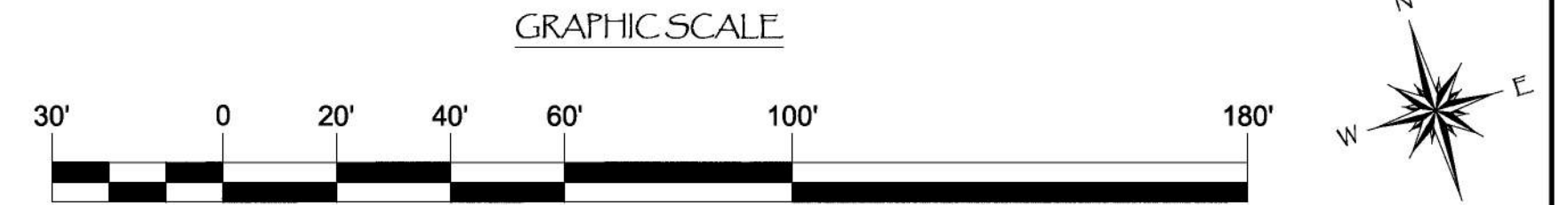
THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

Taylor Jeff Strack
 TAYLOR JEFF STRACK
 PE 87513
 06-10-2022
 DATE

Greg A. Spaulding
 GREG A. SPAULDING
 CEG 1863
 06-10-2022
 DATE



A ○ = 14" (14" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE



NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	PILE SIZE CHANGED FROM 12"	KG
REVISIONS			

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

PILE LAYOUT FOR DOCKS W1 - W6

Craig S Funston
 CRAIG S FUNSTON
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 STATE OF CALIFORNIA
 No. 4878
 03/20/2023

Craig S Funston
 2022.05.13
 12:25:40-07'00"

SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: PL2

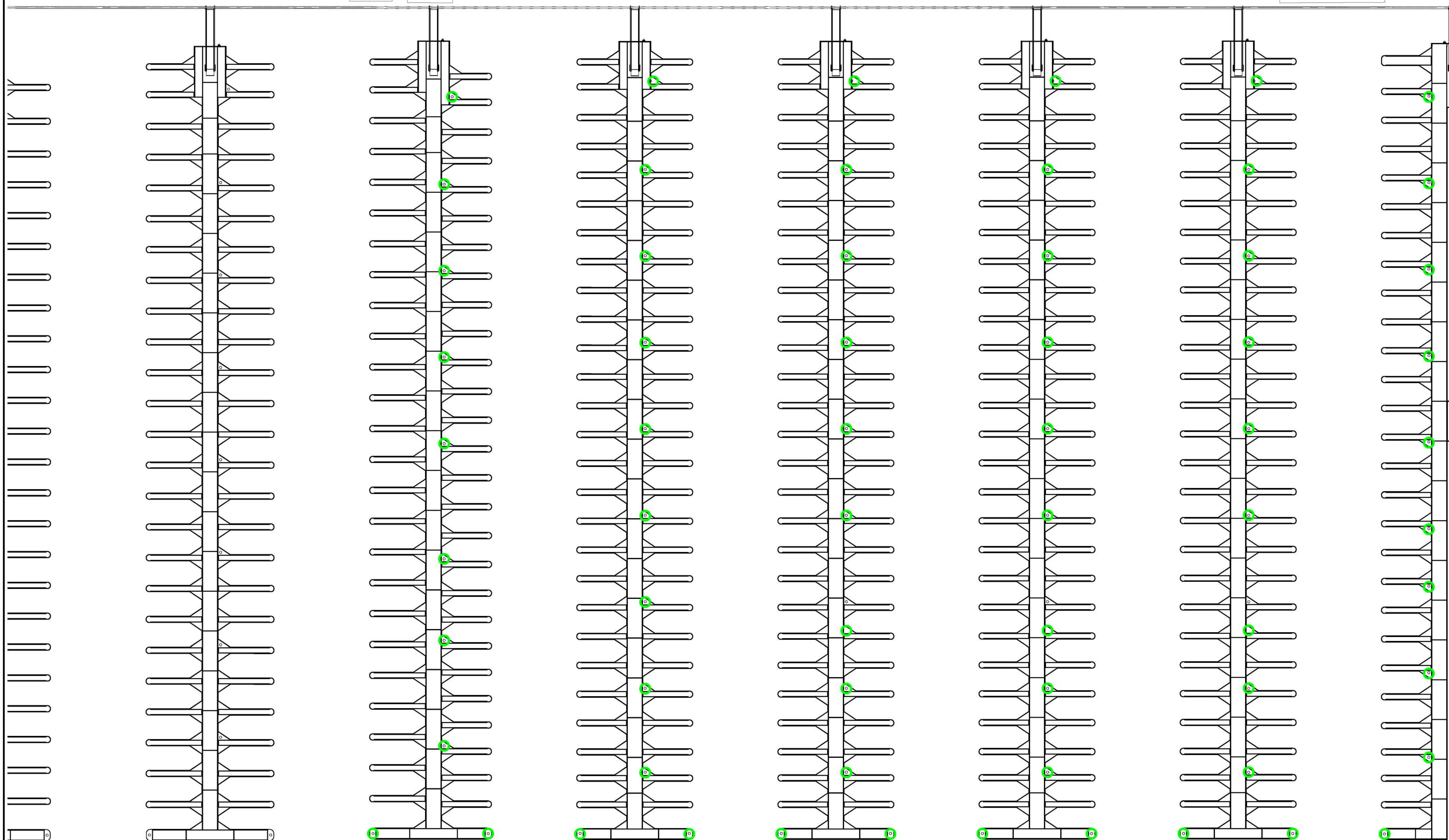
SHEET NO.: 19

PERMIT DRAWING

WEST COVE

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**
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 Hadi Tabatabaee
 BUILDING OFFICIAL

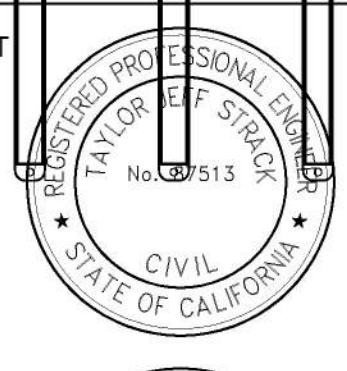


W6 W7 W8 W9 W10 W11 W12

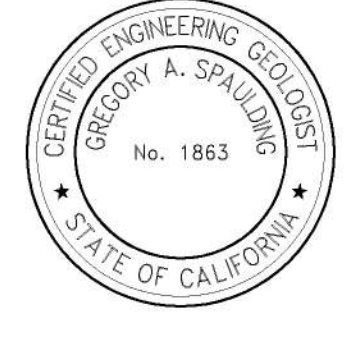
A ○ = 14" (14" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE

THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

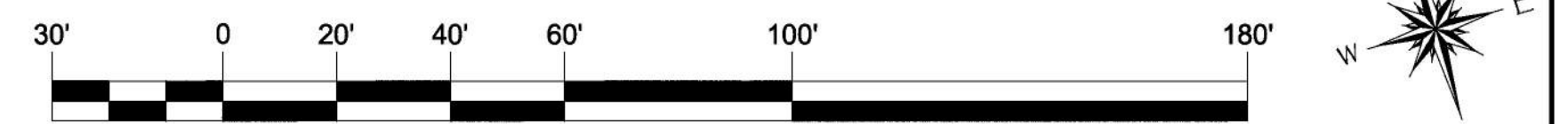
Taylor Jeff Strack
 TAYLOR JEFF STRACK
 PE 87513 06-10-2022 DATE



Greg A. Spaulding
 GREG A. SPAULDING
 CEG 1863 06-10-2022 DATE



GRAPHIC SCALE



NO.	DATE	DESCRIPTION	BY
A	5-10-22	PILE SIZE CHANGED FROM 12"	KG
REVISIONS			

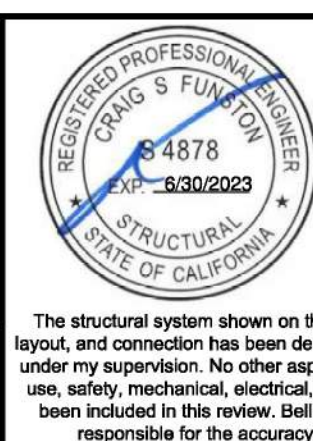


Bellingham MARINE
 SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
PILE LAYOUT FOR DOCKS W7 - W12



Craig S Funston
 2022.05.13
 12:26:14-07'00"

SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: PL3
 SHEET NO.: 20

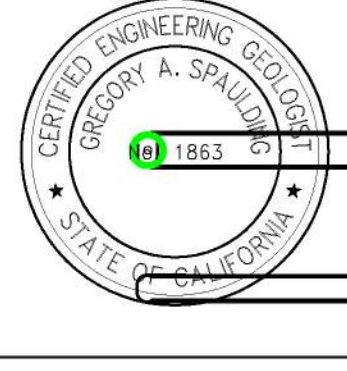
The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

Taylor Jeff Strack
TAYLOR JEFF STRACK
PE 87513
DATE 06-10-2022



Greg A Spaulding
GREG A SPAULDING
CEG 1863
DATE 06-10-2022



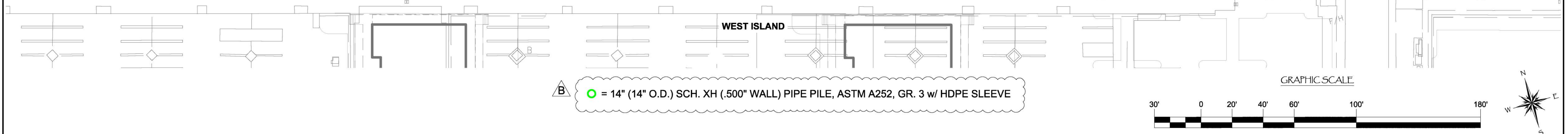
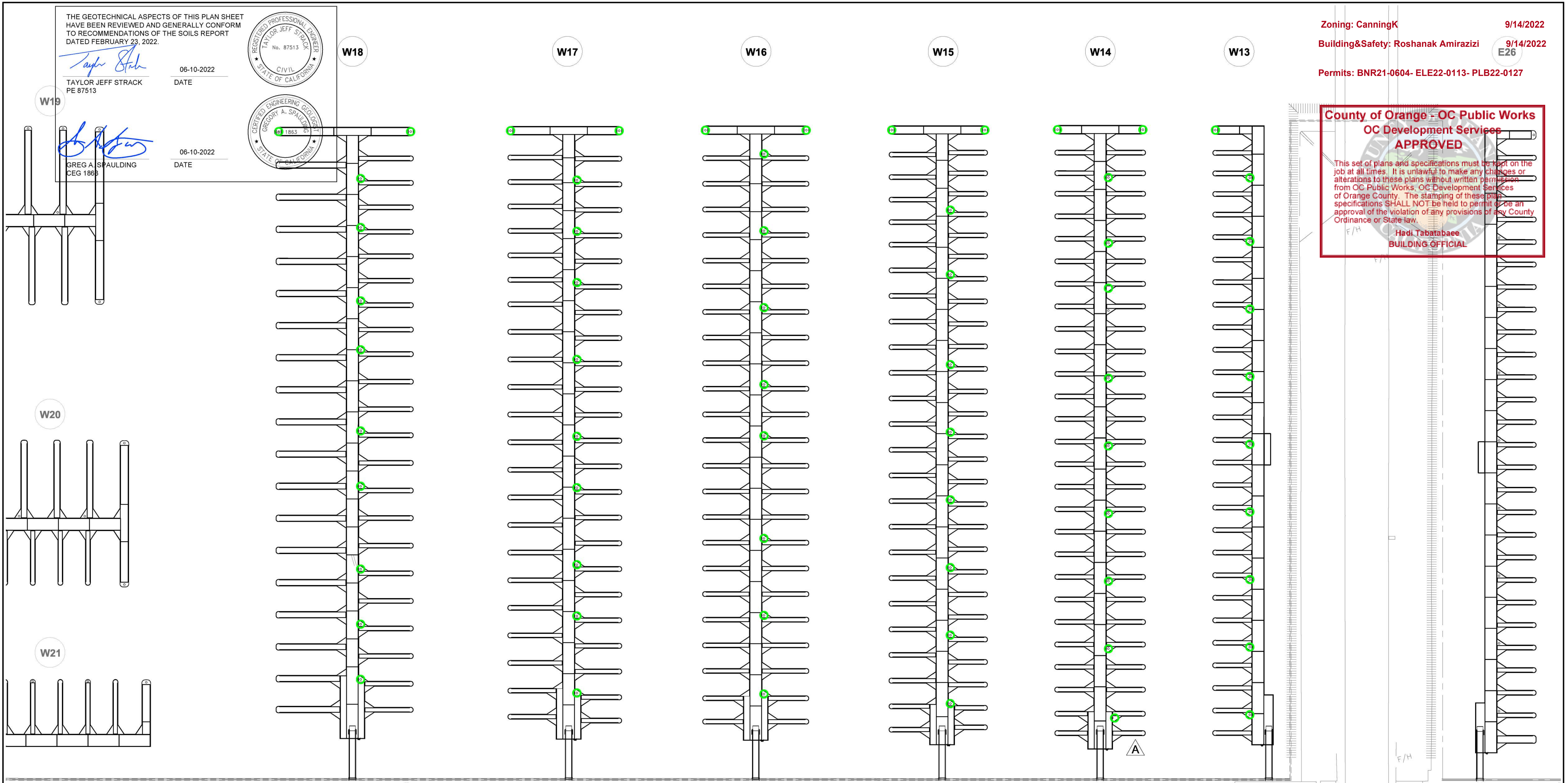
Zoning: CanningK 9/14/2022
Building&Safety: Roshanak Amirazizi 9/14/2022 E26
Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED

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Hadi Tabatabaee
BUILDING OFFICIAL

PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
B	5-10-22	CHANGED FROM 12" PILE	KG
A	2-25-22	MOVED PILES TO OTHER SIDE OF DOCK	KG
		REVISIONS	

Bellingham MARINE
THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
FAX: (707) 678-1760

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PROJECT NUMBER:
7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629
PILE LAYOUT FOR DOCKS W13 - W18

Craig S Funston
2022.05.13
12:26:25-07'00"

REGISTERED PROFESSIONAL ENGINEER
CRAIG S FUNSTON
4878
8/20/2023
STRUCTURAL
STATE OF CALIFORNIA

SCALE: 1" = 30'
(Sheet Size 24" x 36")
DRAWN BY: KG
DATE: 5/10/2022
DRAWING: PL4
SHEET NO.: 21

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

W18

County of Orange - OC Public Works
OC Development Services
APPROVED

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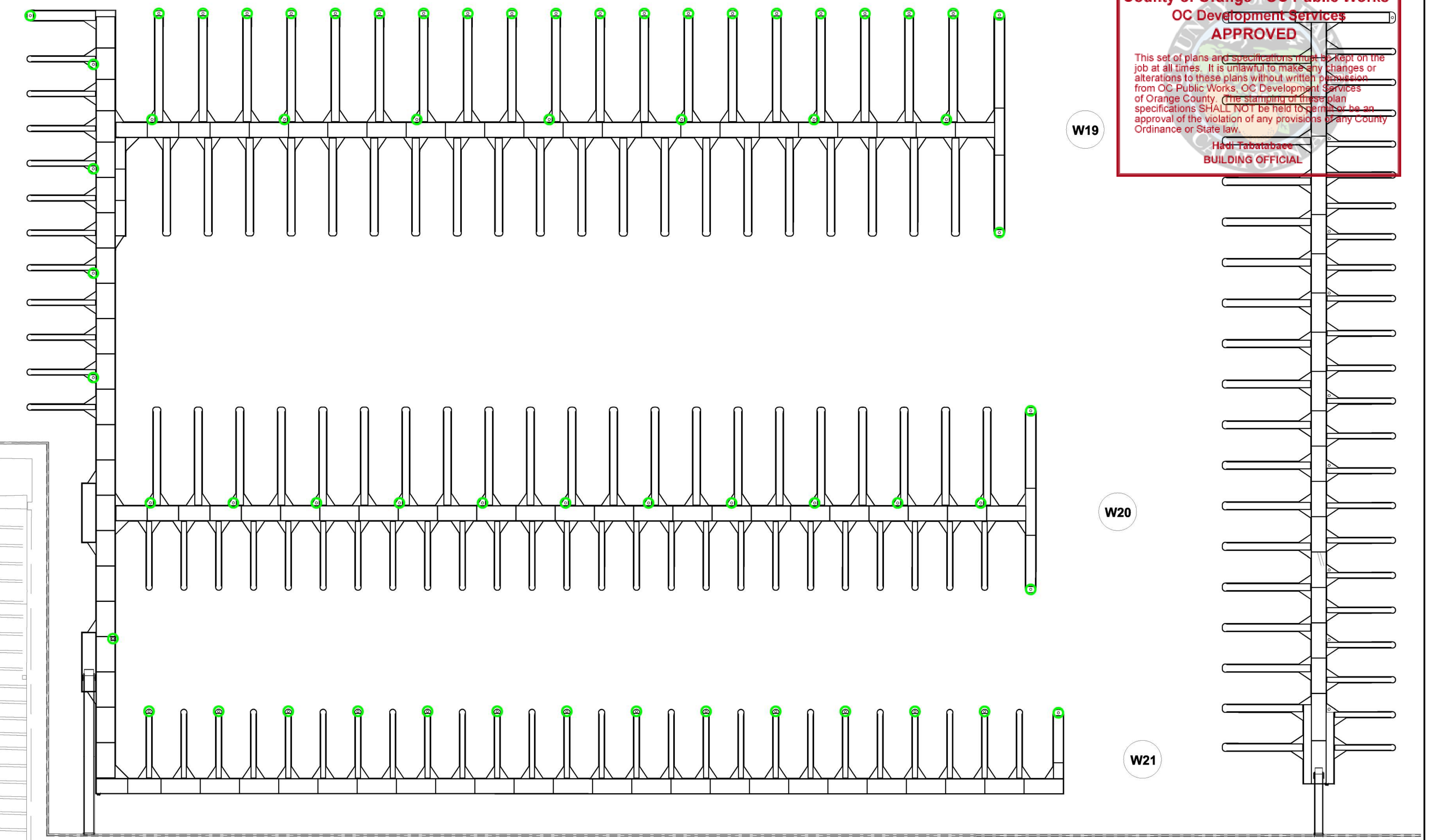
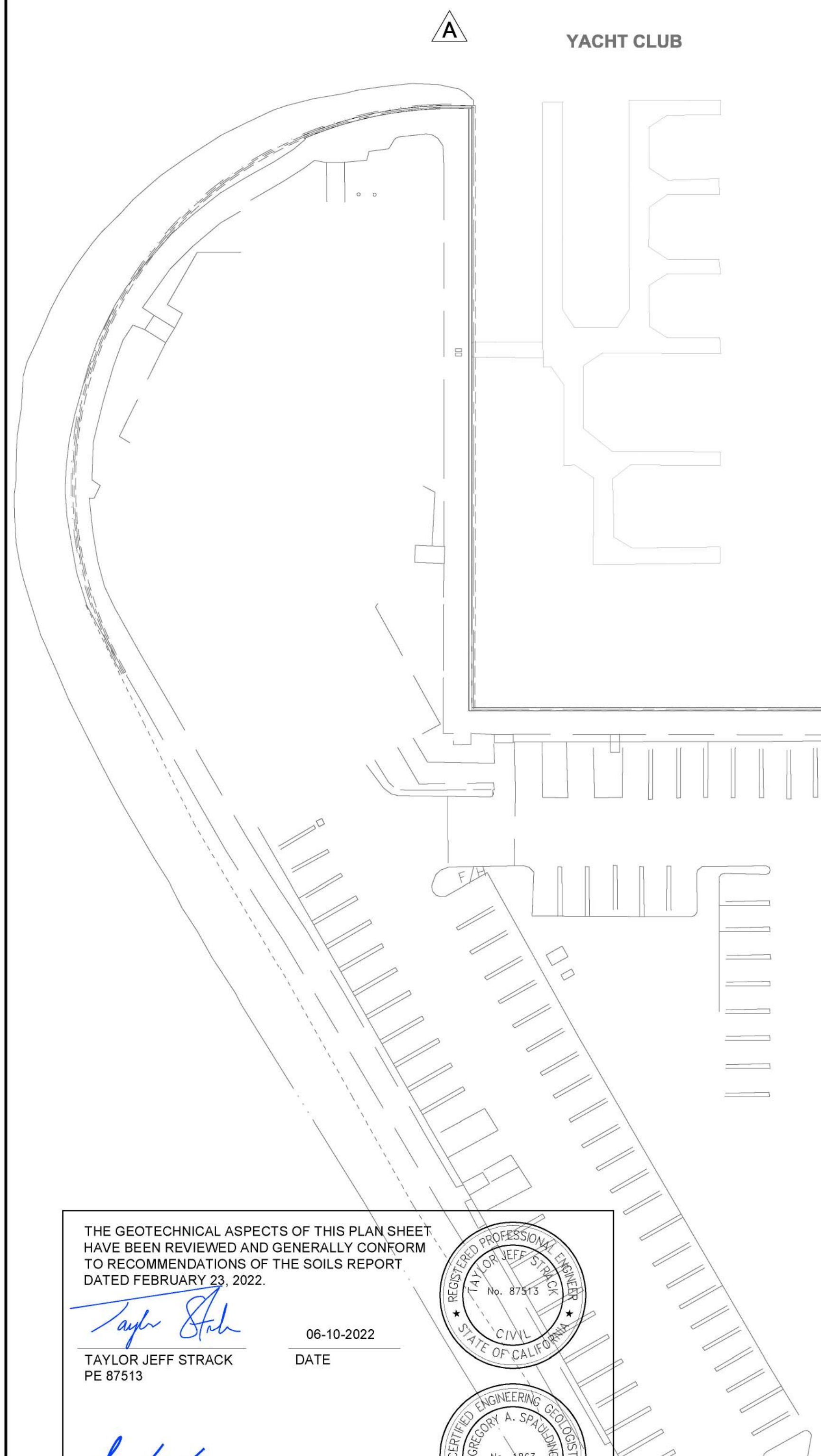
Hadi Tabatabaee
 BUILDING OFFICIAL

W19

W20

W21

PERMIT DRAWING

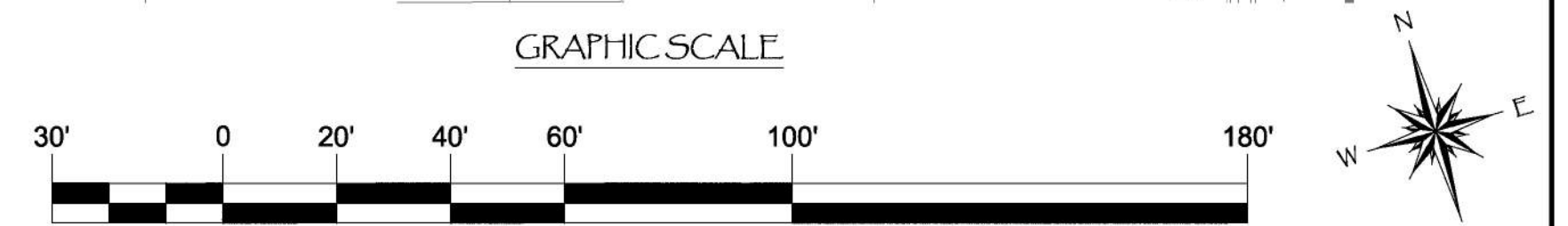


THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

Taylor Jeff Strack
 TAYLOR JEFF STRACK
 PE 87513
 06-10-2022
 DATE

Greg A. Spaulding
 GREG A. SPAULDING
 CEG 1863
 06-10-2022
 DATE

B ○ = 14" (14" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE



NO.	DATE	DESCRIPTION	BY
B	5-10-22	CHANGED FROM 12" PILE	KG
A	2-25-22	REMOVED YACHT CLUB	KG
REVISIONS			

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

PILE LAYOUT FOR DOCKS W19 - W21

Craig S Funston
 2022.05.13
 12:26:36-07'00"

SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: PL5

SHEET NO.: 22

PERMIT DRAWING

EAST COVE

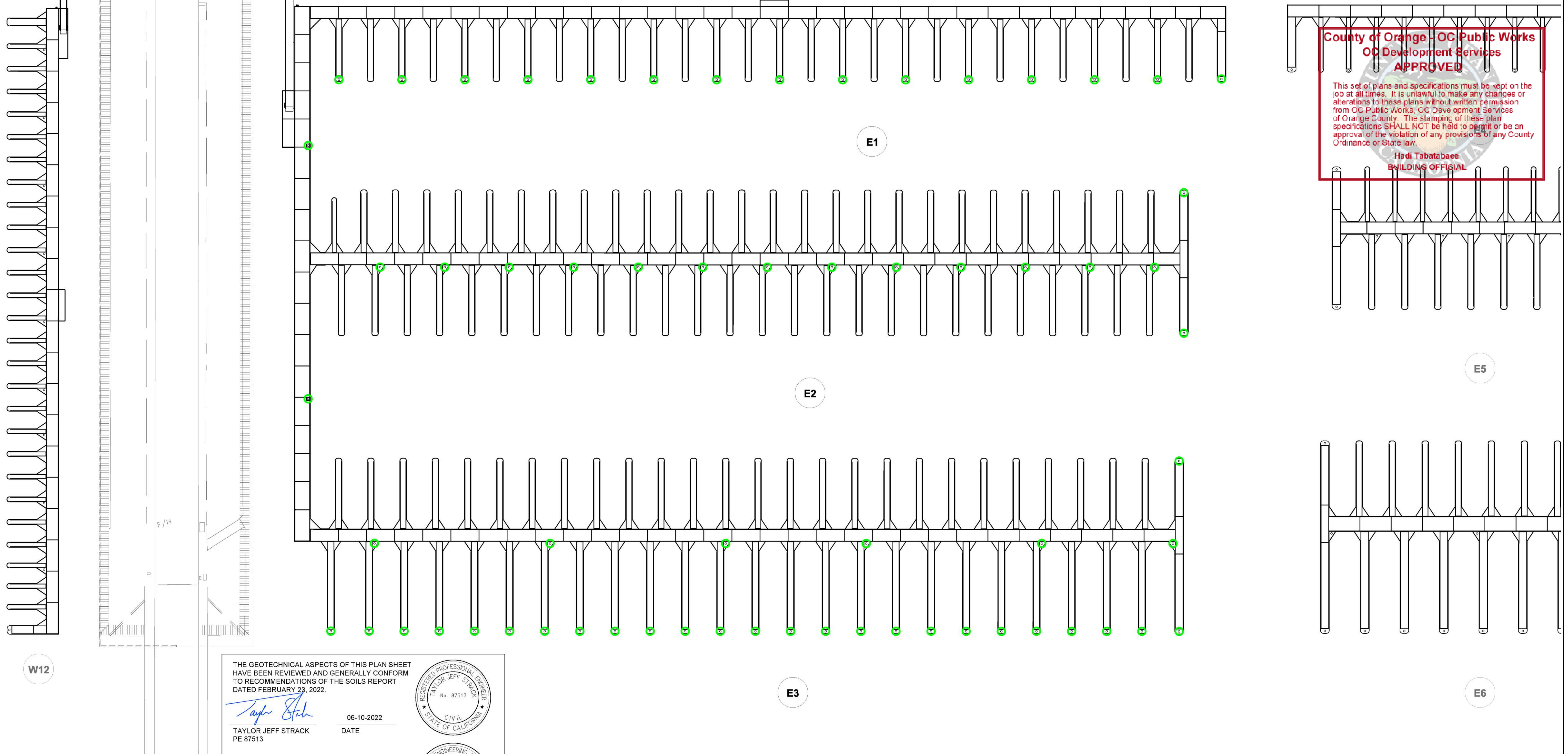
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022

Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

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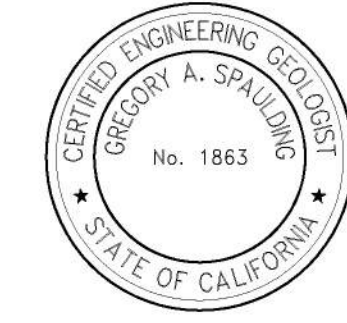
Hadi Tabatabaee
 BUILDING OFFICIAL



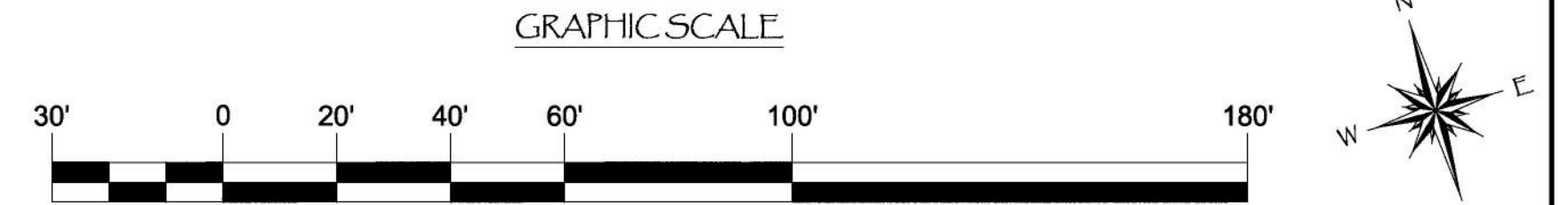
THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

Taylor Jeff Strack
 TAYLOR JEFF STRACK
 PE 87513
 DATE: 06-10-2022

Gregory A. Spaulding
 GREG A. SPAULDING
 CEG 1863
 DATE: 06-10-2022



A ○ = 14" (14" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE



NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	CHANGED FROM 12" PILE	KG
REVISIONS			

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

PILE LAYOUT FOR DOCKS E1 - E3

Craig S Funston
 2022.05.13
 12:26:46-07'00"

SCALE: 1" = 30"
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: PL6

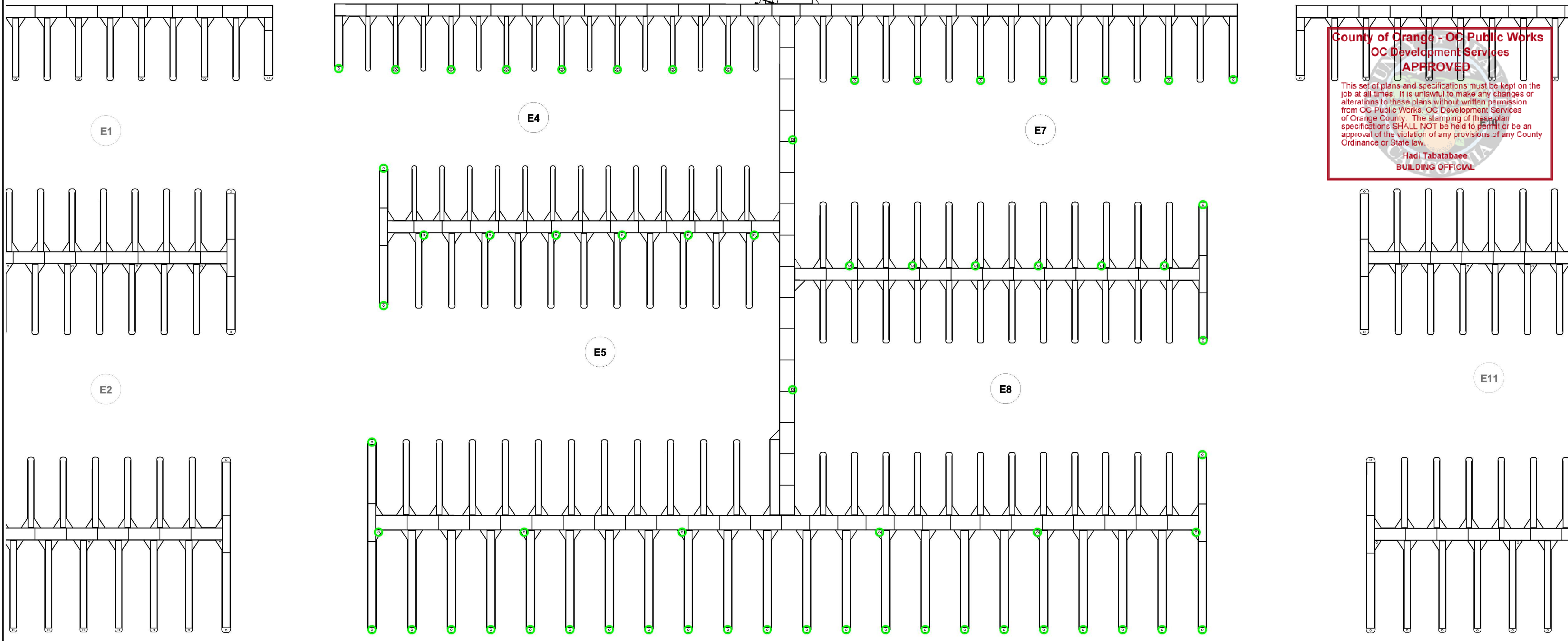
SHEET NO.: 23

County of Orange - OC Public Works
 OC Development Services
APPROVED

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Hadi Tabatabaee
 BUILDING OFFICIAL

PERMIT DRAWING



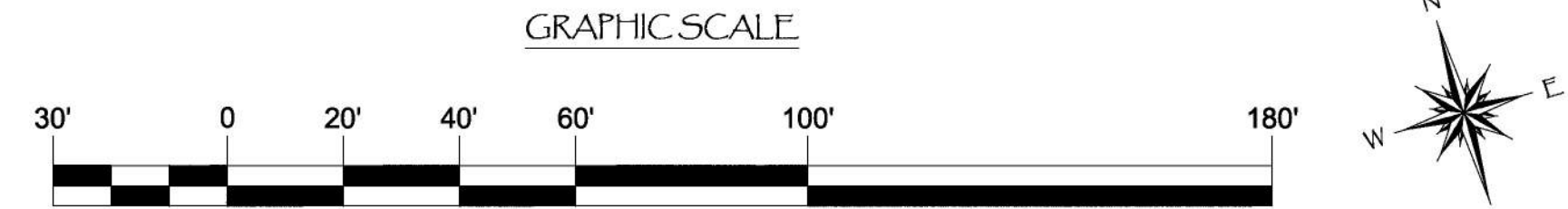
THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

Taylor Jeff Strack
 TAYLOR JEFF STRACK
 PE 87513
 06-10-2022
 DATE

Gregory A. Spaulding
 GREG A. SPAULDING
 CEG 1863
 06-10-2022
 DATE



A ○ = 14" (14" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE



NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	CHANGED FROM 12" PILE	
REVISIONS			

Bellingham MARINE

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

PILE LAYOUT FOR DOCKS E4 - E9

Craig S Funston
 2022.05.13
 12:26:57-07'00"



SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: PL7

SHEET NO.: 24

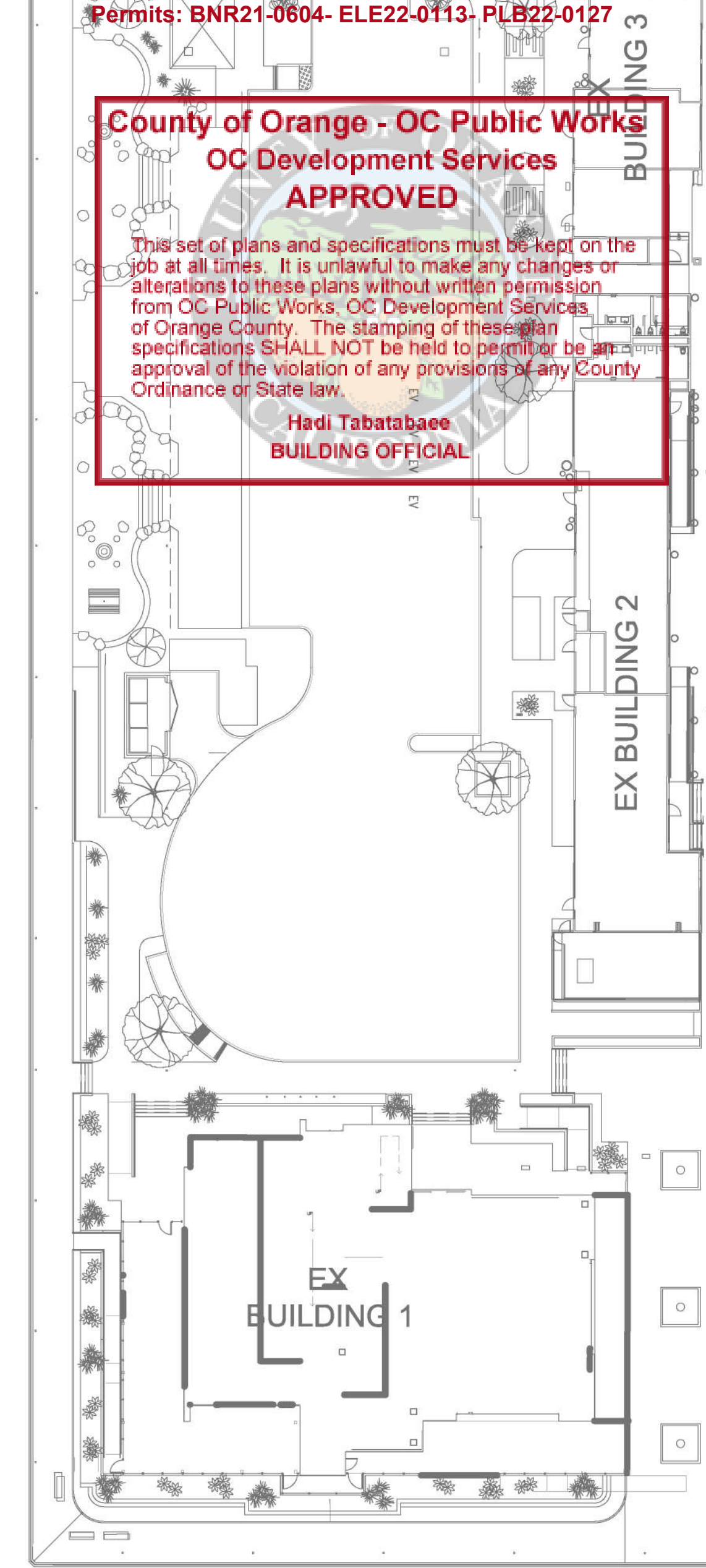
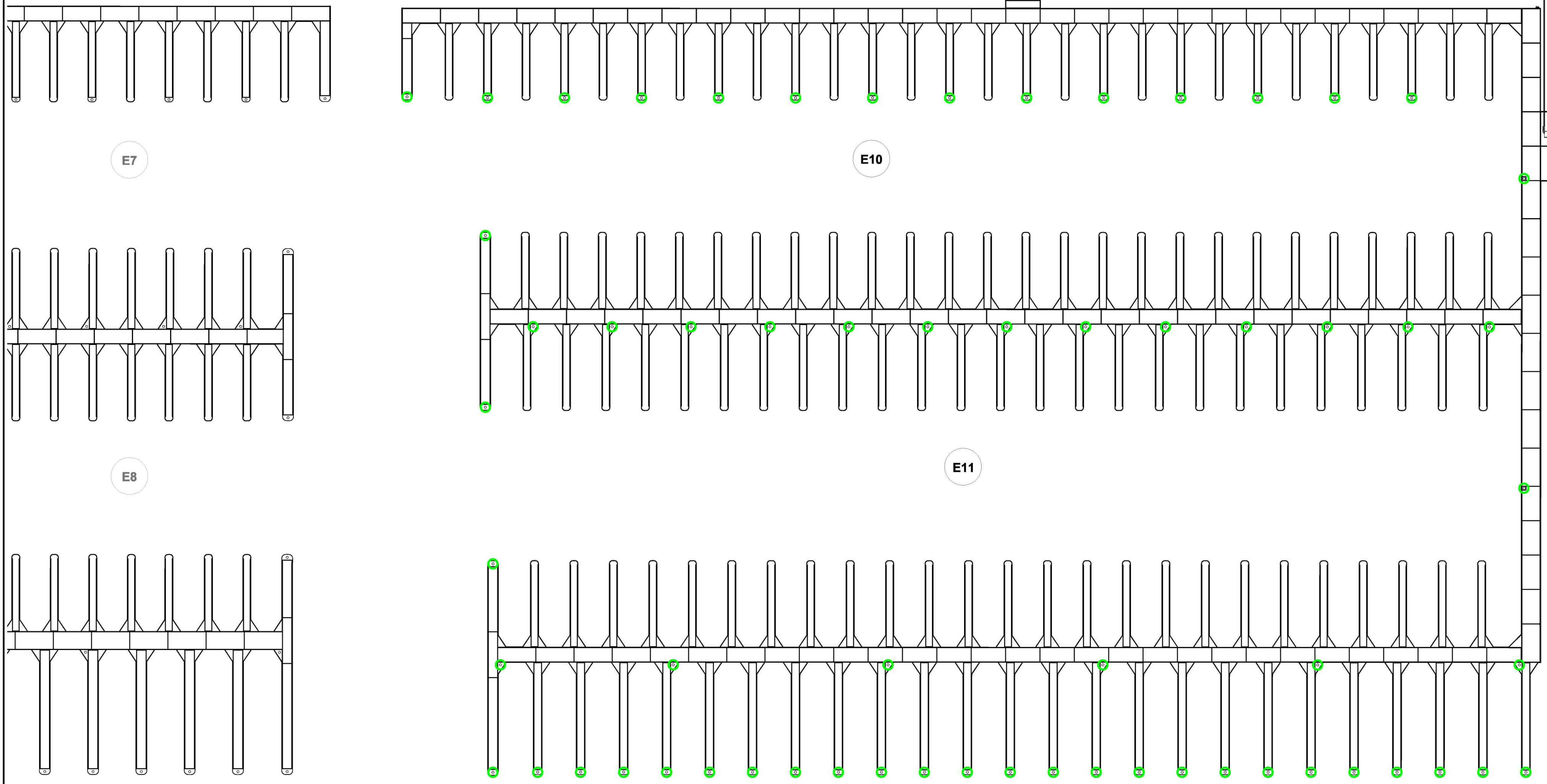
EAST COVE

Zoning: CanningK 9/14/2022
Building&Safety: Roshanak Amirazizi 9/14/2022

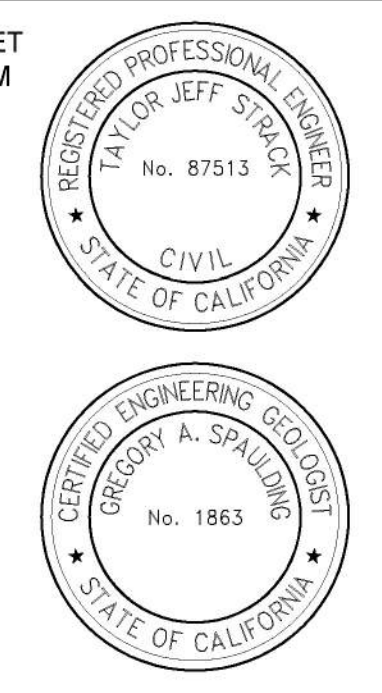
Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
OC Development Services
APPROVED**
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**Hadi Tabatabaee
BUILDING OFFICIAL**

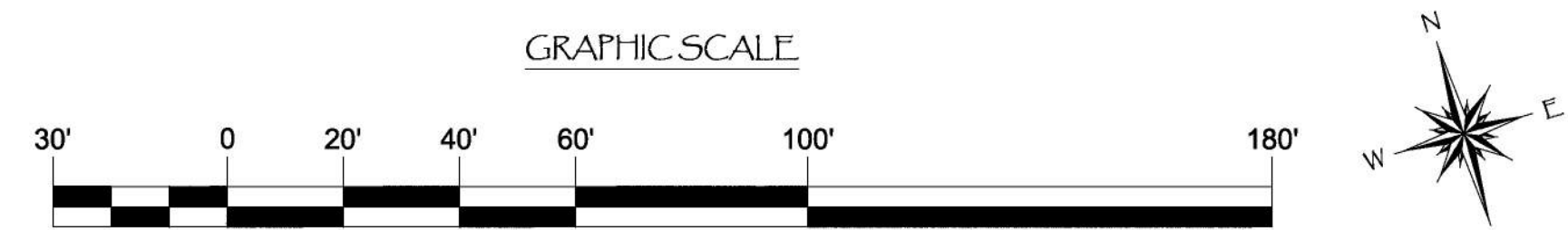
PERMIT DRAWING



THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.
Taylor Jeff Strack 06-10-2022
TAYLOR JEFF STRACK
PE 87513
Greg A. Spaulding 06-10-2022
GREG A. SPAULDING
CEG 1863



A ○ = 14" (14" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE



NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	CHANGED FROM 12" PILE	KG
REVISIONS			

Bellingham MARINE
THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER
SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
FAX: (707) 678-1760

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PROJECT NUMBER:
7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629
PILE LAYOUT FOR DOCKS E10 - E12

Craig S Funston
2022.05.13
12:27:07-07'00"
REGISTERED PROFESSIONAL ENGINEER
CRAIG S. FUNSTON
4878
8/20/2023
STRUCTURAL
STATE OF CALIFORNIA

SCALE: 1" = 30'
(Sheet Size 24" x 36")
DRAWN BY: KG
DATE: 5/10/2022
DRAWING: PL8
SHEET NO.: 25

PERMIT DRAWING

E16

E15

E14

E13

BD1

Zoning: CanningK

9/14/2022

Building&Safety: Roshanak Amirazizi

9/14/2022

Permits: BNR21-0604- ELE22-0113- PLB22-0127

THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

Taylor Jeff Strack
TAYLOR JEFF STRACK
PE 87513

06-10-2022
DATE



Greg A. Spaulding
GREG A. SPAULDING
CES 1863

06-10-2022
DATE

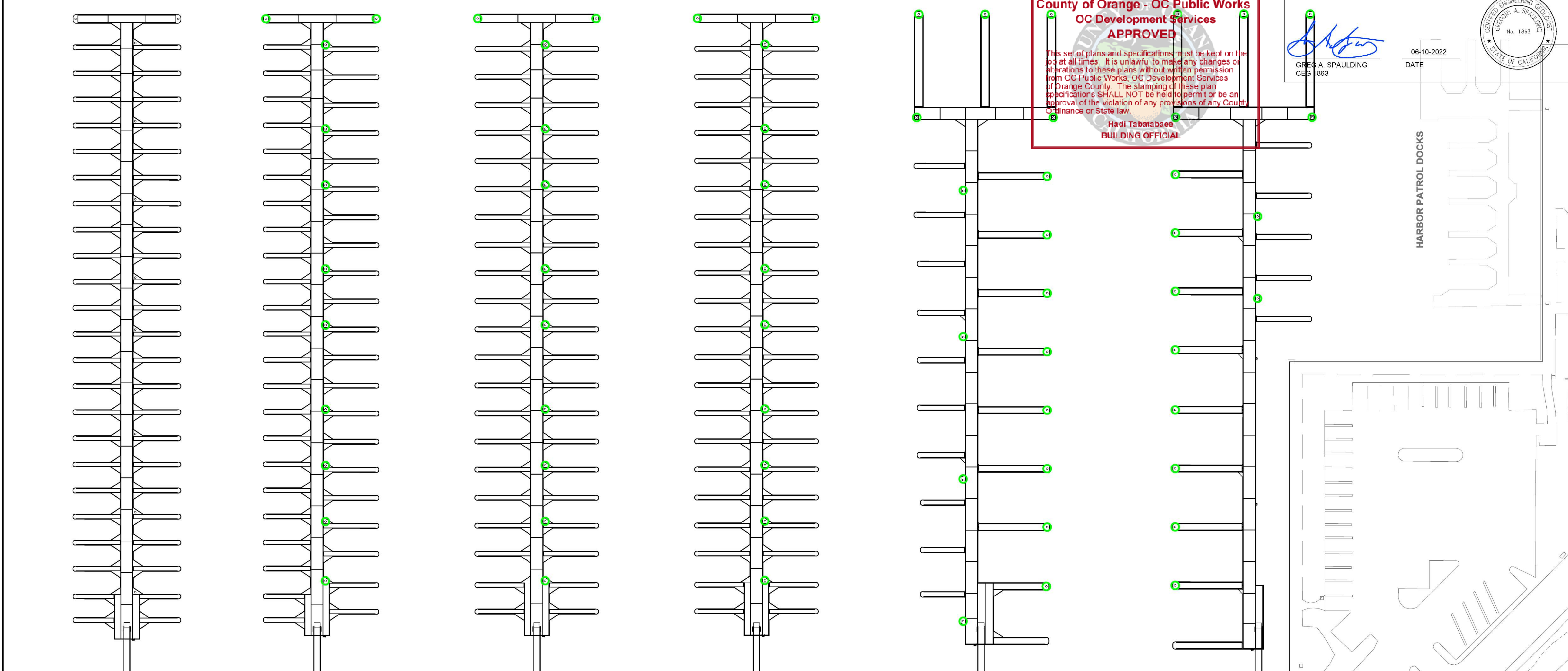


**County of Orange - OC Public Works
OC Development Services
APPROVED**

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Hadi Tabatabaee
BUILDING OFFICIAL

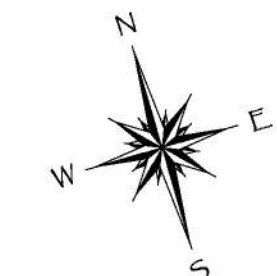
HARBOR PATROL DOCKS



EAST ISLAND

A ○ = 14" (14" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE

GRAPHIC SCALE



NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	CHANGED FROM 12" PILE	
REVISIONS			

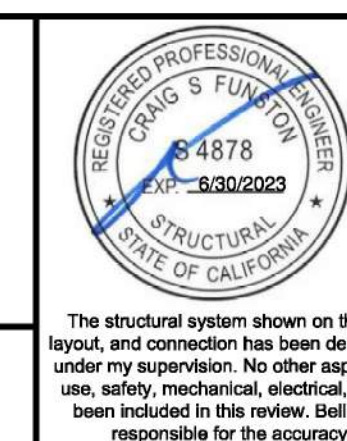
Bellingham MARINE
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SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
FAX: (707) 678-1760

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PROJECT NUMBER:
7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629
PILE LAYOUT FOR DOCKS BFD1, BD1, & E13 - E15



Craig S Funston
2022.05.13
12:27:17-07'00"

SCALE: 1" = 30'
(Sheet Size 24" x 36")
DRAWN BY: KG
DATE: 5/10/2022
DRAWING: PL9
SHEET NO.: 26

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

PERMIT DRAWING

E22

E21

E20

E19

E18

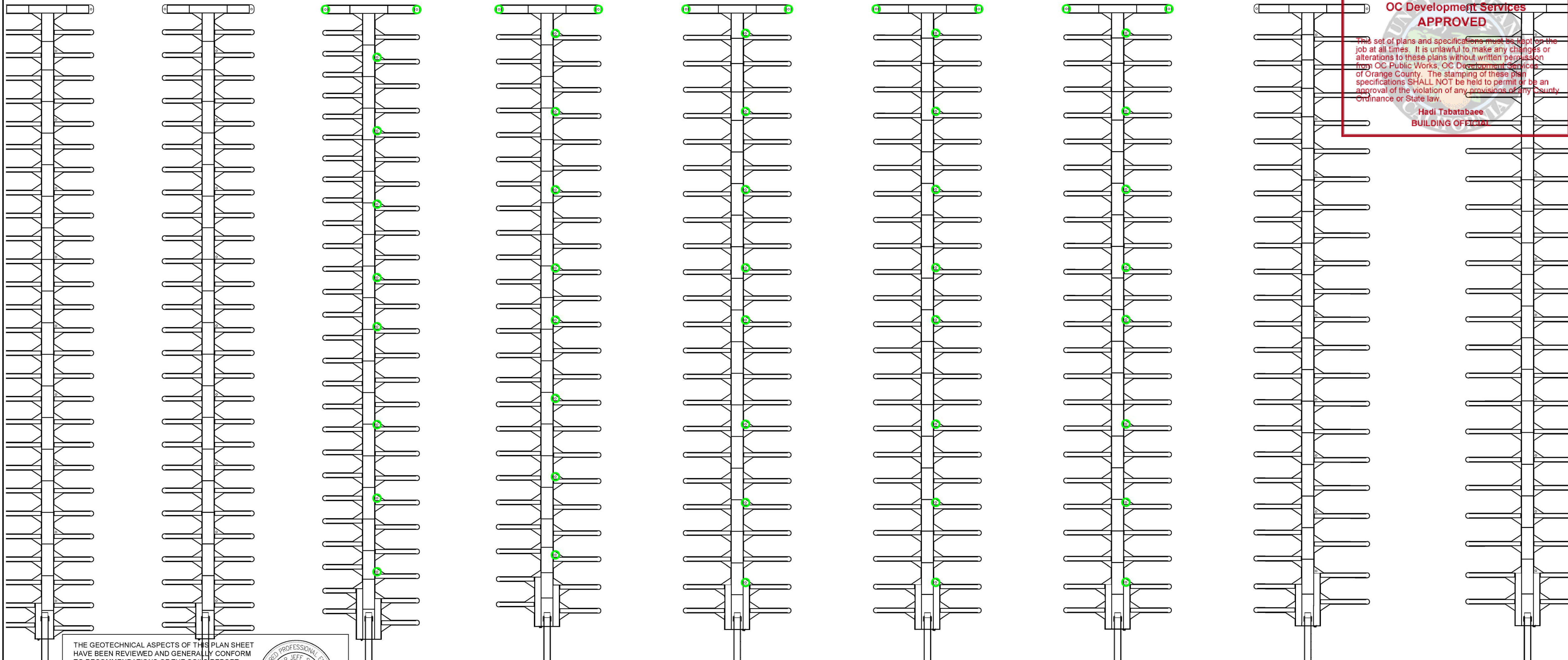
E17

E16

E15

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED
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 Hadi Tabatabaee
 BUILDING OFFICER



THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

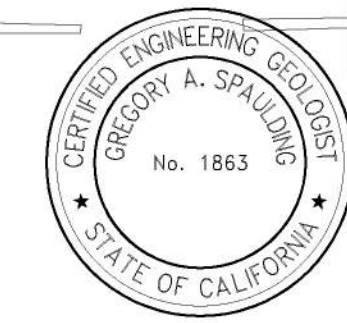
Taylor Jeff Strack
 TAYLOR JEFF STRACK
 PE 87513

06-10-2022
 DATE

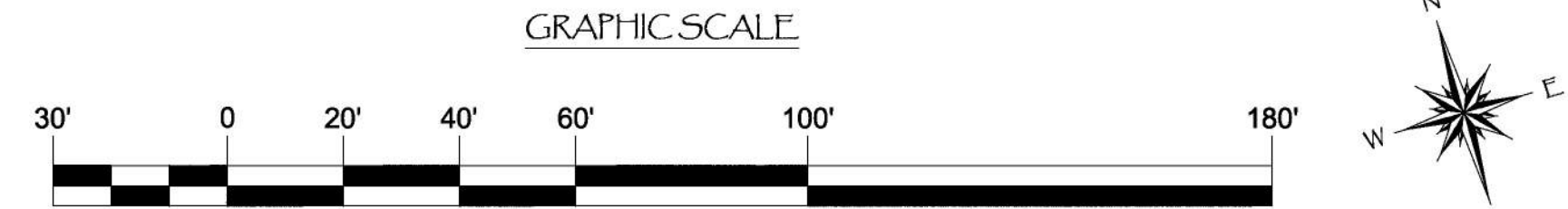


Greg A. Spaulding
 GREG A. SPAULDING
 CEG 1863

06-10-2022
 DATE



A ○ = 14" (14" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE



NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	CHANGED FROM 12" PILE	KG
REVISIONS			

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SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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 FAX: (707) 678-1760

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

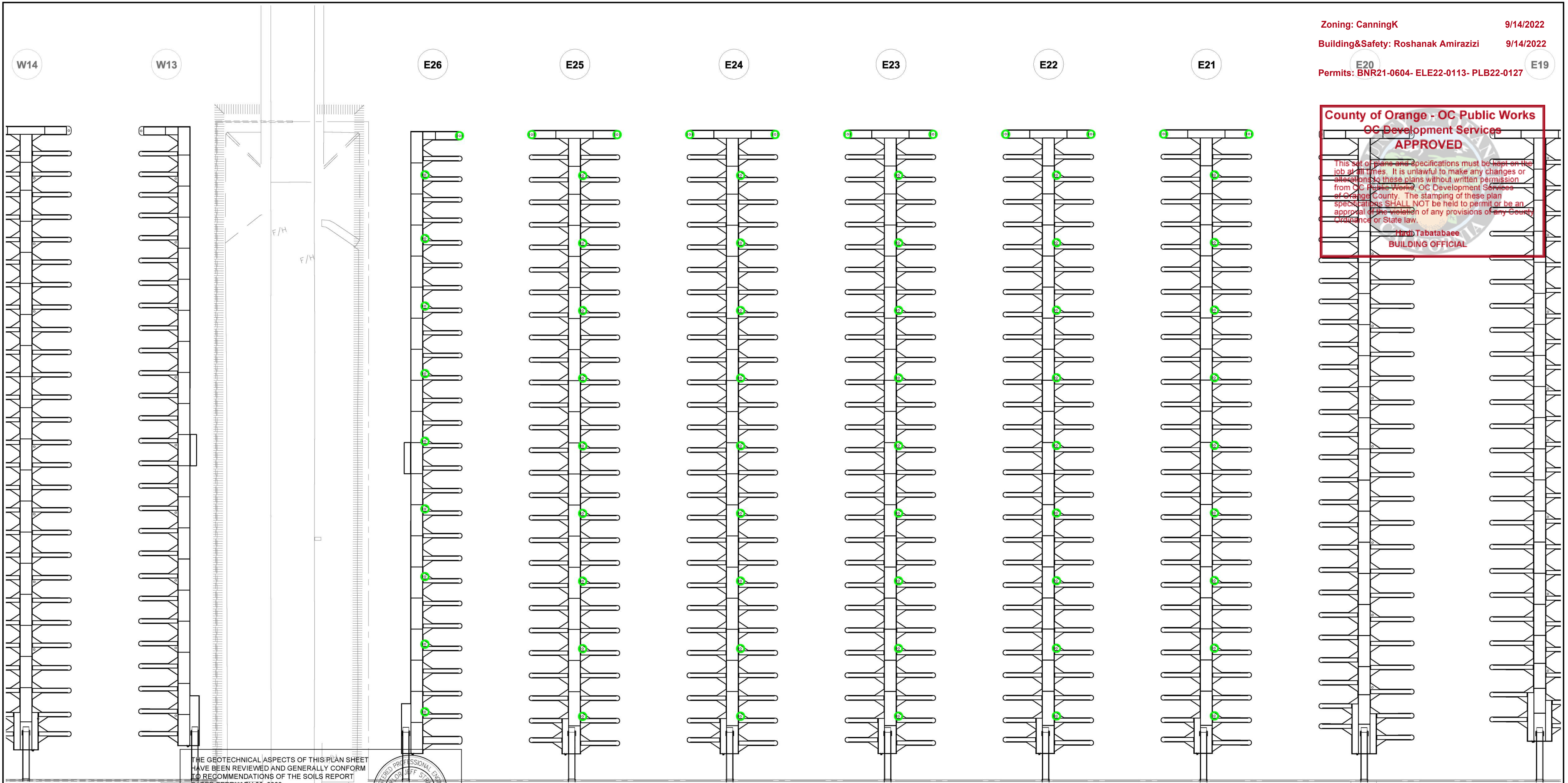
PILE LAYOUT FOR DOCKS E16 - E20

Craig S Funston
 2022.05.13
 12:27:26-07'00"

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: PL10
 SHEET NO.: 27

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127



County of Orange - OC Public Works
OC Development Services
APPROVED

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Hadi Tabatabaee
BUILDING OFFICIAL

PERMIT DRAWING

THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

Taylor Jeff Strack
 TAYLOR JEFF STRACK
 PE 87513

06-10-2022
 DATE

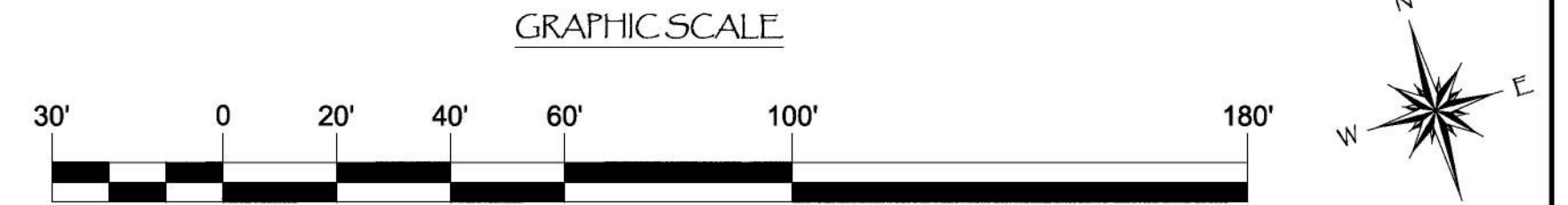


Greg A. Spaulding
 GREG A. SPAULDING
 CEG 1863

06-10-2022
 DATE



A ○ = 14" (14" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE



NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	CHANGED FROM 12" PILE	KG
		REVISIONS	

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SOUTHWEST DIVISION
 CA LICENSE #442499
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 DIXON, CA 95620
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 FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

PILE LAYOUT FOR DOCKS E21 - E26

Craig S Funston
 2022.05.13
 12:27:38-07'00"



SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: PL11

SHEET NO.: 28

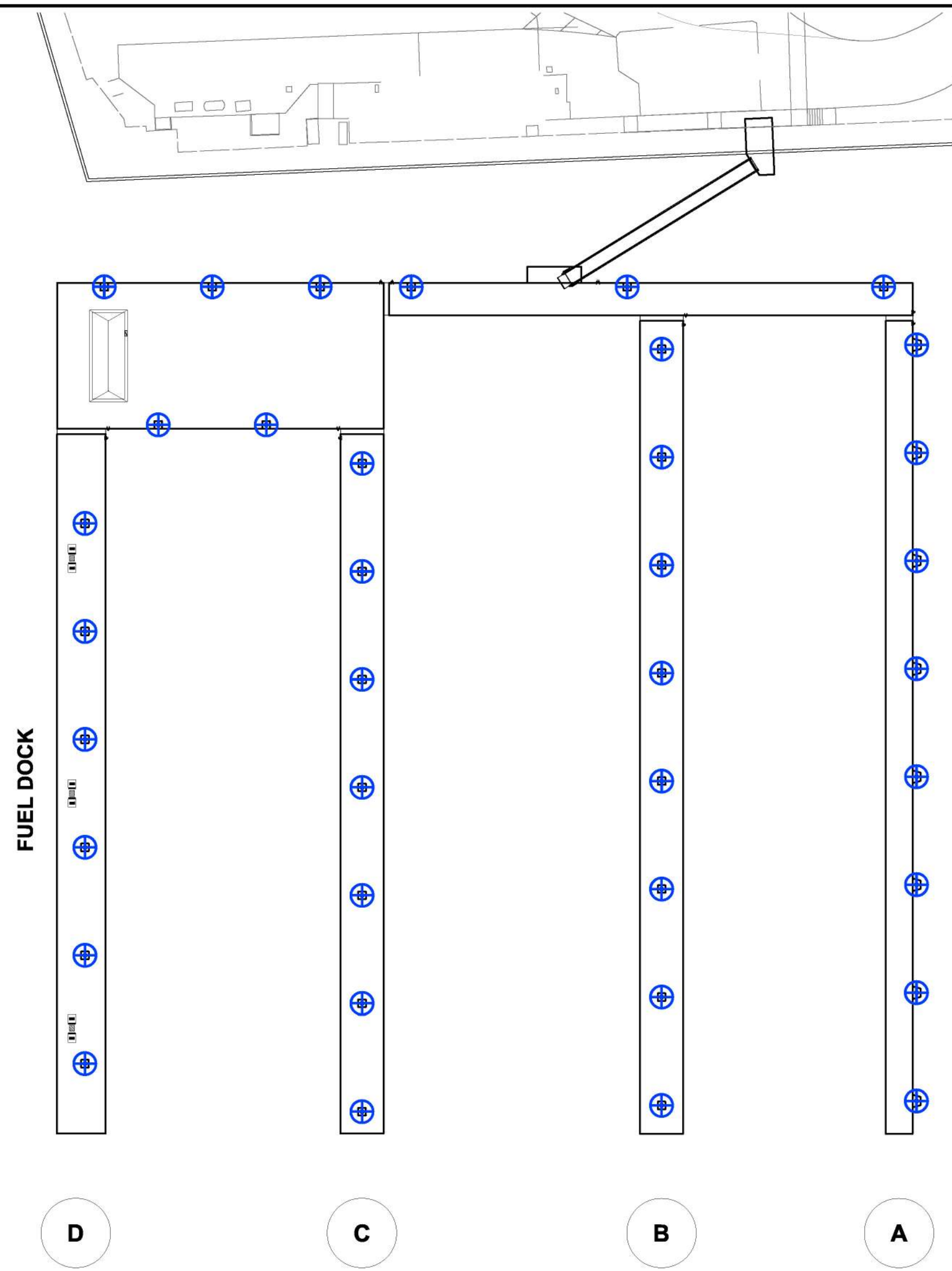
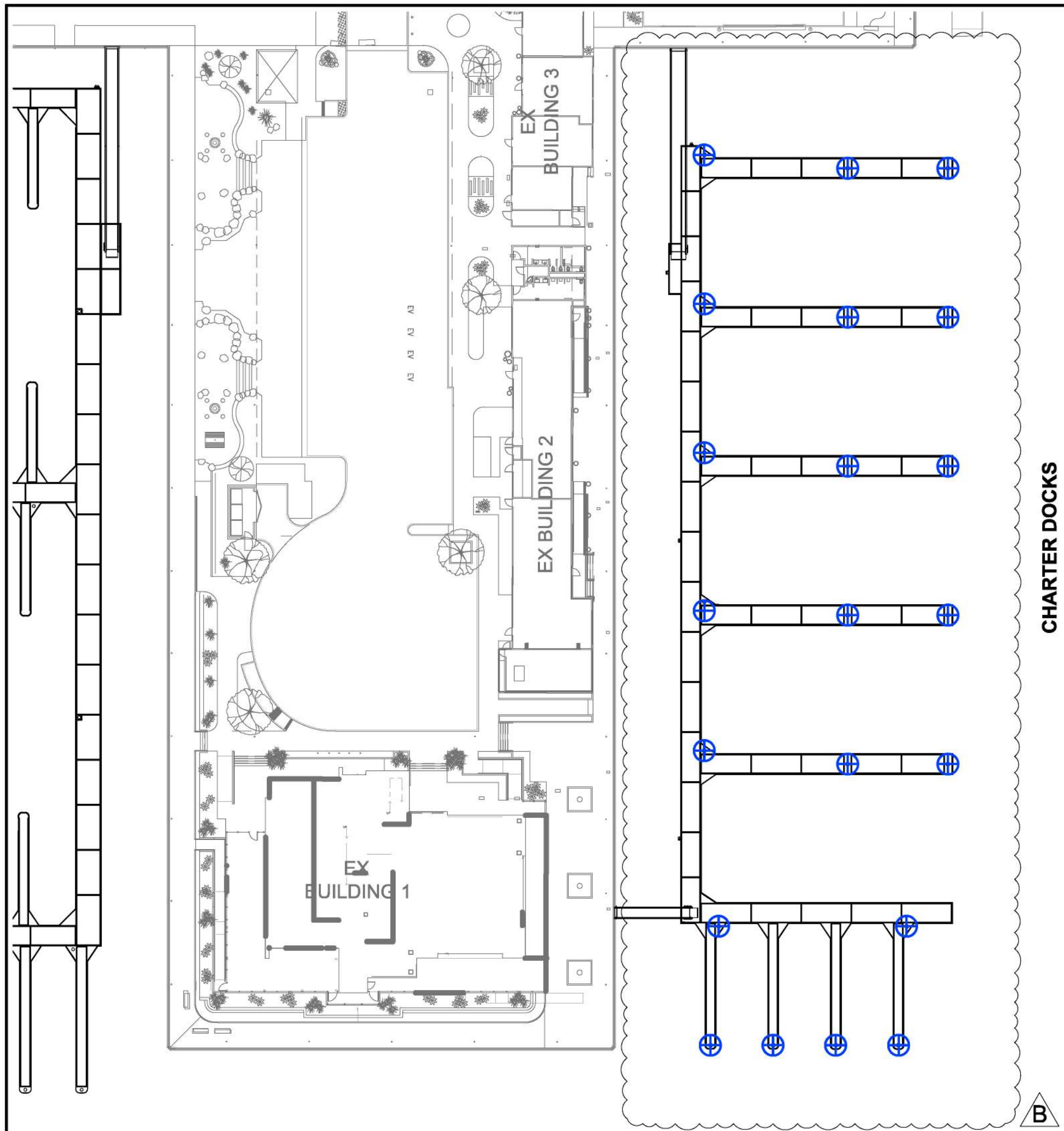
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED

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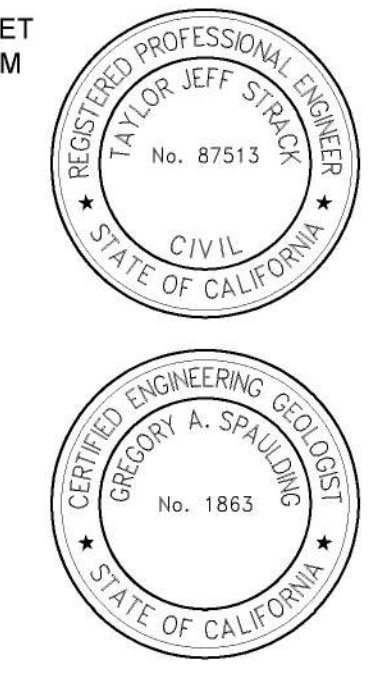
Hadi Tabatabaee
 BUILDING OFFICIAL



THE GEOTECHNICAL ASPECTS OF THIS PLAN SHEET HAVE BEEN REVIEWED AND GENERALLY CONFORM TO RECOMMENDATIONS OF THE SOILS REPORT DATED FEBRUARY 23, 2022.

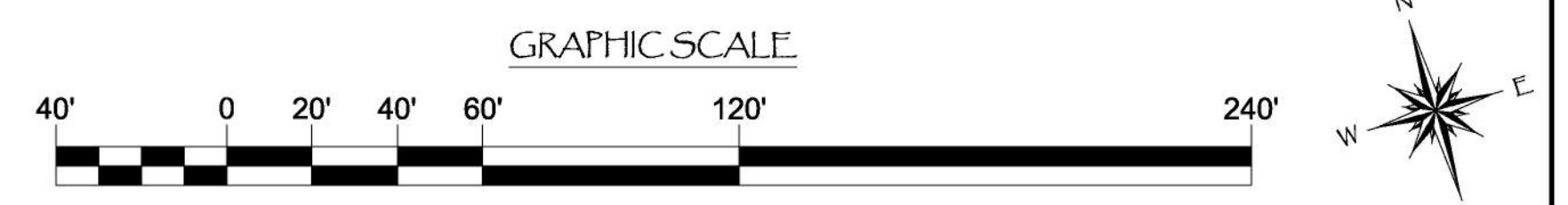
Taylor Jeff Strack
 TAYLOR JEFF STRACK
 PE 87513
 06-10-2022
 DATE

Gregory A. Spaulding
 GREG A. SPAULDING
 CEG 1863
 06-10-2022
 DATE



OUTER BASIN

⊕ = 18" (18" O.D.) SCH. XH (.500" WALL) PIPE PILE, ASTM A252, GR. 3 w/ HDPE SLEEVE



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED SPORTFISHING/ ADDED EXISTING RELOCATED	KG
REVISIONS			

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SOUTHWEST DIVISION
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 8810 SPARLING LANE
 DIXON, CA 95620
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 FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

PILE LAYOUT FOR OUTER BASIN DOCKS

Craig S Funston
 2022.05.13
 12:27:47-07'00"

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

SCALE: 1" = 40'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

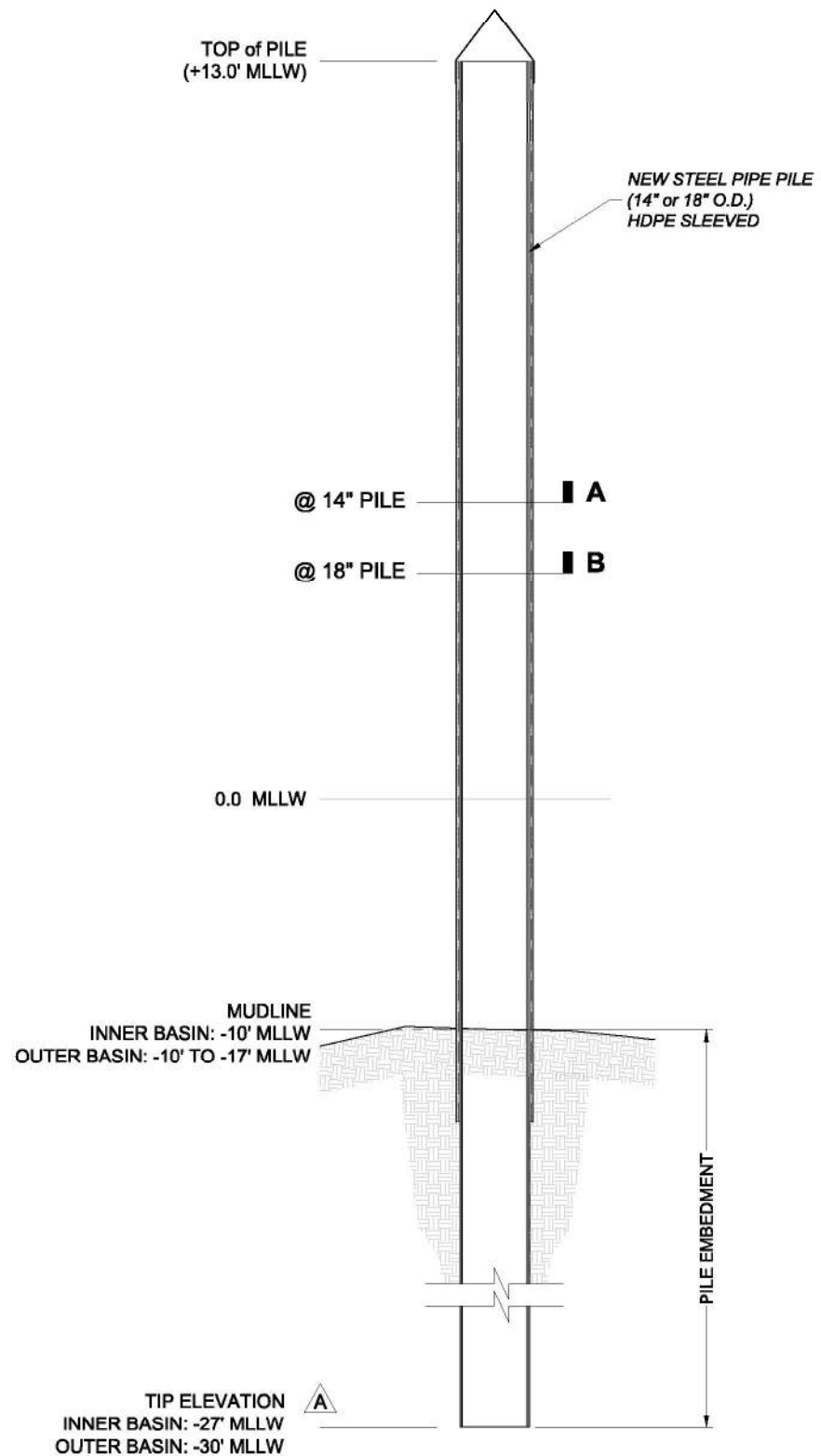
DRAWING: PL12

SHEET NO.: 29

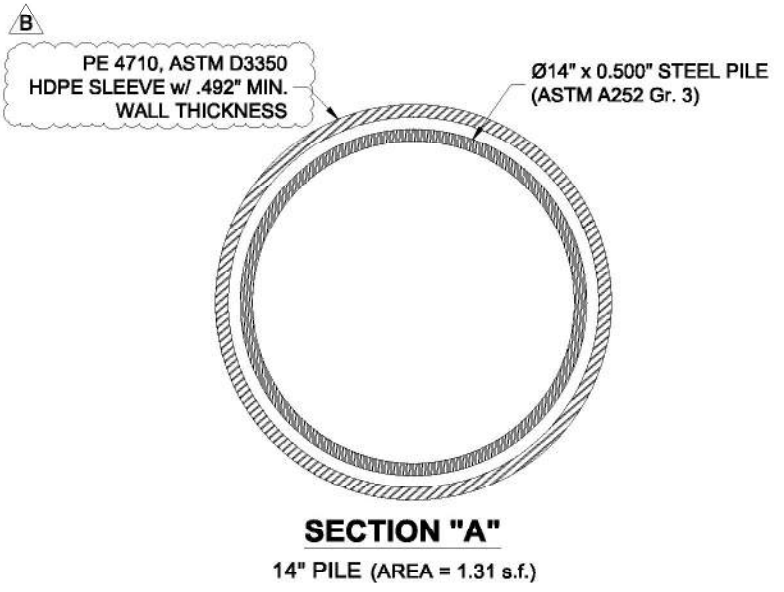
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

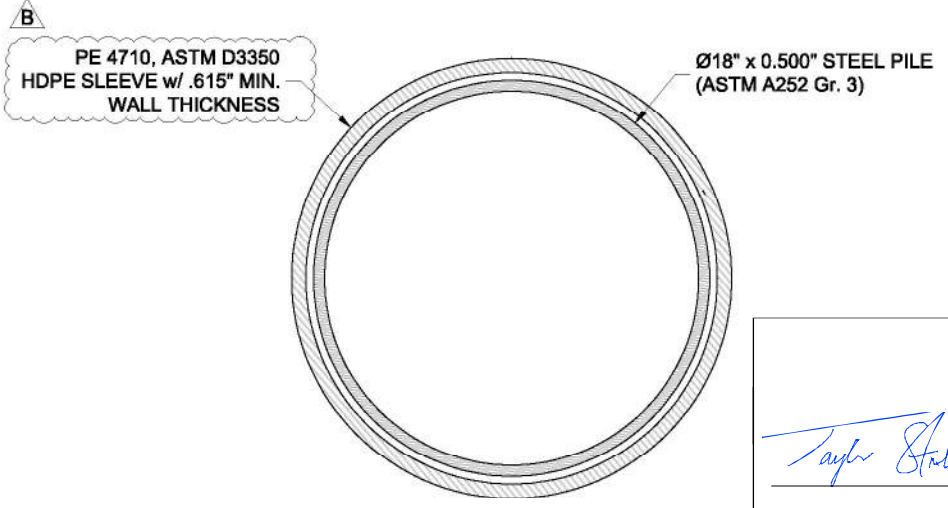
County of Orange - OC Public Works
OC Development Services
APPROVED
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Hadi Tabatabaee
BUILDING OFFICIAL



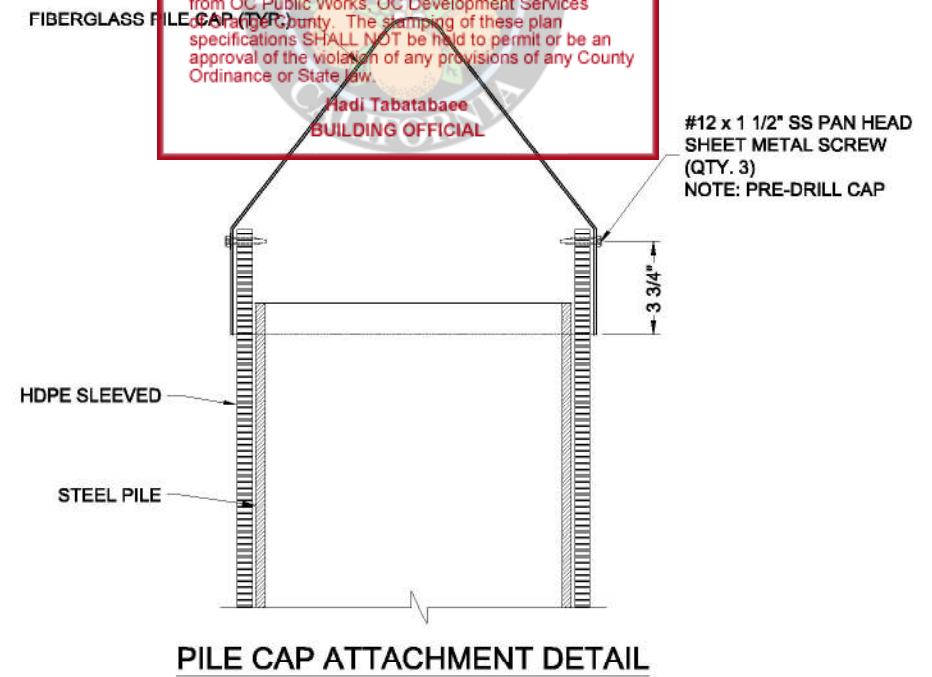
1 PILE ELEVATION
 PE1 SCALE: NTS




SECTION "A"
 14" PILE (AREA = 1.31 s.f.)




SECTION "B"
 18" PILE (AREA = 2.07 s.f.)



PILE CAP ATTACHMENT DETAIL


 REGISTERED PROFESSIONAL ENGINEER
 TAYLOR JEFF STRACK
 No. 87513
 CIVIL
 STATE OF CALIFORNIA


 REGISTERED ENGINEERING GEOLOGIST
 GREGORY A. SPAULDING
 No. 1863
 STATE OF CALIFORNIA


 Taylor Jeff Strack
 2022.05.16
 GEOTECHNICAL ENGINEER


 Craig S Funston
 2022.05.13
 12:15:20-07'00"

NO.	DATE	DESCRIPTION	BY
B	5-10-22	UPDATED NOTE	KG
A	2-25-22	UPDATED/ ADDED INFORMATION	KG
REVISIONS			


Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER
 SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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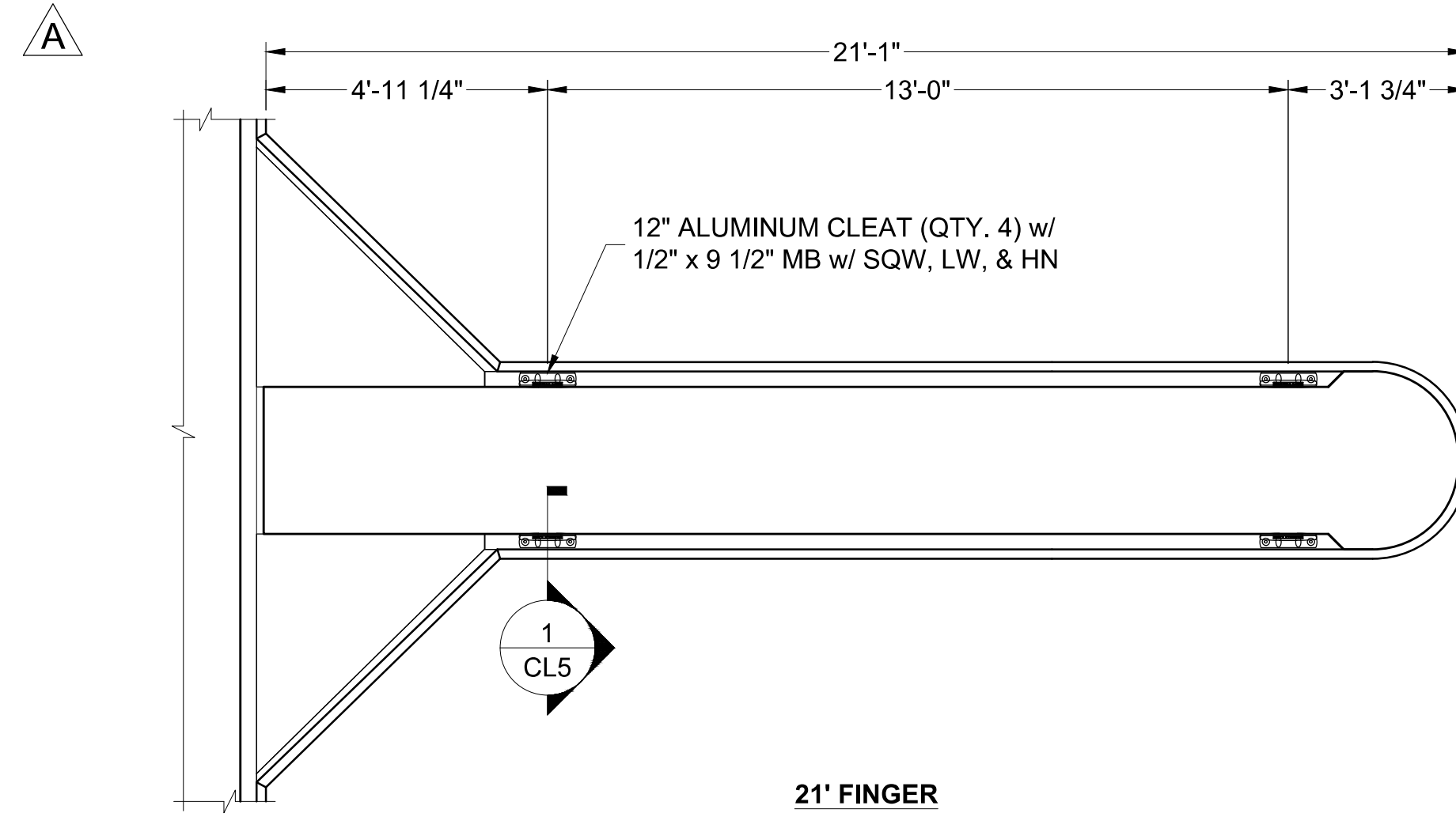
PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
PILE ELEVATION

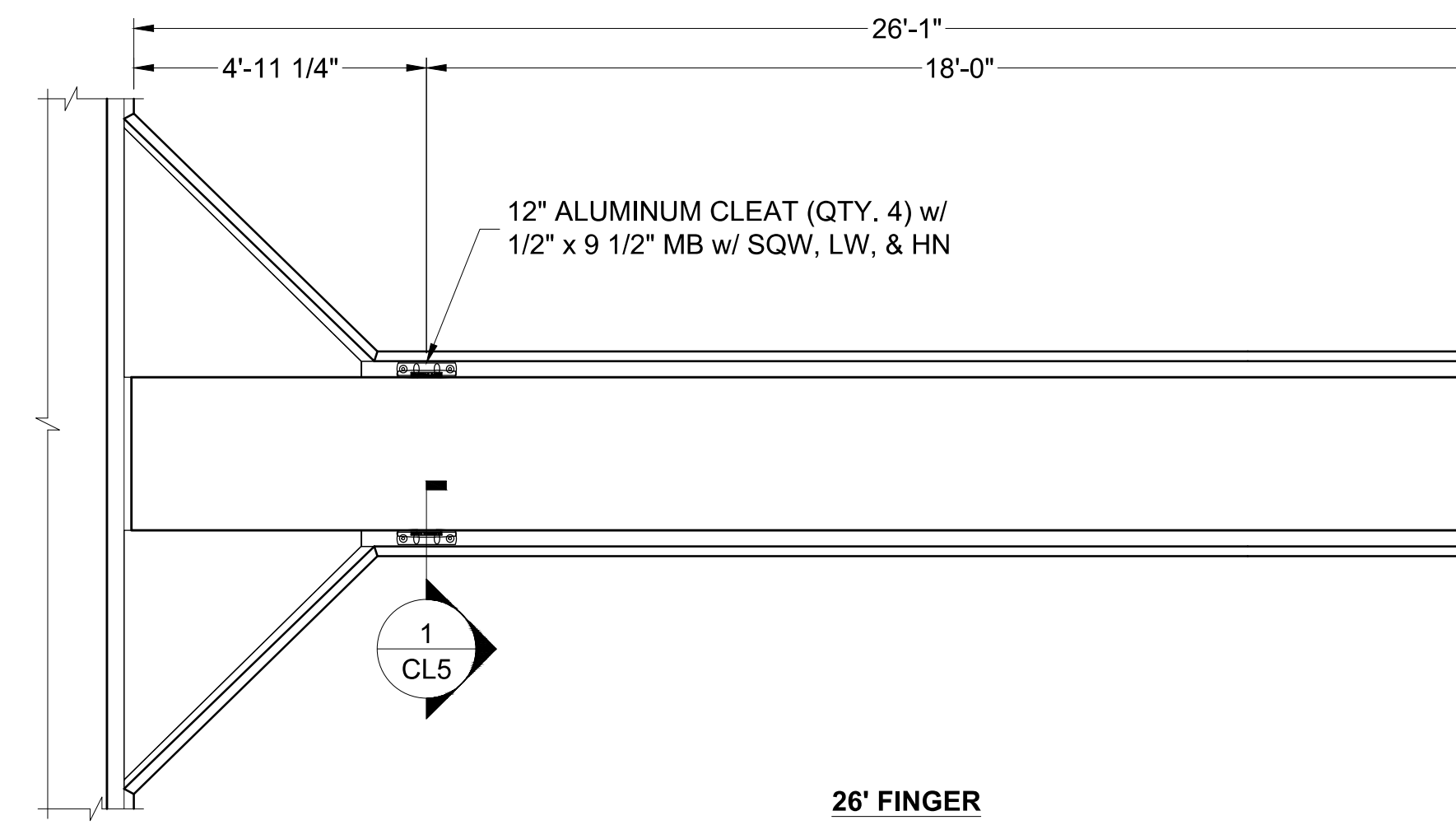
SCALE: NTS
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: PE1
 SHEET NO.: 30

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including utility for use, safety, mechanical, electrical, quantities, and lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

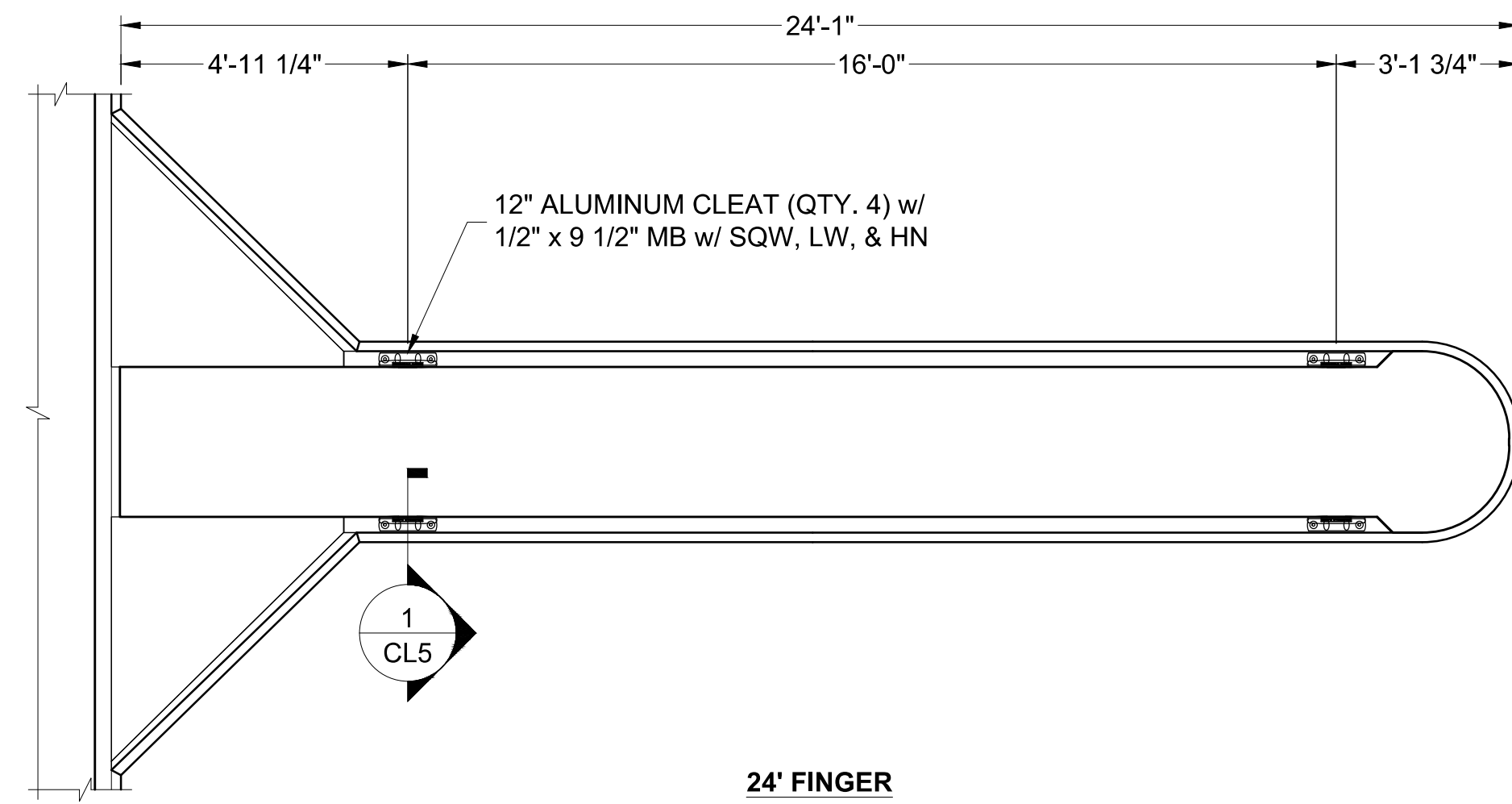
PERMIT DRAWING



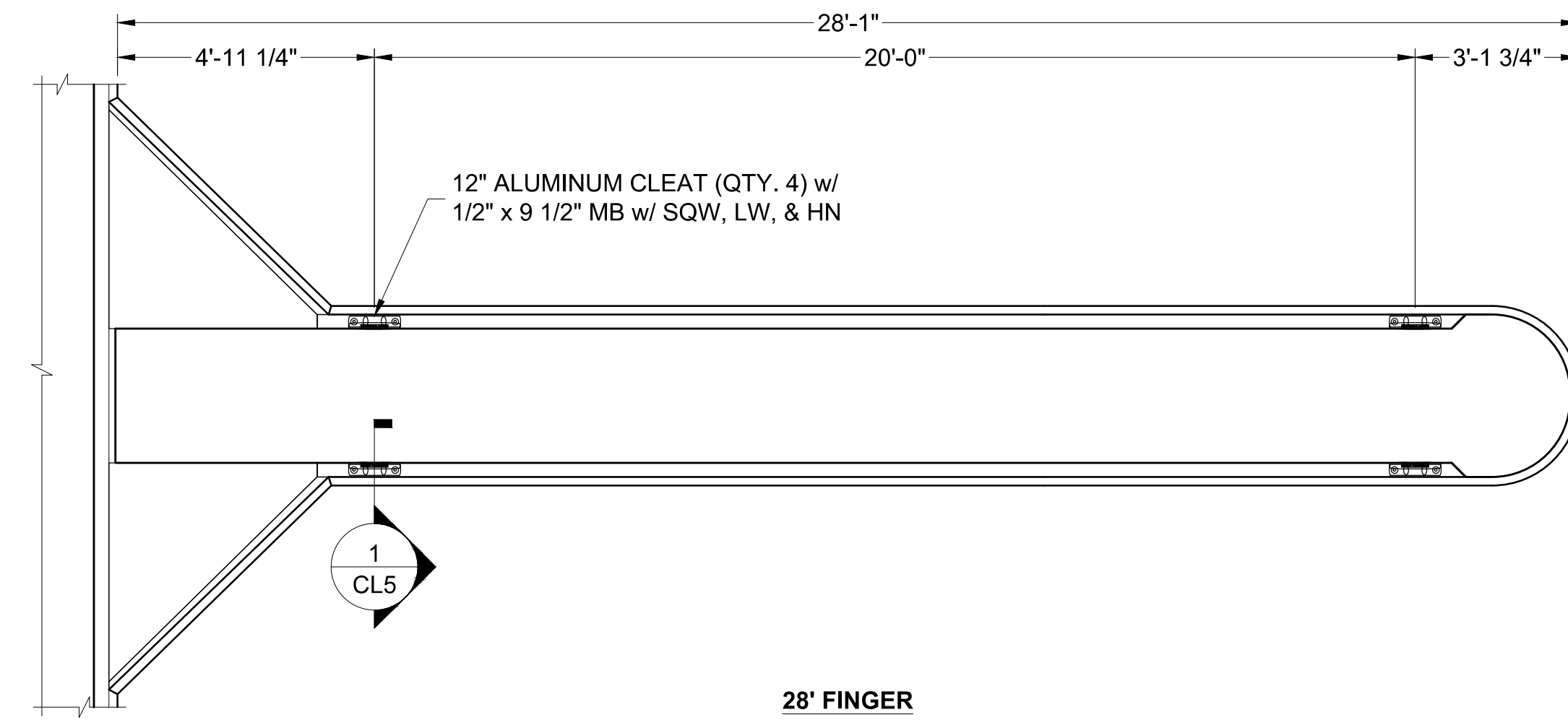
21' FINGER



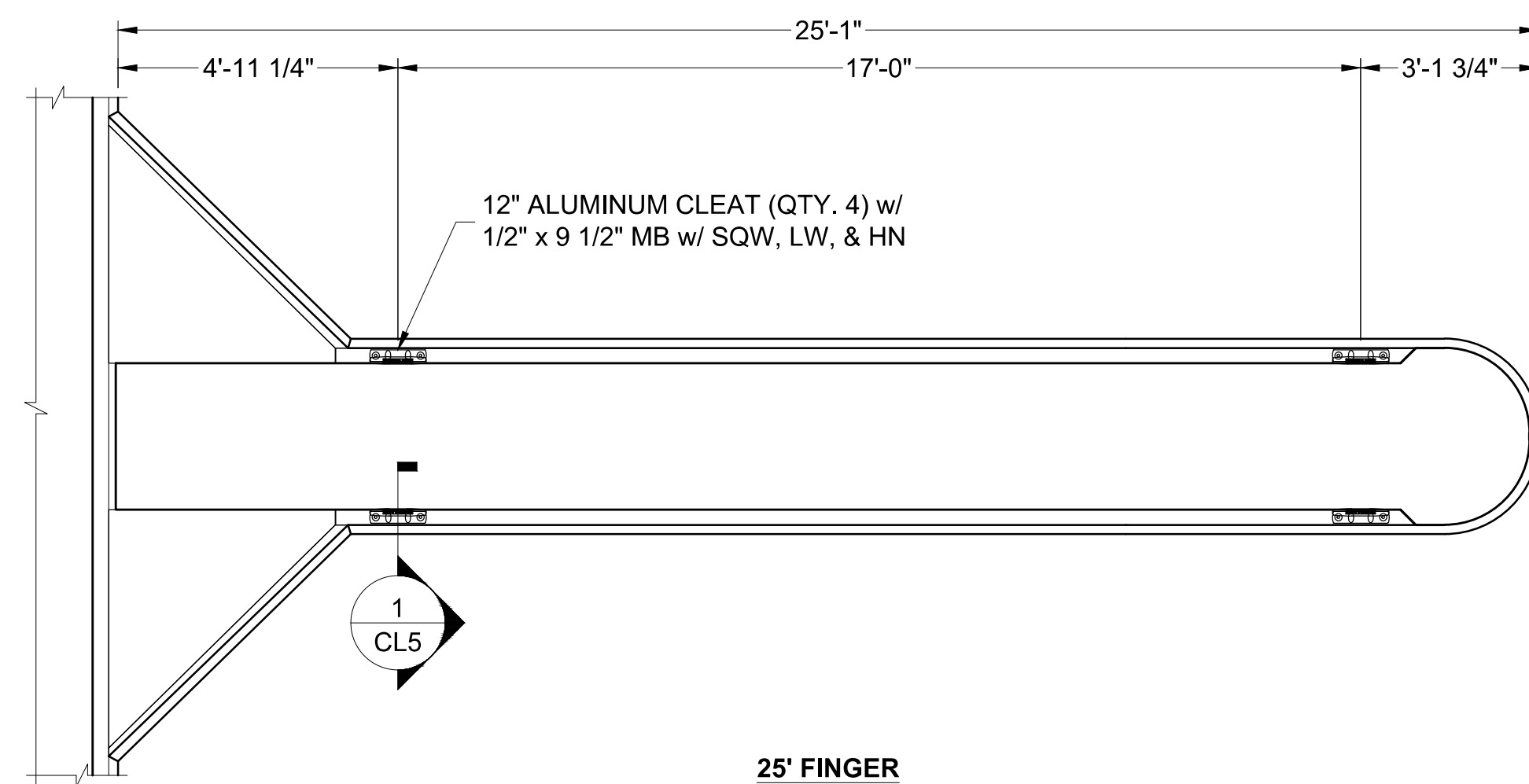
26' FINGER



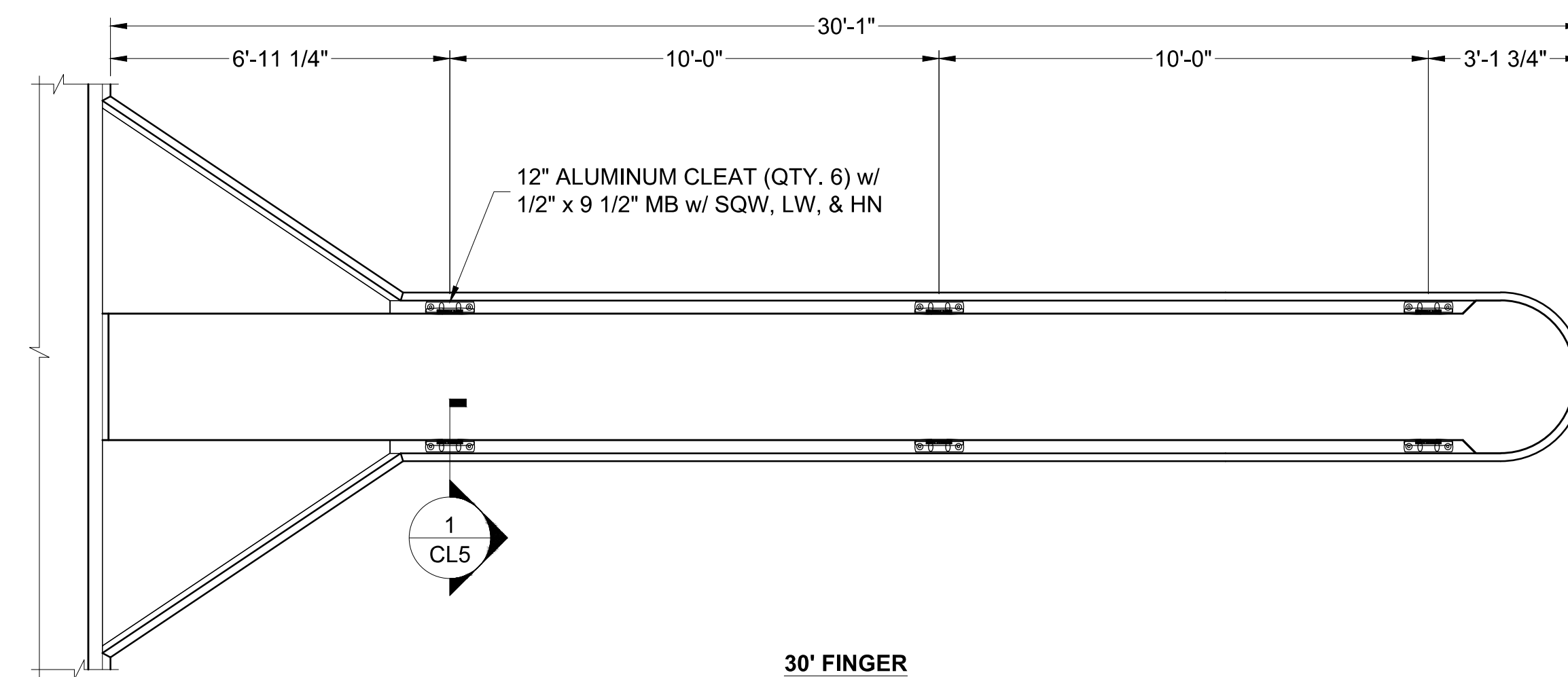
24' FINGER



28' FINGER



25' FINGER



30' FINGER

Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

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**Hadi Tabatabaee
 BUILDING OFFICIAL**

NO.	DATE	DESCRIPTION	BY
A	2-25-22	TRIANGLE FRAME SIZE CHANGED/ CLEAT SPACING CHANGED	KG
REVISIONS			

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

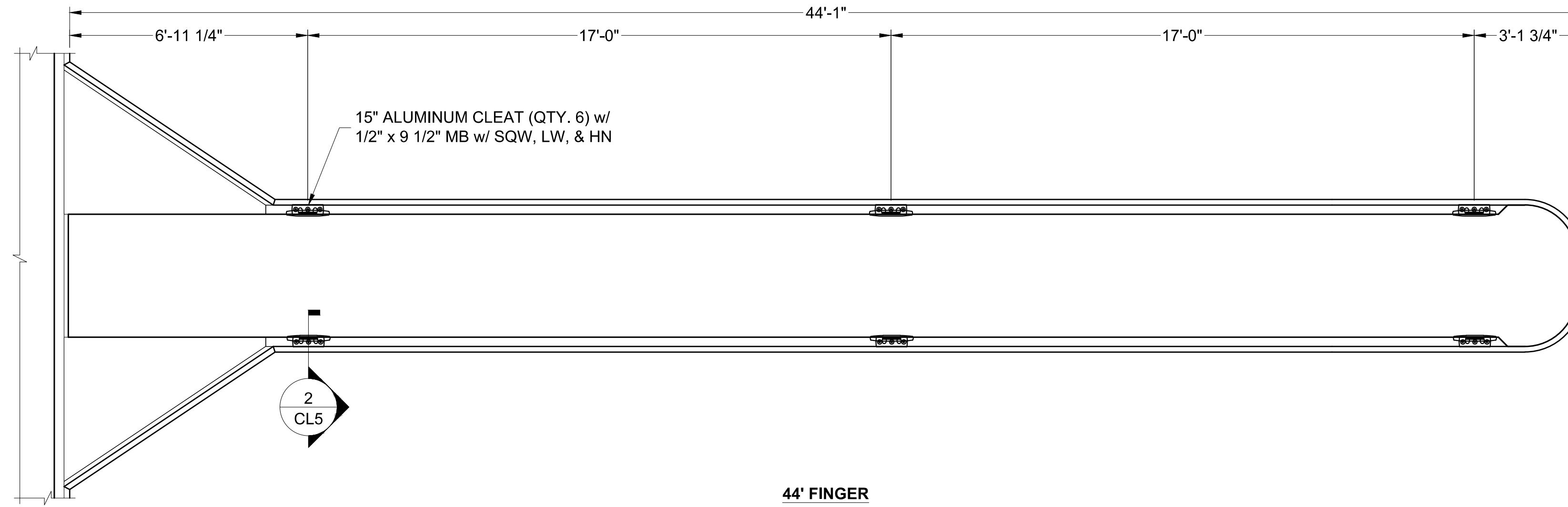
CLEAT LAYOUT DETAILS

Craig S Funston
 2022.05.13
 12:28:02-07'00'

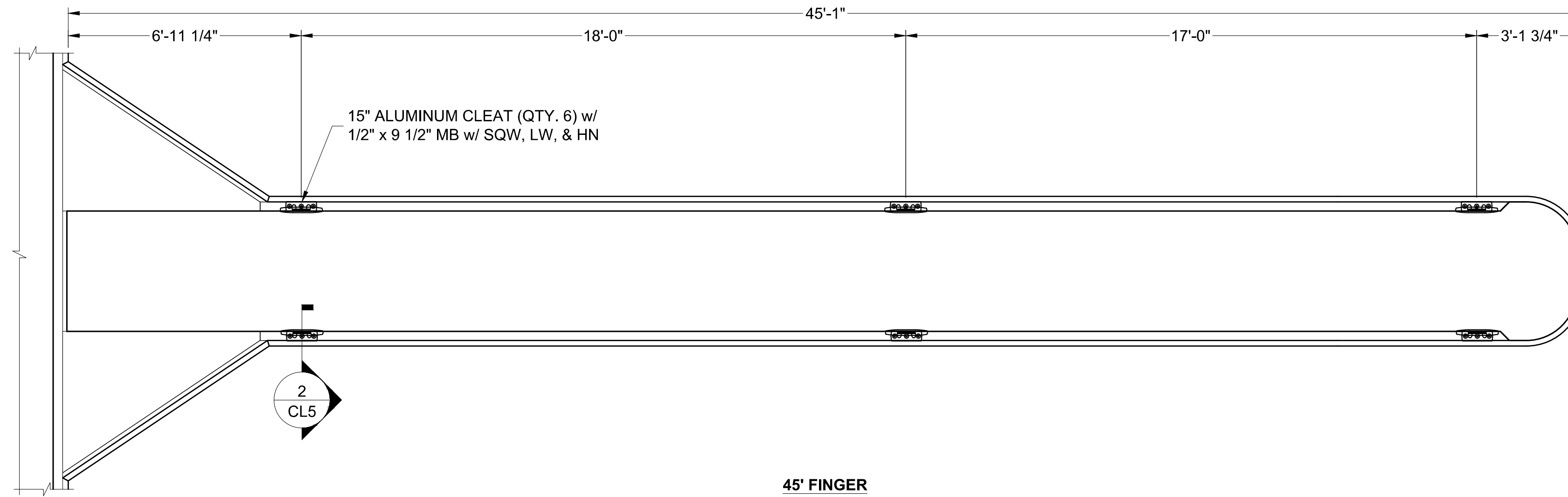
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SCALE:	3/8" = 1'-0" (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	CL1
SHEET NO.:	31

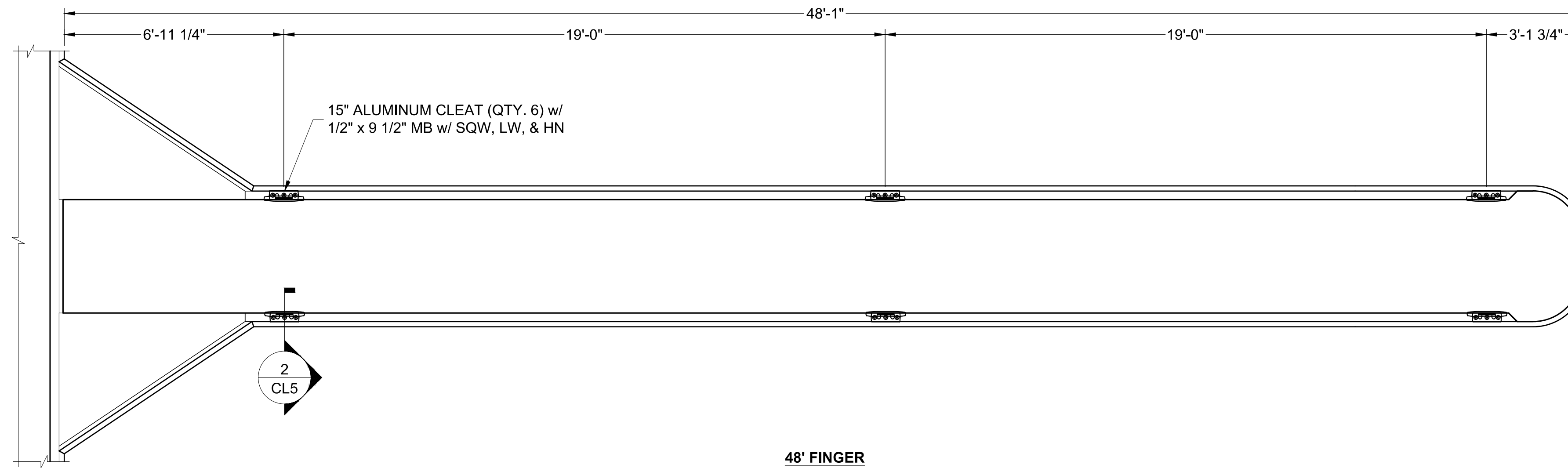
PERMIT DRAWING



44' FINGER



45' FINGER



48' FINGER

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED

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Hadi Tabatabaee
 BUILDING OFFICIAL

NO.	DATE	DESCRIPTION	BY
REVISIONS			

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

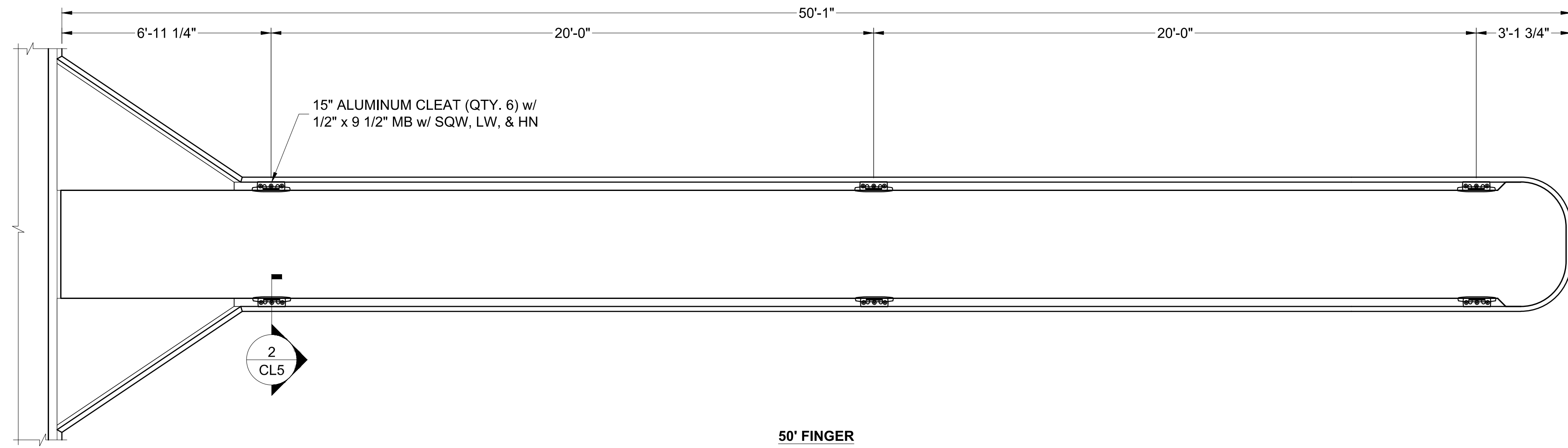
CLEAT LAYOUT DETAILS

Craig S Funston
 2022.05.13
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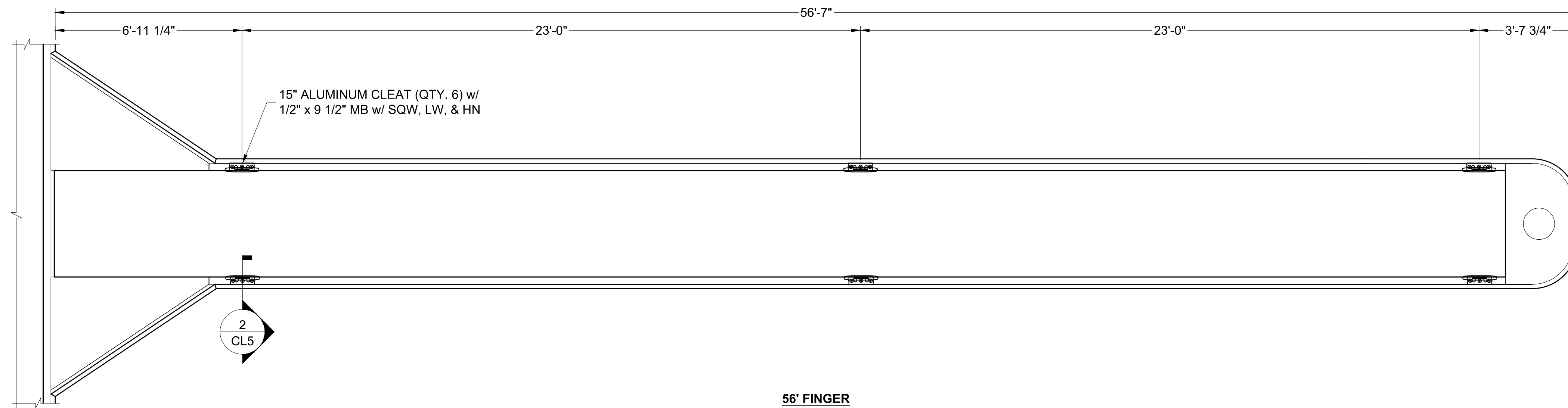
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SCALE:	3/8" = 1'-0" (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	CL3
SHEET NO.:	33

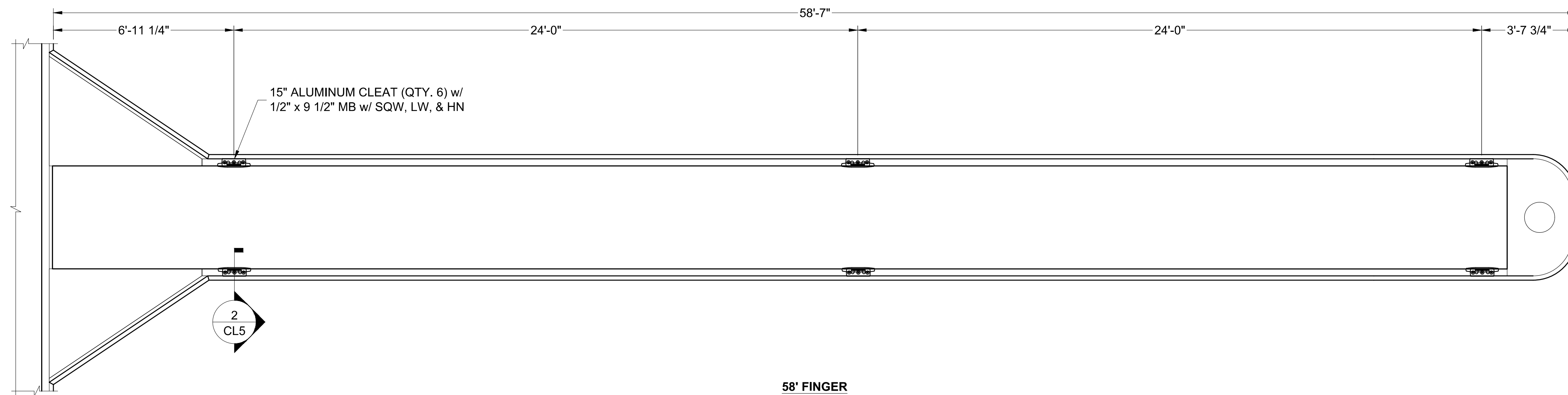
PERMIT DRAWING



50' FINGER



56' FINGER



58' FINGER

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

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Hadi Tabatabaee
 BUILDING OFFICIAL

NO.	DATE	DESCRIPTION	BY
REVISIONS			



SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
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DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

CLEAT LAYOUT DETAILS

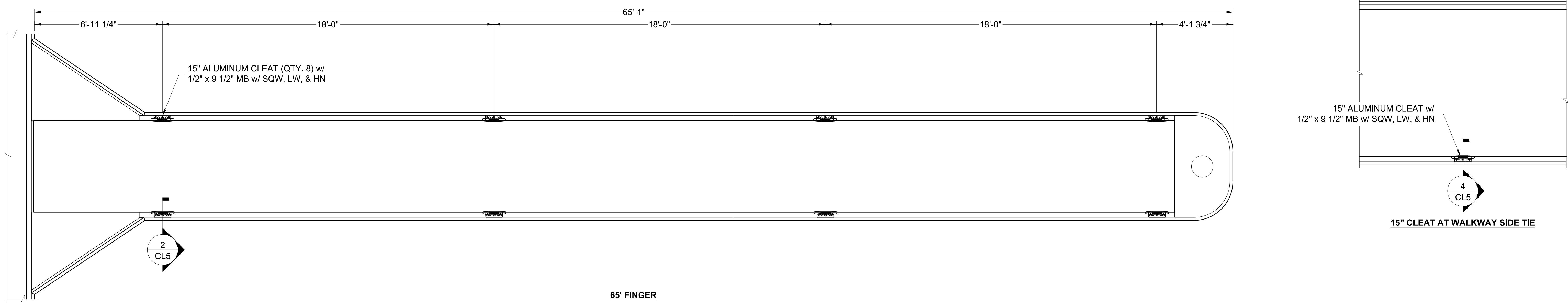
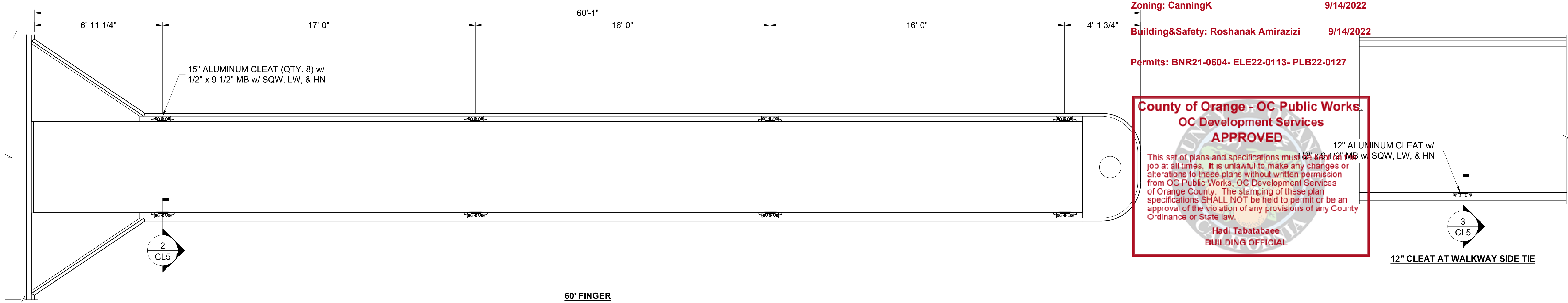


Craig S Funston
 2022.05.13
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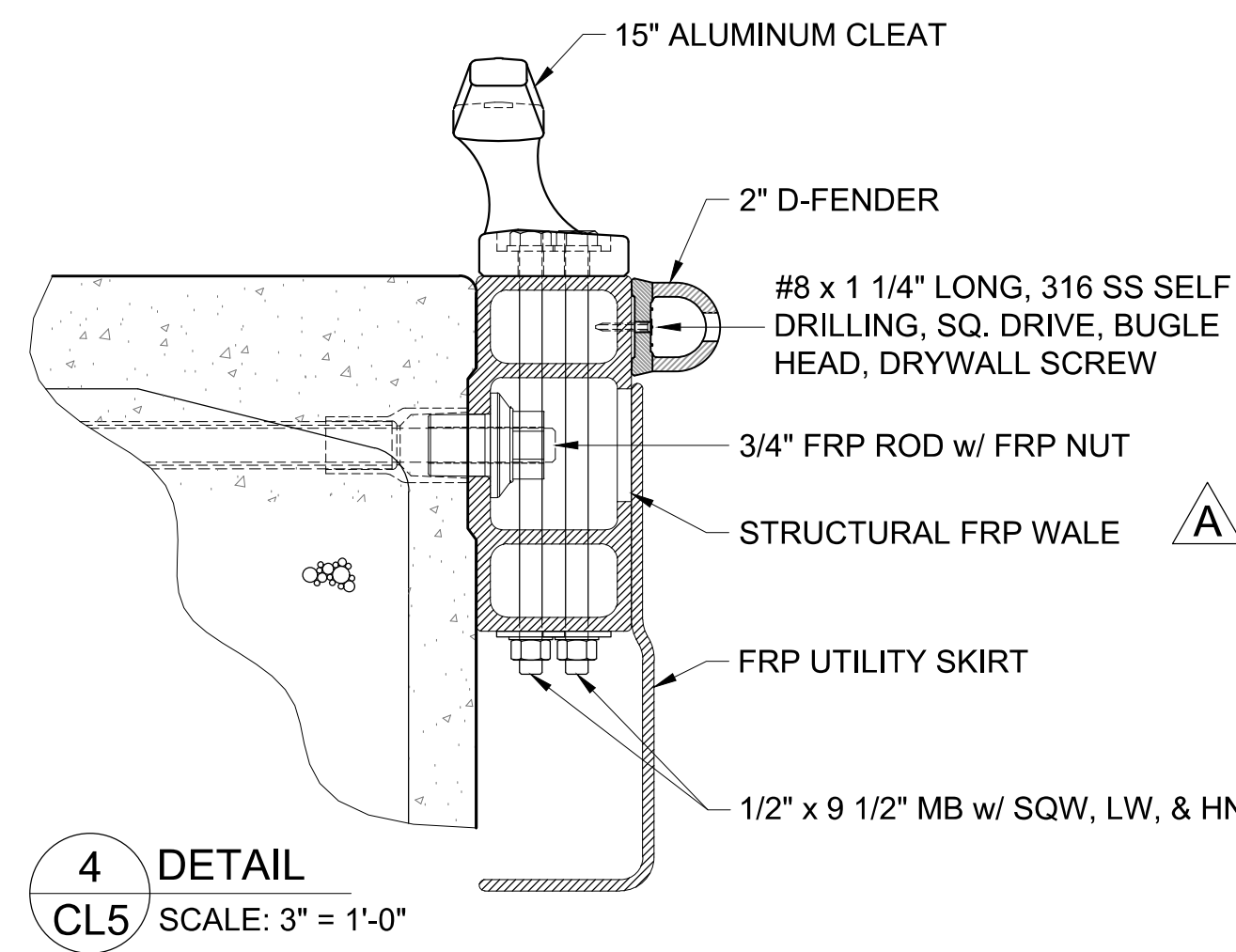
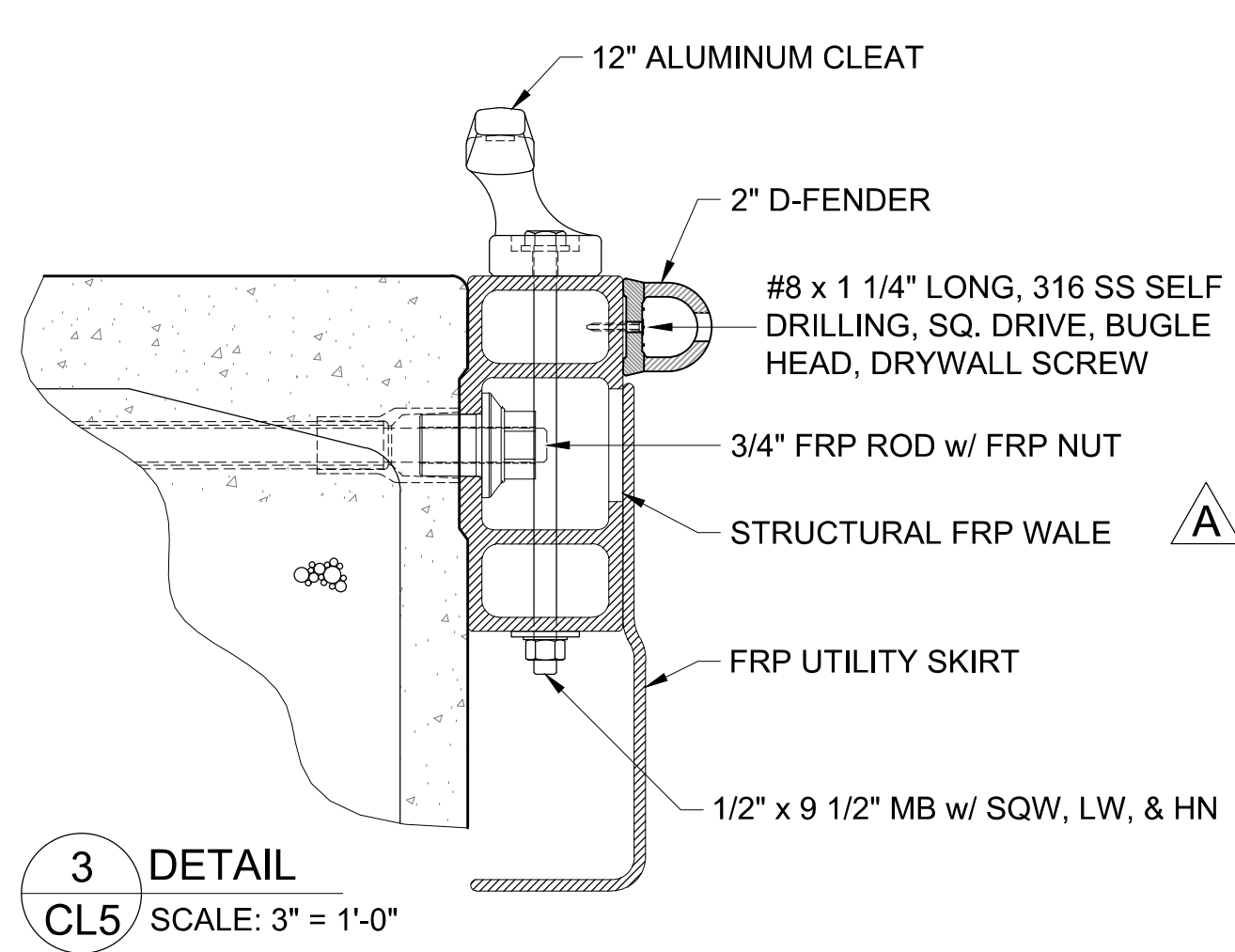
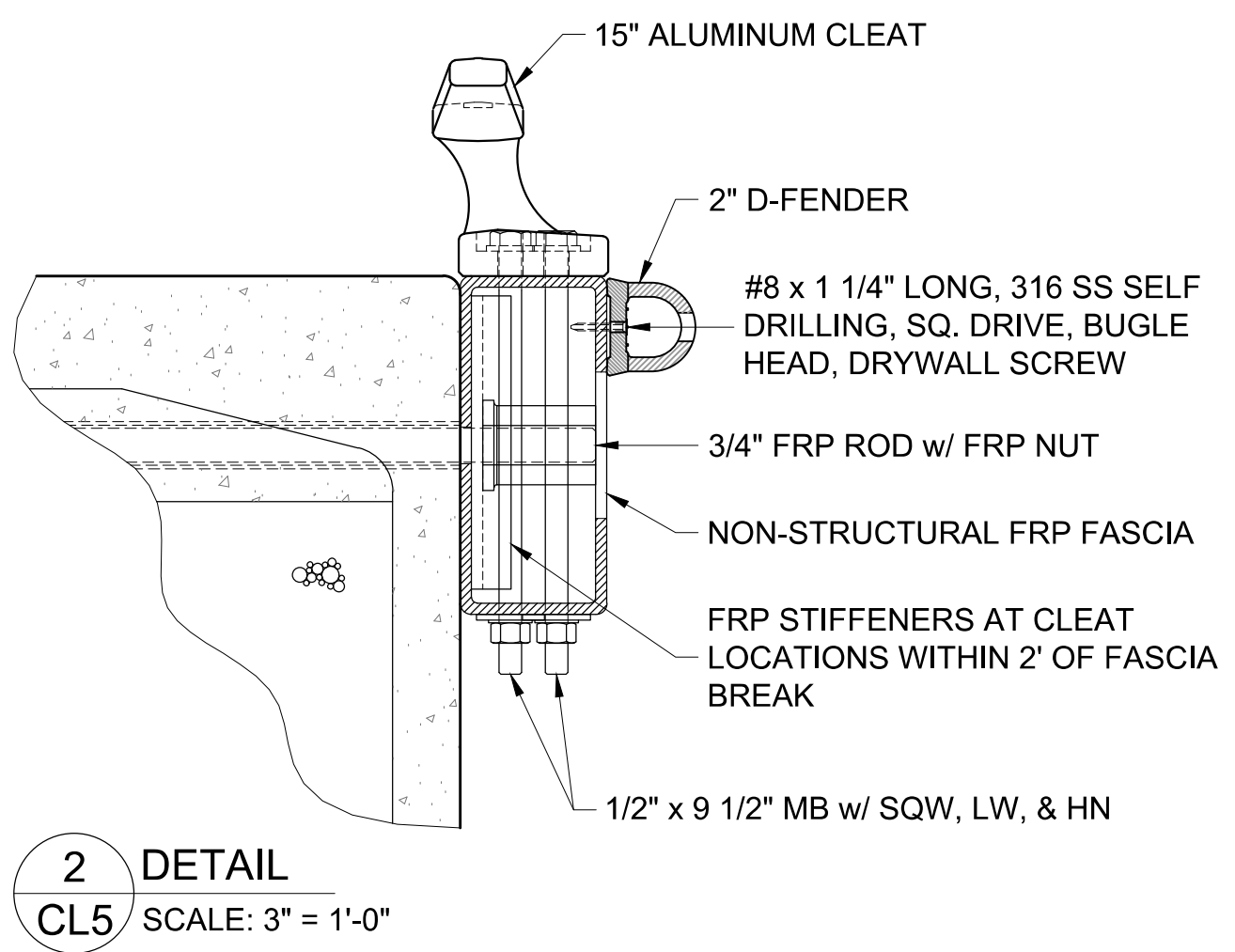
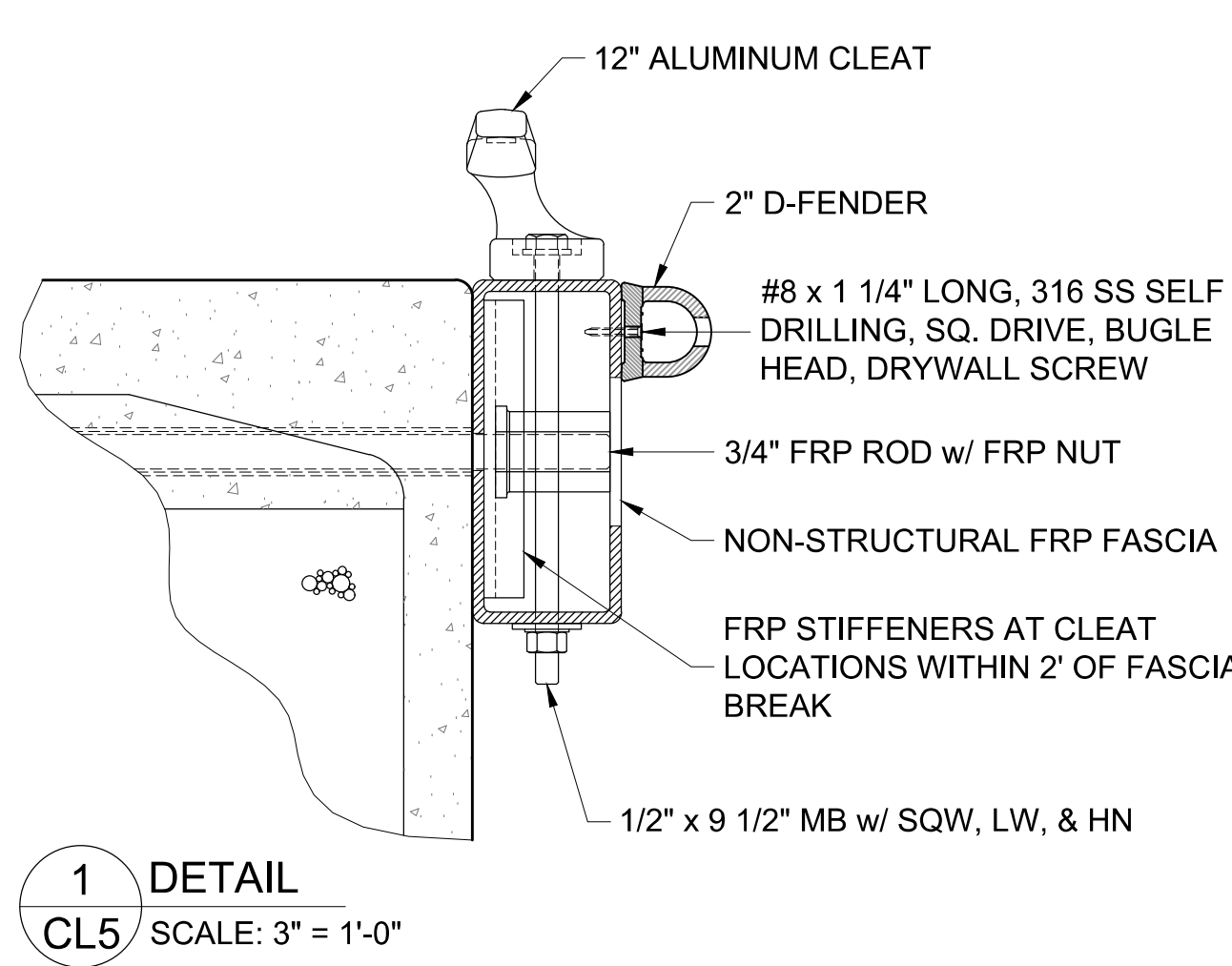
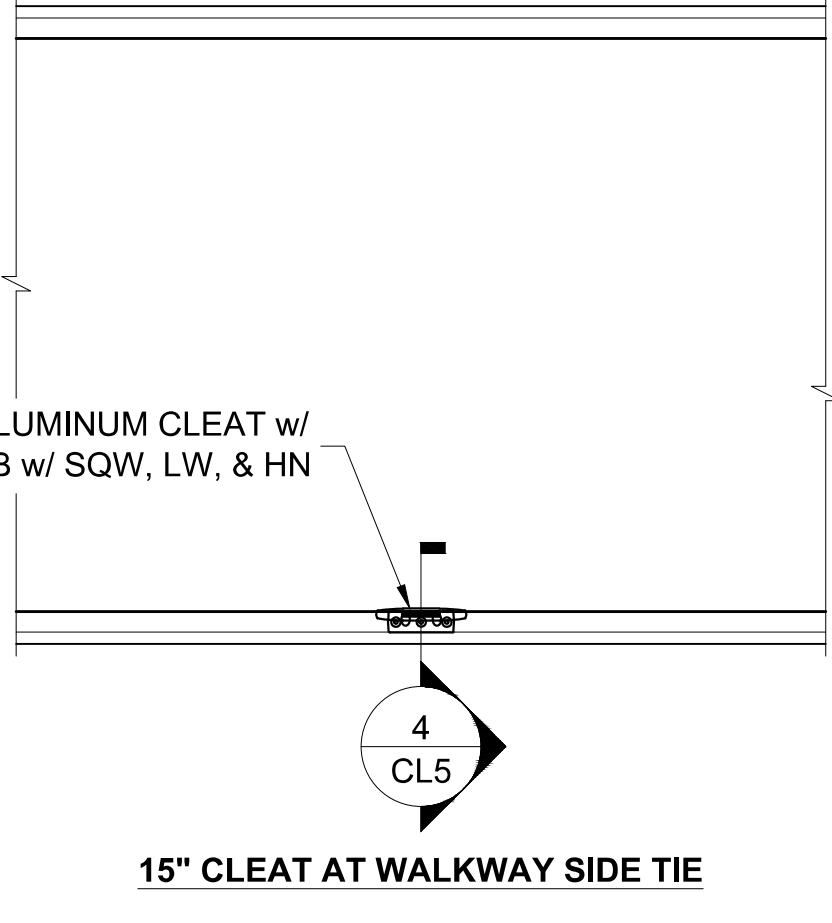
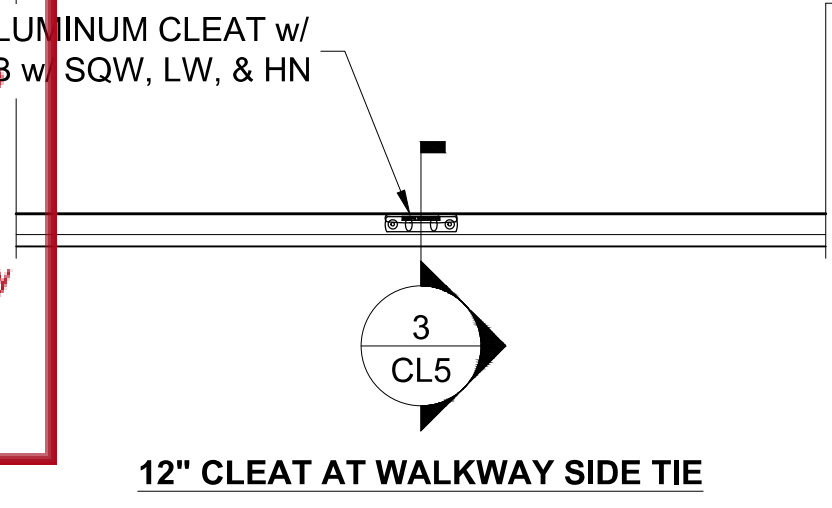
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 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: CL4
 SHEET NO.: 34

PERMIT DRAWING



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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OC Development Services
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Hadi Tabatabaee
BUILDING OFFICIAL



NO.	DATE	DESCRIPTION	BY
A	2-25-22	CHANGED FROM FASCIA	KG
REVISIONS			

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

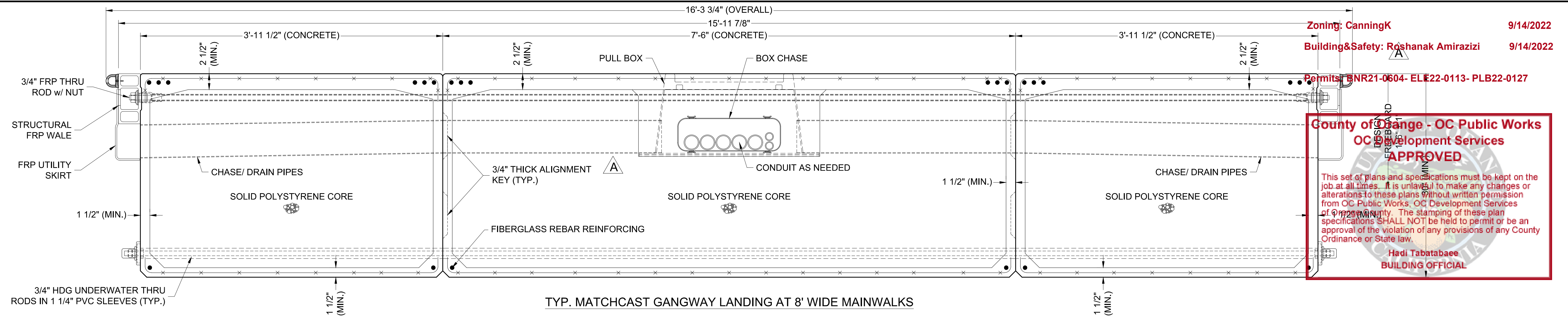
CLEAT LAYOUT DETAILS

Craig S Funston
 2022.05.13
 12:28:46-07'00'

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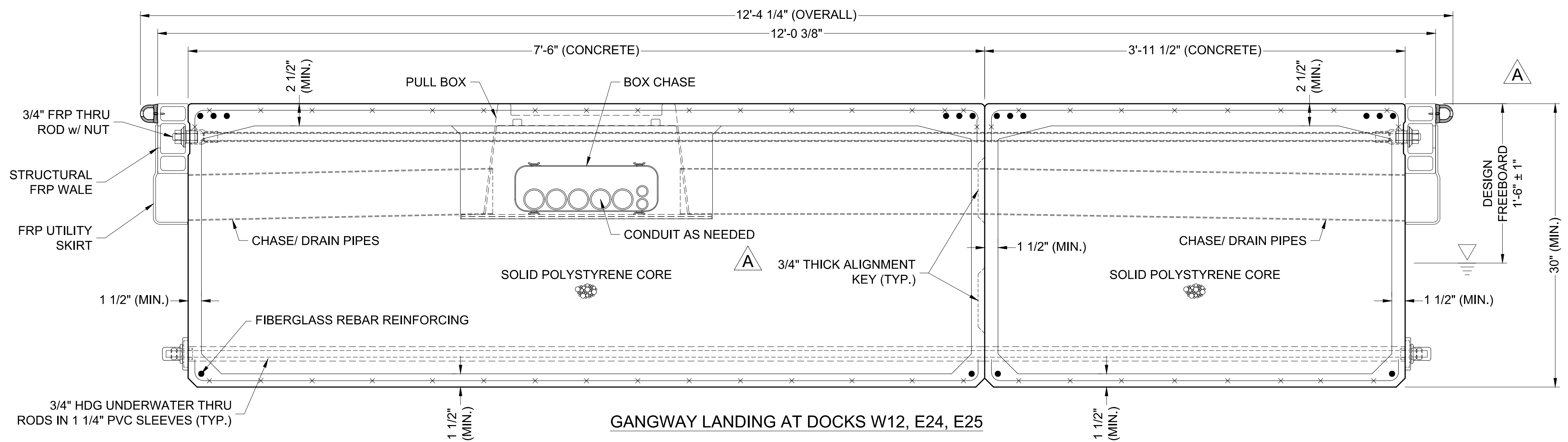
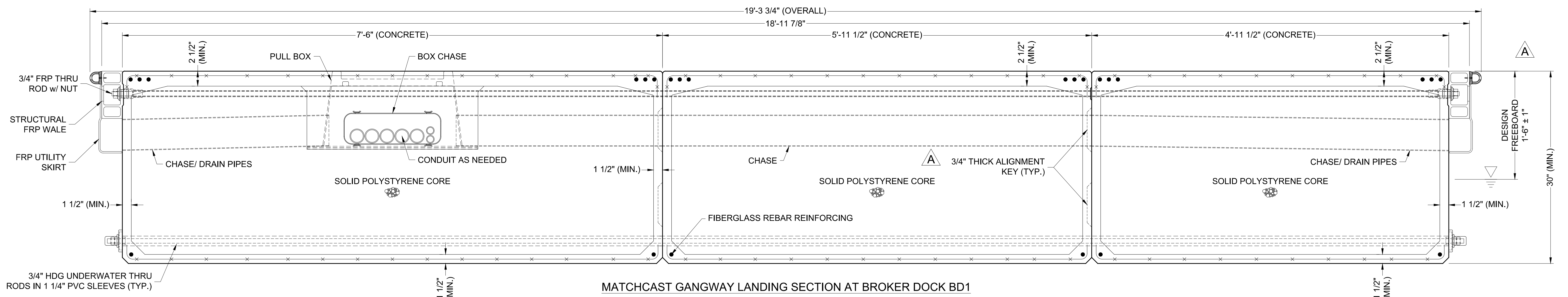
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 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: CL5
 SHEET NO.: 35

PERMIT DRAWING



Zoning: CanningK
 Building & Safety: Roshanak Amirazizi
 Permits: BNR21-0604-EL22-0113-PLB22-0127

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BUILDING OFFICIAL



NO.	DATE	DESCRIPTION	BY
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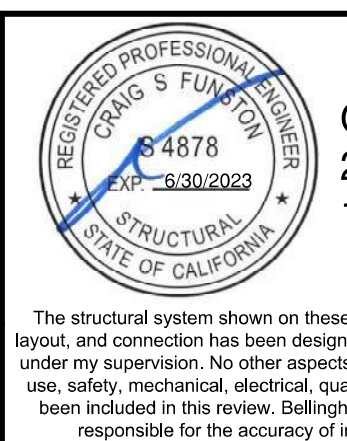
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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

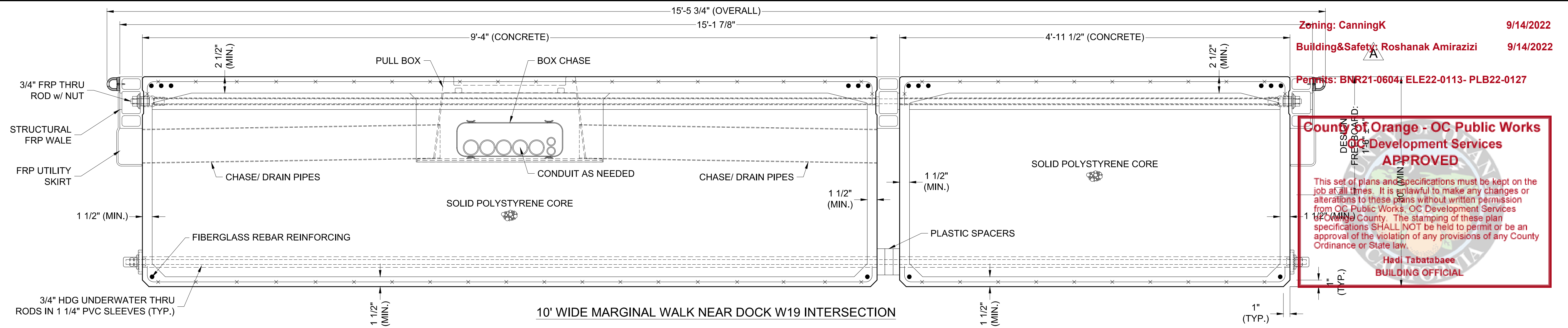
DOCK SECTIONS



Craig S Funston
 2022.05.13
 12:28:56-07'00'

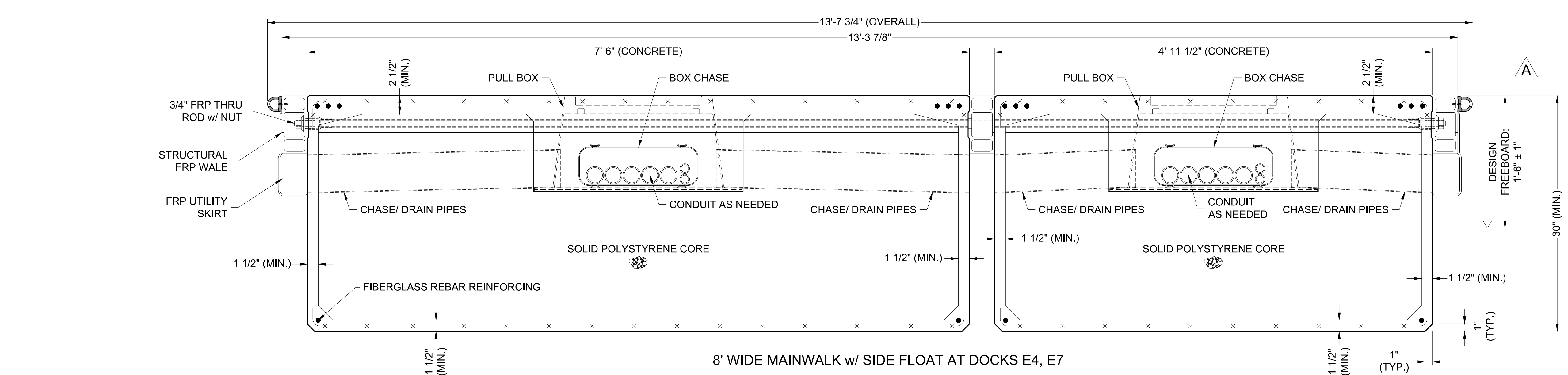
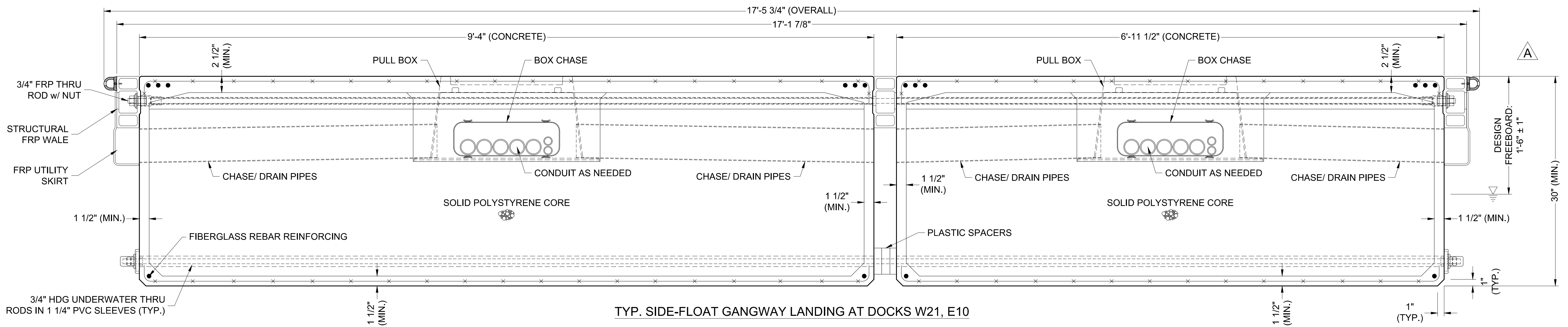
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 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: DS1
 SHEET NO.: 36

PERMIT DRAWING



Zoning: CanningK
 Building & Safety: Roshanak Amirazizi
 Permits: BNR21-0604, ELE22-0113, PLB22-0127

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OC Development Services
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NO.	DATE	ADDED DIMENSIONS DESCRIPTION	KG BY
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOCK SECTIONS

Craig S Funston
 2022.05.13
 12:29:05-07'00'

REGISTERED PROFESSIONAL ENGINEER
 CIVIL & MARINE
 No. 4878
 Exp. 8-30-2023
 STATE OF CALIFORNIA

SCALE: 1 1/2" = 1'
 (Sheet Size 24" x 36")

DRAWN BY: KG

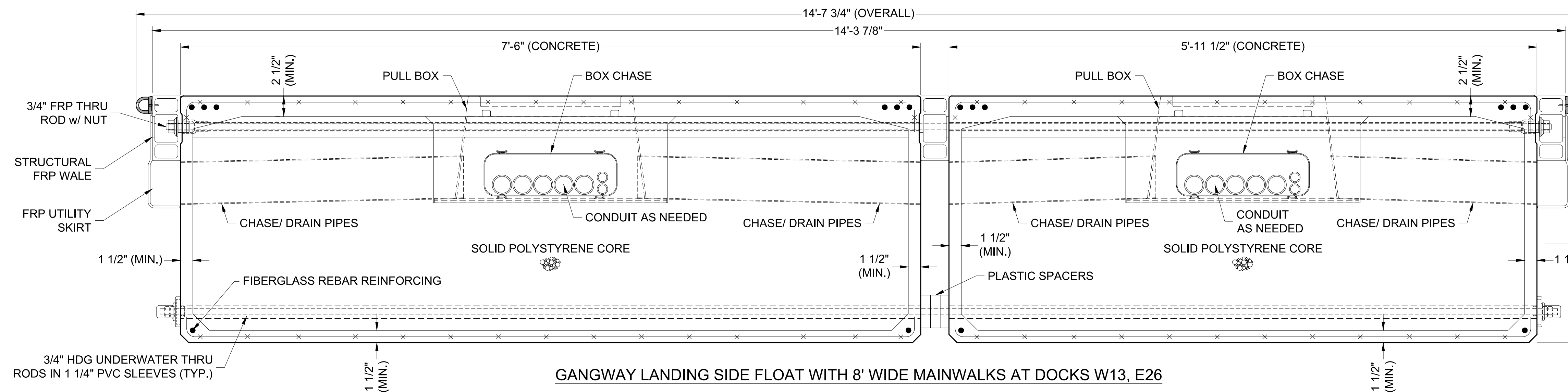
DATE: 5/10/2022

DRAWING: DS2

SHEET NO.: 37

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PERMIT DRAWING

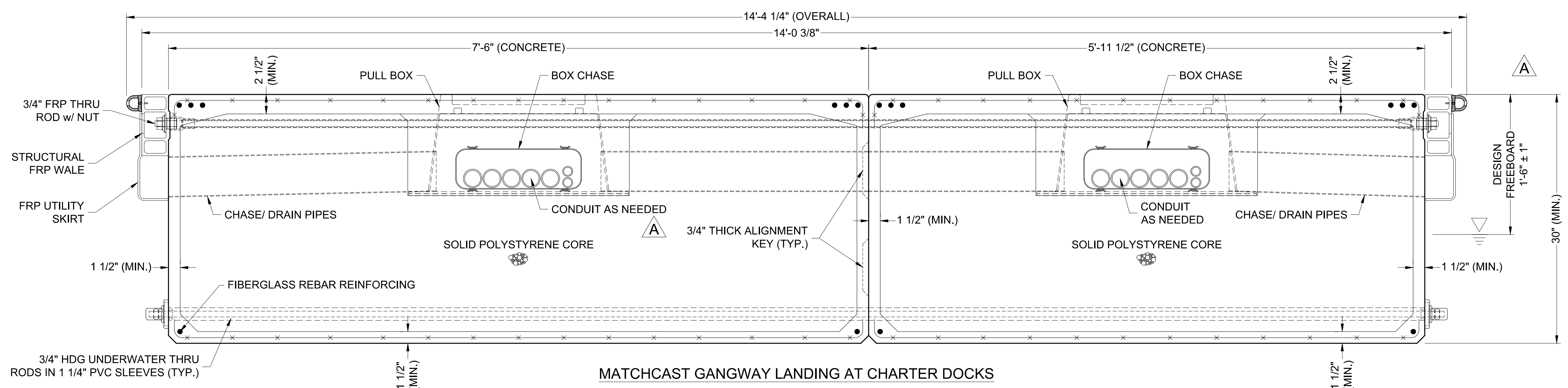
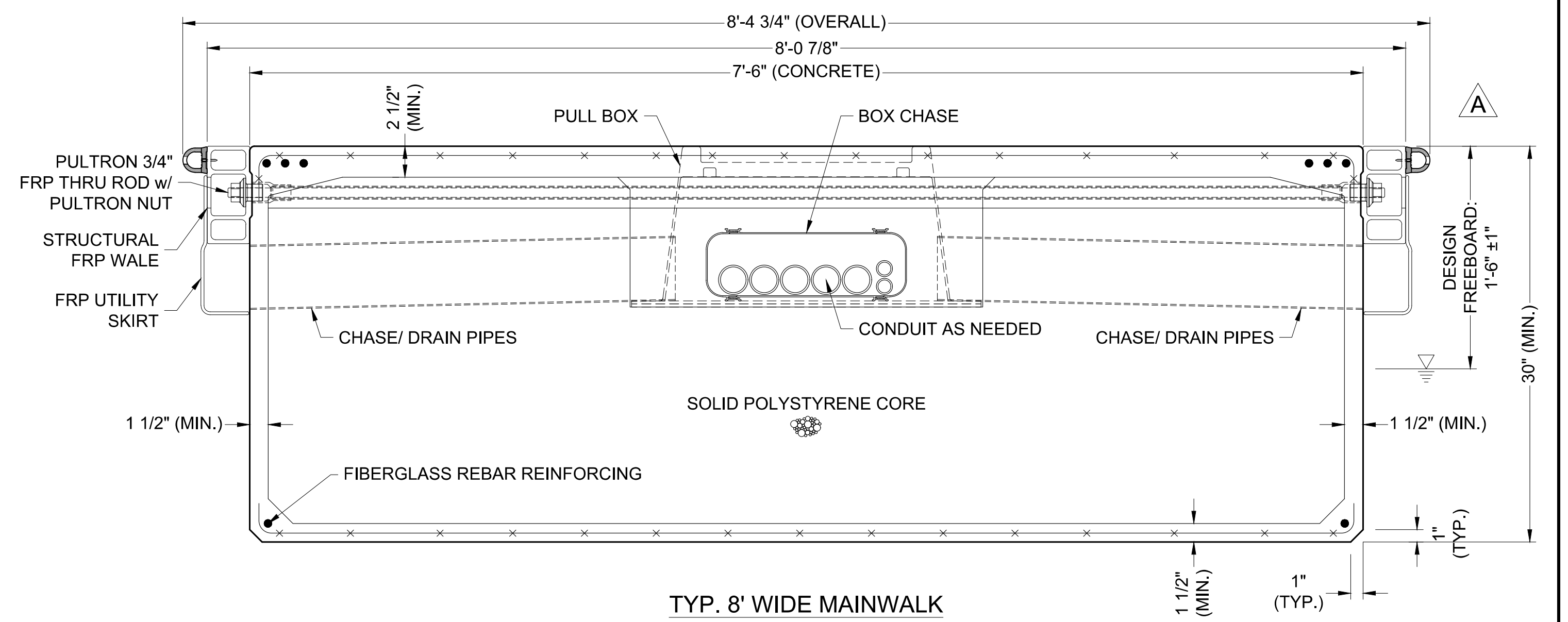
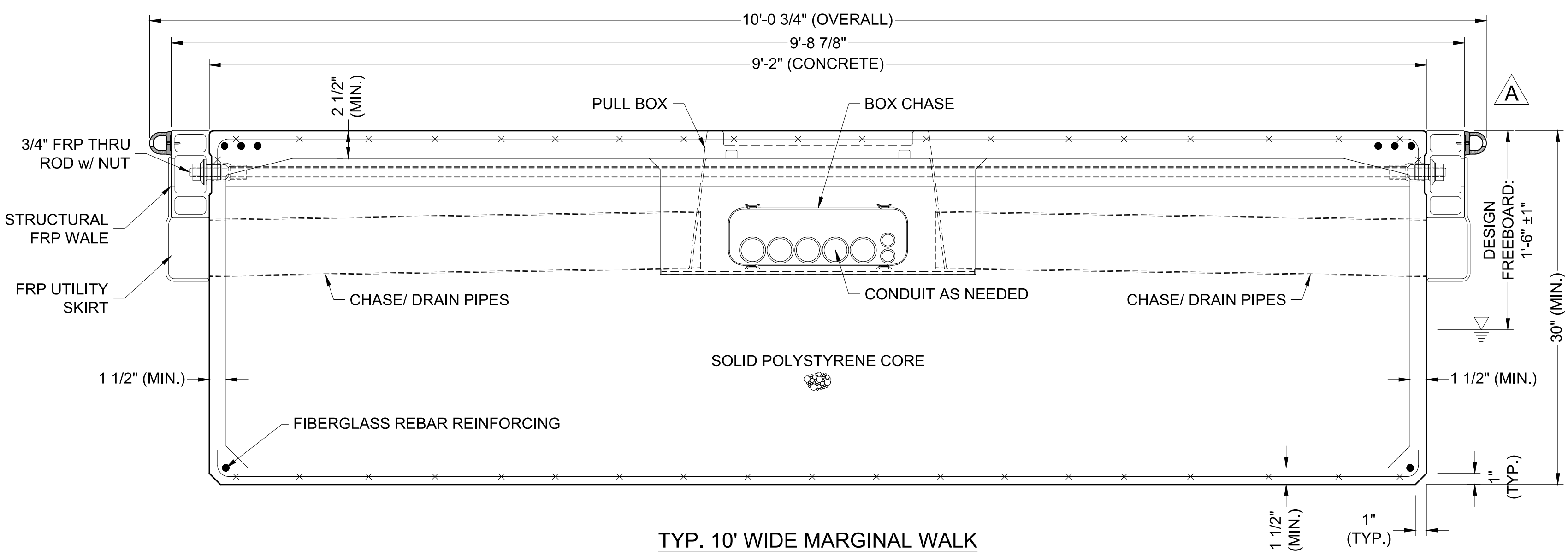


Zoning: CanningK
 Building & Safety: Roshanak Amirazizi
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED

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Hadi Tabatabaee
 BUILDING OFFICIAL



NO.	DATE	DESCRIPTION CHANGED/ ADDED DIMENSIONS	KG BY
A	2-25-22	DESCRIPTION CHANGED/ ADDED DIMENSIONS	KG BY
REVISIONS			

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:
 [Signature]

PROJECT MANAGER:
 [Signature]

CHECKED BY:
 [Signature]

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOCK SECTIONS

Craig S Funston
 2022.05.13
 12:29:16-07'00'

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SCALE: 1 1/2" = 1'
 (Sheet Size 24" x 36")

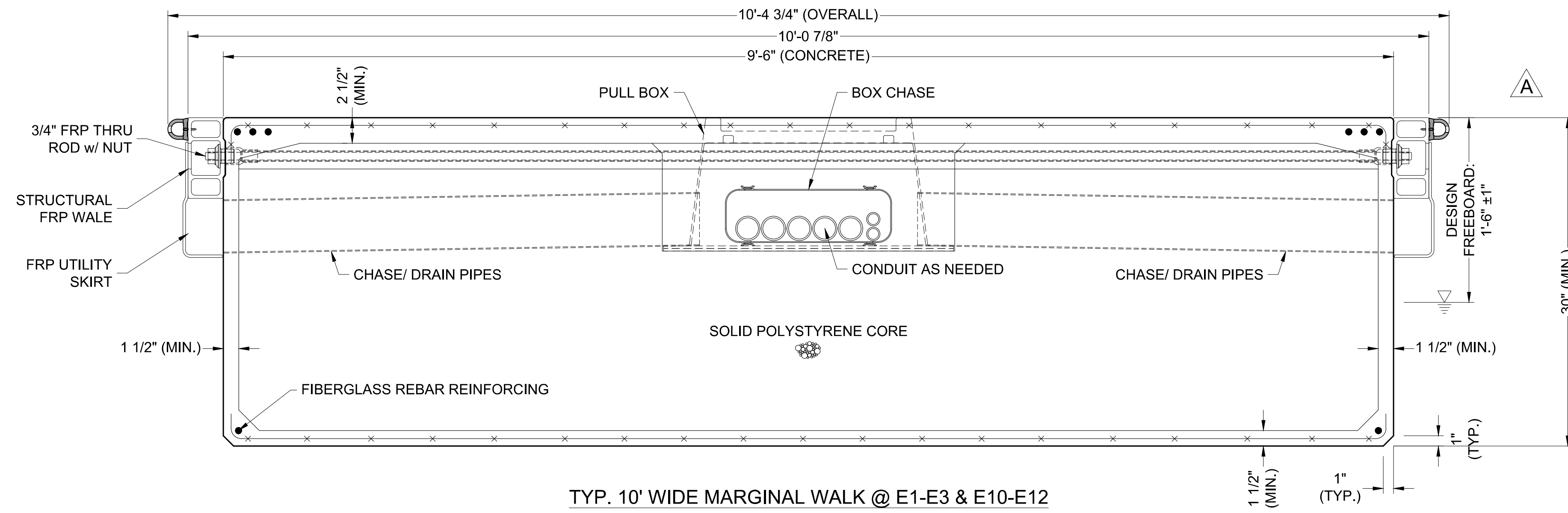
DRAWN BY: KG

DATE: 5/10/2022

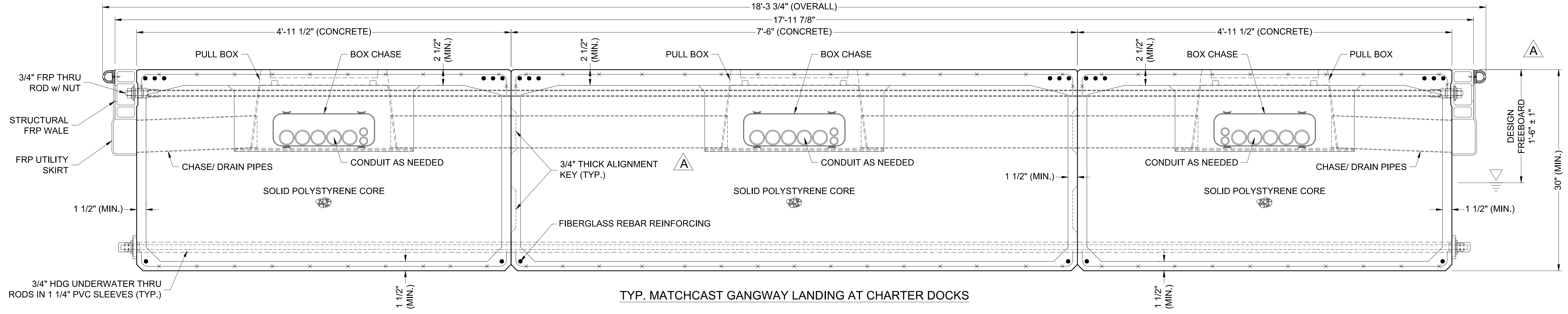
DRAWING: DS3

SHEET NO.: 38

PERMIT DRAWING



TYP. 10' WIDE MARGINAL WALK @ E1-E3 & E10-E12



TYP. MATCHCAST GANGWAY LANDING AT CHARTER DOCKS

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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Hadi Tabatabaee
BUILDING OFFICIAL

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A	2-25-22	DESCRIPTION CHANGED/ ADDED DIMENSIONS	KG
REVISIONS			

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PROJECT NUMBER:
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PROJECT MANAGER:

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DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOCK SECTIONS

Craig S Funston
 2022.05.13
 12:29:25-07'00'

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 (Sheet Size 24" x 36")

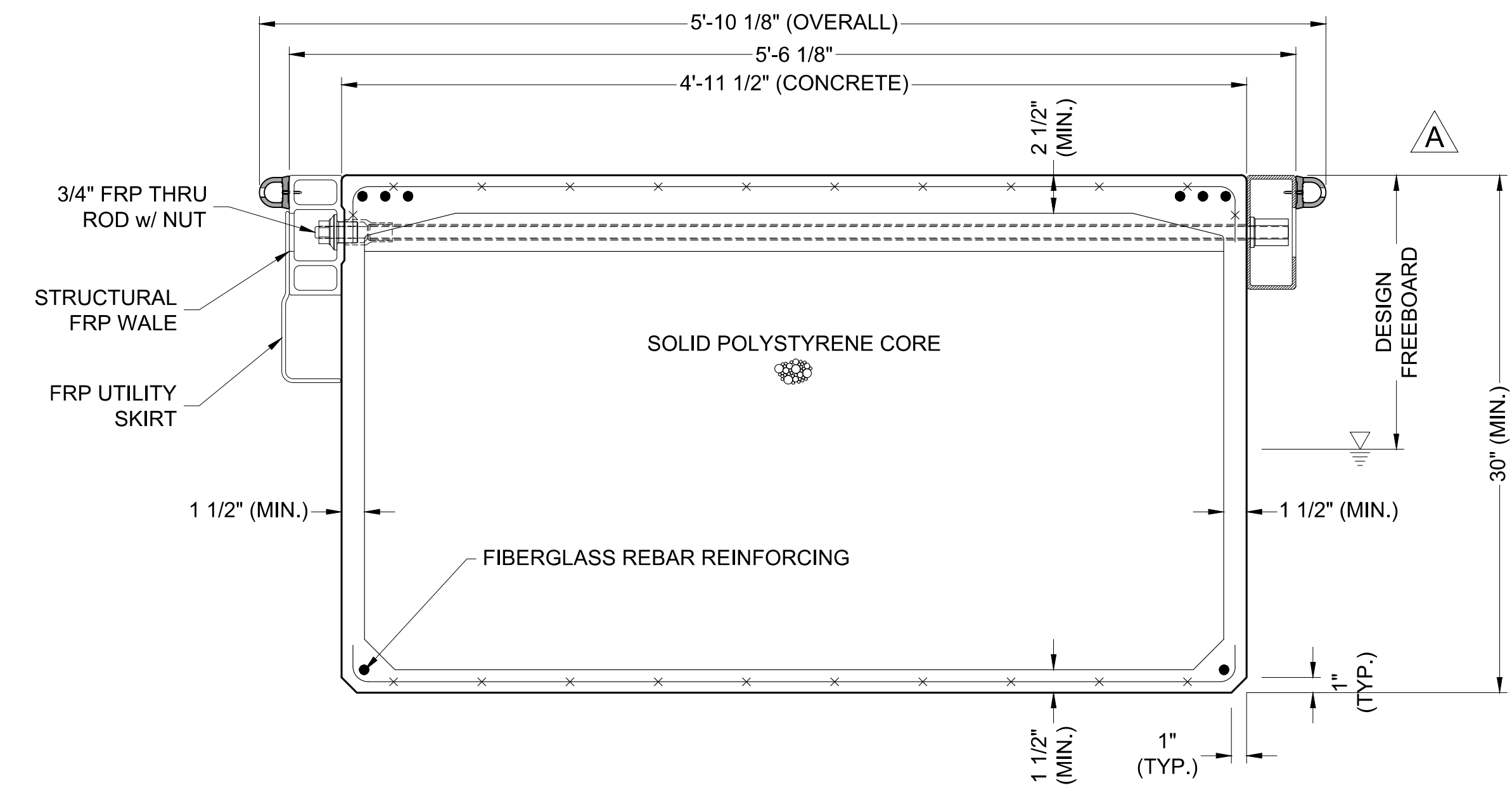
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DATE: 5/10/2022

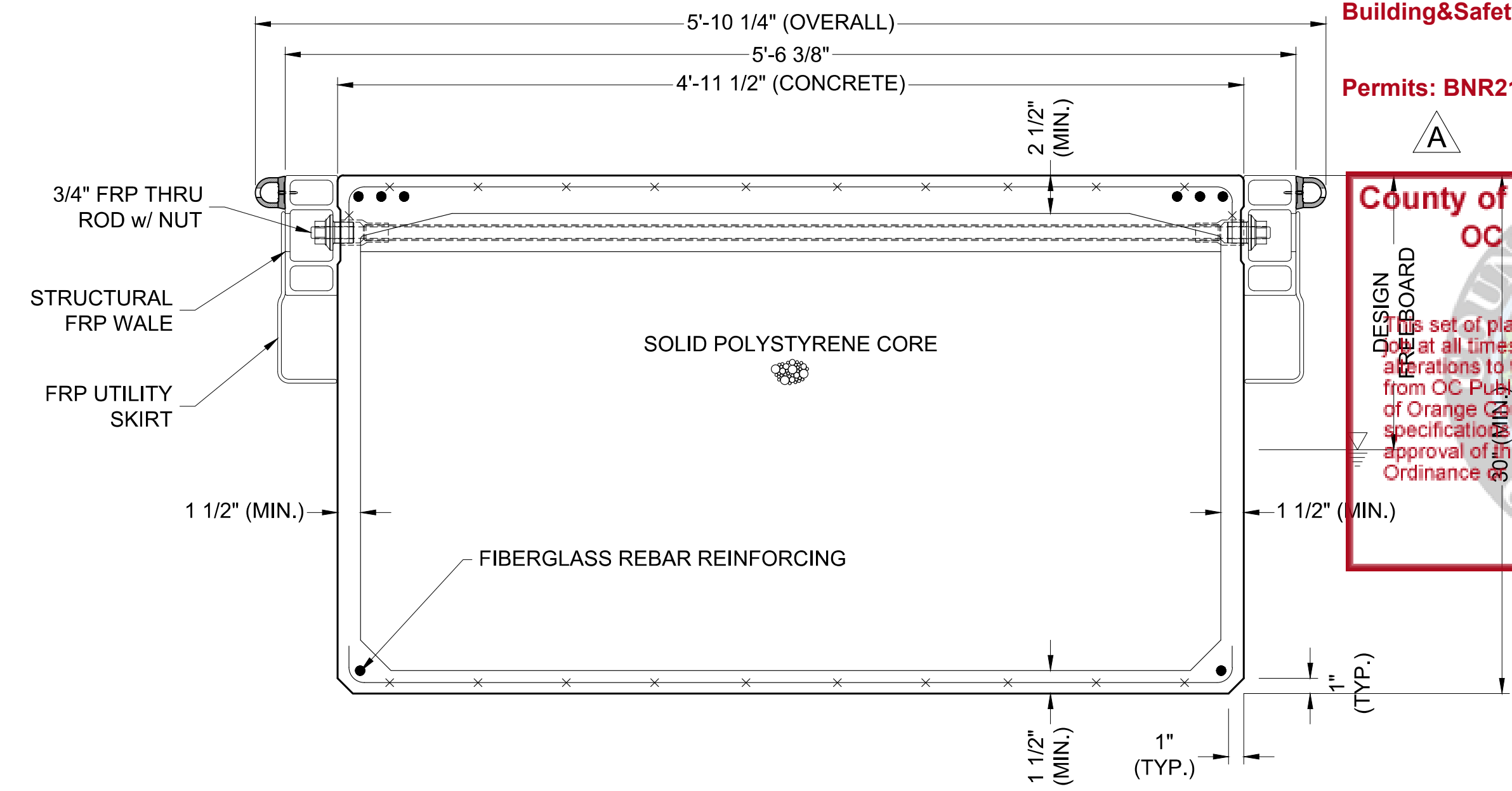
DRAWING: DS4

SHEET NO.: 39

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127



TYP. SINGLE ENDTIE WALKWAY SECTION

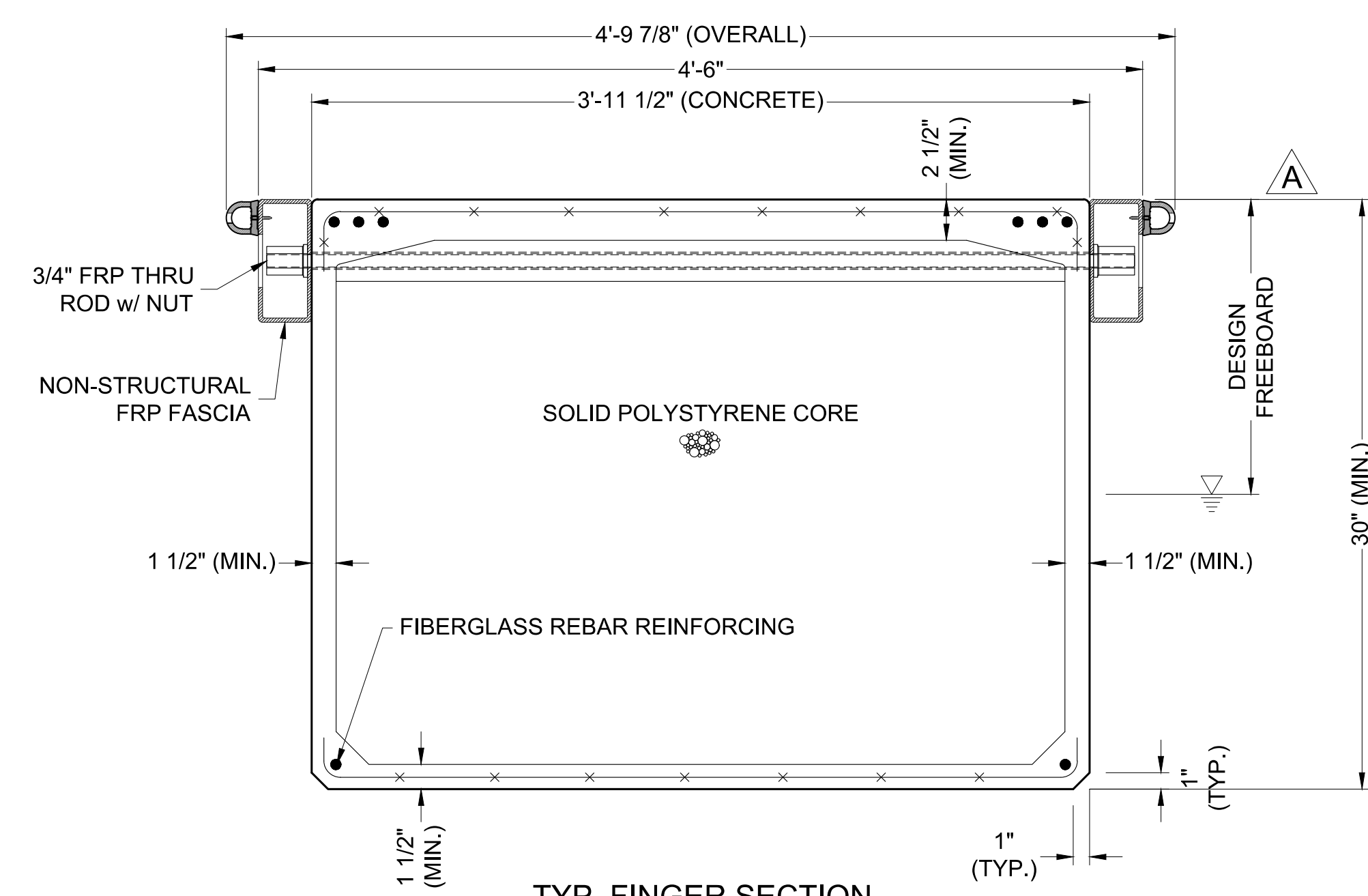


TYP. ENDTIE WALKWAY & 60'-79' LONG FINGER SECTION

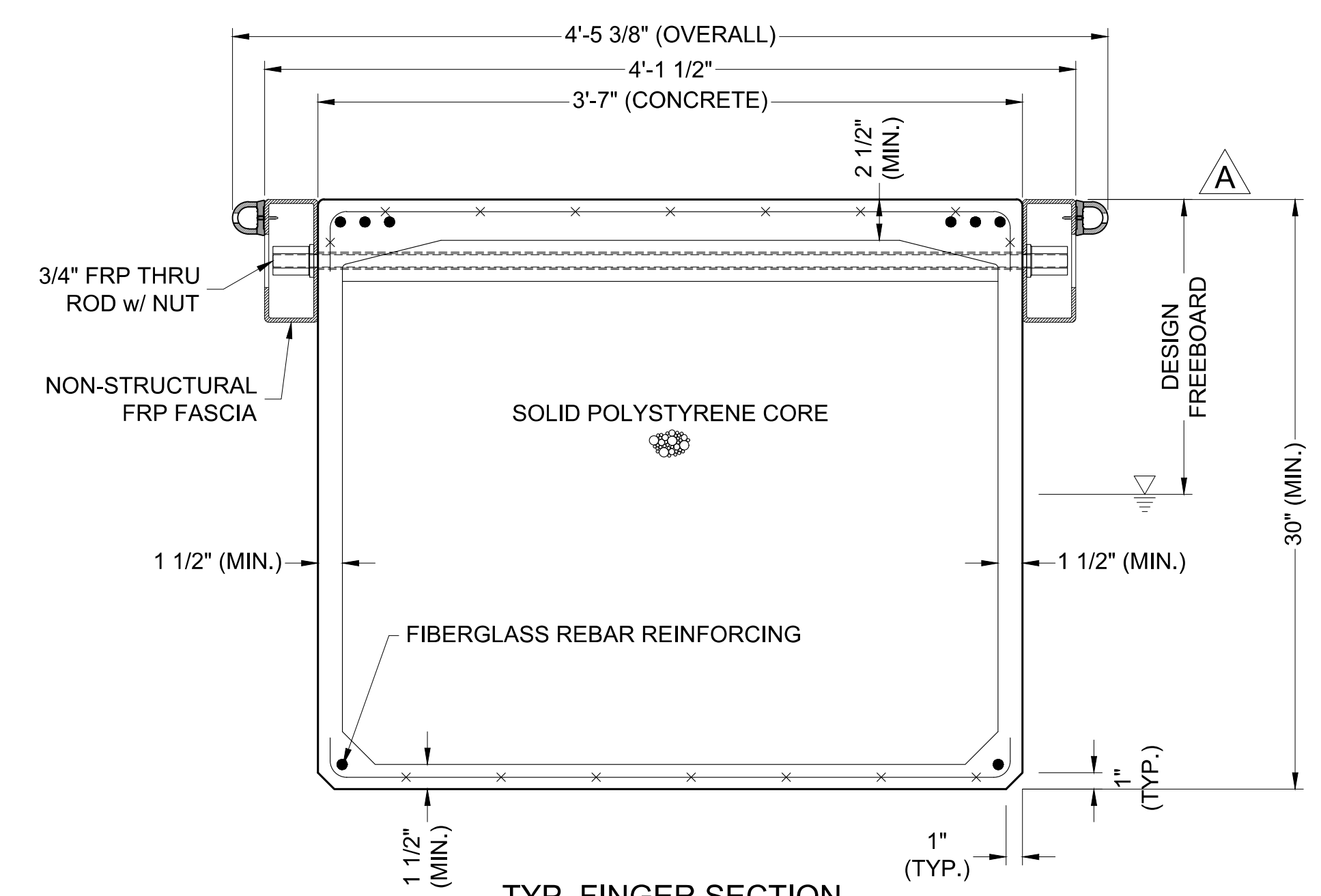
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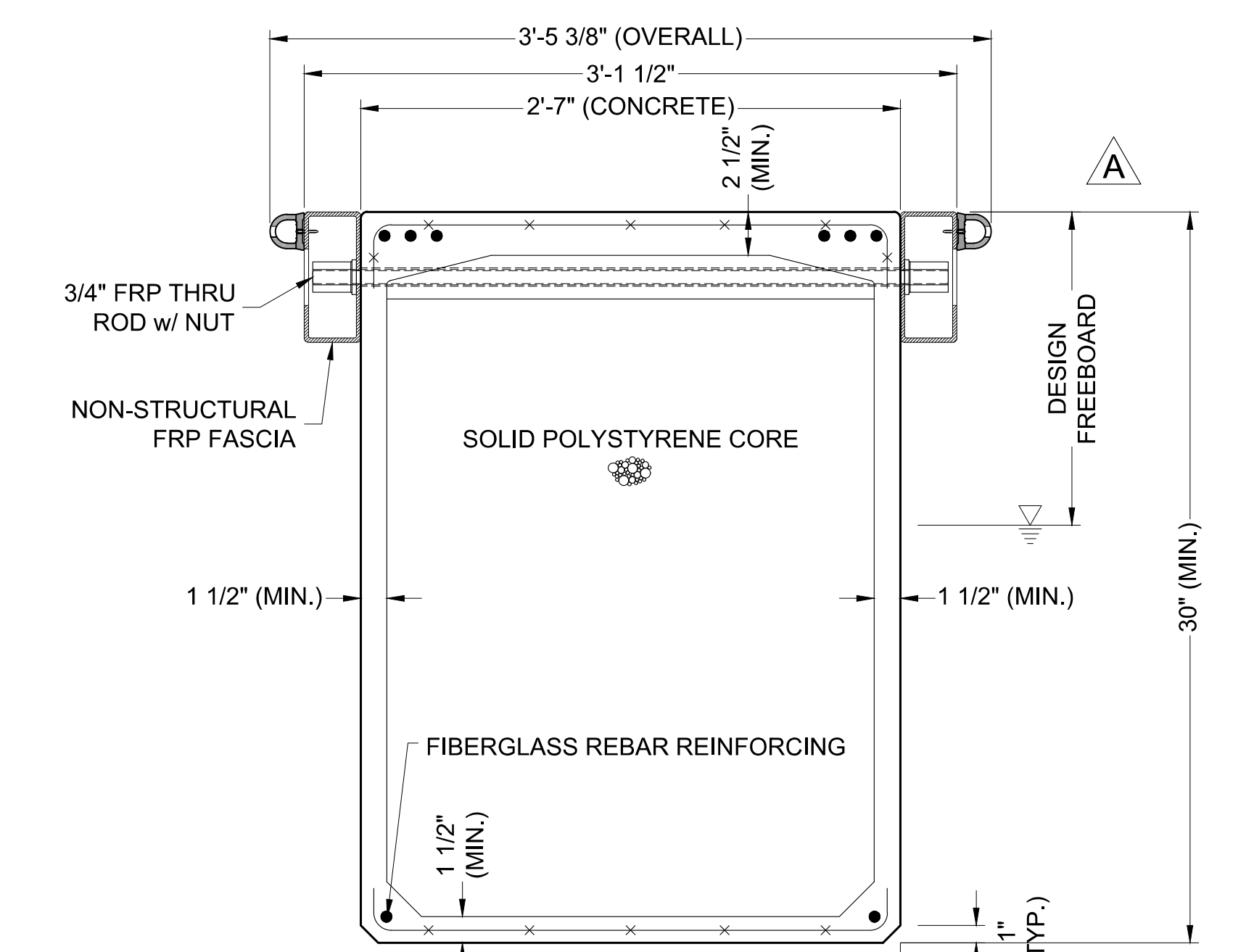
**Hadi Tabatabaee
 BUILDING OFFICIAL**



TYP. FINGER SECTION
51'-59' LONG



TYP. FINGER SECTION
36'-50' LONG



TYP. FINGER SECTION
UNDER 36' LONG

PERMIT DRAWING

NO.	DATE	ADDED DIMENSIONS DESCRIPTION	KG BY
A	2-25-22		
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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
DOCK SECTIONS

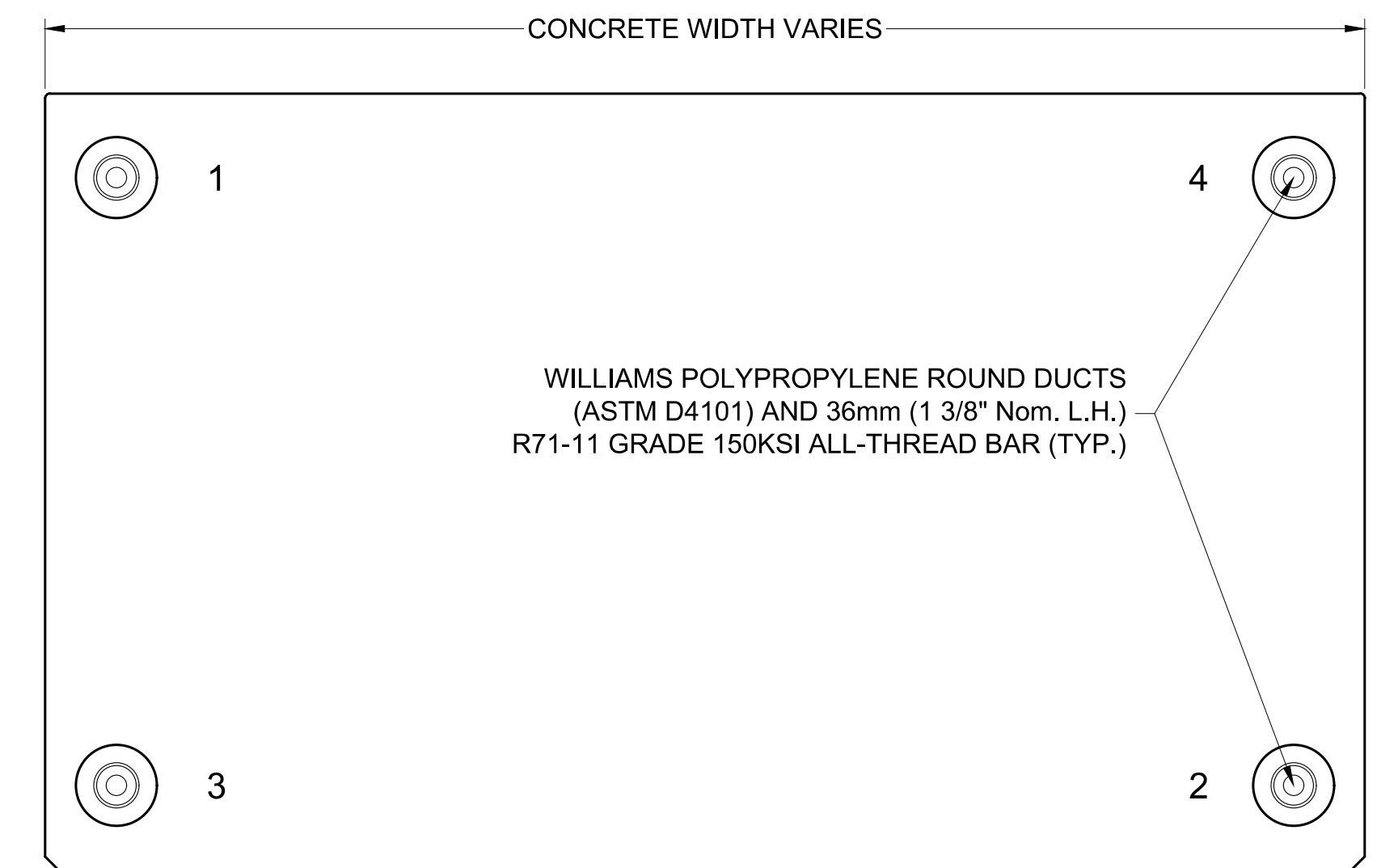
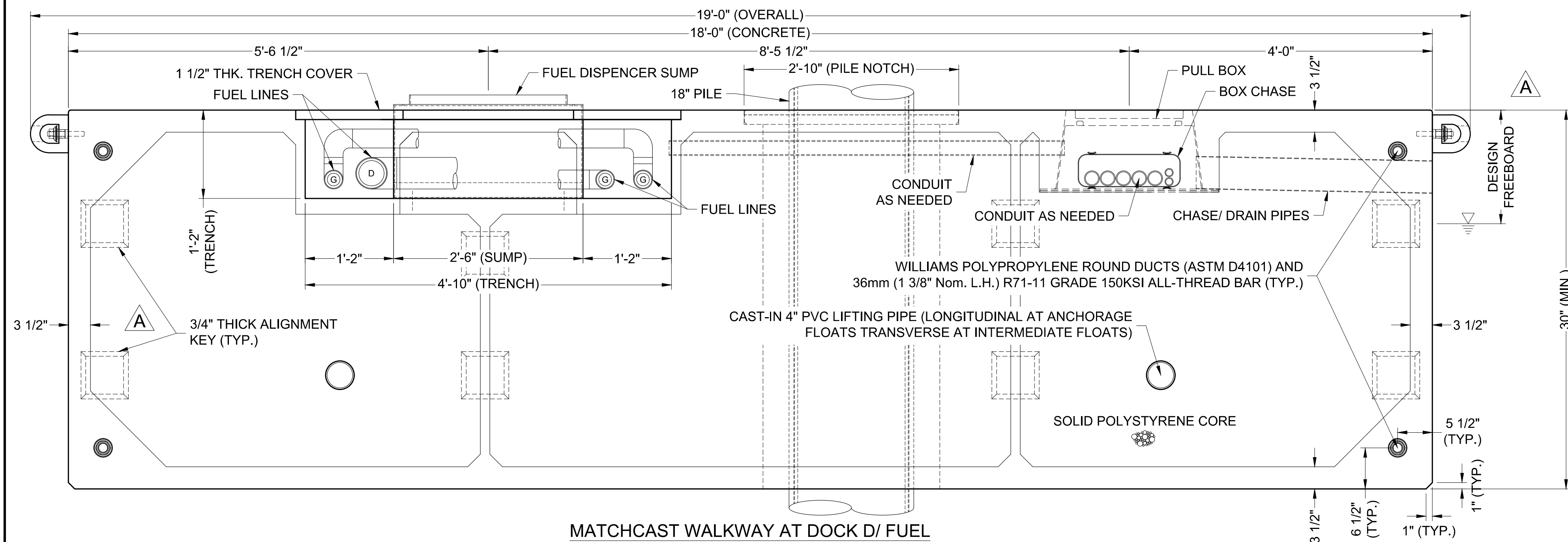
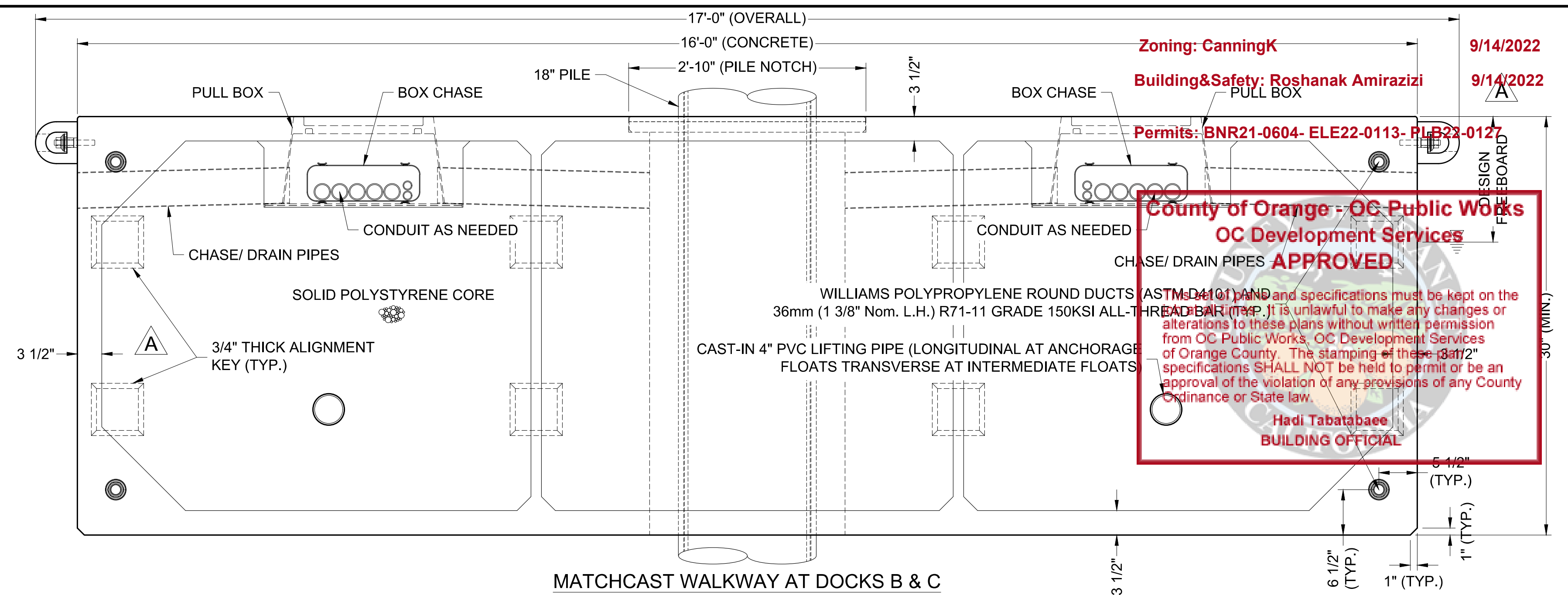
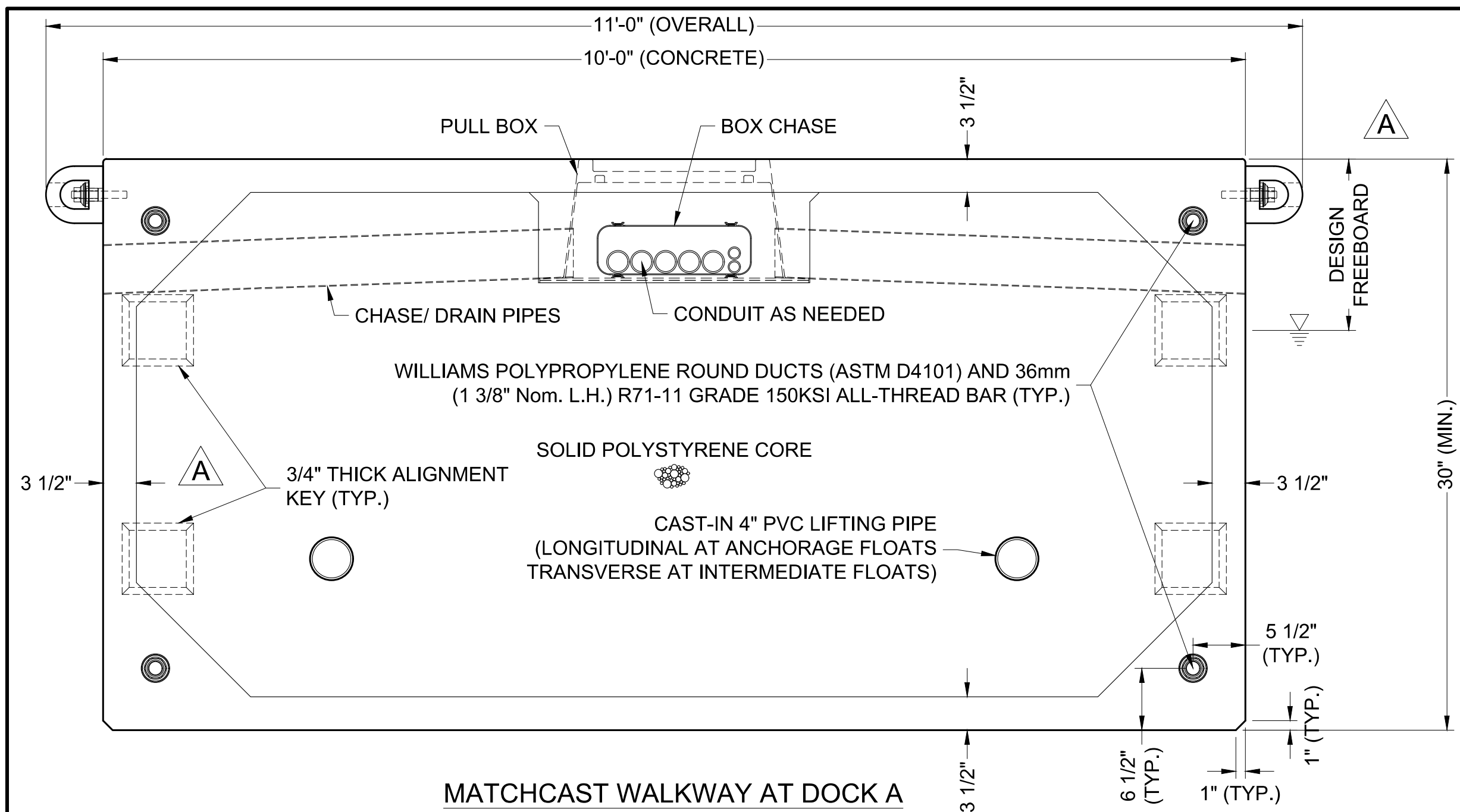


Craig S Funston
 2022.05.13
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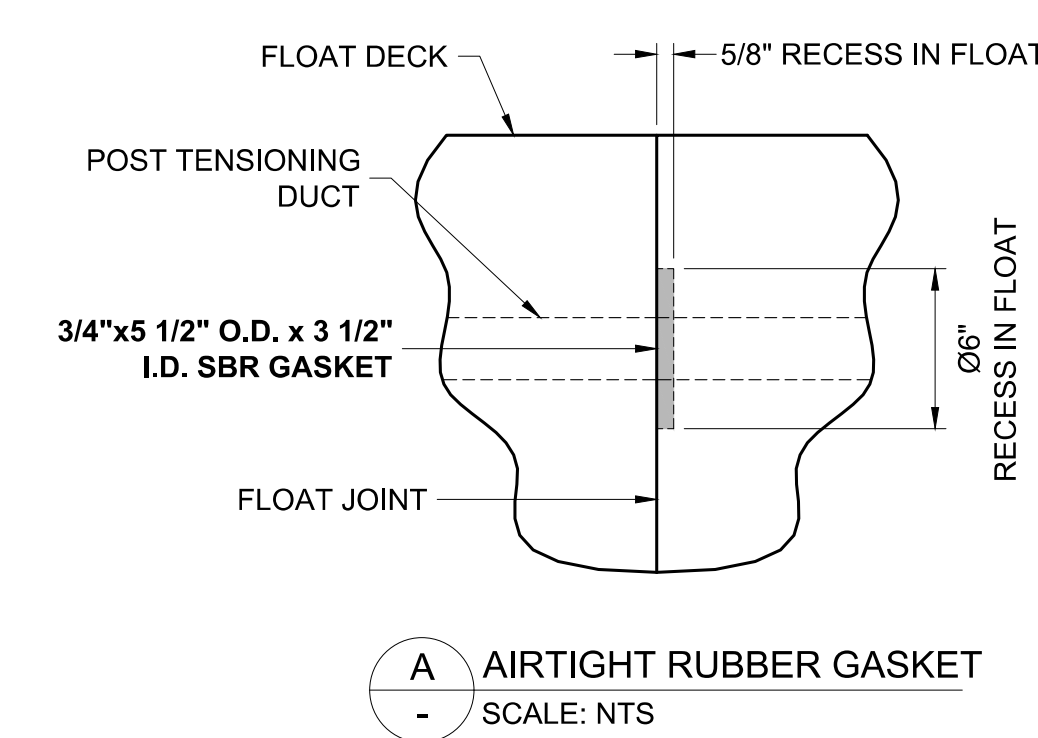
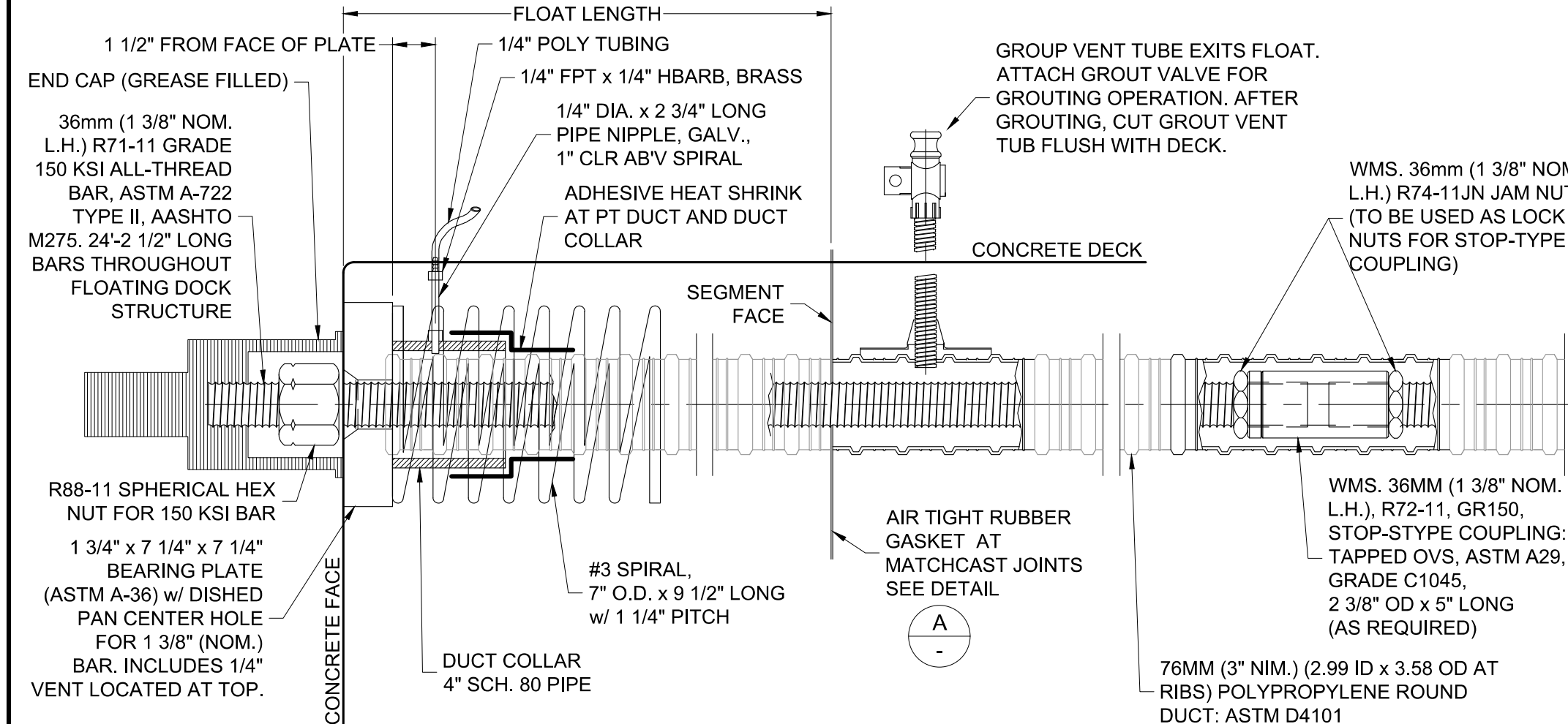
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SCALE: 1 1/2" = 1'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: DS5
 SHEET NO.: 40

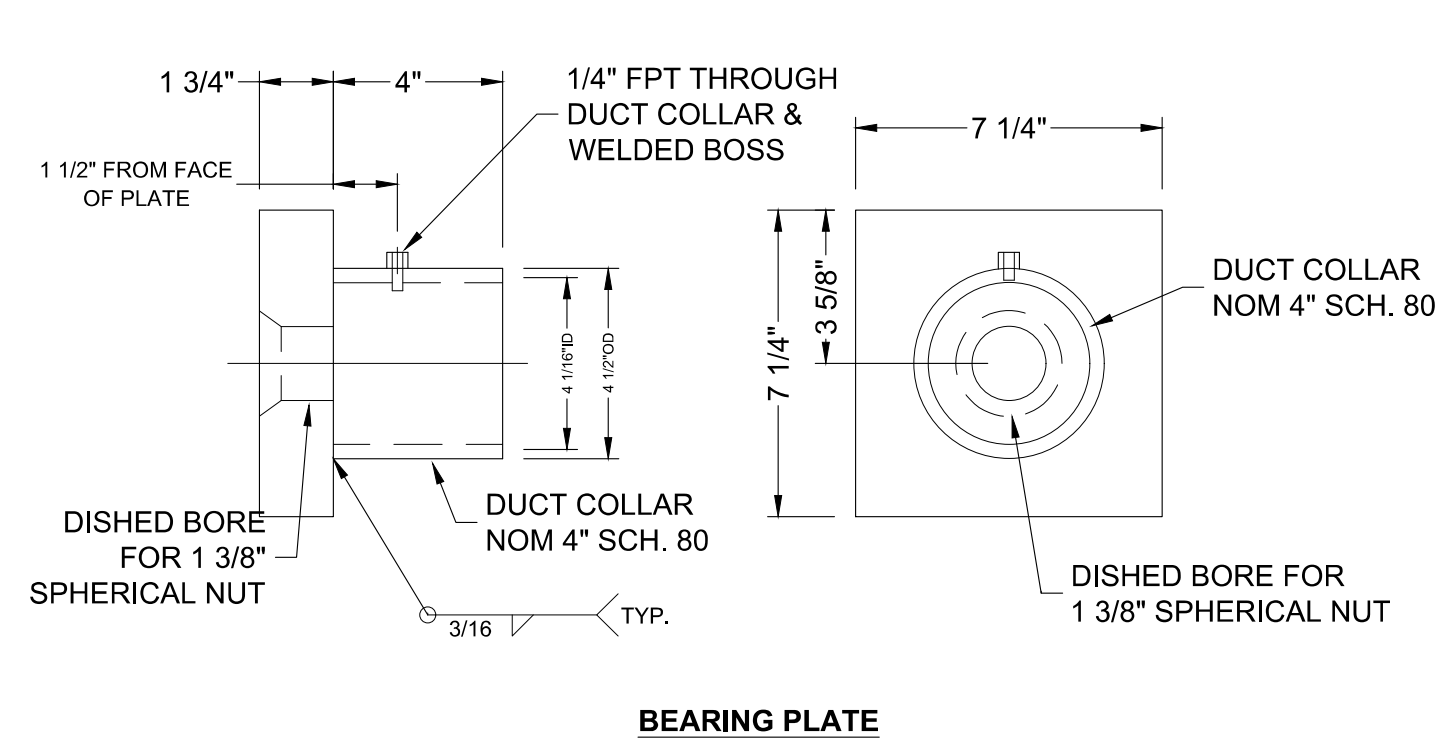
PERMIT DRAWING



ELEVATION VIEW
TENSIONING SEQUENCE



A AIRTIGHT RUBBER GASKET
SCALE: NTS



BEARING PLATE

TENSIONING PROCEDURE

- STAGE 1:** SNUG UP POST-TENSION BARS WHILE ASSURING THAT ALL MODULE SHEAR KEYS AND MATING FACES ARE ALIGNED. ONCE MODULES ARE PROPERLY ALIGNED AND MATING FACES ARE IN FIRM, EVEN CONTACT, TENSION ALL BARS TO 20 KIPS EACH. SEAT ALL SPHERICAL NUTS AND MARK BARS AT SQUARE FACE OF NUT TO RECORD ELONGATIONS PER PT INSTRUCTION SHEET.
- STAGE 2:** TENSION ALL BARS TO 90 KIPS USING THE SEQUENCE SHOWN. RE-SEAT SPHERICAL NUTS AND MEASURE TOTAL ELONGATION FROM THE 20 KIP MARK. TOTAL CALCULATED ELONGATION FROM 20 KIPS TO 90 KIPS IS 2.20 in. ± .22 in. IF MEASURED ELONGATION IS OUTSIDE THIS RANGE, CONTACT THE ENGINEER.
- STAGE 3:** TENSION ALL BARS TO 166 KIPS USING THE SEQUENCE SHOWN. DO NOT EXCEED 190 KIPS AT ANY TIME DURING JACKING. RE-SEAT SPHERICAL NUTS AND MEASURE TOTAL ELONGATION FROM THE 20 KIP MARK. TOTAL CALCULATED ELONGATION FROM 20 KIPS TO 166 KIPS IS 4.59 in. ± .46 in. IF MEASURED ELONGATION IS OUTSIDE OF THIS RANGE, CONTACT THE ENGINEER.

Zoning: CanningK
Building & Safety: Roshanak Amirazizi
Permits: BNR21-0604- ELE22-0113- PLB23-0127
County of Orange - OC Public Works
OC Development Services
APPROVED
Hadi Tabatabaee
BUILDING OFFICIAL
9/14/2022

NO.	DATE	DESCRIPTION CHANGED/ ADDED DIMENSIONS	KG BY
A	2-25-22	DESCRIPTION CHANGED/ ADDED DIMENSIONS	KG BY
REVISIONS			

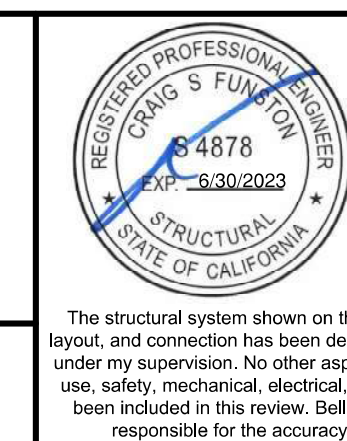


SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
FAX: (707) 678-1760

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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629
DOCK SECTIONS

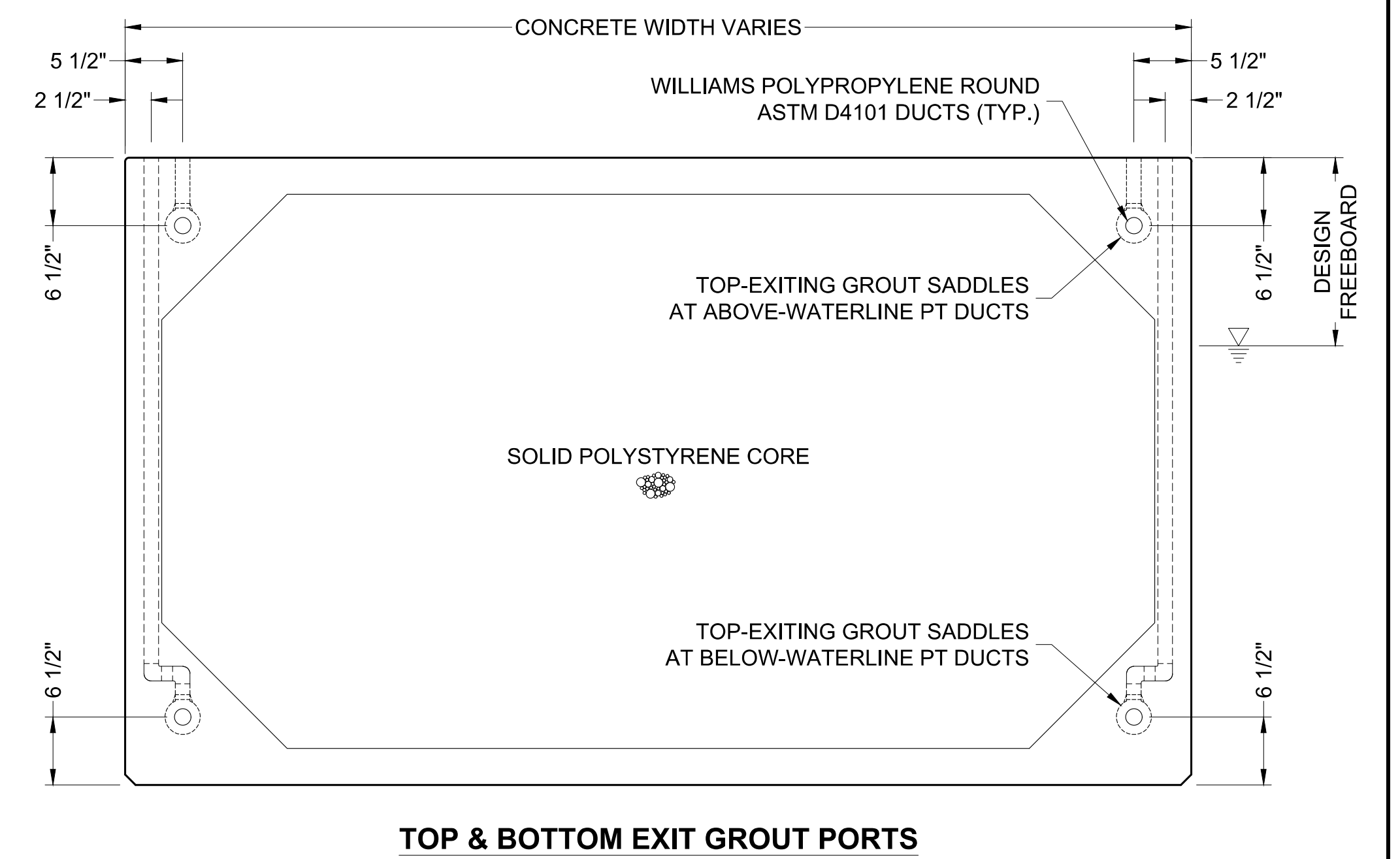
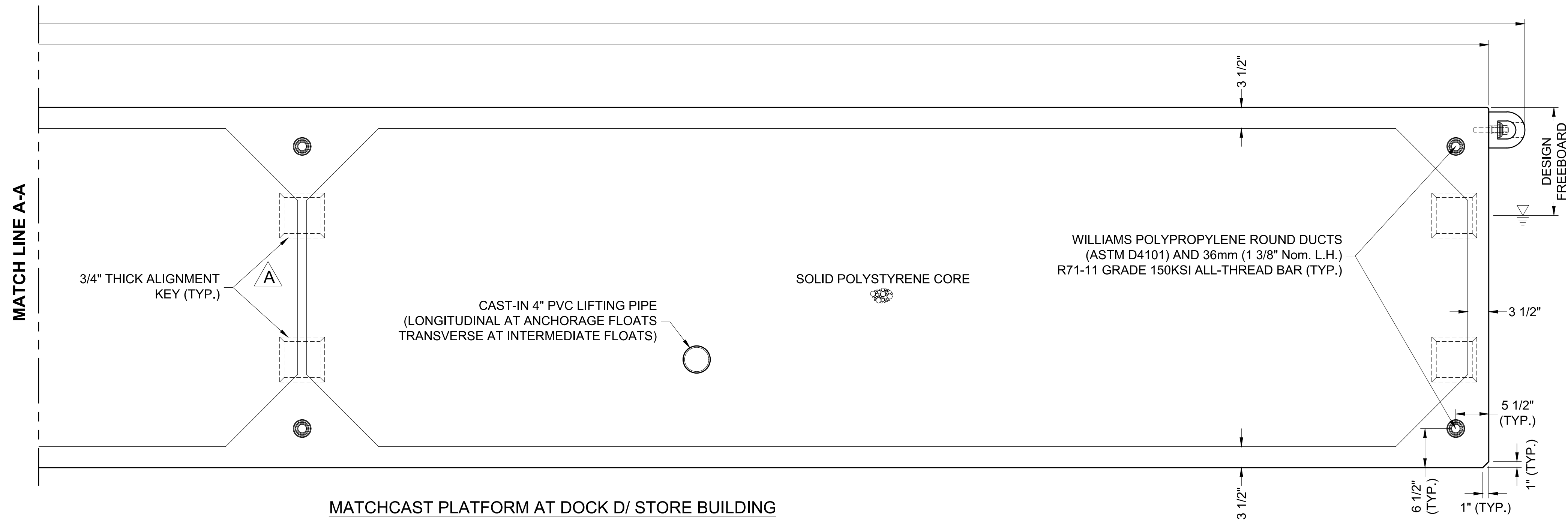
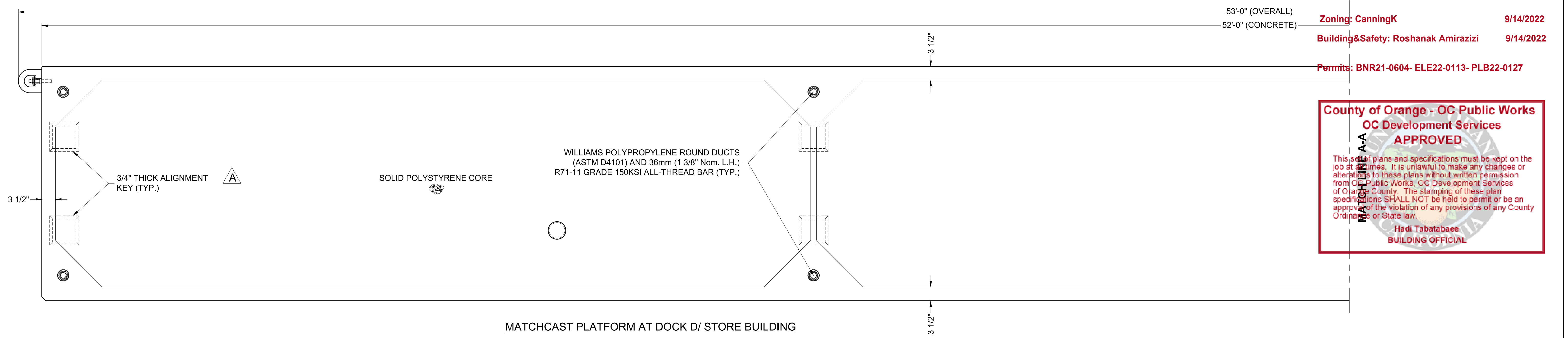


Craig S Funston
2022.05.13
12:29:44-07'00'

SCALE:	1" = 1' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DS6
SHEET NO.:	41

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

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GROUTING NOTES

GROUT SHALL BE EUCO CABLE GROUT PTX OR US SPEC NA-100.

AFTER TENSIONING AND PRIOR TO GROUTING:

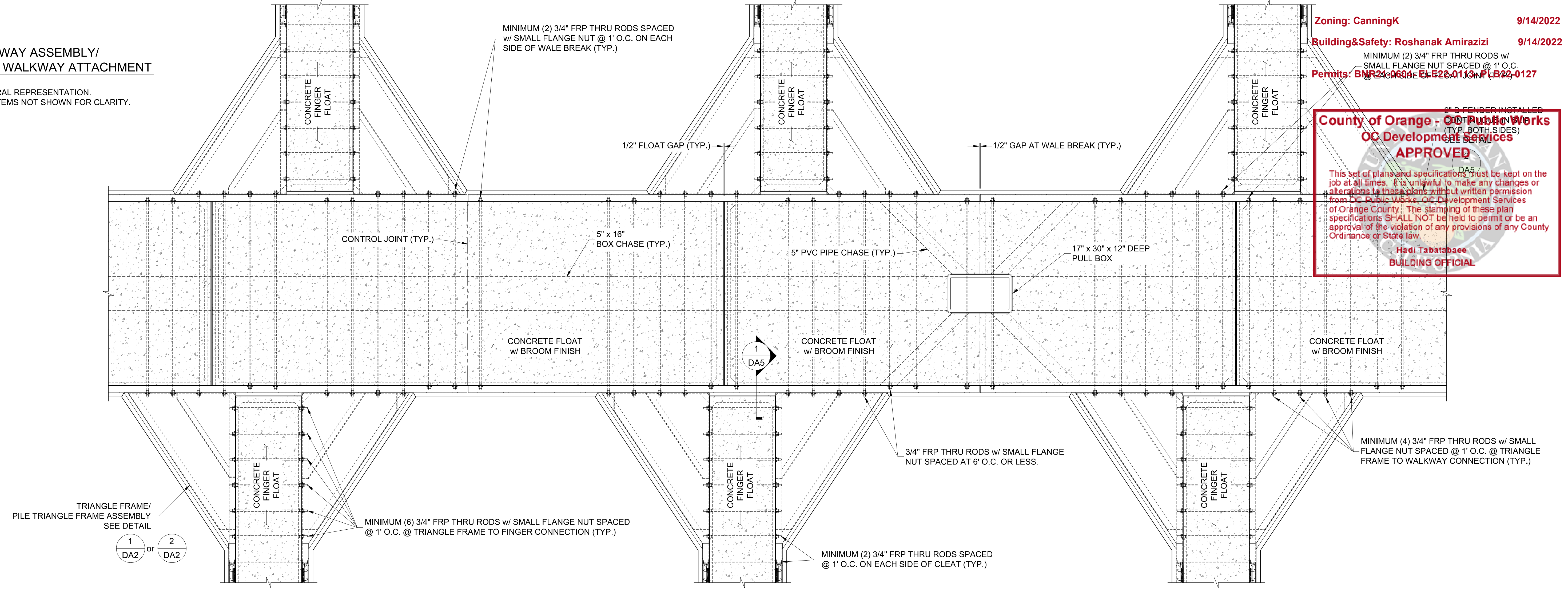
- THE UNDERWATER DUCTS (4 BENEATH WATERLINE) SHALL BE FLUSHED WITH FRESH WATER TO DISPLACE ALL SEA WATER. RUN FRESH WATER FROM END TO END UNTIL A VOLUME OF WATER EQUAL TO 6 TIMES THE DUCT VOLUME HAS BEEN DISCHARGED.
- THE FRESH WATER SHALL THEN BE DISPLACED WITH LOW PRESSURE AIR (20 PSI MAX) BEFORE FINAL GROUTING.

- CAUTION
AIR PRESSURE MUST BE MONITORED. INTRODUCTION OF EXCESSIVE AIR PRESSURE INTO THE DUCTS MAY CAUSE CATASTROPHIC DAMAGE TO THE FLOAT MODULES.

A		2-25-22	DESCRIPTION CHANGED	KG	<p>Bellingham MARINE SOUTHWEST DIVISION CA LICENSE #442499 8810 SPARLING LANE DIXON, CA 95620 TEL: (707) 678-2385 FAX: (707) 678-1760</p>	<p>THIS DRAWING CONTAINS PROPRIETARY INFORMATION WHICH IS THE PROPERTY OF BELLINGHAM MARINE INDUSTRIES, INC., AND SHALL NOT BE COPIED, REPRODUCED OR MADE AVAILABLE TO THIRD PARTIES WITHOUT PRIOR WRITTEN PERMISSION FROM BELLINGHAM MARINE INDUSTRIES, INC. UNIFLOAT®, UNIDECK® AND © BELLINGHAM MARINE INDUSTRIES, INC.</p>	PROJECT NUMBER: 7341	<p>DANA POINT HARBOR REVITALIZATION</p> <p>Harbor Drive Dana Point, CA 92629</p>	<p>Craig S Funston 2022.05.13 12:29:53-07'00"</p>	SCALE: 1" = 1' (Sheet Size 24" x 36")
NO.	DATE	DESCRIPTION	BY	ENGINEER / DESIGNER:			CHECKED BY:			DRAWN BY: KG
REVISIONS					<p>THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER</p>					

PERMIT DRAWING

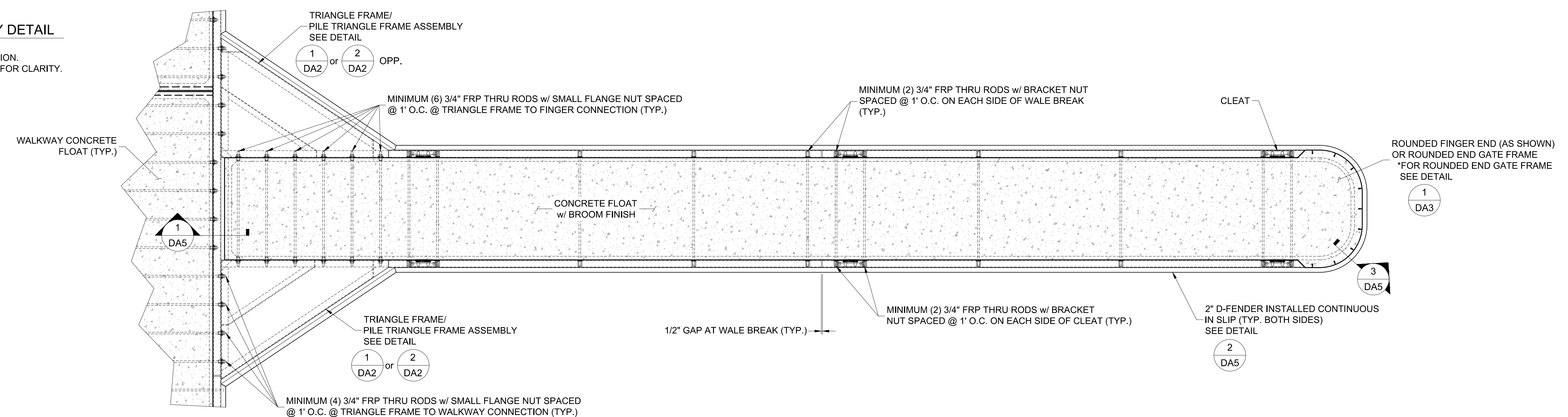
1
DA1
TYP. WALKWAY ASSEMBLY/
FINGER TO WALKWAY ATTACHMENT
NOTES:
THIS IS A GENERAL REPRESENTATION.
SOME HIDDEN ITEMS NOT SHOWN FOR CLARITY.



Zoning: CanningK 9/14/2022
Building&Safety: Roshanak Amirazizi 9/14/2022
Permits: BMR 2022-0110, CFE 22-0110, PLR 22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED
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Hadi Tabatabaee
BUILDING OFFICIAL

2
DA1
TYP. FINGER ASSEMBLY DETAIL
NOTES:
THIS IS A GENERAL REPRESENTATION.
SOME HIDDEN ITEMS NOT SHOWN FOR CLARITY.



NO.	DATE	DESCRIPTION	BY

Bellingham MARINE
THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

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CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
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PROJECT NUMBER:
7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629
DOCK ASSEMBLY DETAILS

Craig S Funston
2022.05.13
12:30:03-07'00"

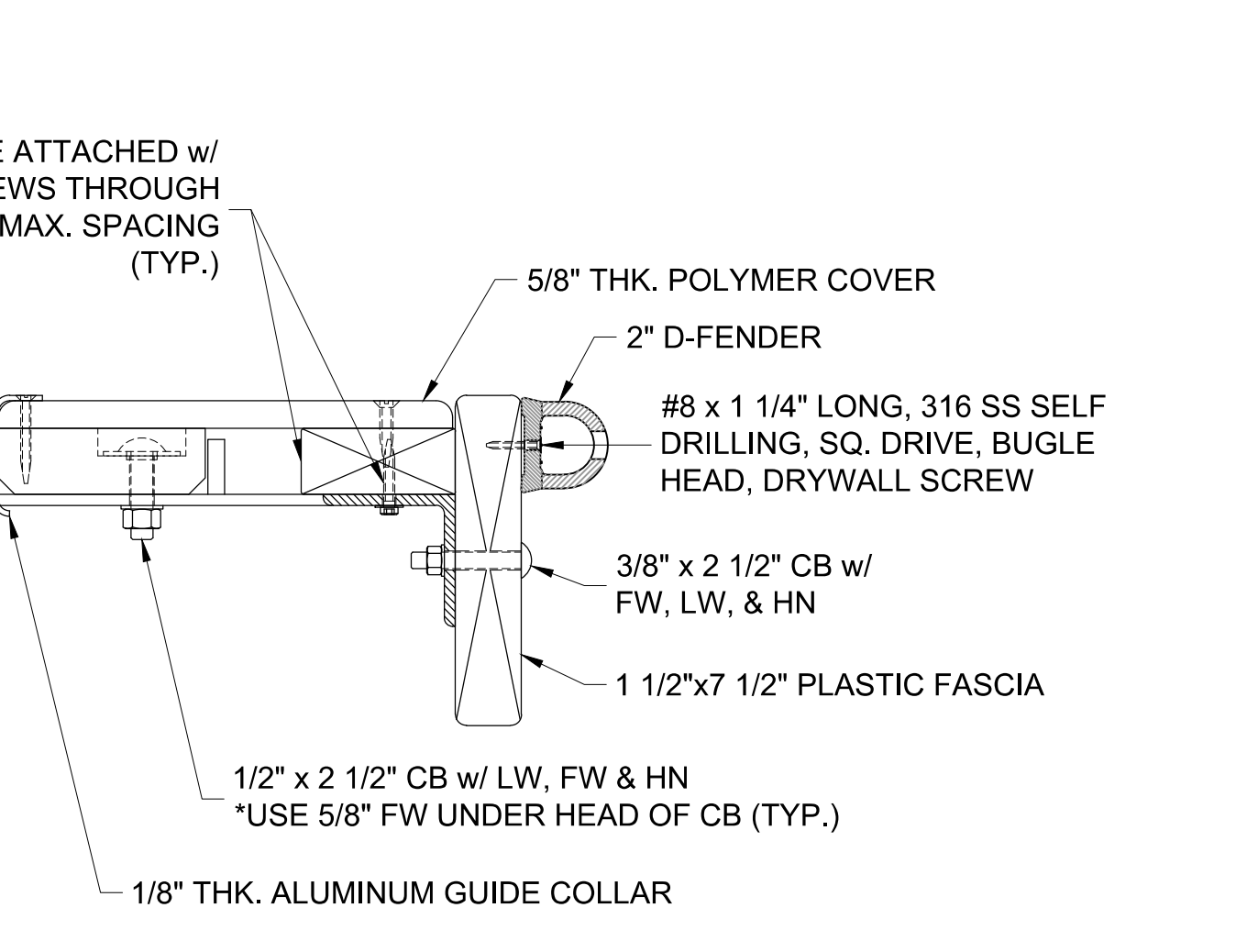
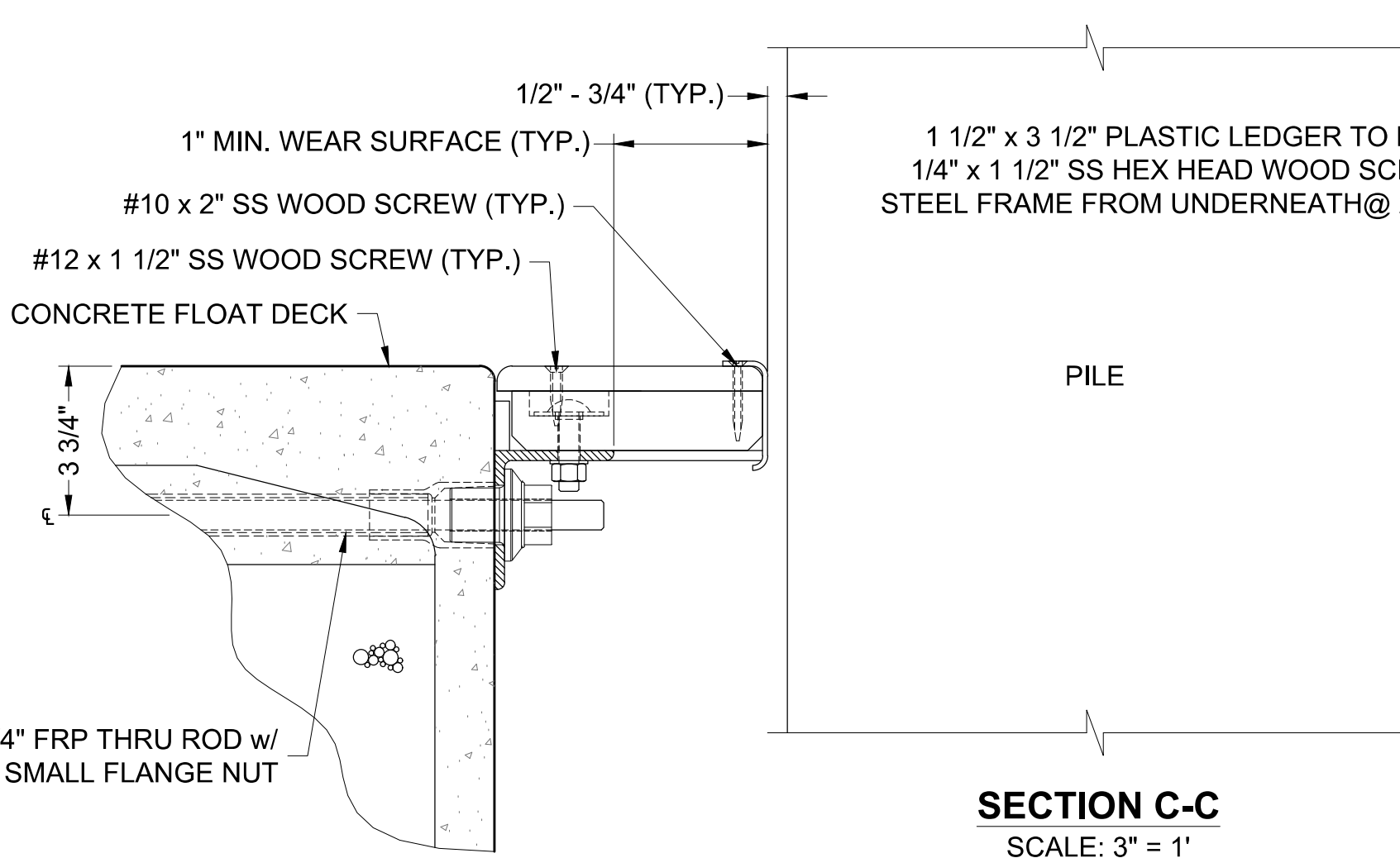
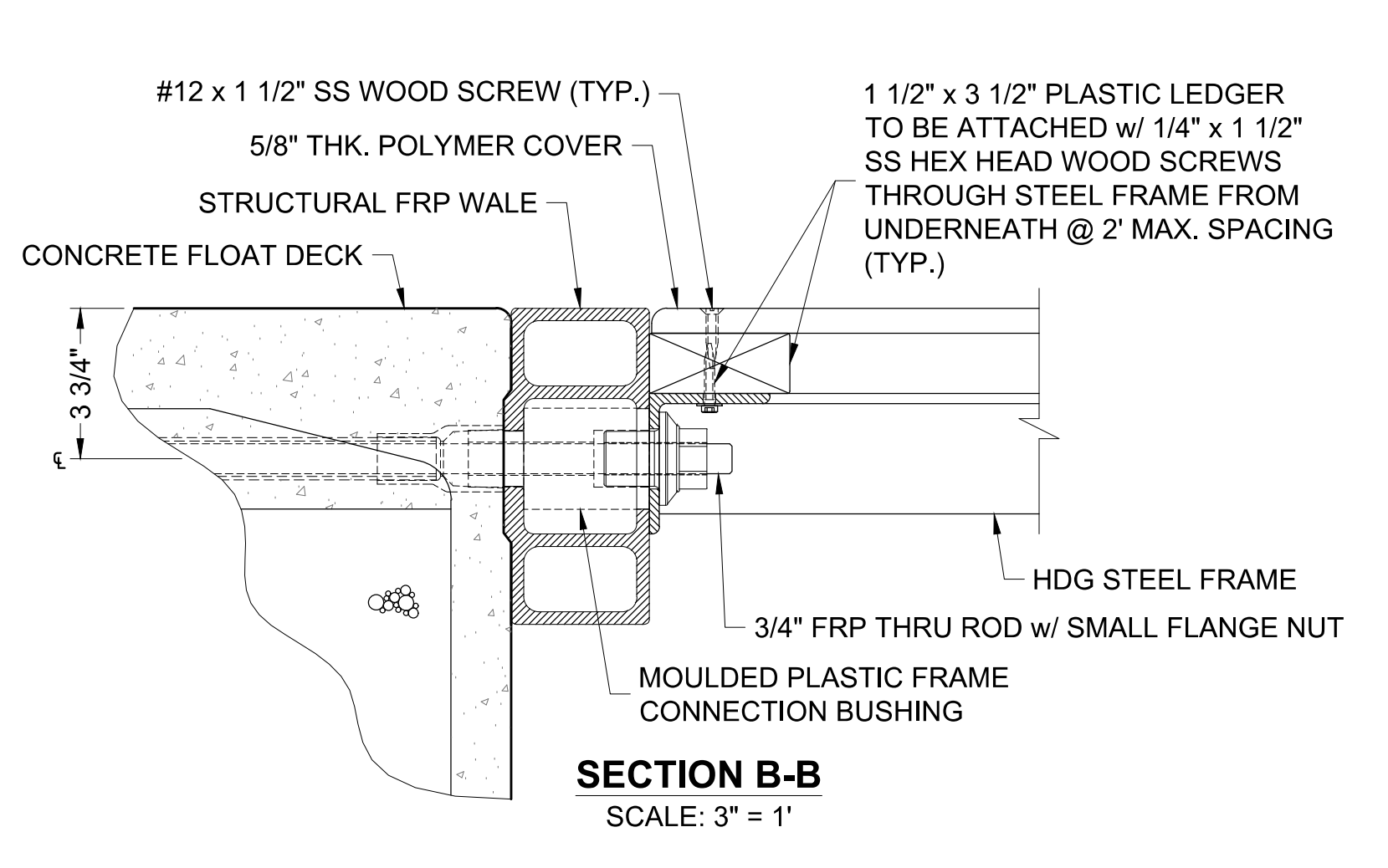
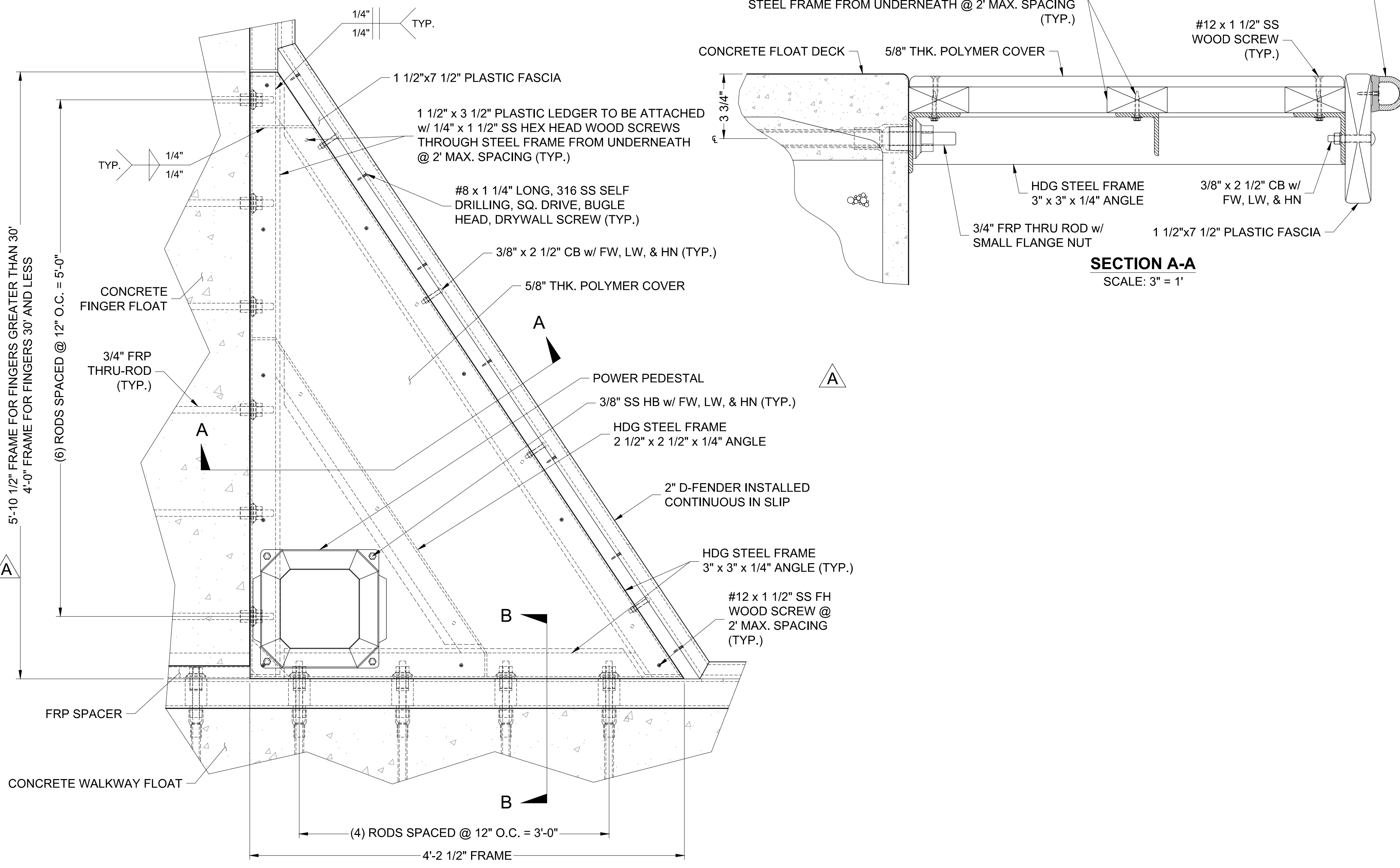
REGISTERED PROFESSIONAL ENGINEER
CRAIG S. FUNSTON
4878
EX-302022
STRUCTURAL
STATE OF CALIFORNIA

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

SCALE: 1/2" = 1'
(Sheet Size 24" x 36")
DRAWN BY: KG
DATE: 5/10/2022
DRAWING: DA1
SHEET NO.: 43

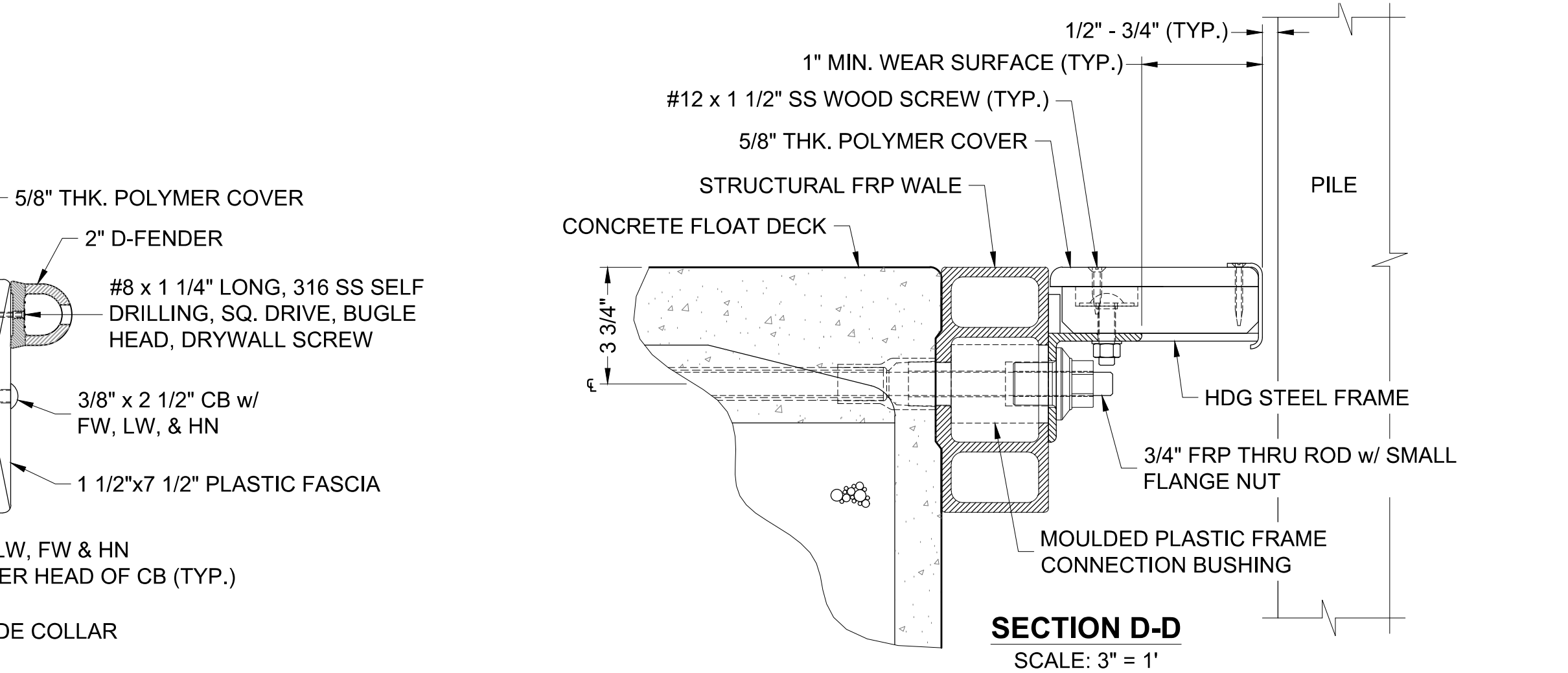
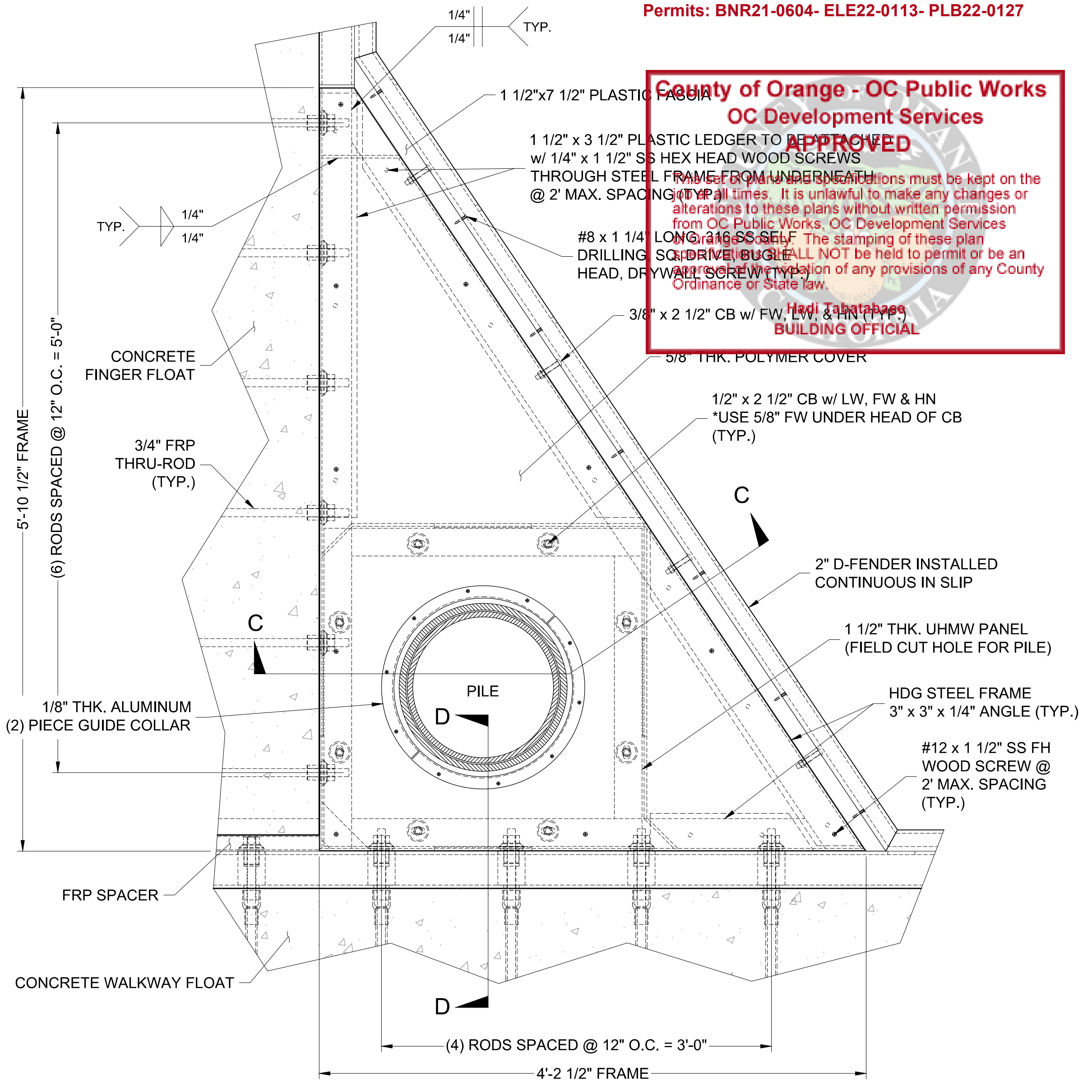
1 TYP. FINGER TO WALKWAY TRIANGLE FRAME ASSEMBLY DETAIL

DA2 NOTES: THIS IS A GENERAL REPRESENTATION. SOME HIDDEN LINES NOT SHOWN FOR CLARITY.



2 TYP. FINGER TO WALKWAY TRIANGLE PILE FRAME ASSEMBLY DETAIL

DA2 NOTES: THIS IS A GENERAL REPRESENTATION. SOME HIDDEN LINES NOT SHOWN FOR CLARITY.



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Conditions must be kept on the alterations to these plans without written permission from OC Public Works. OC Development Services shall not be held to permit or be an agent for any provision of any County Ordinance or State law.
Haji Jabatabaas
BUILDING OFFICIAL

PERMIT DRAWING

NO.	DATE	ADDED NOTES DESCRIPTION	KG BY
A	2-25-22		
REVISIONS			

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SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
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PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

DOCK ASSEMBLY DETAILS

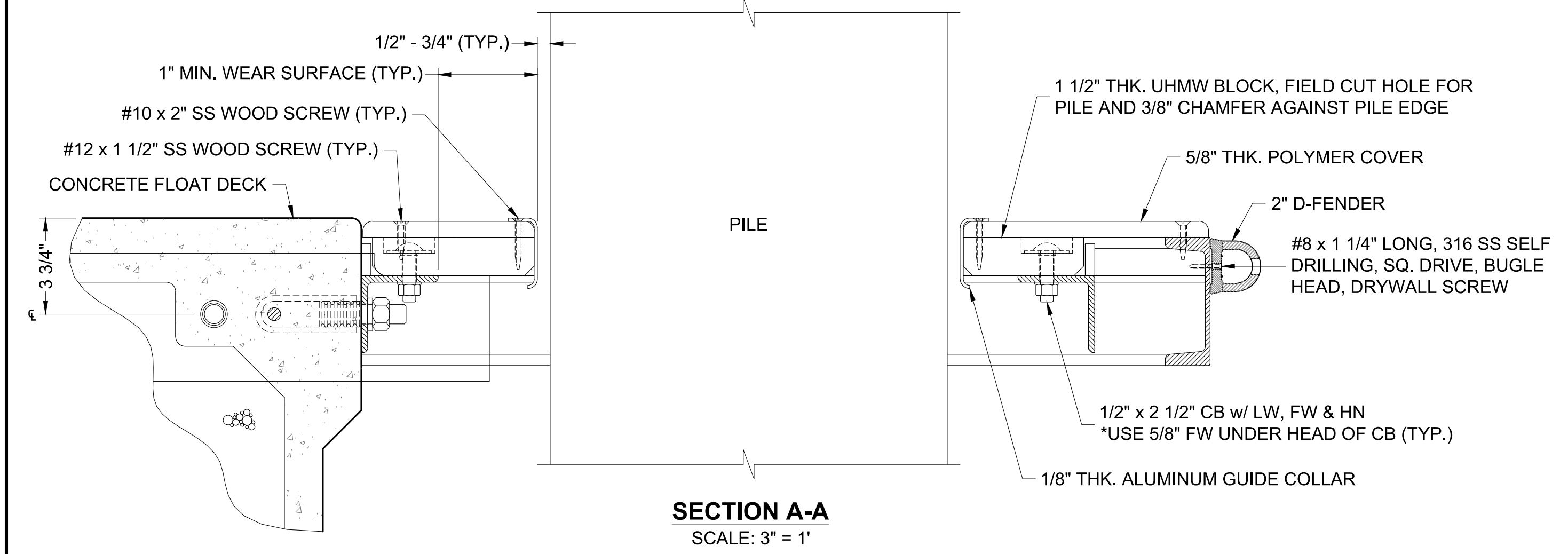
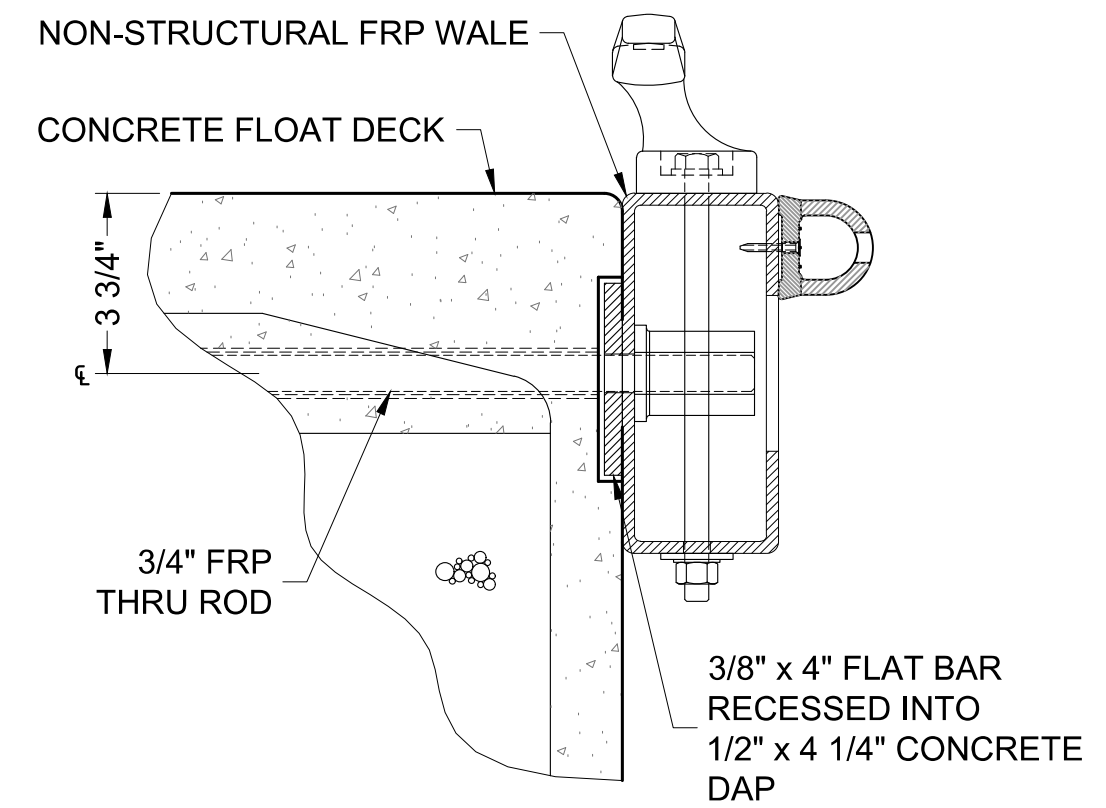
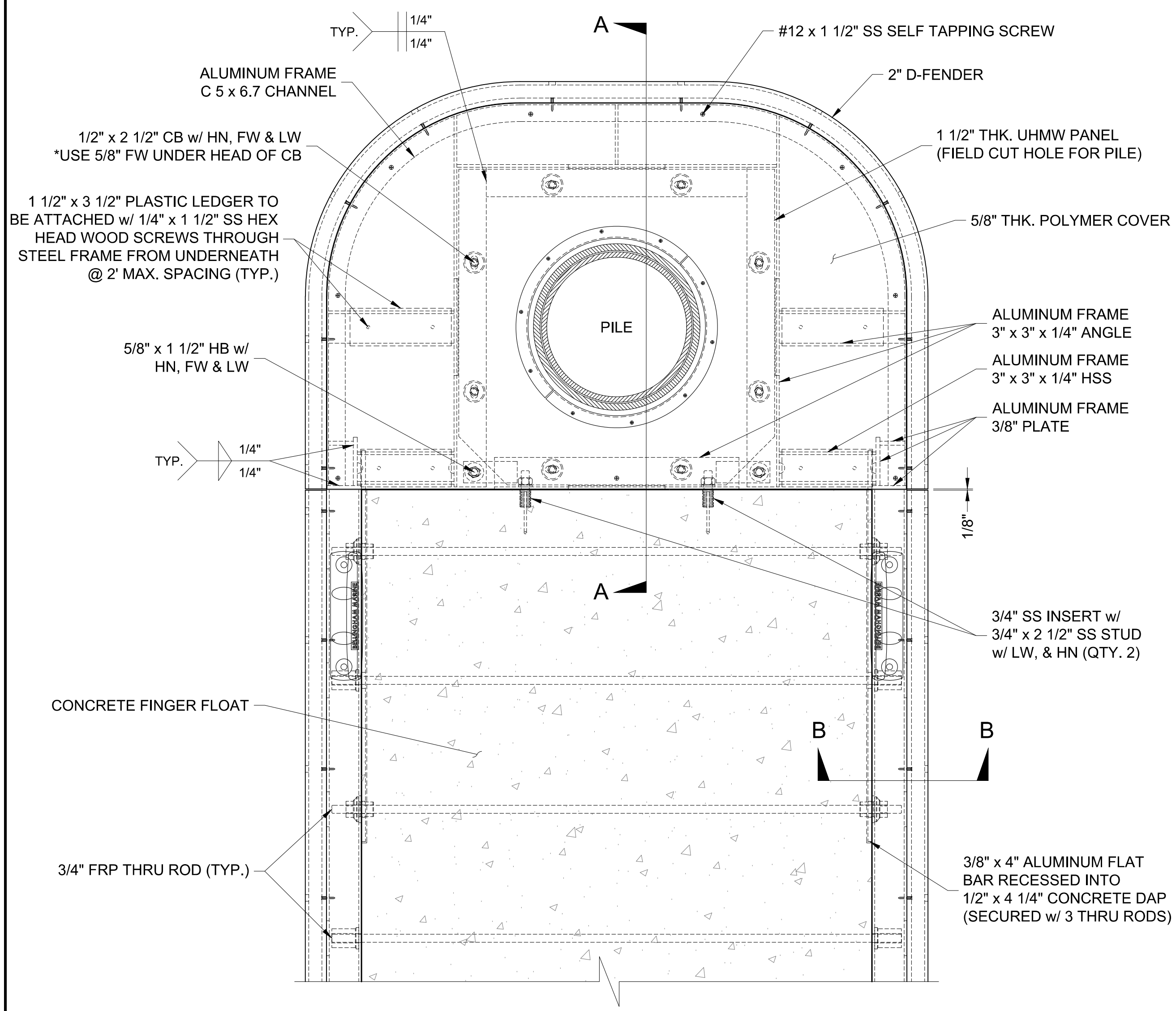
Craig S Funston
2022.05.13
12:30:12-07'00'

REGISTERED PROFESSIONAL ENGINEER
4878
EXPIRES 05-30-2023
STRUCTURAL
STATE OF CALIFORNIA

SCALE:	1 1/2" = 1' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DA2
SHEET NO.:	44

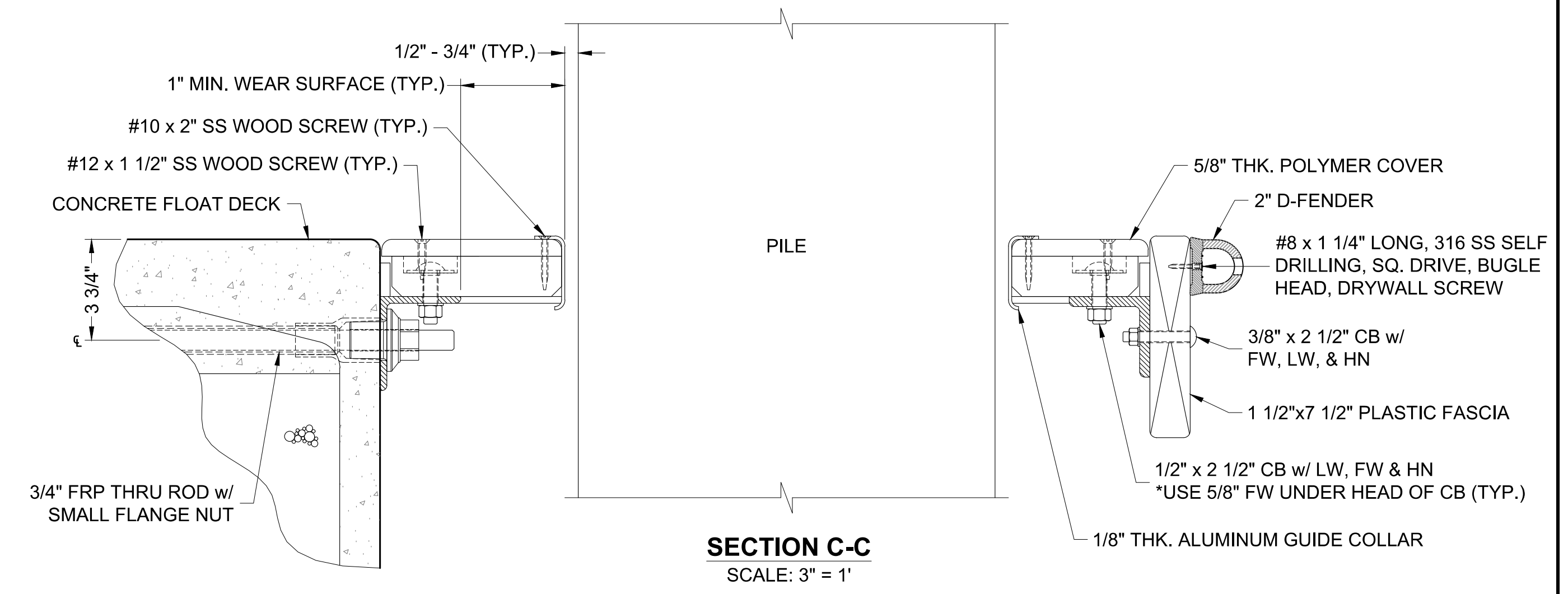
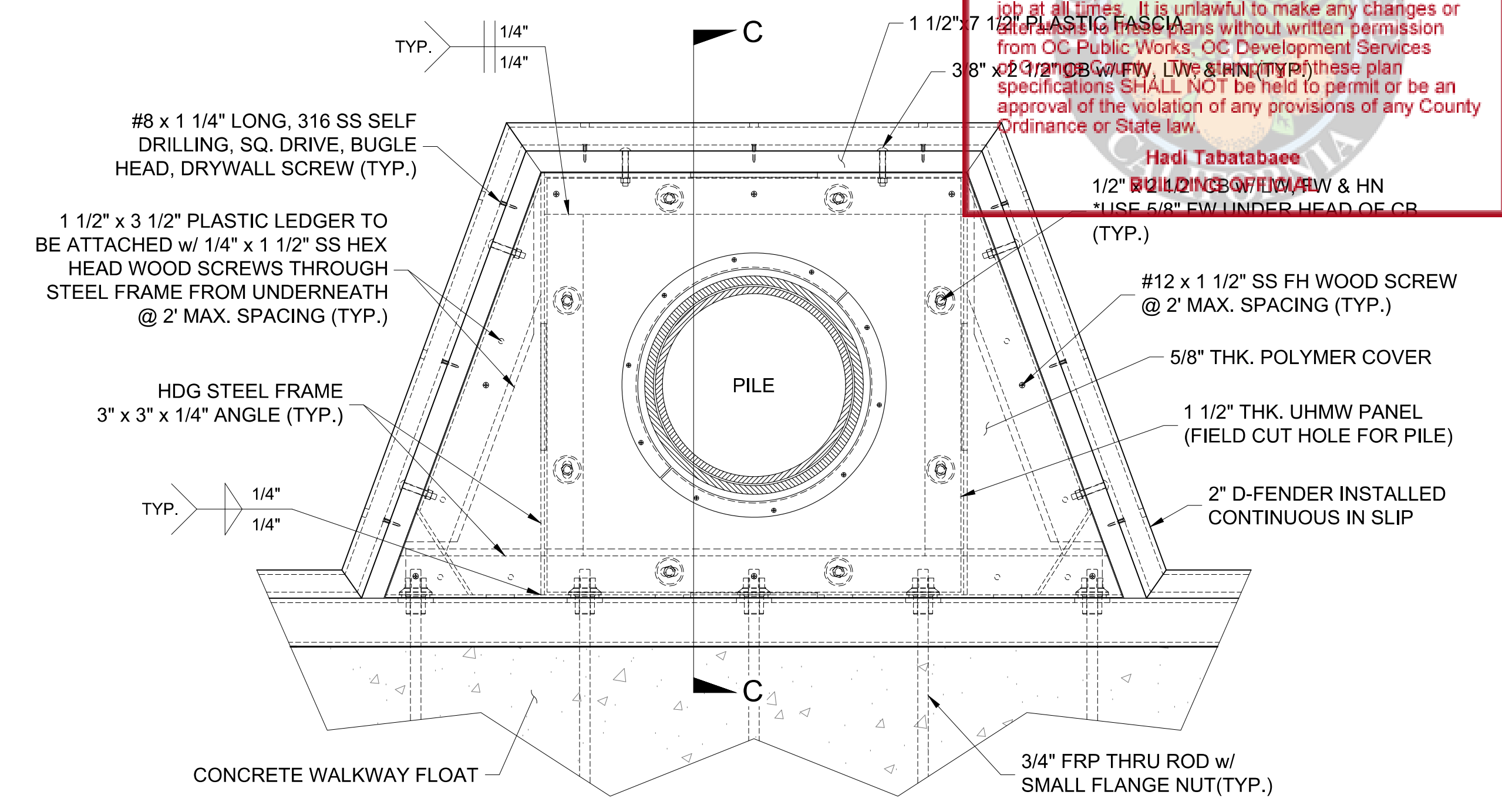
1 TYP. FINGER END PILE GUIDE w/ STRUCTURAL WALERS ASSEMBLY DETAIL

DA3 NOTES: THIS IS A GENERAL REPRESENTATION. SOME HIDDEN LINES NOT SHOWN FOR CLARITY.



2 TYP. SIDE PILE GUIDE ASSEMBLY DETAIL

DA3 NOTES: THIS IS A GENERAL REPRESENTATION. SOME HIDDEN LINES NOT SHOWN FOR CLARITY.



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OC Development Services
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Hadi Tabatabaee
REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEER
No. 4878
Exp. 8-30-2023
STRUCTURAL
STATE OF CALIFORNIA

PERMIT DRAWING

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REVISIONS			

Bellingham MARINE
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CA LICENSE #442499
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DIXON, CA 95620
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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

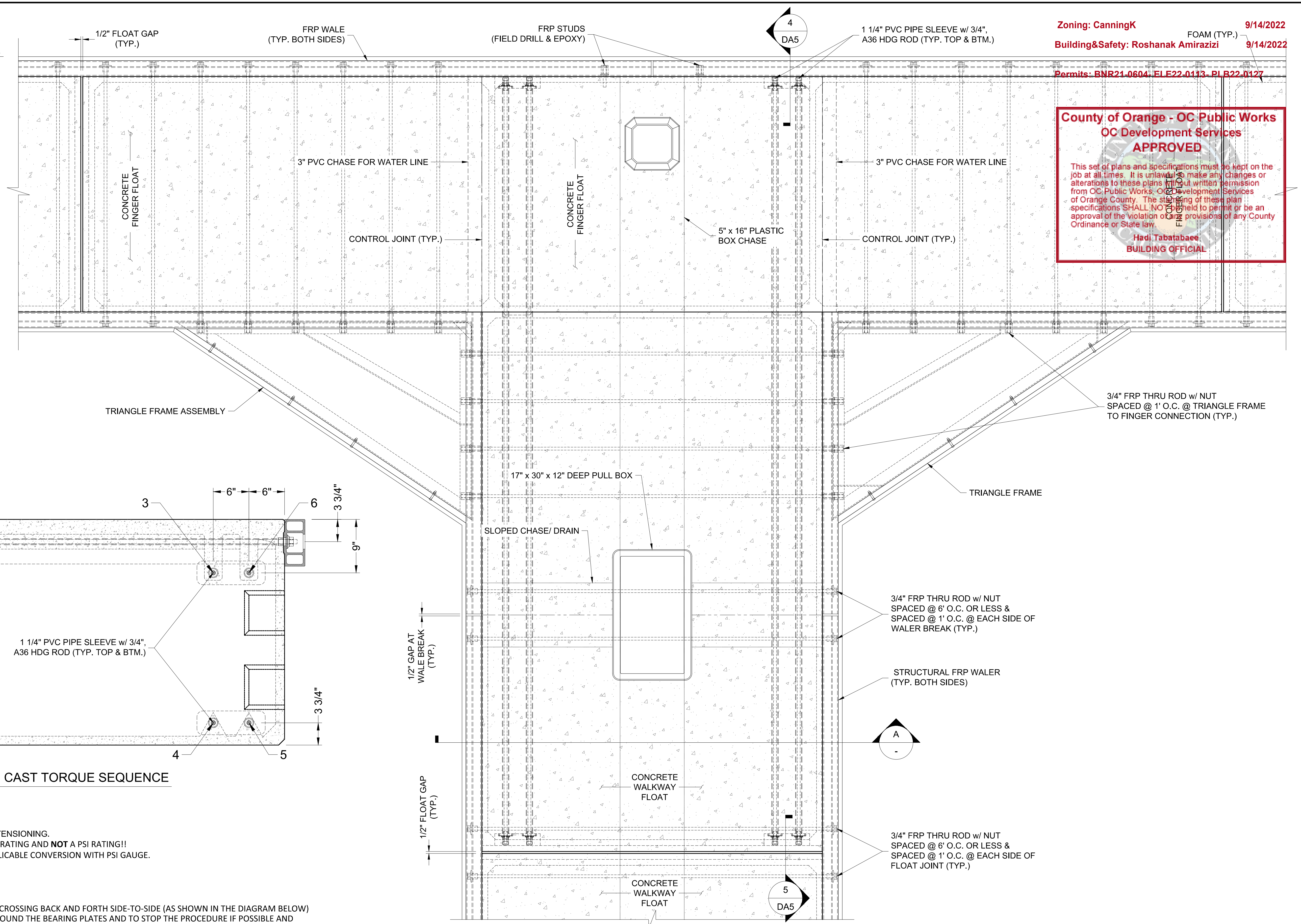
DOCK ASSEMBLY DETAILS

Craig S Funston
2022.05.13
12:30:22-07'00'

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DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DA3
SHEET NO.:	45

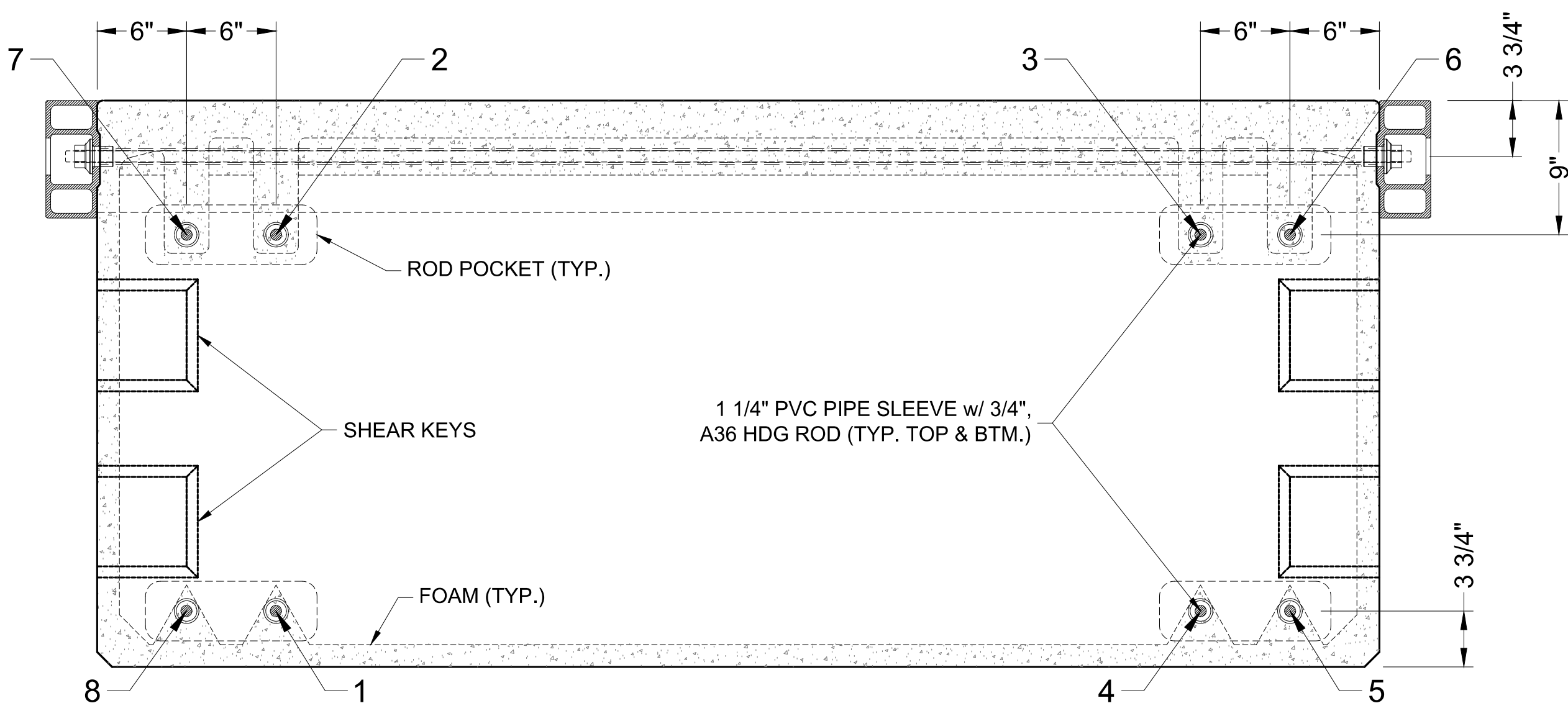
PERMIT DRAWING

1 TYP. MATCH CAST T-HEAD ASSEMBLY DETAIL
DA4 NOTES: THIS IS A GENERAL REPRESENTATION. SOME HIDDEN LINES NOT SHOWN FOR CLARITY.



Zoning: CanningK
 Building&Safety: Roshanak Amirazizi
 Permits: BNR21-0604, ELE22-0113, PLR22-0127
 FOAM (TYP.)
 9/14/2022
 9/14/2022

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Hadi Tabatabaee
BUILDING OFFICIAL



POST-TENSIONING THRU RODS

- 1) WORK FROM ONE END, WITH ENDBOARD REMOVED PRIOR TO TENSIONING.
- 2) A36 RODS: FINAL PRETENSION = 5,000 LB PER ROD. THIS IS A FORCE RATING AND NOT A PSI RATING!! CONSULT CALIBRATION CURVE/DATA ON TOOL FOR APPLICABLE CONVERSION WITH PSI GAUGE.

TENSION IN TWO STAGES
 -SNUG
 -5,000 LB PER ROD

THE PATTERN OF TENSIONING SHOULD ALTERNATE TOP-TO-BOTTOM, CROSSING BACK AND FORTH SIDE-TO-SIDE (AS SHOWN IN THE DIAGRAM BELOW) CARE MUST BE TAKEN TO NOTE THE CONDITION OF THE CONCRETE AROUND THE BEARING PLATES AND TO STOP THE PROCEDURE IF POSSIBLE AND NOTIFY THE ENGINEER IF ANY DISTRESS IS DETECTED.

NO.	DATE	DESCRIPTION	BY
REVISIONS			

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
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 8810 SPARLING LANE
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:
 [Signature]

PROJECT MANAGER:
 [Signature]

CHECKED BY:
 [Signature]

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

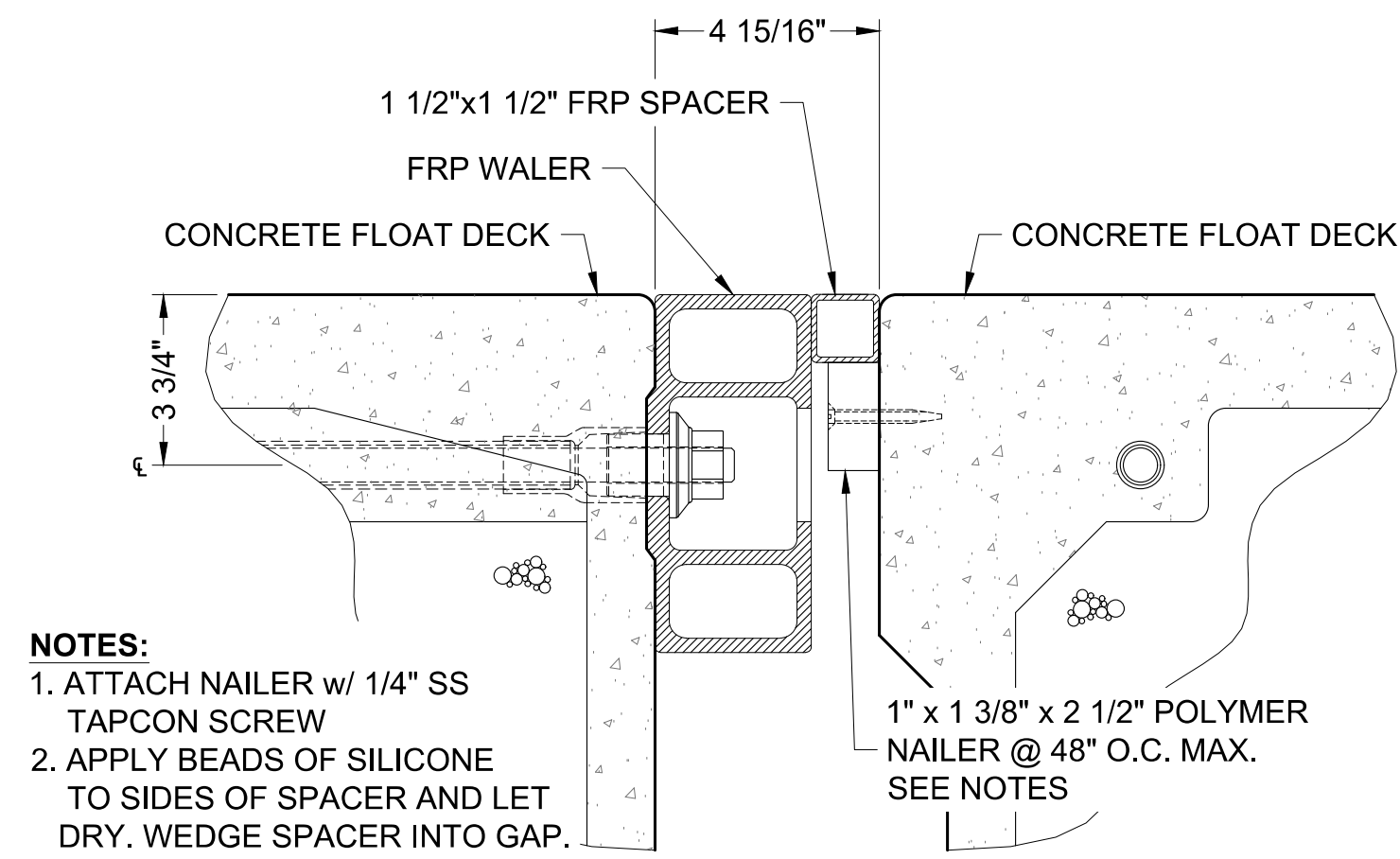
DOCK ASSEMBLY DETAILS

Craig S Funston
 2022.05.13
 12:30:36-07'00"

REGISTERED PROFESSIONAL ENGINEER
 C.R. 4878
 8-20-2022
 STRUCTURAL
 STATE OF CALIFORNIA

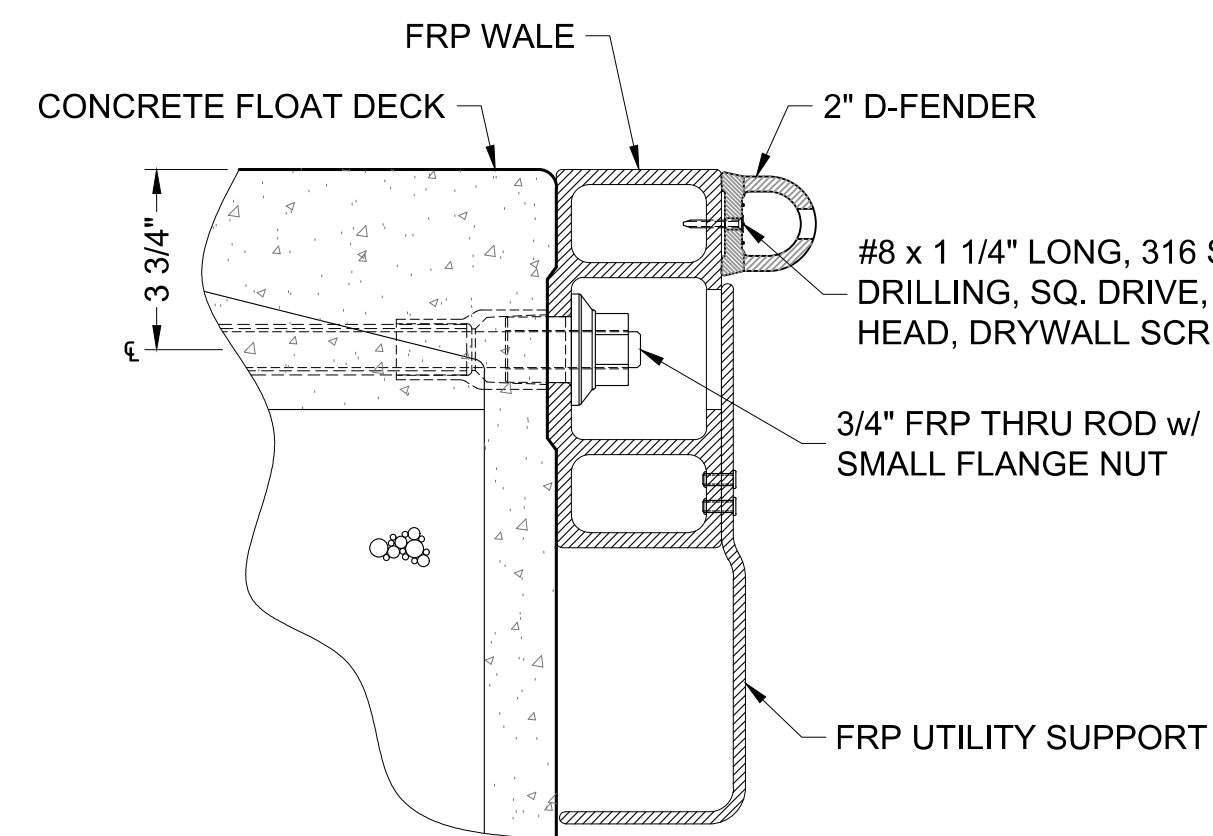
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DATE:	5/10/2022
DRAWING:	DA4
SHEET NO.:	46

PERMIT DRAWING

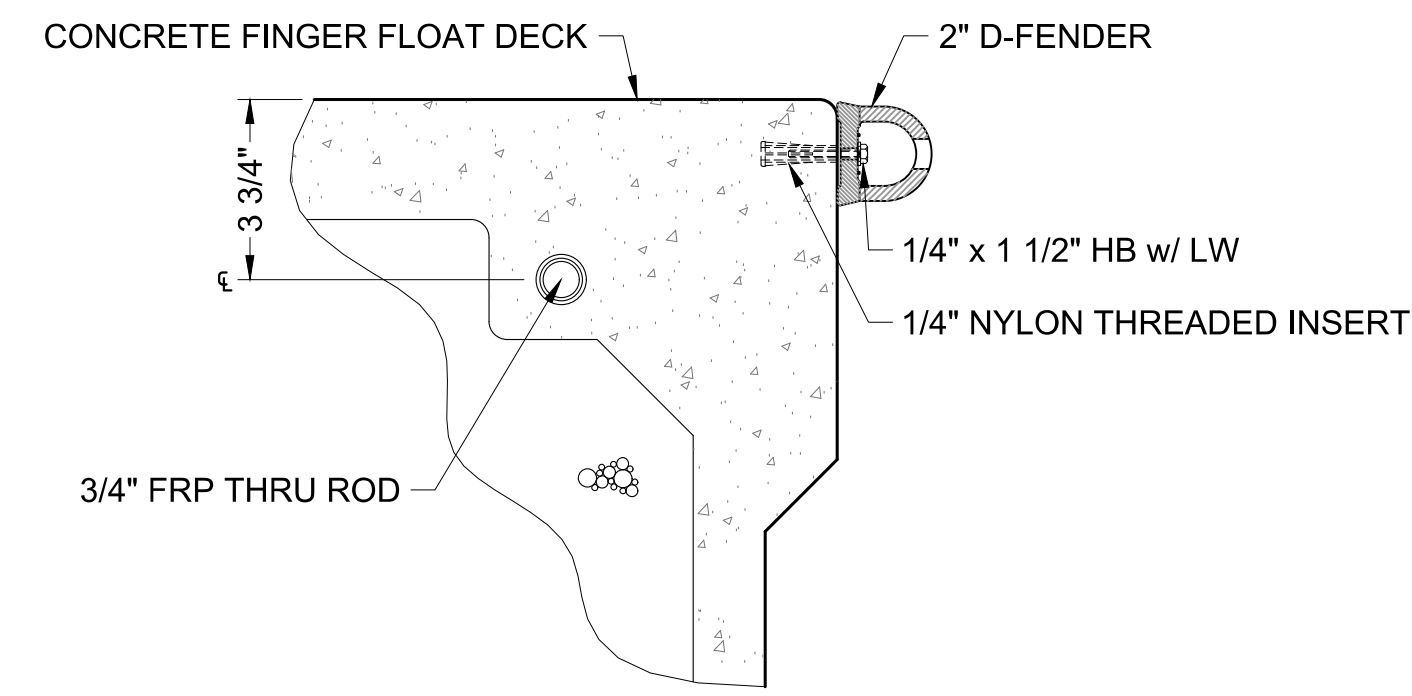


NOTES:
 1. ATTACH NAILER w/ 1/4" SS TAPCON SCREW
 2. APPLY BEADS OF SILICONE TO SIDES OF SPACER AND LET DRY. WEDGE SPACER INTO GAP.

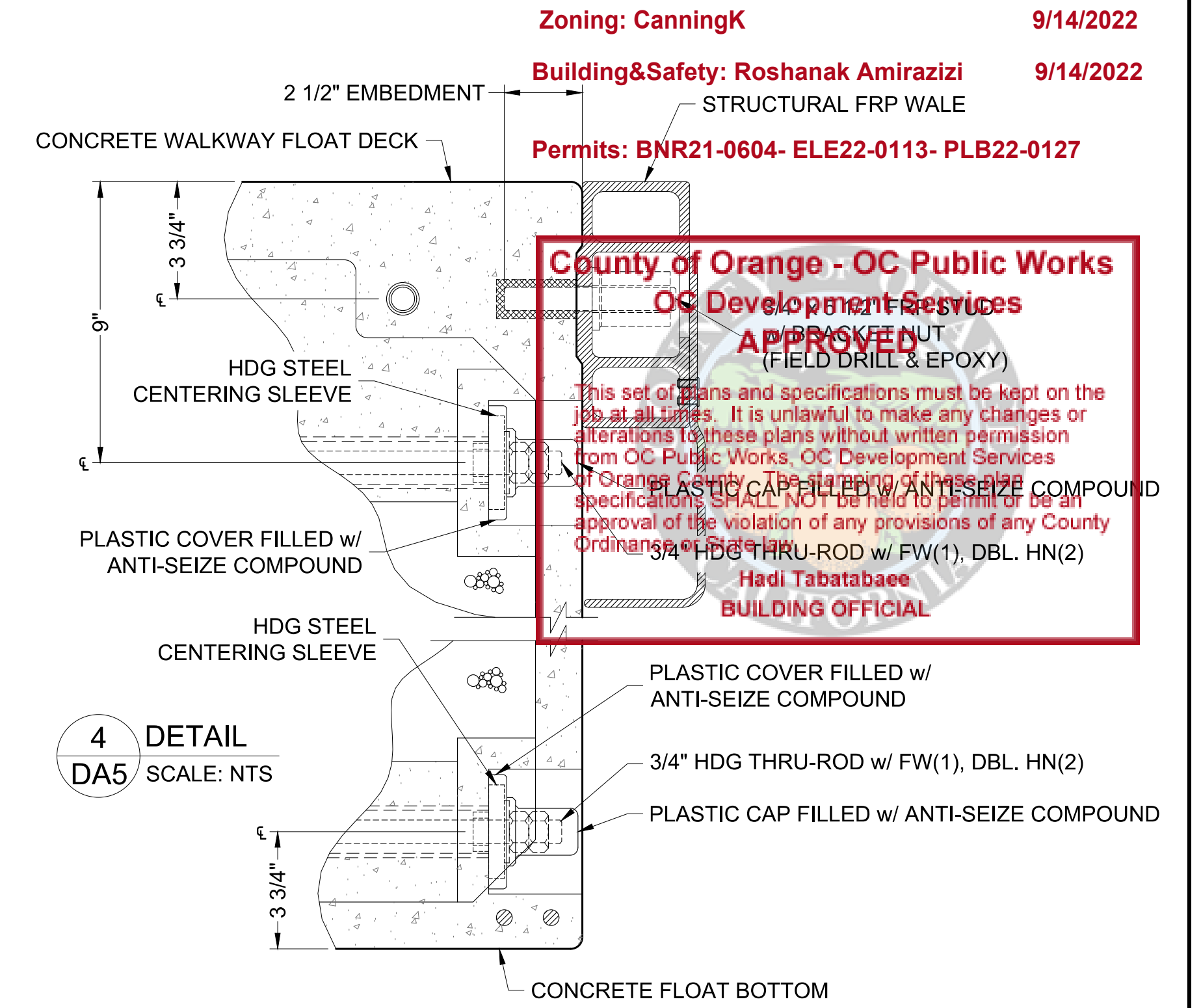
1 DETAIL
 DA5 SCALE: NTS



2 DETAIL
 DA5 SCALE: NTS



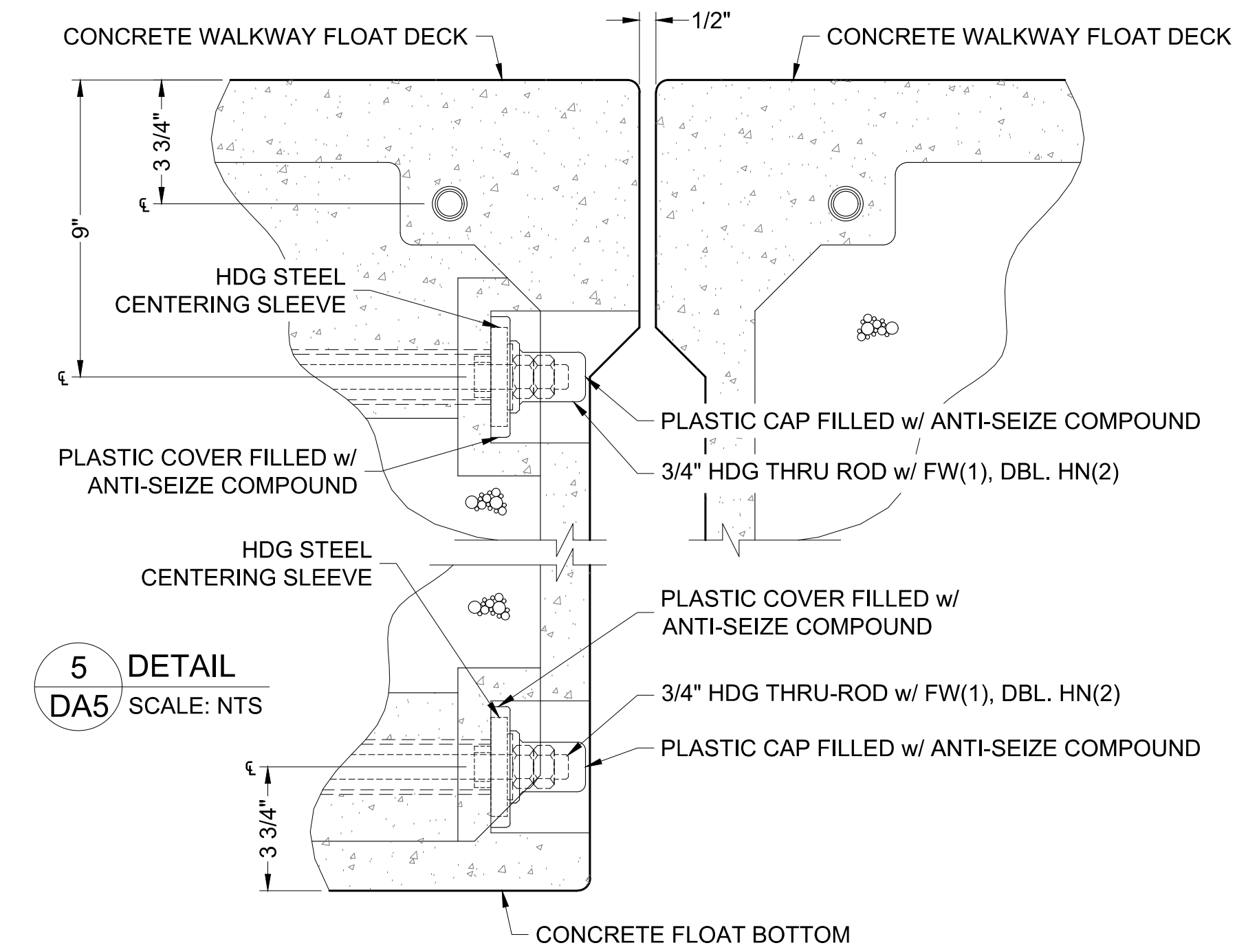
3 DETAIL
 DA5 SCALE: NTS



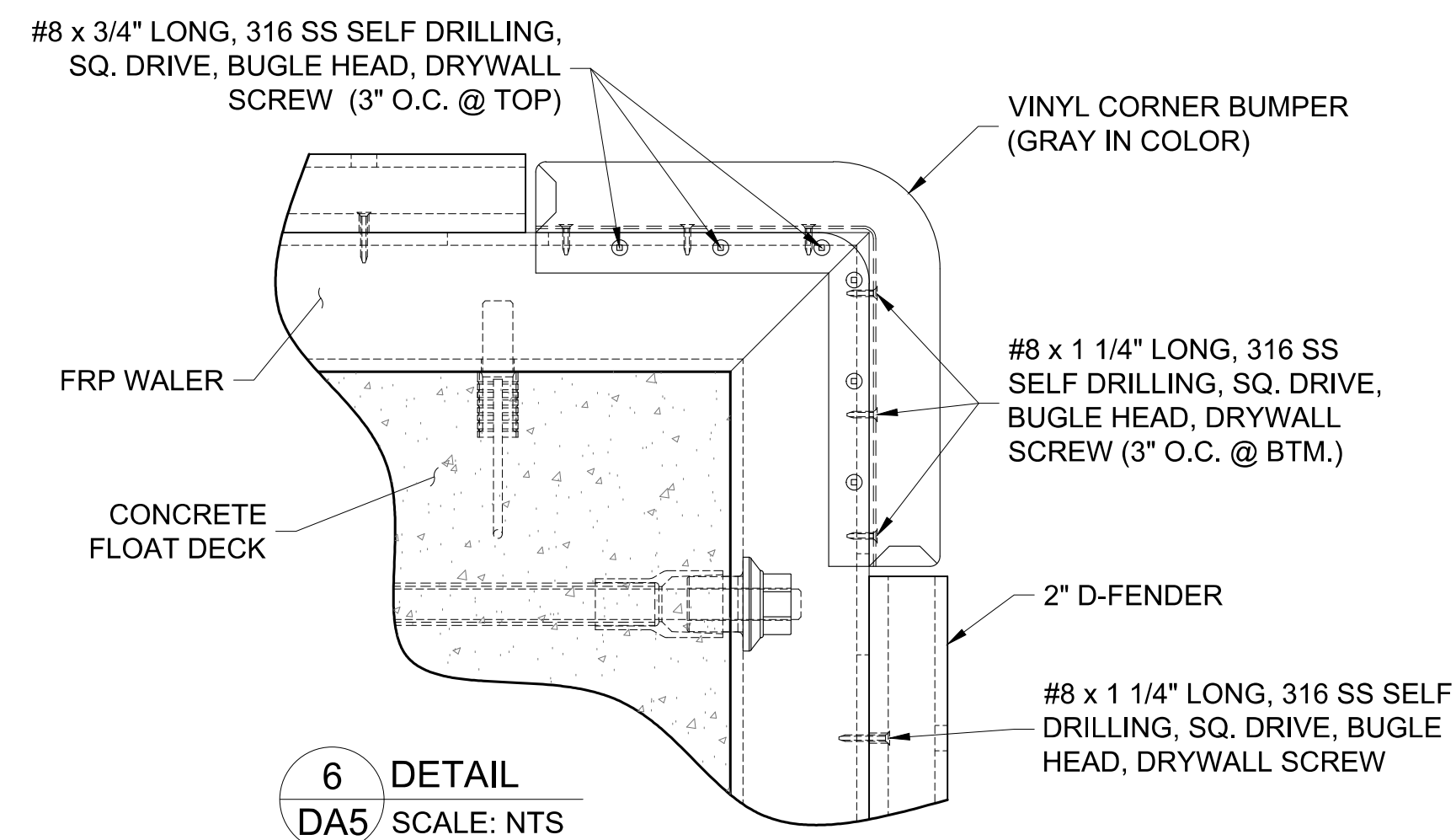
4 DETAIL
 DA5 SCALE: NTS

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 Hadi Tabatabaee
BUILDING OFFICIAL



5 DETAIL
 DA5 SCALE: NTS



6 DETAIL
 DA5 SCALE: NTS

NO.	DATE	DESCRIPTION	BY
REVISIONS			

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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOCK ASSEMBLY DETAILS

Craig S Funston
 2022.05.13
 12:30:46-07'00'

REGISTERED PROFESSIONAL ENGINEER
 CRAIG S FUNSTON
 4878
 5-20-2022
 STRUCTURAL
 STATE OF CALIFORNIA

SCALE:	3" = 1' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DA5
SHEET NO.:	47

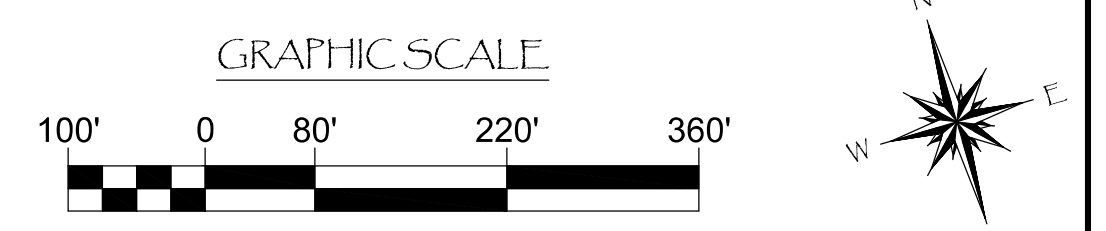
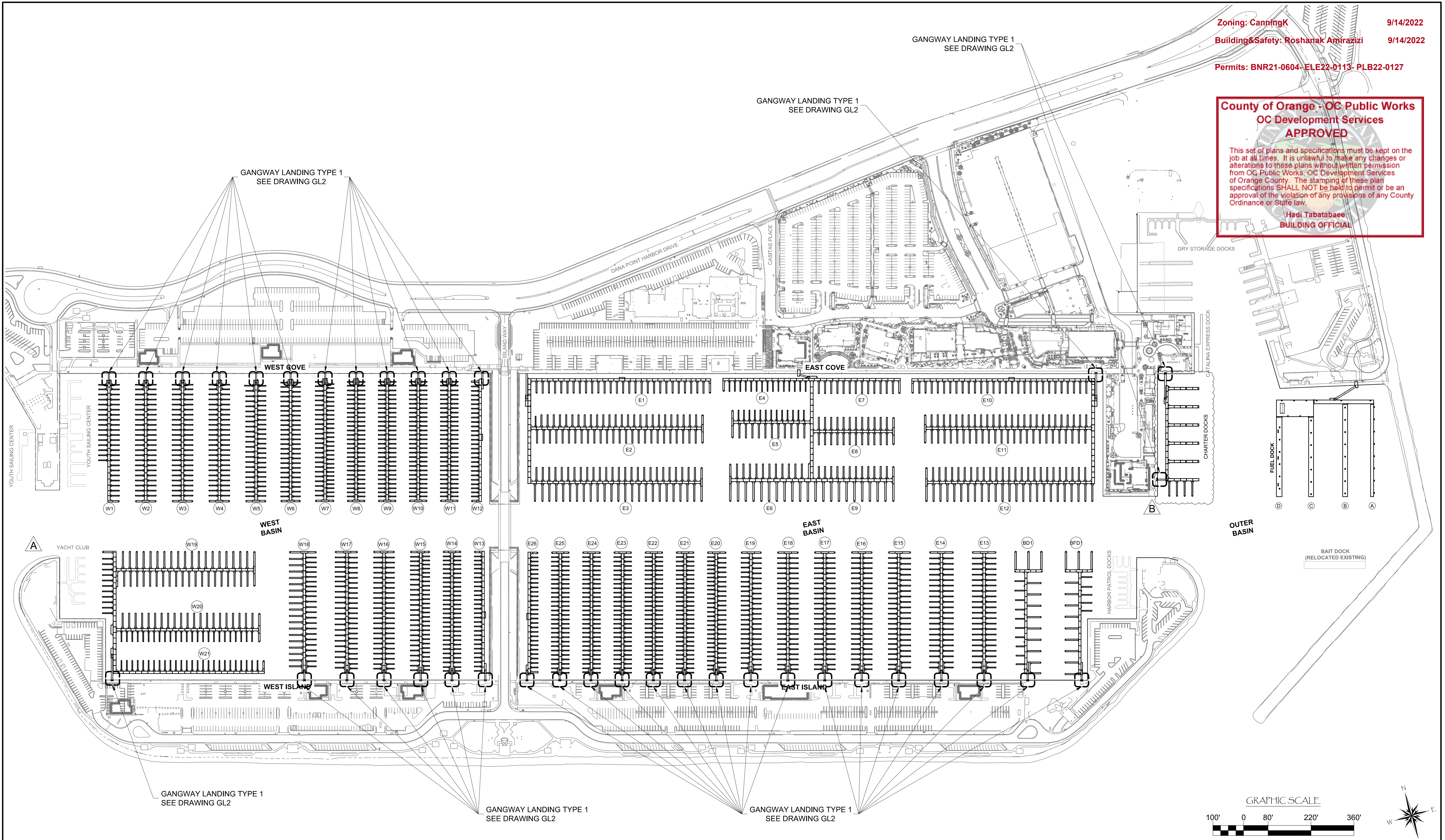
Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604-ELE22-0113-PLB22-0127

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**Hadi Tabatabaee
 BUILDING OFFICIAL**

PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED YACHT CLUB	KG
REVISIONS			

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ENGINEER / DESIGNER:

PROJECT MANAGER:

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DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

GANGWAY LANDING LAYOUT INDEX

Craig S Funston
 2022.05.13
 12:30:58-07'00"

REGISTERED PROFESSIONAL ENGINEER
 CRAIG S FUNSTON
 4878
 5-20-2022
 STRUCTURAL
 STATE OF CALIFORNIA

SCALE: 1" = 140'
 (Sheet Size 24" x 36")

DRAWN BY: KG

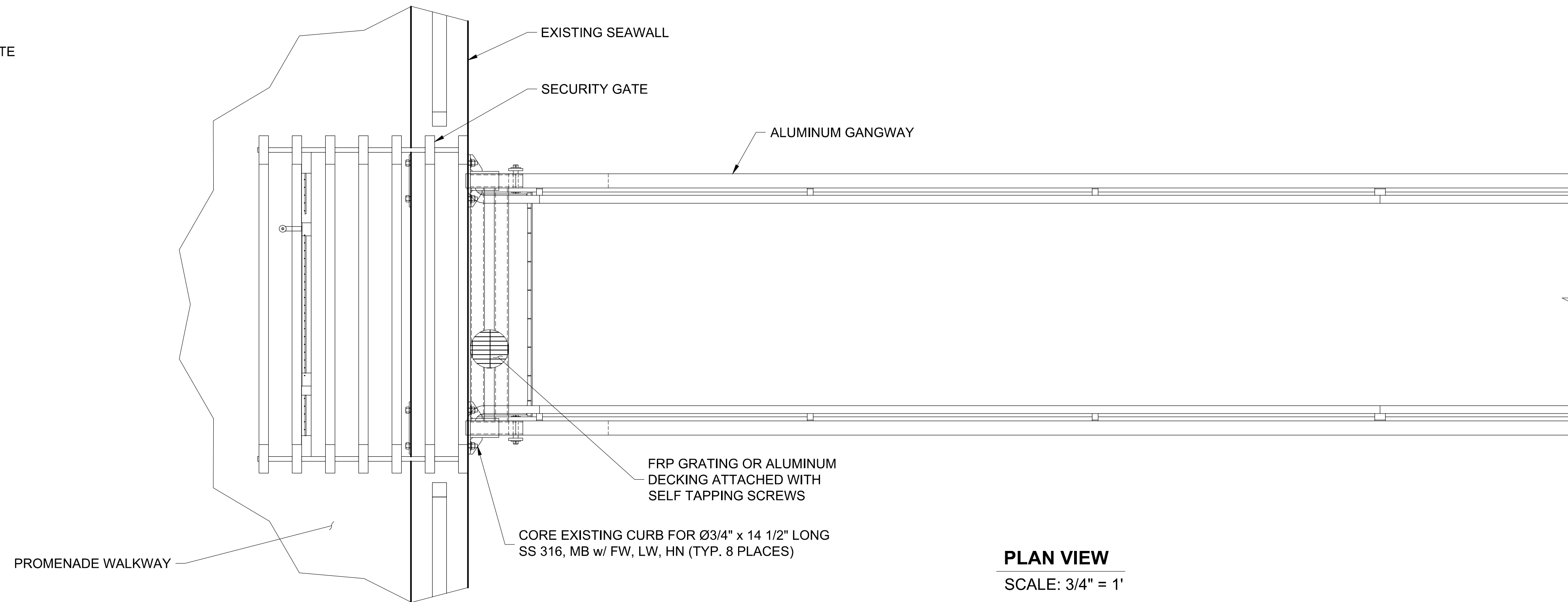
DATE: 5/10/2022

DRAWING: GL1

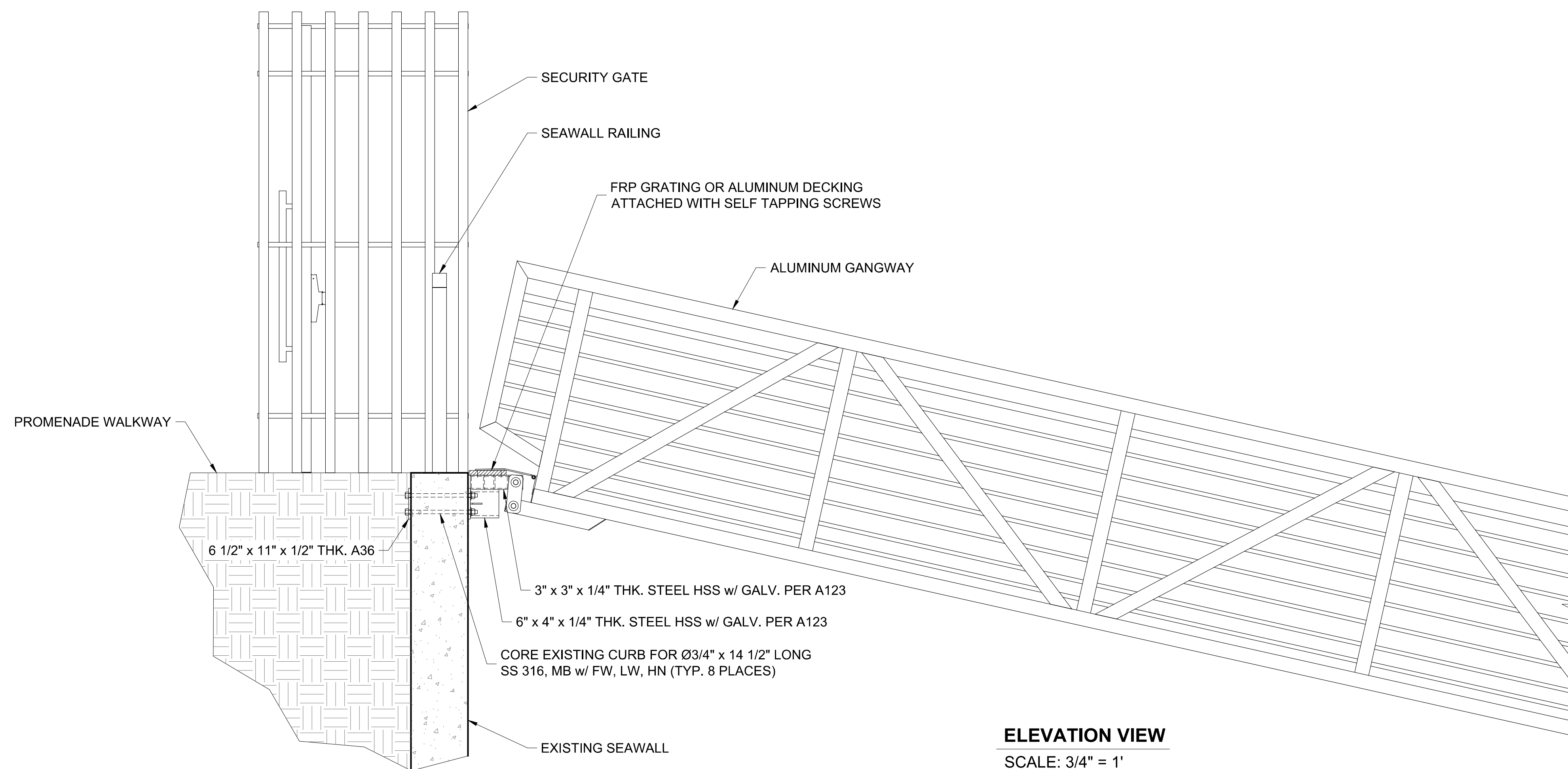
SHEET NO.: 48

PERMIT DRAWING

NOTES:
 1.) PROVIDE MINIMUM OF (2) COATS OF BITUMINOUS PAINT ON CONCRETE AT ALL ALUMINUM CONTACT SURFACES.



PLAN VIEW
 SCALE: 3/4" = 1'



ELEVATION VIEW
 SCALE: 3/4" = 1'

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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Hadi Tabatabaee
 BUILDING OFFICIAL

NO.	DATE	DESCRIPTION	BY
REVISIONS			

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SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

GANGWAY LANDING TYPE 1 DETAILS

Craig S Funston
 2022.05.13
 12:31:07-07'00"

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

SCALE: 3/4" = 1'
 (Sheet Size 24" x 36")

DRAWN BY: KG

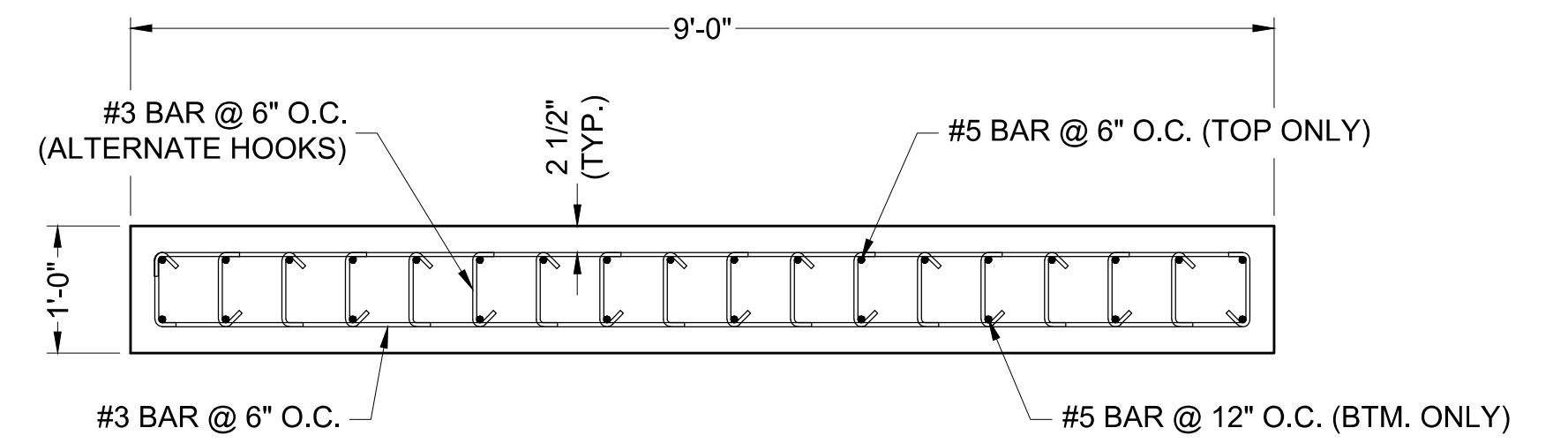
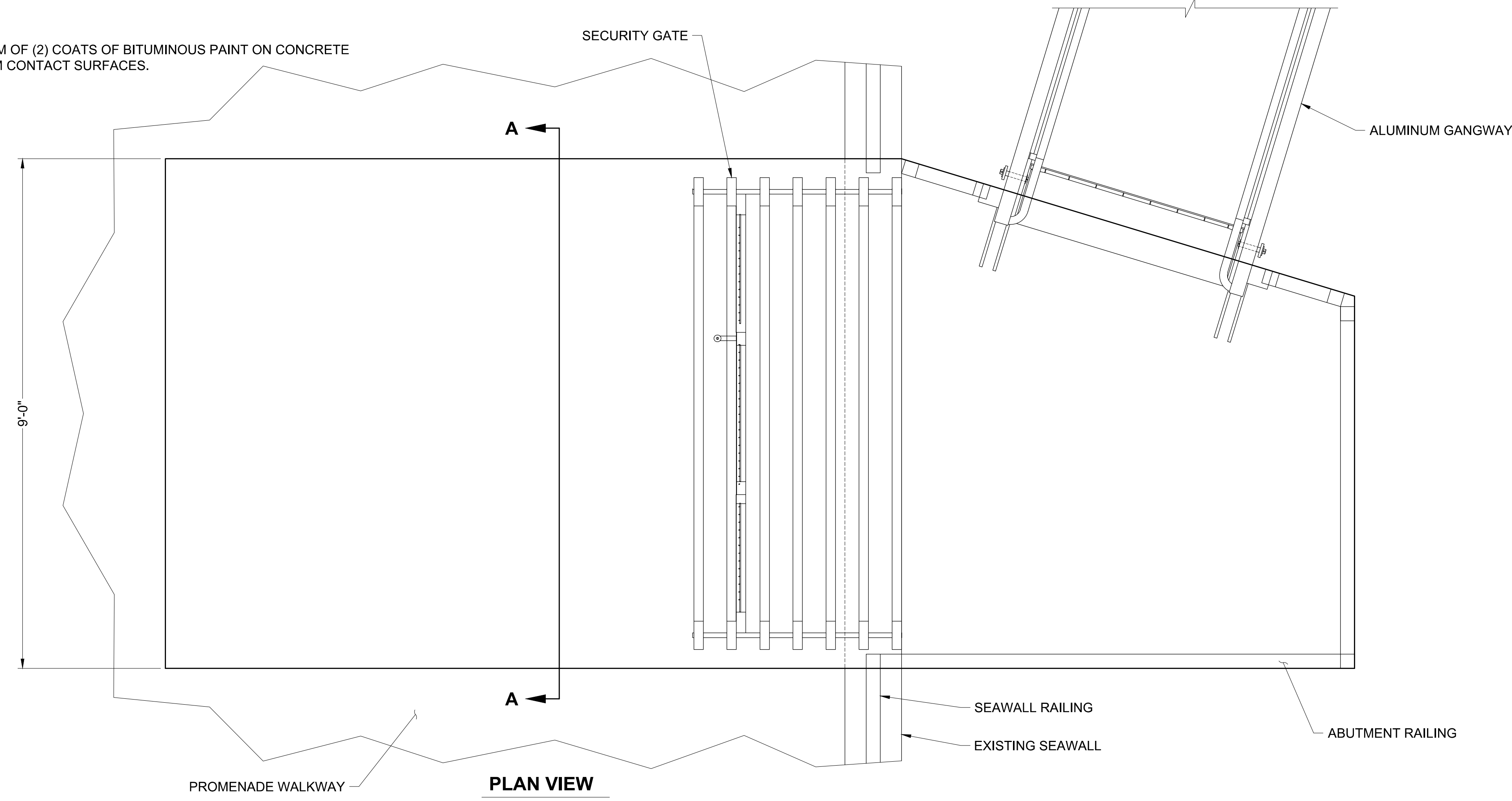
DATE: 5/10/2022

DRAWING: GL2

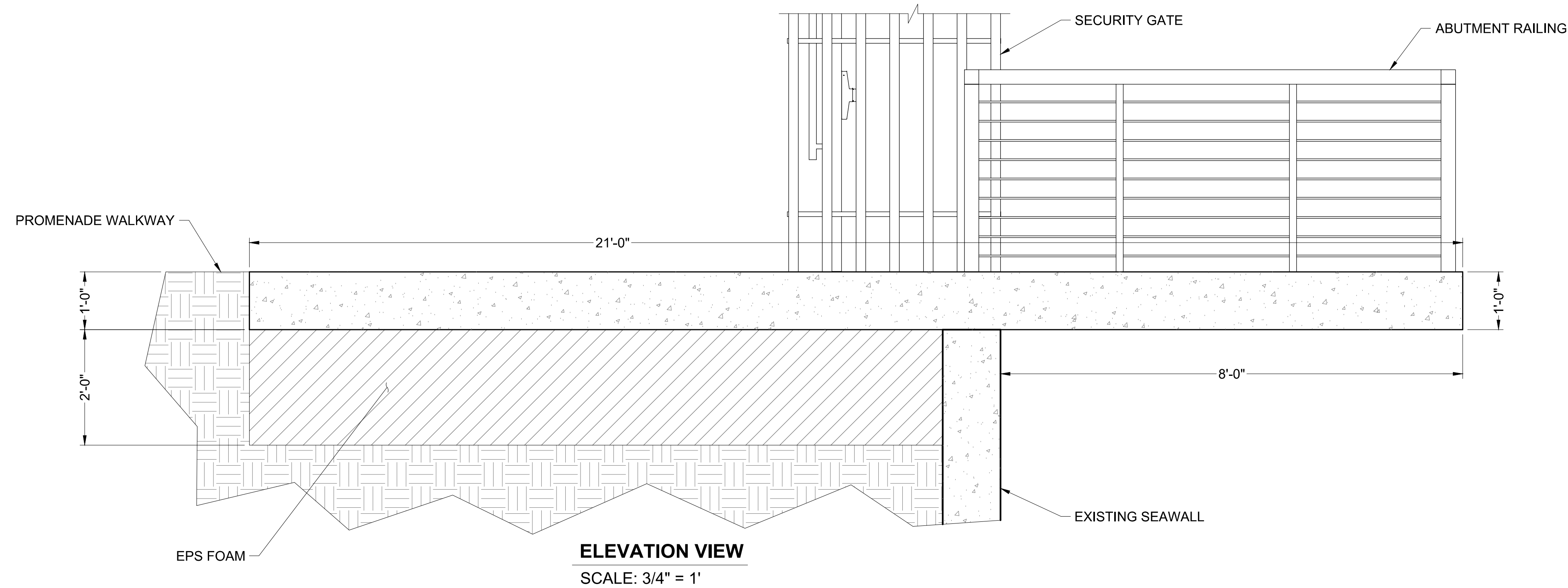
SHEET NO.: 49

PERMIT DRAWING

NOTES:
 1.) PROVIDE MINIMUM OF (2) COATS OF BITUMINOUS PAINT ON CONCRETE AT ALL ALUMINUM CONTACT SURFACES.



NOTE: SPECIAL INSPECTION REQUIRED



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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**Hadi Tabatabaee
 BUILDING OFFICIAL**

NO.	DATE	ADDED NOTE DESCRIPTION	KG BY
A	2-25-22		
REVISIONS			

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

GANGWAY LANDING TYPE 2 DETAILS

Craig S Funston
 2022.05.13
 12:31:18-07'00'

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SCALE:	3/4" = 1' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	GL4
SHEET NO.:	50

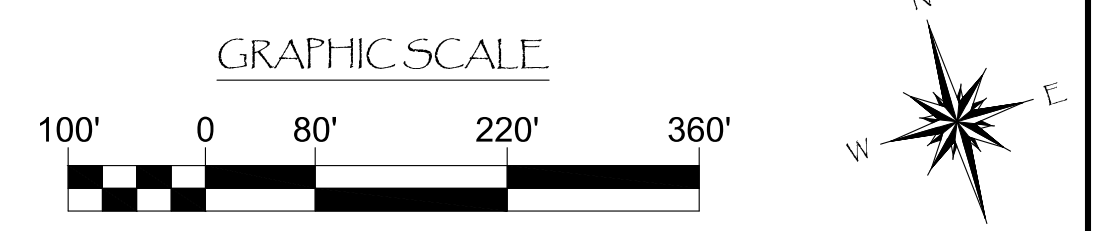
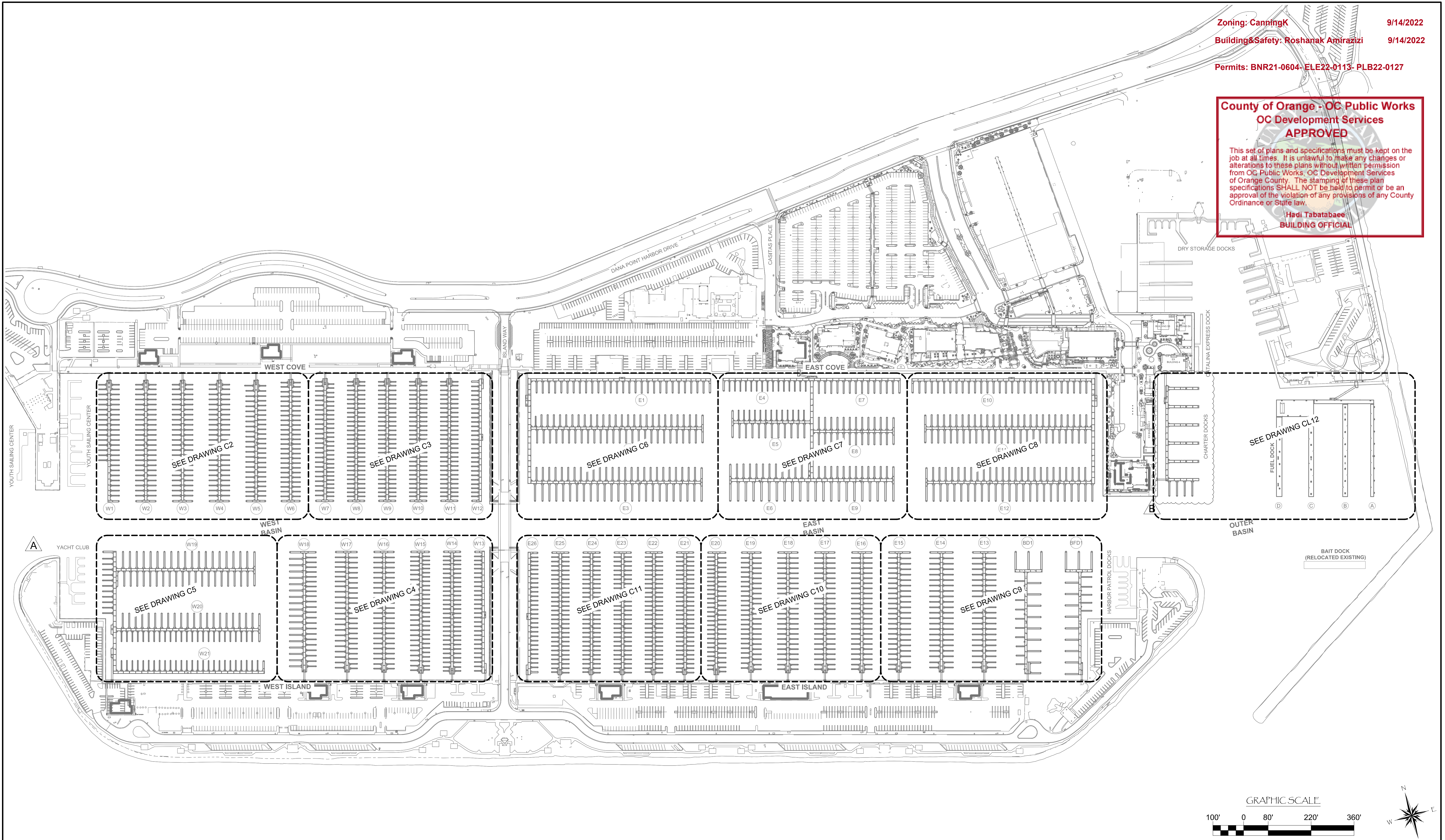
Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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**Hadi Tabatabaee
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PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED YACHT CLUB	KG
REVISIONS			



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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

COMPONENT LAYOUTS INDEX



Craig S
 Funston
 2022.09.14
 16:45:31-07'00"

SCALE: 1" = 140'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

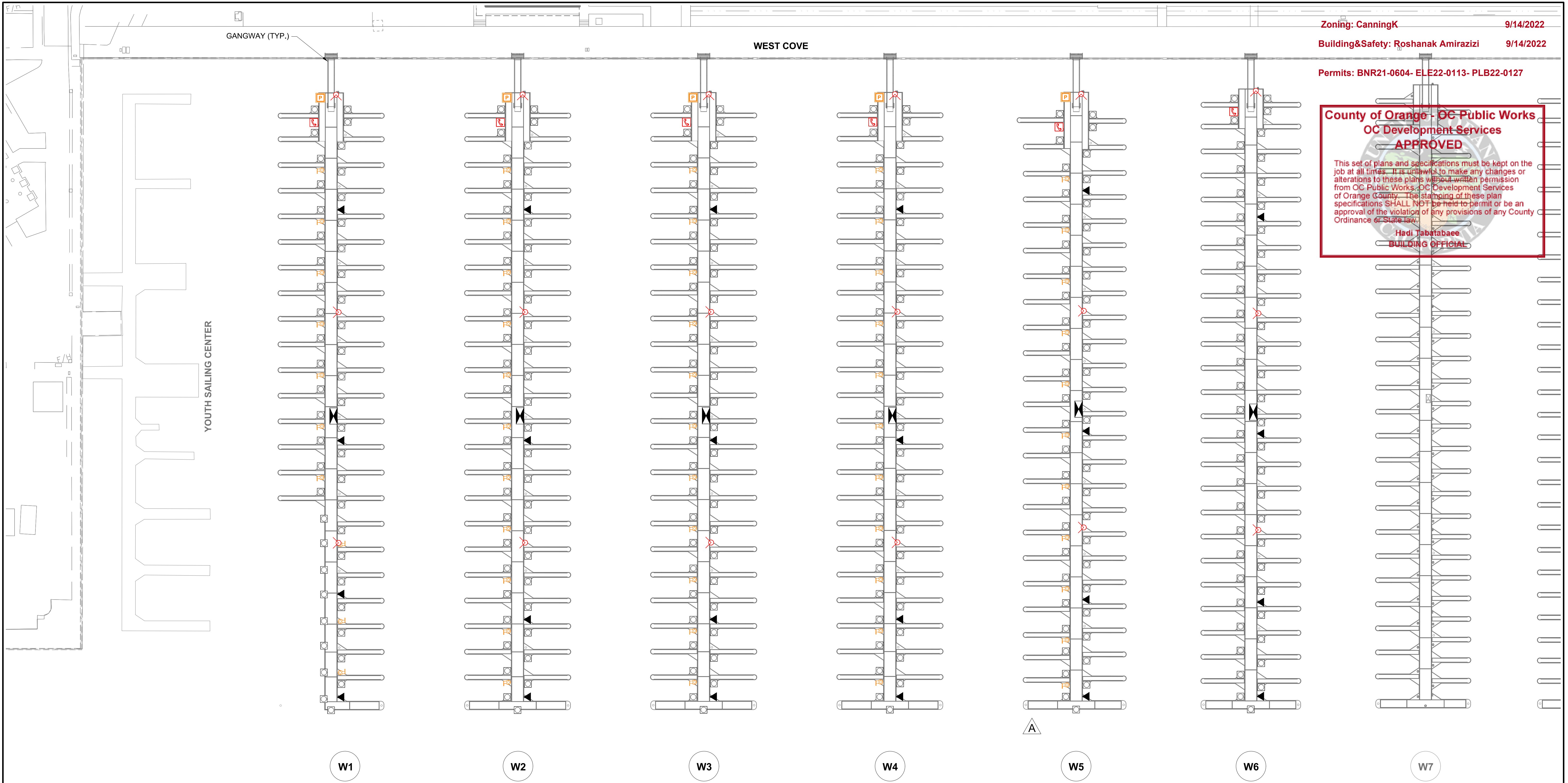
DRAWING: C1

SHEET NO.: 51

PERMIT DRAWING

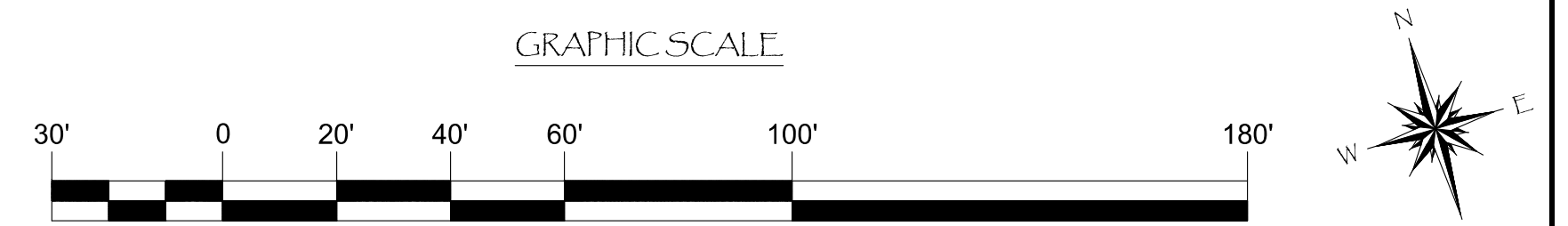
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 Hadi Jabatabaee
 BUILDING OFFICIAL



LEGEND:

- = ELECTRICAL DISTRIBUTION UNIT
- = POWER PEDESTAL w/ HOSE BIB(S)
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP HYDRANT
- = ELECTRICAL SUBSTATION
- = POWER POINT COMMANDER SS
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
- = SEWER PUMP



NO.	DATE	DESCRIPTION	KG BY
A	2-25-22	ADJUSTED SEWER PUMP HYDRANT LOCATIONS	KG
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7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

COMPONENTS LAYOUT FOR DOCKS W1 - W6

Craig S Funston
 2022.09.14
 16:45:19-07'00"

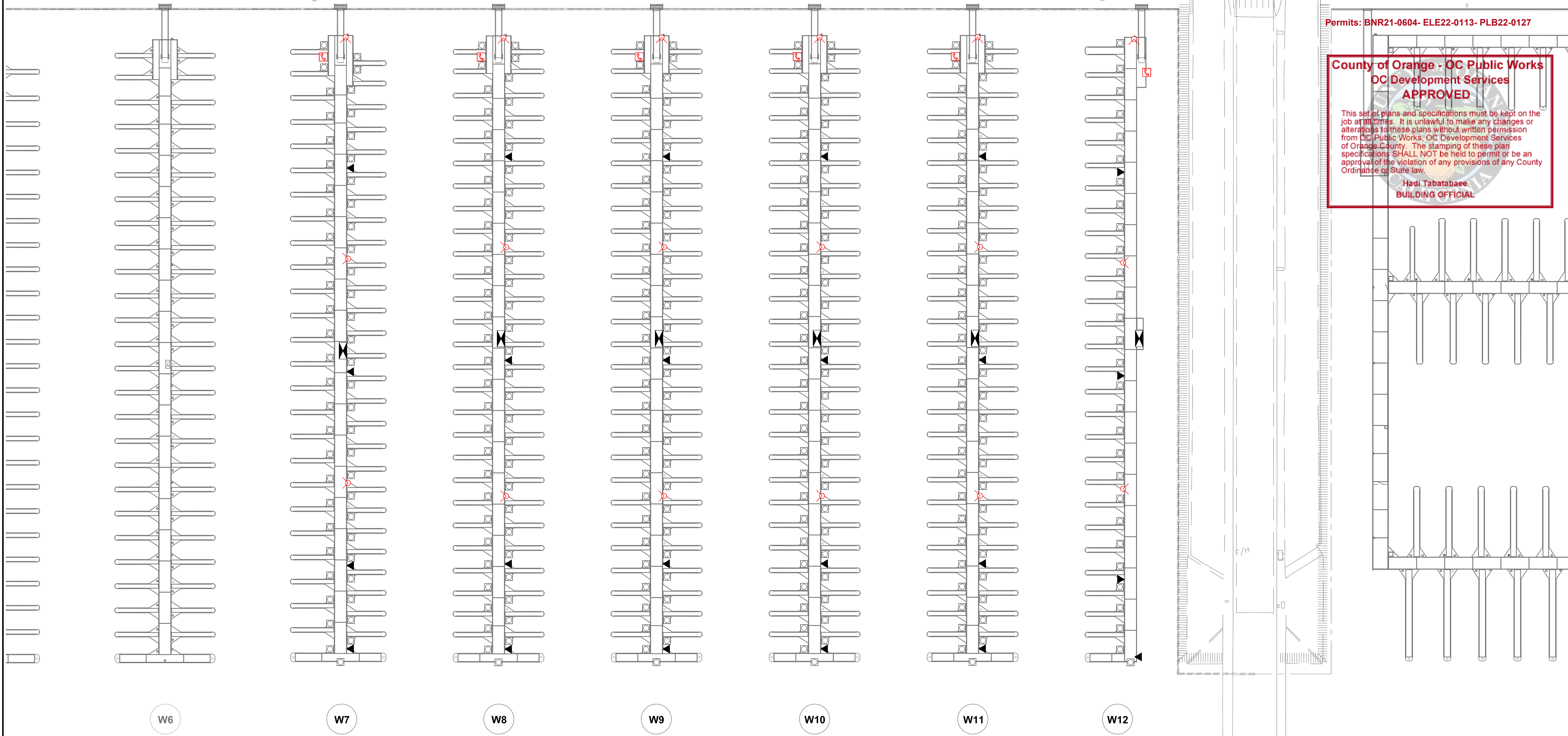
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DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	C2
SHEET NO.:	52

PERMIT DRAWING

WEST COVE

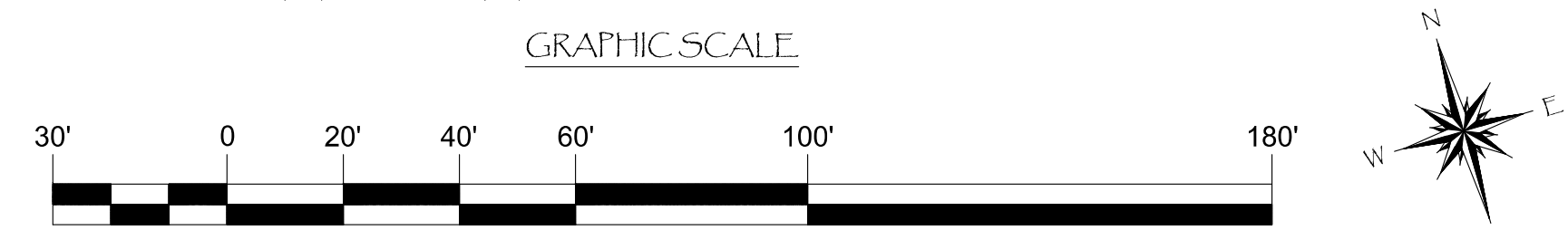
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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LEGEND:

- = ELECTRICAL DISTRIBUTION UNIT
- = POWER PEDESTAL w/ HOSE BIB(S)
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP HYDRANT
- = ELECTRICAL SUBSTATION
- = POWER POINT COMMANDER SS
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
- = SEWER PUMP



NO.	DATE	DESCRIPTION	BY
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ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

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Harbor Drive
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COMPONENTS LAYOUT FOR DOCKS W7 - W12



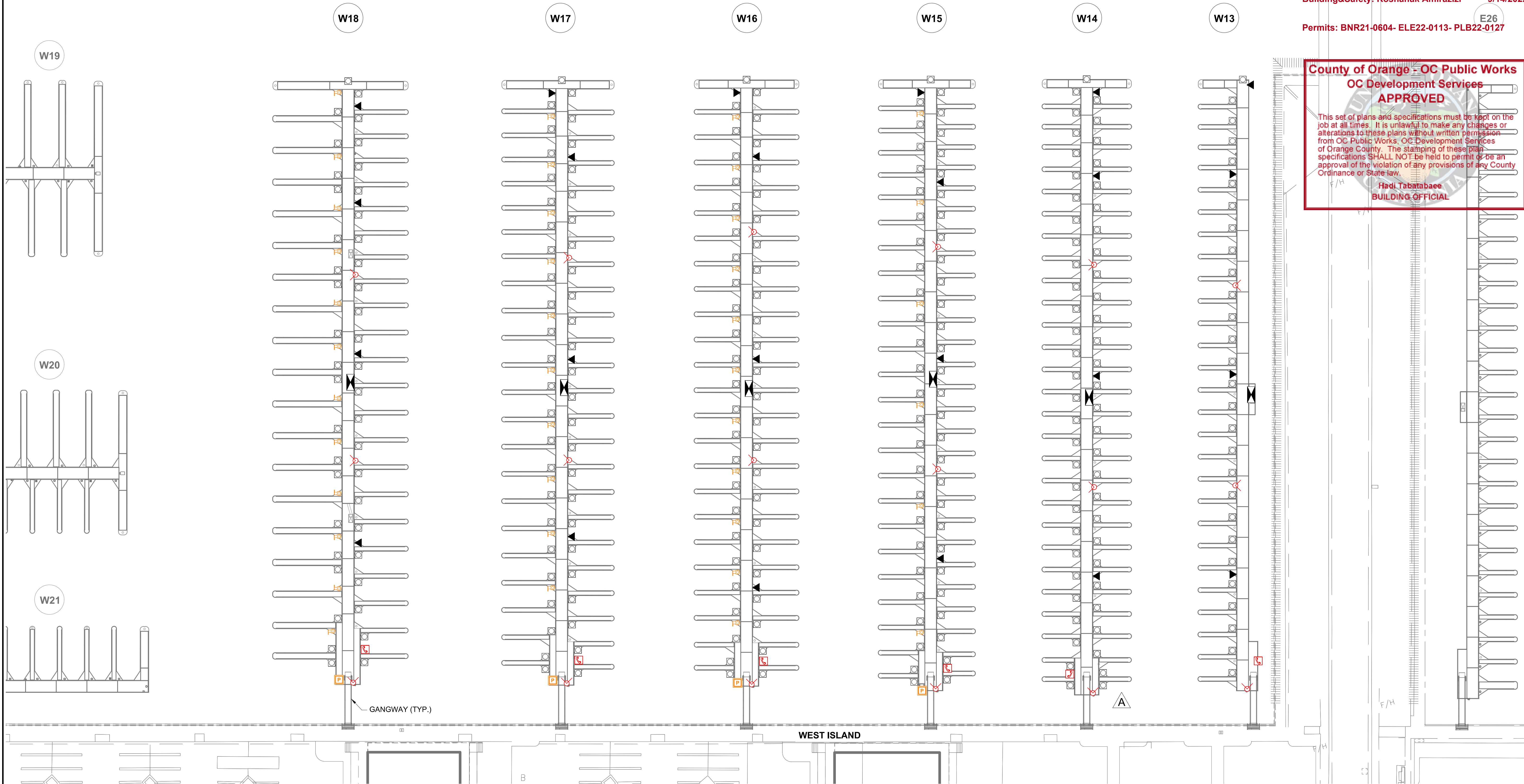
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 2022.09.14
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DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	C3
SHEET NO.:	53

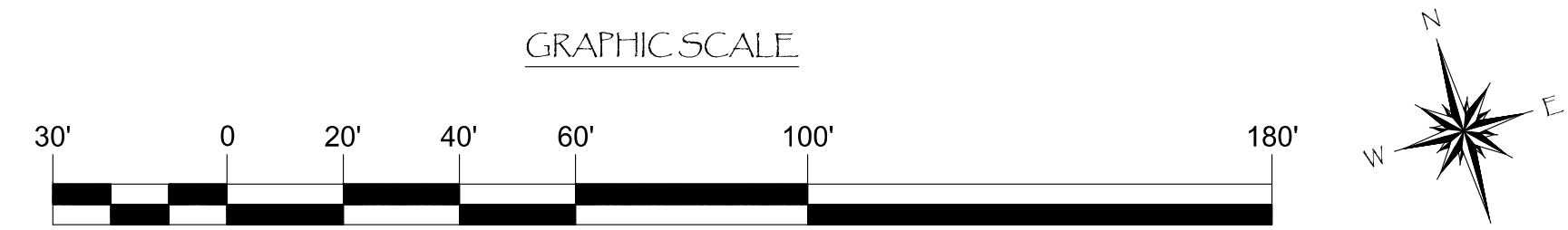
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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- LEGEND:**
- = ELECTRICAL DISTRIBUTION UNIT
 - = POWER PEDESTAL w/ HOSE BIB(S)
 - = EXTINGUISHER CABINET w/ STANDPIPE
 - = EMERGENCY CALL BOX
 - = SEWER PUMP HYDRANT
 - = ELECTRICAL SUBSTATION
 - = POWER POINT COMMANDER SS
 - = EXTINGUISHER CABINET w/ OUT STANDPIPE
 - = SEWER PUMP



NO.	DATE	DESCRIPTION	BY
A	2-25-22	MIRRORED DOCK	KG
REVISIONS			



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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
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DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
COMPONENTS LAYOUT FOR DOCKS W13 - W18



Craig S
 Funston
 2022.09.14
 16:45:00-07'00'

SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	C4
SHEET NO.:	54

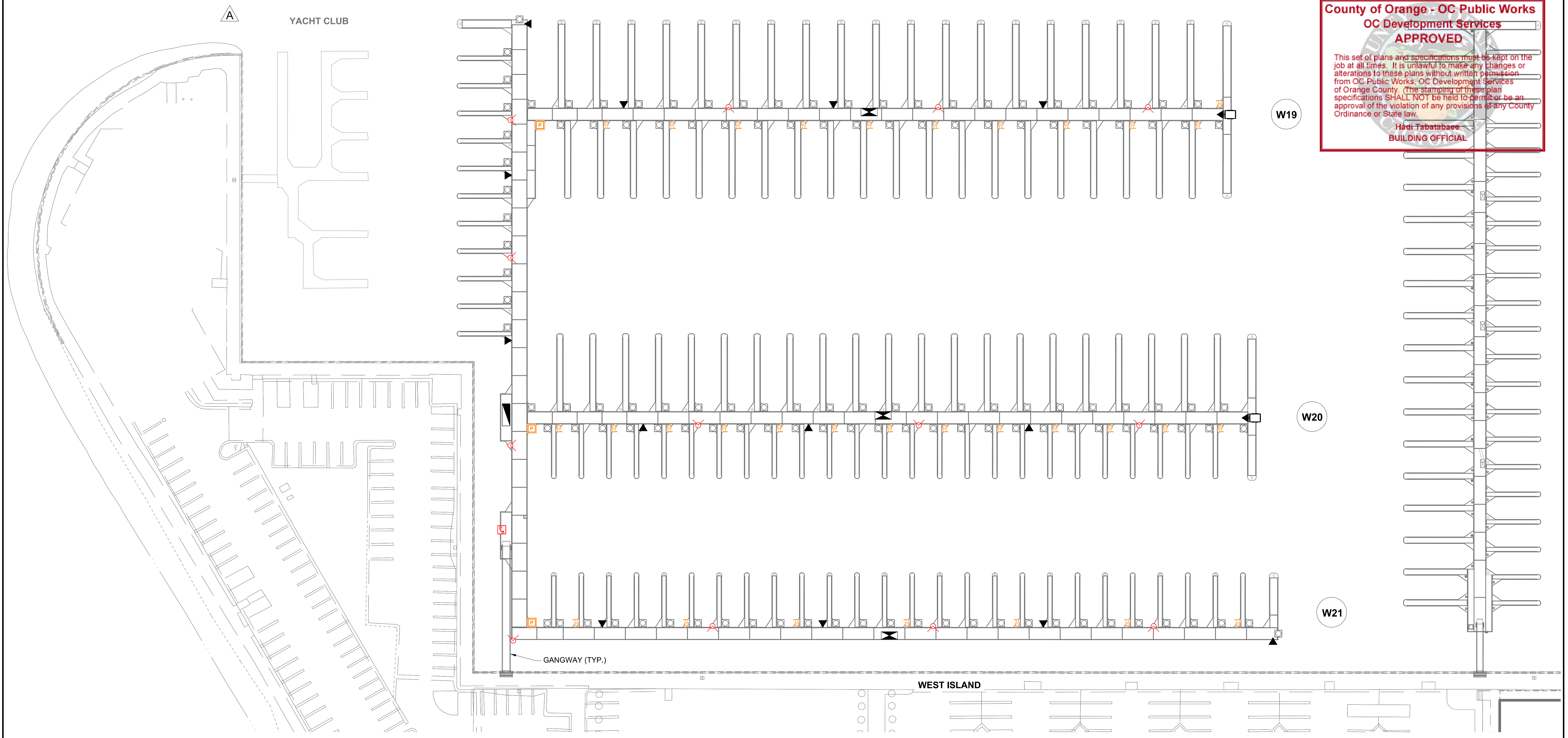
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
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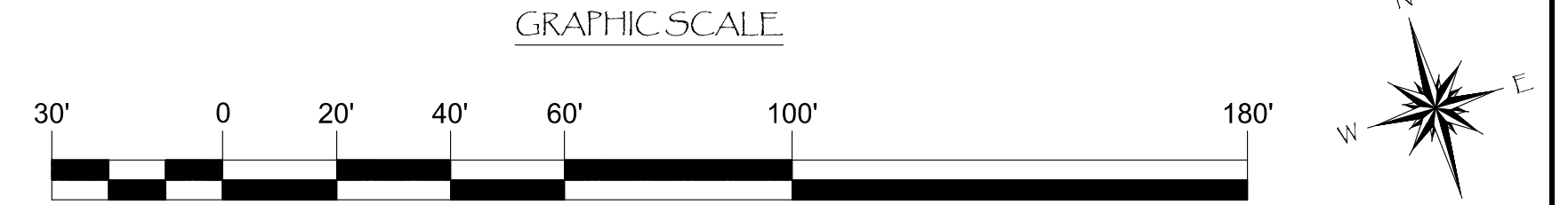
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LEGEND:

- = ELECTRICAL DISTRIBUTION UNIT
- = POWER PEDESTAL w/ HOSE BIB(S)
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP HYDRANT
- = ELECTRICAL SUBSTATION
- = POWER POINT COMMANDER SS
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
- = SEWER PUMP



NO.	DATE	REVISIONS	BY
A	2-25-22	REMOVED YACHT CLUB DESCRIPTION	KG

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

COMPONENTS LAYOUT FOR DOCKS W19 - W21

Craig S
 Funston
 2022.09.14
 16:44:50-07'00"

SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	C5
SHEET NO.:	55

PERMIT DRAWING

EAST COVE

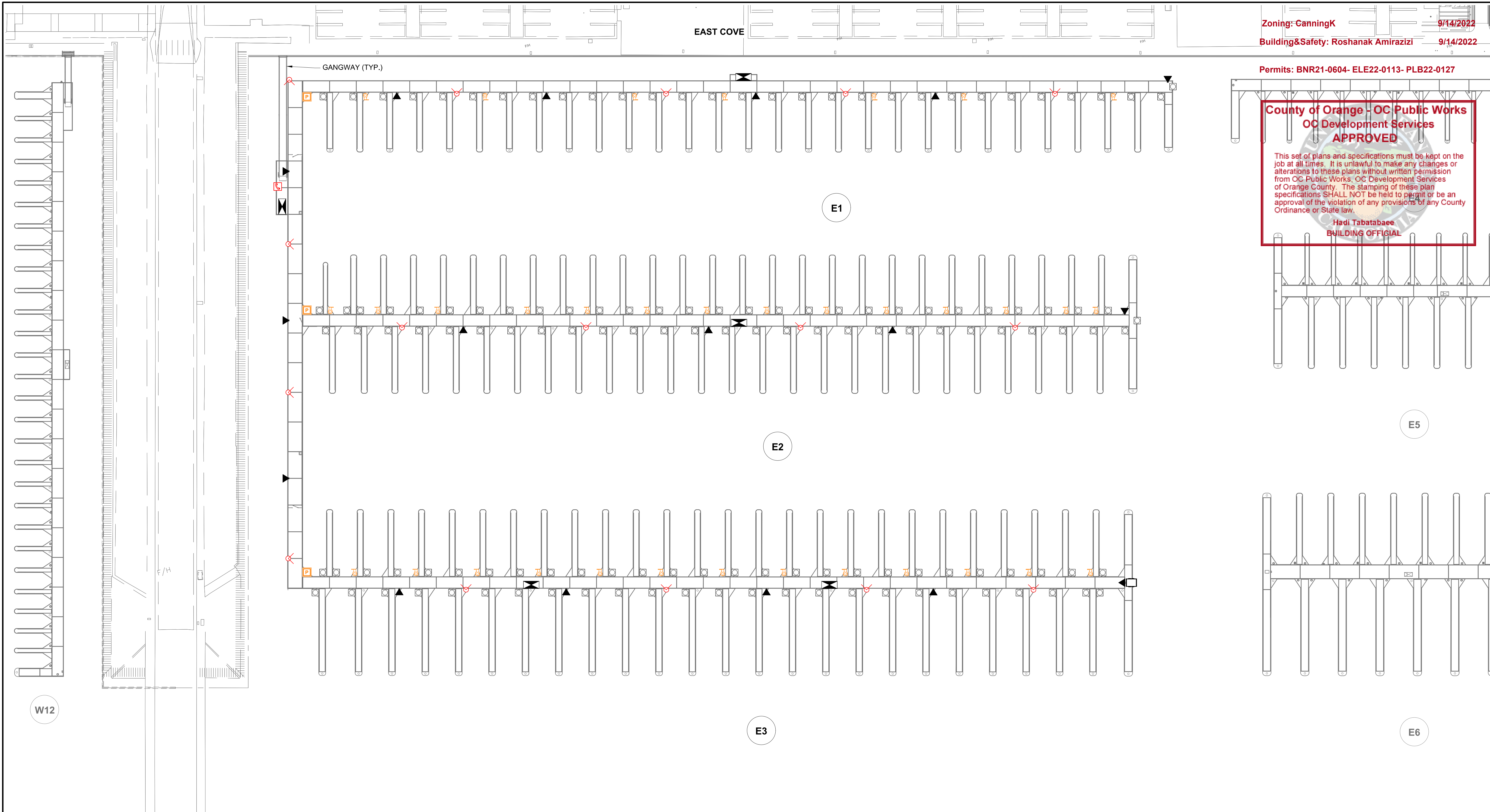
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022

Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
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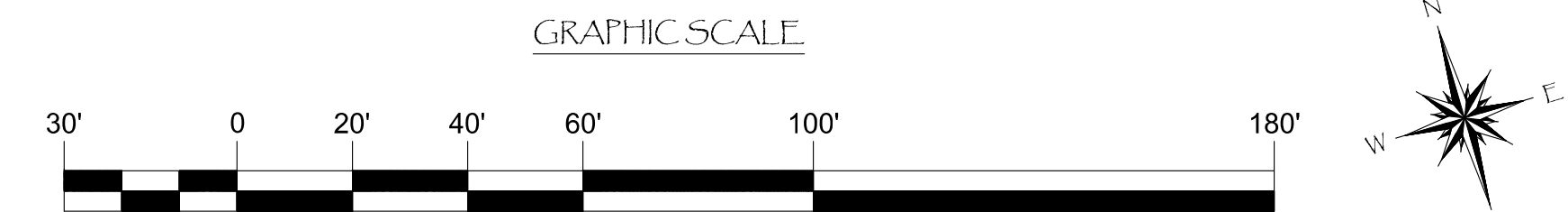
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Hadi Tabatabaee
 BUILDING OFFICIAL



LEGEND:

- = ELECTRICAL DISTRIBUTION UNIT
- = POWER PEDESTAL w/ HOSE BIB(S)
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP HYDRANT
- = ELECTRICAL SUBSTATION
- = POWER POINT COMMANDER SS
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
- = SEWER PUMP



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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PROJECT NUMBER:
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ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

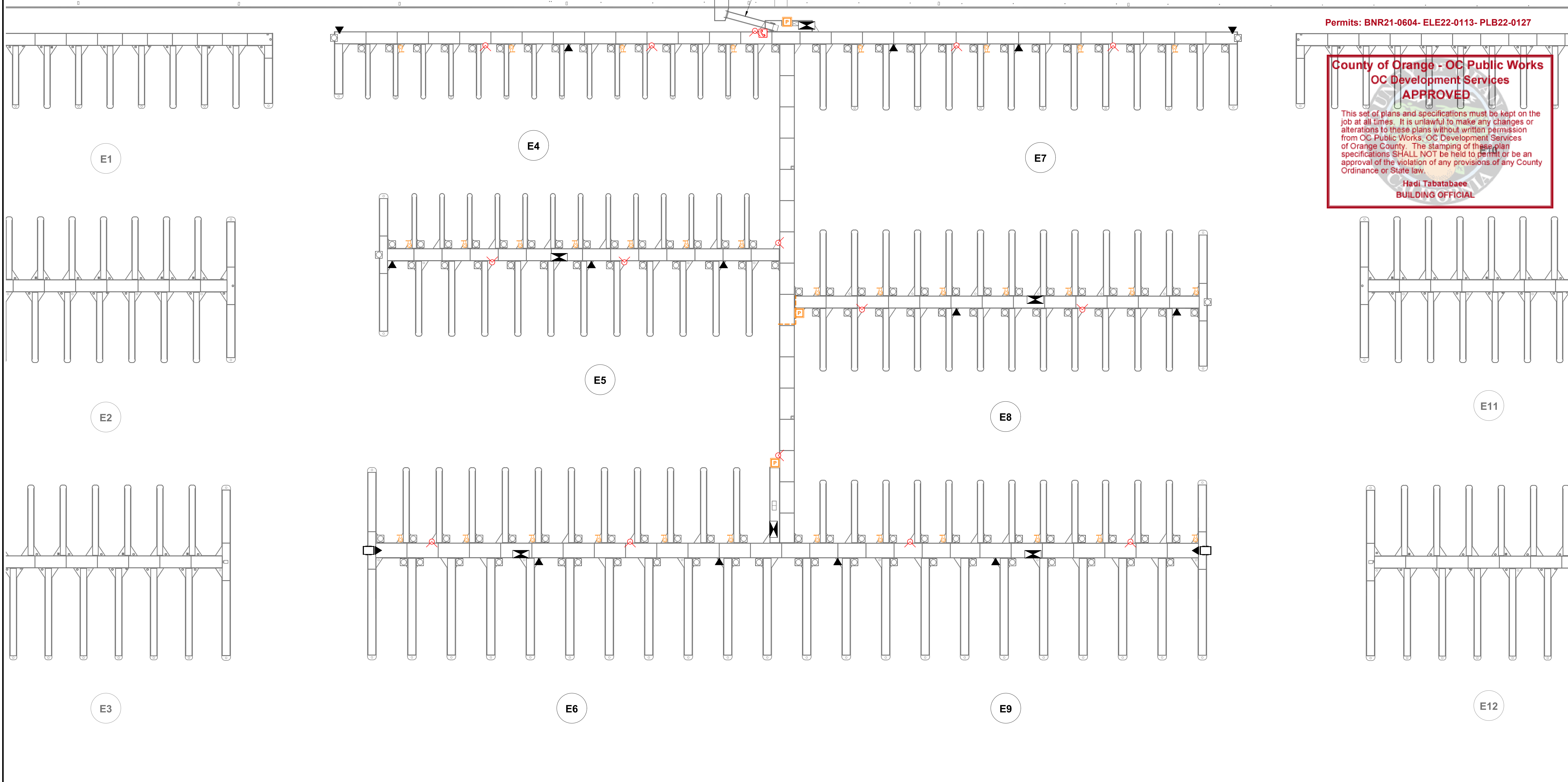
DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

COMPONENTS LAYOUT FOR DOCKS E1 - E3

Craig S Funston
 2022.09.14
 16:44:41-07'00"

SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	C6
SHEET NO.:	56



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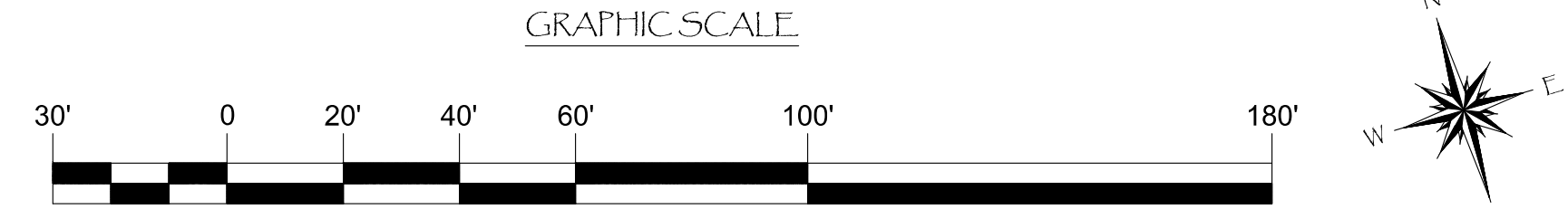
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Hadi Tabatabaee
 BUILDING OFFICIAL

PERMIT DRAWING

LEGEND:

- = ELECTRICAL DISTRIBUTION UNIT
- = POWER PEDESTAL w/ HOSE BIB(S)
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP HYDRANT
- = ELECTRICAL SUBSTATION
- = POWER POINT COMMANDER SS
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
- = SEWER PUMP



NO.	DATE	DESCRIPTION	BY
REVISIONS			



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PROJECT NUMBER:
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ENGINEER / DESIGNER:
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PROJECT MANAGER:
 -

CHECKED BY:
 -

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

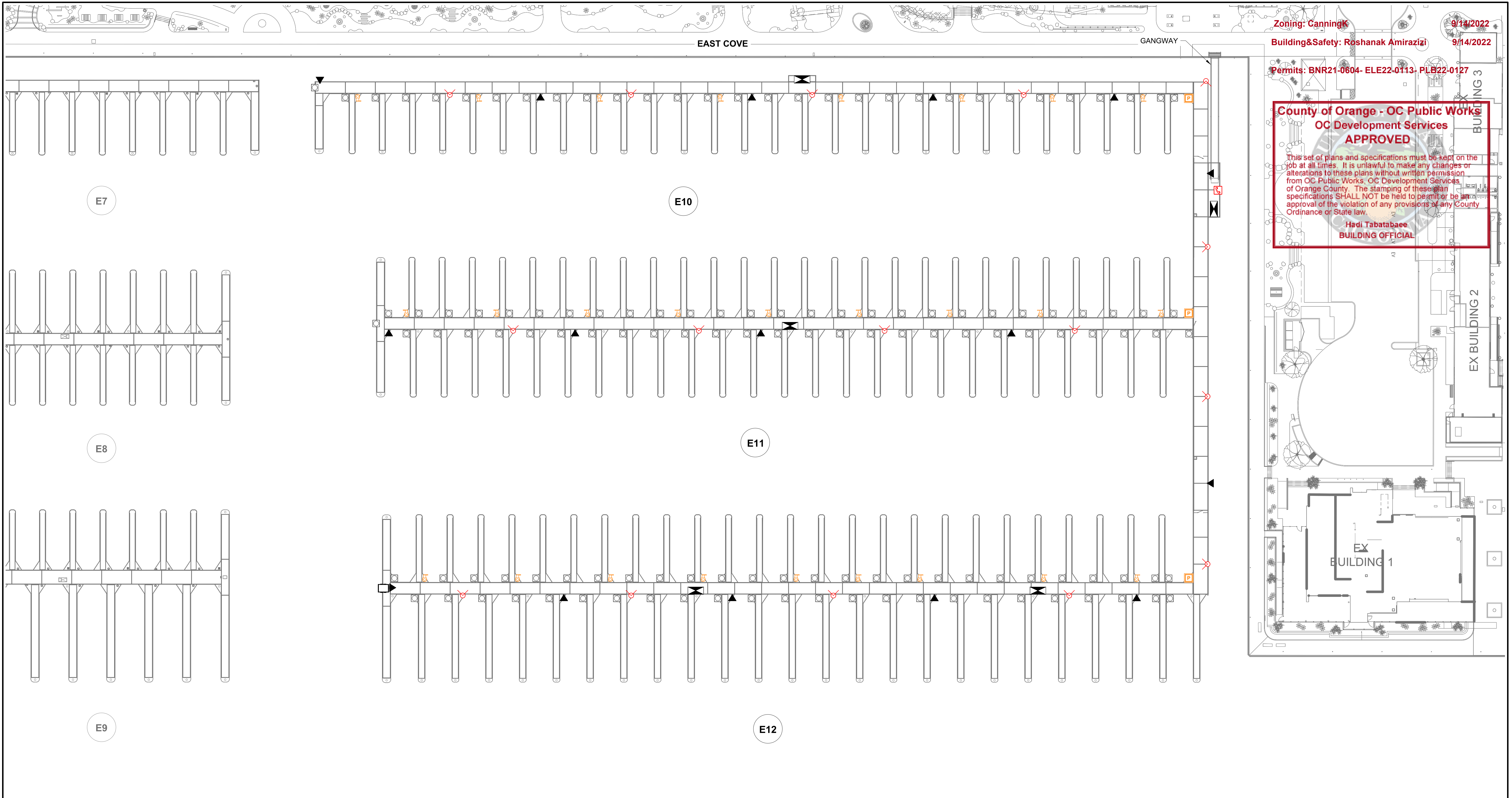
COMPONENTS LAYOUT FOR DOCKS E4 - E9



Craig S
 Funston
 2022.09.14
 16:44:32-07'00"

SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	C7
SHEET NO.:	57

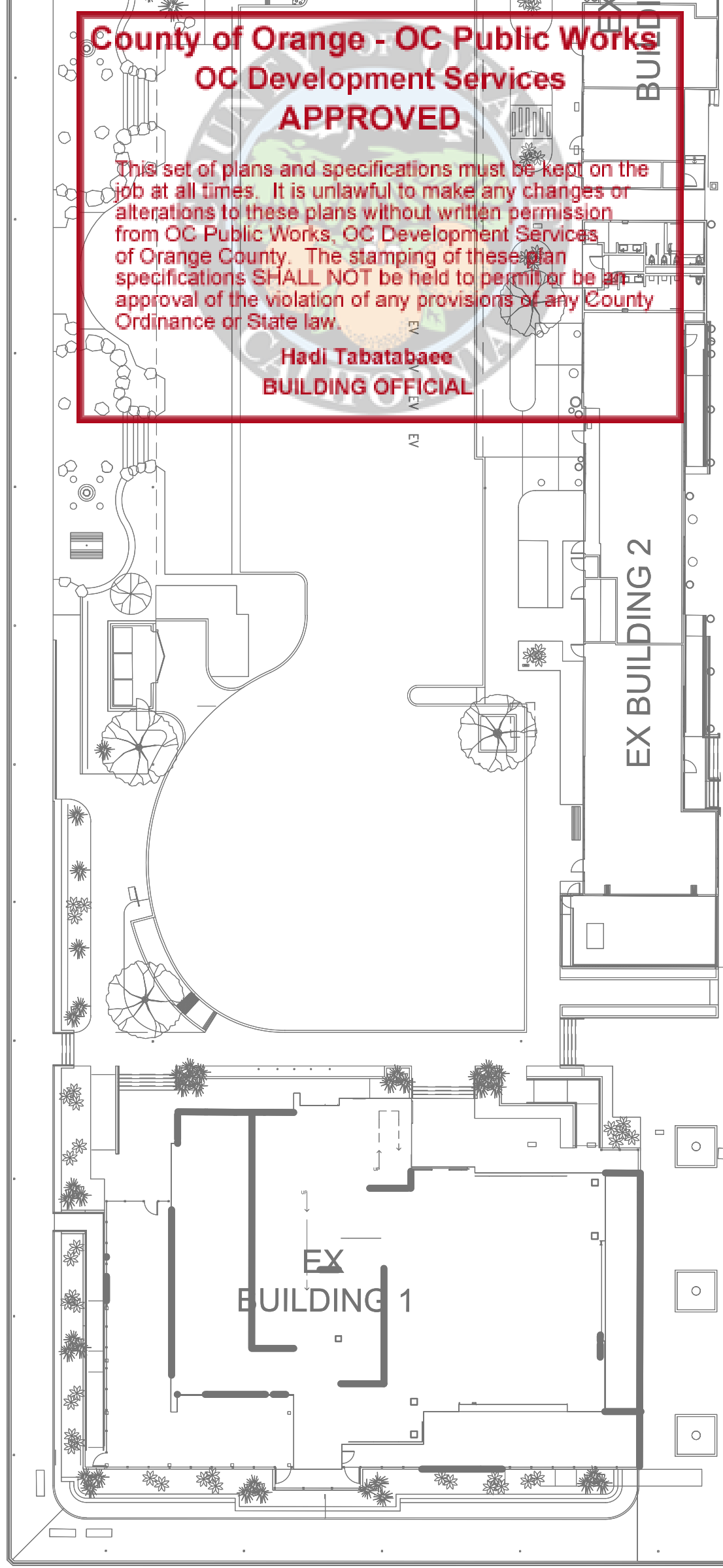
PERMIT DRAWING



Zoning: CanningK
Building&Safety: Roshanak Amirazizi
9/14/2022

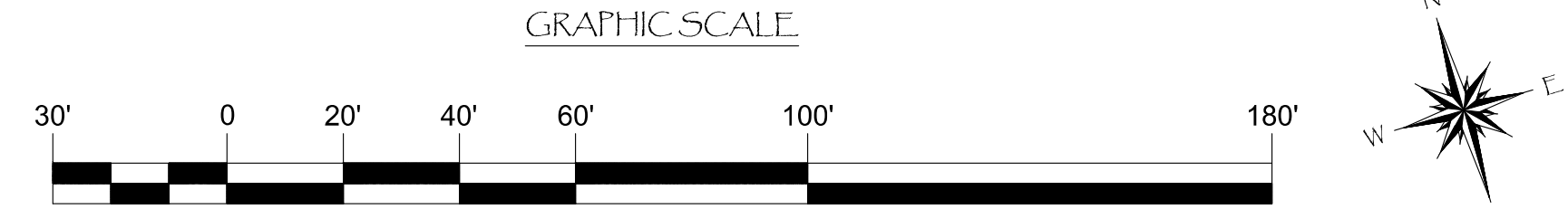
Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 Hadi Tabatabaee
BUILDING OFFICIAL



LEGEND:

- = ELECTRICAL DISTRIBUTION UNIT
- = POWER PEDESTAL w/ HOSE BIB(S)
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP HYDRANT
- = ELECTRICAL SUBSTATION
- = POWER POINT COMMANDER SS
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
- = SEWER PUMP



NO.	DATE	DESCRIPTION	BY
REVISIONS			

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

COMPONENTS LAYOUT FOR DOCKS E10 - E12

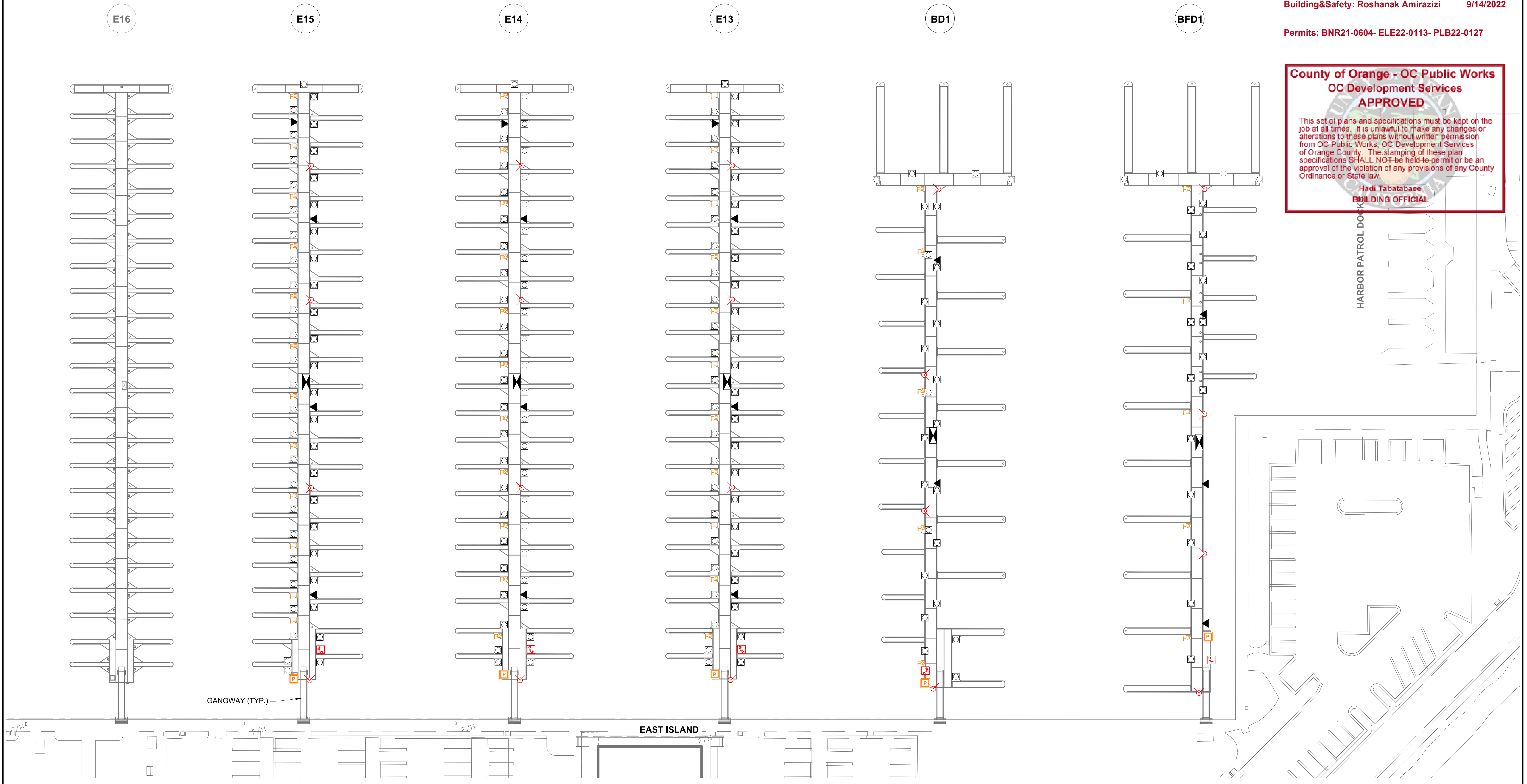
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DATE:	5/10/2022
DRAWING:	C8
SHEET NO.:	58

PERMIT DRAWING

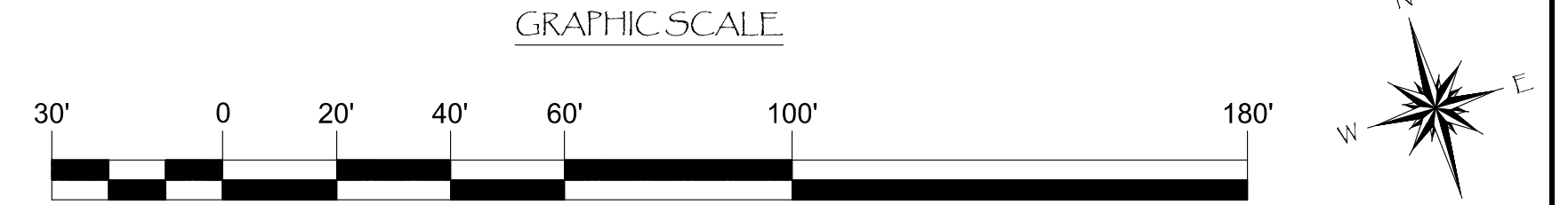
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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OC Development Services
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- = POWER PEDESTAL w/ HOSE BIB(S)
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP HYDRANT
- = ELECTRICAL SUBSTATION
- = POWER POINT COMMANDER SS
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
- = SEWER PUMP



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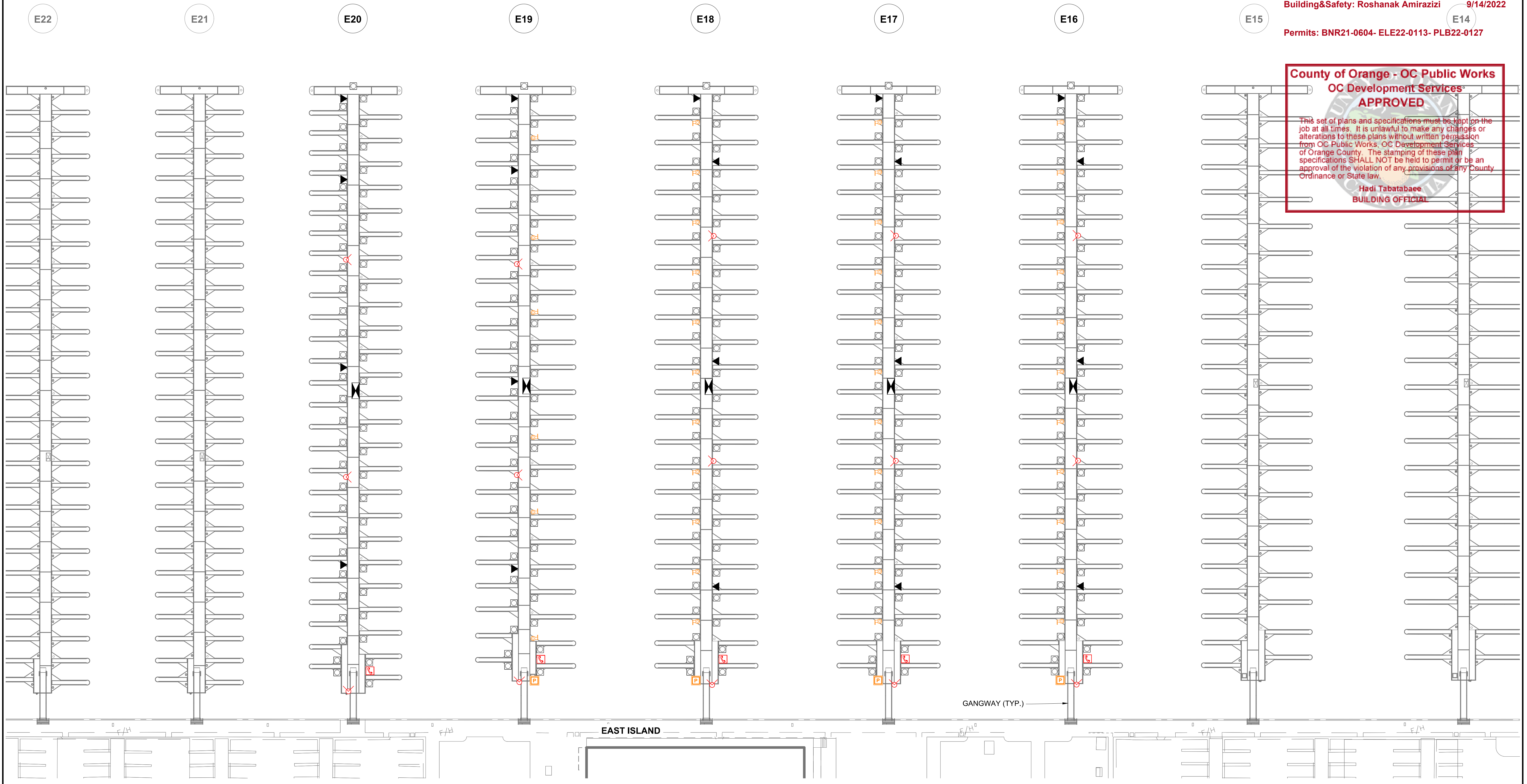
COMPONENTS LAYOUT FOR DOCKS BFD1, BD1, & E13 - E15

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SHEET NO.:	59

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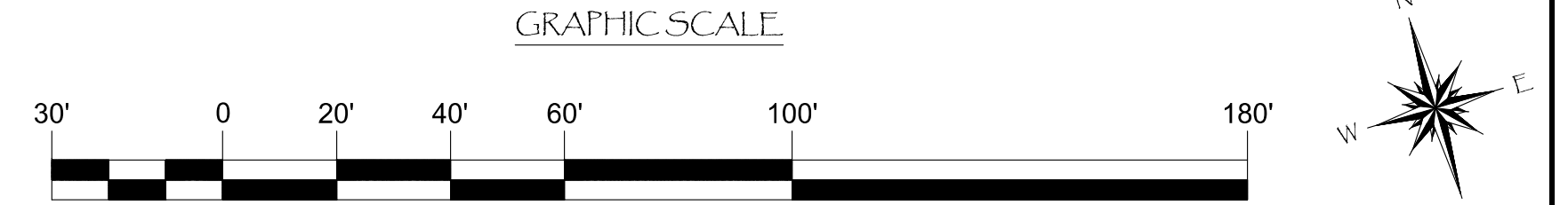
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LEGEND:

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- = POWER PEDESTAL w/ HOSE BIB(S)
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP HYDRANT
- = ELECTRICAL SUBSTATION
- = POWER POINT COMMANDER SS
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
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COMPONENTS LAYOUT FOR DOCKS E16 - E20

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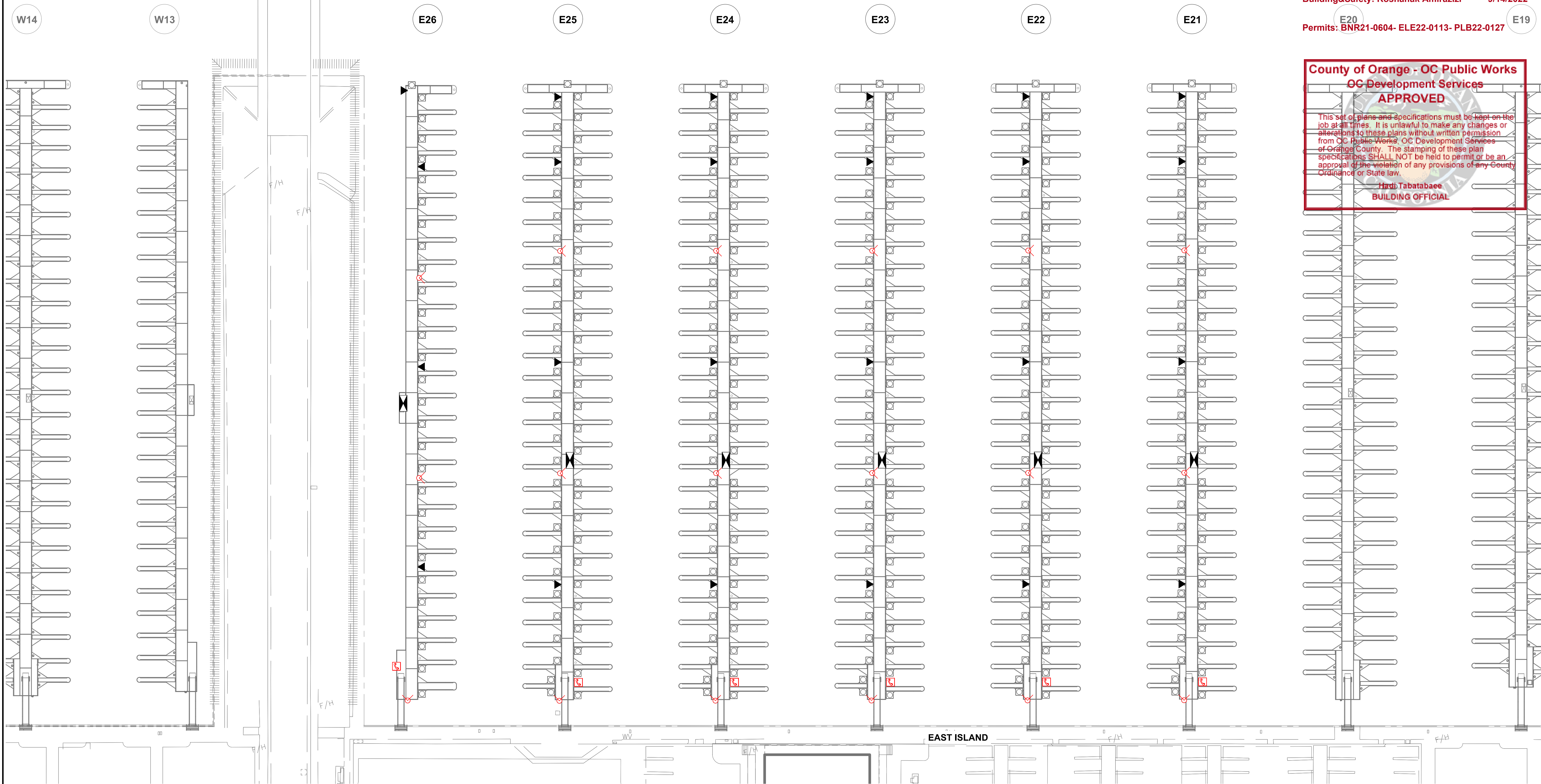
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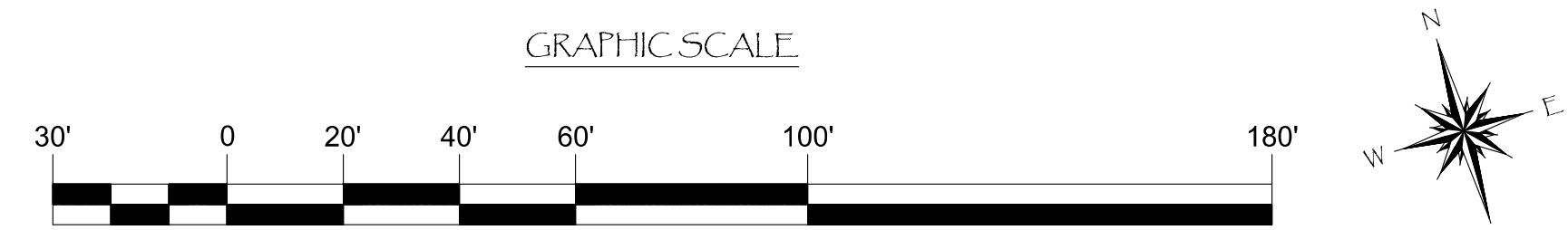
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
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LEGEND:

- = ELECTRICAL DISTRIBUTION UNIT
- = POWER PEDESTAL w/ HOSE BIB(S)
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP HYDRANT
- = ELECTRICAL SUBSTATION
- = POWER POINT COMMANDER SS
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
- = SEWER PUMP



NO.	DATE	DESCRIPTION	BY
REVISIONS			



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Harbor Drive
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COMPONENTS LAYOUT FOR DOCKS E21 - E26



Craig S Funston
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SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: C11

SHEET NO.: 61

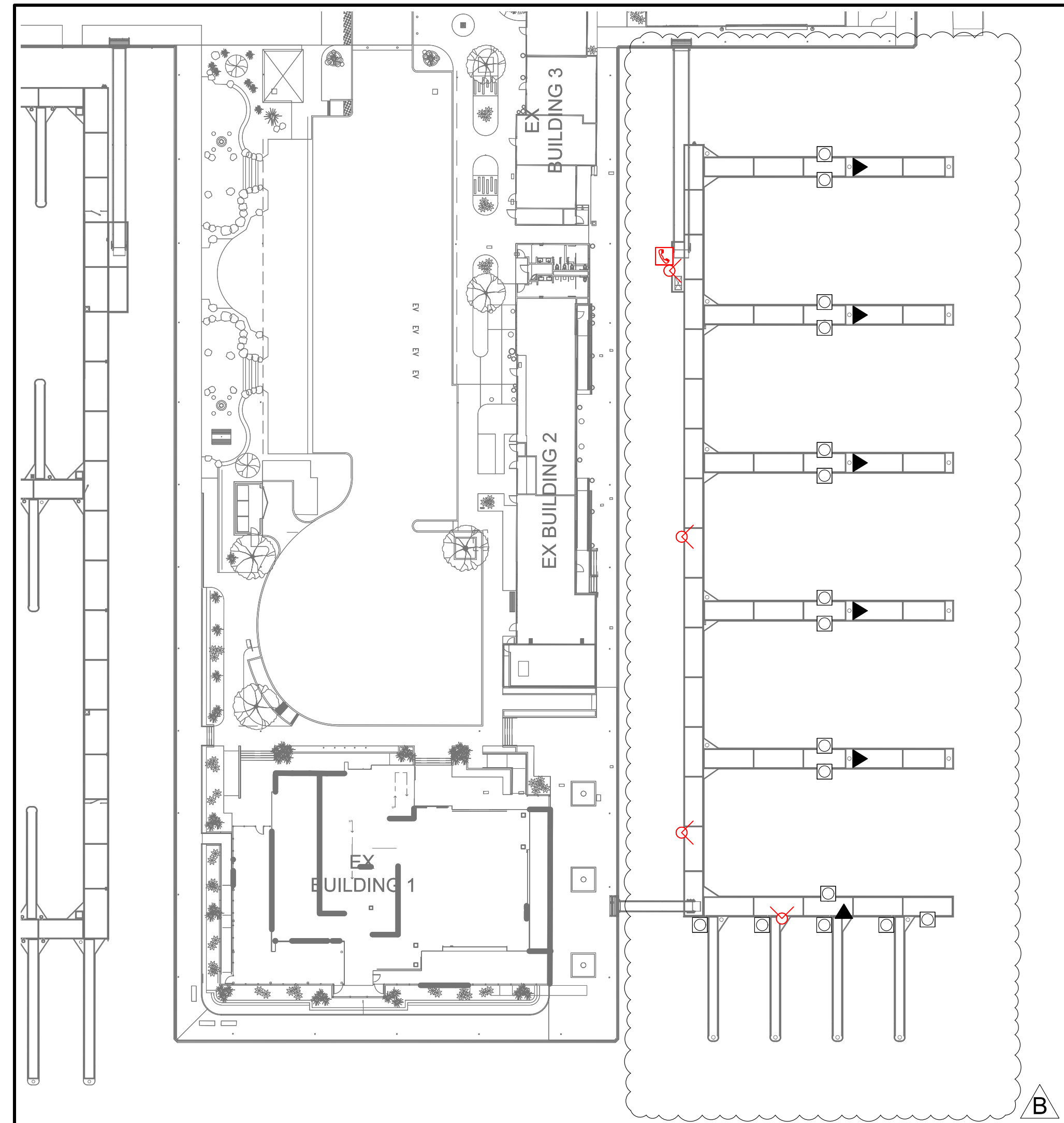
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
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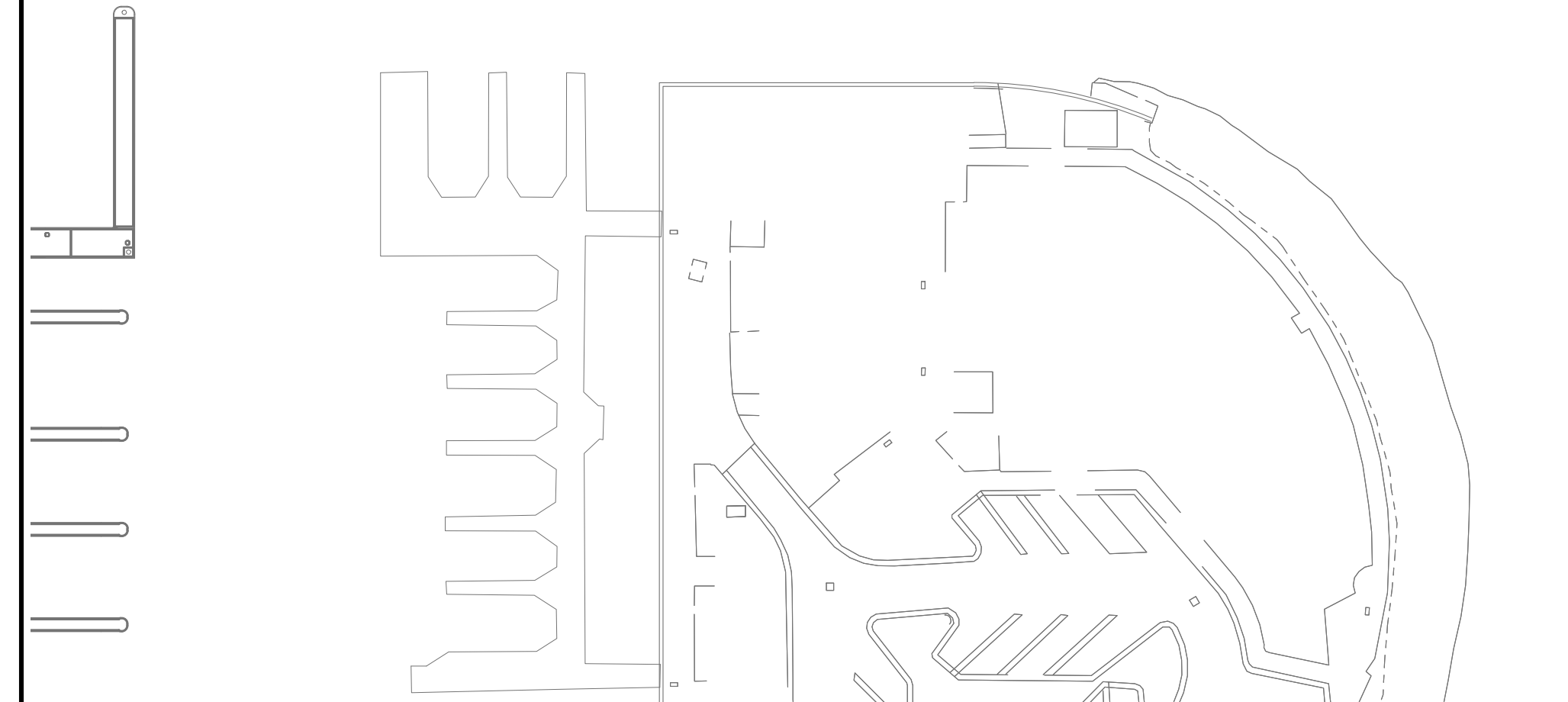
CHARTER DOCKS

A

OUTER BASIN

LEGEND:

- = ELECTRICAL DISTRIBUTION UNIT
- = ELECTRICAL SUBSTATION
- = POWER PEDESTAL w/ HOSE BIB(S)
- = POWER POINT COMMANDER SS
- = FIRE DEPARTMENT CONNECTION
- = EXTINGUISHER CABINET w/ STANDPIPE
- = EXTINGUISHER CABINET w/ OUT STANDPIPE
- = EMERGENCY CALL BOX
- = SEWER PUMP
- = SEWER PUMP HYDRANT



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED SPORTFISHING/ ADDED EXISTING RELOCATED	KG
REVISIONS			

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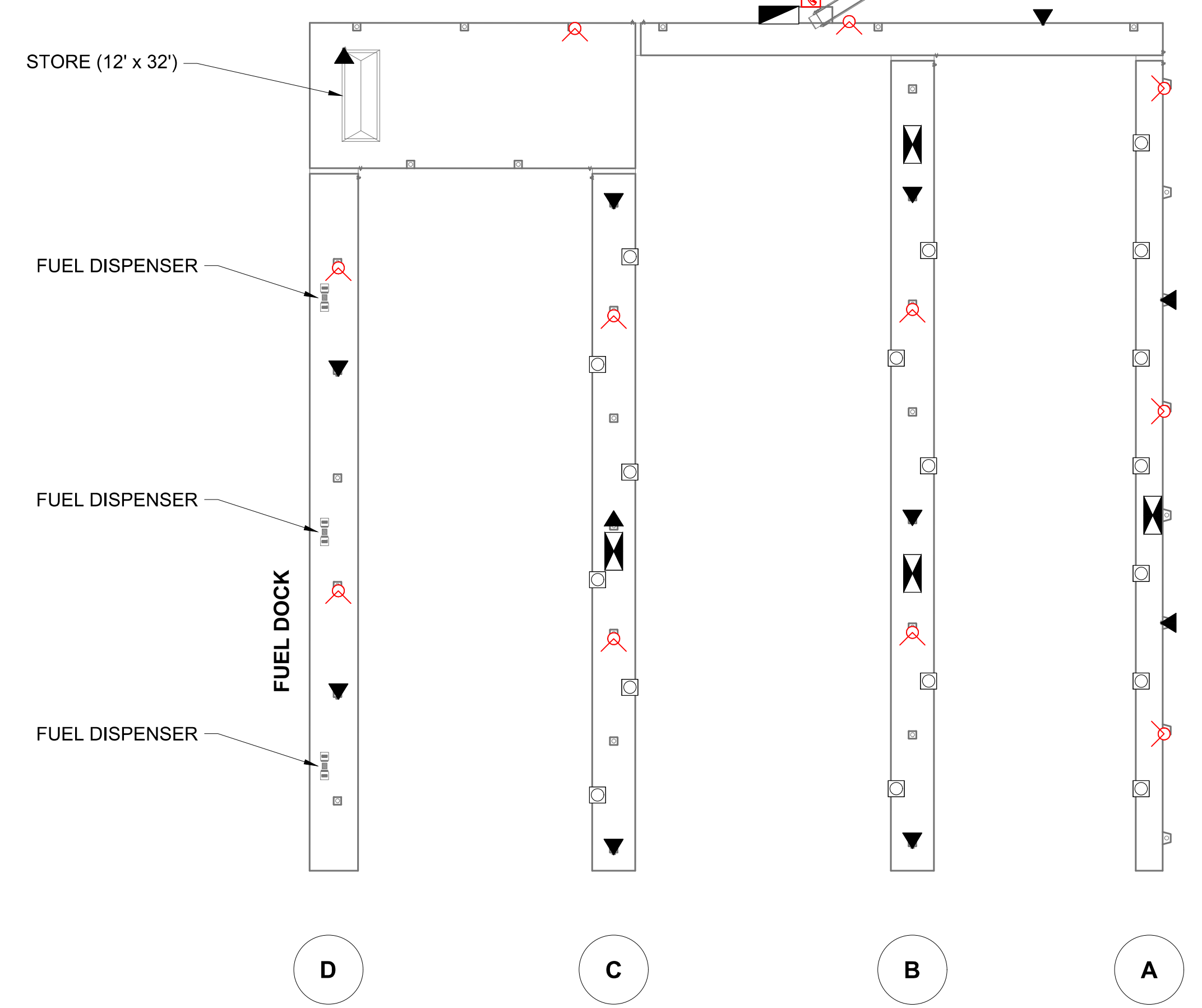
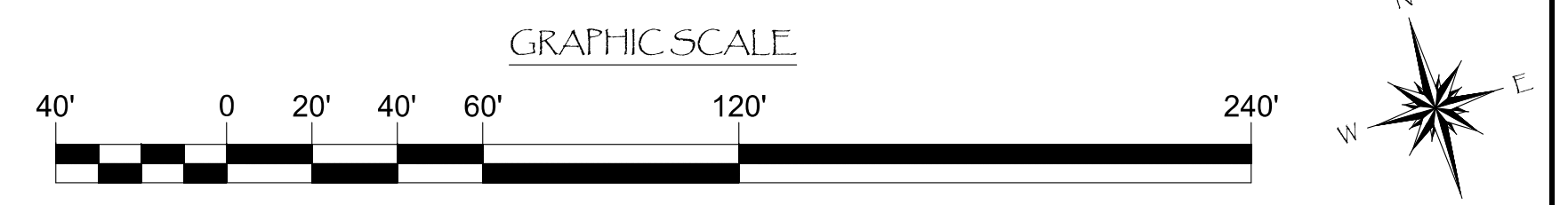
Harbor Drive
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COMPONENTS LAYOUT FOR OUTER BASIN DOCKS

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DATE:	5/10/2022
DRAWING:	C12
SHEET NO.:	62



PERMIT DRAWING

A	AMPERE
A	AMMETER
AF	AMPERE FRAME
AFC	AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CURRENT
AS	AMMETER SWITCH
AT	AMP TRIP
AWG	AMERICAN WIRE GAUGE
BFF	BELOW FINISHED FLOOR
BKR	BREAKER
C	CONDUIT
COIL	COIL
CAP	CAPACITOR
C/B OR CB	CIRCUIT BREAKER
CM/ COMM	COMMUNICATION
CKT	CIRCUIT
DIA	DIAMETER
DU	DISTRIBUTION UNIT
(E)	EXISTING
EX	EXISTING
F	FUTURE
FDR	FEEDER
GRND OR G	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
KCMIL	1000 CIRCULAR MIL
KVA	KILO VOLT-AMPERE
KW	KILOWATT
LTG	LIGHTING
MSB	MAIN SWITCHBOARD
MFR	MANUFACTURER
NEC	NATIONAL ELECTRIC CODE
N	NEW
N	NEUTRAL
NEMA	NATIONAL ELECTRIC MANUF. ASSOC.
NTS	NOT TO SCALE
OCP	OVER CURRENT PROTECTION
P	POLE
P	POWER
PB	PULL BOX
PC	PHOTO CELL CONTROLLED
PG & E	PACIFIC GAS AND ELECTRIC
PNL	PANEL
PVC	POLYVINYL CHLORIDE
PWR	PHASE
Ø	PHASE
REC	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
SC	SHORT CIRCUIT
SCE	SOUTHERN CALIFORNIA EDISON
SES	SERVICE ENTRANCE SWITCHBOARD
SPEC	SPECIFICATION
SS	STAINLESS STEEL
SUB	SUBSTATION
SWBD	SWITCHBOARD
TYP	TYPICAL
T	TRIP
TFR	TRANSFORMER
UL	UNDERWRITERS LABORATORIES INC.
UNO	UNLESS NOTED OTHERWISE
V	VOLTAGE
VA	VOLT-AMPERES
VD	VOLTAGE DROP
W	WATT
W	WIRE
XFMR	TRANSFORMER

CODE NOTES:

- ALL ELECTRICAL WORK SHALL BE DESIGNED PER 2019 CALIFORNIA ELECTRICAL CODE, AND 2017 NATIONAL ELECTRICAL CODE AND 2019 BUILDING ENERGY EFFICIENCY STANDARDS.
- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.

GENERAL ELECTRICAL NOTES

- WORK INCLUDED:** PROVIDE COMPLETE WIRING AND INSTALLATION OF MARINA ELECTRICAL GEAR AND DOCKSIDE CONDUIT, HANDHOLE, WIRING, AND POWER CENTERS TO ACCOMMODATE PROPOSED MARINA.
- REGULATIONS AND CODES:**
 - ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES OF NATIONAL FIRE PROTECTION ASSOCIATION, ANY LOCAL OR STATE ORDINANCES, NATIONAL ELECTRICAL CODE, THE STATE OF CALIFORNIA CODE OF REGULATION, ELECTRICAL REGULATIONS OF THE STATE FIRE MARSHAL AND WITH ANY PREVAILING RULES AND REGULATIONS PERTAINING TO ADEQUATE PROTECTION AND GUARDING OF ANY MOVING PARTS OF OTHERWISE HAZARDOUS LOCATIONS.
 - NOTHING IN THESE SPECIFICATIONS AND PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
 - ALL ELECTRICAL EQUIPMENT SHALL BE LISTED BY UL OR ORANGE COUNTY APPROVED THIRD PARTY TESTING FACILITY.
- PERMITS AND INSPECTIONS:**
 - THE CONTRACTOR SHALL APPLY FOR ALL PERMITS REQUIRED BY ANY OF THE LEGALLY CONSTITUTED PUBLIC AUTHORITIES FOR THE INSTALLATION OF CONSTRUCTION OF THE WORK INCLUDED UNDER THIS DIVISION. THE CONTRACTOR SHALL ARRANGE FOR ANY INSPECTION OR EXAMINATION SO REQUIRED AND DELIVER CERTIFICATIONS OF ALL SUCH INSPECTIONS TO THE ENGINEER.
 - SITE INSPECTIONS:**
 - THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND EXISTING CONSTRUCTION AND SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITION WITHIN THE SCOPE OF THIS WORK. THE CONTRACTOR WILL BE DEEMED TO HAVE MADE SUCH EXAMINATION AND TO HAVE ACCEPTED SUCH CONDITIONS, AND NO ADDITIONAL PAYMENT WILL BE MADE FOR EXISTING CONDITIONS.
 - PROTECTION OF WORK:**
 - THE CONTRACTOR SHALL PROTECT WORK, MATERIAL AND EQUIPMENT FROM DAMAGE FROM ANY CAUSE WHATSOEVER, AND SHALL PROVIDE ADEQUATE AND PROPER STORAGE FACILITIES DURING THE PROGRESS OF THE WORK. THE CONTRACTOR SHALL PROVIDE FOR THE SAFETY AND GOOD CONDITION OF ALL WORK UNTIL FINAL ACCEPTANCE OF THE WORK BY THE ENGINEER, AND REPLACE ALL DAMAGED OR DEFECTIVE WORK, MATERIALS AND EQUIPMENT BEFORE REQUESTING FINAL ACCEPTANCE.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND CORRECTION OF THE WORK FROM SMEARS, SPLASHES, STAIN OR DAMAGES THAT MIGHT OCCUR IN THE PROGRESS OF THE WORK.
 - MATERIAL:**
 - ALL MATERIAL HEREIN SHALL BE NEW AND FURNISHED IN ACCORDANCE WITH SPECIFICATIONS OF INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEER, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FIRE PROTECTION ASSOCIATION, AND THE NATIONAL ELECTRICAL CODE. ALL ELECTRICAL COMPONENTS SHALL BE SPECIFICALLY RATED FOR OUTDOOR, MARINE USE.
 - ALL ELECTRICAL EQUIPMENT SHALL BE LISTED BY UL OR APPROVED THIRD PARTY TESTING FACILITY.
 - CONDUIT AND FITTINGS:**
 - CONDUIT SHALL COMPLY WITH THE REQUIREMENTS OF THE UNDERWRITERS' LABORATORIES AND SHALL BE DELIVERED TO THE SITE IN STANDARD LENGTHS WITH EACH LENGTH BEARING THE MANUFACTURER'S TRADEMARK AND THE U.L. LABEL OF APPROVAL. CONDUIT SHALL BE POLYVINYL CHLORIDE CONDUIT (PVC).
 - POLYVINYL CHLORIDE CONDUIT SHALL BE SCHEDULE 40 UNLESS IN EXPOSED AREAS AND SUBJECT TO PHYSICAL DAMAGE. TYPE PVC SCHEDULE 80 IS INTENDED FOR AREAS OF PHYSICAL DAMAGE.
 - ALL CONDUITS WHICH ARE INSTALLED AT THIS TIME AND LEFT EMPTY FOR FUTURE USE SHALL HAVE A 1/8 INCH POLYETHYLENE ROPE LEFT IN PLACE FOR FUTURE USE.
 - EACH END OF CONDUIT SHALL BE REAMED AND CONDUIT THOROUGHLY CLEANED OF BURRS, SCALES, DIRT, AND OTHER CONTAMINANTS BOTH INSIDE AND OUTSIDE. END OF CONDUITS SHALL BE KEPT CLOSED WITH APPROVED CONDUIT SEALS DURING CONSTRUCTION.
 - JOINTS IN CONDUIT SHALL BE JOINED BY MEANS OF SOLVENT CEMENT JOINTS AND SHALL BE LIQUID AND GAS TIGHT. CONDUIT TERMINATED TO JUNCTION BOX SHALL BE COMPLETE WITH PROPER CONNECTOR WITH NEOPRENE O-RING SEAL AND LOCKNUT FOR A WATERTIGHT INSTALLATION.
 - ALL CONDUITS SHALL BE CUT SQUARE AND CLEANED FOR SOLVENT CONNECTION TO BOXES, CONDUIT, ETC. ALL OPEN ENDS SHALL BE COMPLETELY SEALED FOR WATER TIGHT.
 - OUTLET BOXES:**
 - OUTLET AND JUNCTION BOXES SHALL BE MADE WITH HIGH IMPACT RESISTANT NON-METALLIC COMPOUND, GRAY COLOR, AS MANUFACTURED BY CARLON OR APPROVED EQUAL AND SHALL BE U.L. LISTED.
 - BOXES SHALL BE COMPLETE WITH PROPER HOLES FOR CONDUIT CONNECTIONS AND WATERTIGHT COVERS. ALL CONNECTORS SHALL BE LIQUID TIGHT.
 - CONDUCTORS (600 VOLT OR LESS):**
 - ALL CONDUCTORS SHALL BE U.L. LABELED, FOR 600 VOLT INSULATED COPPER CONDUCTORS, NO WIRES SHALL BE SMALLER THAN #12 GAUGE UNLESS NOTED OTHERWISE ON THE PLANS.
 - ALL CONDUCTORS SHALL BE NEW AND DELIVERED TO THE JOB SITE IN THEIR ORIGINAL UNBROKEN PACKAGES. EACH PACKAGE SHALL BEAR U.L. AND MANUFACTURER'S LABEL, DATE OF MANUFACTURE, SIZE, KIND AND INSULATION OF WIRE.
 - ALL CONDUCTORS SHALL BE TYPE "THWN" 90 DEGREE C, 600 VOLT INSULATION COPPER WIRES. CONDUCTOR SHALL BE STRANDED.
 - PROVIDE U.L. LISTED MARINE TYPE "G" FLEXIBLE CABLE FOR CONNECTION BETWEEN SHORE AND FLOATING DOCK. CONDUCTORS SHALL BE BUNCHED STRANDS OF BARE COPPER ANNEALED DEAD SOFT CONDUCTORS COMPLETE WITH GROUND

- MISCELLANEOUS IRON WORK:**
 - ALL MISCELLANEOUS IRON WORK REQUIRED TO COMPLETELY AND PROPERLY INSTALL THE ELECTRICAL WORK SHALL BE FURNISHED AND INSTALLED UNDER THIS DIVISION OF THE SPECIFICATIONS. THIS SHALL INCLUDE ALL SUPPORTS AND APPURTENANCES.
- NAME PLATES:**
 - PROVIDE BLACK-ON-WHITE NAMEPLATES FOR PANELBOARDS, PULL BOXES, DISCONNECT SWITCHES AND MAGNETIC MOTOR STARTERS TO CORRESPOND WITH DESIGNATION ON THE PLANS. NAMEPLATES SHALL BE SECURED WITH SCREWS, BOLTS OR RIVETS. OTHER MEANS OF ATTACHMENT WILL NOT BE ACCEPTED. "DYMO" TYPE LABELS WILL NOT BE ACCEPTED. DESCRIPTION OF NAMEPLATES SHALL INCLUDE NAME, VOLTAGE, PHASE, WIRE, SUCH AS PANEL "DP1", 120/208 VOLT, 3 PHASE, 4 WIRE.
- LUGS:**
 - FURNISH AND INSTALL PROPER LUGS IN PANEL BOARDS, SWITCHBOARDS, CUTTERS, AND OTHER ELECTRICAL EQUIPMENT REQUIRED TO PROPERLY TERMINATE EVERY CABLE.
- CENTRAL PHOTO-ELECTRIC CELL:**
 - A CENTRAL PHOTO-ELECTRIC CELL SHALL BE FOR OUTDOOR INSTALLATION, SELF CONTAINED AND SHALL NOT BE EFFECTED BY MOISTURE, VIBRATION OR CHANGING OF TEMPERATURE. PHOTO-ELECTRIC CELL ON/OFF LEVEL SHALL BE ABLE TO BE ADJUSTED BETWEEN 2 F.C. TO 50 F.C. PHOTO-ELECTRIC CELL SHALL BE TORK #2100 OR EQUAL.
- SUBSTATIONS:**
 - SUBSTATIONS SHALL CONSIST OF A DRY TYPE TRANSFORMER AND A DISTRIBUTION PANEL AS SPECIFIED HEREINAFTER. SUBSTATIONS SHALL BE UL OR ETL LISTED AS A COMPLETE UNIT.
 - ENCLOSURE SHALL BE CONSTRUCTED WITH MARINE GRADE ALUMINUM ALLOY #5052 BOLTED AND GASKETED, NEMA 3R, FINISHED POLYESTER POWDER COAT OF WHITE COLOR. LOWER 4" FRAME SHALL BE GALVANIZED 7 GAGE STEEL FINISHED WHITE POLYESTER POWDER COAT. ALL HARDWARE SHALL BE STAINLESS STEEL.
 - PROVIDE SCREW-ON BLACK-ON-WHITE NAMEPLATES OF 1X3 LETTERS FOR ALL DEVICES.
 - UNIT SUB-STATION SHALL BE CONSTRUCTED SUCH THAT NO LIVE PARTS WILL BE LESS THAN 12" FROM THE BOTTOM AND 30" FROM WATER.
- TRANSFORMERS:**
 - TRANSFORMERS SHALL BE DRY TYPE WITH KVA RATINGS AND VOLTAGE AS INDICATED IN THESE DRAWINGS. TRANSFORMERS SHALL HAVE COPPER PRIMARY AND SECONDARY WINDINGS DOUBLE DIPPED IN CLEAR BAKING VARNISH AND SHALL BE TYPE "H", DISTRIBUTION TYPE WITH INTEGRAL VIBRATION MOUNTS.
 - TRANSFORMER SHALL BE INSTALLED INTEGRAL IN THE UNIT SUB-STATION.
 - TRANSFORMERS SHALL BE BUILT IN ACCORDANCE WITH THE LATEST ANSI AND NEMA STANDARDS, AND SHALL HAVE U.L. APPROVAL.
 - TRANSFORMER SHALL HAVE BIL OF 10 KV. TRANSFORMER SHALL HAVE APPLIED VOLTAGE TEST (TO EACH WINDING AND FROM EACH WINDING TO GROUND) AND INDUCE VOLTAGE TEST 2 TIMES NORMAL VOLTAGE.
 - MINIMUM IMPEDANCE OF TRANSFORMERS SHALL BE AS FOLLOWS:
 - 75 TO 112.5 KVA 3.0 %
 - 150 TO 225 KVA 4.5 %
 - 250 TO 500 KVA 5.0 %
 - TRANSFORMERS SHALL HAVE A MINIMUM OVERLOAD CAPACITY AS SPECIFIED IN ANSI STANDARD.
 - TRANSFORMER SHALL HAVE INSULATION WITH TEMPERATURE RISE NOT EXCEEDING 150 DEGREE C. UNDER FULL LOAD IN A MAXIMUM AMBIENT OF 40 DEGREE C.
 - TAPS SHALL BE PROVIDED FOR FOUR 2 1/2 % FULL CAPACITY BELOW AND TWO 2 1/2 % FULL CAPACITY ABOVE NORMAL VOLTAGE.
- DISTRIBUTION PANELBOARDS:**
 - PANELBOARDS SHALL BE WITH BREAKERS AND COPPER BUSSING AS SHOWN ON THE SCHEDULE AND IN THE SINGLE LINE DIAGRAM AND ENGRAVED NAMEPLATES PANELBOARD SHALL BE INSTALLED IN THE UNIT SUB-STATION AS SPECIFIED HEREINBEFORE.
 - CIRCUIT BREAKERS SHALL HAVE MINIMUM SHORT CIRCUIT INTERRUPTING CAPACITY OF 18,000 AMPERES SYMMETRICAL FOR 120/208 VOLT PANELS OR AS NOTED ON THE DRAWINGS.
 - ALL CIRCUIT BREAKERS SHALL BE AMBIENT COMPENSATED, THERMAL MAGNETIC TYPE, WITH COMMON TRIP MECHANISM FOR MULTI POLE TYPE, BOLTED CONNECTIONS AND WITH THE NUMBER OF POLES, VOLTAGE AND TYPE INDICATED.
 - CIRCUIT BREAKERS SHALL BE PROVIDED WITH SCREW-ON BLACK_ON_WHITE NAMEPLATES.
 - PANELBOARDS SHALL BE EQUIPPED WITH A GROUND BUS SECURED TO THE INTERIOR OF THE ENCLOSURE. THE BUS SHALL BE EQUAL TO THE PANELBOARD NEUTRAL BUS AND SHALL HAVE A SEPARATE LUG FOR EACH GROUND CONDUCTOR. NO MORE THAN ONE CONDUCTOR SHALL BE INSTALLED PER LUG.
- GROUNDINGS:**
 - GROUNDING SHALL BE EXECUTED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.
 - EACH PANELBOARD, PULL BOX OR ANY OTHER ENCLOSURE IN WHICH SEVERAL GROUND WIRES ARE TERMINATED SHALL BE EQUIPPED WITH A GROUND BUS SECURED TO THE INTERIOR OF THE ENCLOSURE. THE GROUND BUS SHALL BE EQUAL TO THE NEUTRAL BUS AND SHALL HAVE A SEPARATE LUG FOR EACH GROUND CONDUCTOR.

MARK	CONDUIT SIZE (SEE NOTE 2)	CONDUCTOR TYPE (SEE NOTE 1)	CONDUCTORS
A6	3"	THWN/ THHN	2 #500 + #4G
A5	3"	THWN/ THHN	3 #500 + #4G
A4	3"	THWN/ THHN	3 #400 + #4G
A3	3"	THWN/ THHN	3 #350 + #4G
A2	3"	THWN/ THHN	3 #300 + #4G
A1	2 1/2"	THWN/ THHN	3 #250 + #4G
B	2 1/2"	THWN/ THHN	4 #4/0 + #6G
B1	2 1/2"	THWN/ THHN	3 #4/0 + #6G
C	2"	THWN/ THHN	4 #3/0 + #6G
C1	2"	THWN/ THHN	3 #3/0 + #6G
D1	2"	THWN/ THHN	3 #2/0 + #6G
E1	2"	THWN/ THHN	3 #1/0 + #6G
F	1.5"	THWN/ THHN	4 # 1 + #6G
F1	1.5"	THWN/ THHN	3 # 1 + #6G
G	1.5"	THWN/ THHN	4 #2 + #8G
G1	1.5"	THWN/ THHN	3 #2 + #8G
H	1.5"	THWN/ THHN	4 #3 + #8G
H1	1.5"	THWN/ THHN	3 #3 + #8G
I	1.25"	THWN/ THHN	4 #4 + #8G
I1	1.25"	THWN/ THHN	3 #4 + #8G
J	1"	THWN/ THHN	4 #6 + #10G
J1	1"	THWN/ THHN	3 #6 + #10G
K	1"	THWN/ THHN	4 #10 + #10G
K1	1"	THWN/ THHN	3 #10 + #10G
K2	1"	THWN/ THHN	2 #10 + #10G
L1	3"		CONDUIT ONLY

MARK	CABLE TYPE	CONDUCTORS	GROUND
GC1	GCC	3 #1/0	(2) #5
GC2	GCC	3 #2/0	(2) #4
GC3	GCC	3 #3/0	(2) #3
GC4	GCC	3 #4/0	(2) #2
GC5	GCC	3 #250 kcmil	(2) #2
GC6	GCC	3 #350 kcmil	(2) #1/0
GC7	GCC	3 #500 kcmil	(2) #2/0

- NOTES:**
- USE CONDUCTOR TYPE AS SPECIFIED UNLESS NOTED OTHERWISE IN DRAWING. TYPE G CABLE SHALL BE USED FROM LAND TO DOCK TRANSITION.
 - CONDUIT SIZE BASED ON CONDUCTORS AS SPECIFIED PLUS GROUNDING ELECTRODE CONDUCTOR, WHERE NEEDED, IN SAME CONDUIT AS SHOWN ON DRAWINGS.
 - AL SUBSCRIPT DENOTES ALUMINUM CONDUCTORS.
 - ALL PEDESTAL & POWER CENTER FEEDERS INCLUDE (1) #12 FOR LIGHTING. CENTRAL PHOTOCCELL LOCATED AT SUBSTATION PANEL.

LEGEND:

- = SUBSTATION
- = CONSTRUCTION NOTE
- = FEEDER/ WIRE DESIGNATION - IDENTIFIES FEEDER PER SCHEDULE AND CIRCUIT
- = NEW CONDUIT AND WIRE (TWWN-ION) PER CONSTRUCTION NOTE
- = G-TYPE FLEXIBLE CABLE FOR TRANSITION FROM FIXED PIER TO FLOATING DOCK
- = GROUND CONDUIT, CONDUCTOR AND GROUND ROD (3/4" COPPER CLAD STEEL 10' LONG, UNLESS NOTED OTHERWISE)
- = CIRCUIT BREAKER
- = TRANSFORMER
- = SWITCHBOARD
- = DISTRIBUTION UNIT
- = 17" x 30" PULL BOX CAST INTO FLOAT
- = 5" x 16" PVC BOX CHASE CAST INTO FLOAT
- = 20A, 120V GFI RECEPTACLE AT SUBSTATION PANEL
- = SHP OR 3HP, KECO SEWER PUMP 3 Ph. PUMPS ARE 208V 1 Ph. PUMPS ARE 240V.

Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirajazi 9/14/2022
 Permits: BNR21-0604-ELE22-0113-PLB22-0127

County of Orange Public Works

OC Development Services

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- = POWER PEDESTAL SIDE 1: (2) 30A, 125V. w/ METER, TV, TELE., LIGHT, HOSE BIB. SIDE 2: NO SERVICES
- = POWER PEDESTAL SIDE 1: (2) 50A, 125/250V. w/ METER, TV, TELE., LIGHT, HOSE BIB. SIDE 2: NO SERVICES
- = POWER PEDESTAL SIDE 1: (2) 50A, 125/250V. w/ METER, TV, TELE., LIGHT, HOSE BIB. SIDE 2: (1) 50A, 125/250V. w/ METER, TV, TELE., LIGHT, HOSE BIB.
- = POWER PEDESTAL SIDE 1: (1) 50A, 125/250V. w/ METER, TV, TELE., LIGHT, HOSE BIB. SIDE 2: (1) 30A, 125V. w/ METER, TV, TELE., LIGHT, HOSE BIB.
- = POWER PEDESTAL SIDE 1: (1) 50A, 125/250V. w/ METER, TV, TELE., LIGHT, HOSE BIB. SIDE 2: (1) 30A, 125V. w/ METER, TV, TELE., LIGHT, HOSE BIB.
- = POWER PEDESTAL SIDE 1: (1) 50A, 125/250V. + (1) 30A, 125V. w/ METER, TV, TELE., LIGHT, HOSE BIB. SIDE 2: (1) 30A, 125V. w/ METER, TV, TELE., LIGHT, HOSE BIB.
- = POWER PEDESTAL SIDE 1: (1) 50A, 125/250V. + (1) 30A, 125V. w/ METER, TV, TELE., LIGHT, HOSE BIB. SIDE 2: (2) 30A, 125V. w/ METER, TV, TELE., LIGHT, HOSE BIB.
- = POWER PEDESTAL SIDE 1: (1) 100A, 120/208V., 3 Ph. w/ METER, TV, TELE., LIGHT, HOSE BIB. SIDE 2: NO SERVICES
- = POWER PEDESTAL SIDE 1: (1) 100A, 125/250V., + (2) 50A, 125/250V. + (2) 30A, 125V. w/ METER, TV, TELE., LIGHT, HOSE BIB.
- = POWER DISTRIBUTION UNIT (1) 100A, 480V., 3 Ph. + (2) 100A, 120/208V. (2) 100A, 125/250V., + (2) 50A, 125/250V. + (2) 30A, 125V. w/ METER, TV, TELE., LIGHT, HOSE BIB.

NOTES:

ALL POWER CENTERS AND PEDESTALS HAVE CIRCUIT BREAKER OVERCURRENT PROTECTION, EACH RECEPTACLE HAS INDIVIDUAL BREAKER WITH SAME AMPERAGE AS RECEPTACLE, AND ALL HAVE 30 MA GROUND FAULT PROTECTION INTEGRAL IN THE BREAKER. 100 AMP BREAKERS USE GROUND FAULT RELAY WITH SHUNT TRIP BREAKER.

NO.	DATE	DESCRIPTION	BY	KG
A	2-25-22	UPDATED NOTE		
REVISIONS				

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SOUTHWEST DIVISION
 CA LICENSE #442499
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 DIXON, CA 95620
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 FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

ELECTRICAL NOTES & LEGEND

REGISTERED PROFESSIONAL ENGINEER
 No. E-16945
 EXP. 4-30-2023
 Date Signed: May 18, 2022

SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	E1
SHEET NO.:	63

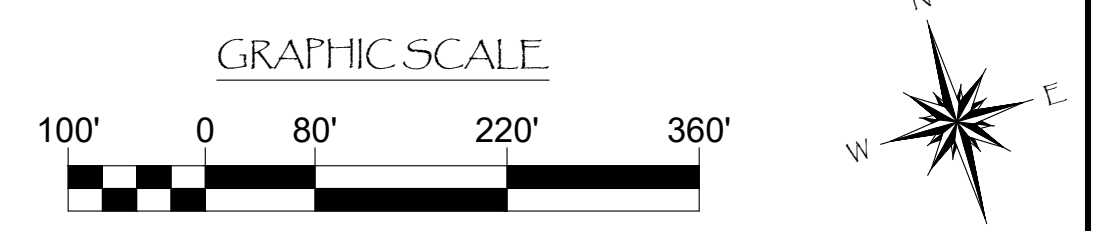
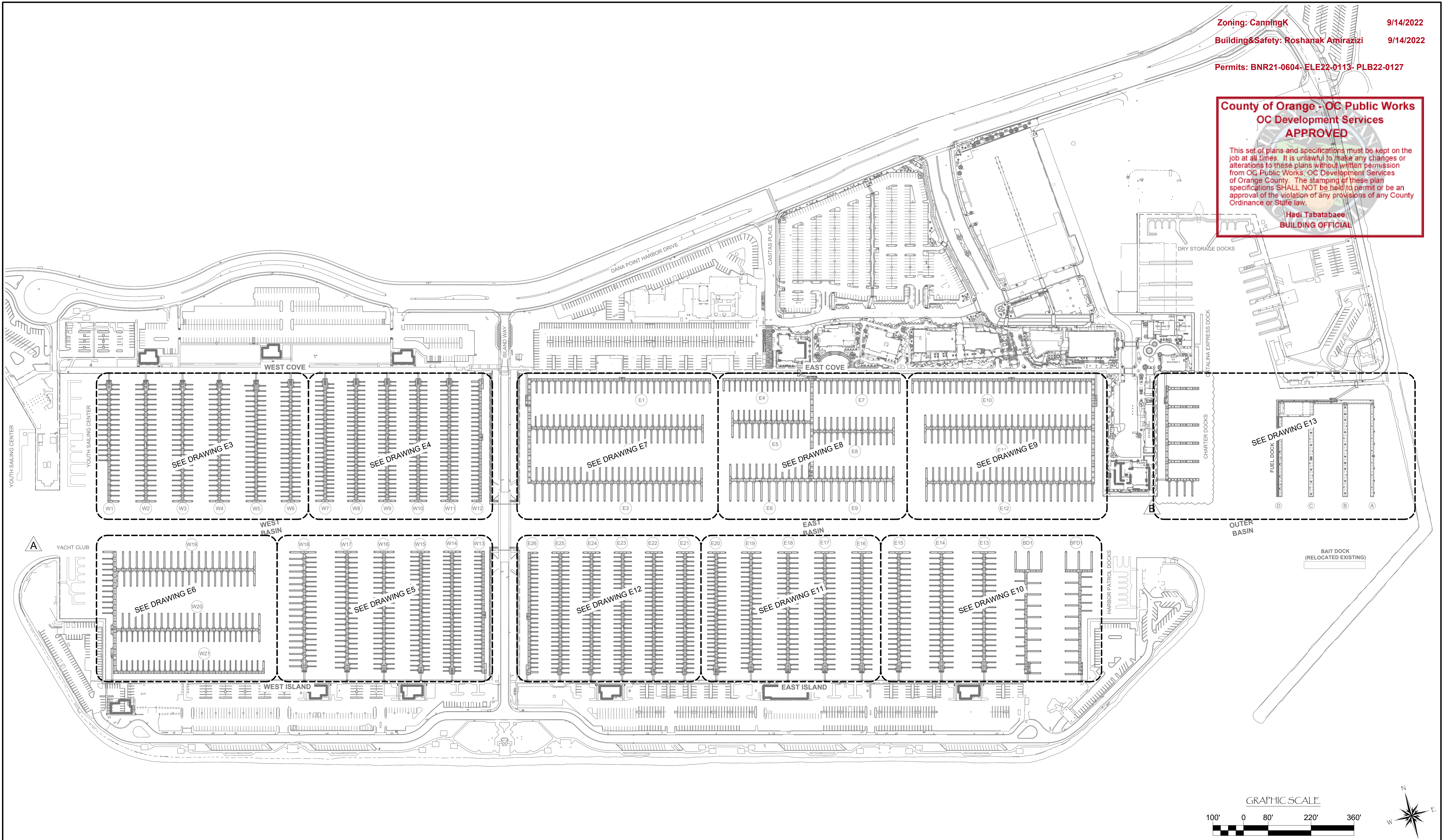
Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 OC Development Services
 APPROVED**

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**Hadi Tabatabaee
 BUILDING OFFICIAL**

PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED YACHT CLUB	KG
REVISIONS			

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
ELECTRICAL LAYOUTS INDEX

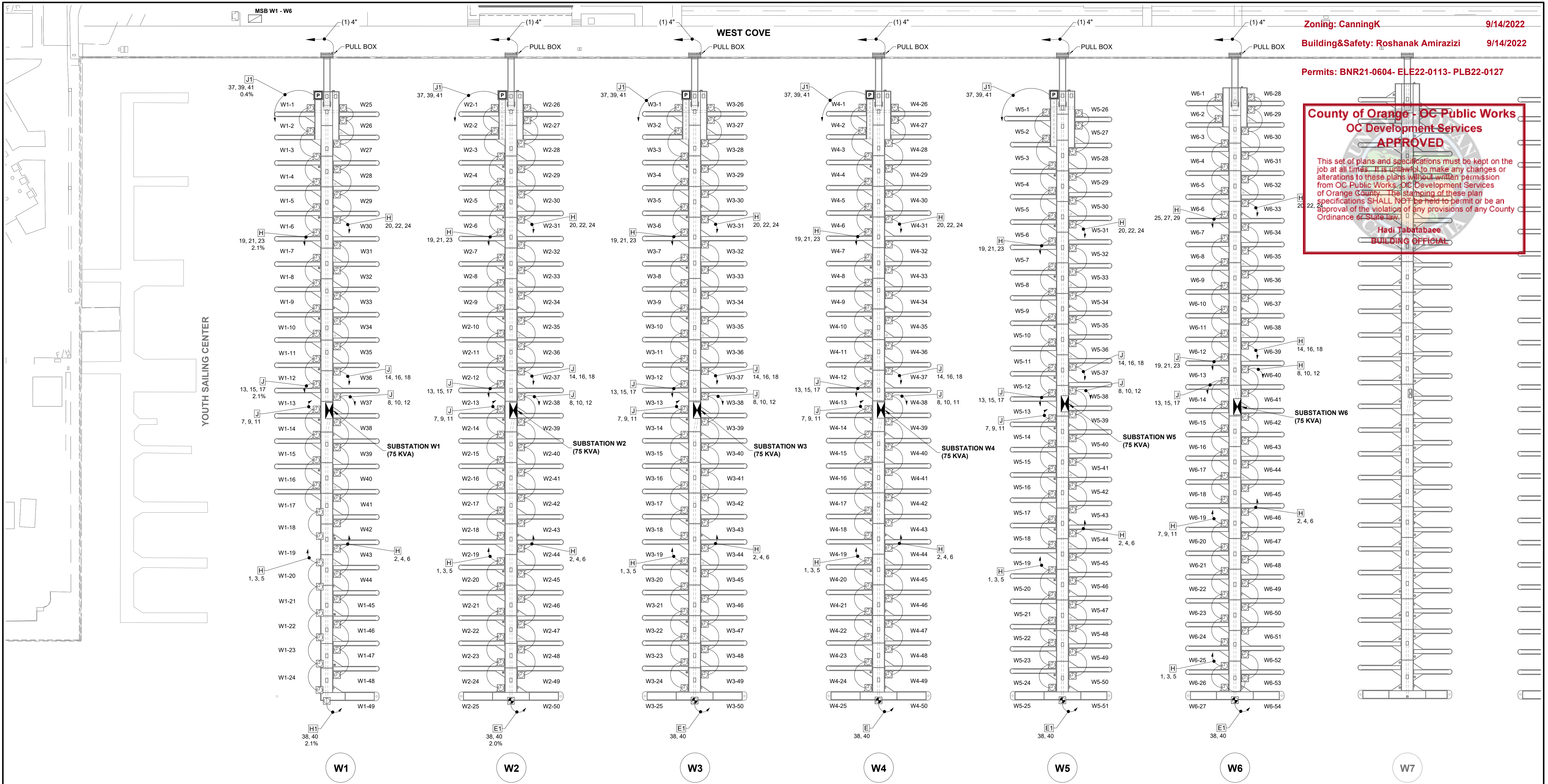
Date Signed: May 16, 2022

SCALE: 1" = 140'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: E2
 SHEET NO.: 64

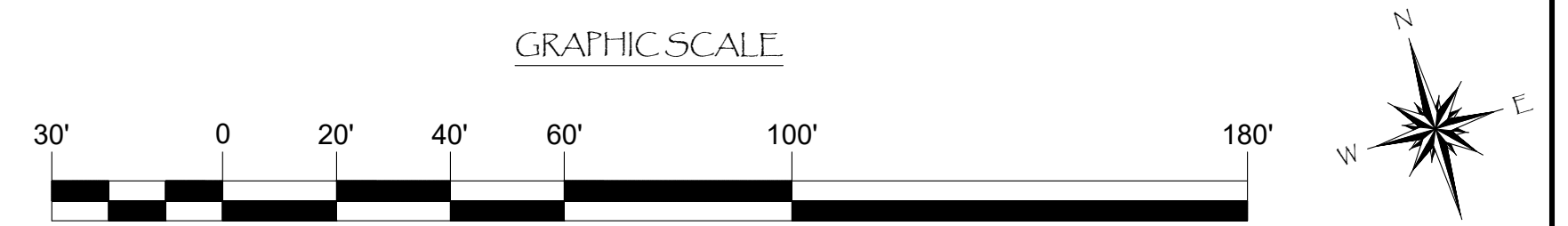
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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Hadi Jabatabae
BUILDING OFFICIAL



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NO.	DATE	DESCRIPTION	BY
REVISIONS			

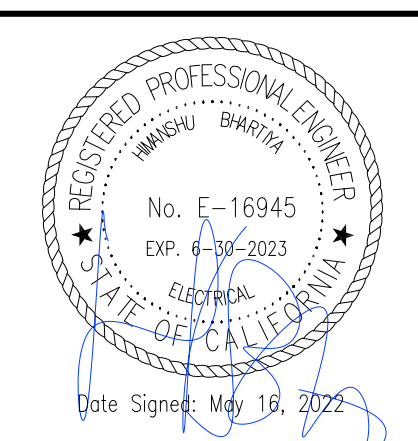


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 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
ELECTRICAL LAYOUT FOR DOCKS W1 - W6



SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: E3
 SHEET NO.: 65

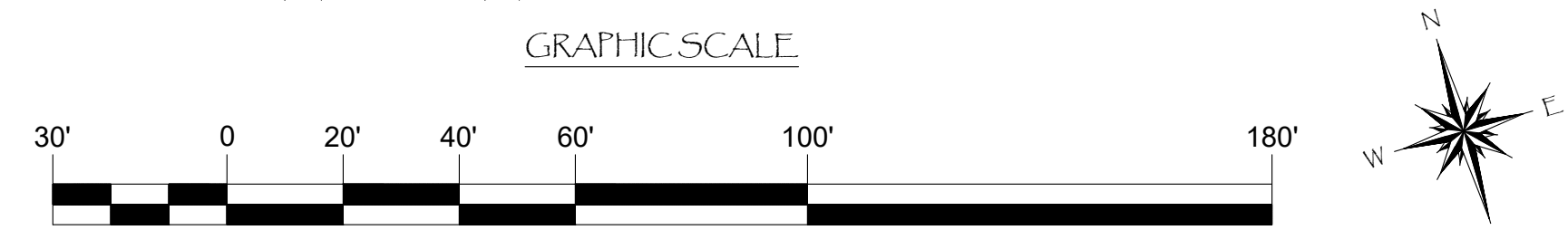
PERMIT DRAWING



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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BUILDING OFFICIAL

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REVISIONS			

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

ELECTRICAL LAYOUT FOR DOCKS W7 - W12

REGISTERED PROFESSIONAL ENGINEER
 No. E-16945
 EXP. 4-30-2025
 Hadi Tabatabaee
 Date Signed: May 16, 2022

SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: E4

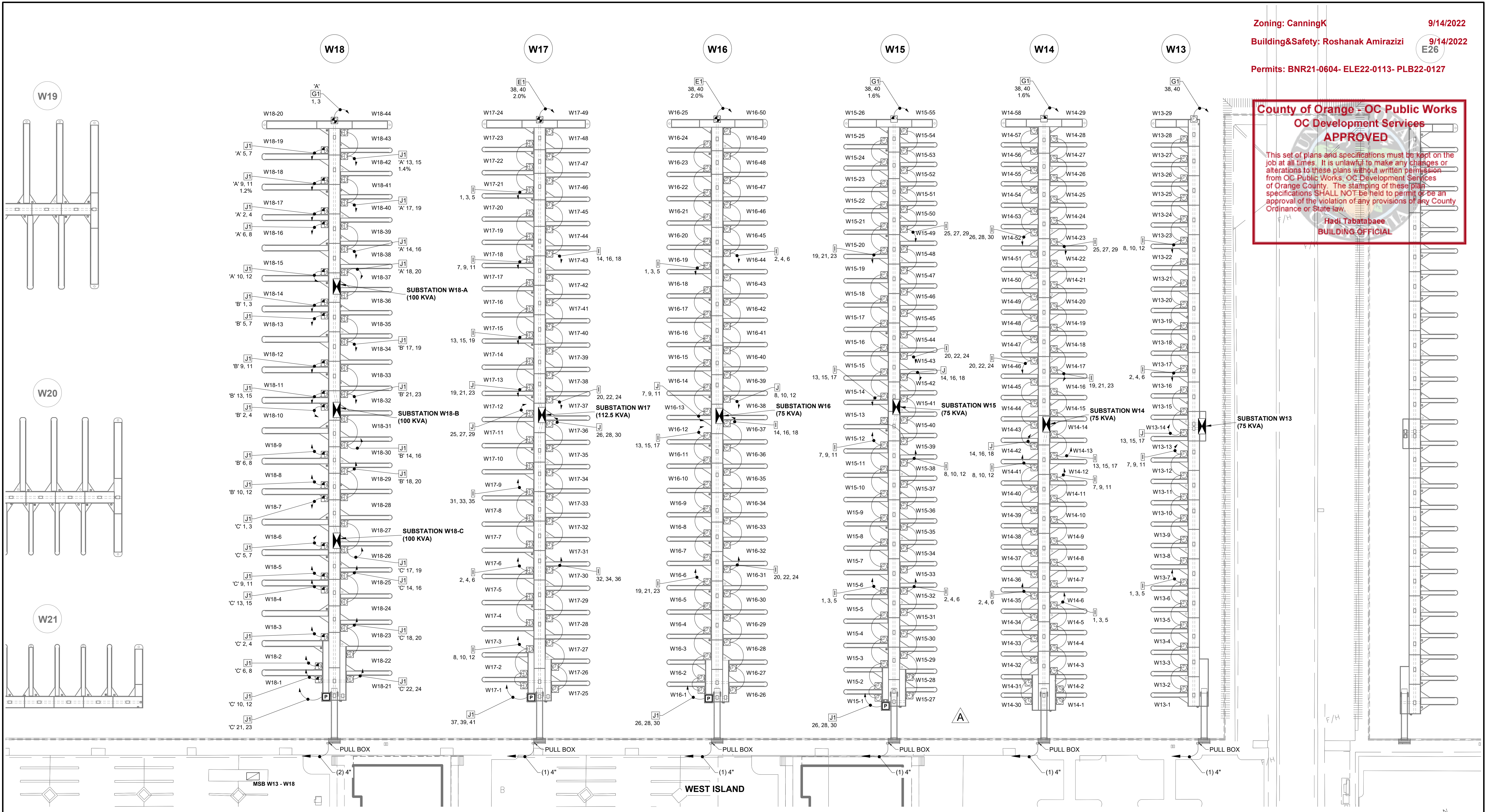
SHEET NO.: 66

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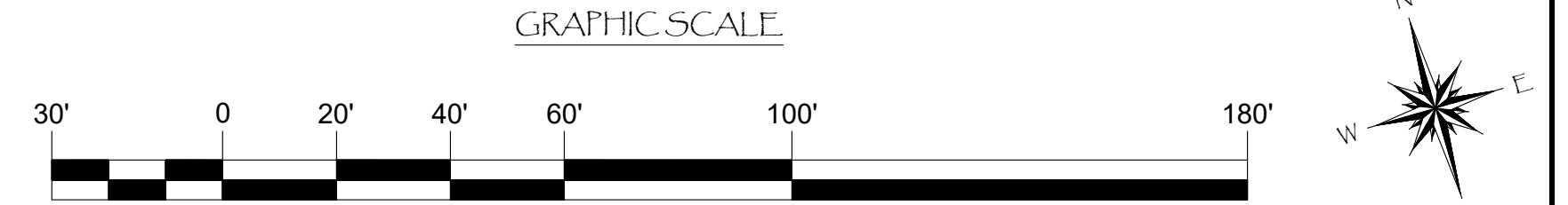
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BUILDING OFFICIAL

PERMIT DRAWING



NOTE:
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NO.	DATE	DESCRIPTION	BY
A	2-25-22	MIRRORED DOCK	KG
		DESCRIPTION	
REVISIONS			

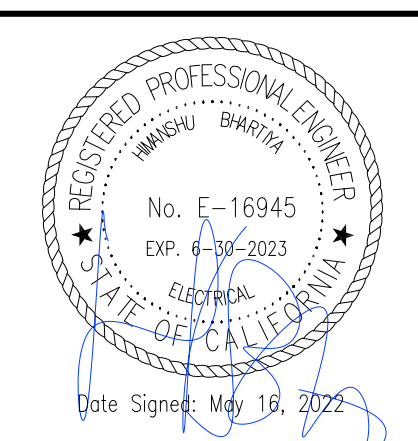


Bellingham
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 DIXON, CA 95620
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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
ELECTRICAL LAYOUT FOR DOCKS W13 - W18



SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: E5
 SHEET NO.: 67

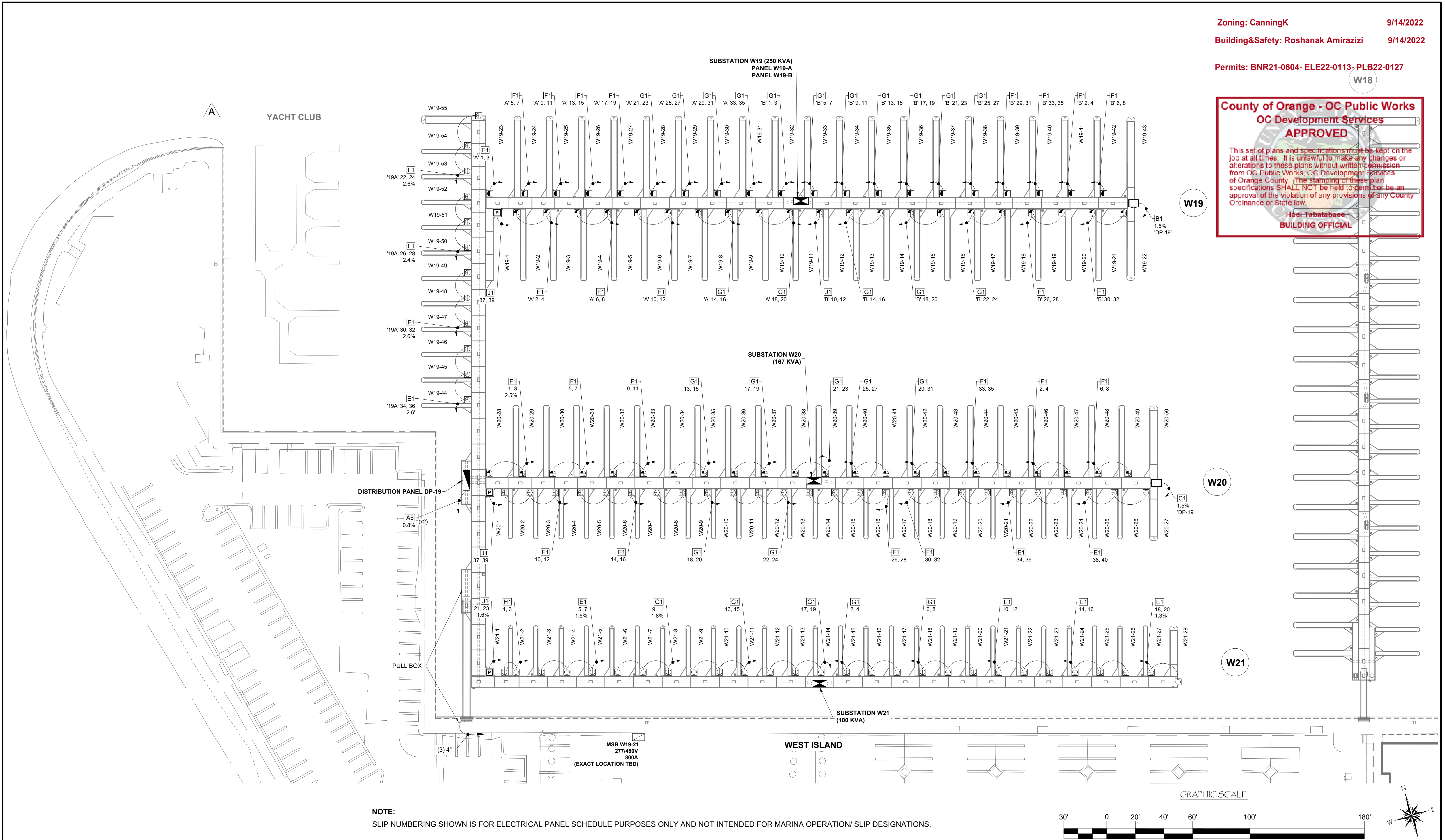
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
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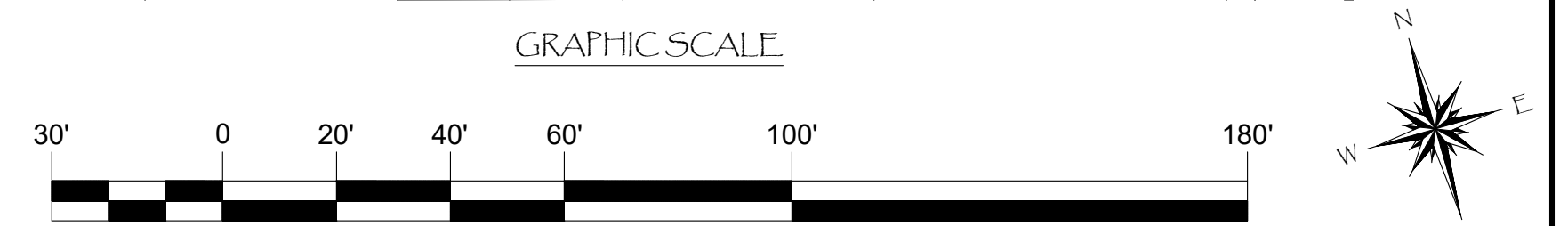
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NO.	DATE	REMOVED YACHT CLUB DESCRIPTION	KG BY
A	2-25-22		
REVISIONS			

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

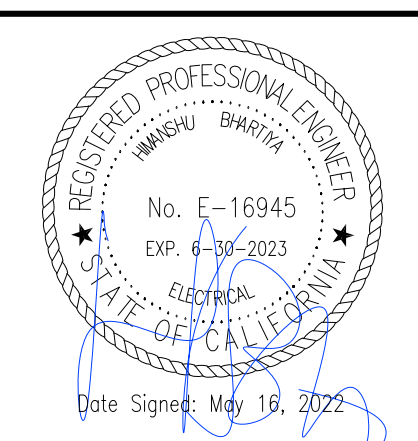
PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

ELECTRICAL LAYOUT FOR DOCKS W19 - W21



SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

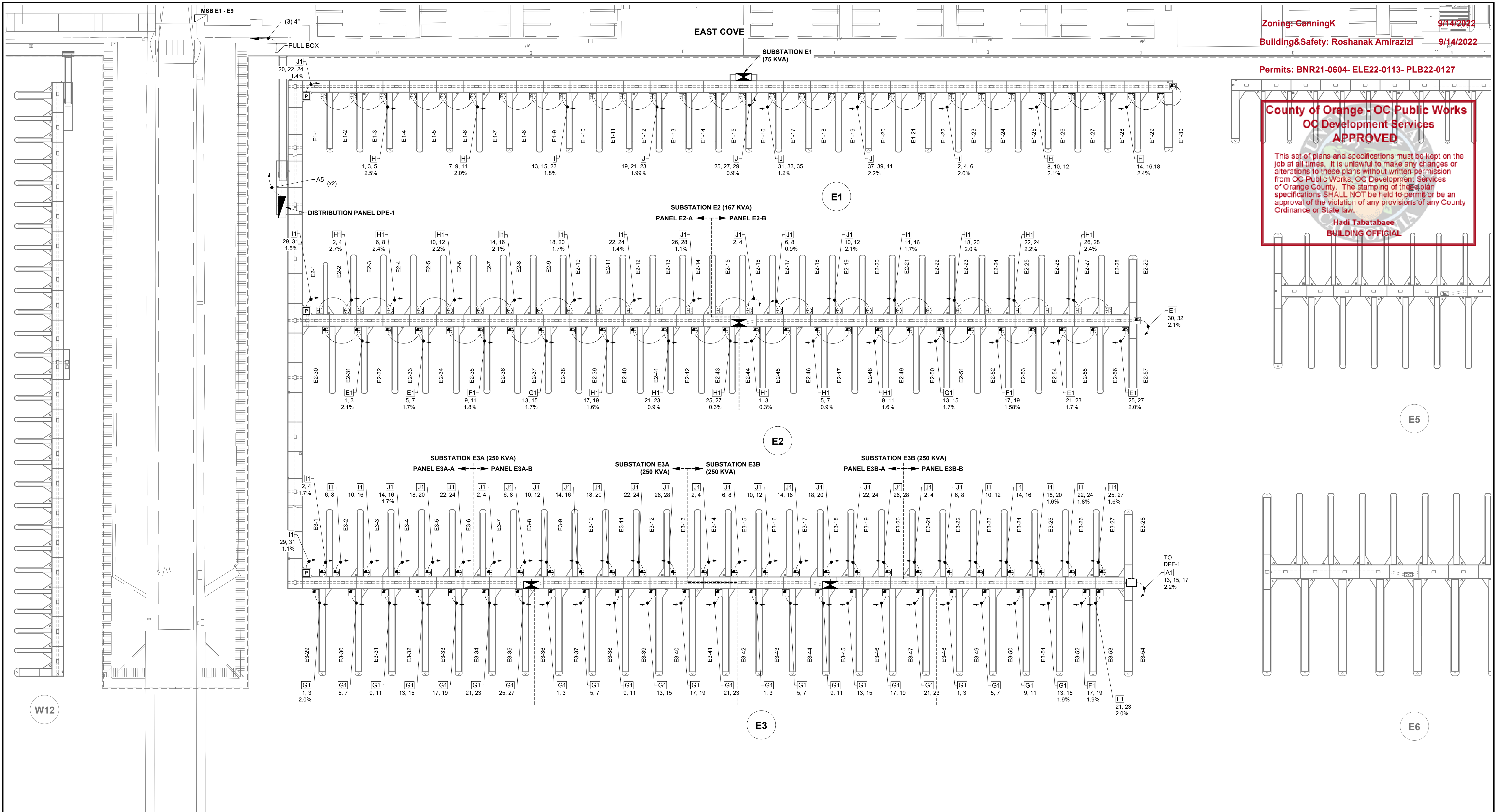
DRAWING: E6

SHEET NO.: 68

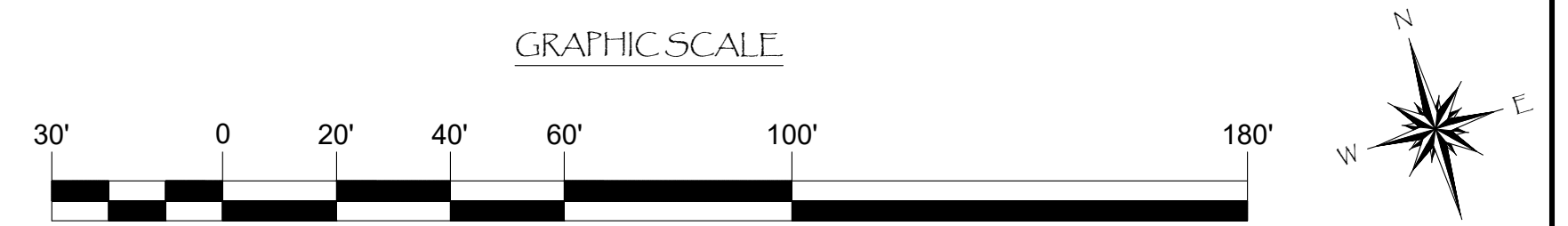
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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Hadi Tabatabaee
BUILDING OFFICIAL



NOTE:
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NO.	DATE	DESCRIPTION	BY
REVISIONS			

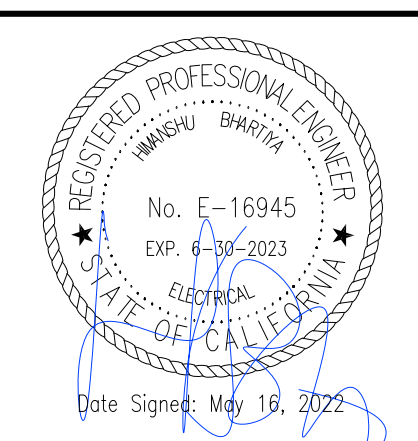
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SOUTHWEST DIVISION
 CA LICENSE #442499
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 DIXON, CA 95620
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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
ELECTRICAL LAYOUT FOR DOCKS E1 - E3



SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: E7
 SHEET NO.: 69

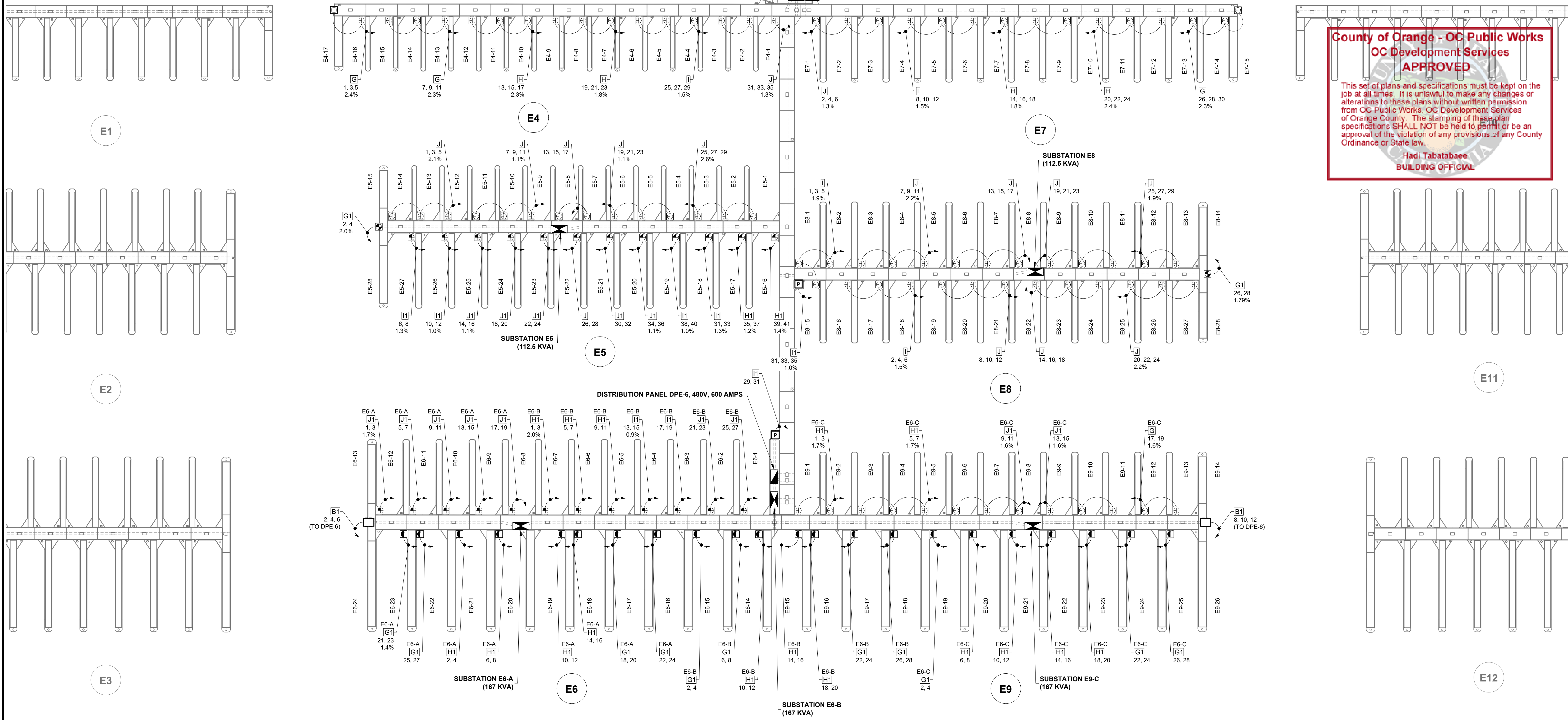
Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
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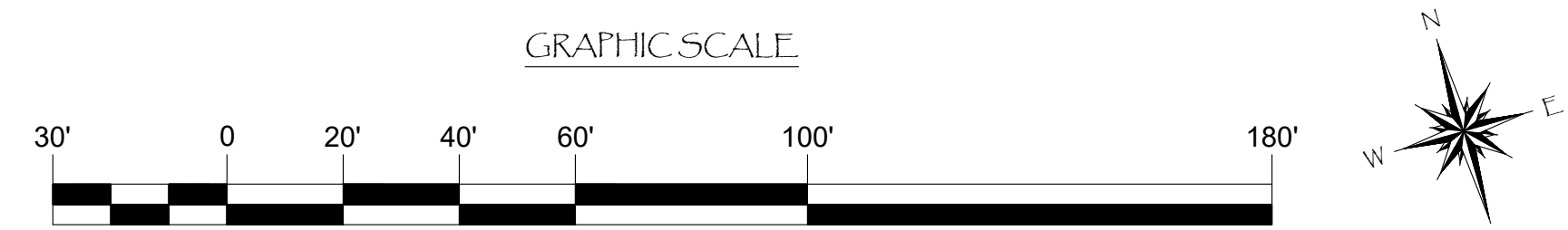
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Hadi Tabatabaee
 BUILDING OFFICIAL

PERMIT DRAWING



NOTE:
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NO.	DATE	DESCRIPTION	BY
REVISIONS			

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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DIMENSIONAL LAYOUT FOR DOCKS E4 - E9

Date Signed: May 16, 2022

SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	E8
SHEET NO.:	70

EAST COVE

Zoning: CanningK

9/14/2022

Building&Safety: Roshanak Amirazizi

9/14/2022

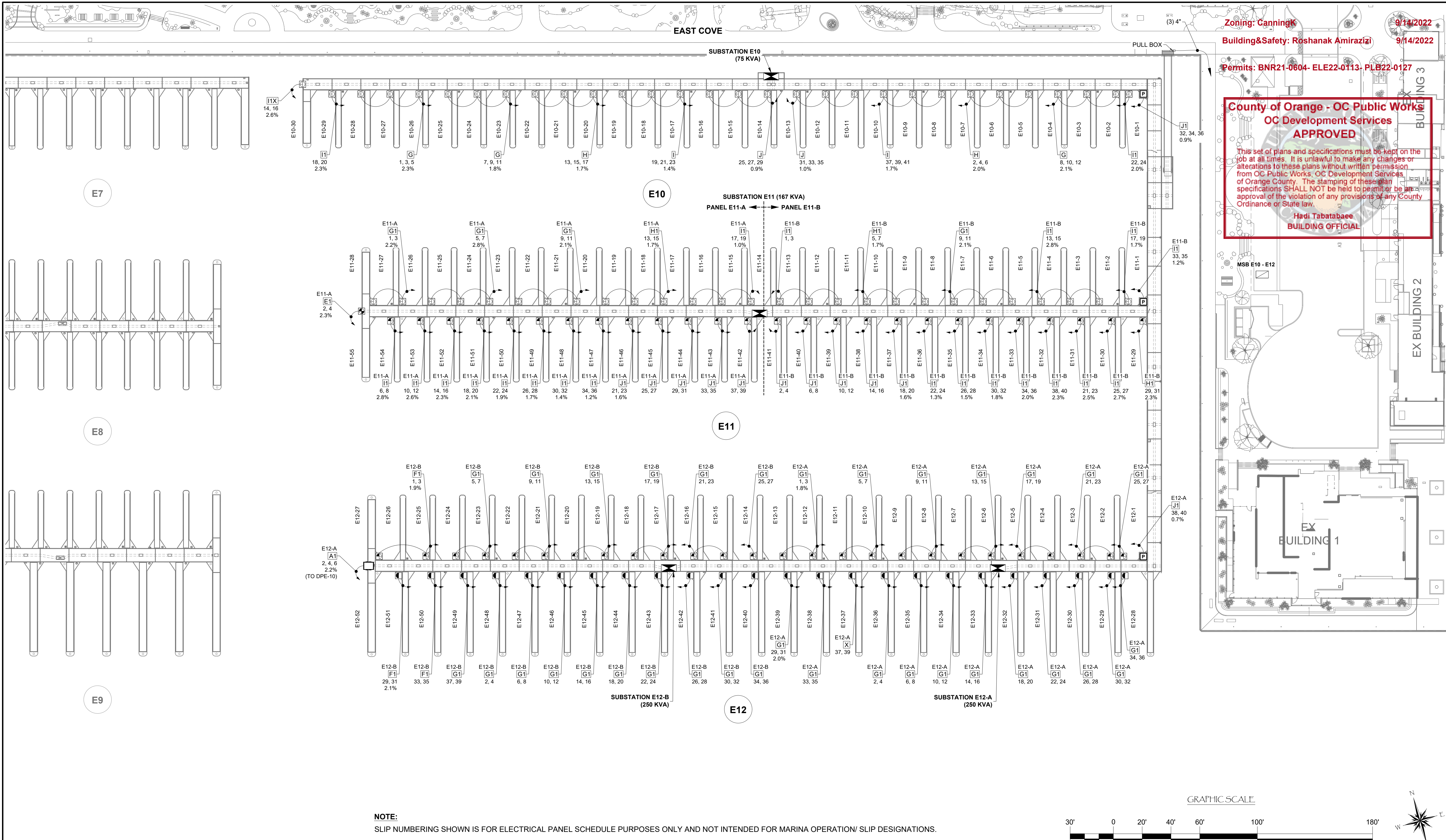
Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
OC Development Services
APPROVED**

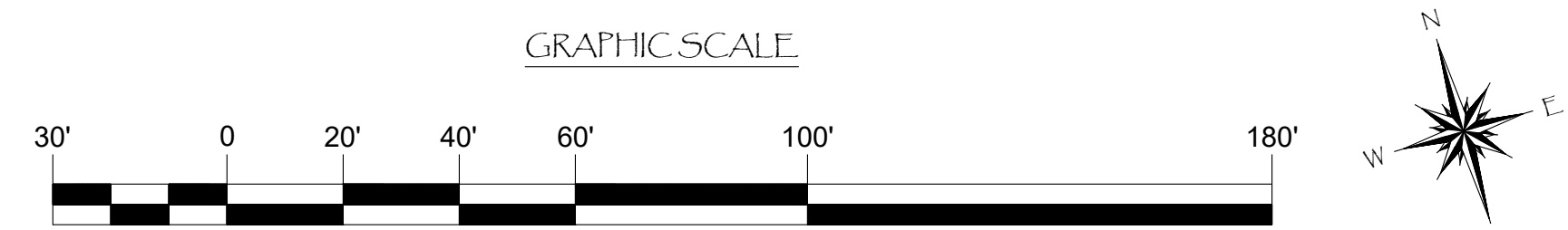
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**Hadi Tabatabaee
BUILDING OFFICIAL**

PERMIT DRAWING



NOTE:
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NO.	DATE	DESCRIPTION	BY
REVISIONS			

Bellingham MARINE
THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

ELECTRICAL LAYOUT FOR DOCKS E10 - E12

Date Signed: May 16, 2022

SCALE: 1" = 30'
(Sheet Size 24" x 36")

DRAWN BY: KG

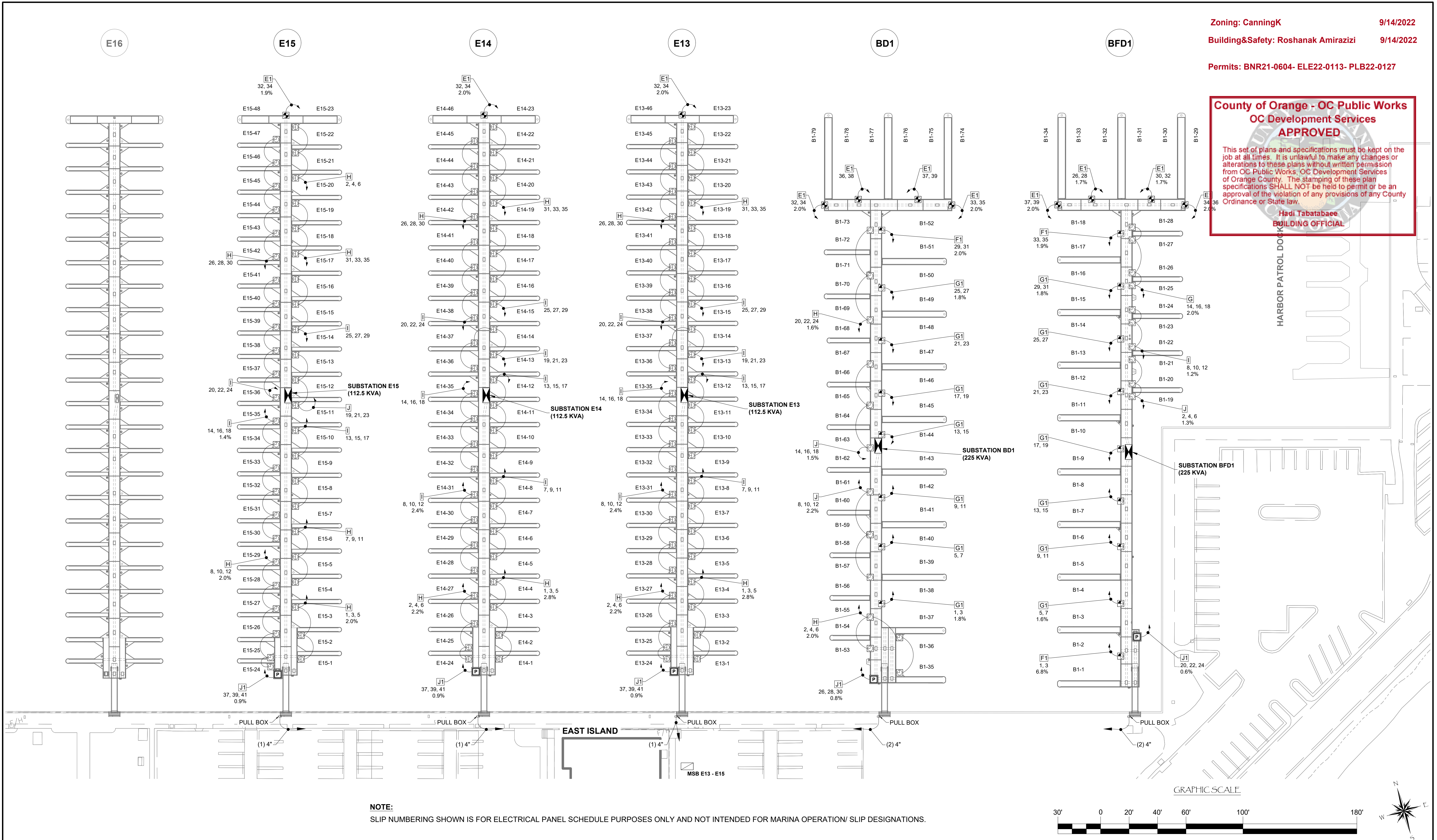
DATE: 5/10/2022

DRAWING: E9

SHEET NO.: 71



PERMIT DRAWING



NOTE:
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NO.	DATE	DESCRIPTION	BY
REVISIONS			

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

ELECTRICAL LAYOUT FOR DOCKS BFD1, BD1, & E13 - E15



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	E10
SHEET NO.:	72

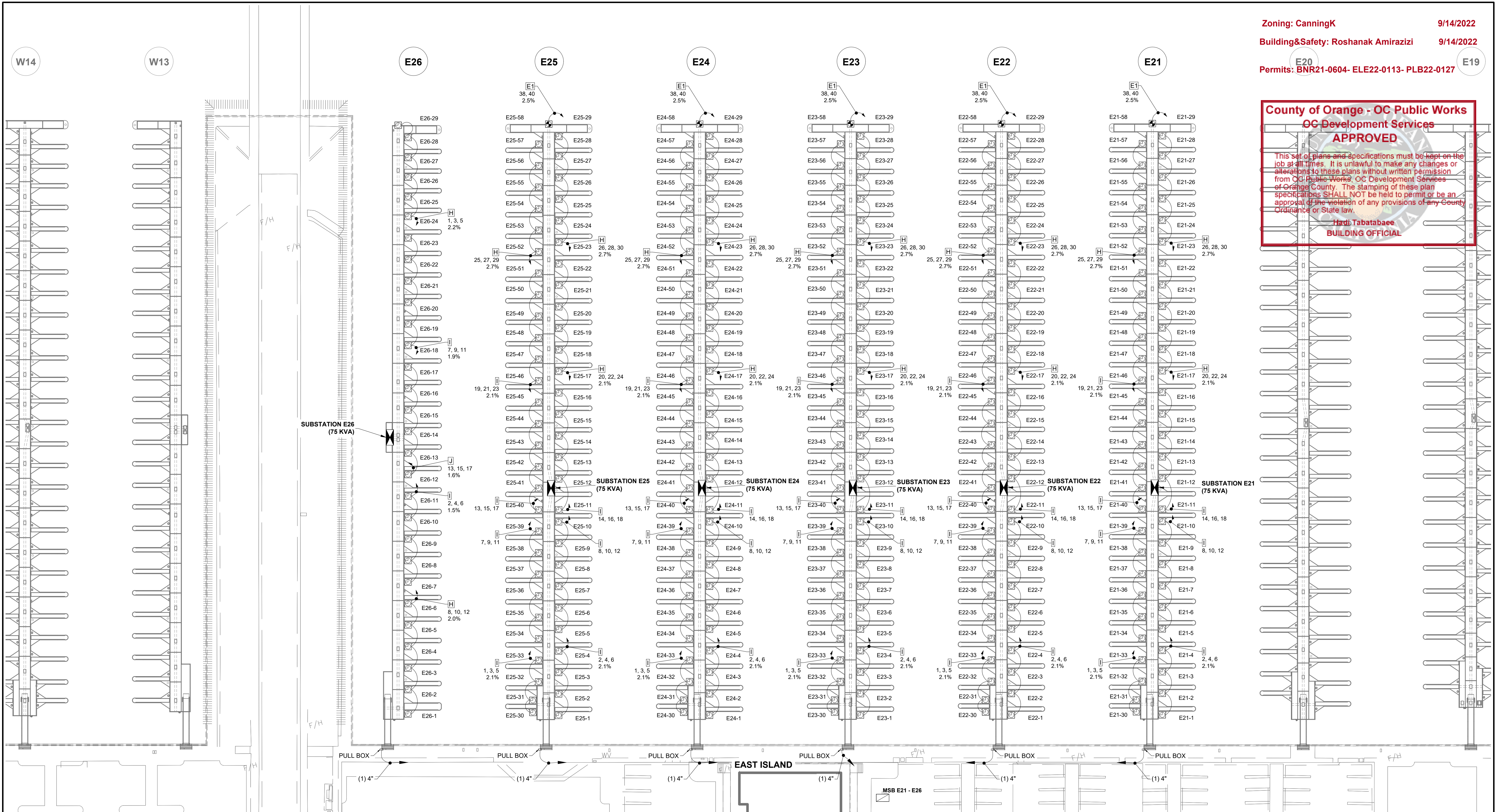
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED

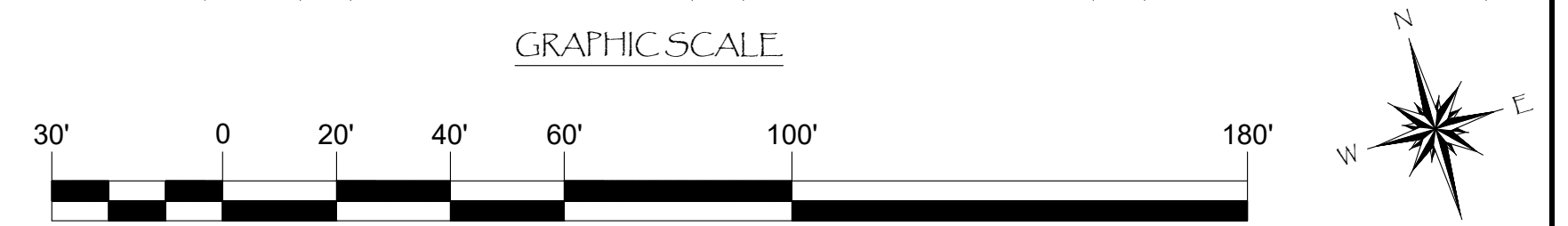
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Hadi Tabatabaee
BUILDING OFFICIAL

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NO.	DATE	DESCRIPTION	BY
REVISIONS			

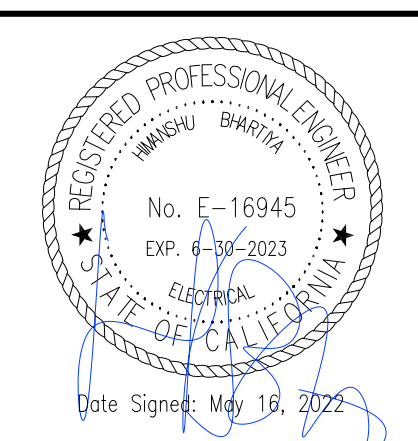


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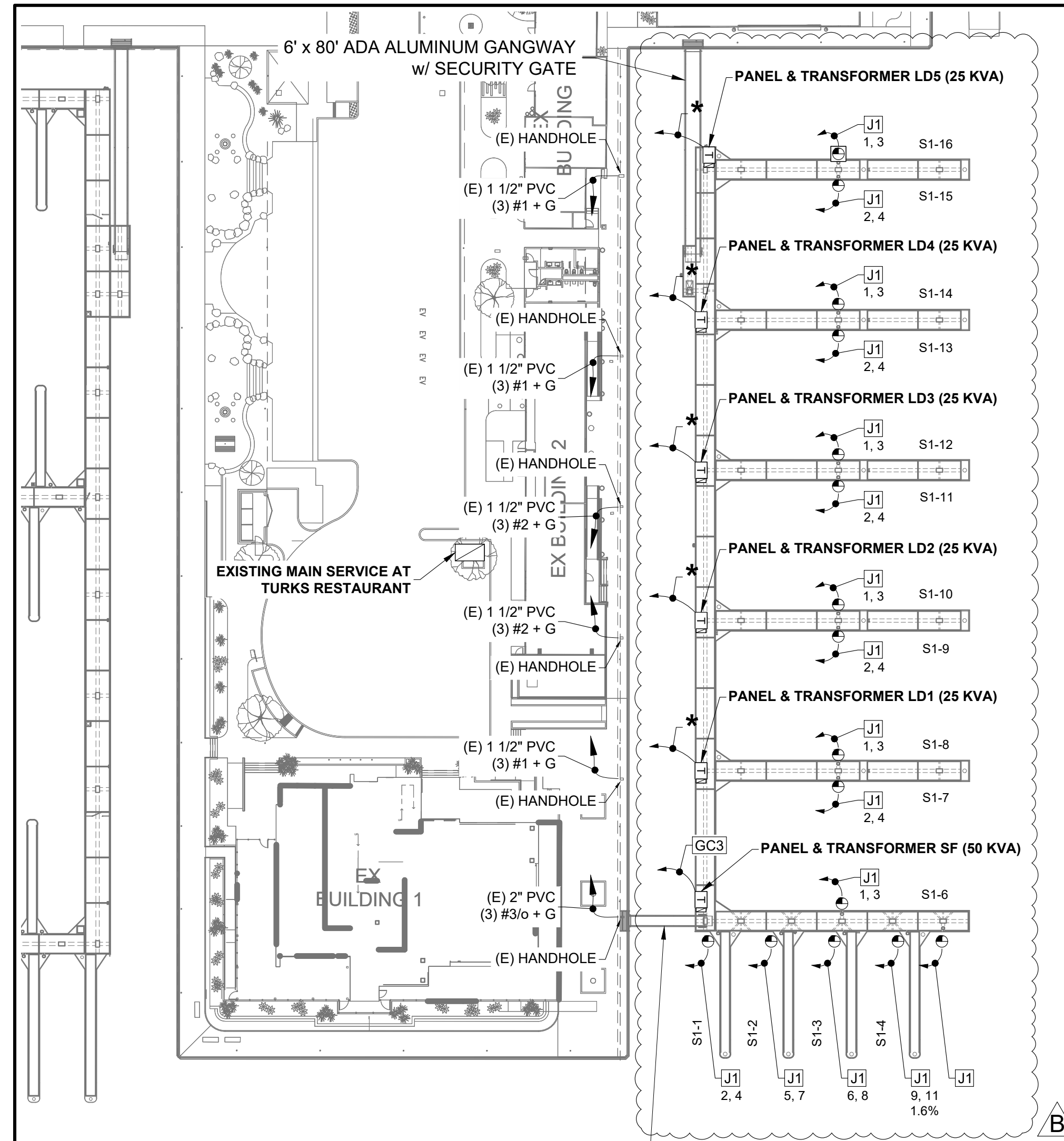
PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
ELECTRICAL LAYOUT FOR DOCKS E21 - E26



SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: E12
 SHEET NO.: 74

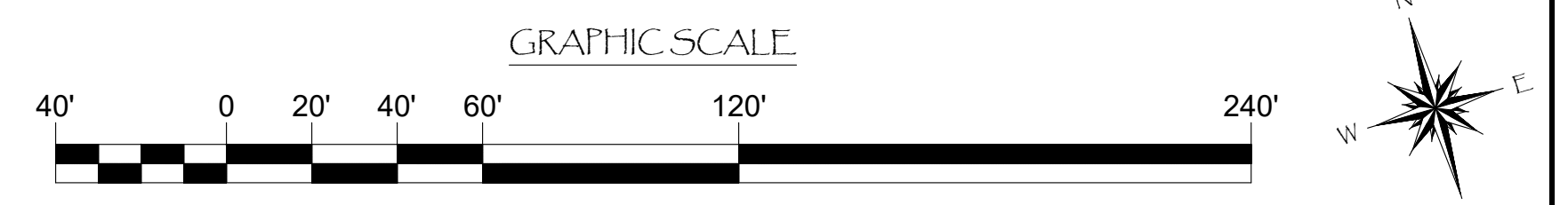
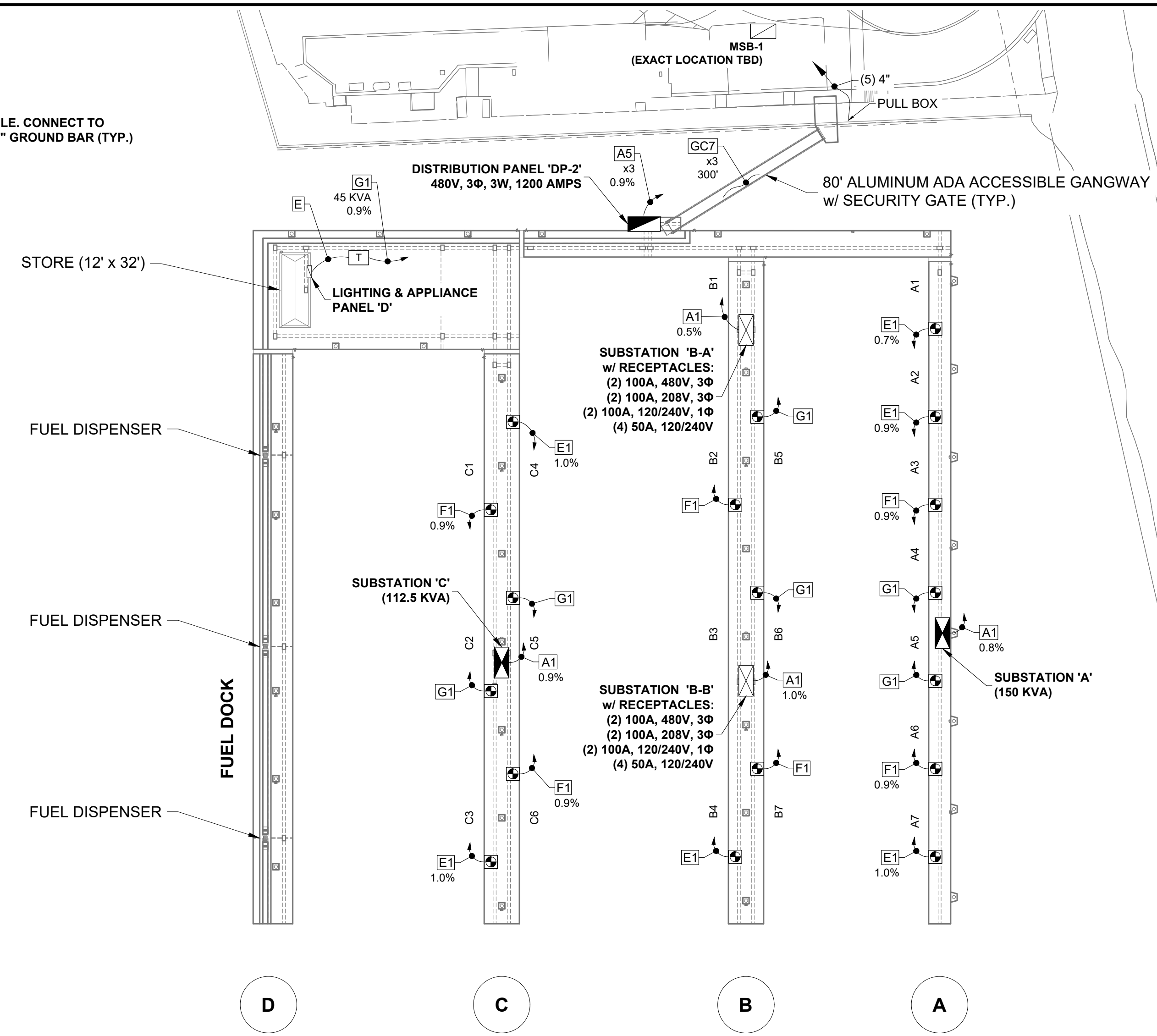
PERMIT DRAWING



* = #1 - 3 COND. TYPE 'G' CABLE. CONNECT TO (E) FEEDER & ADD 5/8" x 8" GROUND BAR (TYP.)

CHARTER DOCKS

OUTER BASIN



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED

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Hadi Tabatabaee
 BUILDING OFFICIAL

NOTE:
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NO.	DATE	REVISIONS DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED SPORTFISHING/ ADDED EXISTING RELOCATED	KG

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SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

ELECTRICAL LAYOUT FOR OUTER BASIN DOCKS

Date Signed: May 18, 2022

SCALE: 1" = 40'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: E13
 SHEET NO.: 75

A

PANEL: W1 120/208V, 3Φ, 4W 22 KAIC. 225 AMP 100% RATED MAIN CIRCUIT BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA. Includes subtotals and demand factors.

PANEL: W2 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA. Includes subtotals and demand factors.

PANEL: W3 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA. Includes subtotals and demand factors.

PANEL: W4 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA. Includes subtotals and demand factors.

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Hadi Tabatabaee BUILDING OFFICIAL

9/14/2022

9/14/2022

PANEL: W5 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA. Includes subtotals and demand factors.

PANEL: W6 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA. Includes subtotals and demand factors.

PANEL: W7 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA. Includes subtotals and demand factors.

PANEL: W8 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA. Includes subtotals and demand factors.

REVISIONS table with columns: NO., DATE, DESCRIPTION, BY.

Bellingham MARINE logo and text: THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER.

SOUTHWEST DIVISION CA LICENSE #442499 8810 SPARKLING LANE DIXON, CA 95620 TEL: (707) 678-2385 FAX: (707) 678-1760

PROJECT NUMBER: 7341 ENGINEER / DESIGNER: PROJECT MANAGER: CHECKED BY:

DANA POINT HARBOR REVITALIZATION Harbor Drive Dana Point, CA 92629 ELECTRICAL PANEL SCHEDULES

Professional Engineer Seal for Hadi Tabatabaee, No. E-16945, Exp. 4-30-2023.

SCALE: NTS (Sheet Size 24" x 36") DRAWN BY: KG DATE: 5/10/2022 DRAWING: E14 SHEET NO.: 76

PANEL: W9 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: W10 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: W11 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: W12 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: W13 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: W14 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: W15 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: W16 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

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9/14/2022

9/14/2022

Table with columns: NO., DATE, DESCRIPTION, REVISIONS, KG BY.

Bellingham MARINE logo and contact information: SOUTHWEST DIVISION CA LICENSE #442499 8810 SPARLING LANE DIXON, CA 95620 TEL: (707) 678-2385 FAX: (707) 678-1760

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PROJECT NUMBER: 7341 ENGINEER / DESIGNER: PROJECT MANAGER: CHECKED BY:

DANA POINT HARBOR REVITALIZATION Harbor Drive Dana Point, CA 92629 ELECTRICAL PANEL SCHEDULES

Professional Engineer Seal: REGISTERED PROFESSIONAL ENGINEER No. E-16945 EXP. 4-30-2025 Date Signed: May 16, 2022

SCALE: NTS (Sheet Size 24" x 36") DRAWN BY: KG DATE: 5/10/2022 DRAWING: E15 SHEET NO.: 77

PERMIT DRAWING

PANEL: W17		120/208V, 3Φ, 4W										22 KAIC	
400 AMP MAIN BREAKER					TRANSFORMER: 112.5 KVA								
	KVA	CB	CKT	A	B	C	CKT	CB	KVA				
SLIPS W17-21 to W17-23	5.76	60	1	11.52			2	60	5.76	SLIPS W17-4 to W17-6			
	5.76	3	5			11.52	6	3	5.76				
SLIPS W17-18 to W17-20	5.76	60	7	11.52			8	60	5.76	SLIPS W17-11 to W17-13			
	5.76	3	11			11.52	12	3	5.76				
SLIPS W17-15 to W17-17	5.76	60	13	11.52			14	60	5.76	SLIPS W17-43 to W17-48			
	5.76	3	17			11.52	18	3	5.76				
SLIPS W17-13 to W17-14	5.76	60	19	11.52			20	60	5.76	SLIPS W17-37 to W17-42			
	5.76	3	23			11.52	24	3	5.76				
SLIPS W17-10 to W17-12	5.76	60	25	11.52			26	60	5.76	SLIPS W17-31 to W17-36			
	5.76	3	29			11.52	30	3	5.76				
SLIPS W17-7 to W17-9	5.76	60	31	11.52			32	60	5.76	SLIPS W17-25 to W17-30			
	5.76	3	35			11.52	36	3	5.76				
* WASTE PUMP 3HP	1.27	30	37	8.32			38	100	8.32	SLIPS W17-24 & W17-49			
	1.27	3	41			8.32	40	2	8.32				
	1.27	3	41			8.32	40	2	8.32	* LIGHTS			
SUBTOTAL:				77.44			69.12						
CONNECTED LOAD, SHORE POWER:	224,000				224		TOTAL RECEPTS: 52						
DEMAND FACTOR, NEC 555.12 NOTE 2: .36			0.36		DEMAND FACTOR: 0.36								
DEMAND LOAD, SHORE POWER:	80,640				80.64		KVA						
OTHER LOAD: 4,104			4,104		KVA								
25% LIGHTING LOAD			0.0735		KVA								
25% LARGEST MOTOR			0.9525		KVA								
TOTAL LOAD			85.77		KVA								
TOTAL LOAD: 85,770 VA = 238A @ 208V, 3Φ													
* = NOT INCLUDED IN SHORE POWER DEMAND													

PANEL: W18-A		120/240V, 1Φ, 3W										22 KAIC	
400 AMP MAIN BREAKER					TRANSFORMER: 100 KVA								
	KVA	CB	CKT	A	B	CKT	CB	KVA					
SLIPS W18-20 & W18-44	9.6	100	1	14.4			2	60	4.8	SLIP W18-17			
	9.6	2	3			14.4	4	2	4.8				
SLIP W18-19	4.8	60	5	9.6			6	60	4.8	SLIP W18-16			
	4.8	2	7			9.6	8	2	4.8				
SLIP W18-18	4.8	60	9	9.6			10	60	4.8	SLIP W18-15			
	4.8	2	11			9.6	12	2	4.8				
SLIPS W18-42 & W18-43	5.76	60	13	11.52			14	60	5.76	SLIPS W18-38 & W18-39			
	5.76	2	15			11.52	16	2	5.76				
SLIPS W18-40 & W18-41	5.76	60	17	11.52			18	60	5.76	SLIPS W18-36 & W18-37			
	5.76	2	19			11.52	20	2	5.76				
			21			22							
			23			24							
			25			26							
			27			28							
			29			30							
			31			32							
			33			34							
			35			36							
			37			38							
			39			40							
			41			42	20	1	0.084	* LIGHTS			
SUBTOTAL:				56.64			56.64						
CONNECTED LOAD, SHORE POWER:	113,280				113.28		TOTAL RECEPTS: 23						
DEMAND FACTOR, NEC 555.12 NOTE 2: .63			0.63		DEMAND FACTOR: 0.63								
DEMAND LOAD, SHORE POWER:	71,366				71.3664		KVA						
OTHER LOAD: 84			0.084		KVA								
25% LIGHTING LOAD			0.021		KVA								
25% LARGEST MOTOR			0		KVA								
TOTAL LOAD			71.4714		KVA								
TOTAL LOAD: 71,474 VA = 298A @ 240V, 1Φ													
* = NOT INCLUDED IN SHORE POWER DEMAND													

PANEL: W18-B		120/240V, 1Φ, 3W										22 KAIC	
400 AMP MAIN BREAKER					TRANSFORMER: 100 KVA								
	KVA	CB	CKT	A	B	CKT	CB	KVA					
SLIP W18-14	4.8	60	1	9.6			2	60	4.8	SLIP W18-10			
	4.8	2	3			9.6	4	2	4.8				
SLIP W18-13	4.8	60	5	9.6			6	60	4.8	SLIP W18-9			
	4.8	2	7			9.6	8	2	4.8				
SLIP W18-12	4.8	60	9	9.6			10	60	4.8	SLIP W18-8			
	4.8	2	11			9.6	12	2	4.8				
SLIP W18-11	4.8	60	13	10.56			14	60	5.76	SLIPS W18-30 & W18-31			
	4.8	2	15			10.56	16	2	5.76				
SLIPS W18-34 & W18-35	5.76	60	17	11.52			18	60	5.76	SLIPS W18-28 & W18-29			
	5.76	2	19			11.52	20	2	5.76				
SLIPS W18-32 & W18-33	5.76	60	21	5.76			22						
	5.76	2	23			5.76	24						
			25			26							
			27			28							
			29			30							
			31			32							
			33			34							
			35			36							
			37			38							
			39			40							
			41			42	20	1	0.09	* LIGHTS			
SUBTOTAL:				56.64			56.64						
CONNECTED LOAD, SHORE POWER:	113,280				113.28		TOTAL RECEPTS: 23						
DEMAND FACTOR, NEC 555.12 NOTE 2: .63			0.63		DEMAND FACTOR: 0.63								
DEMAND LOAD, SHORE POWER:	71,366				71.3664		KVA						
OTHER LOAD: 90			0.09		KVA								
25% LIGHTING LOAD			0.0225		KVA								
25% LARGEST MOTOR			0		KVA								
TOTAL LOAD			71.4789		KVA								
TOTAL LOAD: 71,478 VA = 298A @ 240V, 1Φ													
* = NOT INCLUDED IN SHORE POWER DEMAND													

PANEL: W18-C		120/240V, 1Φ, 3W										22 KAIC	
400 AMP MAIN BREAKER					TRANSFORMER: 100 KVA								
	KVA	CB	CKT	A	B	CKT	CB	KVA					
SLIP W18-7	4.8	60	1	9.6			2	60	4.8	SLIP W18-3			
	4.8	2	3			9.6	4	2	4.8				
SLIP W18-6	4.8	60	5	9.6			6	60	4.8	SLIP W18-2			
	4.8	2	7			9.6	8	2	4.8				
SLIP W18-5	4.8	60	9	9.6			10	60	4.8	SLIP W18-1			
	4.8	2	11			9.6	12	2	4.8				
SLIP W18-4	4.8	60	13	10.56			14	60	5.76	SLIPS W18-24 & W18-25			
	4.8	2	15			10.56	16	2	5.76				
SLIPS W18-26 & W18-27	5.76	60	17	11.52			18	60	5.76	SLIPS W18-22 & W18-23			
	5.76	2	19			11.52	20	2	5.76				
* WASTE PUMP 3HP	1.9	30	21	2.88			22	60	2.88	SLIP W18-21			
	1.9	2	23			2.88	24	2	2.88				
			25			26							
			27			28							
			29			30							
			31			32							
			33			34							
			35			36							
			37			38							
			39			40							
			41			42	20	1	0.084	* LIGHTS			
SUBTOTAL:				50.88			53.76						
CONNECTED LOAD, SHORE POWER:	104,640				104.64		TOTAL RECEPTS: 21						
DEMAND FACTOR, NEC 555.12 NOTE 2: .63			0.63		DEMAND FACTOR: 0.63								
DEMAND LOAD, SHORE POWER:	65,923				65.9232		KVA						
OTHER LOAD: 3,884			3.884		KVA								
25% LIGHTING LOAD			0.021		KVA								
25% LARGEST MOTOR			0		KVA								
TOTAL LOAD			69.8282		KVA								
TOTAL LOAD: 69,828 VA = 291A @ 240V, 1Φ													
* = NOT INCLUDED IN SHORE POWER DEMAND													

PANEL: W19		120/240V, 1Φ, 3W										22 KAIC	
800 AMP MAIN BREAKER					TRANSFORMER: 250 KVA								
	KVA	CB	CKT	A	B	CKT	CB	KVA					
SLIP W19-23	9.6	100	1	19.2			2	100	9.6	SLIPS W19-1 & W19-2			
	9.6	2	3			19.2	4	2	9.6				
SLIP W19-24	9.6	100	5	19.2			6	100	9.6	SLIPS W19-3 & W19-4			
	9.6	2	7			19.2	8	2	9.6				
SLIP W19-25	9.6	100	9	19.2			10	60	9.6	SLIPS W19-5 & W19-6			
	9.6	2	11			19.2	12	2	9.6				
SLIP W19-26	9.6	100	13	19.2			14	60	9.6	SLIPS W19-7 & W19-8			
	9.6	2	15			19.2	16	2	9.6				
SLIP W19-27	9.6	100	17	19.2			18	60	9.6	SLIPS W19-9 & W19-10			
	9.6	2	19			19.2	20	2	9.6				
SLIP W19-28	9.6	100	21	19.2			22	60	9.6	SLIPS W19-11 & W19-12			
	9.6	2	23			19.2	24	2	9.6				
SLIP W19-29	9.6	100	25	19.2			26	100					

PERMIT DRAWING

PANEL: LD1 - LD5 (Outer Basin/ Charter Docks) 120/240V, 1Φ, 3W 22 KAIC. 125 AMP MAIN BREAKER. TRANSFORMER: 25 KVA. Includes circuit list with KVA, CB, CKT, A, B, C, KVA columns and load summary.

PANEL: SF (Outer Basin/ Sportfishing Docks) 120/240V, 1Φ, 3W 22 KAIC. 225 AMP MAIN BREAKER. TRANSFORMER: 50 KVA. Includes circuit list with KVA, CB, CKT, A, B, C, KVA columns and load summary.

PANEL: BD1 120/208V, 3Φ, 4W 22 KAIC. 600 AMP MAIN BREAKER. TRANSFORMER: 225 KVA. Includes circuit list with KVA, CB, CKT, A, B, C, KVA columns and load summary.

PANEL: BFD1 120/208V, 3Φ, 4W 22 KAIC. 600 AMP MAIN BREAKER. TRANSFORMER: 225 KVA. Includes circuit list with KVA, CB, CKT, A, B, C, KVA columns and load summary.

PANEL: DPE-1 480V, 3Φ, 3W 22 KAIC. 800 AMP MAIN BREAKER. Includes circuit list with KVA, CB, CKT, A, B, C, KVA columns and load summary.

PANEL: DPE-4 480V, 3Φ, 3W 22 KAIC. 800 AMP MAIN BREAKER. Includes circuit list with KVA, CB, CKT, A, B, C, KVA columns and load summary.

PANEL: DPE-6 480V, 3Φ, 3W 22 KAIC. 600 AMP MAIN BREAKER. Includes circuit list with KVA, CB, CKT, A, B, C, KVA columns and load summary.

PANEL: DPE-10 480V, 3Φ, 3W 22 KAIC. 800 AMP MAIN BREAKER. Includes circuit list with KVA, CB, CKT, A, B, C, KVA columns and load summary.

County of Orange - OC Public Works
OC Development Services
APPROVED
This set of plans and specifications are to be used on the job at all times. Has authority to make any changes or alterations to these plans without written permission from OC Public Works, OC Development Services of Orange County. The stamping was done with specifications SHALL NOT be held to permit or be an approval of any violation of any provisions of any County Ordinance or State Code.
Haji Tabatabaei
Haji Tabatabaei
Haji Tabatabaei

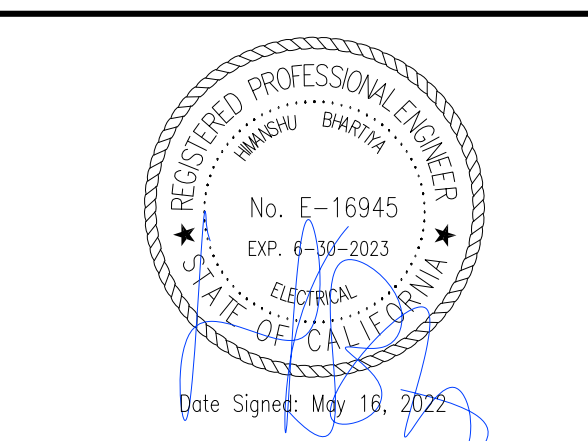
REVISIONS table with columns for NO., DATE, DESCRIPTION, and KG BY.

Bellingham MARINE logo and address: SOUTHWEST DIVISION CA LICENSE #442499 8810 SPARLING LANE DIXON, CA 95620

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629
ELECTRICAL PANEL SCHEDULES



SCALE: NTS (Sheet Size 24" x 36")
DRAWN BY: KG
DATE: 5/10/2022
DRAWING: E17
SHEET NO.: 79

PANEL: E1 120/208V, 3Φ, 4W 22 KAIC
SECONDARY PANEL: 400 AMP MAIN BREAKER TRANSFORMER: 75 KVA
Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA and rows for SLIPS E1-1 to E1-3, E1-4 to E1-6, E1-7 to E1-9, E1-10 to E1-12, E1-13 to E1-15, E1-16 to E1-18, E1-19 to E1-21, SUBTOTAL, and various load calculations.

PANEL: E2-B 120/240V, 1Φ, 3W 22 KAIC
600 AMP MAIN BREAKER TRANSFORMER: 167 KVA
Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA and rows for SLIPS E2-44 & E2-45, E2-46 & E2-47, E2-48 & E2-49, E2-50 & E2-51, E2-52 & E2-53, E2-54 & E2-55, E2-56, SUBTOTAL, and various load calculations.

PANEL: E2-A 120/240V, 1Φ, 3W 22 KAIC
600 AMP MAIN BREAKER TRANSFORMER: 167 KVA
Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA and rows for SLIPS E2-30 & E2-31, E2-32 & E2-33, E2-34 & E2-35, E2-36 & E2-37, E2-38 & E2-39, E2-40 & E2-41, E2-42 & E2-43, * WASTE PUMP SHP, SUBTOTAL, and various load calculations.

PANEL: E3A-A 120/240V, 1Φ, 3W 22 KAIC
600 AMP MAIN BREAKER TRANSFORMER: 250 KVA
Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA and rows for SLIP E3-29, E3-30, E3-31, E3-32, E3-33, E3-34, E3-35, * WASTE PUMP SHP, SUBTOTAL, and various load calculations.

PANEL: E3A-B 120/240V, 1Φ, 3W 22 KAIC
600 AMP MAIN BREAKER TRANSFORMER: 250 KVA
Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA and rows for SLIP E3-36, E3-37, E3-38, E3-39, E3-40, E3-41, SUBTOTAL, and various load calculations. Includes a red stamp: 'County of Orange - OC Public Works OC Development Services APPROVED'.

PANEL: E3B-A 120/240V, 1Φ, 3W 22 KAIC
600 AMP MAIN BREAKER TRANSFORMER: 250 KVA
Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA and rows for SLIP E3-42, E3-43, E3-44, E3-45, E3-46, E3-47, SUBTOTAL, and various load calculations.

PANEL: E3B-B 120/240V, 1Φ, 3W 22 KAIC
600 AMP MAIN BREAKER TRANSFORMER: 250 KVA
Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA and rows for SLIP E3-48, E3-49, E3-50, E3-51, E3-52, E3-53, E3-27, SUBTOTAL, and various load calculations.

PANEL: E4 & E7 120/208V, 3Φ, 4W 22 KAIC
400 AMP MAIN BREAKER TRANSFORMER: 112.5 KVA
Table with columns for KVA, CB, CKT, A, B, C, CT, CB, KVA and rows for SLIPS E4-16 & E4-17, E4-13 to E4-15, E4-10 to E4-12, E4-7 to E4-9, E4-4 to E4-6, E4-1 to E4-3, SUBTOTAL, and various load calculations.

Table with columns: NO., DATE, UPDATED PANEL SCHEDULES DESCRIPTION, KG BY. Row 1: A, 2-25-22, REVISIONS.

Bellingham MARINE logo and text: 'THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER'.

SOUTHWEST DIVISION CA LICENSE #442499 8810 SPARLING LANE DIXON, CA 95620 TEL: (707) 678-2385 FAX: (707) 678-1760

PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629
ELECTRICAL PANEL SCHEDULES

Professional Engineer Seal for Hadi Tabatabaee, No. E-16945, Exp. 4-30-2025.

SCALE: NTS (Sheet Size 24" x 36")
DRAWN BY: KG
DATE: 5/10/2022
DRAWING: E18
SHEET NO.: 80

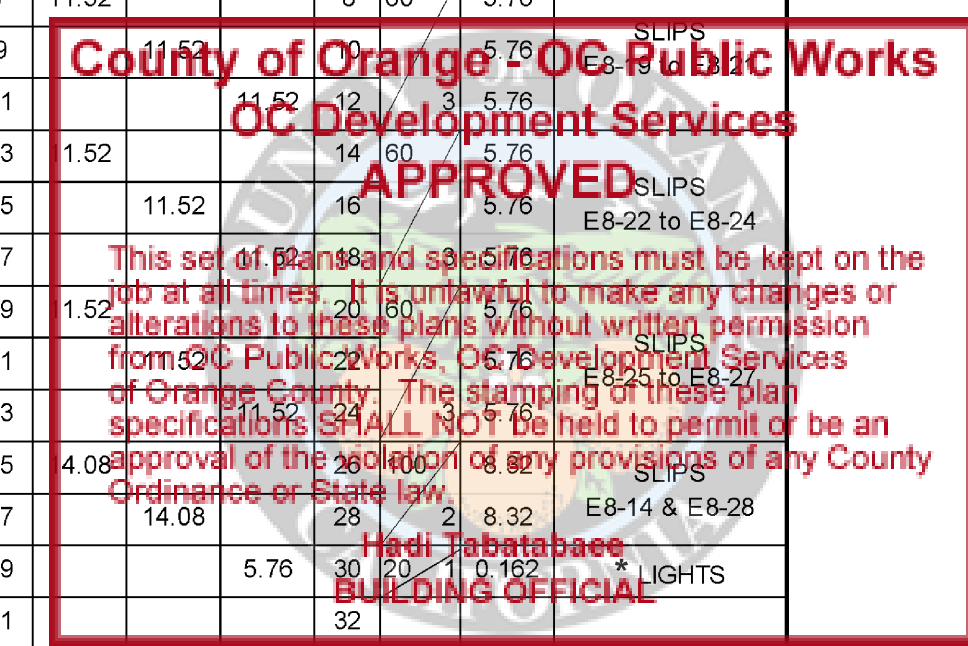
PERMIT DRAWING

PANEL: E5 120/208V, 3Φ, 4W 22 KAIC 400 AMP MAIN BREAKER TRANSFORMER: 11.5 KVA

PANEL: E6-A 120/240V, 1Φ, 3W 22 KAIC 700 AMP MAIN BREAKER TRANSFORMER: 167 KVA

PANEL: E6-B 120/240V, 1Φ, 3W 22 KAIC 700 AMP MAIN BREAKER TRANSFORMER: 167 KVA

PANEL: E8 120/208V, 3Φ, 4W 22 KAIC 400 AMP MAIN BREAKER TRANSFORMER: 112.5 KVA



PANEL: E9-C 120/240V, 1Φ, 3W 22 KAIC 700 AMP MAIN BREAKER TRANSFORMER: 167 KVA

PANEL: E10 120/208V, 3Φ, 4W 22 KAIC 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA

PANEL: E11-A 120/240V, 1Φ, 3W 22 KAIC 600 AMP MAIN BREAKER TRANSFORMER: 167 KVA

PANEL: E11-B 120/240V, 1Φ, 3W 22 KAIC 600 AMP MAIN BREAKER TRANSFORMER: 167 KVA

Table with 4 columns: NO., DATE, UPDATED PANEL SCHEDULES DESCRIPTION, KG BY

Bellingham MARINE logo and address: SOUTHWEST DIVISION CA LICENSE #442499 8810 SPARLING LANE DIXON, CA 95620

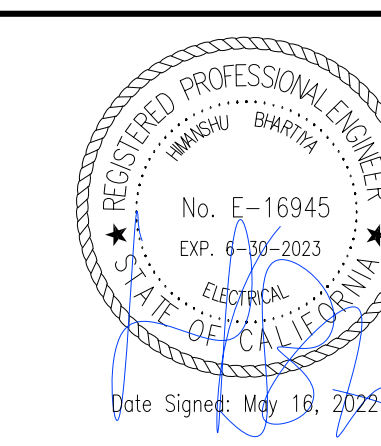
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PROJECT NUMBER: 7341 ENGINEER / DESIGNER: PROJECT MANAGER: CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive Dana Point, CA 92629

ELECTRICAL PANEL SCHEDULES



SCALE: NTS (Sheet Size 24" x 36") DRAWN BY: KG DATE: 5/10/2022 DRAWING: E19 SHEET NO.: 81

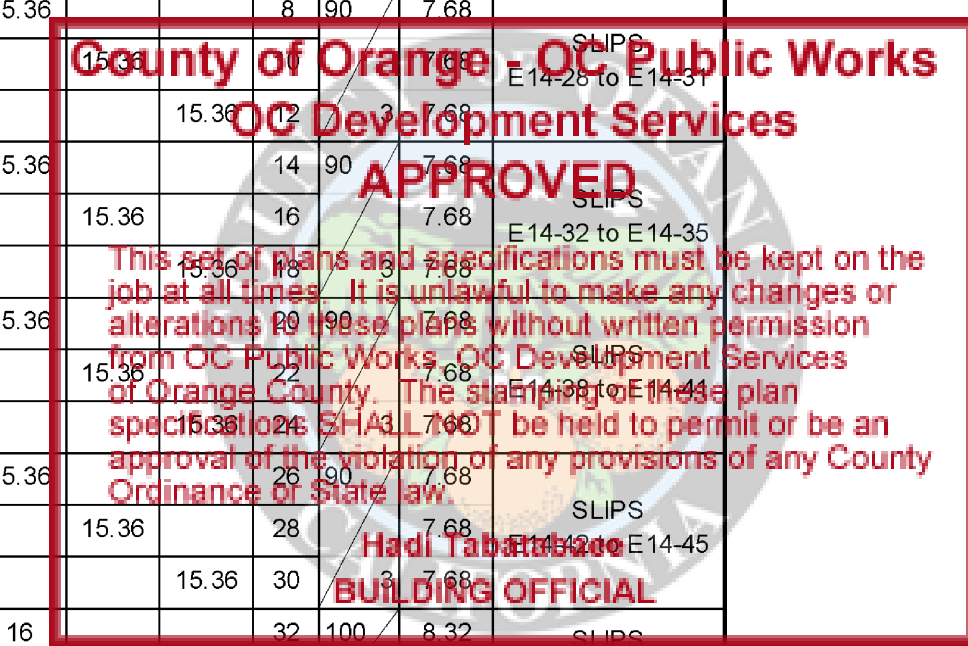
PERMIT DRAWING

PANEL: E12-A		120/240V, 1Φ, 3W						22 KAIC	
1000 AMP MAIN BREAKER			TRANSFORMER: 250 KVA						
	KVA	CB	CKT	A	B	CKT	CB	KVA	
SLIPS E12-12 & E12-13	9.6	100	1	19.2		2	100	9.6	
SLIPS E12-10 & E12-11	9.6	100	5	19.2		6	100	9.6	
SLIPS E12-8 & E12-9	9.6	100	9	19.2		10	100	9.6	
SLIPS E12-6 & E12-7	9.6	100	13	19.2		14	100	9.6	
SLIPS E12-4 & E12-5	9.6	100	17	19.2		18	100	9.6	
SLIPS E12-2 & E12-3	9.6	100	21	19.2		22	100	9.6	
SLIP E12-1	4.8	100	25	14.4		26	100	9.6	
SLIP E12-39	9.6	100	29	19.2		30	100	9.6	
SLIP E12-38	9.6	100	33	19.2		34	100	9.6	
SLIP E12-37	9.6	100	37	9.6		38	30	1.95	
			39			40	2	1.95	
			42	20		1	0.15		
SUBTOTAL:				177.6	177.6				
CONNECTED LOAD, SHORE POWER:				355,200		TOTAL RECEPTS: 37			
DEMAND FACTOR, NEC 555.12 NOTE 2:				.54					
DEMAND LOAD, SHORE POWER:				191.8	KVA				
OTHER LOAD:				4.050	KVA				
25% LIGHTING LOAD				0.038	KVA				
25% LARGEST MOTOR				1	KVA				
TOTAL LOAD				196.8955	KVA				
TOTAL LOAD:				196.9 KVA	=	820.4 A @ 240V, 1Φ			
* = NOT INCLUDED IN SHORE POWER DEMAND									

PANEL: E12-B		120/240V, 1Φ, 3W						22 KAIC	
1000 AMP MAIN BREAKER			TRANSFORMER: 250 KVA						
	KVA	CB	CKT	A	B	CKT	CB	KVA	
SLIPS E12-25 & E12-26	9.6	100	1	19.2		2	100	9.6	
SLIPS E12-23 & E12-24	9.6	100	5	19.2		6	100	9.6	
SLIPS E12-21 & E12-22	9.6	100	9	19.2		10	100	9.6	
SLIPS E12-19 & E12-20	9.6	100	13	19.2		14	100	9.6	
SLIPS E12-17 & E12-18	9.6	100	17	19.2		18	100	9.6	
SLIPS E12-15 & E12-16	9.6	100	21	19.2		22	100	9.6	
SLIP E12-14	4.8	100	25	14.4		26	100	9.6	
SLIP E12-51	9.6	100	29	19.2		30	100	9.6	
SLIP E12-50	9.6	100	33	19.2		34	100	9.6	
SLIP E12-49	9.6	100	37	9.6		38	30	1.95	
			39			40	2	1.95	
			41			42	20	0.15	
SUBTOTAL:				177.6	177.6				
CONNECTED LOAD, SHORE POWER:				355,200		TOTAL RECEPTS: 37			
DEMAND FACTOR, NEC 555.12 NOTE 2:				.54					
DEMAND LOAD, SHORE POWER:				191.8	KVA				
LIGHTING, OTHER LOAD:				150	KVA				
25% LIGHTING LOAD				0.038	KVA				
25% LARGEST MOTOR				1	KVA				
TOTAL LOAD				191.9955	KVA				
TOTAL LOAD:				192 KVA	=	799.98 A @ 240V, 1Φ			
* = NOT INCLUDED IN SHORE POWER DEMAND									

PANEL: E13		120/208V, 3Φ, 4W						22 KAIC		
400 AMP MAIN BREAKER			TRANSFORMER: 112.5 KVA							
	KVA	CB	CKT	A	B	C	CKT	CB	KVA	
SLIPS E13-1 to E13-4	7.68	90	1	15.36			2	90	7.68	
SLIPS E13-5 to E13-8	7.68	90	7	15.36			8	90	7.68	
SLIPS E13-9 to E13-12	7.68	90	13	15.36			14	90	7.68	
SLIPS E13-13, E13-14, & E13-36 & E13-37	7.68	90	19	15.36			20	90	7.68	
SLIPS E13-15 to E13-18	7.68	90	25	15.36			26	90	7.68	
SLIPS E13-19 to E13-22	7.68	90	31	15.36			32	100	8.32	
* WASTE PUMP 3HP	1.27	30	37				38			
	1.27	30	39				40			
	1.27	30	41				42	20	0.264	
SUBTOTAL:				92.8	92.8	84.48				
CONNECTED LOAD, SHORE POWER:				270,980		TOTAL RECEPTS: 88				
DEMAND FACTOR, NEC 555.12 NOTE 2:				.27						
DEMAND LOAD, SHORE POWER:				72.922	KVA					
OTHER LOAD:				4.074	KVA					
25% LIGHTING LOAD				0.07	KVA					
25% LARGEST MOTOR				1.5	KVA					
TOTAL LOAD				78.562	KVA					
TOTAL LOAD:				78.562 KVA	=	218.23 A @ 208V, 3Φ				
* = NOT INCLUDED IN SHORE POWER DEMAND										

PANEL: E14		120/208V, 3Φ, 4W						22 KAIC		
400 AMP MAIN BREAKER			TRANSFORMER: 112.5 KVA							
	KVA	CB	CKT	A	B	C	CKT	CB	KVA	
SLIPS E14-1 to E14-4	7.68	90	1	15.36			2	90	7.68	
SLIPS E14-5 to E14-8	7.68	90	7	15.36			8	90	7.68	
SLIPS E14-9 to E14-12	7.68	90	13	15.36			14	90	7.68	
SLIPS E14-13, E14-14, & E14-36 & E14-37	7.68	90	19	15.36			20	90	7.68	
SLIPS E14-15 to E14-18	7.68	90	25	15.36			26	90	7.68	
SLIPS E14-19 to E14-22	7.68	90	31	15.36			32	100	8.32	
* WASTE PUMP 3HP	1.27	30	37				38			
	1.27	30	39				40			
	1.27	30	41				42	20	0.264	
SUBTOTAL:				92.8	92.8	84.48				
CONNECTED LOAD, SHORE POWER:				270,980		TOTAL RECEPTS: 88				
DEMAND FACTOR, NEC 555.12 NOTE 2:				.27						
DEMAND LOAD, SHORE POWER:				72.922	KVA					
OTHER LOAD:				4.074	KVA					
25% LIGHTING LOAD				0.07	KVA					
25% LARGEST MOTOR				1.5	KVA					
TOTAL LOAD				78.562	KVA					
TOTAL LOAD:				78.562 KVA	=	218.23 A @ 208V, 3Φ				
* = NOT INCLUDED IN SHORE POWER DEMAND										



9/14/2022
9/14/2022

PANEL: E15		120/208V, 3Φ, 4W						22 KAIC		
400 AMP MAIN BREAKER			TRANSFORMER: 112.5 KVA							
	KVA	CB	CKT	A	B	C	CKT	CB	KVA	
SLIPS E15-1 to E15-3	5.76	60	1	11.52			2	60	5.76	
SLIPS E15-4 to E15-6	5.76	60	7	11.52			8	60	5.76	
SLIPS E15-7 to E15-10	5.76	60	13	13.44			14	60	5.76	
SLIPS E15-11 to E15-13	5.76	60	19	11.52			20	60	5.76	
SLIPS E15-14 to E15-16	5.76	60	25	11.52			26	60	5.76	
SLIPS E15-17 to E15-19	5.76	60	31	15.36			32	100	9.6	
* WASTE PUMP 3HP	1.27	30	37				38			
	1.27	30	39				40			
	1.27	30	41				42	20	0.21	
SUBTOTAL:				74.88	74.88	65.28				
CONNECTED LOAD, SHORE POWER:				215,040		TOTAL RECEPTS: 70				
DEMAND FACTOR, NEC 555.12 NOTE 2:				.36						
DEMAND LOAD, SHORE POWER:				77.415	KVA					
LIGHTING, OTHER LOAD:				4.020	KVA					
25% LIGHTING LOAD				0.05	KVA					
25% LARGEST MOTOR				1.5	KVA					
TOTAL LOAD				82.9875	KVA					
TOTAL LOAD:				82.988 KVA	=	230.52 A @ 208V, 3Φ				
* = NOT INCLUDED IN SHORE POWER DEMAND										

PANEL: E16		120/208V, 3Φ, 4W						22 KAIC		
225 AMP MAIN BREAKER			TRANSFORMER: 75 KVA							
	KVA	CB	CKT	A	B	C	CKT	CB	KVA	
SLIPS E16-26 to E16-31	5.76	60	1	11.52			2	60	5.76	
SLIPS E16-32 to E16-37	5.76	60	7	11.52			8	60	5.76	
SLIPS E16-38 to E16-43	5.76	60	13	11.52			14	60	5.76	
SLIPS E16-44 to E16-49	5.76	60	19	11.52			20	60	5.76	
			25				26	30	1.27	
			27				28		1.27	
			29				30	3	1.27	
			31				32			
			33				34			
			35				36			
			37	8.32			38	100	8.32	
			39		8.32		40	2	8.32	
			41				42	20	0.294	
SUBTOTAL:				54.4	54.4	46.08				
CONNECTED LOAD, SHORE POWER:				154,880		TOTAL RECEPTS: 50				
DEMAND FACTOR, NEC 555.12 NOTE 2:				.45						
DEMAND LOAD, SHORE POWER:				69.696	KVA					
LIGHTING, OTHER LOAD:				4.110	KVA					
25% LIGHTING LOAD				0.07	KVA					
25% LARGEST MOTOR					KVA					
TOTAL LOAD				73.8795	KVA					
TOTAL LOAD:				73.88 KVA	=	205.22 A @ 208V, 3Φ				
* = NOT INCLUDED IN SHORE POWER DEMAND										

PANEL: E17		120/208V, 3Φ, 4W						22 KAIC		
225 AMP MAIN BREAKER			TRANSFORMER: 75 KVA							
	KVA	CB	CKT	A	B	C	CKT	CB	KVA	
SLIPS E17-26 to E17-31	5.76	60	1	11.52			2	60	5.76	
SLIPS E17-32 to E17-37	5.76	60	7	11.52			8	60	5.76	
SLIPS E17-38 to E17-43	5.76	60	13	11.52			14	60	5.76	
SLIPS E17-44 to E17-49	5.76	60	19	11.52			20	60	5.76	
			25				26	30	1.27	
			27				28		1.27	
			29				30	3	1.27	
			31				32			
			33				34			
			35				36			
			37	8.32			38	100	8.32	
			39		8.32		40	2	8.32	
			41				42	20	0.294	
SUBTOTAL:				54.4	54.4	46.08				
CONNECTED LOAD, SHORE POWER:				154,880		TOTAL RECEPTS: 50				
DEMAND FACTOR, NEC 555.12 NOTE 2:				.45						
DEMAND LOAD, SHORE POWER:				69.696	KVA					
OTHER LOAD:				4.110	KVA					
25% LIGHTING LOAD				0.07	KVA					
25% LARGEST MOTOR					KVA					
TOTAL LOAD				73.8795	KVA					
TOTAL LOAD:				73.88 KVA	=	205.22 A @ 208V, 3Φ				
* = NOT INCLUDED IN SHORE POWER DEMAND										

PANEL: E18		120/208V, 3Φ, 4W						22 KAIC	
225 AMP MAIN BREAKER			TRANSFORMER: 75 KVA						
	KVA	CB	CKT	A	B	C	CKT	CB	KVA
SLIPS E18-26 to E18-31	5.76	60	1	11.52			2	60	5.76
SLIPS E18-32 to E18-37	5.76	60	7	11.52			8	60	

PERMIT DRAWING

PANEL: E19 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: E20 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: E21 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: E22 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: E23 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: E24 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: E25 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

PANEL: E26 120/208V, 3Φ, 4W 22 KAIC. 225 AMP MAIN BREAKER TRANSFORMER: 75 KVA. Table with columns for KVA, CB, CKT, A, B, C, CKT, CB, KVA. Includes subtotals and load calculations.

9/14/2022 Building & Safety: Roshanat Amirazizi Permits: BNR21-0604-EL22-0110-PLB22-0127 County of Orange, OC Public Works OC Development Services APPROVED. This set of plans and specifications must be kept on the job at all times. It is unlawful to make any changes or alterations to these plans without written permission from OC Public Works, OC Development Services of Orange County. The stamping for these plans specifies that HALB NO. 76 be held to permit or be an approval of the violation of any provisions of any County Ordinance or State law. Had, Tabatabaee BUILDING OFFICIAL

Table with columns: NO., DATE, UPDATED PANEL SCHEDULES DESCRIPTION, KG BY. Includes revision 2-25-22.

Bellingham MARINE logo and address: SOUTHWEST DIVISION CA LICENSE #442499 8810 SPARLING LANE DIXON, CA 95620 TEL: (707) 678-2385 FAX: (707) 678-1760

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PROJECT NUMBER: 7341 ENGINEER / DESIGNER: PROJECT MANAGER: CHECKED BY:

DANA POINT HARBOR REVITALIZATION Harbor Drive Dana Point, CA 92629 ELECTRICAL PANEL SCHEDULES

Professional Engineer Seal: No. E-16945 Exp. 4-30-2025 Date Signed: May 16, 2022

SCALE: NTS (Sheet Size 24" x 36") DRAWN BY: KG DATE: 5/10/2022 DRAWING: E21 SHEET NO.: 83

PERMIT DRAWING

PANEL: DP-2		120/208V, 3Φ, 4W										22 KAIC	
1200 AMP MAIN BREAKER					TRANSFORMER: 75 KVA								
	KVA	CB	CKT	A	B	C	CKT	CB	KVA				
SUBSTATION 'A' KVA	44.8	225	1	100.2			2	250	55.4	DISTRIBUTION UNIT 'B-A' 150 KVA			
	44.8	3	3	100.2			4	3	55.4				
	44.8	3	5			100.2	6	3	55.4				
SUBSTATION 'C' KVA	38.4	225	7	93.8			8	250	55.4	DISTRIBUTION UNIT 'B-B' 150 KVA			
	38.4	3	9	93.8			10	3	55.4				
	38.4	3	11			93.8	12	3	55.4				
			13	15			14	100	15	STORE TRANSFORMER 45 KVA			
			15	15			16	15	15				
			17		15	18	3	15					
			19				20						
			21				22						
			23				24						
			25				26						
			27				28						
			29				30						
			31				32						
			33				34						
			35				36						
			37				38						
			39				40						
			41				42	20	1	0.174	* LIGHTS		
SUBTOTAL:				209	209	209							
CONNECTED LOAD, SHORE POWER: 582,000.										TOTAL RECEPTS: 30			
DEMAND FACTOR, NEC 555.12 NOTE 2: .63													
DEMAND LOAD, SHORE POWER: 366,660.										367 KVA			
LIGHTING, OTHER LOAD: 45,000										45 KVA			
25% LIGHTING LOAD										1 KVA			
25% LARGEST MOTOR										1.5 KVA			
TOTAL LOAD										414.16 KVA			
TOTAL LOAD: 414.16 KVA = 498.39 A @ 480V, 3Φ													
* = NOT INCLUDED IN SHORE POWER DEMAND													

PANEL: A		120/208V, 3Φ, 4W										22 KAIC	
600 AMP MAIN BREAKER					TRANSFORMER: 150 KVA								
	KVA	CB	CKT	A	B	C	CKT	CB	KVA				
PEDESTAL 1	9.6	100	1	19.2			2	100	9.6	PEDESTAL 4			
	9.6	2	3	19.2			4	2	9.6				
PEDESTAL 2	9.6	100	5			19.2	6	100	9.6	PEDESTAL 5			
	9.6	2	7	19.2			8	2	9.6				
PEDESTAL 3	9.6	100	9			19.2	10	100	9.6	PEDESTAL 6			
	9.6	2	11			19.2	12	2	9.6				
			13	9.6			14	100	9.6	PEDESTAL 7			
			15	9.6			16	2	9.6				
			17				18						
			19				20						
			21				22						
			23				24						
			25				26						
			27				28						
			29				30						
			31				32						
			33				34						
			35				36						
			37				38						
			39				40						
			41				42	20	1	0.042	* LIGHTS		
SUBTOTAL:				48	48	38.4							
CONNECTED LOAD, SHORE POWER: 134,400.										TOTAL RECEPTS: 14			
DEMAND FACTOR, NEC 555.12 NOTE 2: .72													
DEMAND LOAD, SHORE POWER: 96,768.										96.8 KVA			
OTHER LOAD: 42.										0.04 KVA			
25% LIGHTING LOAD										0.01 KVA			
25% LARGEST MOTOR										KVA			
TOTAL LOAD										96.821 KVA			
TOTAL LOAD: 96.821 KVA = 268.95 A @ 208V, 3Φ													
TRANSFORMER PRIMARY: 480V = 117A, 3Φ													

PANEL: B-A		120/208V, 3Φ, 4W										22 KAIC	
600 AMP MAIN BREAKER					TRANSFORMER: 150 KVA								
	KVA	CB	CKT	A	B	C	CKT	CB	KVA				
100A, 3Φ RECEPTICAL	9.6	100	1	19.2			2	100	9.6	100A, 3Φ RECEPTICAL			
	9.6	3	3	19.2			4	3	9.6				
	9.6	3	5			19.2	6	3	9.6				
100A, 1Φ RECEPTICAL	9.6	100	7	19.2			8	100	9.6	100A, 1Φ RECEPTICAL			
	9.6	2	9	19.2			10	2	9.6				
50A RECEPTICAL	4.8	50	11			9.6	12	50	4.8	50A RECEPTICAL			
	4.8	2	13	9.6			14	2	4.8				
50A RECEPTICAL	4.8	50	15			9.6	16	50	4.8	50A RECEPTICAL			
	4.8	2	17	9.6			18	2	4.8				
50A-50A PEDESTAL	9.6	100	19	19.2			20	100	9.6	50A-50A PEDESTAL			
	9.6	2	21	19.2			22	2	9.6				
			23				24						
			25				26						
			27				28						
			29				30						
			31				32						
			33				34						
			35				36						
			37				38						
			39				40						
			41				42	20	1	0.018	* LIGHTS		
SUBTOTAL:				67.2	67.2	38.4							
CONNECTED LOAD, SHORE POWER: 172,800.										TOTAL RECEPTS: 12			
DEMAND FACTOR, NEC 555.12 NOTE 2: .72													
DEMAND LOAD, SHORE POWER: 124,416.										124 KVA			
OTHER LOAD: 18.										0.02 KVA			
25% LIGHTING LOAD										0.0045 KVA			
25% LARGEST MOTOR										KVA			
TOTAL LOAD										124.4385 KVA			
TOTAL LOAD: 124.44 KVA = 345.66 A @ 208V, 3Φ													
TRANSFORMER PRIMARY: 480V = 150A, 3Φ													

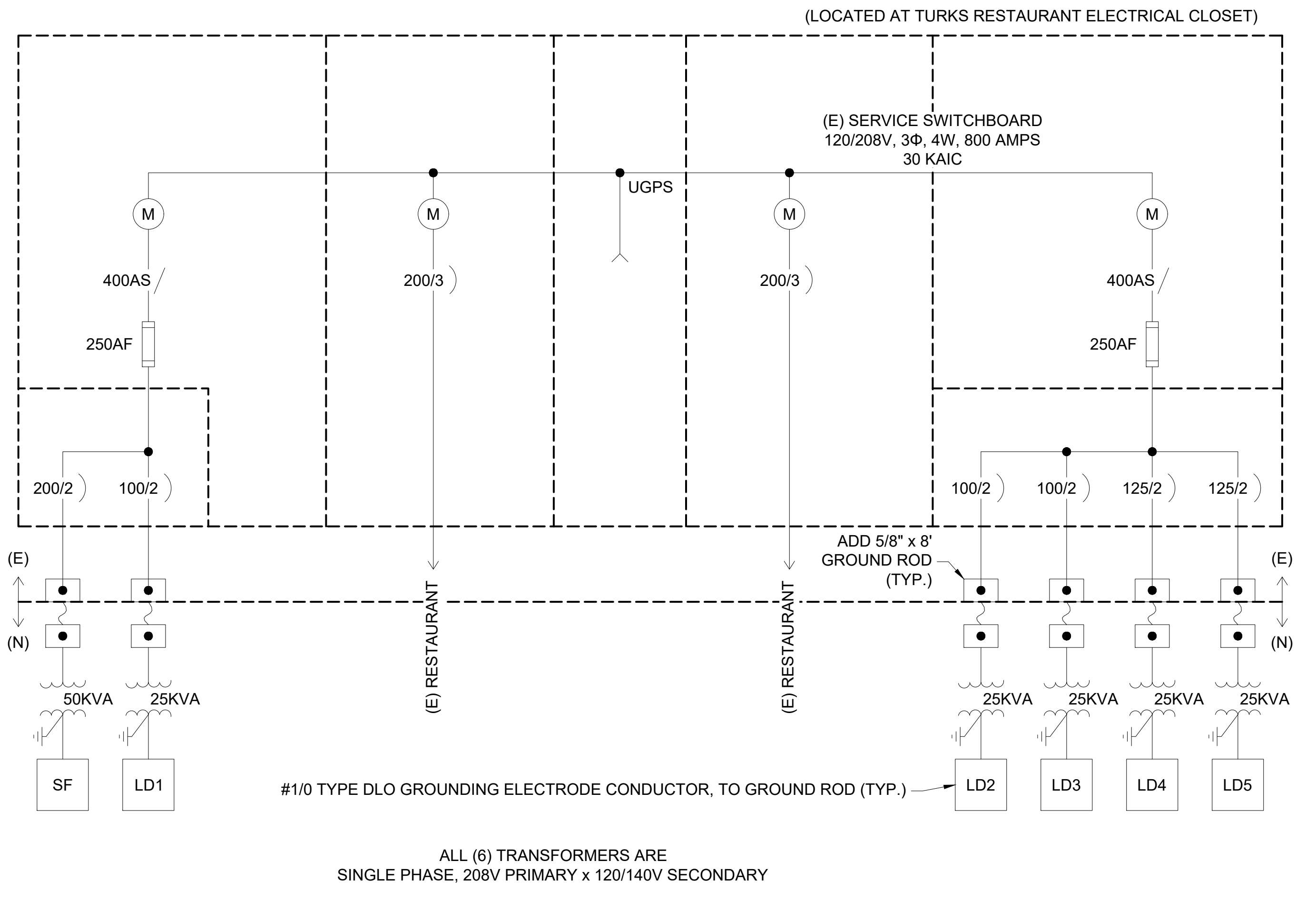
PANEL: B-B		120/208V, 3Φ, 4W										22 KAIC	
600 AMP MAIN BREAKER					TRANSFORMER: 150 KVA								
	KVA	CB	CKT	A	B	C	CKT	CB	KVA				
100A, 3Φ RECEPTICAL	9.6	100	1	19.2			2	100	9.6	100A, 3Φ RECEPTICAL			
	9.6	3	3	19.2			4	3	9.6				
	9.6	3	5			19.2	6	3	9.6				
100A, 1Φ RECEPTICAL	9.6	100	7	19.2			8	100	9.6	100A, 1Φ RECEPTICAL			
	9.6	2	9	19.2			10	2	9.6				
50A RECEPTICAL	4.8	50	11			9.6	12	50	4.8	50A RECEPTICAL			
	4.8	2	13	9.6			14	2	4.8				
50A RECEPTICAL	4.8	50	15			9.6	16	50	4.8	50A RECEPTICAL			
	4.8	2	17	9.6			18	2	4.8				
50A-50A PEDESTAL	9.6	100	19	19.2			20	100	9.6	50A-50A PEDESTAL			
	9.6	2	21	19.2			22	2	9.6				
			23				24						
			25				26						
			27				28						
			29				30						
			31				32						
			33				34						
			35				36						
			37				38						
			39				40						
			41				42	20	1	0.024	* LIGHTS		
SUBTOTAL:				76.8	67.2	48							
CONNECTED LOAD, SHORE POWER: 192,000.										TOTAL RECEPTS: 14			
DEMAND FACTOR, NEC 555.12 NOTE 2: .72													
DEMAND LOAD, SHORE POWER: 138,240.										138 KVA			
OTHER LOAD: 24.										0.02 KVA			
25% LIGHTING LOAD										0.0060 KVA			
25% LARGEST MOTOR										KVA			
TOTAL LOAD										138.27 KVA			
TOTAL LOAD: 138.27 KVA = 384.08 A @ 208V, 3Φ													
TRANSFORMER PRIMARY: 480V = 166A, 3Φ													

County of Orange, OC Public Works
OC Development Services
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BUILDING OFFICIAL

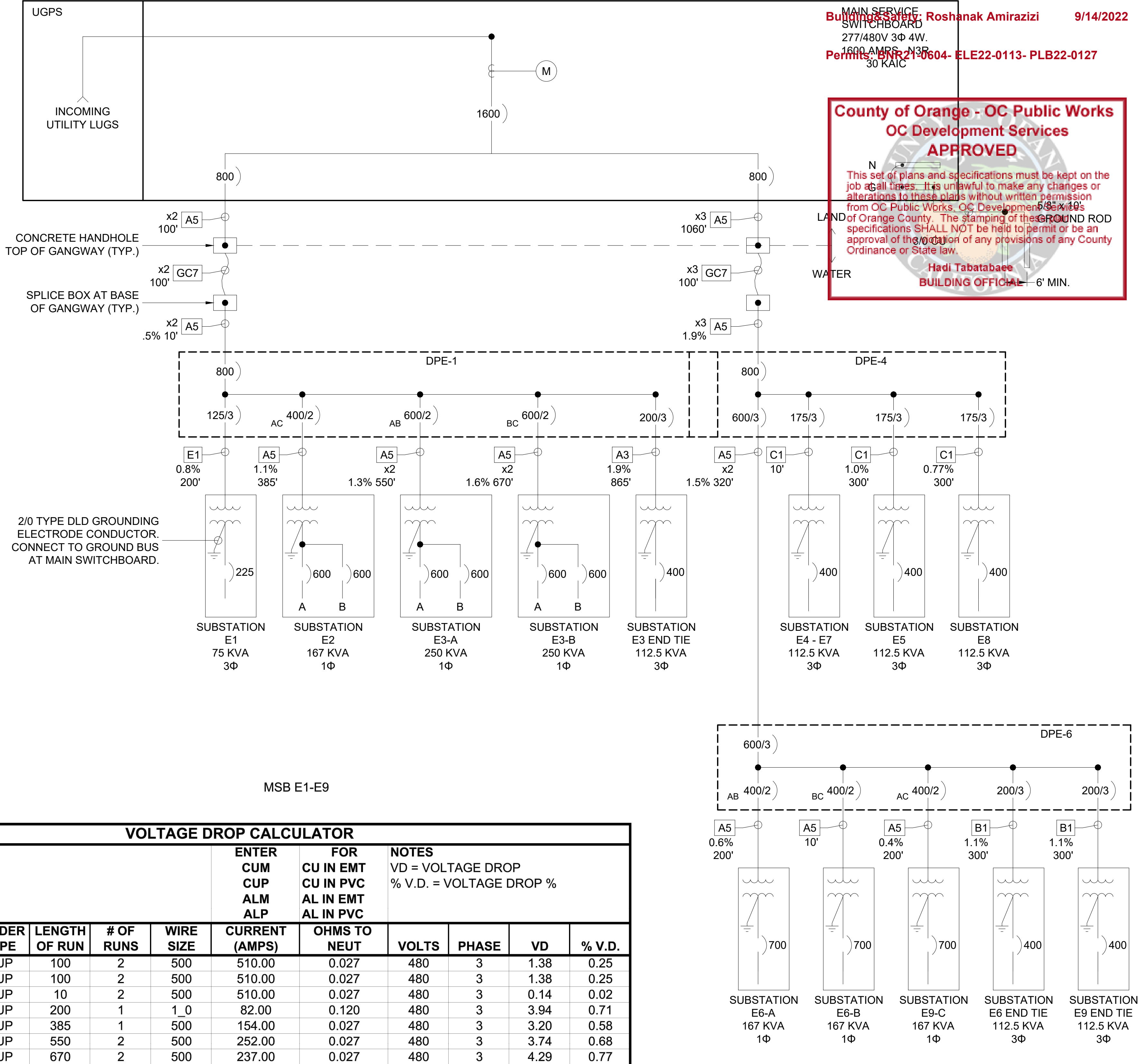
PANEL: C		120/208V, 3Φ, 4W										22 KAIC	
600 AMP MAIN BREAKER					TRANSFORMER: 150 KVA								
	KVA	CB	CKT	A	B	C	CKT	CB	KVA				
PEDESTAL 1	9.6	100	1	19.2			2	100	9.6	PEDESTAL 4			
	9.6	2	3	19.2			4	2	9.6				
PEDESTAL 2	9.6	100	5			19.2	6	100	9.6	PEDESTAL 5			
	9.6	2	7	19.2			8	2	9.6				
PEDESTAL 3	9.6	100	9			19.2	10	100	9.6	PEDESTAL 6			
	9.6	2	11			19.2	12	2	9.6				
			13				14						
			15				16						
			17				18						
			19				20						
			21				22						
			23				24						
			25				26						
			27				28						
			29				30						
			31				32						
			33				34						
			35				36						
			37				38						
			39				40						
			41				42	20	1	0.036	* LIGHTS		
SUBTOTAL:				38.4	38.4	38.4							
CONNECTED LOAD, SHORE POWER: 115,200.										TOTAL RECEPTS: 12			
DEMAND FACTOR, NEC 555.12 NOTE 2: .72													
DEMAND LOAD, SHORE POWER: 82,944.										82.9 KVA			
LIGHTING, OTHER LOAD: 36.										0.04 KVA			
25% LIGHTING LOAD										0.0090 KVA			
25% LARGEST MOTOR										KVA			
TOTAL LOAD										82.989 KVA			
TOTAL LOAD: 82.989 KVA = 230.53 A @ 208V, 3Φ													
TRANSFORMER PRIMARY: 480V = 100A, 3Φ													

PANEL: D		120/208V, 3Φ, 4W										22 KAIC	
125 AMP MAIN BREAKER					TRANSFORMER: 45 KVA								
	KVA	CB											

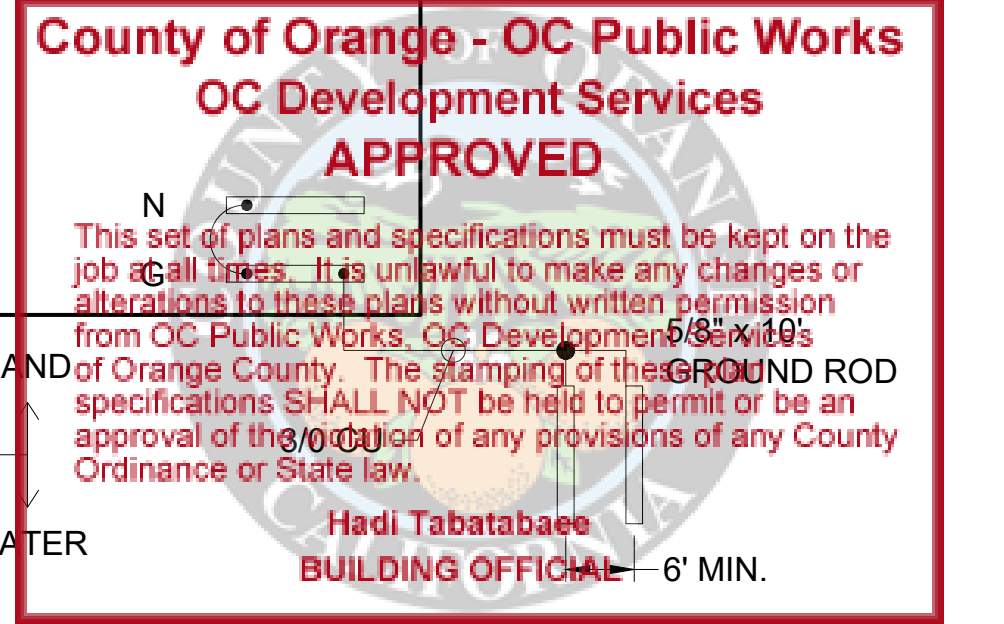
OUTER BASIN- CHARTER DOCKS



MSB E1 - E9



Zohreh E. Ghasseini 9/14/2022
 Building Designer: Roshanak Amirazizi 9/14/2022
 MAIN SERVICE SWITCHBOARD
 277/480V 3Φ 4W.
 1600 AMPS, NGR
 30 KAIC
 Permits: BNR2130604- ELE22-0113- PLB22-0127



PERMIT DRAWING

LOAD SUMMARY: MSB E1 - E9 277/480V, 1600 AMPS

SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
E1	172,620	60	0.36	62,143	6,400	68,543	82
E2	449,280	85	0.27	121,306	7,000	128,306	154
E3-A	374,400	39	0.54	202,176	6,850	209,026	252
E3-B	364,800	38	0.54	196,992	130	197,122	237
E3 END TIE	133,018	2	0.9	119,716		119,716	144
DPE-1	1,494,118	224	0.27	403,412	20,380	423,792	510
DPE-4	1,399,476	246	0.27	377,859	19,710	397,569	478
DPE-6	840,116	86	0.27	226,831	7,002	233,833	281
E4 & E7	184,320	64	0.36	66,355	6,384	73,739	89
E5	202,880	42	0.45	91,296	162	91,458	110
E6-A	201,600	21	0.63	127,008	78	127,086	153
E6-B	201,600	21	0.63	127,008	6,804	133,812	161
E8	172,160	54	0.36	61,978	6,162	68,140	82
E9-C	170,880	40	0.54	92,275	120	92,395	111
E6 END TIE	133,018	2	0.9	119,716		119,716	144
E9 END TIE	133,018	2	0.9	119,716		119,716	144
TOTAL:	6627304	1026	0.27	781,270	87182	821,360	988

VOLTAGE DROP CALCULATOR

MSB E1-E9

START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CURRENT (AMPS)	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB	HH	CUP	100	2	500	510.00	0.027	480	3	1.38	0.25
HH	SB	CUP	100	2	500	510.00	0.027	480	3	1.38	0.25
SB	DPE-1	CUP	10	2	500	510.00	0.027	480	3	0.14	0.02
DPE-1	E1	CUP	200	1	1_0	82.00	0.120	480	3	3.94	0.71
DPE-1	E2	CUP	385	1	500	154.00	0.027	480	3	3.20	0.58
DPE-1	E3-A	CUP	550	2	500	252.00	0.027	480	3	3.74	0.68
DPE-1	E3-B	CUP	670	2	500	237.00	0.027	480	3	4.29	0.77

ENTER: CUM CUP ALM ALP
 FOR: CU IN EMT CU IN PVC AL IN EMT AL IN PVC
 NOTES: VD = VOLTAGE DROP % V.D. = VOLTAGE DROP %

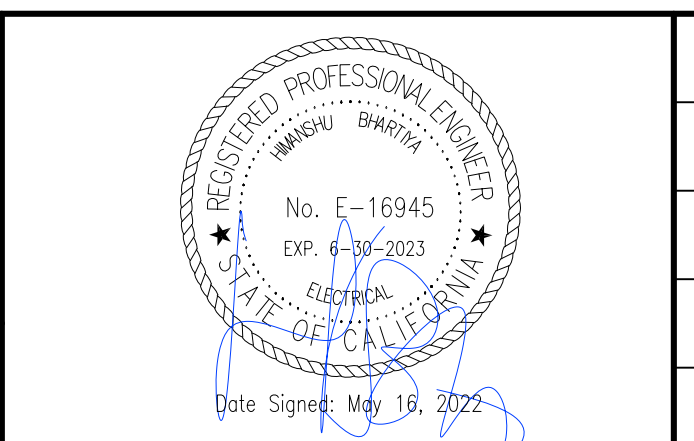
NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADDED VOLTAGE DROP CALCULATOR	KG
REVISIONS			

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER
 SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
ELECTRICAL SINGLE LINE DIAGRAMS & LOAD SUMMARIES



SCALE: NTS (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: E23
 SHEET NO.: 85

PERMIT DRAWING

LOAD SUMMARY: MSB E10 - E12 277/480V, 800 AMPS							
SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
E10	180,480	60	0.36	64,973	3,996	68,969	83
E11	421,440	82	0.27	113,789	4,224	118,013	142
E12-A	355,200	37	0.54	191,808	4,050	195,858	236
E12-B	355,200	37	0.54	191,808	150	191,958	231
E12 END TIE	133,018	2	0.9	119,716		119,716	144
TOTAL:	1445338	218	0.27	390,242	12420	402,662	485

LOAD SUMMARY: MSB E13 - E15 277/480V, 800 AMPS							
SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
E13	270,080	88	0.27	72,922	4,074	76,996	93
E14	270,080	88	0.27	72,922	4,074	76,996	93
E15	215,040	70	0.36	77,415	4,020	81,435	98
BD1	268,800	49	0.45	120,960	3,960	124,920	150
BFD1	273,920	46	0.45	123,264	3,948	127,212	153
TOTAL:	1297920	341	0.27	350,439	20076	370,515	446

LOAD SUMMARY: MSB E16 - E20 277/480V, 800 AMPS							
SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
E16	154,880	50	0.45	69,696	4110	73,806	89
E17	154,880	50	0.45	69,696	4110	73,806	89
E18	154,880	50	0.45	69,696	4110	73,806	89
E19	157,760	51	0.36	61,978	4110	73,806	89
E20	172,160	56	0.36	61,978	4110	73,806	89
TOTAL:	794560	257	0.27	214,532	16784	231,296	279

Zoning: CanningK
 Building & Safety: Deshaun K. Amrazizi
 Permits: BNR21-0604- ELE22-0113-PLB22-0127
 City of Orange - OC Public Works
 OC Development Services
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MSB E10-E12

MSB E13-E15

MSB E16-E20

VOLTAGE DROP CALCULATOR											
MSB E10-E12											
START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CURRENT (AMPS)	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB	HH	CUP	160	2	500	485.00	0.027	480	3	2.10	0.38
HH	SB	CUP	100	2	500	485.00	0.027	480	3	1.31	0.24
SB	DPE-10	CUP	10	2	500	485.00	0.027	480	3	0.13	0.02
DPE-10	E10	CUP	360	1	2_0	83.00	0.100	480	3	5.98	1.08
DPE-10	E12	CUP	880	1	350	142.00	0.038	480	3	9.50	1.71
DPE-10	E11	CUP	440	1	500	236.00	0.027	480	3	5.61	1.01
DPE-10	E12-A	CUP	520	2	500	231.00	0.027	480	3	3.24	0.59

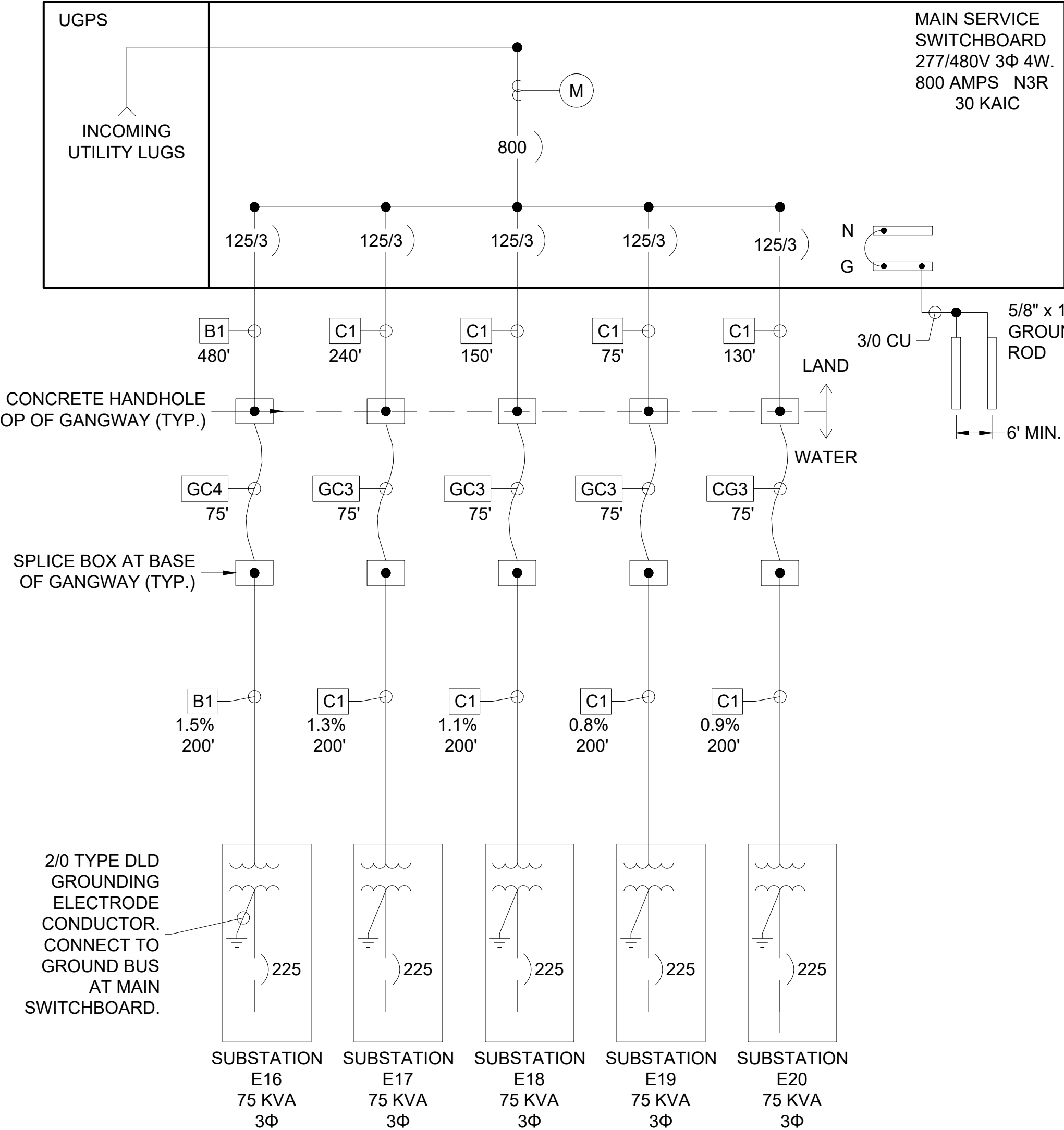
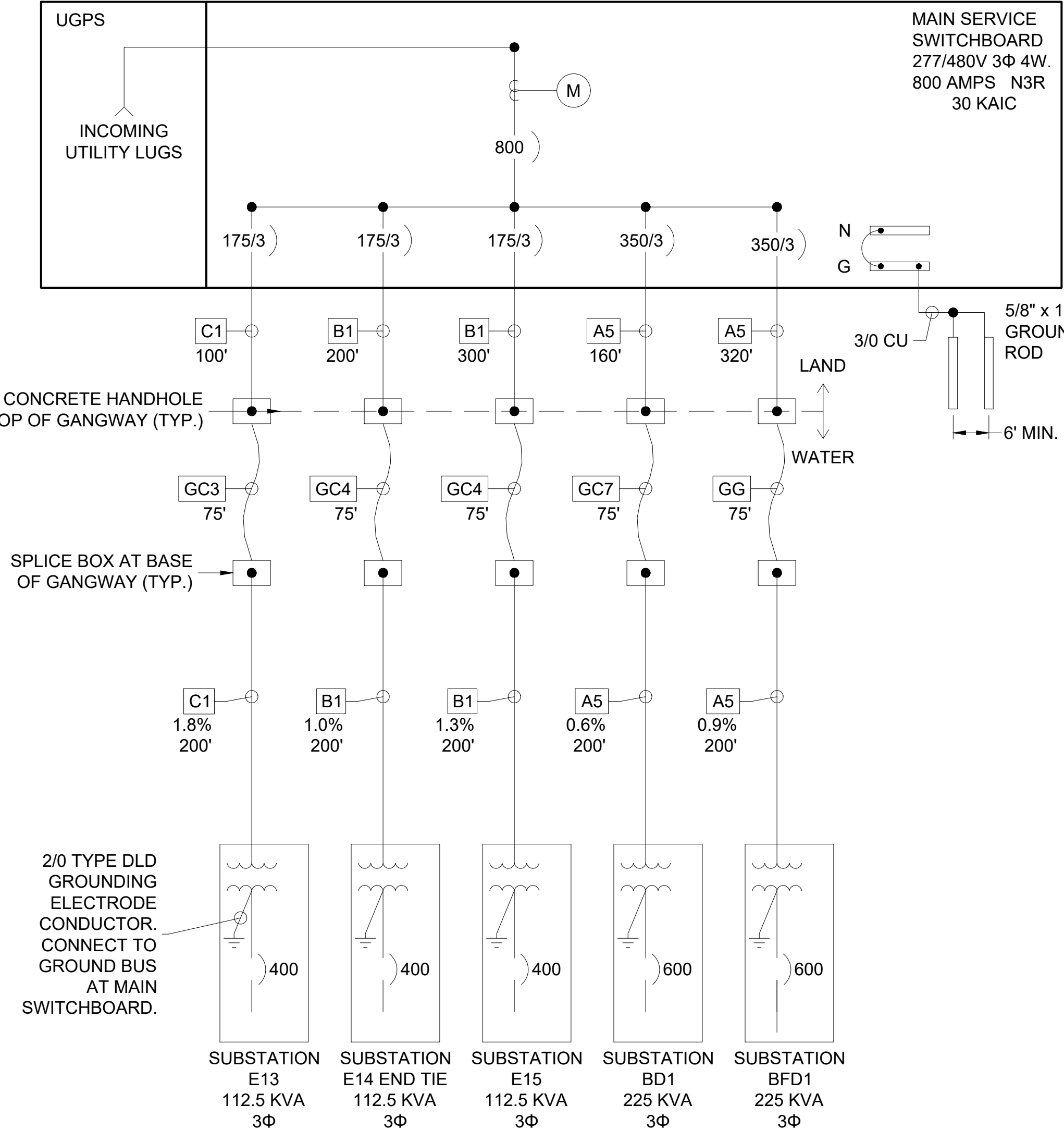
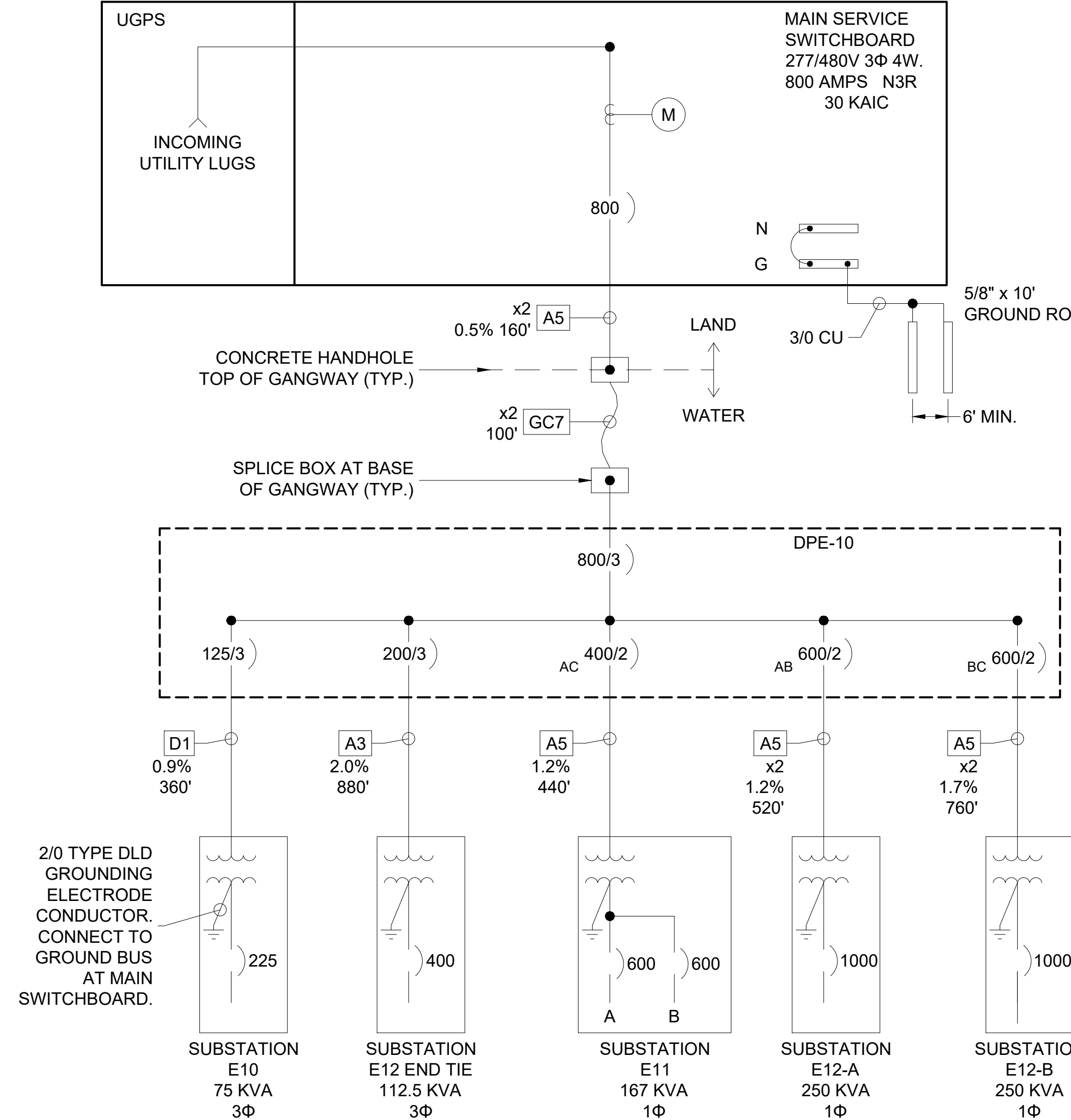
VOLTAGE DROP CALCULATOR											
MSB E13-E15											
START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CURRENT (AMPS)	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB	E13	CUP	475	1	3_0	93.00	0.077	480	3	6.80	1.23
MSB	E14	CUP	475	1	4_0	93.00	0.062	480	3	5.48	0.99
MSB	E15	CUP	575	1	4_0	98.00	0.062	480	3	6.99	1.26
MSB	BD1	CUP	435	1	500	150.00	0.027	480	3	3.52	0.64

VOLTAGE DROP CALCULATOR											
MSB E16-E20											
START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CURRENT (AMPS)	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB	E16	CUP	755	1	4_0	89.00	0.062	480	3	8.33	1.50
MSB	E17	CUP	515	1	3_0	89.00	0.077	480	3	7.06	1.27
MSB	E18	CUP	425	1	3_0	89.00	0.077	480	3	5.83	1.05
MSB	E19	CUP	350	1	3_0	74.00	0.077	480	3	3.99	0.72

MSB E10 - E12

MSB E13 - E15

MSB E16 - E20



NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADDED VOLTAGE DROP CALCULATOR	KG
		REVISIONS	

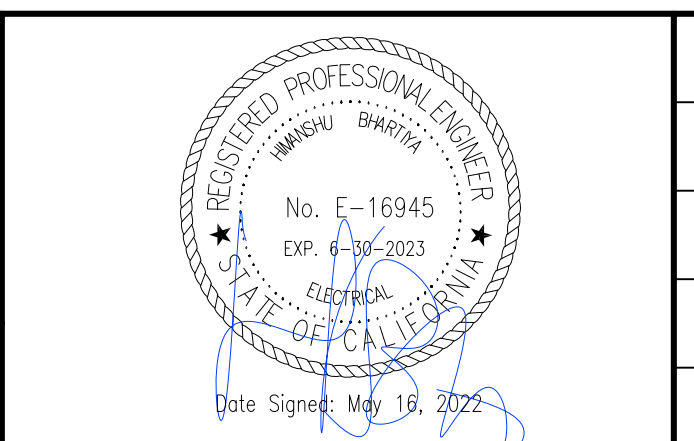


SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
ELECTRICAL SINGLE LINE DIAGRAMS & LOAD SUMMARIES



SCALE: NTS
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: E24
 SHEET NO.: 86

LOAD SUMMARY: MSB E21 - E26 277/480V, 800 AMPS

SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
E21	189,440	58	0.36	68,198	336	68,534	83
E22	189,440	58	0.36	68,198	336	68,534	83
E23	189,440	58	0.36	68,198	336	68,534	83
E24	189,440	58	0.36	68,198	336	68,534	83
E25	189,440	58	0.36	68,158	336	68,534	83
E26	86,400	29	0.63	54,432	174	54,606	66
TOTAL:	1033600	319	0.27	279,072	1854	280,926	338

LOAD SUMMARY: MSB W1 - W6 277/480V, 800 AMPS

SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
W1	144,000	50	0.45	64,800	4,104	68,904	83
W2	154,880	50	0.45	69,696	4,104	73,800	89
W3	154,880	50	0.45	69,696	4,104	73,800	89
W4	154,880	50	0.45	69,696	4,104	73,800	89
W5	154,880	50	0.45	69,696	4,104	73,800	89
W6	172,160	54	0.36	61,978	318	55,830	75
TOTAL:	935680	304	0.27	252,634	20838	273,472	329

LOAD SUMMARY: MSB W7 - W12 277/480V, 800 AMPS

SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
W7	172,160	56	0.36	61,978	330	62,308	75
W8	169,600	57	0.36	61,056	342	61,398	74
W9	169,600	57	0.36	61,056	342	61,398	74
W10	169,600	57	0.36	61,056	342	61,398	74
W11	169,600	57	0.36	61,056	342	61,398	74
W12	83,520	29	0.63	52,618	174	52,792	64
TOTAL:	934080	313	0.27	252,232	20772	272,196	326

MSB E21-E26

MSB W1-W6

MSB W7-W12

VOLTAGE DROP CALCULATOR

START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CURRENT (AMPS)	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB	E21	CUP	525	1	3_0	83.00	0.077	480	3	6.71	1.21
MSB	E22	CUP	425	1	3_0	83.00	0.077	480	3	5.43	0.98
MSB	E23	CUP	350	1	3_0	83.00	0.077	480	3	4.47	0.81
MSB	E24	CUP	425	1	3_0	83.00	0.077	480	3	5.43	0.98

VOLTAGE DROP CALCULATOR

START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CURRENT (AMPS)	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB	W1	CUP	400	1	3_0	83.00	0.077	480	3	5.11	0.92
MSB	W2	CUP	515	1	3_0	89.00	0.077	480	3	7.06	1.27
MSB	W3	CUP	650	1	3_0	89.00	0.077	480	3	8.91	1.61
MSB	W4	CUP	790	1	4_0	89.00	0.062	480	3	8.72	1.57

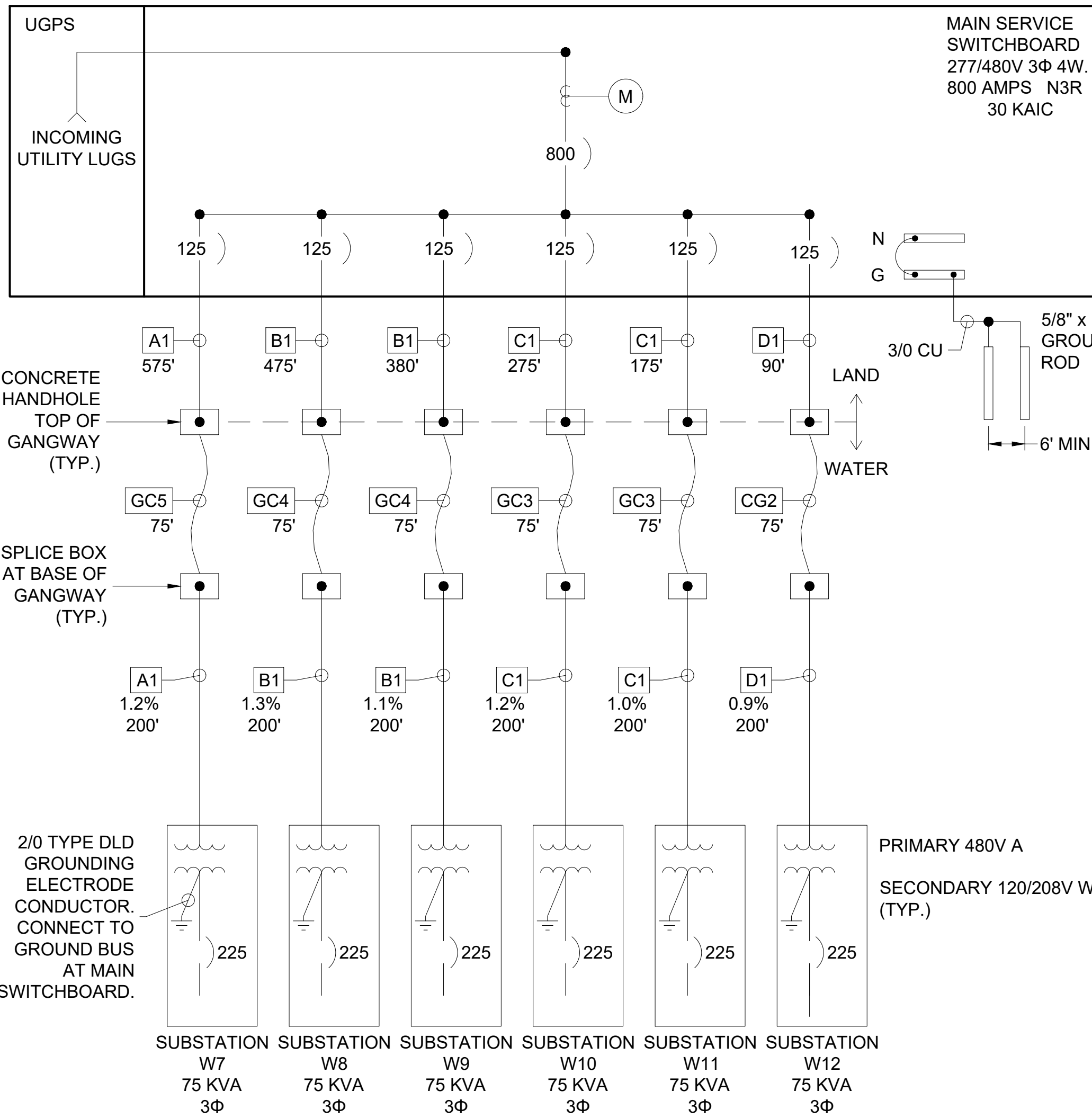
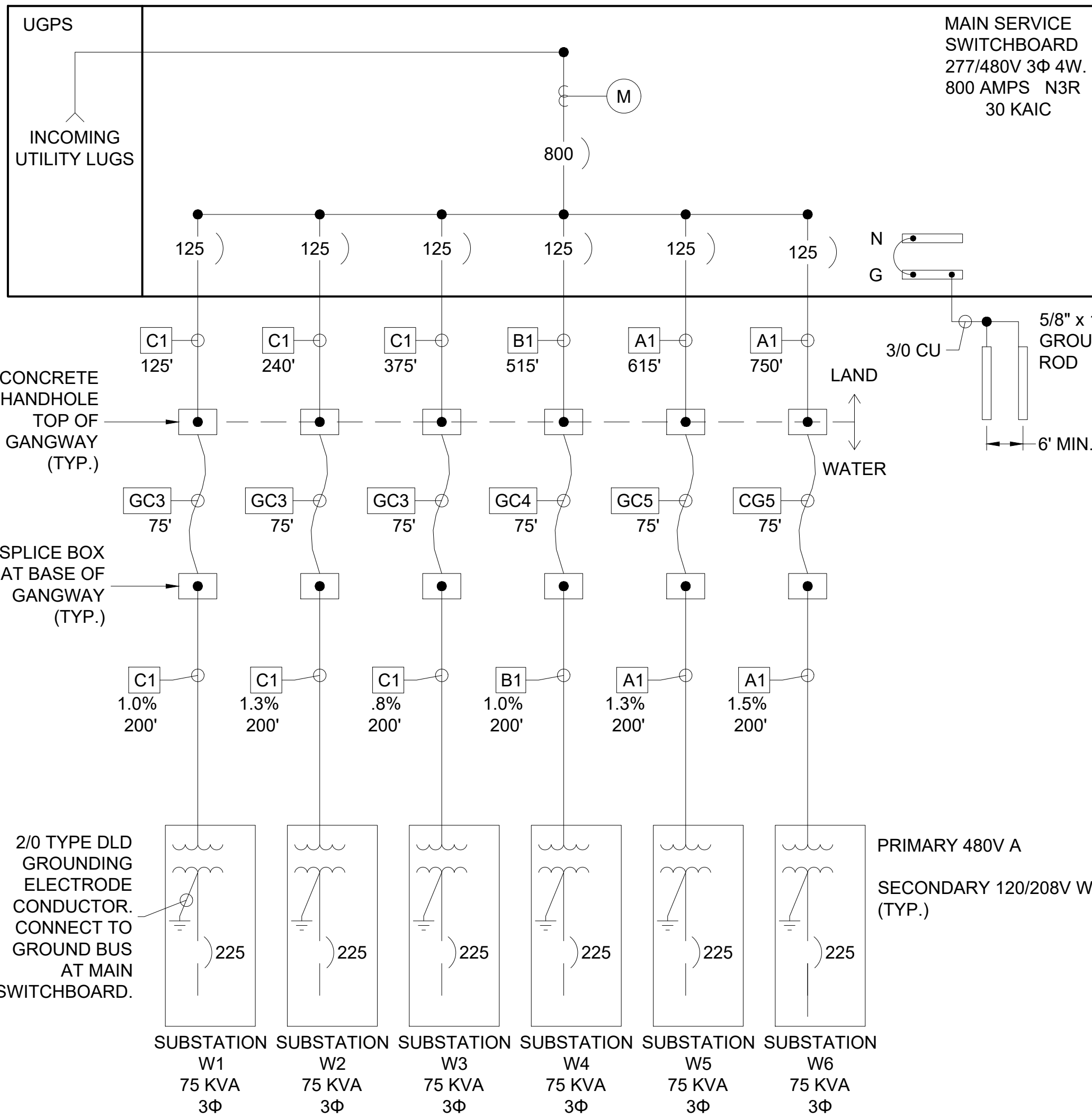
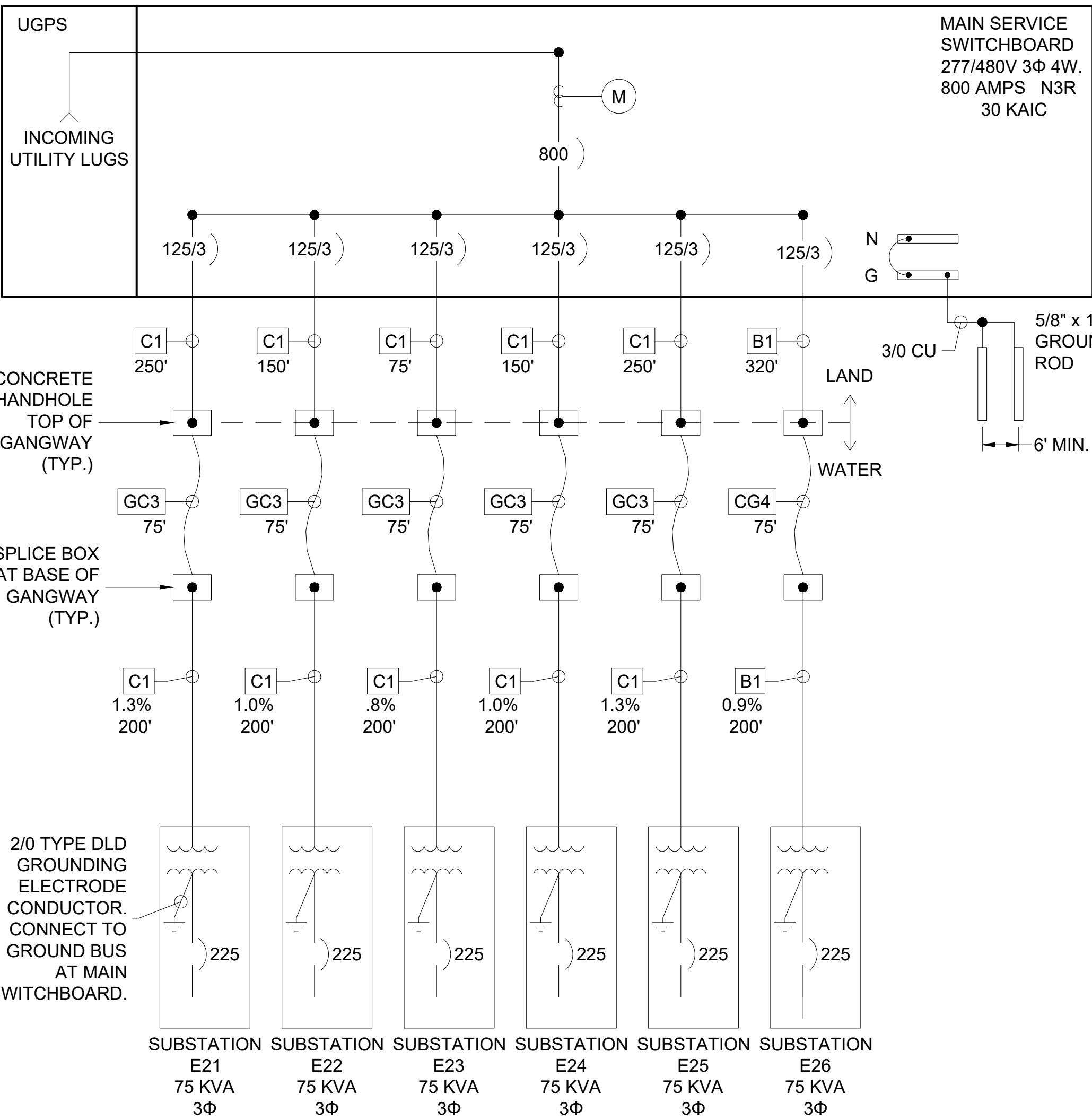
VOLTAGE DROP CALCULATOR

START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CURRENT (AMPS)	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB	W7	CUP	850	1	250	75.00	0.052	480	3	6.63	1.20
MSB	W8	CUP	750	1	4_0	74.00	0.062	480	3	6.88	1.24
MSB	W9	CUP	655	1	4_0	74.00	0.062	480	3	6.01	1.09
MSB	W10	CUP	550	1	3_0	74.00	0.077	480	3	6.27	1.13

MSB E21 - E26

MSB W1 - W6

MSB W7 - W12



PERMIT DRAWING

Zoning: Canning K
 Building & Safety: Basharak Amirazizi
 9/14/2022
 Permits: BNR21-0604- ELE22-0113-PLB22-0127
 County of Orange - OG Public Works
 OC Development Services
 APPROVED
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 MSB W7-W12
 New Database
 BLDG DIVISION OFFICIAL

NO.	DATE	DESCRIPTION	BY
B	5-10-22	UPDATED TOTAL	KG
A	2-25-22	ADDED VOLTAGE DROP CALCULATOR	KG
REVISIONS			

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SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARKLING LANE
 DIXON, CA 95620
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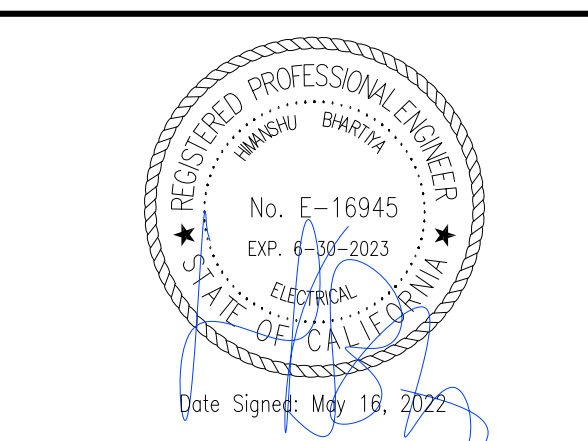
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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

ELECTRICAL SINGLE LINE DIAGRAMS & LOAD SUMMARIES



SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	E25
SHEET NO.:	87

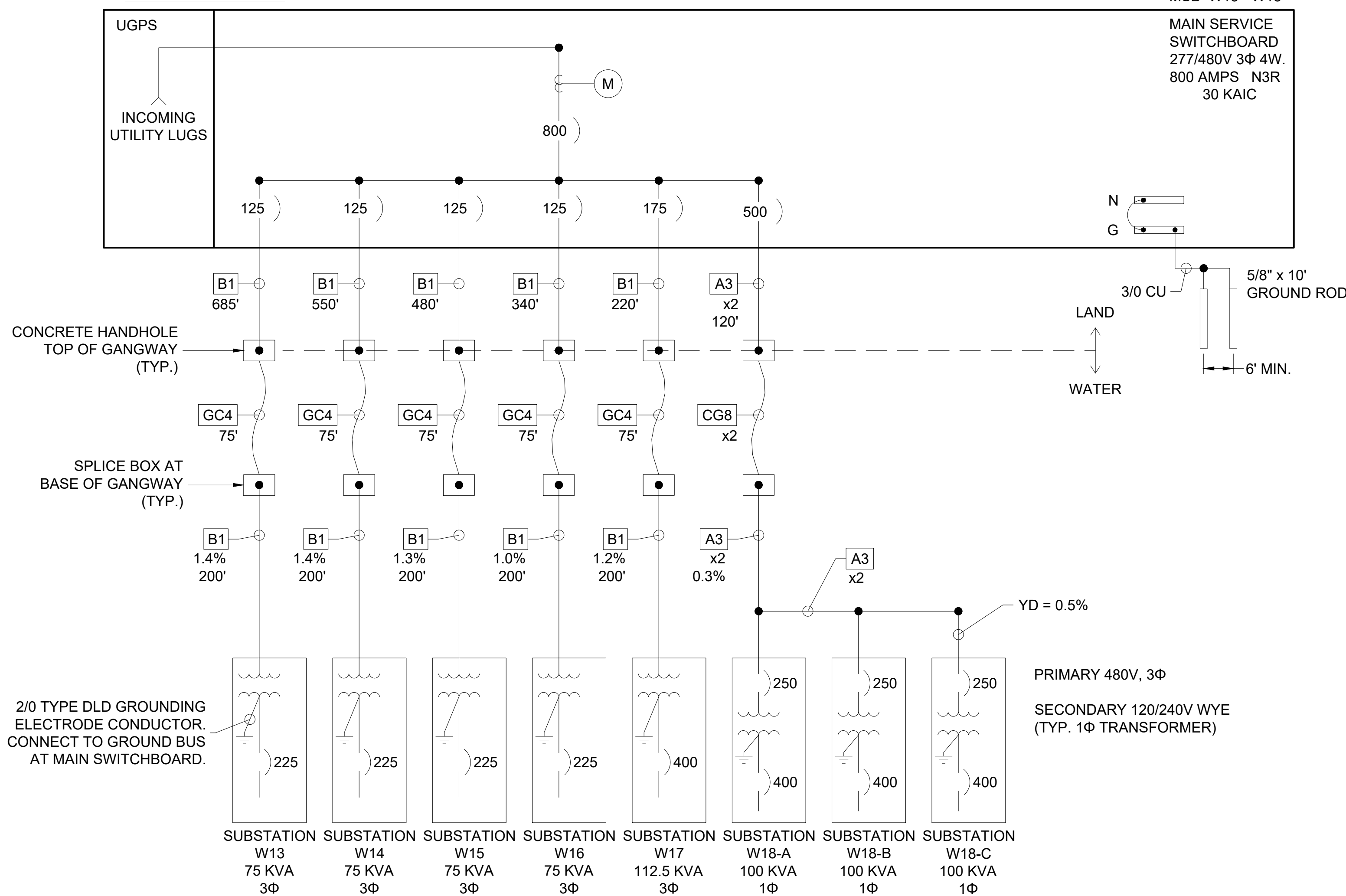
PERMIT DRAWING

LOAD SUMMARY: MSB W13 - W18 277/480V, 800 AMPS							
SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
W13	80,640	28	0.63	50,803	168	50,971	62
W14	169,600	57	0.36	61,056	342	61,398	74
W15	163,840	54	0.36	58,982	4,134	63,116	76
W16	154,880	50	0.36	55,757	4,104	59,861	72
W17	224,000	52	0.36	80,640	4,104	84,744	102
W18-A	113,280	23	0.63	71,366	84	71,450	149
W18-B	113,280	23	0.63	71,366	90	71,456	149
W18-C	104,640	21	0.63	65,923	3,884	69,807	146
TOTAL:	1124160	308	0.27	303,524	16910	320,434	386

MSB W13-W18

VOLTAGE DROP CALCULATOR											
MSB W13-W18											
START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CURRENT (AMPS)	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB	W13	CUP	960	1	4.0	62.00	0.062	480	3	7.38	1.33
MSB	W14	CUP	825	1	4.0	74.00	0.062	480	3	7.57	1.37
MSB	W15	CUP	755	1	4.0	76.00	0.062	480	3	7.12	1.28
MSB	W16	CUP	615	1	4.0	72.00	0.062	480	3	5.49	0.99

MSB W13 - W18

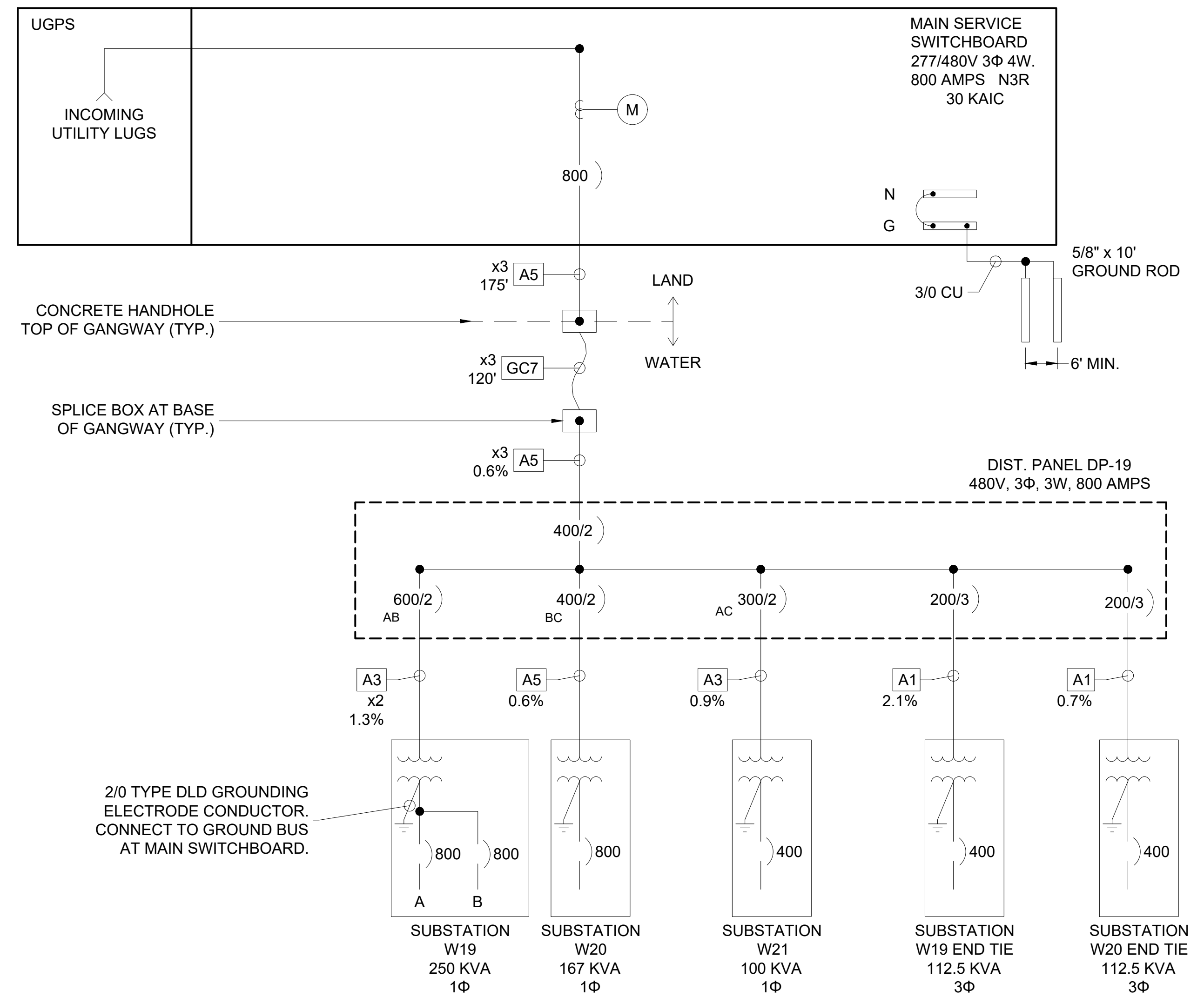


LOAD SUMMARY: MSB W19 - W21 277/480V, 800 AMPS							
SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
W19	654,720	85	0.27	176,775	4,118	180,893	377
W20	360,960	74	0.27	97,459	4,088	101,547	212
W21	161,280	56	0.36	58,061	3,968	62,029	130
W19 END TIE	133,018	2	0.9	119,716			
W20 END TIE	133,018	2	0.9	119,716			
TOTAL:	1442996	219	0.27	389,609	12174	401,783	484

MSB W19-W21

VOLTAGE DROP CALCULATOR											
MSB W19-W21											
START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CURRENT (AMPS)	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB	DP-19	CUP	960	3	500	484.00	0.027	480	3	8.36	1.51
DP-19	W19	CUP	960	2	350	218.00	0.038	480	3	7.95	1.44
DP-19	W20	CUP	825	1	500	122.00	0.027	480	3	5.44	0.98
DP-19	W21	CUP	755	1	350	75.00	0.038	480	3	4.30	0.78
DP-19	W19 END	CUP	615	1	250	144.00	0.052	480	3	9.21	1.66

MSB W19 - W21



Zoning: Gammgk
Building & Safety: Roshanak Amirazizi
Permits: BNR21-0604-ELE22-0113-PLB22-0127
County of Orange - OC Public Works
OC Development Services
APPROVED
Hadi Tabatabaee
BUILDING OFFICIAL

9/14/2022

9/14/2022

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NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADDED VOLTAGE DROP CALCULATOR	KG
REVISIONS			

Bellingham MARINE
SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
FAX: (707) 678-1760

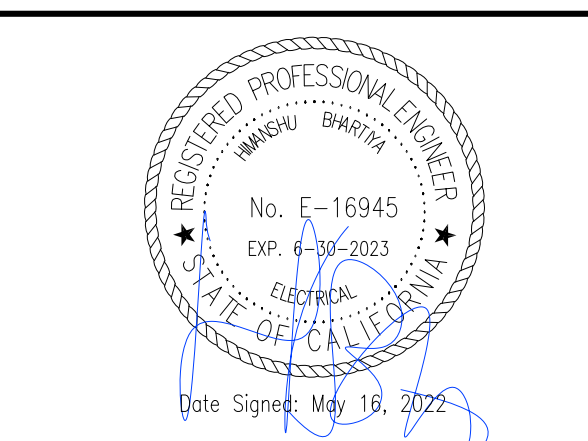
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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629

ELECTRICAL SINGLE LINE DIAGRAMS & LOAD SUMMARIES



SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	E26
SHEET NO.:	88

PERMIT DRAWING

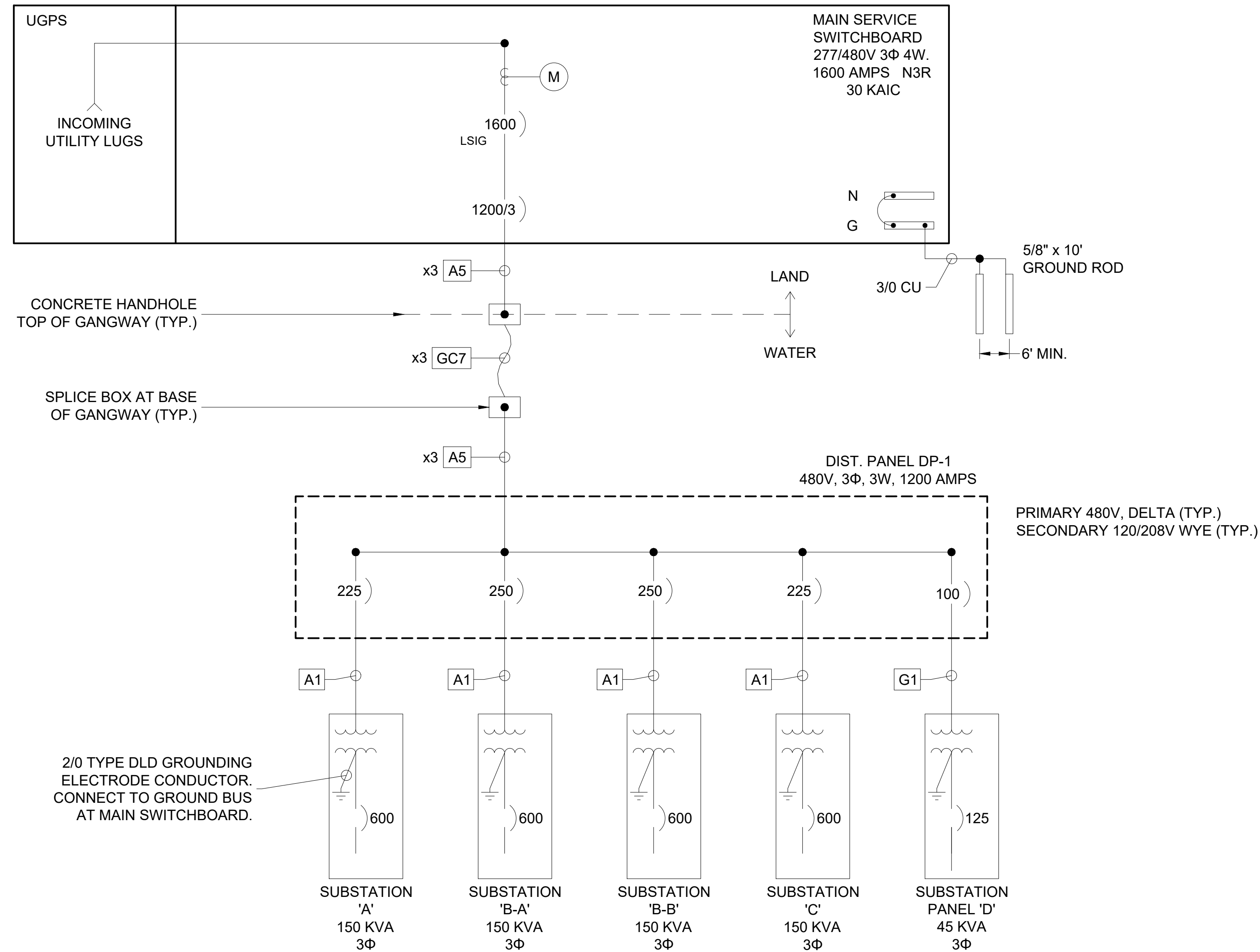
LOAD SUMMARY: MSB 1 277/480V, 1600 AMPS							
SUBSTATION	CONNECTED LOAD					DEMAND LOAD	
	SHORE POWER	NO. RECEPTS.	DEMAND FACTOR	SHORE DEMAND VA	LIGHTING/ OTHER @ 100%	VA	AMPS
A	134,400	14	0.72	96,768	42		
B-A	166,272	2	0.9	149,645	18		
B-B	166,272	2	0.9	149,645	24		
C	115,200	12	0.72	82,944	36		
STORE					45,000		
TOTAL:	582144	30	0.63	366,751	45120	411,871	496



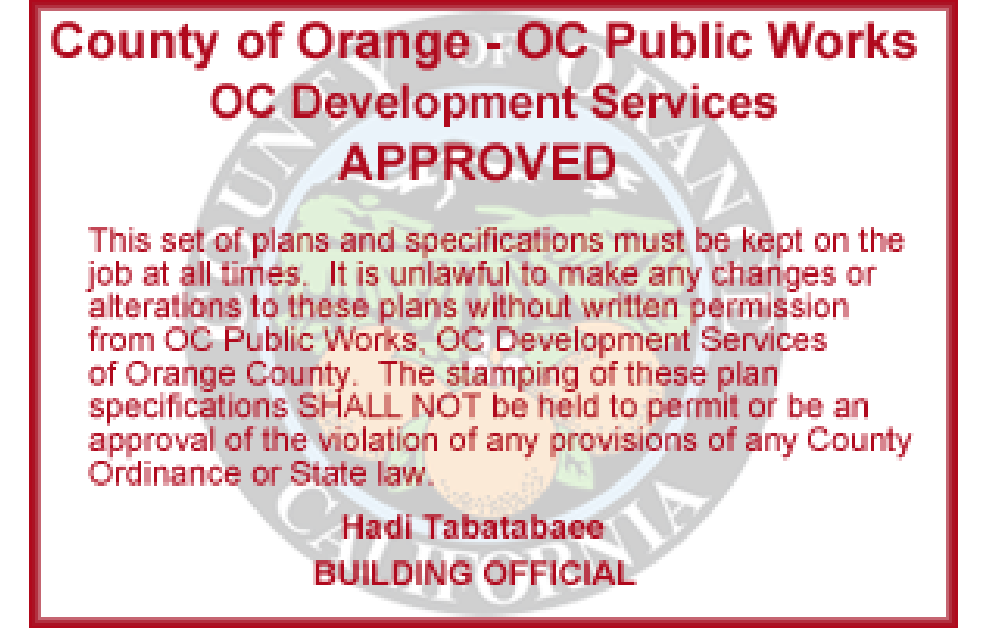
MSB 1

VOLTAGE DROP CALCULATOR												
MSB 1						ENTER	FOR	NOTES				
START POINT	END POINT	FEEDER TYPE	LENGTH OF RUN	# OF RUNS	WIRE SIZE	CUM CUP ALM ALP	CU IN EMT CU IN PVC AL IN EMT AL IN PVC	OHMS TO NEUT	VOLTS	PHASE	VD	% V.D.
MSB1	DP-1	CUP	300	3	500	496.00		0.027	480	3	2.68	0.48
DP-1	A	CUP	50	1	250	116.00		0.052	480	3	0.60	0.11
DP-1	B-A	CUP	50	1	250	180.00		0.052	480	3	0.94	0.17
DP-1	B-B	CUP	50	1	250	180.00		0.052	480	3	0.94	0.17
DP-1	C	CUP	50	1	250	100.00		0.052	480	3	0.52	0.09

MSB 1



Zoning: CanningK 9/14/2022
Building&Safety: Roshanak Amirazizi 9/14/2022
Permits: BNR21-0604- ELE22-0113- PLB22-0127



NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADDED VOLTAGE DROP CALCULATOR	KG
REVISIONS			

Bellingham MARINE

SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

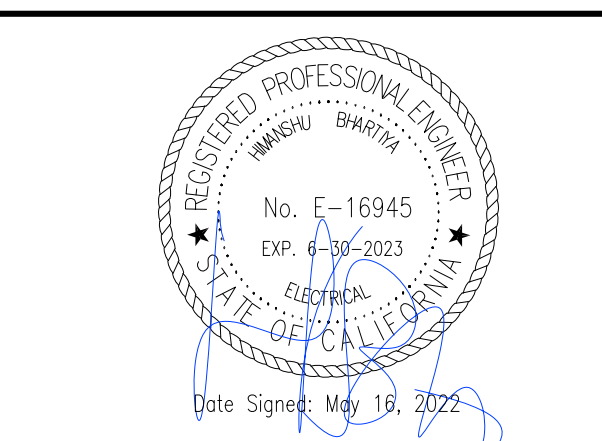
PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

ELECTRICAL SINGLE LINE DIAGRAMS & LOAD SUMMARIES



SCALE: NTS (Sheet Size 24" x 36")

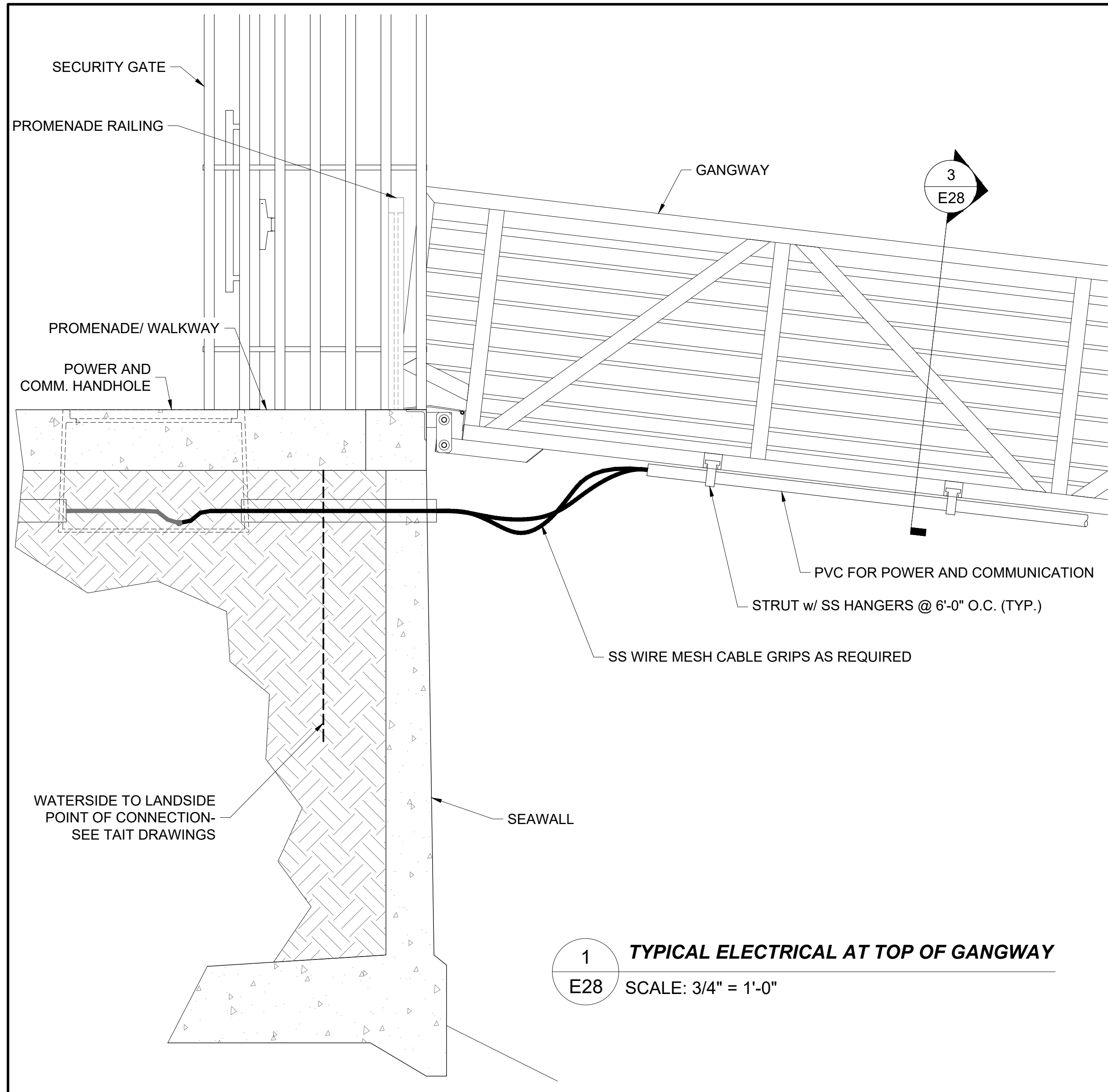
DRAWN BY: KG

DATE: 5/10/2022

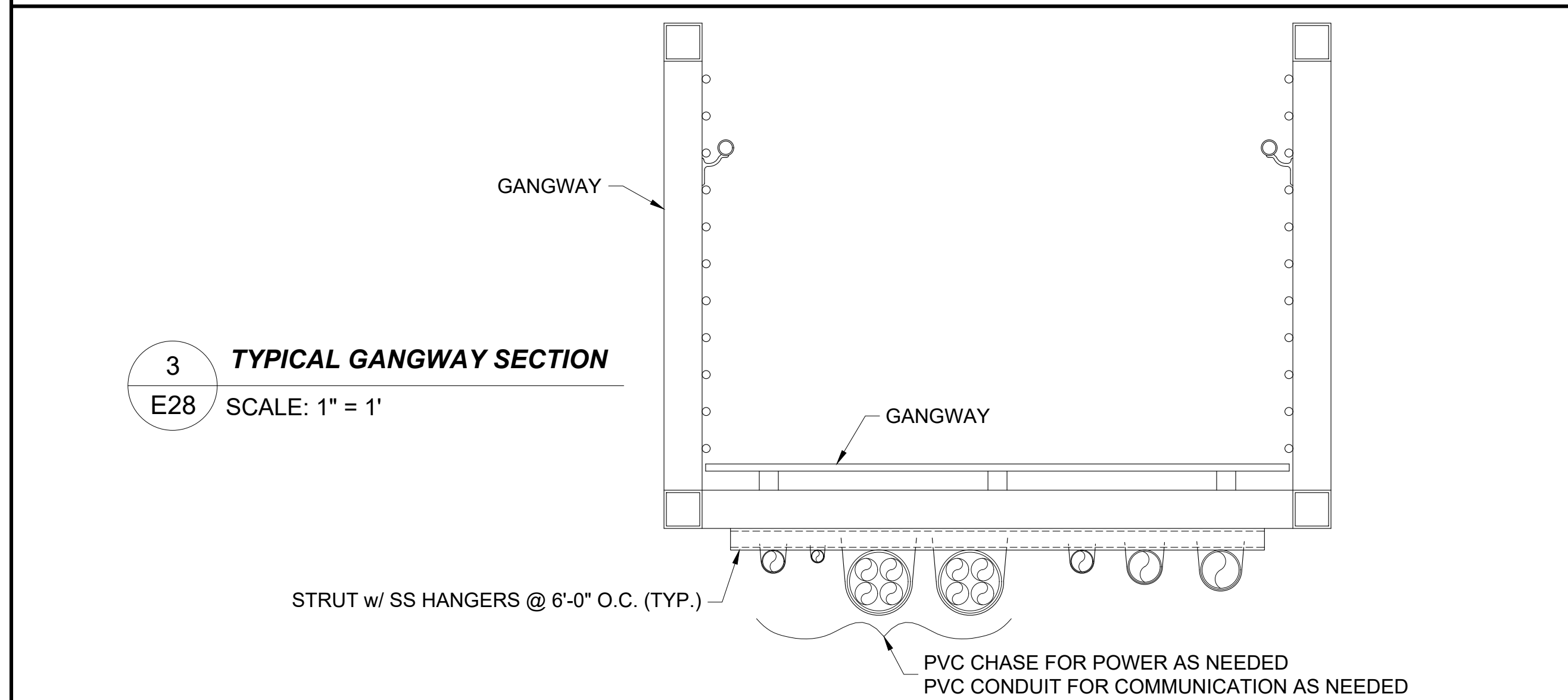
DRAWING: E27

SHEET NO.: 89

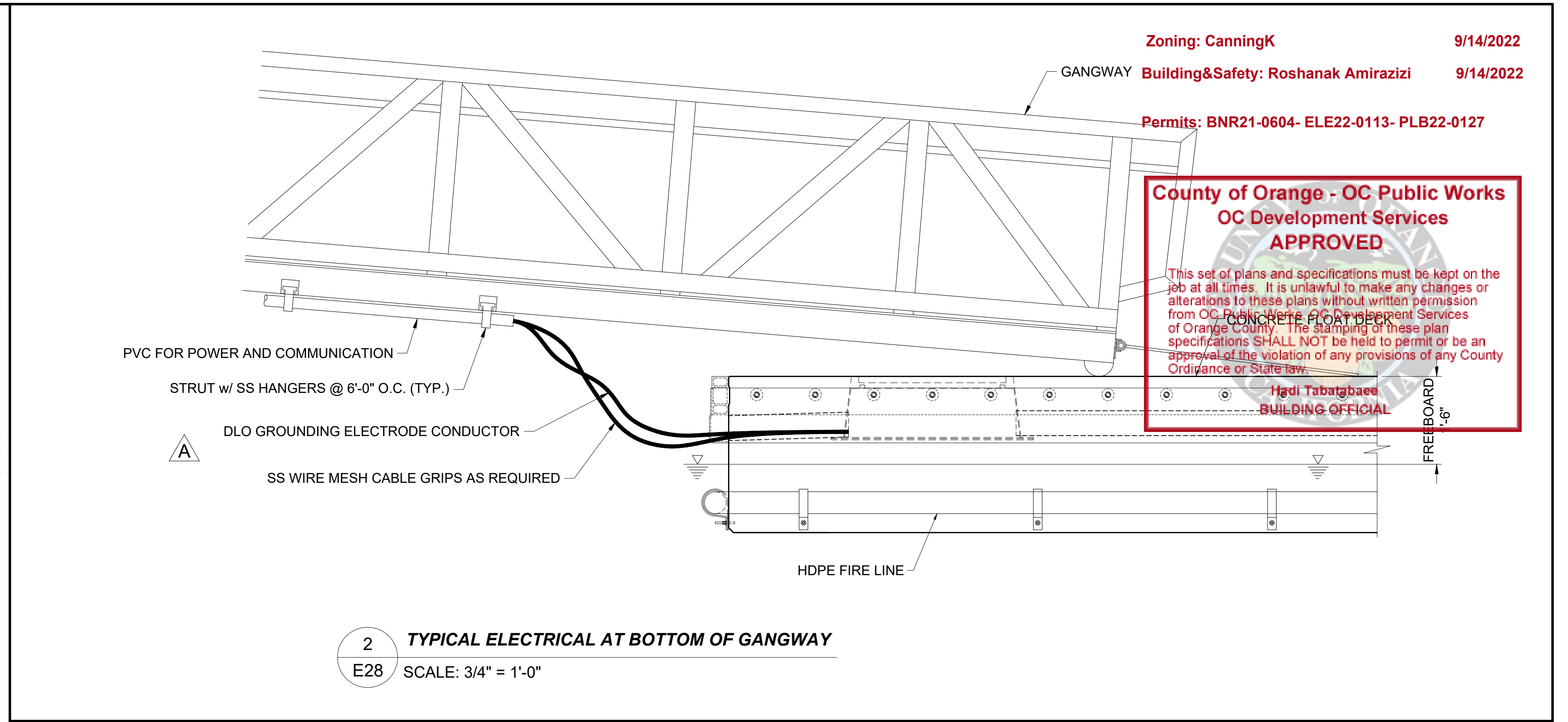
PERMIT DRAWING



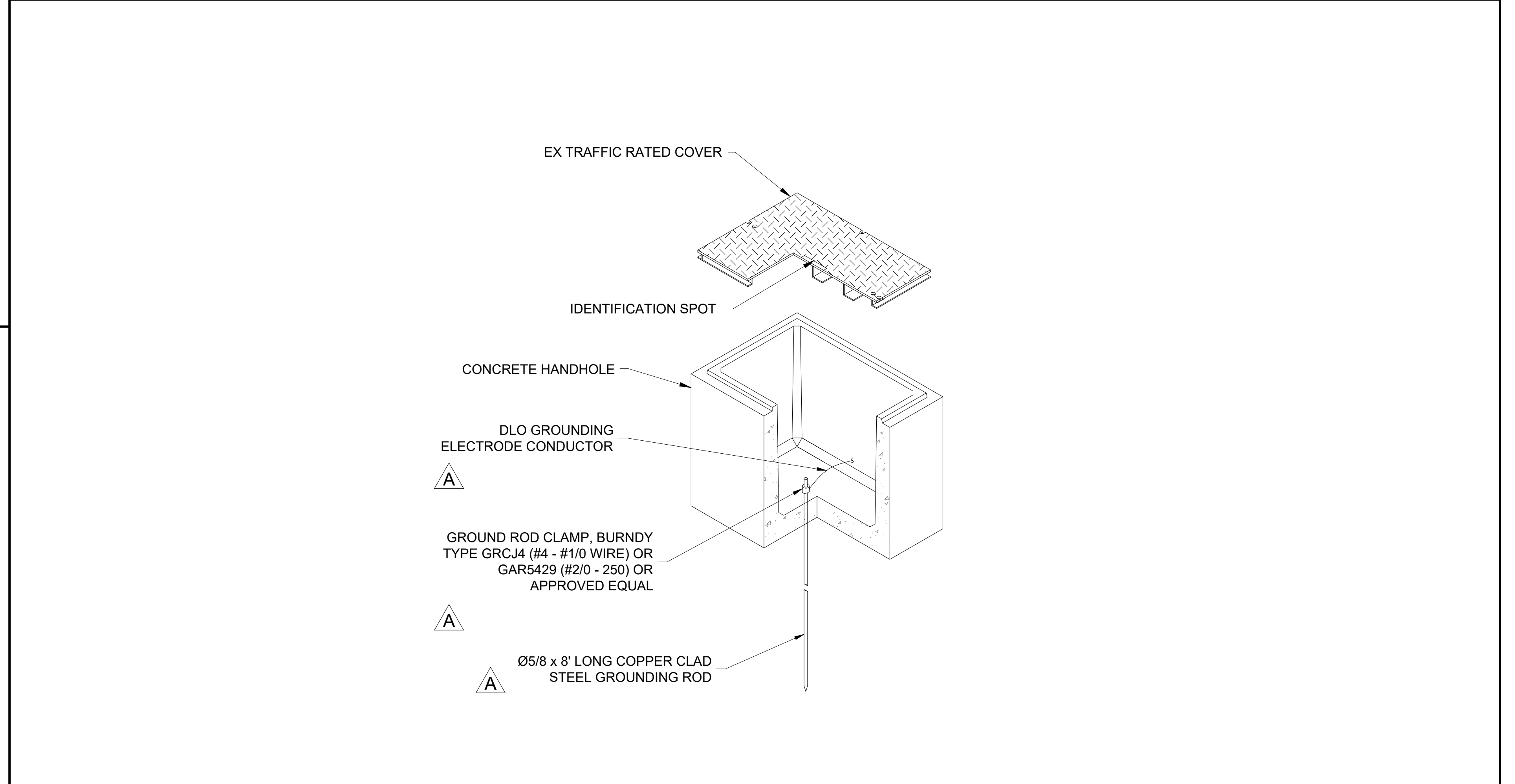
1 TYPICAL ELECTRICAL AT TOP OF GANGWAY
E28 SCALE: 3/4" = 1'-0"



3 TYPICAL GANGWAY SECTION
E28 SCALE: 1" = 1'



2 TYPICAL ELECTRICAL AT BOTTOM OF GANGWAY
E28 SCALE: 3/4" = 1'-0"



Zoning: CanningK 9/14/2022
Building&Safety: Roshanak Amirazizi 9/14/2022
Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
OC Development Services
APPROVED**

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**Hadi Tabatabaee
BUILDING OFFICIAL**

NO.	DATE	ADDED / UPDATED NOTES DESCRIPTION	KG BY
A	2-25-22		
REVISIONS			

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SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
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FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

ELECTRICAL DETAILS

Date Signed: May 18, 2022

SCALE: AS NOTED (Sheet Size 24" x 36")

DRAWN BY: KG

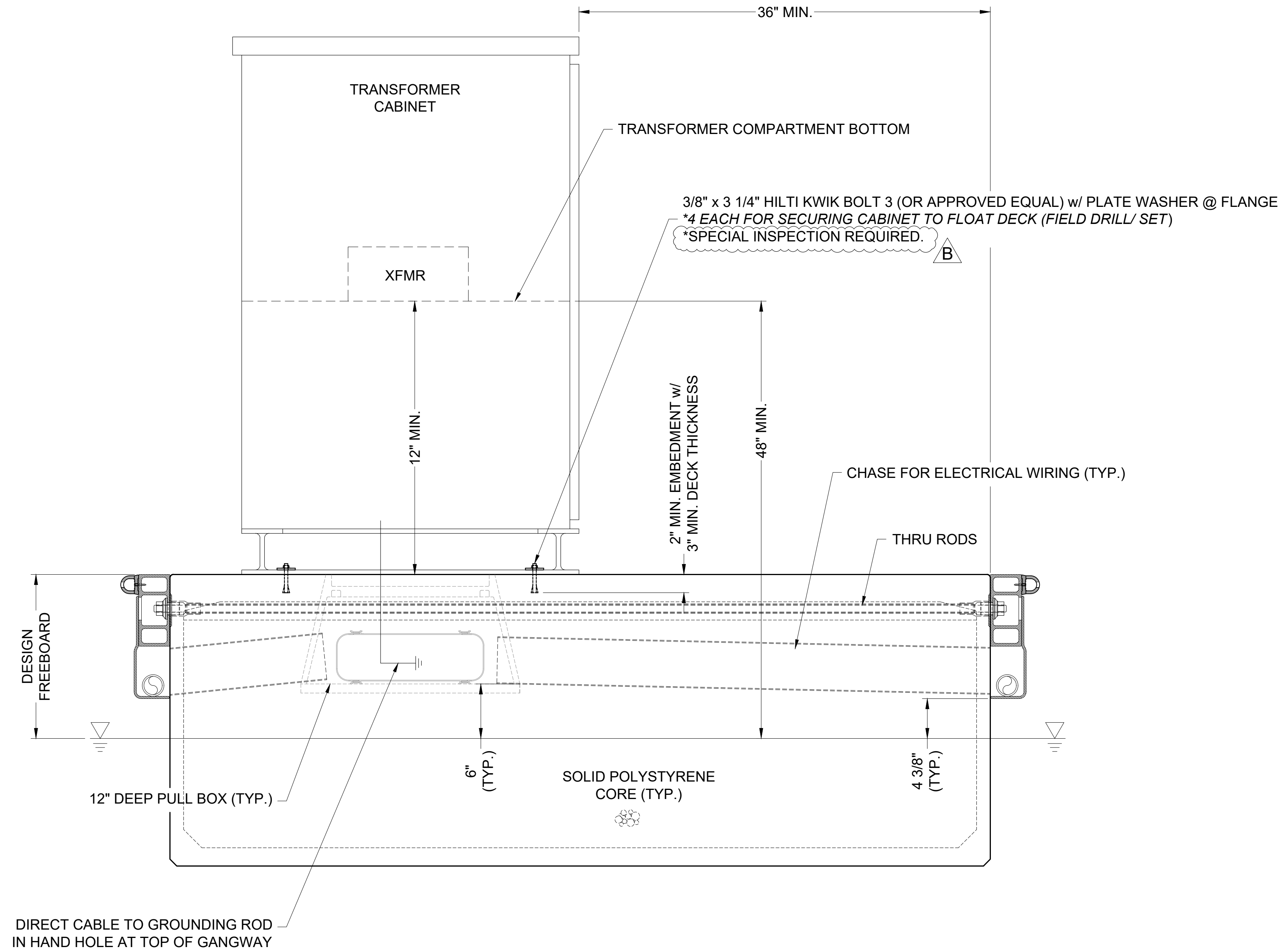
DATE: 5/10/2022

DRAWING: E28

SHEET NO.: 90

PERMIT DRAWING

▲



2 TYPICAL TRANSFORMER SIDE ELEVATION
E29 SCALE: 1 1/2" = 1'

NOTE:
FLOAT SIZES & TRANSFORMER ORIENTATION VARY. SEE ELECTRICAL LAYOUT.
HANDHOLES & CHASES SHOWN ARE NOT DIRECTLY UNDER THE MOUNTING ANCHORS-
ANCHORS EMBED INTO CONCRETE ONLY.

Zoning: CanningK 9/14/2022
Building&Safety: Roshanak Amirazizi 9/14/2022
Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
APPROVED

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Hadi Tabatabaee
BUILDING OFFICIAL

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

NO.	DATE	DESCRIPTION	BY
B	5-10-22	ADDED NOTE	KG
A	2-25-22	UPDATED DETAIL	KG
REVISIONS			

Bellingham MARINE
THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

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PROJECT NUMBER:
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ENGINEER / DESIGNER:

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DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

ELECTRICAL DETAILS

Date Signed: May 18, 2022

SCALE:	AS NOTED (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	E29
SHEET NO.:	91

A

Electrical Loads - Lighting:
 Color-Changing Accent Lighting (LED): TBD @ 120V

Electrical Loads - Receptacles (dependent on slip configuration):
 Loads Calculated for 120/208V, 3-Phase System
 One (1) 30A, 120V 2,880W
 Two (2) 30A, 120V 5,760W
 One (1) 50A, 120/240V 8,320W
 Two (2) 50A, 120/240V 16,640W
 One (1) 100A, 120/240V 16,640W

Securing the Base Plate to Mount the Power Pedestal:
 Note: The pedestal mounting surface must be flat and level for proper mounting. Warped decking or uneven concrete surfaces can be shimmed with stainless steel washers to provide a level surface for mounting base installation.

On Concrete Docks: At each corner, fit the mounting base plate to the dock surface with one (1) 3/8" stainless steel compression bolt or 3/8" stainless steel threaded rod cast in concrete on 8-1/4" centers.

Mounting the Power Pedestal:
 After the mounting base has been installed, orient the Power Pedestal so that the electrical access panel is accessible from the dock walkway. Place the pedestal over the mounting base and secure with the included eight (8) #10 X 3/4" stainless steel screws.

Marina Electrical Equipment
Project: Dana Point Marina
Product: Unit Substations
Component: Transformers

Date: 04/07/2022

Each Substation by Marina Electrical Equipment will contain at minimum one (1) transformer with a 480V primary and either a 120/208V, 3-Phase or 120/240V, 1-Phase secondary. The attached specifications are representative of every transformer used in Marina Electrical Equipment gear. No changes shall be made without written notification to, and acceptance by, Bellingham Marine.

Permits: BNR21-004-FL-EC-0114-SL-000127
 - 3 PHASE ISOLATION
 - DRY TYPE - ANN SELF COOLED

County of Orange - OC Public Works
OC Development Service
APPROVED

This set of plans and specifications must be kept on the job at all times. It is unlawful to make any changes or alterations to these plans without written permission from OC Public Works. OC Development Service is not responsible for the stamping of these plans. The stamping of these plans shall not be held to permit of an approval of the violation of any provisions of any Ordinance of State Law.

Hadji Tabatabaee
ENGINEERING OFFICIAL

Standards:
 1) CSA certified
 2) UL recognized

Special Features:
 1) Lug for Earth grounding provided
 2) Transformer meets DOE 2016 efficiency level

Design:
 1) Open construction
 2) Indoor application
 3) Floor mounting

REVISIONS

REV	REMARKS	BY	APPROVED	DATE
1				

PERMIT DRAWING

ENERGY EFFICIENT TRANSFORMER
 - 1 PHASE ISOLATION
 - DRY TYPE - ANN SELF COOLED

Windings	Terminals	Hole Size
Primary @ Front / Bottom	Pads*	2 X Ø1/8"
Secondary @ Front / Top	Pads*	2 X Ø1/8"
Ground Lug		20-6 AWG

Wiring Connection:
 Primary: H1, H2, H3
 Voltage: 480 V
 %Tap: 105.0, 102.5, 100.0, 97.5, 95.0
 Jumpers To: 1-1, 2-2, 3-3, 4-4, 5-5

Secondary: X1, X2, X3, X4
 Voltage: 120/240
 Interconnect: X2 to X3
 Connect Loads TO: X1-X2-X4 (X2 is a Neutral), X1/X3 - X2/X4

Special Features:
 1) Lug for Earth grounding provided
 2) Transformer meets DOE 2016 efficiency level

Design:
 1) Open construction
 2) Indoor application
 3) Floor mounting

REVISIONS

REV	REMARKS	BY	APPROVED	DATE
1				

ENERGY EFFICIENT TRANSFORMER
 - 3 PHASE ISOLATION
 - DRY TYPE - ANN SELF COOLED

Windings	Terminals	Hole Size
Primary @ Front / Bottom	Pads*	2 X Ø1/8"
Secondary @ Front / Top	Pads*	2 X Ø1/8"
Ground Lug		20-6 AWG

Wiring Connection:
 Primary: H1, H2, H3
 Voltage: 480 V
 %Tap: 105.0, 102.5, 100.0, 97.5, 95.0
 Jumpers To: 1-1, 2-2, 3-3, 4-4, 5-5

Secondary: X0, X1, X2, X3
 Voltage: 208/120 V
 Phase: 3
 Connect Loads TO: X0 - X1, X0 - X2 AND/OR X0 - X3

Special Features:
 1) Lug for Earth grounding provided
 2) Transformer meets DOE 2016 efficiency level

Design:
 1) Open construction
 2) Indoor application
 3) Floor mounting

REVISIONS

REV	REMARKS	BY	APPROVED	DATE
1				

ENERGY EFFICIENT TRANSFORMER
 - 3 PHASE ISOLATION
 - DRY TYPE - ANN SELF COOLED

Windings	Terminals	Hole Size
Primary @ Front / Bottom	Pads*	2 X Ø1/8"
Secondary @ Front / Top	Pads*	2 X Ø1/8"
Ground Lug		20-6 AWG

Wiring Connection:
 Primary: H1, H2, H3
 Voltage: 480 V
 %Tap: 105.0, 102.5, 100.0, 97.5, 95.0
 Jumpers To: 1-1, 2-2, 3-3, 4-4, 5-5

Secondary: X0, X1, X2, X3
 Voltage: 208/120 V
 Phase: 3
 Connect Loads TO: X0 - X1, X0 - X2 AND/OR X0 - X3

Special Features:
 1) Lug for Earth grounding provided
 2) Transformer meets DOE 2016 efficiency level

Design:
 1) Open construction
 2) Indoor application
 3) Floor mounting

REVISIONS

REV	REMARKS	BY	APPROVED	DATE
1				

NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
A	5-10-22		

REVISIONS

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER: 7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
ELECTRICAL DATA SHEETS



SCALE: AS NOTED (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: E30

SHEET NO.: 92

A

Windings	Terminals	Hole Size
Primary @ Front / Bottom	Pads*	2 X $\frac{3}{16}$ "
Secondary @ Front / Top	Pads*	4 X $\frac{3}{16}$ "
Ground Lug 600MCM-2		

*NEMA Terminal Connector Dimensions (CC 1-2009 Annex C)

ENERGY EFFICIENT TRANSFORMER
 - 1 PHASE ISOLATION
 - DRY TYPE - ANN SELF COOLED

Coils: Cat. No.: ALUMINUM SA167H-K/C&C/X/Z3/MEE

kVA: 167
 Primary: 480 V
 Secondary: 120/240 V
 Primary taps: 2.5%
 - Taps FCAN
 - Taps FCBN
 2

Frequency: 60 Hz
 BILL: 10kV
 Insulation class: 220°C
 Temperature rise: 150°C
 Impedance: 4.0 - 6.0%

Efficiency: (Calculated @ 35% Loaded) 98.7%

Weight: 760 Lbs

Standards:
 1.) CSA certified
 2.) UL recognized

Standard Features:
 1.) Lug for Earth grounding provided
 2.) Transformer meets DOE 2016 efficiency level

Special Features:
 1.) No lugs
 2.) Front & back of HV/LV taps are epoxy free
 3.) Left & right grounding holes with $\frac{3}{16}$ " on top core bracket
 4.) Mounting dimension (26.0" X 9.0")
 5.) 4 Anti-vibration pads ship with transformer
 6.) All core/coils hardware are varnished except Jumpers and its hardware
 7.) Double epoxy dipped coils
 8.) Two temporary cross channels are bolted and required for shipping only

Design:
 1.) Open construction
 2.) Indoor application
 3.) Floor mounting

Wiring Connection:
 Primary: H1, H2
 Voltage: %Tap Links:
 504 105.0 1-2
 492 102.5 2-3
 480 100.0 3-4
 468 97.5 4-5
 456 95.0 5-6

Secondary: X1, X2, X3, X4
 Voltage: Interconnect Connect Loads T0:
 240 X2 to X3 X1- X4
 120/240 X2 to X3 X1-X2-X4 (X2 is a Neutral)
 120 X1 to X3 and X2 to X4 X1/X3 - X2/X4

REV. R3EM REX POWER MAGNETICS
 DIVISION OF TRANSACTOR INDUSTRIES INC.
 DRAWN BY: AP DATE: JULY 14, 2021 POF: 9105
 CHECKED BY: V.A. DATE: JULY 14, 2021 SWW: V32980
 TITLE: SA167H-K/C&C/X/Z3/MEE
 SCALE: N.T.S. CUSTOMER: MARINA ELECTRICAL EQUIPMENT INC. NO. TBA

Windings	Terminals	Hole Size
Primary @ Front / Bottom	Pads*	2 X $\frac{3}{16}$ "
Secondary @ Front / Top	Pads*	4 X $\frac{3}{16}$ "
Ground Lug 600MCM-2		

*NEMA Terminal Connector Dimensions (CC 1-2009 Annex C)

ENERGY EFFICIENT TRANSFORMER
 - 1 PHASE ISOLATION
 - DRY TYPE - ANN SELF COOLED

Coils: Cat. No.: ALUMINUM SA250H-K/C&C/X/Z3/MEE

kVA: 250
 Primary: 480 V
 Secondary: 120/240 V
 Primary taps: 2.5%
 - Taps FCAN
 - Taps FCBN
 2

Frequency: 60 Hz
 BILL: 10kV
 Insulation class: 220°C
 Temperature rise: 150°C
 Impedance: 4.0 - 6.0%

Efficiency: (Calculated @ 35% Loaded) 98.8%

Weight: 1100 Lbs

Standards:
 1.) CSA certified
 2.) UL recognized

Standard Features:
 1.) Lug for Earth grounding provided
 2.) Transformer meets DOE 2016 efficiency level

Special Features:
 1.) No lugs
 2.) Front & back of HV/LV taps are epoxy free
 3.) Left & right grounding holes with $\frac{3}{16}$ " on top core bracket
 4.) Mounting dimension (26.0" X 9.0")
 5.) 4 Anti-vibration pads ship with transformer
 6.) All core/coils hardware are varnished except Jumpers and its hardware
 7.) Double epoxy dipped coils
 8.) Two temporary cross channels are bolted and required for shipping only

Design:
 1.) Open construction
 2.) Indoor application
 3.) Floor mounting

Wiring Connection:
 Primary: H1, H2
 Voltage: %Tap Links:
 504 105.0 1-2
 492 102.5 2-3
 480 100.0 3-4
 468 97.5 4-5
 456 95.0 5-6

Secondary: X1, X2, X3, X4
 Voltage: Interconnect Connect Loads T0:
 240 X2 to X3 X1- X4
 120/240 X2 to X3 X1-X2-X4 (X2 is a Neutral)
 120 X1 to X3 and X2 to X4 X1/X3 - X2/X4

REV. R3EM REX POWER MAGNETICS
 DIVISION OF TRANSACTOR INDUSTRIES INC.
 DRAWN BY: AP DATE: JULY 14, 2021 POF: 9105
 CHECKED BY: V.A. DATE: JULY 14, 2021 SWW: V32982
 TITLE: SA250H-K/C&C/X/Z3/MEE
 SCALE: N.T.S. CUSTOMER: MARINA ELECTRICAL EQUIPMENT INC. NO. TBA

TERMINATION	LOCATION	TERMINALS	HOLE SIZE
PRIMARY	FRONT	COPPER PADS	$\frac{3}{16}$ "
SECONDARY	FRONT	COPPER PADS	$\frac{3}{16}$ "

WIRING CONNECTION:
 PRIMARY: H1-H2-H3
 VOLTAGE: %TAPS LINKS:
 504 105.0 1-2
 492 102.5 2-3
 480 100.0 3-4
 468 97.5 4-5
 456 95.0 5-6

SECONDARY: VOLTAGE PHASE: CONNECT LOADS TO:
 220 3 X1 - X2 - X3
 127 1 X0 - X1, X0 - X2 AND/OR X0 - X3

DESIGN:
 - OPEN CONSTRUCTION
 - INDOOR APPLICATION
 - FLOOR MOUNTING

Permits: BNR24-0604-EL-23-0113-PL-823-0127
County of Orange - OC Public Works
OC Development Services
APPROVED

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STANDARDS:
 1. CSA CERTIFIED FILE NO. LR34493
 2. UL RECOGNIZED

STANDARD FEATURES:
 1. LUG FOR EARTH GROUNDING PROVIDED
 2. TRANSFORMER MEETS DOE 2016 EFFICIENCY LEVEL

SPECIAL FEATURES:
 X = 1.) VPE
 2.) FRONT/BACK MOUNTING 9.0"
 3.) STUBS UP
 4.) PRIMARY BOTTOM / SECONDARY TOP

REV. R3EM REX POWER MAGNETICS
 DIVISION OF TRANSACTOR INDUSTRIES INC.
 DRAWN BY: AP DATE: DEC 16, 2017 POF: 10207047
 CHECKED BY: V.A. DATE: DEC 16, 2017 SWW: V11801
 TITLE: TRANSFORMER OUTLINE
 SCALE: N.T.S. CUSTOMER: MARINA ELECTRICAL EQUIPMENT INC. NO. TBA

PERMIT DRAWING

Windings	Terminals	Hole Size
Primary @ Front / Bottom	Pads*	2 X $\frac{3}{16}$ "
Secondary @ Front / Top	Pads*	4 X $\frac{3}{16}$ "
Ground Lug 300MCM-G		

*NEMA Terminal Connector Dimensions (CC 1-2009 Annex C)

ENERGY EFFICIENT TRANSFORMER
 - 3 PHASE ISOLATION
 - DRY TYPE - ANN SELF COOLED

Coils: Cat. No.: ALUMINUM BA300H-M/C&C/X/Z3/MEE

kVA: 300
 Primary: 480 V
 Secondary: 208Y/120 V
 Primary taps: 2.5%
 - Taps FCAN
 - Taps FCBN
 2

Frequency: 60 Hz
 BILL: 10kV
 Insulation class: 220°C
 Temperature rise: 150°C
 Impedance: 4.0 - 6.0%

Efficiency: (Calculated @ 35% Loaded) 99.02%

Weight: 2010 Lbs

Standards:
 1.) CSA certified
 2.) UL recognized

Standard Features:
 1.) Lug for Earth grounding provided
 2.) Transformer meets DOE 2016 efficiency level

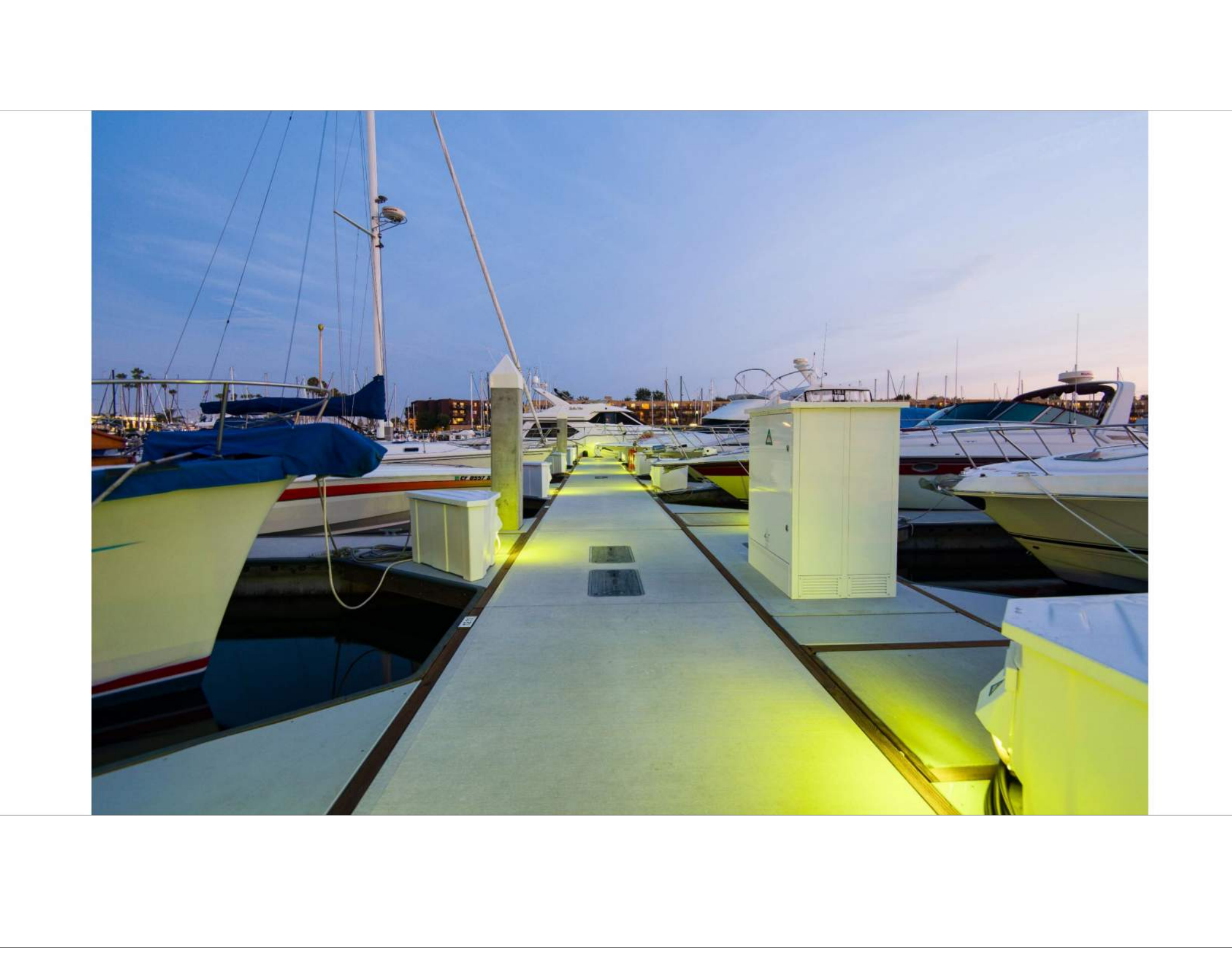
Special Features:
 1.) No lugs
 2.) Front & back of HV/LV taps are epoxy free
 3.) Left & right grounding holes with $\frac{3}{16}$ " on top core bracket
 4.) Mounting dimension (26.0" X 9.0")
 5.) 4 Anti-vibration pads ship with transformer
 6.) All core/coils hardware are varnished except Jumpers and its hardware
 7.) Double epoxy dipped coils
 8.) Two temporary cross channels are bolted and required for shipping only

Design:
 1.) Open construction
 2.) Indoor application
 3.) Floor mounting

Wiring Connection:
 Primary: H1, H2, H3
 Voltage: %Tap Links:
 504 105.0 1-2
 492 102.5 2-3
 480 100.0 3-4
 468 97.5 4-5
 456 95.0 5-6

Secondary: X0, X1, X2, X3
 Voltage: Phase Connect Loads T0:
 208 3 X1 - X2 - X3
 120 1 X0 - X1, X0 - X2 AND/OR X0 - X3

REV. R3EM REX POWER MAGNETICS
 DIVISION OF TRANSACTOR INDUSTRIES INC.
 DRAWN BY: AP DATE: JULY 14, 2021 POF: 9105
 CHECKED BY: V.A. DATE: JULY 14, 2021 SWW: V32987
 TITLE: BA300H-M/C&C/X/Z3/MEE
 SCALE: N.T.S. CUSTOMER: MARINA ELECTRICAL EQUIPMENT INC. NO. TBA



NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
A	5-10-22		

REVISIONS



SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
 ELECTRICAL DATA SHEETS



SCALE: NTS (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: E31
 SHEET NO.: 93

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GTX™ UNIT SUBSTATION

Marina Electrical Equipment's GTX™ Unit Substations are designed and manufactured to maximize cable and installation cost savings through integration of a dry-type isolation transformer and factory-installed secondary panelboard. Constructed of the highest quality powder-coated 316L grade stainless steel, GTX™ Unit Substations are designed to withstand the harsh, corrosive environments found in marinas and boatyards.

STANDARD DIMENSIONS: 72"H 45"W 42/46"D

STANDARD FEATURES



- ETL Listed, tested in accordance with Underwriters Laboratories-1062 standards, CAN/CSA Standard C22.2 No.31-10 and NFPA 303.
- Single Phase dry-type isolation transformers available to 330kVA.
- Three Phase dry-type isolation transformers available to 300kVA.
- (2) 2.5% FCAN and (2) 2.5% FCBN Primary Taps to compensate for varying incoming voltages.
- Transformer and secondary-side distribution panel mounted in single NEMA 3RX 316L stainless steel enclosure with single lockable access door (patent-pending).
- Integrated panelboard sizes up to 1200-ampere main circuit breaker/main lug.
- Extra-large wiring access area with removable .080" aluminium gland plate for simple cable entry/knockouts.
- Stainless steel hardware.
- 360-degree "Take-Apart" enclosure construction.
- Simple mounting and installation design:
 - Lifting: engineered lifting eyes designed/tested to lift four (4) times unit substation static weight (concealed beneath removable solar shield)
 - Handling/Positioning: front/side fork access.
 - Positioning: bottom rolling rails.
 - Mounting: 1/2" mounting slots at each corner (concealed behind removable access panels).
- Standard 12" base height, requiring no field-curbings or modifications to comply with 12" datum plane requirements.
- White textured powder-coat exterior finish.
- Thermo-statically controlled axial fans maintain efficient operating temperature.
- Fine-stranded, tin-plated copper leads.
- Limited 1-year warranty.

OPTIONAL FEATURES

- Primary Voltages: 480V Single Phase, 480V Delta Three Phase, or 600V Delta Three Phase.
- Secondary Voltages: 120/240V Single Phase, 208Y/120V Three Phase, 220V/127V Three-Phase
- 50 Hz or 60 Hz Frequency
- Primary Disconnect or Panelboard.
- Integrated Surge Protective Device (SPD) for supreme surge protection.
- Integrated Ground Fault Monitor Relay(s) (GFM) for maximum safety.
- Custom Configurations Available.
- Dual Phase Isolation Transformers.

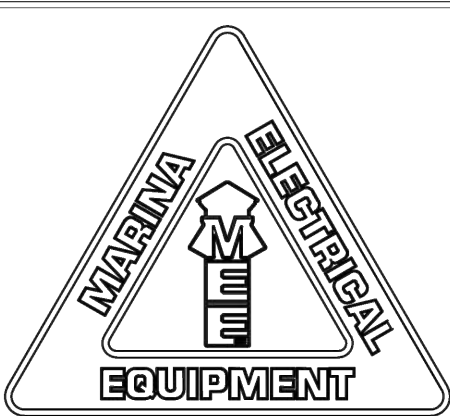
Typical Panel and Transformer Combinations	
Single-Phase Panel Main	Transformer Size
200A	50 kVA
400A	100 kVA
700A	167 kVA
800A	200 kVA
1000A	250 kVA
1200A	300 kVA
Three-Phase Panel Main	Transformer Size
200A	75 kVA
300A	112.5 kVA
400A	150 kVA
600A	225 kVA
800A	300 kVA



GTX™ UNIT SUBSTATION

General Specifications




Marina Electrical Equipment, Inc.
1715 Merrimac Trail
Williamsburg, VA 23185
Toll Free: 1-855-258-3939
Fax: 1-757-258-3988


Intertek
 4005786
 CONFORMS TO STD. ANSI/UL1062

Rev.6 06/01/2018

General Specifications - GTX™ Unit Substation

Zoning: CanningK
Building & Safety: Roshanak Amirazizi
Permits: BNR21-0604- ELE22-0113- PLB22-0127

9/14/2022
9/14/2022

ALL GTX UNIT SUBSTATIONS SHALL MEET THE FOLLOWING SPECIFICATIONS:

SECTION A: ACCEPTABLE MANUFACTURERS:
Marina Electrical Equipment, Inc.
1715 Merrimac Trail
Williamsburg, VA 23185
Toll Free: 1-855-258-3939
Web: www.marinaelectricequipment.com

SECTION B: GENERAL REQUIREMENTS

- Unit substations shall be listed and marked, tested and certified to conform to Standard ANSI/UL 1062 (UL 1062) for use in boatyards.
- Standards for Marinas and Boatyards shall be specifically approved for the intended location. The bottom of transformers shall not be located below the electrical datum plane.

SECTION C: CONSTRUCTION REQUIREMENTS

- All materials and components used in the construction of the unit substation shall be listed.
- Main Housing:** Shall be "take-apart" construction utilizing 316L stainless steel and shall be powder-coated with a finish that is processed to withstand a salt spray without peeling or separating. The housing is listed as a NEMA 3RX weatherproof enclosure and contain removable "lift-off panels" to provide 360-degree access to the interior components from all sides.
- Access Panels:** Shall be constructed of 316L stainless steel and be flush-mounted with minimal external protrusion.
- Top / Lifting:** Shall be constructed with a removable solar shield that conceals engineered lifting shackles that swivel and are designed / tested to lift four (4) times the static weight of the unit substation.
- Mounting Base:** Shall be compliant with NEC and NFPA 70 555, and meet the datum plane requirement without the addition of curbing to meet the 12" height requirement. The housing shall also have isolation pads to ensure the housing does not have contact with the mounting substrate (concrete or wood).
- Mounting Requirements:** Mounting bolts (provided by others) for the Unit Substation shall be easy to use and concealed behind removable louvered access panels after mounting.
- Doors:** The housing shall have lockable doors.
- Fans:** Shall be equipped with thermo-statically controlled axial fans to maintain efficient operating temperature. The fans shall also be controlled by an electromechanical photocell to limit condensation build-up created by temperature variations during evening hours.
- Hardware:** Shall be minimal and be 316 stainless steel, Phillips® drive.

SECTION D: TRANSFORMER

- Transformer shall meet the requirements of NEMA TP.1/DOE2016 as described in the Code of Federal Regulations Section 451.196 Energy Conservation Standards.
- Construction shall be dry-type isolation transformers with copper windings and thermo-statically controlled axial fans to maintain efficient operating temperatures.

SECTION E: PANELBOARD

- The distribution panelboard(s) shall be main circuit breaker (main lug only available by request) and manufactured by GE, Square-D or equivalent.
- The distribution panelboard(s) shall include surge protection device designed to contain a 130kA/phase surge incident (optional, other ratings available by request).
- The distribution panelboard(s) shall include ground fault monitor relay(s) to monitor and/or interrupt the main circuit breaker and/or branch circuit breakers to comply with NEC 555.3 requirements (optional).
- Standard panelboard(s) bussing shall be 1000A PSI copper, unless otherwise noted/requested.
- The standard panelboard(s) short-circuit current rating (SCCR) shall be 10 kAIC and be fully-rated unless otherwise noted/requested (SCCR are available from 10 kAIC - 200 kAIC, fully or series-rated).
- Primary main circuit breakers and panelboards are optional.

Marina Electrical Equipment, Inc. 1-855-258-3939 www.marinaelectricequipment.com Rev.6 06/01/2018 Page 1



General Specifications - GTX™ Unit Substation

SECTION F: WIRING & TERMINAL BLOCK

- GTX unit substations shall be completely factory pre-wired to the load side of the copper 3/8" stud lug compression terminal block assembly.
- Electrical wiring shall be high-stranding tin-plated copper THHW/MTW VW-1 Boat Cable rated for 105°C.
- LINE and LOAD side terminations to the copper bus bar shall be made by compression-type ring terminals on 3/8"-16 stainless steel stud with stainless steel 3/8" x 3/4" O.D. flat washer, 3/8" stainless steel split-ring spring washer and 3/8"-16 silicone-bronze hex nut, torqued to 180 inch-pounds.
- All electrical components shall be located above the electrical datum plane set forth by the NEC.
- All exposed metallic parts shall be grounded as part of the integral equipment ground.

SECTION G: WARRANTY POLICY:

Housings:
Marina Electrical Equipment, Inc. (MEE) warrants that the main housing and attached parts (top, lens, doors, receptacle faceplates, circuit breaker plates, and mounting base plate) will be free from failure resulting from defects in material and/or workmanship, and are covered by a limited warranty of one (1) year. Should any of the above parts fail to comply with the above-mentioned warranty, MEE will either repair or replace the defective part(s), or credit the purchaser for the purchase price of the part. This warranty is voided if any petroleum-based solvent is used anywhere on or near any of the polycarbonate parts. These parts include, but may not be limited to: the top, lens, doors, receptacle faceplates, circuit breaker plates, terminal block, and the mounting base plate.

Internal Components:
MEE warrants that all internal electrical components shall be covered by a limited warranty of one (1) year. Items covered include but are not limited to: transformers, panelboards, ground fault monitor relays, surge protective devices, receptacles, circuit breakers, photocells, lamp holders, coil transformers, counters and wiring harnesses. Should any of the above parts fail to comply with this warranty policy, MEE will coordinate the repair or replacement of the defective part(s) with the respective supplier.

Solid-State Electric kWh Monitors:
MEE warrants that the International Intelligent Meter (IIM) solid-state electric kWh monitors will be free from failure resulting from defects in material and/or workmanship, and are covered for one (1) year. Although the IIM meters contain integrated surge protection, MEE and IIM will not warrant the product against severe over-voltage conditions such as lightning strikes or abnormal utility surges. Should an electric monitor fail to comply with the above-mentioned warranty, MEE will either repair or replace the defective part(s)/components, or credit the purchaser for the purchase price of the part. This warranty is voided if the damage to any or all of the components is the result of abuse, misuse, or Force Majeure. This warranty is voided if the factory seal is broken or manipulated.



This warranty policy does not cover damage or failure resulting from abuse, misuse, negligence or Force Majeure. All warranty claims must be made in writing and all defective products shall be returned to MEE for evaluation unless stated otherwise by MEE. MEE will not be responsible for reimbursing the purchaser for any sort of expense incurred by the purchaser as a result of the repair or replacement of a warranty claim.

Send all warranty claims to:

Marina Electrical Equipment, Inc.
1715 Merrimac Trail
Williamsburg, VA 23185
Toll Free: 1-855-258-3939
Fax: 757-258-3988

Specifications Subject to Change Without Notice
END OF SECTION

Marina Electrical Equipment, Inc. 1-855-258-3939 www.marinaelectricequipment.com Rev.6 06/01/2018 Page 2

		 Bellingham MARINE THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER	SOUTHWEST DIVISION CA LICENSE #442499 8810 SPARLING LANE DIXON, CA 95620 TEL: (707) 678-2385 FAX: (707) 678-1760	THIS DRAWING CONTAINS PROPRIETARY INFORMATION WHICH IS THE PROPERTY OF BELLINGHAM MARINE INDUSTRIES, INC., AND SHALL NOT BE COPIED, REPRODUCED OR MADE AVAILABLE TO THIRD PARTIES WITHOUT PRIOR WRITTEN PERMISSION FROM BELLINGHAM MARINE INDUSTRIES, INC. UNIFLOAT®, UNIDECK® AND © BELLINGHAM MARINE INDUSTRIES, INC.	PROJECT NUMBER: 7341 ENGINEER / DESIGNER: PROJECT MANAGER: CHECKED BY:	DANA POINT HARBOR REVITALIZATION Harbor Drive Dana Point, CA 92629 ELECTRICAL DATA SHEETS	 Date Signed: May 16, 2022	SCALE: NTS (Sheet Size 24" x 36") DRAWN BY: KG DATE: 5/10/2022 DRAWING: E32 SHEET NO.: 94
A	5-10-22	ADDED SHEET	KG					
NO.	DATE	DESCRIPTION	BY					
REVISIONS								

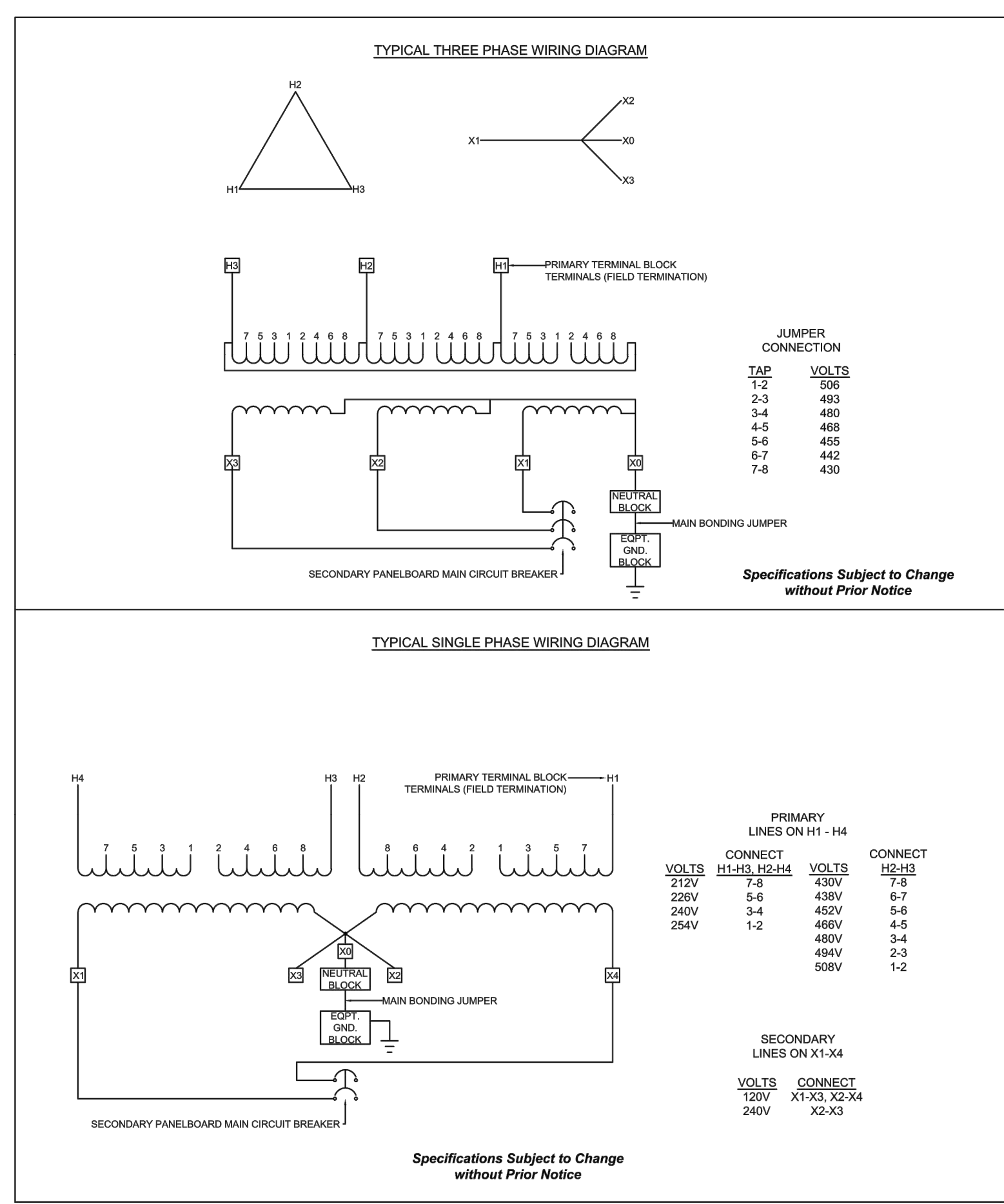
**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

Hadi Tabatabaee
 Electrical Engineer

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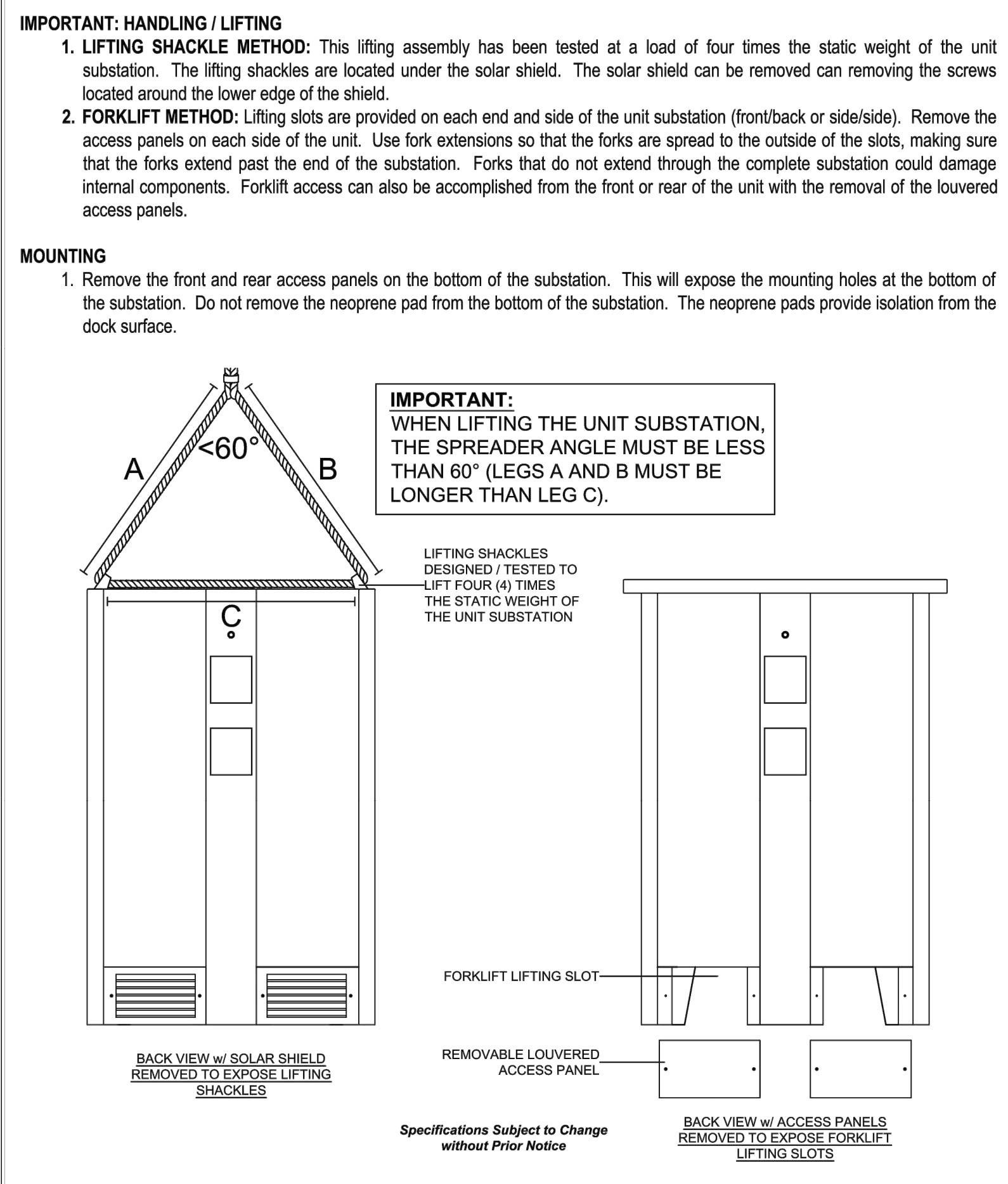
PERMIT DRAWING

General Specifications - GTX™ Unit Substation



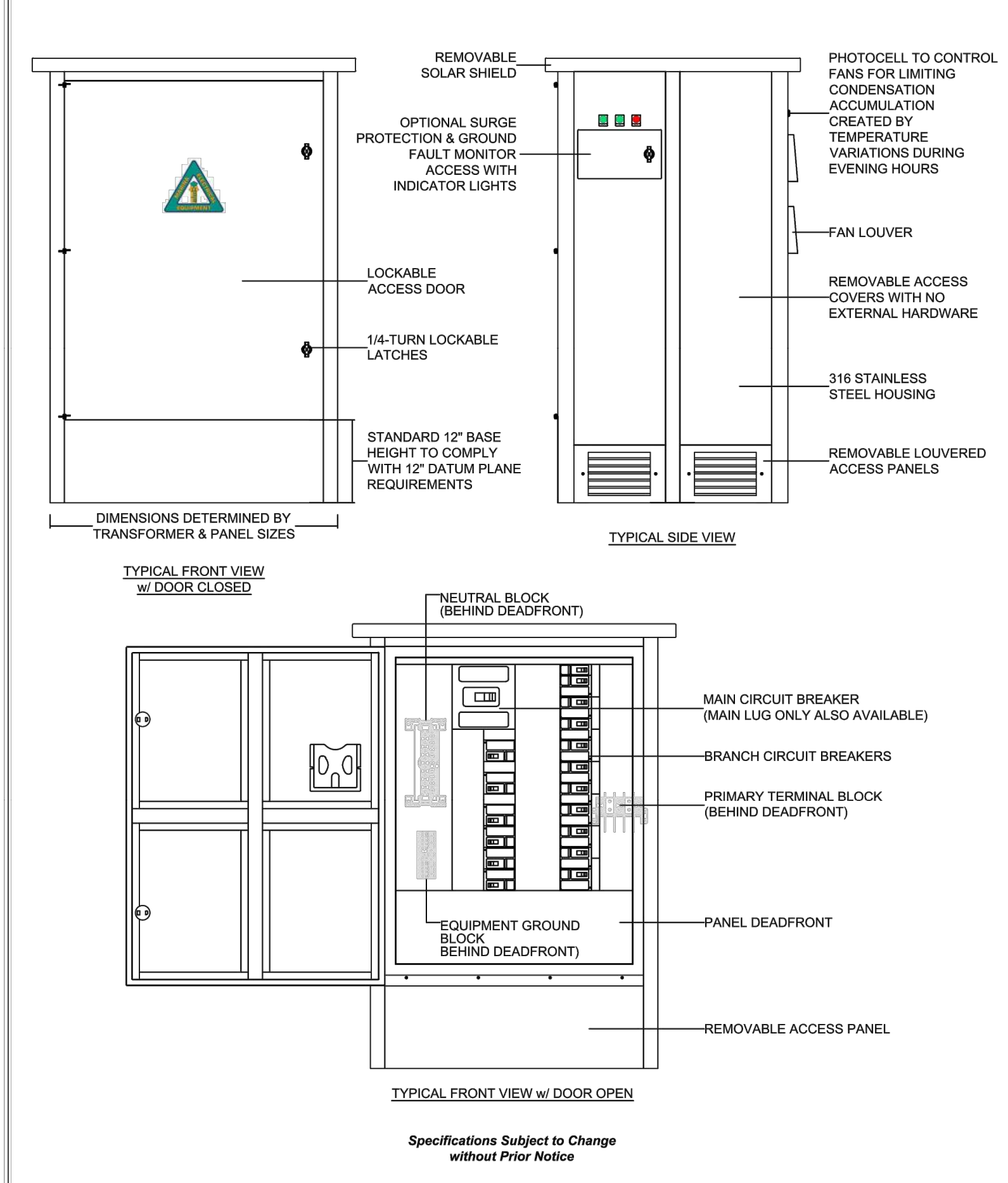
Marina Electrical Equipment, Inc. 1-855-258-3939 www.marinaelectricequipment.com Rev.6 06/01/2018 Page 5

General Specifications - GTX™ Unit Substation



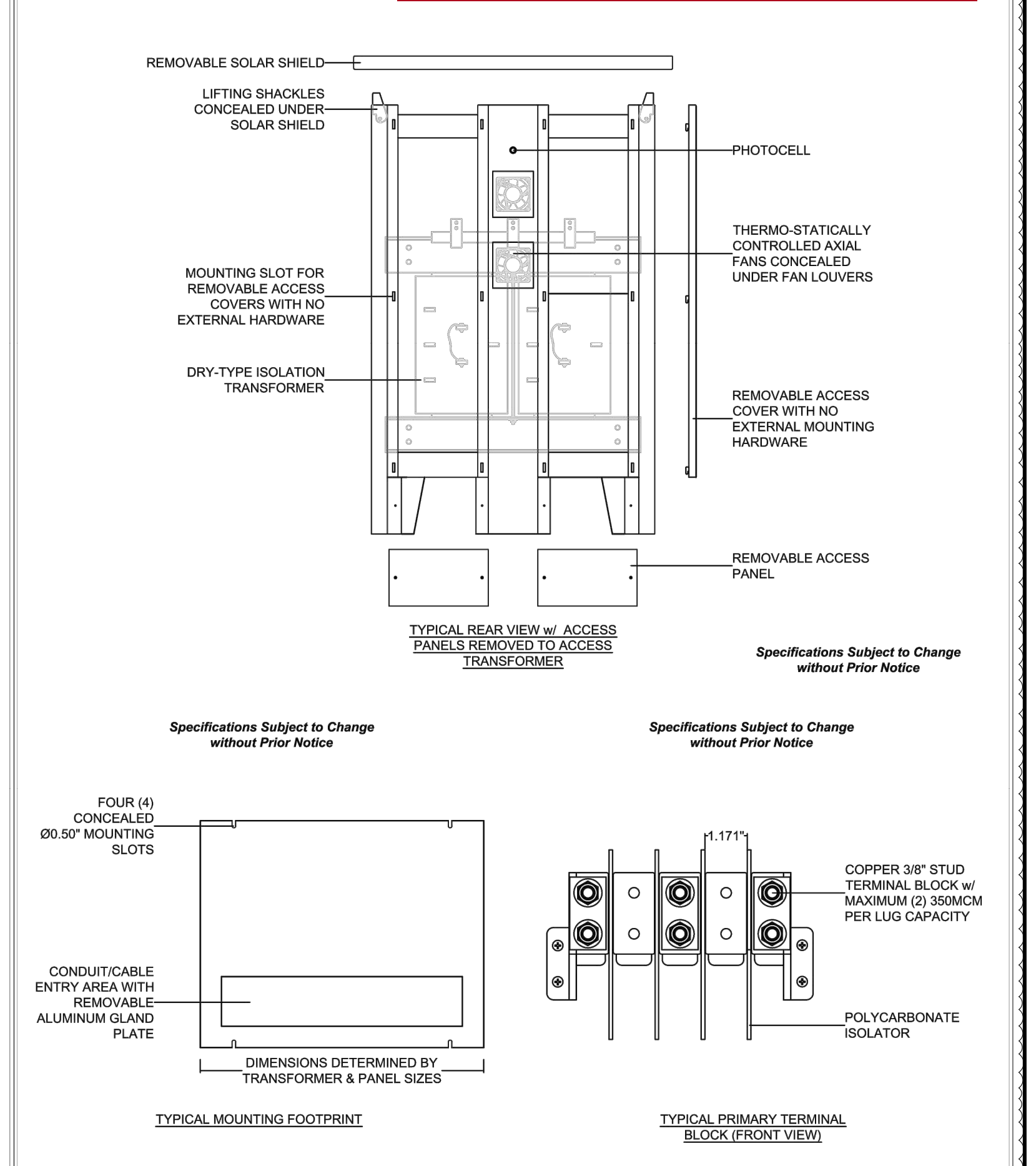
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General Specifications - GTX™ Unit Substation



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General Specifications - GTX™ Unit Substation



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NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
A	5-10-22		
REVISIONS			

Bellingham MARINE

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
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THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

ELECTRICAL DATA SHEETS

Date Signed: May 16, 2022

SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	E33
SHEET NO.:	95

PERMIT DRAWING

DOMESTIC WATER-

1. WORK INCLUDED:

- 1.1. THE WORK INCLUDES FURNISHING AND INSTALLING MARINE PIPING AS SHOWN ON THE DRAWINGS AND AS SPECIFIED IN THESE SPECIFICATIONS. MARINE PIPING IS DEFINED AS THE PIPING AND ASSOCIATED APPURTENANCES ATTACHED TO THE FLOATING DOCK SYSTEM AS WELL AS THE PIPING AND APPURTENANCES THAT EXTEND TO AND ACROSS THE GANGWAY SYSTEMS AND INTERFACE AT A POINT-OF-CONNECTION (POC), CONSISTENT WITH THE LANDSIDE "PRIVATE DOMESTIC WATER AND SEWER PLAN" FROM TAIT.
- 1.2. PIPING CONSISTS OF FURNISHING LABOR, MATERIALS, TRANSPORTATION, TOOLS EQUIPMENT AND INCIDENTALS AND CONSTRUCTING THE PIPING SYSTEM COMPLETE.
- 1.3. NEW OR REPAIRED POTABLE WATER SYSTEM SHALL BE DISINFECTED PRIOR TO USE ACCORDING TO THE METHOD SET IN SECTION 609.9 OF THE CALIFORNIA PLUMBING CODE.
- 1.4. WHERE LOCAL STATIC WATER PRESSURE (HIGH OR LOW) IS IN EXCESS OF EIGHTY (80) POUNDS PER SQUARE INCH, AN APPROVED TYPE PRESSURE REGULATOR PRECEDED BY AN ADEQUATE STRAINER SHALL BE INSTALLED TO REDUCE THE STATIC PRESSURE TO EIGHTY (80) POUNDS PER SQUARE INCH OR LESS.

2. QUALITY ASSURANCE:

- 2.1. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ARRANGEMENTS FOR OWNER INSPECTORS TO BE PRESENT DURING TESTING, OBTAINING ALL REQUIRED SIGN-OFFS FOR SYSTEM APPROVAL AND PROVIDING THE OWNER WITH A COMPLETE SIGN-OFF RECORD.

3. APPLICABLE PUBLICATIONS:

- 3.1. APPLICABLE CODES - THE MARINE PIPING SHALL CONFORM TO THE CODES LISTED BELOW.
 - 3.1.1. 2019 CALIFORNIA PLUMBING CODE
- 3.2. APPLICABLE STANDARDS AND TESTING - MARINE PIPING ADHERES TO THE APPLICABLE STANDARDS AND TESTING LISTED BELOW.
 - 3.2.1. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) PUBLICATIONS
 - 3.2.2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) PUBLICATIONS

4. MATERIALS AND EQUIPMENT:

- 4.1. THE MATERIALS AND EQUIPMENT SHALL BE A STANDARD PRODUCT OF THE MANUFACTURER. WHERE TWO OR MORE UNITS OF THE SAME EQUIPMENT ARE REQUIRED, THESE UNITS SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER. ALL MATERIALS SHALL BE DELIVERED TO THE JOBSITE NEW AND UNUSED. ALL MATERIALS SHALL BE WEATHERPROOF AND SUITABLE FOR A CORROSIVE MARINE ENVIRONMENT. NO FERROUS MATERIALS SHALL BE USED UNLESS SPECIFICALLY CALLED FOR HEREIN OR ON THE DRAWINGS.
- 4.2. ALL MATERIAL AND EQUIPMENT SHALL BE WORKED INTO A COMPLETE, CONVENIENT AND ECONOMICAL SYSTEM OR SYSTEMS; ALL APPARATUS, PARTS, MATERIALS, AND ACCESSORIES WHICH ARE NECESSARY TO ACCOMPLISH THIS RESULT SHALL BE FURNISHED AND WORKED INTO PLACE. MANUFACTURER'S INSTRUCTIONS, WRITTEN OR OTHERWISE, SHALL BE FOLLOWED, UNLESS SUPERSEDED HEREIN.

5. HDPE PIPE & FITTINGS:

- 5.1. DOCK WATER MAIN SHALL BE CONSTRUCTED FROM PE4710 POLYETHYLENE COMPOUNDS PER ASTM D3350 AND HAVE MINIMUM PRESSURE RATING OF 150 PSI.
- 5.2. LATERALS SHALL BE 3/4" PEX TUBING MADE FROM FDA APPROVED MATERIALS AND SHALL HAVE ANS/NSF-16 CERTIFICATION.
- 5.3. UP TO FOUR HOSE BIBS MAY BE SERVED PER 3/4" PEX LATERAL FROM MAIN CONNECTION.

6. HOSE BIBS:

- 6.1. HOSE BIBS AND SILLCOCKS SHALL HAVE 3/4 INCH HOSE CONNECTION. MADE FROM LEAD-FREE BRONZE CONSTRUCTION AND HAVE INTEGRAL ANTI-SIPHON VACUUM BREAKER.

7. FLEXIBLE HOSE:

- 7.1. FLEXIBLE HOSE FOR WATER CONNECTIONS FROM SHORE TO DOCK AT GANGWAY SHALL BE AS FOLLOWS:
 - 7.1.1. DOMESTIC WATER HOSE SHALL BE FDA/USDA COMPLIANT AND IN CONFORMANCE WITH 3-A SANITARY STANDARD 18-03. THE HOSE SHALL HAVE A 150 PSI WP, WITH SYNTHETIC RUBBER TUBE WITH SPIRAL-PLIED SYNTHETIC FABRIC COVER, WITH STAINLESS STEEL GROOVED COUPLINGS ON EACH END.

8. PIPE HANGERS AND SUPPORTS:

- 8.1. PIPE HANGERS, SUPPORTS, CLAMPS AND STRAPS SHALL BE PURCHASED OR FABRICATED FOR THE APPLICATION, AND COMPATIBLE WITH THE PIPE MATERIAL CHOSEN. PIPE STRAPS SHALL BE STAINLESS STEEL.

9. PIPING:

- 9.1. ALL PIPING SHALL FOLLOW THE GENERAL ARRANGEMENT SHOWN, SHALL BE CUT ACCURATELY TO MEASUREMENTS ESTABLISHED FOR THE WORK BY THE CONTRACTOR, AND SHALL BE WORKED INTO PLACE WITHOUT SPRINGING OR FORCING. PROVISION FOR EXPANSION AND CONTRACTION OF PIPE LINES SHALL BE MADE WHERE NECESSARY. PIPING SHALL BE RUN ESSENTIALLY AS INDICATED CARE BEING TAKEN TO AVOID INTERFERENCE WITH OTHER PIPING, CONDUIT, OR EQUIPMENT. THE LOCATION OF PIPING TO BE RUN ON THE DOCK SHALL BE CAREFULLY COORDINATED WITH ELECTRICAL CONDUITS. COMMON PIPE SUPPORT SYSTEMS MAY BE USED FOR WATER, SEWER AND ELECTRICAL CONDUITS WHERE APPLICABLE. BEFORE JOINTING AND ERECTION OF PIPING THOROUGHLY CLEAN INTERIORS OF PIPE AND COMPONENTS. MAINTAIN CLEANLINESS BY CLOSURE OF PIPE OPENINGS WITH CAPS OR PLUGS. BEFORE MAKING FINAL EQUIPMENT CONNECTIONS, BLOW OUT EACH SYSTEM WITH COMPRESSED AIR AT 100 PSI OR MORE. REDUCING FITTINGS SHALL BE USED FOR CHANGES IN PIPE SIZE; THE USE OF BUSHINGS WILL NOT BE PERMITTED.
- 9.2. SCREW FITTINGS: USE FACTORY-INSTALLED SCREW FITTINGS ONLY WHERE EXPLICITLY CALLED OUT HEREIN.
- 9.3. PROVIDE PIPE PROTECTION FROM LONG TERM EXPOSURE TO SUNLIGHT. (IAPMO INSTALLATION STANDARD IS 26-2006)

10. UTILITY STANDS:

- 10.1. FLEXIBLE HOSE AND RISER SHALL BE SUPPORTED WITH A GALVANIZED STEEL STAND BOLTED INTO THE DOCK SYSTEM. STANDS SHALL BE CONSTRUCTED USING STRUCTURAL SHAPES; IE, CHANNELS, ANGLES OR TUBES.
- 10.2. UTILITY STANDS INSTALLED ON THE EDGES OF THE DOCK SHALL BE STRUCTURALLY MOUNTED TO THE FLOATING DOCK. UTILITY STANDS MOUNTED ON FINGER FILLETS SHALL BE THRU-BOLTED.

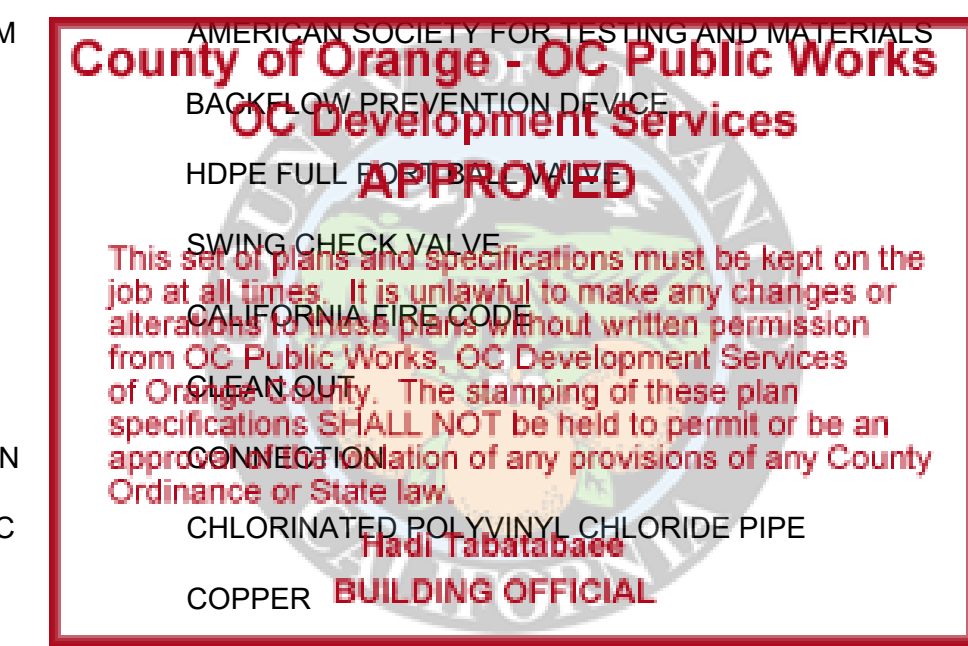
11. FIELD TEST:

- 11.1. THE DOCK DOMESTIC WATER SYSTEM SHALL BE SUBJECTED TO HYDROSTATIC PRESSURE TEST. SYSTEM MAY BE TESTED AS A UNIT OR IN SECTIONS. INSTALL A CALIBRATED PRESSURE GAGE, APPLY AND MAINTAIN THE VACUUM PRESSURE SHOWING NO EVIDENCE OF LEAKAGE AS DETECTED BY A CHANGE IN TEST PRESSURE. SHOULD A REDUCTION OCCUR, LOCATE LEAKS, REPAIR, AND REPEAT TEST.
- 11.2. DOMESTIC WATER TEST PRESSURE SHALL BE 1.25 TIMES THE LOCAL STATIC LINE PRESSURE WITH THE TEST PRESSURE NOT TO EXCEED ONE HUNDRED (100) POUNDS PER SQUARE INCH. DURATION OF THE TEST IS TWO (2) HOURS.
- 11.3. ALL EQUIPMENT AND APPARATUS REQUIRED FOR THE TESTS SHALL BE FURNISHED BY THE CONTRACTOR.

LEGEND AND ABBREVIATIONS

9/14/2022

SYMBOLS	ABBREV.	DESCRIPTION
	AHJ	Building & Safety: Roshanak Amirazizi
	ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
	ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
←→	BFP	BACKFLOW PREVENTION DEVICE
⊘	BV	HDPE FULL
↺	CH	SWING CHECK VALVE
—	CFC	CORROSION RESISTANT FIBERGLASS COMPOSITE
—	CO	COPPER
—	CONN	CONNECTOR
—	CPVC	CHLORINATED POLYVINYL CHLORIDE PIPE
—	CU	COPPER
—	DB	DOCK BOX WITH HOSE BIB
---	DW	DOMESTIC WATER- 2" SDR11 HDPE PIPE (UNO)
—	DI	DUCTILE IRON
—	DIA	DIAMETER
—	DWG	DRAWING
—	ELL	ELBOW
⊕	EXIST.	EXISTING
▼	FDC	FIRE DEPARTMENT CONNECTION
⊕	FEC	FIRE EXTINGUISHER CABINET (NO STANDPIPE)
⊕	FSP	FIRE EXTINGUISHER CABINET WITH 2-1/2" STANDPIPE
⊕	FH	FIRE HYDRANT
—	FHC	FIRE HOSE CABINET
—	FM	FACTORY MUTUAL
—	FT	FEET
—	GPM	GALLONS PER MINUTE
—	GALV	GALVANIZED
—	GV	GATE VALVE
⊕	HB	3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER
—	HDPE	HIGH DENSITY POLYETHYLENE
—	HDG	HOT DIPPED GALVANIZED
—	MAX	MAXIMUM
—	MIN	MINIMUM
—	MJ	MECHANICAL JOINT
—	NPT	NATIONAL PIPE THREAD
—	NTS	NOT TO SCALE
—	OSHA	OCCUPATIONAL AND SAFETY HEALTH ADMIN
⊕	P.O.C.	POINT OF CONNECTION
—	PVC	POLYVINYL CHLORIDE PIPE
—	PSI	POUNDS PER SQUARE INCH
⊕	SP	SEWER PUMP
⊕	SH	SEWER PUMP HYDRANT
—	SS	STAINLESS STEEL
—	TYP.	TYPICAL
—	UL	UNDERWRITERS LABORATORIES INC.
—	UNO	UNLESS NOTED OTHERWISE
⊕		EMERGENCY TELEPHONE STAND



NO.	DATE	DESCRIPTION	BY
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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION	
Harbor Drive Dana Point, CA 92629	
DOMESTIC WATER SYSTEM NOTES & LEGEND	



SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DW1
SHEET NO.:	96

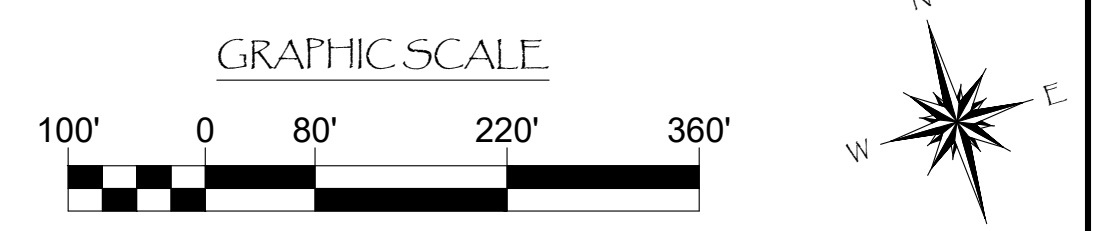
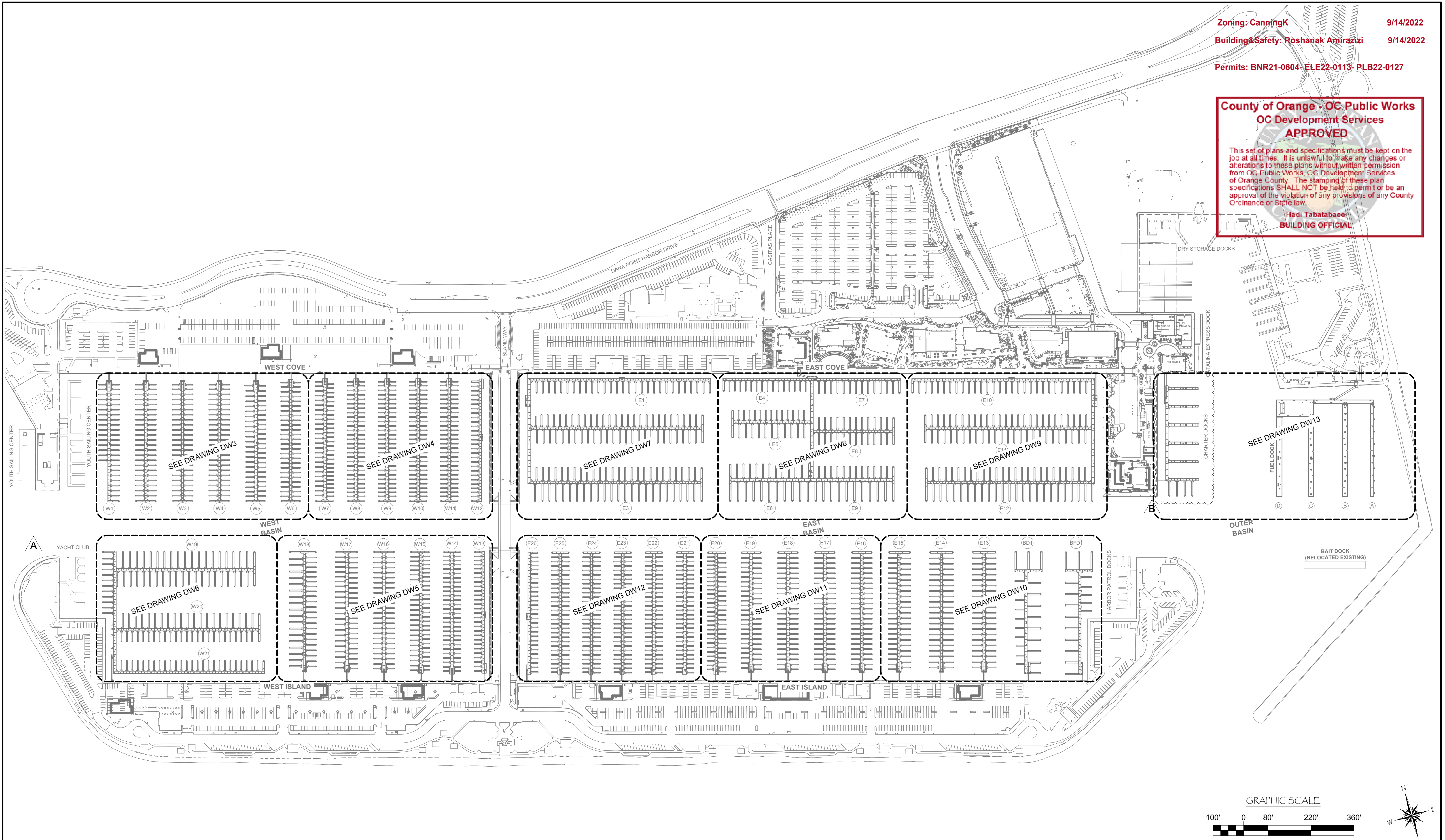
Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604-ELE22-0113-PLB22-0127

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 OC Development Services
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**Hadi Tabatabaee
 BUILDING OFFICIAL**

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NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED YACHT CLUB	KG
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOMESTIC WATER SYSTEM LAYOUTS INDEX



SCALE: 1" = 140'
 (Sheet Size 24" x 36")

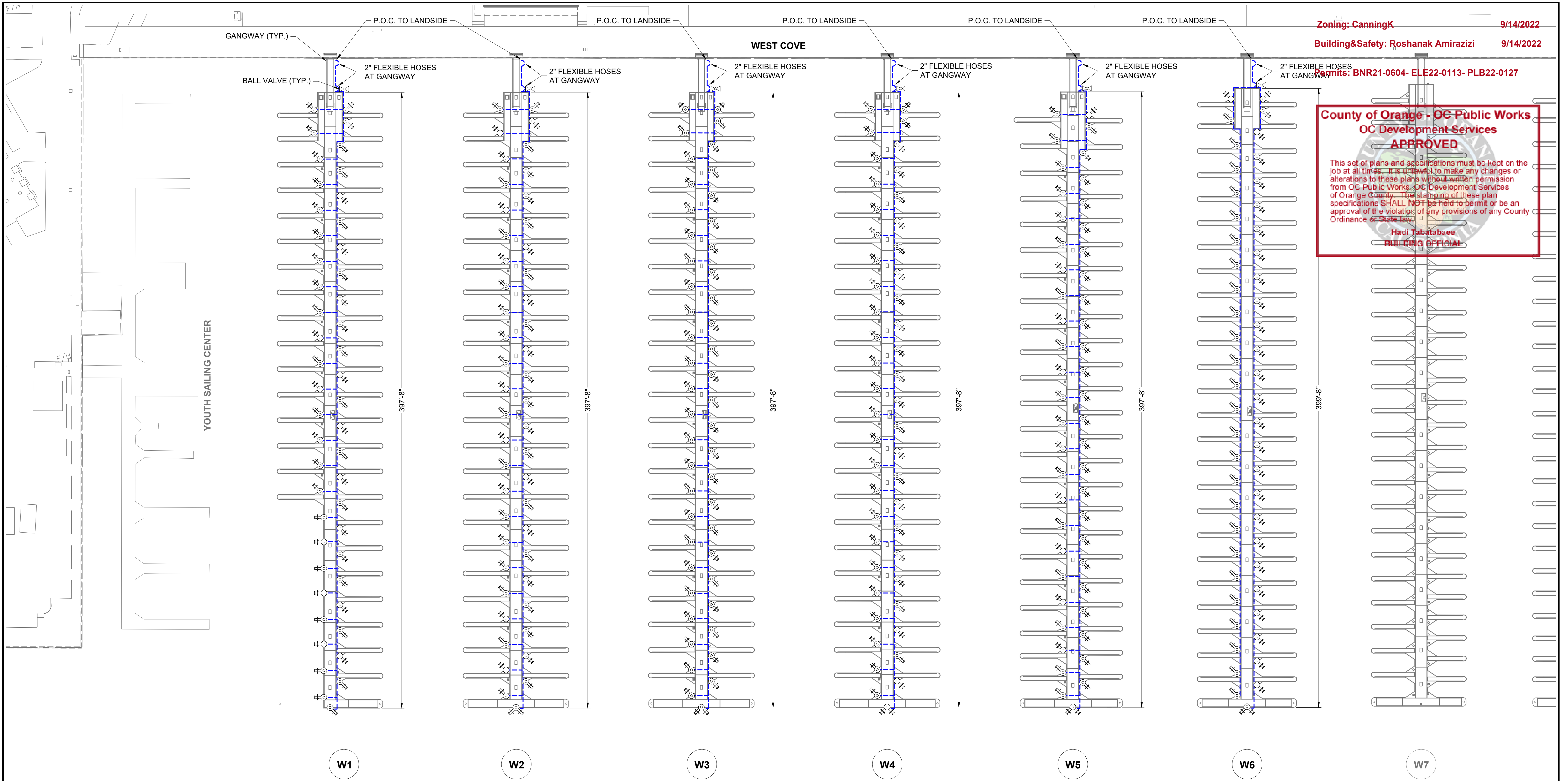
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DATE: 5/10/2022

DRAWING: DW2

SHEET NO.: 97

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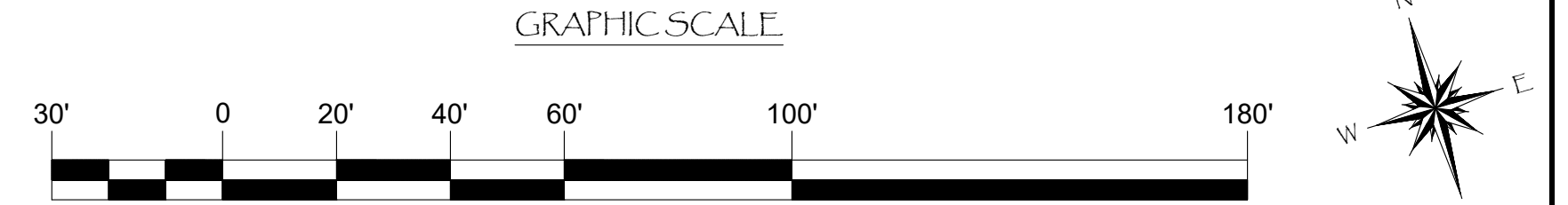


Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 Hadi Jabatabae
 BUILDING OFFICIAL

W1
W2
W3
W4
W5
W6
W7

LEGEND:
 - - - - - = 2" SDR11 HDPE PIPE
 ⊕⊙ = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER
 △ = BALL VALVE



NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADDED BALL VALVES	KG
REVISIONS			

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 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
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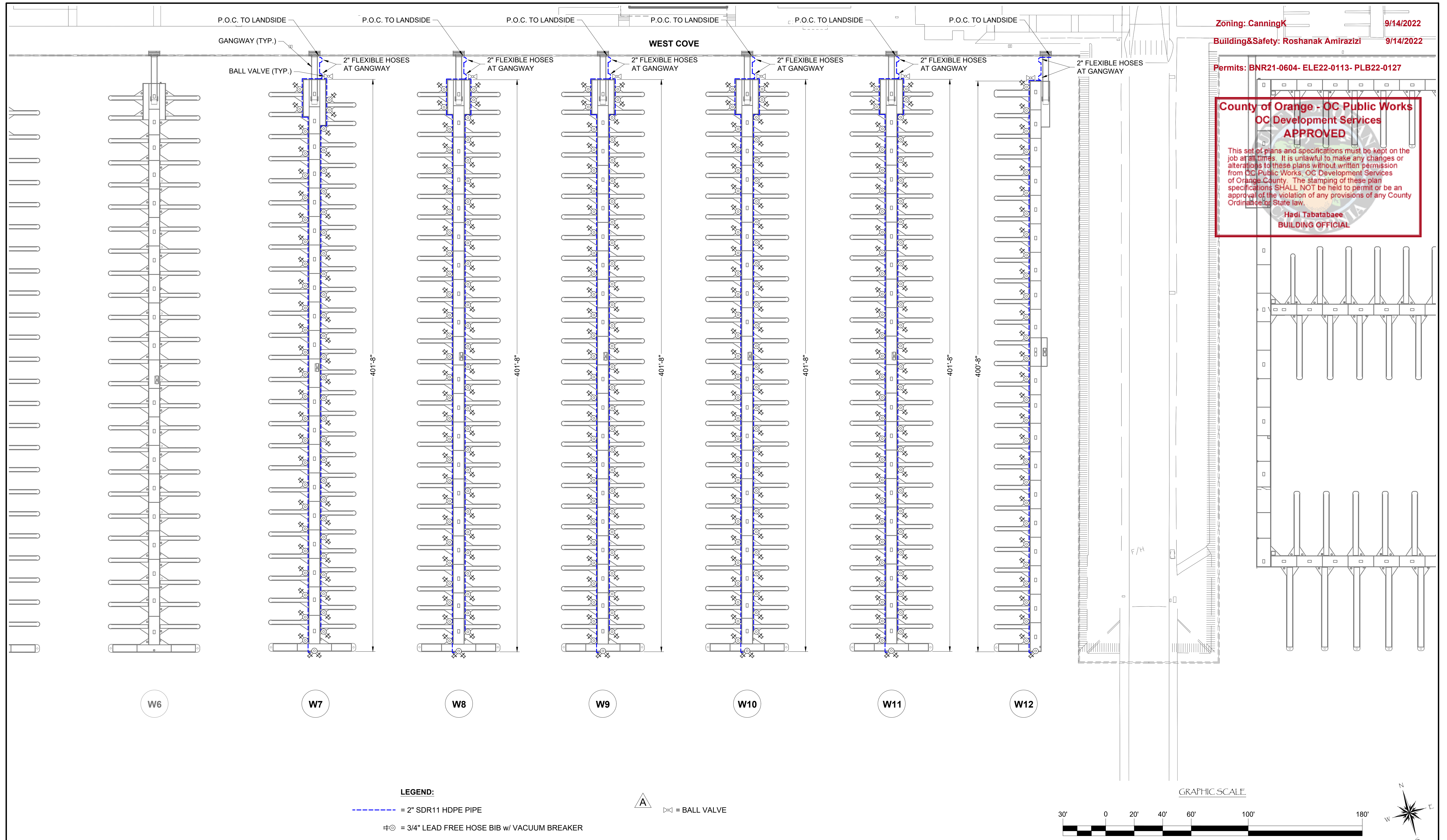
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DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS W1 - W6



SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: DW3
 SHEET NO.: 98

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LEGEND:

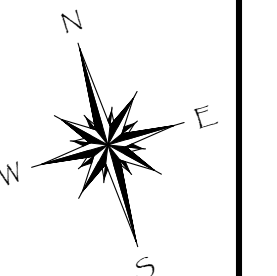
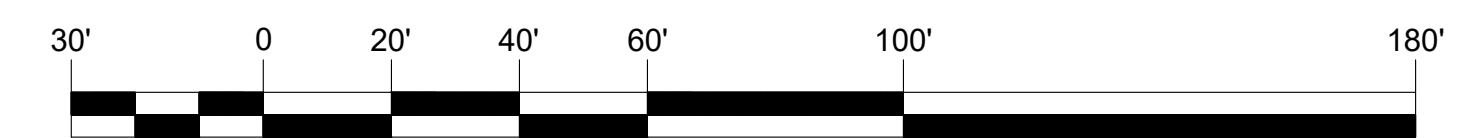
--- = 2" SDR11 HDPE PIPE

⊕ = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER



⊕ = BALL VALVE

GRAPHIC SCALE



NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADDED BALL VALVES	KG
REVISIONS			



SOUTHWEST DIVISION
 CA LICENSE #442499
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ENGINEER / DESIGNER:	
PROJECT MANAGER:	
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DANA POINT HARBOR REVITALIZATION

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 Dana Point, CA 92629

DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS W7 - W12



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DW4
SHEET NO.:	99

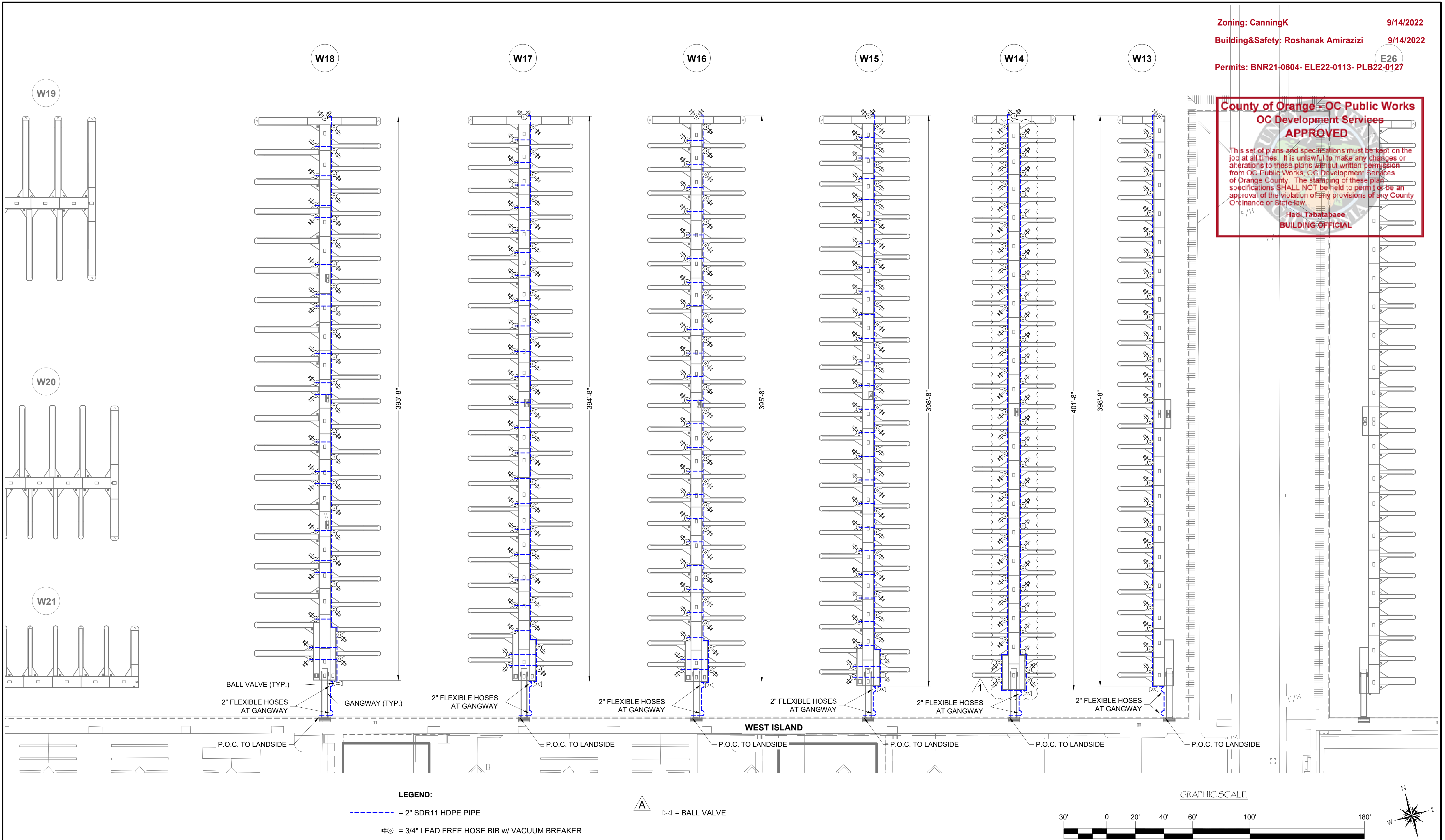
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
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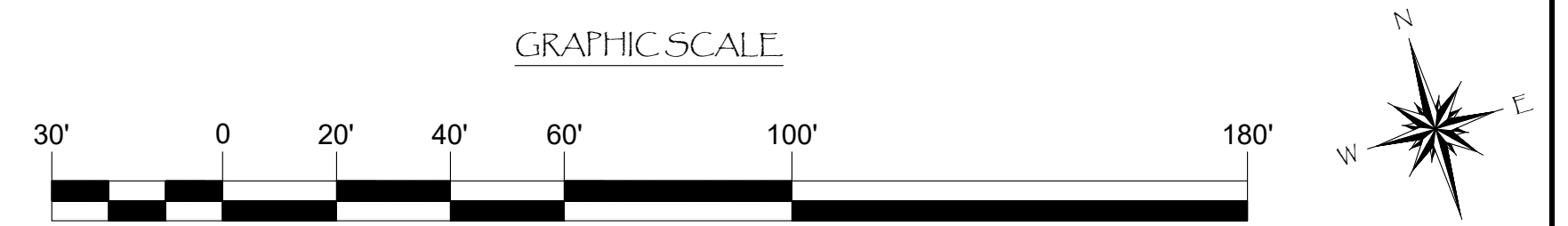


LEGEND:

--- = 2" SDR11 HDPE PIPE

⊕ = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER

△ = BALL VALVE



NO.	DATE	DESCRIPTION	BY
A	2-25-22	MIRRORED DOCK/ ADDED BALL VALVES	KG
REVISIONS			

Bellingham MARINE

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 CA LICENSE #442499
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PROJECT MANAGER:

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DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS W13 - W18



SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: DW5

SHEET NO.: 100

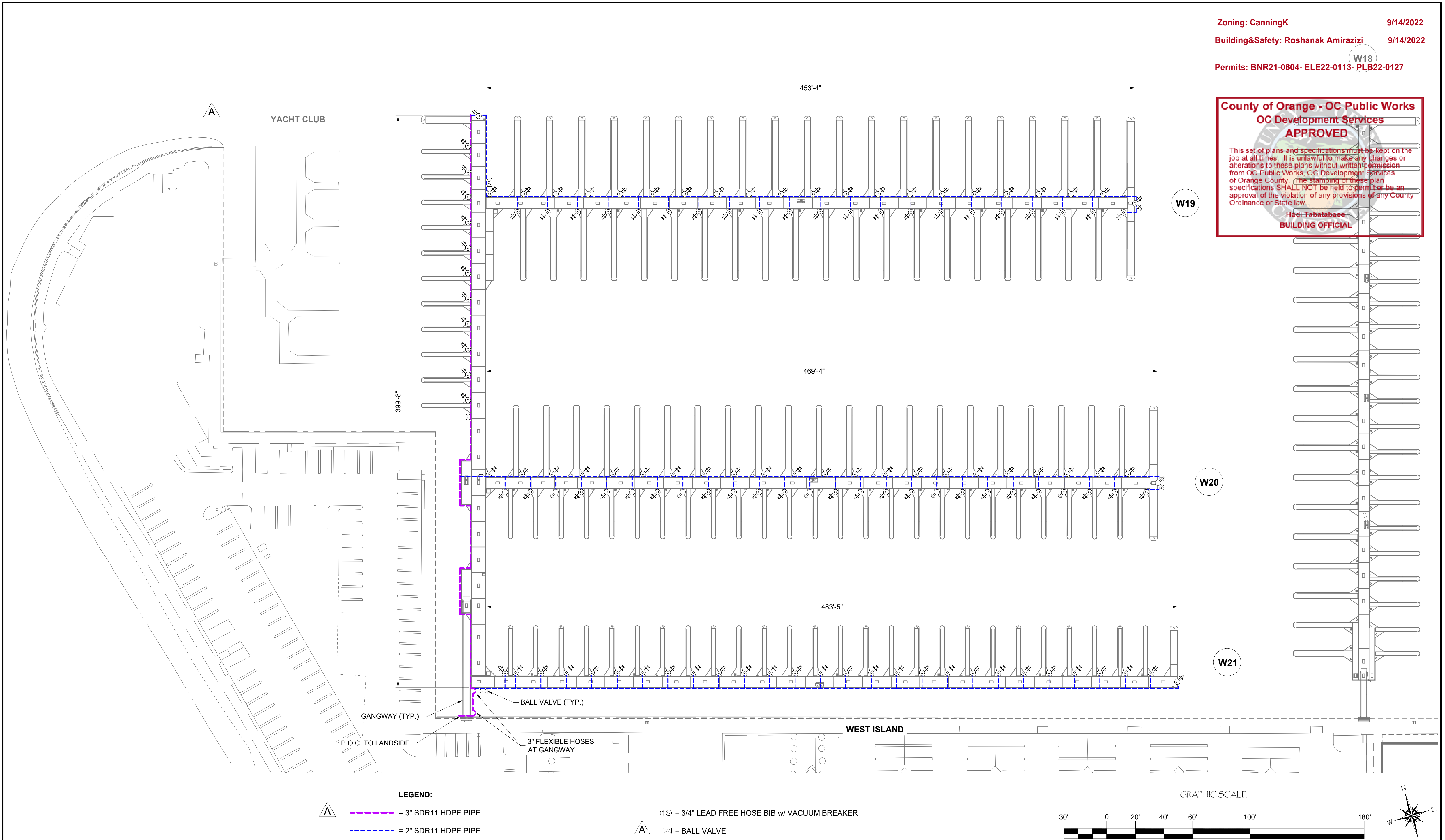
Zoning: CanningK 9/14/2022
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PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
A	2-25-22	REMOVED YACHT CLUB/ MAIN CHANGED TO 3" & ADDED BALL VALVES	KG
REVISIONS			

Bellingham MARINE
 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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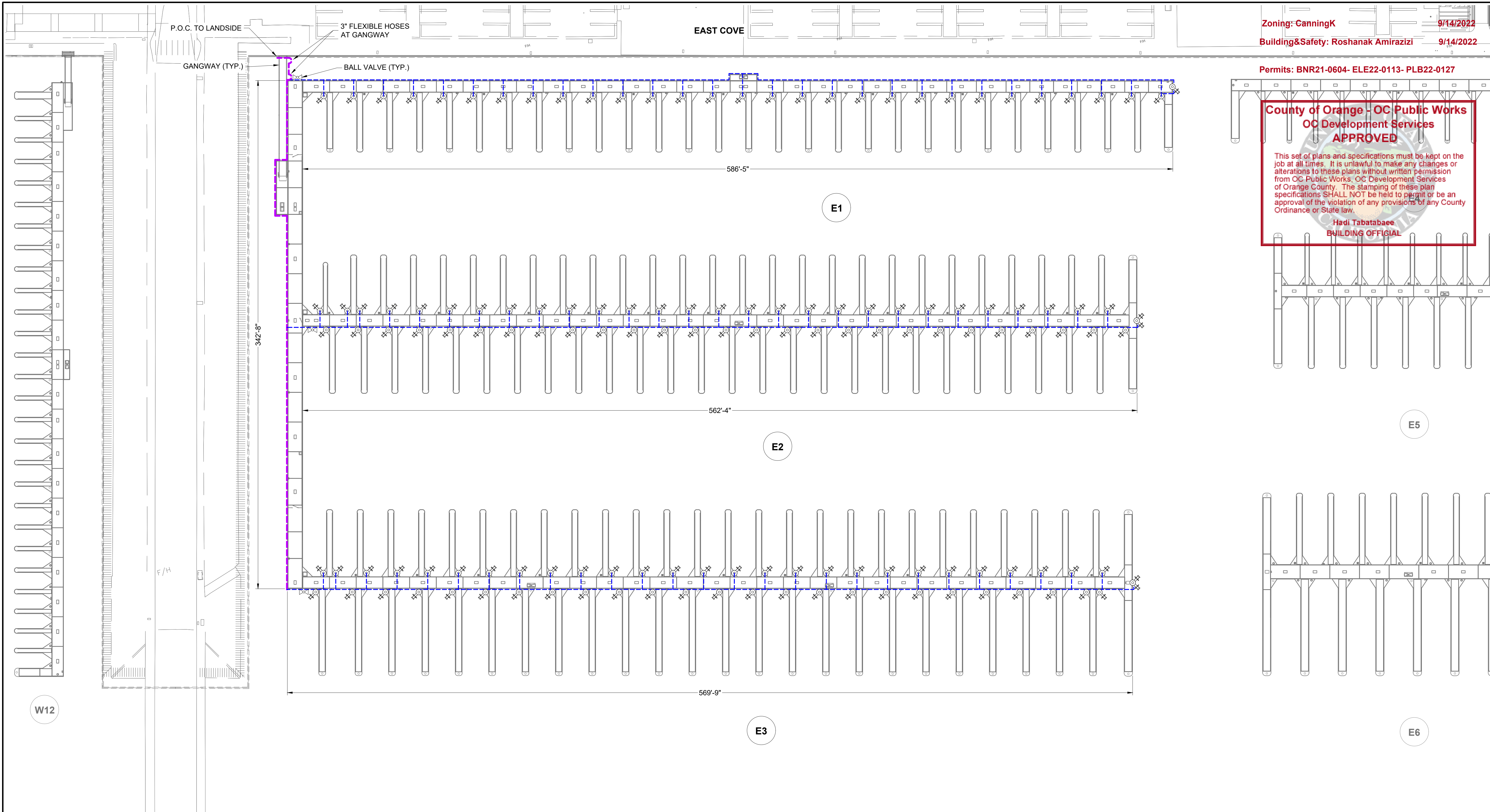
PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS W19 - W21



SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: DW6
 SHEET NO.: 101

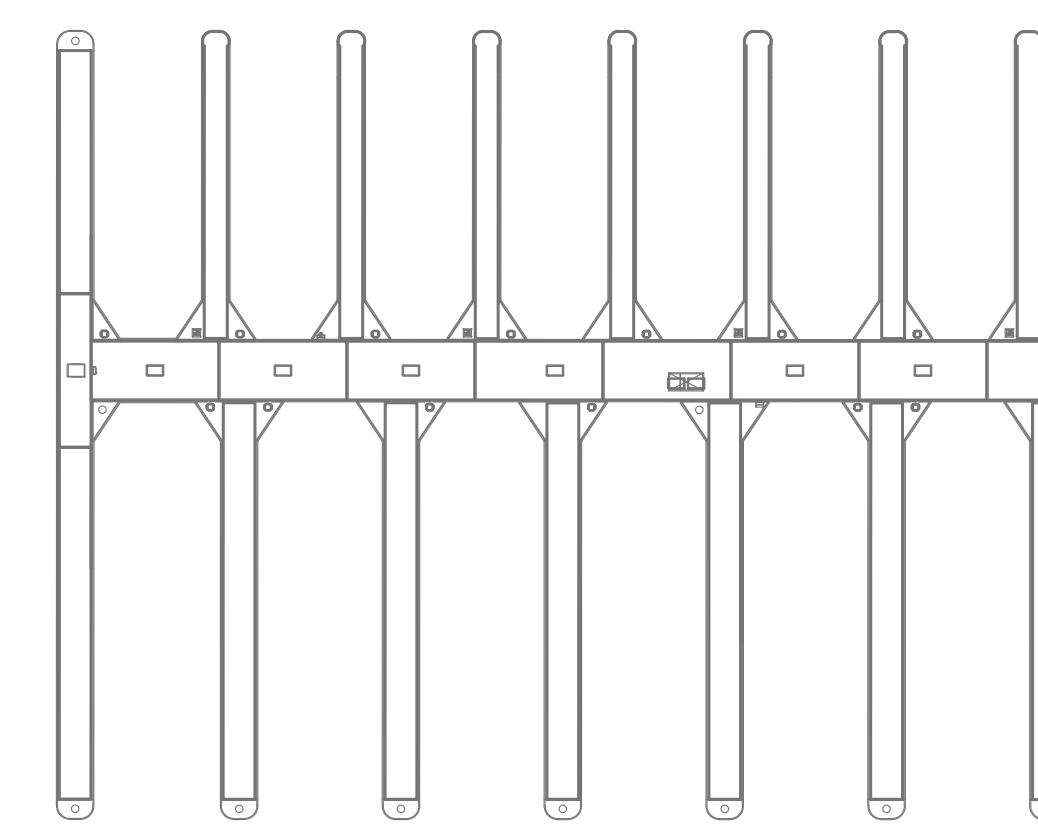
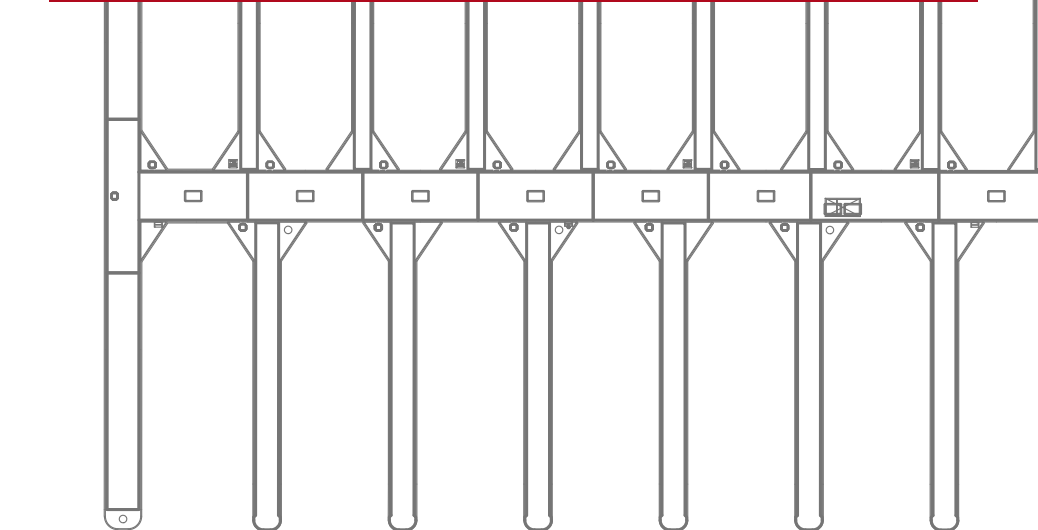
PERMIT DRAWING



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022

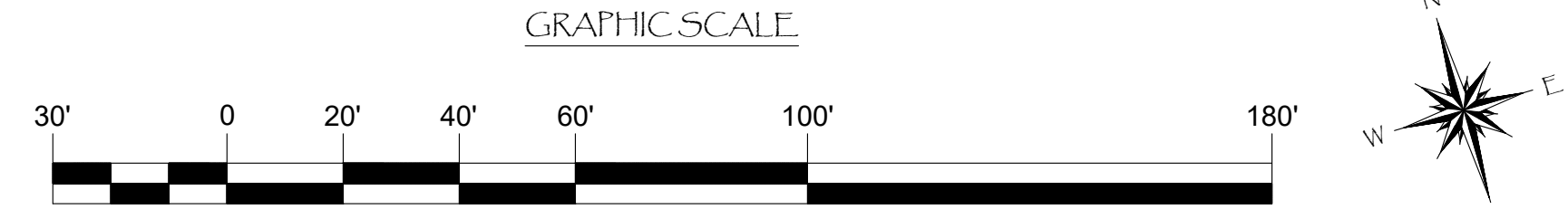
Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 Hadi Tabatabaee
 BUILDING OFFICIAL



LEGEND:

- = 3" SDR11 HDPE PIPE
- = 2" SDR11 HDPE PIPE
- $\oplus \ominus$ = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER
- \otimes = BALL VALVE



NO.	DATE	DESCRIPTION	BY
A	2-25-22	MAIN CHANGED TO 3", ADDED BALL VALVES	KG
REVISIONS			

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 THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

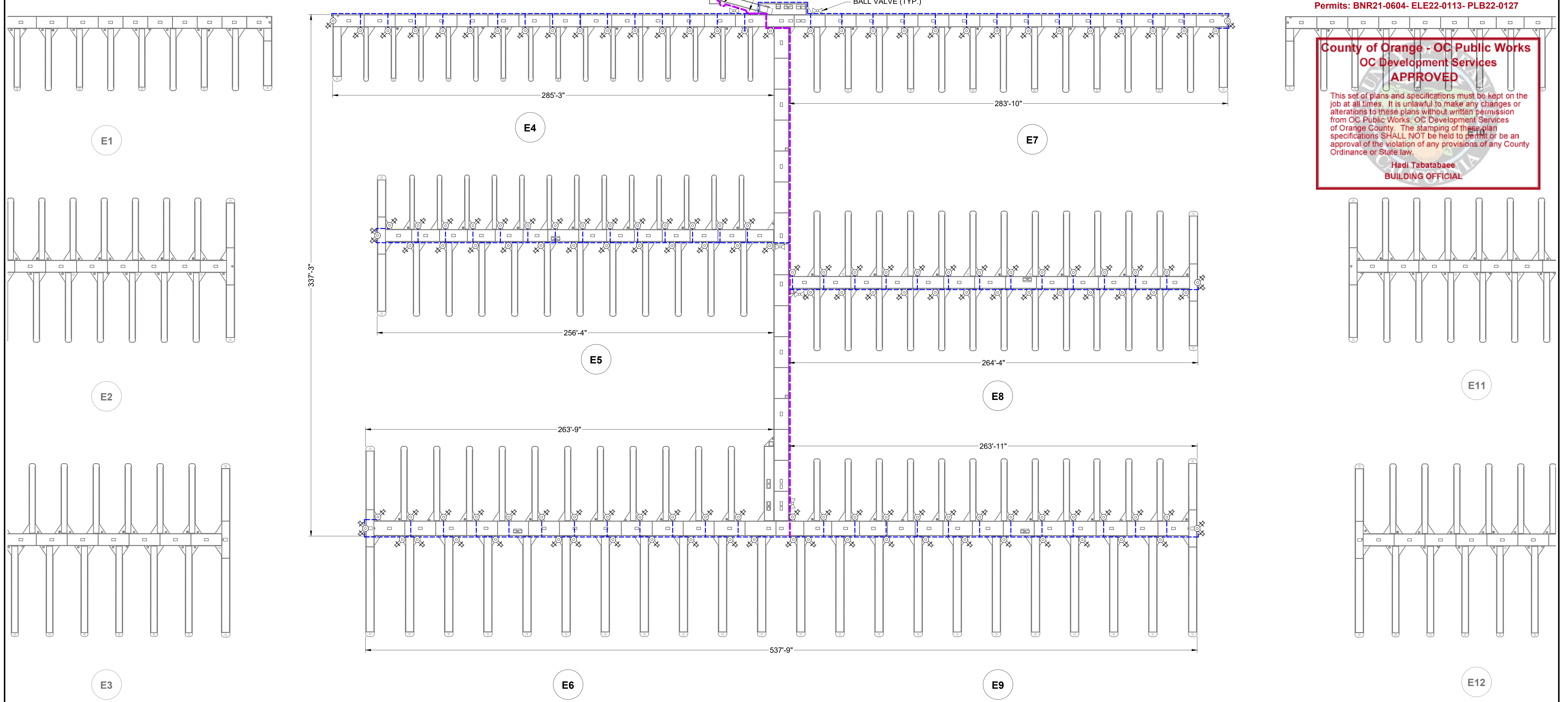
Harbor Drive
 Dana Point, CA 92629

DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS E1 - E3



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DW7
SHEET NO.:	102

PERMIT DRAWING



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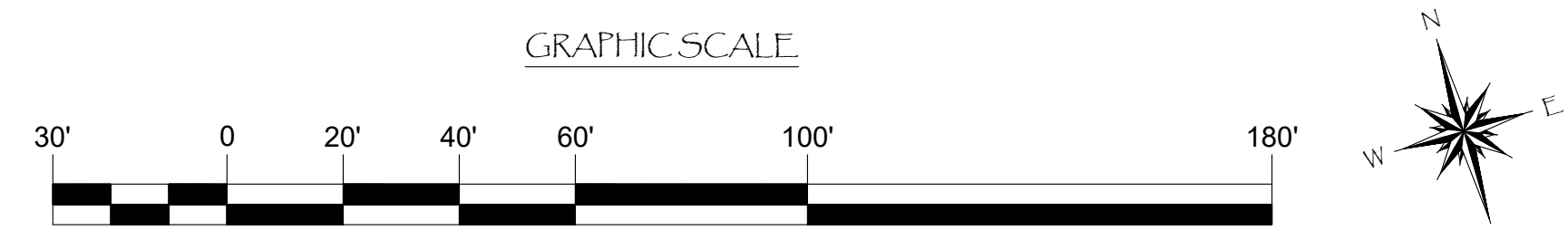
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Hadi Tabatabaee
 BUILDING OFFICIAL

LEGEND:

— = 3" SDR11 HDPE PIPE
 - - - = 2" SDR11 HDPE PIPE

⊕ = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER
 ⊕ = BALL VALVE



NO.	DATE	DESCRIPTION	BY
A	2-25-22	MAIN CHANGED TO 3", ADDED BALL VALVES	KG
REVISIONS			

Bellingham MARINE

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
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THE WORLD'S MOST
 COMPREHENSIVE
 MARINA BUILDER

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

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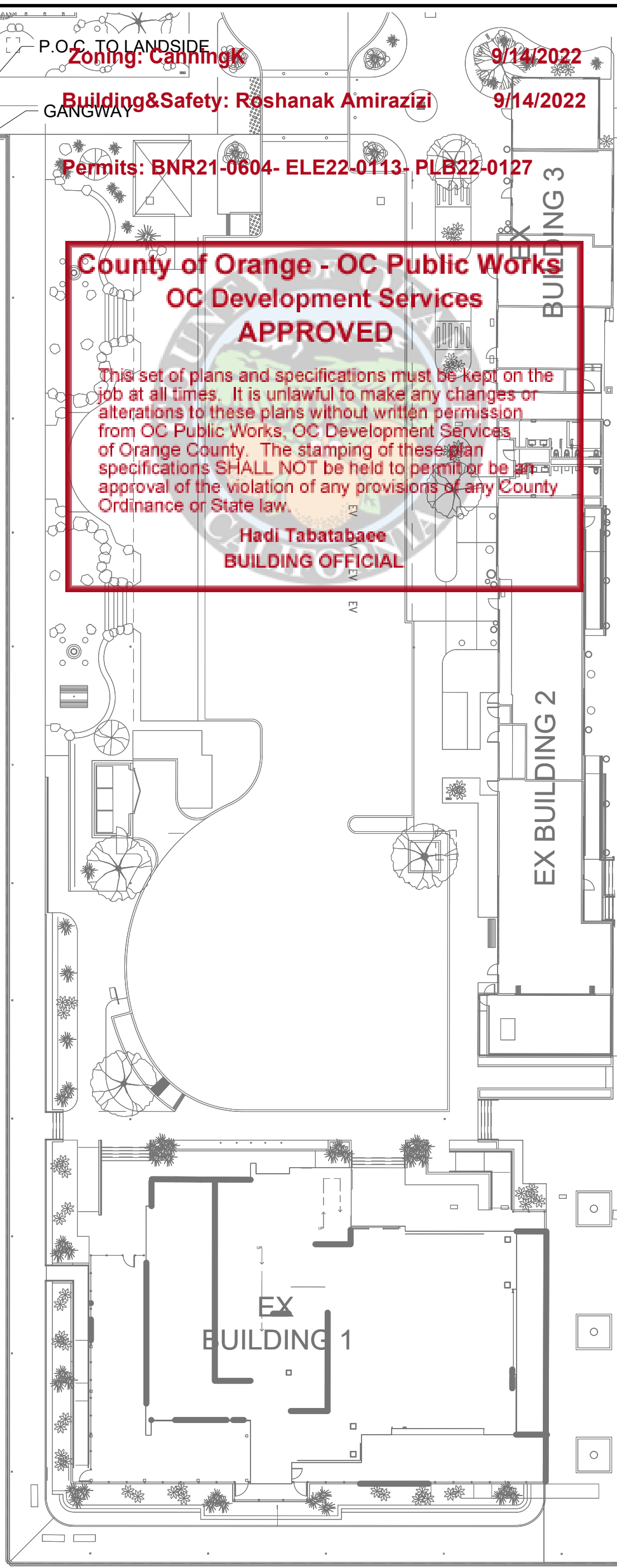
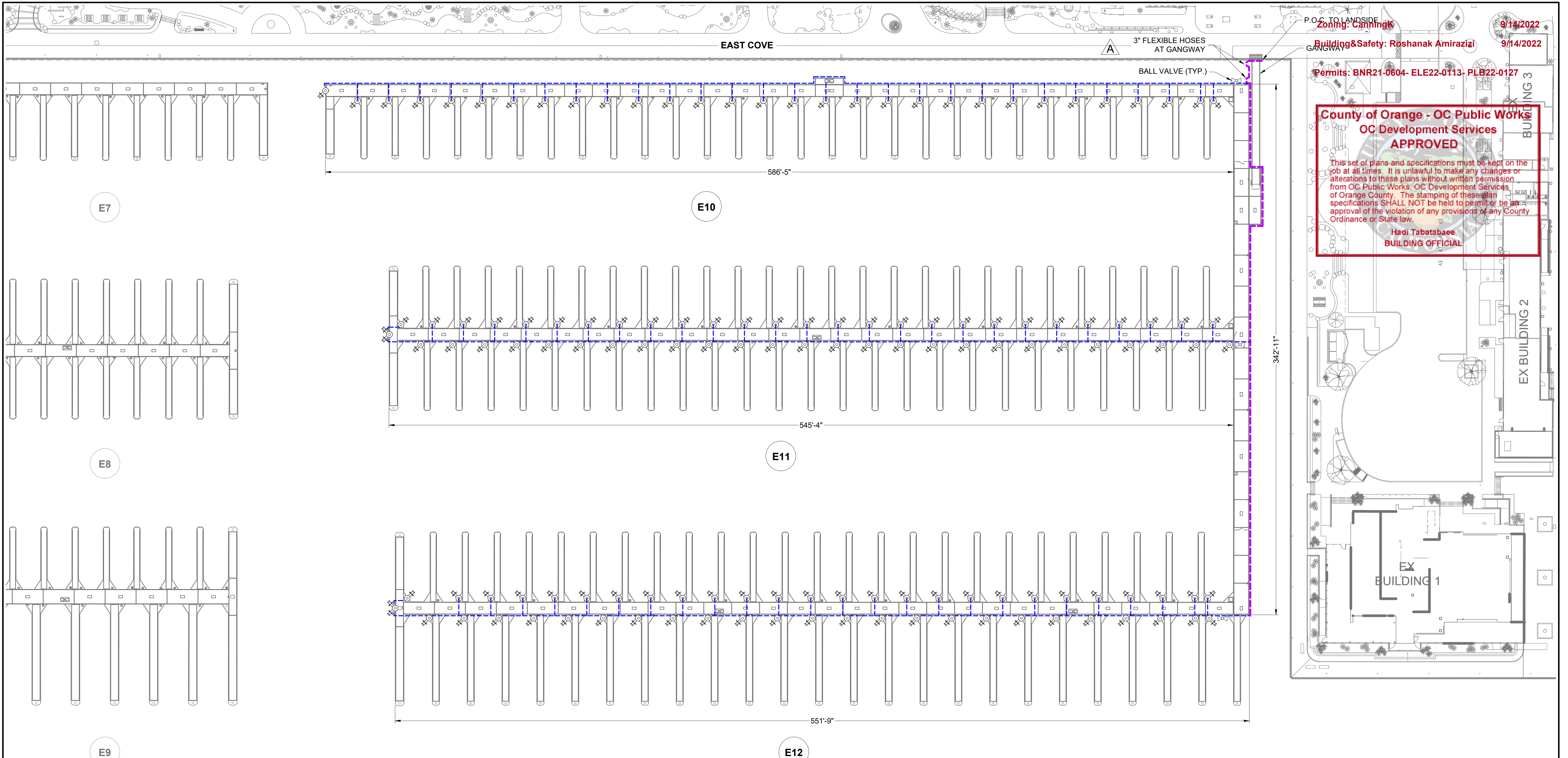
Harbor Drive
 Dana Point, CA 92629

DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS E4 - E9

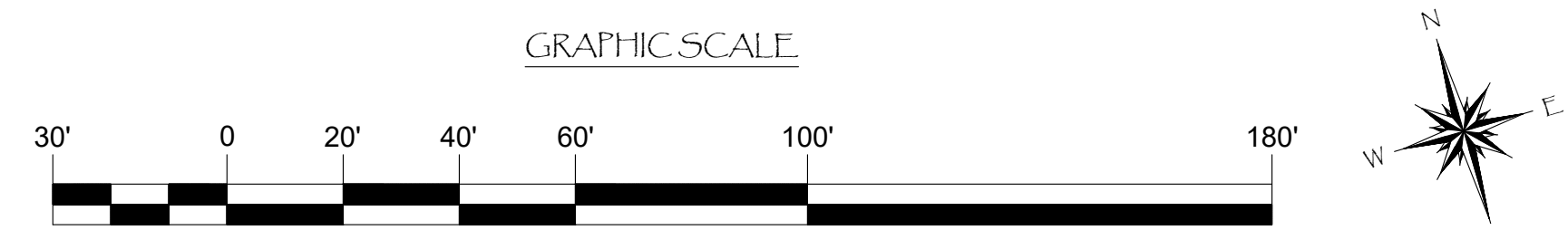


SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DW8
SHEET NO.:	103

PERMIT DRAWING



- LEGEND:**
- = 3" SDR11 HDPE PIPE
 - = 2" SDR11 HDPE PIPE
 - = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER
 - = BALL VALVE



NO.	DATE	DESCRIPTION	BY
A	2-25-22	MAIN CHANGED TO 3", ADDED BALL VALVES	KG

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SOUTHWEST DIVISION
 CA LICENSE #442499
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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS E10 - E12



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DW9
SHEET NO.:	104

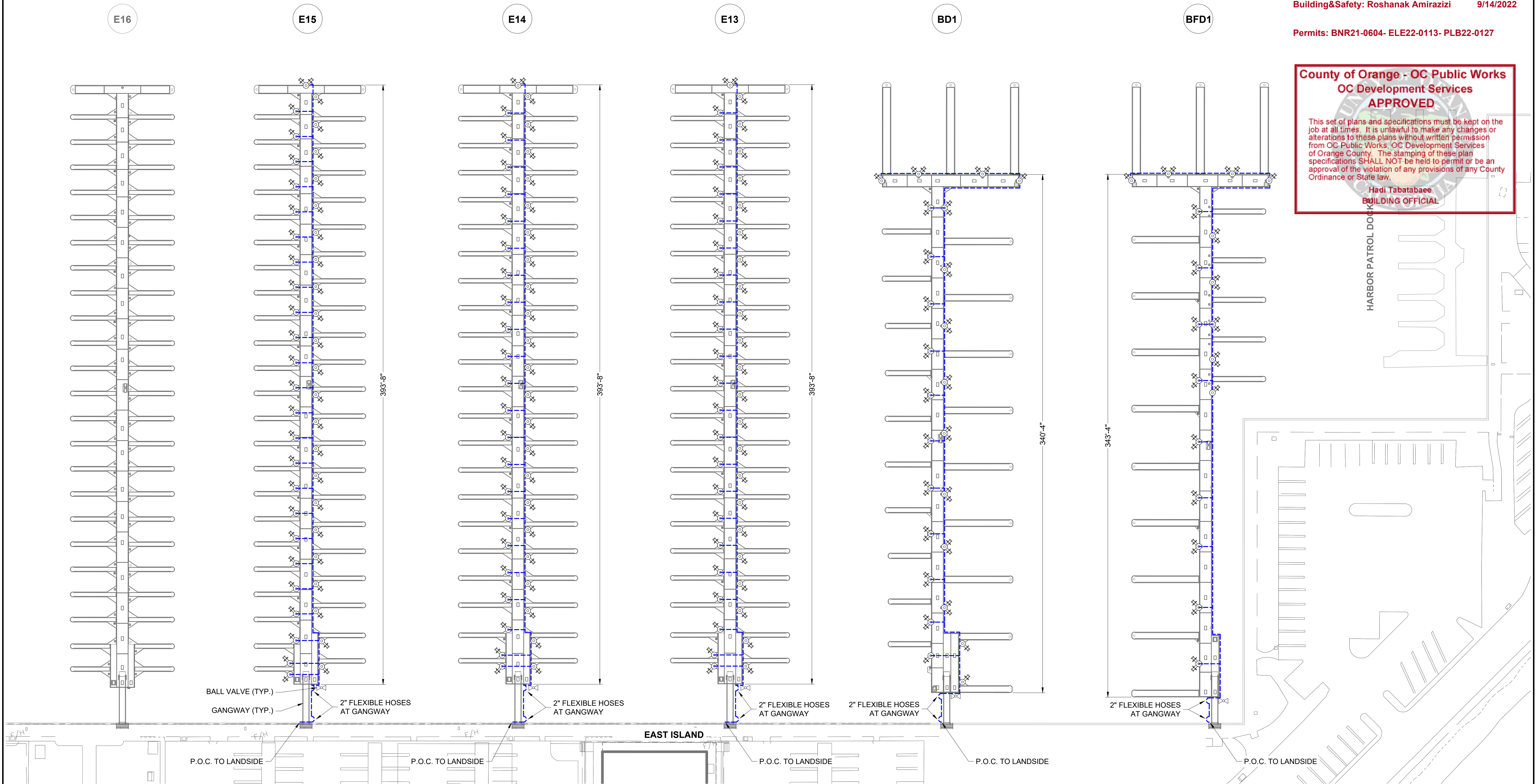
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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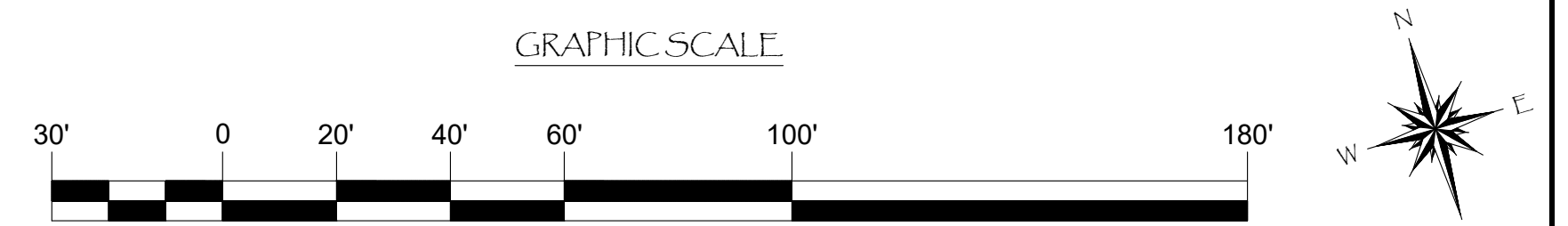
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Hadi Tabatabaee
 BUILDING OFFICIAL



LEGEND:

- - - - - = 2" SDR11 HDPE PIPE
- ⊕⊙ = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER
- A = BALL VALVE



NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADDED 2" BALL VALVES	KG
REVISIONS			

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS BFD1, BD1, & E13 - E15

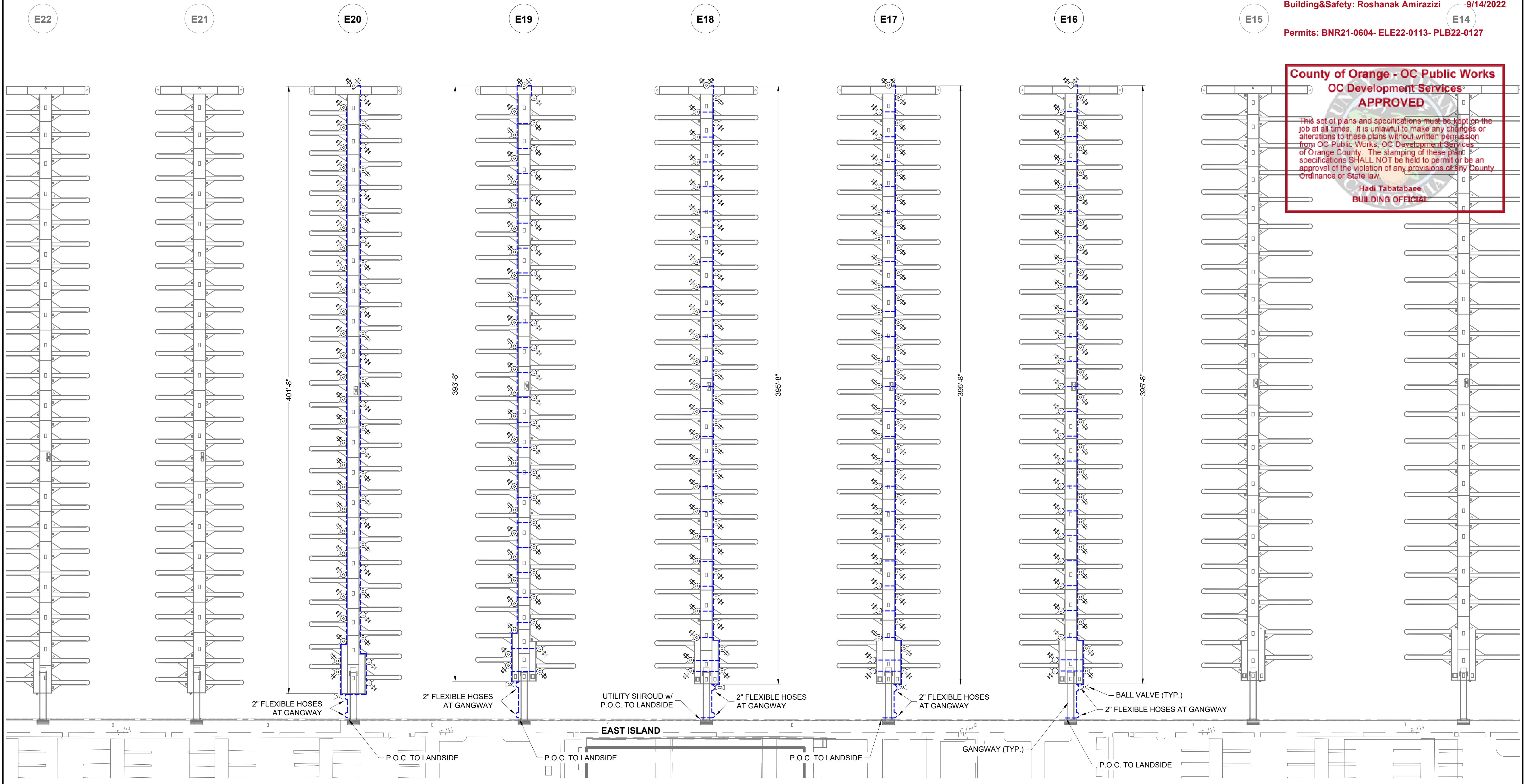


SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DW10
SHEET NO.:	105

PERMIT DRAWING

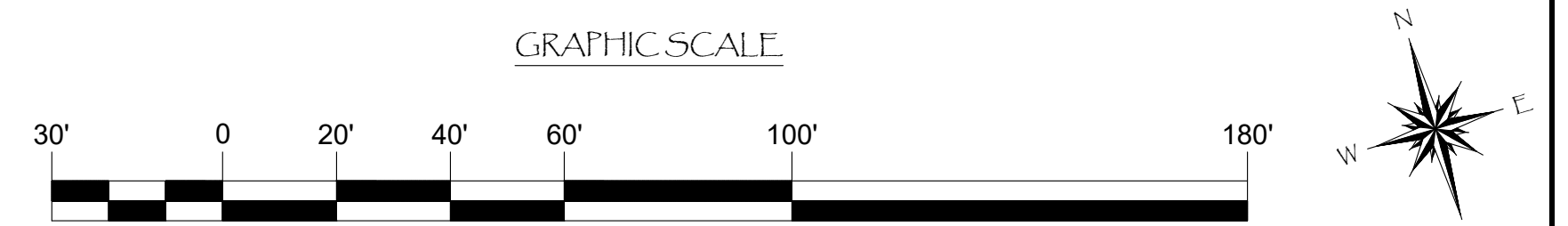
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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LEGEND:

- - - - - = 2" SDR11 HDPE PIPE
- ⊕ = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER
- A = BALL VALVE



NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADDED BALL VALVES	KG
REVISIONS			

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

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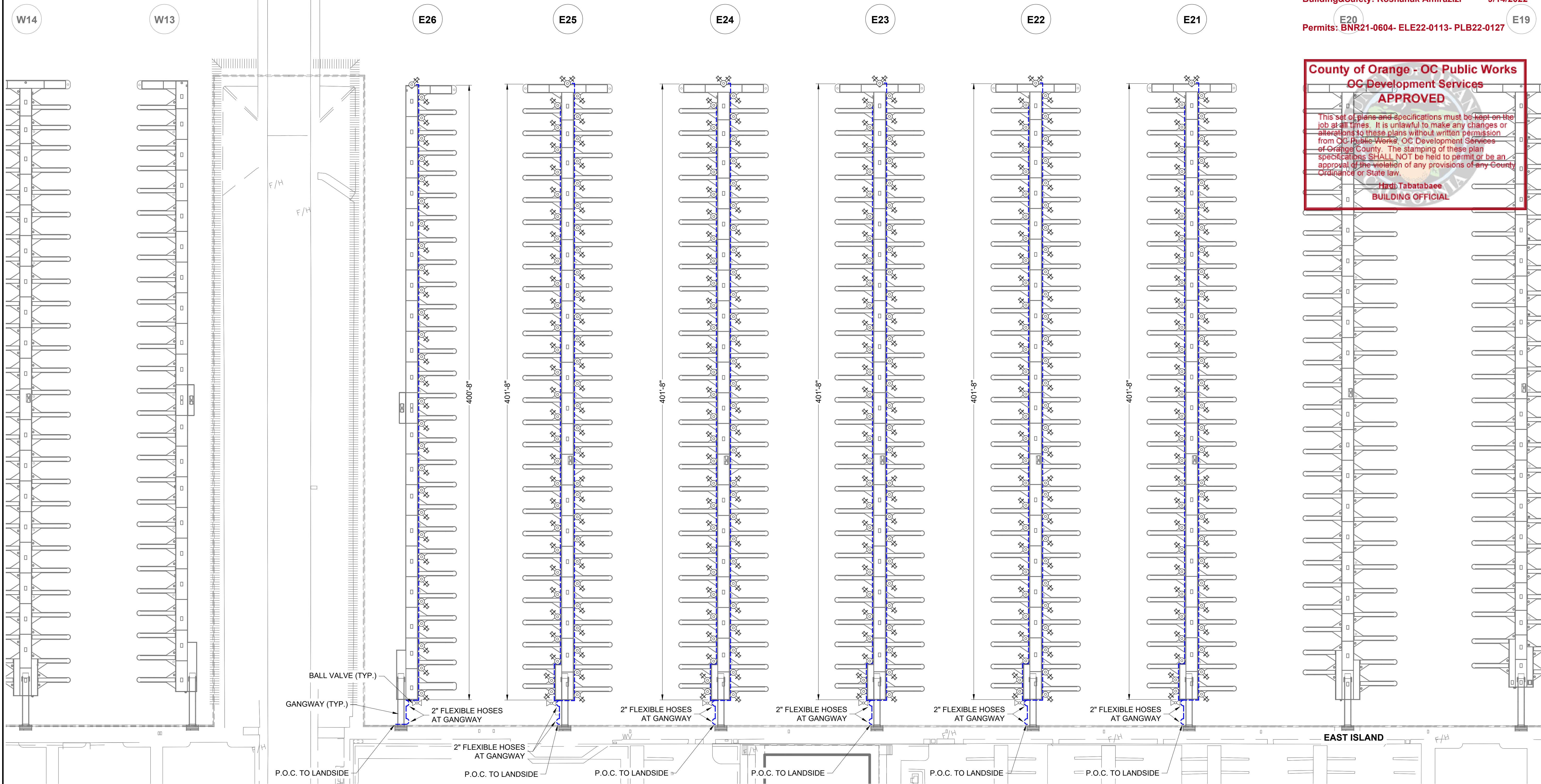
DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS E16 - E20



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DW11
SHEET NO.:	106

PERMIT DRAWING

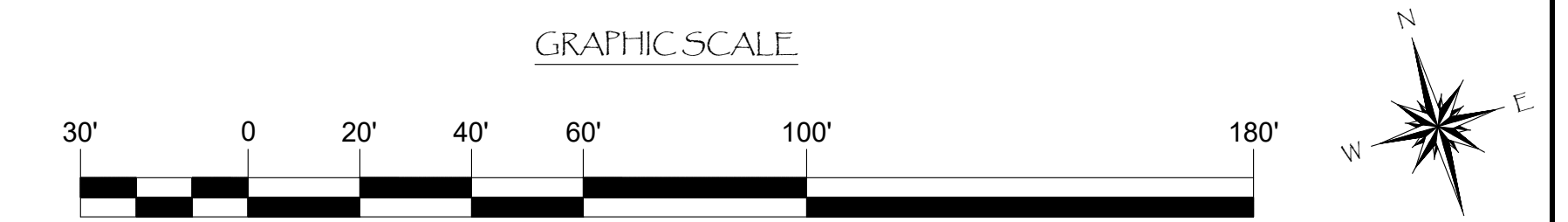
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127



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LEGEND:

- - - - - = 2" SDR11 HDPE PIPE
- = BALL VALVE
- = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER



NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADDED BALL VALVES	KG
REVISIONS			

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOMESTIC WATER SYSTEM LAYOUT FOR DOCKS E21 - E26



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DW12
SHEET NO.:	107

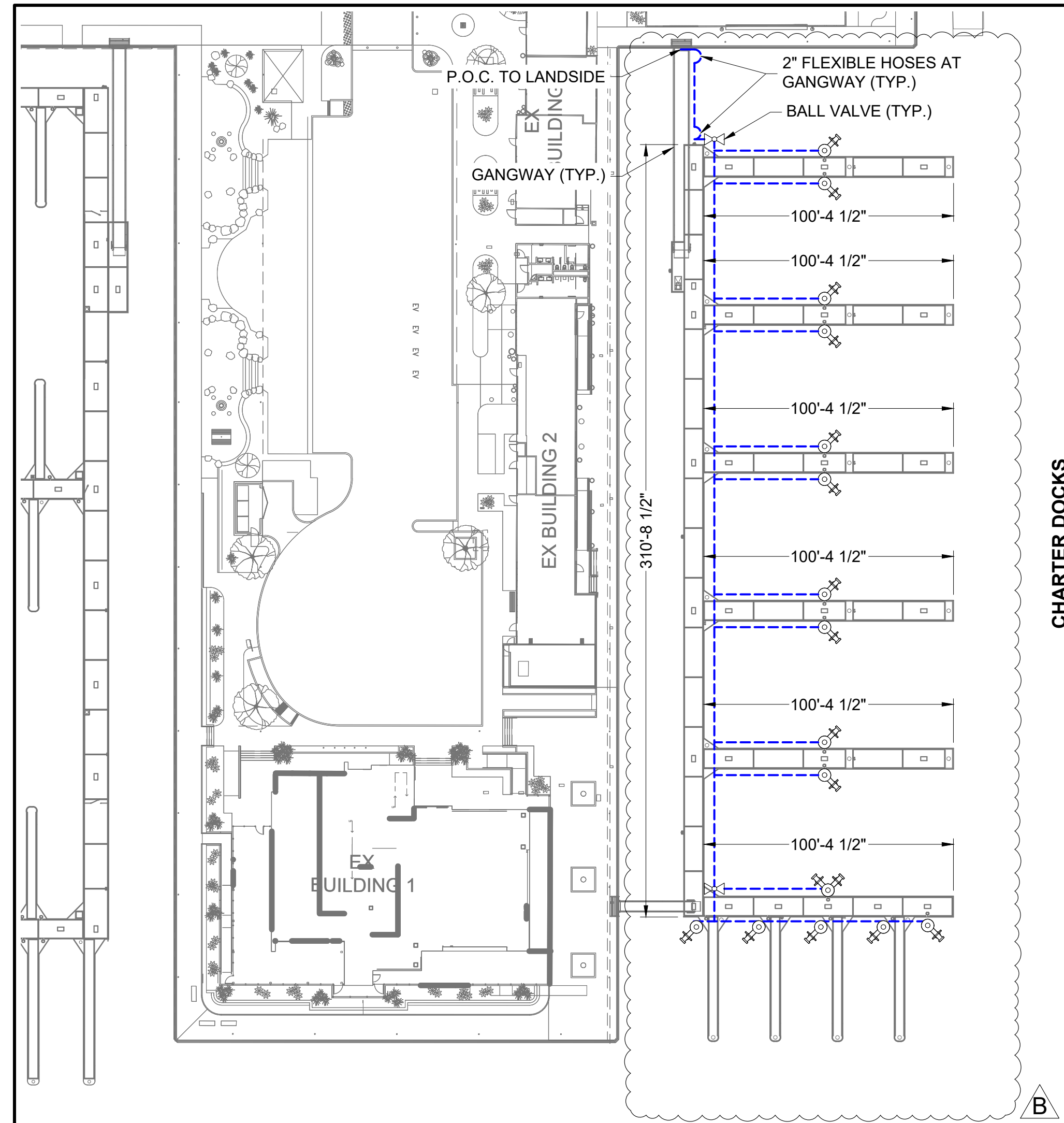
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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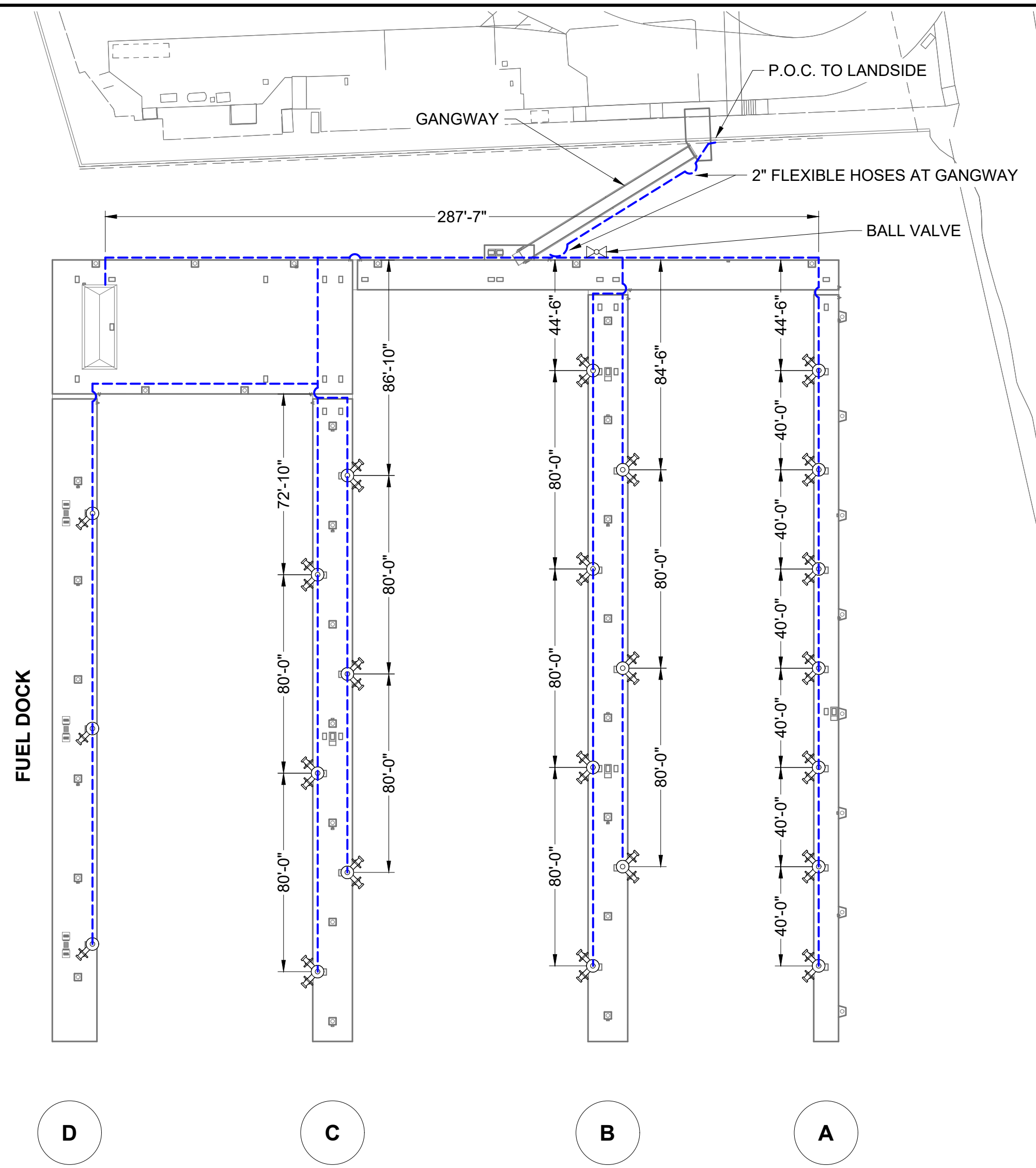
CHARTER DOCKS

A

B

OUTER BASIN

- LEGEND:**
- = 2" SDR11 HDPE PIPE
 - = 3/4" LEAD FREE HOSE BIB w/ VACUUM BREAKER
 - = BALL VALVE



FUEL DOCK

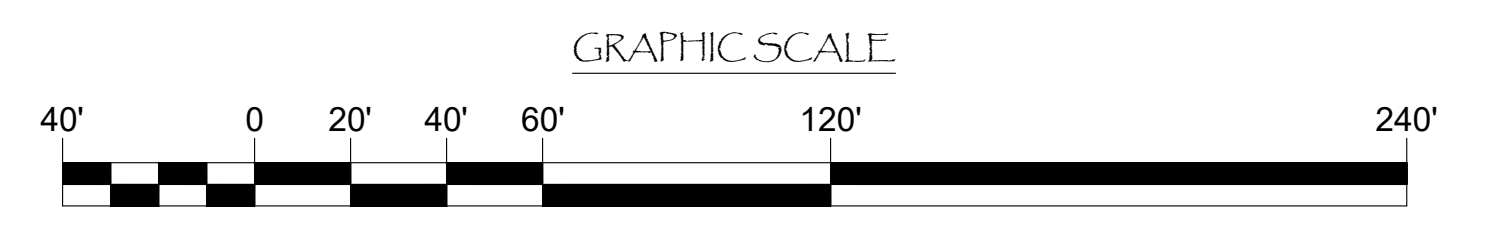
BAIT DOCK
(EXISTING RELOCATED)

D

C

B

A



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	ADDED BALL VALVES/ REMOVED SPORTFISHING/ ADDED EXISTING RELOCATED	KG
REVISIONS			

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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOMESTIC WATER SYSTEM LAYOUT FOR OUTER BASIN DOCKS

SCALE:	1" = 40' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	DW13
SHEET NO.:	108

A

PERMIT DRAWING

TABLE 604.1 MATERIALS FOR BUILDING SUPPLY AND WATER DISTRIBUTION PIPING AND FITTINGS				
MATERIAL	BUILDING SUPPLY	WATER	REFERENCED STANDARD(S)	REFERENCED STANDARD(S)
	PIPE AND FITTINGS	DISTRIBUTION PIPE AND FITTINGS	PIPE	FITTINGS
Copper and Copper Alloys			ASTM B42, ASTM B43, ASTM B75, ASTM B88, ASTM B135, ASTM B251, ASTM B302, ASTM B447	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.26, ASME B16.50 ² , ASME B16.51, ASSE 1061
CPVC	X	X	ASTM D2846, ASTM F441, ASTM F442, CSA B137.6	ASSE 1061, ASTM D2846, ASTM F437, ASTM F438, ASTM F439, ASTM F1970, CSA B137.6
CPVC-AL-CPVC	X	X	ASTM F2855	ASTM D2846
Ductile-Iron	X	X	AWWA C151	ASME B16.4, AWWA C110, AWWAC153
Galvanized Steel	X	X	ASTM A53	-
Malleable Iron	X	X	-	ASME B16.3
PE	X ¹	-	ASTM D2239, ASTM D2737, ASTM D3035, AWWA C901, CSA B137.1	ASTM D2609, ASTM D2683, ASTM D3261, ASTM F1055, CSA B137.1
PE-AL-PE	X	X	ASTM F1282, CSA B137.9	ASTM F1282, ASTM F1974, CSA B137.9
PE-AL-PEX	X	X	ASTM F1986	ASTM F1986
PE-RT	X	X	ASTM F2769, CSA B137.18	ASTM D3261, ASTM F1055, ASSE 1061, ASTM F1807, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F2769, CSA B137.18
PEX ^{3,4}	X	X	ASTM F876, ASTM F877, CSA B137.5, AWWA C904 ¹	ASSE 1061, ASTM F877, ASTM F1807, ASTM F1960, ASTM F1961, ASTM F2080, ASTM F2159, ASTM F2735, CSA B137.5
PEX-AL-PEXS	X	X	ASTM F1281, CSA B137.10, ASTM F2262	ASTM F1281, ASTM F1974, ASTM F2434, CSA B137.10
pp	X	X	ASTM F2389, CSA B137.11	ASTM F2389, CSA B137.11
PVC	X ¹	-	ASTM D1785, ASTM D2241, AWWA C900	ASTM D2464, ASTM D2466, ASTM D2467, ASTM F1970, AWWA C907
Stainless Steel	X	X	ASTM A269, ASTM A312	-

System Summary										
Dock	Length	FU	estimate d demand A103.1 GPM	FL at last HB	Static Pressure	final pressure at 30 GPM flow	Max FU @ Pressure	Min Line size	Actual Line size	notes:
W1	398	50.5	30							
W2	398	51.5	30							
W3	398	51.5	30							
W4	398	51.5	30							
W5	398	51.5	30							
W6	400	55.5	30							
W7	402	57.5	30							
W8	402	57.5	30							
W9	402	57.5	30							
W10	402	57.5	30							
W11	402	57.5	30							
W12	400	30.5	20							
W13	399	29.5	20							
W14	402	59.5	30	8.132347	72	63.86765	64	1.5"	2"	Longest run, highest FU count, by inspection
W15	399	56.5	30							
W16	396	51.5	30							
W17	395	51.5	30							
W18	394	45.5	25							
BFD1	385	34.5	20							
BD1	385	34.5	20							
E13	394	47.5	25							
E14	394	47.5	25							
E15	394	47.5	25							
E16	396	51.5	30							
E17	396	51.5	30							
E18	396	51.5	30							
E19	394	52.5	30							
E20	402	57.5	30							
E21	402	57.5	30							
E22	402	57.5	30							
E23	402	57.5	30							
E24	402	57.5	30							
E25	402	57.5	30							
E26	400	30.5	20							

Note: Fixture Units from table 610.3, 2019 CPC, Static Pressure from site measurements, actual pressures may vary.
Design includes up to 100 feet of landside piping in PVC, to a 2" DCDA attached to a minimum 1" meter.

Estimated supply demand: From A103.1, Chart A103.1
30 GPM 0.06684

Max velocity 8 ft/sec
area of 2" pipe 0.021806 sq ft

2" V= Q/A 3.065295 ft/sec ok

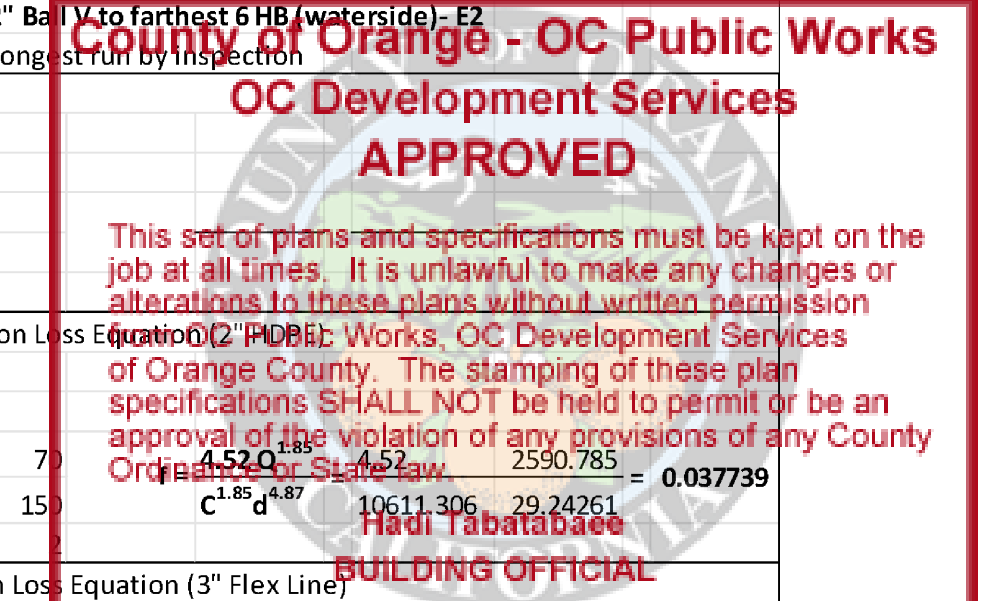
Available Flow and Pressure at main
1235
@ 72

Total System FL:
8.132347
Excess FL: 56.86765 psi OK

Zoning: CanningK 9/14/2022

Building & Safety: Roshanak Amirazizi 9/14/2022

System Friction Loss	
Job Dana Point Dock E1- E3	Permits: BNR21-0604- ELE22-0113- PLB22-0127
Flow Requirement 30 GMP	15 PSI
Total Friction Loss For waterside	25.02102 PSI
Run 2" Ball Valve to farthest 6 HDPE (waterside) - E2	
Longest run by inspection	
Friction Loss Equation (2" Pipe)	
f= friction loss per foot of pipe, psi	
Q= flow in pipe, in gpm	70
C= Hazen-Williams C value	150
d= inside diameter of pipe	2
Friction Loss Equation (3" Flex Line)	
f= friction loss per foot of pipe, psi	
Q= flow in pipe, in gpm	70
C= Hazen-Williams C value	150
d= inside diameter of pipe	2



Friction Loss Calculations						
Reference	Units	Quantity	Fittings Equivalent Length	Length	f/ft	FL
2" ball valve	Each	1	1.51	1.51	0.037739	0.056985
	Each			0	0	0
				0	0	0
2" HDPE Parts						
2" HDPE Pipe	If	572	1	572	0.037739	21.58644
2" HDPE 45°	Each	0	0	0	0.037739	0
2" HDPE 90° Std. Elbow	Each	6	51	51	0.037739	1.924665
2" HDPE T or Cross	Each	5	38.5	38.5	0.037739	1.452933
2" flex						
Top Flex	If	0	6	0	0.011091	0
Bottom Flex	If	0	12	0	0.011091	0
2" SS Parts						
2" Pipe	If	0	1	0	0.037739	0
2" 45°	Each	0	6.04	0	0.037739	0
2" 90° Std. Elbow	Each	0	15.1	0	0.037739	0
2" T or Cross	Each		30.2	0	0.037739	0
Total Friction Loss over system						25.02102

NO.	DATE	ADDED SHEET/ CALCS DESCRIPTION	KG BY
A	2-25-22		
REVISIONS			

Bellingham MARINE
SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:
[Signature]

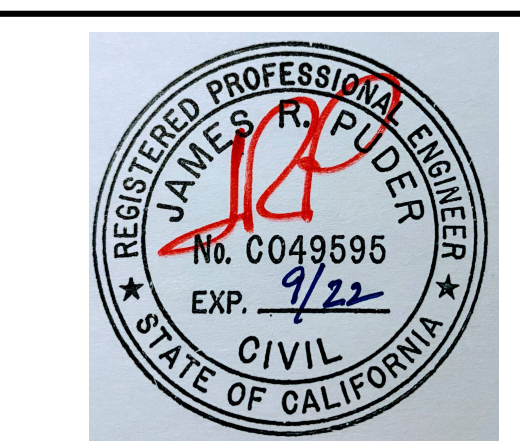
PROJECT MANAGER:

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DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

DOMESTIC WATER CALCULATIONS



SCALE: NTS
(Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: DW14

SHEET NO.: 109

TABLE 604.1 MATERIALS FOR BUILDING SUPPLY AND WATER DISTRIBUTION PIPING AND FITTINGS				
MATERIAL	BUILDING SUPPLY PIPE AND FITTINGS	WATER DISTRIBUTION PIPE AND FITTINGS	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
Copper and Copper Alloys	X	X	ASTM B42, ASTM B43, ASTM B75, ASTM B88, ASTM B135, ASTM B251, ASTM B302, ASTM B447	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.26, ASME B16.50 ² , ASME B16.51, ASSE 1061
CPVC	X	X	ASTM D2846, ASTM F441, ASTM F442, CSA B137.6	ASSE 1061, ASTM D2846, ASTM F437, ASTM F438, ASTM F439, ASTM F1970, CSA B137.6
CPVC-AL-CPVC	X	X	ASTM F2855	ASTM D2846
Ductile-Iron	X	X	AWWA C151	ASME B16.4, AWWA C110, AWWAC153
Galvanized Steel	X	X	ASTM A53	-
Malleable Iron	X	X	-	ASME B16.3
PE	X ¹	-	ASTM D2239, ASTM D2737, ASTM D3035, AWWA C901, CSA B137.1	ASTM D2609, ASTM D2683, ASTM D3261, ASTM F1055, CSA B137.1
PE-AL-PE	X	X	ASTM F1282, CSA B137.9	ASTM F1282, ASTM F1974, CSA B137.9
PE-AL-PEX	X	X	ASTM F1986	ASTM F1986
PE-RT	X	X	ASTM F2769, CSA B137.18	ASTM D3261, ASTM F1055, ASSE 1061, ASTM F1807, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F2769, CSA B137.18
PEX ^{3,4}	X	X	ASTM F2769, CSA B137.18	ASTM F2098, ASTM F2159, ASTM F1961, ASTM F2080, ASTM F2159, ASTM F2735, CSA B137.5
PEX-AL-PEXS	X	X	ASTM F1281, CSA B137.10, ASTM F2262, ASTM F2389, CSA B137.11	ASTM F1281, ASTM F1974, ASTM F2434, CSA B137.10, ASTM F2389, CSA B137.11
pp	X	X	ASTM D1785, ASTM D2241, AWWA C900	ASTM D2464, ASTM D2466, ASTM D2467, ASTM F1970, AWWA C907
PVC	X ¹	-	AWWA C900	ASTM D2467, ASTM F1970, AWWA C907
Stainless Steel	X	X	ASTM A269, ASTM A312	-

System Summary									
Dock	Length	FU	estimate demand A103.1 GPM	FL at last HB	Static Pressure	final pressure @ 30 GPM flow	Max FU @ Pressure	Min Line size	Actual Line size
E1	596	31.5	20						
E2	572	58.5	30	35.78372	72	36.21628	64	1.5"	2"
E3	570	55.5	30						
E4	286	18.5	15						
E5	256	29.5	20						
E6	264	26.5	20						
E7	284	16.5	15						
E8	264	29.5	20						
E9	264	27.5	20						
E10	586	31.5	20						
E11	546	56.5	30						
E12	552	53.5	30						
W19	454	44.5	25						
W20	470	51.5	30						
W21	484	29.5	20						
OB	520	44.5	25						

Note: Fixture Units from table 610.3, 2019 CPC, Static Pressure from site measurements, actual pressures may vary.

Design to multiple docks includes a 3" DCDA attached to a minimum 1" meter with a 3" main supply to the 2" ball valve located on the dock system. Only to most significant run has been analyzed

Estimated supply demand: From A103.1, Chart A103.1 at longest dock w/ highest fixture count

30 GPM	0.06684	cuft/sec
80 GPM	0.178241	cuft/sec

Max allowable velocity 8 ft/sec

area of 2" pipe	0.021806	sq ft	72	psi	at landside connection
area of 3" pipe	0.04459		-10.7627	psi	at ball valve
2" V=Q/A	3.065295	ft/sec	61.2373		
3" V=Q/A	3.99732	ft/sec	-25.021	psi	at last hb

Available Flow and Pressure at main

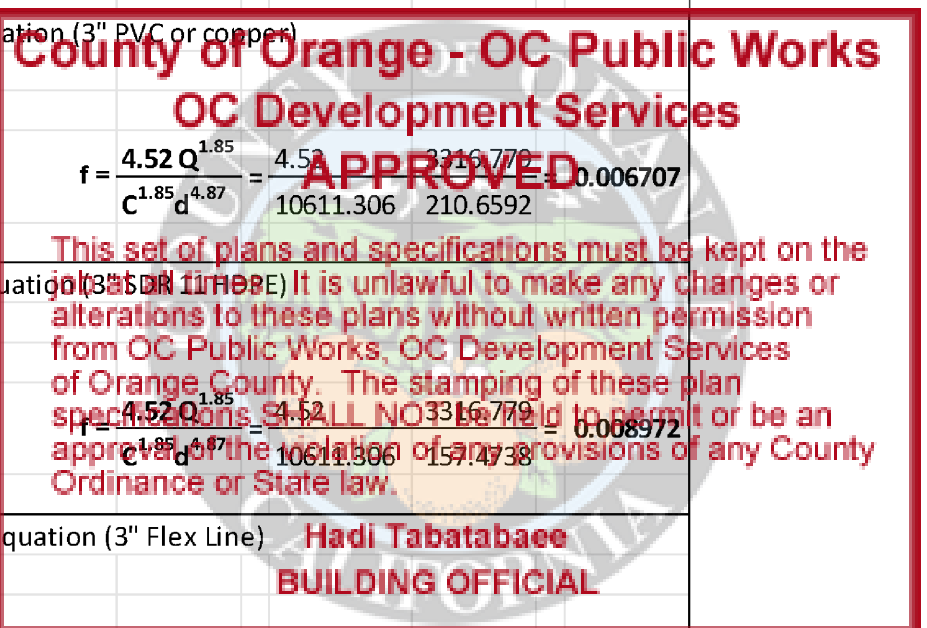
1235			36.21628		OK greater than 15psi
@	72				

Total System FL: 35.78372
Excess FL: 29.21628 psi OK

System Friction Loss	
Job Dana Point Dock E1- E3	
Flow Requirement	30 GMP 15 PSI - min
Total Friction Loss	Waterside to 2" DCDA 8.132347 PSI
Run	Dock W 14 Longest run by inspection
Friction Loss Equation (2" HDPE)	
f= friction loss per foot of pipe, psi	
Q= flow in pipe, in gpm	30
C= Hazen-Williams C value	150
d= inside diameter of pipe	2
Friction Loss Equation (2" Flex Line)	
f= friction loss per foot of pipe, psi	
Q= flow in pipe, in gpm	30
C= Hazen-Williams C value	100
d= inside diameter of pipe	2
Friction Loss Equation (2" Schedule 10 Stainless Steel pipe or PVC)	
f= friction loss per foot of pipe, psi	
Q= flow in pipe, in gpm	30
C= Hazen-Williams C value	150
d= inside diameter of pipe	2

Friction Loss Calculations						
Waterside to 2" DCDA						
Reference	Units	Quantity	Fittings Equivalent Length	Length	fl/ft	Fl
2" DCDA	Each	1	na	na		2
2" HDPE	If	402	1	402	0.007871	3.164127
2" HDPE 45°	Each	0	0	0	0.007871	0
2" HDPE 90° Std. Elbow	Each	6	51	51	0.007871	0.401419
2" HDPE T or Cross	Each	1	17	17	0.007871	0.133806
2" flex	If	1	6	6	0.016665	0.099988
Bottom Flex	If	1	12	12	0.016665	0.199976
2" SS Parts or PVC	If	120	1	120	0.007871	0.944516
2" 45°	Each	0	6.04	0	0.007871	0
2" 90° Std. Elbow	Each	10	15.1	15.1	0.007871	1.188515
2" T or Cross	Each			0	0.007871	0
Total Friction Loss over system						8.132347

System Friction Loss	
Job Dana Point Dock E1- E3	
Flow Requirement	80 GPM 15 PSI
Total Friction Loss	10.7627 PSI
Run	Back Flow to Ball valve at dock
Friction Loss Equation (3" PVC or copper)	
f= friction loss per foot of pipe, psi	
Q= flow in pipe, in gpm	80
C= Hazen-Williams C value	150
d= inside diameter of pipe	3
Friction Loss Equation (3" Flex Line)	
f= friction loss per foot of pipe, psi	
Q= flow in pipe, in gpm	80
C= Hazen-Williams C value	100
d= inside diameter of pipe	3
Friction Loss Equation (3" Schedule 10 Stainless Steel pipe)	
f= friction loss per foot of pipe, psi	
Q= flow in pipe, in gpm	80
C= Hazen-Williams C value	150
d= inside diameter of pipe	3



Friction Loss Calculations						
Back Flow to Ball						
Reference	Units	Quantity	Fittings Equivalent Length	Length	fl/ft	Fl
Backflow	Each	1	NA	NA		2
	Each			0		0
	Each			0		0
3" HDPE	If	353	1	353	0.008972	3.167031
3" HDPE 45°	Each	0	0	0	0.008972	0
3" HDPE 90° Std. Elbow	Each	6	48	288	0.008972	2.583867
3" HDPE T or Cross	Each	2	34	68	0.008972	0.61008
3" SS on Gangway	If	20	1	20	0.006707	0.134133
3" 90°	Each	5	40	200	0.006707	1.34133
	Each	0	0	0	0.006707	0
	Each	0	0	0	0.006707	0
3" Flex line	If	6	1	6	0.0142	0.085197
Bottom Flex	If	12	1	12	0.0142	0.170395
3" Copper	If	100	1	100	0.006707	0.670665
	Each			0	0.006707	0
	Each			0	0.006707	0
	Each			0	0.006707	0
Total Friction Loss over system						10.7627

A NO.	2-25-22 DATE	ADDED SHEET/ CALCS DESCRIPTION	KG BY
REVISIONS			



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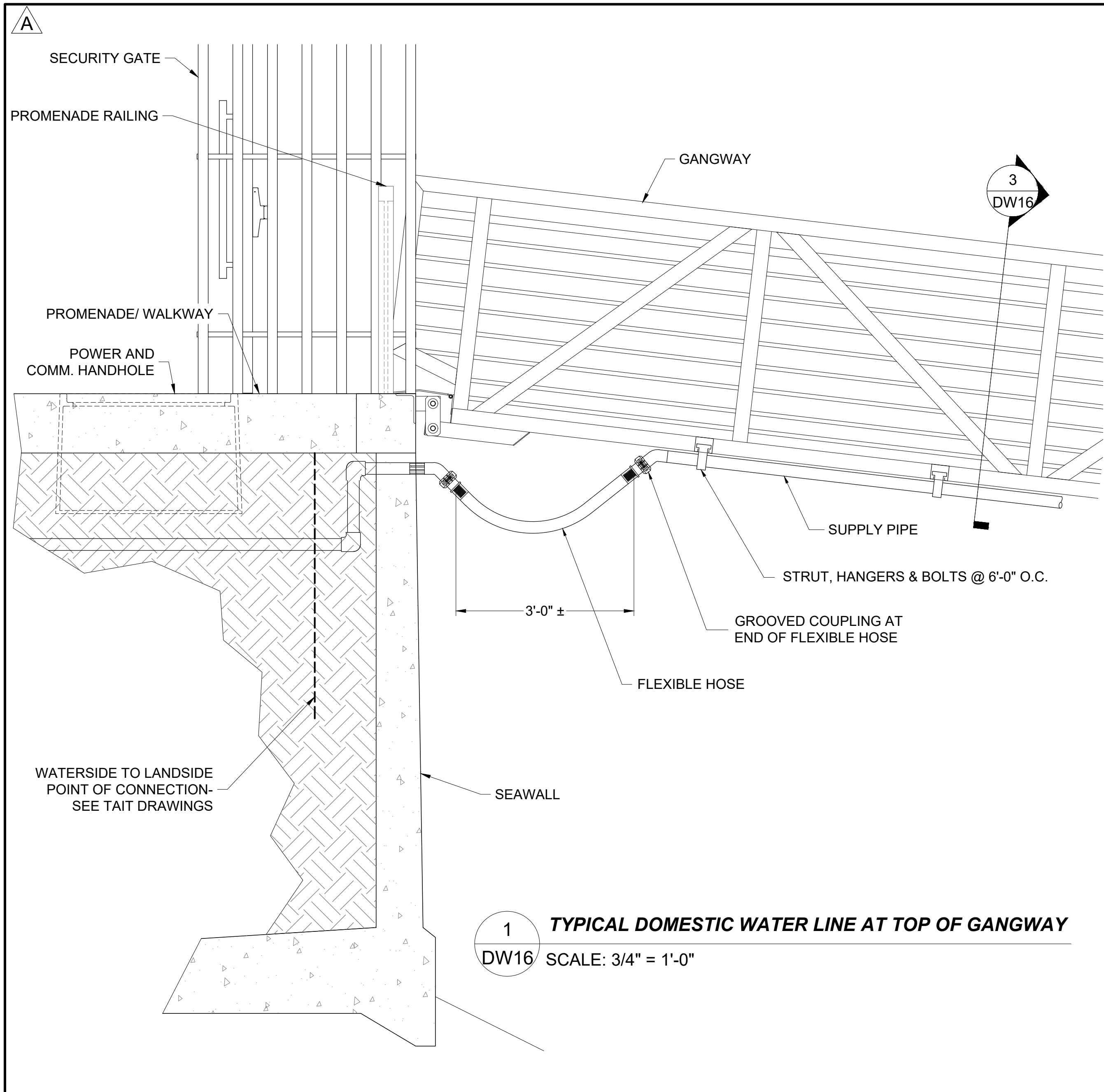
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ENGINEER / DESIGNER:
PROJECT MANAGER:
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DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629
DOMESTIC WATER CALCULATIONS

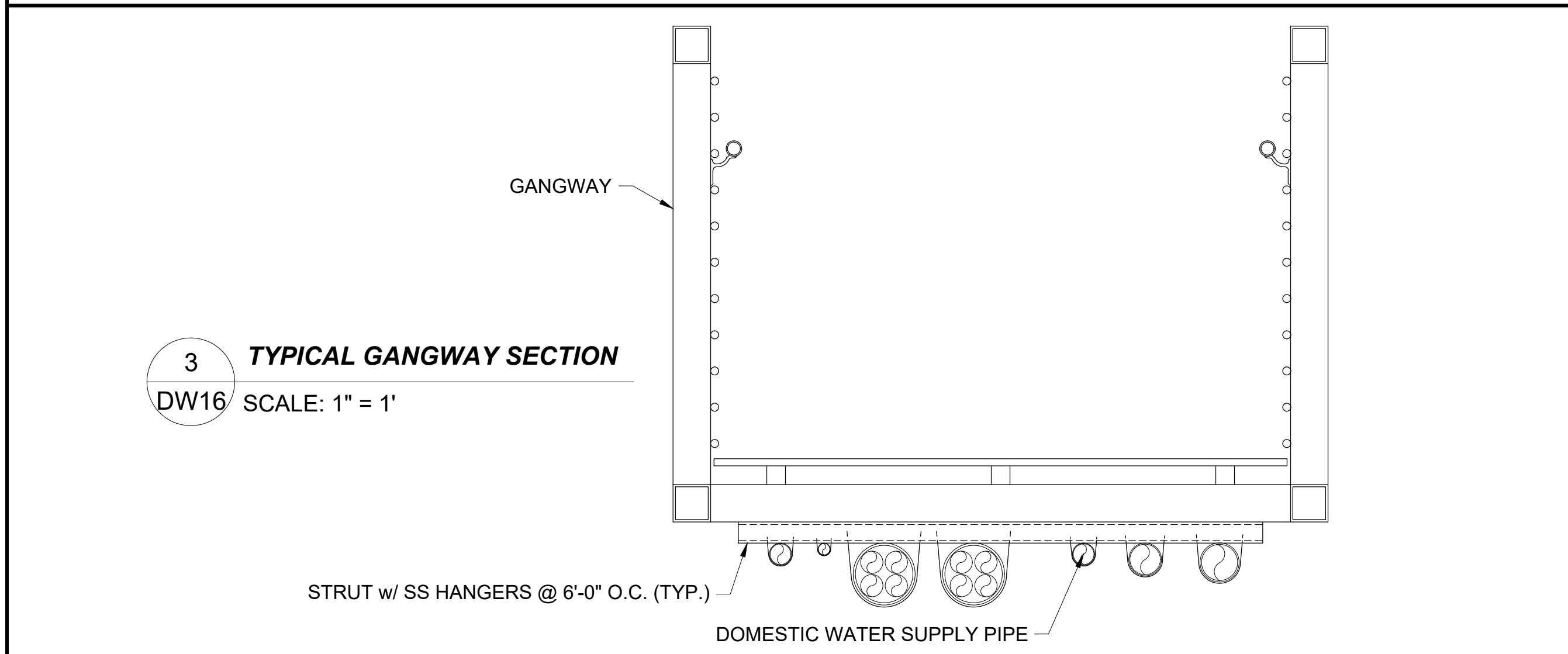


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DATE: 5/10/2022
DRAWING: DW15
SHEET NO.: 110

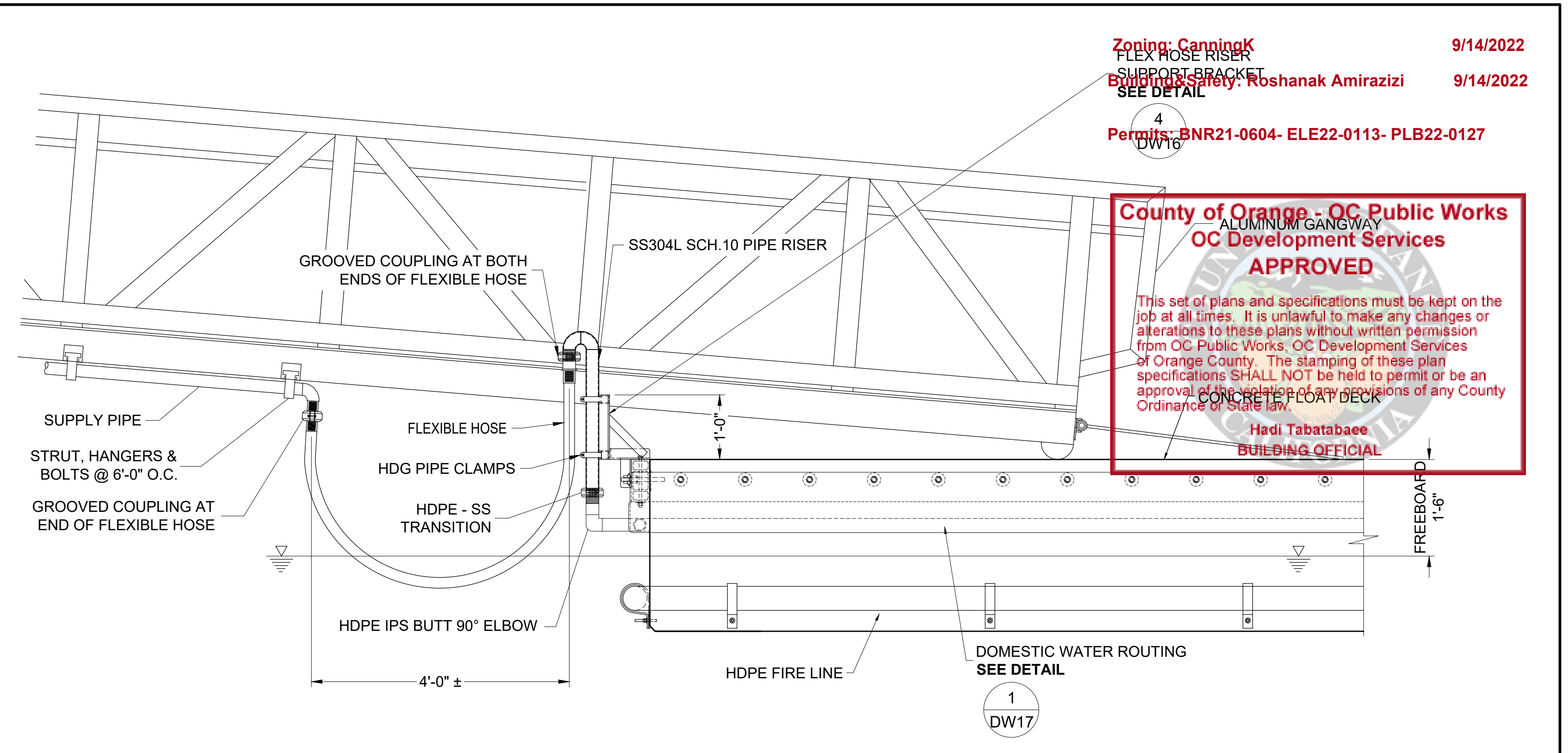
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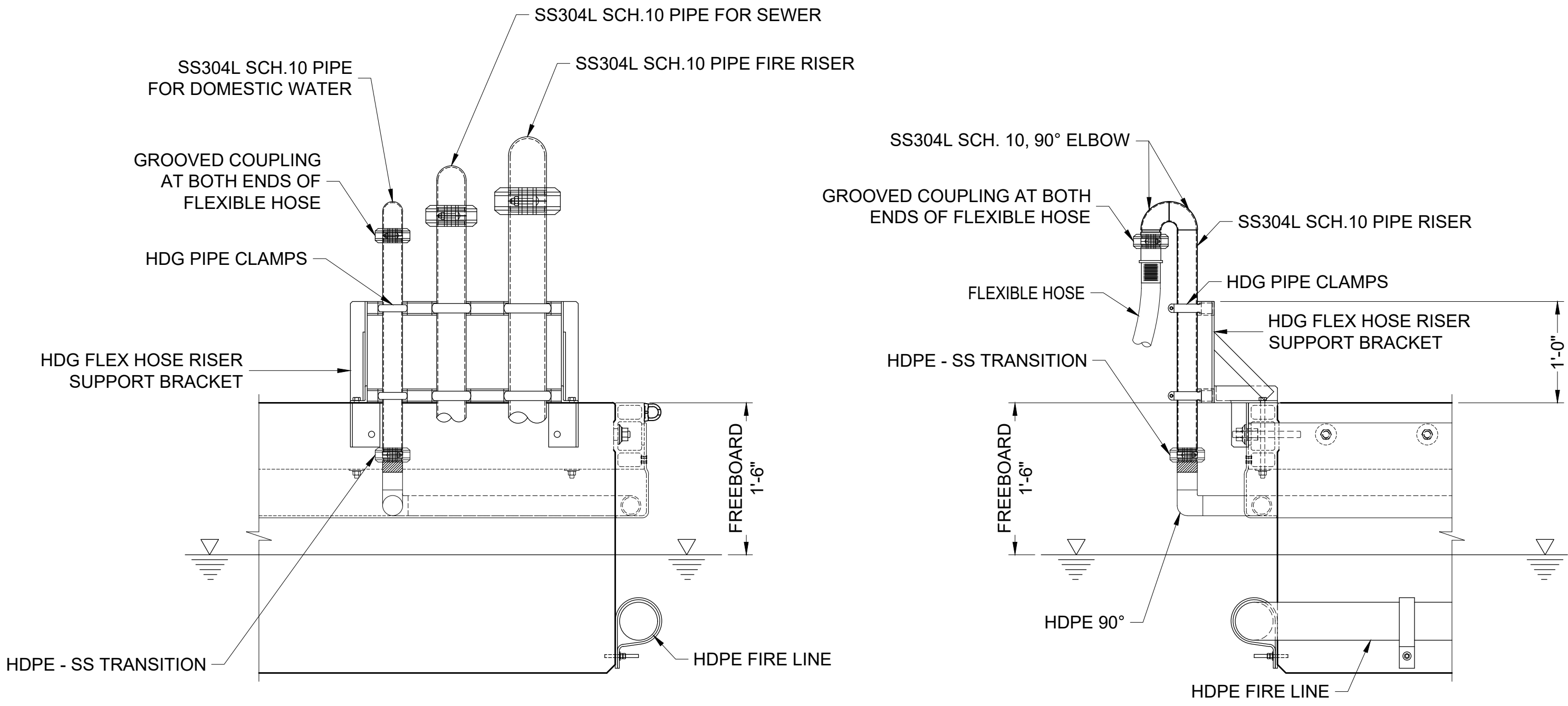
1 TYPICAL DOMESTIC WATER LINE AT TOP OF GANGWAY
DW16 SCALE: 3/4" = 1'-0"



3 TYPICAL GANGWAY SECTION
DW16 SCALE: 1" = 1'



2 TYPICAL DOMESTIC WATER LINE AT BOTTOM OF GANGWAY
DW16 SCALE: 3/4" = 1'-0"



4 TYPICAL ELEVATION VIEW OF FLEX HOSE RISER SUPPORT BRACKET
DW16 SCALE: 1" = 1'

Zoning: CanningK 9/14/2022
 Building Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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Hadi Tabatabaee
BUILDING OFFICIAL

NO.	DATE	DESCRIPTION	BY
A	2-25-22	UPDATED DETAILS	KG
REVISIONS			

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7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

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DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

DOMESTIC WATER SYSTEM DETAILS



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DATE: 5/10/2022

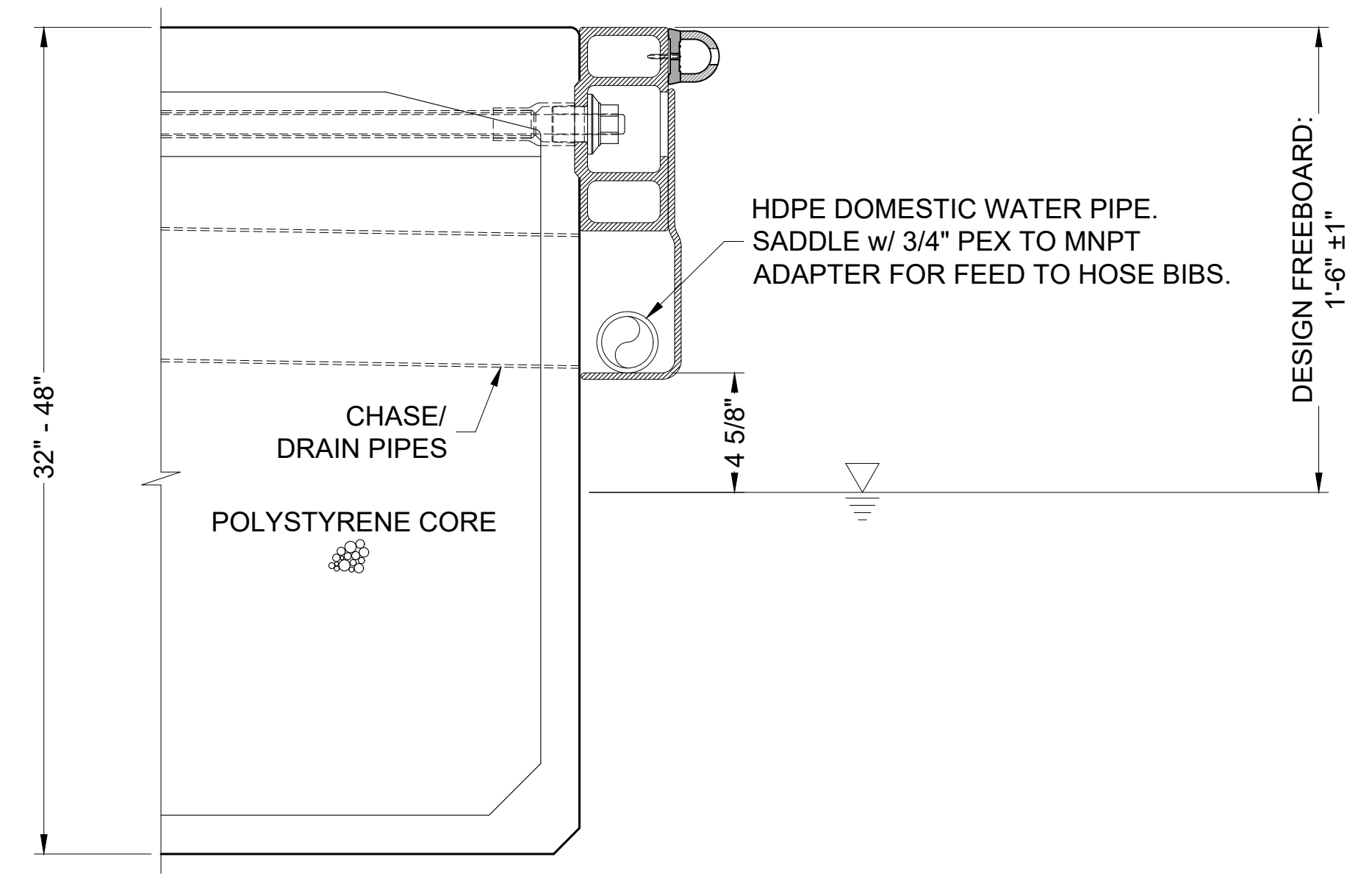
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SHEET NO.: 111

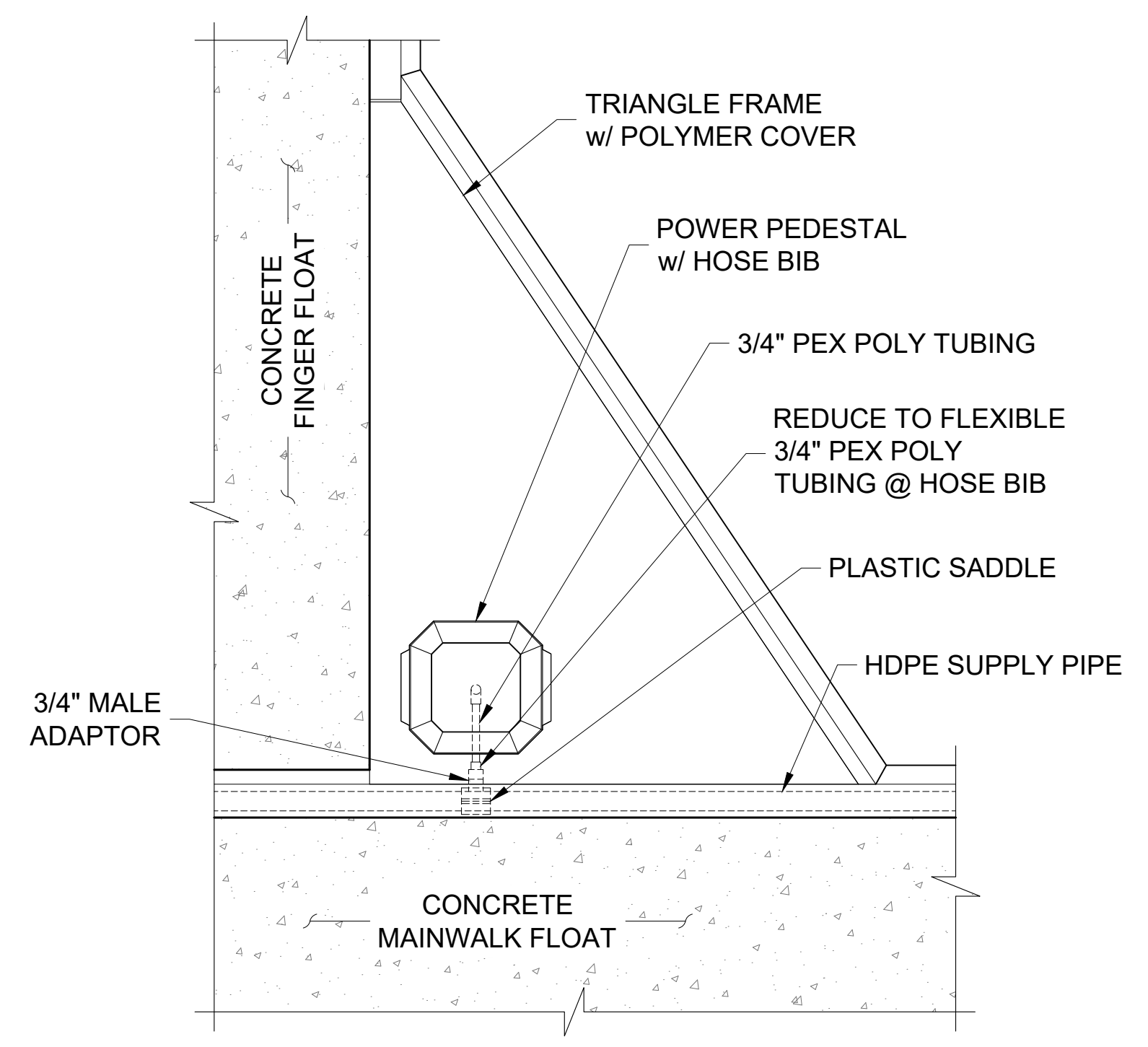
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Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

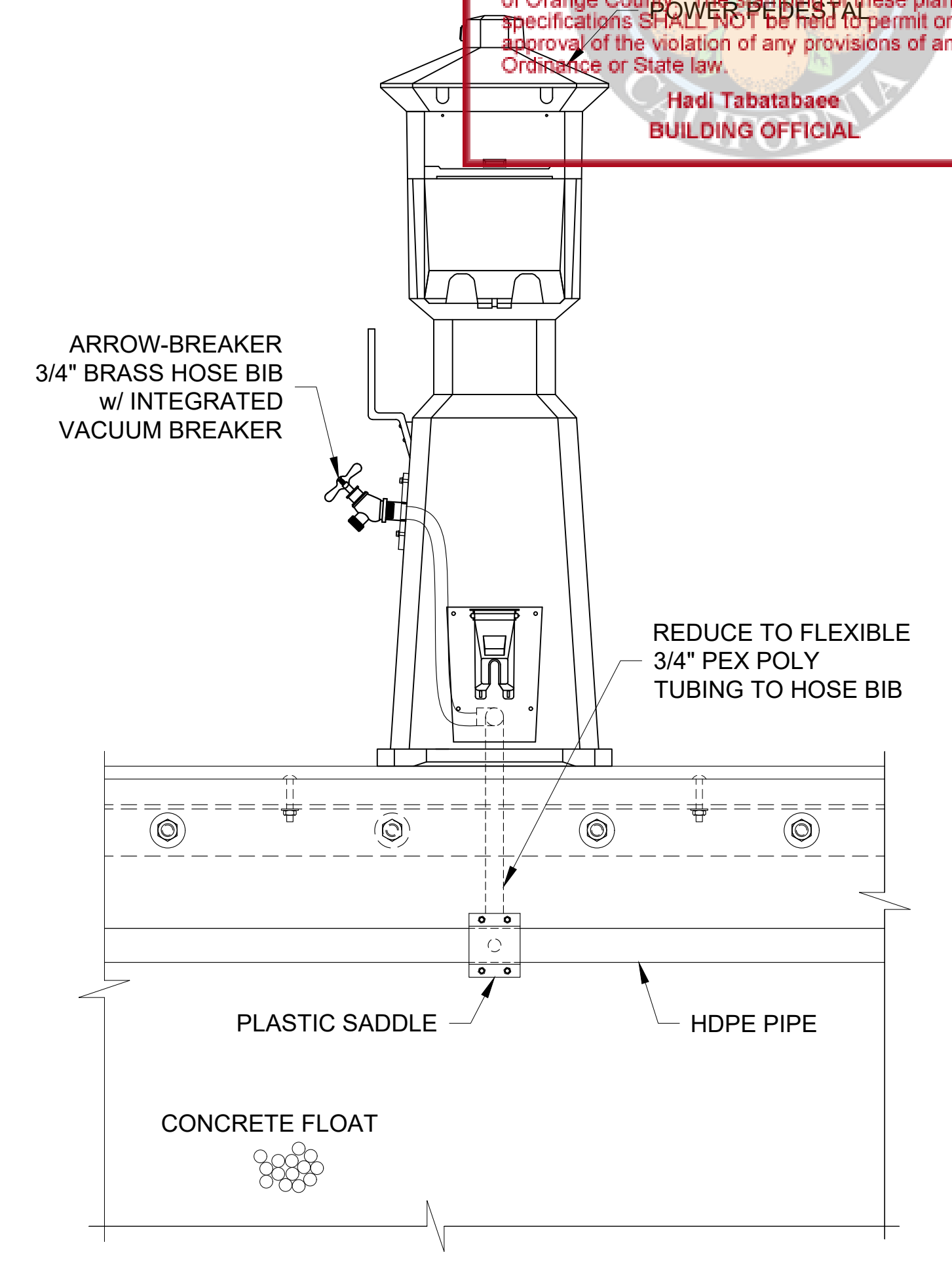
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BUILDING OFFICIAL



1 TYPICAL HDPE DOMESTIC WATER ROUTING
 DW17 SCALE: NTS



2 TYPICAL PLAN VIEW OF DOMESTIC WATER FEED INTO PEDESTAL
 DW17 SCALE: NTS



3 TYPICAL ELEVATION VIEW OF DOMESTIC WATER FEED INTO PEDESTAL
 DW17 SCALE: NTS

NO.	DATE	DESCRIPTION	BY
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 Harbor Drive
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DOMESTIC WATER SYSTEM DETAILS



SCALE: NTS
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 SHEET NO.: 112

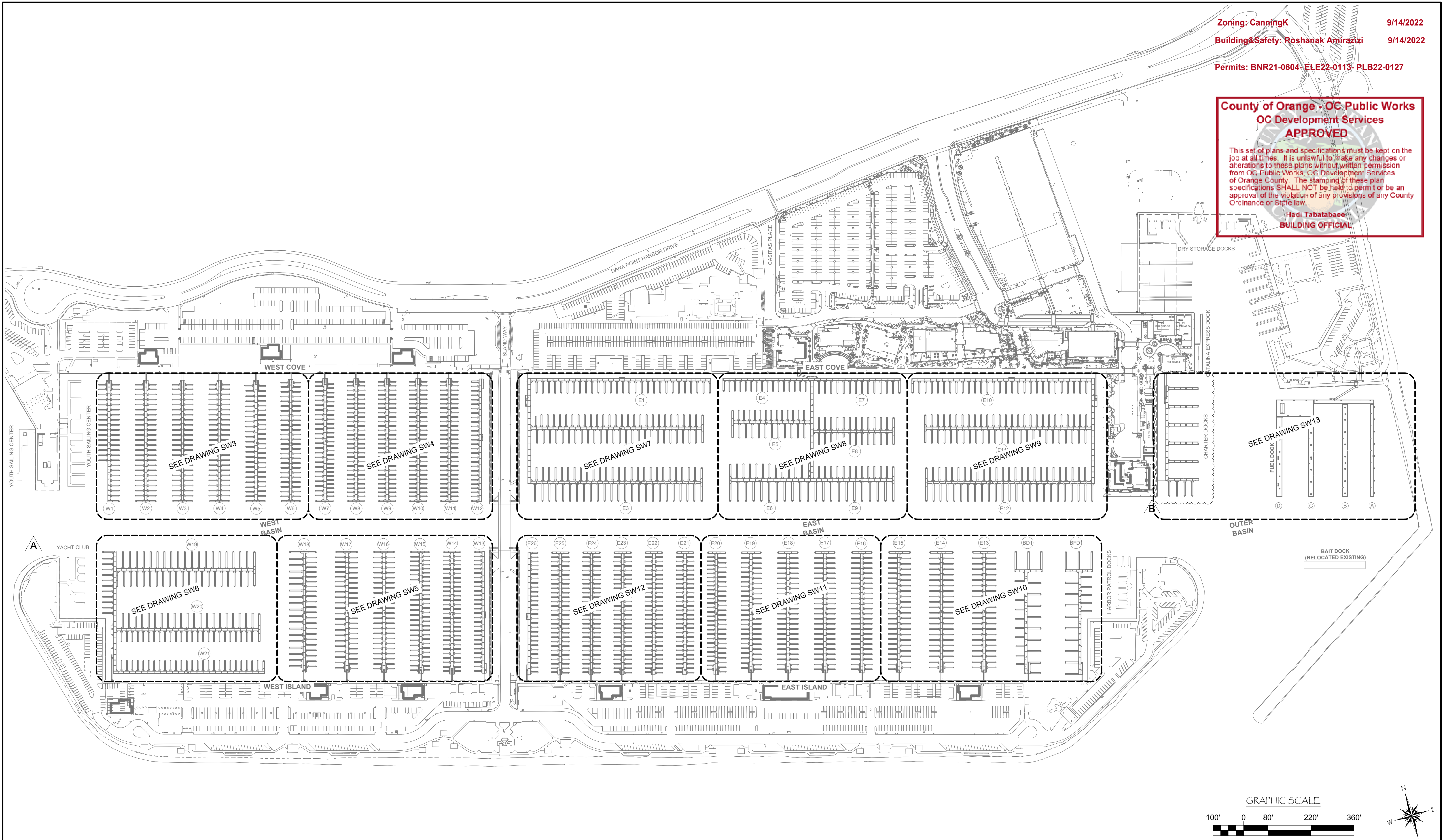
Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
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PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED YACHT CLUB	KG
REVISIONS			

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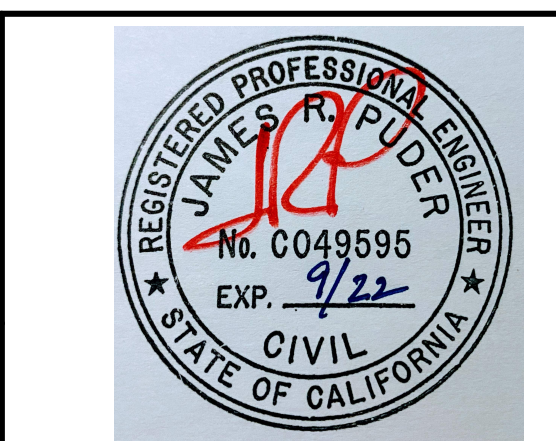
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DANA POINT HARBOR REVITALIZATION

Harbor Drive
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SEWER SYSTEM LAYOUTS INDEX



SCALE: 1" = 140'
 (Sheet Size 24" x 36")

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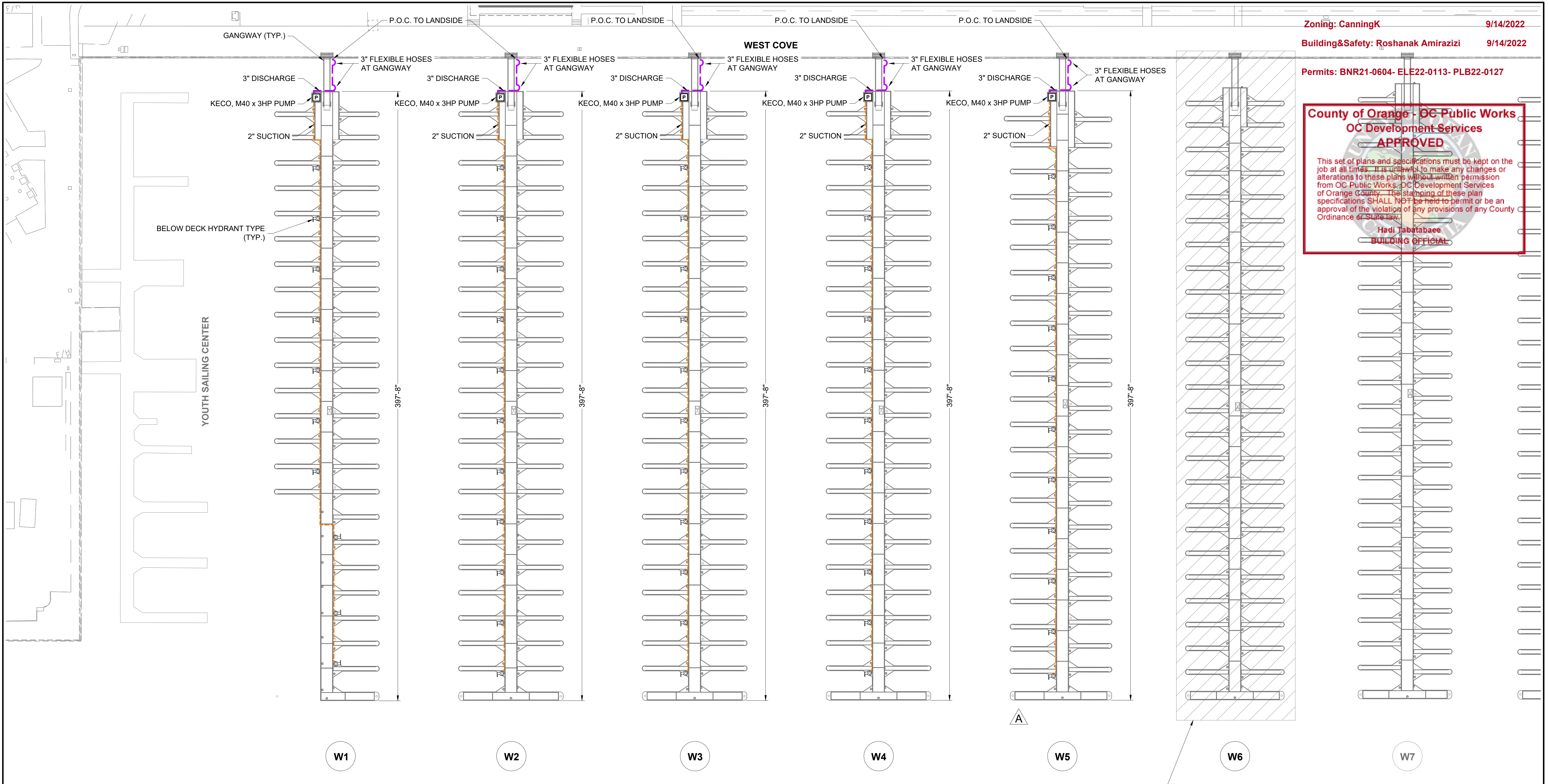
DATE: 5/10/2022

DRAWING: S2

SHEET NO.: 114

PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127



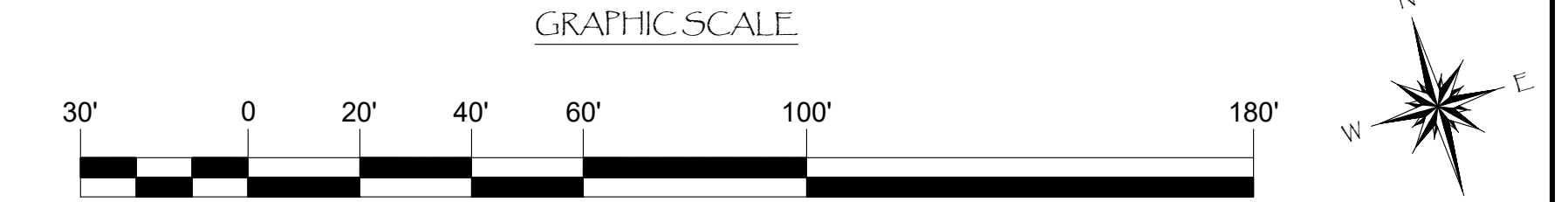
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Hadi Jabatabaee
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LEGEND:

- = 2" SDR11 HDPE PIPE (UNO)
- = 3" SDR11 HDPE PIPE (UNO)
- P = SEWER PUMP
- H = SEWER PUMP HYDRANT



NO.	DATE	DESCRIPTION	BY
A	2-25-22	ADJUSTED SEWER PUMP HYDRANT LOCATIONS	KG
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DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM LAYOUT FOR DOCKS W1 - W6

SCALE: 1" = 30'
 (Sheet Size 24" x 36")

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DATE: 5/10/2022

DRAWING: S3

SHEET NO.: 115

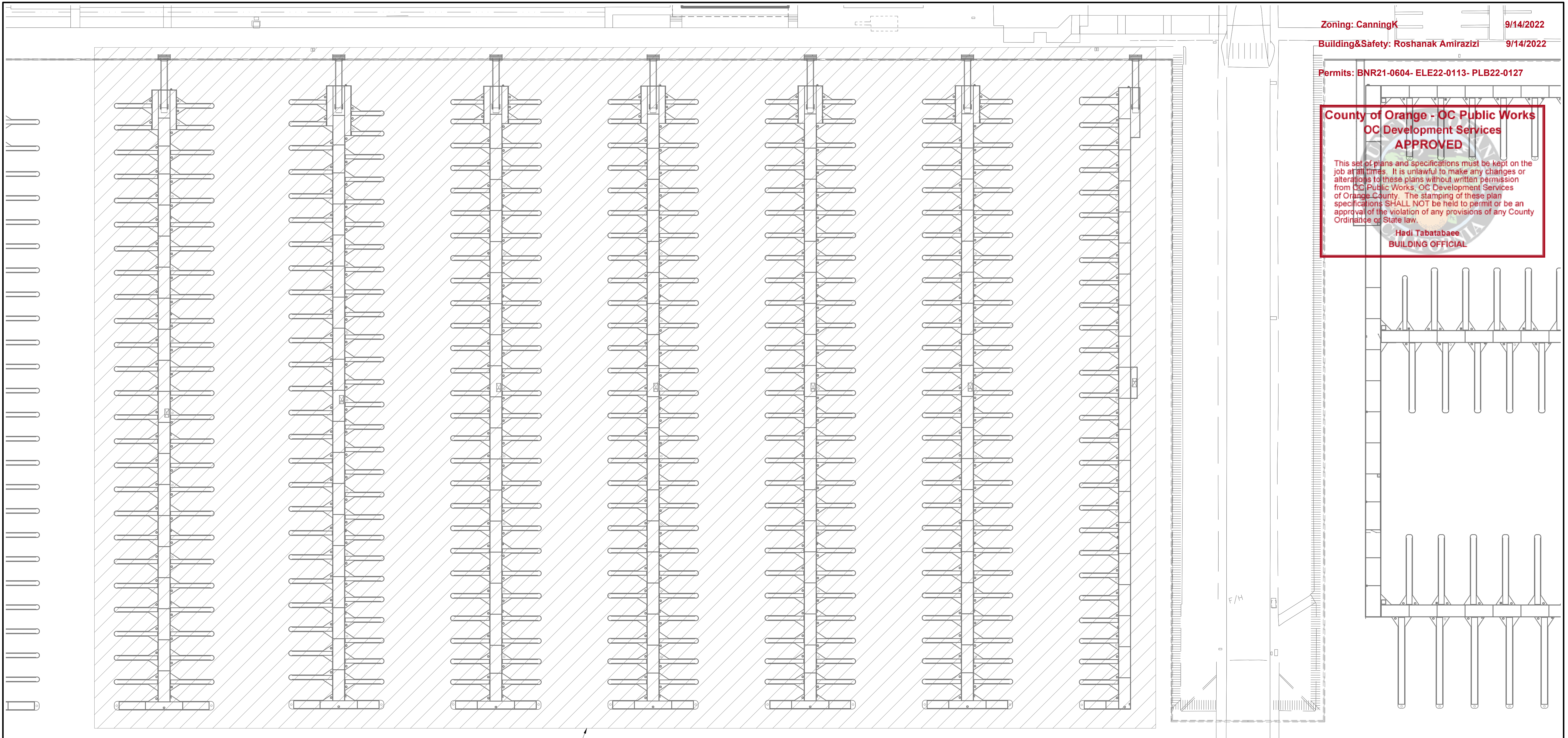
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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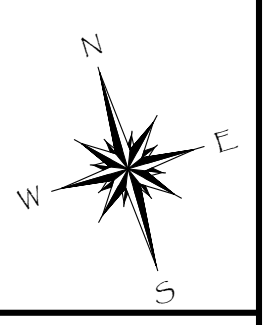
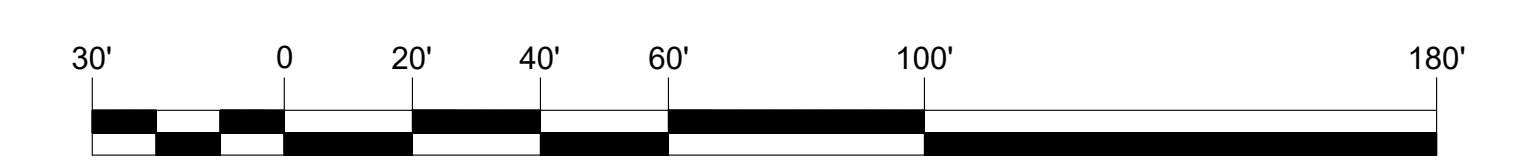
W6 W7 W8 W9 W10 W11 W12

NO SEWER

LEGEND:

- = 2" SDR11 HDPE PIPE (UNO)
- = 3" SDR11 HDPE PIPE (UNO)
- = SEWER PUMP
- = SEWER PUMP HYDRANT

GRAPHIC SCALE



NO.	DATE	DESCRIPTION	BY
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DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
SEWER SYSTEM LAYOUT FOR DOCKS W7 - W12



SCALE: 1" = 30'
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: S4
 SHEET NO.: 116

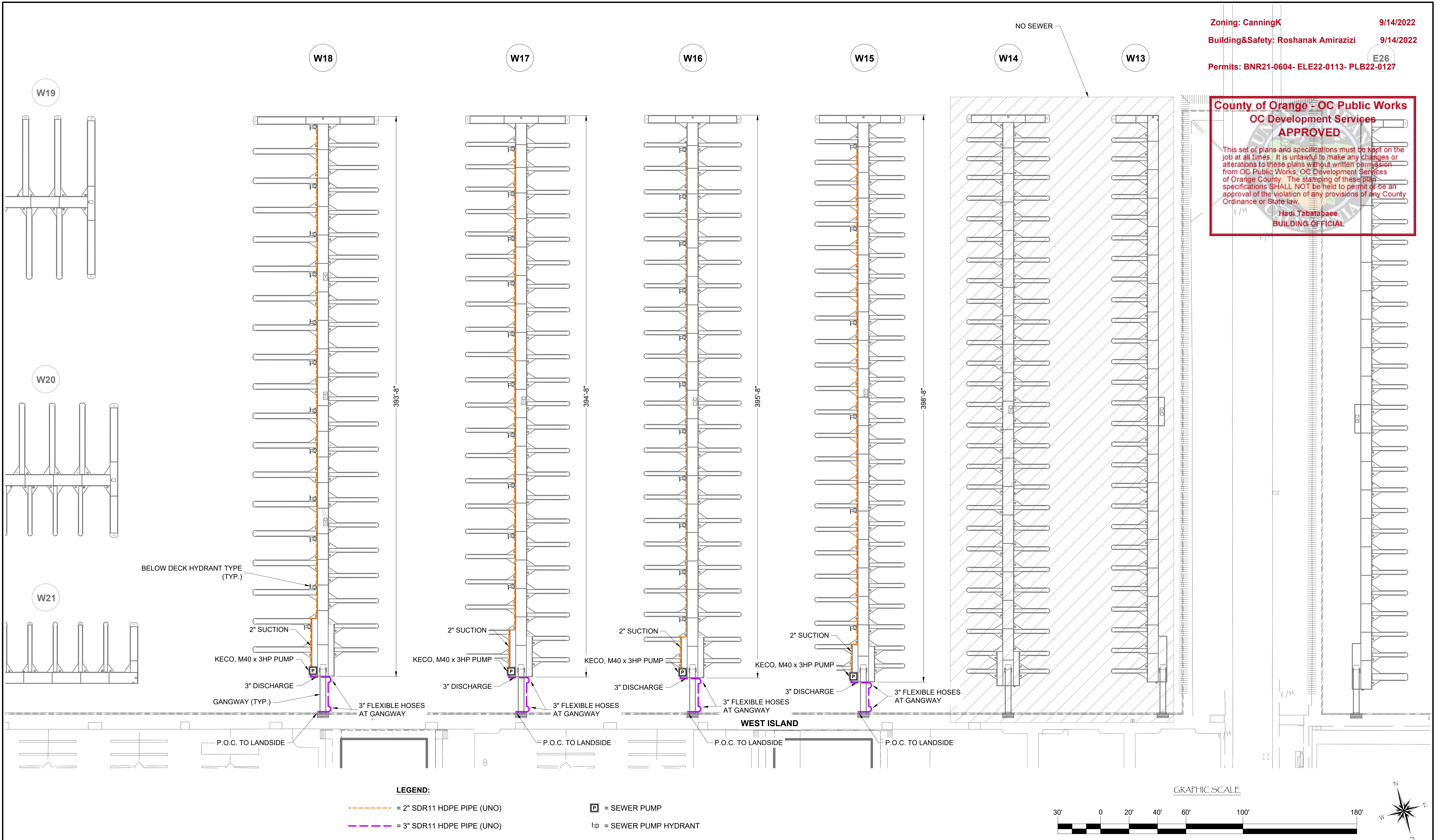
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
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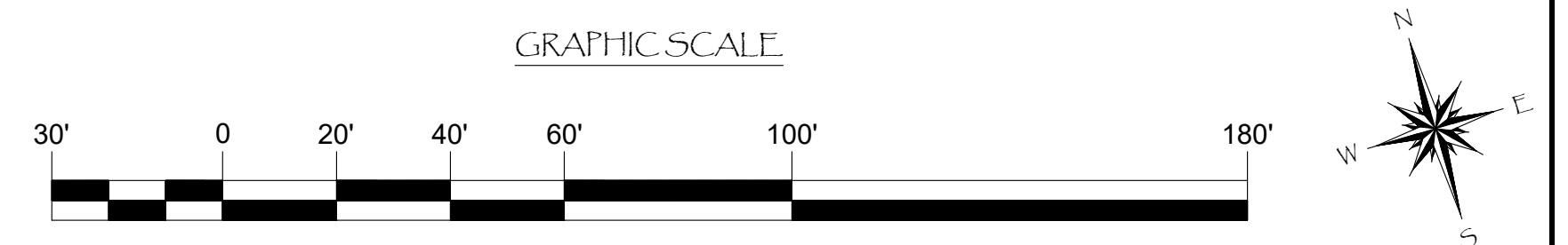
Hadi Tabatabaee
 BUILDING OFFICIAL

PERMIT DRAWING



LEGEND:

- - - = 2" SDR11 HDPE PIPE (UNO)
- - - = 3" SDR11 HDPE PIPE (UNO)
- [P] = SEWER PUMP
- [H] = SEWER PUMP HYDRANT



NO.	DATE	DESCRIPTION	BY
REVISIONS			

Bellingham MARINE
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 CA LICENSE #442499
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 DIXON, CA 95620
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

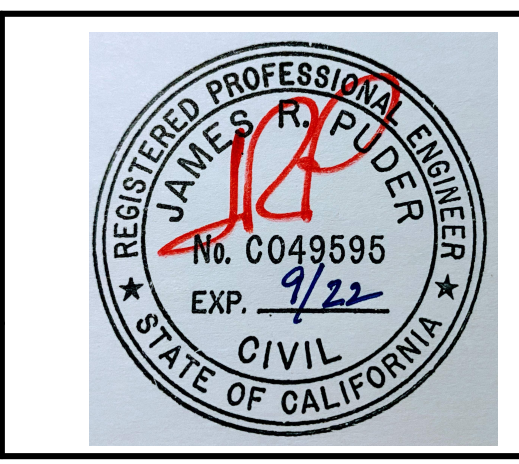
PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM LAYOUT FOR DOCKS W13 - W18



SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: S5

SHEET NO.: 117

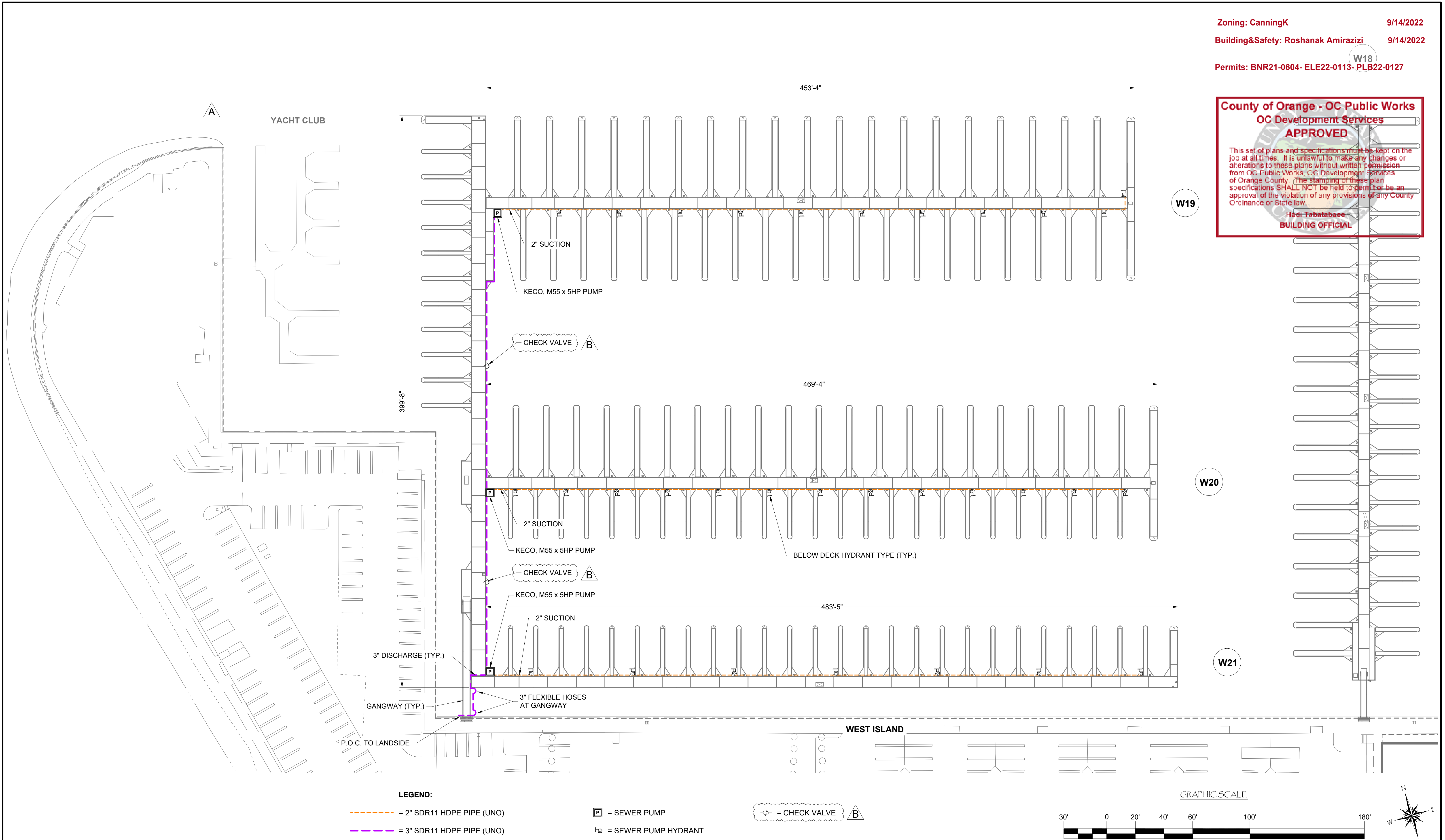
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
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Hadi Tabatabaee
 BUILDING OFFICIAL

PERMIT DRAWING



NO.	DATE	DESCRIPTION	BY
B	5-10-22	ADDED CHECK VALVES	KG
A	2-25-22	REMOVED YACHT CLUB	KG
		REVISIONS	

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

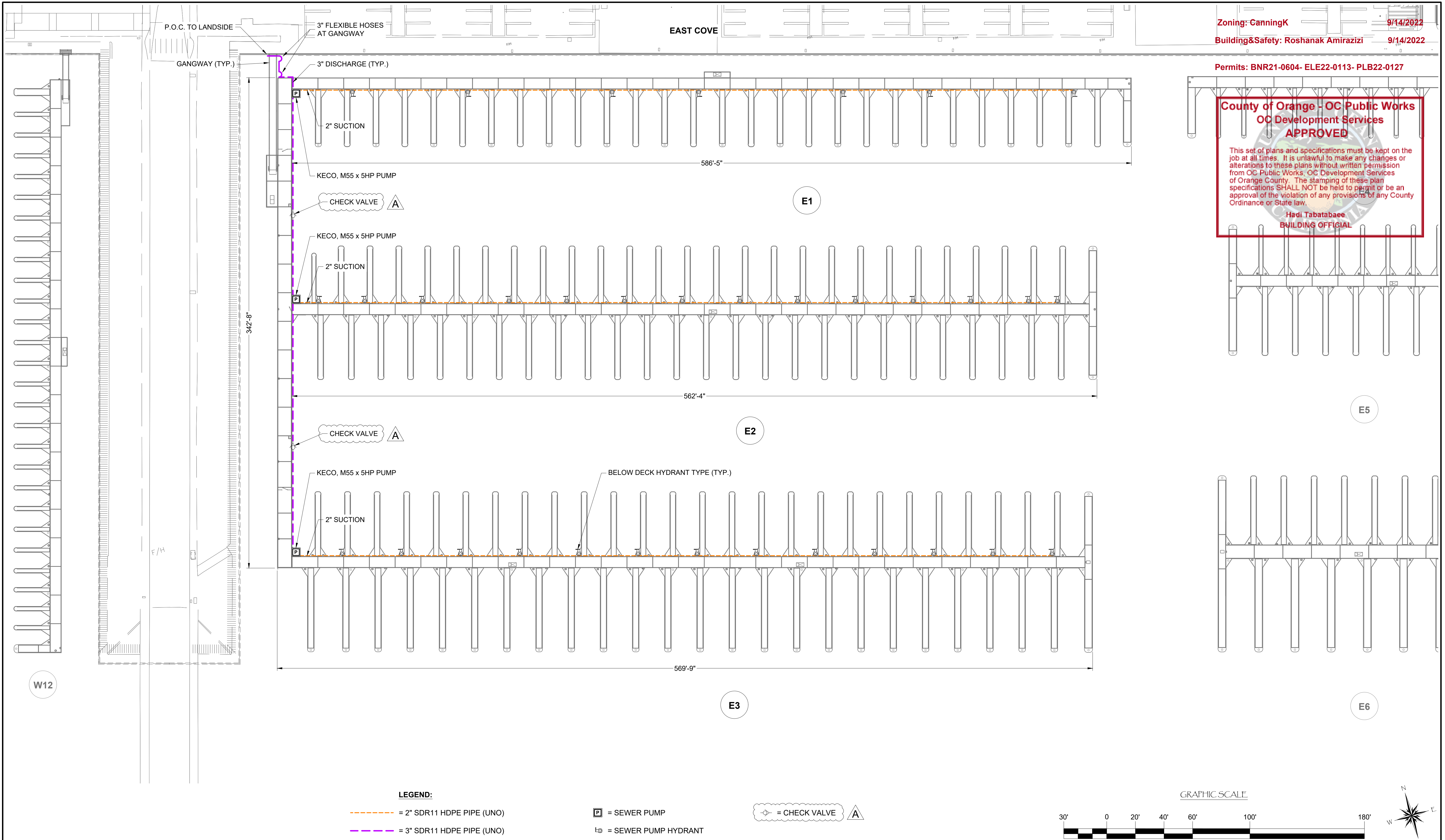
Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM LAYOUT FOR DOCKS W19 - W21



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	S6
SHEET NO.:	118

PERMIT DRAWING

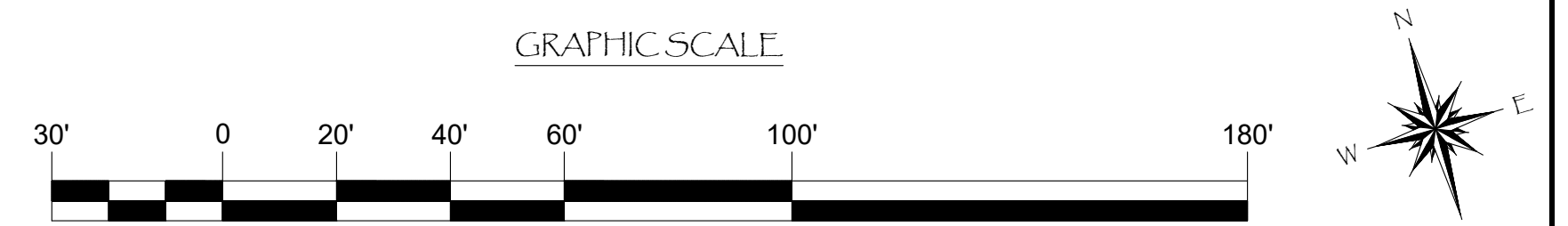


Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

County of Orange - OC Public Works
OC Development Services
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 Hadi Tabatabaee
 BUILDING OFFICIAL

LEGEND:

- = 2" SDR11 HDPE PIPE (UNO)
- = 3" SDR11 HDPE PIPE (UNO)
- P = SEWER PUMP
- A = CHECK VALVE
- H = SEWER PUMP HYDRANT



NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	ADDED CHECK VALVES	KG
REVISIONS			



Bellingham MARINE
 SOUTHWEST DIVISION
 CA LICENSE #442499
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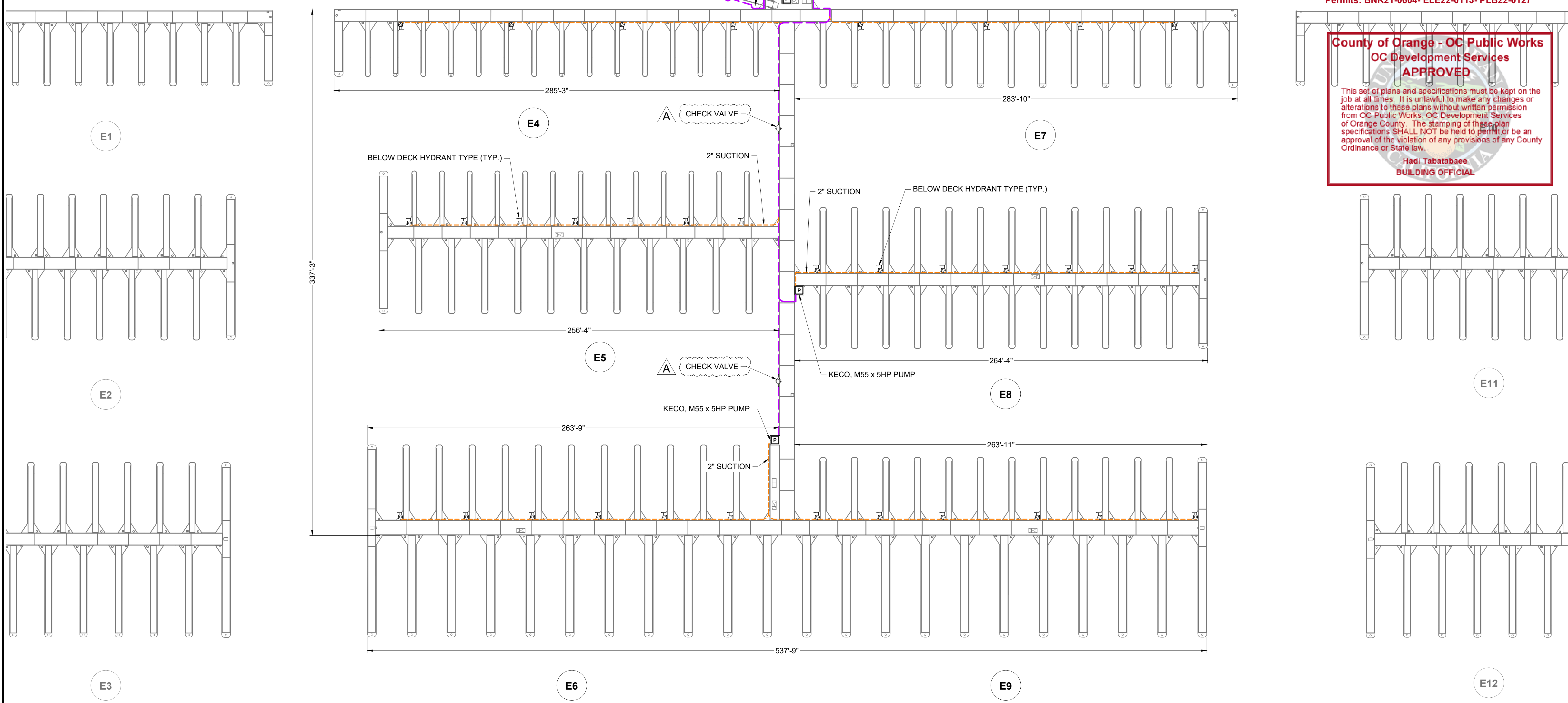
PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
SEWER SYSTEM LAYOUT FOR DOCKS E1 - E3



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	S7
SHEET NO.:	119

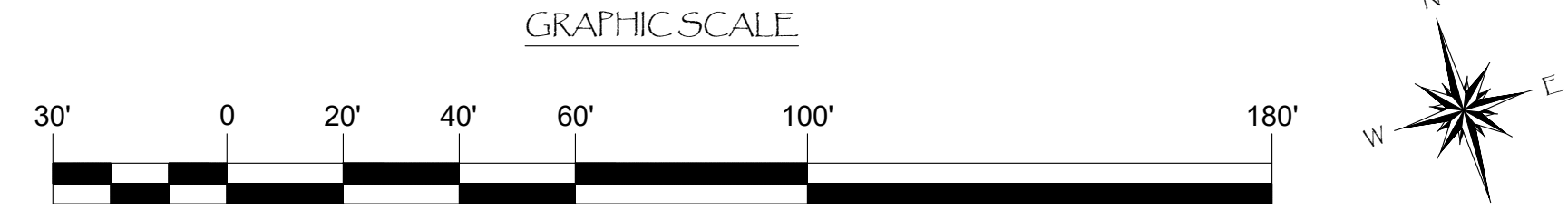
PERMIT DRAWING



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 Hadi Tabatabaee
 BUILDING OFFICIAL

LEGEND:

- = 2" SDR11 HDPE PIPE (UNO)
- = 3" SDR11 HDPE PIPE (UNO)
- P = SEWER PUMP
- H = SEWER PUMP HYDRANT
- A = CHECK VALVE



NO.	DATE	ADDED CHECK VALVES DESCRIPTION	KG BY
A	5-10-22		
REVISIONS			

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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

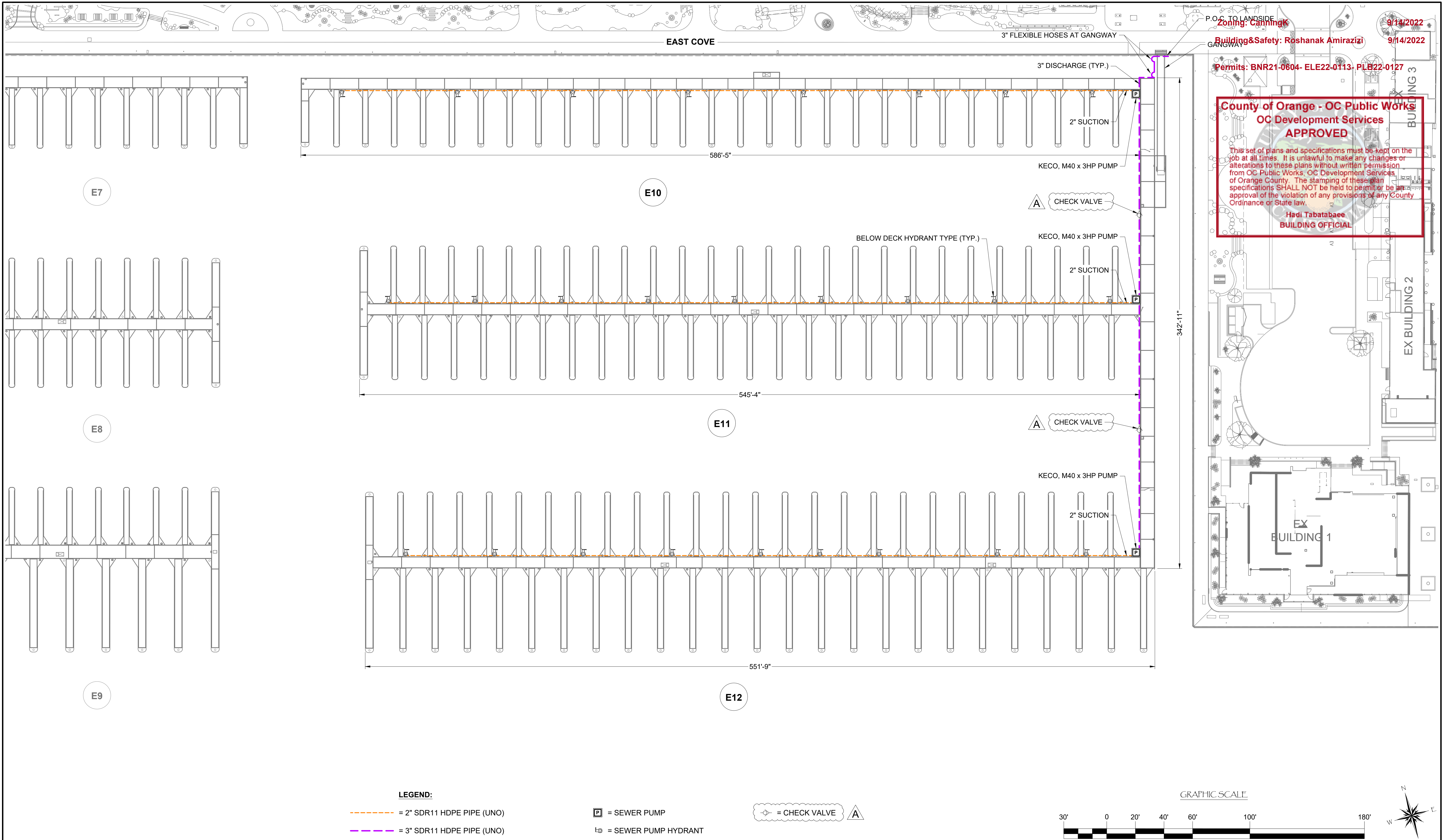
Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM LAYOUT FOR DOCKS E4 - E9



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	S8
SHEET NO.:	120

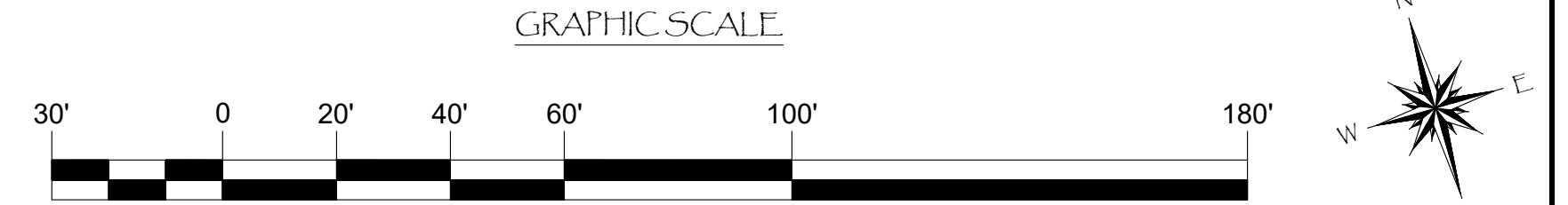
PERMIT DRAWING



P.O. TO LANDSIDE Zoning - CarlingK
 Building & Safety: Roshanak Amirazizi
 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127
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 BUILDING OFFICIAL

LEGEND:

- = 2" SDR11 HDPE PIPE (UNO)
- = 3" SDR11 HDPE PIPE (UNO)
- P = SEWER PUMP
- A = CHECK VALVE
- H = SEWER PUMP HYDRANT



NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	ADDED CHECK VALVES	
REVISIONS			

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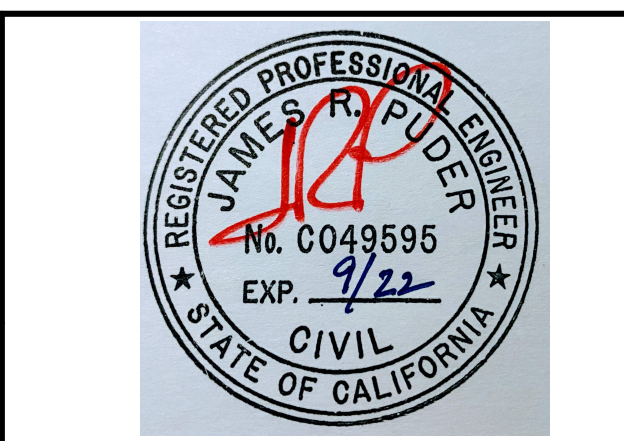
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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM LAYOUT FOR DOCKS E10 - E12



SCALE:	1" = 30' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	S9
SHEET NO.:	121

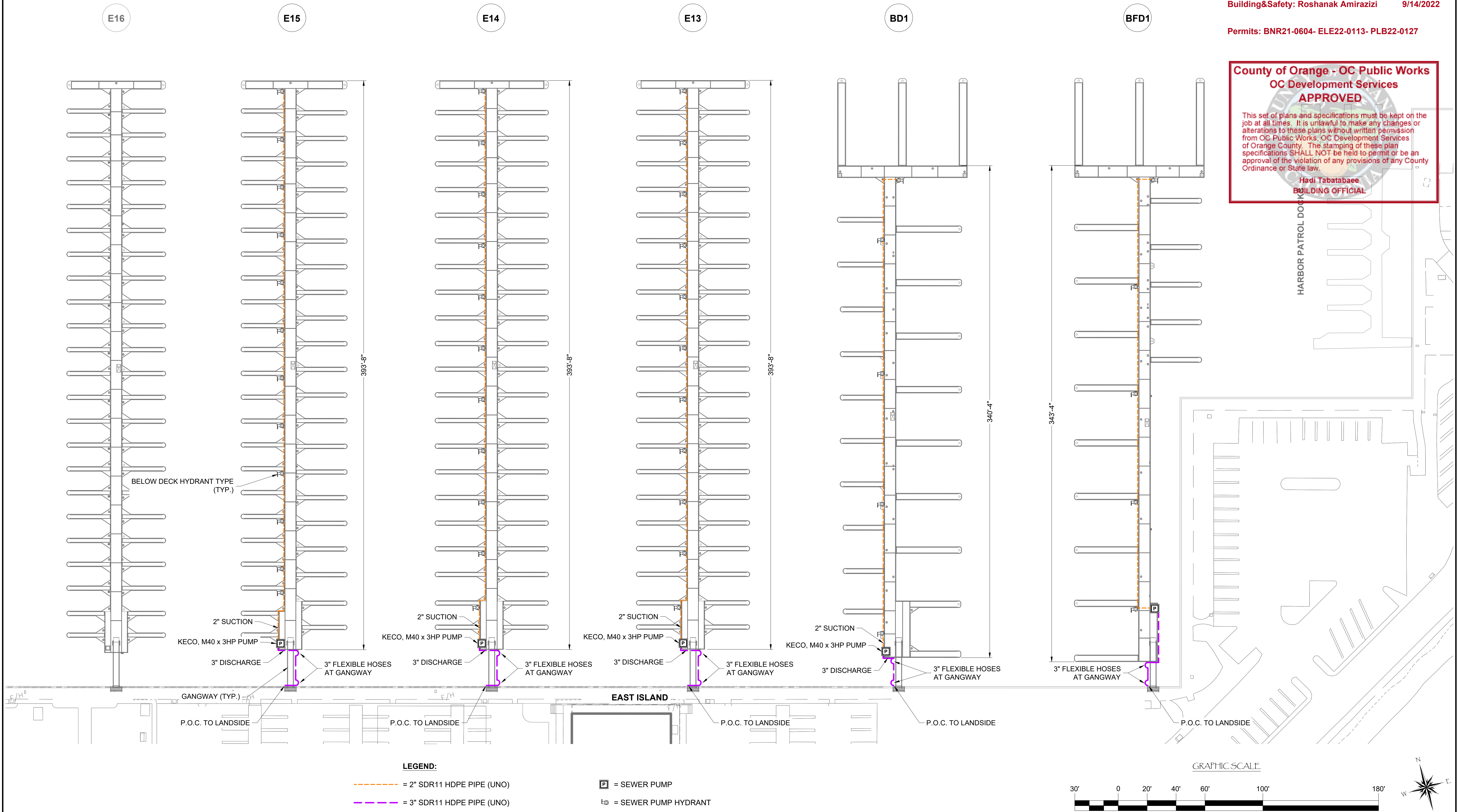
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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NO.	DATE	DESCRIPTION	BY
REVISIONS			



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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM LAYOUT FOR DOCKS BFD1, BD1, & E13 - E15



SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

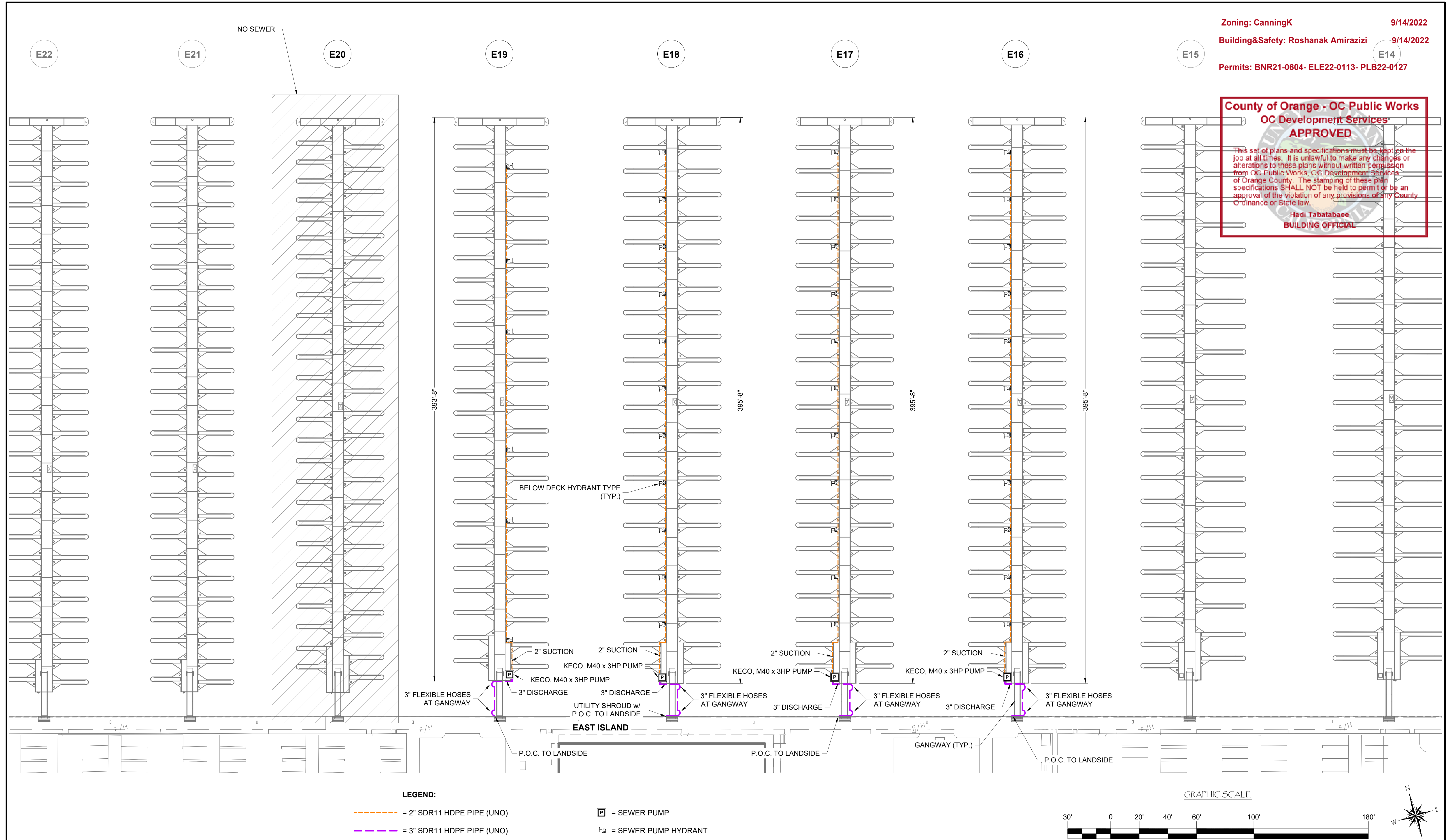
DRAWING: S10

SHEET NO.: 122

PERMIT DRAWING

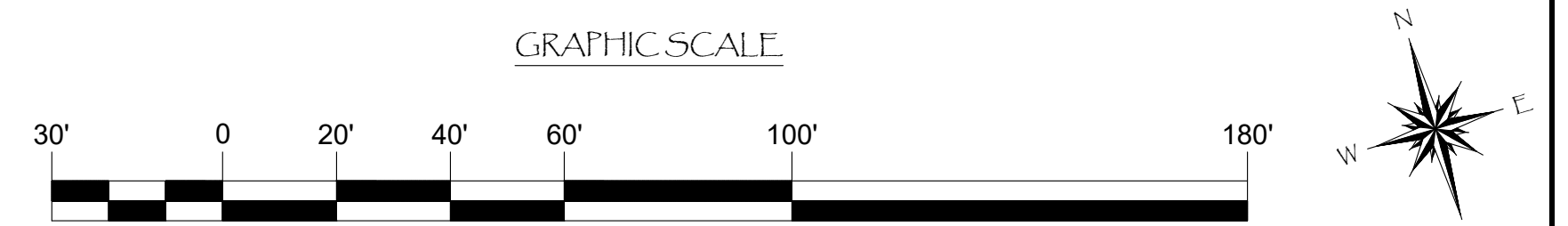
Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 Hadi Tabatabaee
 BUILDING OFFICIAL



LEGEND:

- = 2" SDR11 HDPE PIPE (UNO)
- = 3" SDR11 HDPE PIPE (UNO)
- P = SEWER PUMP
- H = SEWER PUMP HYDRANT



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

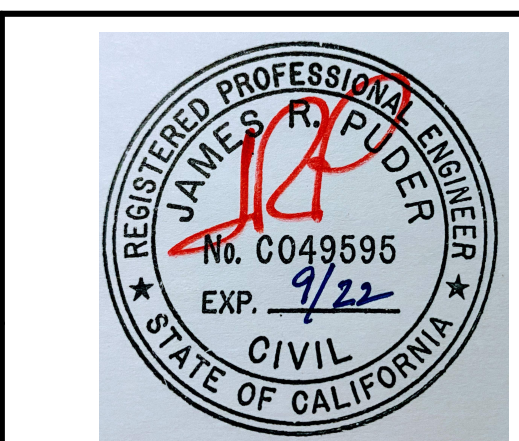
PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM LAYOUT FOR DOCKS E16 - E20



SCALE: 1" = 30'
 (Sheet Size 24" x 36")

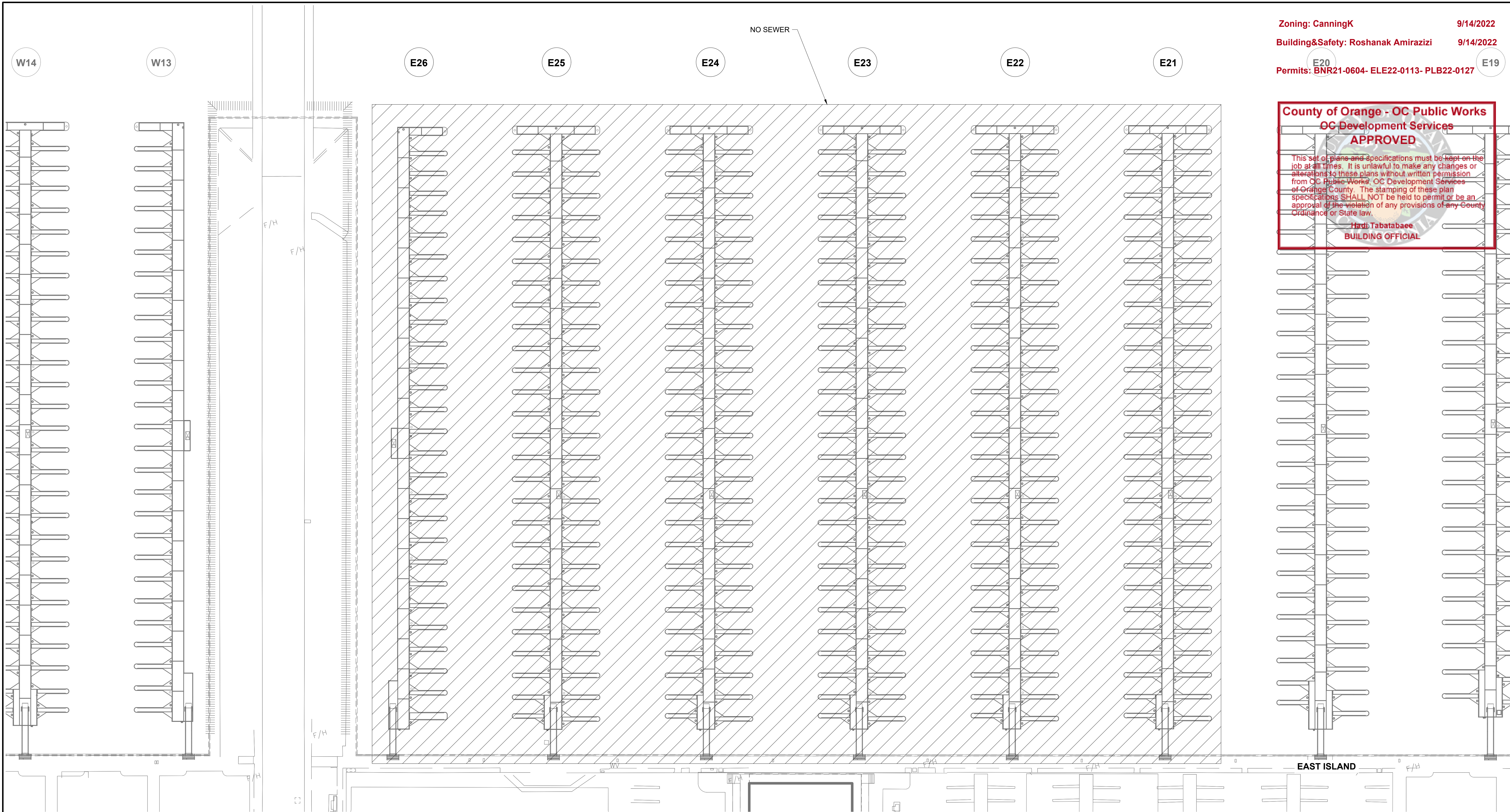
DRAWN BY: KG

DATE: 5/10/2022

DRAWING: S11

SHEET NO.: 123

PERMIT DRAWING



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

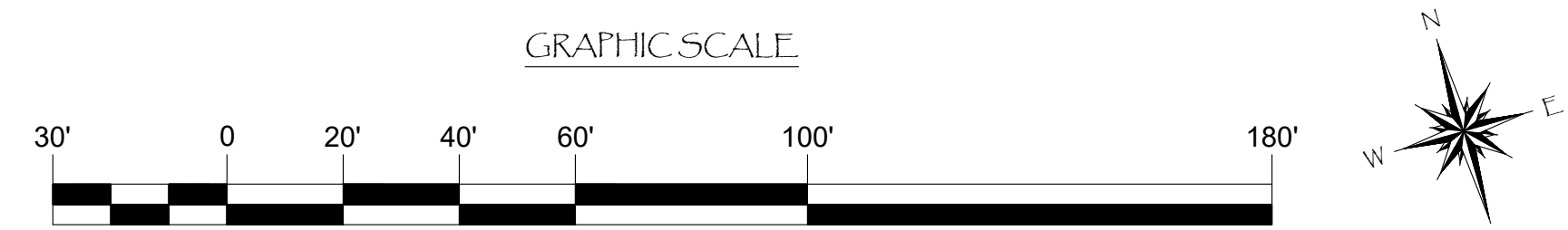
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Habib Tabatabaee
BUILDING OFFICIAL

LEGEND:

- = 2" SDR11 HDPE PIPE (UNO)
- = 3" SDR11 HDPE PIPE (UNO)
- = SEWER PUMP
- = SEWER PUMP HYDRANT



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM LAYOUT FOR DOCKS E21 - E26



SCALE: 1" = 30'
 (Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

DRAWING: S12

SHEET NO.: 124

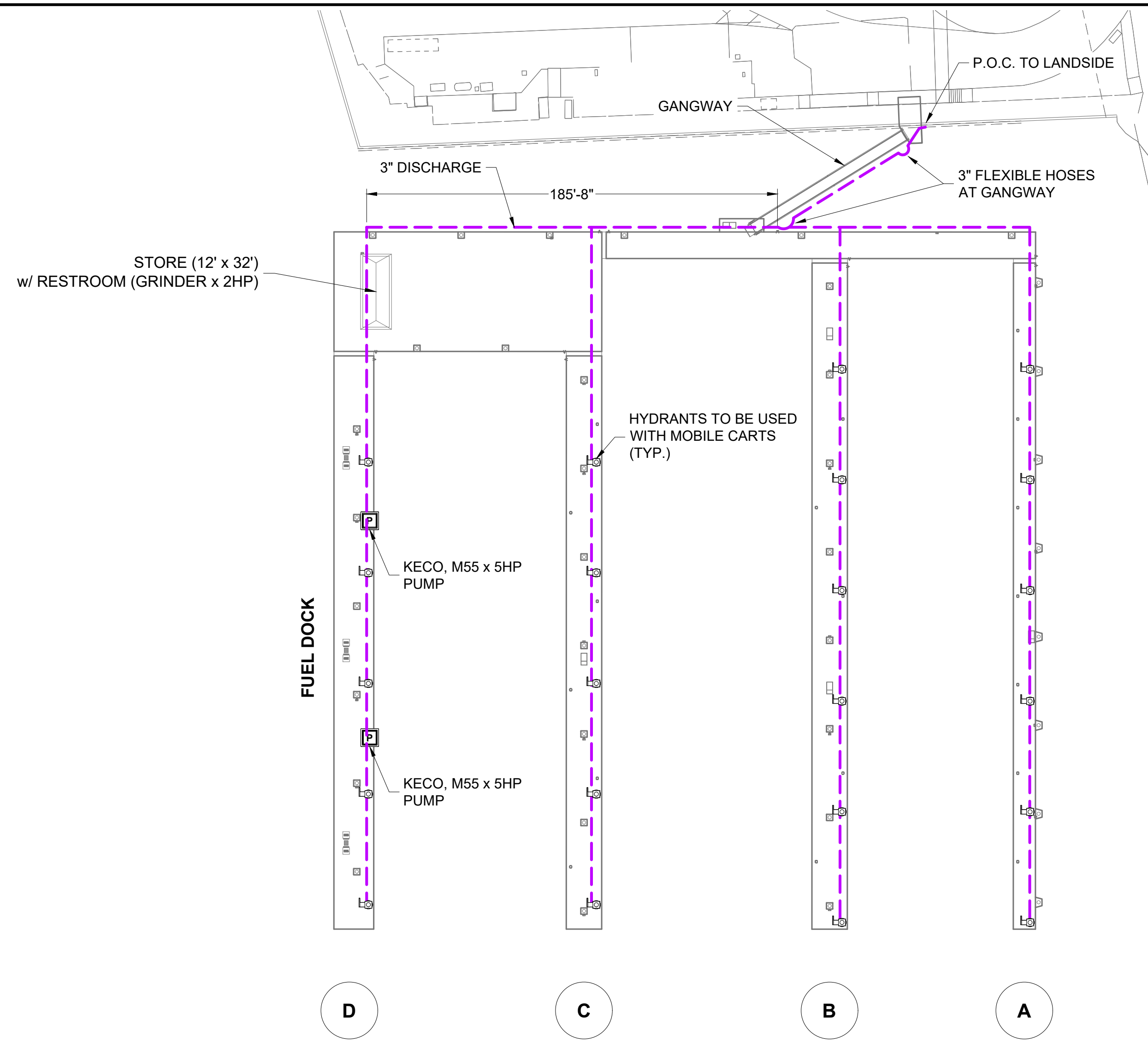
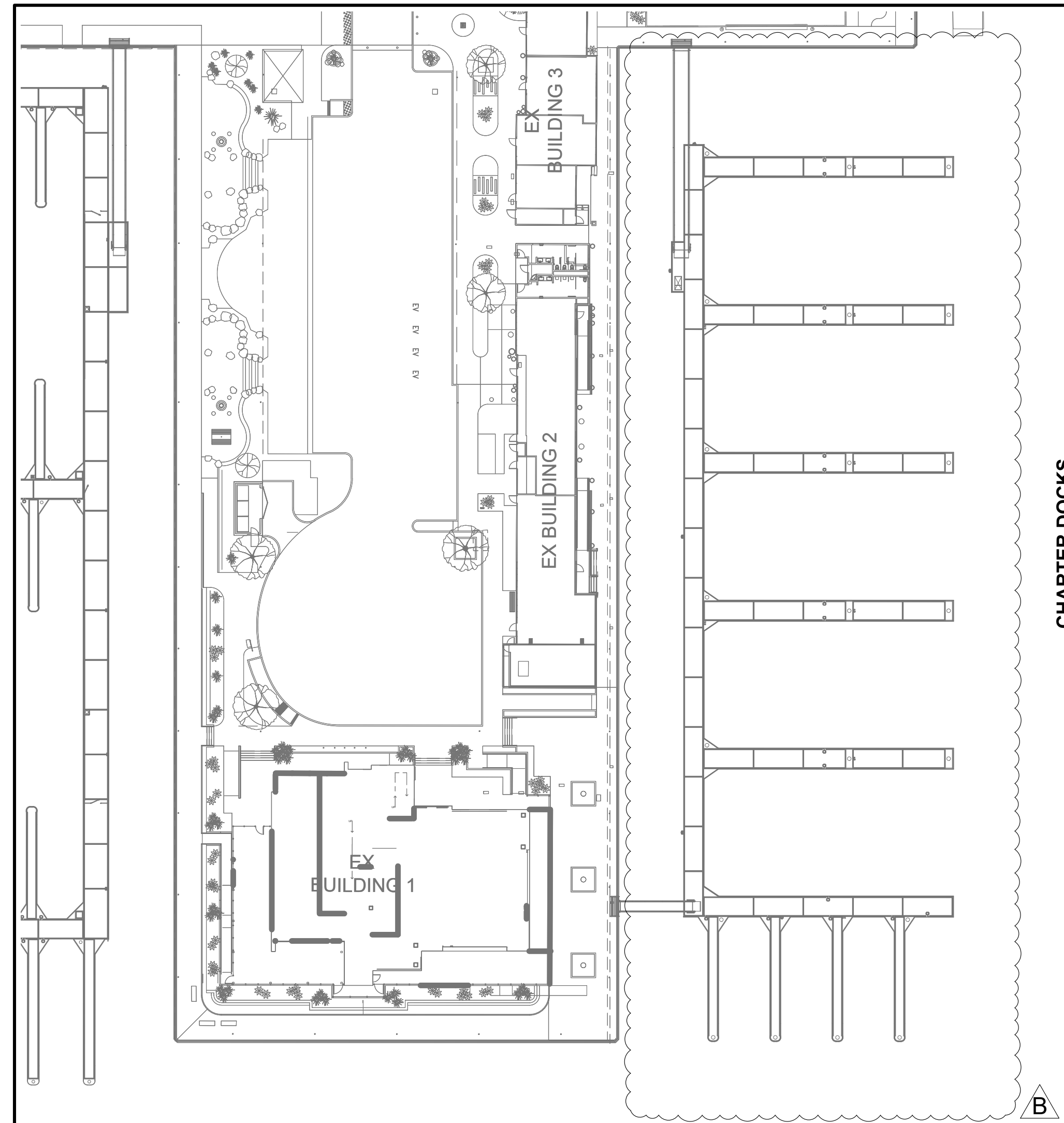
PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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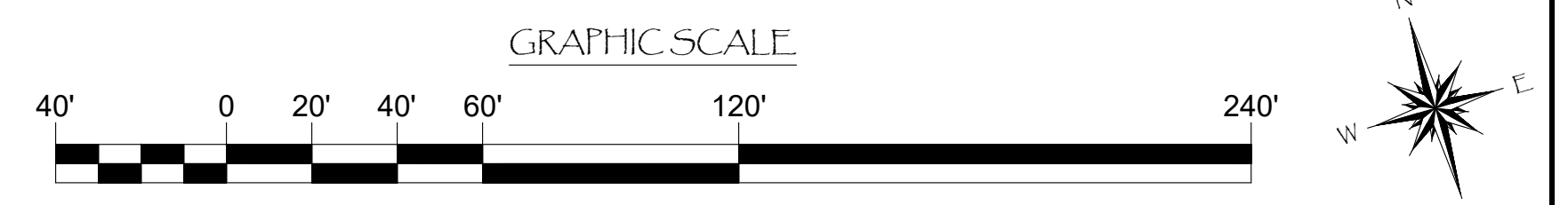
Hadi Tabatabaee
 BUILDING OFFICIAL



CHARTER DOCKS
 A
 B
 A

D
 C
 B
 A

- LEGEND:**
- - - = 2" SDR11 HDPE PIPE (UNO)
 - - - = 3" SDR11 HDPE PIPE (UNO)
 - ⊕ = SEWER PUMP HYDRANT
 - Ⓟ = SEWER PUMP



NO.	DATE	DESCRIPTION	BY
B	5-10-22	RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	REMOVED SPORTFISHING/ ADDED EXISTING RELOCATED	KG
REVISIONS			

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION

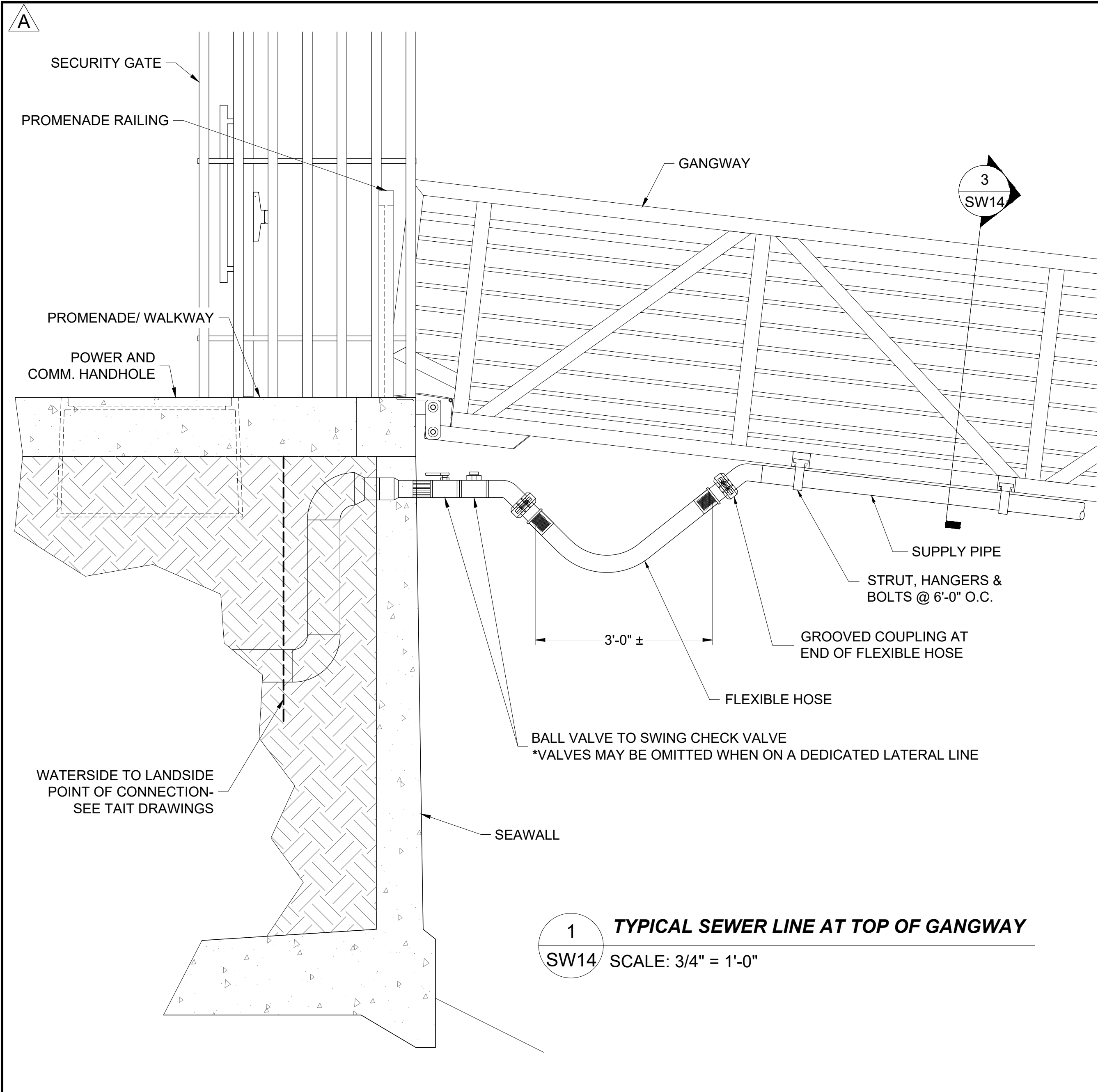
Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM LAYOUT FOR OUTER BASIN DOCKS

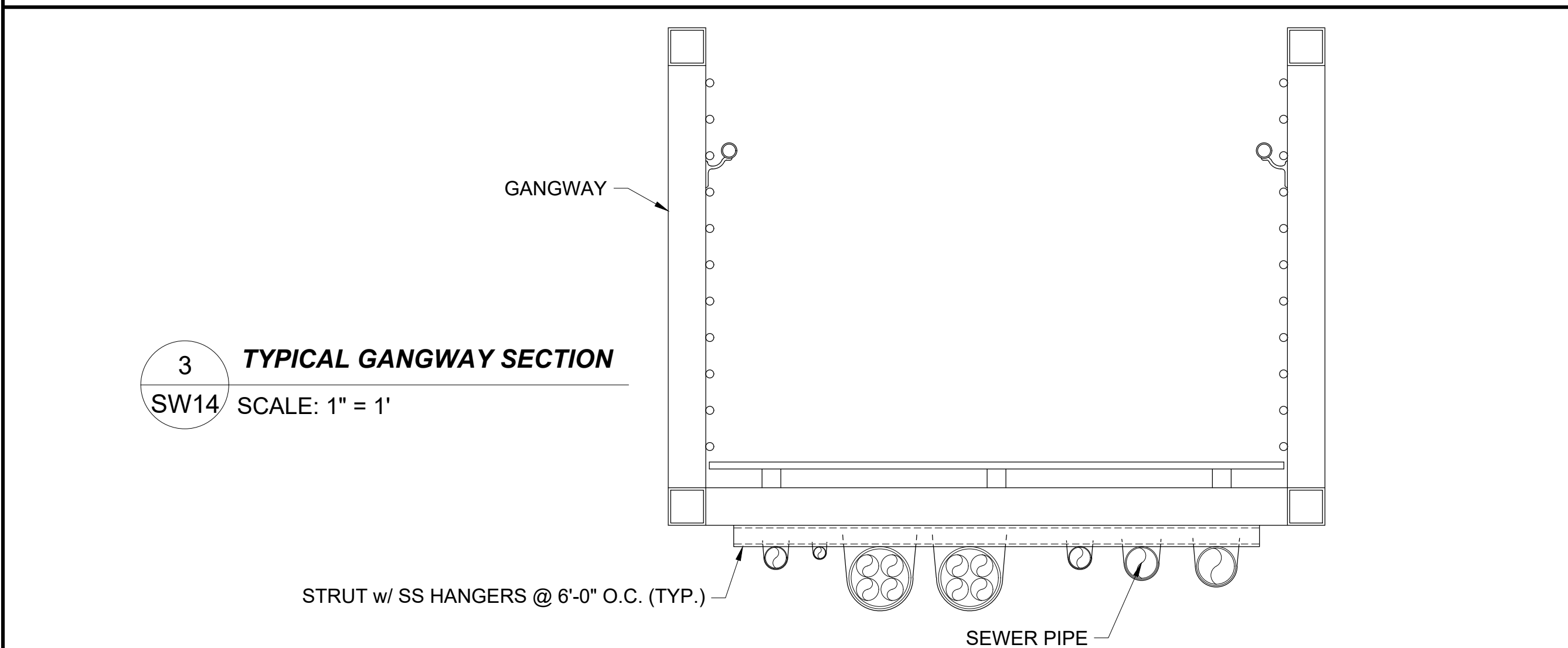
REGISTERED PROFESSIONAL ENGINEER
 JAMES R. PUDE
 No. C049595
 EXP. 9/22
 CIVIL
 STATE OF CALIFORNIA

SCALE:	1" = 40' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	S13
SHEET NO.:	125

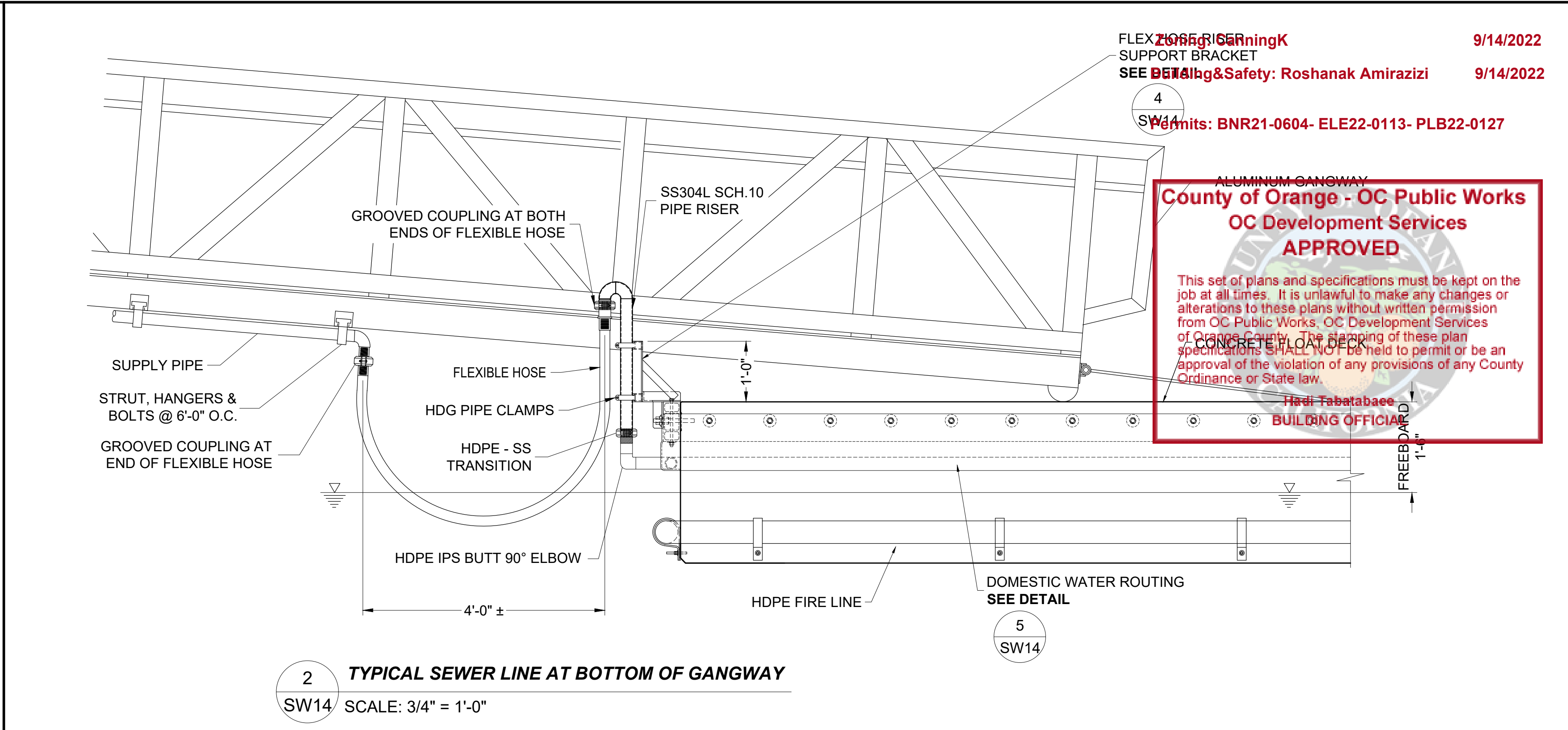
PERMIT DRAWING



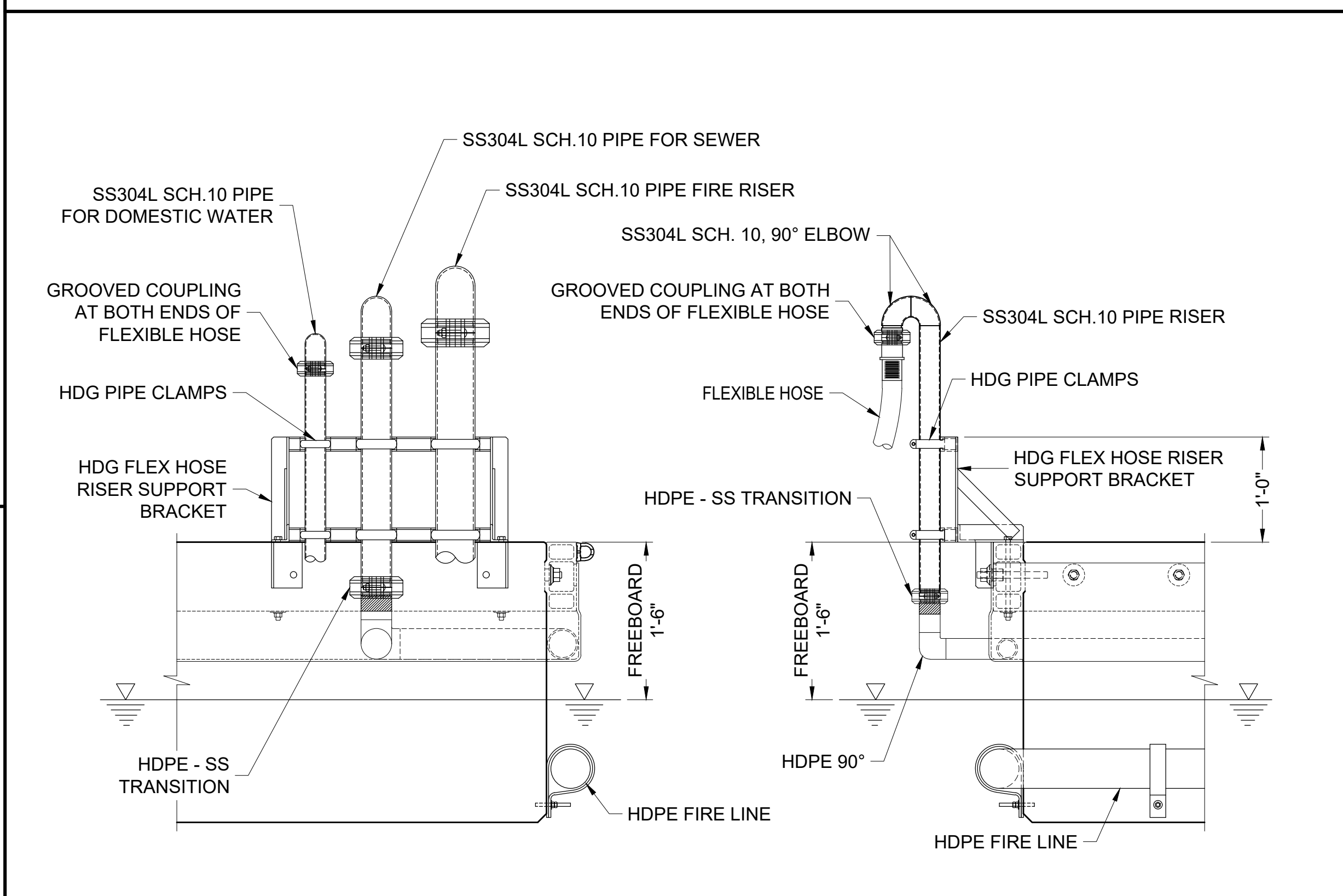
1 TYPICAL SEWER LINE AT TOP OF GANGWAY
SW14 SCALE: 3/4" = 1'-0"



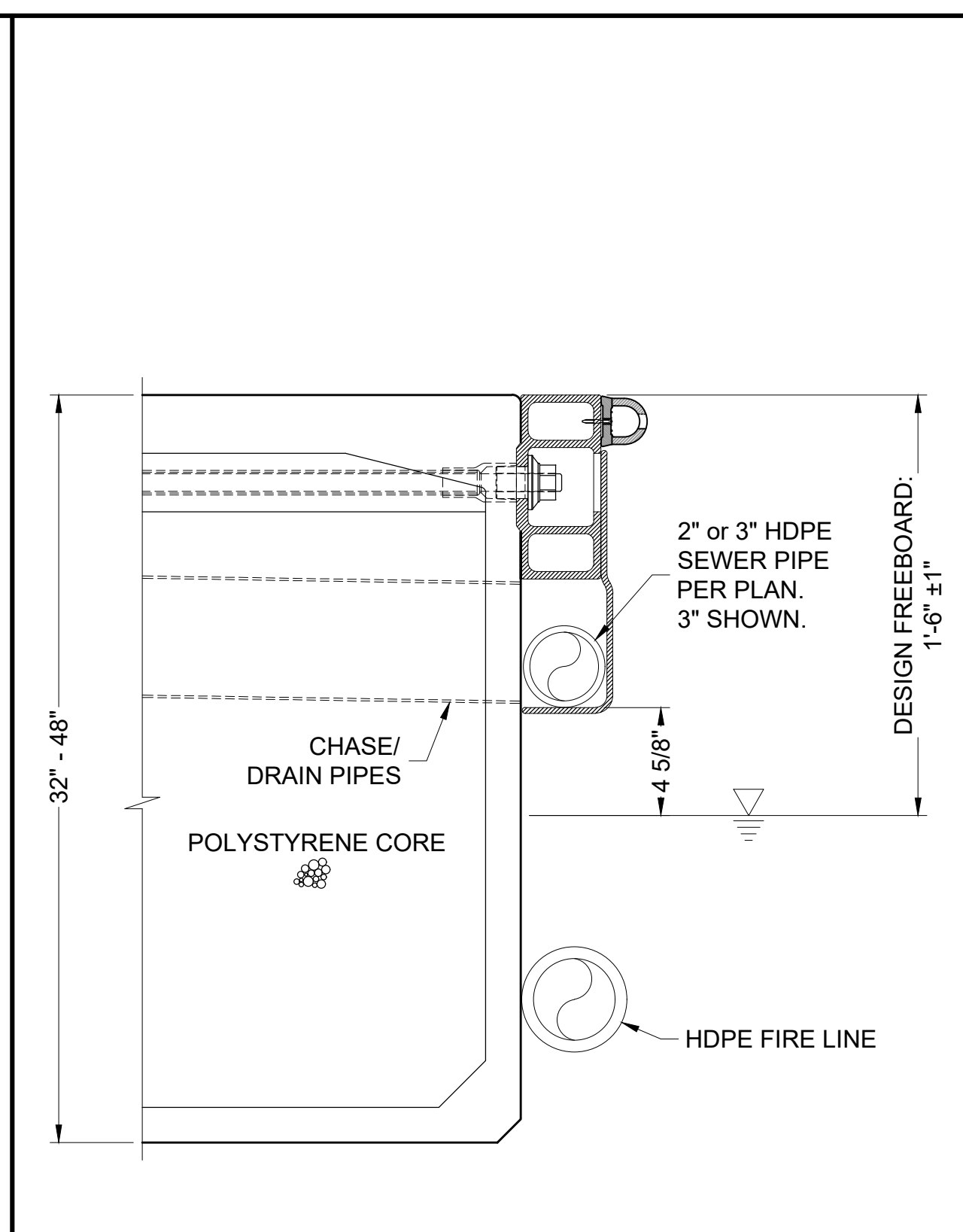
3 TYPICAL GANGWAY SECTION
SW14 SCALE: 1" = 1'



2 TYPICAL SEWER LINE AT BOTTOM OF GANGWAY
SW14 SCALE: 3/4" = 1'-0"



4 TYPICAL ELEVATION VIEW OF FLEX HOSE RISER SUPPORT BRACKET
SW14 SCALE: 1" = 1'



5 TYPICAL HDPE PIPE ROUTING
SW14 SCALE: NTS

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Development Services
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Hadji Tabatabaee
BUILDING OFFICIAL

FLEX HOSE RISING K
SUPPORT BRACKET
SEE DETAILS & Safety: Roshanak Amirazizi
9/14/2022
Permits: BNR21-0604- ELE22-0113- PLB22-0127

NO.	DATE	DESCRIPTION	BY
A	2-25-22	UPDATED DETAILS	KG
REVISIONS			

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

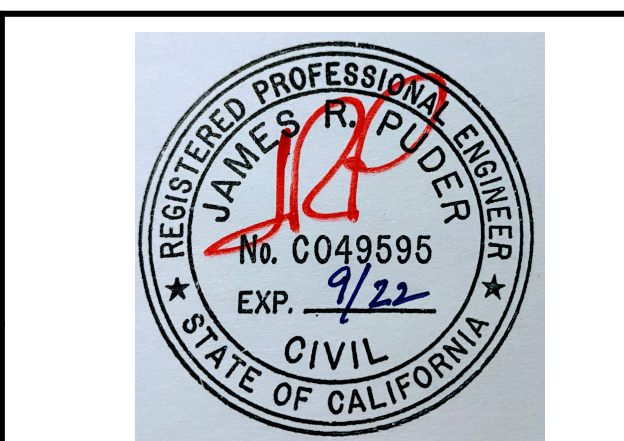
PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

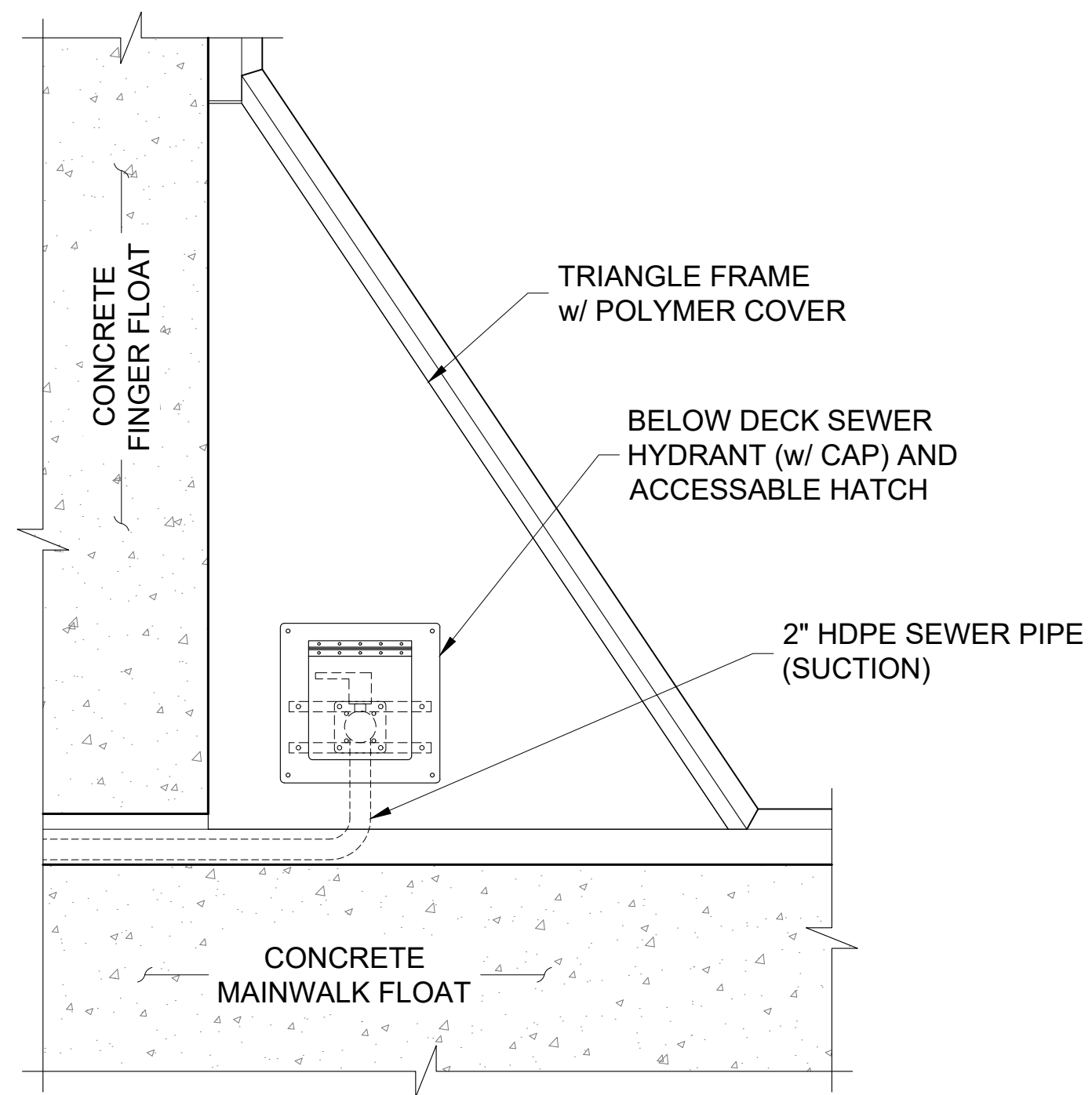
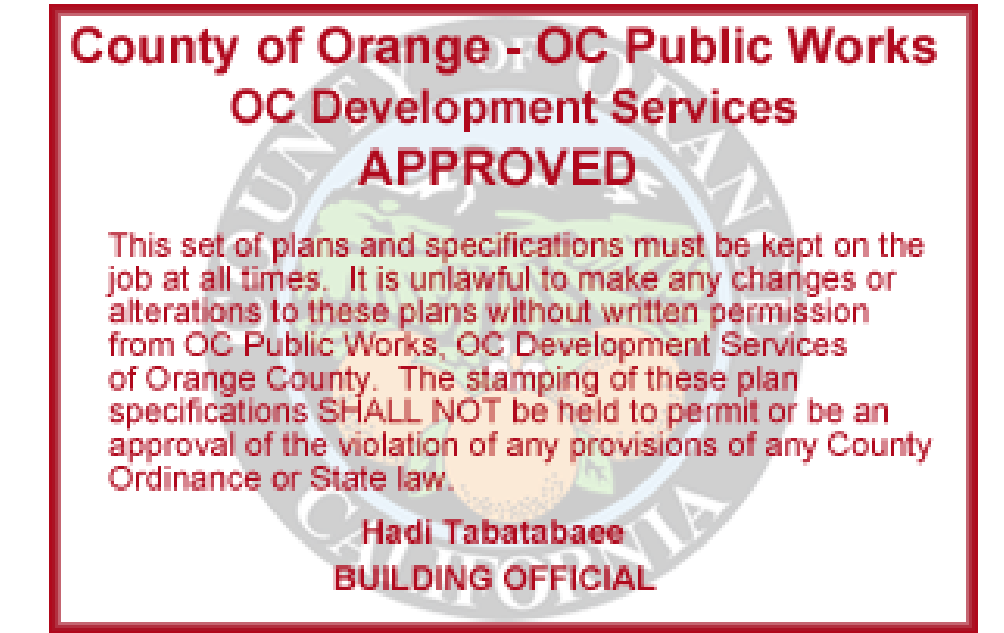
SEWER SYSTEM DETAILS



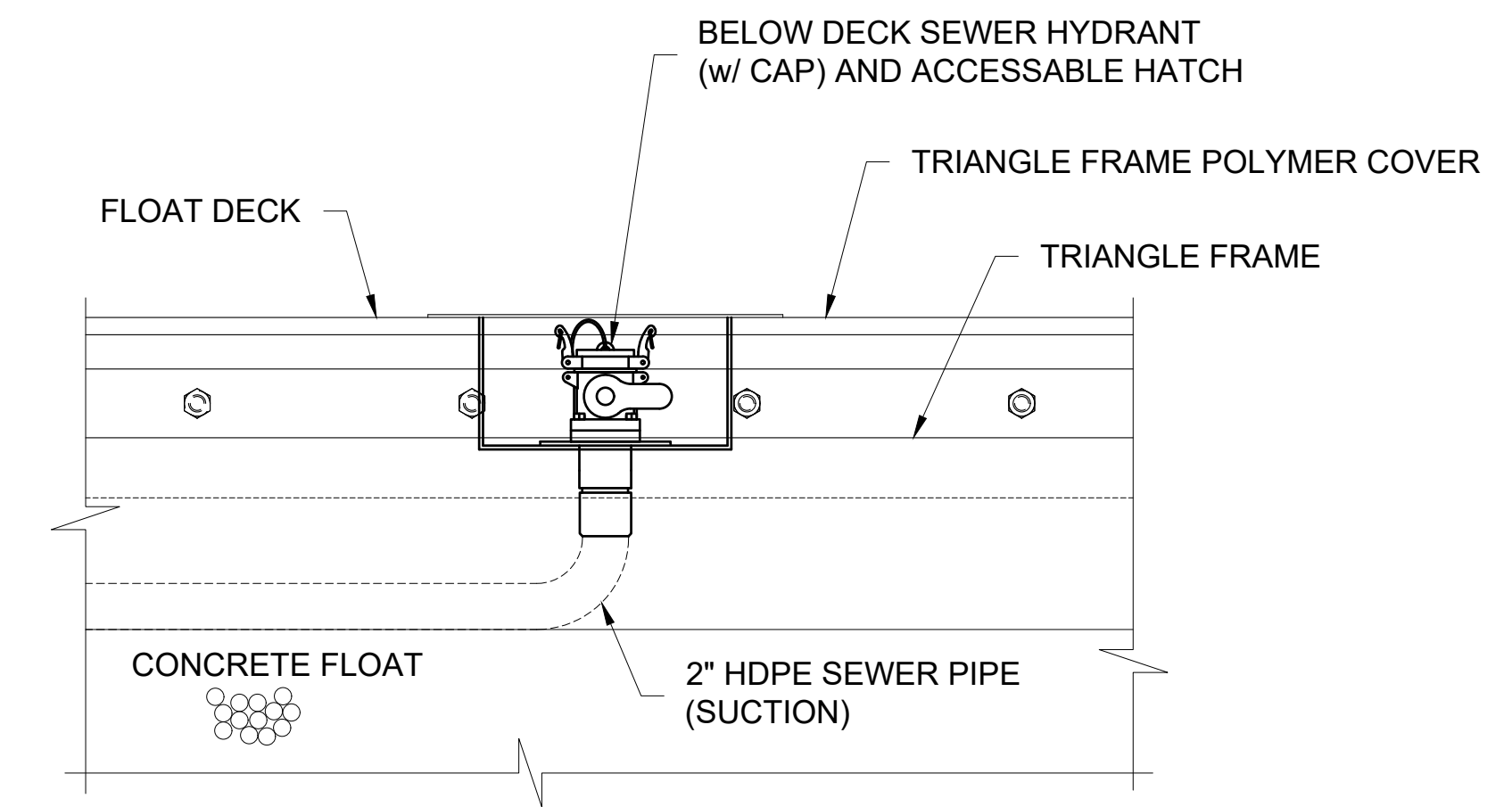
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DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	S14
SHEET NO.:	126

PERMIT DRAWING

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127



1 TYPICAL PLAN VIEW OF SEWER HYDRANT AT TRIANGLE FRAME
 SW15 SCALE: NTS



2 TYPICAL ELEVATION VIEW OF SEWER HYDRANT AT TRIANGLE FRAME
 SW15 SCALE: NTS

NO.	DATE	DESCRIPTION	BY
REVISIONS			

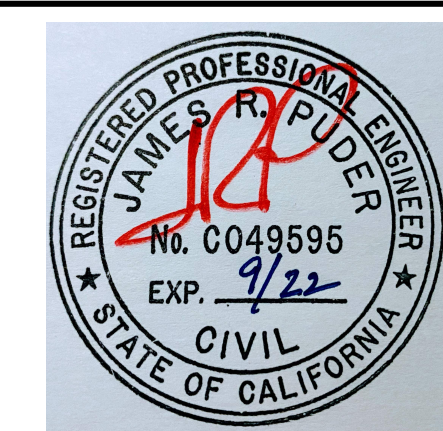


SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER:
 7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

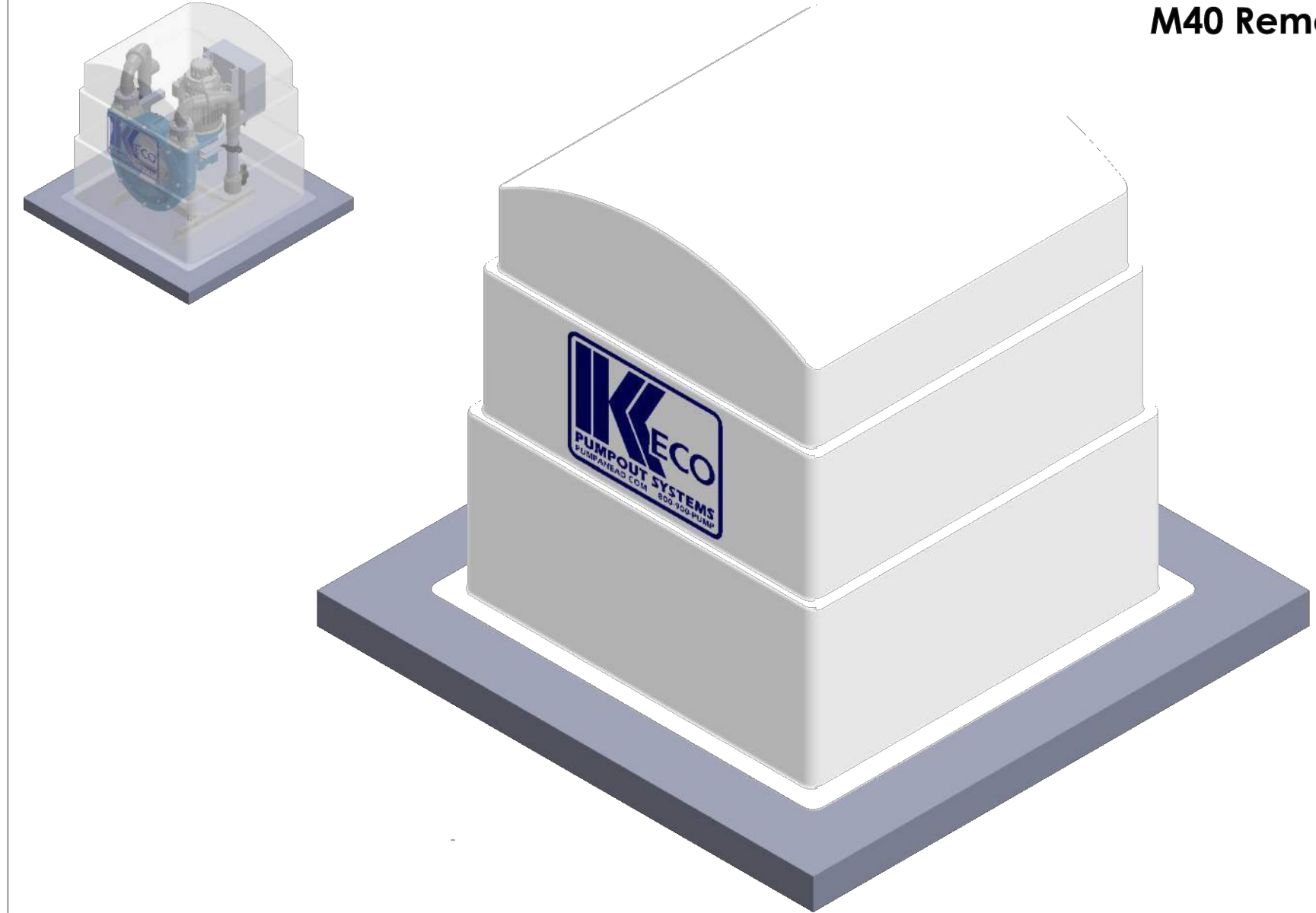
DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
SEWER SYSTEM DETAILS



SCALE: NTS
 (Sheet Size 24" x 36")
 DRAWN BY: KG
 DATE: 5/10/2022
 DRAWING: S15
 SHEET NO.: 127

A

M40 Remote (3 Tier)



NOTES:

*STANDARD PLUMBING MANIFOLDS INCLUDE DISCONNECT UNIONS, ISOLATION VALVE, AND VACUUM/PRESSURE GAUGE PORTS

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ONE PLACE DECIMAL ± 0.1
TWO PLACE DECIMAL ± 0.03
THREE PLACE DECIMAL ± 0.002
ANGULAR ± 0.5°

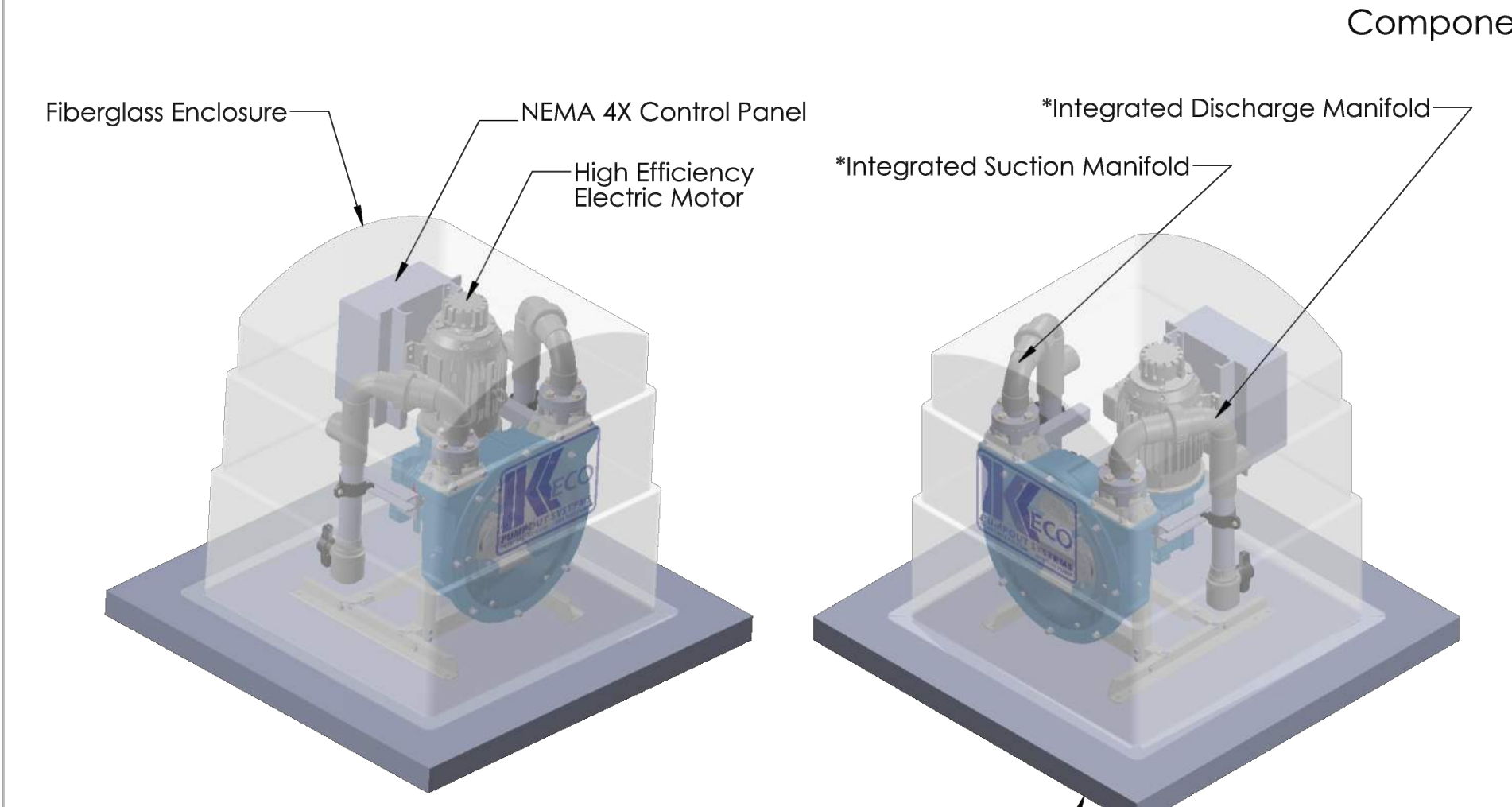
DRAWN	REVISED	DATE	COMMENTS
	1.0	7/14/2015	

KECCO PUMP AND EQUIPMENT
WWW.PUMPAHEAD.COM

PART NUMBER - TITLE
M40 Remote

DIMENSION: INCHES / (XX) MM
SCALE: 1:10 SHEET 1 OF 4

Components



Fiberglass Enclosure

NEMA 4X Control Panel

High Efficiency Electric Motor

*Integrated Discharge Manifold

*Integrated Suction Manifold

48" X 48" Suggested Installation Area

NOTES:

*STANDARD PLUMBING MANIFOLDS INCLUDE DISCONNECT UNIONS, ISOLATION VALVE, AND VACUUM/PRESSURE GAUGE PORTS

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TWO PLACE DECIMAL ± 0.03
THREE PLACE DECIMAL ± 0.002
ANGULAR ± 0.5°

DRAWN	REVISED	DATE	COMMENTS
	1.0	7/14/2015	

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PART NUMBER - TITLE
M40 Remote

DIMENSION: INCHES / (XX) MM
SCALE: 1:16 SHEET 2 OF 4



Call Toll Free **800.900.PUMP**
ph: 619.298.3800 fax: 619.298.3300

Zoning: Canning 9/14/2022

Building & Safety: Roshanak Amirazizi 9/14/2022

Permits: BNR21-0604- ELE22-0113- PLB22-0127

9/14/2022

900-Series Peristaltic Pump / M40 - 3HP Specifications

Standard Performance:

Volume.....30 GPM / 132 LPM

Dry Suction Lift.....29ft / 8.8 m

Vacuum Rating.....29 Hg / 9.5 bar

Discharge Head.....103 ft / 31.4 m

Discharge Pressure.....60 Psi / 4.1 bar

Maximum Performance:

Volume.....45 GPM / 170 LPM

Dry Suction Lift.....29 ft / 8.8 m

Vacuum Rating.....29 Hg / 9.5 bar

Discharge Head.....550 ft / 167.6 m

Discharge Pressure.....240 Psi / 16.5 bar

Standard Features:

- 3-HP TEFC Baldor Electric Motor
- 316 - Stainless Steel Pump Frame
- Aluminum Pump Housing (Epoxy Coated)
- Clear Acrylic Viewing Window
- Oil Free Pump Housing
- Factory Installed Suction & Discharge Plumbing
- Direct Drive, Maintenance Free Gearbox
- Leak Detection with Auto Pump Shutdown
- Integrated Vacuum Relief Valve
- NEMA 4X Non Metallic Control Panel
- Textile Reinforced Internal Hose Element
- Integrated Solid State Adjustable Run-Timer
- NEMA 4X Hour Meter

Optional Features:

- UL Listed NEMA 4X Control Panel
- Variable Speed Pump Controller
- Explosion Proof Leak Detector
- Explosion Proof Electric Motor
- Main Power Disconnect Switch
- Fiberglass, Stainless or Aluminum Pump Enclosure
- MarineSync Remote Monitoring
- Extended Warranty

Dimensions:

Pump - 25"x32"x40" @ 285lbs


Fiberglass Enclosure - 40"x40"x45" @ 35lbs

County of Orange - OC Public Works
Development Services

APPROVED

This set of plans is intended to be used for the construction of a pump station. All specifications must be kept on the job at all times. It is the responsibility of the contractor to make any changes or alterations to these plans without written permission from the County of Orange Public Works. The stamping of these plans by the County of Orange Public Works is not to be construed as an approval of the violation of any provisions of any County Ordinance or Code.

BUILDING OFFICIAL



Call Toll Free **800.900.PUMP**
ph: 619.298.3800 fax: 619.298.3300

Pump it, Don't Dump it!

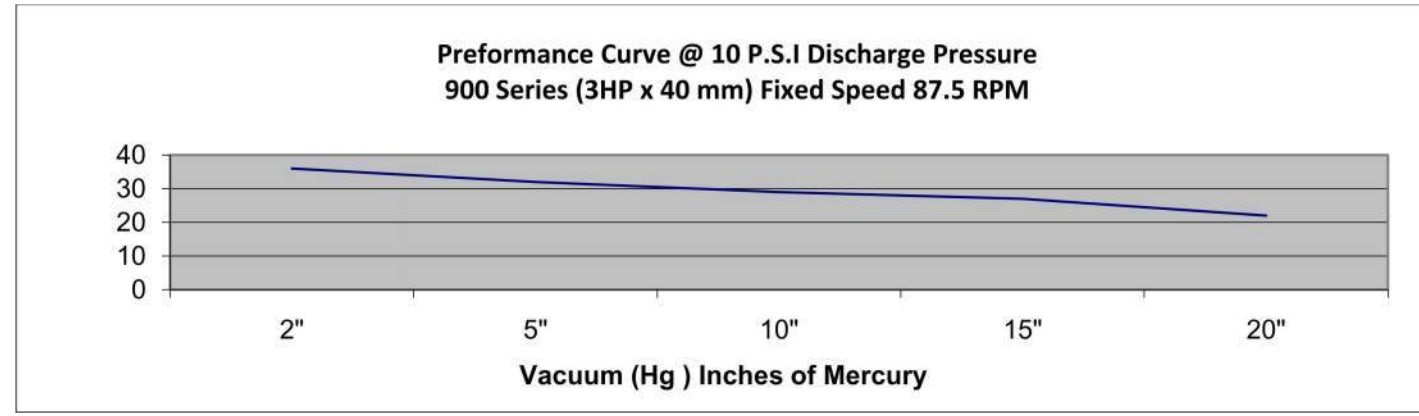
9/14/2022

900-Series Peristaltic Pump / M40 - 3HP Specifications

Suction: Performance curve above indicates flow rates are impacted by more by suction lift than discharge head. The pump curve indicates the 900 series peristaltic (40mm) pump will pump between 35-gpm and 29-gpm at 2-ft. and 10-ft. suction lift respectively. This does not take into friction loss in suction piping or fittings. Additionally, pockets of air are common in suction and discharge piping which will dramatically affect volumes and velocities of fluids being pumped. Always consult factory with pump application / sizing inquiries.

Discharge: The peristaltic pump is a positive displacement pump, with pulses of 2.20 times greater than average flow, or approximately 66 GPM if actual flow is 30 GPM. When calculating discharge pressure requirement, assume the higher flow rate (actual x 2.2) when determining discharge dynamic head.

Performance Curve @ 10 P.S.I Discharge Pressure
900 Series (3HP x 40 mm) Fixed Speed 87.5 RPM

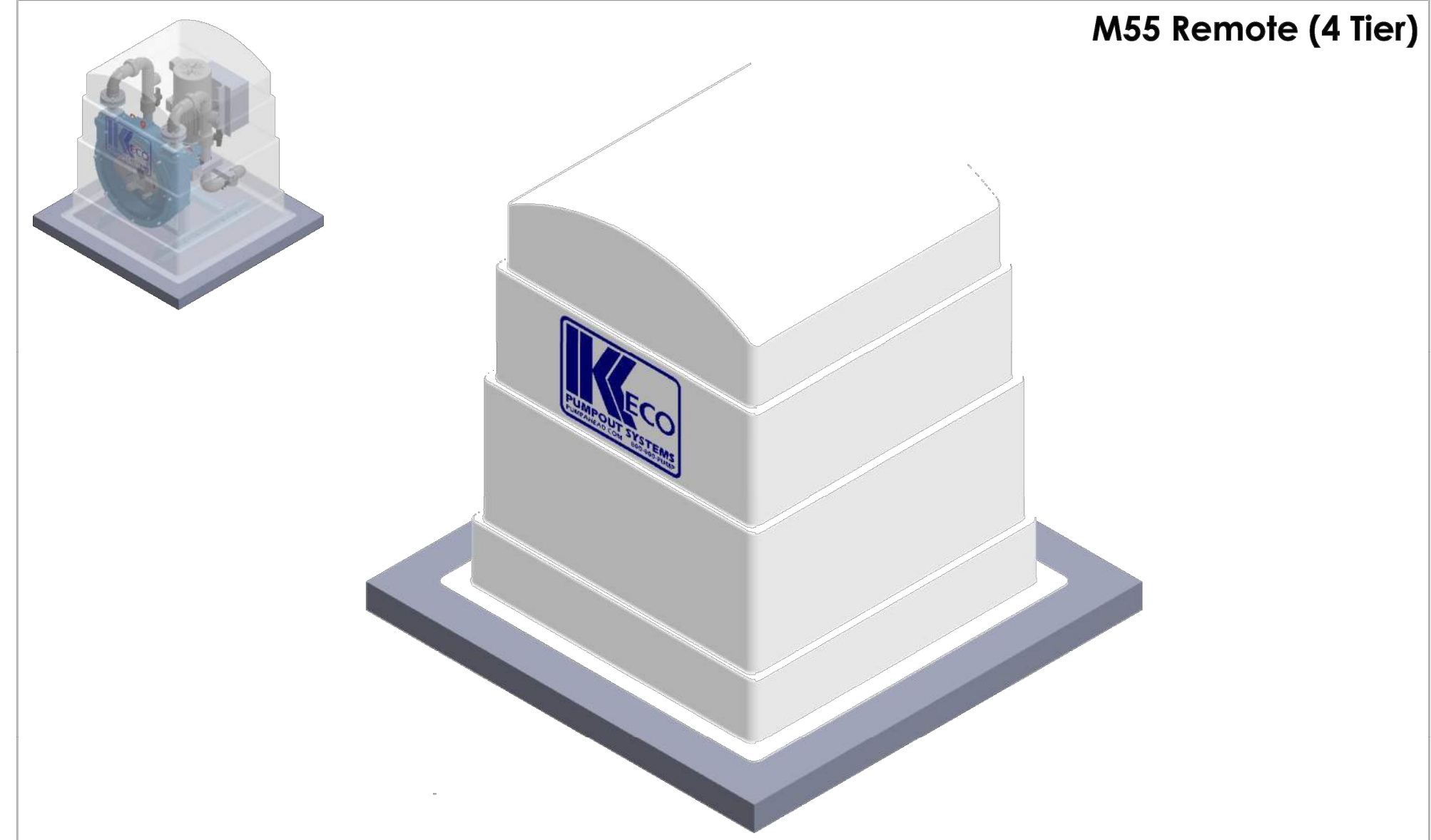


Suction Capabilities		Discharge Capabilities	
Model 900R (40 mm) 3 HP	29 HG - 45 PSI	Model 900R (40 mm) 3 HP	45 PSI - 35 GPM
Lift	Horizontal Distance 2" (LF)	Head	Horizontal Distance 3" (LF)
23'	50'	280'	*
21'	125'	200'	*
19'	200'	180'	*
16'	275'	160'	*
13'	350'	140'	*
11'	425'	120'	*
9'	500'	100'	200'
7'	575'	90'	800'
5'	650'	80'	1700'
3'	725'	70'	2300'
0'	800'	60'	2900'
		50'	3500'
		40'	4000'
		30'	4600'
		20'	5200'
		10'	5800'
		0'	6500'

Chart Reflects Approximate 2" Suction x 3" Discharge Maximum Pipe Distances. Elbows, Fittings & Valves Have Not Been Taken Into Consideration.

P.O. Box 80306, San Diego, CA 92138 • www.pumpahead.com

M55 Remote (4 Tier)



NOTES:

*STANDARD PLUMBING MANIFOLDS INCLUDE DISCONNECT UNIONS, ISOLATION VALVE, AND VACUUM/PRESSURE GAUGE PORTS

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TWO PLACE DECIMAL ± 0.03
THREE PLACE DECIMAL ± 0.002
ANGULAR ± 0.5°

DRAWN	REVISED	DATE	COMMENTS
	1.0	7/21/2015	

KECCO PUMP AND EQUIPMENT
WWW.PUMPAHEAD.COM

PART NUMBER - TITLE
M55 Remote

DIMENSION: INCHES / (XX) MM
SCALE: 1:12 SHEET 1 OF 4

NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
A	5-10-22		



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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:
[Signature]

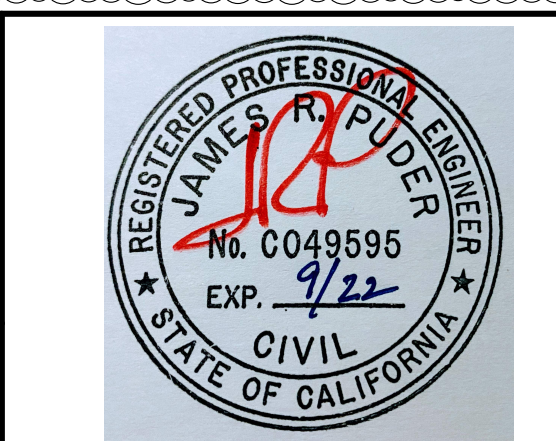
PROJECT MANAGER:
[Signature]

CHECKED BY:
[Signature]

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

SEWER SYSTEM DATA SHEETS



SCALE: NTS
(Sheet Size 24" x 36")

DRAWN BY: KG

DATE: 5/10/2022

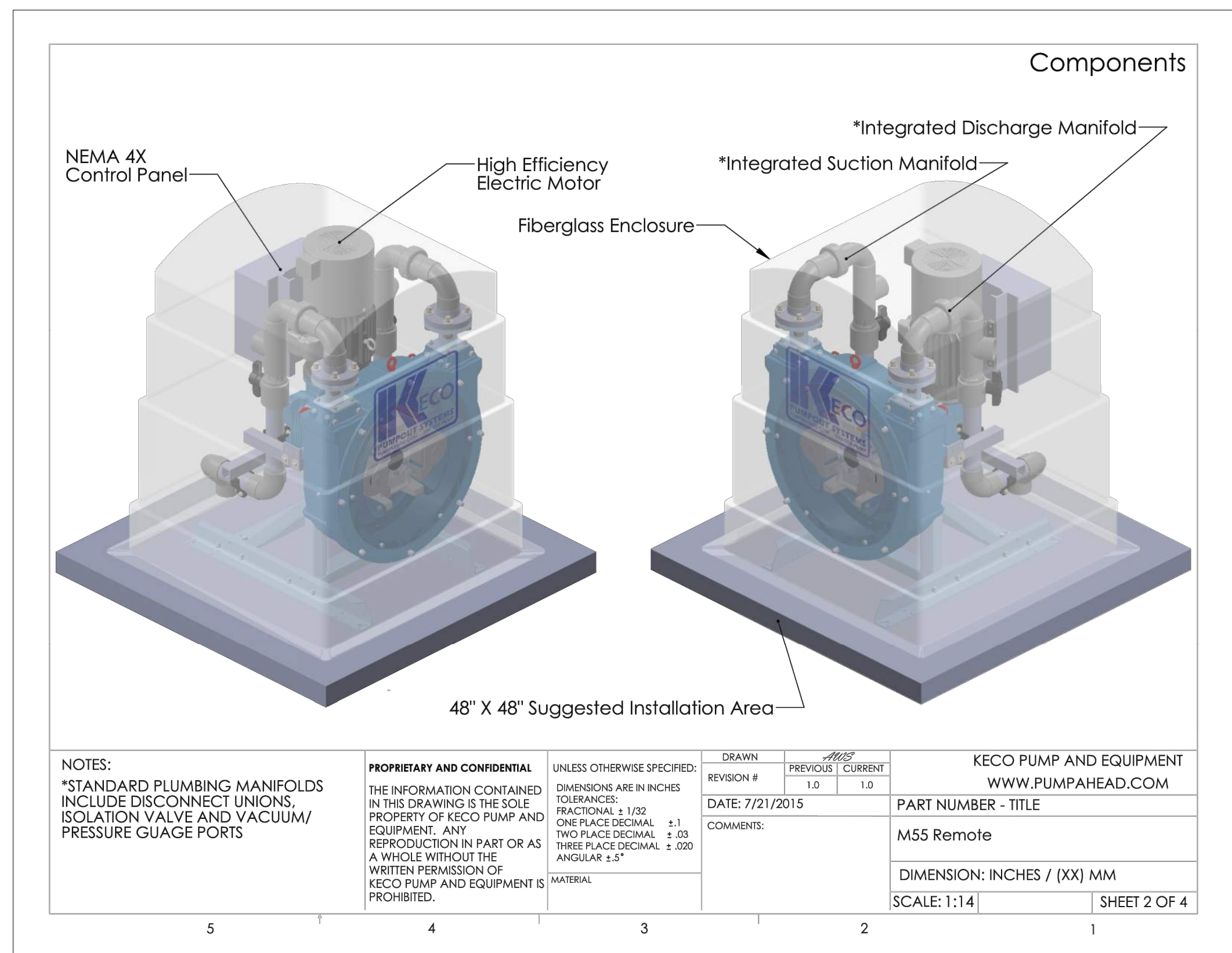
DRAWING: S16

SHEET NO.: 128

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 OC Development Services
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Hadi Tabatabaee
BUILDING OFFICIAL



Call Toll Free **800.900.PUMP**
PH: 619.298.3300 | FAX: 619.298.3300

Pump it, Don't Dump it!™

900-Series Peristaltic Pump / M55 – 5HP Specifications

Standard Performance:

Volume.....50 GPM / 208 LPM
 Dry Suction Lift.....29ft / 8.8 m
 Vacuum Rating.....29 Hg / -9.5 bar
 Discharge Head.....103 ft / 31 m
 Discharge Pressure.....60 Psi / 4.0 bar

Maximum Performance:

Volume.....80 GPM / 302 LPM
 Dry Suction Lift.....29 ft / 8.8 m
 Vacuum Rating.....29 Hg / -9.5 bar
 Discharge Head.....550 ft / 161 m
 Discharge Pressure.....240 Psi / 16 bar

Standard Features:

5-HP TEFC Baldor Electric Motor
 316 – Stainless Steel Pump Frame
 Aluminum Pump Housing (Epoxy Coated)
 Clear Acrylic Viewing Window
 Oil Free Pump Housing
 Factory Installed Suction & Discharge Plumbing
 Direct Drive, Maintenance Free Gearbox
 Leak Detection with Auto Pump Shutdown
 Integrated Vacuum Relief Valve
 NEMA 4X Non Metallic Control Panel
 Textile Reinforced Internal Hose Element
 Integrated Solid State Adjustable Run-Timer
 NEMA 4X Hour Meter

Optional Features:

UL Listed NEMA 4X Control Panel
 Variable Speed Pump Controller
 Explosion Proof Leak Detector
 Explosion Proof Electric Motor
 Main Power Disconnect Switch
 Fiberglass, Stainless or Aluminum Pump Enclosure
 MarineSync Remote Monitoring
 Extended Warranty

Dimensions:

Pump – 32"x27"x40" @ 385lbs
 Fiberglass Enclosure – 40"x40"x45" @ 35lbs

Applications:

- Marine / Recreational Pump Outs
- Bilge Pump Outs
- Forward Lift Stations

Design Consideration:

- Pump body shall be constructed of cast aluminum.
- Pump frame shall be constructed of 316 stainless steel.
- Pump body shall NOT be filled with a lubricant bath.
- Pump shall be equipped with a direct drive gearbox (Belts, pulleys or couplers shall NOT be accepted)
- Pump shall be equipped with a natural rubber or nitrile internal hose with an inside diameter of 55mm.
- Pump shall be equipped with two hi-efficiency rollers that gradually compress the elastomeric peristaltic hose.
- Pump rollers shall feature permanently sealed stainless steel bearings with double lipped oil seals.
- Pump rotor shall be supported by double-shaft bearings protected by double lipped oil seals.
- Pump rotor shall provide storage capability for roller for long-term storage and/or winterization.
- Peristaltic hose and rollers shall be visible through a 22" clear acrylic site window.
- Pump shall be equipped with suction & discharge plumbing manifolds with unions for quick disconnect.
- Pump shall include a vacuum gauge and ball valve on the suction manifold for isolating and testing.
- Leak detection shall instantly disable motor if the peristaltic hose ruptures.
- Pump shall come equipped with an electronic hour meter, displaying hours and decimal hours.

Call Toll Free **800.900.PUMP**
PH: 619.298.3300 | FAX: 619.298.3300

Pump it, Don't Dump it!™

900-Series Peristaltic Pump / M55 – 5HP Specifications

Suction: Performance curve above indicates flow rates are impacted by more by suction lift than discharge head. The pump curve indicates the 900 series peristaltic (55mm) pump will pump between 55-gpm and 48-gpm at 2-ft. and 10-ft. suction lift respectively. This does not take into friction loss in suction piping or fittings. Additionally, pockets of air are common in suction and discharge piping which will dramatically affect volumes and velocities of fluids being pumped. Always consult factory with pump application / sizing inquiries.

Discharge: The peristaltic pump is a positive displacement pump, with pulses of 2.20 times greater than average flow, or approximately 110 GPM if actual flow is 50 GPM. When calculating discharge pressure requirement, assume the higher flow rate (actual x 2.2) when determining discharge dynamic head.

**Performance Curve @ 10 P.S.I Discharge Pressure
 900 Series (5HP x 55 mm) Fixed Speed 58 RPM**

Suction Capabilities	Model 900R (55 mm) 5 HP	Discharge Capabilities	Model 900R (55 mm) 5 HP
	29 HG - 45 PSI		45 PSI - 55 GPM
Lift	Horizontal Distance 2" (LF)	Head	Horizontal Distance 3" (LF)
23'	100'	280'	*
21'	250'	200'	*
19'	325'	180'	*
16'	450'	160'	*
13'	525'	140'	*
11'	675'	120'	*
9'	725'	100'	50'
7'	850'	90'	150'
5'	975'	80'	300'
3'	1125'	70'	500'
0'	1500'	60'	750'
		50'	950'
		40'	1150'
		30'	1350'
		20'	1600'
		10'	1800'
		0'	2000'

Chart Reflects Approximate 2" Suction x 3" Discharge Maximum Pipe Distances. Elbows, Fittings & Valves Have Not Been Taken Into Consideration.

P.O. Box 80306, San Diego, CA 92138 • www.pumpahead.com

A	5-10-22	ADDED SHEET	KG
NO.	DATE	DESCRIPTION	BY
REVISIONS			

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

SEWER SYSTEM DATA SHEETS

SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	S17
SHEET NO.:	129

A

B

LEGEND:

— = GUARDRAIL (CURVED)

— = GUARDRAIL (STRAIGHT)

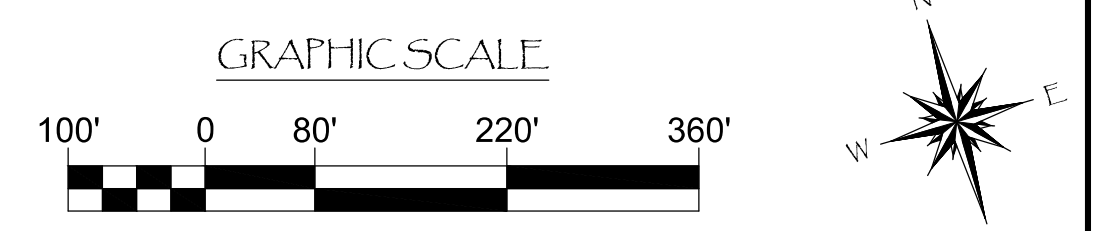
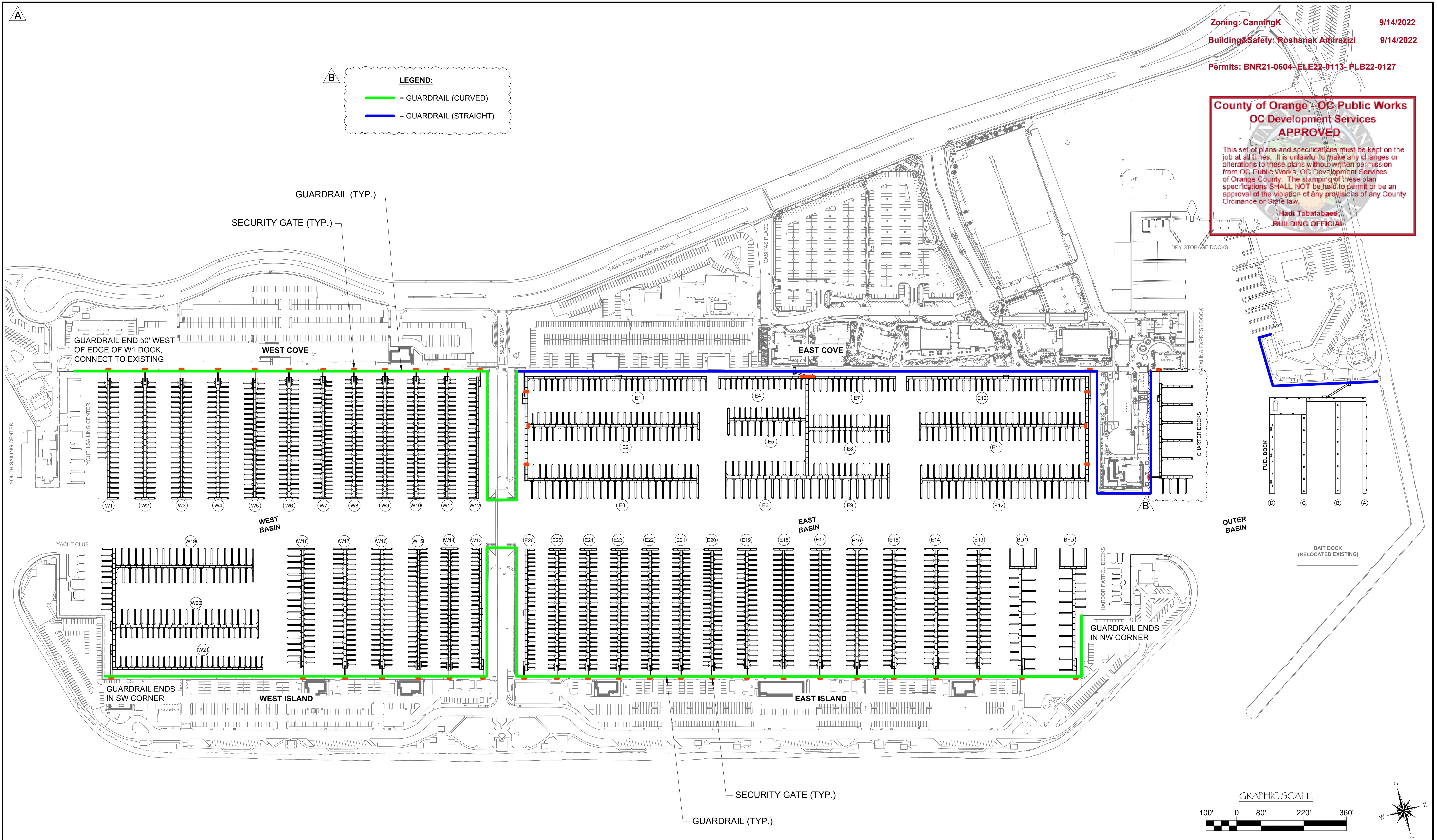
Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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 OC Development Services
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**Hadi Tabatabaee
 BUILDING OFFICIAL**

PERMIT DRAWING



NO.	DATE	REVISIONS	BY
B	5-10-22	ADDED LEGEND/ RECONFIGURED CHARTER DOCKS	KG
A	2-25-22	ADDED SHEET	KG
NO.	DATE	DESCRIPTION	BY

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

GATES AND GUARDRAILS LAYOUT

Craig S Funston
 2022.05.13
 12:31:31-0700'

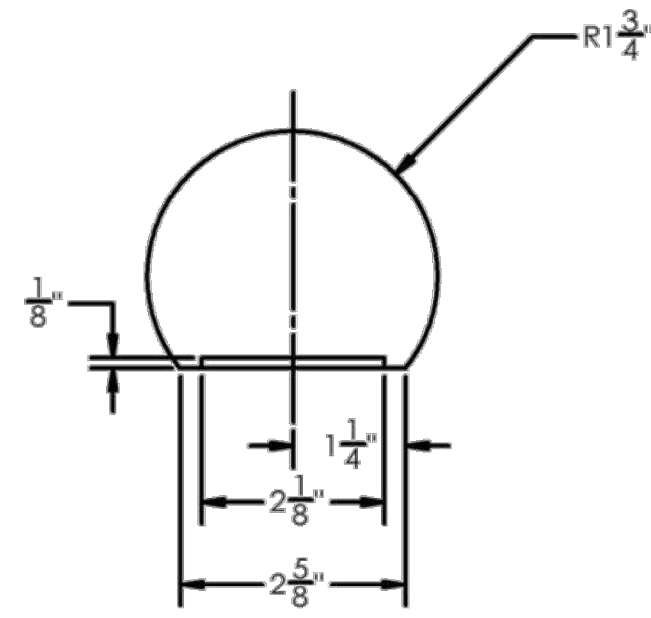
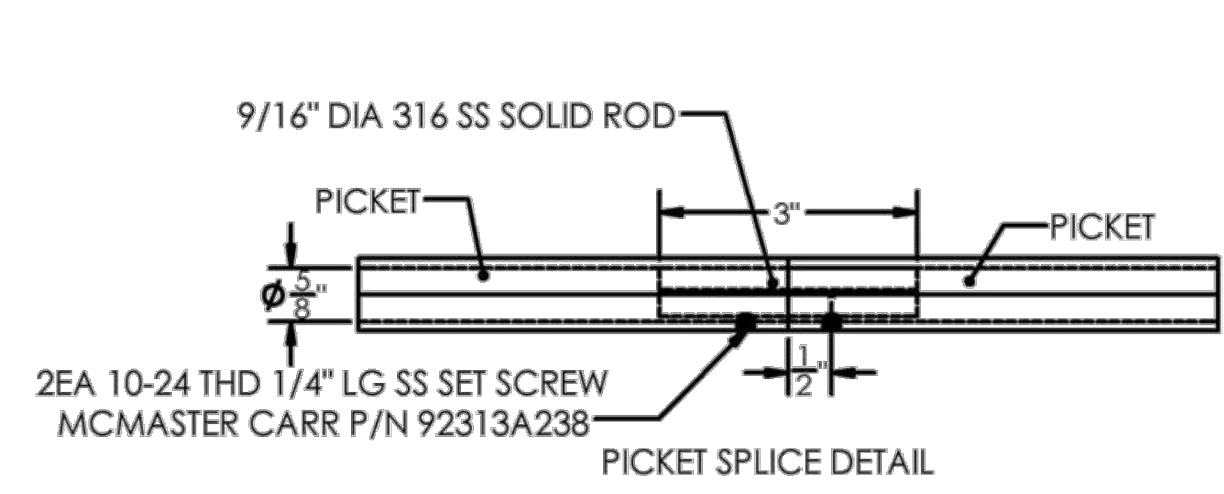
REGISTERED PROFESSIONAL ENGINEER
 4878
 8-30-2023
 STRUCTURAL
 STATE OF CALIFORNIA

The structural system shown on these drawings, including member sizes, layout, and connection has been designed by Bellingham Marine Engineering under my supervision. No other aspects of the design including suitability for use, safety, mechanical, electrical, quantities, cut lengths and the like have been included in this review. Bellingham Marine Engineering can not be responsible for the accuracy of information provided by others.

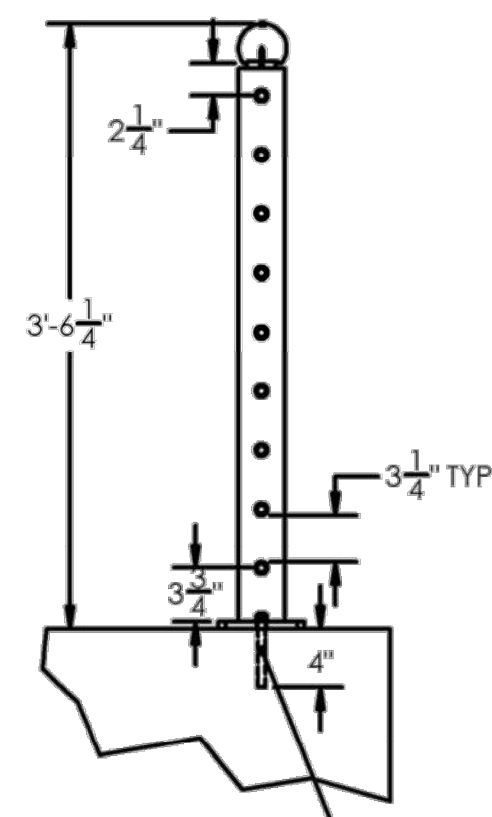
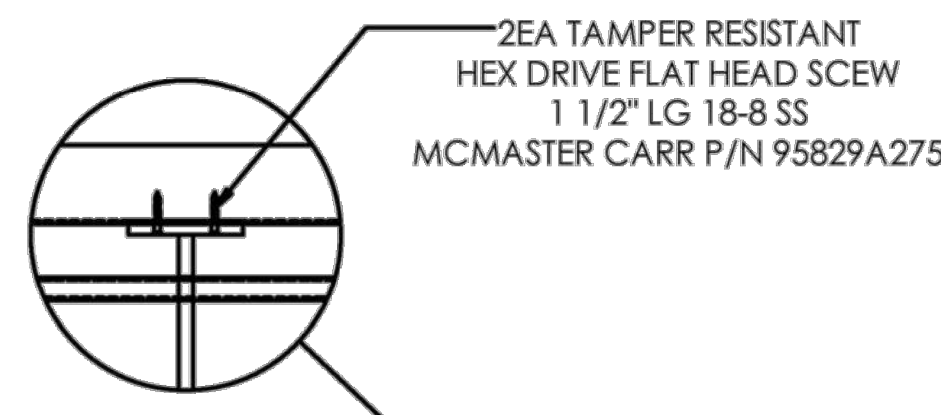
SCALE:	1" = 140' (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	RS1
SHEET NO.:	130

PERMIT DRAWING

- GENERAL NOTES:
 1. ALL GUARDRAIL AT CENTERLINE OF POST. MASTER CARPENTER TO DESIGN SPLICE
 2. PICKET SPLICES AT CENTERLINE OF POST SEE DETAIL.

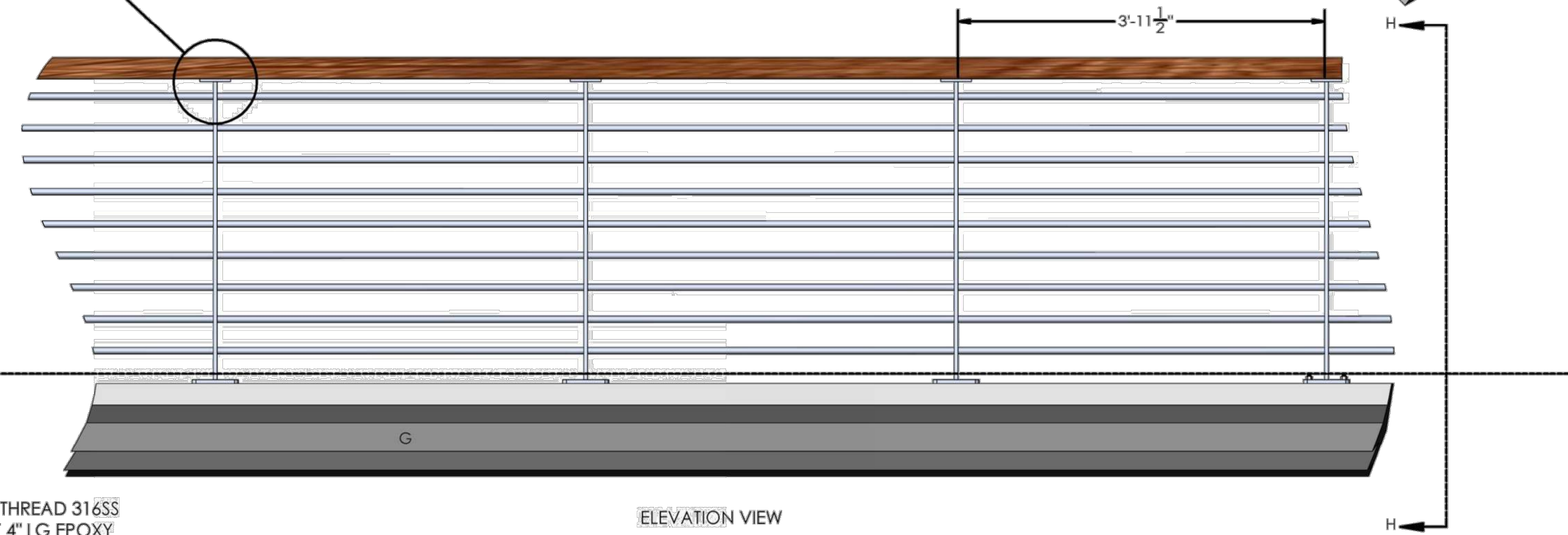


GUARDRAIL CROSS SECTION
IPE HARDWOOD



2EA 1/2" DIA ALL THREAD 316SS
 MIN EMBEDMENT 4" LG EPOXY
 WITH SIMPSON STRONG
 TIE SET 3G PER ICC ESR 4057
 SECURE WITH 1/2" HEX NUT 18-8 SS

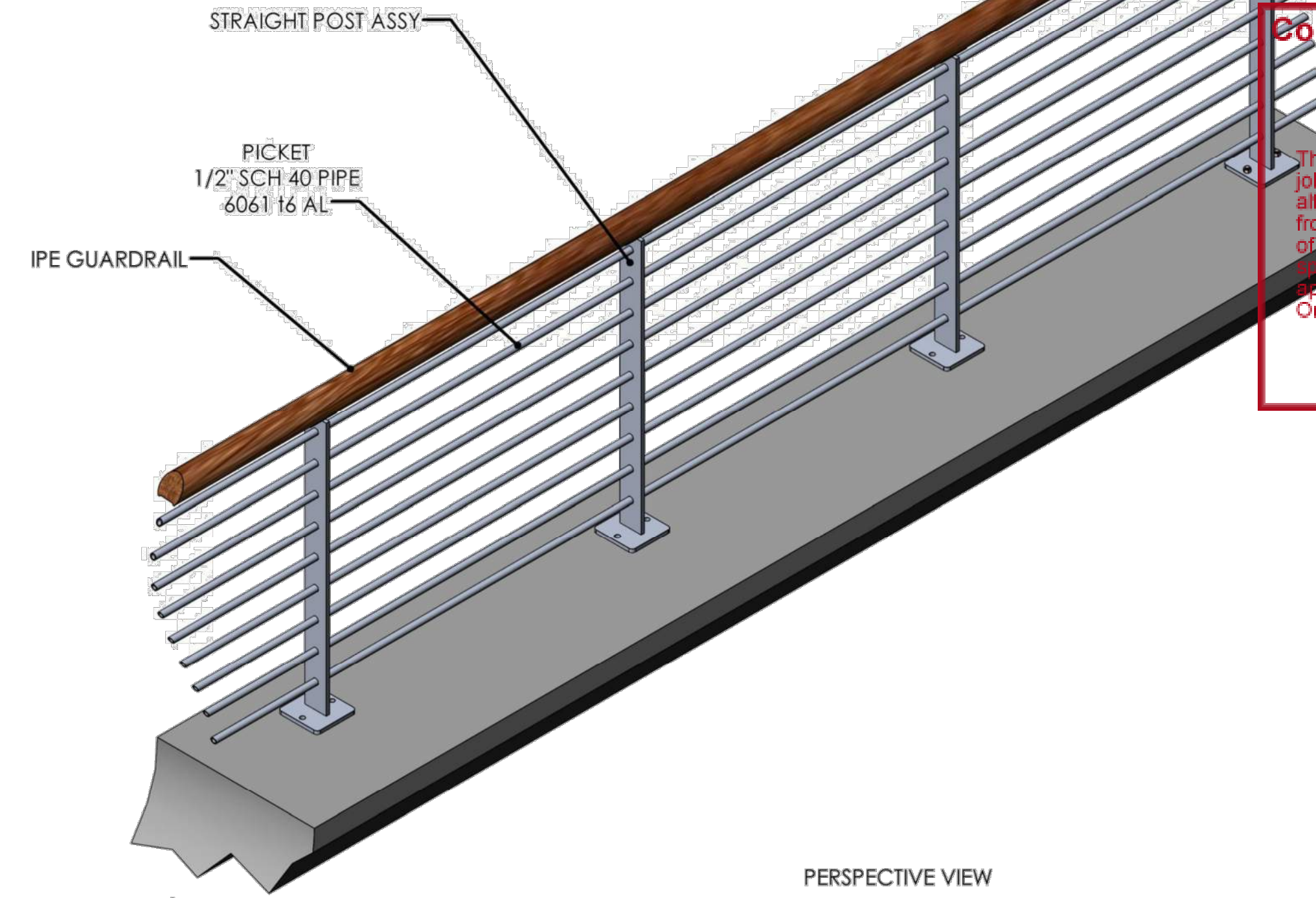
SECTION H-H



ELEVATION VIEW



PLAN VIEW
SECTION G-G



PERSPECTIVE VIEW

Zoning: CanningK 9/14/2022
 Building & Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604-ELE22-0113-PLB22-0127

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 Hani Tatabaqa
 BUILDING OFFICIAL

PROJECT NAME: DANA POINT GUARDRAIL
 DRAWING TITLE: STRAIGHT GUARDRAIL SECTION

ENGINEER OF RECORD:
GRANTHAM ENGINEERING
 Civil • Mechanical • Marine
 7807 HILLDALE DR
 SAN DIEGO, CA 92120, CELL: 619 994 0748
 GRANTHAMENG@GMAIL.COM



CLIENT:
 BELLINGHAM MARINE INDUSTRIES, INC.
 10000 MARINE DRIVE
 SUITE 470
 NEWPORT BEACH, CA 92660

SHEET: 1

NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
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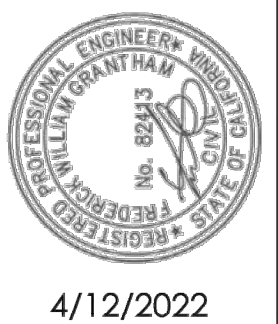
DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
GUARDRAILS DETAILS

SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	GD1
SHEET NO.:	131

Zoning: CanningK 9/14/2022

Building&Safety: Roshanak Amirazizi 9/14/2022

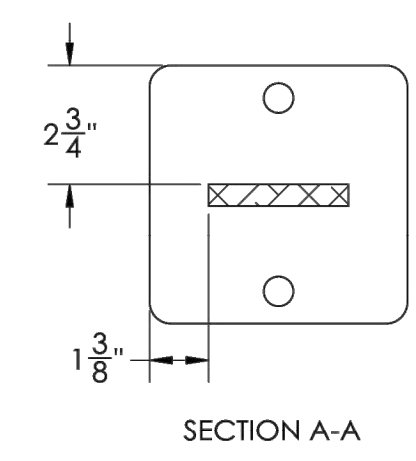
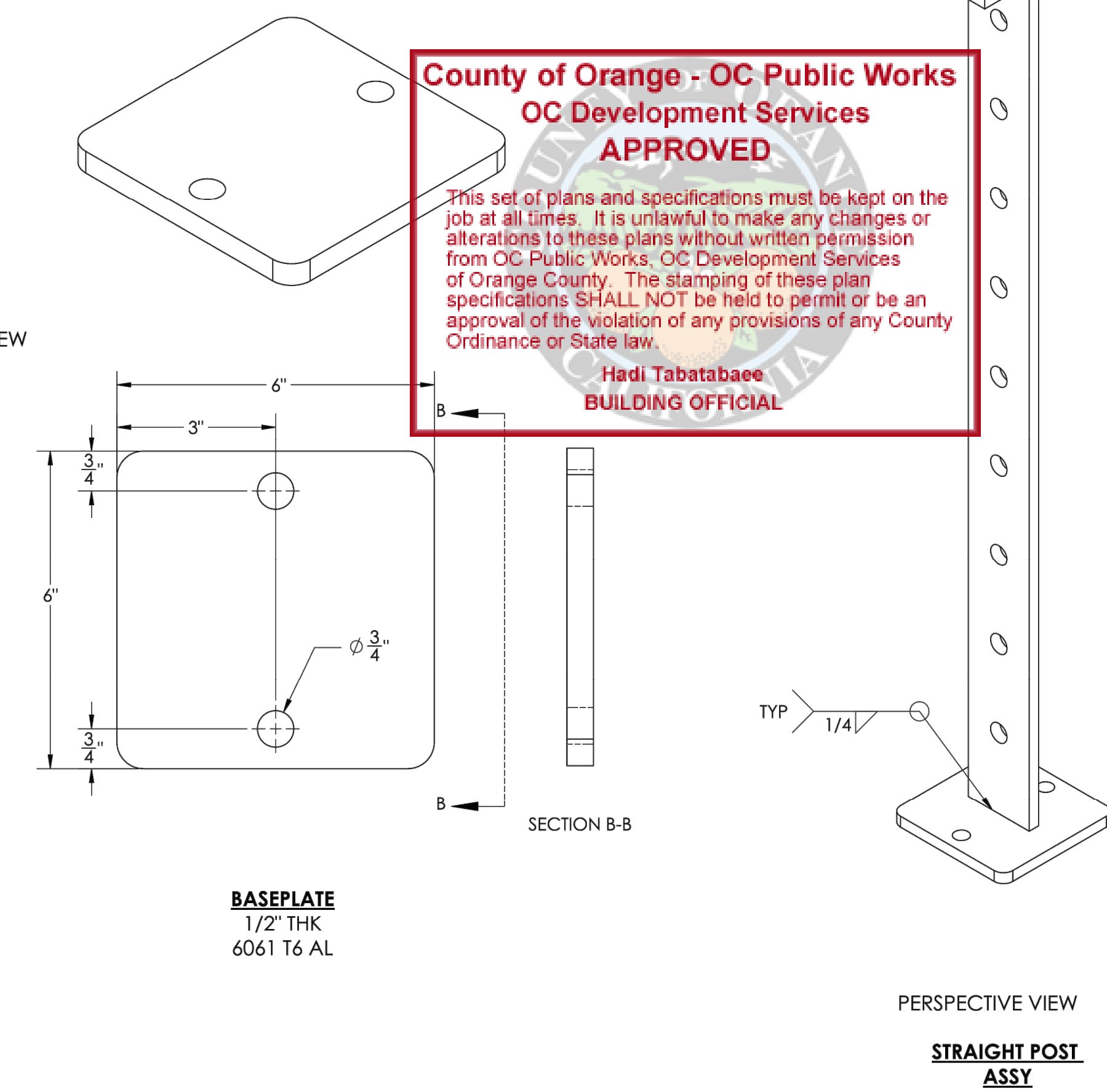
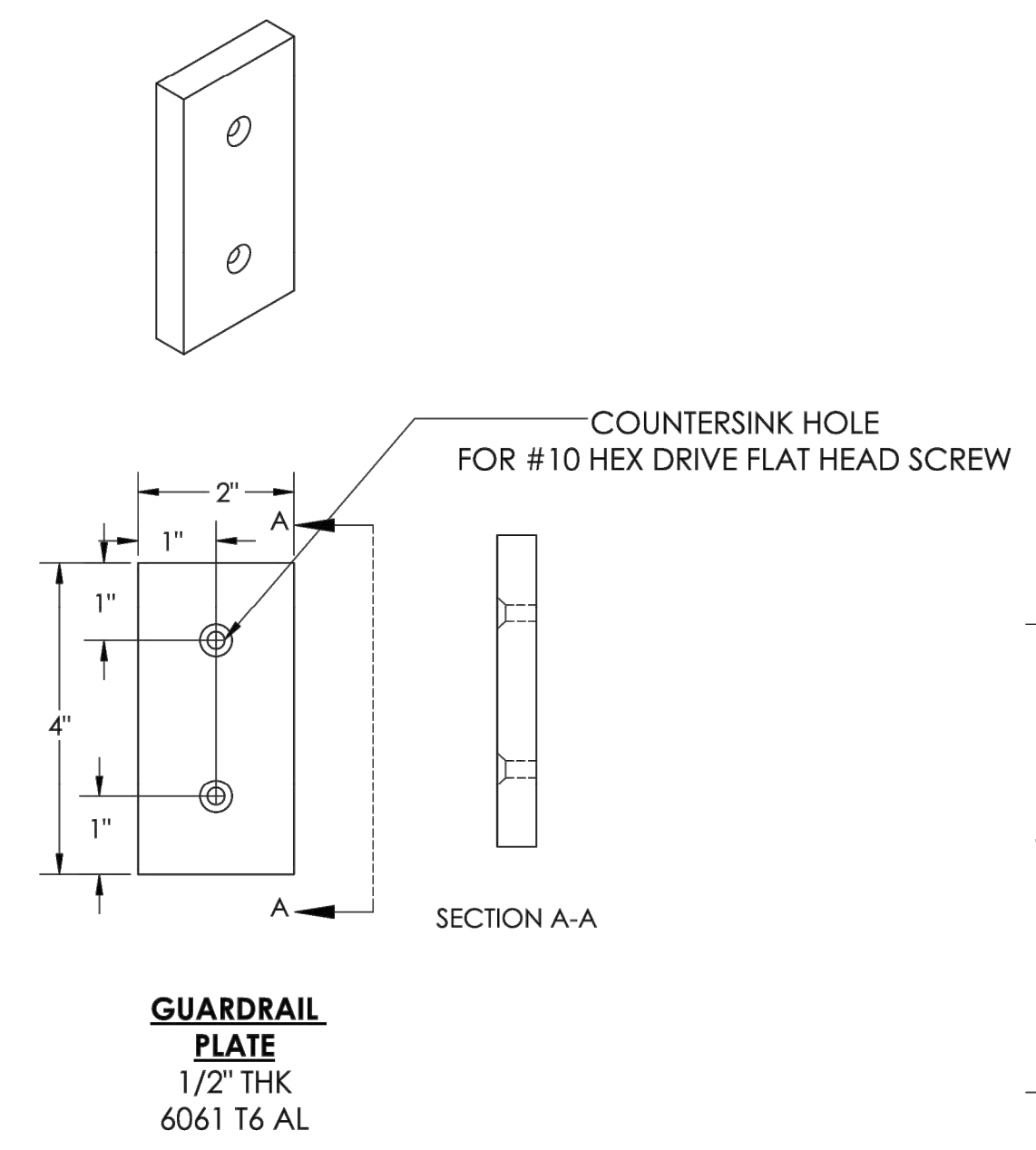
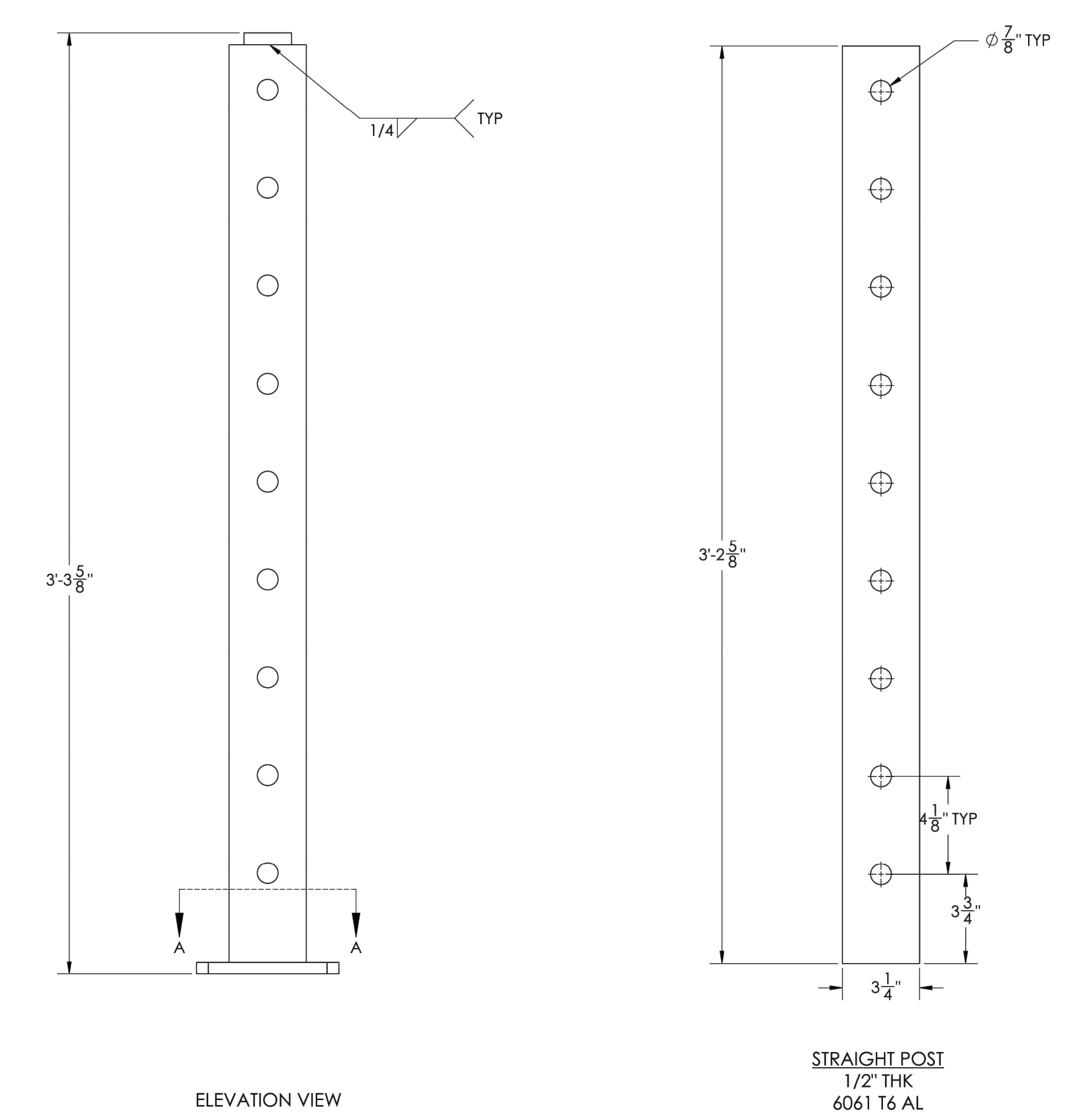
Permits: BNR21-0604- ELE22-0113- PLB22-0127



**County of Orange - OC Public Works
OC Development Services
APPROVED**

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**Hadi Tabatabaee
BUILDING OFFICIAL**



ORIGINAL RELEASE DATE:	4/12/2022
NO.	
REVISION DATE	
BY	

PROJECT NAME:	DANA POINT GUARDRAIL
DRAWING TITLE:	STRAIGHT POST ASSY DETAIL

ENGINEER OF RECORD:
GRANTHAM ENGINEERING
Civil • Mechanical • Marine
7807 HILLDALE DR
SAN DIEGO, CA 92120, CELL: 619 994 0748
GRANTHAMENG@GMAIL.COM



CLIENT:
BELLINGHAM MARINE INDUSTRIES, INC.
11000 CENTRE DRIVE
SUITE 470
NEWPORT BEACH
CA 92660

SHEET: 2

NO.	DATE	DESCRIPTION	KG BY
A	5-10-22	ADDED SHEET	
REVISIONS			

Bellingham MARINE

SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
FAX: (707) 678-1760

THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

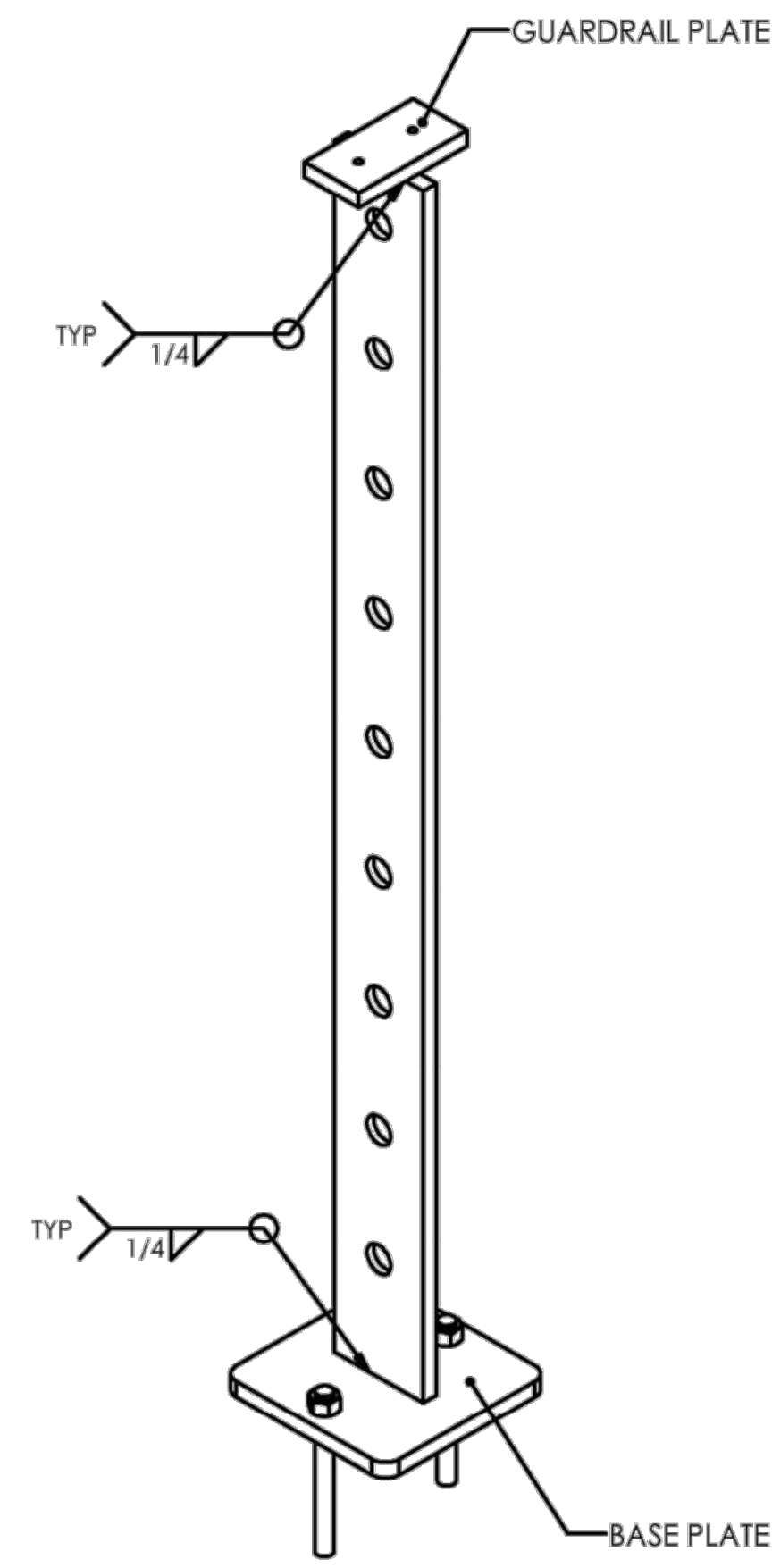
DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

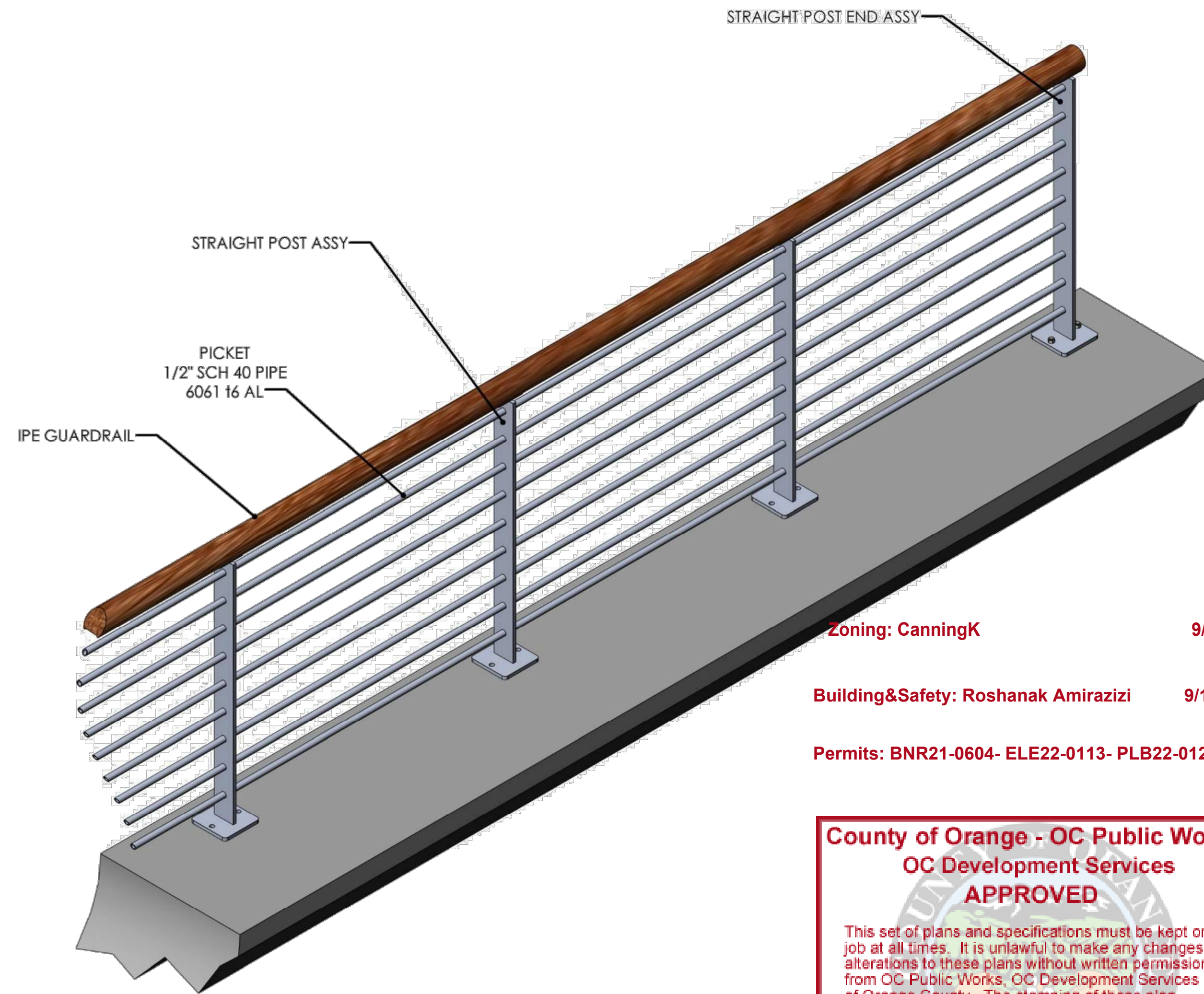
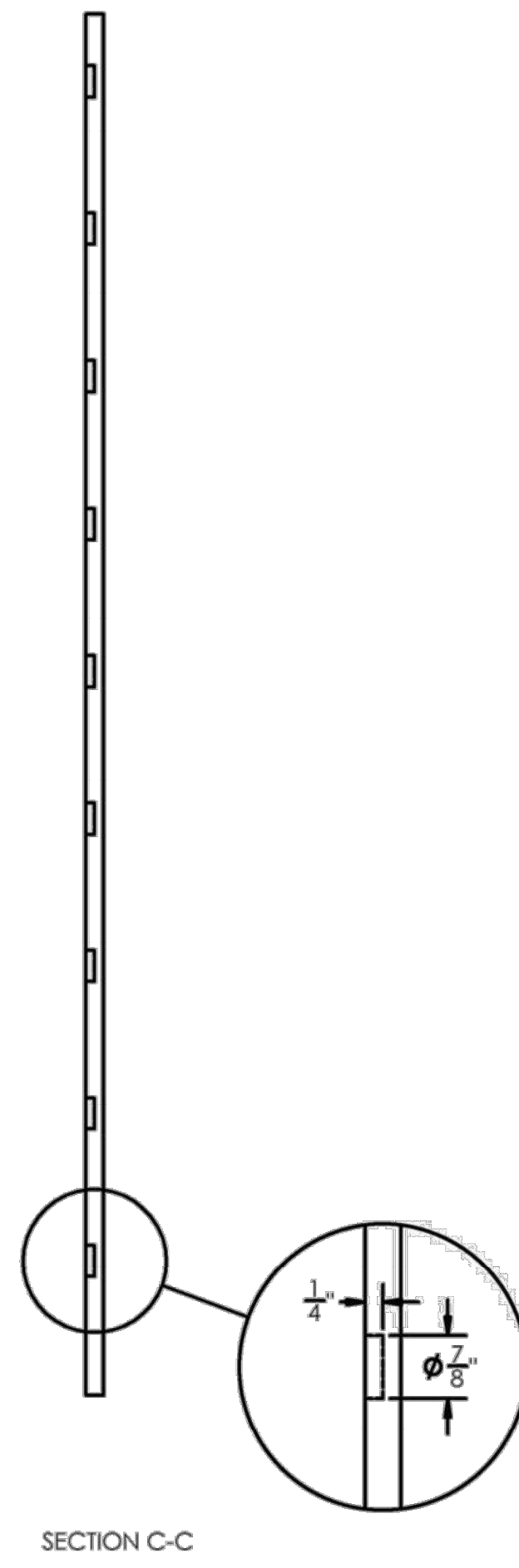
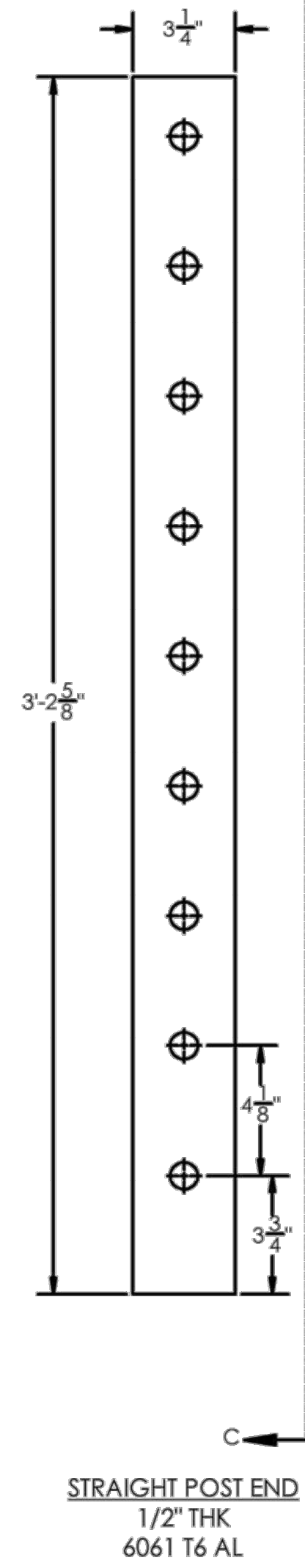
GUARDRAILS DETAILS

SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	GD2
SHEET NO.:	132

PERMIT DRAWING



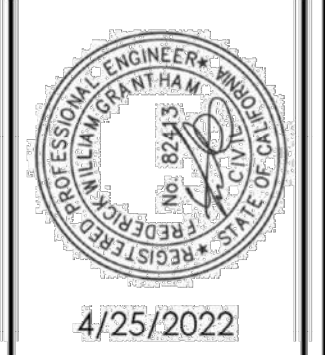
PERSPECTIVE VIEW
STRAIGHT POST END
ASSY



PERSPECTIVE VIEW

Zoning: CanningK 9/14/2022
Building&Safety: Roshanak Amirazizi 9/14/2022
Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
OC Development Services
APPROVED**
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**Hadi Tabatabaee
BUILDING OFFICIAL**



ORIGINAL RELEASE DATE:	4/25/2022
NO.	
REVISION DATE	
BY	

PROJECT NAME:
DANA POINT GUARDRAIL
DRAWING TITLE:
STRAIGHT GUARDRAIL SECTION END

ENGINEER OF RECORD:
GRANTHAM ENGINEERING
Civil • Mechanical • Marine
7807 HILLDALE DR
SAN DIEGO, CA 92120, CELL: 619 994 0748
GRANTHAMENG@GMAIL.COM



CLIENT:
BELLINGHAM MARINE
1 CENTER DRIVE
SUITE 470
NEWPORT BEACH
CA 92660

SHEET:
3

NO.	DATE	DESCRIPTION	BY
A	5-10-22	ADDED SHEET	KG
REVISIONS			

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THE WORLD'S MOST COMPREHENSIVE MARINA BUILDER

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CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
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PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION
Harbor Drive
Dana Point, CA 92629

GUARDRAILS DETAILS

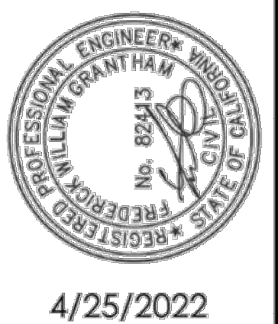
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DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	GD3
SHEET NO.:	133

PERMIT DRAWING

Zoning: CanningK 9/14/2022

Building&Safety: Roshanak Amirazhi 9/14/2022

Permits: BNR21-0604- ELE22-0113- PLB22-0127

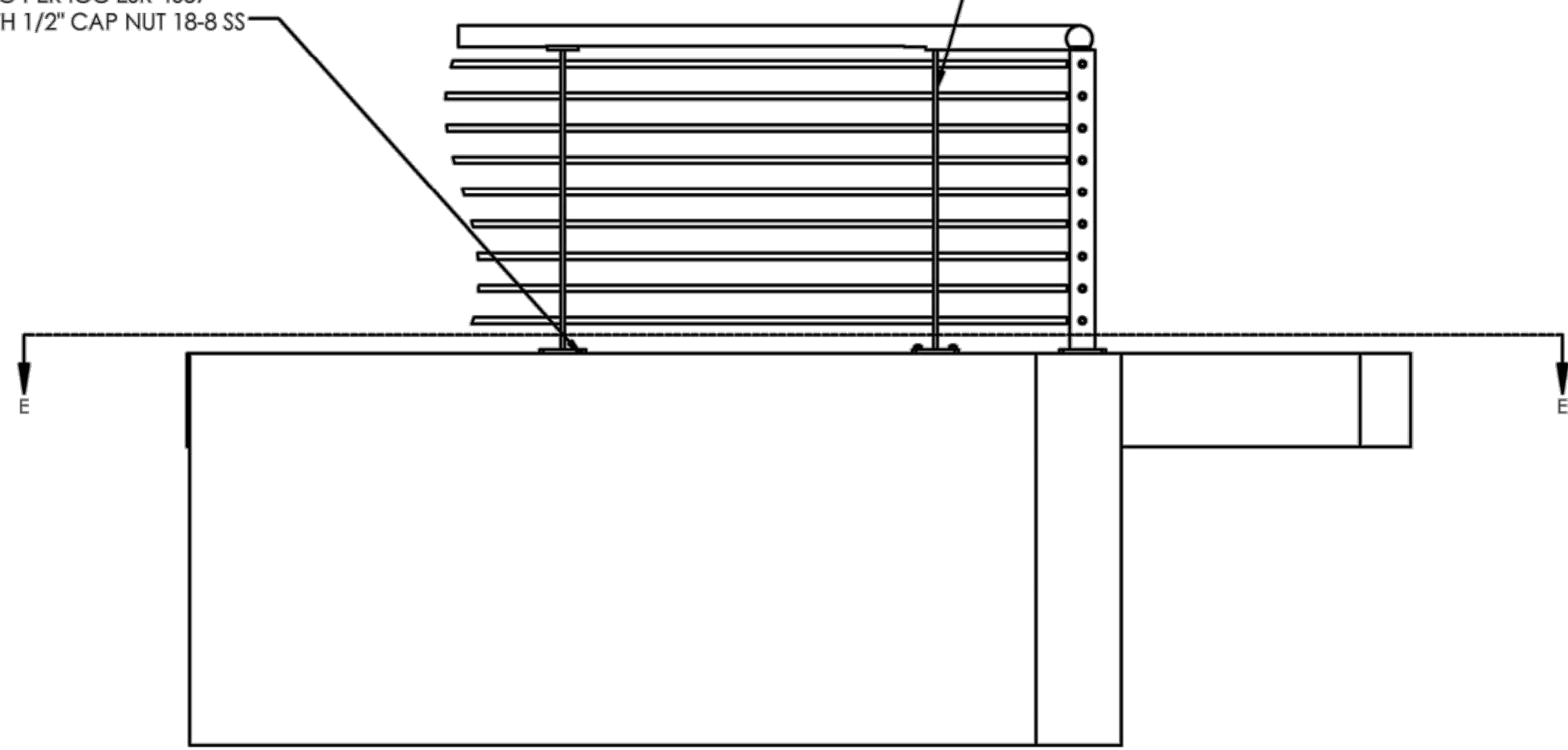


ORIGINAL RELEASE DATE:	4/25/2022
NO.	REVISION DATE

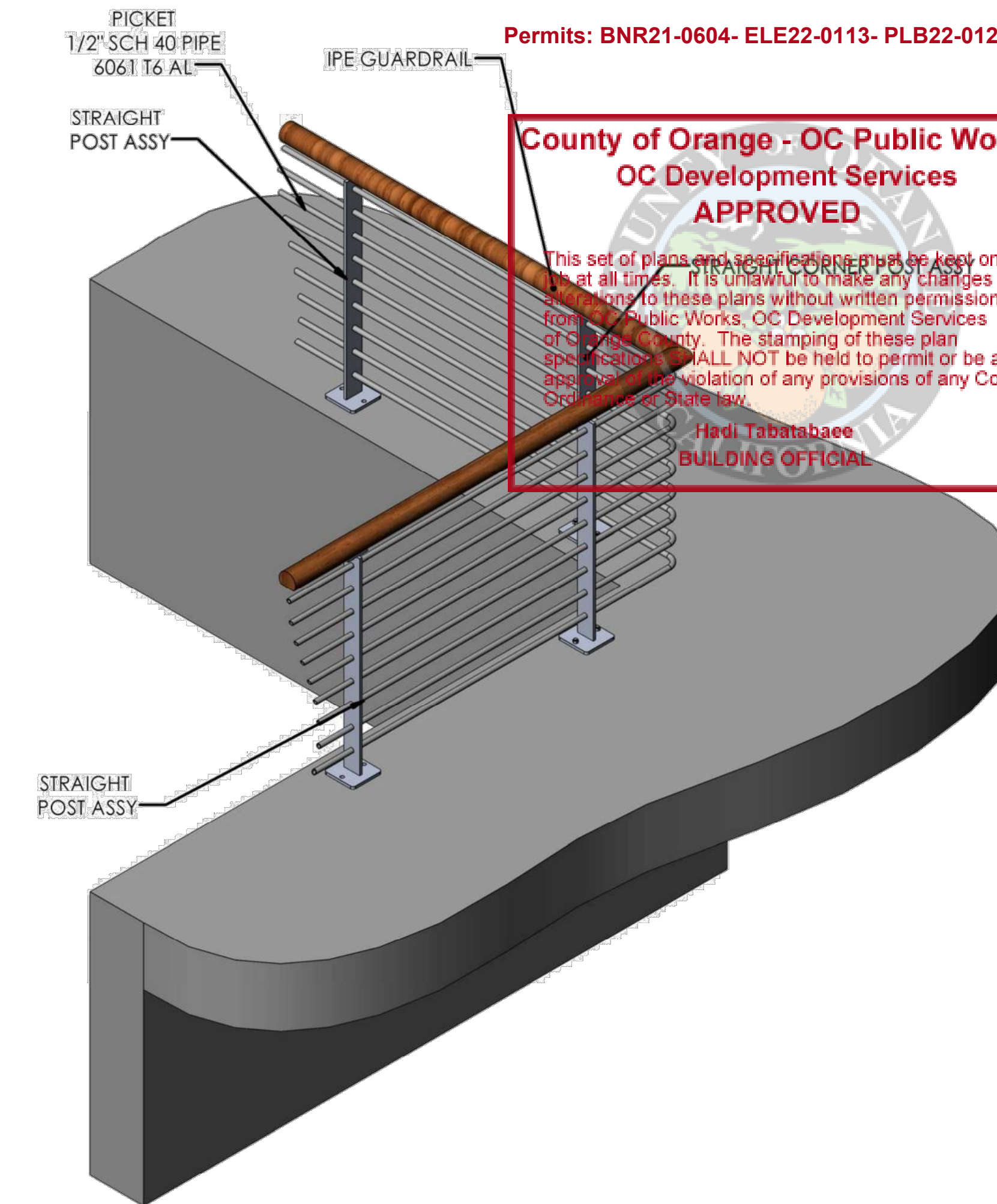
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OC Development Services
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**Hadi Tabatabaee
BUILDING OFFICIAL**

2EA 1/2" DIA ALL THREAD 316SS
MIN EMBEDMENT 3 1/4" LG EPOXY
WITH SIMPSON STRONG
TIE SET 3G PER ICC ESR 4057
SECURE WITH 1/2" CAP NUT 18-8 SS

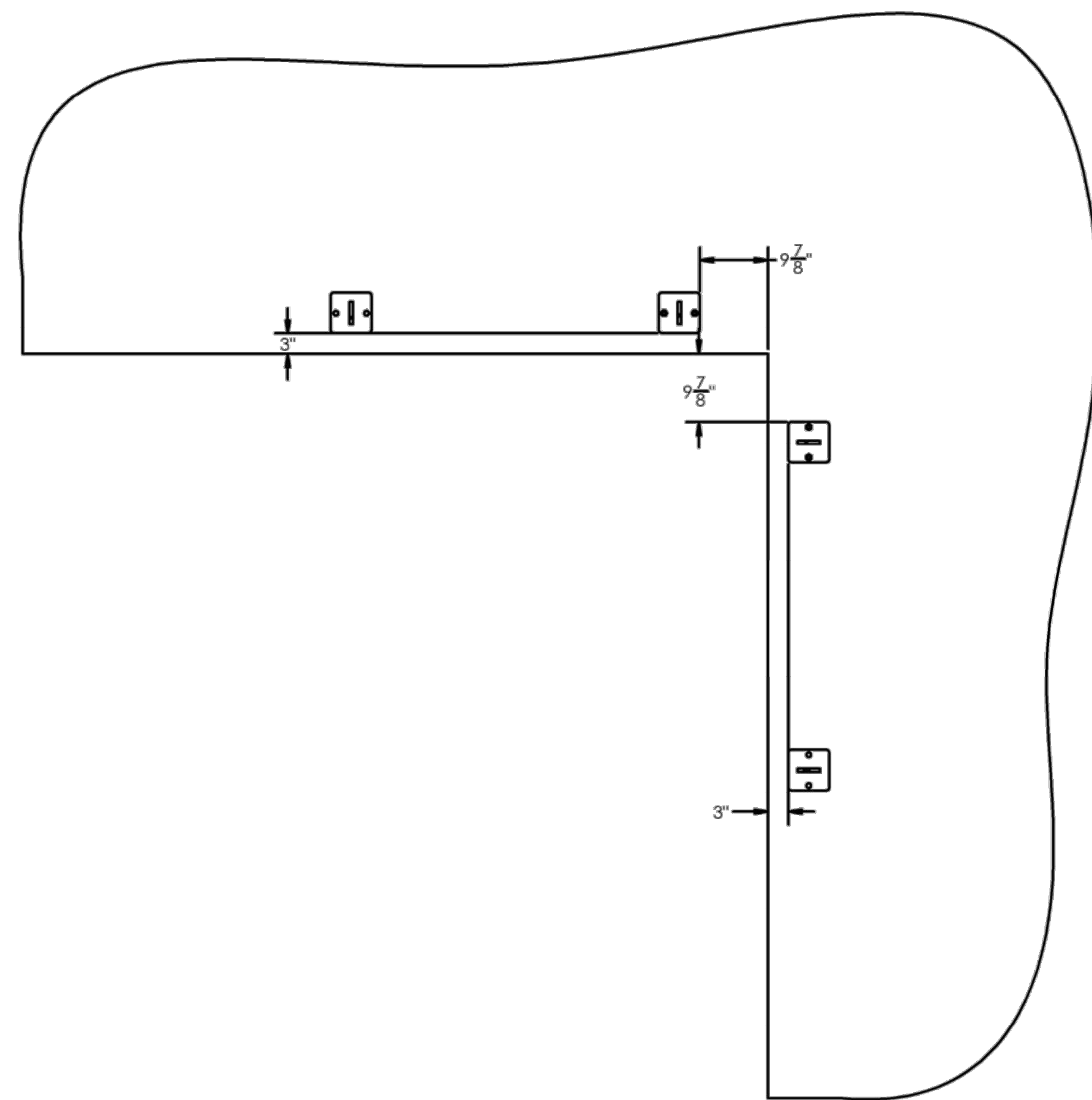
STRAIGHT CORNER POST ASSY



ELEVATION VIEW



PERSPECTIVE VIEW



PLAN VIEW
SECTION E-E

PROJECT NAME:
DANA POINT GUARDRAIL

DRAWING TITLE:
CORNER STRAIGHT GUARDRAIL SECTION

ENGINEER OF RECORD:
GRANTHAM ENGINEERING
Civil • Mechanical • Marine
7807 HILLDALE DR
SAN DIEGO, CA 92120, CELL: 619 994 0748
GRANTHAMENG@GMAIL.COM



CLIENT:
BELLINGHAM MARINE INDUSTRIES, INC.
CENTER DRIVE
SUITE 470
NEWPORT BEACH
CA 92660

SHEET: **4**

NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
A	5-10-22	REVISIONS	



SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
TEL: (707) 678-2385
FAX: (707) 678-1760

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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

GUARDRAILS DETAILS

SCALE: NTS
(Sheet Size 24" x 36")

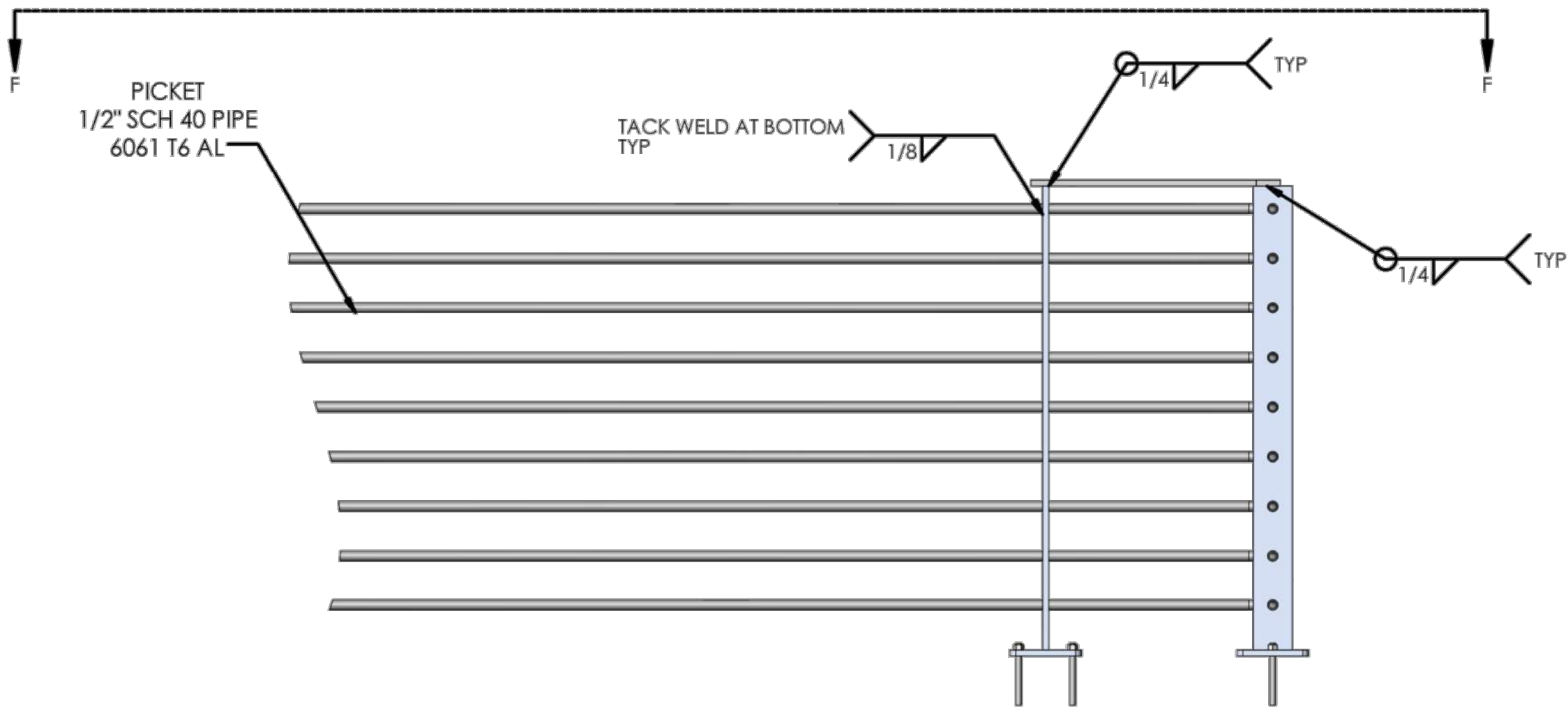
DRAWN BY: KG

DATE: 5/10/2022

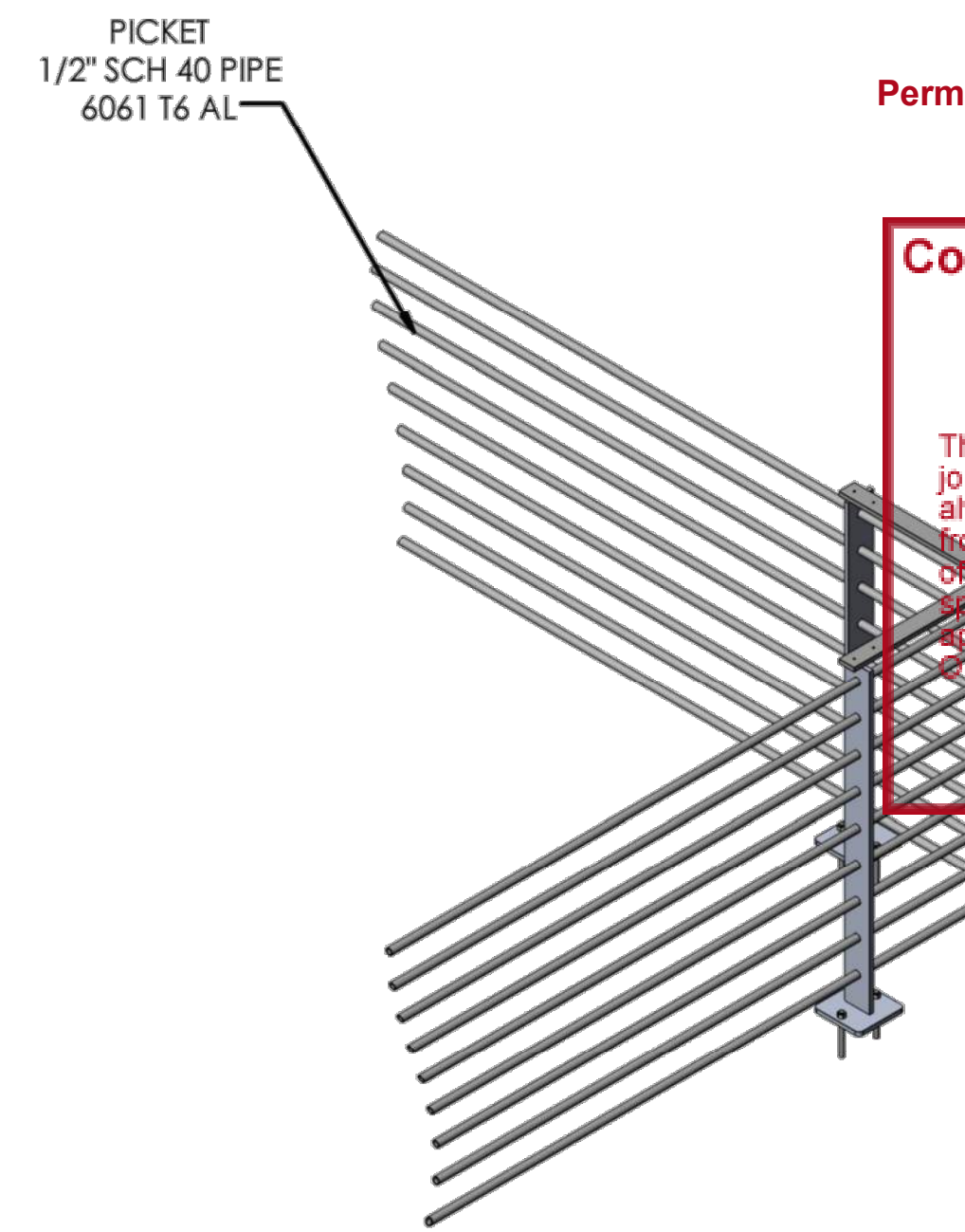
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SHEET NO.: 134

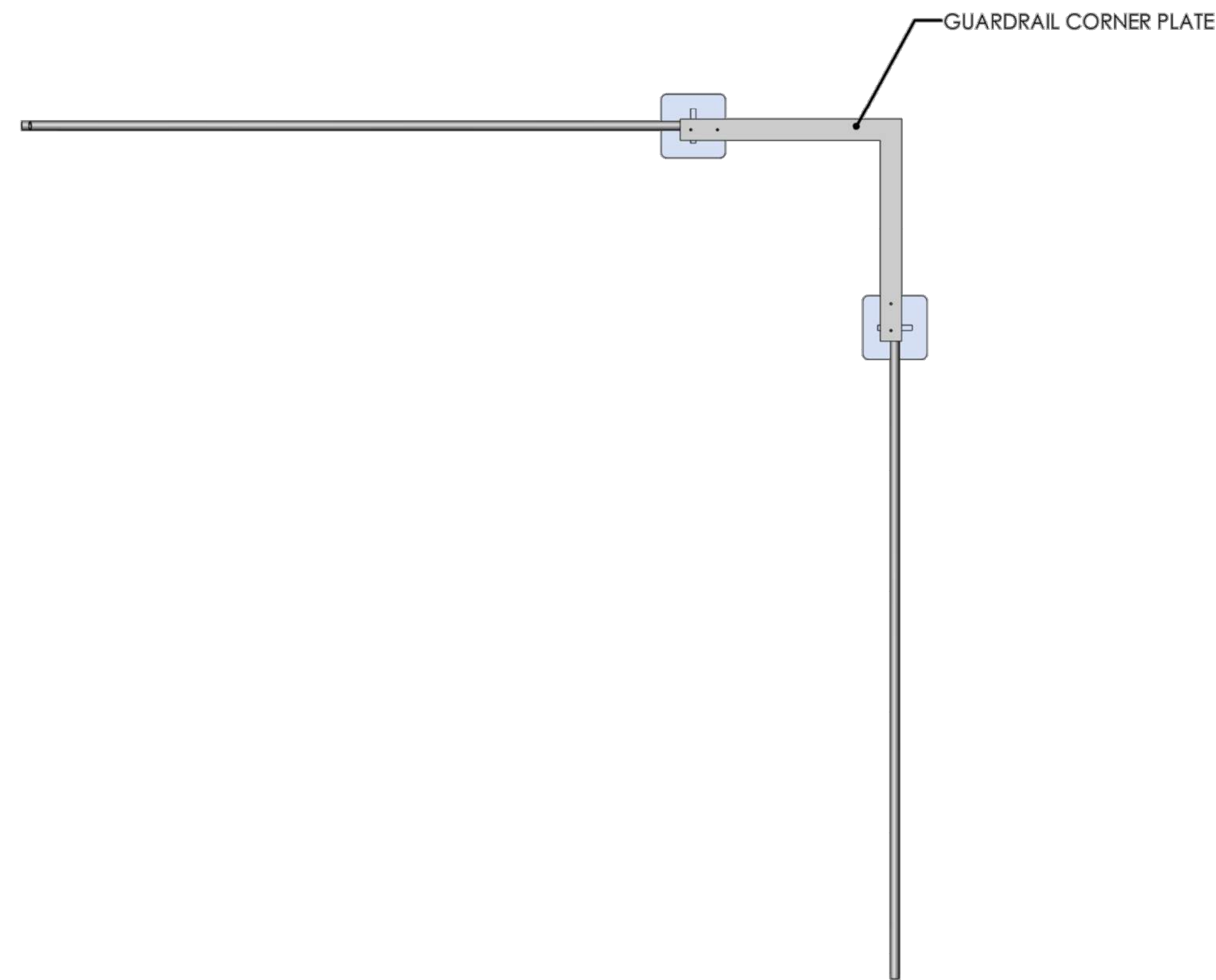
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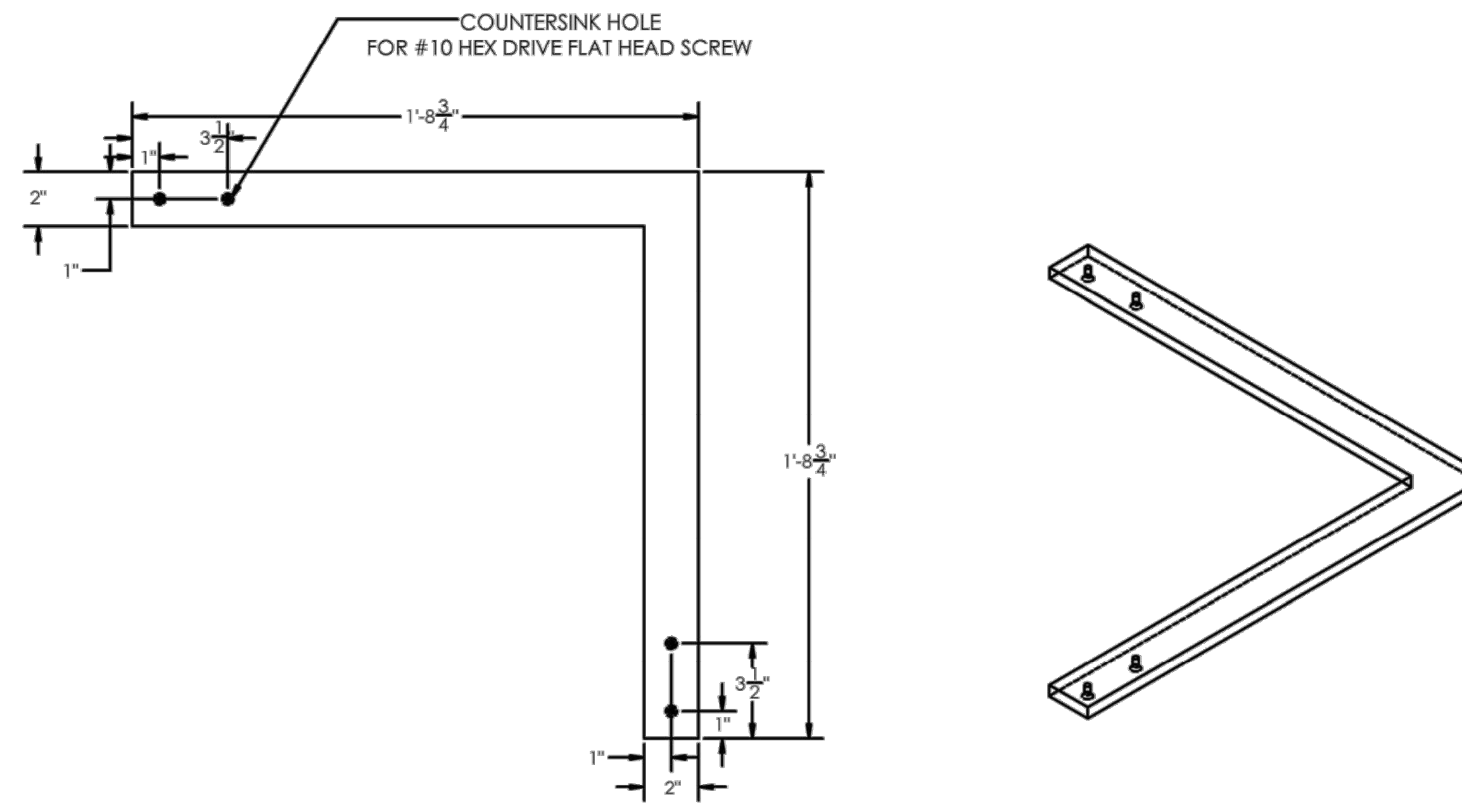
ELEVATION VIEW



PERSPECTIVE VIEW

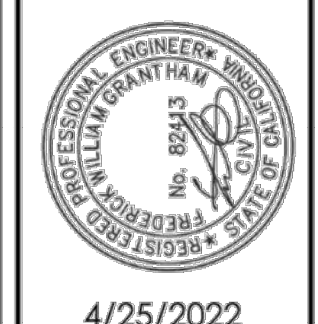


PLAN VIEW
SECTION F-F



GUARDRAIL
CORNER PLATE
1/2" THK
6061 T6 AL

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127



**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

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**Hadi Tabatabaee
 BUILDING OFFICIAL**

ORIGINAL RELEASE DATE:	4/25/2022
NO.	REVISION DATE

PROJECT NAME: **DANA POINT GUARDRAIL**
 DRAWING TITLE: **STRAIGHT CORNER POST ASSY**

ENGINEER OF RECORD:
GRANTHAM ENGINEERING
 Civil • Mechanical • Marine
 7807 HILLDALE DR
 SAN DIEGO, CA 92120, CELL: 619 994 0748
 GRANTHAMENG@GMAIL.COM



CLIENT:
 BELLINGHAM MARINE INDUSTRIES, INC.
 CENTER DRIVE
 SUITE 470
 NEWPORT BEACH
 CA 92660

SHEET: **5**

NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
A	5-10-22	ADDED SHEET	KG
REVISIONS			

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 8810 SPARLING LANE
 DIXON, CA 95620
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PROJECT NUMBER:
7341

ENGINEER / DESIGNER:

PROJECT MANAGER:

CHECKED BY:

DANA POINT HARBOR REVITALIZATION

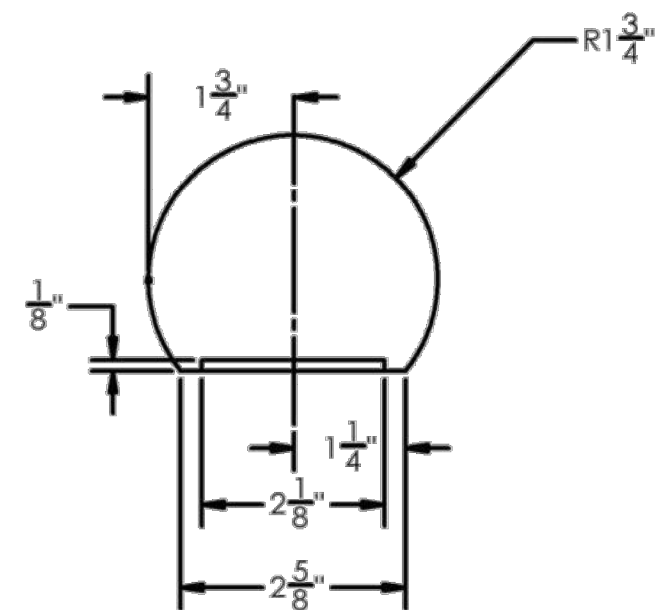
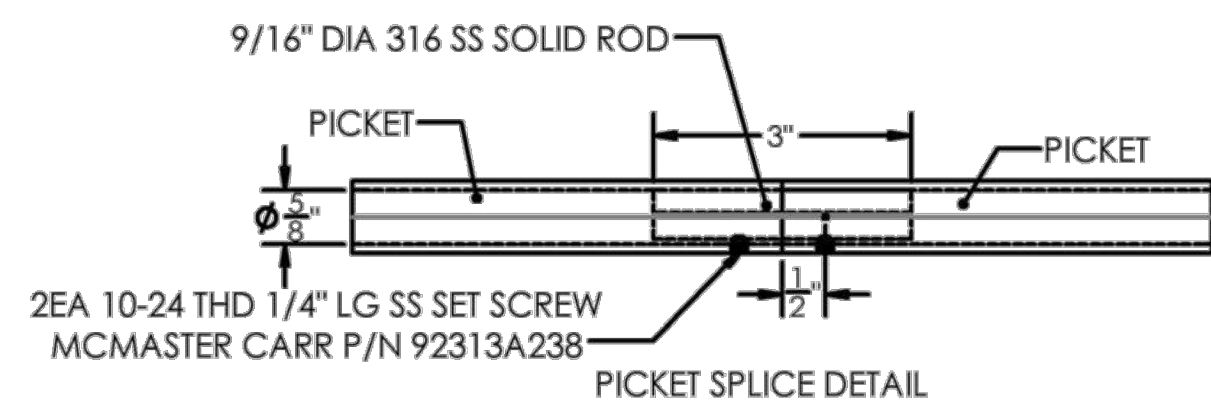
Harbor Drive
 Dana Point, CA 92629

GUARDRAILS DETAILS

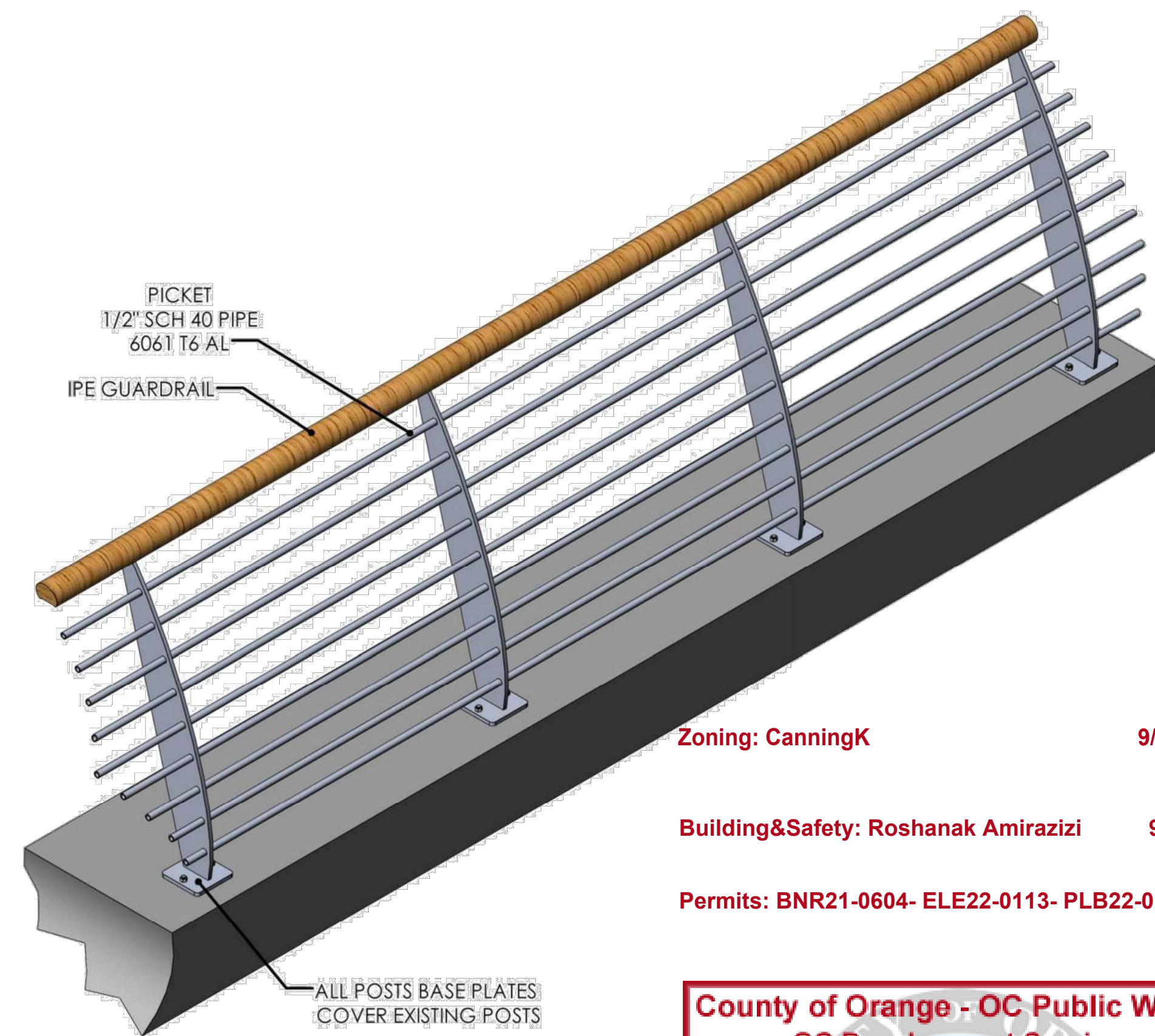
SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	GD5
SHEET NO.:	135

PERMIT DRAWING

- GENERAL NOTES:
1. ALL GUARDRAIL AT CENTERLINE OF POST. MASTER CARPENTER TO DESIGN SPLICE
 2. PICKET SPLICES AT CENTERLINE OF POST SEE DETAIL.
 3. ALL ALUMINUM PARTS TO BE SULFURIC ANODIZED (TYPE II)
 4. ANCHORS TO BE PERIODICALLY INSPECTED AS REQUIRED

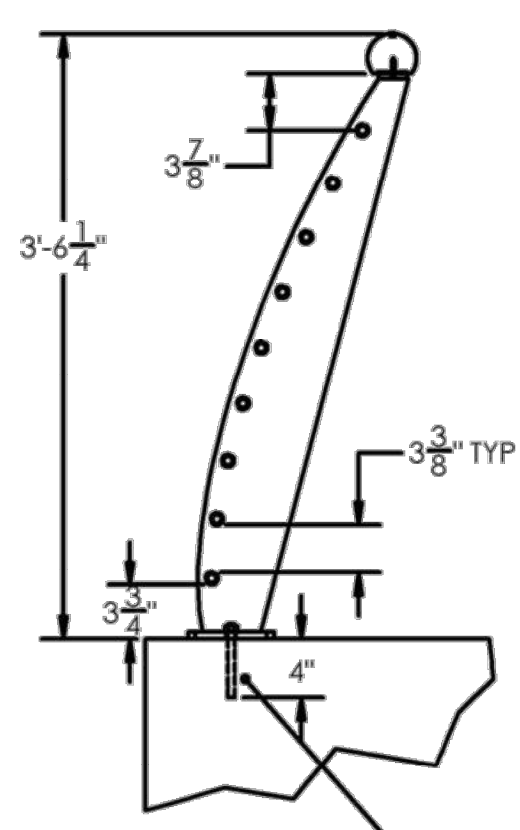


GUARDRAIL CROSS SECTION
IPE HARDWOOD

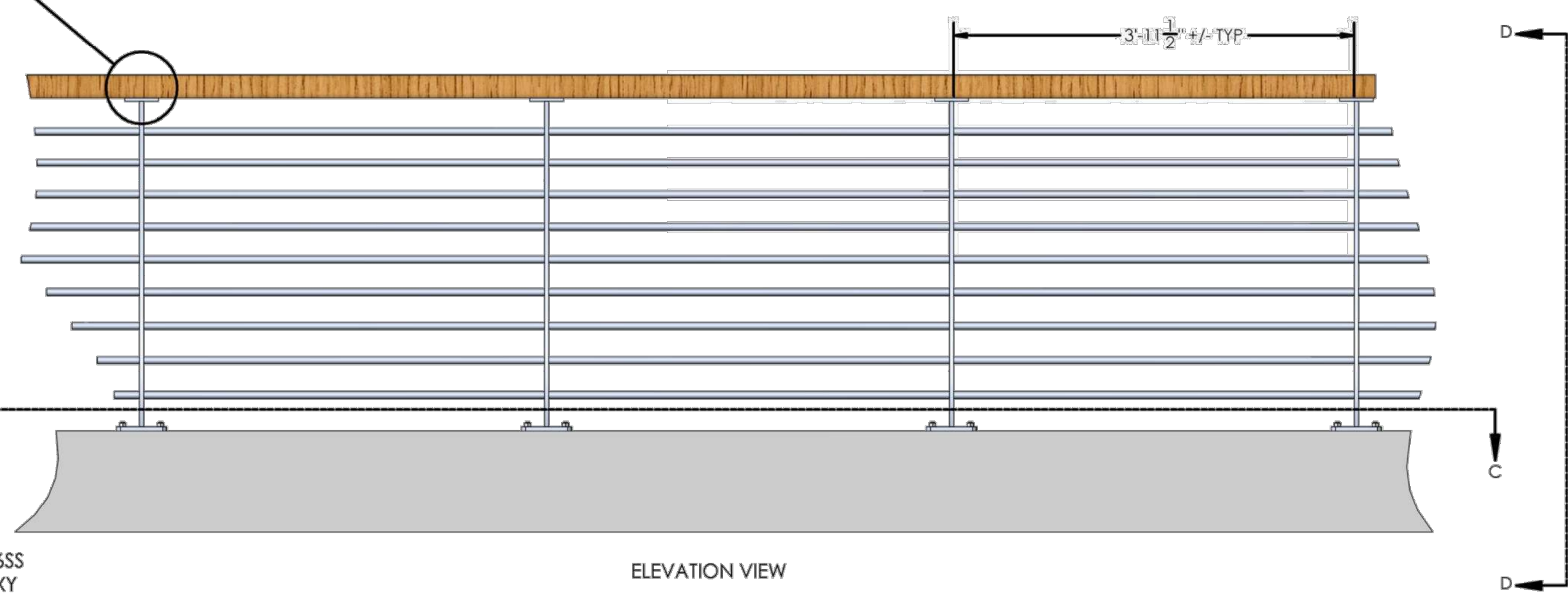


Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

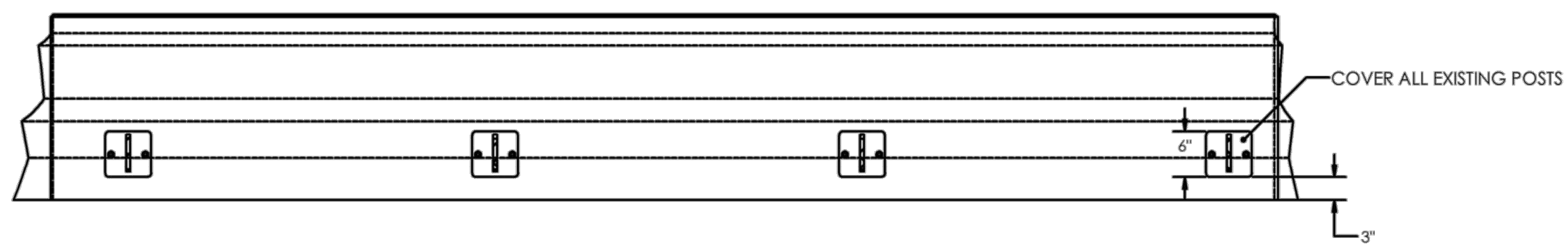
- 2EA TAMPER RESISTANT
 HEX DRIVE FLAT HEAD SCREW
 1 1/2\"/>



- 2EA 1/2\"/>



ELEVATION VIEW

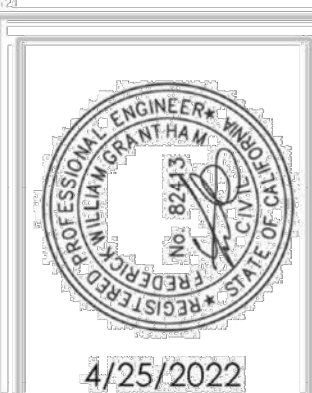


PLAN VIEW SECTION C-C

County of Orange - OC Public Works
OC Development Services
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Hadi Tabatabaee
 BUILDING OFFICIAL



ORIGINAL RELEASE DATE:	4/25/2022
NO.	
REVISION DATE	
BY	

PROJECT NAME: **DANA POINT GUARDRAIL**
 DRAWING TITLE: **ARCHED GUARDRAIL SECTION**

ENGINEER OF RECORD:
GRANTHAM ENGINEERING
 Civil • Mechanical • Marine
 7807 HILLDALE DR
 SAN DIEGO, CA 92120, CELL: 619 994 0748
 GRANTHAMENG@GMAIL.COM



CLIENT:
BELLINGHAM MARINE INDUSTRIES
 10000 MARINE DRIVE
 SUITE 470
 NEWPORT BEACH CA 92660

SHEET: **1**

NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
A	5-10-22	ADDED SHEET DESCRIPTION	KG
REVISIONS			

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 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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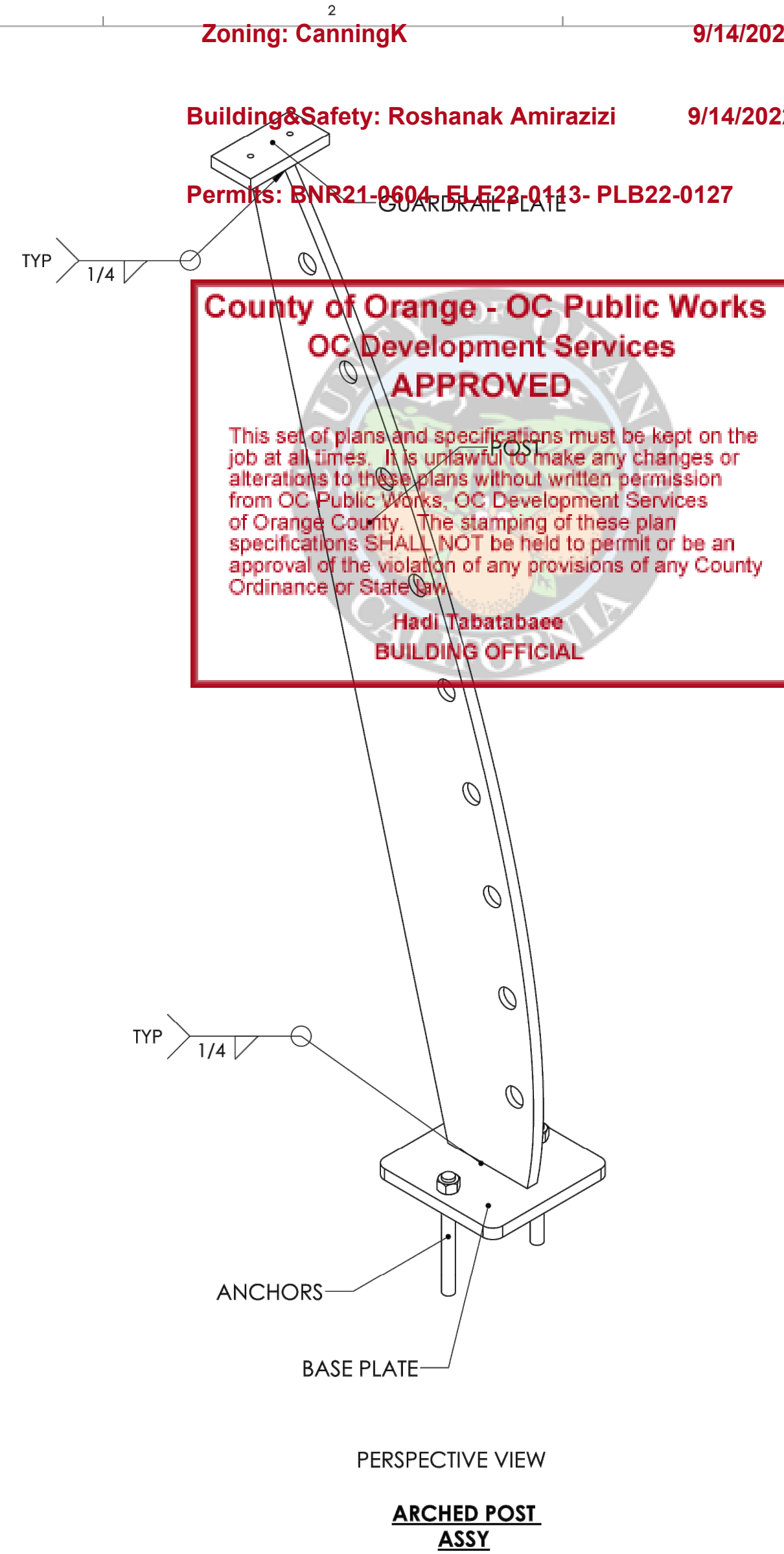
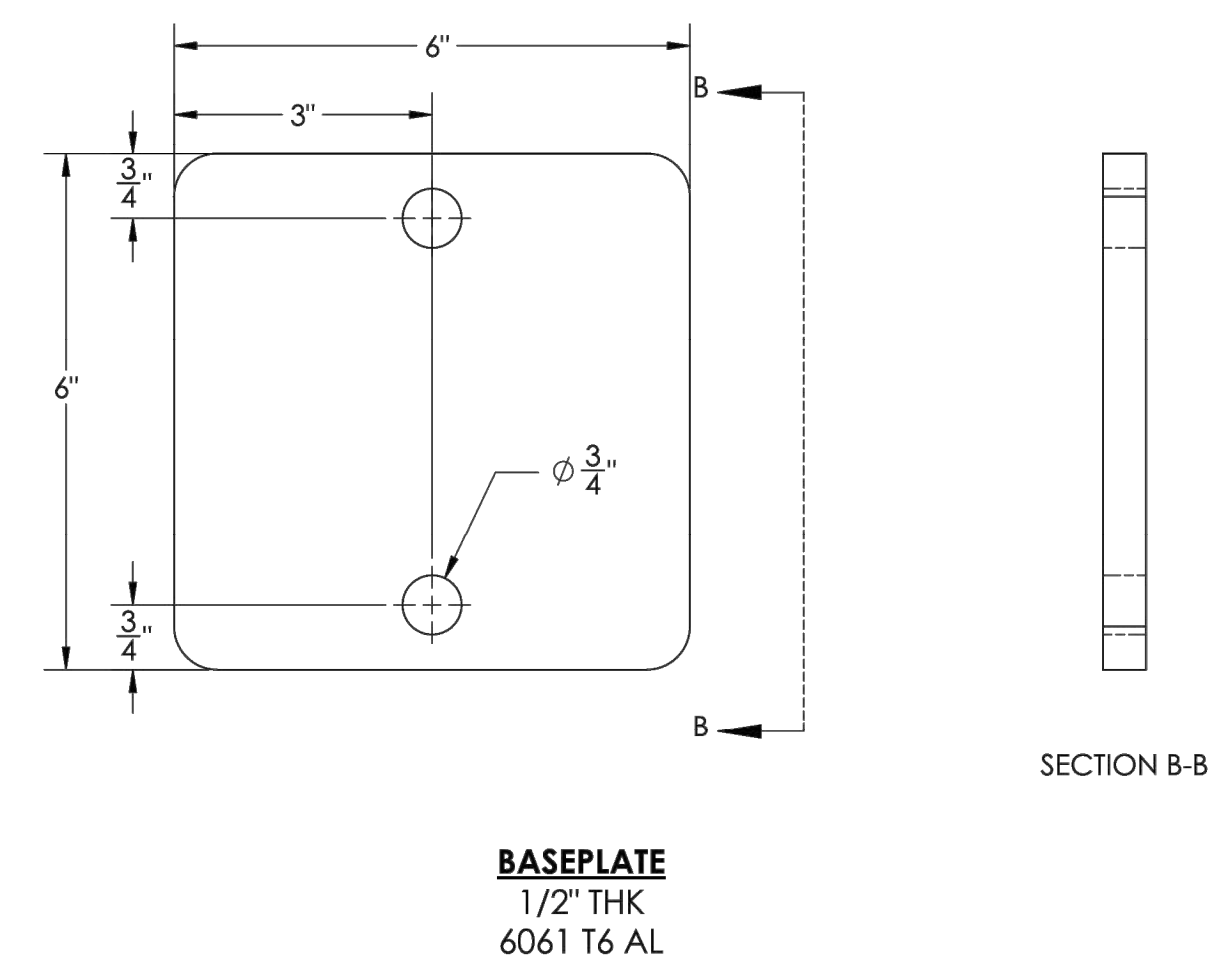
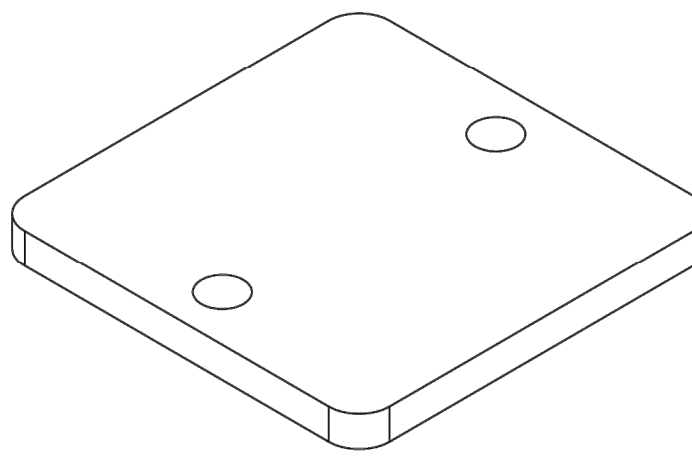
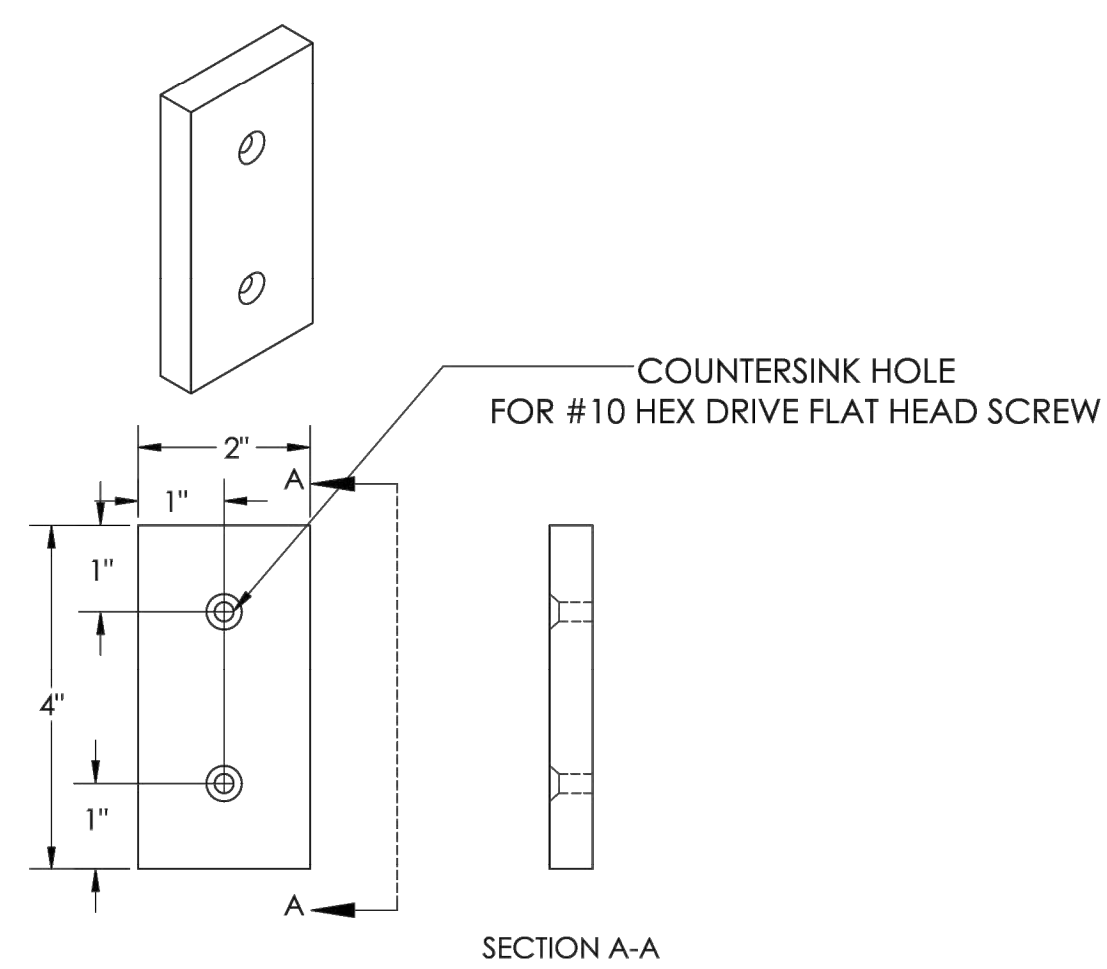
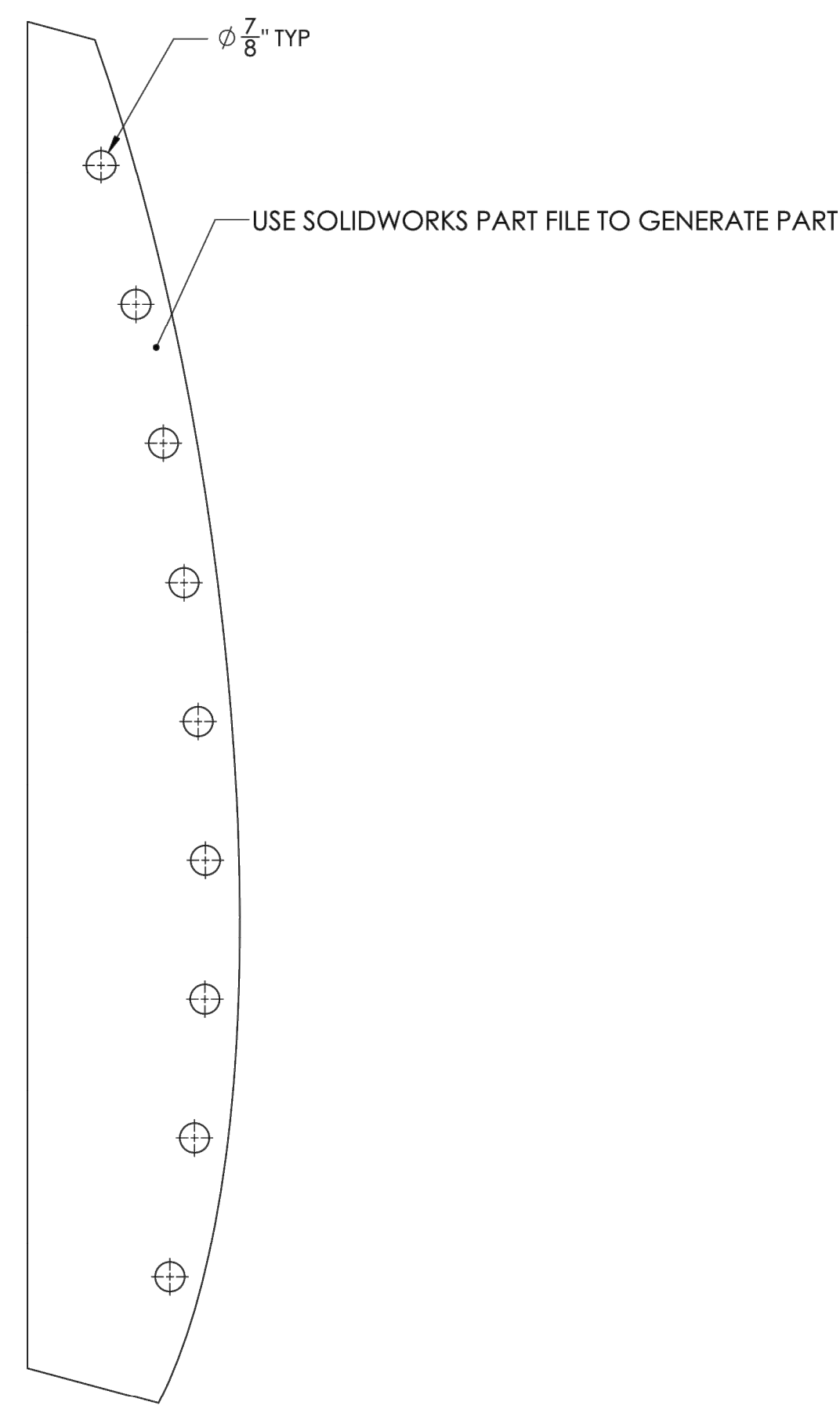
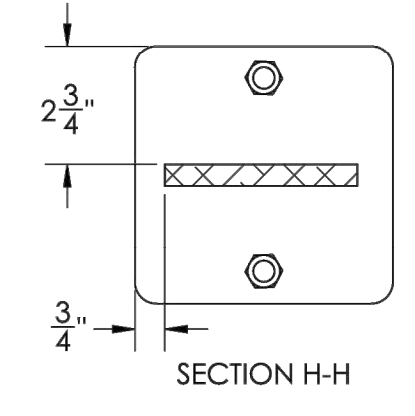
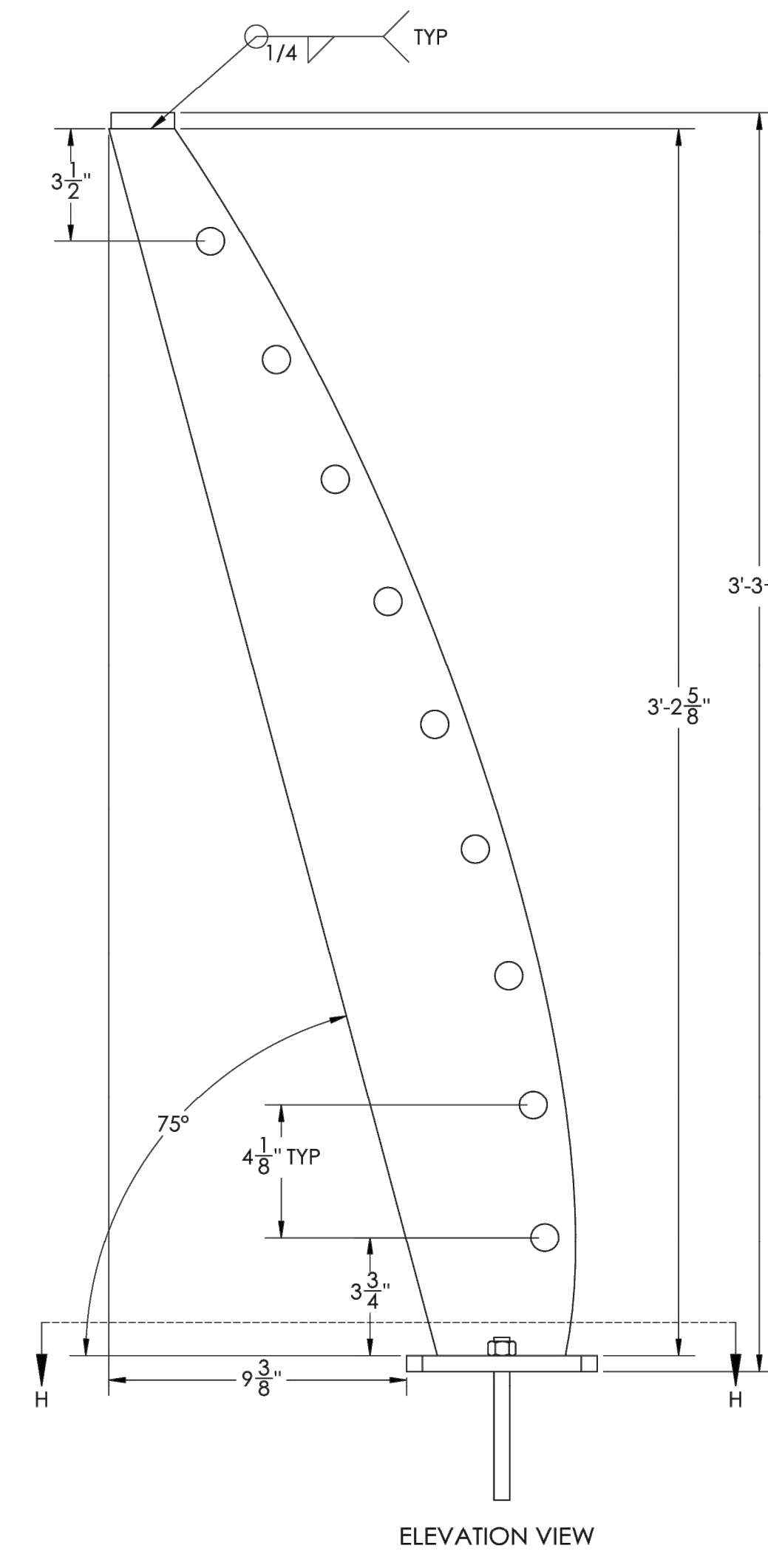
PROJECT NUMBER:	7341
ENGINEER / DESIGNER:	
PROJECT MANAGER:	
CHECKED BY:	

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

GUARDRAILS DETAILS

SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	GD6
SHEET NO.:	136



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Hadi Tabatabaee
BUILDING OFFICIAL

Zoning: CanningK 9/14/2022
Building & Safety: Roshanak Amirazizi 9/14/2022
Permits: BNR21-0804, EL22-0113, PLB22-0127

ORIGINAL RELEASE DATE: 4/25/2022	BY:
NO.:	REVISION DATE:
DANA POINT GUARDRAIL PROJECT NAME:	
ARCHED POST ASSY DETAIL DRAWING TITLE:	
ENGINEER OF RECORD: GRANTHAM ENGINEERING Civil • Mechanical • Marine 7807 HILLANDALE DR SAN DIEGO, CA 92120, CELL: 619 994 0748 GRANTHAMENG@GMAIL.COM	
CLIENT: BELLINGHAM MARINE INDUSTRIES, INC. 11000 CANTON DRIVE SUITE 470 NEWPORT BEACH CA 92660	
SHEET: 2	

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A	5-10-22		
REVISIONS			

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SOUTHWEST DIVISION
CA LICENSE #442499
8810 SPARLING LANE
DIXON, CA 95620
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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

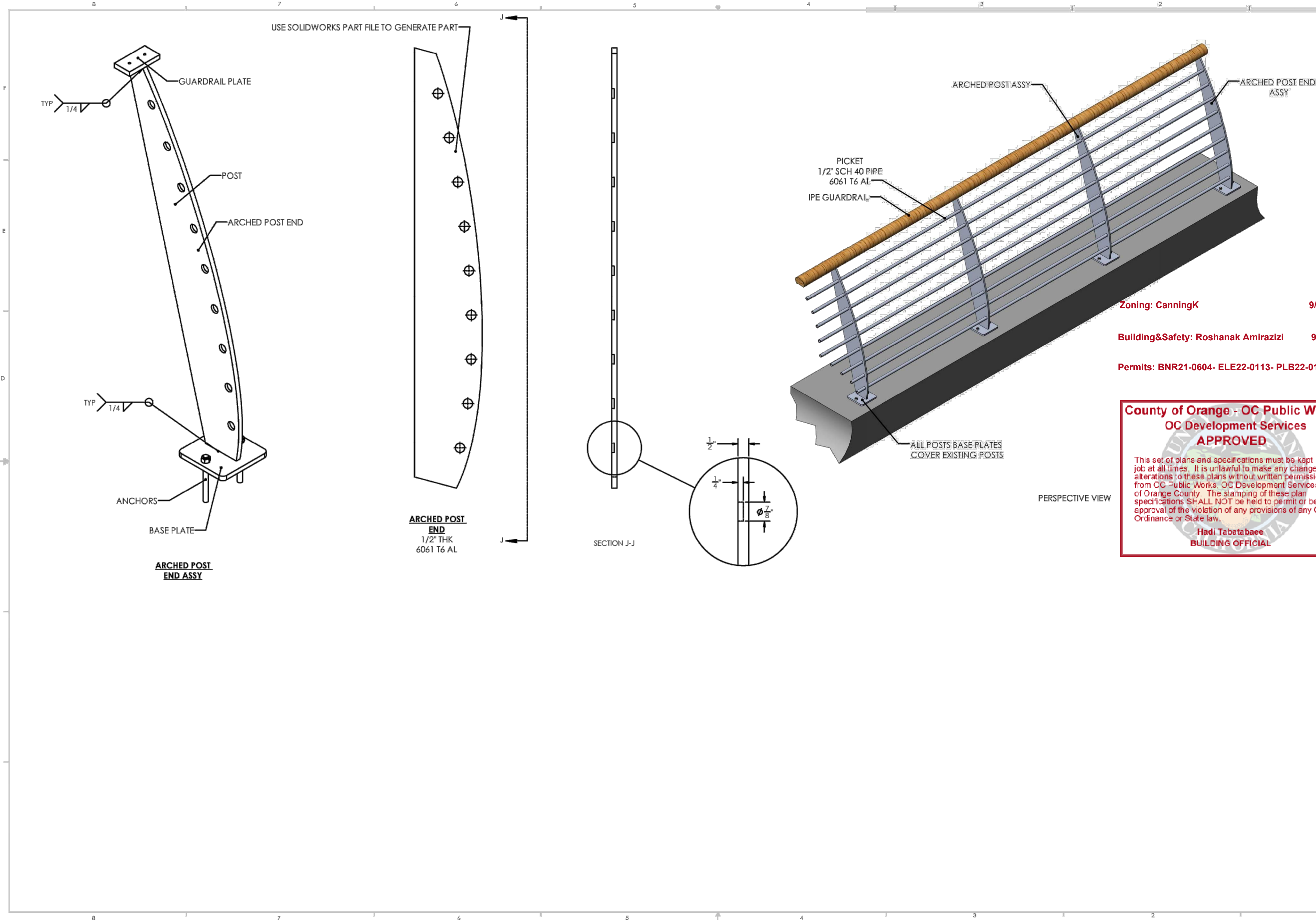
DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

GUARDRAILS DETAILS

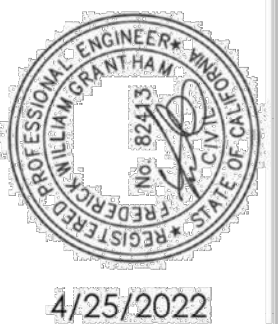

SCALE:	NTS (Sheet Size 24" x 36")
DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	GD7
SHEET NO.:	137

PERMIT DRAWING



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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Hadi Tabatabaee
BUILDING OFFICIAL

 4/25/2022
ORIGINAL RELEASE DATE: 4/25/2022 NO. REVISION DATE BY
DANA POINT GUARDRAIL ARCHED GUARDRAIL END
ENGINEER OF RECORD: GRANTHAM ENGINEERING Civil • Mechanical • Marine 7807 HILLDALE DR SAN DIEGO, CA 92120, CELL: 619 994 0748 GRANTHAMENG@GMAIL.COM
 CLIENT: BELLINGHAM MARINE INDUSTRIES, INC. CENTER DRIVE SUITE 470 NEWPORT BEACH CA 92660
3

NO.	DATE	DESCRIPTION	BY
A	5-10-22	ADDED SHEET	KG
REVISIONS			

Bellingham

MARINE

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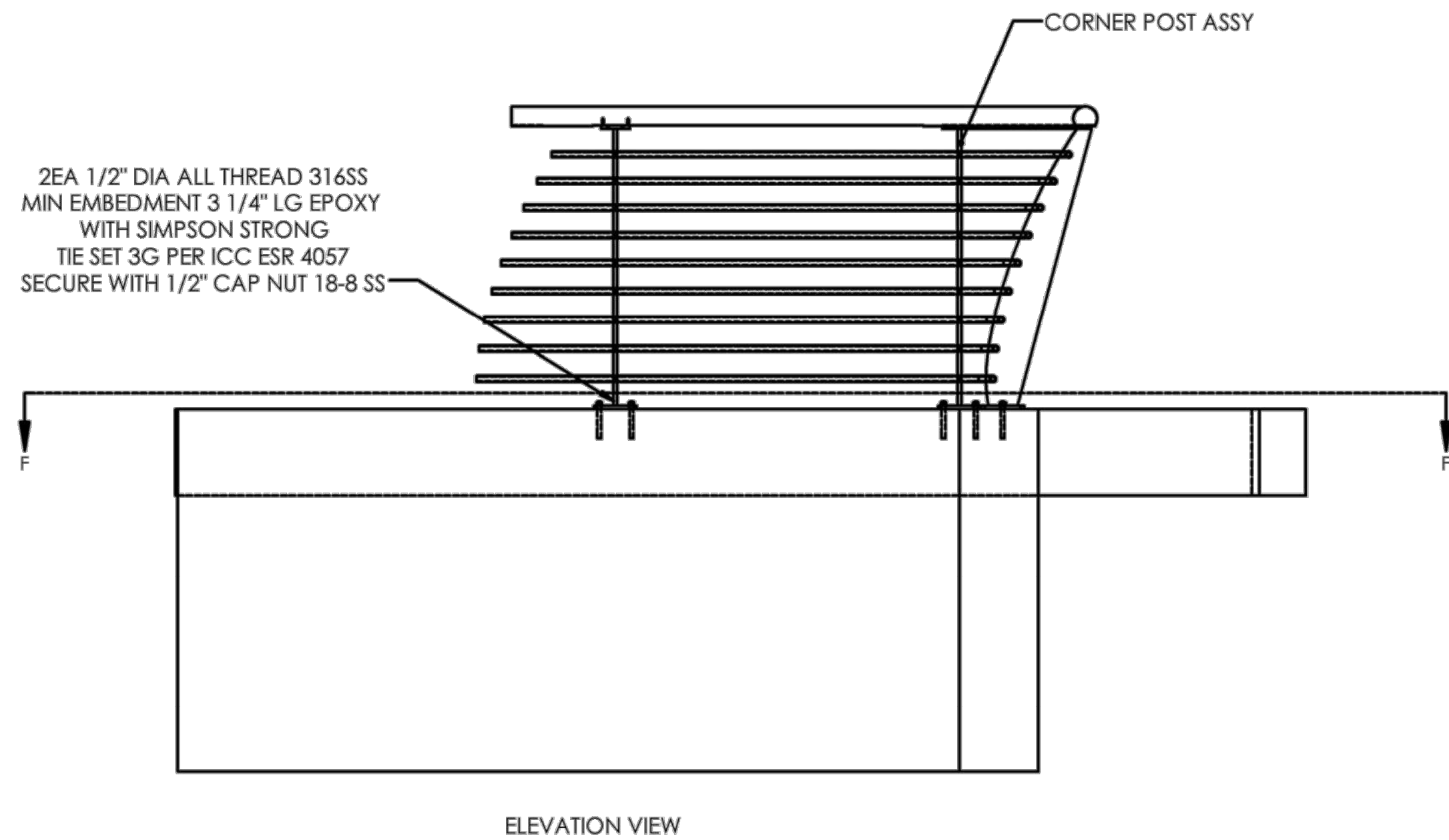
SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

PROJECT NUMBER:
7341
 ENGINEER / DESIGNER:
 PROJECT MANAGER:
 CHECKED BY:

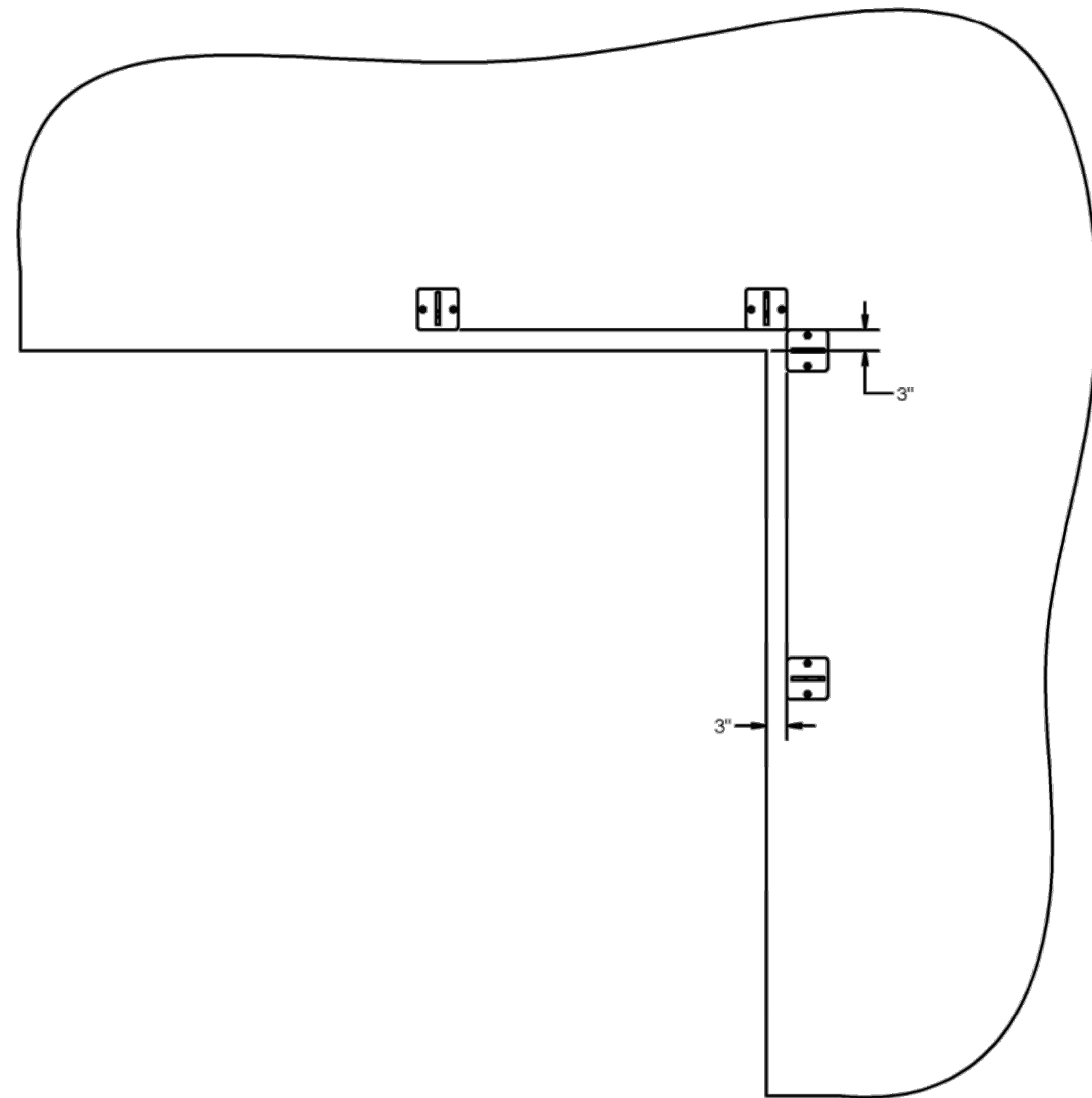
DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
GUARDRAILS DETAILS

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DATE:	5/10/2022
DRAWING:	GD8
SHEET NO.:	138

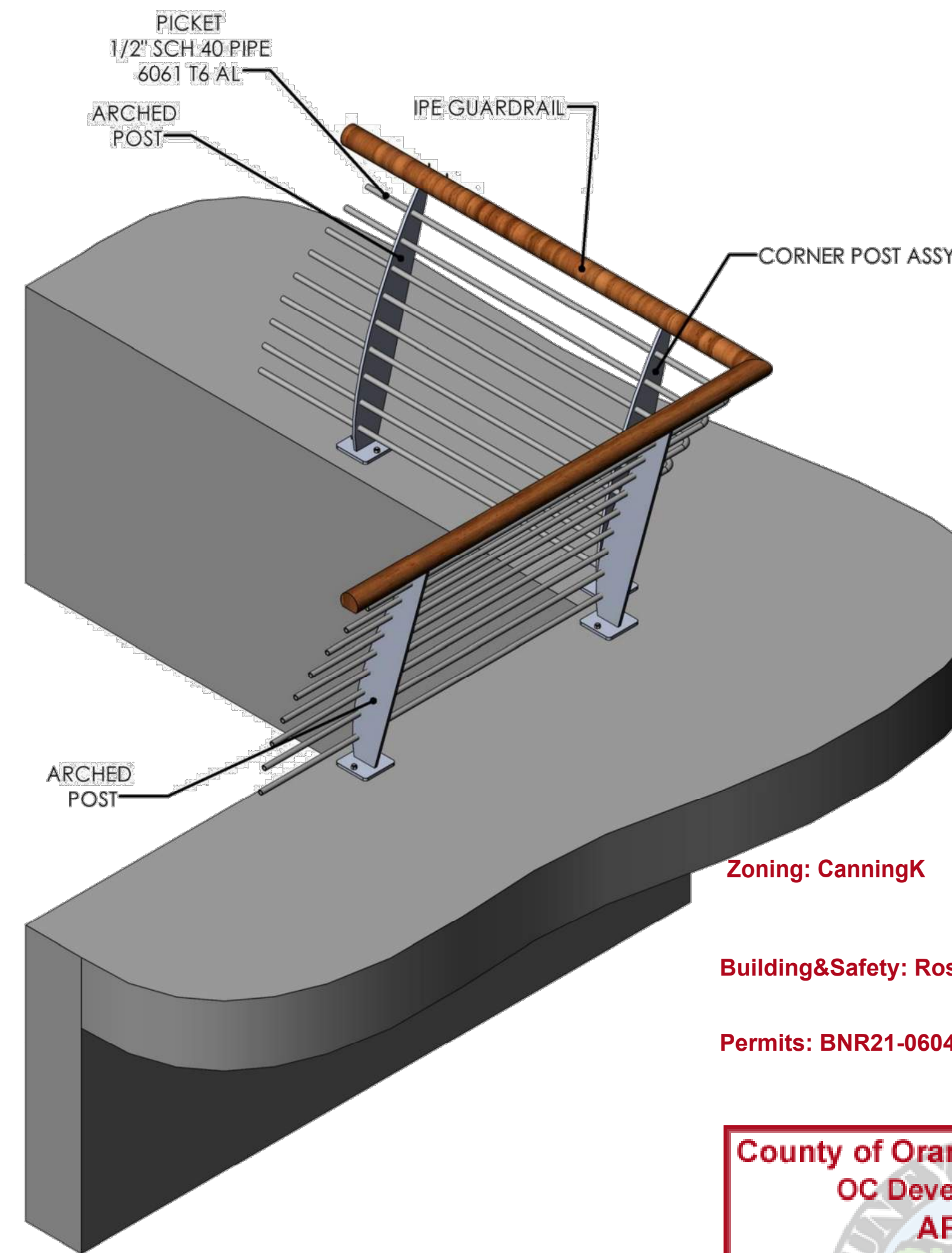
PERMIT DRAWING



ELEVATION VIEW



PLAN VIEW
SECTION F-F



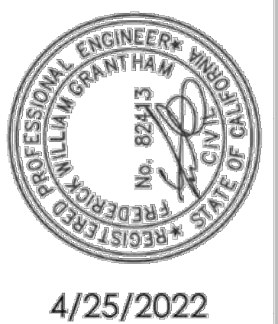
PERSPECTIVE VIEW

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

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**Hadi Tabatabaee
 BUILDING OFFICIAL**



4/25/2022

ORIGINAL RELEASE DATE: 4/25/2022	BY
NO.	REVISION DATE

PROJECT NAME: **DANA POINT GUARDRAIL**

DRAWING TITLE: **CORNER ARCHED GUARDRAIL SECTION**

GRANTHAM ENGINEERING
 Civil • Mechanical • Marine
 7807 HILLDALE DR
 SAN DIEGO, CA 92120, CELL: 619 994 0748
 GRANTHAMENG@GMAIL.COM



CLIENT: **BELLINGHAM MARINE INDUSTRIES, INC.**
 10000 SPARLING LANE
 SUITE 470
 NEWPORT BEACH CA 92660

SHEET: **4**

NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
A	5-10-22		
REVISIONS			



THE WORLD'S MOST
 COMPREHENSIVE
 MARINA BUILDER

SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
 TEL: (707) 678-2385
 FAX: (707) 678-1760

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

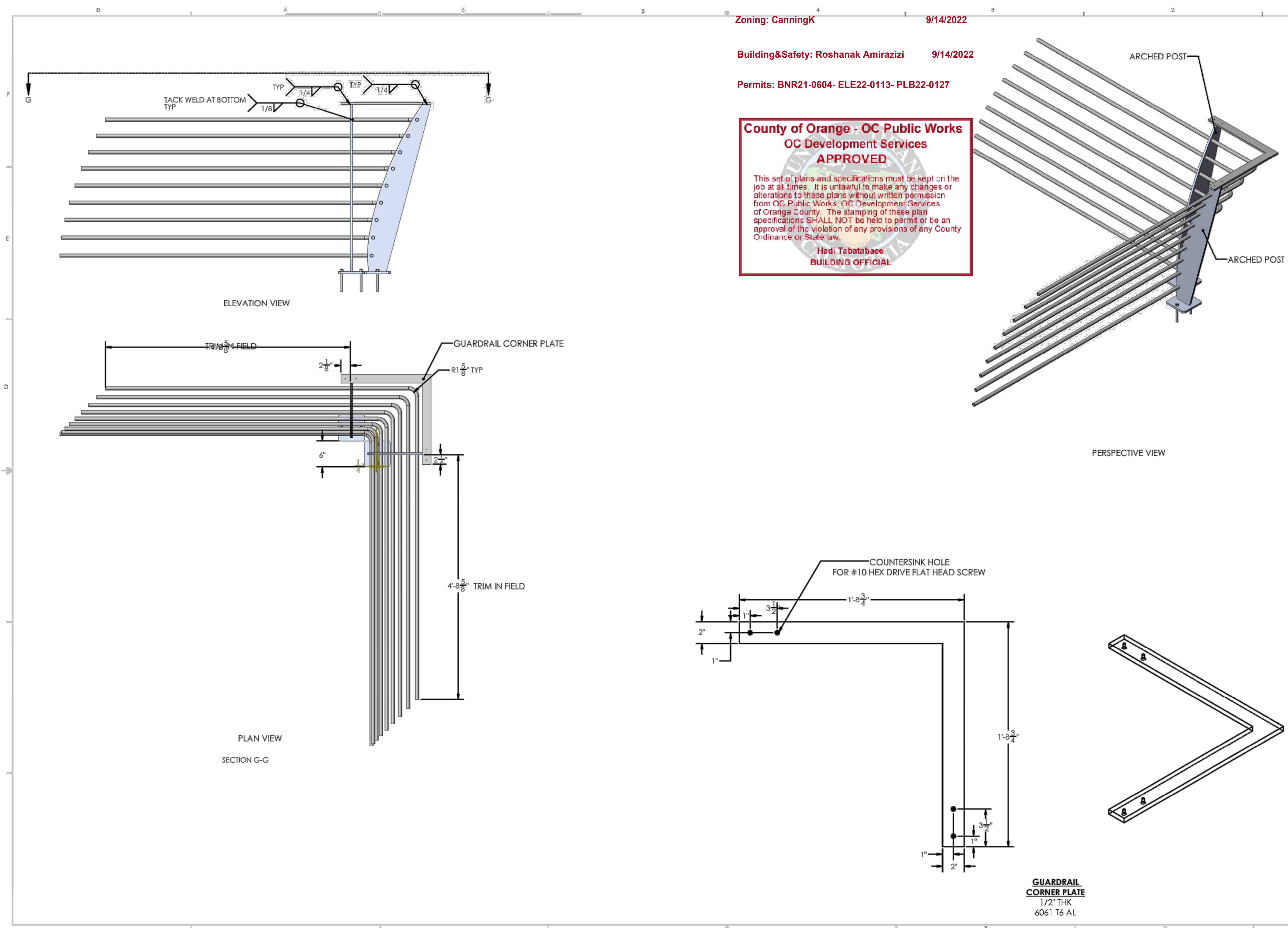
DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

GUARDRAILS DETAILS

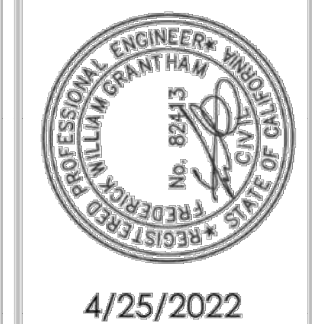
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DRAWN BY:	KG
DATE:	5/10/2022
DRAWING:	GD9
SHEET NO.:	139

PERMIT DRAWING



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
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**Hadi Tabatabaee
 BUILDING OFFICIAL**



ORIGINAL RELEASE DATE: 4/25/2022	BY:
NO.	REVISION DATE

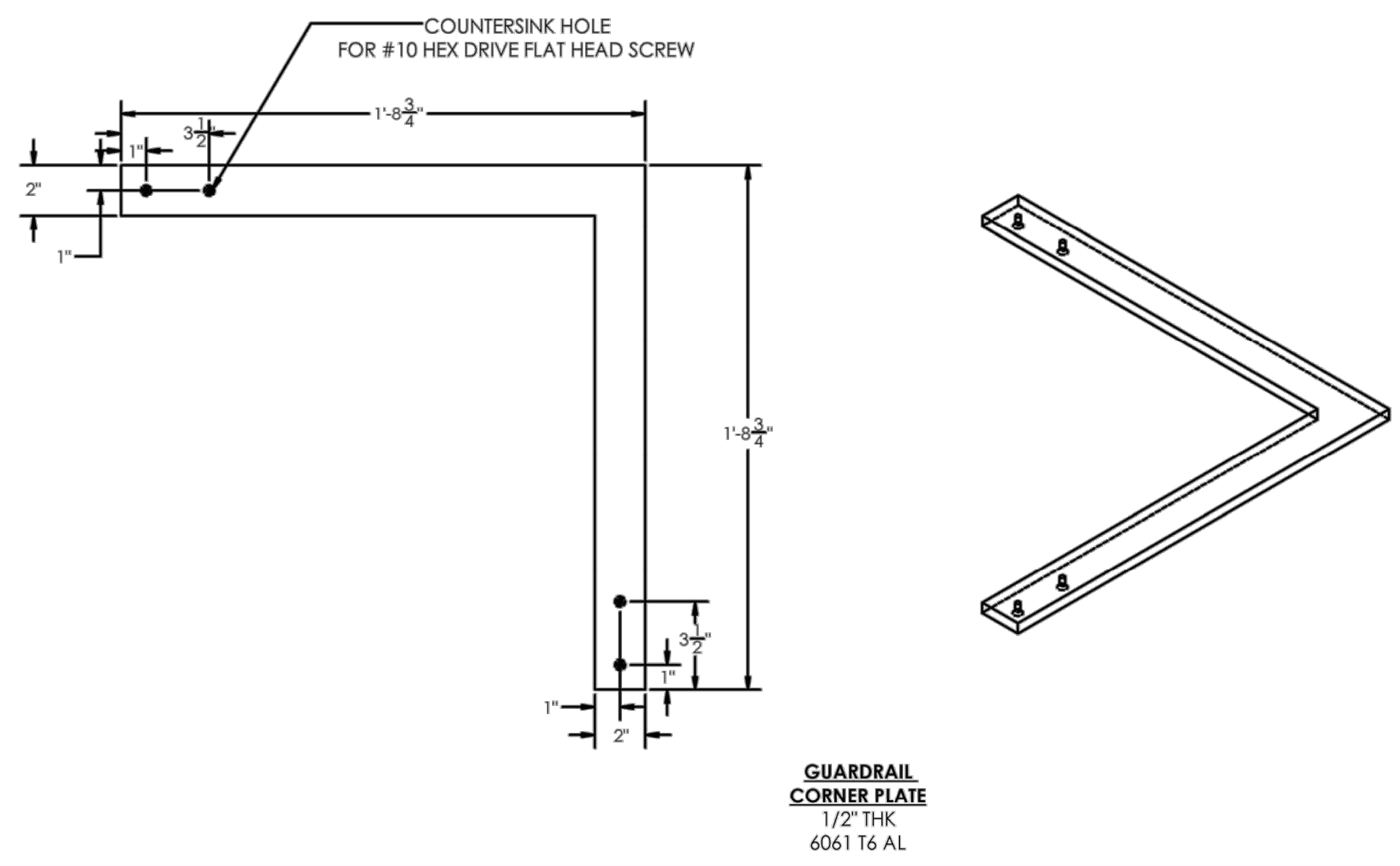
PROJECT NAME: **DANA POINT GUARDRAIL**
 DRAWING TITLE: **CORNER POST ASSY**

ENGINEER OF RECORD:
GRANTHAM ENGINEERING
 Civil • Mechanical • Marine
 7807 HILLDALE DR.
 SAN DIEGO, CA 92120, CELL: 619 994 0748
 GRANTHAMENG@GMAIL.COM



CLIENT:
BELLINGHAM MARINE INDUSTRIES, INC.
 CENTER DRIVE
 SUITE 470
 NEWPORT BEACH
 CA 92660

SHEET: **5**



**GUARDRAIL
 CORNER PLATE**
 1/2" THK
 6061 T6 AL

NO.	DATE	ADDED SHEET DESCRIPTION	KG BY
A	5-10-22		
REVISIONS			

Bellingham MARINE
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SOUTHWEST DIVISION
 CA LICENSE #442499
 8810 SPARLING LANE
 DIXON, CA 95620
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 FAX: (707) 678-1760

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PROJECT NUMBER: 7341
ENGINEER / DESIGNER:
PROJECT MANAGER:
CHECKED BY:

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
GUARDRAILS DETAILS

SCALE: NTS (Sheet Size 24" x 36")
DRAWN BY: KG
DATE: 5/10/2022
DRAWING: GD10
SHEET NO.: 140

IN THE CITY OF DANA POINT, COUNTY OF ORANGE, STATE OF CALIFORNIA

DANA POINT HARBOR PRIVATE DOMESTIC WATER AND SEWER PLAN

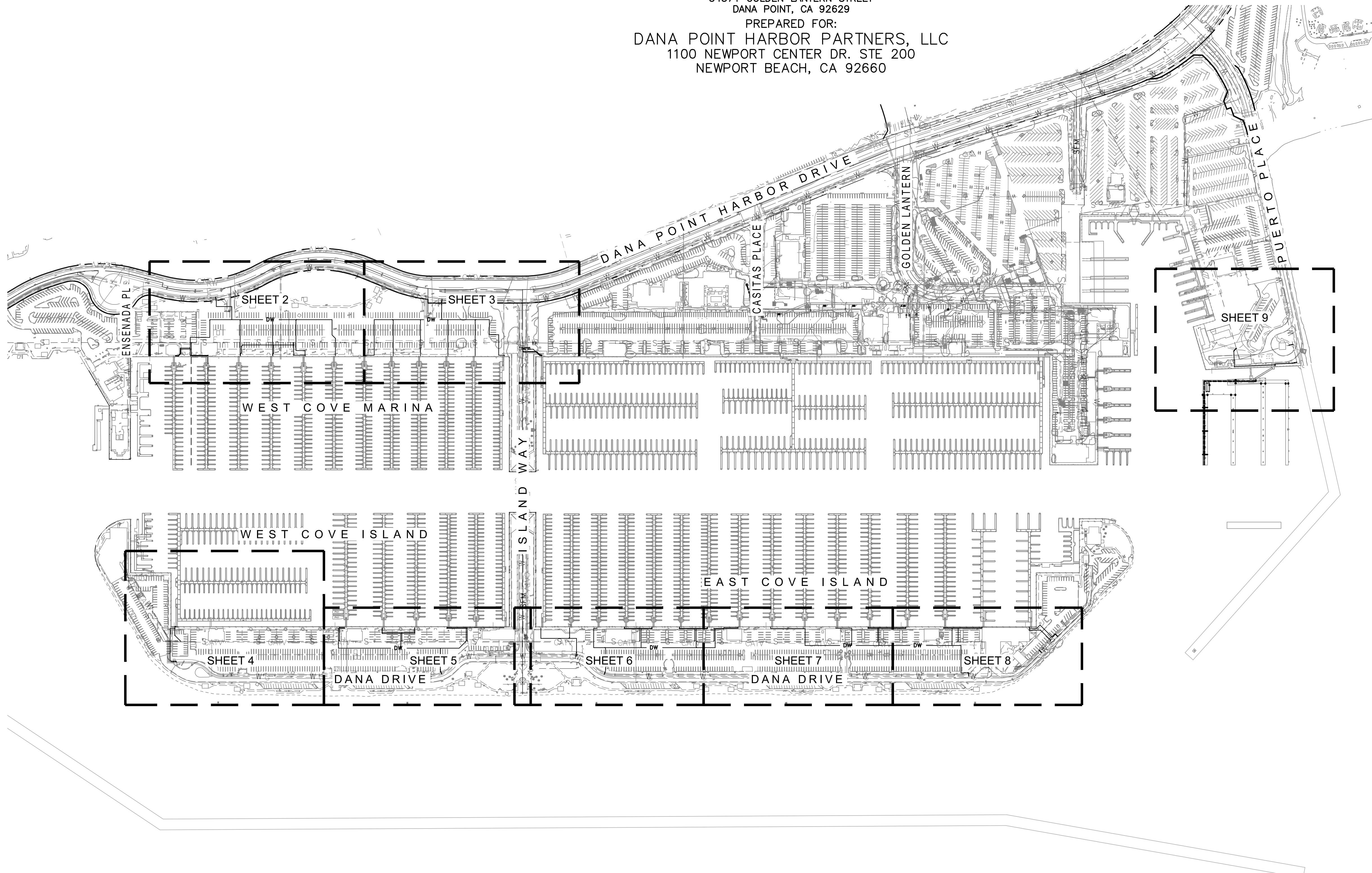
34571 GOLDEN LANTERN STREET
DANA POINT, CA 92629
PREPARED FOR:
DANA POINT HARBOR PARTNERS, LLC
1100 NEWPORT CENTER DR. STE 200
NEWPORT BEACH, CA 92660

Zoning: CanningK 9/14/2022
Building&Safety: Roshanak Amirazizi 9/14/2022
Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
OC Development Services
APPROVED**

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**Hadi Tabatabaee
BUILDING OFFICIAL**

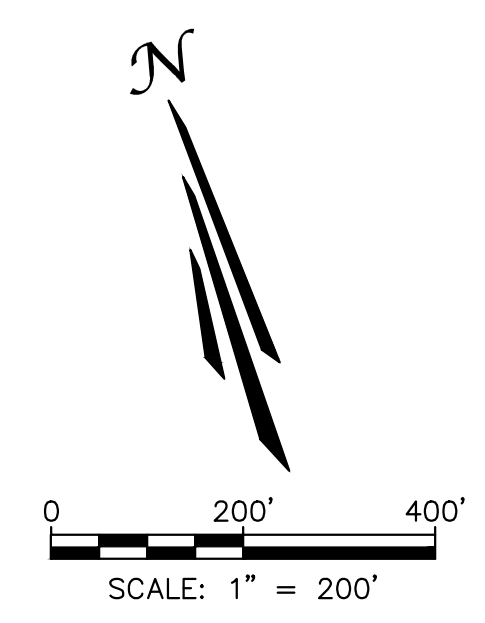


LEGEND

---	S	---	EXISTING SEWER
---	SD	---	EXISTING STORM DRAIN
---	W	---	EXISTING WATER
---	RW	---	EXISTING RECYCLED WATER
---	E	---	EXISTING ELECTRIC
---	CATV	---	EXISTING COMMUNICATIONS
---	G	---	EXISTING GAS
---	DW	---	PROPOSED DOMESTIC WATER (PRIVATE)
---	FW	---	PROPOSED FIRE WATER
---	SS	---	PROPOSED SEWER (PRIVATE)
⊙			PROPOSED SEWER MANHOLE
---		---	PROPERTY LINE
---		---	CENTERLINE

ABBREVIATIONS

℄	CENTERLINE
DW	DOMESTIC WATER
ESMT	EASEMENT
(E)	EXISTING
FF	FINISHED FLOOR
FS	FIRE SERVICE
LAT	LATERAL
(P)	PROPOSED
℄	PROPERTY LINE
RCP	REINFORCED CONCRETE PIPE
SCWD	SOUTH COAST WATER DISTRICT
SFM	SEWER FORCE MAIN
SMH	SEWER MANHOLE
SS	SANITARY SEWER
OCPW	ORANGE COUNTY PUBLIC WORKS



NO.	DATE	DESCRIPTION	BY
REVISIONS			

PREPARED UNDER THE SUPERVISION OF:

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Santa Ana, CA 92705
p: 714/560/8200 f: 714/560/8211
www.tait.com

Los Angeles Ontario Sacramento San Diego San Francisco Boise San Jose Phoenix Denver Portland

JACOB VANDERVIS R.C.E. No. C46301 3/2/22 DATE

PROJECT NUMBER:
ME0381

ENGINEER / DESIGNER:
TAIT

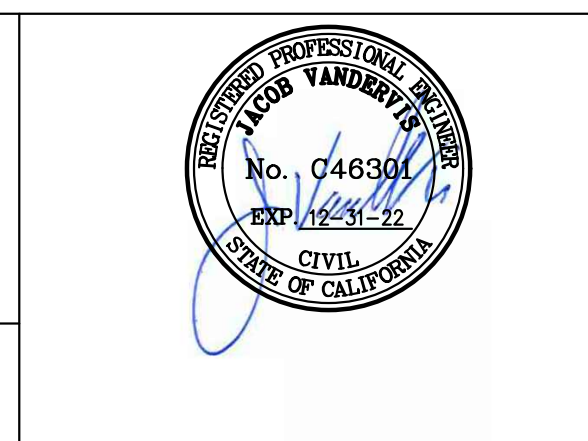
PROJECT MANAGER:
DM

CHECKED BY:
JV

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

**PRIVATE DOMESTIC WATER AND SEWER PLAN
INDEX SHEET**



SCALE:	SEE ON SHEET
DRAWN BY:	TAIT
DATE:	3/2/2022
DRAWING:	ME0381
SHEET NO.:	1

K:\Drawings\ME\ME03810 - Dana Point Harbor\ENG\Construction Drawings\Warmo\Gangways Phase\Private Utilities\ME03810_INDEX_PH1_UT_PRIV.dwg PLOTTED: 3/2/2022 11:07:07 AM BY: Chris Dickel

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

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CONSTRUCTION NOTES

- 1 PROTECT EXISTING UTILITIES PER PLAN.
- 2 CONTRACTOR TO REPLACE SUBMITTALS BASED ON FIELD CONDITIONS.
- 3 WHERE TRENCH ENCOUNTERS PCC, CONTRACTOR TO MATCH TO EXISTING PCC PAVEMENT, AT 6" PCC SIDEWALK PER CITY OF DANA POINT STD. PLAN DP-101.

CONSTRUCTION NOTES

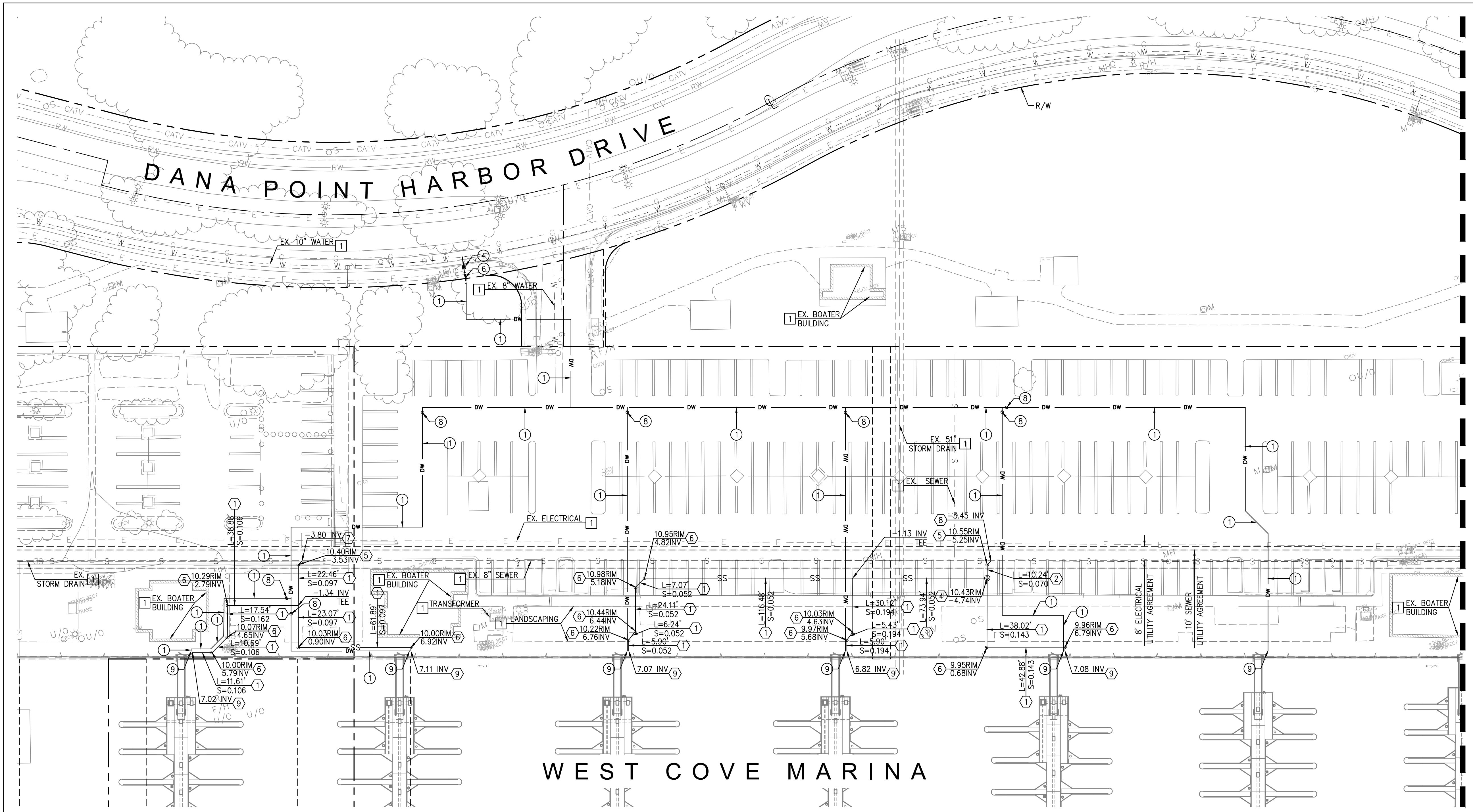
- 1 PROTECT EXISTING UTILITIES PER PLAN.
- 2 CONTRACTOR TO REPLACE SUBMITTALS BASED ON FIELD CONDITIONS.
- 3 WHERE TRENCH ENCOUNTERS PCC, CONTRACTOR TO MATCH TO EXISTING PCC PAVEMENT, AT 6" PCC SIDEWALK PER CITY OF DANA POINT STD. PLAN DP-101.

DOMESTIC WATER NOTES:

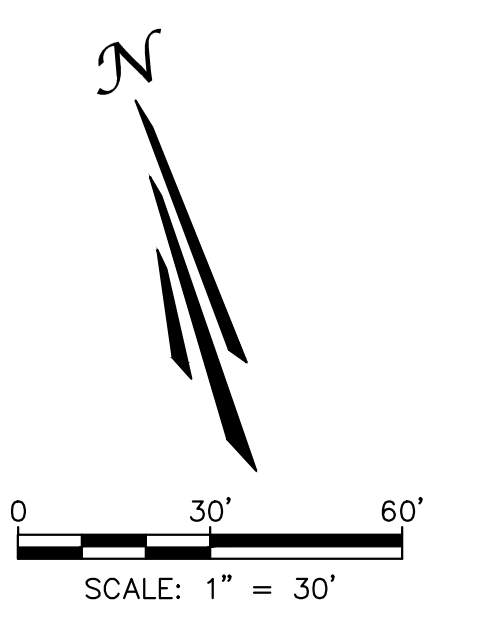
- 1 FURNISH AND INSTALL 2" PVC SCH 80 WATER LINE, FITTINGS AND BENDS. TRENCH AND BEDDING PER DETAIL ON SHEET 8 AND GEOTECHNICAL RECOMMENDATIONS.
- 2 FURNISH AND INSTALL 3" PVC SCH 80 WATER LINE, FITTINGS AND BENDS. TRENCH AND BEDDING PER DETAIL ON SHEET 8 AND GEOTECHNICAL RECOMMENDATIONS.
- 3 TRENCHING AND BEDDING TO BE MODIFIED PER DETAIL ON SHEET 8 AND GEOTECHNICAL RECOMMENDATIONS WHERE GROUNDWATER IS ENCOUNTERED.
- 4 2" WATER METER CONNECTION TO WATER MAIN PER SEPARATE SCWD PLAN AND PERMIT.
- 5 3" WATER METER CONNECTION TO WATER MAIN PER SEPARATE SCWD PLAN AND PERMIT.
- 6 INSTALL 2" BACKFLOW PREVENTER PER SCWD STD. DWG. W-14 ON SHEET 11.
- 7 INSTALL 3" BACKFLOW PREVENTER PER SCWD STD. DWG. W-15 ON SHEET 11.
- 8 INSTALL WATER VALVE PER SCWD STD. DWG. W-6 ON SHEET 10.
- 9 INSTALL TEMPORARY CAP UNTIL CONNECTING TO WATER LINE AT GANGWAY. CONTRACTOR TO COORDINATE CONNECTION TIMING WITH BELLINGHAM MARINE.

SEWER NOTES:

- 1 FURNISH AND INSTALL 4" PVC (SDR 35) SEWER LINE, FITTINGS AND BENDS. TRENCH AND BEDDING PER DETAIL ON SHEET 8 AND GEOTECHNICAL RECOMMENDATIONS.
- 2 FURNISH AND INSTALL 6" PVC (SDR 35) SEWER LINE, FITTINGS AND BENDS. TRENCH AND BEDDING PER DETAIL ON SHEET 8 AND GEOTECHNICAL RECOMMENDATIONS.
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- 4 CONSTRUCT SEWER MANHOLE PER SCWD STD. DWG. S-1 ON SHEET 11. ALL MANHOLES SHALL BE LINED USING LINER FROM APPROVED MATERIAL LIST AND COMPOSITE LIDS.
- 5 INSTALL SEWER CLEANOUT PER SCWD PLAN AND PERMIT.
- 6 INSTALL SEWER CLEANOUT PER SCWD STD. DWG. S-10 ON SHEET 13.
- 7 CONNECT 4" SEWER LATERAL TO EXISTING SEWER LINE PER SCWD STD. DWG. S-6 ON SHEET 13.
- 8 CONNECT 6" SEWER LATERAL TO EXISTING SEWER LINE PER SCWD STD. DWG. S-6 ON SHEET 13.
- 9 INSTALL TEMPORARY CAP UNTIL CONNECTING TO SEWER LINE AT GANGWAY. CONTRACTOR TO COORDINATE CONNECTION TIMING WITH BELLINGHAM MARINE.



MATCHLINE - SEE SHEET 3



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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 www.tait.com

JACOB VANDERVIS R.C.E. No. C46301 DATE 3/2/22

PROJECT NUMBER:
ME0381

ENGINEER / DESIGNER:
TAIT

PROJECT MANAGER:
DM

CHECKED BY:
JV

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

**PRIVATE DOMESTIC WATER AND SEWER PLAN
 WEST COVE PRIVATE UTILITY PLAN**

SCALE: SEE ON SHEET

DRAWN BY: TAIT

DATE: 3/2/2022

DRAWING: ME0381

SHEET NO.: 2

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

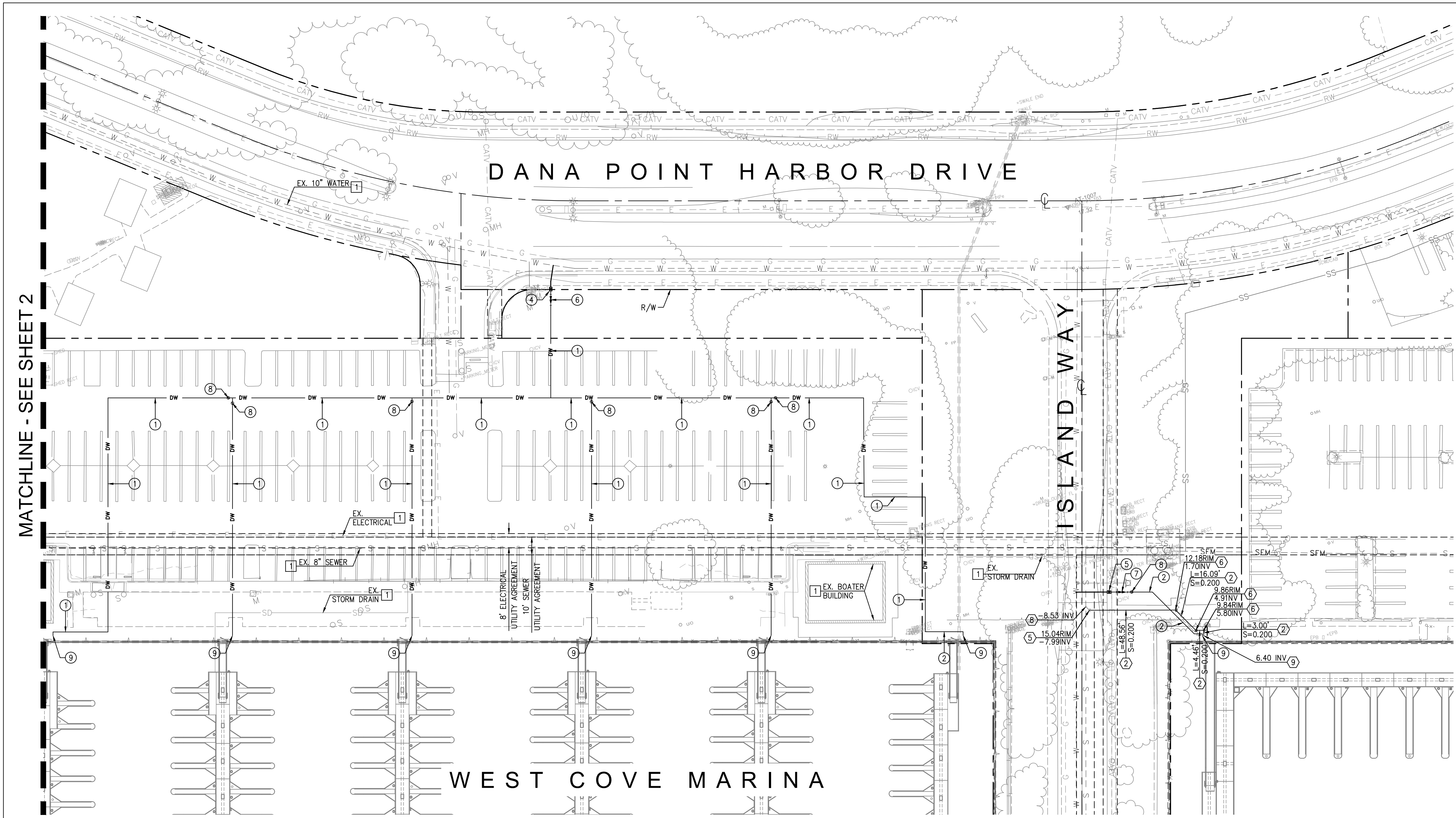
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CONSTRUCTION NOTES

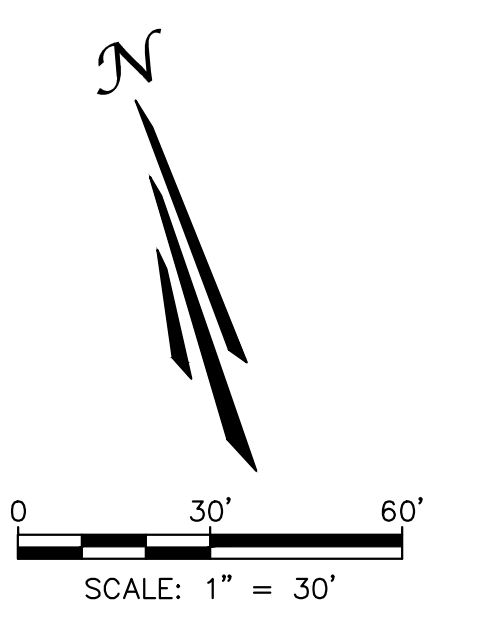
- 1 PROTECT ON PLACED PER PLAN.
- 2 CONTRACTOR TO REPLACE SUBGRADE BASE BUILDING OFFICIAL
- 3 WHERE TRENCH ENCOUNTERS PCC, CONTRACTOR TO MATCH TO EXISTING PCC PAVEMENT AT 6" PCC SIDEWALK PER CITY OF DANA POINT STD. PLAN DP-101.

- DOMESTIC WATER NOTES:**
- 1 FURNISH AND INSTALL 2" PVC SCH 80 WATER LINE, FITTINGS AND BENDS. TRENCH AND BEDDING PER DETAIL ON SHEET 8 AND GEOTECHNICAL RECOMMENDATIONS.
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 - 6 INSTALL 2" BACKFLOW PREVENTER PER SCWD STD. DWG. W-14 ON SHEET 11.
 - 7 INSTALL 3" BACKFLOW PREVENTER PER SCWD STD. DWG. W-15 ON SHEET 11.
 - 8 INSTALL WATER VALVE PER SCWD STD. DWG. W-6 ON SHEET 10.
 - 9 INSTALL TEMPORARY CAP UNTIL CONNECTING TO WATER LINE AT GANGWAY. CONTRACTOR TO COORDINATE CONNECTION TIMING WITH BELLINGHAM MARINE.

- SEWER NOTES:**
- 1 FURNISH AND INSTALL 4" PVC (SDR 35) SEWER LINE, FITTINGS AND BENDS. TRENCH AND BEDDING PER DETAIL ON SHEET 8 AND GEOTECHNICAL RECOMMENDATIONS.
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 - 8 CONNECT 6" SEWER LATERAL TO EXISTING SEWER LINE PER SCWD STD. DWG. S-6 ON SHEET 13.
 - 9 INSTALL TEMPORARY CAP UNTIL CONNECTING TO SEWER LINE AT GANGWAY. CONTRACTOR TO COORDINATE CONNECTION TIMING WITH BELLINGHAM MARINE.



MATCHLINE - SEE SHEET 2



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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 Ontario San Diego Boise Denver Portland

JACOB VANDERVIS R.C.E. No. C46301 3/2/22 DATE

PROJECT NUMBER:
ME0381

ENGINEER / DESIGNER:
TAIT

PROJECT MANAGER:
DM

CHECKED BY:
JV

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

**PRIVATE DOMESTIC WATER AND SEWER PLAN
 WEST COVE PRIVATE UTILITY PLAN**

SCALE: SEE ON SHEET

DRAWN BY: TAIT

DATE: 3/2/2022

DRAWING: ME0381

SHEET NO.: 3

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

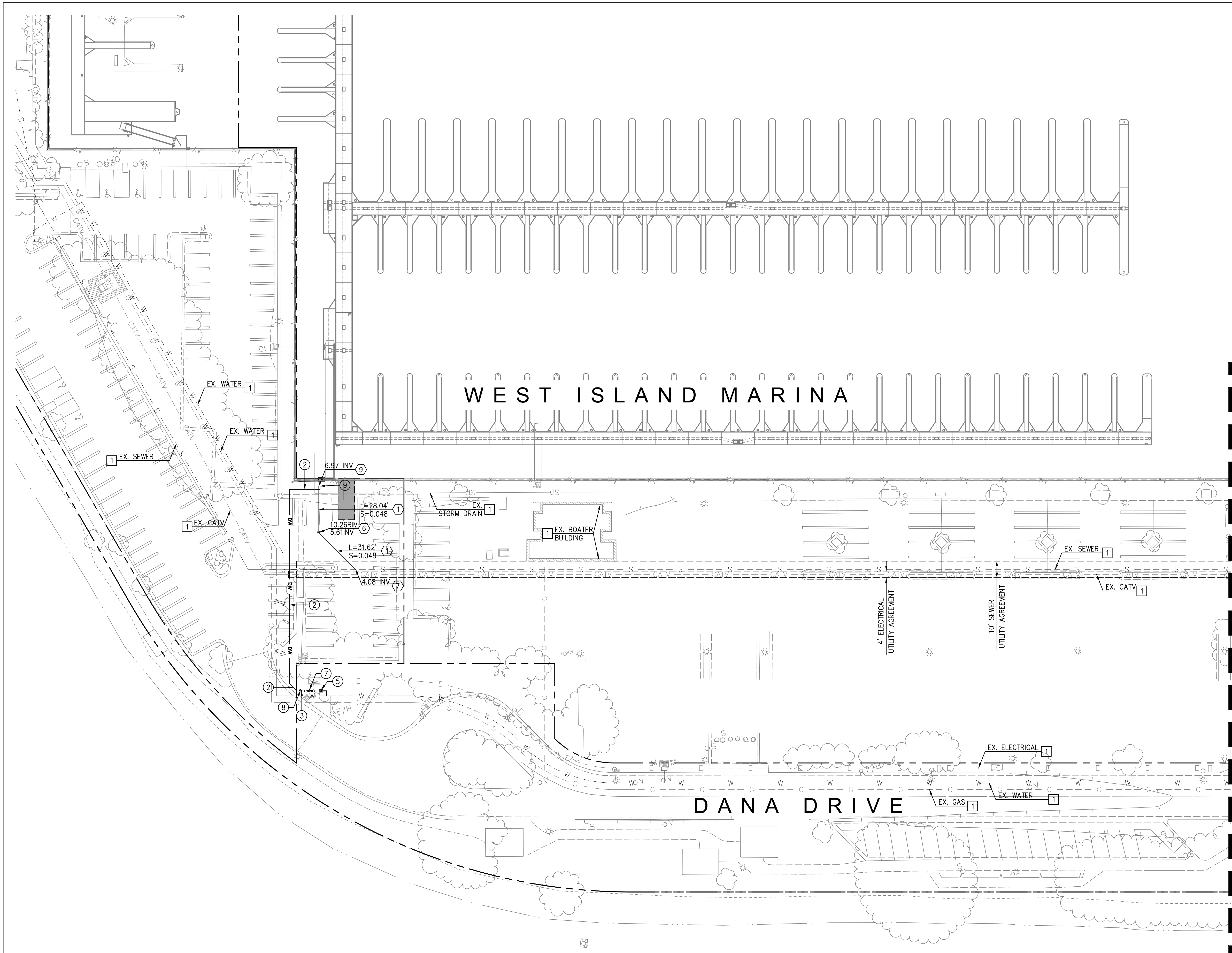
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CONSTRUCTION NOTES

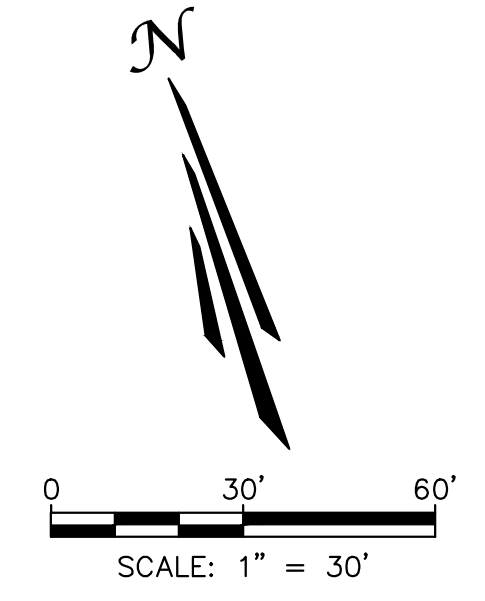
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 - 8 CONNECT 6" SEWER LATERAL TO EXISTING SEWER LINE PER SCWD STD. DWG. S-6 ON SHEET 13.
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MATCHLINE - SEE SHEET 5



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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 Santa Ana, CA 92705
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 www.tait.com
 Los Angeles Sacramento San Francisco Dallas Phoenix
 Ontario San Diego Boise Denver Portland

JACOB VANDERVIS R.C.E. No. C46301 DATE 3/2/22

PROJECT NUMBER:
ME0381

ENGINEER / DESIGNER:
TAIT

PROJECT MANAGER:
DM

CHECKED BY:
JV

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

**PRIVATE DOMESTIC WATER AND SEWER PLAN
 WEST ISLAND PRIVATE UTILITY PLAN**

SCALE: SEE ON SHEET

DRAWN BY: TAIT

DATE: 3/2/2022

DRAWING: ME0381

SHEET NO.: 4

WEST ISLAND MARINA

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

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PROJECT: Dana Point Harbor
 CONTRACTOR TO REPLACE SURFACE BASE BUILDING OFFICIAL
 PCC PAVEMENT AT 6" PCC SIDEWALK PER CITY OF DANA POINT STD. PLAN DP-101.

CONSTRUCTION NOTES:

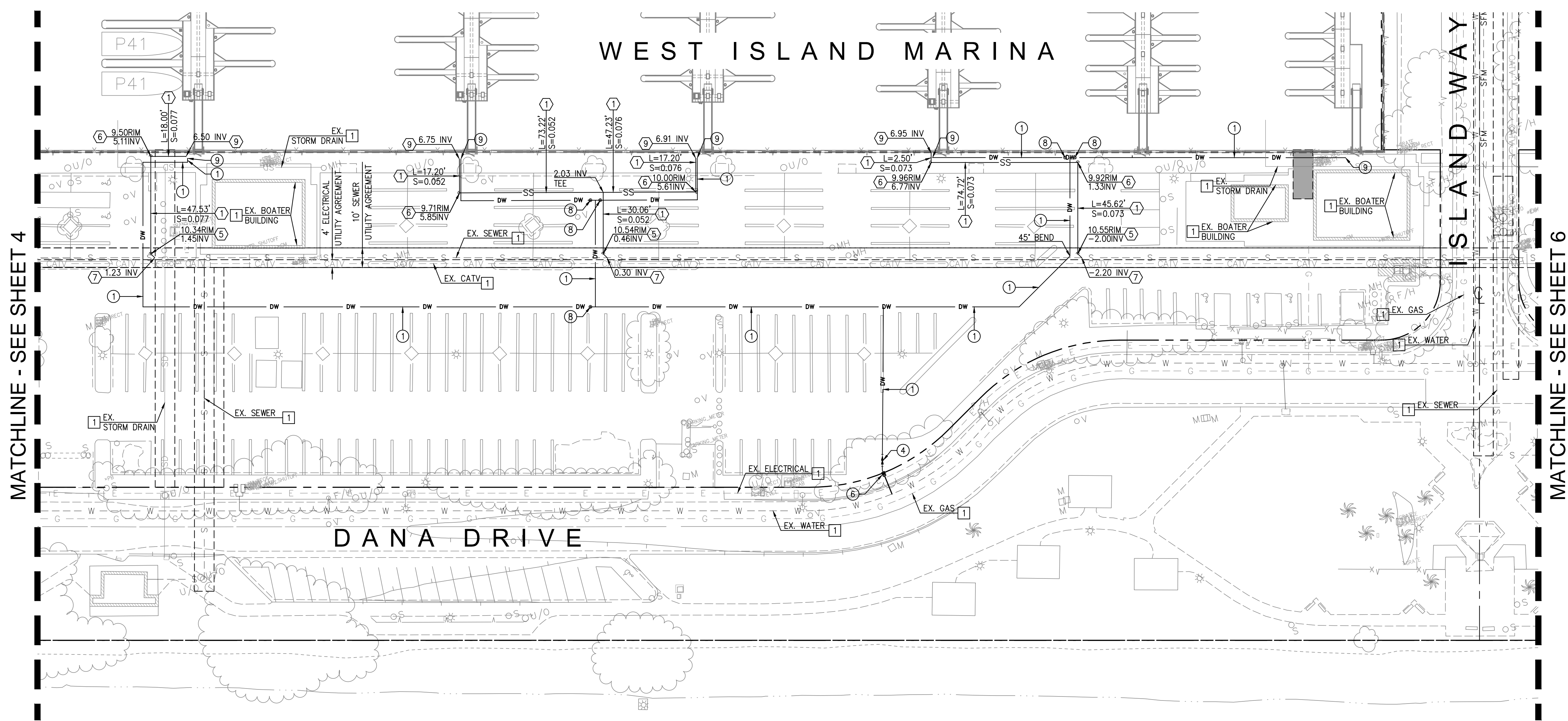
- 1 PROTECT EXISTING UTILITIES.
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- 3 WHERE TRENCH ENCOUNTERS PCC, CONTRACTOR TO MATCH TO EXISTING PCC PAVEMENT AT 6" PCC SIDEWALK PER CITY OF DANA POINT STD. PLAN DP-101.

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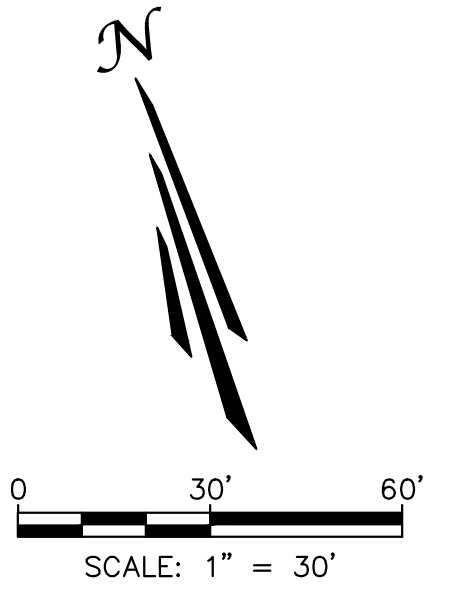
SEWER NOTES:

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MATCHLINE - SEE SHEET 4

MATCHLINE - SEE SHEET 6



NO.	DATE	DESCRIPTION	BY
REVISIONS			

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Los Angeles Sacramento San Francisco Dallas Phoenix
 Ontario San Diego Boise Denver Portland

JACOB VANDERVIS R.C.E. No. C46301 DATE 3/2/22

PROJECT NUMBER:
ME0381

ENGINEER / DESIGNER:
TAIT

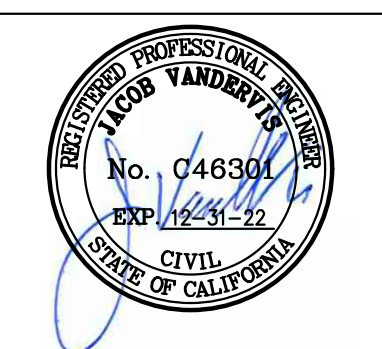
PROJECT MANAGER:
DM

CHECKED BY:
JV

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

**PRIVATE DOMESTIC WATER AND SEWER PLAN
 WEST ISLAND PRIVATE UTILITY PLAN**



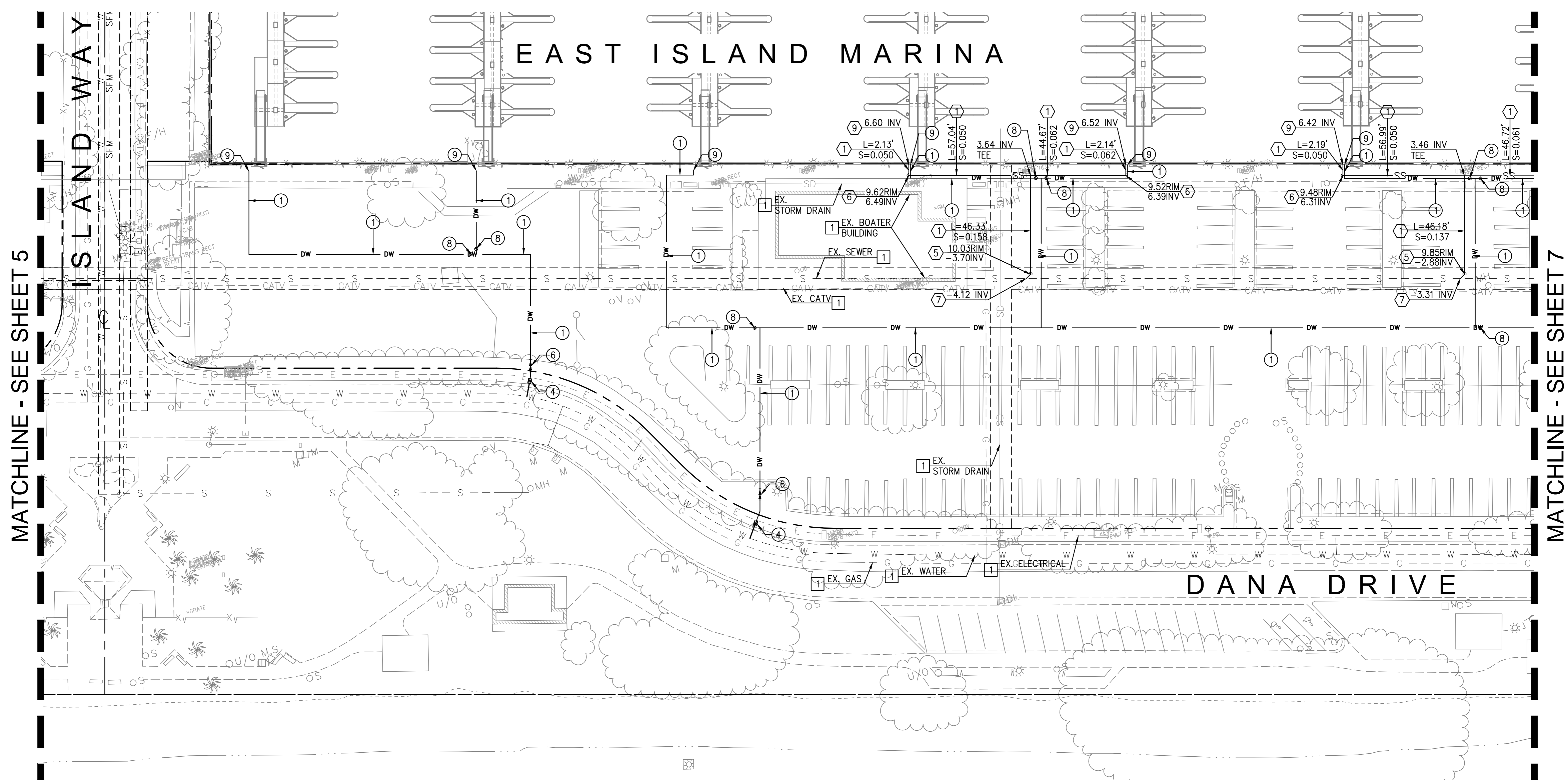
SCALE: SEE ON SHEET

DRAWN BY: TAIT

DATE: 3/2/2022

DRAWING: ME0381

SHEET NO.: 5



Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
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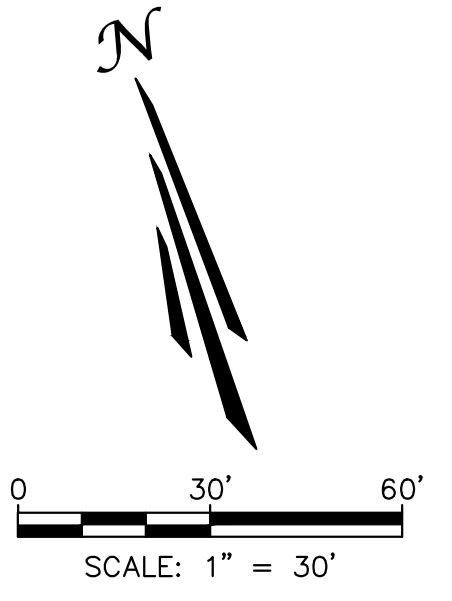
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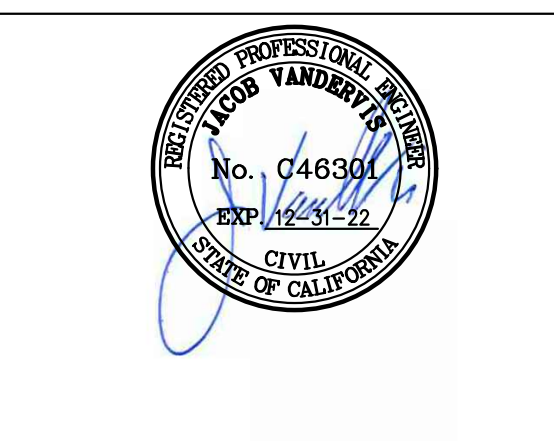
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REVISIONS			

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JACOB VANDERVIS R.C.E. No. C46301 DATE 3/2/22

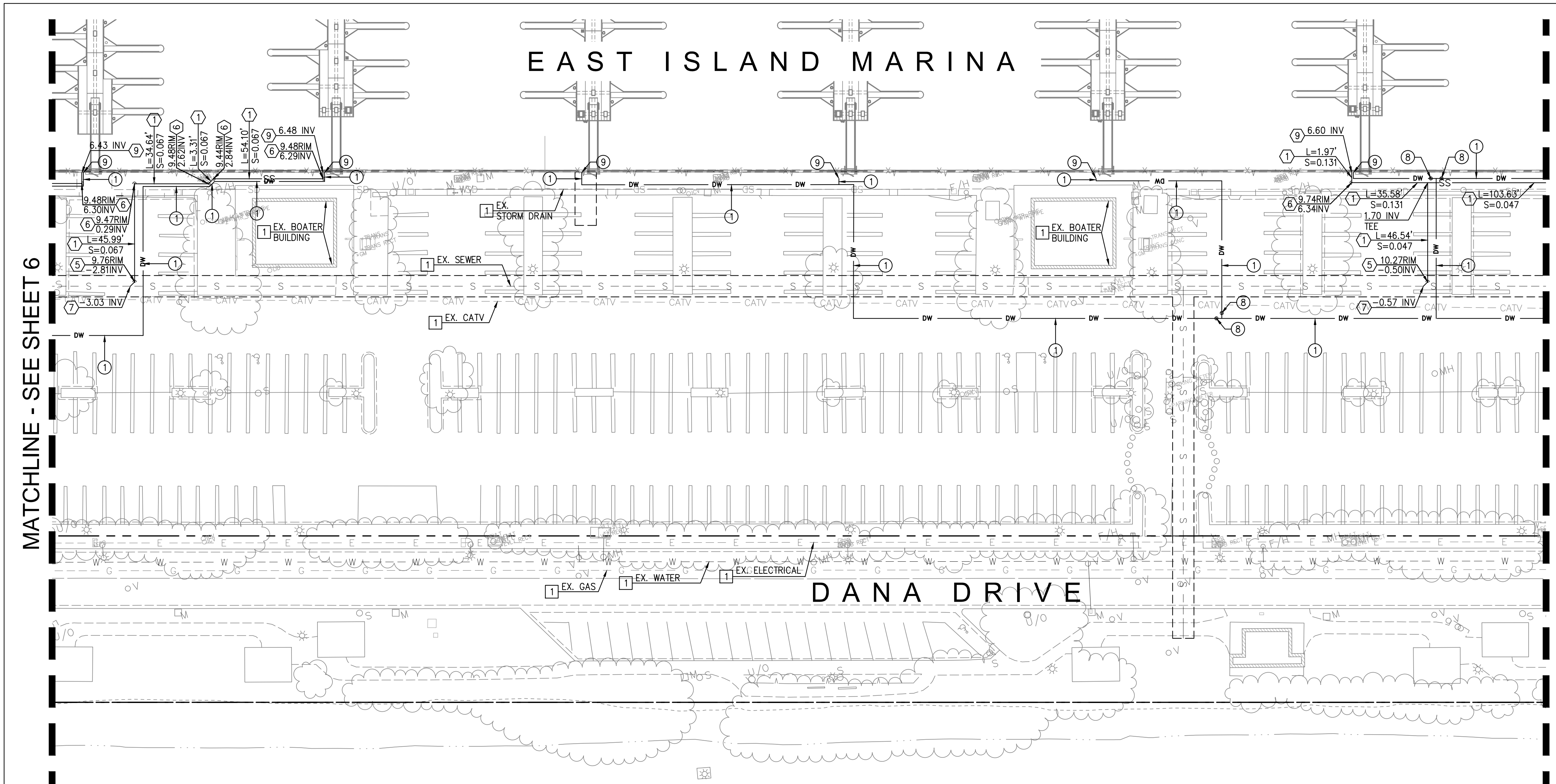
PROJECT NUMBER: ME0381
 ENGINEER / DESIGNER: TAIT
 PROJECT MANAGER: DM
 CHECKED BY: JV

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
 PRIVATE DOMESTIC WATER AND SEWER PLAN
 EAST ISLAND PRIVATE UTILITY PLAN



SCALE: SEE ON SHEET
 DRAWN BY: TAIT
 DATE: 3/2/2022
 DRAWING: ME0381
 SHEET NO.: 6

K:\Drawings\ME\ME03810 - Dana Point Harbor\ENG\Construction Drawings\Marina\Gangways\Private Utilities\ME03810_EI_PHL_UT_PRIV.dwg PLOTTED: 3/2/2022 11:10:07 AM By Chris Dickel



MATCHLINE - SEE SHEET 6

MATCHLINE - SEE SHEET 8

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
 OC Development Services
 APPROVED**

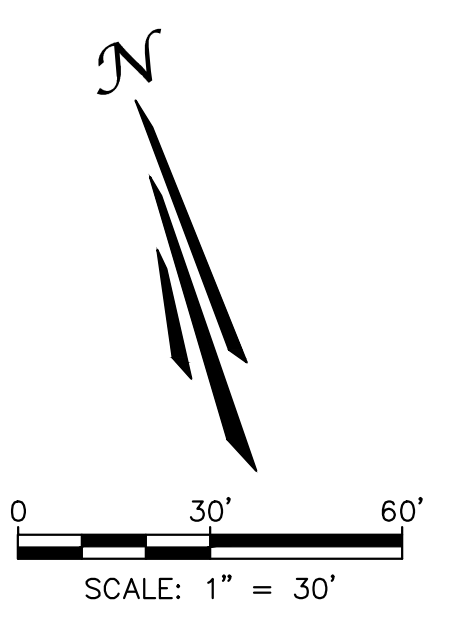
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 www.tait.com

Los Angeles Sacramento San Francisco Dallas Phoenix
 Ontario San Diego Boise Denver Portland

3/2/22
 DATE

JACOB VANDERVIS R.C.E. No. C46301

PROJECT NUMBER:
ME0381

ENGINEER / DESIGNER:
TAIT

PROJECT MANAGER:
DM

CHECKED BY:
JV

DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

**PRIVATE DOMESTIC WATER AND SEWER PLAN
 EAST ISLAND PRIVATE UTILITY PLAN**

SCALE: SEE ON SHEET

DRAWN BY: TAIT

DATE: 3/2/2022

DRAWING: ME0381

SHEET NO.: 7

EAST ISLAND MARINA

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

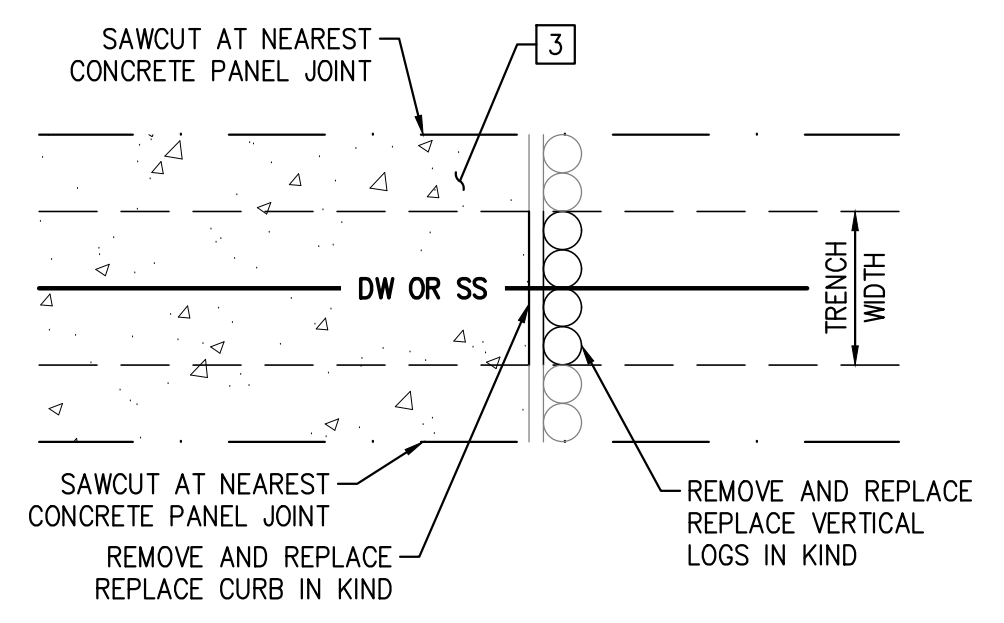
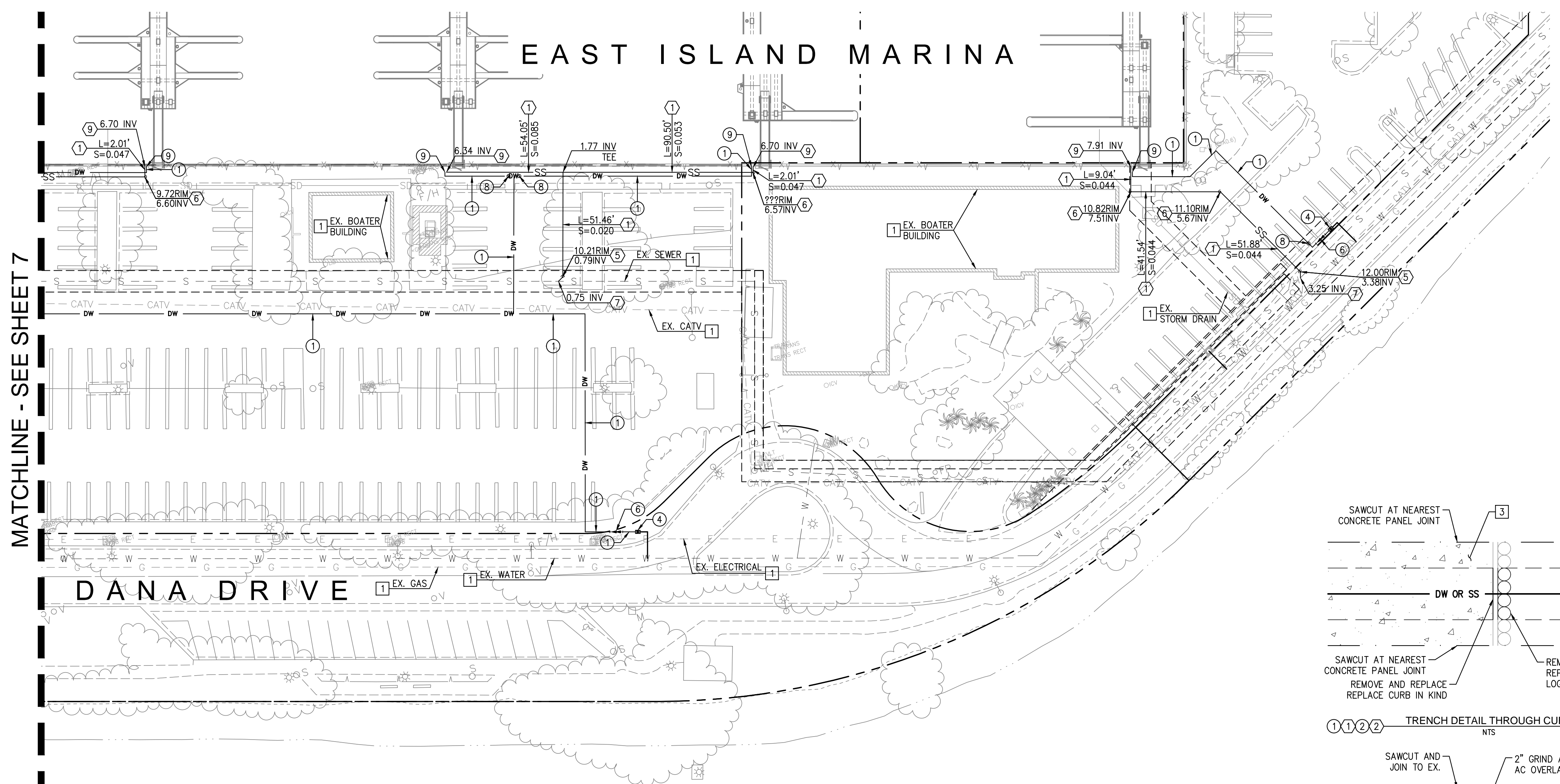
**County of Orange - OC Public Works
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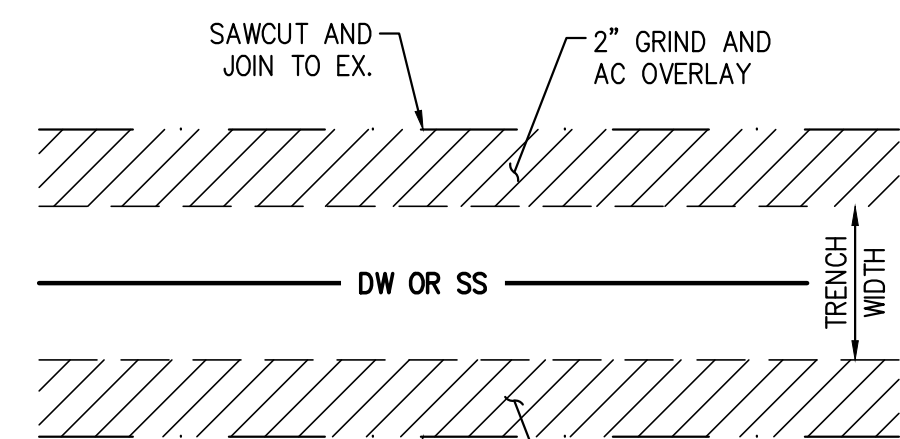
CONSTRUCTION NOTES

- PROTECT EXISTING UTILITIES.
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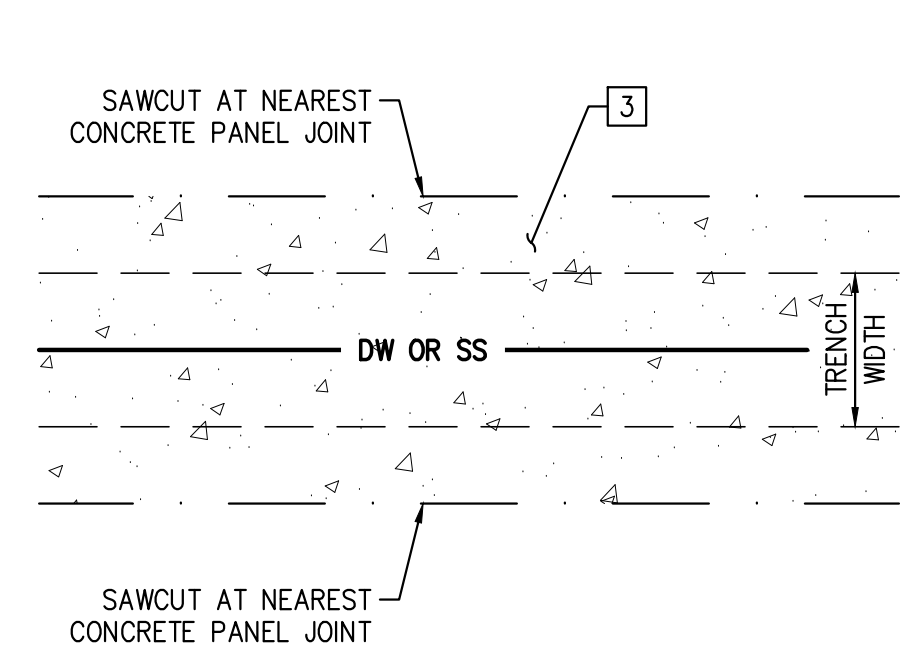
MATCHLINE - SEE SHEET 7



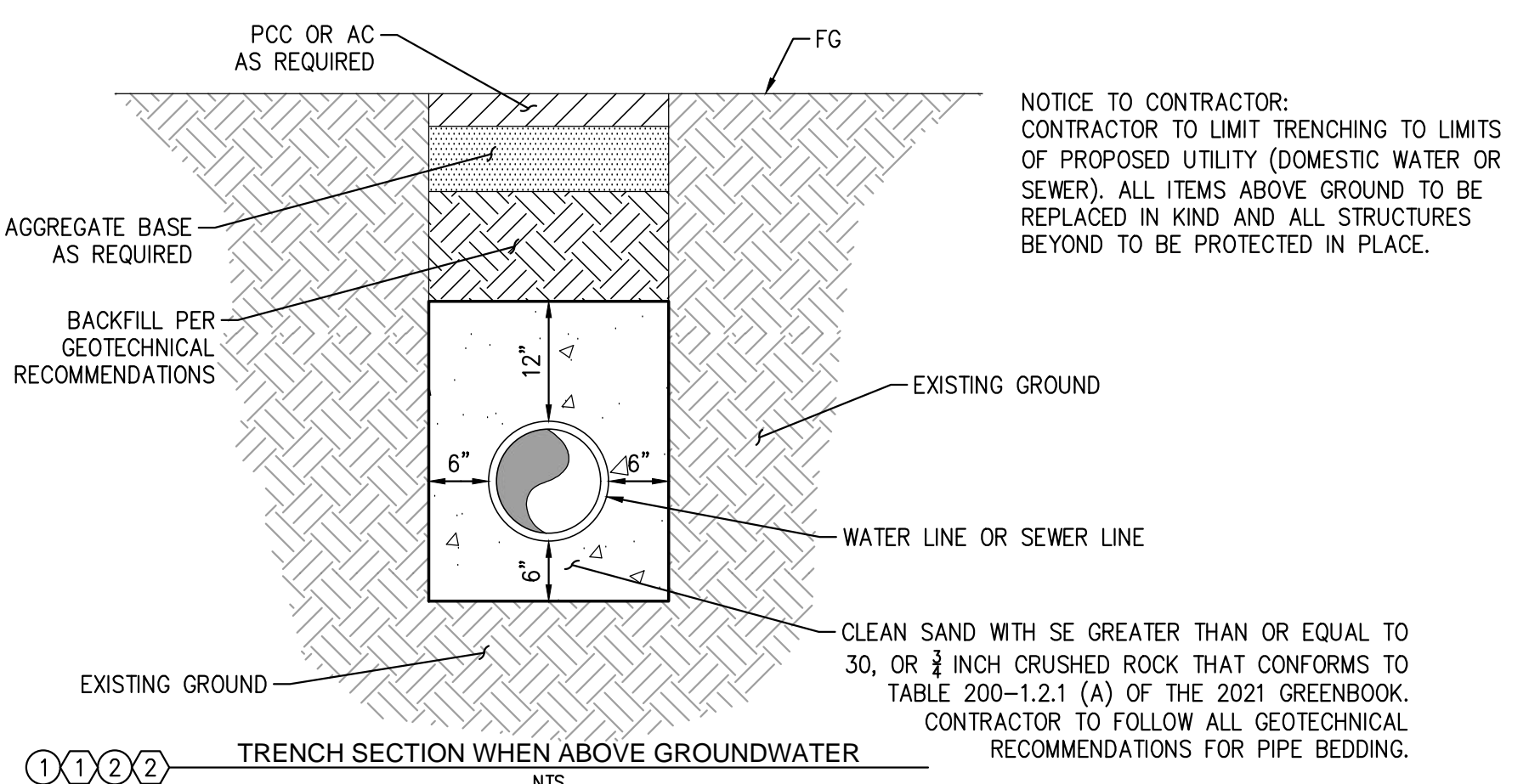
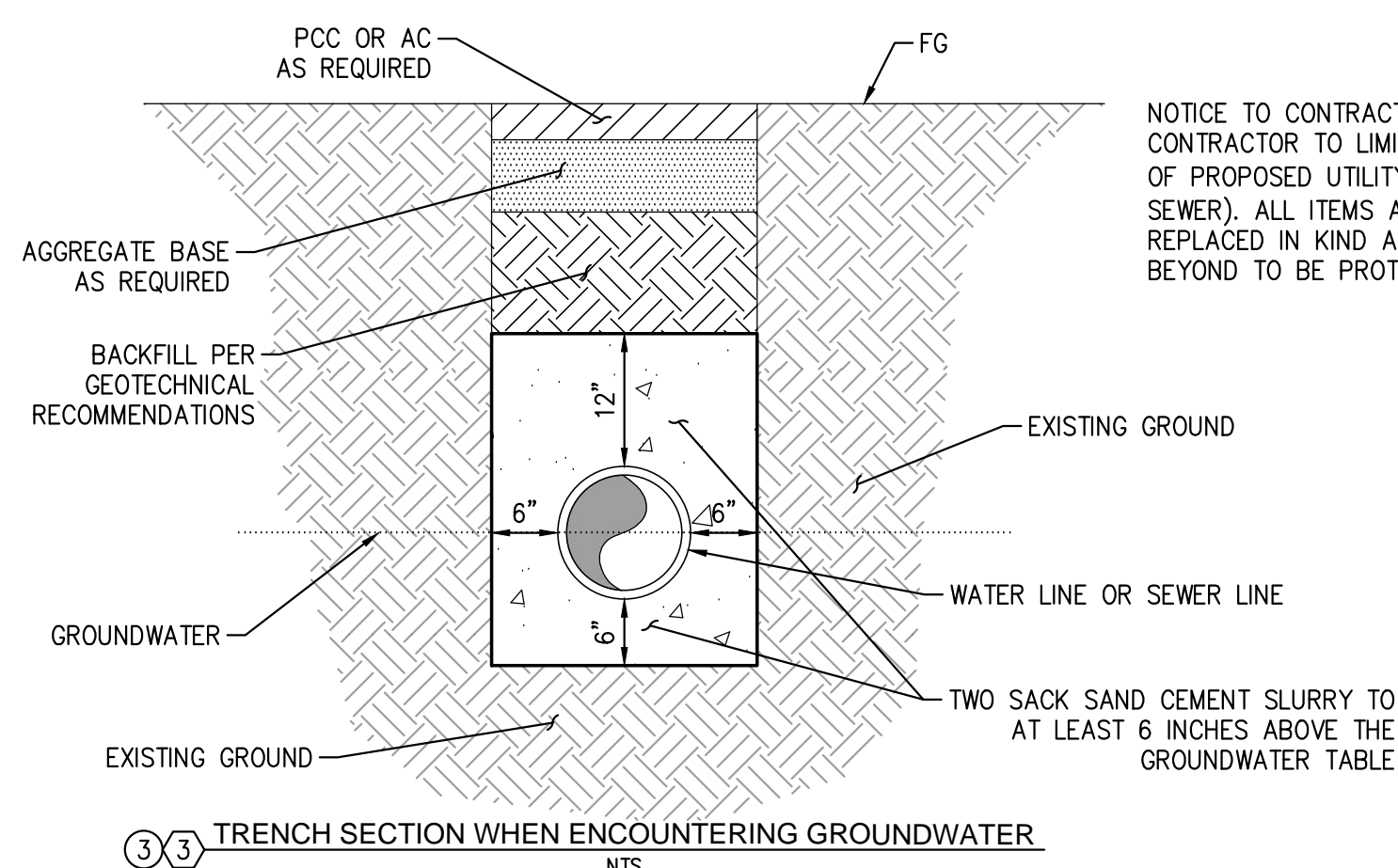
1 1 2 2 TRENCH DETAIL THROUGH CURB NTS



1 1 2 2 TRENCH DETAIL AT ASPHALT SURFACE NTS



1 1 2 2 TRENCH DETAIL AT CONCRETE SURFACE NTS

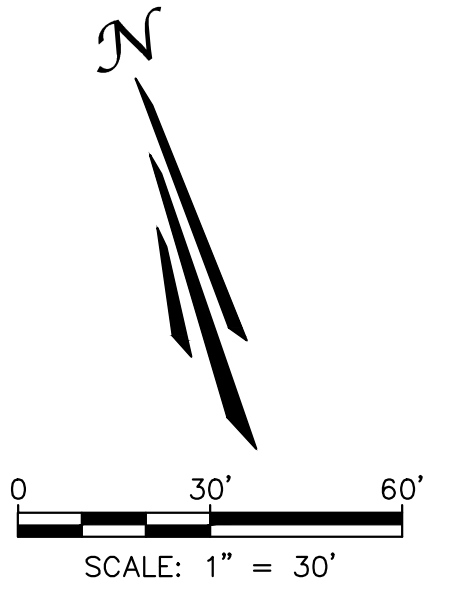


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DANA POINT HARBOR REVITALIZATION

Harbor Drive
 Dana Point, CA 92629

ENGINEER / DESIGNER: TAIT
 PROJECT MANAGER: DM
 CHECKED BY: JV

**PRIVATE DOMESTIC WATER AND SEWER PLAN
 EAST ISLAND PRIVATE UTILITY PLAN**

SCALE: SEE ON SHEET
 DRAWN BY: TAIT
 DATE: 3/2/2022
 DRAWING: ME0381
 SHEET NO.: 8

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
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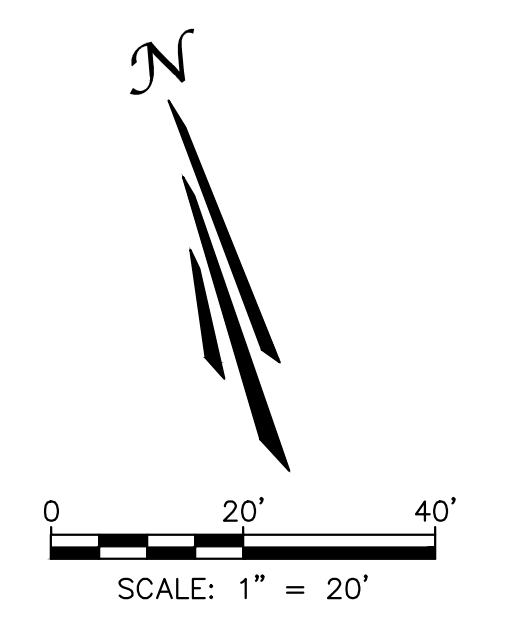
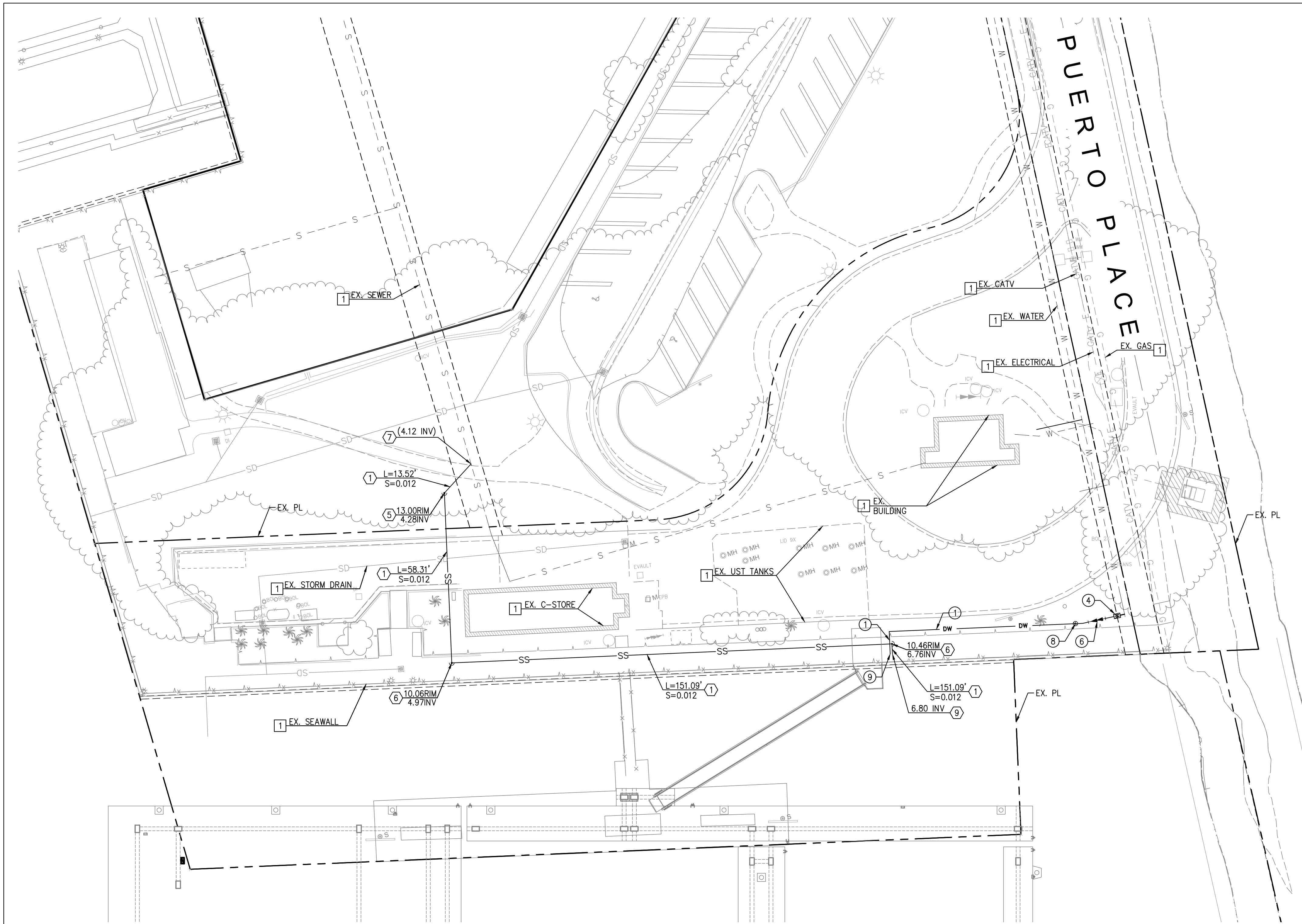
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BUILDING OFFICIAL

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ENGINEER / DESIGNER:
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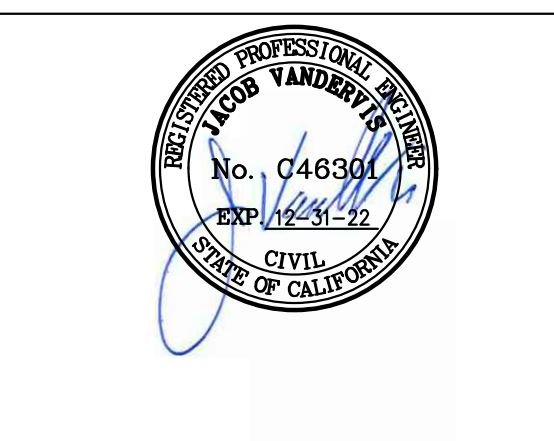
PROJECT MANAGER:
DM

CHECKED BY:
JV

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

**PRIVATE DOMESTIC WATER AND SEWER PLAN
 GUEST DOCKS PRIVATE UTILITY PLAN**



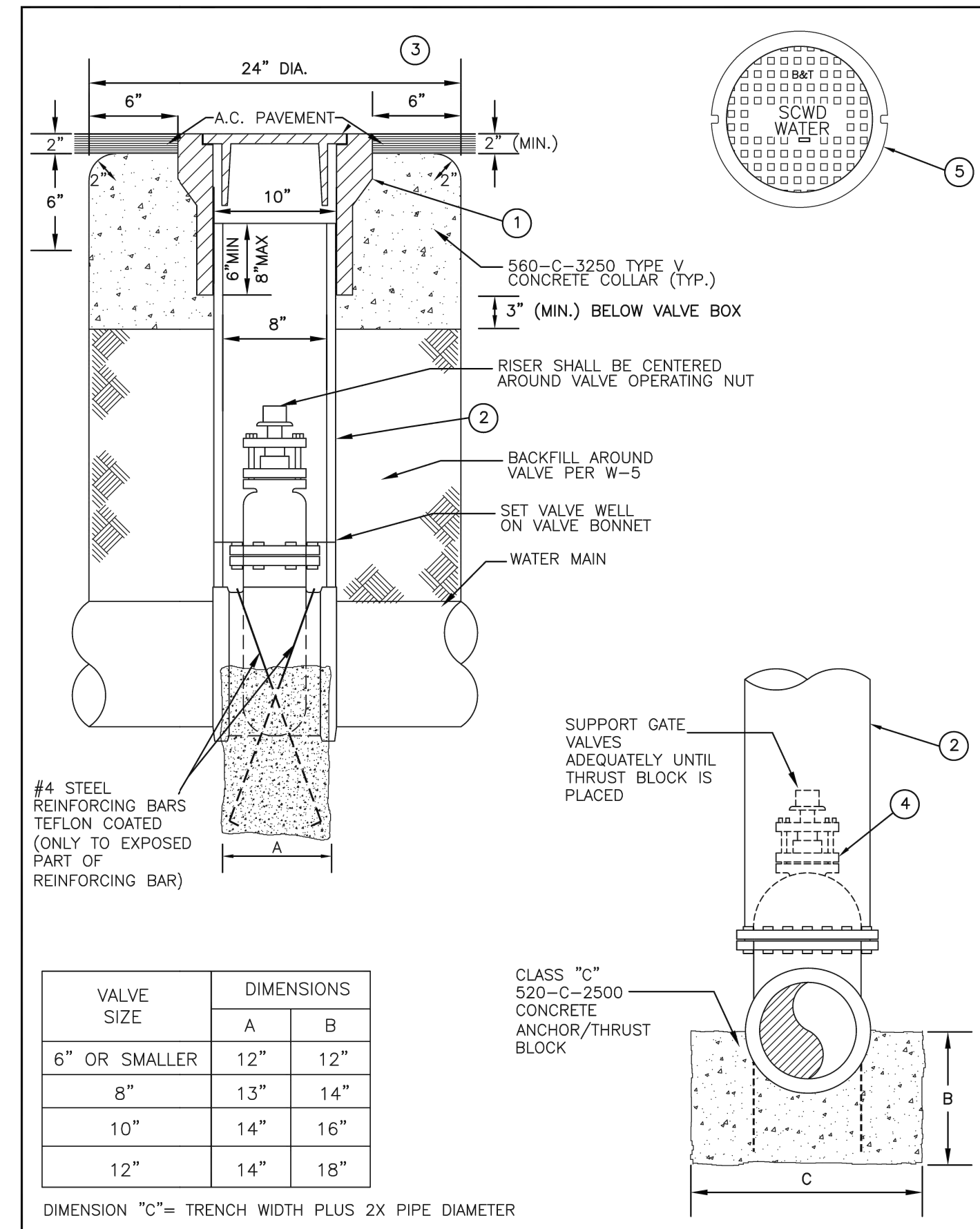
SCALE: SEE ON SHEET

DRAWN BY: TAIT

DATE: 3/2/2022

DRAWING: ME0381

SHEET NO.: 9



VALVE SIZE	DIMENSIONS	
	A	B
6" OR SMALLER	12"	12"
8"	13"	14"
10"	14"	16"
12"	14"	18"

DIMENSION "C" = TRENCH WIDTH PLUS 2X PIPE DIAMETER

VALVE BOX ASSEMBLY
SOUTH COAST WATER DISTRICT

REVISION	BY	DATE	APPROVED	DATE	STD. NO.
ORIGINAL					W-6
UPDATE		2014	CHIEF ENGINEER		
UPDATE	TK	2022	APPROVED DIRECTOR OF OPERATIONS		

SHEET 1 OF 3

- NOTES:**
1. PROVIDE VALVE STEM EXTENSION. IF DEPTH TO VALVE NUT EXCEEDS 4 FEET FROM FINISHED GRADE, SEE SHEET 3.
 2. FOR VALVE INSTALLATIONS IN NEW TRACTS UNDER CONSTRUCTION, CONTRACTOR SHALL EXTEND VALVE WELL 2 FEET ABOVE INTERIM GRADE, AS DIRECTED BY SCWD INSPECTOR, UNTIL FINISH GRADE IS ESTABLISHED.
 3. THE WORDS "SCWD WATER" ON VALVE LID SHALL BE INSTALLED PARALLEL TO THE MAIN.
 4. VALVES BOLTED TO FITTINGS SHALL NOT REQUIRE ANCHOR/THRUST BLOCKS.
 5. COAT ALL FITTINGS, VALVES, AND HARDWARE WITH NON-OXIDIZING GREASE AND WRAP WITH 8 MIL POLYWRAP WITH V-BIocide PRIOR TO INSTALLING REBAR.

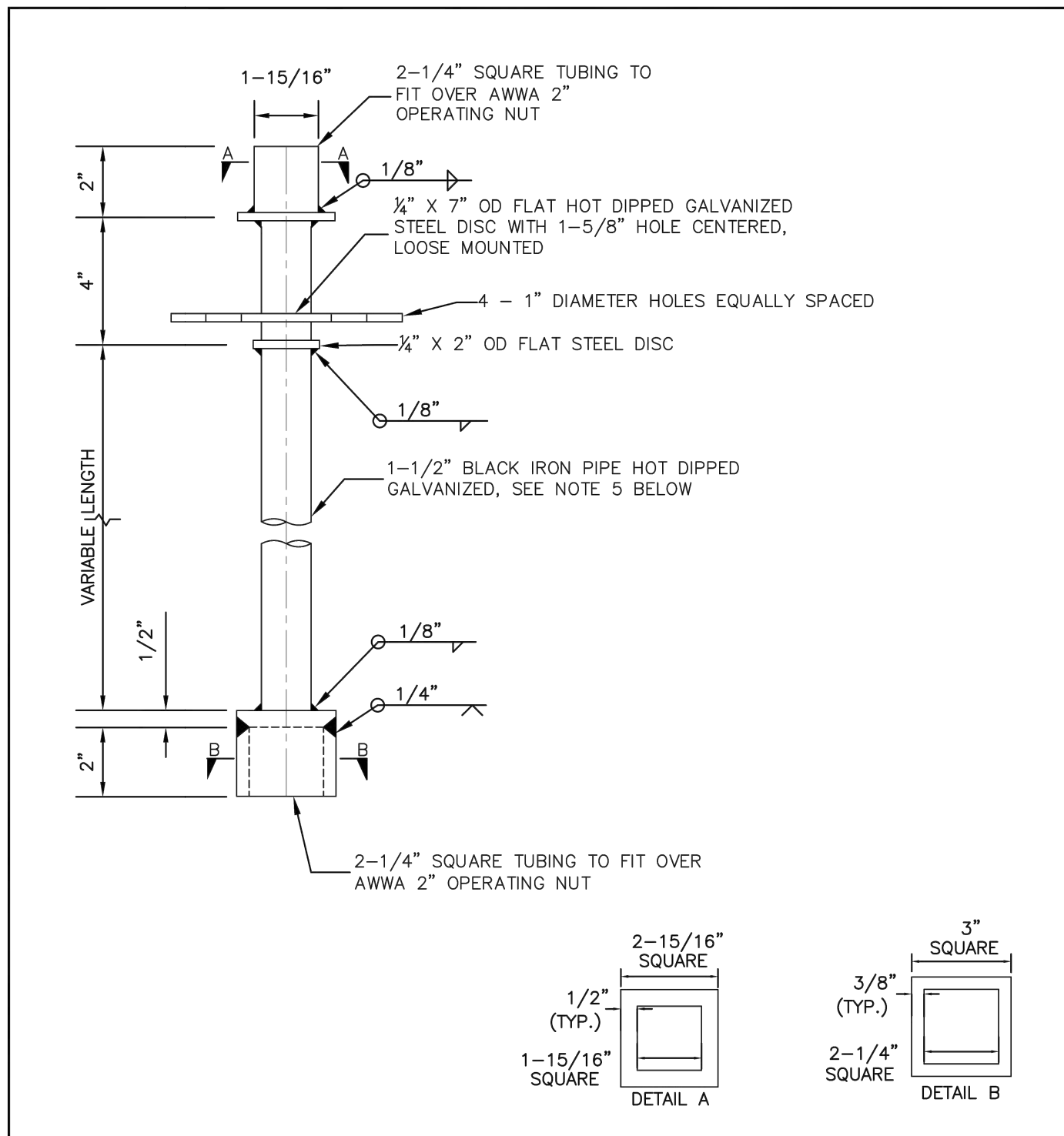
LIST OF MATERIALS

ITEM	DESCRIPTION	MANUFACTURER	MODEL
1	10" HEAVY VALVE BOX, MARK V, RIM CLASS 35, NO FLG	BINGHAM AND TAYLOR	CUL10RHVY
2	8" VALVE WELL SDR-35 PVC PIPE	VINYL TECH, N.A.P.C.O., NORTHERN PIPE PRODUCTS, OR APPROVED EQUAL	
3	10" HEAVY LID WITH 4" SKIRT, MARK V, WATER RIM CLASS 35	BINGHAM AND TAYLOR	CUL10UWY4SCWDW
4	RESILIENT WEDGE GATE VALVE	MUELLER	2362 SERIES

VALVE BOX ASSEMBLY
SOUTH COAST WATER DISTRICT

REVISION	BY	DATE	APPROVED	DATE	STD. NO.
ORIGINAL					W-6
UPDATE		2014	CHIEF ENGINEER		
UPDATE	TK	2022	APPROVED DIRECTOR OF OPERATIONS		

SHEET 2 OF 3



- NOTES:**
1. FABRICATE EXTENSION TO FIELD MEASUREMENT - SEE NOTE 2.
 2. NO VALVE STEM EXTENSION SHALL BE LESS THAN 2 FEET IN LENGTH. TERMINATE EXTENSION 24" FROM FINISHED GRADE.
 3. PROVIDE ADDITIONAL SPACER PLATE WHEN DISTANCE TO BOTTOM SOCKET EXCEEDS 5 FEET.
 4. EXTENSION STEM SHALL NOT BE ATTACHED/BOLTED TO OPERATING NUT OF THE VALVE.
 5. EXTENSION STEMS SHALL BE ROUND OR SQUARE STEEL BAR STOCK OF SOLID DESIGN (NO PINNED COUPLINGS, HOLLOW TUBE, OR PIPE PERMITTED).
 6. VALVES DEEPER THAN 4 FEET REQUIRE A VALVE STEM EXTENSION.

VALVE EXTENSION STEM
SOUTH COAST WATER DISTRICT

REVISION	BY	DATE	APPROVED	DATE	STD. NO.
ORIGINAL					W-6
UPDATE		2014	CHIEF ENGINEER		
UPDATE	TK	2022	APPROVED DIRECTOR OF OPERATIONS		

SHEET 3 OF 3

Zoning: CanningK 9/14/2022
 Building&Safety: Roshanak Amirazizi 9/14/2022
 Permits: BNR21-0604- ELE22-0113- PLB22-0127

**County of Orange - OC Public Works
OC Development Services
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**Hadi Tabatabaee
BUILDING OFFICIAL**

NO.	DATE	DESCRIPTION	BY
-	-	-	-
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Los Angeles Ontario Sacramento San Diego San Francisco Boise Dallas Denver Phoenix Portland

JACOB VANDERVIS R.C.E. No. C46301 3/2/22 DATE

PROJECT NUMBER: ME0381

ENGINEER / DESIGNER: TAIT

PROJECT MANAGER: DM

CHECKED BY: JV

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

**PRIVATE DOMESTIC WATER AND SEWER PLAN
WATER DETAILS**

SCALE: SEE ON SHEET

DRAWN BY: TAIT

DATE: 3/2/2022

DRAWING: ME0381

SHEET NO.: 10

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Zoning: CanningK 9/14/2022

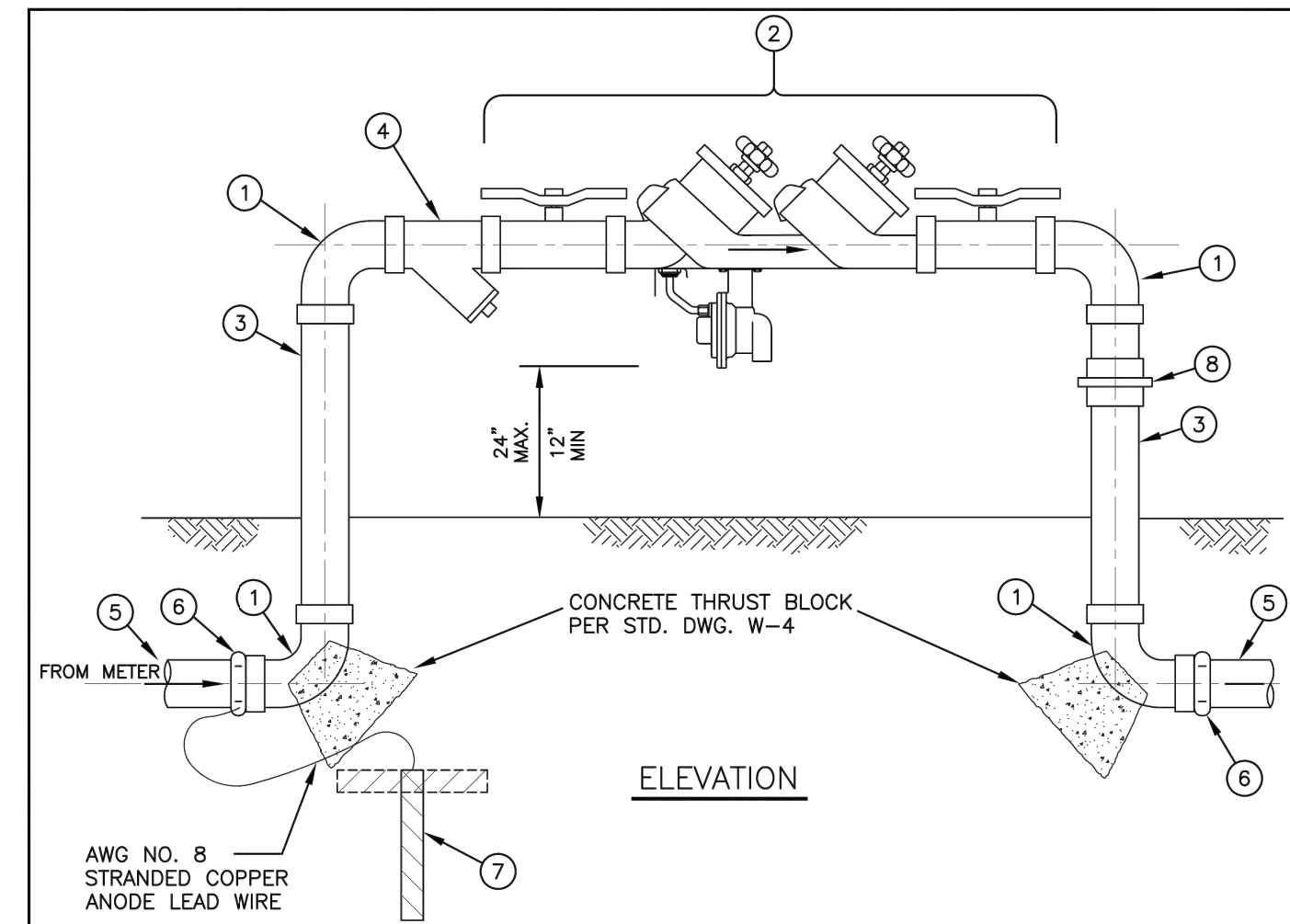
Building&Safety: Roshanak Amirazizi 9/14/2022

Permits: BNR21-0604- ELE22-0113- PLB22-0127

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**Hadi Tabatabaee
BUILDING OFFICIAL**



- NOTES:**
1. NOTIFY DISTRICT PRIOR TO INSTALLATION OF UNIT.
 2. INSTALLATION SHALL COMPLY WITH THE LATEST PLUMBING CODES AND APPLICABLE LOCAL AGENCY REQUIREMENTS. THE DEVICE SHALL BE LEAD FREE FOR DOMESTIC SERVICE.
 3. UPON COMPLETION OF THE INSTALLATION OF THE DEVICE, A TEST SHALL BE PERFORMED AND A CERTIFICATE OF ADEQUACY AND OPERATIONAL COMPLIANCE SHALL BE FURNISHED TO SCWD. THE TEST SHALL BE PERFORMED BY A TESTING AGENCY CERTIFIED BY THE ORANGE COUNTY ENVIRONMENTAL HEALTH AGENCY.
 4. PLACE ANODE AT LEAST 2" FROM COPPER TUBING.
 5. DEVICE SHALL NOT BE LOCATED WITHIN THE PUBLIC RIGHT OF WAY, BUT SHALL BE SET BACK AT LEAST 1 FOOT BEHIND RIGHT OF WAY ON PRIVATE PROPERTY.
 6. NO CONNECTIONS ALLOWED BETWEEN THE METER AND THE DEVICE.

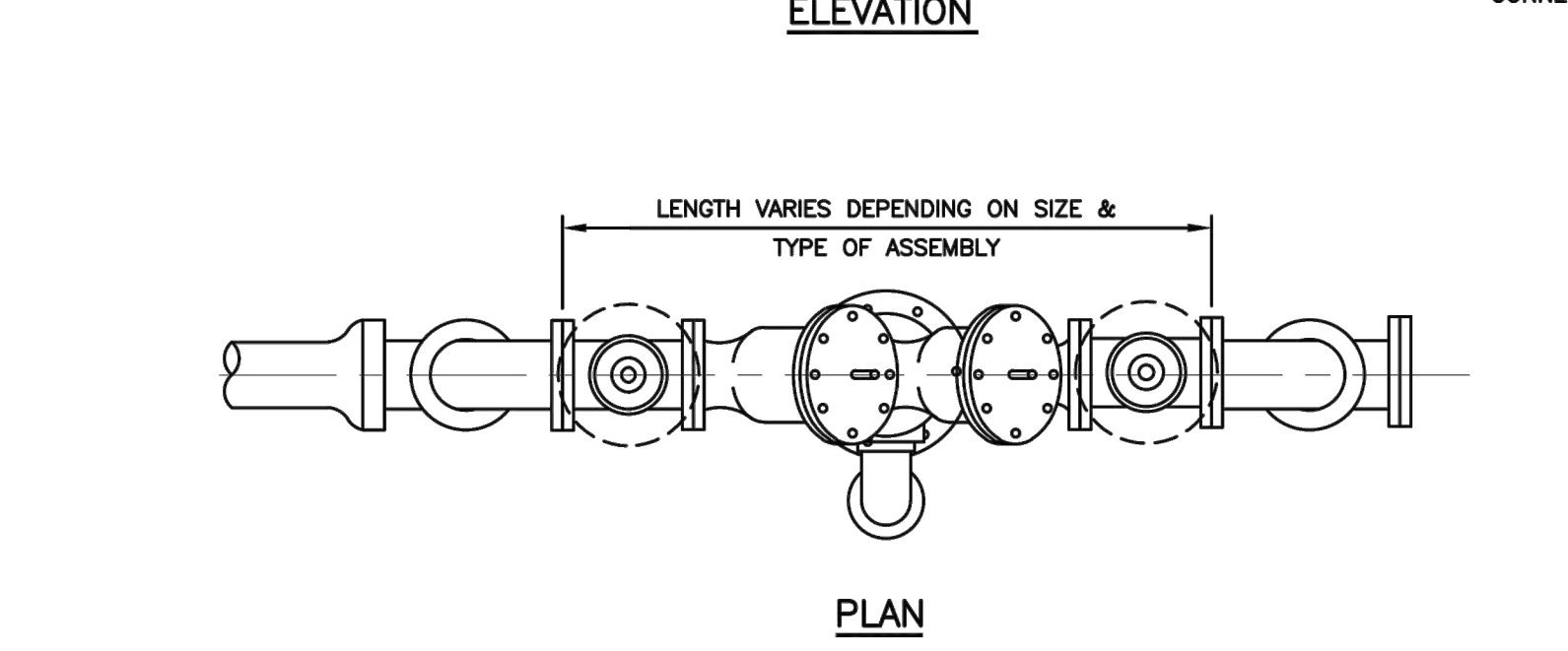
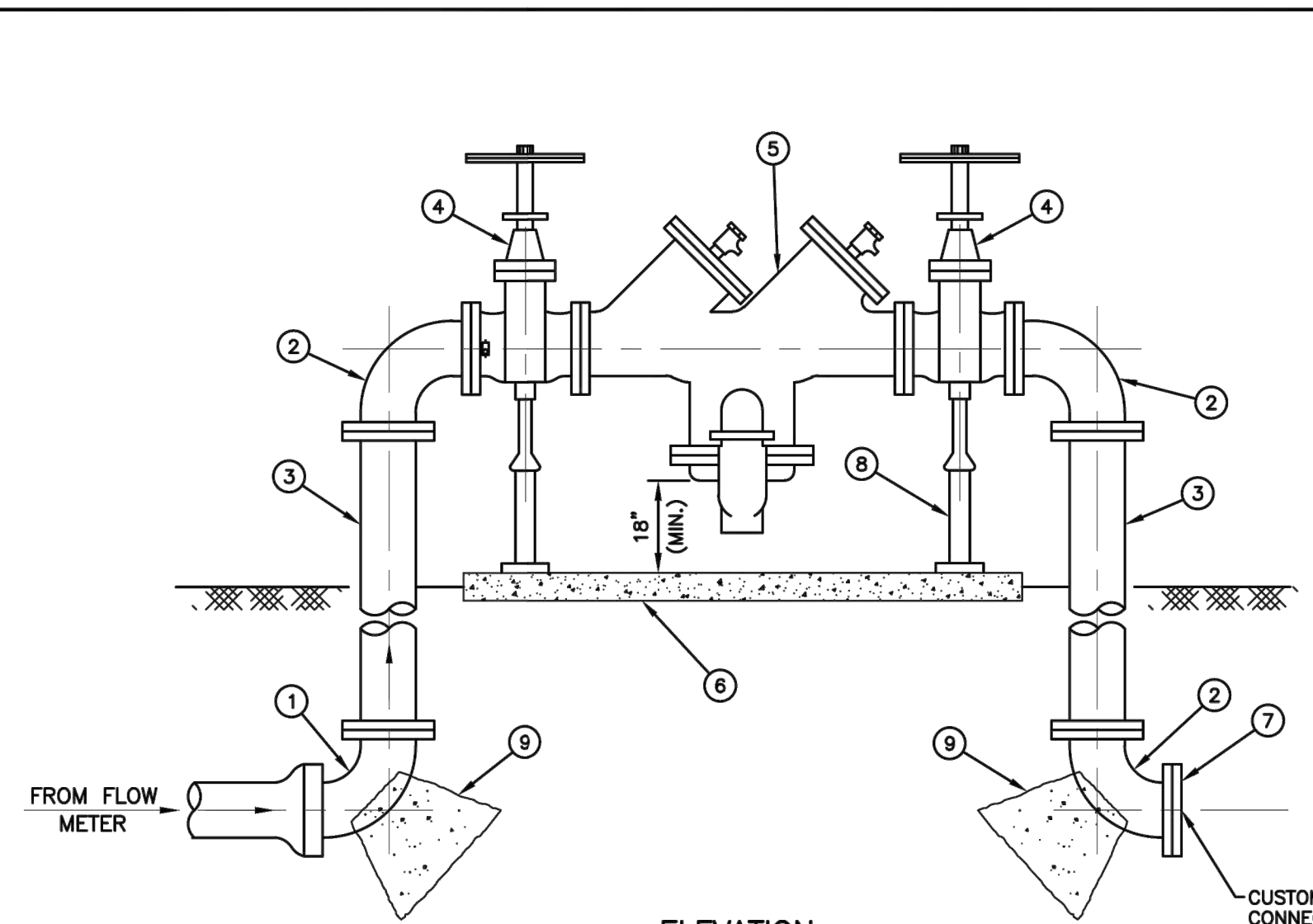
LIST OF MATERIALS

ITEM	DESCRIPTION	MANUFACTURER	MODEL
1	FNTX X FNTX BRASS 90° ELL		
2	USC HYDRAULIC INSTITUTE APPROVED/LISTED BACKFLOW PREVENTION ASSEMBLY		
3	THREADED BRASS NIPPLE		
4	WYE STRAINER, BRONZE		
5	TYPE K COPPER TUBING	MUELLER STREAMLINE CERRO FLOW PRODUCTS	ASTM-B88
6	HARD COPPER WITH MALE ADAPTOR		
7	ZINC ANODE AND LEAD WIRE	NORTHTOWN	NO 8 STRANDED WIRE
8	BRASS UNION		

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY; SIZES 3/4" THROUGH 2 1/2"

REVISION	BY	DATE	DESCRIPTION	STANDARD NO.
ORIGINAL				
UPDATE	TK	2014	APPROVED CHIEF ENGINEER	W-14
UPDATE	TK	2020	APPROVED DIRECTOR OF OPERATIONS	

SHEET 1 OF 1



MATERIALS

1	FLG x PD D.I.P. 90° ELL	33 11 11
2	FLG x FLG D.I.P. 90° ELL	33 11 11
3	FLG x FLG D.I.P. SPOOL	33 11 11
4	FLG x FLG OS&Y RISING STEM RW GATE VALVE	33 12 12
5	USC-LISTED REDUCED-PRESSURE (RP) BACKFLOW PREVENTION ASSEMBLY	33 12 09
6	CLASS B (520-A-2500) CONCRETE PAD WITH WIRE-MESH REINFORCEMENT	03 30 00
7	D.I.P. BLIND FLG	33 11 11
8	ADJUSTABLE PIPE SUPPORT SEE STD. DWG. W-19	33 05 38
9	CONCRETE THRUST BLOCK PER STD. DWG. W-4	03 30 00

- NOTES:**
1. REQUIRED ON ALL IRRIGATION SERVICES USING POTABLE WATER.
 2. NOTIFY DISTRICT PRIOR TO INSTALLATION OF UNIT.
 3. INSTALLATION SHALL COMPLY WITH THE LATEST PLUMBING CODE AND APPLICABLE LOCAL AGENCY REQUIREMENTS.
 4. UPON COMPLETION OF THE INSTALLATION OF THE DEVICE, A TEST SHALL BE PERFORMED AND A CERTIFICATE OF THE ADEQUACY AND OPERATIONAL COMPLIANCE SHALL BE FURNISHED TO SCWD. THE TEST SHALL BE PERFORMED BY A TESTING AGENCY CERTIFIED BY THE ORANGE COUNTY HEALTH DEPARTMENT.

SOUTH COAST WATER DISTRICT STANDARD DRAWING

2014	REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY; SIZES 3" AND LARGER	W-15	SHEET 1 OF 1
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NO.	DATE	DESCRIPTION	BY

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JACOB VANDERVIS R.C.E. No. C46301 3/2/22 DATE

PROJECT NUMBER: ME0381
ENGINEER / DESIGNER: TAIT
PROJECT MANAGER: DM
CHECKED BY: JV

DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

PRIVATE DOMESTIC WATER AND SEWER PLAN
WATER DETAILS

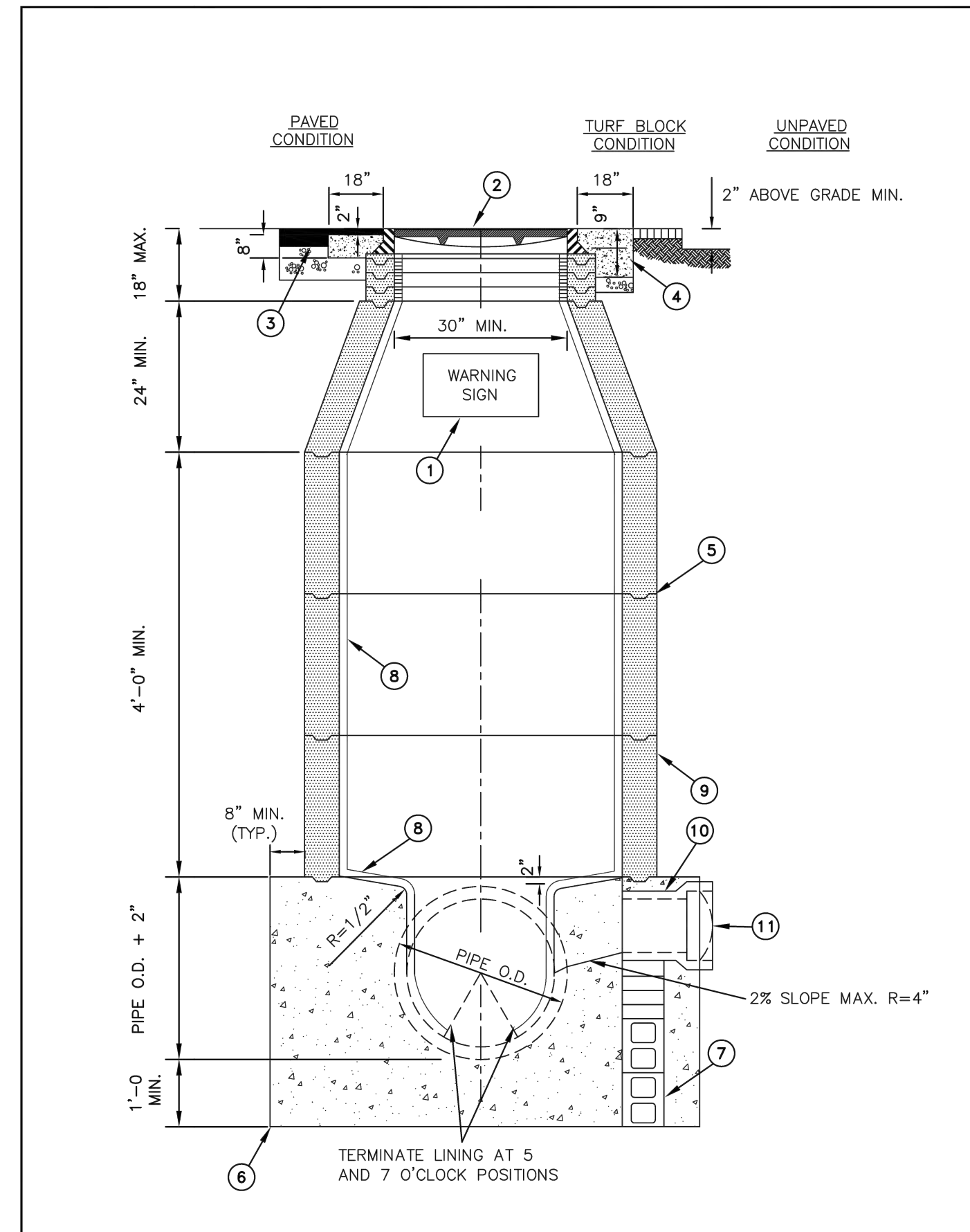
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DRAWN BY:	TAIT
DATE:	3/2/2022
DRAWING:	ME0381
SHEET NO.:	11

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Zoning: CanningK 9/14/2022

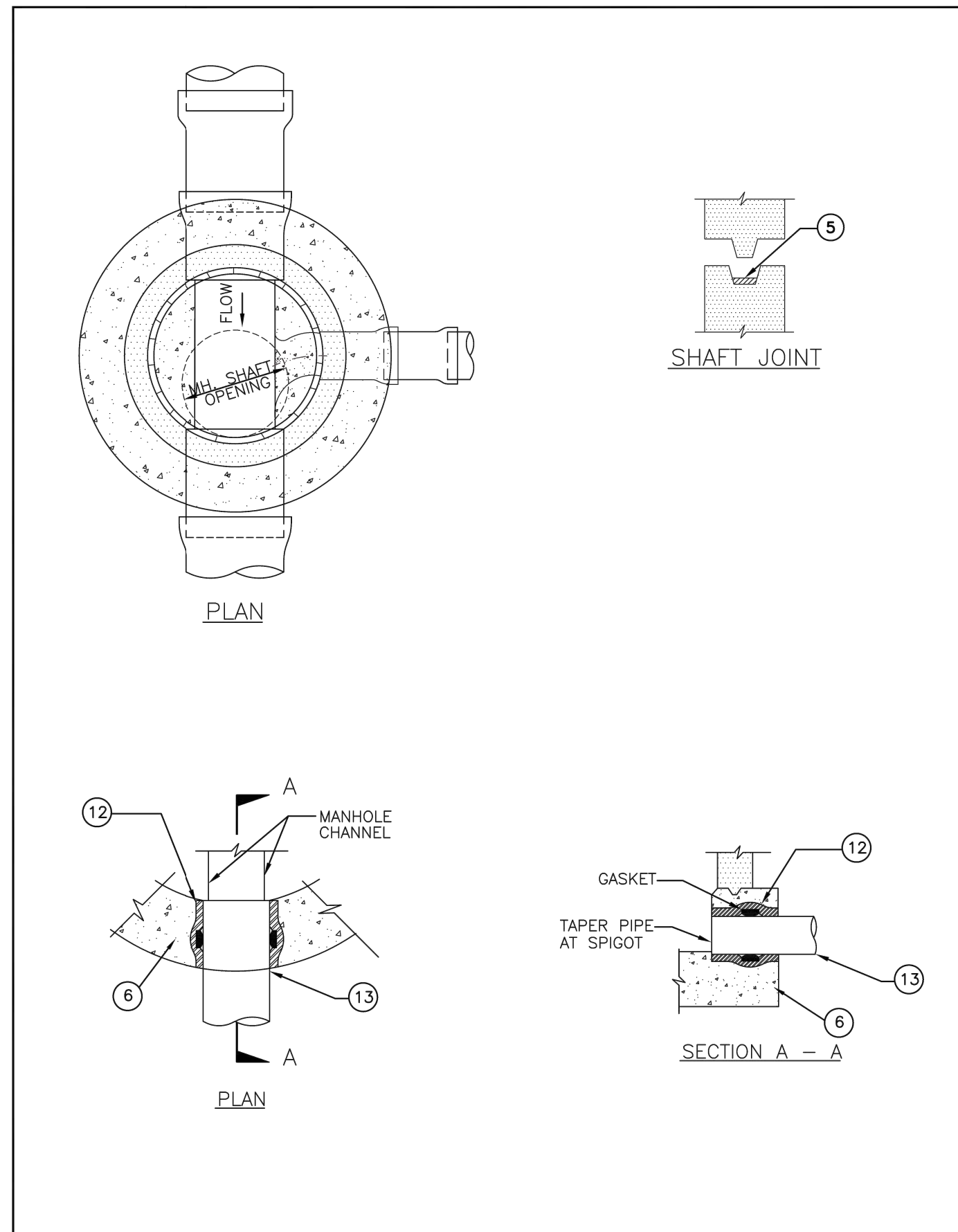
Building&Safety: Roshanak Amirazizi 9/14/2022

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REVISION		BY	DATE	APPROVED		DATE	STD. NO.
ORIGINAL			2014	APPROVED	2014		S-1
UPDATE	TK		2020	CHIEF ENGINEER			
UPDATE				DIRECTOR OF OPERATIONS			

SEWER MANHOLE
SOUTH COAST WATER DISTRICT
SHEET 1 OF 3



REVISION		BY	DATE	APPROVED		DATE	STD. NO.
ORIGINAL			2014	APPROVED	2014		S-1
UPDATE	TK		2020	CHIEF ENGINEER			
UPDATE				DIRECTOR OF OPERATIONS			

SEWER MANHOLE
SOUTH COAST WATER DISTRICT
SHEET 2 OF 3

- NOTES:**
- PLACE TWO HALF MOON SHAPED PLYWOOD COVERS (3/4" THICK MIN.) ON BOTTOM OF MANHOLE AFTER SHAFTS HAVE BEEN SET TO KEEP DEBRIS FROM ENTERING SEWER. REMOVE PLYWOOD PRIOR TO FINAL ACCEPTANCE.
 - ALL INLETS AND OUTLETS SHALL BE SUPPORTED WITH CONCRETE BLOCK AND/OR BRICK SUPPORTS, PRIOR TO POURING MANHOLE BASE TO PREVENT PIPE MOVEMENT DURING CONSTRUCTION OF MANHOLE BASE.
 - ALL PRECAST CONCRETE MANHOLE SHAFTS SHALL BE MANUFACTURED PER SCWD STD. SPEC. SECTION 03461.
 - BASE SHALL BE POURED AGAINST UNDISTURBED SOIL. IF SOIL IS DISTURBED, OR IF GROUND WATER EXISTS, CRUSHED ROCK SHALL BE INSTALLED BENEATH BASE PER SCWD STD. SPEC. SECTION 02223.
 - CONCRETE BASE SHALL BE CONCRETE CLASS "A", CAST IN PLACE MONOLITHICALLY.
 - PERFORMED COLD-APPLIED READY-TO-USE PLASTIC JOINT SEALING COMPOUND SHALL BE USED FOR ALL MANHOLE JOINTS. REMOVE EXCESS FROM SURFACES INSIDE MANHOLE.
 - MANHOLES SHALL NOT BE PLACED IN SIDEWALKS OR IN CONCRETE DRIVEWAY APRONS.
 - MANHOLES DEEPER THAN 20'-0" TO TOP OF PIPE SHALL BE DESIGNED BY A REGISTERED CIVIL ENGINEER.
 - PAINTED WARNING SIGN SHALL HAVE WHITE BACKGROUND AND BLACK LETTERS.
 - MANHOLE MUST BE CONSTRUCTED AS SHOWN HEREON REGARDLESS OF CONSTRUCTION PHASE. NO INTERIM CONDITIONS WILL BE ACCEPTED.
 - STREET REHABILITATION AND/OR ASPHALT OVERLAY PROJECTS SHALL NOT INTERRUPT THE SERVICE FUNCTION OF ANY SEWER MANHOLES AND EMERGENCY ACCESS SHALL BE MAINTAINED AT ALL TIMES. MANHOLES THAT ARE PAVED OVER DURING CONSTRUCTION SHALL BE RAISED TO GRADE NO LATER THAN THREE DAYS AFTER THEY WERE PAVED OVER.

LIST OF MATERIALS			
ITEM	DESCRIPTION	MANUFACTURER	MODEL
1	STENCILED WARNING SIGN WITH WHITE BACKING. SEE SCWD STD. DWG. S-3		
2	36" DIA. CAST IRON TRAFFIC RATED FRAME AND COVER, MARKED WITH "SEWER" AND "SCWD"	ALHAMBRA FOUNDRY	A-1251
3	ROUND CLASS "B" CONCRETE COLLAR AND AC PAVEMENT		SFB 1251-6
4	SQUARE CLASS "B" CONCRETE PAD REINFORCED WITH 6" X 6" W.W.F. 10 GAUGE CENTERED IN CONCRETE		
5	SHAFT JOINT WITH JOINT SEALING COMPOUND. SEE NOTE 6.		
6	CAST IN PLACE CONCRETE MANHOLE BASE. SEE NOTES 6 AND 8.		
7	CONCRETE BLOCK AND/OR BRICK SUPPORT. SEE NOTE 2.		
8	MANHOLE LINER (WHERE REQUIRED). APPLY NON-SKID SURFACE ON TOTAL SHELF AREA.		
9	PRECAST CONCRETE MANHOLE SHAFT, MIN. WALL THICKNESS: 48" DIA. MANHOLE 6" WALL THICKNESS 60" DIA. MANHOLE 6" WALL THICKNESS 72" DIA. MANHOLE 7" WALL THICKNESS	AMERON, B&W PRECAST, MAR-CON PRODUCTS, SOUTHWEST CONCRETE PRODUCTS, UNDERGROUND PRECAST SOLUTIONS, UTILITY VAULT, VERTICAL CONCRETE OLD CASTLE PRECAST	
10	16" LONG VCP INSTALLED THROUGH MANHOLE BASE, FOLLOWED BY A 12" LONG VCP. FOR PVC PIPE REFER TO DETAILS HEREON		
11	TEMPORARY PLUG		
12	FOR SDR-35 PVC PIPE: GASKETED SDR-35 (SDR 26 FOR 15" THRU 18") PVC MANHOLE COUPLING WITH EPOXY RESIN SAND COATING ON EXTERIOR SURFACE. FOR C900 PVC DR 14 PIPE: GASKETED C900 PVC DR 14 MANHOLE COUPLING WITH EPOXY RESIN SAND COATING ON EXTERIOR SURFACE		
13	SDR-35 PVC PIPE	CERTAINTEED CORPORATION, DIAMOND PLASTICS, NORTH AMERICAN SPECIALTY PRODUCTS, PACIFIC WESTERN PIPE, VINYLTECH	
	C900 PVC DR 14	IPEX, NORTH AMERICAN DIAMOND PLASTICS, NORTH AMERICAN SPECIALTY PRODUCTS, PACIFIC WESTERN PIPE, VINYLTECH	

REVISION		BY	DATE	APPROVED		DATE	STD. NO.
ORIGINAL			2014	APPROVED	2014		S-1
UPDATE	TK		2020	CHIEF ENGINEER			
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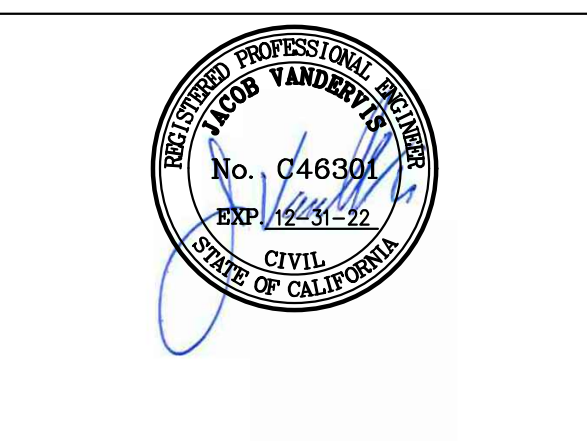
SEWER MANHOLE
SOUTH COAST WATER DISTRICT
SHEET 3 OF 3

NO.	DATE	DESCRIPTION	BY
-	-	-	-
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PROJECT NUMBER:
ME0381
 ENGINEER / DESIGNER:
TAIT
 PROJECT MANAGER:
DM
 CHECKED BY:
JV

DANA POINT HARBOR REVITALIZATION
 Harbor Drive
 Dana Point, CA 92629
 PRIVATE DOMESTIC WATER AND SEWER PLAN
 SEWER DETAILS



SCALE: SEE ON SHEET
 DRAWN BY: TAIT
 DATE: 3/2/2022
 DRAWING: ME0381
 SHEET NO.: 12

Zoning: CanningK 9/14/2022

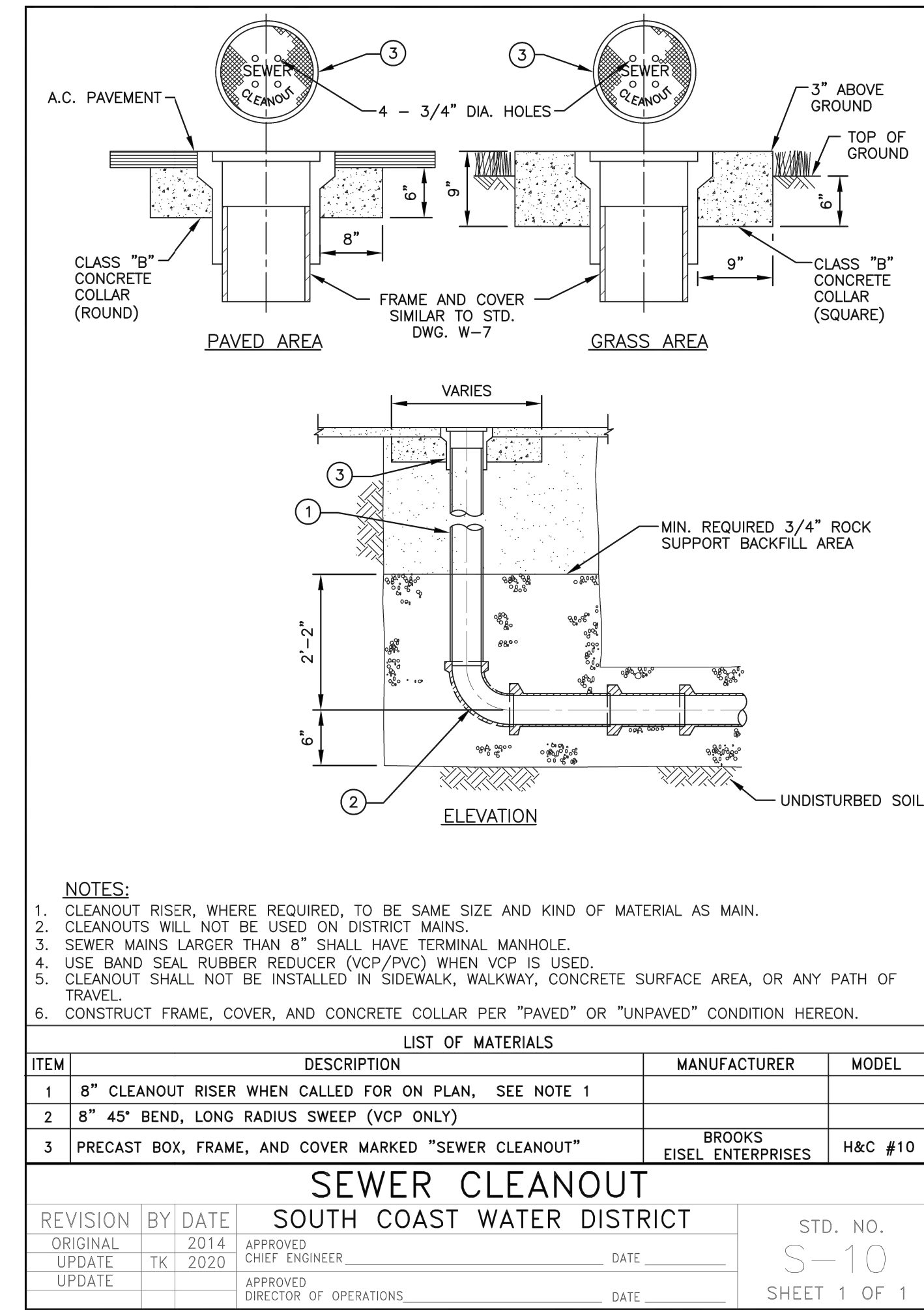
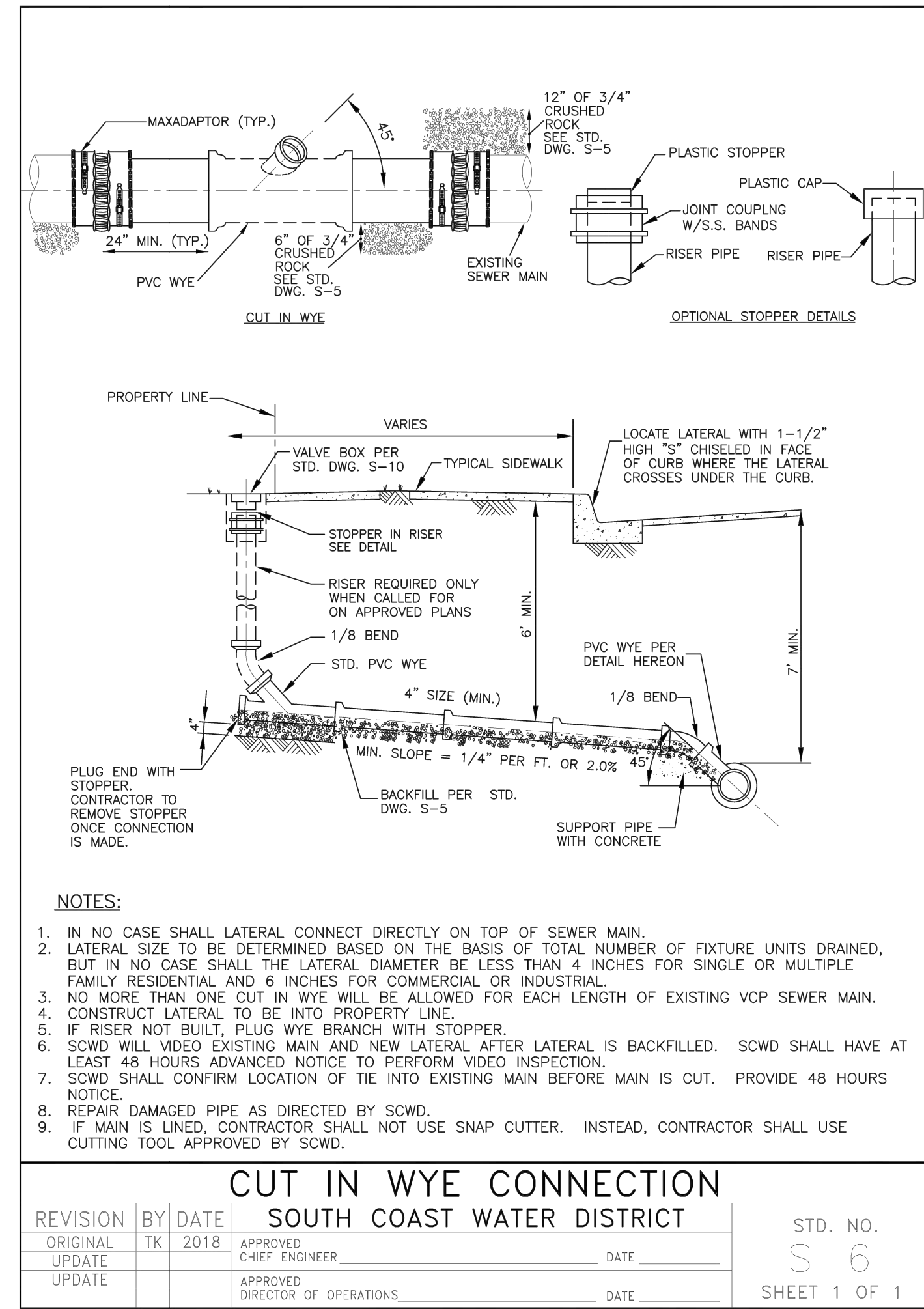
Building&Safety: Roshanak Amirazizi 9/14/2022

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PROJECT NUMBER:
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TAIT

PROJECT MANAGER:
DM

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DANA POINT HARBOR REVITALIZATION

Harbor Drive
Dana Point, CA 92629

**PRIVATE DOMESTIC WATER AND SEWER PLAN
SEWER DETAILS**

SCALE: SEE ON SHEET

DRAWN BY: TAIT

DATE: 3/2/2022

DRAWING: ME0381

SHEET NO.: 13