THE PORT OF LOS ANGELES
425 S. Palos Verdes Street Post Office Box 151 San Pedro, CA 90733-0151 TEL 310-SEA-PORT portoflosangeles.org

DATE: **April 29, 2025**

SUBJECT: **AMENDMENT # 2 – DESIGN SERVICES FOR BERTH 126-129 WHARF REDEVELOPMENT**

The Harbor Department's Design Services for Berth 126-129 Wharf Redevelopment Request for Proposals (RFP) is amended through this notification as described below:

~~Please click on the link to view the Concept Drawings.~~

~~Conceptual Drawings - B121-131~~

Please review Conceptual Drawings as attachment.

It is the responsibility of all proposers to review the Department's website and www.rampla.org for any RFP revisions or answers to questions prior to submitting a proposal in order to ensure their proposal is complete and responsive.

THE PORT
OF LOS ANGELES

ENGINEERING DIVISION

BERTH 121-131 WHARF UPGRADE AND BACKLAND IMPROVEMENTS PHASE I

SPECIFICATION NO. XXXX

PREPARED BY:

AECOM USA, Inc. | AECOM

999 Town & Country Road, - Orange, CA, 92868
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NO.	DATE	DRAWN	REVISIONS –		APP'D

CONSTRUCTION DIVISION		R/W	ARCH	SPECS	CHIEF OF DESIGN
INSPECTION	SURVEY	CIVIL	ELEC	PR MNGR	ASSISTANT CHIEF HARBOR ENGINEER
CHIEF HARBOR ENGINEER – CONST DIV.		STRUCT	MECH		CHIEF HARBOR ENGINEER DATE

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

COVER SHEET

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER T-01

THE PORT OF LOS ANGELES

BERTH 121-131 WHARF UPGRADE AND BACKLAND IMPROVEMENTS PHASE I

SPECIFICATION NO. XXXX

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1-XXXX GP-06	GRADING AND PAVING SECTIONS**		
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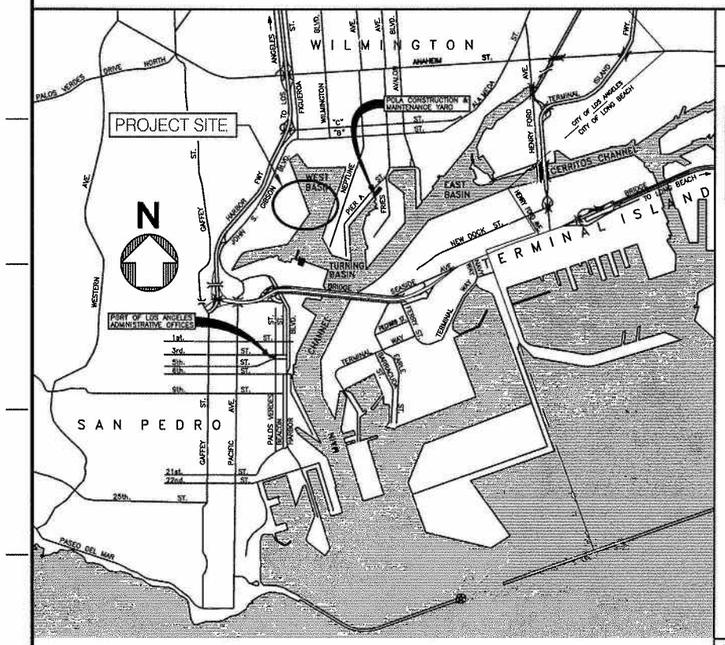
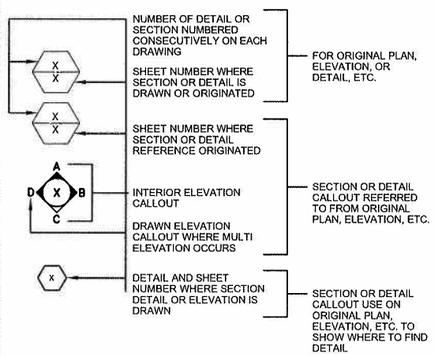
**NOT INCLUDED WITH THIS SUBMITTAL



VICINITY MAP

MILES 0 5 1

REFERENCING SYSTEM



*REFERENCE DRAWINGS ARE AVAILABLE FOR REVIEW IN THE L.A.H.D. CHIEF HARBOR ENGINEER'S OFFICE 425 SOUTH PALOS VERDES STREET SAN PEDRO, CALIFORNIA 90733

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DATE: OCTOBER 30, 2009
DRAWN: D. NGUYEN
CHECKED:
DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

VICINITY MAP & INDEX OF DRAWINGS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER T-02

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	ENLARGED PLAN - SHT 1 OF 2

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

INDEX OF DRAWINGS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
T-03

GENERAL NOTES:

1. VERTICAL DATUM IS REFERENCED TO MEAN LOWER LOW WATER (MLLW). HORIZONTAL COORDINATES ARE PER NAD 83, CALIFORNIA ZONE 5 SYSTEM. SEE DWG NO. C-01 FOR COORDINATE CONTROL.
2. ATTENTION IS DIRECTED TO THE SPECIFICATIONS WHERE BIDDERS ARE REQUIRED TO EXAMINE AND JUDGE, AS THEIR OWN RESPONSIBILITY, THE LOCATION, PHYSICAL CONDITIONS, AND SURROUNDINGS OF THE PROPOSED WORK.
3. SUBSTRUCTURE RECORDS, REFERENCE DRAWINGS, AND REPORTS MAY BE REVIEWED IN THE LAHD CHIEF HARBOR ENGINEER'S OFFICE LOCATED AT 425 S. PALOS VERDES ST., SAN PEDRO, CALIFORNIA.
4. WHERE NEW SUBSURFACE IMPROVEMENTS CROSS EXISTING SUBSTRUCTURES, THE CONTRACTOR SHALL TRENCH WITH EXTREME CAUTION TO LOCATE ALL ACTIVE AND IDLE SUBSTRUCTURES AT THESE CROSSINGS PER SPEC SECTION 02221 3.10 POTHOLING. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ALL SUBSTRUCTURES DAMAGED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.
5. SAFE CONSTRUCTION PRACTICES DURING EXCAVATION INCLUDING PROPER SLOPES AND SHORING ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA AND OTHER APPLICABLE SAFETY REGULATIONS. INFORMATION REGARDING SOIL CONDITIONS AND COMMENTS ON SHORING ARE CONTAINED IN THE SOIL REPORT FOR THE SITE WHICH IS AVAILABLE FOR REVIEW AT THE ENGINEER'S OFFICE.
6. PULL BOXES, NEW STORM DRAIN MAINTENANCE HOLES, CATCH BASINS AND VALVE COVERS SHALL BE DESIGNED FOR A 100 KIP WHEEL LOADING + 25% IMPACT (125 KIPS) ON A 2' x 2'-6" WHEEL IMPRINT AREA, UNLESS NOTED OTHERWISE ON THE PLANS. ALLOWABLE SOIL PRESSURE AT THE BOTTOM OF STRUCTURE SHALL MEET CODE REQUIREMENTS. THESE STRUCTURES SHALL BE DESIGNED BY A CALIFORNIA REGISTERED CIVIL ENGINEER AND CALCULATIONS BEARING THE ENGINEER'S SIGNATURE AND STAMP SHALL BE SUBMITTED BY THE CONTRACTOR TO THE DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.
7. THE LOCATION OF EXISTING UTILITIES AND SUBSTRUCTURES SHOWN HEREIN HAVE BEEN TAKEN FROM AVAILABLE RECORDS. THE PORT OF LOS ANGELES DOES NOT WARRANT THE COMPLETENESS OR CORRECTNESS OF THE LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING SUBSTRUCTURES THAT ARE TO REMAIN. SHOULD UTILITIES BE ENCOUNTERED THAT ARE NOT INDICATED, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. THE REMOVAL OF ABANDONED IN PLACE SUBSTRUCTURES SHALL FOLLOW THE REMOVAL AND ABANDONMENT PROCEDURES SHOWN ON RB-01. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN AN UNDERGROUND SERVICE ALERT INQUIRY I.D. NUMBER BY CALLING 1-800-422-4133. TWO WORKING DAYS SHALL BE ALLOWED AFTER THE I.D. NUMBER IS OBTAINED AND BEFORE THE EXCAVATION WORK IS STARTED SO THAT UTILITY OWNERS CAN BE NOTIFIED.
8. GASES IN EXCAVATIONS NEAR CHEMICAL & OIL TERMINALS, PIPELINES & TANK FARMS MAY BE EXPLOSIVE AND TOXIC. THE CONTRACTOR SHALL COMPLY WITH THE CONSTRUCTION SAFETY ORDERS OF THE STATE DIVISION OF INDUSTRIAL SAFETY.
9. A COPY OF THE SOILS REPORT AND TEST BORINGS IS AVAILABLE AT THE LOS ANGELES CITY HARBOR DEPARTMENT, ENGINEERING AND CONSTRUCTION DIVISION, 425 SOUTH PALOS VERDES STREET SAN PEDRO, CA 90733 TEL NO. (310) 732-3639.
10. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE WITH THE VARIOUS COMPANIES AND AGENCIES WHO MAY BE AFFECTED BY THIS PROJECT. THE CONTRACTOR SHALL OBTAIN THE REQUIRED PERMITS.
11. THE CONTRACTOR, IN CONFORMANCE TO LOS ANGELES CITY ORDINANCE NO. 150,478, SHALL POTHOLE EXISTING SUBSURFACE INSTALLATIONS CARRYING UNSTABLE SUBSTANCES TO DETERMINE THEIR LOCATIONS AND ELEVATIONS PRIOR TO COMMENCING EXCAVATION.
12. THE CONTRACTOR WILL ADHERE TO ALL SAFETY CODES, REGULATIONS AND SPECIFICATIONS FOR THE DURATION OF THIS CONTRACT.
13. CONTRACTOR SHALL COMPLETE ALL WORK SHOWN ON THE PLANS AND IN THE SPECIFICATIONS, UNLESS INDICATED AS NOT IN CONTRACT (N.I.C.)
14. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER AND OTHER CONTRACTORS FOR WORK REQUIRED BY OTHER CONTRACTORS (SEWER, GAS LINE, TELEPHONE, ETC.) WITHIN THE PROJECTS LIMIT. WORK OUTSIDE THE PROJECT LIMIT SHOULD BE COORDINATED AND APPROVED BY THE ENGINEER.
15. GROUNDWATER ELEVATIONS WERE MEASURED AT TIME OF SOIL BORINGS. THE GROUNDWATER ELEVATION IS EXPECTED TO VARY WITH TIDE AND SEASON.
16. THE CONTRACTOR SHALL NOTE THE PRESENCE OF DWP POLES AND OVERHEAD POWER LINES WITHIN THE PROJECT SITE AND SHALL COMPLY WITH ALL OSHA AND OTHER APPLICABLE SAFETY REGULATIONS WHEN WORKING IN THEIR VICINITY.
17. TRAFFIC DISRUPTION OUTSIDE AND WITHIN THE TERMINAL SHALL BE KEPT TO A MINIMUM BY THE CONTRACTOR DURING CONSTRUCTION. ALL LANE CLOSINGS AT ROAD CROSSINGS SHALL BE COORDINATED BEFOREHAND WITH THE ENGINEER.
18. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH) ADOPTED BY THE BOARD OF PUBLIC WORKS OF THE CITY OF LOS ANGELES.

LEGEND:

	EXISTING	PROPOSED
RAIL ALIGNMENT		
STORM DRAIN LINE	SD	PROPOSED SD PIPE
SANITARY SEWER LINE	SS	
WATER LINE	W	PROPOSED WATER
ELECTRICAL LINE	E	PROPOSED ELEC
NATURAL GAS LINE	G	
TELEPHONE LINE	T	PROPOSED TEL
OIL LINE	O	
CONTOUR (PAVEMENT)	17	16.0
HIGH VOLTAGE		HV
FENCE ONLY		
KRAIL WITH FENCE		
EDGE OF PAVEMENT		
PROPOSED TRENCH DRAIN W/ RCP BELOW		
PROPOSED RCP		
TRENCH DRAIN		
BACKFLOW PREVENTER		
CASING VENT	CV	
CATCH BASIN		
FENCE, CHAIN LINK		
FIRE HYDRANT (ABOVE GRD)		
GUARD RAIL		
GUY WIRE		
K-RAIL BARRIER		
HIGH MAST LIGHT POLE		
LIGHT POLE		
LIGHT POLE, CANTILEVER		
MANHOLE		
POWER POLE		
PULL BOX		
RETAINING WALL		
SIGN		
SIGNAL, CANTILEVER TRAFFIC		
SIGNAL, PEDESTRIAN		
SIGNAL, TRAFFIC		
SLOPE		TOP OF SLOPE / TOE OF SLOPE
PALM TREE		
TREE		
VEGETATION		
UTILITY BOX		
WATER METER OR VALVE BOX		
PROJECT LIMIT		
ELECTRICAL PULL BOXES		

	EXISTING	PROPOSED
HIGH MAST POLE & FH		
WHITE PAVEMENT MARKINGS TYPE 1 (3.05m) ARROW PER CALTRANS STD. PLAN A24A		
HIGH VOLTAGE PULL BOX		
ELECTRIC/TELEPHONE		E/T
TELEPHONE		T
WATER		WATER
LADDER		L
STOWAGE PIN		
FENDER		
MOORING BIT		
POWER FOR FUTURE CRANE BUS BAR		P
CRANE INTERCHANGE FOR FUTURE BUS BAR		CI
CRANE POWER		CP

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GENERAL NOTES AND LEGEND

THE PORT OF LOS ANGELES
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425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER T-04

ABBREVIATIONS:

A	AMPERE, AMPS
AA	AIR AMBIENT
ABD, ABND	ABANDONED
ABAND	ABANDONED
ABV	ABOVE
AC	ASPHALTIC CONCRETE OR ALTERNATING CURRENT
ACP	ASBESTOS CONCRETE PIPE
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AIC	AMPS INTERRUPTING CURRENT
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
APPD	APPROVED
APPROX	APPROXIMATELY
AR	AIR RELEASE
ASB, ASBEST.	ASBESTOS
ASPH	ASPHALT CONCRETE
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT	AMPERE TRIP
AVE	AVENUE
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
BC	BEGIN CURVE
BD	BOARD
BCR	BEGIN CURVE RADIUS
BCa	BURIED CABLE
BEG	BEGINNING
BET	BETWEEN
BF	BACKFLOW
BKHD	BULKHEAD
BLDG	BUILDING
BM	BENCH MARK
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BVC	BEGINNING OF VERTICAL CURVE
C, CO	CONDUIT, CONDUIT ONLY, OR CLEAN OUT
CCTV	CLOSED CIRCUIT TELEVISION
C&G	CURB AND GUTTER
CAB	CRUSHED AGGREGATE BASE
CB	CATCH BASIN, CIRCUIT BREAKER
CC	CENTER TO CENTER
CFS	CONTAINER FREIGHT STATION
CI	CAST IRON
CIP	CAST IRON PIPE
CJ	CONSTRUCTION JOINT
℄, CL, C/L	CENTERLINE
CLR	CLEAR
CMB	CRUSHED MISCELLANEOUS BASE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
C02	CARBON DIOXIDE
COMM	COMMUNICATION
COMP	COMPUTER
CONC	CONCRETE
COND	CONDUCTOR OR CONDUIT
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUATION
COTG	CLEANOUT TO GRADE
CP	CONTROL POINT, CLAY PIPE
CSG	CASING
CT	CONTAINER TERMINAL
CTB	CEMENT TREATED BASE
CU	COPPER
CU FT	CUBIC FEET
CW	CONTAINER WHARF
D	DRAIN, DEGREE OF CURVATURE
DEG	DEGREE
DEMO	DEMOLISH
DEPT	DEPARTMENT
DET	DETAIL
DESC	DESCRIPTION
DF	DEMAND FACTOR
DI	DUCTILE IRON
DIA	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISC	DISCONNECT
DN	DATA NETWORK FOR COMPUTER
DS	DISTRIBUTION SWITCHBOARD
DW	DOMESTIC WATER
DWG	DRAWING
DWP	DEPARTMENT OF WATER AND POWER
DWP PS	POWER SERVICE
DWP WS	WATER SERVICE
DPW	DEPARTMENT OF PUBLIC WORKS

E	EAST, EASTING
EA	EACH
EC	END CURVE
ECD	ELECTRICAL CONDUIT DUCT
ECR	END CURVE RADIUS
EL, ELEV	ELEVATION
ELEC, ELECT	ELECTRIC OR ELECTRICAL
EMH	ELECTRIC MAINTENANCE HOLE
ENGR	ENGINEER
EOP, EP	EDGE OF PAVEMENT
EQ	EQUAL
EQPT, EQUIP	EQUIPMENT
EST	ESTIMATE
EV	ELECTRICAL VAULT
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EX, EXIST	EXISTING
EXP JT	EXPANSION JOINT
FA	FIRE ALARM
FDN	FOUNDATION
FG	FINISH GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH OR FINISHED
FL, FLL	FLOW LINE, FLANGE, FLOOR
FLEX	FLEXIBLE
FLG	FLANGE
FLP	FLOOD LIGHTING POLE
FM	FORCE MAIN OR FIRE MAIN
FP	FULL PENETRATION GROOVE WELD
FS	FINISHED SURFACE, FUSE SIZE
FT	FOOT OR FEET
FTG	FOOTING
FW	FRESH WATER
G	GAS, GENERAL
GA	GAGE, GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GD	GUARD
GIP	GALVANIZED IRON PIPE
GL	GROUND LINE
GN	GREEN
GND	GROUND
GR	GRADE
GRD	GROUND
GP	GUARD POST, GRADING & PAVING
GPM	GALLONS PER MINUTE
GV	GATE VALVE
GLV	GRAVEL
GWB	GYPSUM WALLBOARD
HC	HOUSE CONNECTION
HD	HARBOR DEPARTMENT
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HGL	HYDRAULIC GRADE LINE
HGT	HEIGHT
HH	HANDHOLE
HMP	HIGH MAST POLE
HORIZ	HORIZONTAL
HP	HIGH PRESSURE
HPG	HIGH PRESSURE GAS
HT	HEIGHT
HV	HIGH VOLTAGE, HORSE VALVE
HVY	HEAVY
HWY	HIGHWAY
HYD	HYDRANT
HZ	HERTZ
IC	INTERCOM, INTERRUPTING CURRENT
I.D.	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH OR INCHES
IND	INDUSTRY
INJ	INJECTION PIPE
INST	INSTRUMENT
INSUL	INSULATE
INT	INTERFERING
INV	INVERT
IP	IRON PIPE
IRR	IRRIGATION
JB	JUNCTION BOX
JCT	JUNCTION
JT	JOINT
JS	JUNCTION STRUCTURE

K	KILO
KCMIL	THOUSAND CIRCULAR MILS
KSI	KIPS PER SQUARE INCH
KV	KILOVOLT
KVA	KILOVOLT AMPERES
L	LIGHT, LENGTH
LA	LOS ANGELES
LACFCD	LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
LADWP	LOS ANGELES DEPARTMENT OF WATER & POWER
LADPW	LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAHD	LOS ANGELES HARBOR DEPARTMENT
LB	LONG BEACH, POUND
LB/FT	POUNDS PER FOOT
LC	LIGHTING CONTROL
LF	LINEAL FEET
LG	LONG
LONG	LONGITUDINAL
LP	LIGHT POLE, LOW POINT
LPG	LIQUIFIED PROPANE GAS
LR	LONG RADIUS
LS	LAND SIDE
LT	LIGHT, LEFT
LTG	LIGHTING
MAINT	MAINTENANCE
MAX	MAXIMUM
MECH	MECHANICAL
MFG	MANUFACTURER OF FEATURE (WATER DIST. SYSTEM)
MFR	MANUFACTURER
MH	MAINTENANCE HOLE
MHW	MEAN HIGH WATER
MID	MIDDLE
MIL.	MILLIMETER
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
ML	MUD LINE
MLLW	MEAN LOWER LOW WATER
MLW	MEAN LOW WATER
MOD	MODIFIED
MS	MAIN SWITCHGEAR
MSL	MEAN SEA LEVEL
MTC	MARINE TERMINAL CORPORATION
MTL	MATERIAL
N	NORTH, NORTHING
NIC	NOT IN CONTRACT
NIS	NOT IN SERVICE
NO	NUMBER
NOM	NOMINAL
NRS	NON RISING STEM
NTP	NOTICE TO PROCEED
NTS	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O/H	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OV	OIL VALVE
P	POWER, PIPE, POLE
PA	PUBLIC ADDRESS
PACBELL	PACIFIC BELL TELEPHONE
PB	PULL BOX
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PD	PRESENCE DETECTOR
PHL	PACIFIC HARBOR LINES
PI	POINT OF INTERSECTION
PL OR P/L	PROPERTY LINE, POWER LOGIC, PLATE(STEEL)
PMB	PROCESSED MISCELLANEOUS BASE
POLA	PORT OF LOS ANGELES
PP	POWER POLE, PUMPING PLANT
PRC	POINT OF REVERSE CURVATURE
PREV	PREVENTER
PROP	PROPOSED
PS	POWER SERVICE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH (GAUGE)
PT	POINT OF TANGENCY
PTT	PACIFIC TELEPHONE & TELEGRAPH (PACBELL)
PVC	POLYVINYL CHLORIDE, POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWR	POWER

R	REEFER, RADIUS
RC	REINFORCED CONCRETE, RELATIVE COMPACTION
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RD, RDWY	ROAD, ROADWAY
RECPT	RECEPTACLE
RED	REDUCING
REF	REFERENCE, REFRIGERATOR
REINF	REINFORCE, REINFORCED, REINFORCING
REM	REMOVED, REMOVAL
REQD	REQUIRED
REV	REVISION
RGS	RIGID GALVANIZED STEEL
RM	REFER MONITORING
RP	REDUCED PRESSURE
RR	RAILROAD
RS	RAILROAD SIGNALIZATION
RTE	ROUTE
R/W	RIGHT OF WAY
RY	RAILWAY
RTG	RUBBER TIRED GANTRY
S	SOUTH, SLOPE
SCG	SOUTHERN CALIFORNIA GAS
SCH	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SDR	STANDARD DIMENSIONAL RATIO
SEC	SECURITY
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SIG	SIGNAL
SIM	SIMILAR
SMH	SEWER MAN HOLE
SPEC	SPECIFICATION
SPLY	SUPPLY
SPRINK	SPRINKLER
SQ	SQUARE
SQ FT	SQUARE FOOT/FEET
SQ IN	SQUARE INCH
SS	SANITARY SEWER, SECURITY SYSTEM
SSL	SANITARY SEWER LINE
ST	STREET
ST LT	STREET LIGHT
STA	STATION
STD	STANDARD
STL	STEEL
STRUC	STRUCTURE
SUBSTA	SUBSTATION
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL, SYMBOL
SYS	SYSTEM
T	TANGENT DISTANCE
TCB	TOP OF CATCH BASIN
TD	TILE DUCT
TEL, TELE	TELEPHONE
TEMP	TEMPORARY
TERM	TERMINAL
TFH	TOP OF FIRE HYDRANT COVER
TG	TOP OF GRATE
THRU	THROUGH
TMH	TELEPHONE MAINTENANCE HOLE, TOP OF MAINTENANCE HOLE
TOC	TOP OF CONCRETE
TOD	TOP OF DECK
TOG	TOP OF GRATE
TOP	TOP OF PIPE
TOR	TOP OF RAIL
TOT	TOTAL
TOW	TOP OF WALL
TP	TELEPHONE POLE, TOP OF PIPE, TOP OF PAVEMENT
TRANS	TRANSITION
TRK	TRACK
TT	TIMBER TIE
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UP	UNION PACIFIC
USGS	UNITED STATES GEODETIC SURVEY
USN	UNITED STATES NAVY
UTIL	UTILITY

V	VALVE, VAULT, OR VOLT
VA	VOLT-AMPERE
VB	VALVE BOX
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VPM	VOLTAGE POTENTIAL MODULE
VLT	VAULT
W	WEST, WATER OR WATT (S)
W/	WITH
VHB	WELDED HEADED REINFORCED BARS
WM	WATER METER
W/O	WITHOUT
WP	WEATHER PROOF
WS	WATER SERVICE, WATER SIDE
WT	WEIGHT
WTR	WATER
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
YD	YARD
XFMR	TRANSFORMER
#	NUMBER
&	AND
@	AT
∠	ANGLE POINT
Ø	DIAMETER
°	DEGREE
Δ	DEFLECTION ANGLE

NO.	DATE	DRAWN	REVISIONS --	CH'KD	APP'D

NO.	DATE	DRAWN	REVISIONS --	CH'KD	APP'D

PRELIMINARY

40% SUBMITTAL

NOT FOR CONSTRUCTION

PLANS PREPARED BY:

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DATE:	OCTOBER 30, 2009
DRAWN:	E. LANDAS
CHECKED:	
DESIGNED:	
ENGR/ARCH	
KOSAL KRISHNAN	

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

ABBREVIATIONS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

T-05

STRUCTURAL NOTES

A. CONCRETE:

1. MINIMUM 28 DAY COMPRESSIVE STRENGTH, (UNLESS OTHERWISE NOTED)
   PRESTRESSED CONCRETE PILES AND PILE BUILD-UP ---------- 6500 PSI
   ALL OTHER ---------- 5000 PSI

2. PROPORTION USING THE FOLLOWING MAXIMUM AGGREGATE SIZE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

   PRESTRESSED CONCRETE PILES ---------- 1 INCH
   ALL OTHER ---------- 1-1/2 INCHES

3. SLUMP SHALL BE LIMITED TO THE FOLLOWING

   PRESTRESSED AND PRECAST CONCRETE PILES ---------- 3-4 INCHES
   CAST-IN-PLACE ---------- 3-4 INCHES

   NOTE: WHEN A SUPERPLASTICIZER IS USED, REFER TO THE SPECIFICATIONS FOR SLUMP REQUIREMENTS.

4. THE CONTRACTOR SHALL SUBMIT A POURING SCHEDULE WITH CONSTRUCTION JOINT LOCATIONS AND DETAILS INDICATED FOR APPROVAL PRIOR TO CONSTRUCTION.

5. ALL CONSTRUCTION JOINTS SHALL BE CLEANED OF SURFACE LAITANCE, CURING COMPOUND, AND OTHER FOREIGN MATERIALS BEFORE FRESH CONCRETE IS PLACED AGAINST THE SURFACE OF THE JOINT. ABRASIVE BLAST METHODS SHALL BE USED TO CLEAN HORIZONTAL CONSTRUCTION JOINTS TO THE EXTENT THAT CLEAN AGGREGATE IS EXPOSED. ALL CONSTRUCTION JOINTS SHALL BE FLUSHED WITH WATER AND ALLOWED TO DRY TO A SURFACE DRY CONDITION IMMEDIATELY PRIOR TO PLACING CONCRETE.

6. ALL EXPOSED CONCRETE EDGES AND CORNERS TO BE CHAMFERED 3/4 IN x 3/4 IN UNLESS OTHERWISE NOTED.

7. CONTRACTOR'S FORMING SYSTEM SHALL BE CAPABLE OF INCORPORATING MISALIGNED PILES INTO THE STRUCTURE, IF APPROVED BY THE ENGINEER, AT NO EXTRA COST.

8. CONCRETE COVER TO MAIN DECK TRANSVERSE REINFORCEMENT SHALL BE 3" MIN UNLESS NOTED OTHERWISE.

9. ALL WHARF CONCRETE IS TO BE FORMED, THE USE OF SAND SOFFIT IS NOT ALLOWED.

B. REINFORCEMENT:

1. REINFORCING BARS:
   EXCEPT AS NOTED, REINFORCING BARS SHALL BE DEFORMED AND SHALL CONFORM TO ASTM A615, GRADE 60. BARS TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60. REINFORCING BARS FOR PILE DOWELS SHALL CONFORM TO ASTM A706, GRADE 60.

2. PRESTRESSING STEEL: ASTM A416 SEVEN WIRE UNCOATED, LOW RELAXATION STRAND, f_{pu} = 270 KSI

3. SPIRAL REINFORCEMENT FOR PILES: ASTM A 82 COLD DRAWN WIRE REINFORCEMENT, f_y = 70 KSI

4. WELDING OF REINFORCING BARS:

   WELDING OF BARS IS NOT PERMITED EXCEPT WHERE SHOWN OR APPROVED BY ENGINEER. ALL WELDING SHALL CONFORM TO AWS D1.4

5. SPLICES IN ADJACENT REINFORCING BARS AT ANY PARTICULAR SECTION SHALL BE STAGGERED. THE MINIMUM DISTANCE BETWEEN STAGGERED SPLICES SHALL BE 40 BAR DIAMETERS CLEAR. EXCEPTIONS WILL BE INDICATED BY SPECIFIC NOTES ON THE DRAWINGS.

6. DECK REINFORCING LAYOUT SHALL BE BASED ON THEORETICAL BENT AND COLUMN LINES UNLESS NOTED OTHERWISE.

7. PROVIDE CLASS B SPLICE LENGTHS FOR REINFORCING BARS UNLESS OTHERWISE NOTED. SPLICES PERMITTED ONLY AT LOCATIONS SHOWN OR APPROVED BY THE ENGINEER.

CLASS B LAP SPLICE LENGTH (IN)
GR 60, FY=60,000 PSI, F'C=5,000 PSI

BAR SIZE	TOP BARS	OTHER
#4	2'-5"	1'-10"
#5	3'-0"	2'-4"
#6	3'-7"	2'-9"
#7	5'-3"	4'-1"
#8	6'-0"	4'-7"
#9	6'-9"	5'-3"
#10	7'-7"	5'-10"
#11	8'-5"	6'-6"

NOTE: TOP BARS DEFINED AS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 IN OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.

8. NO MORE THAN ONE HALF THE REINFORCEMENT SHALL BE SPLICED AT ANY ONE LOCATION. TOP BARS OF BEAMS SHALL BE SPLICED AT MIDSPAN BETWEEN BENTS AND NO MORE THAN ONE HALF THE REINFORCEMENT SHALL BE SPLICED WITHIN ANY ONE SPAN UNLESS OTHERWISE SHOWN.

9. SPACE UTILITY PIPES AT LEAST 3 DIAMETERS OC APART UNLESS OTHERWISE SHOWN ON DRAWINGS.

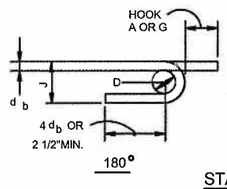
10. SINGLE MAT REINFORCEMENT SHALL BE PLACED AT MID-DEPTH UNLESS OTHERWISE NOTED.

11. DO NOT CUT OR REPOSITION REINFORCEMENT SHOWN ON DRAWINGS WITHOUT PRIOR APPROVAL BY THE ENGINEER.

12. REVIEW ALL DRAWINGS FOR OPENINGS IN THE SLABS OR WALLS. ALL OPENINGS SHALL BE FORMED OR SLEEVED BEFORE CONCRETE IS PLACED. ADDITIONAL REINFORCING IS NOT REQUIRED FOR OPENINGS WHOSE LONGER DIMENSION IS 9 INCHES OR LESS BUT INTERRUPTED BARS SHALL BE DEFLECTED AROUND OPENING TO MAINTAIN SPECIFIED CLEARANCES. ALL OTHER OPENINGS SHALL BE REINFORCED AS DETAILED OR AS REQUIRED BY THE STANDARD DETAILS WHEN NOT SPECIFICALLY DETAILED.

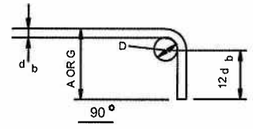
13. ALL REINFORCING STEEL HOOKS SHALL BE STANDARD HOOKS, AS FOLLOWS:

STANDARD HOOK DETAILS

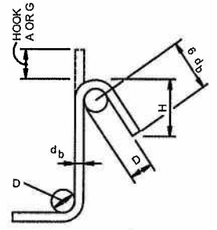


180°

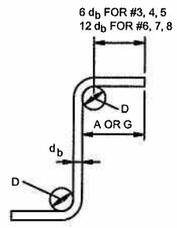
d_b = BAR DIAMETER
D = FINISHED INSIDE BEND DIAMETER



90°



135°



90°

STANDARD HOOK

BAR SIZE	DIMENSIONS OF STANDARD 180-DEG.HOOKS, ALL GRADES			DIMENSIONS OF STANDARD 90-DEG.HOOKS,ALL GRADES	
	A OR G	J	D	A OR G	D
#3	5"	3"	2 1/4"	6"	2 1/4"
#4	6"	4"	3"	8"	3"
#5	7"	5"	3 3/4"	10"	3 3/4"
#6	8"	6"	4 1/2"	1'-0"	4 1/2"
#7	10"	7"	5 1/4"	1'-2"	5 1/4"
#8	11"	8"	6"	1'-4"	6"
#9	1'-3"	11 3/4"	9 1/2"	1'-7"	9 1/2"
#10	1'-5"	1'-1 1/4"	10 3/4"	1'-10"	10 3/4"
#11	1'-7"	1'-2 3/4"	12"	2'-0"	12"

STIRRUPS/TIE HOOKS

BAR SIZE	135° HOOKS D	135° HOOKS A OR G	135° HOOKS H APPROX	90° HOOKS A OR G	90° HOOKS D
#3	1 1/2"	4"	2 1/2"	4"	1 1/2"
#4	2"	4 1/2"	3"	4 1/2"	2"
#5	2 1/2"	5 1/2"	3 3/4"	6"	2 1/2"
#6	4 1/2"	8"	4 1/2"	1'-0"	4 1/2"
#7	5 1/4"	9"	5 1/4"	1'-2"	5 1/4"
#8	6"	10 1/2"	6"	1'-4"	6"

C. STEEL:

1. PLATES AND SHAPES: ASTM A36, UNLESS NOTED OTHERWISE.
2. EXPANSION JOINT: ASTM A709, GRADE 50.
3. BOLTS AND NUTS: ASTM A307, UNLESS NOTED OTHERWISE.
4. PIPE: ASTM A53, TYPE E OR S, GRADE B.
5. TUBES: ASTM A500, GRADE B.
6. FOR SPECIALTY ITEMS SEE SPECIFICATIONS.
7. ALL FERROUS METAL EXCEPT REINFORCING BARS, CORRUGATED METAL TUBES, RAIL STOPS AND STEEL PARTS OF THE JET TUBES IN PILES, SHALL BE GALVANIZED PER SPECIFICATIONS UNLESS NOTED OTHERWISE.
8. ALL STRUCTURAL STEEL SHALL BE FABRICATED IN THE SHOP OF A LOS ANGELES CITY APPROVED FABRICATOR.

D. WELDING:

1. WELDING SHALL CONFORM TO AWS D1.1-98.
2. ELECTRODES FOR STRUCTURAL STEEL SHALL BE E70-LOW HYDROGEN.
3. ALL WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY, AWS D1.1 AND THE LOS ANGELES CITY BUILDING AND SAFETY DEPT.

E. LUMBER AND TIMBER:

1. SAWN LUMBER SHALL BE DOUGLAS FIR. SEE SPECIFICATION FOR GRADE AND TREATMENT.

F. INSPECTION:

1. CONTINUOUS CONSTRUCTION INSPECTION IS REQUIRED AND WILL BE PROVIDED BY THE ENGINEER IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE READY, SAFE ACCESS TO ALL FEATURES OF CONSTRUCTION TO FACILITATE SUCH INSPECTION.

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

PRELIMINARY
40% SUBMITTAL
NOT FOR CONSTRUCTION

PLANS PREPARED BY:
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ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

GENERAL STRUCTURAL NOTES

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
GN-01

STRUCTURAL DESIGN CRITERIA

A. PARTIAL LIST OF CODES AND REFERENCES USED FOR DESIGN:

1. CITY OF LOS ANGELES BUILDING CODE (LABC), 2008.
2. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-05).
3. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)-"STEEL CONSTRUCTION MANUAL"-THIRTEENTH EDITION.
4. AMERICAN WELDING SOCIETY (AWS) D1.1-2006
5. NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION
6. ASCE/SEI 7-05, AMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM LOAD FOR BUILDINGS AND OTHER STRUCTURES, 2005
7. POLA, "THE PORT OF LOS ANGELES CODE FOR SEISMIC DESIGN, UPGRADE AND REPAIR OF CONTAINER WHARVES", PORT OF LOS ANGELES, SAN PEDRO, CALIFORNIA, MAY 2004.
8. PRIESTLEY, M. J. NIGEL, "BERTH 147 CONTAINER TERMINAL DYNAMIC ANALYSIS OF WHARF/CRANE INTERACTION", REPORT 97/03, SEQAD CONSULTING ENGINEERS, MAY 1997 AND TWO SUPPLEMENTS.
9. PRIESTLEY, M. J. NIGEL, "POLA PIER 400 - DYNAMIC ANALYSIS OF LINKED WHARF SEGMENTS", SEQAD CONSULTING ENGINEERS, REPORT 98/02, MAY 1999.
10. PRIESTLEY, M. J. NIGEL, "POLA PIER 400 - STRENGTH AND DUCTILITY OF WHARF PILES", AUGUST 2000.
11. UCSD, "SEISMIC TESTING OF FULL-SCALE PRECAST PRESTRESSED PILE TO DECK CONNECTIONS", REPORT NO. SSRP-06/26, UNIVERSITY OF CALIFORNIA, SAN DIEGO, NOVEMBER 2007.

B. DEAD AND SUPERIMPOSED DEAD LOAD:

DEAD LOAD IS BASED ON UNITWEIGHT OF 150 PCF.

C. UNIFORM LIVE LOAD:

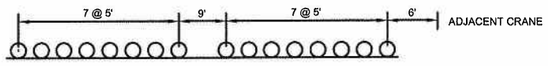
1. DECK AND GIRDERS: 1000 PSF.
2. PILES: 800 PSF.

D. CONCENTRATED WHEEL LOADS:

1. TWO WHEELS OF 125 KIPS (INCLUDING IMPACT OF 25%) EACH LOCATED 13 FEET ON CENTER WITH A WHEEL PRINT AREA OF 4.95 SQUARE FEET EACH.
2. UTILITY VAULT COVER IS ADEQUATE FOR 1000 PSF.

E. GANTRY CRANE LOADS:

1. GANTRY CRANE OPERATING LOAD (GCOL) FOR EACH CRANE GIRDER (LANDSIDE AND WATERSIDE), IS BASED ON 50 KIPS PER FOOT WHICH INCLUDES IMPACT THE FOLLOWING IS THE CRANE WHEEL LAYOUT.



ELEVATION OF CRANE WHEELS ON RAIL

2. GANTRY CRANE DEAD LOAD (GCDL): 3000 KIPS.
3. STOWAGE PIN SOCKETS ARE DESIGNED FOR 240 KIPS PER RAIL PER LOCATION.
4. CRANE BUMPERS ARE DESIGNED FOR 350 KIPS.
5. CRANE WHEEL LATERAL LOADING: 3K/WHEEL, NORMAL OPERATION CONDITION 10K/WHEEL, STOWED CONDITION

F. LATERAL LOADS (EXCEPT SEISMIC LOADING):

1. MOORING/BREASTING

SHIP: CONTAINER SHIP 9,100 TEU (1138' LOA)

MAXIMUM WIND SPEED: 45 MPH WITH SHIP AT BERTH; 70 MPH WITHOUT.

MOORING BOLLARD LOAD: 150 METRIC TONS BOLLARDS WITH 330 KIPS LATERAL LOAD PER BOLLARD.

2. BERTHING LOADS:

CONTAINER SHIP	UNITS	DESIGN VESSEL
OVERALL LENGTH	FT.	1,138
BEAM	FT.	140
DRAFT	FT.	47.5
DISPLACEMENT	LONG TON	186,000
APPRACH ANGLE	DEGREE	6

FOR FENDER SYSTEM DESIGN CRITERIA SEE SHT F-01.

G. LOAD FACTORS AND LOAD COMBINATIONS (EXCEPT SEISMIC LOADING):

1. DEFINITIONS:
   - U -REQUIRED ULTIMATE STRENGTH
   - DL -DEAD LOAD AND SUPERIMPOSED DEAD LOAD
   - VLL -VERTICAL UNIFORM LIVE LOADS
   - CLL -CONCENTRATED LIVE LOAD
   - H -EARTH LOAD
   - W -WIND LOAD
   - T -SETTLEMENT LOAD
   - GCDL -GENTRY CRANE DEAD LOAD
   - GCOL -GANTRY CRANE OPERATING LOAD
   - RRL -RAILROAD LOAD
2. STATIC LOADING COMBINATIONS ***

$U = 1.4\,DL + 1.7\,VLL^{*} + 1.7\,CLL + 1.4\,GCDL^{**}$

$U = 1.4\,DL + 1.45\,GCOL$

$U = 1.4\,DL + 1.7\,VLL^{*} + 1.4\,RRL$

$U = 0.75\,(1.4\,DL + 1.7\,VLL^{*} + 1.7\,CLL + 1.4\,GCDL^{**} + 1.7\,W)$

$U = 0.75\,(1.4\,DL + 1.7\,VLL^{*} + 1.4\,RRL + 1.7\,W)$

$U = 0.9\,DL + 1.3\,W$

$U = 0.75\,(1.4\,DL + 1.7\,VLL^{*} + 1.7\,CLL + 1.4\,T)$

$U = 0.75\,(1.4\,DL + 1.7\,VLL^{*} + 1.4\,RRL + 1.4\,T)$

$U = 1.4\,DL + 1.4\,T$

$U = 1.4\,DL + 1.7\,VLL^{*} + 1.7\,H$

* VLL NOT ALLOWED ON SAME SPAN AS CLL OR RRL.

** GCDL AND GCOL ARE USED ONLY FOR GIRDER DESIGN.

*** THESE ARE THE ACI 318-99 LOAD FACTOR. THE RESULTS OF EITHER SET OF LOAD FACTORS ARE CONSIDERED ACCEPTABLE WHEN USED WITH THE APPROPIATE STRENGHT REDUCTION FACTORS. SEE ACI 318-05 COMMENTARY, SECTION R9-1.

J. BROKEN PILE CRITERIA:

BROKEN PILE CRITERIA APPLIES TO WATERSIDE CRANE GIRDER ONLY. THE ANALYSIS FOR BROKEN PILE CONDITION FOLLOWS BEAM ON ELASTIC FOUNDATION PRINCIPLE. THERE ARE TWO BROKEN PILE CRITERIA:

1. SINGLE BROKEN PILE CRITERIA:

THE INCREASED PILE LOAD AND ADDED FORCES TO THE CRANE GIRDER ARE BASED ON DEAD AND LIVE LOAD INCLUDING FULL OPERATING CRANE RAIL LOADING. ACCEPTANCE DESIGN CRITERIA AS FOLLOWS:

LOAD FACTOR = 1.45

MINIMUM CRANE GIRDER MOMENT = ϕ Mu (ϕ = 0.9)

MINIMUM PILE LOAD = 75% Pu

THE ACCEPTANCE CRITERIA WOULD ENSURE THE UNINTERRUPTED CRANE RAIL OPERATION ON THE WHARF WITH ONE BROKEN PILE.

2. TWO BROKEN PILES CRITERIA:

THE PILE LOAD AND ADDED FORCES TO THE CRANE GIRDER ARE BASED ON CONSIDERING ONLY THE DEAD LOAD COMPONENT OF THE CRANE GANTRY (GCDL = 3,000 KIPS) AND THE WHARF DEAD LOAD. ACCEPTANCE DESIGN CRITERIA IS AS FOLLOWS:

LOAD FACTOR = 1.15

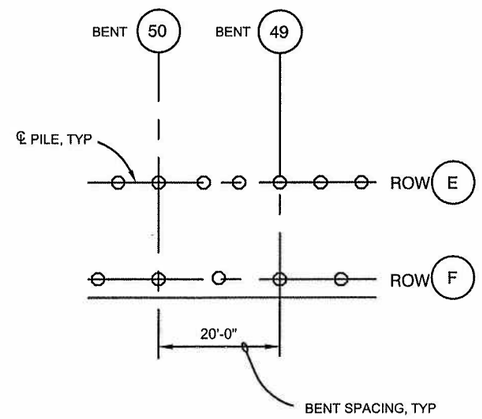
MINIMUM CRANE GIRDER MOMENT = ϕ Mu (ϕ = 0.9)

MINIMUM PILE LOAD = 85% Pu

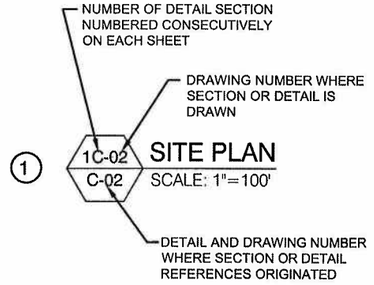
THE ACCEPTANCES CRITERIA INDICATES AN OVERSTRESS CONDITION ON BOTH THE "A" FRAME CRANE GIRDER AND PILE. THE PILES AND CRANE GIRDER ARE EXPECTED TO SURVIVE WITHOUT THE RISK OF COLLAPSING. HOWEVER, THE CRANE RAIL OPERATION SHALL BE INTERRUPTED UNTIL THE STRUCTURE IS REPAIRED AND CRANE COULD BE TRANSFERED WITH DEAD LOAD ONLY TO A NEW LOCATION.

K. PILE INSTALLION CRITERIA:

TOTAL RESISTANCE DEVELOPED SHALL BE AT LEAST 2 TIMES DESIGN LOAD.



BENT DESIGNATION



STANDARD DETAIL REFERENCING

1. FORMAT FOR PLAN OR ELEVATION TITLES.
2. FORMAT FOR SECTION OR DETAIL TITLES.
3. FORMAT FOR SHOWING WHERE A SECTION IS CUT AND WHERE TO FIND IT.
4. FORMAT USED WHEN REFERRING TO A DETAIL IN A NOTE.
5. FORMAT USED WHEN REFERRING TO AN ELEVATION.

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DATE: OCTOBER 30, 2009
DRAWN: E. LANDAS
CHECKED:
DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

STRUCTURAL DESIGN CRITERIA

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
GN-02

SEISMIC DESIGN CRITERIA

A. DESIGN SPECTRA:

1. OPERATING LEVEL EARTHQUAKE (OLE):

   HAZARD CRITERIA: 50% PROBABILITY OF EXCEEDANCE IN 50 YEARS. (72 YEAR RECURRENCE)

2. CONTINGENCY LEVEL EARTHQUAKE (CLE):

   HAZARD CRITERIA: 10% PROBABILITY OF EXCEEDANCE IN 50 YEARS. (475 YEAR RECURRENCE)

3. SITE SPECIFIC UNIFORM RISK SPECTRUM FOR HORIZONTAL COMPONENTS (5 % DAMPING):

PERIOD SECONDS	PGA	0.03	0.10	0.20	0.30	0.50	1.00	2.00	4.00
OLE	0.23	0.23	0.45	0.57	0.57	0.46	0.29	0.15	0.04
CLE	0.52	0.52	0.93	1.16	1.27	1.15	0.74	0.38	0.14

B. SEISMIC DESIGN:

1. THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH POLA SEISMIC CODE, SEE REFERENCE 7 ON SHT GN-02.

2. A DISPLACEMENT BASED DESIGN PROCEDURE WAS UTILIZED.

3. WHARF OLE FORCES AND DEFORMATIONS INCLUDING PERMANENT EMBANKMENT DEFORMATIONS DO NOT RESULT IN SIGNIFICANT STRUCTURAL DAMAGE AND REQUIRED REPAIRS WILL NOT INTERRUPT WHARF OPERATION. ALL DAMAGE THAT REQUIRES REPAIR WILL OCCUR WHERE VISUALLY OBSERVABLE AND ACCESSIBLE.

4. WHARF CLE FORCES AND DEFORMATIONS INCLUDING PERMANENT EMBANKMENT DEFORMATIONS WILL RESULT IN CONTROLLED INELASTIC STRUCTURAL BEHAVIOR AND LIMITED PERMANENT DEFORMATIONS. ALL DAMAGE THAT REQUIRES REPAIR WILL OCCUR WHERE VISUALLY OBSERVABLE AND ACCESSIBLE. TEMPORARY LOSS OF WHARF OPERATION IS EXPECTED AND OPERATION WILL BE RESTORED WITHIN AN ACCEPTABLE PERIOD OF TIME.

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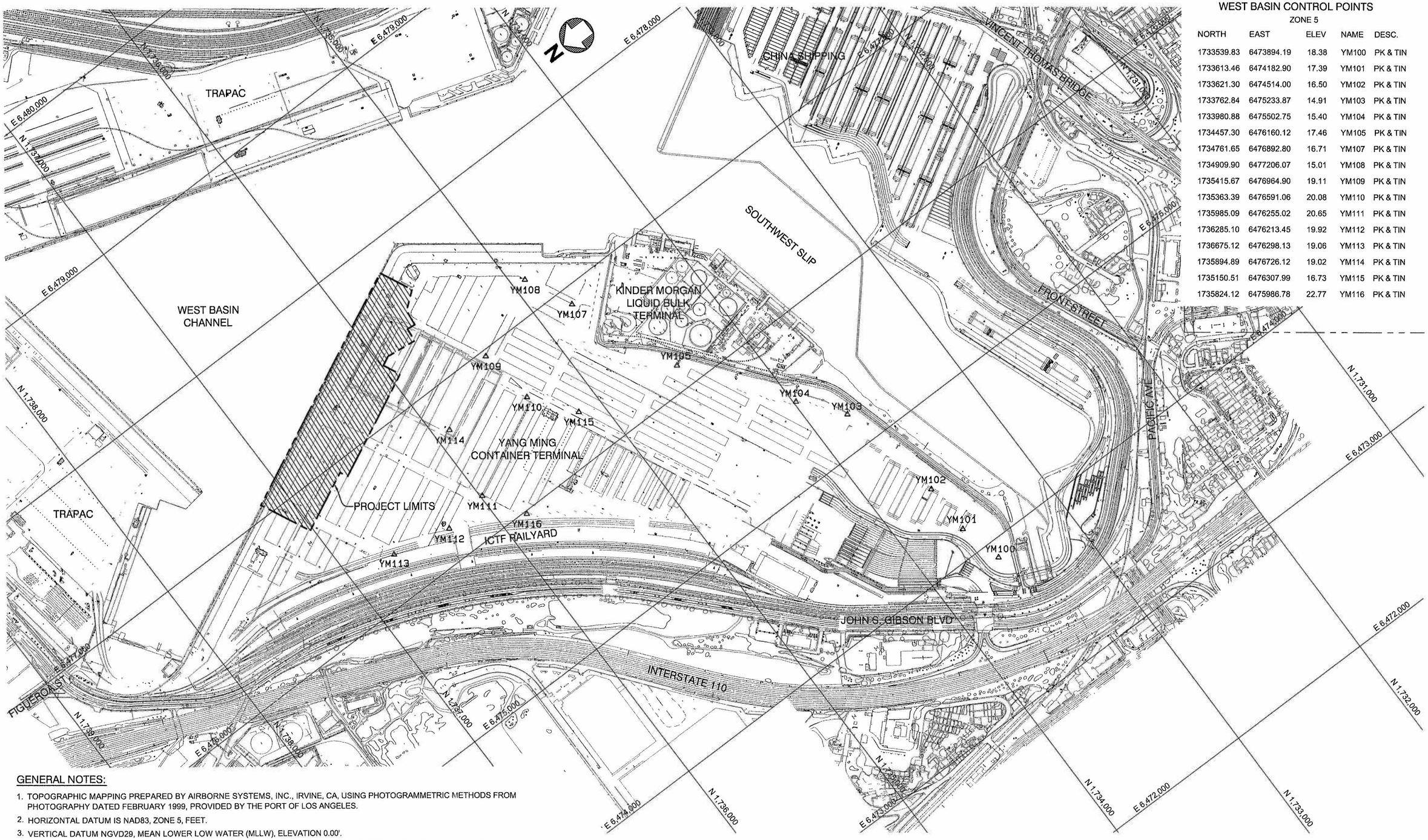
SEISMIC DESIGN CRITERIA

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
GN-03



WEST BASIN CONTROL POINTS

ZONE 5

NORTH	EAST	ELEV	NAME	DESC.
1733539.83	6473894.19	18.38	YM100	PK & TIN
1733613.46	6474182.90	17.39	YM101	PK & TIN
1733621.30	6474514.00	16.50	YM102	PK & TIN
1733762.84	6475233.87	14.91	YM103	PK & TIN
1733980.88	6475502.75	15.40	YM104	PK & TIN
1734457.30	6476160.12	17.46	YM105	PK & TIN
1734761.65	6476892.80	16.71	YM107	PK & TIN
1734909.90	6477206.07	15.01	YM108	PK & TIN
1735415.67	6476964.90	19.11	YM109	PK & TIN
1735363.39	6476591.06	20.08	YM110	PK & TIN
1735985.09	6476255.02	20.65	YM111	PK & TIN
1736285.10	6476213.45	19.92	YM112	PK & TIN
1736675.12	6476298.13	19.06	YM113	PK & TIN
1735894.89	6476726.12	19.02	YM114	PK & TIN
1735150.51	6476307.99	16.73	YM115	PK & TIN
1735824.12	6475986.78	22.77	YM116	PK & TIN

GENERAL NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY AIRBORNE SYSTEMS, INC., IRVINE, CA, USING PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHY DATED FEBRUARY 1999, PROVIDED BY THE PORT OF LOS ANGELES.
2. HORIZONTAL DATUM IS NAD83, ZONE 5, FEET.
3. VERTICAL DATUM NGVD29, MEAN LOWER LOW WATER (MLLW), ELEVATION 0.00'.
4. WHARF AND BACKLANDS SURVEY PERFORMED BY POLA SURVEY DEPT., FILE REFERENCE E4424.PRO, DATED FEBRUARY 13, 2008.

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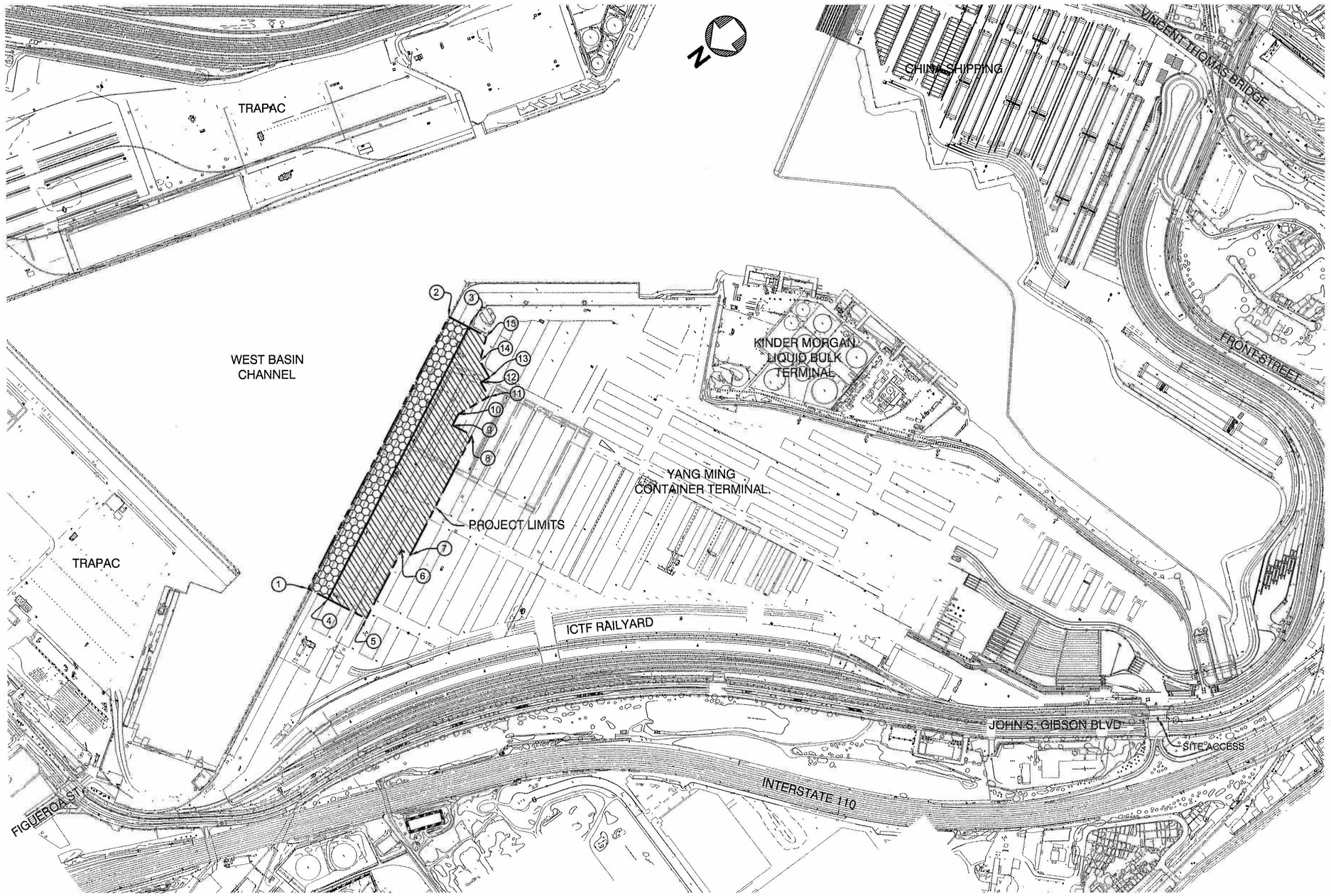
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

HORIZONTAL COORDINATE CONTROL MAP

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER C-01



NOTES:

1. THE PROJECT DRAWINGS SHOWN HEREON DEFINE THE GENERAL LIMITS OF EACH PROJECT DRAWING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WORK OUTSIDE THESE LIMITS AS INDICATED ON THE PLANS, SEE NOTE 2 FOR REQUIRED COORDINATION.
2. FOR WORK OUTSIDE OF THE PROJECT LIMITS AND WITHIN THE PERIMETER OF THE EXISTING, OPERATING BERTH TERMINAL. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE TENANT, YANG MING, MARK WHEELER AT 310-519-2333. WORK SHALL NOT INTERUPT TERMINAL OPERATIONS AT ANY TIME.
3. THE DEPARTMENT WILL SURVEY THE SPECIFIC LIMITS FOR THE PROJECT PRIOR TO BEGINNING WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PROJECT LIMITS ESTABLISHED BY THE DEPARTMENT. THE CONTRACTOR SHALL MAINTAIN PERIMETER SECURITY FENCING FOR THE EXISTING TERMINAL AT ALL TIMES.
4. CONTRACTOR SHALL COORDINATE WITH THE TENANT FOR ACCESS TO THE SITE VIA JOHN S. GIBSON BOULEVARD GATE. ACCESS THRU THE EXISTING TERMINAL SHALL NOT INTERRUPT TERMINAL OPERATIONS AT ALL TIMES.
5. CONTRACTOR STORAGE AREA SHALL BE WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL BE RESPONSIBLE FOR IT'S SECURITY.

BERTH 108 WHARF
PROJECT LIMITS

POINT #	NORTHING	EASTING
1	1737175.03	6477077.82
2	1735641.22	6477810.03
3	1735587.30	6477696.92
4	1737121.04	6476964.73

BERTH 108 BACKLAND
PROJECT LIMITS

POINT #	NORTHING	EASTING
3	1735587.30	6477696.92
4	1737121.04	6476964.73
5	1737018.91	6476750.78
6	1736634.37	6476934.35
7	1736610.68	6476884.72
8	1735935.22	6477207.17
9	1736028.03	6477330.81
10	1735927.14	6477346.97
11	1735729.15	6477322.47
12	1735718.10	6477411.78
13	1735663.52	6477405.02
14	1735650.57	6477509.63
15	1735539.57	6477597.10

LEGEND:

- PROJECT LIMITS
- BERTH 108 WHARF
- BERTH 108 BACKLAND IMPROVEMENT

1C-02 / C-02 PROJECT DRAWING LIMITS AND ACCESS PLAN
SCALE: 1" = 300'

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NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I
PROJECT DRAWING LIMITS AND ACCESS PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
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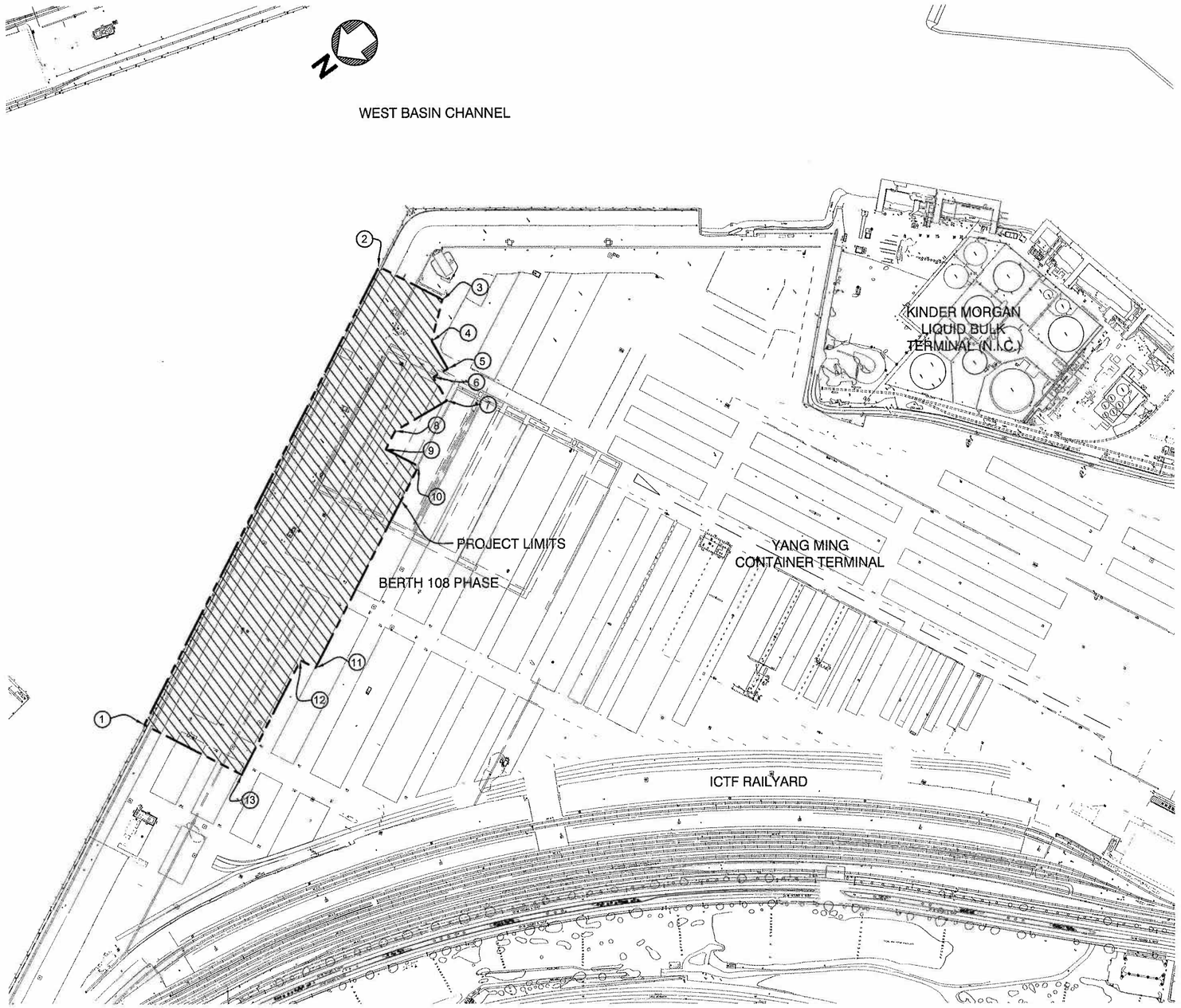
DRAWING NUMBER C-02



1C-03 / C-03 PHASING PLAN

SCALE: 1" = 200'

NOTES:

1. THE PHASING LIMITS SHOWN HEREON DEFINE THE GENERAL LIMITS OF BERTH 106. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WORK OUTSIDE THESE LIMITS AS INDICATED ON THE PLAN, SEE NOTE 2 FOR REQUIRED COORDINATION.
2. THESE PLANS CALL FOR WORK OUTSIDE OF THE PHASING LIMITS AND WITHIN THE PERIMETER OF THE EXISTING, OPERATING BERTH 121 TERMINAL. THE CONTRACTOR SHALL COORDINATES ALL WORK WITH THE TENANT, YANG MING, MARK WHEELER AT 310-519-2333. WORK SHALL NOT INTERRUPT TERMINAL OPERATIONS AT ANY TIME.
3. CONTRACTOR SHALL CONSTRUCT & MAINTAIN PERIMETER CHAIN LINK FENCING MOUNTED ON K-RAIL ALONG LIMITS ADJACENT TO THE EXISTING TERMINAL (WHERE CHAIN LINK FENCING DOES NOT EXIST). CONTRACTOR SHALL REMOVE TEMPORARY PERIMETER FENCING UPON COMPLETION OF CONSTRUCTION.
4. CONTRACTOR SHALL CONSTRUCT ELECTRICAL WORK OUTSIDE PROJECT LIMITS PER E SHEETS, INCLUDING CONDUITS/DUCTBANKS, IN SECTIONS TO ALLOW THE TENANT CONTINUOUS AND UNINTERRUPTED ACCESS. A SECTION SHALL CONSIST OF CONTINUOUS CONDUIT BETWEEN VAULTS. A SECTION WILL BE MADE AVAILABLE WHEN THE PREVIOUS SECTION IS COMPLETE AND RETURNED TO THE TENANT. CONTRACTOR SHALL PROTECT WORK, INCLUDING OPEN TRENCHES, WITH K-RAIL AND/OR STEEL PLATES AT ALL TIMES.

LEGEND:

PROJECT LIMIT LINES

BERTH 108 PHASE

BERTH 108
PHASE LIMITS

POINT #	NORTHING	EASTING
1	1737175.03	6477077.82
2	1735641.22	6477810.03
3	1735539.57	6477597.10
4	1735650.57	6477509.63
5	1735663.52	6477405.02
6	1735718.10	6477411.78
7	1735729.15	6477322.47
8	1735927.14	6477346.97
9	1736028.03	6477330.81
10	1735935.22	6477207.17
11	1736610.68	6476884.72
12	1736634.37	6476934.35
13	1737018.91	6476750.78

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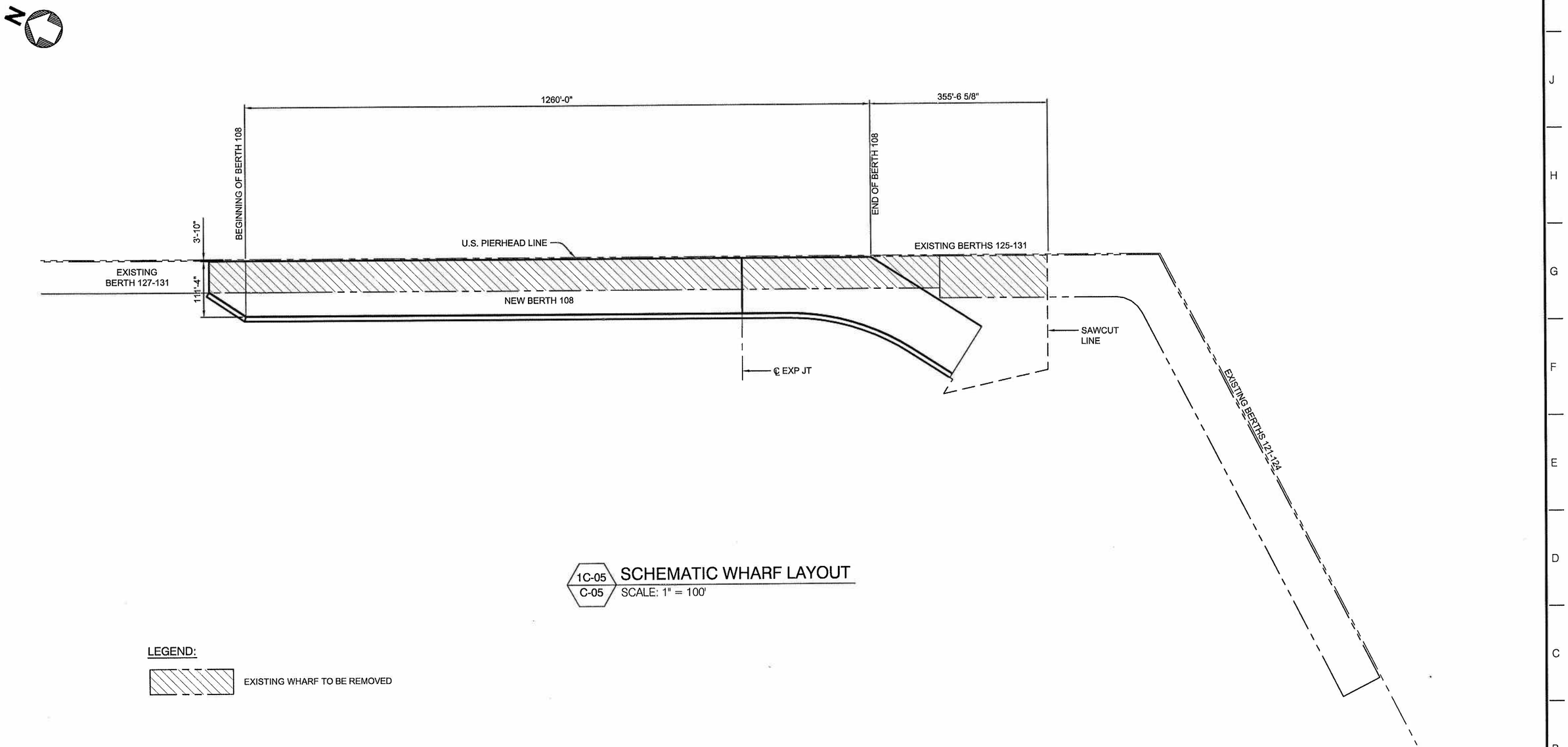
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PHASING PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER C-03



1C-05 / C-05 SCHEMATIC WHARF LAYOUT

SCALE: 1" = 100'

LEGEND:

EXISTING WHARF TO BE REMOVED

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

SCHEMATIC WHARF LAYOUT

THE PORT OF LOS ANGELES
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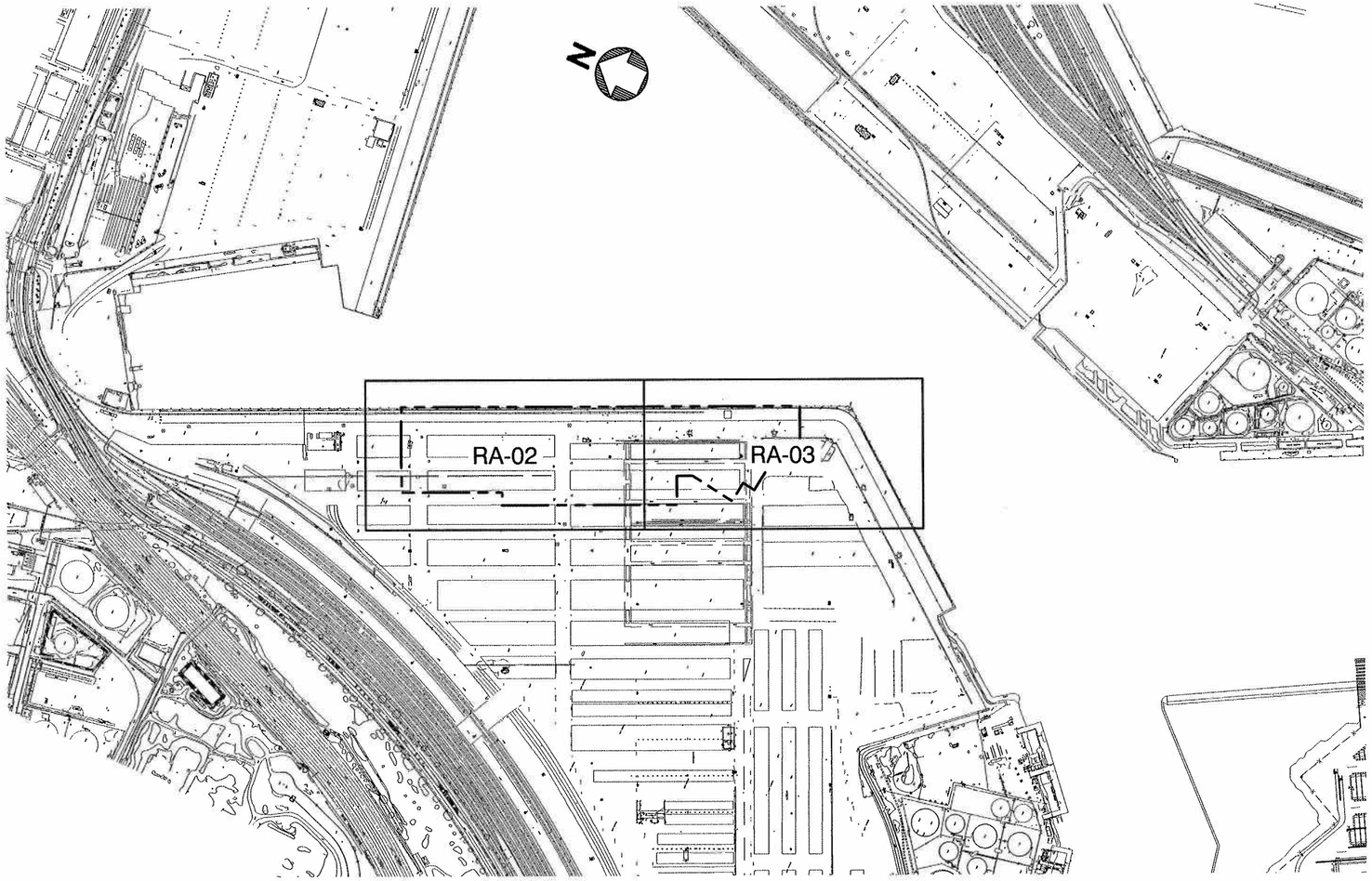
DRAWING NUMBER C-05



ABOVE GROUND REMOVAL AND PROTECT ITEM NUMBERS

1. REMOVE ASPHALT CONCRETE PAVEMENT
2. REMOVE FIRE HYDRANT
3. REMOVE TRENCH DRAIN
4. REMOVE CONCRETE RUNWAY
5. REMOVE HIGH MAST LIGHT POLE FOUNDATION
6. REMOVE STOWAGE PIN ANCHOR
7. REMOVE CHAIN LINK FENCE
8. TELEPHONE VAULT, SEE NOTE 17
9. REMOVE UNKNOWN MANHOLE
10. REMOVE CLEANOUT
11. REMOVE GUARD POST/SURROUNDING GUARD POSTS AND FOUNDATIONS
12. HIGH MAST LIGHT POLE, SEE NOTE 18
13. ELECTRICAL SUBSTATION, SEE NOTE 17
14. ELECTRICAL BOX/VAULT, SEE NOTE 17
15. REMOVE STEEL CRANE RAILS/RAILROAD TRACK
16. REMOVE POWER TRENCH AND METAL ACCESS COVER
17. REMOVE WATER VALVE AND COVER
18. REMOVE WATER VAULT
19. REMOVE SEWER MANHOLE
20. REMOVE STORM DRAIN MANHOLE
21. REMOVE CONCRETE SLAB
22. REMOVE K-RAIL BARRIER
23. REMOVE CRANE
24. REMOVE PORTION OF TIMBER WHARF STRUCTURE. REMOVE ALL DECK STRUCTURES INCLUDING, BUT NOT LIMITED TO TIMBER SHEET PILE WALLS, BULKHEADS, RAMPS, TIMBER CAPS, STRINGERS, DECKING, MECHANICAL CONDUITS AND PIPES. REMOVE ALL PILES COMPLETELY. SEE SPECIFICATIONS FOR REMOVAL AND DISPOSAL REQUIREMENTS.
25. REMOVE AND DISPOSE OF DOCK BUMPER
26. REMOVE AND SALVAGE CAST IRON BOLLARDS AND TRANSPORT IN PLACE TO THE POLA DESIGNATED LOCATION WITHIN THE POLA
27. REMOVE CONCRETE GUTTER
28. REMOVE STORM DRAIN INLET
29. NOT USED
30. ADJUST EX STORM DRAIN MANHOLE TO GRADE
31. ADJUST EX STORM DRAIN INLET TO GRADE
32. SEWER MANHOLE
33. ADJUST EX WATER VALVE AND COVER TO GRADE
34. ADJUST EX SEWER MANHOLE TO GRADE
35. ADJUST EX MANHOLE TO GRADE
36. NOT USED

LEGEND:

- PROJECT LIMIT LINE
- TEMP KRAIL WITH FENCE
- [#] REMOVAL ITEM CALLOUT
- (#) PROTECT IN PLACE

1RA-01 / RA-01 ABOVE GROUND REMOVAL SITE PLAN
SCALE: 1"=300'

GENERAL DEMOLITION NOTES

1. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE CITY OF LOS ANGELES PERMITS PRIOR TO COMMENCING WORK.
2. CONTRACTOR SHALL PROTECT IN PLACE ROADS, UTILITIES, ETC. AS INDICATED ON THE PLANS.
3. IF ANY HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER.
4. SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) APPROVAL IS REQUIRED FOR ASBESTOS ABATEMENT PRIOR TO COMMENCING WORK. (NOTE: SCAQMD REQUIRES 10 WORKING DAY WAITING PERIOD PRIOR TO PERMIT).
5. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL PERIMETER FENCING AS REQUIRED TO MAINTAIN SECURITY AND SAFETY OF THE SITE
6. DETAILS OF EXISTING CONDITIONS, DIMENSIONS, AND SUBSTRUCTURES SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY CONDITIONS AND DIMENSIONS THAT WILL OR MAY AFFECT THE WORK. PROTECT IN PLACE EXISTING STRUCTURES AND SUBSTRUCTURES TO REMAIN.
7. THE CONTRACTOR SHALL OBTAIN "AS-BUILT" INFORMATION FROM POLA FOR THE STRUCTURES AND SUBSTRUCTURES WITHIN THE PROJECT SITE.
8. REMOVE ALL CONCRETE PILES, SHEET PILES, PIERS, WHARF STRUCTURES, ARMOR, ROCK, ASPHALT CONCRETE AND OTHER ITEMS PER PLANS UNLESS NOTED OTHERWISE.
9. BACKFILL AND GRADE ALL EXCAVATIONS AS PER PLANS AND SPECIFICATIONS.
10. THE SITE SHALL BE CLEARED AND CLEANED OF ALL DEBRIS PRIOR TO GRADING.
11. EXCAVATIONS SHALL MEET ALL REGULATIONS AND BE PROTECTED IN AREAS ADJACENT TO PUBLIC ACCESS.
12. ALL EXISTING SURFACE FEATURES WITHIN THE GRADING LIMIT SHALL BE REMOVED UNLESS NOTED OTHERWISE.
13. FOR GENERAL NOTES AND LEGEND, SEE SHEET T-04. FOR ABBREVIATIONS, SEE SHEET T-05.
14. CONTRACTOR SHALL SURVEY ALL CONCRETE AND TIMBER PILES OR PORTIONS THERE OF THAT WILL REMAIN IN THE PROJECT SITE.
15. ANY ABOVE GROUND FEATURE (SUCH AS POLES, HYDRANTS, VALVE ASSEMBLIES, ETC.) OF ANY ABANDONED UTILITY SHALL BE REMOVED. ANY FEATURE ON AN ACTIVE LINE TO REMAIN SHALL BE RELOCATED OR PROTECTED IN PLACE AS SHOWN ON THE DRAWINGS.
16. CONTRACTOR SHALL COORDINATE WITH THE TENANT FOR WORK OUTSIDE THE PROJECT LIMITS. WORK SHALL NOT INTERRUPT TERMINAL OPERATIONS AT ANY TIME.
17. SEE ELECTRICAL REMOVAL SHEETS FOR ABOVE AND BELOW GROUND ELECTRICAL AND COMMUNICATIONS REMOVALS.
18. SEE ELECTRICAL REMOVAL SHEETS FOR HIGH MAST LIGHT POLE REMOVALS.
19. FOR BELOW GROUND REMOVALS SEE RB SHEETS.

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DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

ABOVE GROUND REMOVAL SITE PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
RA-01

MATCHLINE - SEE SHEET RA-03

SAWCUT LINE

PROJECT LIMIT

ASPH

STOP

HV-A112
13.00

1RA-02
RA-02

ABOVE GROUND REMOVAL PLAN

SCALE: 1"=40'

INDEX MAP

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ABOVE GROUND REMOVAL PLAN

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ENGINEERING DIVISION
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DRAWING NUMBER
RA-02

MATCHLINE - SEE SHEET RA-02

SAWCUT LINE

PROJECT LIMIT

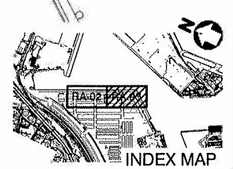
ASPH

CONC

GP'S

HV-A313

1RA-03
RA-03
ABOVE GROUND REMOVAL PLAN
SCALE: 1"=40'



INDEX MAP

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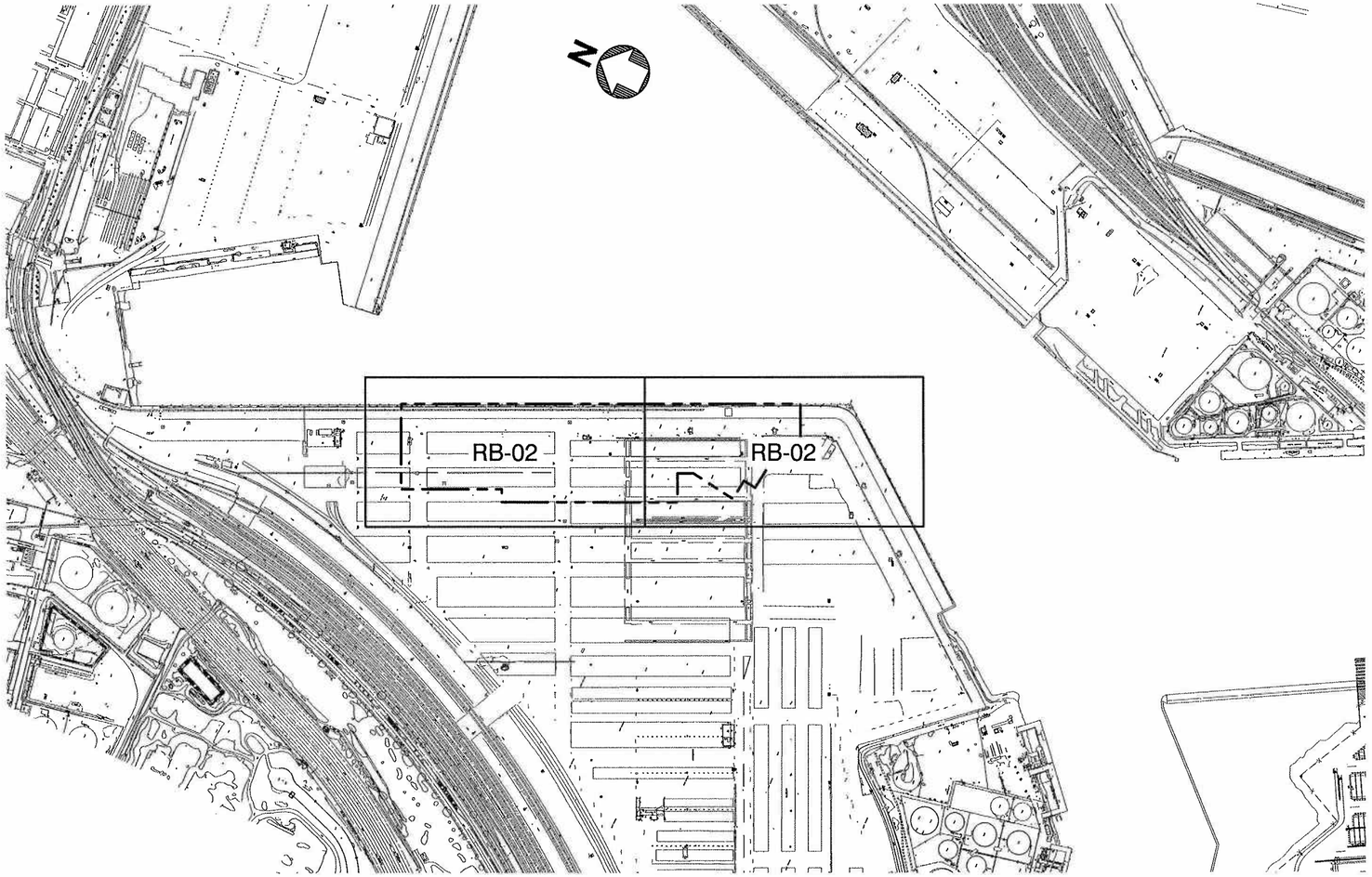
DRAWING NUMBER
RA-03



1RB-01
RB-01

BELOW GROUND REMOVAL SITE PLAN

SCALE: 1"=300'

BELOW GROUND REMOVAL AND PROTECT ITEM NUMBERS

1. NOT USED
2. ACTIVE UTILITY LINE TO BE ABANDONED OR REMOVED PER REMOVAL AND ABANDONMENT PROCEDURES, THIS SHEET.
3. ABANDONED UTILITY LINE TO BE REMOVED PER REMOVAL AND ABANDONMENT PROCEDURES THIS SHEET
4. REMOVE CONCRETE SD OUTFALL STRUCTURE AND/OR SEAL PIPE WITH CONCRETE (IF PIPE IS NOT REMOVED).
5. ACTIVE UTILITY LINE TO REMAIN
6. ACTIVE CATCH BASIN TO REMAIN. CONTRACTOR TO RAISE TO GRADE IF NECESSARY.

REMOVAL AND ABANDONMENT PROCEDURES FOR UTILITIES ACTIVE OR ALREADY ABANDONED (SEE SPECIFICATIONS FOR DETAILS)

UTILITY	SIZE	PROCEDURE
SMALL SEWER CONDUITS, ALL MAINTENANCE HOLES & SEWER STRUCTURES	< 12"Ø	PER SPECIFICATION. REMOVE INTERFERING PORTIONS AND SEAL ENDS. REMOVE MANHOLES OR CLARIFIERS TO 5' BELOW FINISH SURFACE, BREAK OUT BOTTOM & BACKFILL WITH SAND.
LARGE SEWER CONDUITS	≥ 12"Ø	PER SPECIFICATION. REMOVE PORTIONS OF PIPE THAT ARE ABOVE ELEVATION +8.0'. FILL WITH CONCRETE SLURRY ANY REMAINING PORTIONS.
SMALL STORM DRAINS, ALL MAINTENANCE HOLES & CATCH BASINS	< 12"Ø	PER SPECIFICATIONS. REMOVE INTERFERING PORTIONS AND SEAL ENDS. REMOVE MANHOLES AND CATCH BASINS TO 5' BELOW FINISH SURFACE, BREAK OUT BOTTOM & BACKFILL WITH SAND.
LARGE STORM DRAINS	≥ 12"Ø	PER SPECIFICATION. REMOVE PORTIONS OF PIPE THAT ARE ABOVE ELEVATION +8.0'. FILL WITH CONCRETE SLURRY ANY REMAINING PORTIONS.
ELECTRIC/TELEPHONE CONDUITS	ALL	SEE ELECTRICAL REMOVAL SHEETS.
SMALL WATER LINES	< 12"Ø	COORDINATE WITH DWP & PORT OF LA FOR SHUTDOWNS OF ACTIVE SYSTEMS. REMOVE VALVE RISERS AND VAULTS. REMOVE INTERFERING PORTIONS AND CUT AND CAP ENDS WITH CONCRETE.
LARGE WATER LINES	≥ 12"Ø	COORDINATE WITH DWP & PORT OF LA FOR SHUTDOWNS OF ACTIVE SYSTEMS. REMOVE VALVE RISERS AND VAULTS. REMOVE PIPE AND CUT AND CAP ENDS WITH CONCRETE.
GAS LINES	ALL	REMOVE INTERFERING PORTIONS, CUT AND CAP ENDS WITH CONCRETE.
STEAM LINES	ALL	REMOVE INTERFERING PORTIONS, CUT AND CAP ENDS WITH CONCRETE.
AIR AND OXYGEN LINES	ALL	REMOVE INTERFERING PORTIONS, CUT AND CAP ENDS WITH CONCRETE.
OIL LINES	12"	PER SPECIFICATION. REMOVE PIPE AND CAP END WITH CONCRETE.
STORM DRAIN OUTFALLS	ALL	CAP ALL STORM DRAIN OUTFALLS WITH CONCRETE OR REMOVE COMPLETELY.

GENERAL DEMOLITION NOTES

1. THE EXISTING UTILITIES AND SUBSTRUCTURES SHOWN ARE APPROXIMATE. THE PRESENCE, LOCATION, SIZE AND/OR DEPTH OF THE EXISTING UNDERGROUND UTILITIES AS SHOWN ON THE PLANS WERE OBTAINED FROM RECORD DRAWINGS. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID UTILITY INFORMATION.
2. ALL EXISTING UNDERGROUND UTILITIES AND SUBSTRUCTURES SHOWN ON THE PLANS ARE ABANDONED IN PLACE UNLESS OTHERWISE NOTED AS ACTIVE.
3. SEE ELECTRICAL REMOVAL SHEETS FOR ABOVE AND BELOW GROUND ELECTRICAL AND COMMUNICATIONS REMOVALS.

LEGEND:

- PROJECT LIMIT LINE
- TEMP KRAIL WITH FENCE
- [#] ITEM TO BE ABANDONED AND/OR REMOVED
- (#) ITEM TO REMAIN

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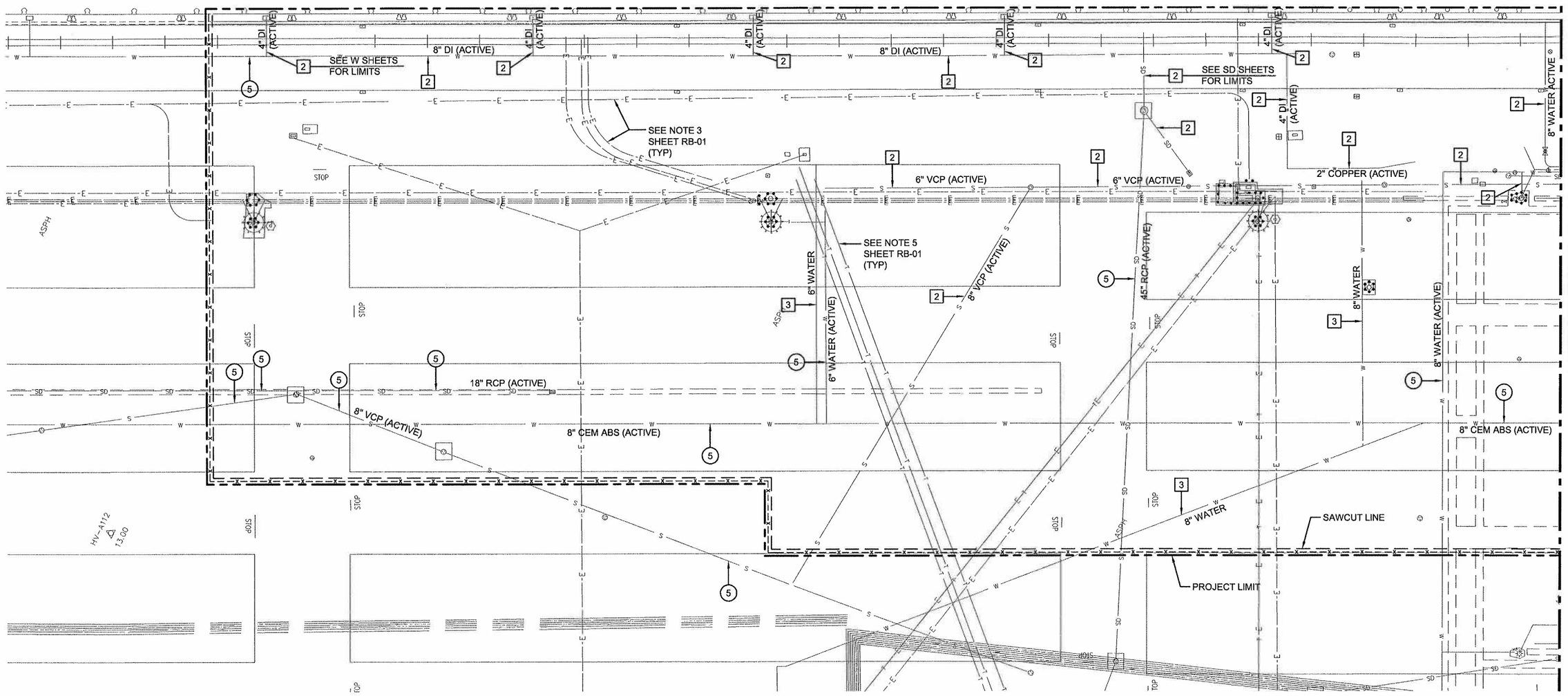
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

BELOW GROUND REMOVAL SITE PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

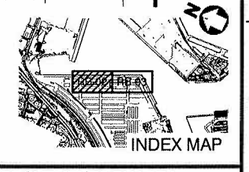
DRAWING NUMBER
RB-01



NOTE:

1. FOR UTILITY LINES THAT ARE SHOWN WITH NO REFERENCE REMOVAL OR PROTECTION ITEM NUMBER, REFER TO REMOVAL AND ABANDONMENT PROCEDURES ON SHEET RB-01.

1RB-02 / RB-02 **BELOW GROUND REMOVAL PLAN**
SCALE: 1"=40'



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BELOW GROUND REMOVAL PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER RB-02

MATCHLINE - SEE SHEET RB-02

6" PVC (ACTIVE)
4" DI (ACTIVE)
8" PVC (ACTIVE)
8" WATER (ACTIVE)
4" WTR (ACTIVE)
24" RCP (ACTIVE)
TRENCH DRAIN (ACTIVE)
45" RCP (ACTIVE-SALT WATER)
8" WTR (ACTIVE)
30" RCP (ACTIVE)
36" RCP (ACTIVE)
TRENCH DRAIN (ACTIVE) 24" RCP
42" RCP (ACTIVE)
10" WTR (ACTIVE)
1" GAS (ACTIVE)
SEE NOTE 2
SEE SD SHEETS FOR LIMITS
SEE NOTE 3 SHEET RB-01 (TYP)
SAWCUT LINE
PROJECT LIMIT
45" RCP SALT WATER (ACTIVE)
24" RCP (ACTIVE)
U/G TANK
HV-A313
ASPH
CONC
SD
GP'S
MH

NOTE:

1. FOR UTILITY LINES THAT ARE SHOWN WITH NO REFERENCE REMOVAL OR PROTECTION ITEM NUMBER, REFER TO REMOVAL AND ABANDONMENT PROCEDURES ON SHEET RB-01.
2. CONTRACTOR TO PROVIDE TEMPORARY GAS CONNECTION TO BUILDING.

1RB-03 / RB-03 BELOW GROUND REMOVAL PLAN
SCALE: 1"=40'

INDEX MAP

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THE PORT OF LOS ANGELES
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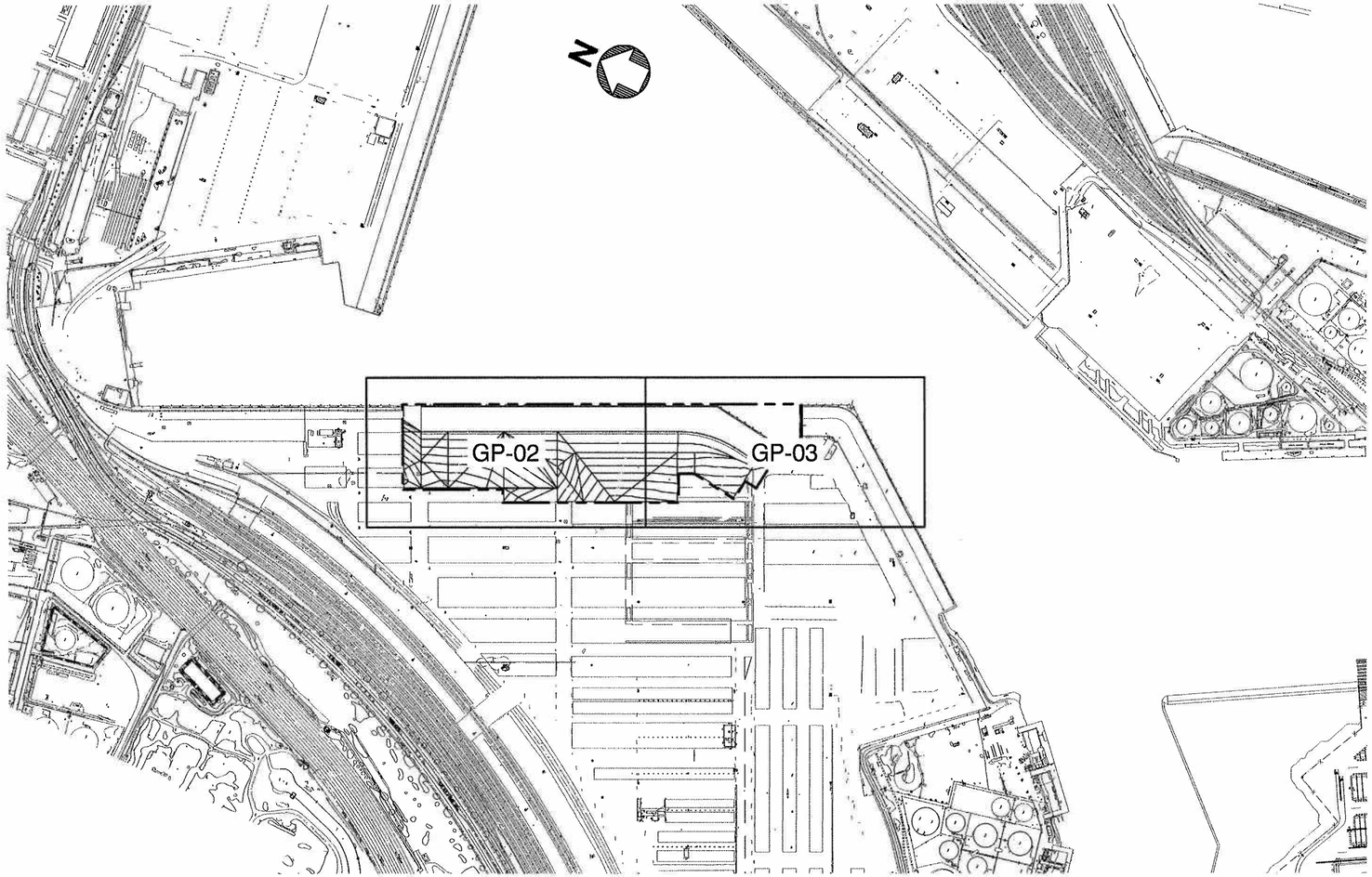
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309
DRAWING NUMBER RB-03



1GP-01 / GP-01 GRADING AND PAVING SITE PLAN
SCALE: 1"=300'

LEGEND:

- NEW 100' HIGH MAST LP & FH
- NEW CB
- NEW ELECTRICAL PULL BOX
- 16.25 — PROPOSED TOP OF AC PAVEMENT CONTOURS
- 16 — EXISTING TOP OF GRADE CONTOURS
- PROJECT LIMITS
- TEMP KRAIL WITH FENCE
- EDGE OF PAVEMENT (EOP) / JOIN EXISTING PAVEMENT

GENERAL GRADING NOTES

1. ALL ELEVATIONS ARE REFERENCED TO MEAN LOWER LOW WATER (M.L.L.W) AS ELEVATION 0.00
2. COMPACTION REPORTS SHALL BE SUBMITTED TO ENGINEER BY CONTRACTOR FOR CONDITIONAL APPROVAL.
3. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE PORT'S SOILS ENGINEER AND LA DEPT OF BUILDING AND SAFETY INSPECTOR FOR ALL KEY OR BOTTOM OF EXCAVATIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.
4. SAFE CONSTRUCTION EXCAVATION SLOPES AND SHORING ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHOULD COMPLY WITH ALL CAL OSHA AND OTHER APPLICABLE SAFETY REGULATIONS. SOIL CONDITIONS AND COMMENTS ON SHORING ARE CONTAINED IN THE SOILS REPORT OF THE SITE WHICH IS AVAILABLE FOR REVIEW IN THE CHIEF HARBOR ENGINEERS OFFICE.
5. PULL BOXES, CATCH BASINS AND MAINTENANCE HOLES, STORM DRAIN AND SEWER MAINTENANCE HOLE SHAFTS SHALL BE DESIGNED FOR 100 KIP WHEEL LOADING PLUS 25% IMPACT (125 KIPS) ON A 2' X 2' 6" WHEEL IMPRINT AREA. THESE STRUCTURES SHALL BE DESIGNED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER OF CALIFORNIA. SHOP DRAWINGS AND CALCULATIONS BEARING THE ENGINEER'S SIGNATURE AND STAMP SHALL BE SUBMITTED BY THE CONTRACTOR TO THE DEPARTMENT FOR APPROVAL.
6. ELEVATIONS GIVEN ARE TO TOP OF AC PAVEMENT SECTION.
7. CONTOUR INTERVAL IS 0.25' OR 3".
8. A REGISTERED DEPUTY GRADING INSPECTOR IS REQUIRED ON ALL SHORING WORK INCLUDING SLOT-CUTS.
9. CONTINUOUS INSPECTION BY THE ENGINEER IS REQUIRED FOR REMOVAL AND RECOMPACTION WORK.
10. NO FILL IS TO BE PLACED, UNTIL THE CITY GRADING INSPECTOR HAS INSPECTED AND APPROVED THE BOTTOM EXCAVATION.
11. THIS PLAN HAS BEEN REVIEWED AND CONFORMS TO RECOMMENDATIONS OF SOILS ENGINEERING AND GEOLOGIC REPORTS
12. DATED _____

    SIGNED _____

    "GENERAL SPECIFICATIONS FOR ALL GRADING PLANS" - DEPARTMENT BUILDING AND SAFETY FORM B-164 IS A PART OF THE PLANS.
13. A REGISTERED DEPUTY GRADING INSPECTOR IS REQUIRED ON ALL GRADING AND FOUNDATION EARTHWORK.
14. TEMPORARY EROSION CONTROL TO BE INSTALLED BETWEEN NOVEMBER 1 AND APRIL 15. OBTAIN GRADING INSPECTOR'S AND DEPARTMENT OF PUBLIC WORKS APPROVAL OF PROPOSED PROCEDURES.
15. MAN MADE FILL SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 90%. COHESIONLESS SOILS WITH LESS THAN 15% FINER THAN .005 MM REQUIRE 95% COMPACTION.
16. CONTRACTOR SHALL PREPARE SUBGRADE AS DEFINED IN THE SPECIFICATIONS AND PER DETAIL 3GP-04.
17. ALL COORDINATES ARE GIVEN PER HORIZONTAL COORDINATE OCNTROL, AS DEFINED ON DWG NO. C-01.

ABBREVIATIONS:

ABAND	ABANDONED	MAX	MAXIMUM
AC	ASPHALT CONCRETE	MH	MAINTENANCE HOLE
BCR	BEGIN CURVE RADIUS	MIN	MINIMUM
CB	CATCH BASIN	MJ	MECHANICAL JOINT
CMB	CRUSHED MISCELLANEOUS BASE	NIC	NOT IN CONTRACT
CI	CAST IRON	NRS	NON RISING STEM
CO	CLEAN OUT	OC	ON CENTER
CONC	CONCRETE	OD	OUTSIDE DIAMETER
DI	DUCTILE IRON	PB	PULL BOX
DIP	DUCTILE IRON PIPE	PP	POWER POLE
DWG	DRAWING	PROP	PROPOSED
DWP	DEPARTMENT OF WATER & POWER	PSI	POUNDS PER SQUARE INCH
ECR	END CURVE RADIUS	RCP	REINFORCED CONCRETE PIPE
ELEC, ELECT	ELECTRICAL	REF	REFERENCE
EOP	EDGE OF PAVEMENT	RR	RAILROAD
EX, EXIST	EXISTING	SCG	SOUTHERN CALIFORNIA GAS
FH	FIRE HYDRANT	SCH	SCHEDULE
FL	FLANGE	SD	STORM DRAIN
FLP	FLOOD LIGHT POLE	SS, SWR	SANITARY SEWER
FM	FORCE MAIN	SWBD	SWITCHBOARD
FT	FEET	TEL	TELEPHONE
G	GAS	TOG	TOP OF GRATE
GP	GUARD POST	TYP	TYPICAL
GV	GATE VALVE	VCP	VITRIFIED CLAY PIPE
HMP	HIGH MAST POLE	VLT	VAULT
HV	HIGH VOLTAGE	WTR	WATER
ID	INSIDE DIAMETER	W/	WITH
LP	LIGHT POLE		

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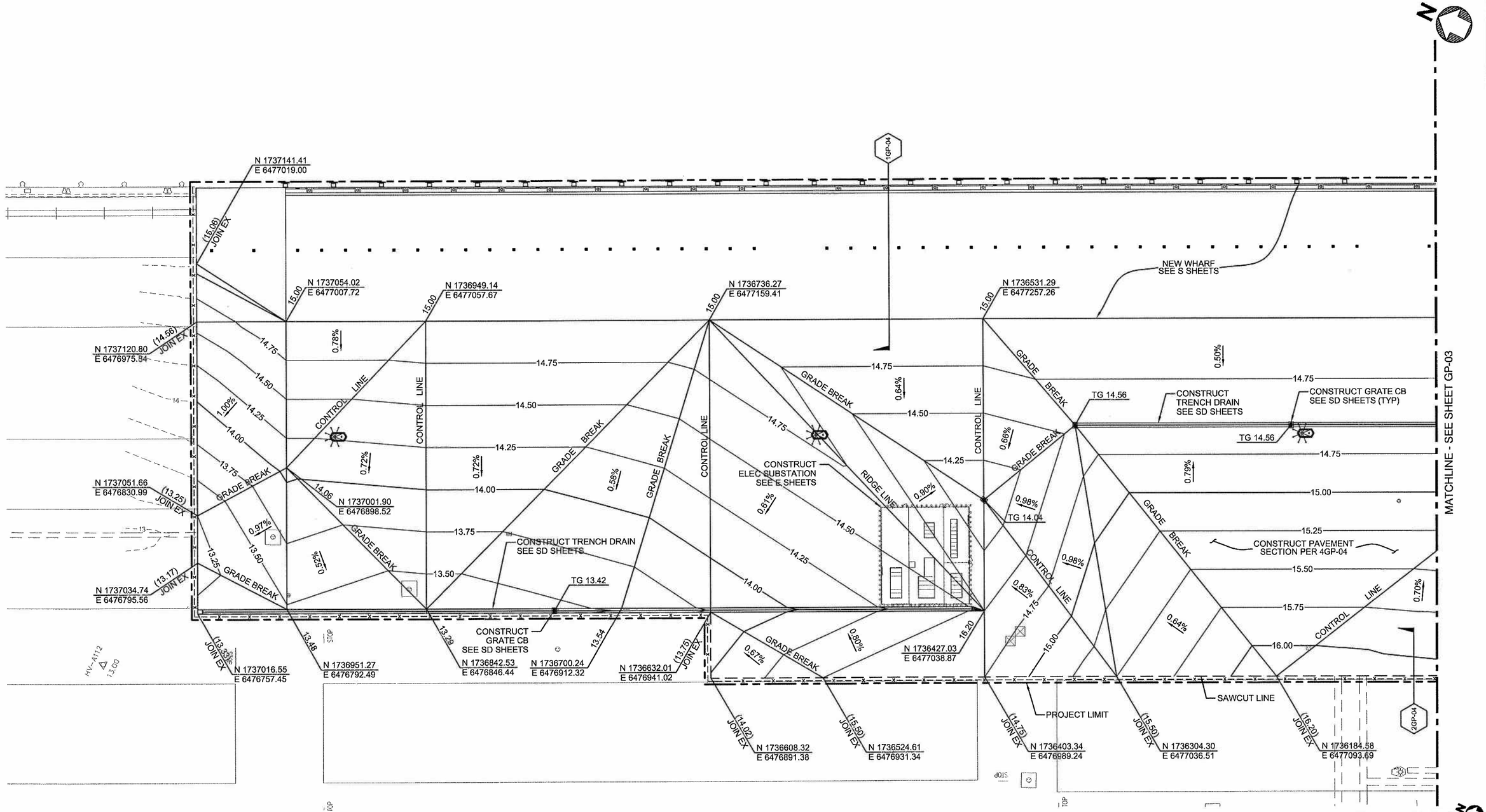
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

GRADING AND PAVING SITE PLAN

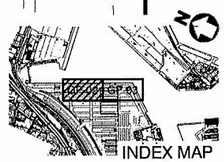
THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
GP-01



1GP-02 / GP-02 **GRADING AND PAVING PLAN**

SCALE: 1"=40'



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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

GRADING AND PAVING PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
GP-02

MATCHLINE - SEE SHEET GP-02

1GP-04

N 1736066.64
E 6477479.07

15.00

CONSTRUCT TRENCH DRAIN
SEE SD SHEETS

0.50%

0.54%

14.75

0.83%

N 1735721.54
E 6477508.83

15.00

EDGE OF PAVEMENT

14.75

0.73%

0.75%

CONSTRUCT GRATE CB
SEE SD SHEETS (TYP)

TG 14.80

N 1735545.86
E 6477598.51

15.00

CONTROL LINE

0.69%

CONSTRUCT PAVEMENT
SECTION PER 4GP-04

15.25

(15.01)
JOIN EX

PROJECT LIMIT

(15.17)
JOIN EX

N 1735994.75
E 6477320.27

(15.21)
JOIN EX

N 1735927.97
E 6477352.11

0.67%

15.50

N 1735716.69
E 6477463.89

15.75

SAWCUT LINE

2GP-04

(15.87)
JOIN EX

N 1735733.50
E 6477328.04

JOIN EX
(16.00)

N 1735941.88
E 6477209.53

HV-A313

ASPH

14

GP'S

S.MH

ASPH

15

ASPH

ASPH

16

ASPH

1GP-02
GP-02

GRADING AND PAVING PLAN

SCALE: 1"=40'

INDEX MAP

GP-02

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GRADING AND PAVING PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
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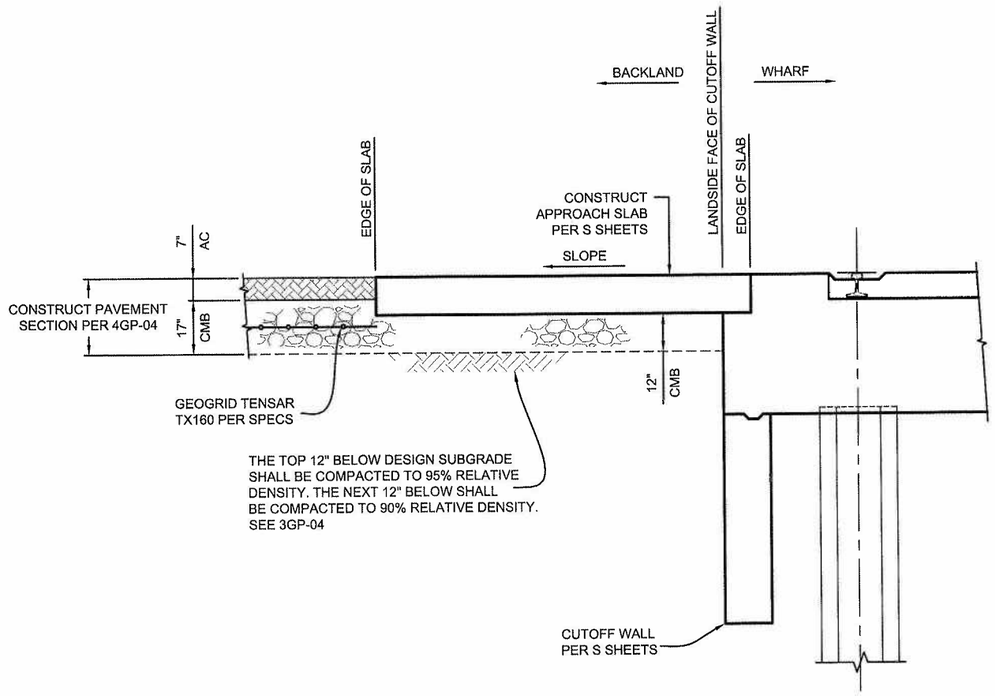
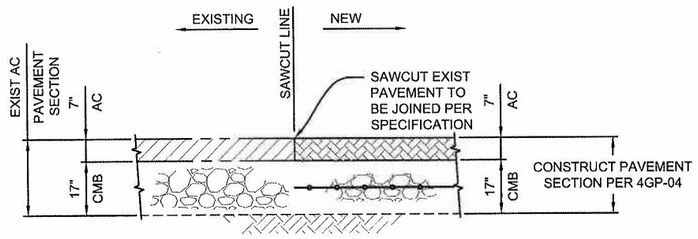
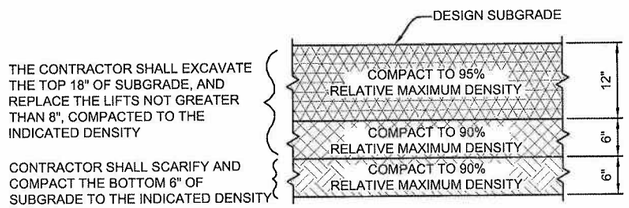
DRAWING NUMBER
GP-03



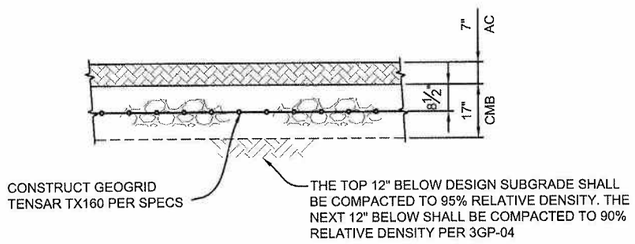
1GP-04 / GP-02 / GP-03 **AC PAVEMENT SECTION AT WHARF**
SCALE: 1/2"=1'



2GP-04 / GP-02 / GP-03 **SECTION - JOIN EXISTING PAVEMENT**
SCALE: 1/2"=1'



3GP-04 / 1GP-04 **SECTION - SUBGRADE PREPARATION**
SCALE: 1"=1'



4GP-04 / GP-04 **AC PAVEMENT SECTION**
SCALE: 1/2"=1'

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

GRADING AND PAVING DETAILS

THE PORT OF LOS ANGELES
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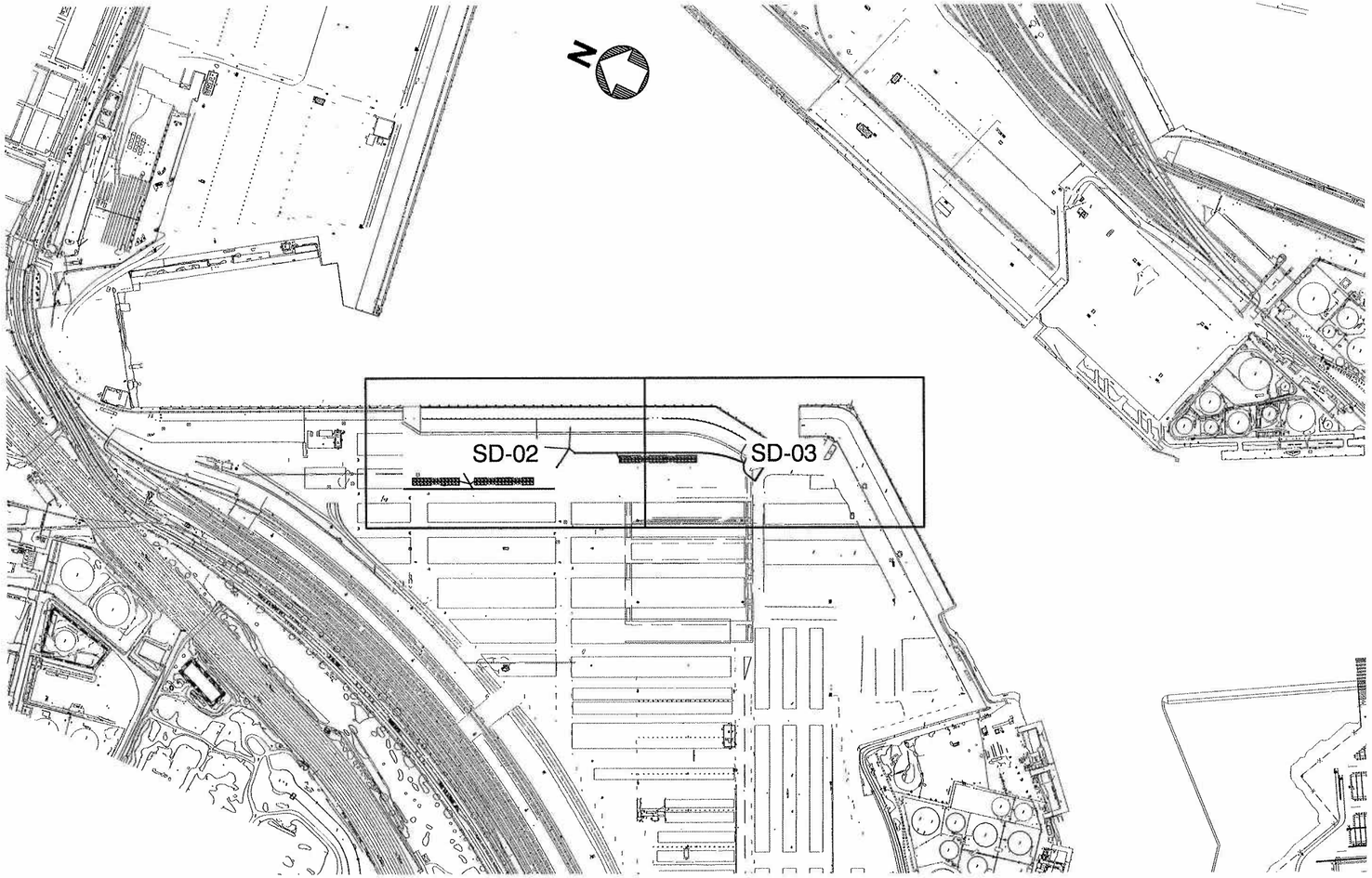
DRAWING NUMBER
GP-04



1SD-01 / SD-01 **STORM DRAIN SITE PLAN**
SCALE: 1"=300'

LEGEND:

	PROJECT LIMITS
	PROPOSED TRENCH DRAIN WITH RCP BELOW
	PROPOSED RCP
	TRENCH DRAIN
SD SD	EXISTING STORM DRAIN
PROPOSED WATER	PROPOSED WATER
PROPOSED ELEC	PROPOSED ELEC
	NEW MANHOLE
	NEW 120' HIGH MAST LP & FH
	NEW CB
	NEW HIGH VOLTAGE PULL BOX
	NEW LOW VOLTAGE PULL BOX
	GROUNDWATER ELEVATION

ABBREVIATIONS:

ABAND	ABANDONED
AC	ASPHALT CONCRETE
CB	CATCH BASIN
CMB	CRUSHED MISCELLANEOUS BASE
CI	CAST IRON
CO	CLEAN OUT
CONC/CNC	CONCRETE
DI	DUCTILE IRON
DWG	DRAWING
DWP	DEPARTMENT OF WATER & POWER
ELEC	ELECTRICAL
EX/EXIST	EXISTING
FH	FIRE HYDRANT
FL	FLOW LINE
FLP	FLOOD LIGHT POLE
GP	GUARD POST
GV	GATE VALVE
HV	HIGH VOLTAGE
HGL	HYDRAULIC GRADE LINE
LP	LIGHT POLE
MH	MAINTENANCE HOLE
MJ	MECHANICAL JOINT
NIC	NOT IN CONTRACT
PB	PULL BOX
PP	POWER POLE
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
RR	RAILROAD
SCG	SOUTHERN CALIFORNIA GAS
SD	STORM DRAIN
SS/SWR	SANITARY SEWER
SWBD	SWITCHBOARD
TEL	TELEPHONE
TYP	TYPICAL
VCP	VITRIFIED CLAY PIPE
VLT	VAULT
WTR	WATER

CONSTRUCTION NOTES

1. 8" WIDE TRENCH DRAIN SEE DETAIL 1SD-06
2. CATCH BASIN WITH SINGLE TRENCH DRAIN SEE DETAIL 2SD-06
3. CATCH BASIN WITH DOUBLE TRENCH DRAIN SEE DETAIL 3SD-06
4. 18" RCP
5. INFILTRATION BASIN SEE DETAIL 4SD-06
6. MODIFIED MANHOLE SEE DETAIL 1SD-07
7. CATCH BASIN WITH DOUBLE TRENCH DRAIN AND SINGLE INFILTRATION INLET SEE DETAIL 2SD-07
8. 6" PVC DRAINS SEE DETAIL 2SD-08
9. 8" PVC DRAIN
10. 12" DI & PVC DRAIN
11. OUTLET SEE DETAIL 3SD-07
12. 30" RCP
13. 45" RCP

GENERAL NOTES

1. JOIN LOCATIONS ON PLANS ARE BASED ON AVAILABLE RECORDS. CONTRACTOR SHALL DETERMINE "AS-BUILT" CONDITIONS BY EXPOSING JOIN LOCATION. PIPE LAYOUT SHALL BE ADJUSTED TO ACCOMMODATE EXISTING CONDITIONS AS APPROVED BY THE ENGINEER.
2. IF PIPE JOINT IS DAMAGED DURING DEMOLITION ACTIVITY, CONTRACTOR SHALL REMOVE ADDITIONAL PIPE UNTIL AN UNDAMAGED JOINT IS OBTAINED.
3. REINFORCED CONCRETE PIPE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.40. RCP SHALL BE SPUN CAST OR WET CAST.
4. ALL RCP SHALL HAVE A MINIMUM INSIDE AND OUTSIDE CONCRETE COVER OF 1-1/2 INCHES.
5. JOINTS SHALL BE RUBBER-GASKETED. MAXIMUM JOINT GAP SHALL BE PER MANUFACTURER'S SPECIFICATIONS.
6. GROUNDWATER ELEVATIONS WERE MEASURED AT TIME OF SOIL BORINGS. THE GROUNDWATER ELEVATION WILL FLUCTUATE WITH TIDE AND SEASON.
7. ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION.
8. SEE SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SOIL BORING LOGS.
9. CONTRACTOR SHALL MAINTAIN EXISTING STORM DRAIN FLOW FROM OFFSITE IN ACCORDANCE WITH LA CITY AND LA COUNTY FLOOD CONTROL DISTRICT FLOW REQUIREMENTS.

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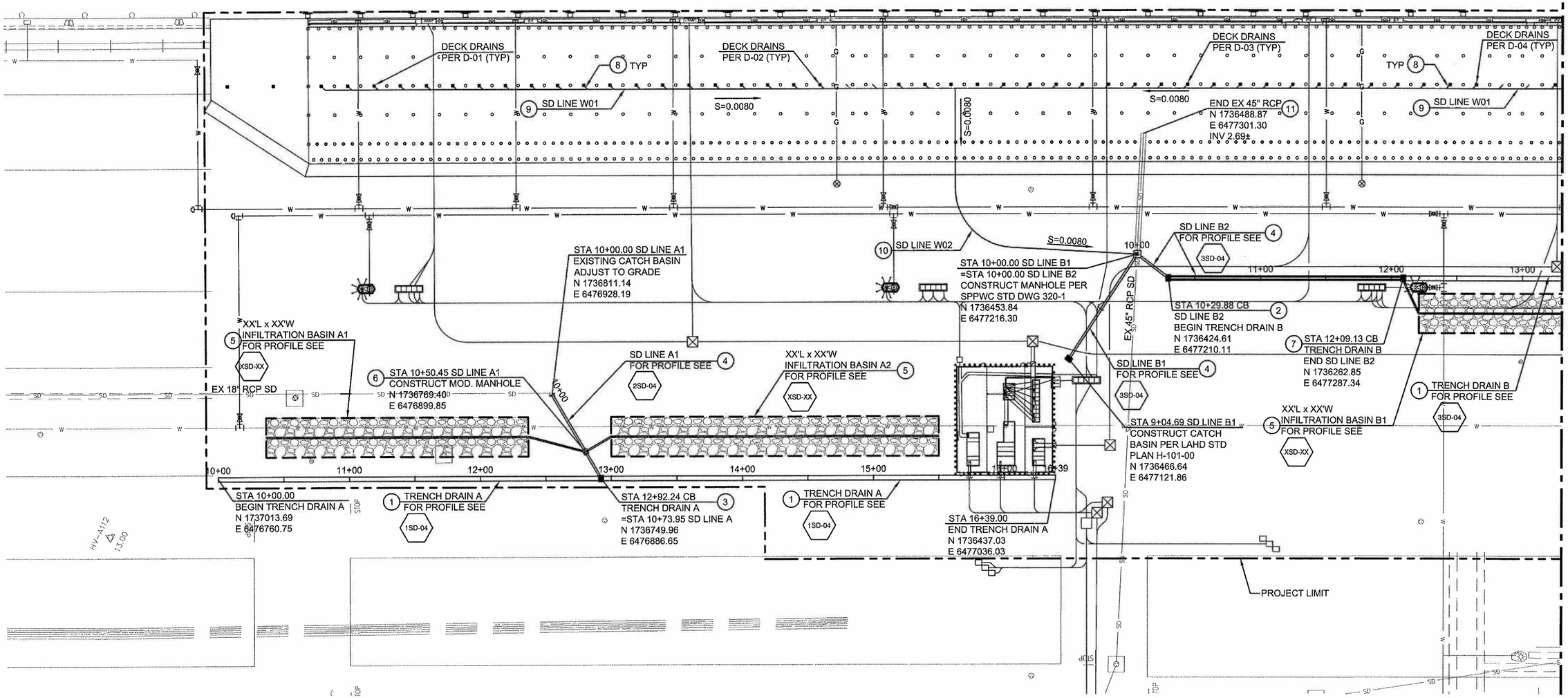
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

STORM DRAIN SITE PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER SD-01



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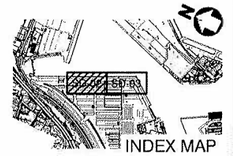
7. CATCH BASIN WITH DOUBLE TRENCH DRAIN AND SINGLE INFILTRATION INLET SEE DETAIL 2SD-07
8. 6" PVC DRAINS SEE DETAIL 2SD-08
9. 8" PVC DRAIN
10. 12" DI & PVC DRAIN
11. OUTLET SEE DETAIL 3SD-07

1SD-02 / SD-02 **STORM DRAIN PLAN**
SCALE: 1"=40'



INDEX MAP

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STORM DRAIN PLAN

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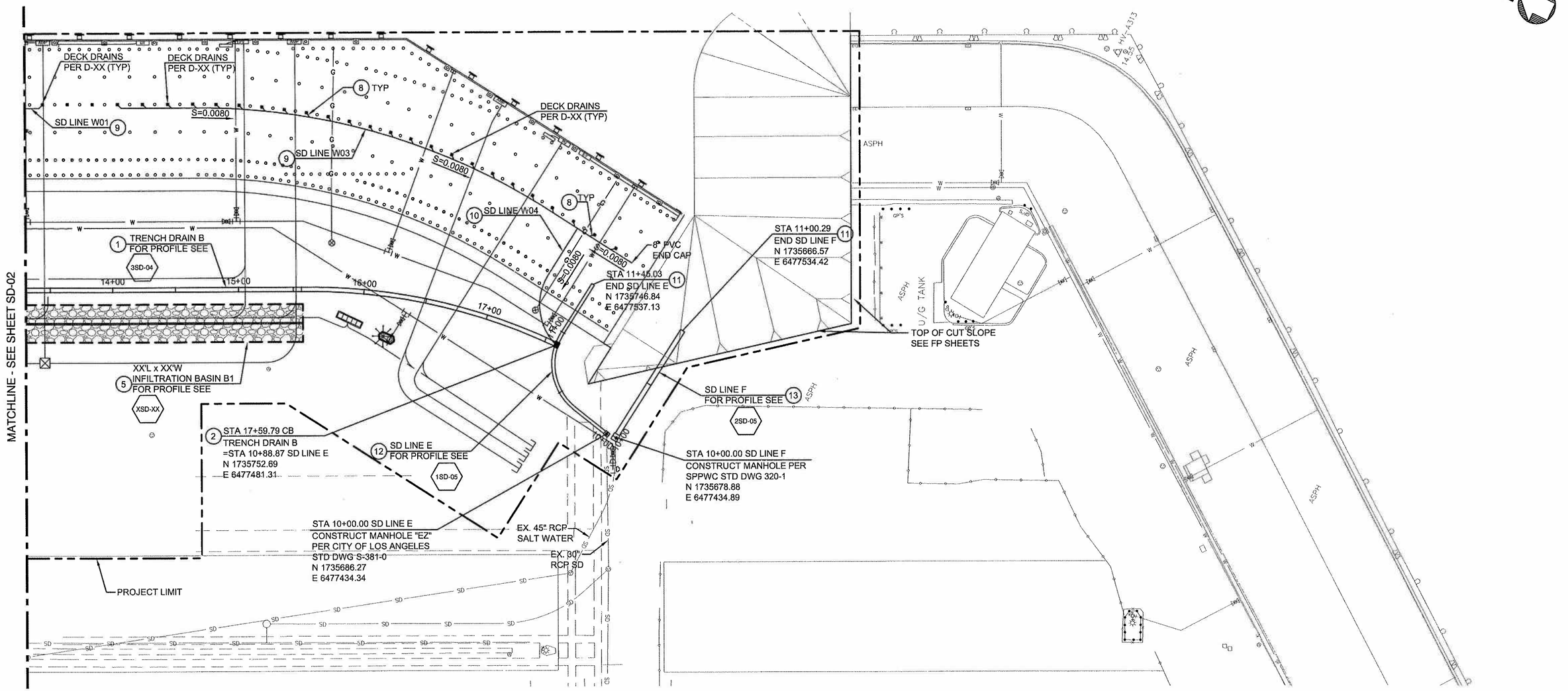
SD-02



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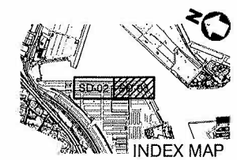
2. CATCH BASIN WITH SINGLE TRENCH DRAIN SEE DETAIL 2SD-06
5. INFILTRATION BASIN SEE DETAIL 4SD-06
8. 6" PVC DRAINS SEE DETAIL 2SD-08
9. 8" PVC DRAIN
10. 12" DI & PVC DRAIN
11. OUTLET SEE DETAIL 3SD-07
12. 30" RCP
13. 45" RCP

1SD-03 / SD-03 STORM DRAIN PLAN
SCALE: 1"=40'



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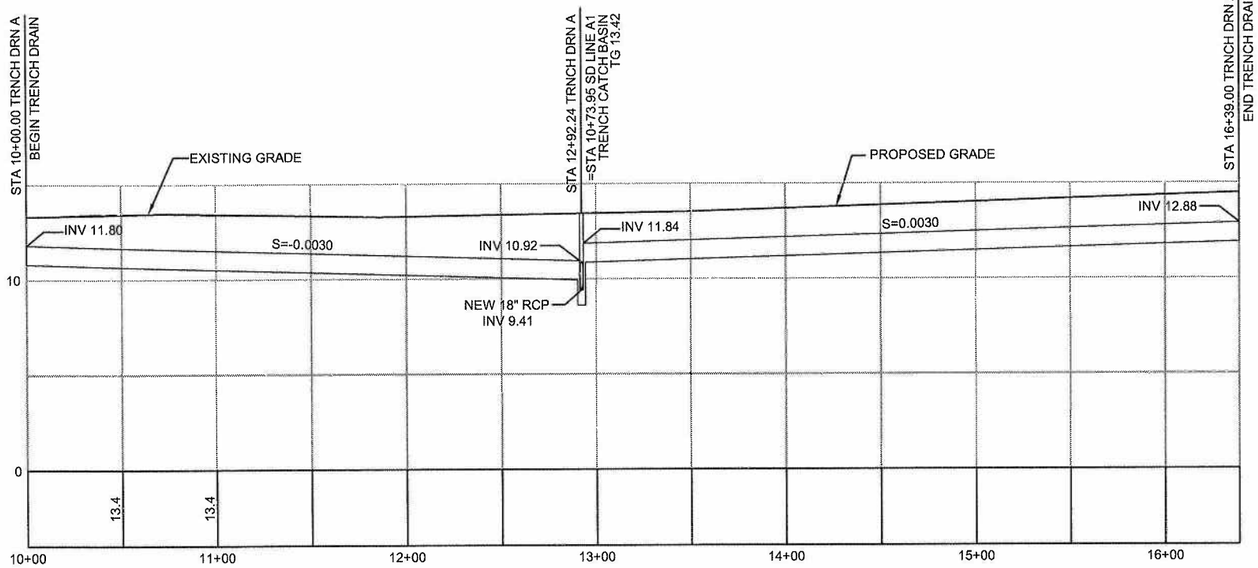
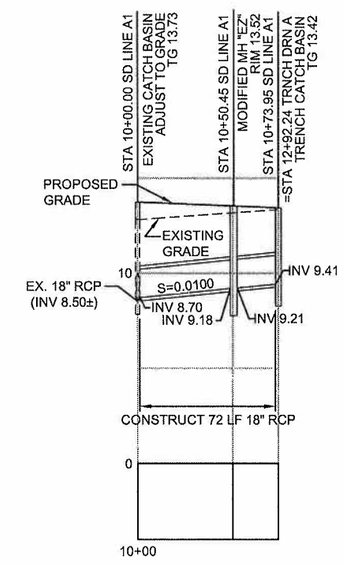
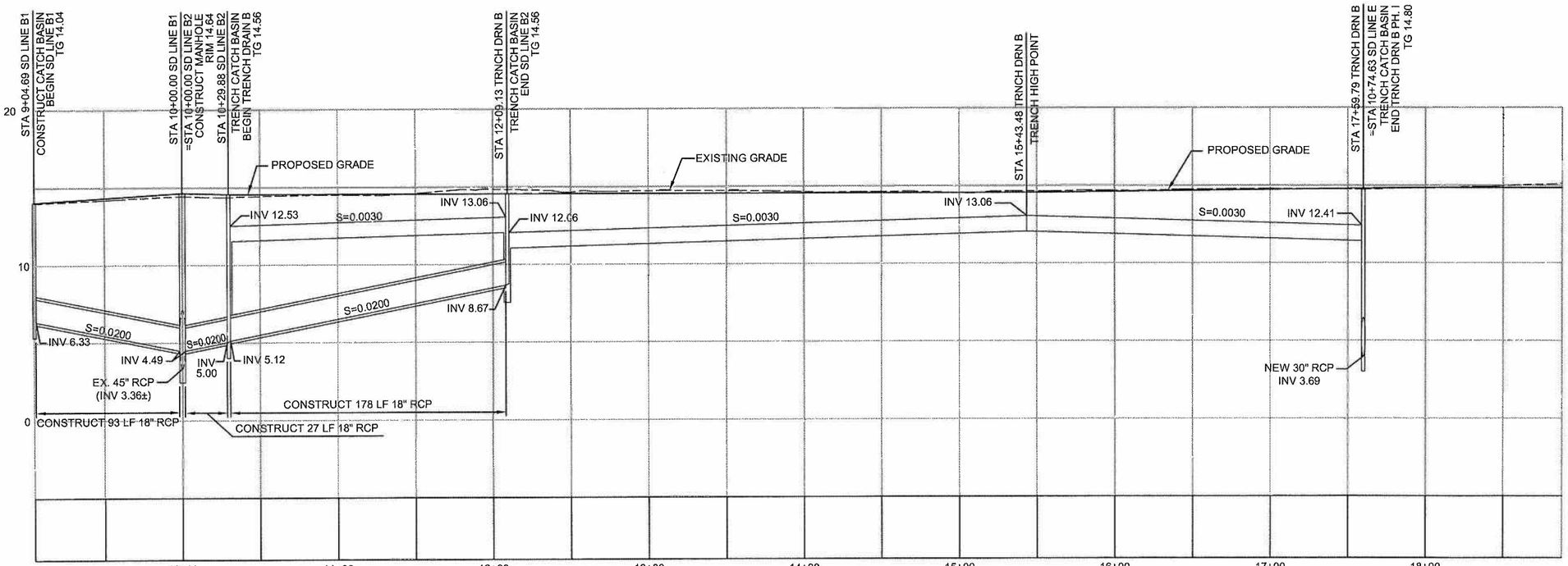


1SD-04
1SD-02 **PROFILE - TRENCH DRAIN A**
SCALE: HORIZ: 1" = 40'
VERT: 1" = 4'



2SD-04
1SD-02 **PROFILE - STORM DRAIN LINE A1**
SCALE: HORIZ: 1" = 40'
VERT: 1" = 4'



3SD-04
1SD-02,1SD-03 **PROFILE - TRENCH DRAIN B AND STORM DRAIN LINE B1 & B2**
SCALE: HORIZ: 1" = 40'
VERT: 1" = 4'

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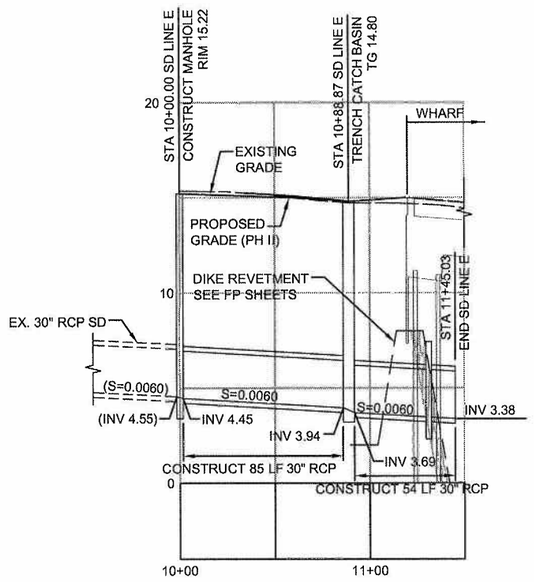
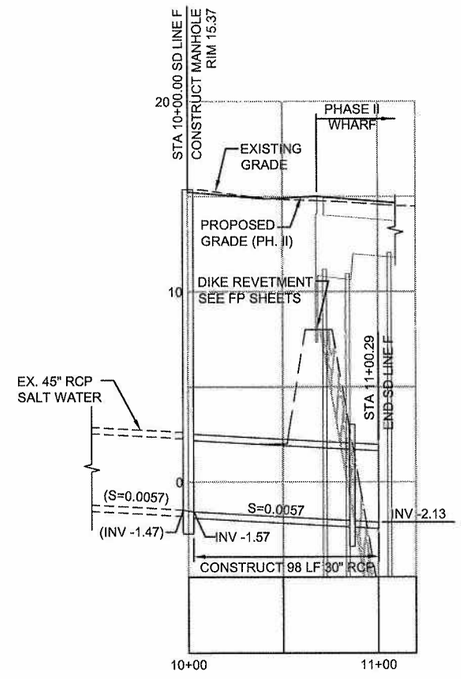


1SD-05
1SD-03 **PROFILE - SD LINE E**

SCALE: HORIZ: 1" = 40'
VERT: 1" = 4'



2SD-05
1SD-03 **PROFILE - SD LINE F**

SCALE: HORIZ: 1" = 40'
VERT: 1" = 4'

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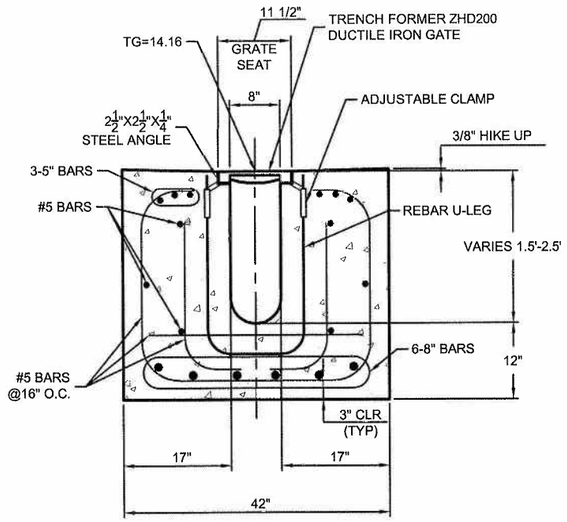
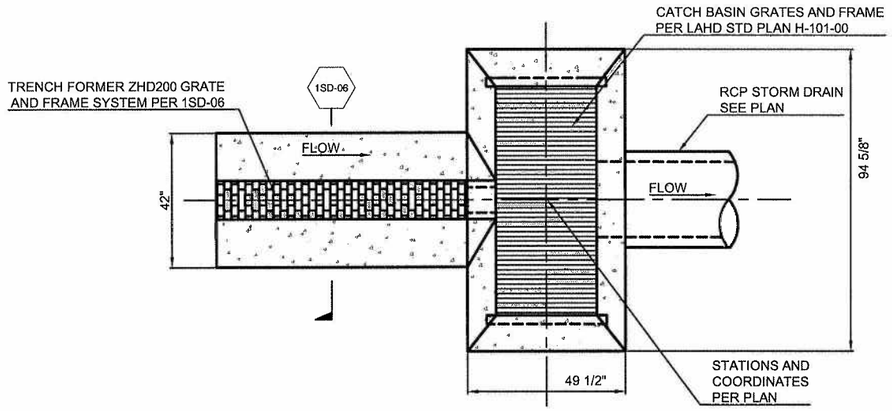


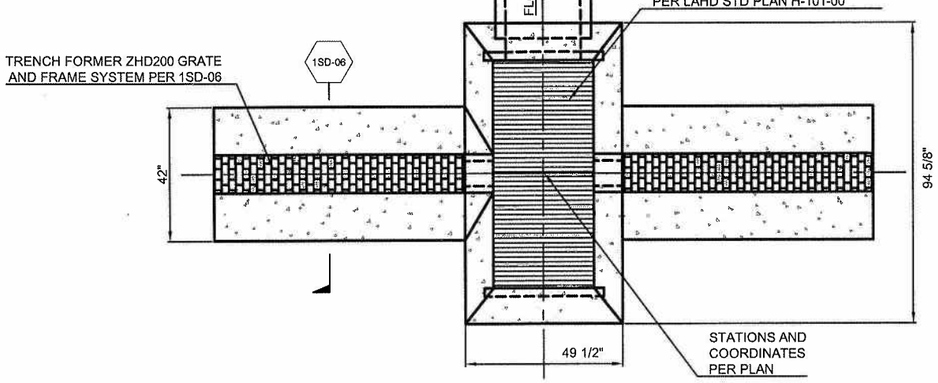
1SD-06 8" WIDE TRENCH DRAIN SECTION

1SD-02, 1SD-03, 2SD-06, 3SD-06, 2SD-07 SCALE: 1" = 1'



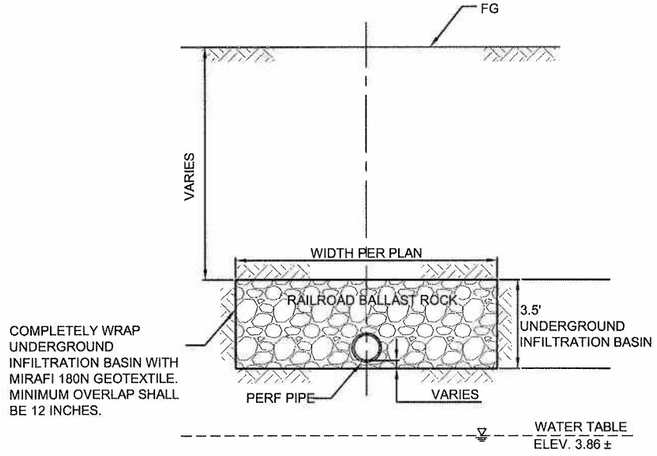
2SD-06 MODIFIED DOUBLE CATCH BASIN WITH SINGLE TRENCH DRAIN

1SD-02, 1SD-03 SCALE: 1/2" = 1'



3SD-06 MODIFIED DOUBLE CATCH BASIN WITH DOUBLE TRENCH DRAINS

1SD-02 SCALE: 1/2" = 1'



4SD-06 INFILTRATION BASIN

1SD-02, 1SD-03 SCALE: 1/2" = 1'

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STORM DRAIN DETAILS - 1

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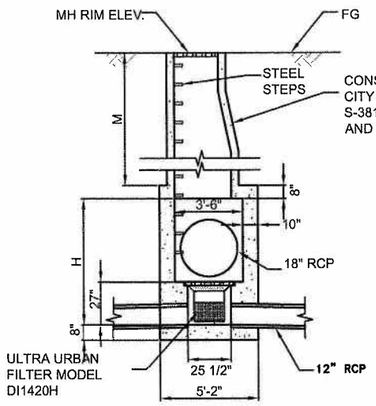
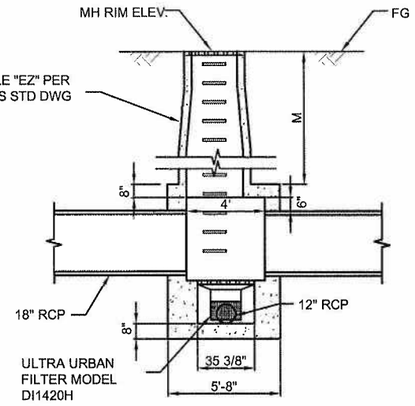
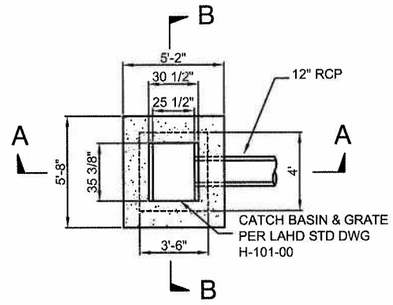


SECTION A-A

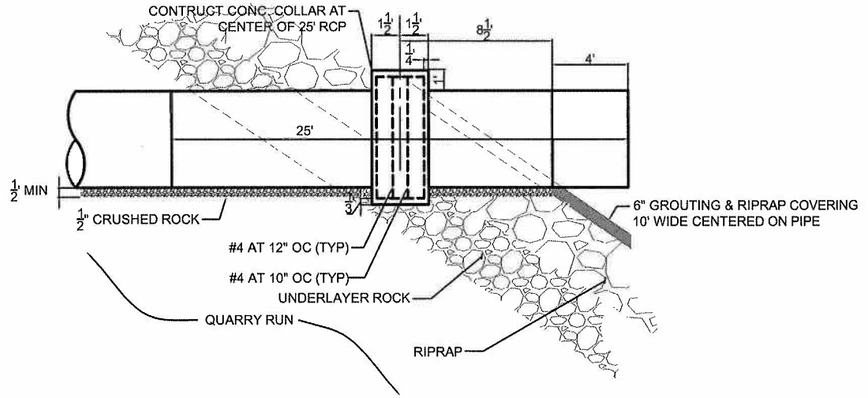


SECTION B-B

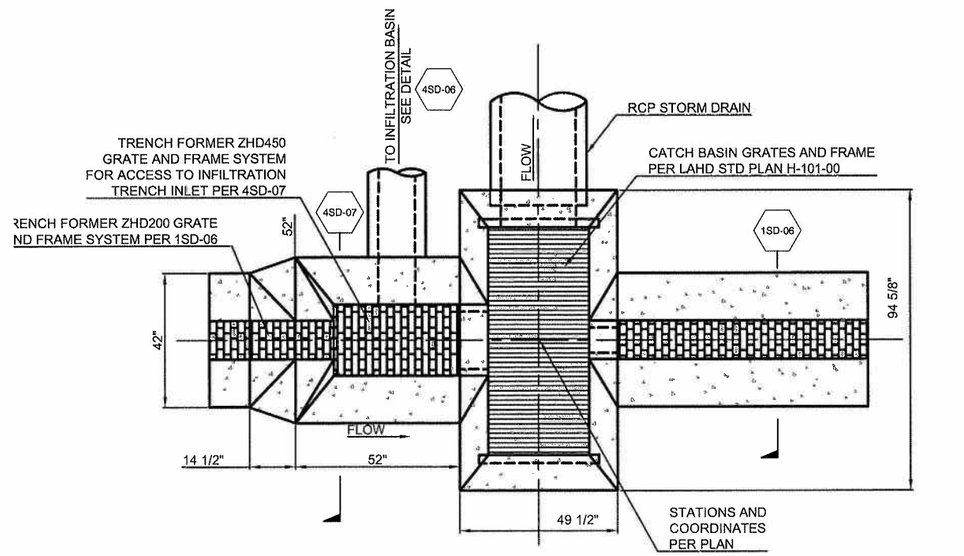


MANHOLE SUMP PLAN

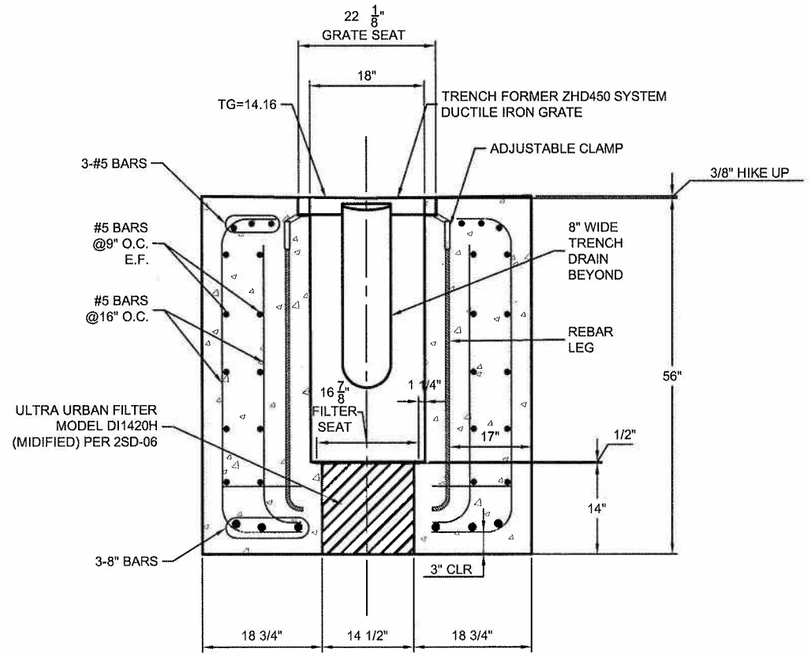
1SD-07
1SD-02
MODIFIED MANHOLE "EZ"
SCALE: 1/2" = 1'



3SD-07
1SD-02
OUTLET DETAIL
SCALE: 1/4" = 1'



2SD-07
1SD-02
MODIFIED DOUBLE CATCH BASIN WITH DOUBLE TRENCH DRAIN AND SINGLE INFILTRATION TRENCH INLET
SCALE: 1/2" = 1'



4SD-07
2SD-07
INFILTRATION TRENCH INLET 18" WIDE TRENCH DRAIN SECTION
SCALE: 1" = 1'

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STORM DRAIN DETAILS - 2

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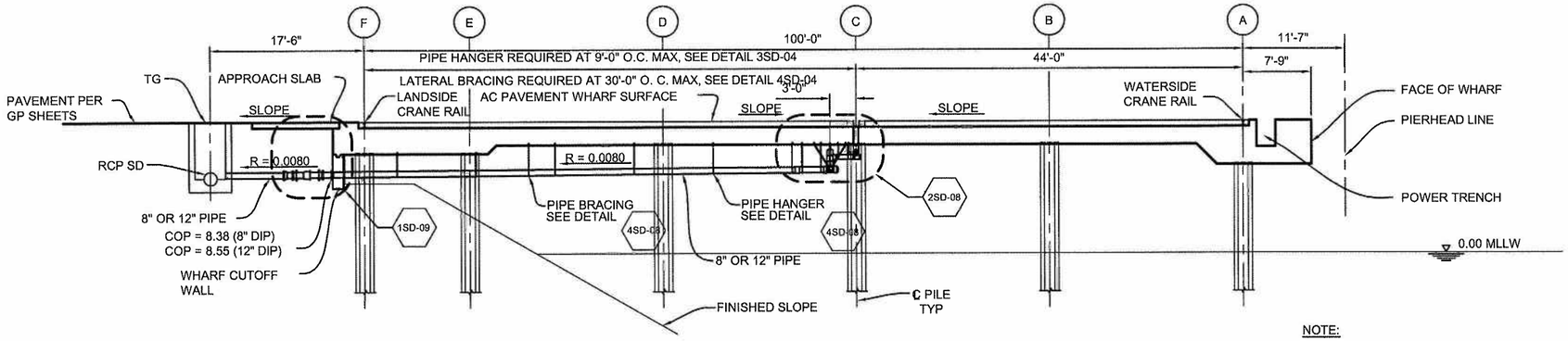
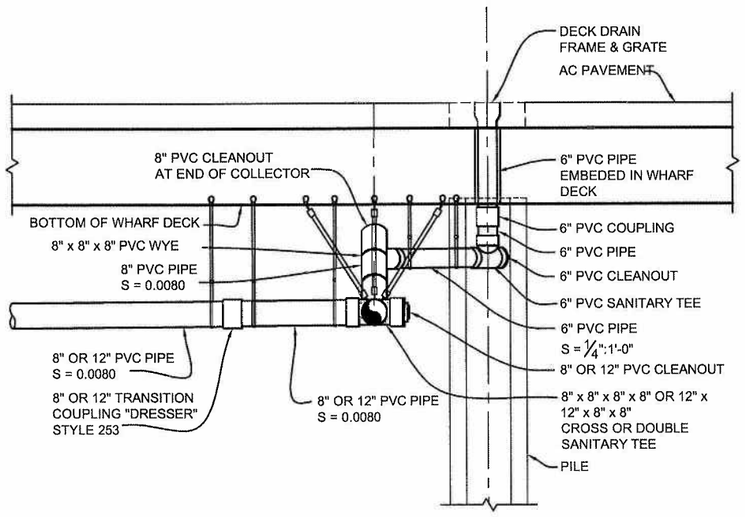


1SD-08 / 1SD-02, 1SD-03 ELEVATION - PIPE INSTALLATION UNDER WHARF

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

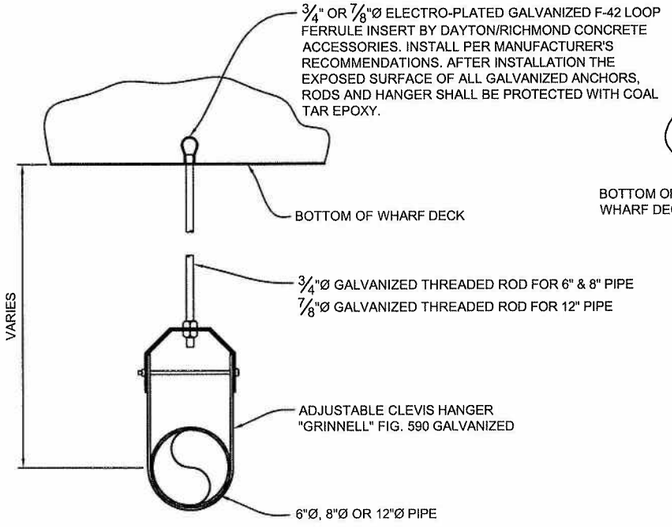
NOTE:

1. CONTRACTOR SHALL PROVIDE ALL REQUIRED FITTINGS.



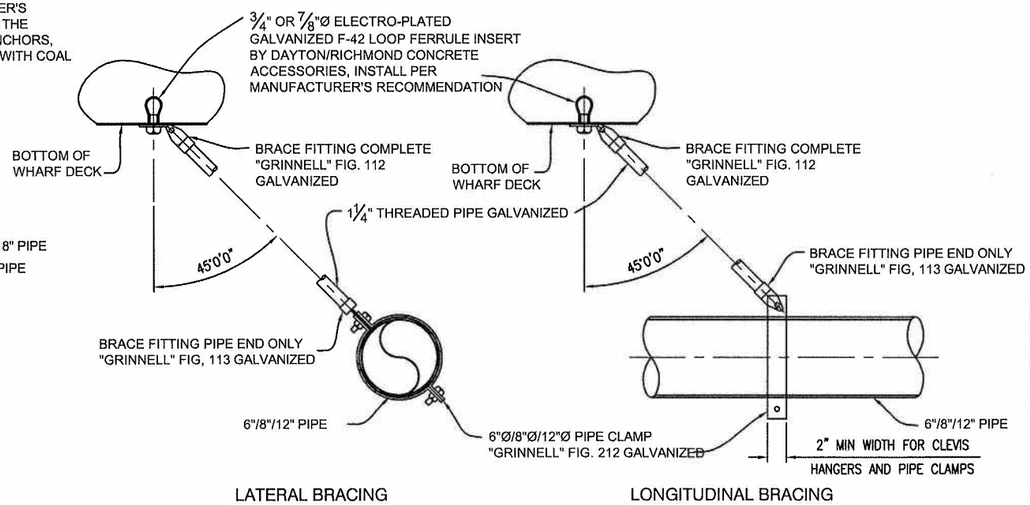
2SD-08 / 1SD-02, 1SD-03 6" PVC DRAIN DETAIL

SCALE: 1/2" = 1'-0"



3SD-08 / 1SD-08 PIPE HANGER

NTS



LATERAL BRACING

LONGITUDINAL BRACING

NOTES:

1. INSTALL LATERAL BRACING ON ALTERNATE SIDE OF THE PIPE.
2. SEPARATE LATERAL AND LONGITUDINAL BRACING BY AT LEAST 10'-0".
3. AFTER INSTALLATION, EXPOSED SURFACES OF ALL ANCHORS, RODS AND HANGERS SHALL BE PROTECTED WITH COAL TAR EPOXY.

4SD-08 / 1SD-08 PIPE BRACING (UNDER THE WHARF)

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STORM DRAIN DETAILS - 3

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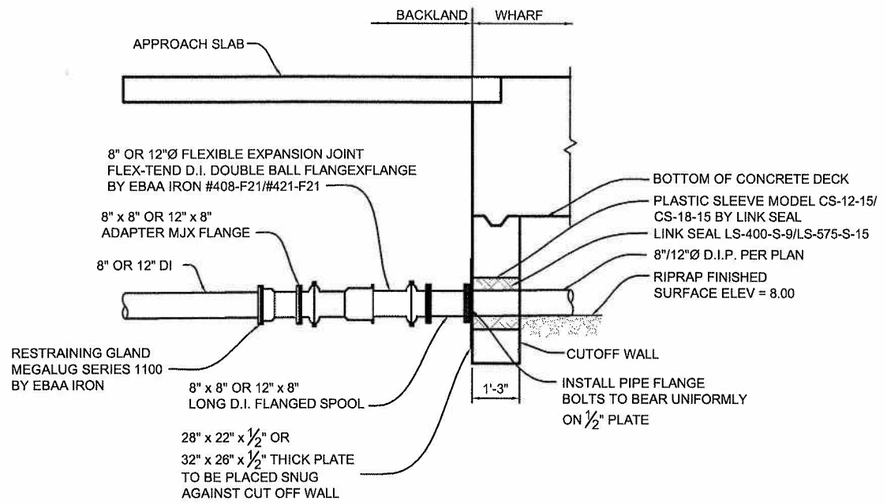
DRAWING NUMBER
SD-08



NOTE: PRE-FLEX EXPANSION JOINT AS NECESSARY TO CREATE GRADE BREAK IN DRAIN PIPE TO MEET MH'S ON LINES W07 AND W08 AT REQUIRED INVERT.

1SD-09
1SD-08

8" OR 12" PIPE PLATE AT CUTOFF WALL

SCALE: 1/2" = 1'-0"

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STORM DRAIN DETAILS - 4

THE PORT OF LOS ANGELES
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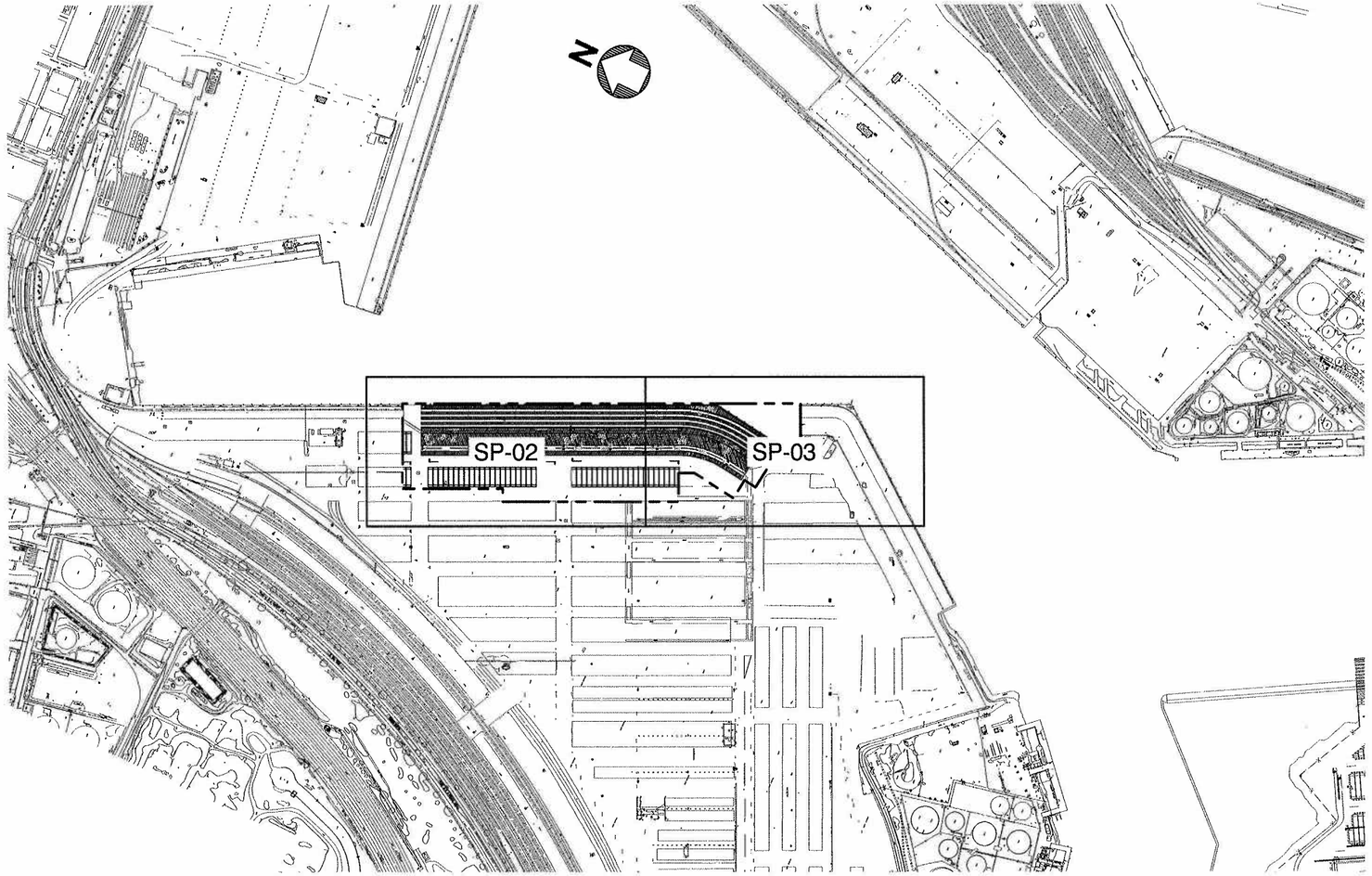
DRAWING NUMBER
SD-09



1SP-01 / SP-01 STRIPING AND FENCING SITE PLAN
SCALE: 1"=300'

LEGEND:

	PROJECT LIMITS
–x–x–x–x–	TEMP KRAIL WITH FENCE
	EDGE OF PAVEMENT
	KRAIL ONLY
	NEW 120' HIGH MAST LP & FH
	NEW CB
	NEW HIGH VOLTAGE PULL BOX
	WHITE PAVEMENT MARKING TYPE 1 (3.05m) ARROW PER CALTRANS STD. PLAN A24A
R1	SIGN POST WITH SIGN DESIGNATION PER CALTRANS WATCH MANUAL
PIN	PORTABLE SIGN WITH ORIENTATION DESIGNATION

ABBREVIATIONS:

AC	ASPHALT CONCRETE
BCR	BEGIN CURVE RADIUS
CB	CATCH BASIN
CMB	CRUSHED MISCELLANEOUS BASE
ECR	END CURVE RADIUS
EOP	EDGE OF PAVEMENT
EX/EXIST	EXISTING
FH	FIRE HYDRANT
FLP	FLOOD LIGHT POLE
FM	FORCE MAIN
FT	FEET
GP	GUARD POST
LAHD	LOS ANGELES HARBOR DEPARTMENT
LP	LIGHT POLE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
OC	ON CENTER
OD	OUTSIDE DIAMETER
PB	PULL BOX
PCC	POINT OF COMPOUND CURVE
PP	POWER POLE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
SCH	SCHEDULE
TYP	TYPICAL
W/	WITH

GENERAL NOTES

1. CONTRACTOR TO FURNISH A TOTAL OF XX PORTABLE SIGNS INCLUDING FOUNDATION. LOCATION OF PORTABLE SIGNS, AS WELL AS EXACT LETTERING DESIGNATION WILL BE PROVIDED AFTER AWARD.
2. ALL PARKING STALLS AND WHARF STRIPING SHALL BE THERMOPLASTIC. ALL OTHER STRIPING SHALL BE RAPID DRY PAINT, COLOR AS NOTED.
3. GROUNDED STORAGE LETTERING AND NUMBERING DESIGNATION WILL BE PROVIDED BY THE ENGINEER AFTER AWARD.
4. ALL KRAIL SHALL BE ANCHORED, PER DETAIL 1SP-05.

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DATE: OCTOBER 30, 2009
DRAWN: J. WARD
CHECKED:
DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

STRIPING AND FENCING SITE PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SP-01

N 1737101.66
E 6477107.51

PROPOSED CRANE RAIL PER CR SHEETS

PROJECT LIMIT

1SP-04

ASPH

N 1736960.15
E 6476881.15

STOP

4SP-04 TYP

PROPOSED STRIPING PER 2SP-04

N 1736924.37
E 6476806.26

HV-4112
13.00

STOP

N 1736410.77
E 6477143.55

PROPOSED GRATE CB
SEE SD SHEETS
(TYP)

PROPOSED
TRENCH DRAIN
SEE SD SHEETS

N 1736375.00
E 6477068.66

PROPOSED STRIPING
PER 2SP-04

PROPOSED TRENCH DRAIN
SEE SD SHEETS

ASPH

MATCHLINE - SEE SHEET SP-03

1SP-02
SP-02

STRIPING AND FENCING PLAN

SCALE: 1"=40'

INDEX MAP

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

STRIPING AND FENCING PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SP-02

MATCHLINE - SEE SHEET SP-02

1SP-04

PROPOSED CRANE RAIL PER CR SHEETS

PROPOSED TRENCH DRAIN
SEE SD SHEETS

SD1S

4SP-04

PROPOSED STRIPING
PER 2SP-04

2SP-04

N 1735707.96
E 6477618.57

EDGE OF
PAVEMENT

PROPOSED GRATE CB
SEE SD SHEETS
(TYP)

N 1735732.83
E 6477406.10

PROJECT LIMIT

ASPH

CONC

GP'S

S-MH

HV-A313

14.55

1SP-03 / SP-03 STRIPING AND FENCING PLAN

SCALE: 1"=40'

INDEX MAP

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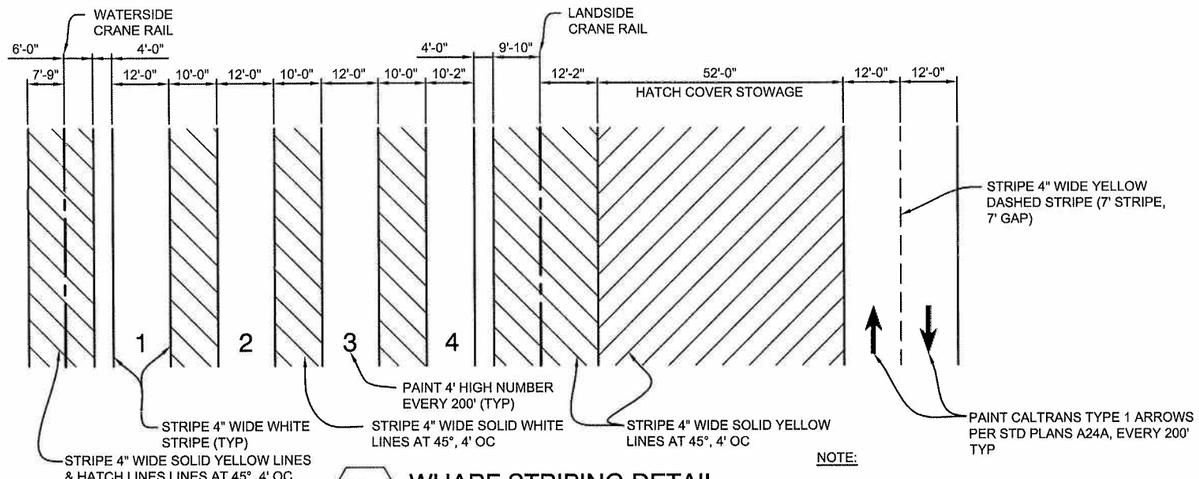
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

STRIPING AND FENCING PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

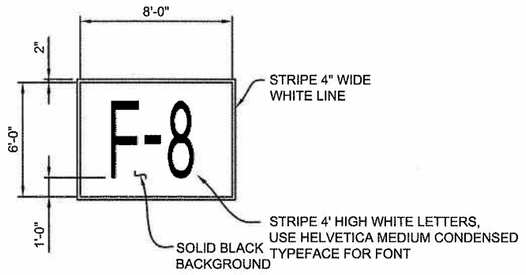
DRAWING NUMBER
SP-03



1SP-04 / SP-02 / SP-03 **WHARF STRIPING DETAIL**
SCALE: 1/16" = 1'-0"

NOTE:

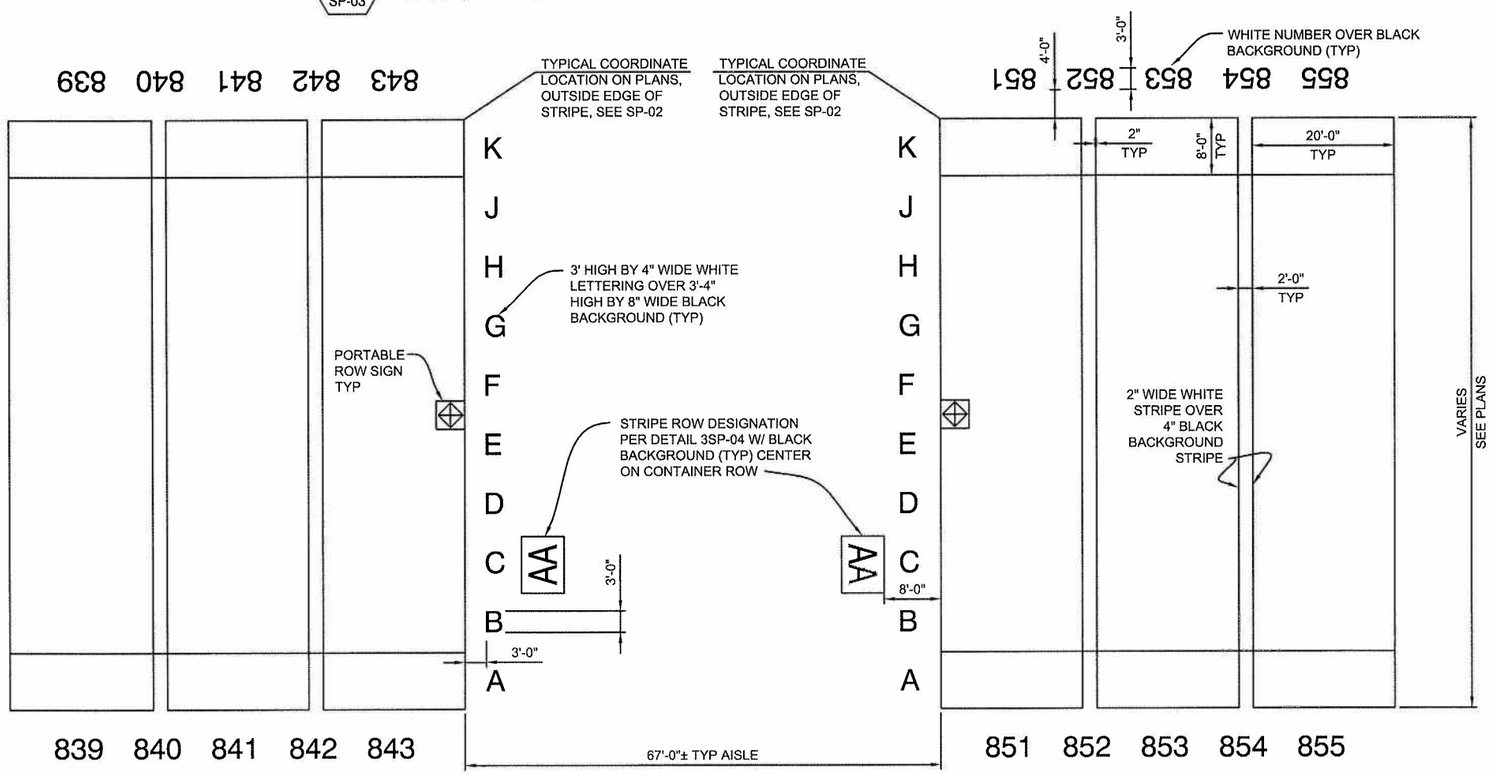
1. CONTRACTOR TO VERIFY COLOR & NUMBERING OF LANE, HATCHING, AND LINES PRIOR TO STARTING WORK.



NOTES:

1. CONTRACTOR TO VERIFY COLOR, NUMBERING & LETTERING OF LINES, STALL NUMBERING & ROW DESIGNATION PRIOR TO STARTING WORK.
2. STRIPE SOLID BLACK BACKGROUND AT LEAST 2" BEYOND 4" WHITE LINE.

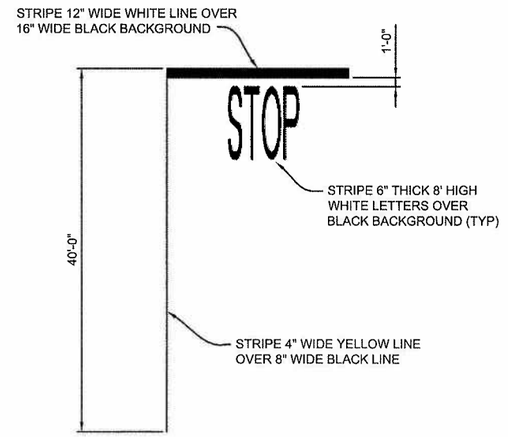
3SP-04 / 2SP-04 **ROW DESIGNATION STRIPING**
SCALE: 1/4" = 1'-0"



NOTES:

1. CONTRACTOR TO VERIFY COLOR, NUMBERING & LETTERING OF LINES, STALL NUMBERING & ROW DESIGNATION PRIOR TO STARTING WORK.
2. STRIPE SOLID BLACK LINE/BACKGROUND AT LEAST 2" BEYOND LINES & NUMBERS/LETTERING.

2SP-04 / SP-02 / SP-03 **GROUNDED STORAGE STRIPING DETAIL**
SCALE: 3/32" = 1'-0"



NOTE:

1. STRIPE SOLID BLACK BACKGROUND AT LEAST 2" BEYOND 4" WHITE LINE.

4SP-04 / SP-02 / SP-03 **DETAIL - "STOP" STRIPING**
SCALE: 1/8" = 1'-0"

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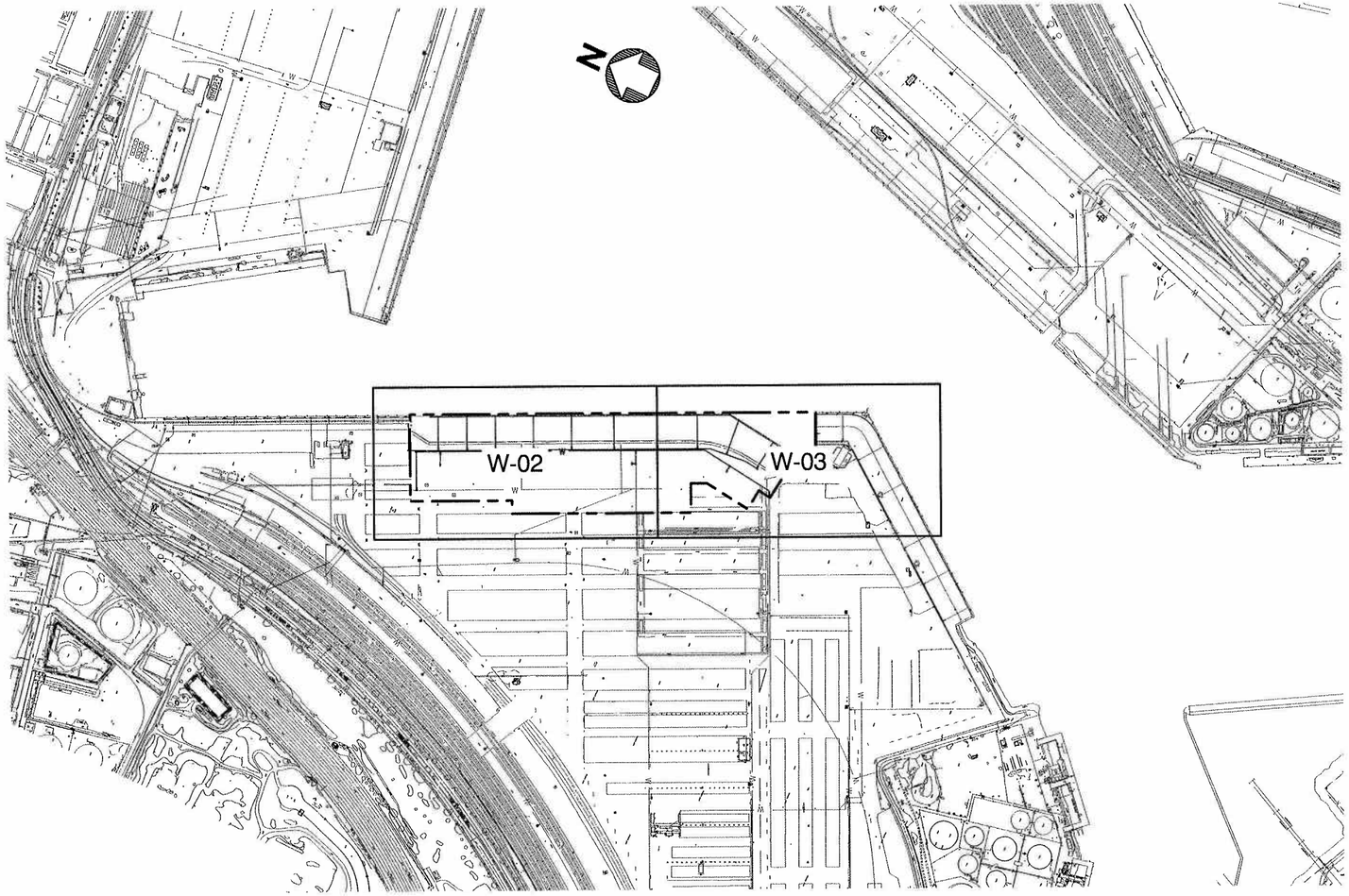
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

STRIPING DETAILS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
SP-04



1W-01
W-01

WATER SYSTEM SITE PLAN

SCALE: 1"=300'

LEGEND:

- NEW HIGH MAST LP & FH
- NEW CB
- NEW ELECTRICAL PULL BOXES
- NEW HIGH VOLTAGE PULL BOX
- NEW COMMUNICATION PULL BOX
- EXISTING WATER LINE
- NEW WATER LINE
- PROJECT LIMIT
- PROPOSED ELEC
- PROPOSED SD PIPE
- HV — PROPOSED HIGH VOLTAGE

ABBREVIATIONS:

ABAND	ABANDONED
AC	ASPHALT CONCRETE
CB	CATCH BASIN
CMB	CRUSHED MISCELLANEOUS BASE
CI	CAST IRON
CO	CLEAN OUT
CONC/CNC	CONCRETE
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DWG	DRAWING
DWP	DEPARTMENT OF WATER & POWER
E/ELEC	ELECTRICAL
EOP	EDGE OF PAVEMENT
EX/EXIST	EXISTING
FH	FIRE HYDRANT
FL	FLANGE
FLP	FLOOD LIGHT POLE
FM	FORCE MAIN
FT	FEET
G	GAS
GP	GUARD POST
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HV	HIGH VOLTAGE
ID	INSIDE DIAMETER
LAHD	LOS ANGELES HARBOR DEPARTMENT
LP	LIGHT POLE
MAX	MAXIMUM
MH	MAINTENANCE HOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
MTC	MARINE TERMINAL CORPORATION
NIC	NOT IN CONTRACT
NRS	NON RISING STEM
OC	ON CENTER
OD	OUTSIDE DIAMETER
PB	PULL BOX
PHL	PACIFIC HARBOR LINES
PP	POWER POLE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
RR	RAILROAD
SCG	SOUTHERN CALIFORNIA GAS
SCH	SCHEDULE
SD	STORM DRAIN
SS/SWR	SANITARY SEWER
SWBD	SWITCHBOARD
TEL	TELEPHONE
TYP	TYPICAL
VCP	VITRIFIED CLAY PIPE
VLT	VAULT
WTR	WATER
W/	WITH

GENERAL WATER SYSTEM NOTES:

1. CONTRACTOR SHALL PROVIDE LABOR, MATERIALS, TOOLS, EQUIPMENT AND ALL OTHER NECESSARY APPURTENANCES TO INSTALL WATER PIPING, VALVES, VALVE BOXES, POSITION INDICATORS, FITTINGS, FIRE HYDRANTS, AND GUARD POSTS FOR THE WATER SYSTEM SHOWN.
2. PIPES, FITTINGS, AND VALVES SHALL BE U.L. LISTED OR APPROVED BY L.A. CITY BUILDING AND SAFETY AND SHALL HAVE THE LETTERS "DI" OR "DUCTILE" & "UL" CAST ON THEM.
3. UNDER GROUND PIPES 4" AND LARGER SHALL BE DUCTILE IRON CLASS 52 TYTON PUSH ON JOINT; UNDER WHARF SHALL BE CLASS 53 MECHANICAL JOINT, PRESSURE RATED AT 350 PSI. THESE PIPES SHALL BE DOUBLE CEMENT-MORTAR LINED. ABOVE GROUND PIPES 4" AND LARGER SHALL BE STEEL, SCHEDULE 40 FLANGED JOINT, PRESSURE RATED AT 250 PSI.
4. FITTINGS 4" AND LARGER SHALL BE DUCTILE IRON; UNDERGROUND AND UNDER WHARF SHALL BE MECHANICAL JOINT, RATED AT 350 PSI. UNDERGROUND FITTINGS SHALL BE RESTRAINED WITH RESTRAINING GLAND. THESE FITTINGS SHALL BE DOUBLE CEMENT-MORTAR LINED. ABOVE GROUND SHALL BE SCHEDULE 40 FLANGED JOINT.
5. PIPES 3" AND SMALLER SHALL BE COPPER TYPE "K" WITH WROUGHT OR CAST COPPER FITTINGS AND SILVER SOLDER JOINTS.
6. UNDERGROUND BENDS, TEES, REDUCERS, PLUGS, CAPS, AND VALVES SHALL BE RESTRAINED WITH THRUST BLOCKS AS SHOWN ON DETAIL 3W-04 AND ADJACENT PIPE PER RESTRAINED PIPE SCHEDULE 4W-04.
7. RESTRAINING GLANDS SHALL BE MEGALUG SERIES 1100 FOR MECHANICAL JOINTS AND RESTRAIN HARNESS SERIES 1700 FOR PUSH-ON JOINTS, AS MANUFACTURED BY EBAA IRON, INC. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS. APPLICATION OF RECOMMENDED TORQUES SHALL BE OBSERVED BY LAHD INSPECTOR AT ALL TIMES.
8. SEPARATION OF WATER PIPE AND SANITARY SEWER SHALL BE PER THE STATE OF CALIFORNIA, DEPARTMENT OF HEALTH SERVICES "CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS" AS LAST REVISED.
9. SEPARATION OF WATER PIPE AND OTHER SUBSTRUCTURES SHALL BE PER DETAILS XW-XX, XW-XX, AND XW-XX.
10. UNDERGROUND PIPES AND APPURTENANCES SHALL BE ENCASED IN 8-MIL CLEAR POLYETHYLENE FILM TUBES IN STRICT ACCORDANCE WITH AWWA C105 AS TO MATERIAL, SIZE, AND INSTALLATION PROCEDURE.
11. WATER LINES SHALL BE INSTALLED AFTER THE AREA ALONG PIPE ALIGNMENT HAS BEEN RAISED TO TOP OF SUBGRADE ELEVATION PER GRADING PLANS.
12. THE WATER SYSTEM WILL PROVIDE FIRE PROTECTION FLOW WHICH MEETS OR EXCEEDS THE FOLLOWING:
    - FIRE FLOW OF 1,500 GPM AT THE MOST REMOTE HYDRANT WITH MINIMUM RESIDUAL PRESSURE OF 20 PSI;
    - FIRE FLOW OF 1,500 GPM WITH MINIMUM RESIDUAL PRESSURE OF 20 PSI FROM EACH OF ANY TWO INTERMEDIATE HYDRANTS;
    - MINIMUM CONCURRENT FIRE FLOW OF 4,500 GPM WITH MINIMUM RESIDUAL PRESSURE OF 20 PSI;
    - FIRE HYDRANT CONTROL VALVE SHALL BE INSTALLED NOT LESS THAN 8' NOR MORE THAN 10' FROM HYDRANT.
13. UNDERGROUND VALVES SHALL BE PROVIDED WITH VALVE BOX AND POSITION INDICATOR, EXCEPT THOSE THAT ARE FOR DOMESTIC WATER LINES AND FOR FIRE HYDRANT CONTROL, BOTH OF WHICH SHALL BE PROVIDED ONLY WITH VALVE BOX AND COVER.
14. SHOWN LOCATIONS OF EXISTING SUBSTRUCTURES ARE APPROXIMATE ONLY. EXCAVATIONS SHALL BE COORDINATED WITH OTHERS INSTALLING OTHER SUBSTRUCTURES
15. ANY DISCREPANCY BETWEEN DRAWINGS AND FIELD CONDITIONS SHALL BE BROUGHT BY THE CONTRACTOR TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
16. UNDERGROUND VALVES SHALL BE INSTALLED PLUMB FOR VERTICAL INSTALLATION OF VALVE BOXES AND POSITION INDICATORS.
17. UNLESS INDICATED OTHERWISE, PLUGGED FITTINGS SHALL BE INSTALLED SO THAT PIPES SUBSEQUENTLY CONNECTED TO THE PLUGGED ENDS WILL BE ON A HORIZONTAL PLANE.
18. CONTRACTOR SHALL SUBMIT, TO THE ENGINEER, A RECORD OF THE COORDINATES AND ELEVATIONS OF BENDS, TEES, CROSSES, PLUGS, AND VALVES PRIOR TO COVERING FITTINGS. THIS SHALL BE DONE ON COPIES OF THE WATER PLANS ALLOCATED ONLY FOR THIS PURPOSE.
19. CONNECTING TO EXISTING SYSTEM SHALL BE MADE ONLY AFTER SUCH SYSTEM IS DEPRESSURIZED BY THE CONTRACTOR.
20. CONTRACTOR SHALL COORDINATE WORK WITH DWP AND OTHER TRADES AT ALL TIMES.
21. NEW WATER LINES SHALL HAVE A COVER OF 4 FT. MIN. FROM FINISHED SURFACE, UNLESS SHOWN OTHERWISE ON THESE DRAWINGS.
22. NEW WATER LINES SHALL BE HYDROSTATICALLY TESTED PER SPECIFICATIONS.
23. ORIENT FIRE HYDRANTS SO THAT OUTLETS ARE POINTED TO ADJACENT LANES AND CLEAR TO HOOK-UP FIRE HOSES WITHOUT BENDS.
24. IN CASE OF DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL BE FOLLOWED.
25. UPON APPROVAL FROM THE ENGINEER, PIPE PROTECTION (CONCRETE) PAD SHALL BE PROVIDED OVER NEW WATER LINES WITH LESS THAN 36" OF COVER. THE CONCRETE PAD SHALL EXTEND NO LESS THAN 30" FROM SIDES AND ENDS OF THE PIPE AS APPLICABLE.
26. FOR ALL WORK UNDER AND WITHIN 25' OF EXISTING RAILROAD TRACKS, CONTRACTOR TO COORDINATE WORK WITH PACIFIC HARBOR LINES (PHL), MTC AND AND THE HARBOR DEPARTMENT FOR SCHEDULING WORK WINDOWS AROUND RR OPERATIONS. SEE THE COORDINATION SECTION OF THE SPECIFICATIONS.

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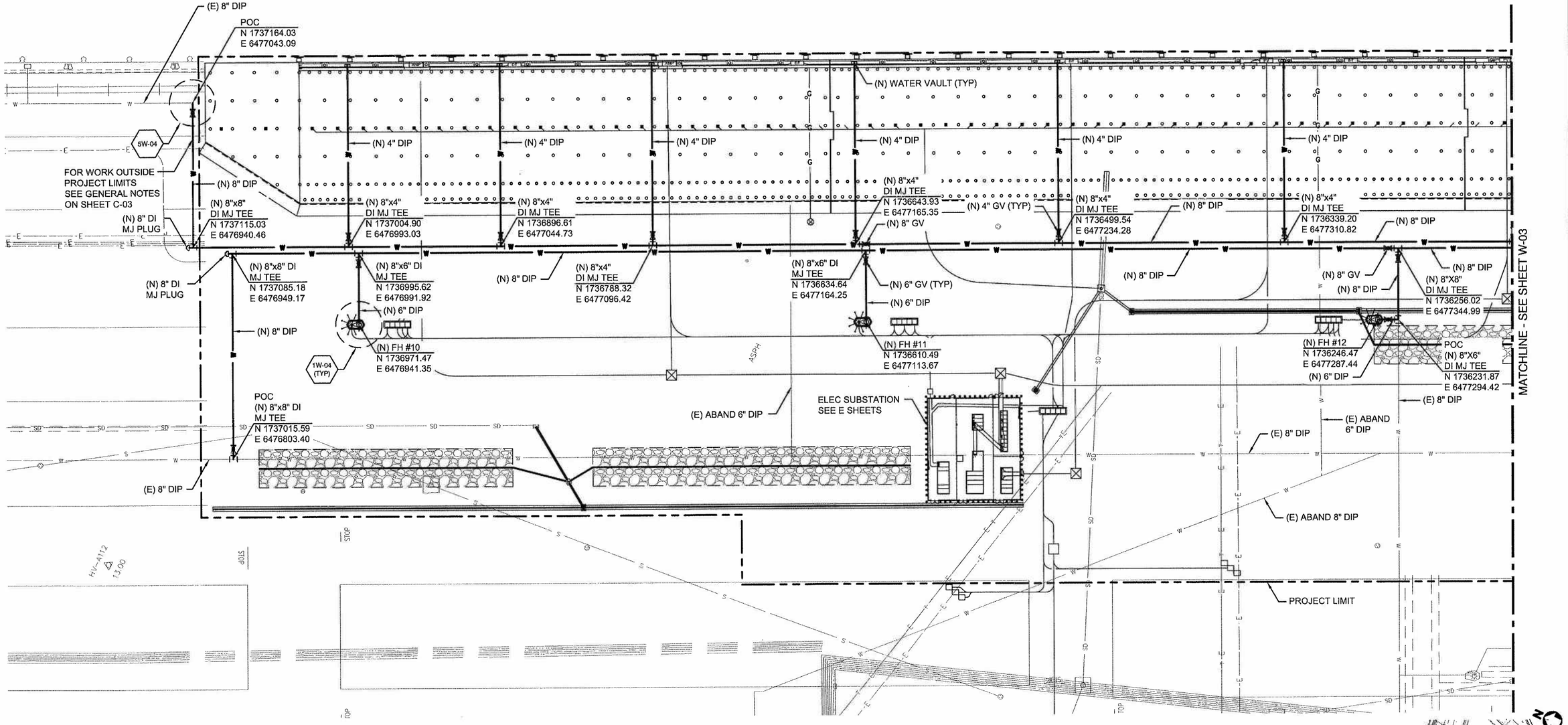
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

WATER SYSTEM SITE PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
W-01



1W-02
W-02
WATER SYSTEM PLAN
SCALE: 1"=40'

INDEX MAP

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DRAWING NUMBER
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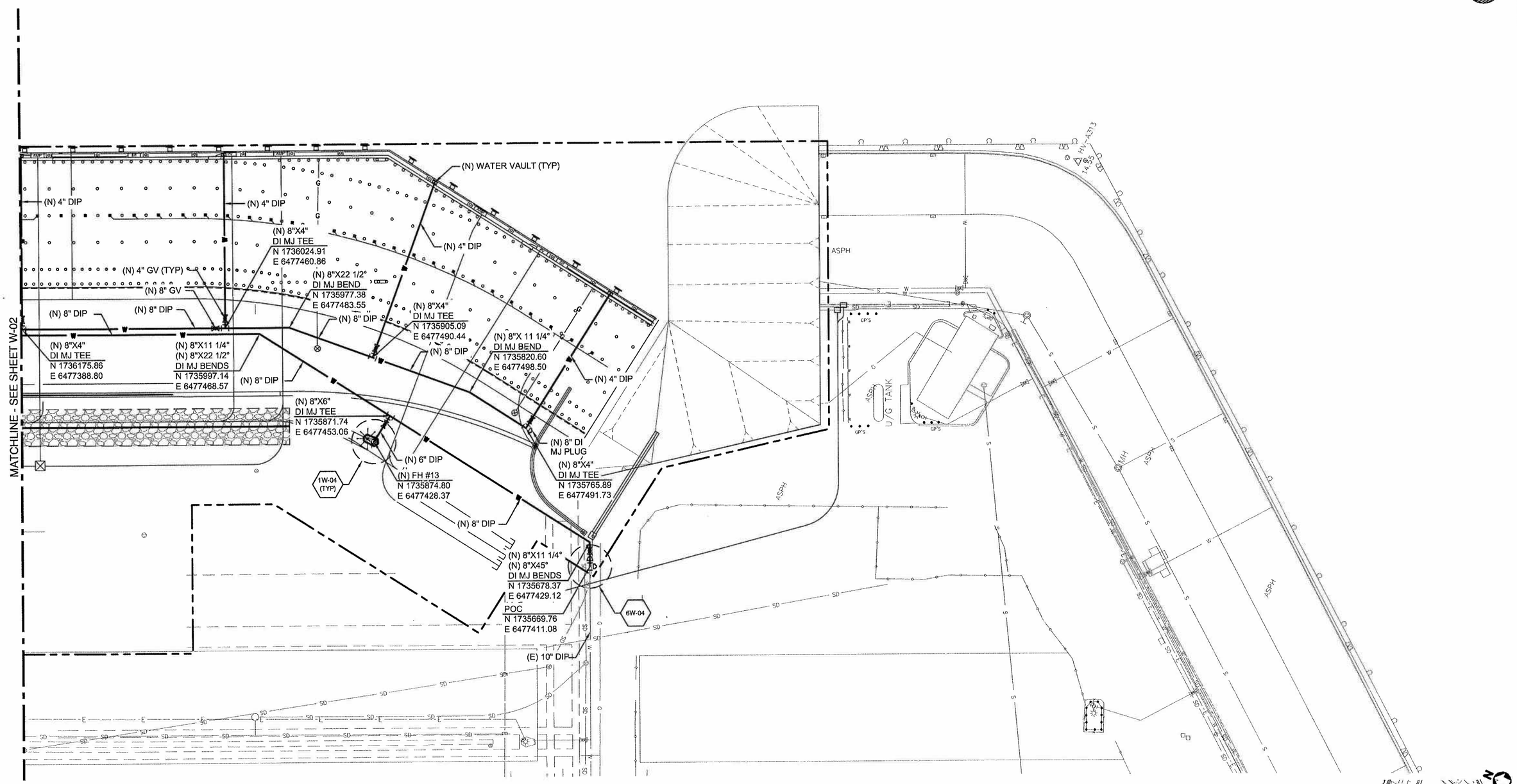
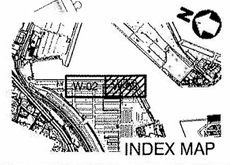


1W-03 / W-03 **WATER SYSTEM PLAN**
SCALE: 1"=40'



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WATER SYSTEM PLAN

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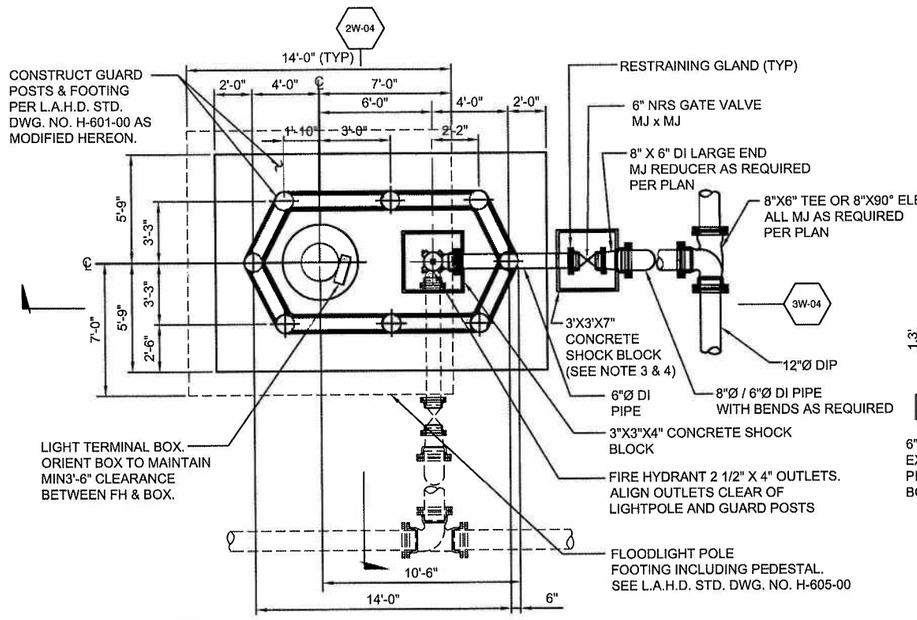
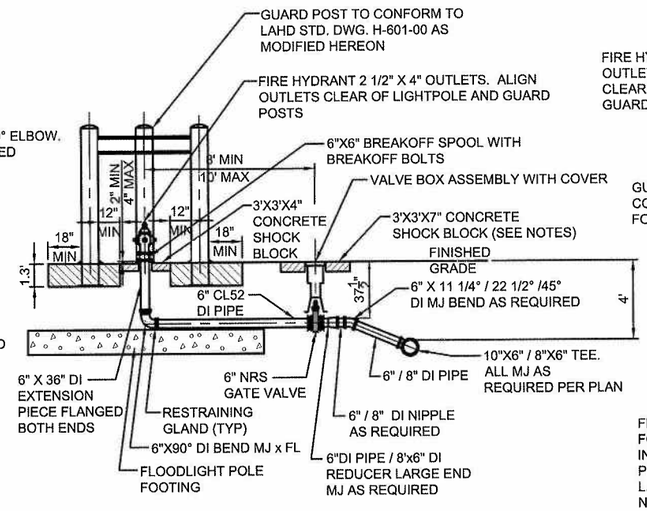
DRAWING NUMBER
W-03



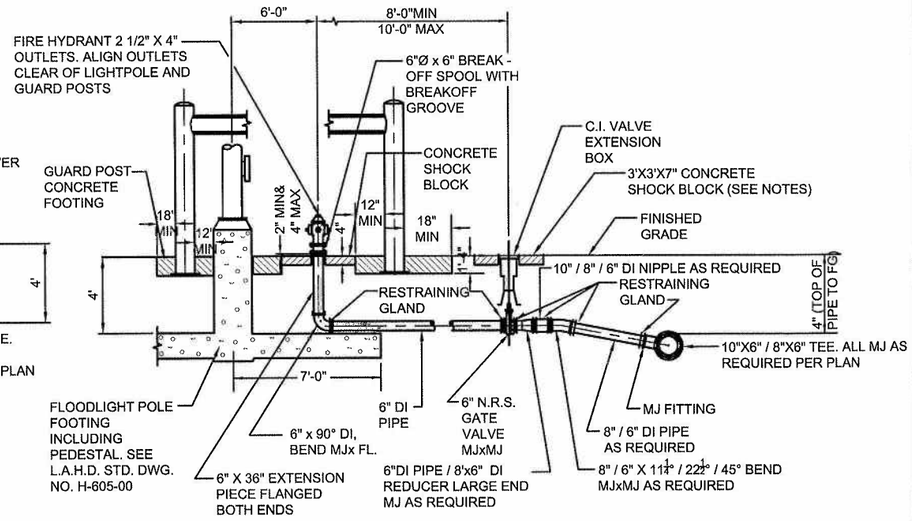
NOTES:
1. ORIENTATION VARIES PER PLAN. DETAIL SHOWS TWO VARIATIONS OF PIPE ALIGNMENTS.
2. MATERIALS INVOLVED ARE IDENTICAL.
3. THICKNESS SHALL BE THE SAME AS EXISTING / NEW ASPHALT.
4. CONCRETE SHALL BE PROVIDED W/ 6 X6, W 2.9 X W 2.9 WIRE MESH.

1W-04 / 1W-02 **PLAN-LIGHTPOLE, FIRE HYDRANT AND GUARD POSTS**
NOT TO SCALE



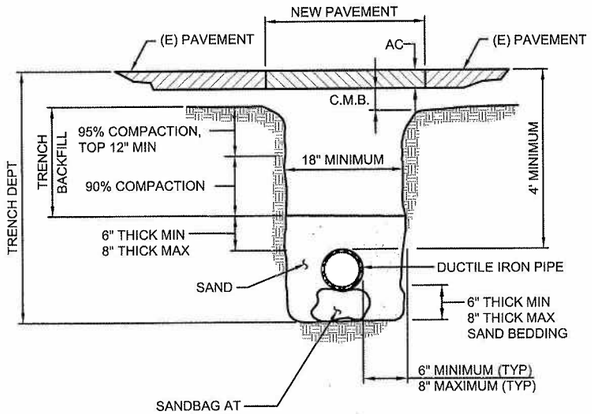
NOTES:
1. THICKNESS SHALL BE THE SAME AS EXISTING / NEW ASPHALT.
2. CONCRETE SHALL BE PROVIDED W/ 6 X 6, W 2.9 X W 2.9 WIRE MESH.

2W-04 / 1W-02 **SECTION-LIGHTPOLE, FIRE HYDRANT AND GUARD POSTS**
NOT TO SCALE



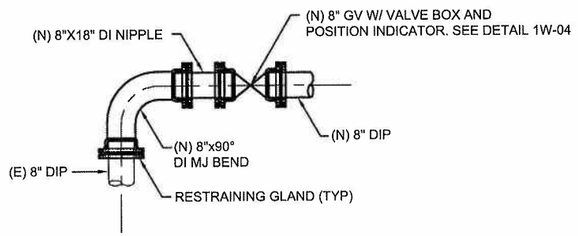
NOTES:
1. THICKNESS SHALL BE THE SAME AS EXISTING / NEW ASPHALT.
2. CONCRETE SHALL BE PROVIDED W/ 6 X6, W 2.9 X W 2.9 WIRE MESH.

3W-04 / 1W-02 **SECTION- LIGHTPOLE, FIRE HYDRANT AND GUARD POSTS**
NOT TO SCALE



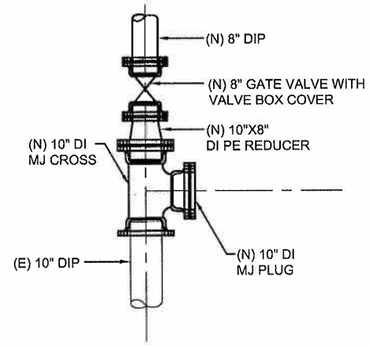
NOTE: REPAIR EXISTING PAVEMENT AFTER PIPING INSTALLATION. SEE PLAN FOR EXTENT OF REPAIR AND VERIF THICKNESS OF EXISTING.

4W-04 / 1W-02 **TYPICAL SECTION-WATER LINE TRENCH**
NOT TO SCALE



NOTE:
1. SEE PLAN FOR ORIENTATION.

5W-04 / 1W-02 **DETAIL - POINT OF CONNECTION**
NOT TO SCALE



NOTES:
1. RESTRAIN JOINTS PER TABLE 4W-05.
2. THRUST BLOCKS PER DETAIL 3W-05.
3. ORIENTATION SHOWN ON PLAN.

6W-04 / 1W-02 **DETAIL - POINT OF CONNECTION**
NOT TO SCALE

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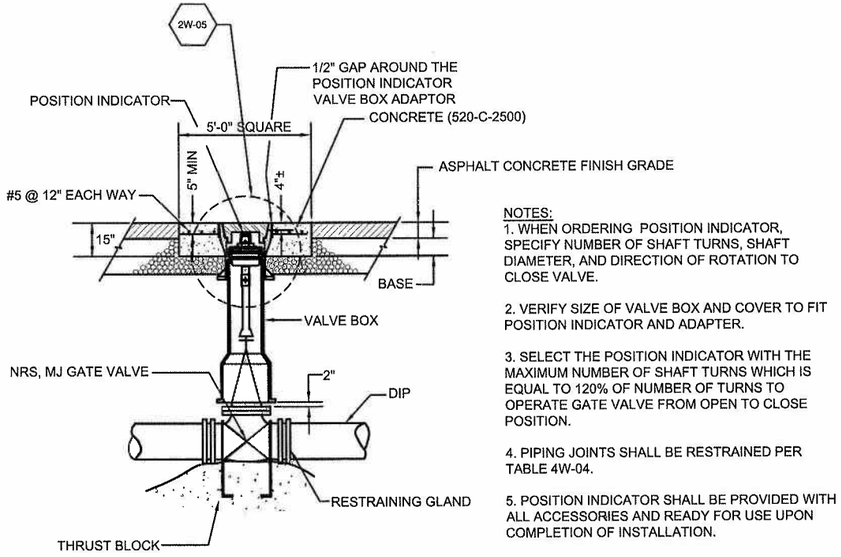
DRAWN: J. ZAMORA
CHECKED:
DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I
WATER SYSTEM DETAILS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

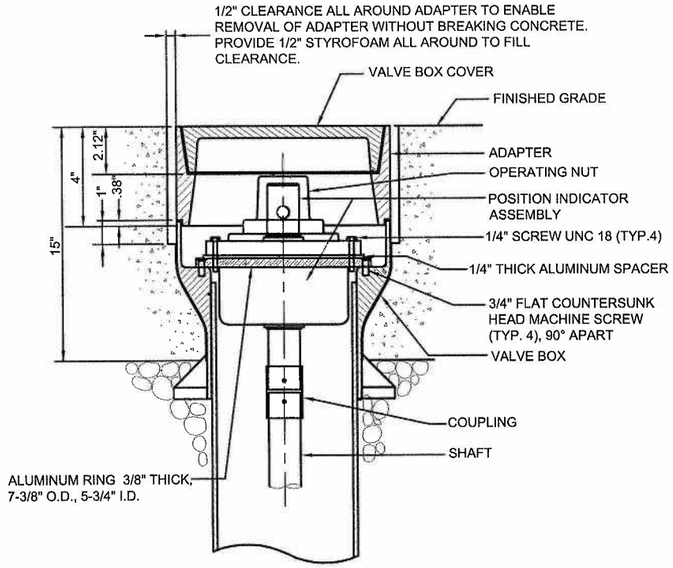
DRAWING NUMBER
W-04



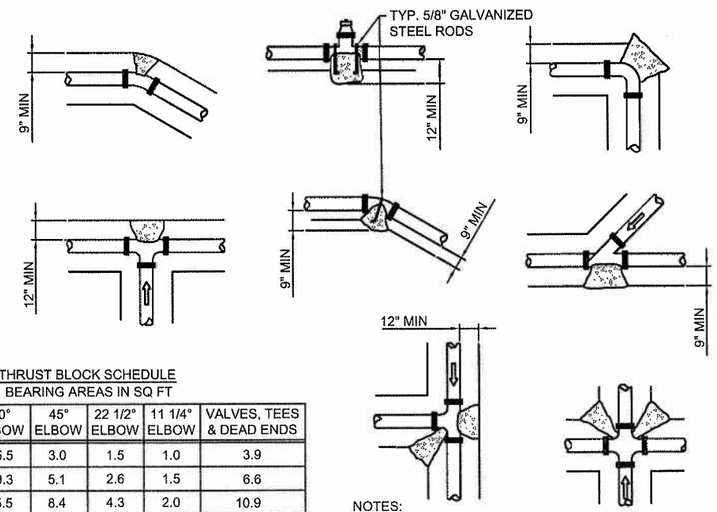
NOTES:

1. WHEN ORDERING POSITION INDICATOR, SPECIFY NUMBER OF SHAFT TURNS, SHAFT DIAMETER, AND DIRECTION OF ROTATION TO CLOSE VALVE.
2. VERIFY SIZE OF VALVE BOX AND COVER TO FIT POSITION INDICATOR AND ADAPTER.
3. SELECT THE POSITION INDICATOR WITH THE MAXIMUM NUMBER OF SHAFT TURNS WHICH IS EQUAL TO 120% OF NUMBER OF TURNS TO OPERATE GATE VALVE FROM OPEN TO CLOSE POSITION.
4. PIPING JOINTS SHALL BE RESTRAINED PER TABLE 4W-04.
5. POSITION INDICATOR SHALL BE PROVIDED WITH ALL ACCESSORIES AND READY FOR USE UPON COMPLETION OF INSTALLATION.

1W-05 / 5W-04 **DETAIL - TYP WATER LINE VALVE W/ POSITION INDICATOR**
NOT TO SCALE



2W-05 / 1W-05 **DETAIL - POSITION INDICATOR INSTALLATION**
NOT TO SCALE



THRUST BLOCK SCHEDULE
BEARING AREAS IN SQ FT

PIPE SIZE	90° ELBOW	45° ELBOW	22 1/2° ELBOW	11 1/4° ELBOW	VALVES, TEES & DEAD ENDS
4"&6"	5.5	3.0	1.5	1.0	3.9
8"	9.3	5.1	2.6	1.5	6.6
10"	15.5	8.4	4.3	2.0	10.9
12"	21.7	11.2	5.6	3.0	15.3
14"	29.0	16.0	9.0	4.0	21.8
16"	42.0	23.0	12.0	6.0	30.0
18"	53.0	29.0	15.0	9.0	37.0
20"	65.0	35.0	18.0	9.0	46.0

NOTES:

1. ABOVE BEARING AREAS ARE BASED ON THE WATER PRESSURE OF 200 P.S.I.
2. ASSUMED BEARING STRENGTH OF SOIL IS 2000 LB./SQ.FT.
3. THRUST BLOCK SHALL BE CONCRETE CLASS 420-B-2000.

3W-05 / 1W-02 **THRUST BLOCK DETAILS**
NOT TO SCALE

FITTING	4"	6"	8"	10"	12"	14"
22.5° ELBOW	18'	18'	18'	18'	18'	18'
45° ELBOW	18'	18'	18'	18'	18'	18'
90° ELBOW	18'	18'	18'	21'	25'	28'
VALVE & DEAD END	43'	60'	79'	95'	112'	128'
TEE RUNS / BRANCH	18' / 18'	18' / 18'	18' / 18'	18' / 18'	18' / 18'	18' / 18'

*STRAIGHT RUN OF PIPE DIRECTLY CONNECTED TO FITTING.

4W-05 / 1W-02 **RESTRAINED PIPE LENGTH SCHEDULE***
NOT TO SCALE

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KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I
WATER SYSTEM DETAILS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
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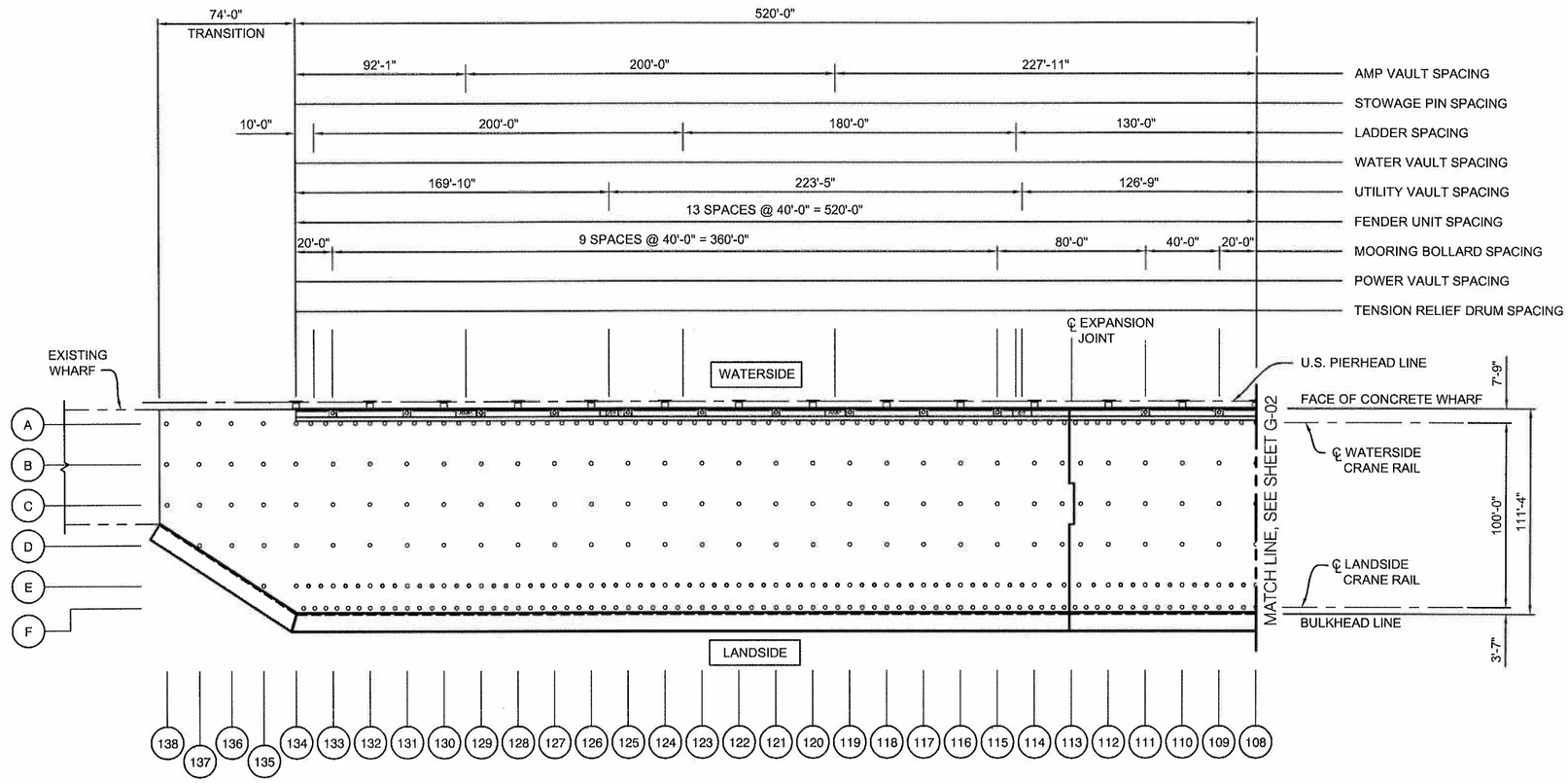
DRAWING NUMBER W-05

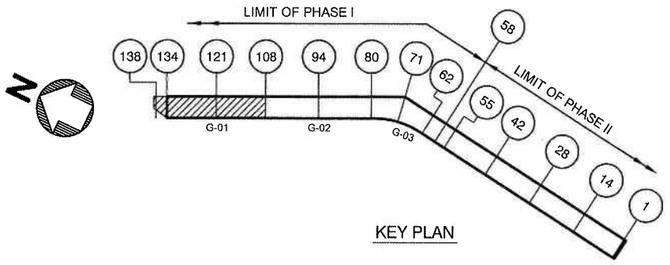


1G-01 / G-01 GENERAL PLAN

SCALE: 1"=40'

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA, SEISMIC DESIGN CRITERIA, LEGENDS AND ABBREVIATIONS, SEE GN SHEETS.
2. VAULT LOCATIONS SHOWN PROVIDE FOR STRAIGHT PIPE AND CONDUIT RUNS FROM THE BACKLAND TO THE VAULT (CUT-OFF WALL PENTRATIONS). WHEN PILE MISALIGNMENT HAS INTERRUPTED THIS ROUTING, CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS IN THE PIPE OR CONDUIT ROUTING, OR PROPOSE A REVISED VAULT LOCATION TO THE ENGINEER FOR APPROVAL AT NO ADDITIONAL COST. THIS NOTE PERTAINS TO ALL VAULT LOCATIONS SHOWN.
3. WATER LINES NOT SHOWN. FOR WATER LINE LOCATIONS AND CUT-OFF WALL PENETRATION DETAILS SEE W SHEETS.
4. ELECTRICAL CONDUITS NOT SHOWN. FOR ELECTRICAL CONDUIT ROUTING, SEE E SHEETS.
5. CONTROL JOINTS IN APPROACH SLAB SHALL BE AT 20'-0" MAXIMUM SPACING, SEE SHT S-32.



KEY PLAN

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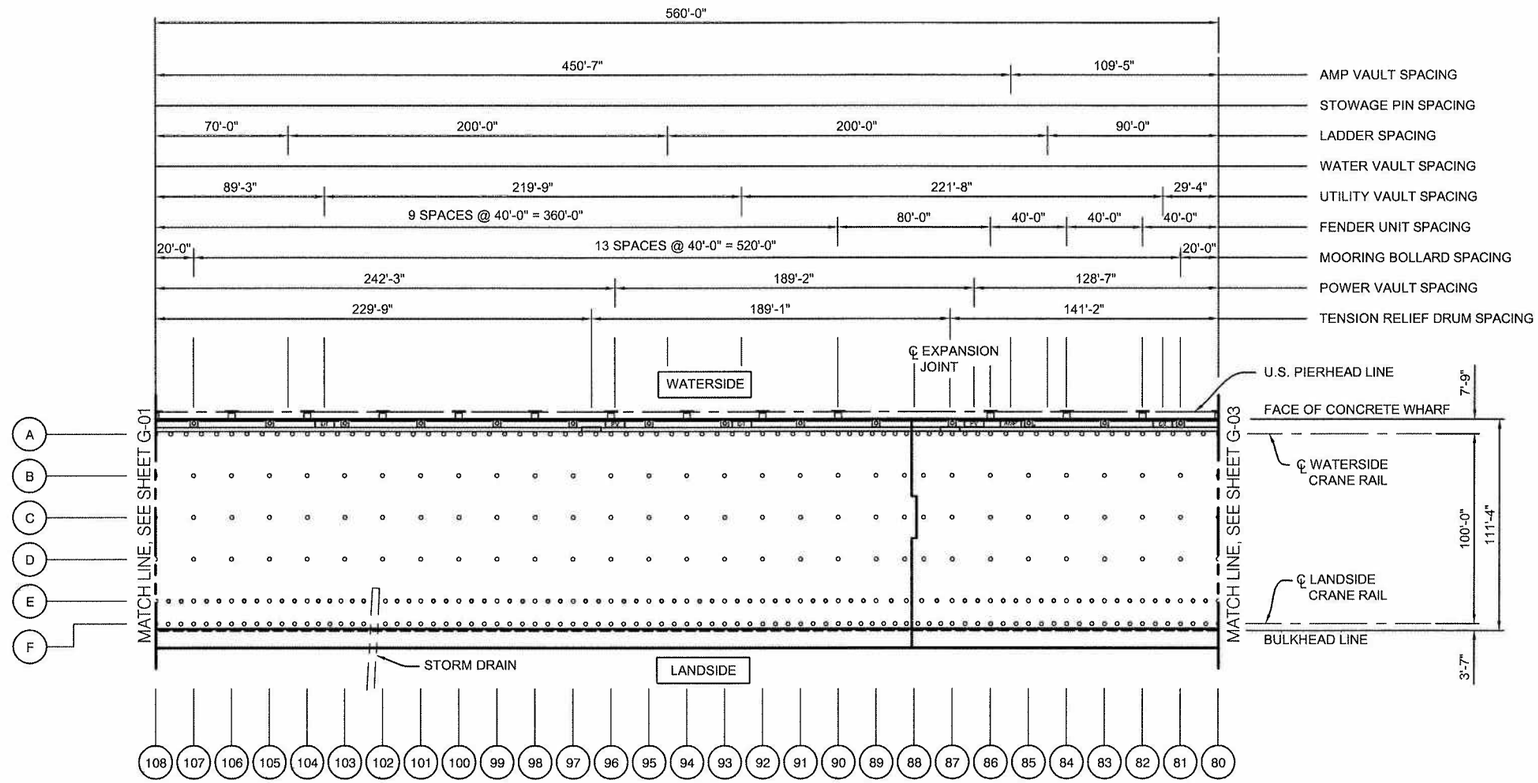
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

GENERAL WHARF PLAN AND LAYOUT - BENTS 108 TO 138

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
G-01

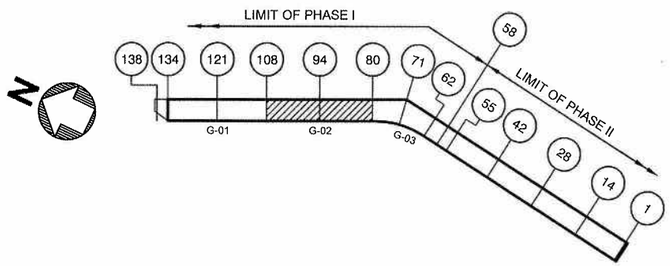


1G-02 / G-02 GENERAL PLAN

SCALE: 1"=40'

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA, SEISMIC DESIGN CRITERIA, LEGENDS AND ABBREVIATIONS, SEE GN SHEETS.
2. VAULT LOCATIONS SHOWN PROVIDE FOR STRAIGHT PIPE AND CONDUIT RUNS FROM THE BACKLAND TO THE VAULT (CUT-OFF WALL PENTRATIONS). WHEN PILE MISALIGNMENT HAS INTERRUPTED THIS ROUTING, CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS IN THE PIPE OR CONDUIT ROUTING, OR PROPOSE A REVISED VAULT LOCATION TO THE ENGINEER FOR APPROVAL AT NO ADDITIONAL COST. THIS NOTE PERTAINS TO ALL VAULT LOCATIONS SHOWN.
3. WATER LINES NOT SHOWN. FOR WATER LINE LOCATIONS AND CUT-OFF WALL PENETRATION DETAILS SEE W SHEETS.
4. ELECTRICAL CONDUITS NOT SHOWN. FOR ELECTRICAL CONDUIT ROUTING, SEE E SHEETS.
5. CONTROL JOINTS IN APPROACH SLAB SHALL BE AT 20'-0" MAXIMUM SPACING, SEE SHT S-32.



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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

GENERAL WHARF PLAN AND LAYOUT - BENTS 80 TO 108

THE PORT OF LOS ANGELES
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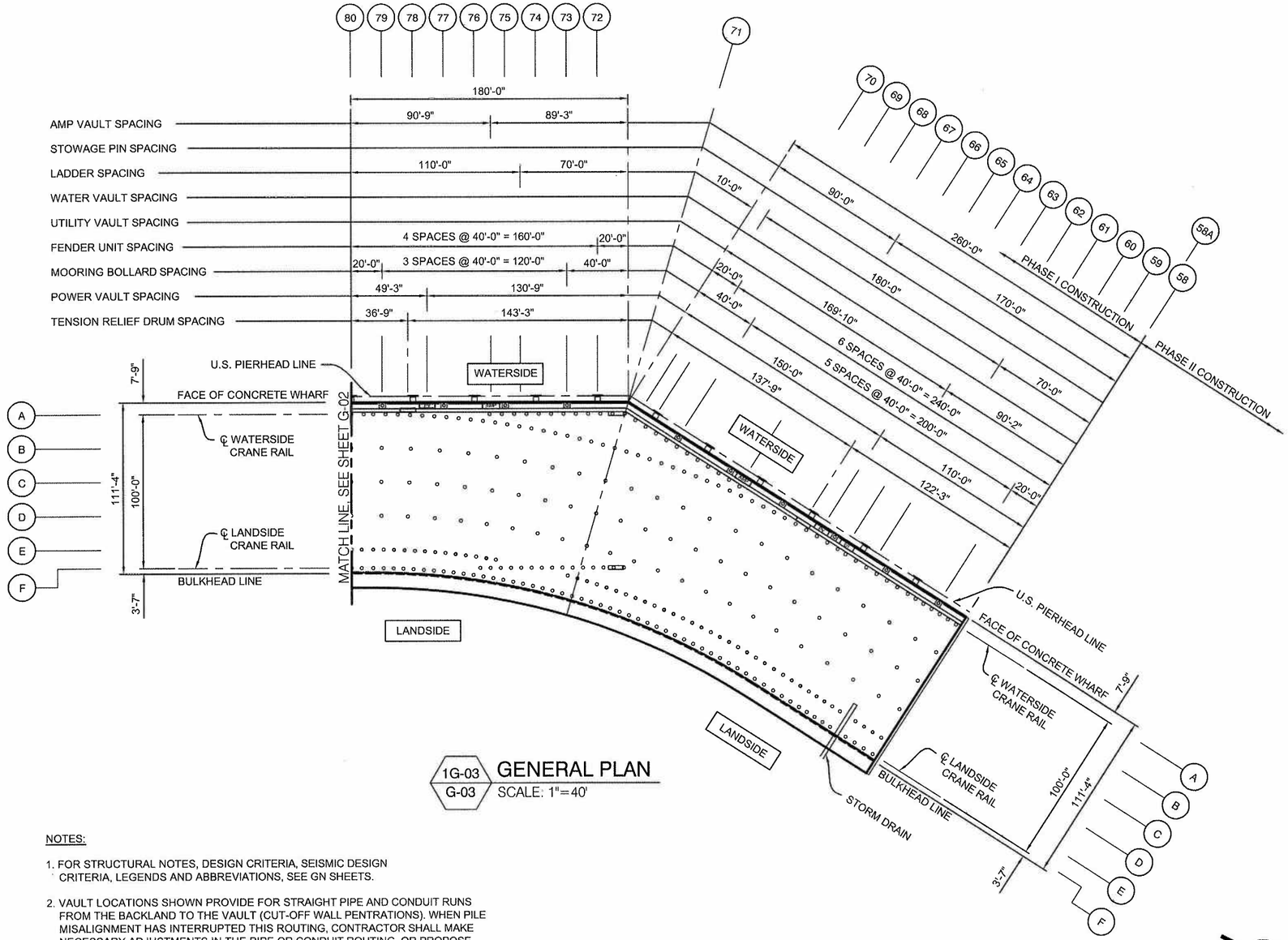
DRAWING NUMBER
G-02



1G-03 / G-03 **GENERAL PLAN**
SCALE: 1"=40'

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA, SEISMIC DESIGN CRITERIA, LEGENDS AND ABBREVIATIONS, SEE GN SHEETS.
2. VAULT LOCATIONS SHOWN PROVIDE FOR STRAIGHT PIPE AND CONDUIT RUNS FROM THE BACKLAND TO THE VAULT (CUT-OFF WALL PENTRATIONS). WHEN PILE MISALIGNMENT HAS INTERRUPTED THIS ROUTING, CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS IN THE PIPE OR CONDUIT ROUTING, OR PROPOSE A REVISED VAULT LOCATION TO THE ENGINEER FOR APPROVAL AT NO ADDITIONAL COST. THIS NOTE PERTAINS TO ALL VAULT LOCATIONS SHOWN.
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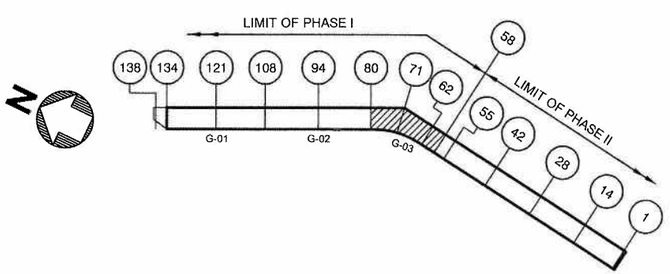
5. CONTROL JOINTS IN APPROACH SLAB SHALL BE AT 20'-0" MAXIMUM SPACING, SEE SHT S-32.



KEY PLAN

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

GENERAL WHARF PLAN AND LAYOUT - BENTS 58 TO 80

THE PORT OF LOS ANGELES
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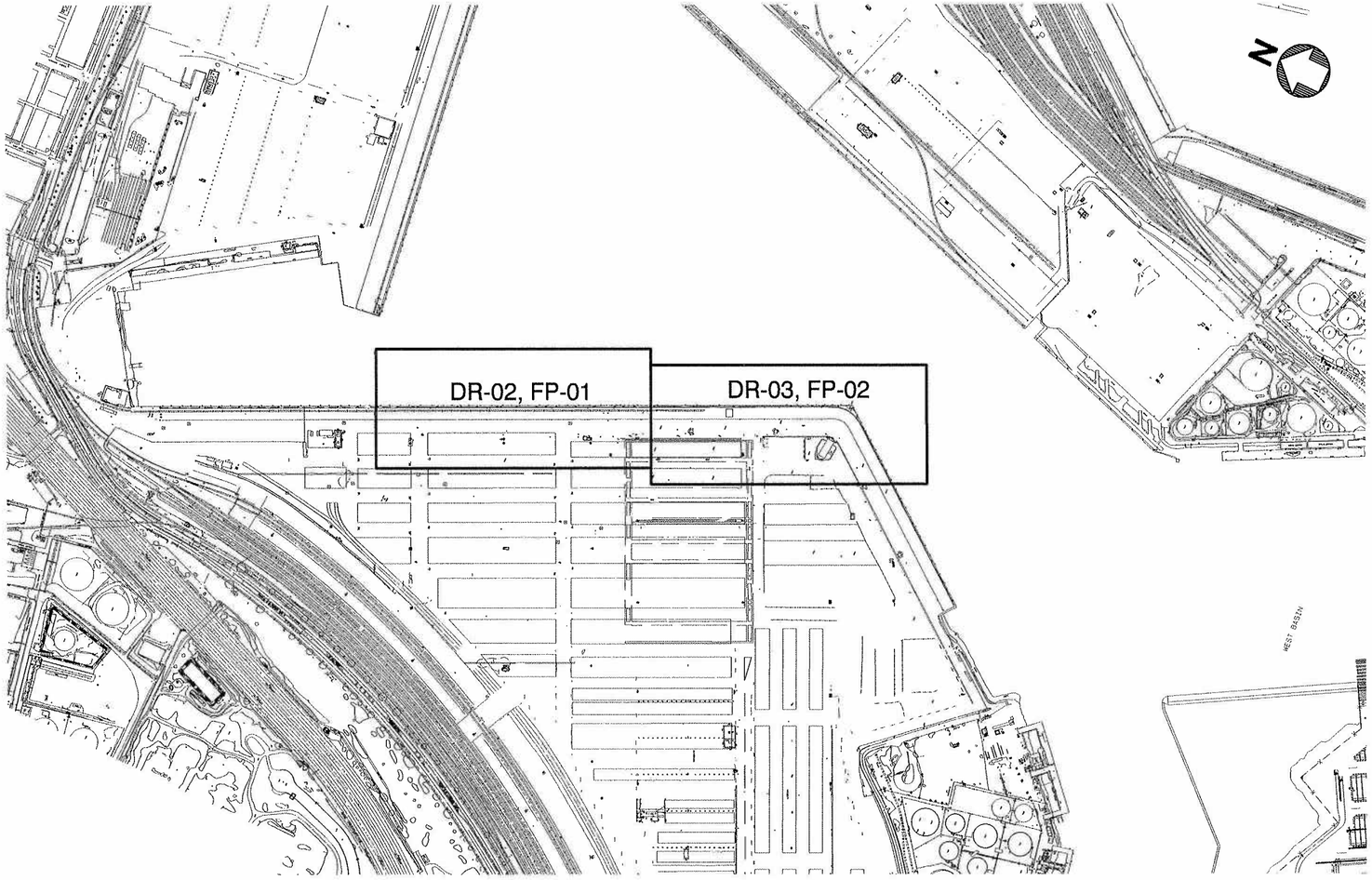
DRAWING NUMBER
G-03



1DR-01 / DR-01 DREDGING & REVETMENT KEY MAP

SCALE: 1"=300'

LEGEND:

- DREDGE LIMIT
- 50+00 — 55+00 CONTROL LINE
- −53.0 PROJECT DEPTH
- TOE OF DREDGE OR ROCK SLOPE
- TOP OF DREDGE OR ROCK SLOPE
- PIER HEAD LINE
- FEDERAL CHANNEL LIMITS

ABBREVIATIONS:

CH	CHANNEL	N	NORTHING (Y)
CL	CENTERLINE OR CONTROL LINE	PHL	PIER HEAD LINE
DWG	DRAWING	POLA	PORT OF LOS ANGELES
E	EASTING (X)	RV OR RVMT	REVETMENT
EL OR ELEV	ELEVATION	S	SLOPE
EX, EXIST	EXISTING	STA	STATION
FCL	FEDERAL CHANNEL LIMIT	TOE	TOE OF SLOPE
FT	FEET	TOP	TOP OF SLOPE
MAX	MAXIMUM	TYP	TYPICAL
MIN	MINIMUM	WTR	WATER
MLLW	MEAN LOWER LOW WATER	W/	WITH

GENERAL NOTES

1. BATHYMETRIC SURVEYS WAS PERFORMED BETWEEN SEPTEMBER 3 AND SEPTEMBER 8, 2009. SURVEY WAS PERFORMED AS PART OF THE U.S. ARMY CORPS OF ENGINEERS, PORT OF LOS ANGELES CHANNEL DEEPENING PROJECT, PERFORMED BY GAHAGAN & BRYANT ASSOCIATES, INC, SAN PEDRO, CALIFORNIA.
2. GEOTECHNICAL INVESTIGATION WAS PERFORMED BY EARTH MECHANICS, INC, FOUNTAIN VALLEY, CALIFORNIA BETWEEN AUGUST 12 ANDAUGUST 25, 2009 WITH A DRAFT REPORT PUBLISHED ON NOVEMBER 2, 2009 AND PRESENTED IN GEOTECHNICAL STUDY, BERTHS 121-131 WHARF UPGRADE AND BACKLAND IMPROVEMENTS.
3. TIDE RANGE:
   THE APPROXIMATE RANGE OF TIDES, BASED ON THE FOLLOWING DATUM IS AS FOLLOWS:

LOWEST TIDE	-2.6 FEET
MEAN LOWER LOW WATER	0.0 FEET
MEAN HIGHER HIGH WATER	+5.4 FEET
HIGHEST TIDE	+7.5 FEET

4. HORIZONTAL DATUM IS THE STATE PLANE COORDINATE SYSTEM OF 1983 (FEET) AND IS BASED ON LAMBERT CONFORMAL PROJECTION FOR ZONE V.
5. VERTICAL DATUM IS REFERENCED TO MEAN LOWER LOW WATER (MLLW) 1985 AS DETERMINED FROM BM "TIDAL 8" ELEVATION = 13.929 FT MLLW, DATED 1985. ELEVATION 0.00 EQUALS MEAN LOWER LOW WATER (MLLW).
6. ALL ELEVATIONS ARE GIVEN IN FEET RELATIVE TO DATUM (0.0 MLLW) UNLESS NOTED OTHERWISE.
7. ALL DIMENSIONS ARE GIVEN IN FEET UNLESS NOTED OTHERWISE.
8. AN AREA HAS BEEN ESTABLISHED FOR STORAGE OF DREDGE PLANT, EQUIPMENT, SURVEY VESSELS, ETC WITHIN THE PROJECT LIMITS. ADDITIONAL AREAS THAT MAY BE REQUIRED WILL BE SECURED BY AND ESTABLISHED AT CONTRACTOR'S EXPENSE. OTHER THAN THOSE AREAS SHOWN, THE PORT OF LOS ANGELES WILL NOT PROVIDE AN AREA OUTSIDE OF THE PROJECT LIMITS FOR STORAGE OF CONTRACTOR'S DREDGING PLANT AND EQUIPMENT.
9. ALL KNOWN DEBRIS AND OBSTRUCTIONS ARE INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL REMOVE ALL EXISTING DEBRIS LYING ON THE BOTTOM WITHIN THE DREDGE AREA AS INDICATED ON THE DRAWINGS AND DISPOSE OFF OF PORT OF LOS ANGELES PROPERTY IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
10. ATTENTION IS DIRECTED TO THE SPECIFICATIONS WHERE BIDDERS ARE REQUIRED TO EXAMINE AND JUDGE, AS THEIR OWN RESPONSIBILITY, THE LOCATION, PHYSICAL CONDITIONS AND SURROUNDINGS OF THE PROPOSED WORK.
11. SUBSTRUCTURE RECORDS, REFERENCE DRAWINGS AND REPORTS MAY BE REVIEWED IN THE LAHD CHIEF HARBOR ENGINEER'S OFFICE LOCATED AT 425 S. PALOS VERDES ST., SAN PEDRO, CALIFORNIA.
12. THE LOCATIONS OF EXISTING UTLTITIES AND SUBSTRUCTURES SHOWN HEREIN HAVE BEEN TAKEN FROM AVAILABLE RECORDS. THE PORT OF LOS ANGELES DOES NOT WARRANT THE COMPLETENESS OR CORRECTNESS OF THE LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT EXISTING SUBSTRUCTURES THAT ARE TO REMAIN. SHOULD UTLITIES BE ENCOUNTERED THAT ARE NOT INDICATED, THE CONTRACTING OFFICERS REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY.
13. GASES IN EXCAVATIONS NEAR CHEMICAL AND OIL TERMINALS, PIPELINES & TANK FARMS MAY BE EXPLOSIVE AND TOXIC. THE CONTRACTOR SHALL COMPLY WITH THE CONSTRUCTION SAFETY ORDERS OF THE STATE DIVISION OF INDUSTRIAL SAFETY.
14. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE WITH THE VARIOUS COMPANIES AND AGENCIES WHO MAY BE AFFECTED BY THIS PROJECT. THE CONTRACTOR SHALL OBTAIN REQUIRED PERMITS.
15. THE CONTRACTOR SHALL ADHERE TO ALL SAFETY CODES, REGULATIONS AND SPECIFICATIONS FOR THE DURATION OF THIS CONTRACT.
16. THE CONTRACTOR SHALL COMPLETE ALL WORK SHOWN ON PLANS AND IN THE SPECIFICATIONS, UNLESS INDICATED AS NOT IN CONTRACT (N.I.C.).

DREDGE AND DISPOSAL NOTES

1. FOR DREDGE AND DISPOSAL PLAN, SEE DRAWING NO. DR-05.

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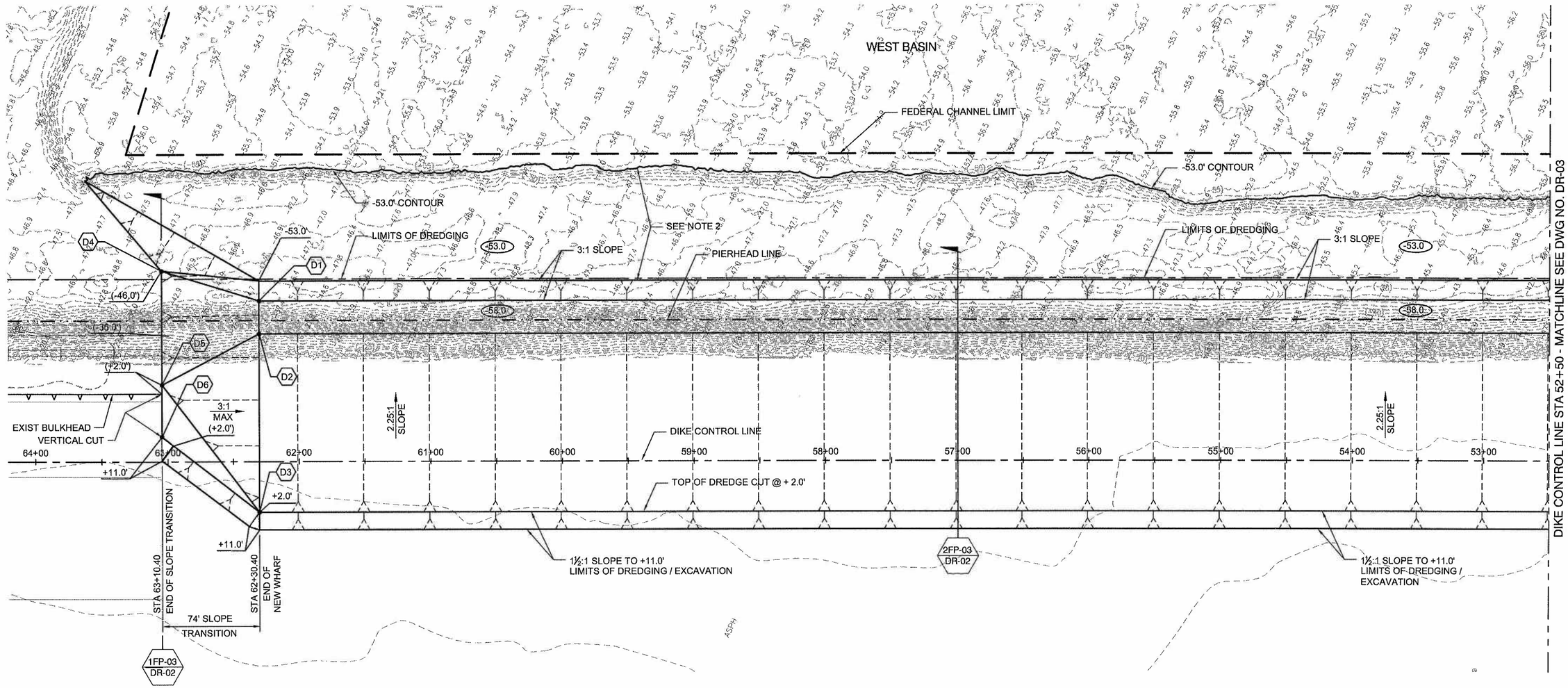
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DREDGING & REVETMENT KEY MAP, NOTES, LEGEND & ABBREVIATIONS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
DR-01



DREDGE AREA COORDINATES		
POINT	NORTHING	EASTING
D1	1737109.56	6477124.62
D2	1737098.79	6477102.05
D3	1737040.63	6476980.22
D4	1737186.17	6477113.10
D5	1737148.91	6477035.30
D6	1737132.08	6476999.80

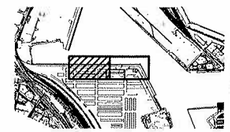
1DR-02 / DR-02 **GENERAL DREDGE PLAN - 1**
SCALE: 1"=40'

LEGEND:

- D1 — DREDGE AREA LOCATION POINT
- -58.0 — DREDGE DEPTH (M.L.L.W.)

NOTES:

1. SEE REMOVAL PLANS FOR LIMITS OF WHARF, BACKLANDS, PILE AND DECK REMOVALS.
2. FUTURE CHANNEL DEEPENING DREDGING TO -53.0'; 30.0' % FROM PIERHEAD LINE BY OTHERS.



INDEX MAP

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D
NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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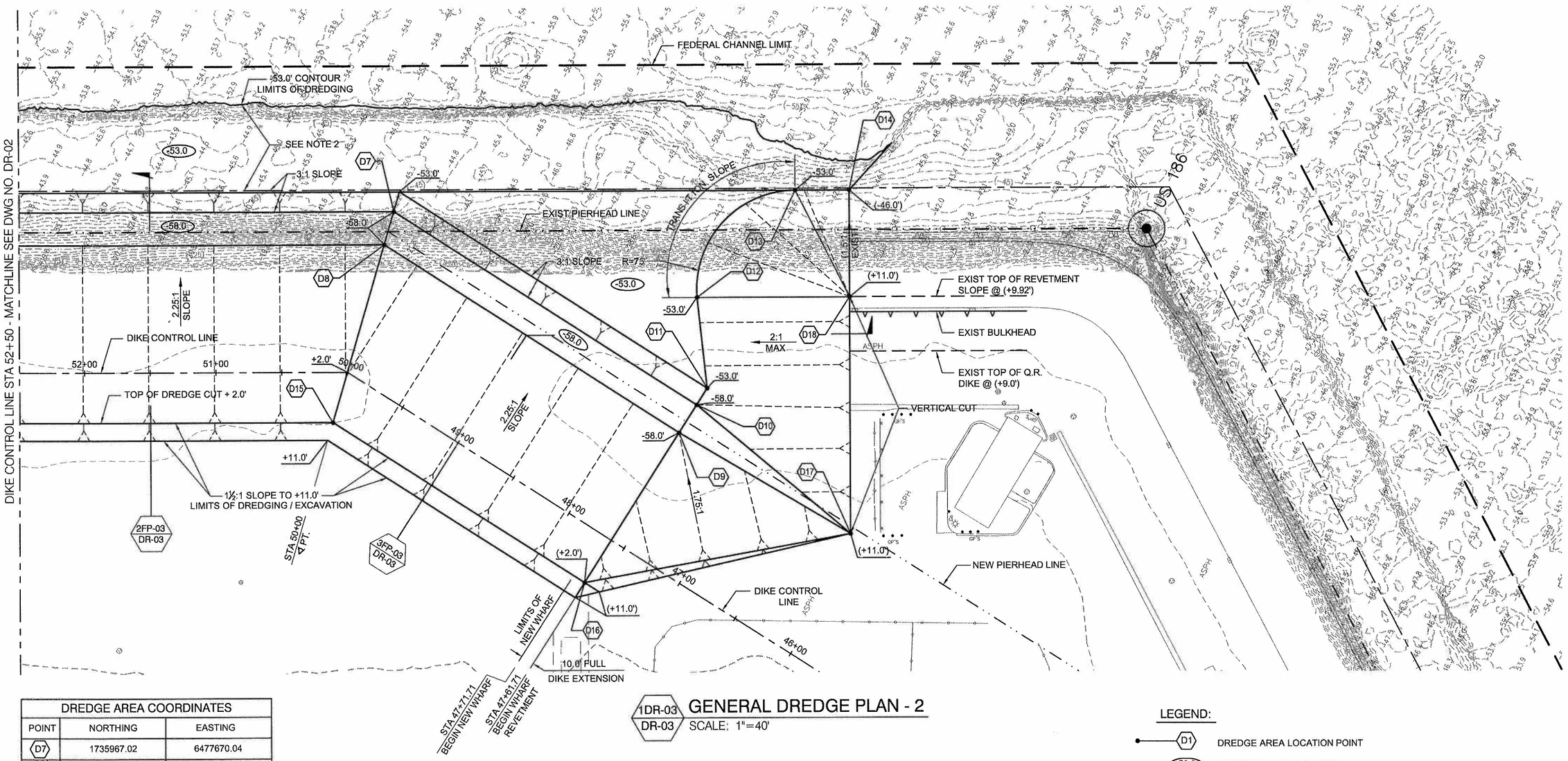
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

GENERAL DREDGE PLAN - 1

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
DR-02



DREDGE AREA COORDINATES		
POINT	NORTHING	EASTING
D7	1735967.02	6477670.04
D8	1735962.85	6477644.33
D9	1735698.45	6477611.27
D10	1735695.38	6477636.08
D11	1735693.54	6477650.97
D12	1735729.96	6477710.07
D13	1735697.39	6477815.38
D14	1735660.04	6477833.21

DREDGE AREA COORDINATES		
POINT	NORTHING	EASTING
D15	1735940.37	6477505.46
D16	1735715.01	6477477.29
D17	1735547.60	6477597.68
D18	1735625.14	6477760.11

1DR-03 / DR-03 **GENERAL DREDGE PLAN - 2**
SCALE: 1"=40'

LEGEND:

D1 — DREDGE AREA LOCATION POINT

-58.0 — DREDGE DEPTH (M.L.L.W.)

NOTES:

1. SEE REMOVAL PLANS FOR LIMITS OF WHARF, BACKLANDS, PILE AND DECK REMOVALS.
2. FUTURE CHANNEL DEEPENING DREDGING TO -53.0'; 30.0' ⅋ FROM PIERHEAD LINE BY OTHERS.

INDEX MAP

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GENERAL DREDGE PLAN - 2

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
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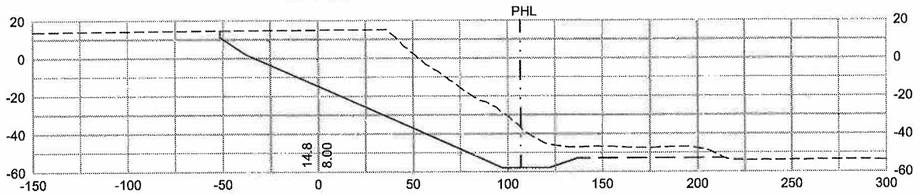
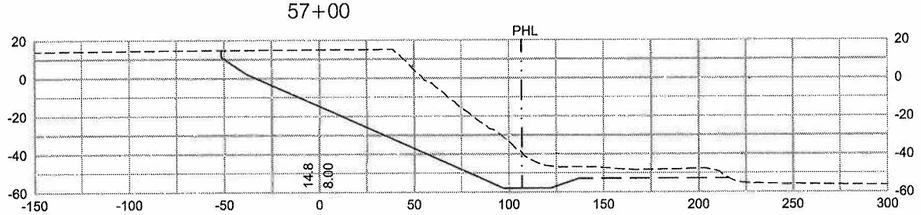
DRAWING NUMBER
DR-03

58+00



57+00



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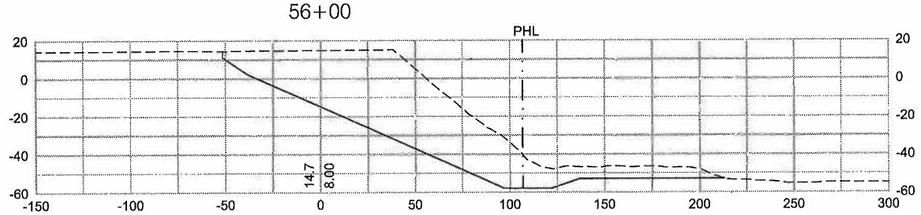

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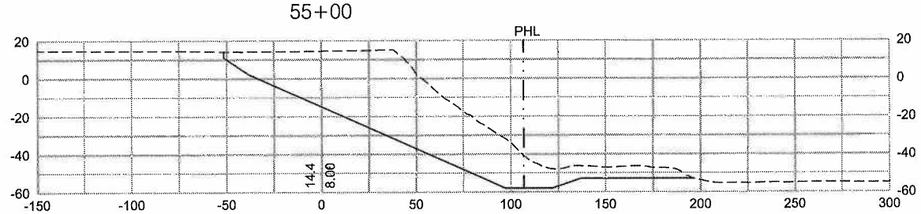

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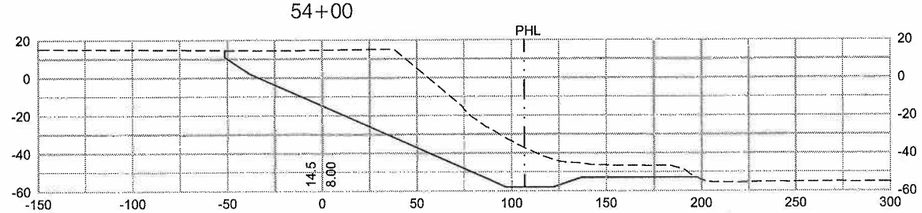

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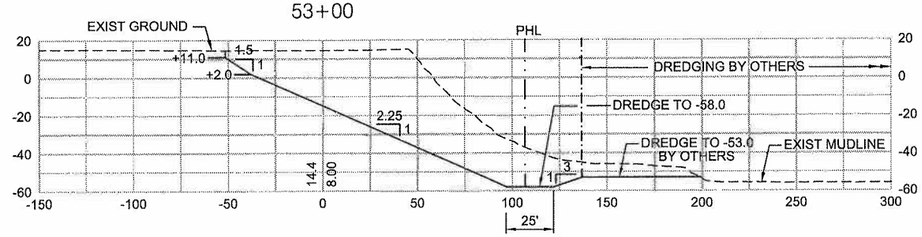

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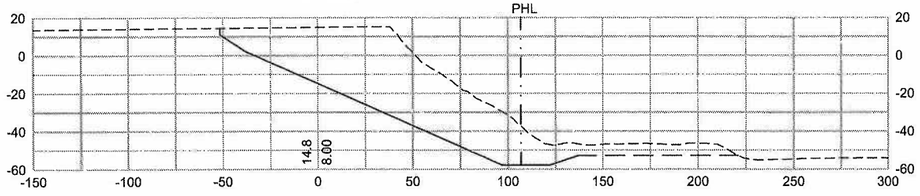

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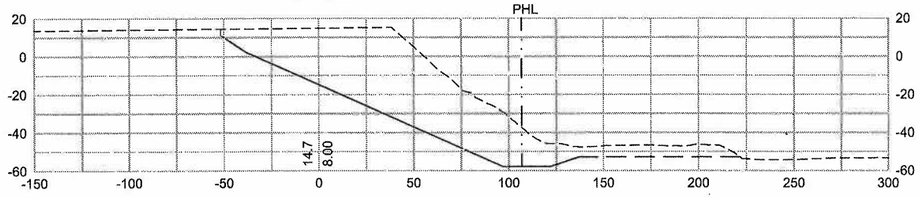

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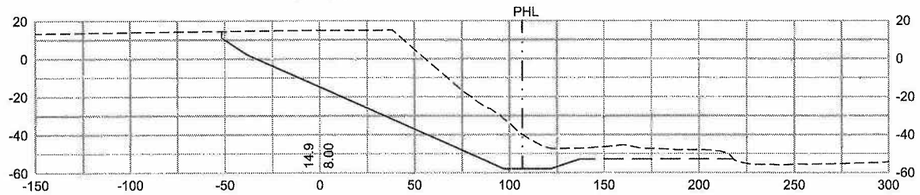

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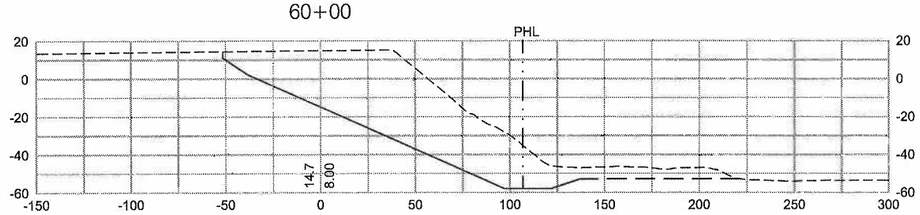

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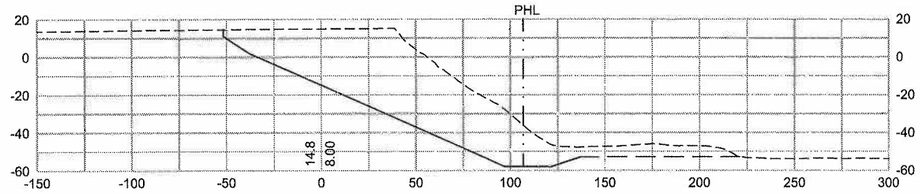

GRAPHIC SCALES

HORIZONTAL

40 20 0 20 40

1 inch = 40 ft.

VERTICAL

40 20 0 20 40

1 inch = 40 ft.

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

PRELIMINARY

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PLANS PREPARED BY:

TRANSPORTATION

AECOM USA, Inc.
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T 714.567.2501 F 714.567.2441

AECOM

www.aecom.com

DATE:	OCTOBER 30, 2009
DRAWN:	R. KAUL
CHECKED:	
DESIGNED:	
ENGR/ARCH	KOSAL KRISHNAN

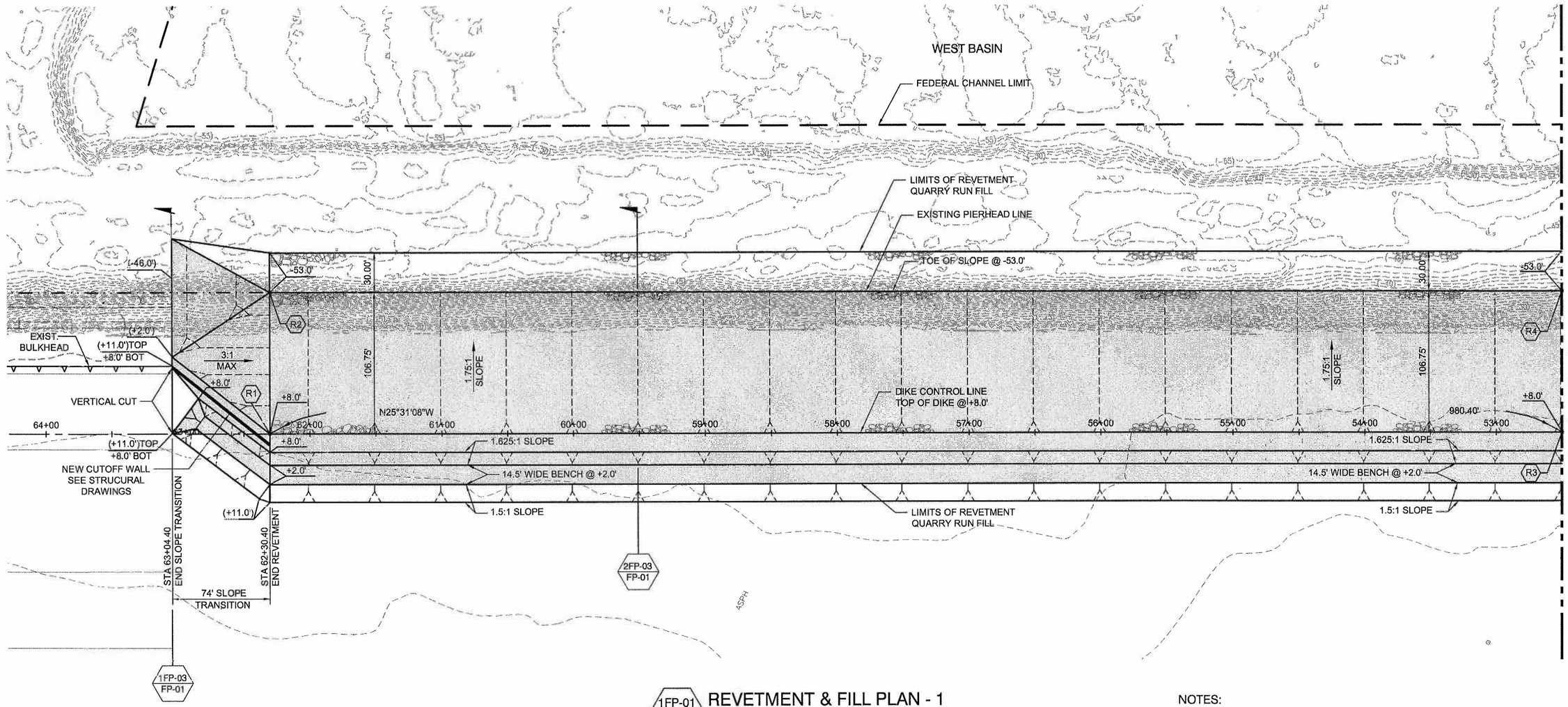
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DREDGE CROSS SECTIONS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

DR-04



1FP-01 / FP-01 REVETMENT & FILL PLAN - 1

SCALE: 1"=40'

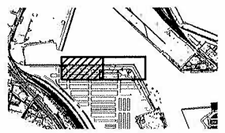
REVETMENT COORDINATES		
POINT	NORTHING	EASTING
R1	1737057.11	6477014.74
R2	1737103.10	6477111.08
R3	1736172.35	6477437.11
R4	1736218.34	6477533.44

LEGEND:

- R1 — REVETMENT AREA LOCATION POINT
- LIMITS OF REVETMENT QUARRY RUN FILL
- LIMITS OF ARMOR STONE

NOTES:

1. SEE DEMOLITION PLANS FOR WHARF AND BACKLANDS REMOVAL LIMITS.
2. SEE FP-03 FOR TYPICAL SECTION
3. SEE FP-04 AND FP-05 FOR CROSS SECTIONS.
4. CONTRACTOR TO VERIFY SLOPE TRANSITION DESIGN UPON WHARF REMOVAL AND DREDGING IS COMPLETED. CONTRACTOR SHALL NOTIFY ENGINEER IF TRANSITION NEEDS MODIFICATION.
5. SEE STRIPING DRAWINGS FOR PERIMETER K-RAIL AND FENCING PROTECTION.



INDEX MAP

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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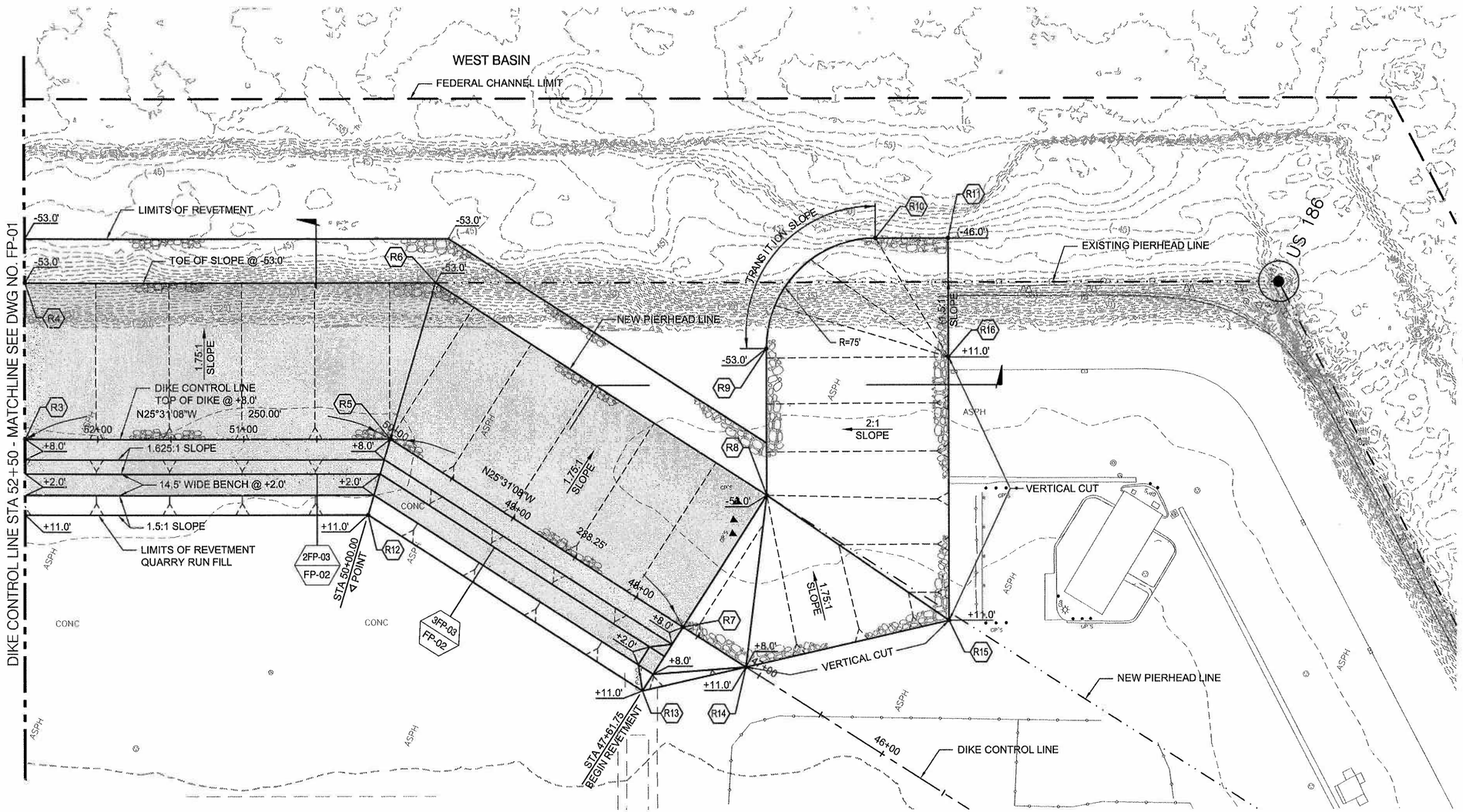
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

REVETMENT & FILL PLAN - 1

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER FP-01



REVETMENT COORDINATES		
POINT	NORTHING	EASTING
R3	1736172.35	6477437.11
R4	1736218.34	6477533.44
R5	1735946.74	6477544.80
R6	1735964.52	6477654.61
R7	1735710.35	6477515.25
R8	1735697.22	6477621.19
R9	1735740.44	6477711.72
R10	1735705.07	6477811.71
R11	1735660.04	6477833.21
R12	1735938.12	6477491.58
R13	1735716.71	6477463.90
R14	1735659.77	6477508.93
R15	1735547.60	6477597.68
R16	1735625.10	6477760.02

NOTES:

1. SEE DEMOLITION PLANS FOR WHARF AND BACKLANDS REMOVAL LIMITS.
2. SEE FP-03 FOR TYPICAL SECTIONS.
3. SEE FP-04 AND FP-05 FOR CROSS SECTIONS.
4. CONTRACTOR TO VERIFY SLOPE TRANSITION DESIGN UPON WHARF REMOVAL AND ONCE DREDGING IS COMPLETED. CONTRACTOR SHALL NOTIFY ENGINEER IF TRANSITION NEEDS MODIFICATION.
5. SEE STRIPING DRAWINGS FOR PERIMETER K-RAIL AND FENCING PROTECTION.

LEGEND:

- R1 — REVETMENT AREA LOCATION POINT
- LIMITS OF REVETMENT QUARRY RUN FILL
- LIMITS OF ARMOR STONE

1FP-01 / FP-01 REVETMENT & FILL PLAN - 2
SCALE: 1"=40'

INDEX MAP

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I
REVETMENT & FILL PLAN - 2

THE PORT OF LOS ANGELES
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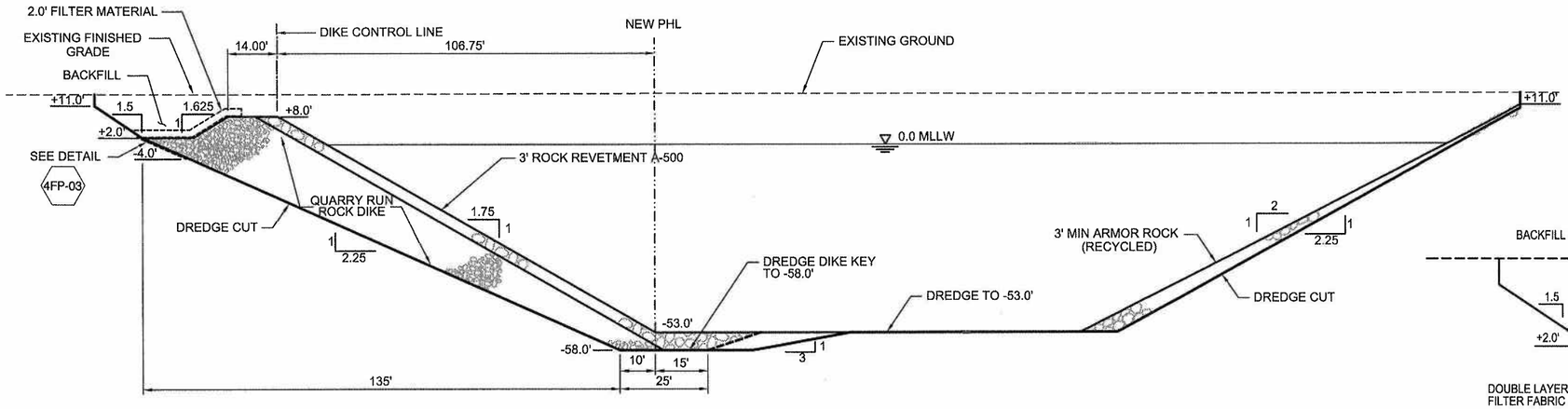
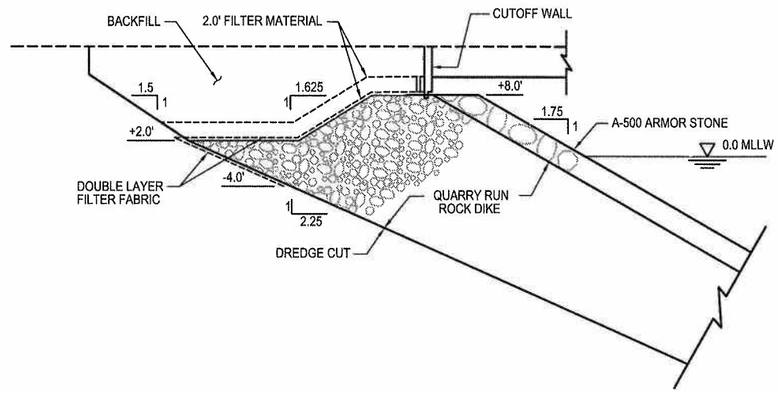
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

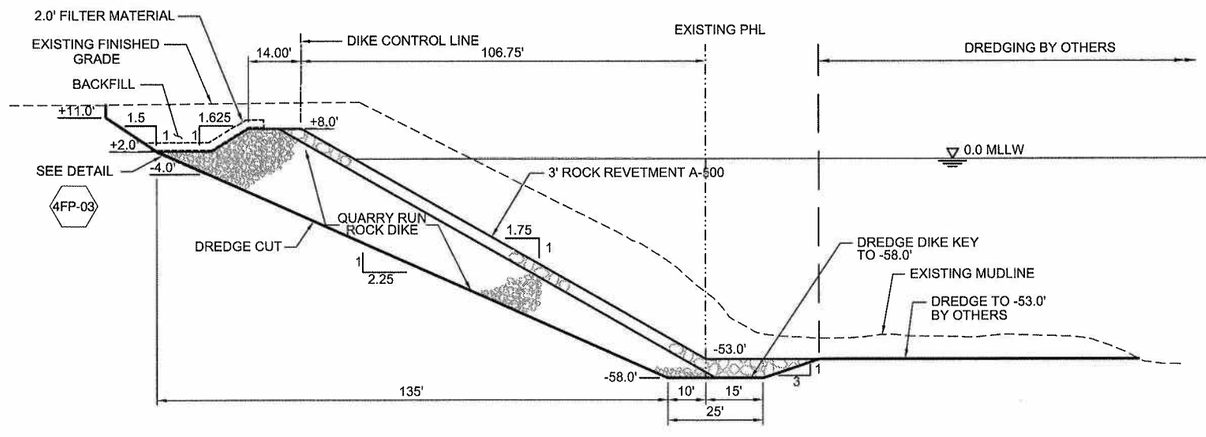
DRAWING NUMBER: FP-02



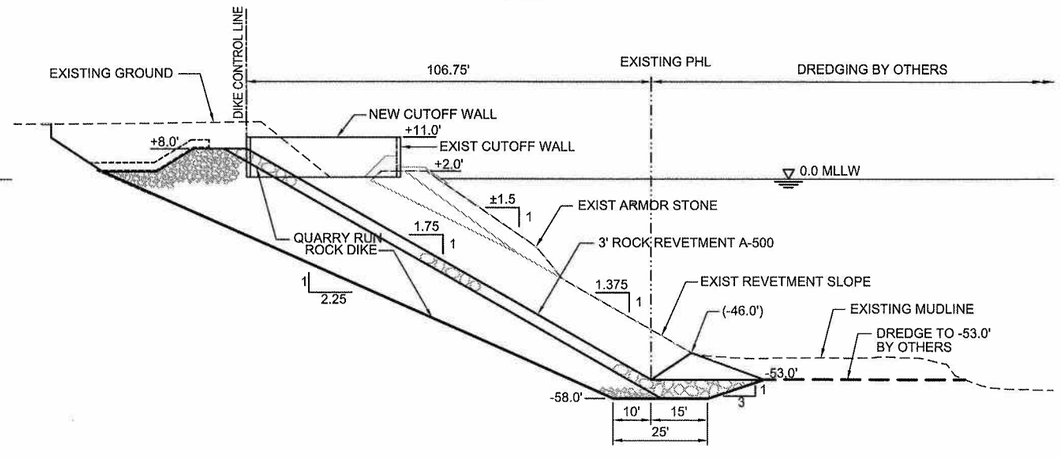
3FP-03 **TYPICAL DIKE SECTION**
DR-02, FP-02 SCALE: 1" = 20'



4FP-03 **FILTER FABRIC DETAIL**
FP-03 SCALE: 1" = 10'



2FP-03 **TYPICAL DIKE SECTION**
DR-02, FP-01, FP-02 SCALE: 1" = 20'



1FP-03 **TYPICAL DIKE SECTION**
DR-02, FP-01 SCALE: 1" = 20'

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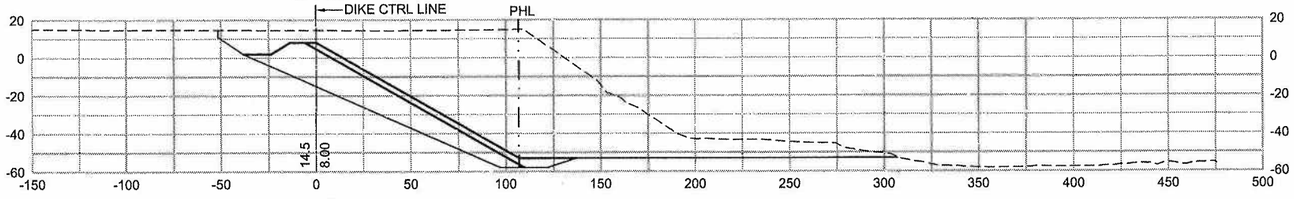
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DREDGING AND FILL TYPICAL SECTIONS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
FP-03

49+00



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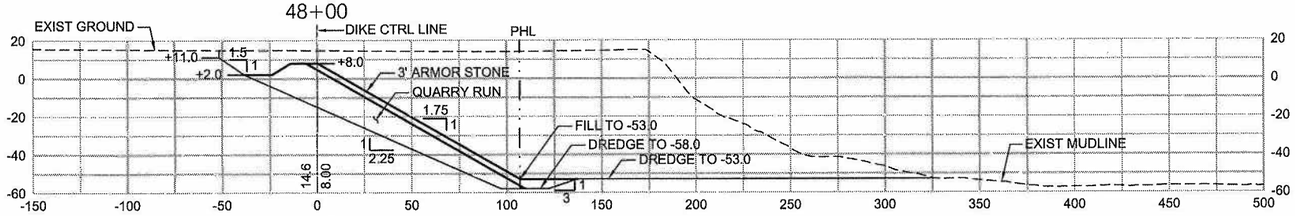

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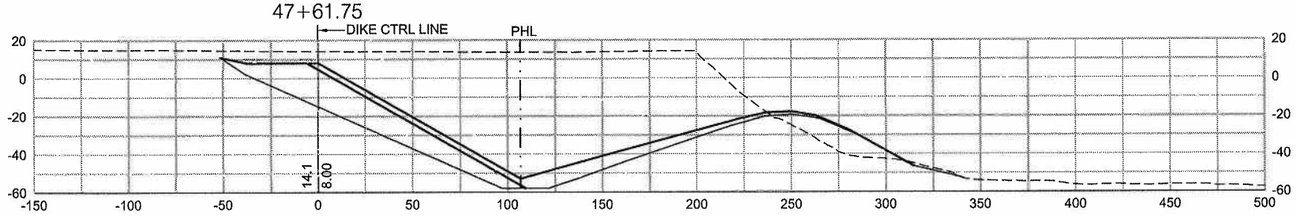

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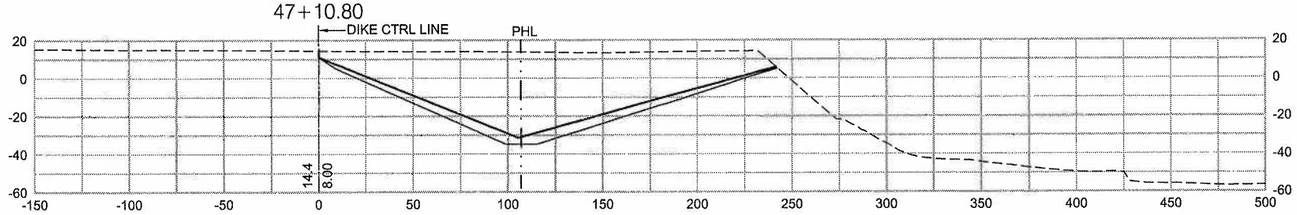

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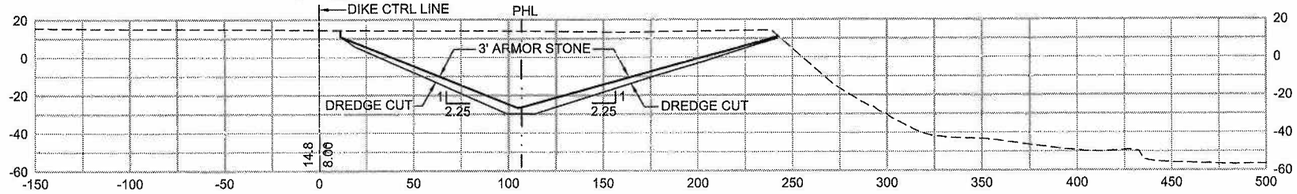

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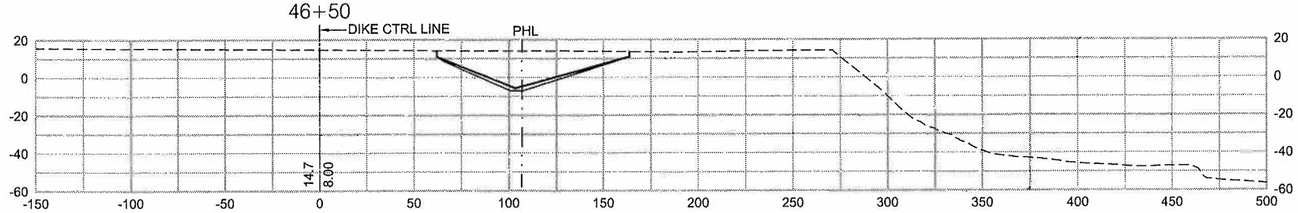

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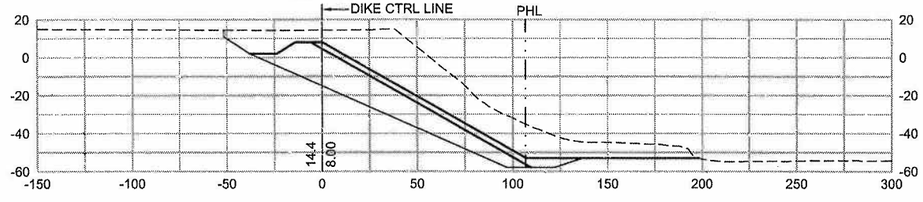

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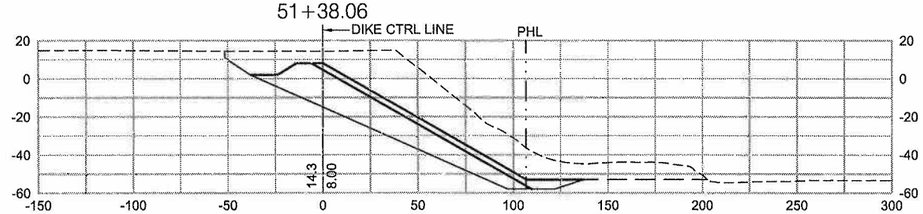

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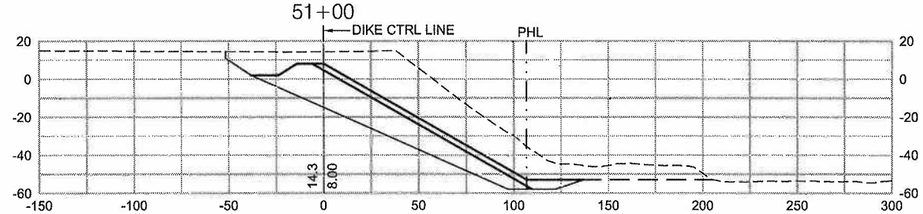
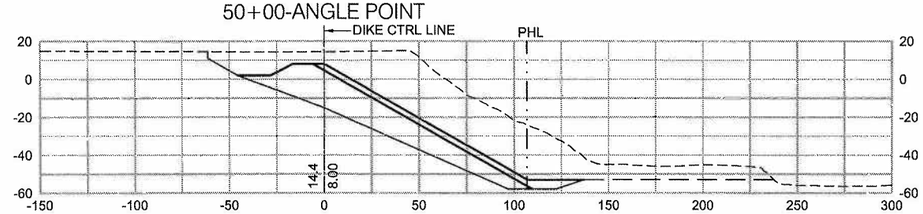


50+00-ANGLE POINT



GRAPHIC SCALES

HORIZONTAL

40 20 0 20 40

1 inch = 40 ft.

VERTICAL

40 20 0 20 40

1 inch = 40 ft.

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

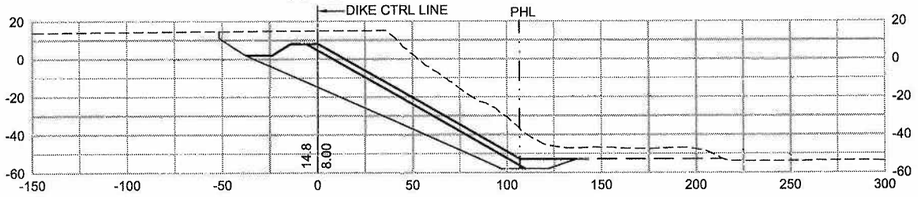
FILL CROSS SECTIONS - 1

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

FP-04

58+00



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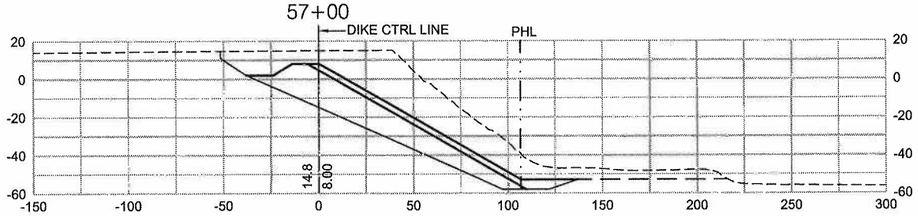

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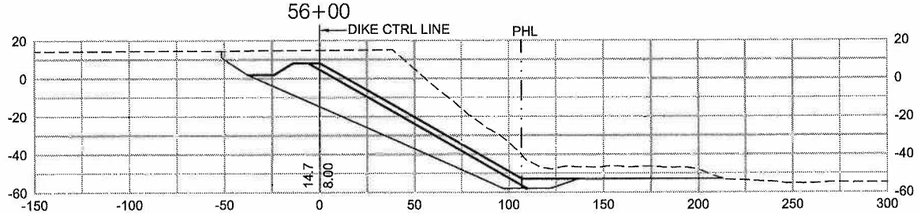

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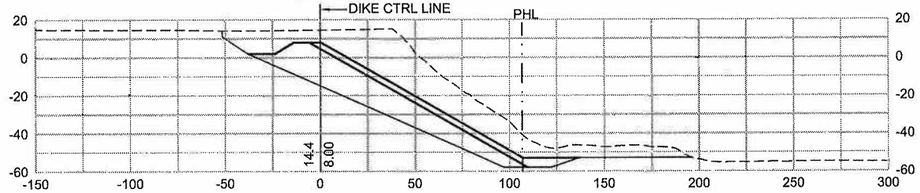

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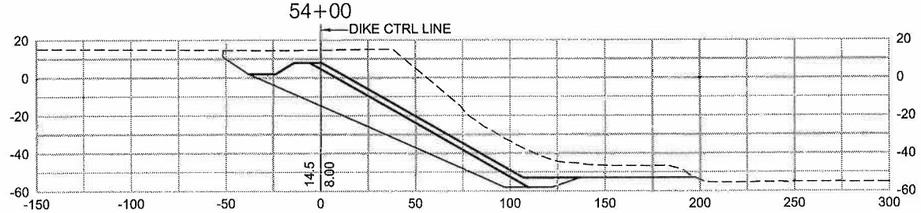

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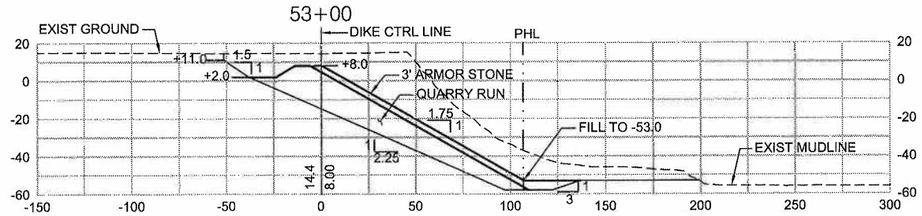

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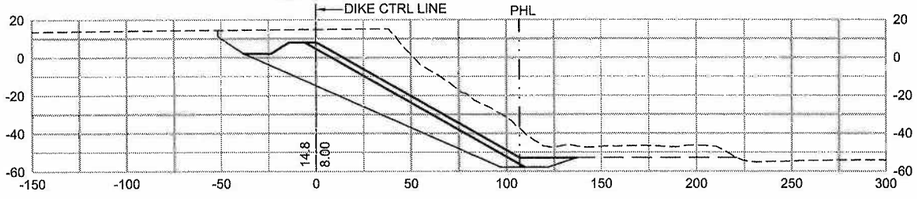

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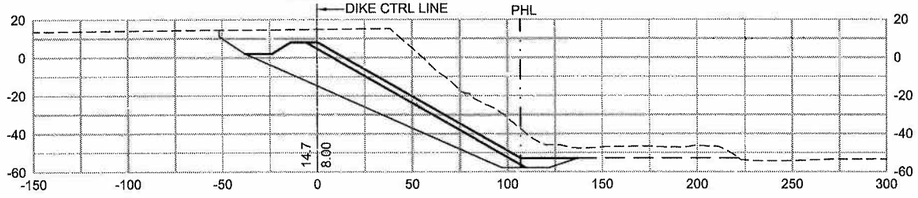

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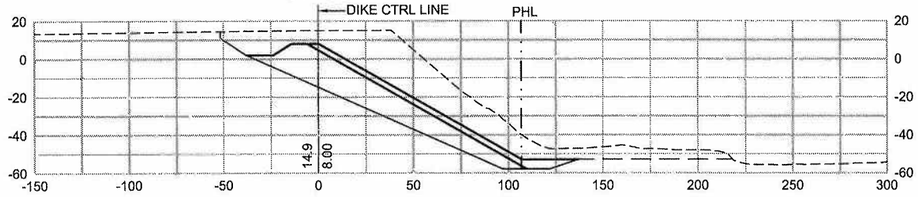

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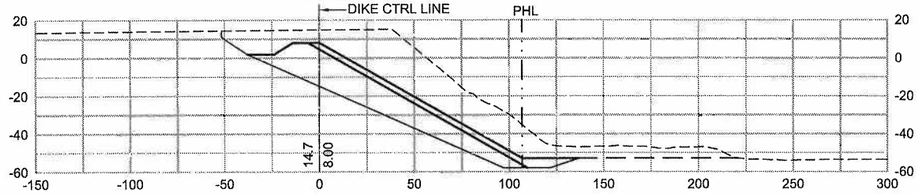

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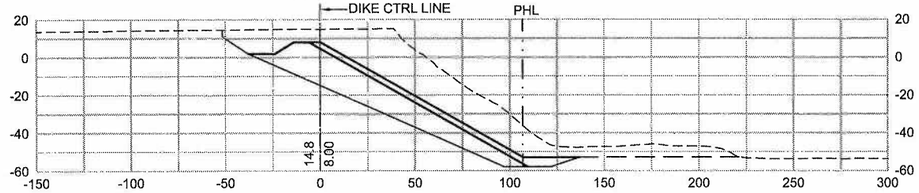

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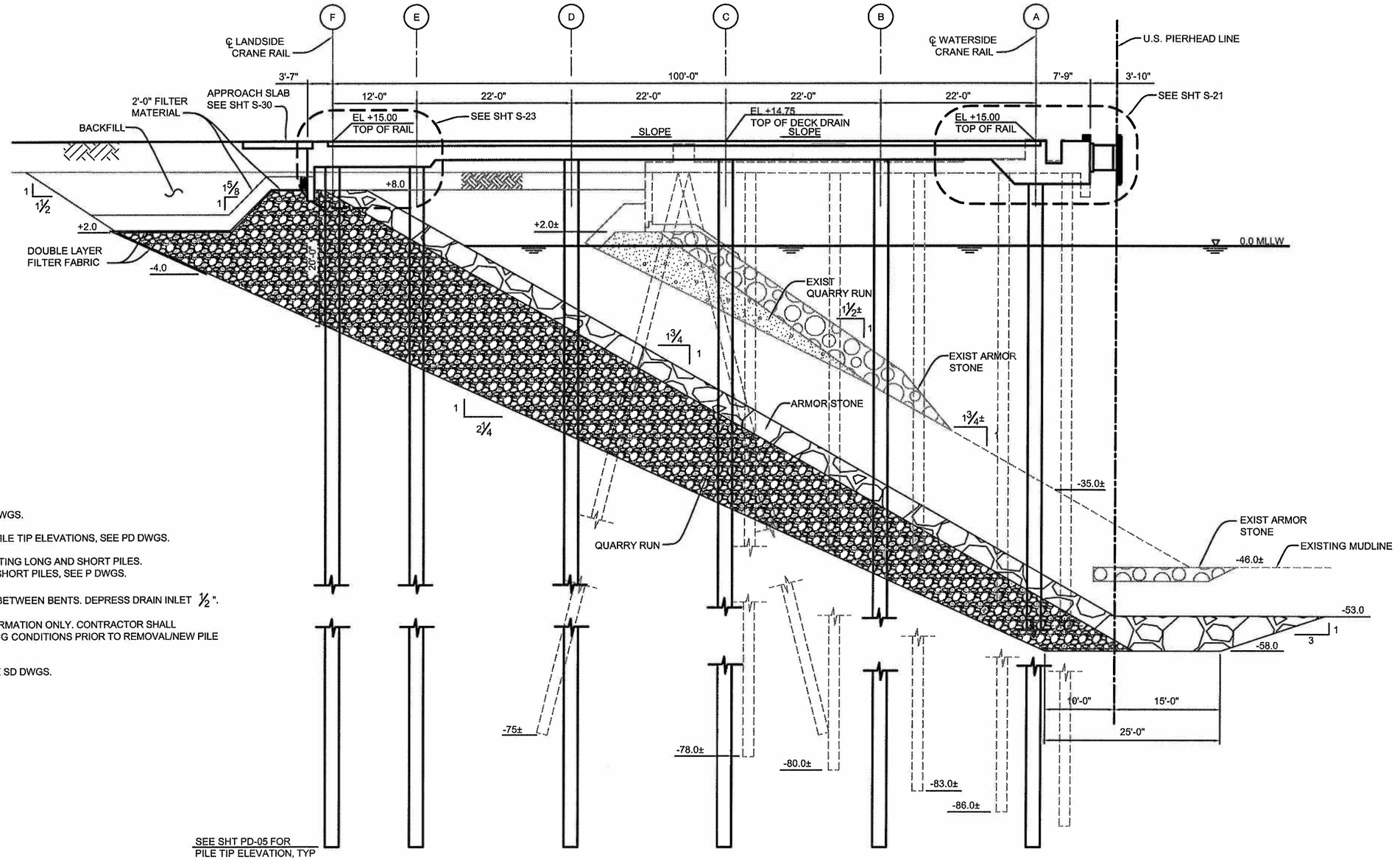
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

FILL CROSS SECTIONS - 2

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER

FP-05



NOTES:

1. FOR GENERAL NOTES, SEE GN DWGS.
2. FOR LONG WHARF ESTIMATED PILE TIP ELEVATIONS, SEE PD DWGS.
3. PILES AT ROW "E" ARE ALTERNATING LONG AND SHORT PILES. FOR LOCATIONS OF LONG AND SHORT PILES, SEE P DWGS.
4. LOCATE DRAIN HOLES MIDWAY BETWEEN BENTS. DEPRESS DRAIN INLET ½".
5. EXIST DIKE SHOWN IS FOR INFORMATION ONLY. CONTRACTOR SHALL FIELD INVESTIGATE THE EXISTING CONDITIONS PRIOR TO REMOVAL/NEW PILE DRIVING.
6. FOR WHARF DRAIN SYSTEM, SEE SD DWGS.

1X-01 / X-01 **TYPICAL SECTION**
SCALE: 1/8"=1'-0"

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D
NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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DESIGNED:
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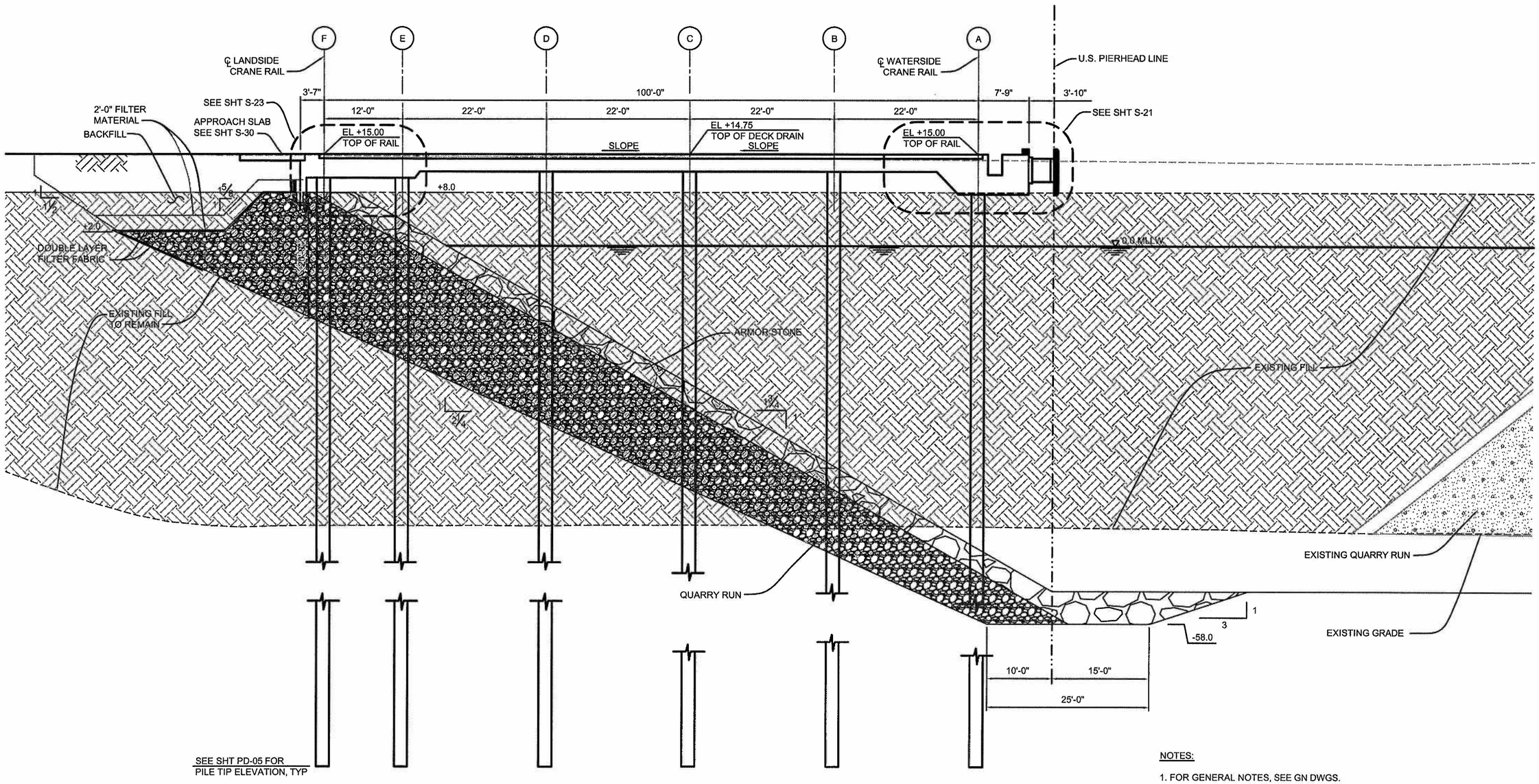
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

TYPICAL CROSS SECTION

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
X-01



1X-02 / X-02 TYPICAL SECTION AT ANGLE POINT

SCALE: 1"=10'

NOTES:

1. FOR GENERAL NOTES, SEE GN DWGS.
2. FOR LONG WHARF ESTIMATED PILE TIP ELEVATIONS, SEE PD DWGS.
3. PILES AT ROW "E" ARE ALTERNATING LONG AND SHORT PILES. FOR LOCATIONS OF LONG AND SHORT PILES, SEE P DWGS.
4. LOCATE DRAIN HOLES MIDWAY BETWEEN BENTS. DEPRESS DRAIN INLET ½".
5. FOR WHARF DRAIN SYSTEM, SEE SD DWGS.

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

TYPICAL CROSS SECTION AT ANGLE POINT

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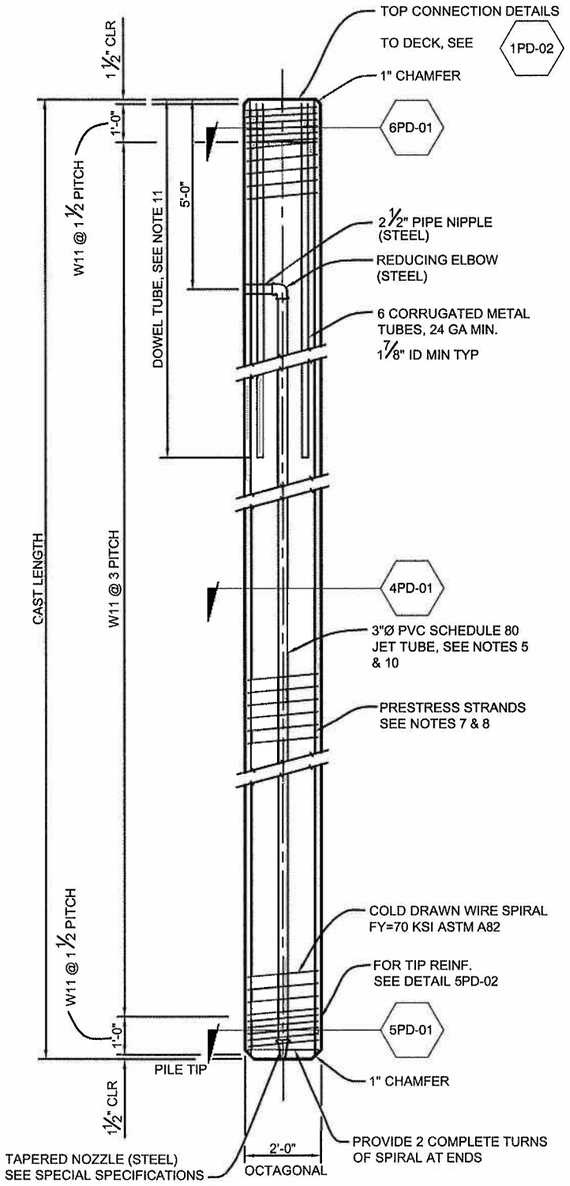
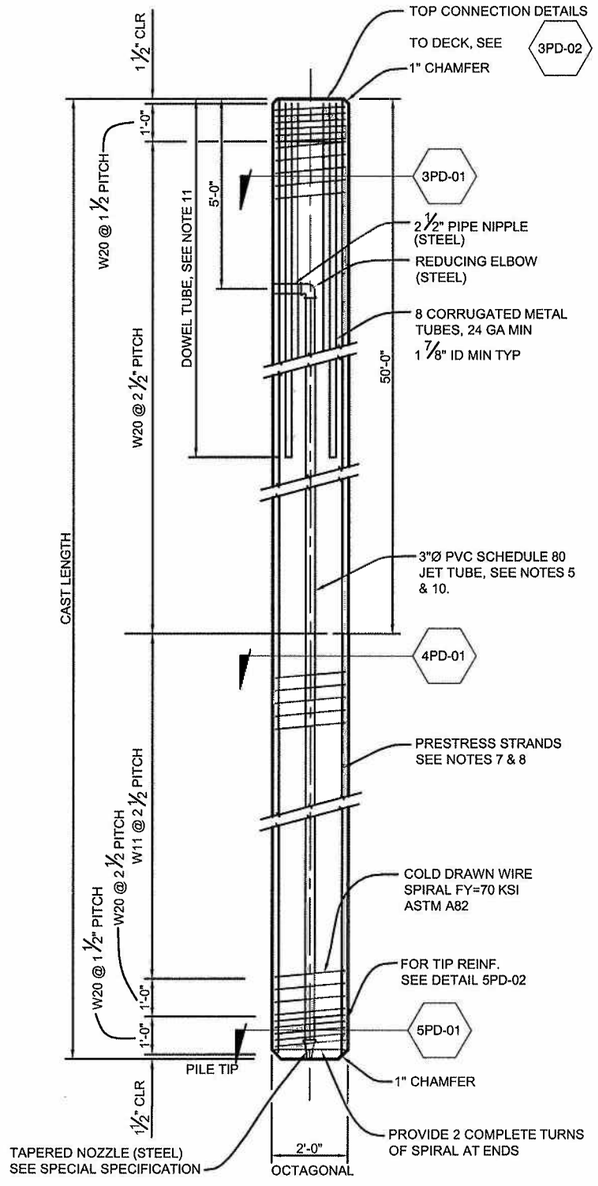
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

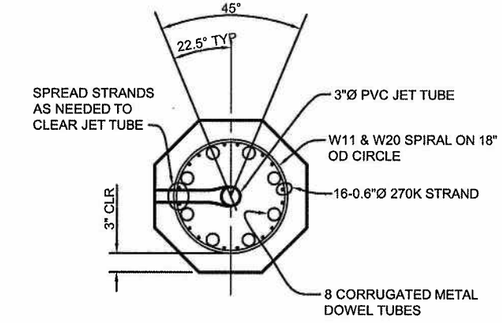
DRAWING NUMBER X-02



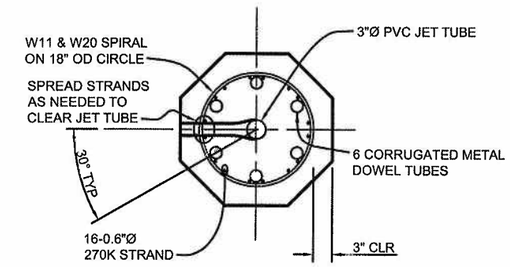
1PD-01 / PD-01 **TYPICAL PILE AT ROWS A, B, C & D**
SCALE: 1/2" = 1'-0"



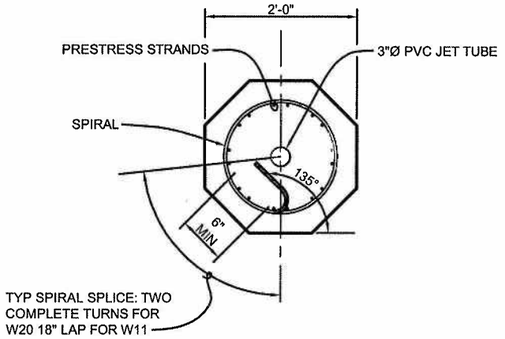
2PD-01 / PD-01 **TYPICAL PILE AT ROWS E & F**
SCALE: 1/2" = 1'-0"



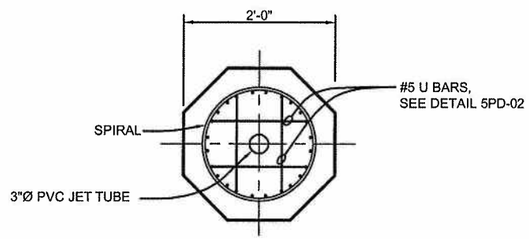
3PD-01 / 2PD-01, 1PD-04 **SECTION**
SCALE: 1" = 1'-0"



6PD-01 / 1PD-01 **SECTION**
SCALE: 1" = 1'-0"



4PD-01 / 1PD-01, 2PD-01, 1PD-04, 6PD-02 **SECTION**
SCALE: 1" = 1'-0"



5PD-01 / 1PD-01, 2PD-01, 1PD-04 **SECTION**
SCALE: 1" = 1'-0"

NOTES:

1. FOR GENERAL NOTES SEE SHT GN-01.
2. CONTACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR HANDLING OF PILES BOTH AT PRECAST PLANT AND IN THE FIELD.
3. THE MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 6,500 PSI.
4. THE MINIMUM CONCRETE STRENGTH AT TRANSFER OF PRESTRESS SHALL BE 5,000 PSI.
5. ALL LONG PILES SHALL BE CAST WITH JET TUBES. ALL SHORT PILES IN ROW E SHALL BE CAST WITHOUT JET TUBES, SEE SHT PD-04.
6. DOWEL TUBES SHALL BE FILLED WITHIN 2 FT FROM TOP WITH A FLUID GROUT MADE OF NEAT CEMENT, WATER AND SUPERPLASTICIZER. MAXIMUM WATER CEMENT RATIO SHALL BE 0.4, PLACE DOWELS IMMEDIATELY AFTER GROUTING.
7. JACKING FORCE PER STRAND SHALL BE 70% ULTIMATE = 40.64 KIPS
   ASSUMED LOSSES 35,000 PSI = 7.525 KIPS
   WORKING FORCE PER STRAND = 33.115 KIPS
   TOTAL PRESTRESS FORCE = 529.84 KIPS
   EFFECTIVE PRESTRESS = 1,111 PSI
8. 16-0.600" DIA. PRESTRESSING STRANDS SPACED AS SHOWN, 270 KSI LOLAX-A416.
9. CLEAR SPACING BETWEEN WIRE STRANDS SHALL NOT BE LESS THAN 1½".
10. JET TUBE SHALL BE PVC SCHEDULE 80 PIPE. NIPPLE, ELBOW, AND NOZZLE SHALL BE STEEL SCHEDULE 40. PLUG INLET AFTER DRIVING.
11. EMBED CORRUGATED METAL DOWEL TUBE 30'-0" MIN FOR INDICATOR PILES AND 20'-0" MIN FOR ALL OTHERS.

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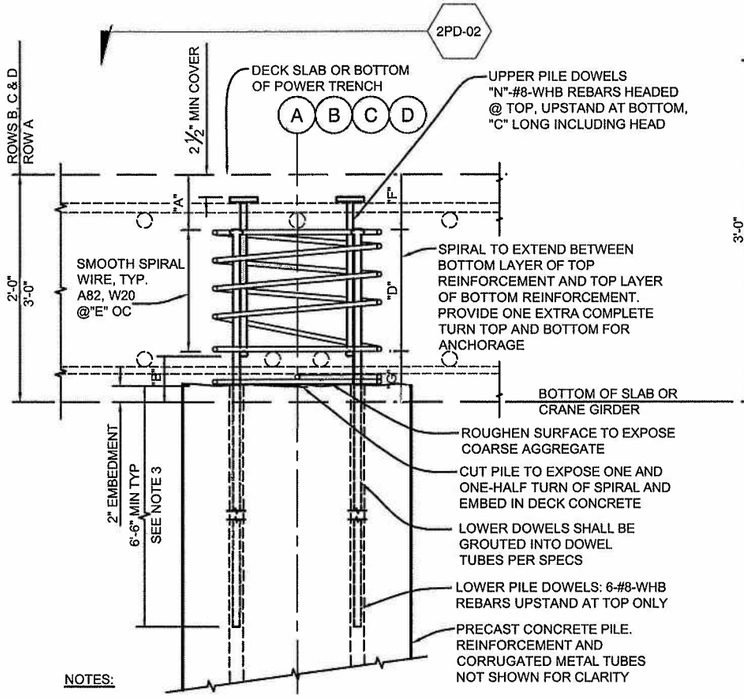
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PRESTRESSED CONCRETE PILE - DETAILS & NOTES

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

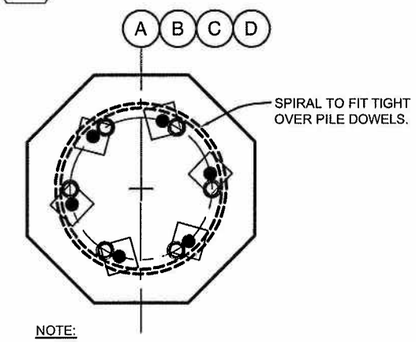
DRAWING NUMBER PD-01



NOTES:

1. ROW B AS SHOWN OTHER ROWS SIMILAR. FOR ROW A, SEE ALSO 2PD-03 AND 3PD-03.
2. SEE TABLE "A", SHT PD-04 FOR NUMBER OF DOWELS "N" AND DIMENSIONS "A" THROUGH "G".
3. EMBEDMENT MAY BE REDUCED TO 5'-0" IF DOWEL TUBE IS TOO SHORT.

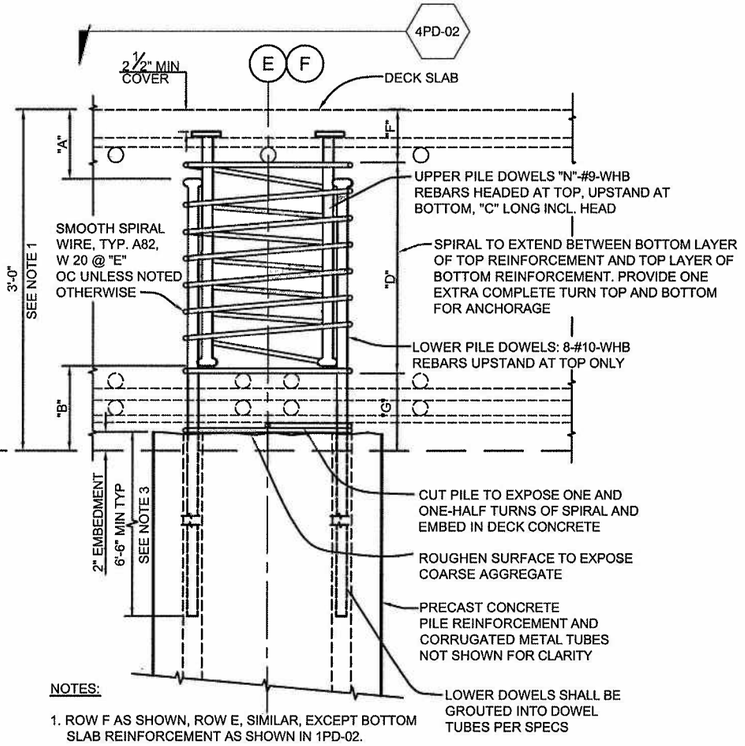
1PD-02 / 1PD-01 **SECTION**
SCALE: 1 1/2" = 1'-0"



NOTE:

1. ROWS A, B, C & D AS SHOWN.

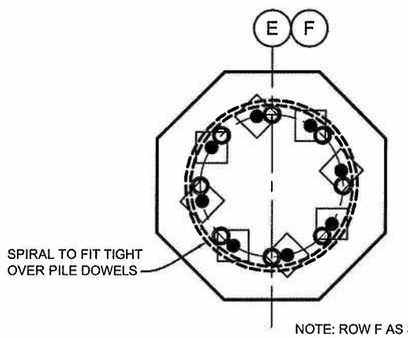
2PD-02 / 1PD-02 **SECTION**
SCALE: 1 1/2" = 1'-0"



NOTES:

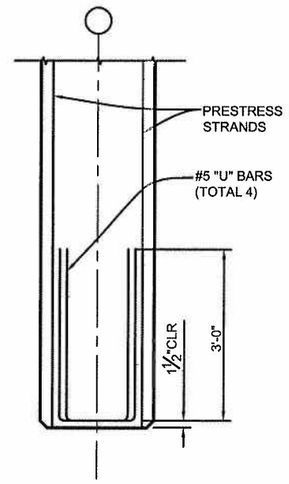
1. ROW F AS SHOWN, ROW E, SIMILAR, EXCEPT BOTTOM SLAB REINFORCEMENT AS SHOWN IN 1PD-02.
2. SEE TABLE "A" SHT PD-04 FOR NUMBER OF DOWELS "N" AND DIMENSIONS "A" THROUGH "G".
3. EMBEDMENT MAY BE REDUCED TO 5'-0" IF DOWEL TUBE IS TOO SHORT.

3PD-02 / 3PD-02 **SECTION**
SCALE: 1 1/2" = 1'-0"

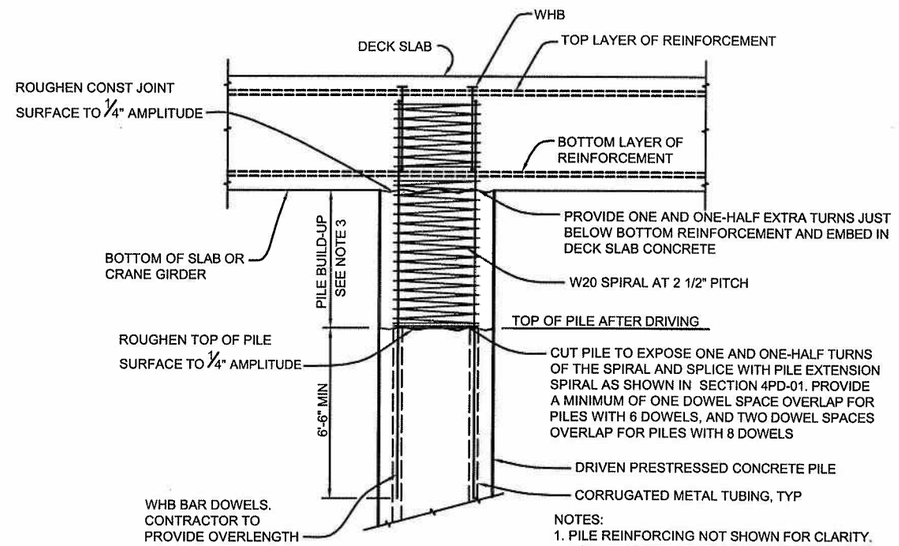


NOTE: ROW F AS SHOWN, ROW E SIMILAR.

4PD-02 / 3PD-02 **SECTION**
SCALE: 1 1/2" = 1'-0"



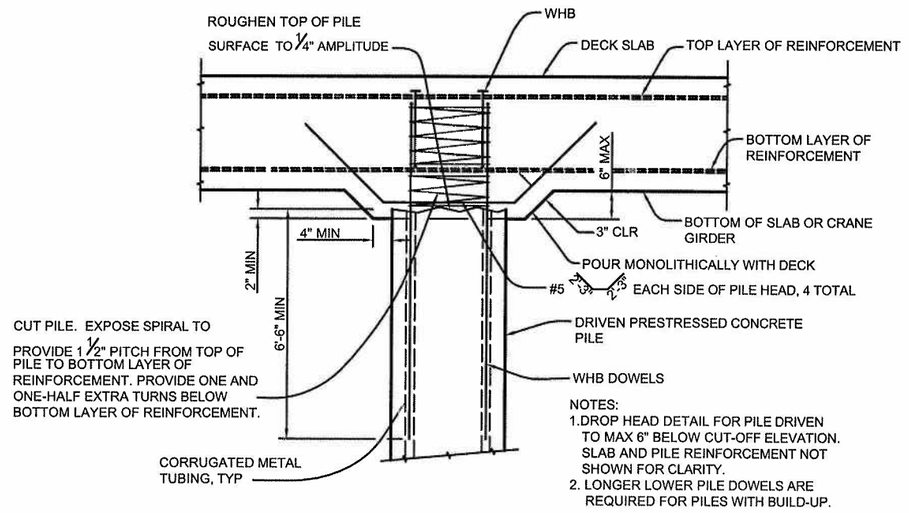
5PD-02 / 1PD-01, 2PD-01, 1PD-04 **SECTION**
SCALE: 3/4" = 1'-0"



NOTES:

1. PILE REINFORCING NOT SHOWN FOR CLARITY.
2. LONGER LOWER PILE DOWELS ARE REQUIRED FOR PILES WITH BUILD-UP.
3. PILE BUILD-UP 4'-0" MAXIMUM UNLESS APPROVED BY ENGINEER.

6PD-02 / PD-02 **PILE CONNECTION - INDEPENDENT BUILD-UP**
SCALE: 3/4" = 1'-0"



NOTES:

1. DROP HEAD DETAIL FOR PILE DRIVEN TO MAX 6" BELOW CUT-OFF ELEVATION. SLAB AND PILE REINFORCEMENT NOT SHOWN FOR CLARITY.
2. LONGER LOWER PILE DOWELS ARE REQUIRED FOR PILES WITH BUILD-UP.

7PD-02 / PD-02 **PILE CONNECTION - MONOLITHIC BUILD-UP**
SCALE: 3/4" = 1'-0"

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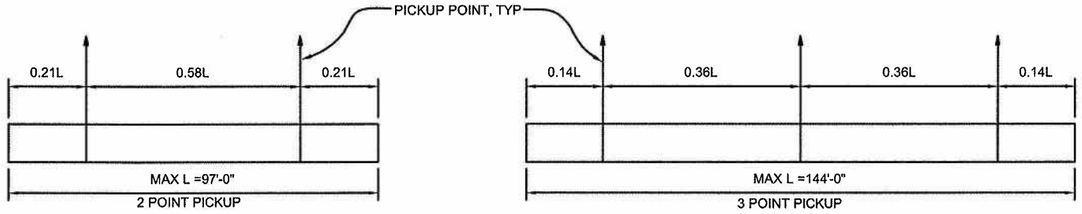
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PRESTRESSED CONCRETE PILE - DETAILS NO. 1

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

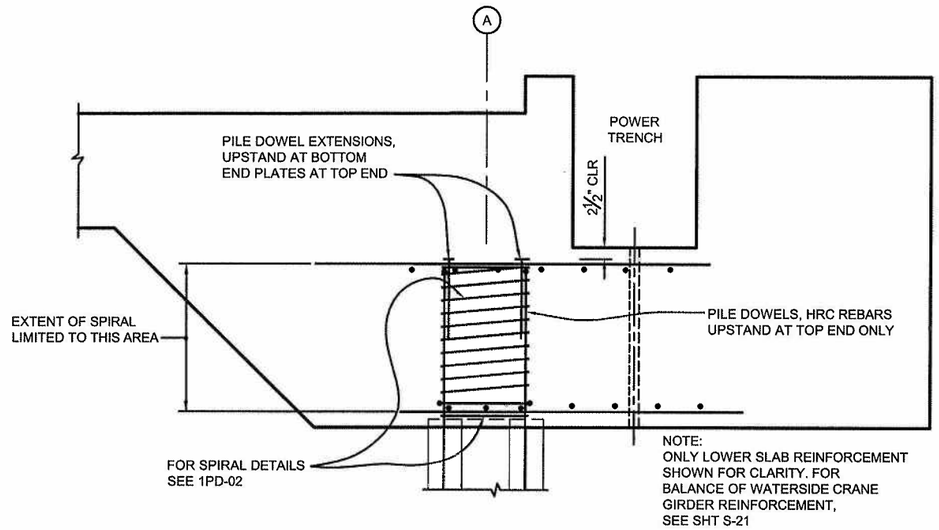
DRAWING NUMBER
PD-02



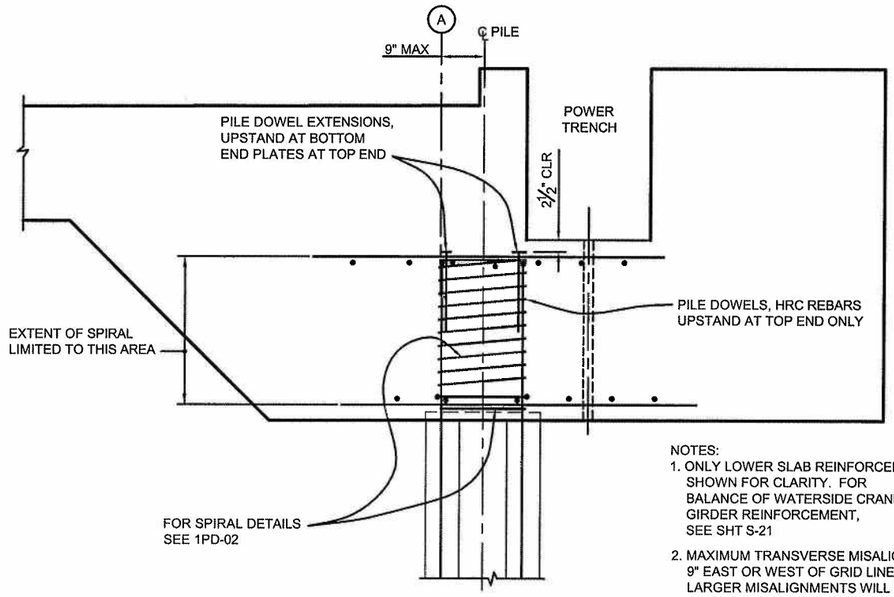
NOTES:

1. PICKUP POINTS BASED ON EQUAL VERTICAL PICK POINTS WITH PILE IN HORIZONTAL POSITION.
2. BEFORE INSTALLING, THE CONTRACTOR SHALL SUBMIT PICKUP DETAILS AND SUPPORTING CALCULATIONS PREPARED BY A CALIFORNIA REGISTERED STRUCTURAL ENGINEER FOR HANDLING PILE DURING TRANSPORTING & DRIVING PROCEDURE.

1PD-03 / PD-03 **TYPICAL PILE PICKUP POINTS**
SCALE: 1/2" = 1'-0"



3PD-03 / 1PD-02 **PILE HEAD DETAIL - NORMAL POSITION**
SCALE: 3/4" = 1'-0"



NOTES:
1. ONLY LOWER SLAB REINFORCEMENT SHOWN FOR CLARITY. FOR BALANCE OF WATERSIDE CRANE GIRDER REINFORCEMENT, SEE SHT S-21
2. MAXIMUM TRANSVERSE MISALIGNMENT 9" EAST OR WEST OF GRID LINE (A) LARGER MISALIGNMENTS WILL BE CORRECTED AS DIRECTED BY THE ENGINEER.

2PD-03 / 1PD-02 **PILE HEAD DETAIL - MISALIGNED POSITION**
SCALE: 3/4" = 1'-0"

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PRESTRESSED CONCRETE PILE - DETAILS NO. 2

THE PORT OF LOS ANGELES
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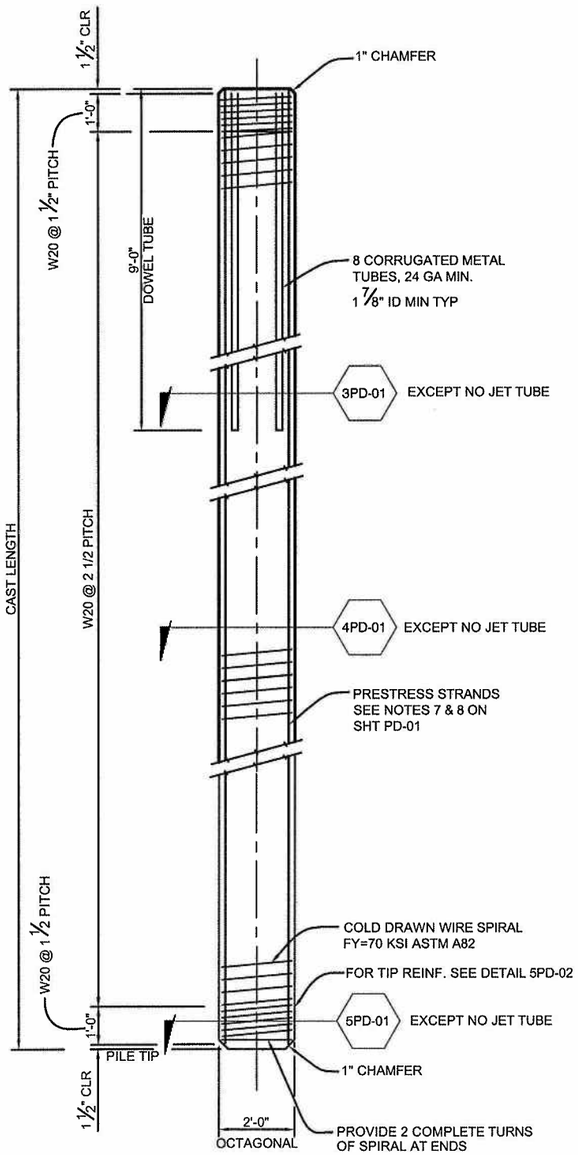
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
PD-03



1PD-04 / PD-04 TYPICAL SHORT PILE AT ROW E

SCALE: 1/2" = 1'-0"

TABLE A						
	ROW F	ROW E	ROW D	ROW C	ROW B	ROW A
"N" NUMBER OF DOWELS AND DOWEL EXTENSIONS	8	8	6	6	6	6
"A" DOWEL CLR @ TOP	6½"	6"	6"	6"	6"	N.A.
"B" DOWEL CLR @ BOT (MAX)	9"	6"	6"	6"	6"	6"
"C" UPPER DOWEL LENGTH	24½"	27½"	15½"	15"	15½"	29½"
"D" SPIRAL, L	22"	25½"	13½"	13"	13½"	27½"
"E" SPIRAL PITCH	2½"	2½"	2½"	2½"	2½"	2½"
"F" SPIRAL CLR TOP	5½"	5"	5"	5"	5"	N.A.
"G" SPIRAL CLR BOT	8½"	5½"	5½"	5½"	5½"	5½"

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PRESTRESSED CONCRETE SHORT PILE & TABLE

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
PD-04

RECOMMENDED PRODUCTION PILE SCHEDULE AND ORDER LENGTH					
BENTS	PILE ROW	DESIGN SERVICE ROAD (KIPS)	MINIMUM TIP ELEVATION (FT)	APPROX ORIGINAL GROUND ELEVATION (FT)	RECOMMENDED PILE ORDER LENGTH (FT)
58 TO 138	A	600	-100.00		
	B	600	-100.00		
	C	600	-100.00		
	D	600	-100.00		
	E	600	-100.00		
	E (SHORT)	---	-35.00		
	F	600	-100.00		

NOTES:

1. FINAL BLOW COUNT CRITERIA FOR PRODUCTION DRIVING WILL BE ESTABLISHED AFTER THE COMPLETION OF THE INDICATOR PILE DRIVING PROGRAM.
2. FOR APPROX GROUND ELEVATIONS, SEE "X" SHTS.
3. PILE TIP ELEVATIONS ARE REFERENCED TO MEAN LOWER LOW WATER (MLLW).
4. PILE LOCATIONS ARE INDICATED AT CUT-OFF ELEVATIONS.
5. DESIGN LOADS ARE FOR REFERENCE ONLY.
6. SEE SPECIFICATIONS FOR PILE LOCATION TOLERANCES AND SURVEY REQUIREMENTS.
7. ONCE THE PILE IS DRIVEN, THE CONTRACTOR SHALL NOT APPLY ANY LATERAL FORCE TO THE PILE.
8. BEARING PILES SHALL BE INSTALLED TO ESTIMATED TIP ELEVATIONS AND DRIVING RESISTANCE CRITERIA AS DETERMINED DURING THE INDICATOR PILE TESTING PROGRAM. SHORT PILES SHALL BE INSTALLED TO SPECIFIED TIP AS INDICATED IN THE "RECOMMENDED PILE SCHEDULE AND ORDER LENGTH" TABLE.
9. INSTALL E (SHORT PILES) AFTER ADJACENT LONG PILES ARE DRIVEN TO AVOID SOIL DISTRUBANCE NEAR SHORT PILES DUE TO JETTING OF LONG PILES.
10. ENGINEER RESERVES THE RIGHT TO ADJUST PILE TIP ELEVATIONS AND PILE CAST LENGTHS AFTER INDICATOR PILE PROGRAM OR DURING PRODUCTION PILE DRIVING.
11. INSTALL LONG PILES BY JETTING AND DRIVING PER SPECIFICATIONS.
12. INDICATOR PILES SHALL BE USED AS PERMANENT PILES UNLESS OTHERWISE DIRECTED BY ENGINEER. SEE SPECIFICATION FOR INSTALLATION REQUIREMENTS.
13. SEE "P" DRAWINGS FOR BENT & ROW DESIGNATIONS.

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PRESTRESSED CONCRETE PILE - SCHEDULE

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

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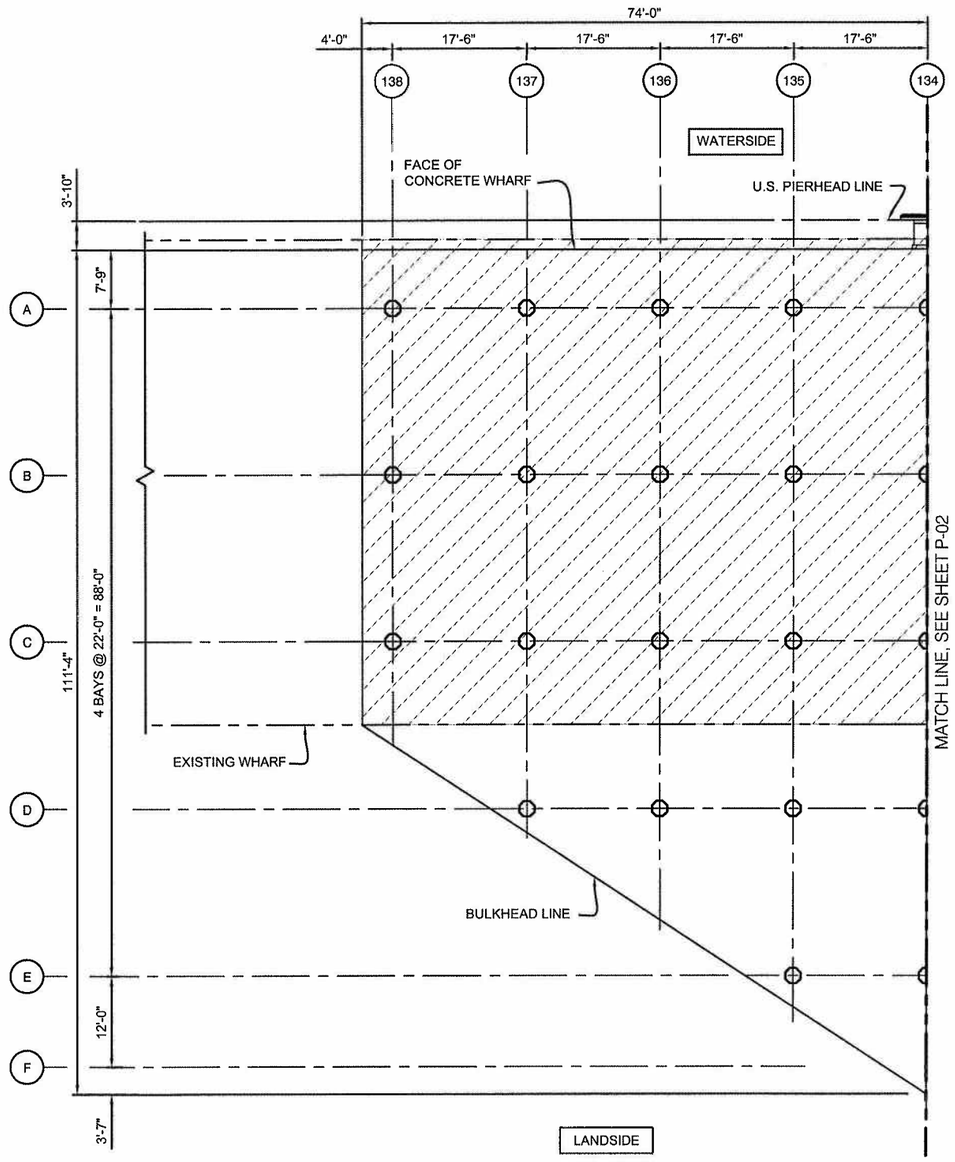
PD-05



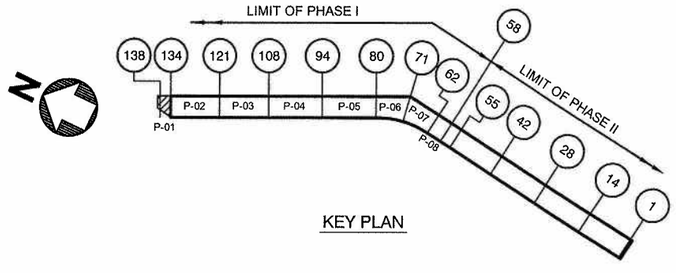
1P-01 / P-01 PILE PLAN
SCALE: 1"=10'

LEGEND:

- SHORT PILE
- LONG PILE
- EXISTING WHARF TO BE REMOVED (PHASE I)

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. EXISTING PILES NOT SHOWN. FOR EXISTING PILE REMOVAL, SEE RD DRAWINGS.



KEY PLAN

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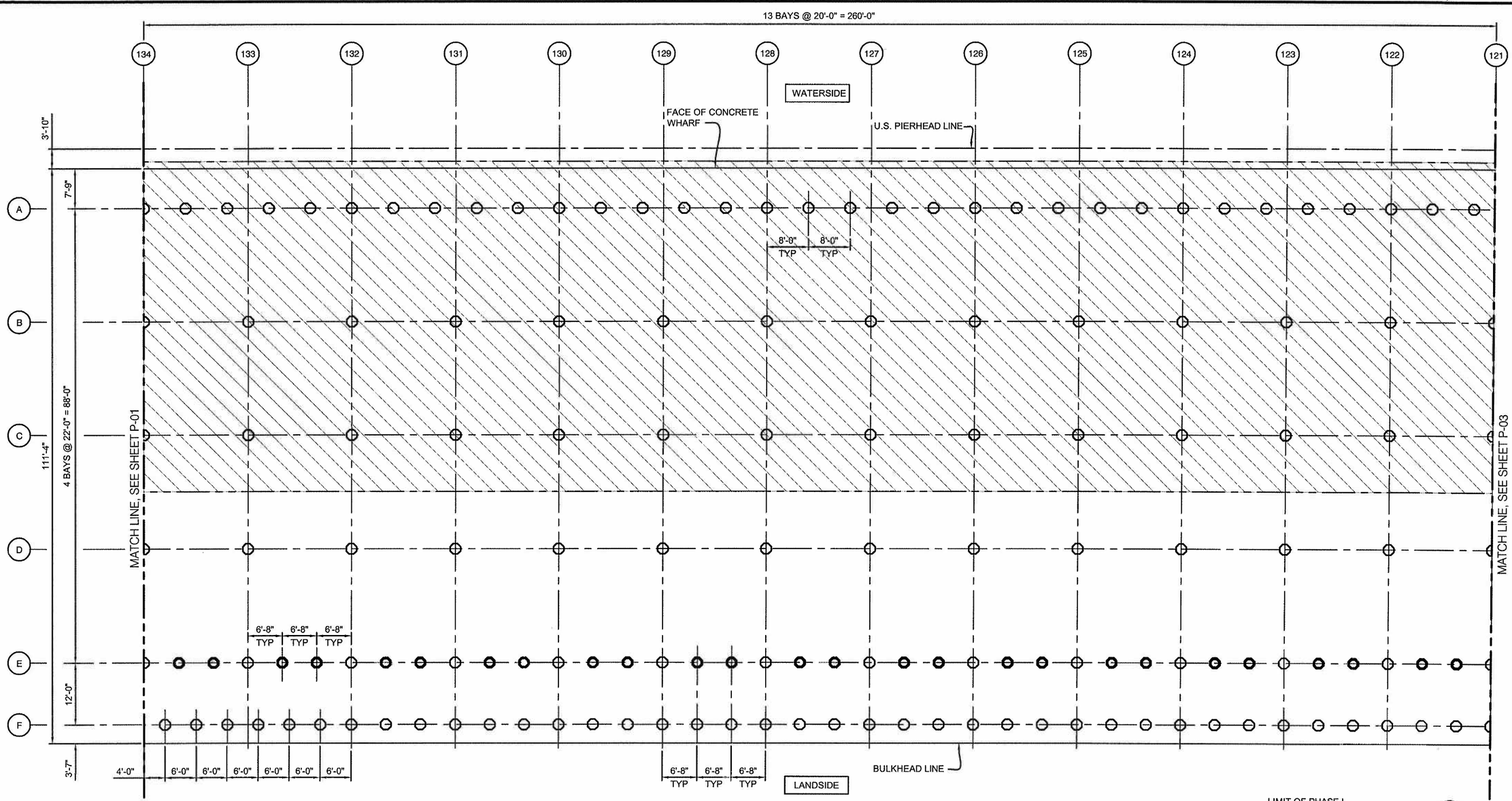
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I
PILE PLAN - BENTS 134 TO 138

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
P-01



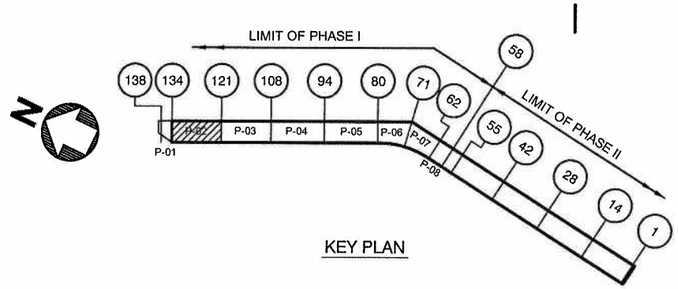
LEGEND:

- SHORT PILE
- LONG PILE
- EXISTING WHARF TO BE REMOVED (PHASE I)

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. EXISTING PILES NOT SHOWN. FOR EXISTING PILE REMOVAL, SEE RD SHEETS.

1P-02 / P-02 **PILE PLAN**
SCALE: 1"=10'



KEY PLAN

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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AECOM
www.aecom.com

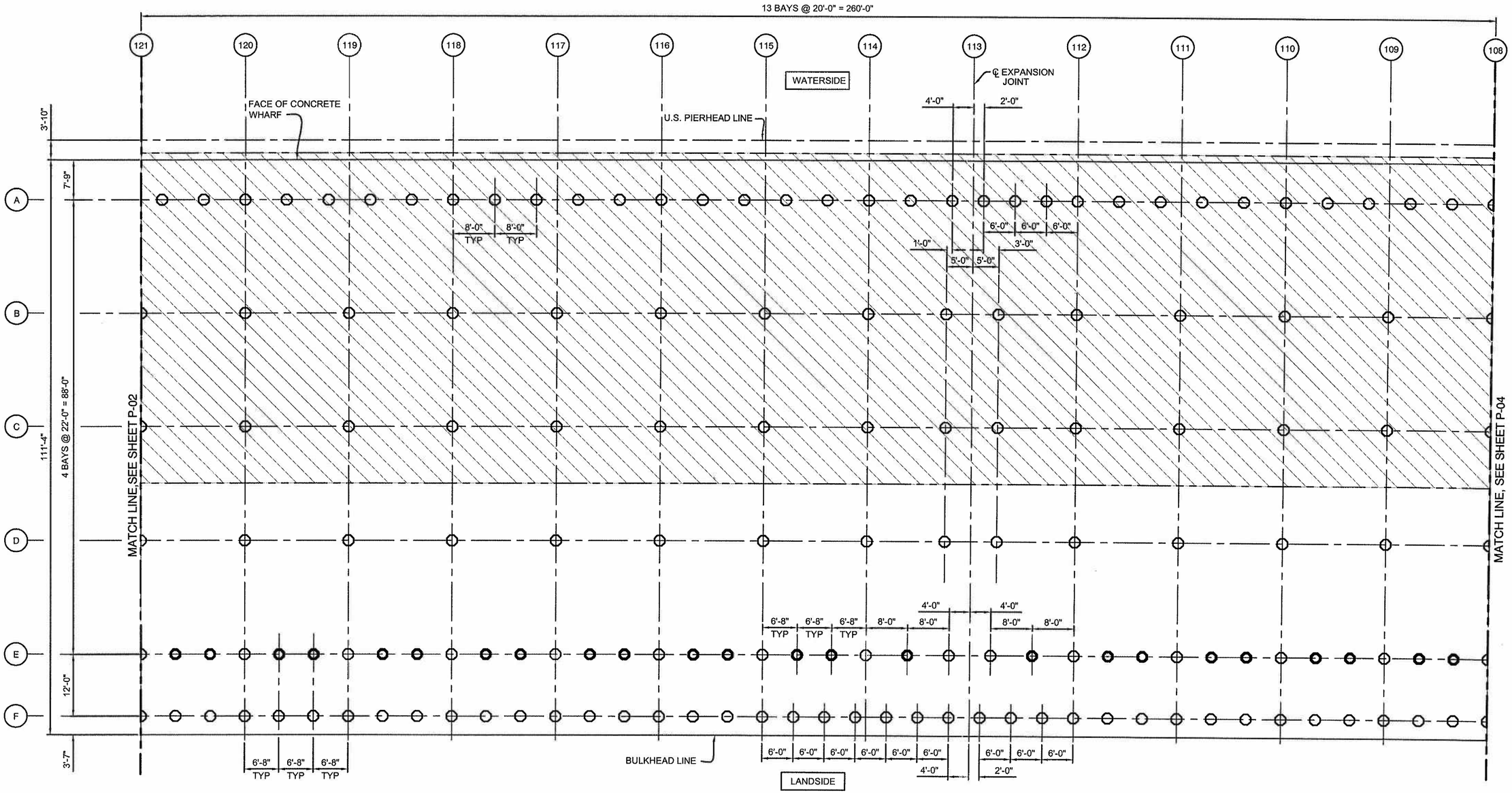
DATE:	OCTOBER 30, 2009
DRAWN:	E. LANDAS
CHECKED:	
DESIGNED:	K. KRISHNAN
ENGR/ARCH	
KOSAL KRISHNAN	

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PILE PLAN - BENTS 121 TO 134

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
P-02



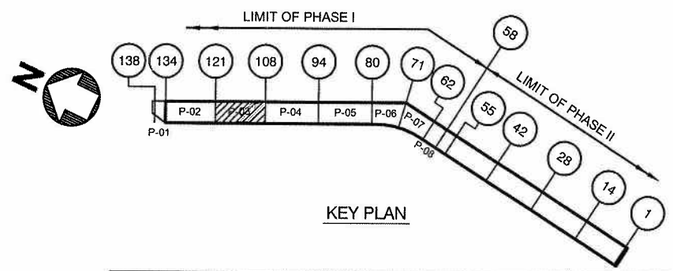
LEGEND:

- SHORT PILE
- LONG PILE
- EXISTING WHARF TO BE REMOVED (PHASE I)

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. EXISTING PILES NOT SHOWN. FOR EXISTING PILE REMOVAL, SEE RD SHEETS.

1P-03 / P-03 PILE PLAN
SCALE: 1"=10'



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CHECKED:
DESIGNED: K. KRISHNAN
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KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PILE PLAN - BENTS 108 TO 121

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
P-03

14 BAYS @ 20'-0" = 280'-0"

108 107 106 105 104 103 102 101 100 99 98 97 96 95 94

WATERSIDE

FACE OF CONCRETE WHARF

U.S. PIERHEAD LINE

3'-10"

7'-9"

A

8'-0" TYP

8'-0" TYP

B

111'-4"

4 BAYS @ 22'-0" = 88'-0"

MATCH LINE, SEE SHEET P-03

C

D

MATCH LINE, SEE SHEET P-05

E

12'-0"

F

3'-7"

6'-8" TYP

6'-8" TYP

6'-8" TYP

6'-0" 6'-0" 6'-0" 6'-0" 6'-0"

6'-2" 6'-2" 6'-2"

BULKHEAD LINE

LANDSIDE

EXIST 45"Ø SD

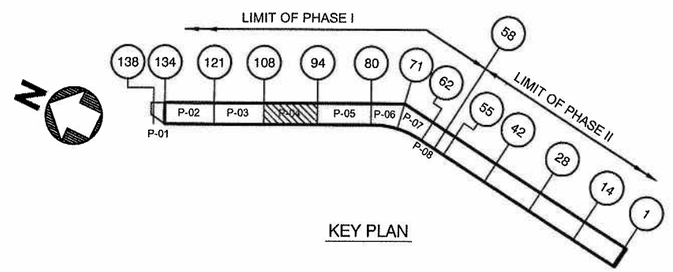
LEGEND:

- SHORT PILE
- LONG PILE
- EXISTING WHARF TO BE REMOVED (PHASE I)

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. EXISTING PILES NOT SHOWN. FOR EXISTING PILE REMOVAL, SEE RD SHEETS.

1P-04 / P-04 PILE PLAN
SCALE: 1"=10'



KEY PLAN

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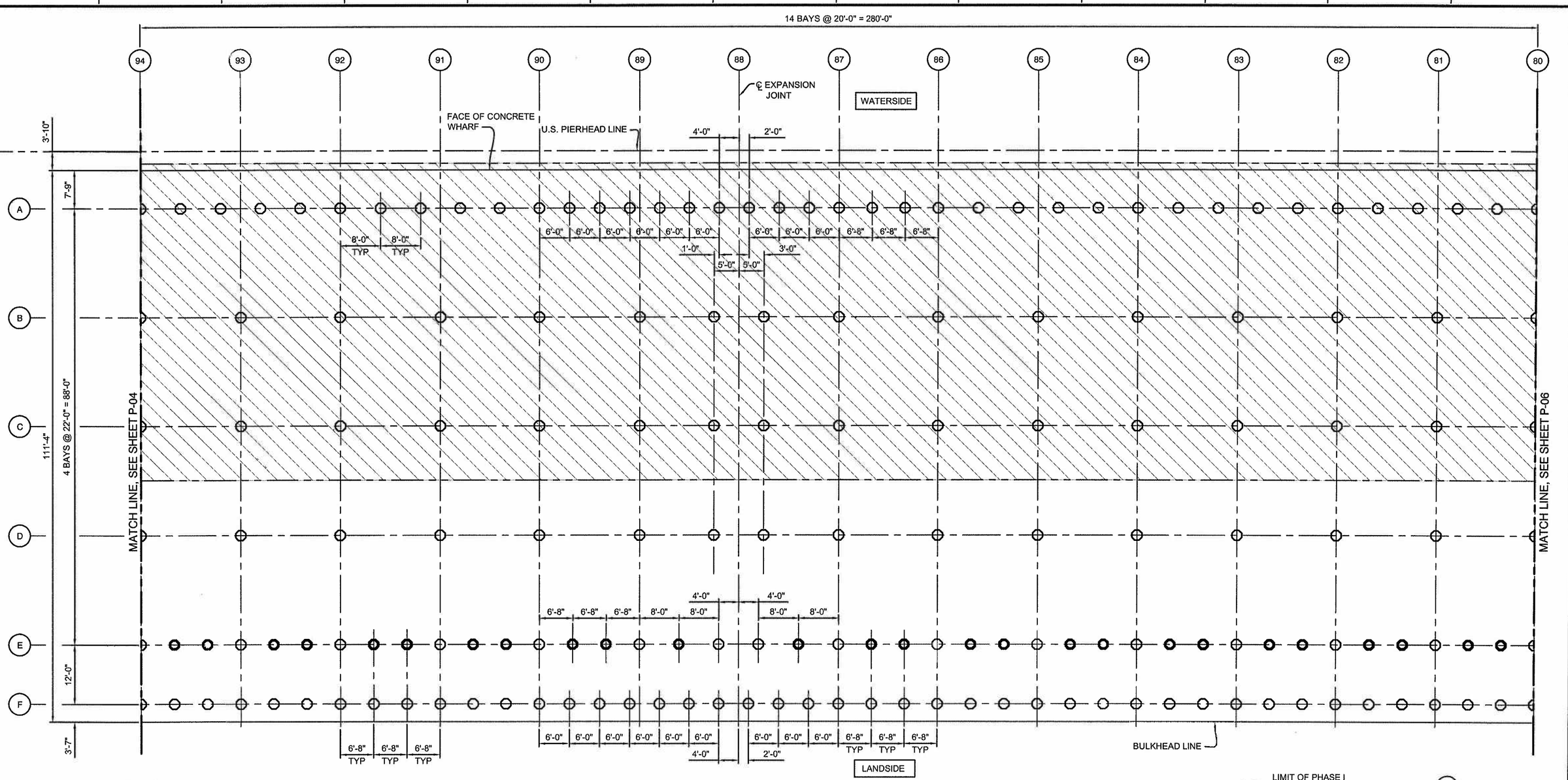
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PILE PLAN - BENTS 94 TO 108

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER P-04



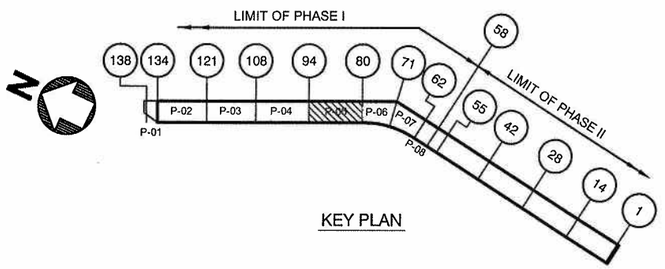
LEGEND:

- SHORT PILE
- LONG PILE
- EXISTING WHARF TO BE REMOVED (PHASE I)

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. EXISTING PILES NOT SHOWN. FOR EXISTING PILE REMOVAL, SEE RD SHEETS.

1P-05 / P-05 PILE PLAN
SCALE: 1"=10'



KEY PLAN

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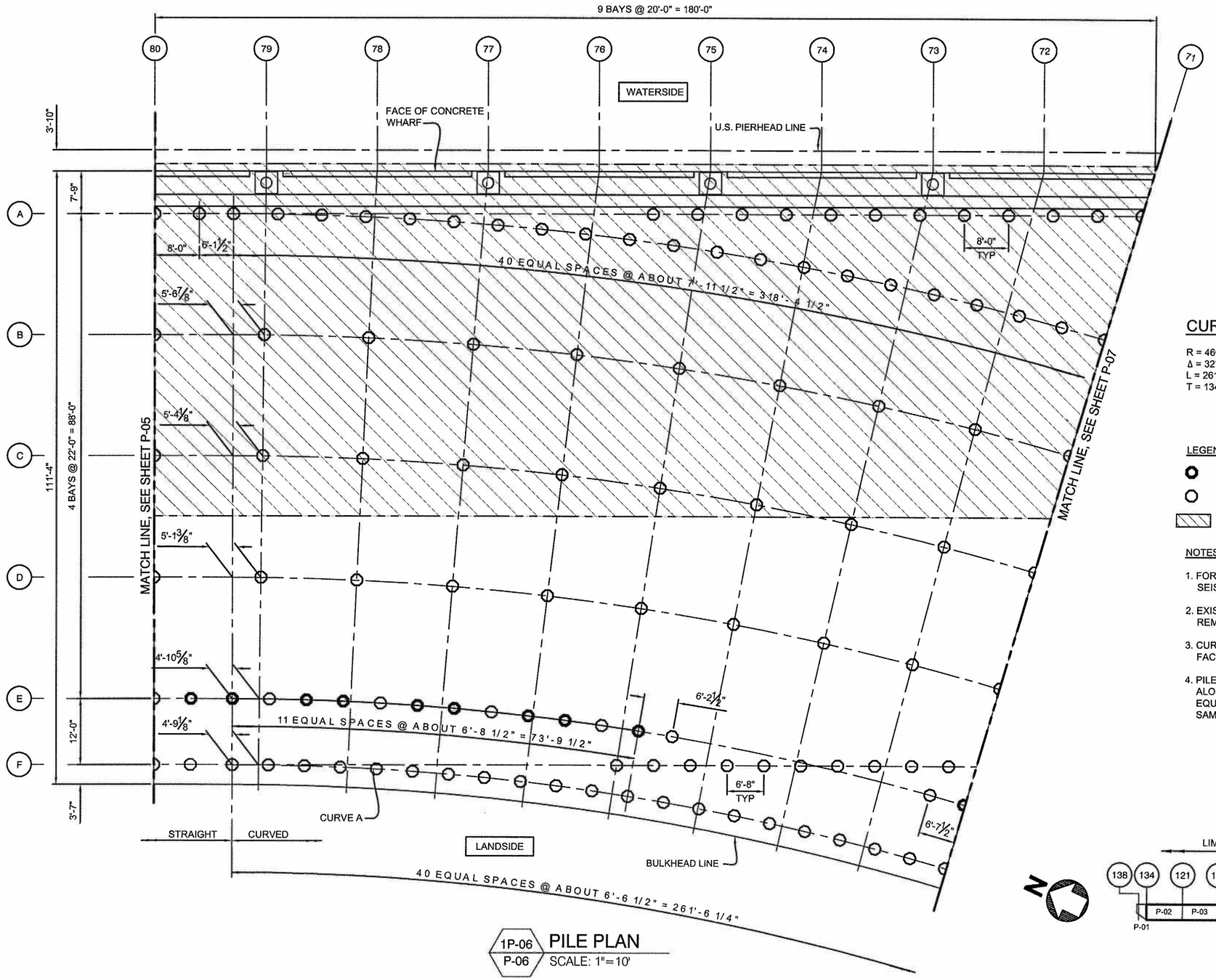
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PILE PLAN - BENTS 80 TO 94

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
P-05



1P-06 / P-06 **PILE PLAN**
SCALE: 1"=10'

CURVE "A" DATA

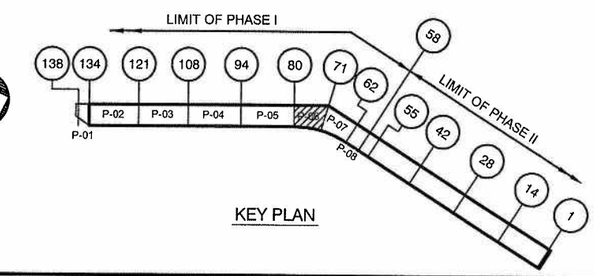
R = 460.00'
Δ = 32°34'25"
L = 261.52'
T = 134.40'

LEGEND:

- SHORT PILE
- LONG PILE
- EXISTING WHARF TO BE REMOVED (PHASE I)

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. EXISTING PILES NOT SHOWN. FOR EXISTING PILE REMOVAL, SEE RD SHEETS.
3. CURVES ON ROWS A, B, C, D, E AND LANDSIDE FACE OF DECK ARE OFFSET FROM ROW F CURVE.
4. PILES SPACED ALONG EACH LINE ARE MEASURED ALONG ARC LINES OF "B", "C", "D", "E" AND "F" AND EQUALLY SPACED WITHIN THE CURVE UNDER THE SAME RADIUS EXCEPT WHERE SHOWN OTHERWISE.



KEY PLAN

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DRAWN: E. LANDAS
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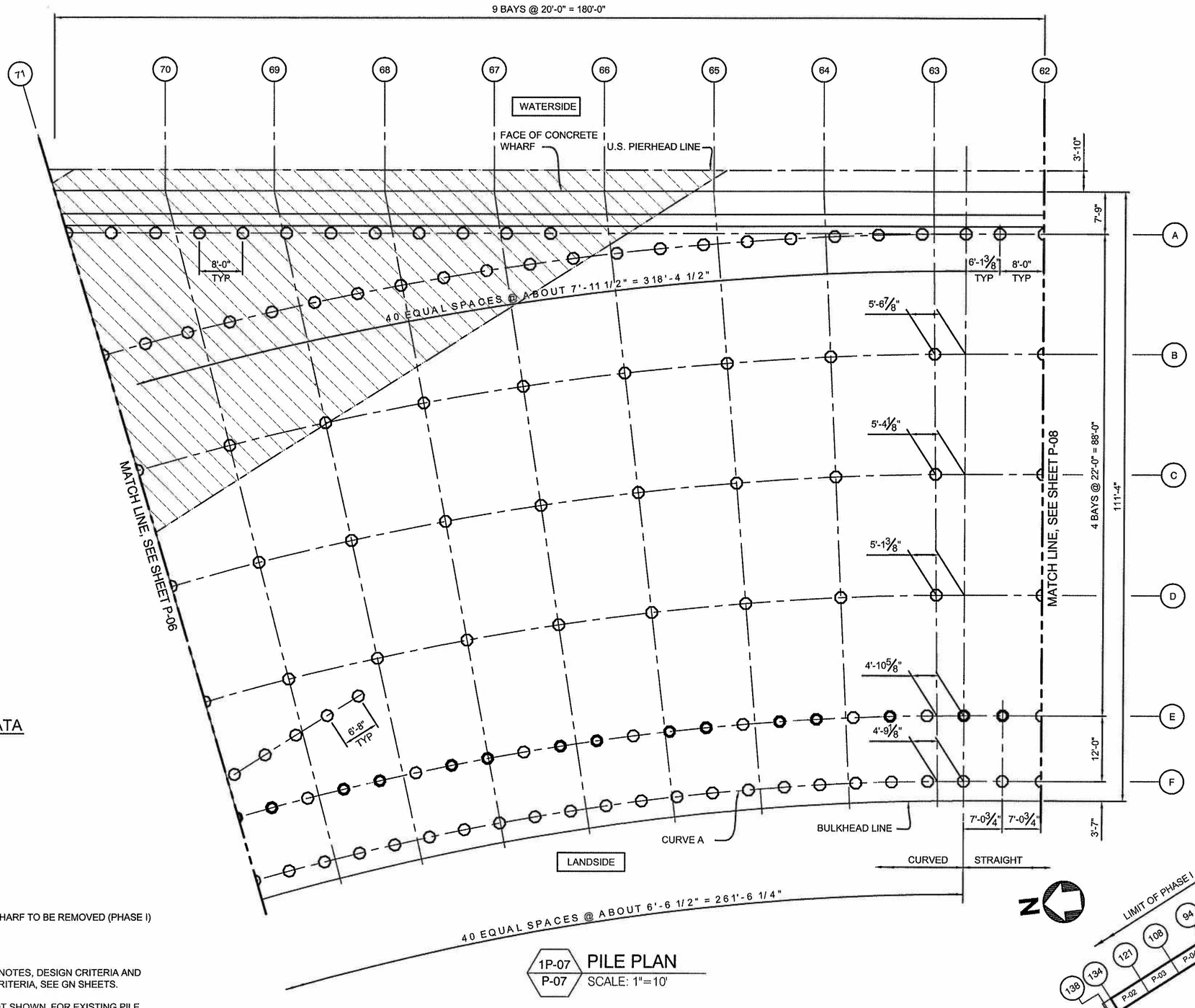
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PILE PLAN - BENTS 71 TO 80

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
P-06



CURVE "A" DATA

R = 460.00'
Δ = 32°34'25"
L = 261.52'
T = 134.40'

LEGEND:

- SHORT PILE
- LONG PILE
- EXISTING WHARF TO BE REMOVED (PHASE I)

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. EXISTING PILES NOT SHOWN. FOR EXISTING PILE REMOVAL, SEE RD SHEETS.

1P-07 / P-07 **PILE PLAN**
SCALE: 1"=10'

KEY PLAN

NO.	DATE	DRAWN	REVISIONS --	CH'KD	APP'D

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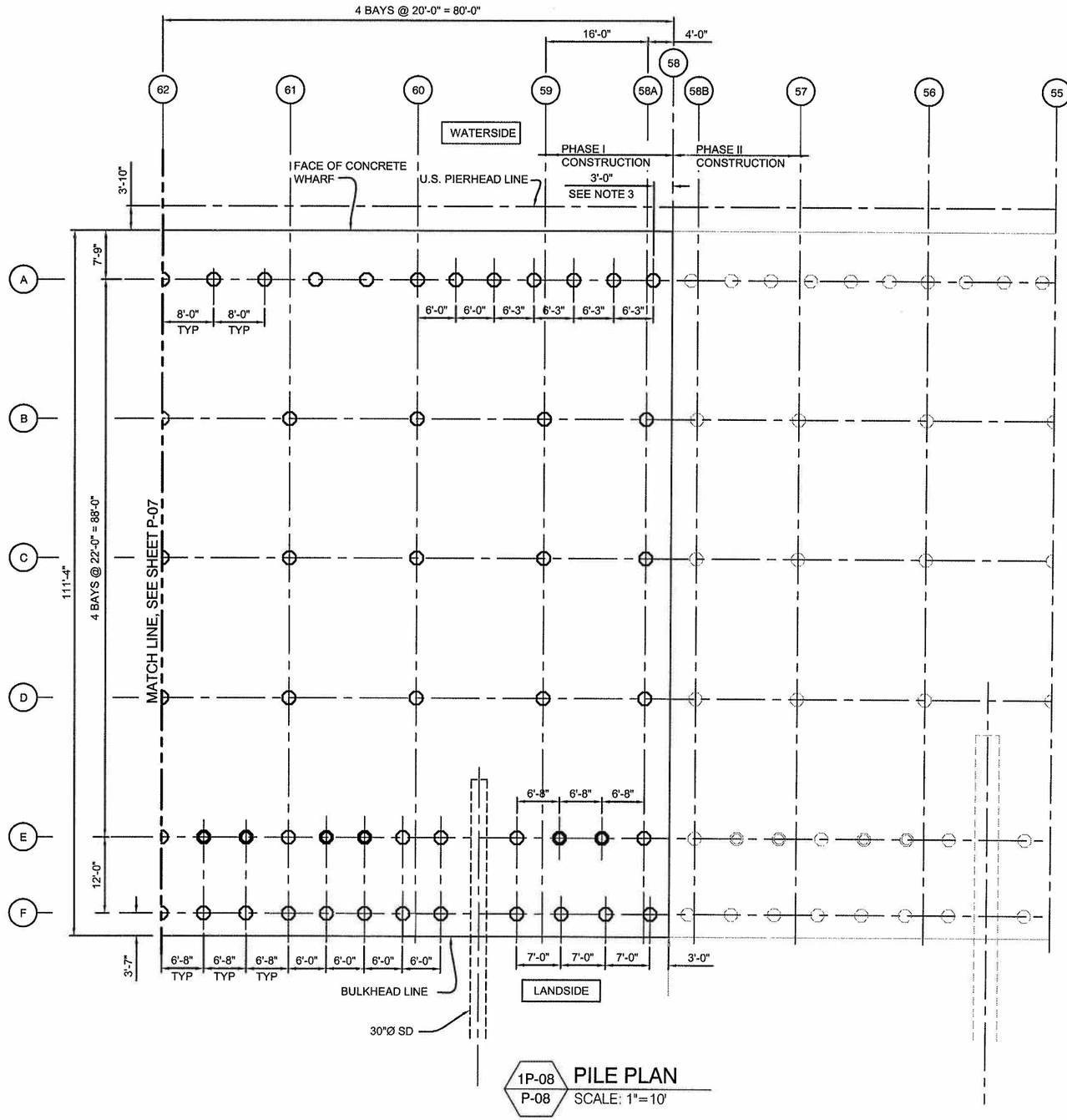
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PILE PLAN - BENTS 62 TO 71

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER P-07



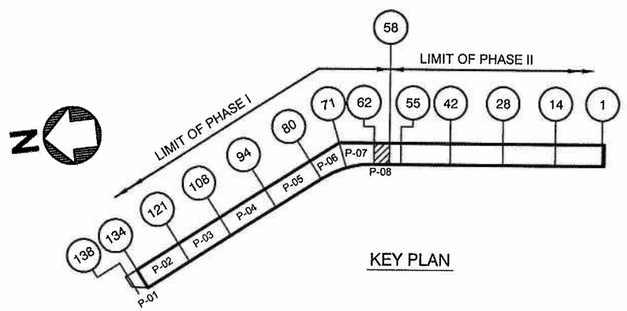
1P-08 / P-08 **PILE PLAN**
SCALE: 1"=10'

LEGEND:

- SHORT PILE
- LONG PILE

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. EXISTING PILES NOT SHOWN. FOR EXISTING PILE REMOVAL, SEE RD SHEETS.
3. DECK REBARS SHOULD EXTEND SUFFICIENT DISTANCE TO FACILITATE SPLICING OF REBARS DURING PHASE II CONSTRUCTION.



KEY PLAN

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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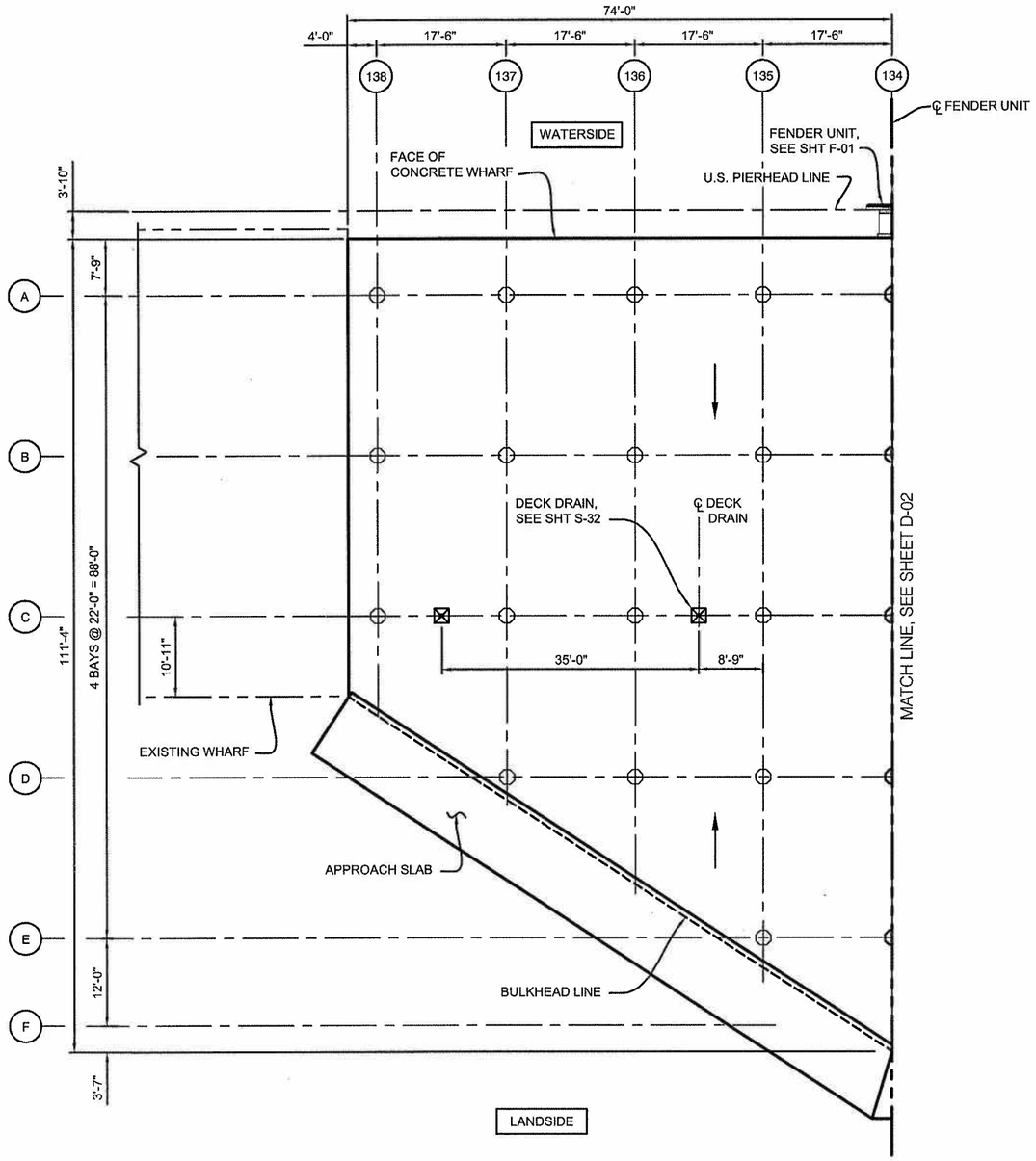
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PILE PLAN - BENTS 58 TO 62

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
P-08



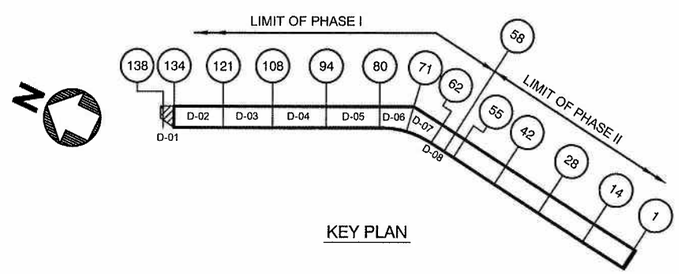
1D-01 / D-01 **DECK PLAN**
SCALE: 1"=10'

LEGEND:

- SHORT PILE
- LONG PILE
- DECK DRAIN DIRECTION

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. FOR DECK DRAIN COLLECTING SYSTEM, SEE SD SHEETS.



KEY PLAN

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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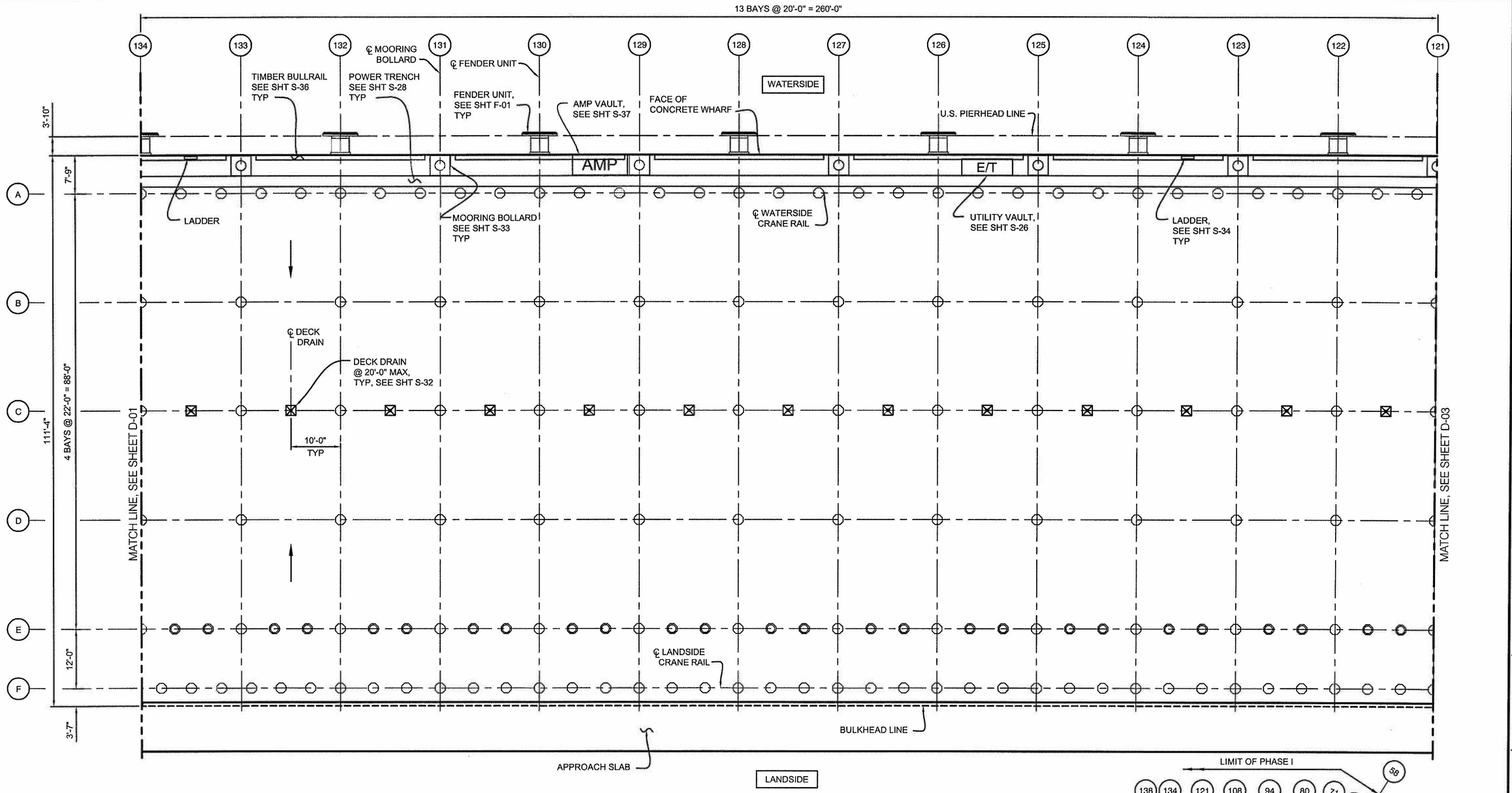
DESIGNED:	
ENGR/ARCH	
KOSAL KRISHNAN	

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DECK PLAN - BENTS 134 TO 138

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER D-01



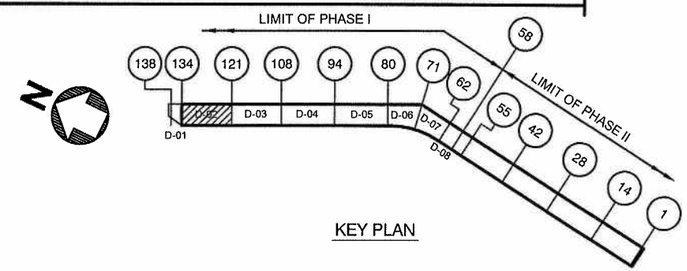
LEGEND:

- SHORT PILE
- LONG PILE
- DECK DRAIN DIRECTION

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. FOR DECK DRAIN COLLECTING SYSTEM, SEE SD SHEETS.

1D-02 / D-02 **DECK PLAN**
SCALE: 1"=10'



KEY PLAN

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DECK PLAN - BENTS 121 TO 134

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER D-02

13 BAYS @ 20'-0" = 260'-0"

121 120 119 118 117 116 115 114 113 112 111 110 109 108

TIMBER BULLRAIL SEE SHT S-36 TYP

℄ MOORING BOLLARD

AMP VAULT, SEE SHT S-37

POWER TRENCH SEE SHT S-28 TYP

FENDER UNIT, SEE SHT F-01 TYP

℄ FENDER UNIT

FACE OF CONCRETE WHARF

WATERSIDE

LADDER, SEE SHT S-34

℄ EXPANSION JOINT

U.S. PIERHEAD LINE

3'-10"

7'-9"

AMP

E/T

MOORING BOLLARD SEE SHT S-33 TYP

UTILITY VAULT, SEE S-26

℄ WATERSIDE CRANE RAIL

A B C D E F

111'-4"

4 BAYS @ 22'-0" = 88'-0"

℄ DECK DRAIN

DECK DRAIN @ 20'-0" MAX, TYP, SEE SHT S-32

10'-0" TYP

MATCH LINE, SEE SHEET D-02

MATCH LINE, SEE SHEET D-04

12'-0"

3'-7"

℄ LANDSIDE CRANE RAIL

BULKHEAD LINE

APPROACH SLAB

LANDSIDE

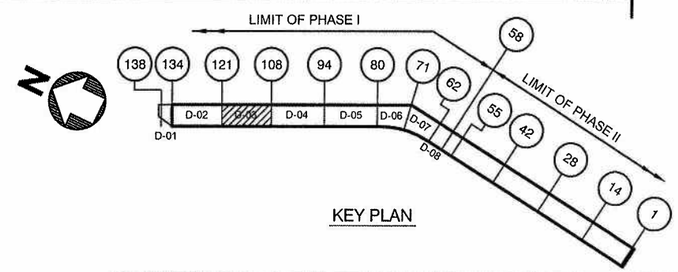
LEGEND:

- SHORT PILE
- LONG PILE
- DECK DRAIN DIRECTION

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. FOR DECK DRAIN COLLECTING SYSTEM, SEE SD SHEETS.

1D-03 / D-03 DECK PLAN
SCALE: 1"=10'



KEY PLAN

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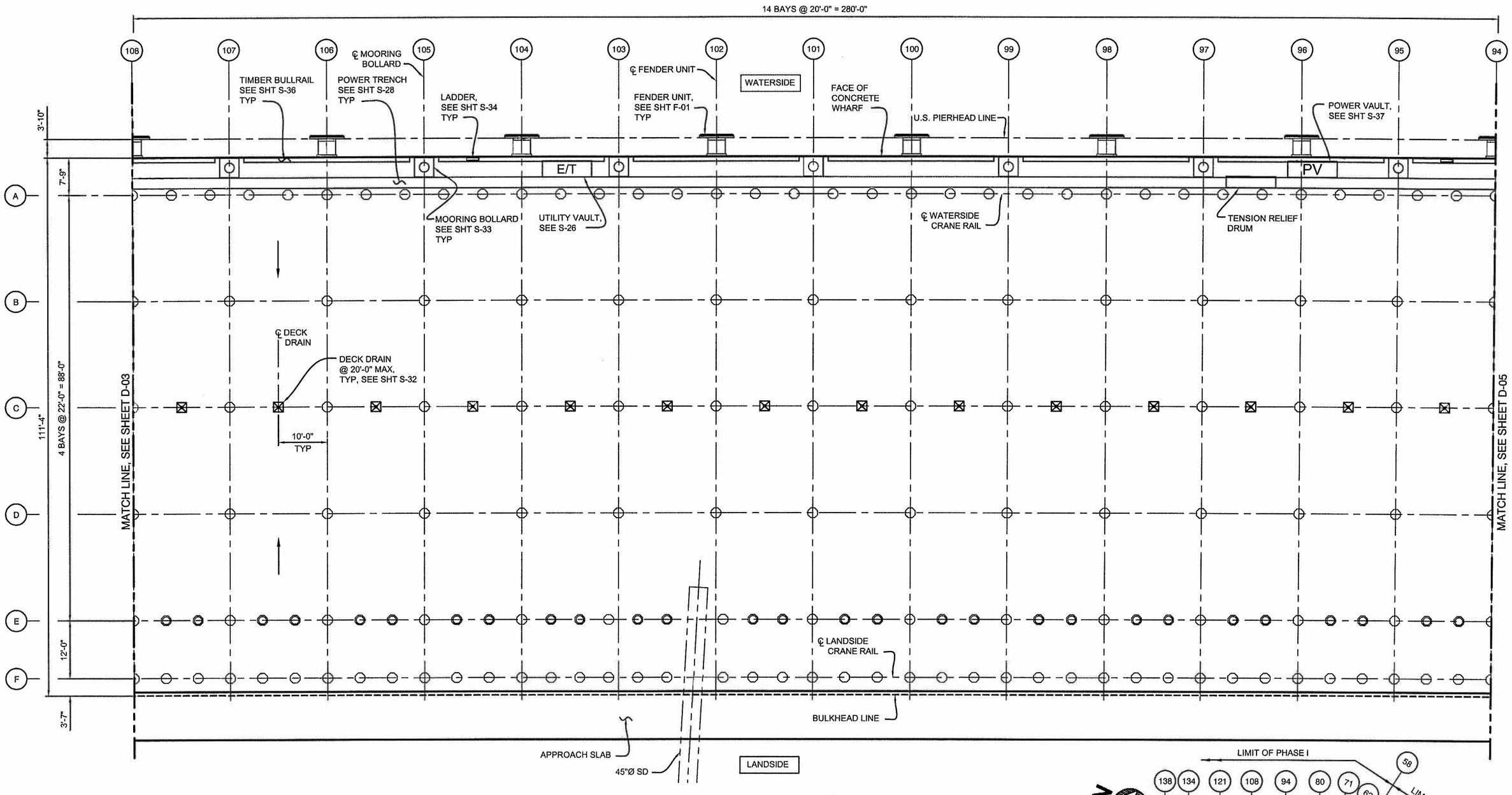
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DECK PLAN - BENTS 108 TO 121

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER D-03



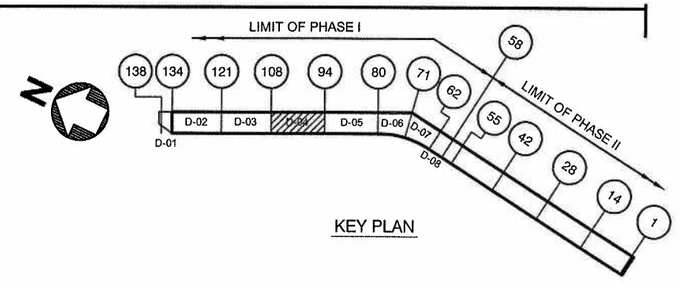
LEGEND:

- SHORT PILE
- LONG PILE
- DECK DRAIN DIRECTION

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. FOR DECK DRAIN COLLECTING SYSTEM, SEE SD SHEETS.

1D-04 / D-04 DECK PLAN
SCALE: 1"=10'



KEY PLAN

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DECK PLAN - BENTS 94 TO 108

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER D-04

1 2 3 4 5 6 7 8 9 10 11 12 13 14

14 BAYS @ 20'-0" = 280'-0"

94 93 92 91 90 89 88 87 86 85 84 83 82 81 80

TIMBER BULLRAIL SEE SHT S-36 TYP

℄ MOORING BOLLARD

POWER TRENCH SEE SHT S-28 TYP

FACE OF CONCRETE WHARF

WATERSIDE

℄ EXPANSION JOINT

U.S. PIERHEAD LINE

℄ FENDER UNIT

FENDER UNIT, SEE SHT F-01 TYP

3'-10"

7'-9"

E/T

PV

AMP

E/T

UTILITY VAULT, SEE SHT S-26 TYP

MOORING BOLLARD SEE SHT S-33 TYP

TENSION RELIEF DRUM

POWER VAULT, SEE SHT S-37

AMP VAULT, SEE SHT S-37

LADDER, SEE SHT S-34

℄ WATERSIDE CRANE RAIL

A B C D E F

℄ DECK DRAIN

DECK DRAIN @ 20'-0" MAX, TYP, SEE SHT S-32

10'-0" TYP

111'-4"

4 BAYS @ 22'-0" = 88'-0"

MATCH LINE, SEE SHEET D-04

MATCH LINE, SEE SHEET D-06

12'-0"

3'-7"

℄ LANDSIDE CRANE RAIL

BULKHEAD LINE

APPROACH SLAB

LANDSIDE

K J H G F E D C B A

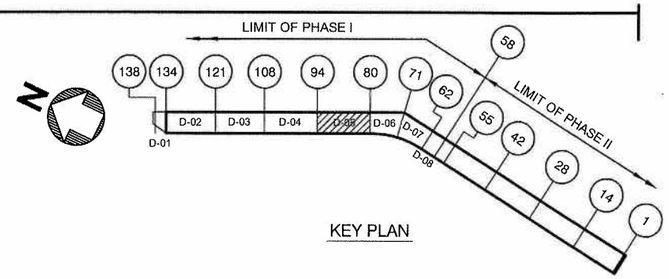
LEGEND:

- SHORT PILE
- LONG PILE
- DECK DRAIN DIRECTION

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. FOR DECK DRAIN COLLECTING SYSTEM, SEE SD SHEETS.

1D-05 / D-05 DECK PLAN
SCALE: 1"=10'



KEY PLAN

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DECK PLAN - BENTS 80 TO 94

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER D-05

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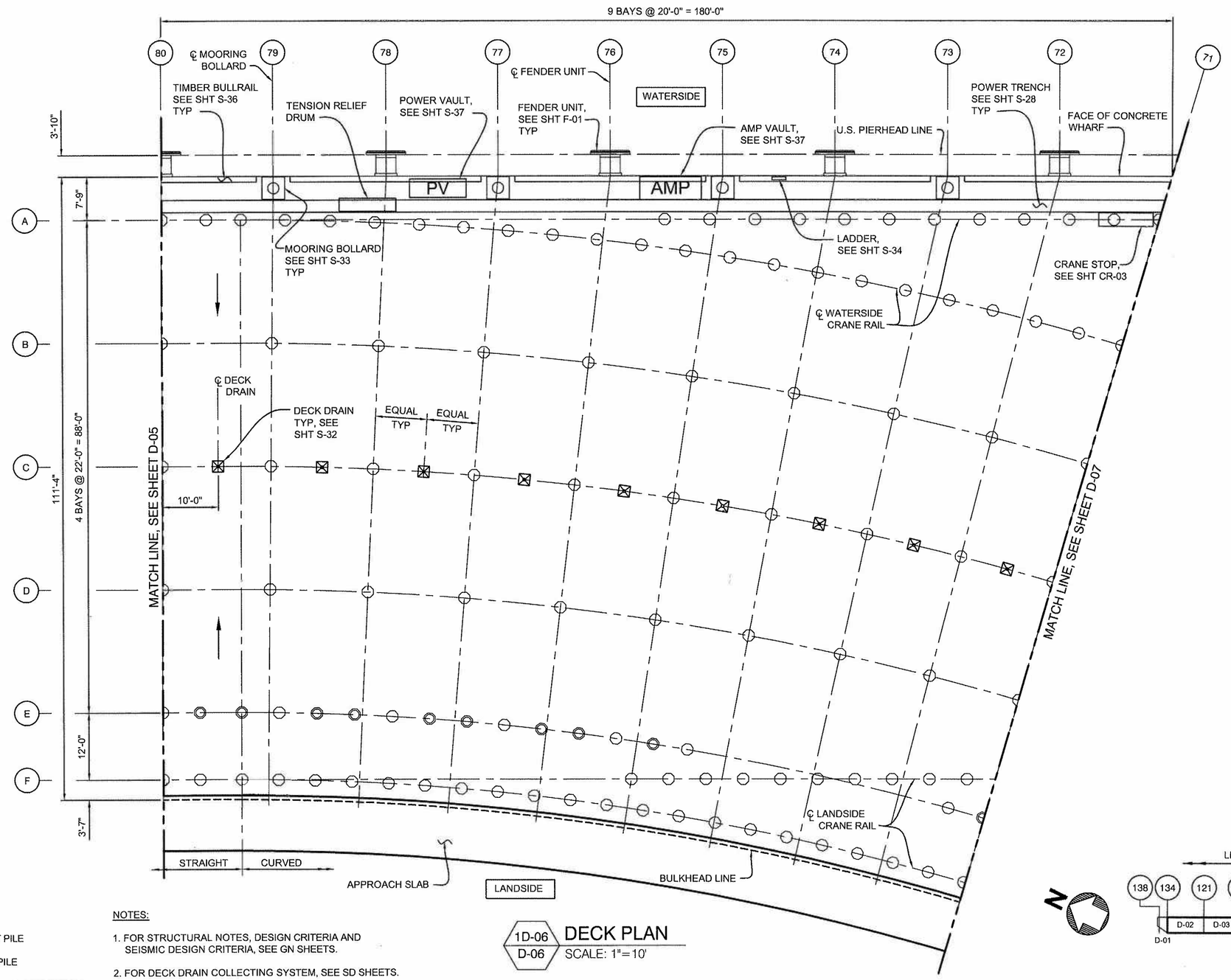


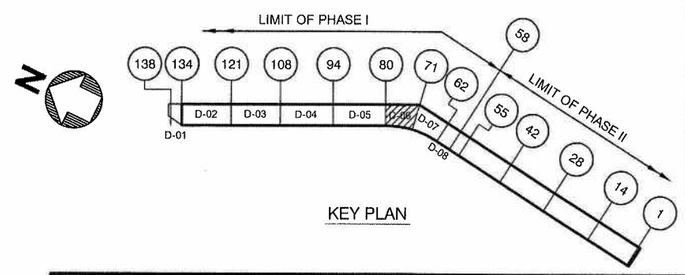
LEGEND:

- SHORT PILE
- LONG PILE
- DECK DRAIN DIRECTION

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. FOR DECK DRAIN COLLECTING SYSTEM, SEE SD SHEETS.
3. FOR CURVE DATA, SEE P SHEETS.

1D-06 / D-06 **DECK PLAN**
SCALE: 1"=10'



KEY PLAN

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DRAWN: E. LANDAS
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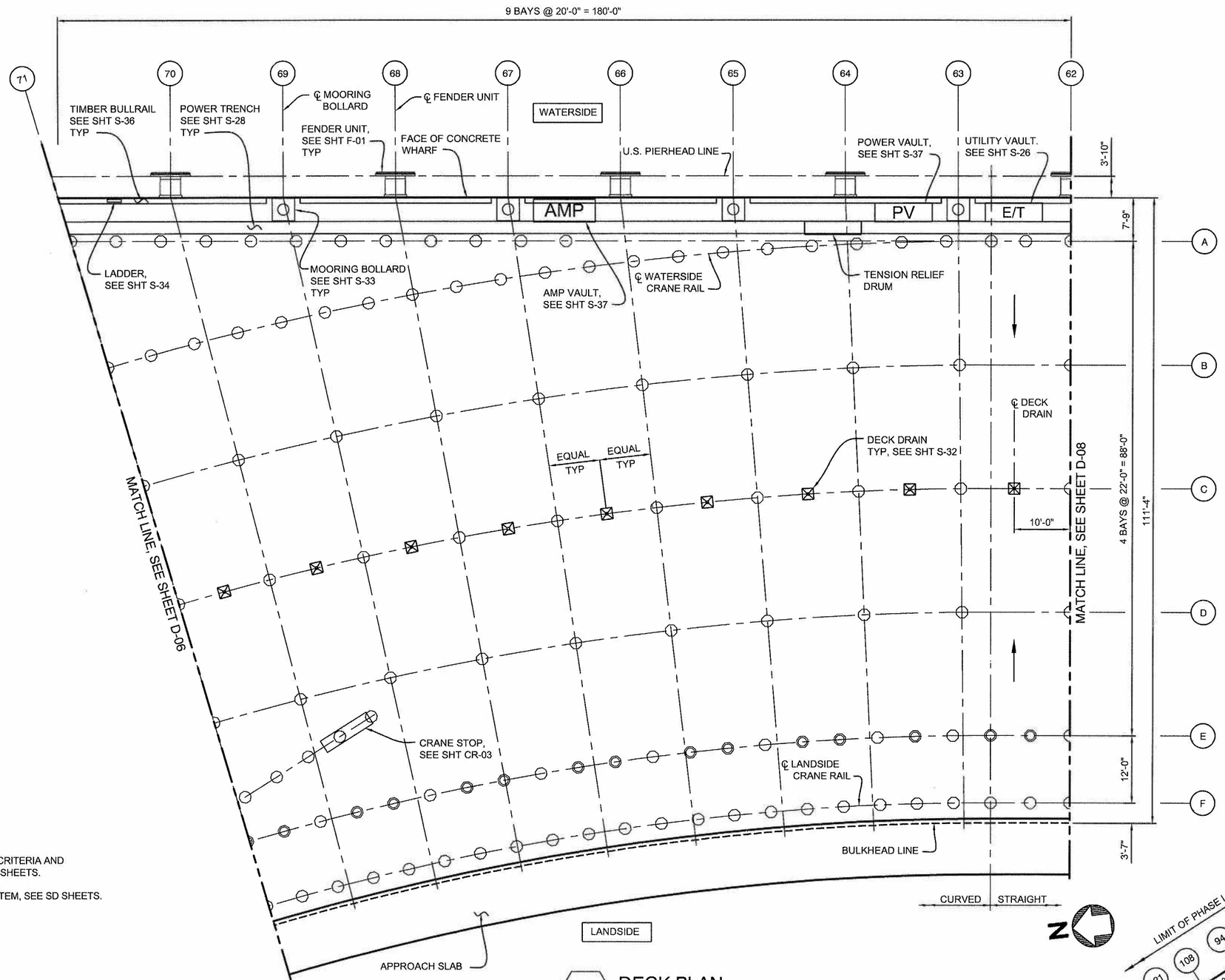
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DECK PLAN - BENTS 71 TO 80

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER D-06



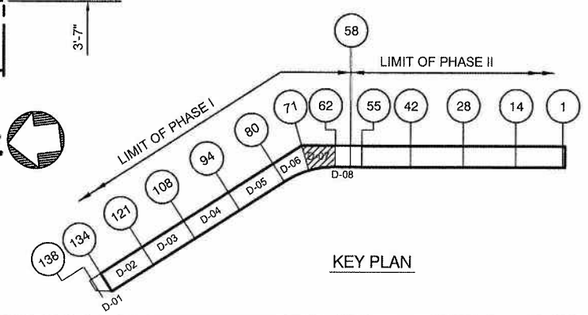
LEGEND:

- SHORT PILE
- LONG PILE
- DECK DRAIN DIRECTION

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. FOR DECK DRAIN COLLECTING SYSTEM, SEE SD SHEETS.
3. FOR CURVE DATA, SEE P SHEETS.

1D-07 / D-07 **DECK PLAN**
SCALE: 1"=10'



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DECK PLAN - BENTS 62 TO 71

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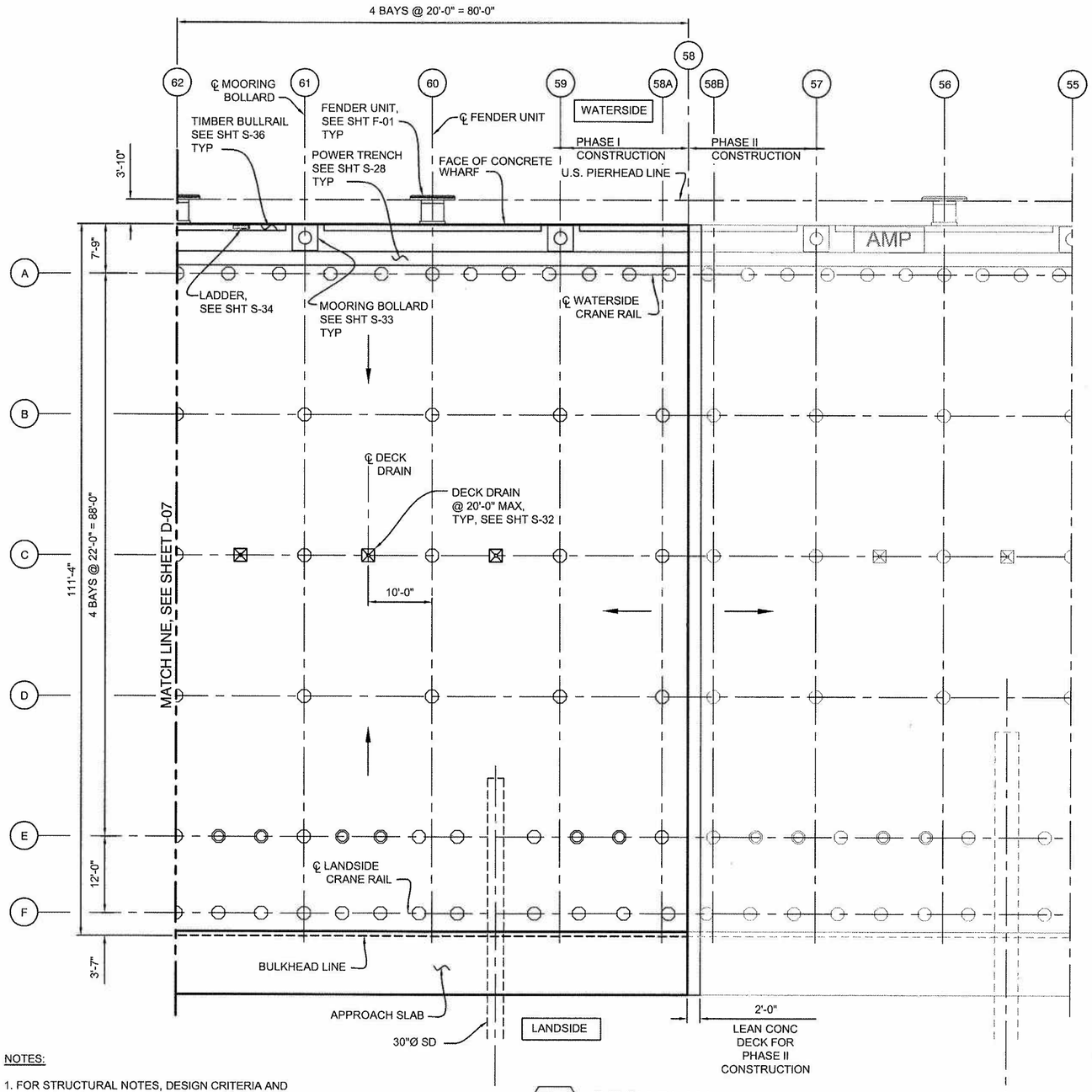
DRAWING NUMBER D-07



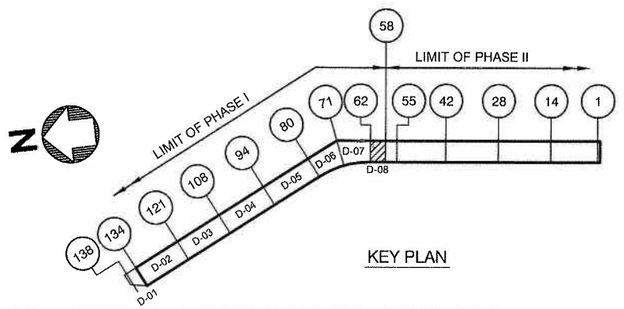
LEGEND:

- SHORT PILE
- LONG PILE
- DECK DRAIN DIRECTION

NOTES:

1. FOR STRUCTURAL NOTES, DESIGN CRITERIA AND SEISMIC DESIGN CRITERIA, SEE GN SHEETS.
2. FOR DECK DRAIN COLLECTING SYSTEM, SEE SD SHEETS.

1D-08 / D-08 **DECK PLAN**
SCALE: 1"=10'



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DECK PLAN - BENTS 58 TO 62

THE PORT OF LOS ANGELES
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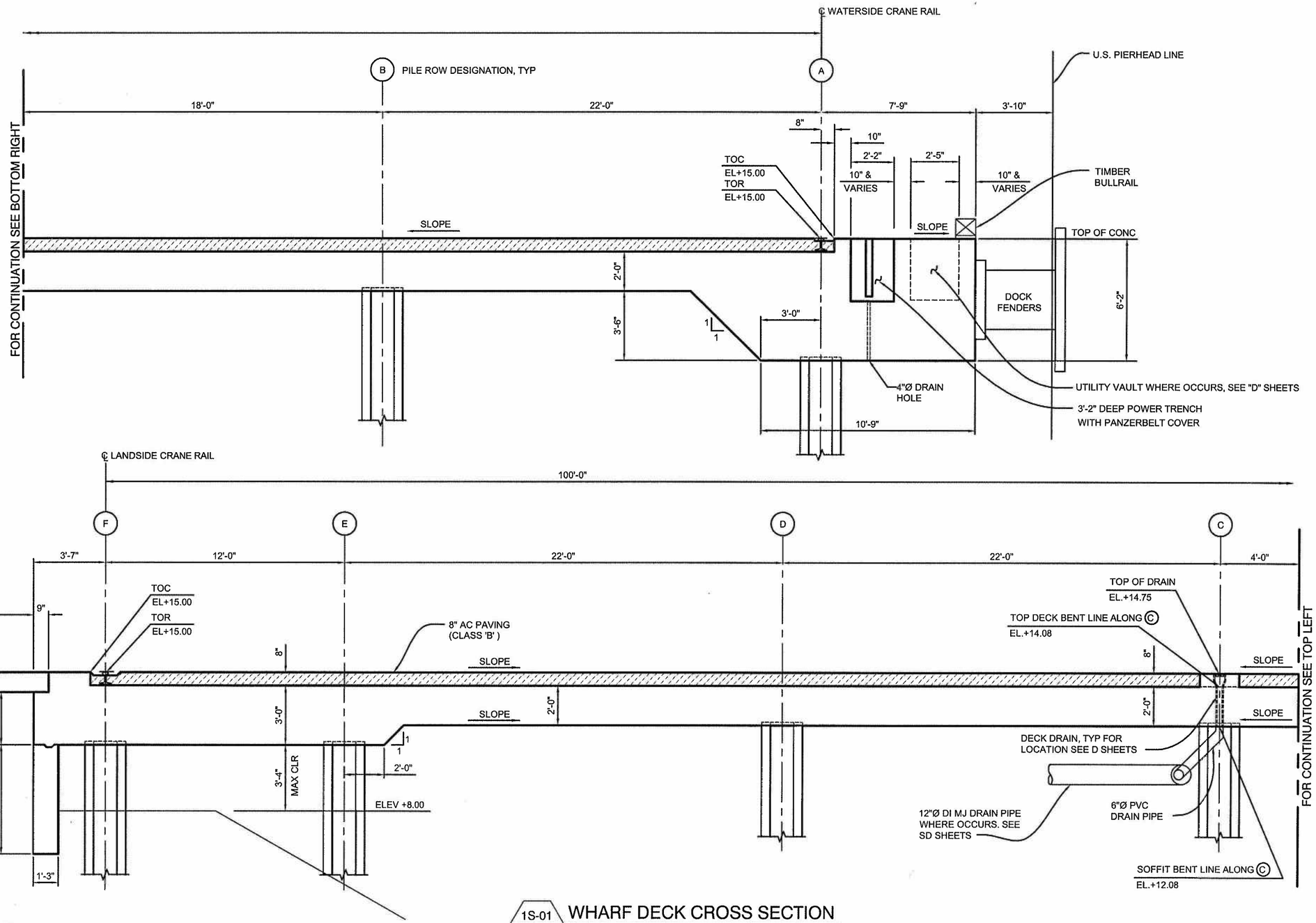
DRAWING NUMBER D-08



NOTES:

1. FOR WHARF DRAIN SYSTEM, SEE SD SHEETS.
2. FOR CROSS SECTION AT EXPANSION JOINT AREA, SEE SHT S-20.

1S-01 / S-01 **WHARF DECK CROSS SECTION**
SCALE: 3/8" = 1'-0"

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WHARF DECK CROSS SECTION

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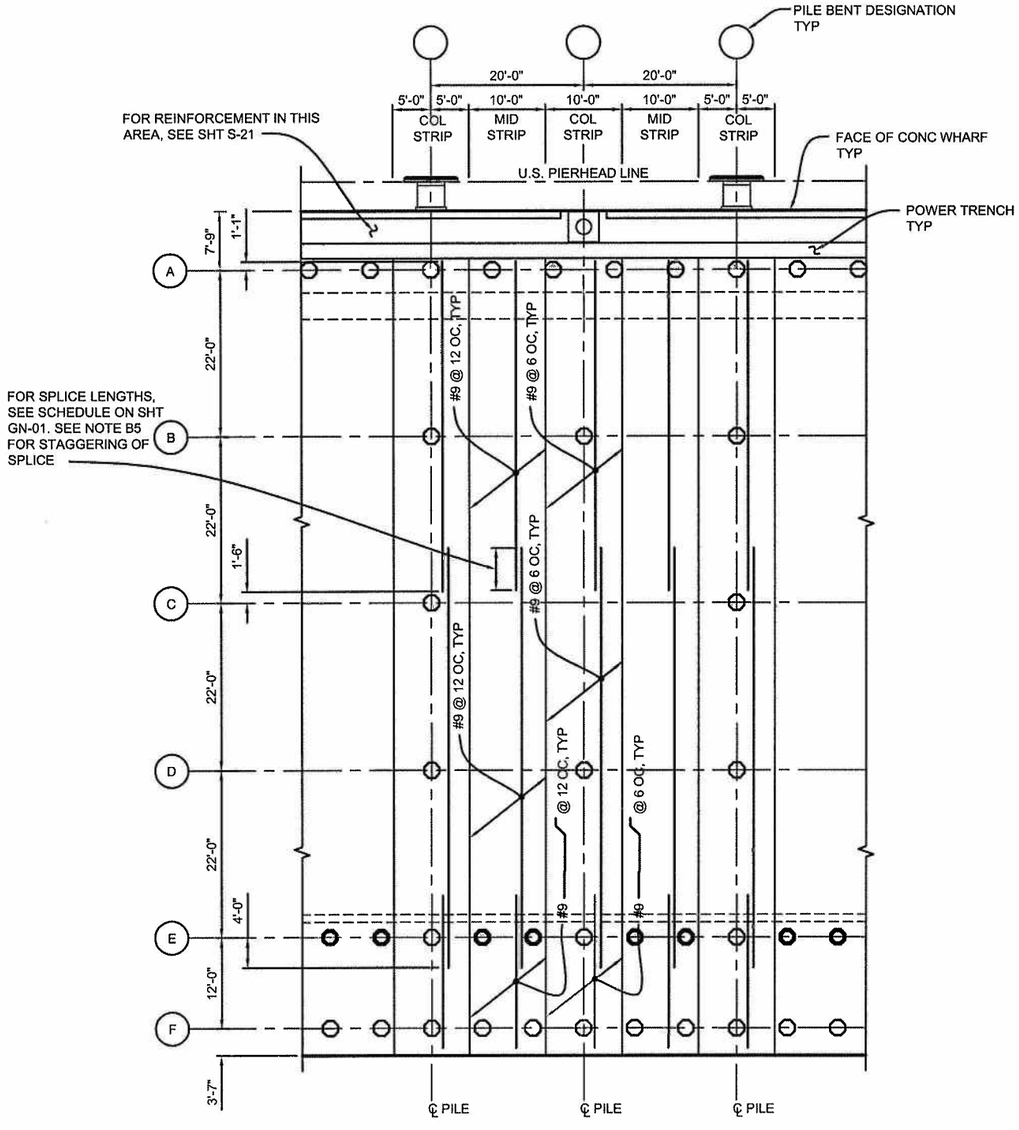
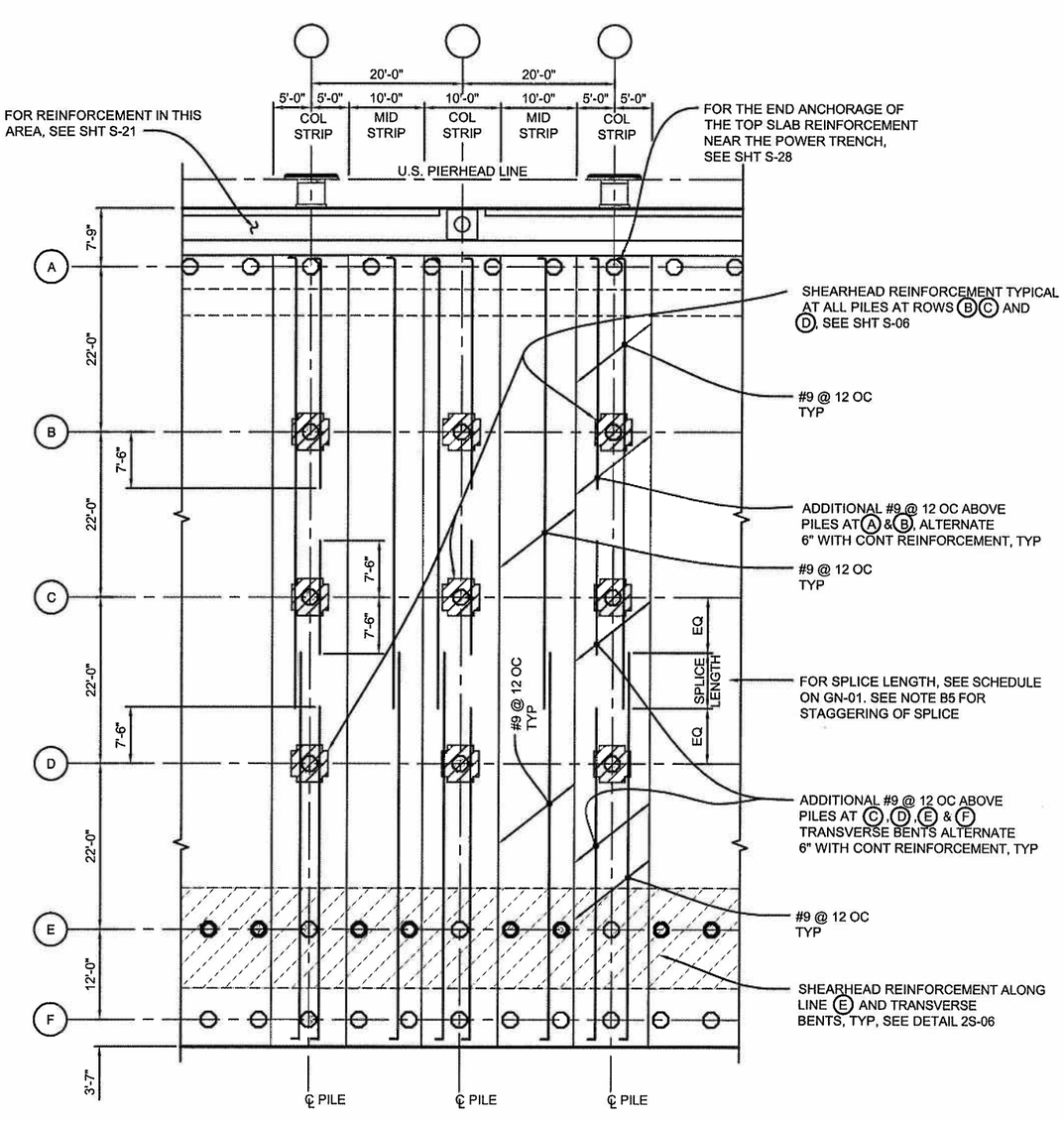
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
S-01



1S-02 / S-02 BOTTOM TRANSVERSE REINF PLAN
SCALE: 1" = 10'



2S-02 / S-02 TOP TRANSVERSE REINF PLAN
SCALE: 1" = 10'

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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DECK SLAB - TYPICAL TRANSVERSE REINFORCING

THE PORT OF LOS ANGELES
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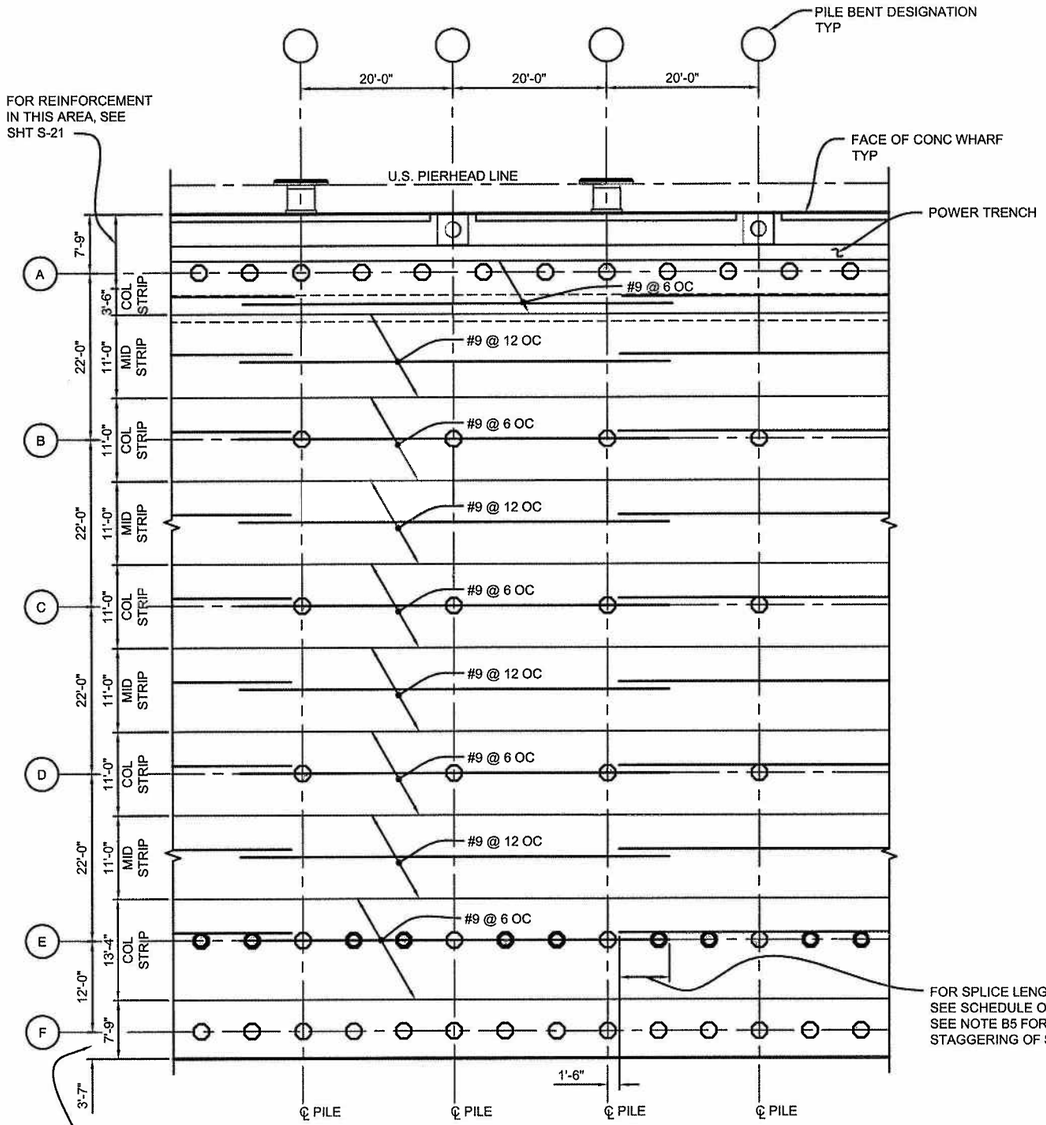
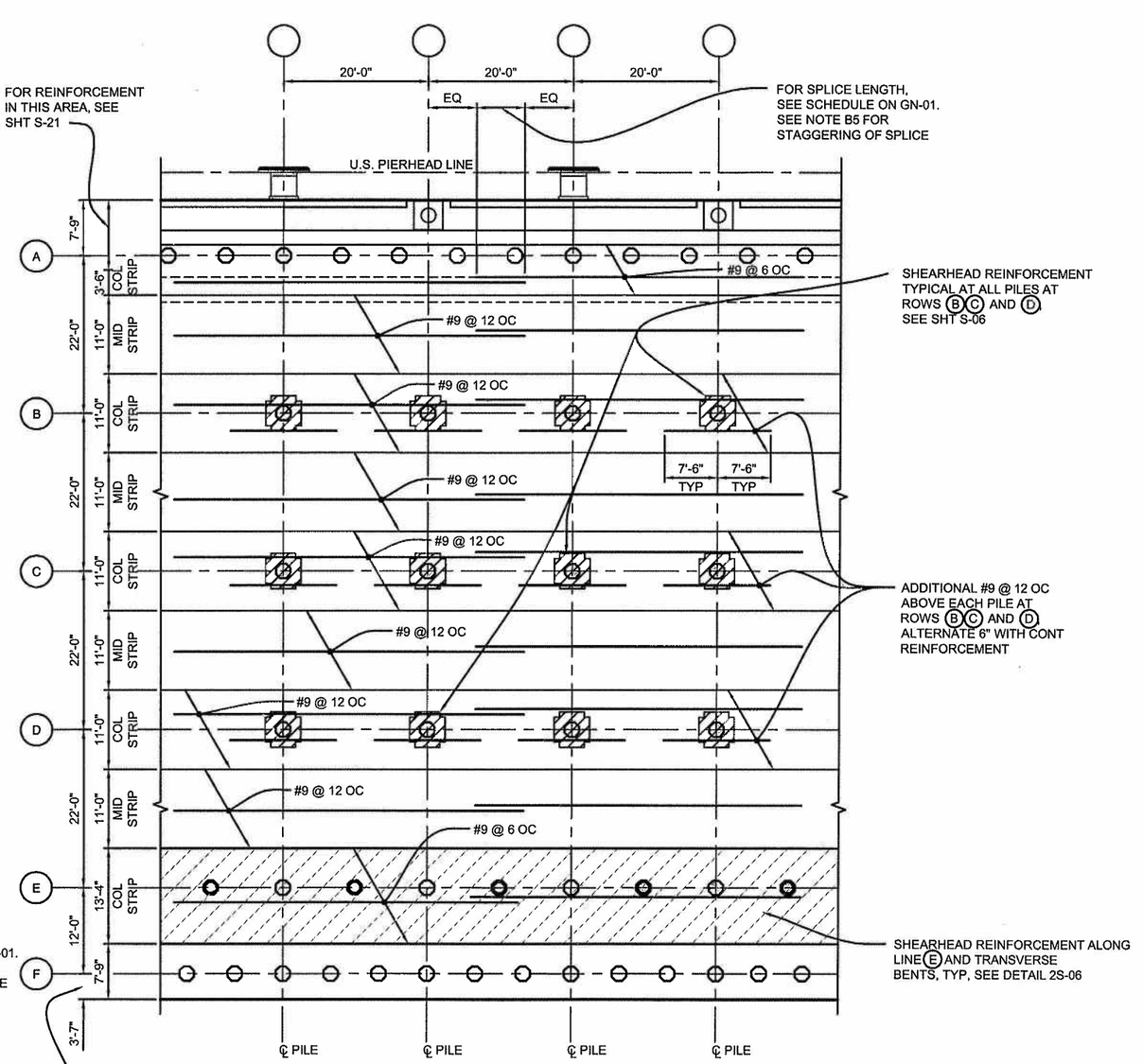
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
S-02



1S-03 / S-03 BOTTOM LONGITUDINAL REINF PLAN
SCALE: 1" = 10'



2S-03 / S-03 TOP LONGITUDINAL REINF PLAN
SCALE: 1" = 10'

NO.	DATE	DRAWN	REVISIONS --	CH'KD	APP'D

NO.	DATE	DRAWN	REVISIONS --	CH'KD	APP'D

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THE PORT OF LOS ANGELES
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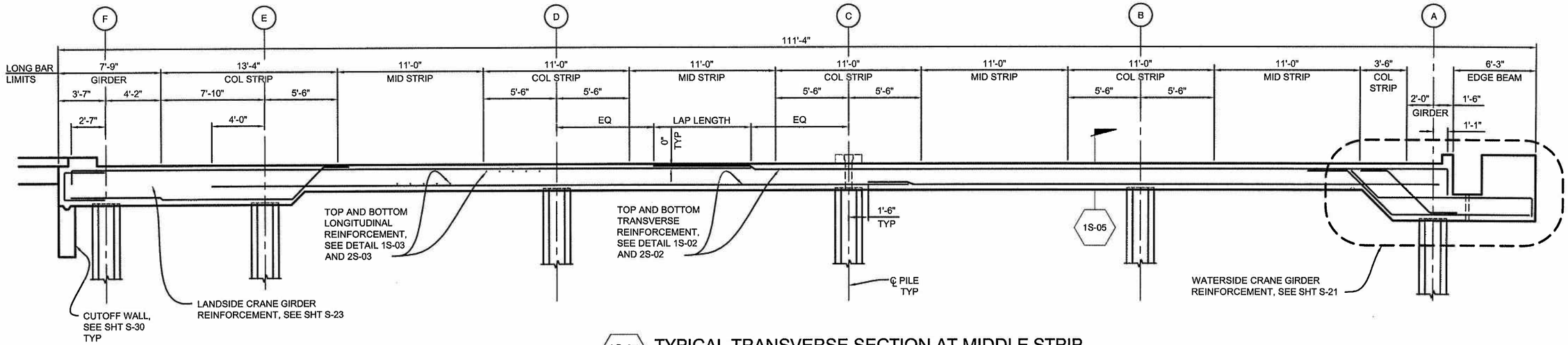
DRAWING NUMBER S-03

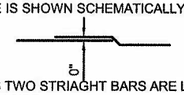


1S-04 / S-04 **TYPICAL TRANSVERSE SECTION AT MIDDLE STRIP**

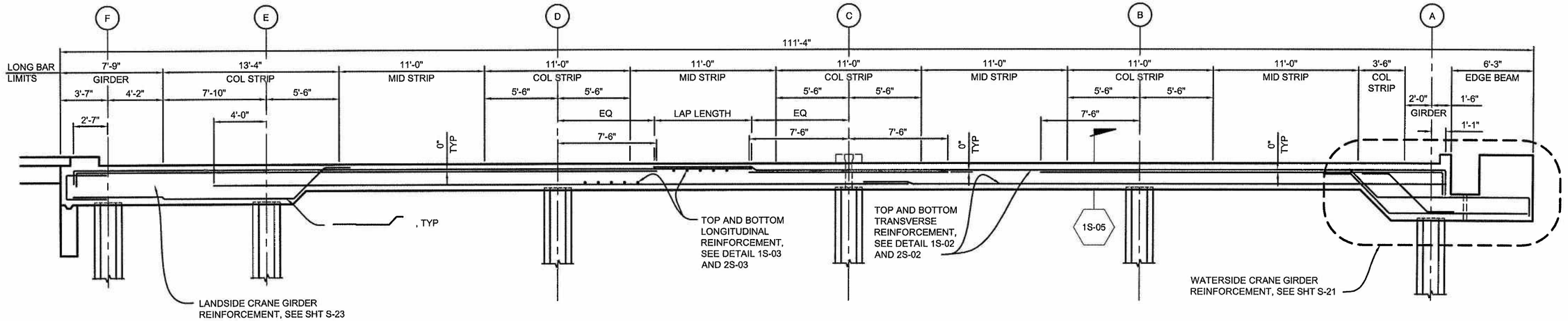
SCALE: 1/4" = 1'-0"

NOTE:

SPLICE IS SHOWN SCHEMATICALLY:



MEANS TWO STRIAGHT BARS ARE LAPPED SIDE BY SIDE.



2S-04 / S-04 **TYPICAL TRANSVERSE SECTION AT COLUMN STRIP**

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

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NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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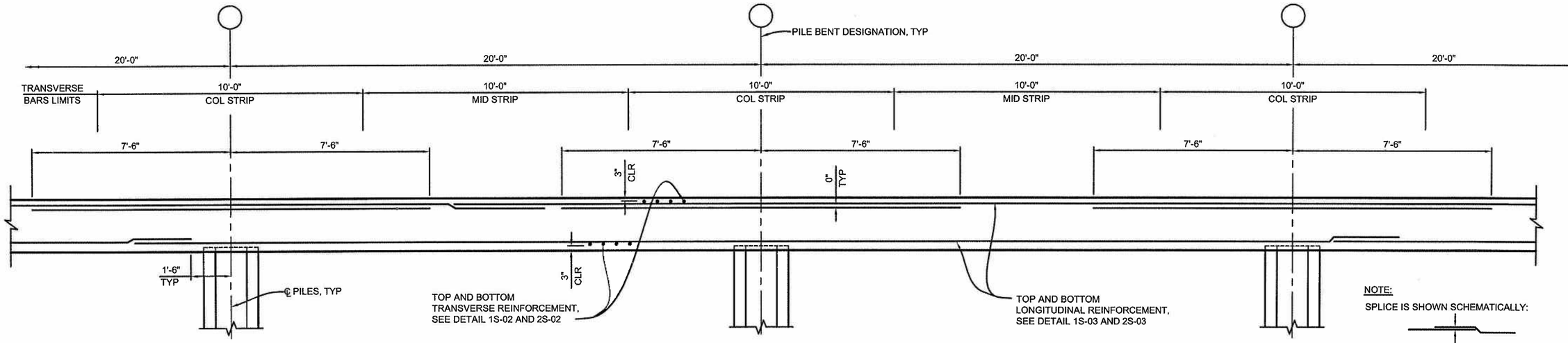
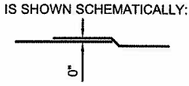
DRAWING NUMBER
S-04



NOTE:

SPLICE IS SHOWN SCHEMATICALLY:



MEANS TWO STRIAGHT BARS ARE LAPPED SIDE BY SIDE.

1S-05 / 1S-04, 2S-04 **TYPICAL LONGITUDINAL SECTION AT COLUMN STRIP**

SCALE: 1/2" = 1'-0"

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DECK SLAB - TYPICAL LONGITUDINAL REINFORCING SECTION

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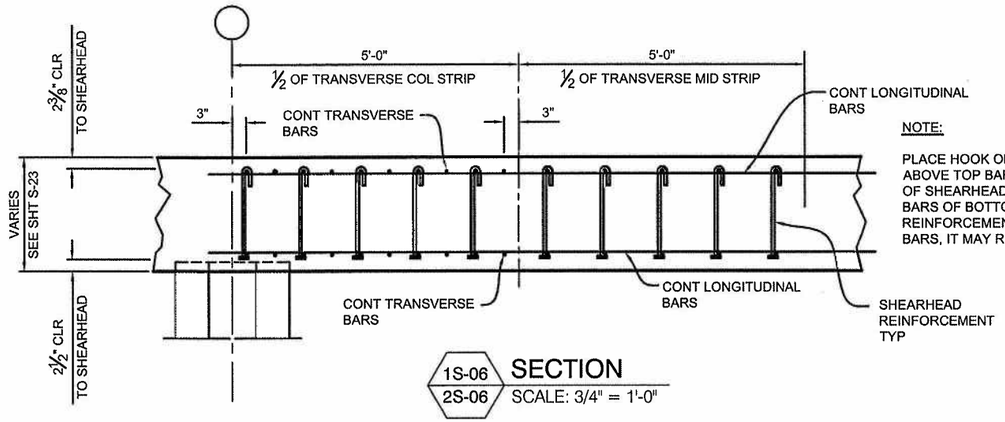
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

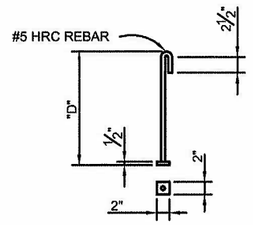
DRAWING NUMBER S-05



NOTE:

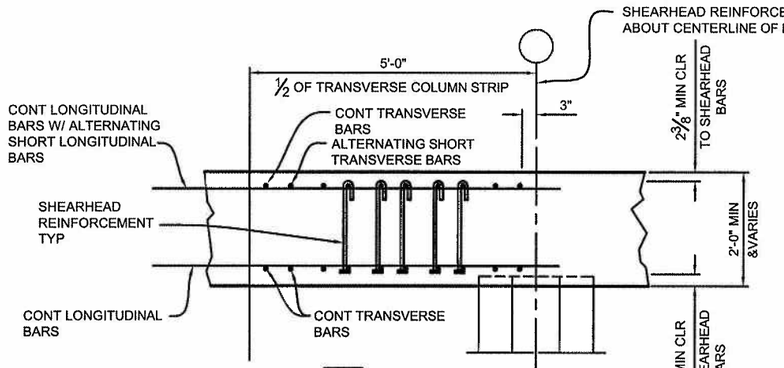
PLACE HOOK OF SHEARHEAD REINFORCEMENT ABOVE TOP BARS OF TOP LAYER. PLACE PLATES OF SHEARHEAD REINFORCEMENT BELLOW BOTTOM BARS OF BOTTOM LAYERS. IF SHEARHEAD REINFORCEMENT HOOKED AROUND TOP LOGITUDINAL BARS, IT MAY REQUIRE A SPACED BAR AT HOOK.

1S-06
2S-06 **SECTION**
SCALE: 3/4" = 1'-0"

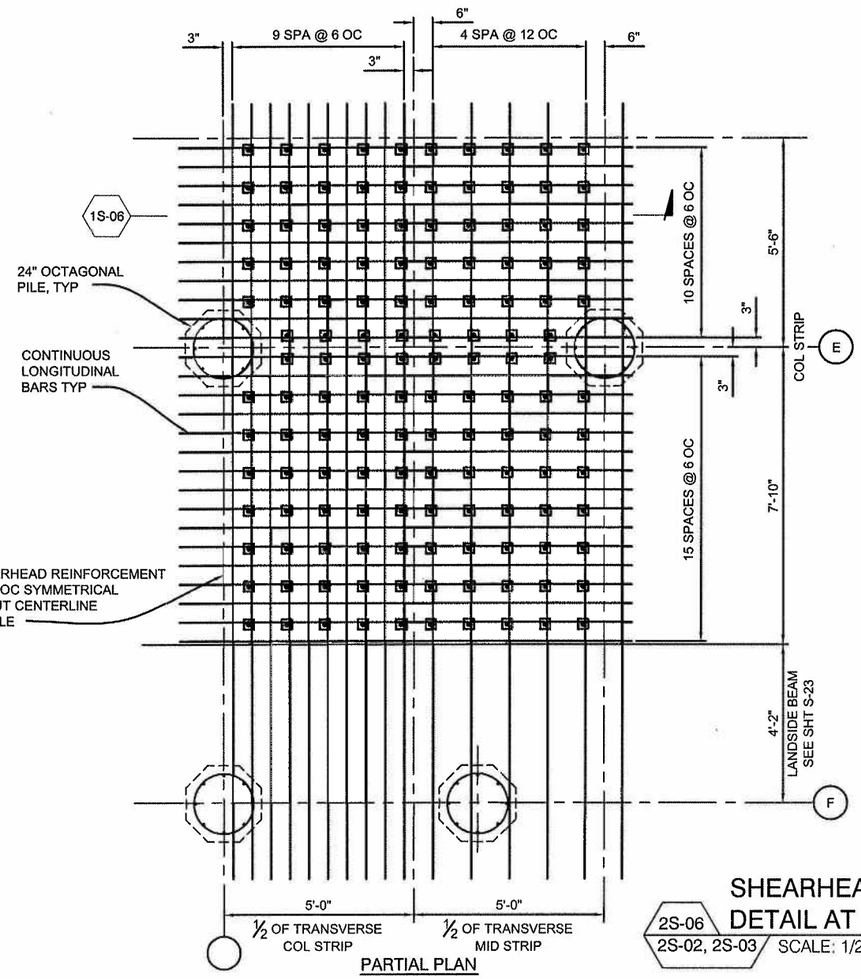


5S-06
S-06 **SHEARHEAD REINFORCEMENT**
NO SCALE

FOR 2' DECK "D" = 19⅛"
FOR 3' DECK "D" = 31⅛"
FOR 4' DECK "D" = 43⅛"



3S-06
4S-06 **SECTION**
SCALE: 3/4" = 1'-0"

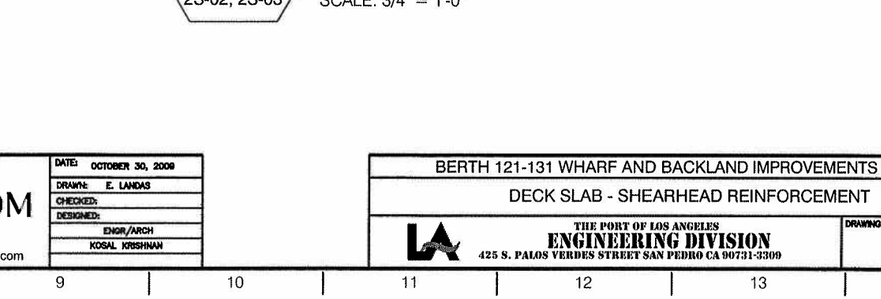


PARTIAL PLAN

NOTE:

TOP TRANSVERSE AND LONGITUDINAL REINFORCEMENT SHOWN, BOTTOM REINFORCEMENT PATTERN TO MATCH TOP LAYER.

2S-06
2S-02, 2S-03 **SHEARHEAD REINFORCEMENT DETAIL AT ROW E**
SCALE: 1/2" = 1'-0"



PARTIAL PLAN

NOTES:

1. ONLY 1 QUADRANT OF SHEARHEAD REINF SHOWN.
2. TOP TRANSVERSE AND LONGITUDINAL REINFORCEMENT SHOWN.
3. SHEARHEAD REINF SHALL BE PLACED RELATIVE TO THE AS-BUILT PILE LOCATIONS AROUND THE NEAREST FLEXURAL REINF BARS. DO NOT RELOCATE THE FLEXURAL BARS.

4S-06
2S-02, 2S-03 **SHEARHEAD REINFORCEMENT DETAIL AT ROWS B, C, AND D**
SCALE: 3/4" = 1'-0"

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NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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DECK SLAB - SHEARHEAD REINFORCEMENT

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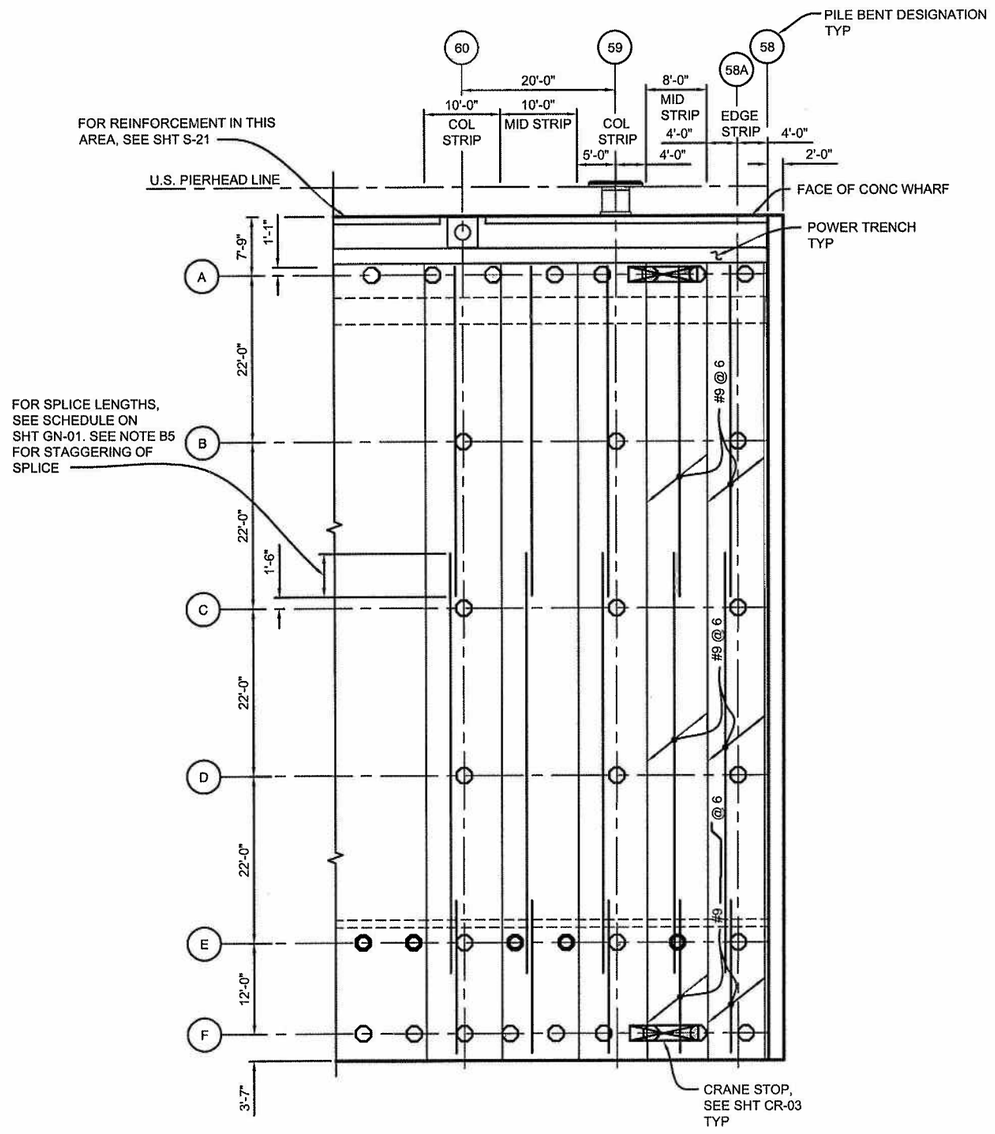
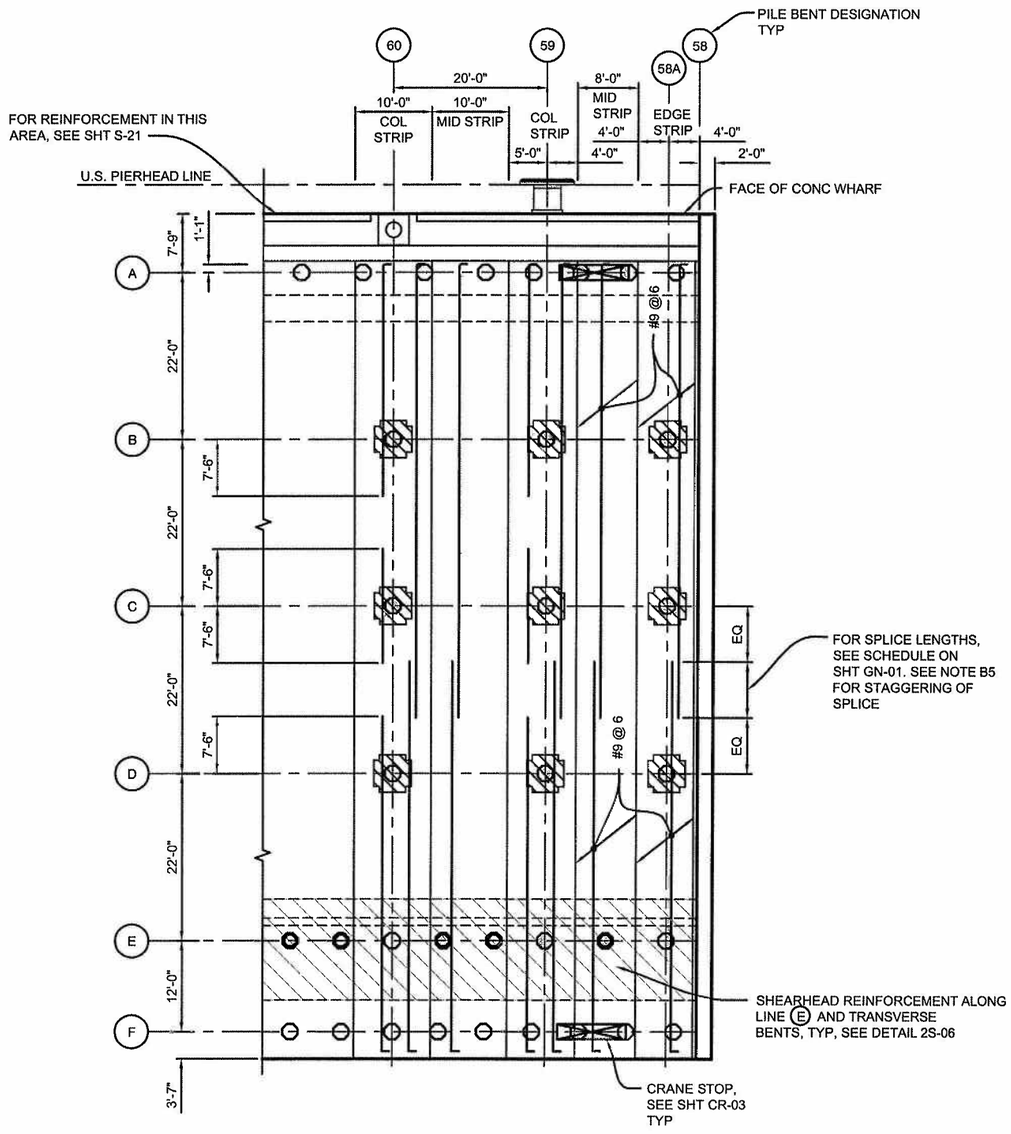


1S-07 / S-07 **BOTTOM TRANSVERSE REINF PLAN**
SCALE: 1" = 10'



2S-07 / S-07 **TOP TRANSVERSE REINF PLAN**
SCALE: 1" = 10'

NOTE:

1. FOR TYPICAL TRANSVERSE REINFORCEMENT, SEE DWG S-02.
2. FOR SHEARHEAD REINFORCEMENT, SEE DWG S-06

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DECK SLAB - SOUTH END - TRANSVERSE REINFORCING

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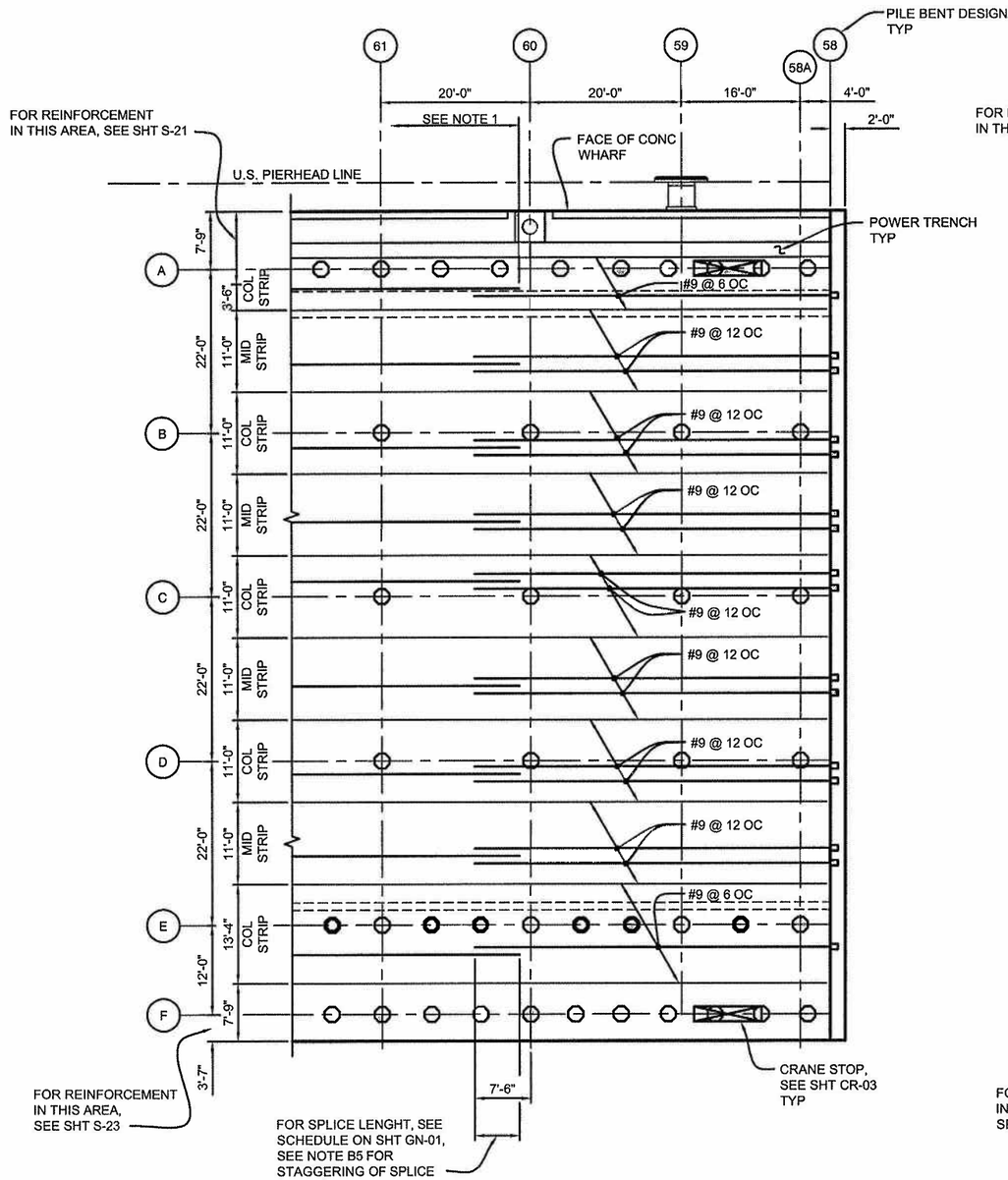
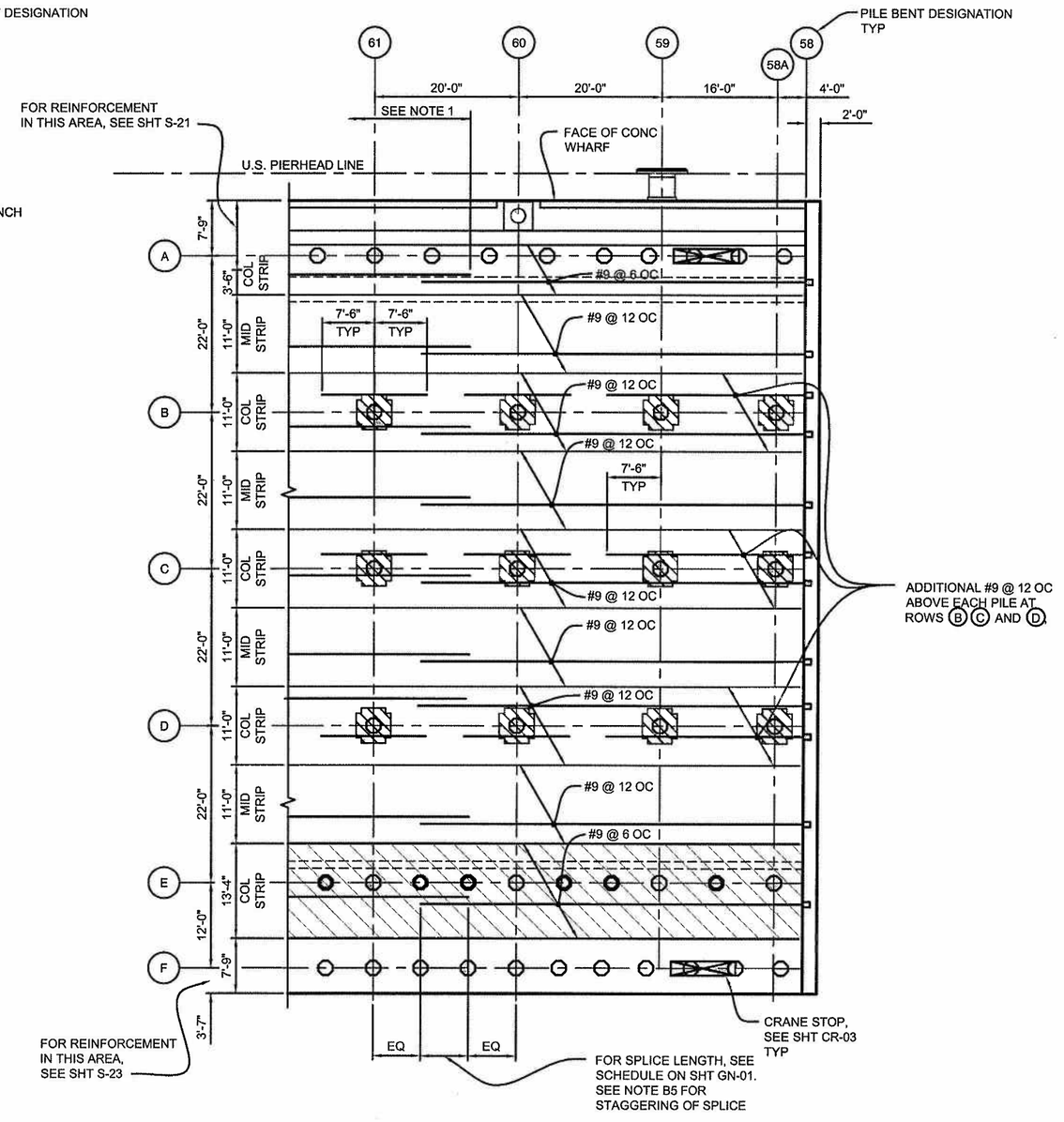


1S-08 / S-08 **BOTTOM LONGITUDINAL REINF PLAN**
SCALE: 1" = 10'



2S-08 / S-08 **TOP LONGITUDINAL REINF PLAN**
SCALE: 1" = 10'

NOTE:

1. FOR TYPICAL LONGITUDINAL REINFORCEMENT, SEE DWG S-03.
2. FOR SHEARHEAD REINFORCEMENT, SEE DWG S-06

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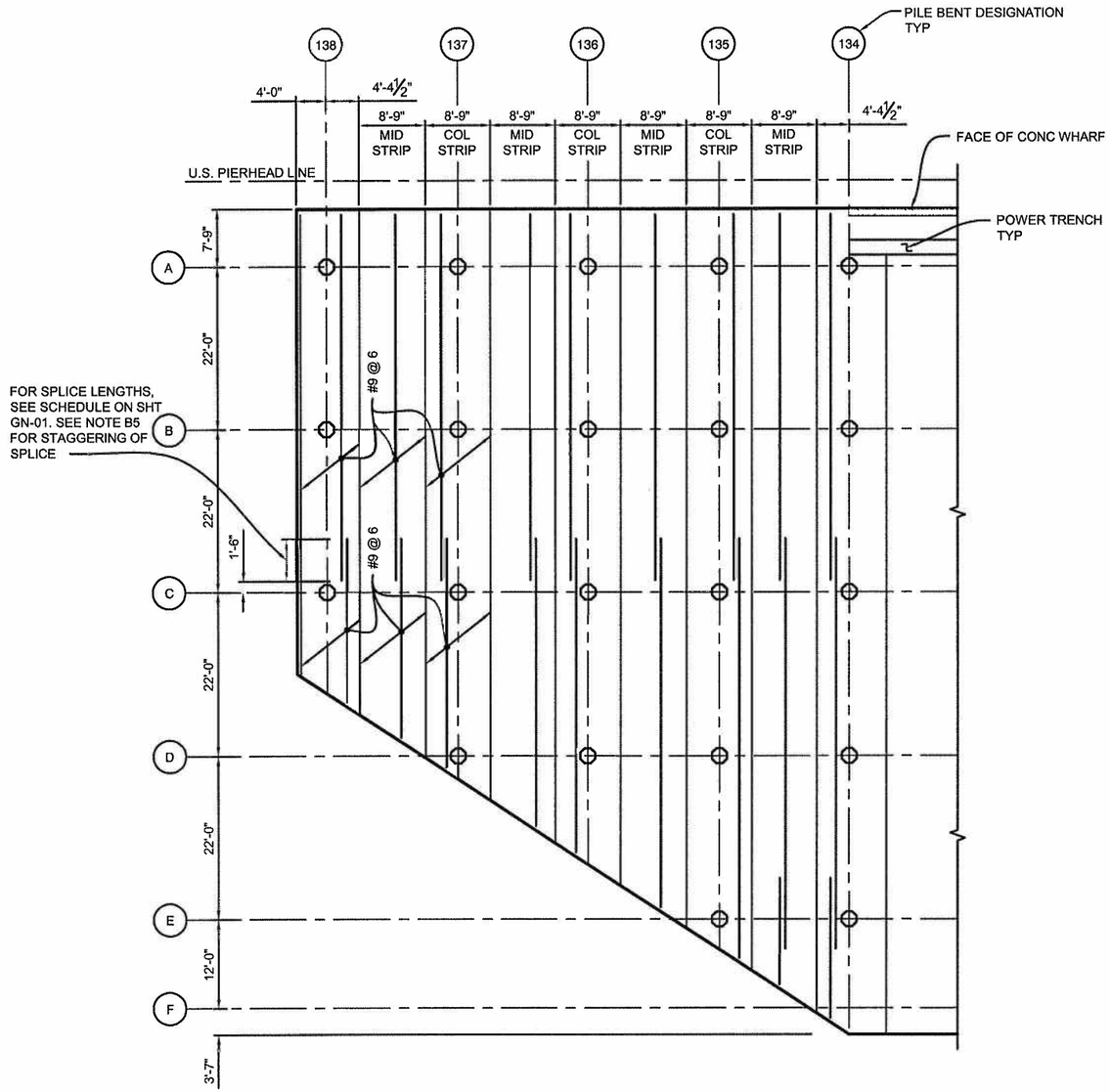
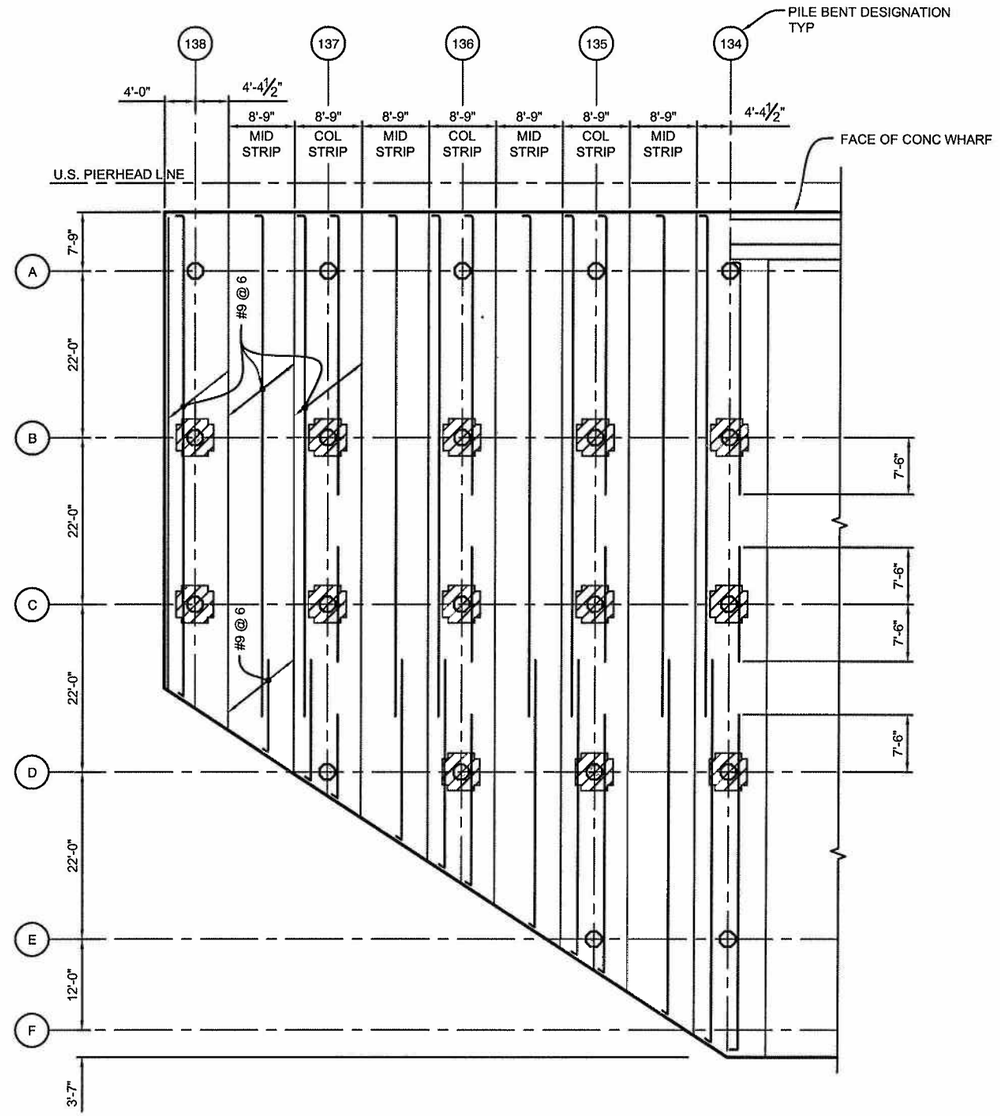


1S-09 / S-09 **BOTTOM TRANSVERSE REINF PLAN**
SCALE: 1" = 10'



2S-09 / S-09 **TOP TRANSVERSE REINF PLAN**
SCALE: 1" = 10'

NOTE:

1. FOR TYPICAL TRANSVERSE REINFORCEMENT, SEE DWG S-02.
2. FOR SHEARHEAD REINFORCEMENT, SEE DWG S-06

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D
NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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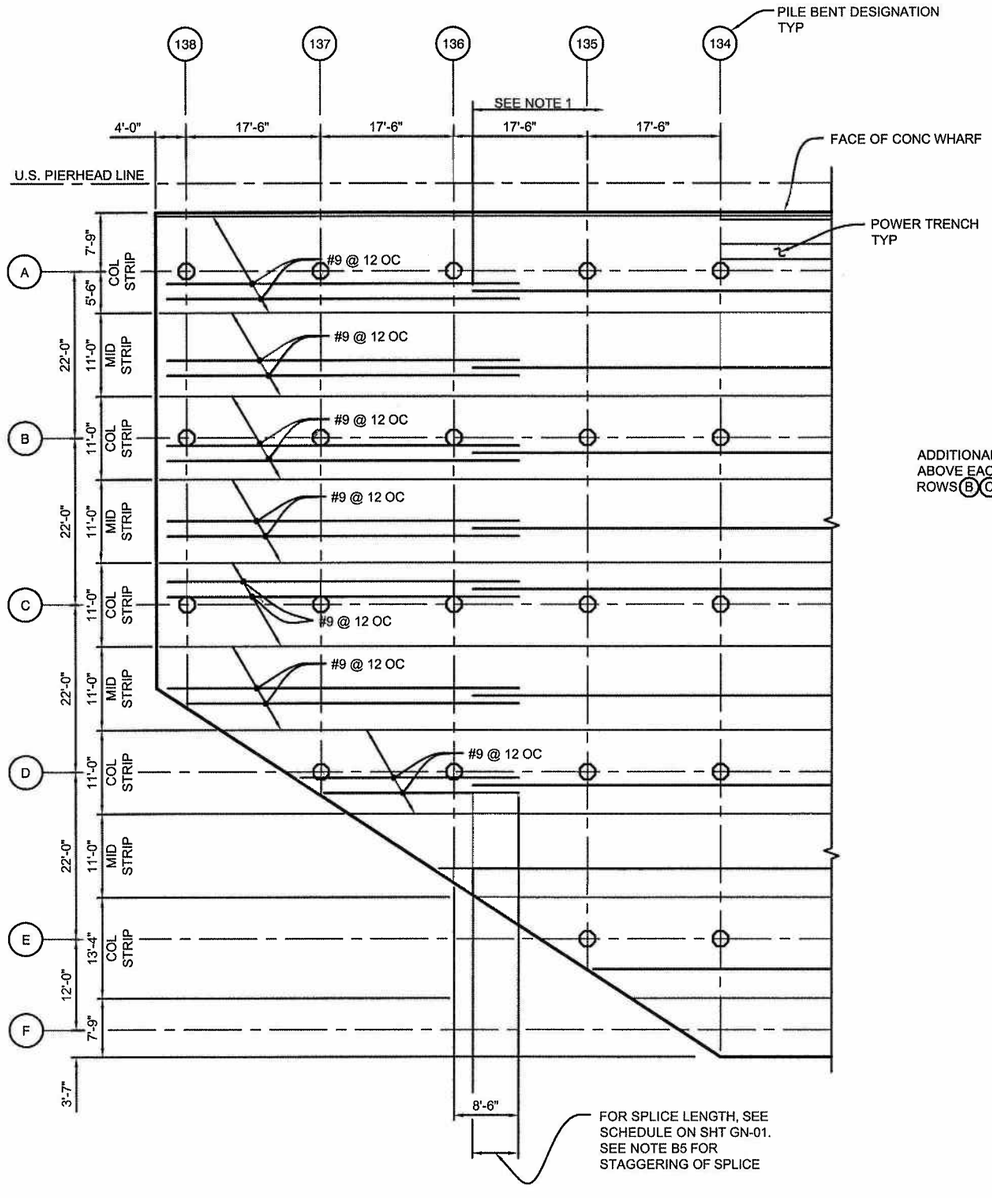
DRAWN: E. LANDAS
CHECKED:
DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

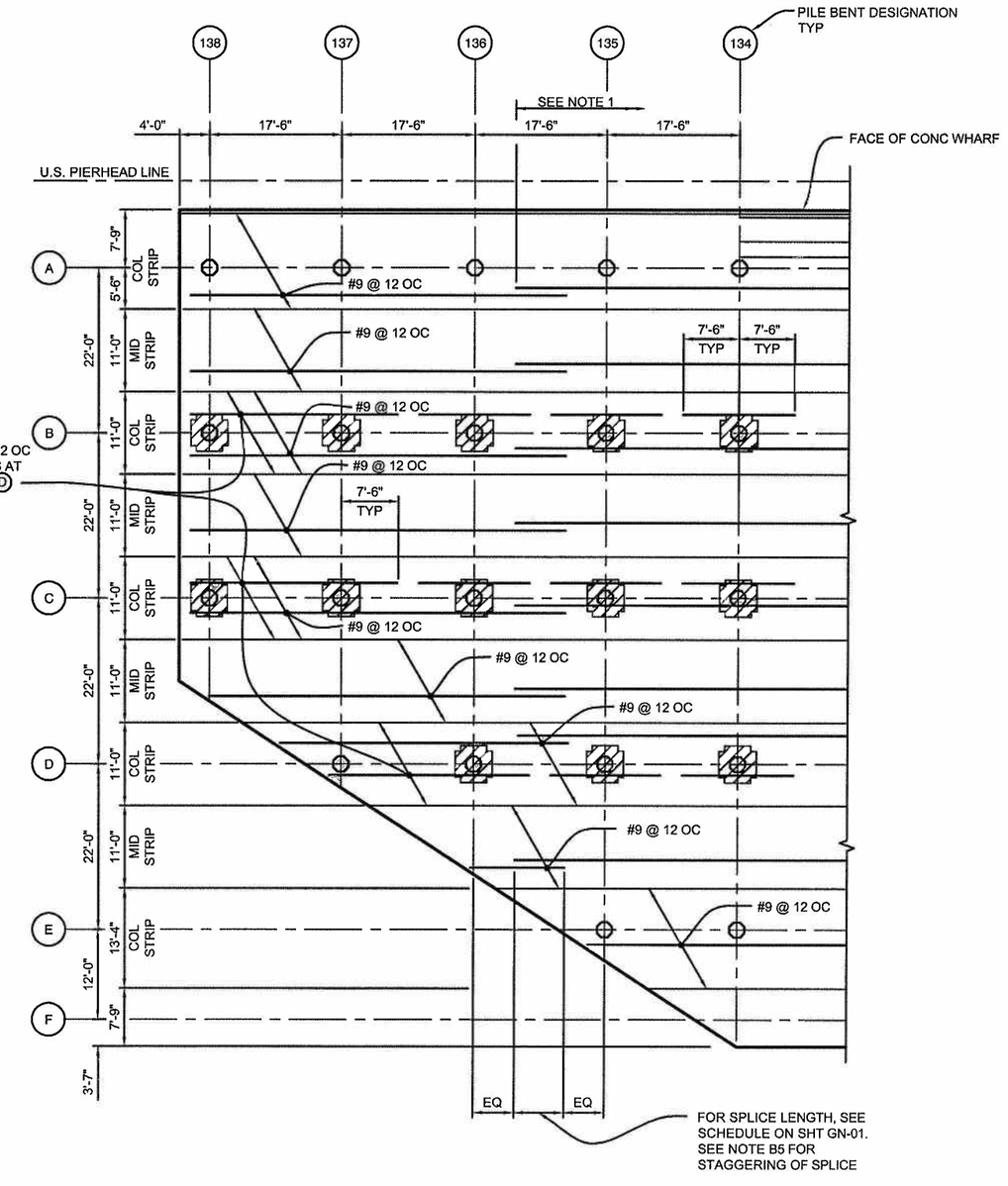
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I
DECK SLAB - NORTH END - TRANSVERSE REINFORCING

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
S-09



1S-10 / S-10 **BOTTOM LONGITUDINAL REINF PLAN**
SCALE: 1" = 10'



2S-10 / S-10 **TOP LONGITUDINAL REINF PLAN**
SCALE: 1" = 10'

NOTE:

1. FOR TYPICAL LONGITUDINAL REINFORCEMENT, SEE DWG S-03.
2. FOR SHEARHEAD REINFORCEMENT, SEE DWG S-06

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DECK SLAB - NORTH END - LONGITUDINAL REINFORCING

THE PORT OF LOS ANGELES
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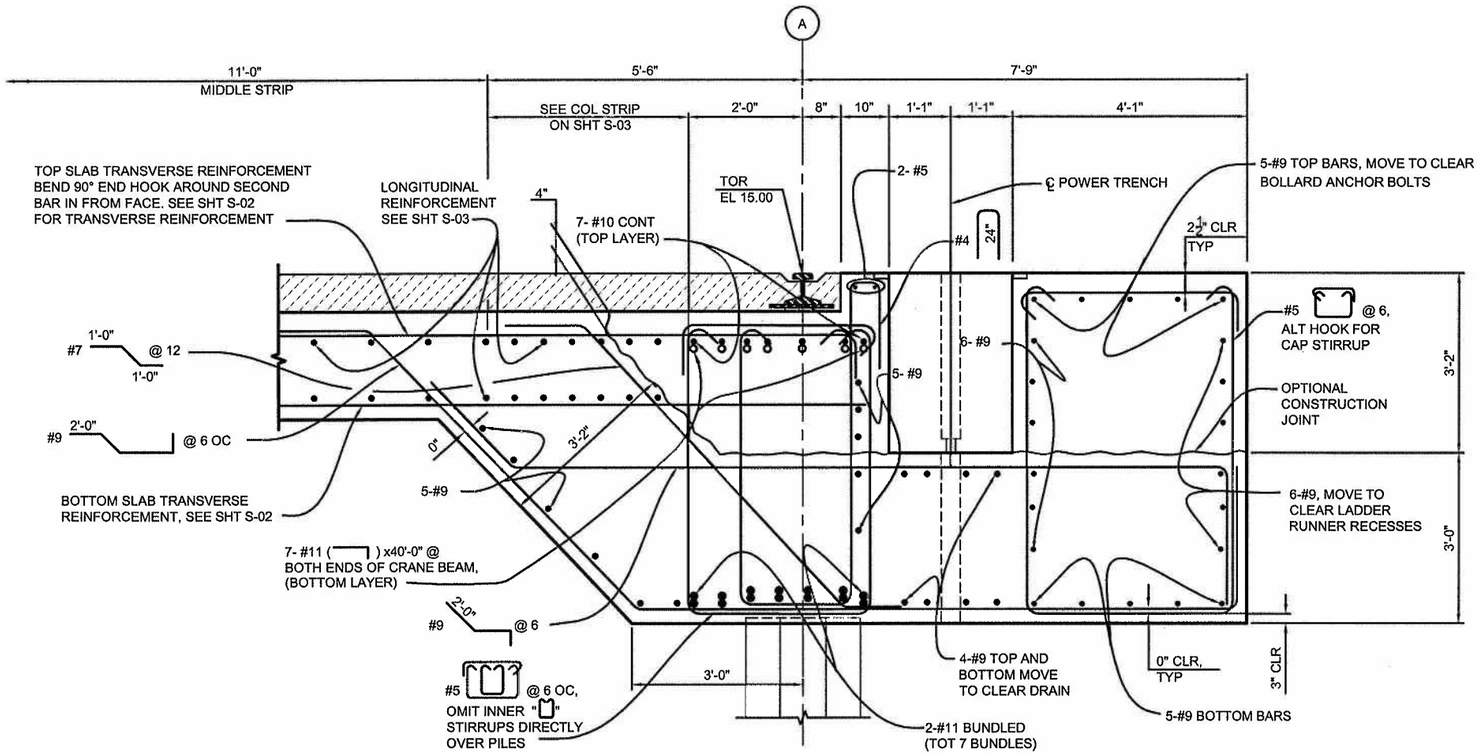
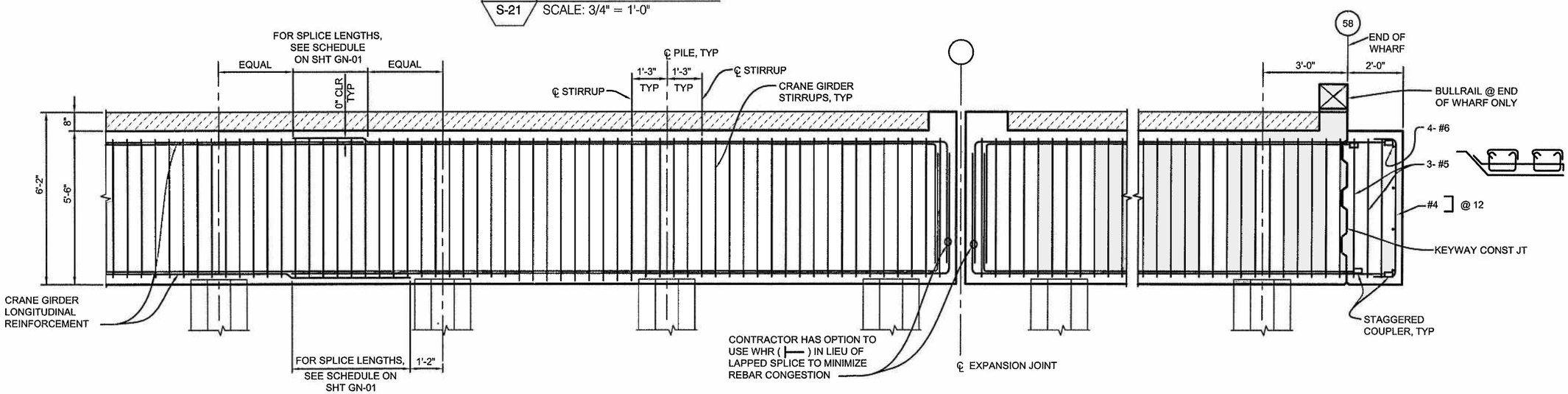
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
S-10



2S-21 / S-21 **TYPICAL SECTION**

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



1S-21 / S-21 **TYPICAL LONGITUDINAL SECTION AT ROW A**

SCALE: 1/2" = 1'-0"

NOTES:

1. BULL RAIL AND RAIL ANCHOR BOLTS NOT SHOWN.
2. DIMENSIONS SHOWN ARE RELATIVE TO ACTUAL PILE LOCATIONS. DIFFERENCES IN SPAN LENGTH SHALL BE MADE UP BY ADDITION/DELETION OF STIRRUPS.
3. BOTTOM REINFORCEMENT SHALL NOT BE SPLICED ABOVE A PILE.
4. STAGGER SPLICES OF ADJACENT REINFORCING BARS BY LOCATING THEM IN DIFFERENT SPANS.
5. NO SPLICE ALLOWED IN THE OUTER 3 PILE SPACING AT BOTH ENDS UNLESS APPROVED BY ENGINEER.
6. ALL BARS ARE CONTINUOUS UNO.

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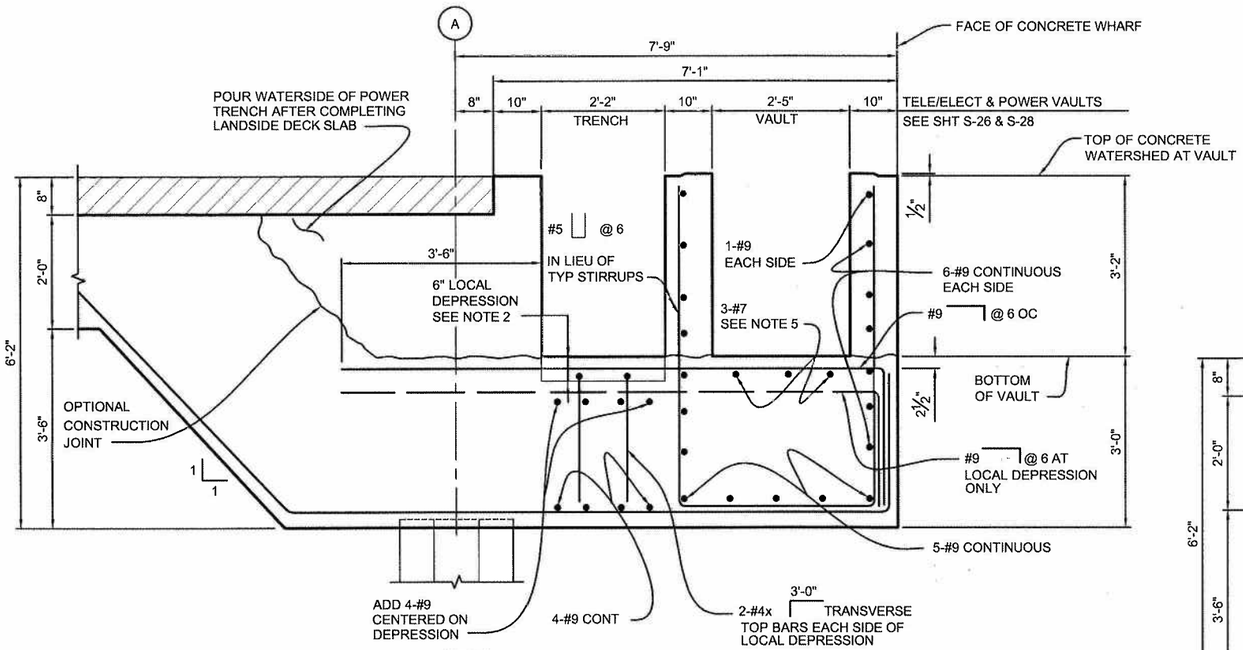
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

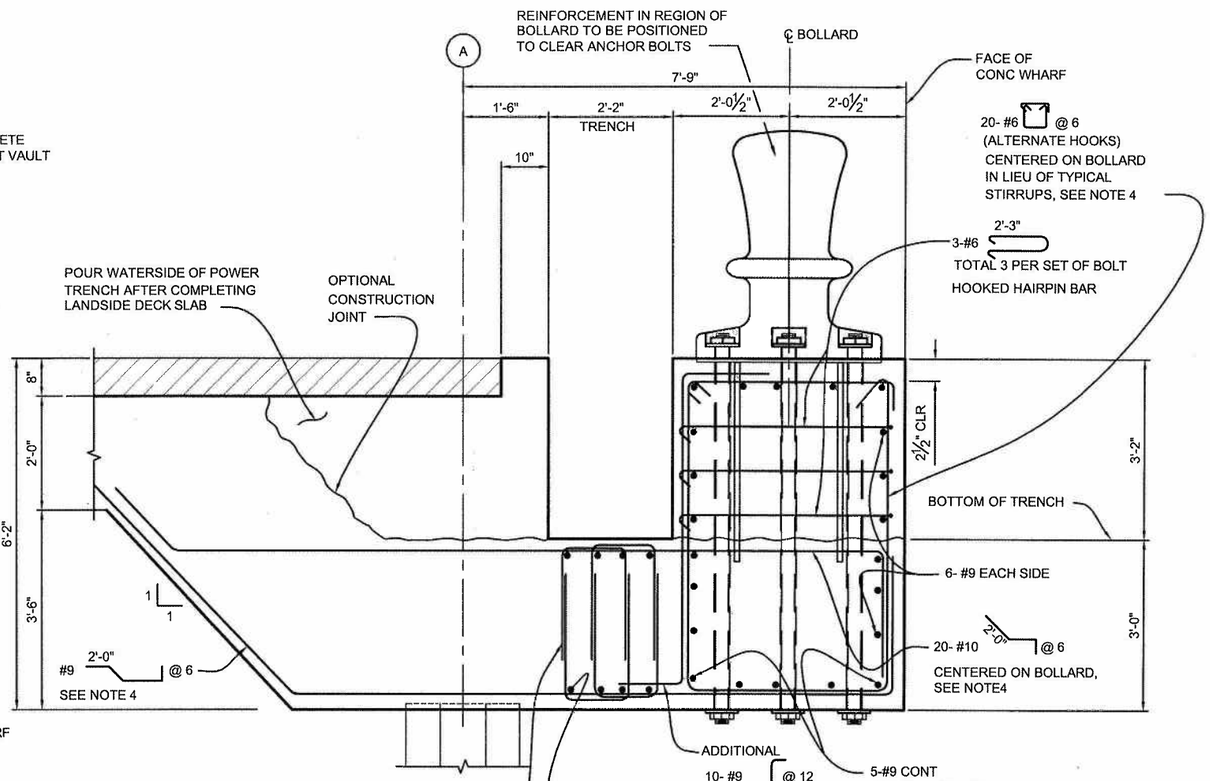
WATERSIDE CRANE GIRDER REINFORCEMENT NO. 1

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

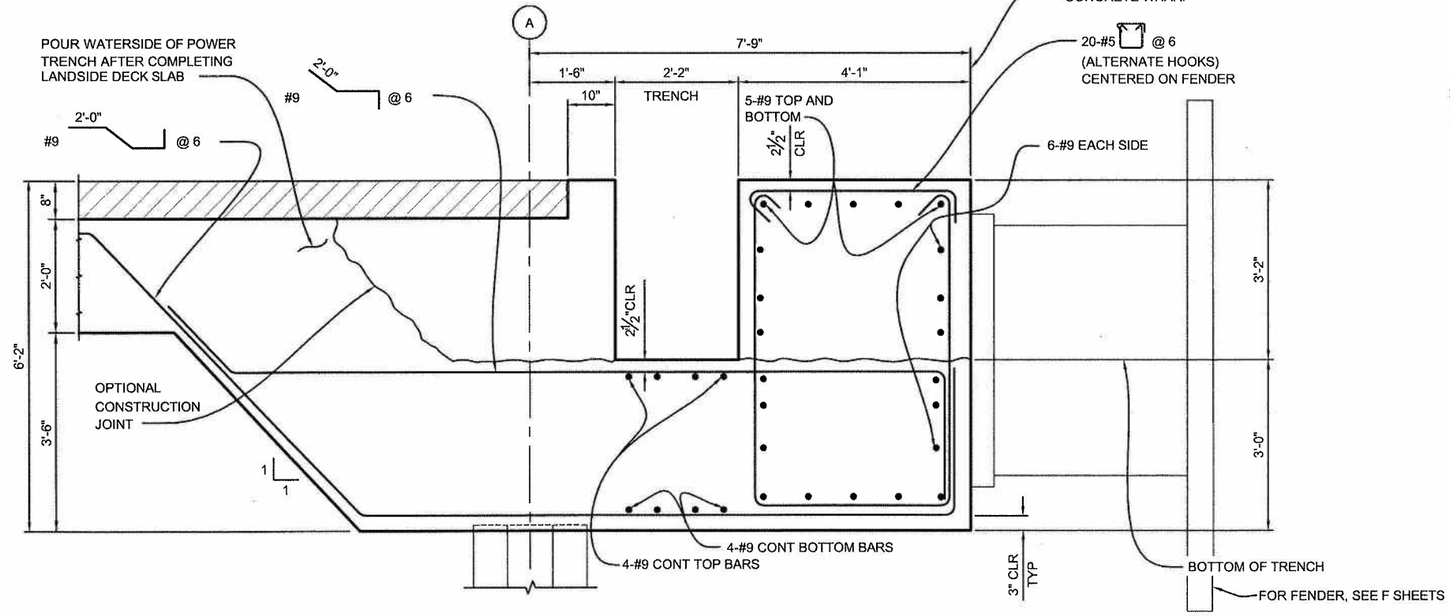
DRAWING NUMBER
S-21



1S-22 / S-22 **TYPICAL SECTION AT VAULT**
SCALE: 3/4" = 1'-0"



2S-22 / S-22 **TYPICAL SECTION AT MOORING BOLLARD**
SCALE: 3/4" = 1'-0"



3S-22 / S-22 **TYPICAL SECTION AT FENDER**
SCALE: 3/4" = 1'-0"

NOTES:

1. TYPICAL DECK SLAB REINFORCEMENT, CRANE GIRDER REINFORCEMENT AND OPTIONAL CONSTRUCTION JOINT ARE NOT SHOWN FOR CLARITY.
2. FOR LOCATION OF DEPRESSIONS, SEE E SHEETS.
3. FOR PANZER BELT WITHIN POWER TRENCH, SEE SHT S-29.
4. WHERE THE EDGE OF TENSION RELIEF DRUM OR POWER VAULT LOCATED AT DISTANCE WITHIN 5' FROM ℄ BOLLARD OR FENDER REDUCE THE SPACING FROM 6" TO 4" MAX & FROM 12" TO 4" MAX RESPECTIVELY. MOVE REINF TO CLEAR BOLLARD ANCHOR BOLTS.
5. EXTEND #7 BAR 5'-3" BEYOND THE EDGES OF VAULT.

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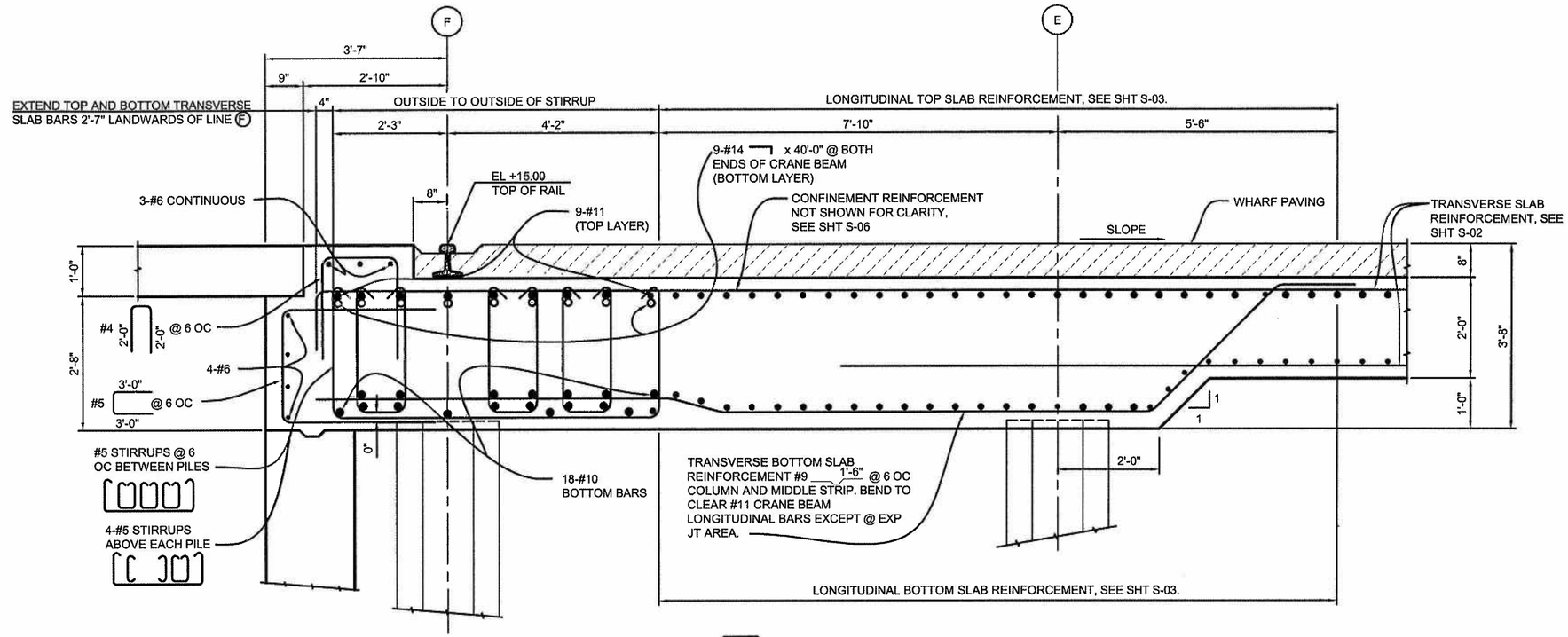
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

WATERSIDE CRANE GIRDER REINFORCEMENT NO. 2

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

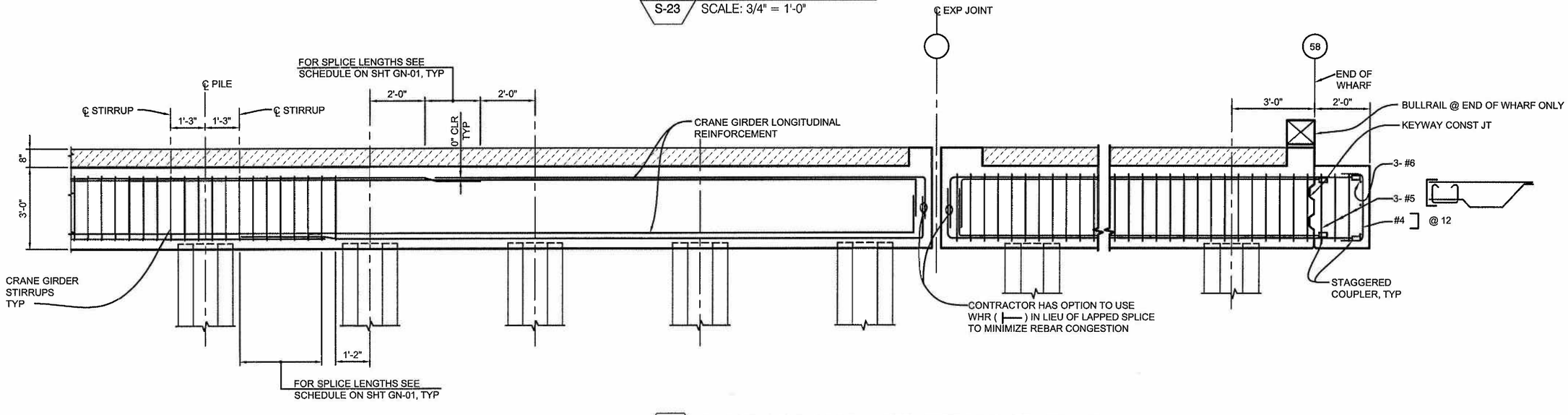
DRAWING NUMBER S-22



2S-23 / S-23 **TYPICAL SECTION**
SCALE: 3/4" = 1'-0"

NOTES:

1. BULL RAIL AND RAIL ANCHOR BOLTS NOT SHOWN.
2. DIMENSIONS SHOWN ARE RELATIVE TO ACTUAL PILE LOCATIONS. DIFFERENCES IN SPAN LENGTH SHALL BE MADE UP BY ADDITION/DELETION OF STIRRUPS.
3. BOTTOM REINFORCEMENT SHALL NOT BE SPLICED ABOVE A PILE.
4. STAGGER SPLICES OF ADJACENT REINFORCEMENT BARS BY LOCATING THEM IN DIFFERENT SPANS.
5. NO SPLICE ALLOWED IN THE OUTER 3 PILE SPACINGS AT BOTH ENDS, UNLESS APPROVED BY ENGINEER.
6. ALL LONGITUDINAL REINFORCEMENT SHOWN SHALL BE CONTINUOUS UNO.



1S-23 / S-23 **TYPICAL LONGITUDINAL SECTION AT ROW F**
SCALE: 1/2" = 1'-0"

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

LANDSIDE CRANE GIRDER REINFORCEMENT

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER S-23

GENERAL NOTES:

1. CONTRACTOR SHALL PERFORM A BURN TEST. LIGHT FIXTURES MUST BURN CONTINUOUSLY FOR (5) DAYS WITHOUT FAILURE. TEST MUST BE REPEATED FOR EARLY BURNOUTS. CONTRACTOR SHALL NOTIFY POLA (5) WORKING DAYS PRIOR TO START TEST.
2. PROVIDE A LABEL ON EACH LUMINAIRE DENOTING PANEL AND CIRCUIT NUMBER.
3. LOCATE AFFECTED EXISTING UTILITIES AND SUBSTRUCTURES PRIOR TO EXCAVATION.
4. ALL WIRES INSTALLED IN SYSTEMS 600V OR LESS SHALL BE COPPER. USE "THWN" INSULATION (75 DEGREES CELSIUS WET) FOR WIRES LESS THAN NO. 8, AND THWN-2 (90 DEGREES CELSIUS WET). FOR WIRES NO. 8 AND LARGER ON WET LOCATION. FOR DRY LOCATION USE THHN INSULATION (90 DEGREES CELSIUS DRY).
5. ALL INSTALLATIONS SHALL COMPLY WITH THE LATEST LA CITY ELECTRICAL CODES AND THE NATIONAL ELECTRICAL CODE AS ADOPTED BY THE CITY OF LOS ANGELES .
6. ELECTRICAL EQUIPMENT AND DEVICES INSTALLED OUTDOORS SHALL BE ENCLOSED IN WEATHERPROOF, CORROSION RESISTANT, HOT DIPPED GALVANIZED NEMA 3R ENCLOSURES, UNLESS NOTED OTHERWISE. HARDWARE SHALL BE STAINLESS STEEL.
7. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE UL LISTED OR CITY OF LA TEST LAB APPROVED.
8. UNDERGROUND CONDUIT SHALL BE NON-METALLIC SCHEDULE 40 PVC. ALL UNDERGROUND CONDUIT BENDS & PVC CONDUIT JOINTS SHALL BE NON-METALLIC SCHEDULE 80 PVC. THE LAST 10'-0" OF UNDERGROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL WITH 40 MIL BONDED PVC COATING. ALL EXPOSED CONDUIT SHALL BE RIGID GALVANIZED STEEL, UNLESS OTHERWISE NOTED.
9. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL VERIFY THE EXACT CONDUIT ROUTES TO SUIT FIELD CONDITIONS.
10. ALL WORK AND MATERIALS SHOWN ON THIS PROJECT ARE NEW, UON.
11. EMPTY CONDUITS SHALL BE PROVIDED WITH 1/4" DIAMETER NYLON PULL CORD RATED 1250 POUNDS TENSILE STRENGTH. TAG CONDUITS AT EACH END IDENTIFYING THE PURPOSE OF THE CONDUIT AND THE LOCATION OF THE OTHER END. WHEN EMPTY CONDUITS TERMINATE AT PULL BOXES, TIE THE NYLON PULL CORD TO THE PULL BOX PULLING IRON. CONDUITS SHALL BE SUCCESSFULLY MANDRELLED WITH A 12" LONG MANDREL IN PRESENCE OF THE INSPECTOR. CONTRACTOR SHALL SUBMIT ENGINEERING TEST REPORT.
12. CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE OF 6" WHEN CROSSING ANY SUBSTRUCTURES.
13. ALL BURIED UNDERGROUND CONDUIT STUB-OUTS SHALL BE FURNISHED WITH CONCRETE MONUMENTS, 6" X 6" X 15" DEEP BURIED FLUSH WITH GRADE OVER THE CAPPED ENDS AND A 3" SQ. BRASS PLATE IDENTIFYING THE NUMBER AND SIZE OF CONDUITS. SEE APPLICABLE DETAIL.
14. MINIMUM DEPTH OF DIRECT BURIAL AND CONCRETE ENCASED CONDUIT SHALL BE 3'-6" FROM FINISHED SURFACE, UON.
15. WHERE CROSSING ANY SUBSTRUCTURES WHICH ALL ARE UNKNOWN IN DEPTH, OR WHERE NEW CONDUITS CROSS EACH OTHER OR CROSS PIPES, THE ELECTRICAL CONTRACTOR SHALL TRENCH CAREFULLY TO LOCATE ALL SUBSTRUCTURES AT THESE CROSSINGS. WHERE SUBSTRUCTURES OR NEW CONDUITS CROSSING MAKE THIS IMPOSSIBLE, THE ELECTRICAL CONTRACTOR SHALL RE-ROUTE CONDUITS AT NO ADDITIONAL COST TO THE OWNER, OVER OR UNDER SUBSTRUCTURES AND NEW INTERFERED CONDUITS AND PIPES, WITH A MINIMUM 6" CLEARANCE IN ACCORDANCE WITH THE ELECTRICAL CODE. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ALL CONDUITS AND WIRES DAMAGED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. CALL UNITED SERVICE ALERT (USA) AT 1-800-422- 4133 FOR FURTHER INFORMATION REGARDING EXISTING SUBSTRUCTURES, TEN (10) WORKING DAYS PRIOR TO COMMENCING WORK.
16. FOR CONDUIT INSTALLATION ACROSS THE WHARF, THE ELECTRICAL CONTRACTOR TO CHECK REBARS SHOWN ON STRUCTURAL DRAWINGS PRIOR TO CONDUIT INSTALLATION. THE ELECTRICAL CONTRACTOR SHALL PLAN THE CONDUIT INSTALLATION ACROSS THE WHARF, AVOIDING REBARS, PILES, DRAINAGES, OR ANY OTHER WHARF STRUCTURAL MATERIALS AND BE INSTALLED STRAIGHT THROUGH THE WHARF BULKHEAD WITHOUT ANY BENDS.
17. THE DESIGNATED BLOCK OUT AREAS ARE AREAS TO BE OCCUPIED BY OTHER CONTRACTORS AT A LATER DATE. FOR THE WORK DESIGNATED AS NIC HOWEVER, ALL ELECTRICAL WORK SHOWN ON PLANS AND WITHIN THE DESIGNATED BLOCK OUT AREA OR OUTSIDE PROJECT BOUNDARY ARE PART OF THIS CONTRACT AND SHALL BE CONSTRUCTED BY THE ELECTRICAL WHARF CONTRACTOR. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS.

ABBREVIATIONS:

A	AMPERE
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CURRENT
AMP	ALTERNATIVE MARITIME POWER (SHIP TO SHORE POWER CONNECTION)
AT	AMPERE TRIP
ANT	ANTENNA
AUX	AUXILIARY
BLDG	BUILDING
BRKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CFS	CONTAINER FREIGHT STATION
CKT	CIRCUIT
CL	CENTER LINE
CLR	CLEARANCE
CO	CONDUIT ONLY WITH NYLON PULL CORD
CP	CRANE POWER
CPB	COMMUNICATION PULL BOX
CPV	CRANE POWER VAULT
CTU	CURRENT TRANSFORMER UNIT
CU	COPPER
CY	CONTAINER YARD
DF	DEMAND FACTOR
DN	DATA NETWORK
DSB	DISTRIBUTION BOARD
DWG	DRAWING
DWP	DEPARTMENT OF WATER AND POWER
E	ELECTRICAL
E/T	ELECTRICAL AND TELEPHONE
(E), EX	EXISTING
FA	FIRE ALARM
FPB	FIVE PULL BOX
FLF	FLOODLIGHT POLE
FO	FIBER OPTIC
FIXT	FIXTURE
GC	GATE HOUSE & CANOPY
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HMP	HIGH MAST LIGHT POLE
HPS	HIGH PRESSURE SODIUM
HV	HIGH VOLTAGE
IC	INTERCOM
L	LADDER
LS	LIMIT SWITCH
LT	LIGHTING
MCM	THOUSAND CIRCULAR MILLS
MH	MANHOLE
MPZ	MINI POWER ZONE
MR	MAINTENANCE & REPAIR BLDG
MS	MAIN SWITCHGEAR
(N)	NEW
NTP	NOTICE TO PROCEED
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
P	POLE
PA	PUBLIC ADDRESS
PL	POWER LOGIC
POLA	PORT OF LOS ANGELES
P, POLE	POWER POLE
PPB	POWER PULL BOX
PV	POWER VAULT
PVC	POLYVINYL CHLORIDE
R	REEFER OUTLET
RGS	RIGID GALVANIZED STEEL
SG	SIGNAL
SN	SOLID NEUTRAL
SPB	SECURITY PULL BOX
SEC	SECURITY SYSTEM
SP5	SPARE 5" CONDUIT NUMBER INDICATES CONDUIT SIZE
SS, SBST	SUBSTATION
SW	SWITCH
SWGR	SWITCHGEAR
TBD	TO BE DETERMINED
T, TELE	TELEPHONE
TRNSTN	TRANSITION
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
W	WIRE
W/	WITH
XFMR	TRANSFORMER

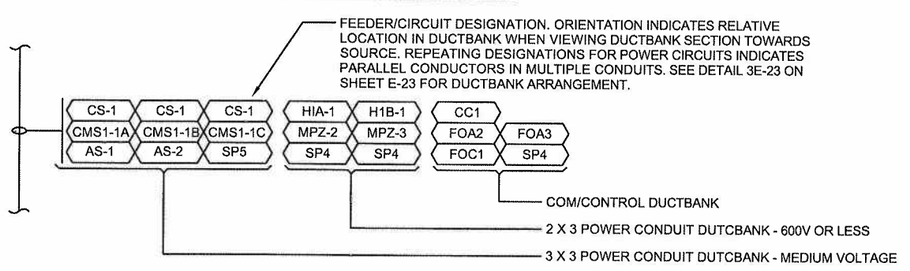
SYMBOLS:

UNDERGROUND DUCTBANK	GROUND RELAY
GROUNDING CONDUCTOR IN CONDUIT, UON	CAPACITOR TRIP UNIT
UNDERGROUND PVC 40 CONDUIT, SIZE & WIRES AS NOTED ON PLAN	SEPAM-1000 WITH S42 RELAY
EXISTING ITEM TO REMAIN OR FUTURE WORK AS INDICATED	POWER-LOGIC CIRCUIT MONITOR
EXISTING ITEM TO BE REMOVED	ETHERNET SWITCH
DUCTBANK	EMERGENCY PUSH BUTTON
100' HIGH MAST POLE, WITH LIGHT FIXTURES, GUARD POSTS, POLE FOOTING, AND FIRE HYDRANT. SEE WATER SYSTEM DRAWINGS FOR FIRE HYDRANT LOCATIONS	HUMAN-MACHINE INTERFACE & PROGRAMMABLE LOGIC CONTROLLER
GUARD POST, SEE CIVIL DRAWINGS	VOLTAGE TRANSFORMER (DRAW-OUT TYPE)
CHAIN LINK FENCE, SEE CIVIL DRAWINGS	KIRK KEY INTERLOCK ASSEMBLY
RAILROAD TRACKS, SEE CIVIL DRAWINGS	MULTI-TAP CURRENT TRANSFORMER
FIVE PULL BOXES. TYPE AND LAYOUT PER PLANS	AMP PLUG RECEPTACLE
HIGH VOLTAGE MANHOLE, TYPE AND LAYOUT PER PLANS	GROUND FAULT SENSOR & RELAY FOR GROUND FAULT PROTECTION
SPARE CONDUIT STUBBED AND CAPPED	TRANSFORMER WITH SECONDARY GROUNDED
CONDUIT TURNING UP	CONTACTS, NORMALLY OPEN
CONDUIT TURNING DOWN, AWAY OR TERMINATING AT EQUIPMENT	CONTACTS, NORMALLY CLOSED
CABLE REEL CRANE, SEE CIVIL DRAWINGS	WP TOGGLE SWITCH 3 = DENOTE THREE WAY SWITCH 4 = DENOTE FOUR WAY SWITCH
GROUND WELL WITH ROD	WP DUPLEX RECEPTACLE, 120V, 20A,
ELECTRICAL/TELEPHONE VAULT	PPB DENOTE POWER PULL BOX SPB DENOTE SIGNAL PULL BOX CPB DENOTE COMMUNICATION PULL BOX
CRANE POWER VAULT	CONTROL POWER #1
AMP POWER VAULT	GROUND
HV CIRCUIT BREAKER - DRAW OUT	NEUTRAL GROUNDING RESISTOR
CIRCUIT BREAKER (BOLTED TYPE), MOLDED CASE, SEE PLANS	SURFACE MOUNTED LIGHT FIXTURE
SWITCH WITH SIZE INDICATED	
FUSE WITH SIZE INDICATED	
POTENTIAL XFMR WITH INDICATED VOLTAGE AS SHOWN ON PLANS	
CURRENT XFMR WITH INDICATED VOLTAGE AS SHOWN ON PLANS	
LOCK-OUT RELAY	
CONTINUITY CHECK RELAY	
RELAY OR COIL OF CONTACTOR	

GENERAL NOTES: continuation

18. FOR ALL LIGHT POLES WITH TOP IS HIGHER THAN 30' ABOVE FINISHED SURFACE, CONTRACTOR SHALL OBTAIN A BUILDING AND SAFETY STRUCTURAL/BUILDING PERMIT, SEE SPECS PRIOR TO POLE INSTALLATION.
19. ALL EXCAVATIONS SHALL BE PROTECTED BY STEEL PLATES OR K RAIL UNTIL BACKFILLING TRENCH TO FINAL GRADE IS COMPLETED.
20. LUGS FOR ELECTRICAL WIRES TERMINATION SHALL BE RATED FOR 75 DEGREES CELSIUS.
21. CONTRACTOR SHALL SEAL ALL AROUND BASE OF ALL SWITCHBOARDS OR SWITCHGEARS WITH WEATHERPROOF SILICON TO PREVENT WATER FROM ENTERING INTO BOTTOM OF EQUIPMENT.

DUCTBANK CALL OUT NOMENCLATURE:



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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

GENERAL NOTES, ABBREVIATIONS & SYMBOLS

THE PORT OF LOS ANGELES
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425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

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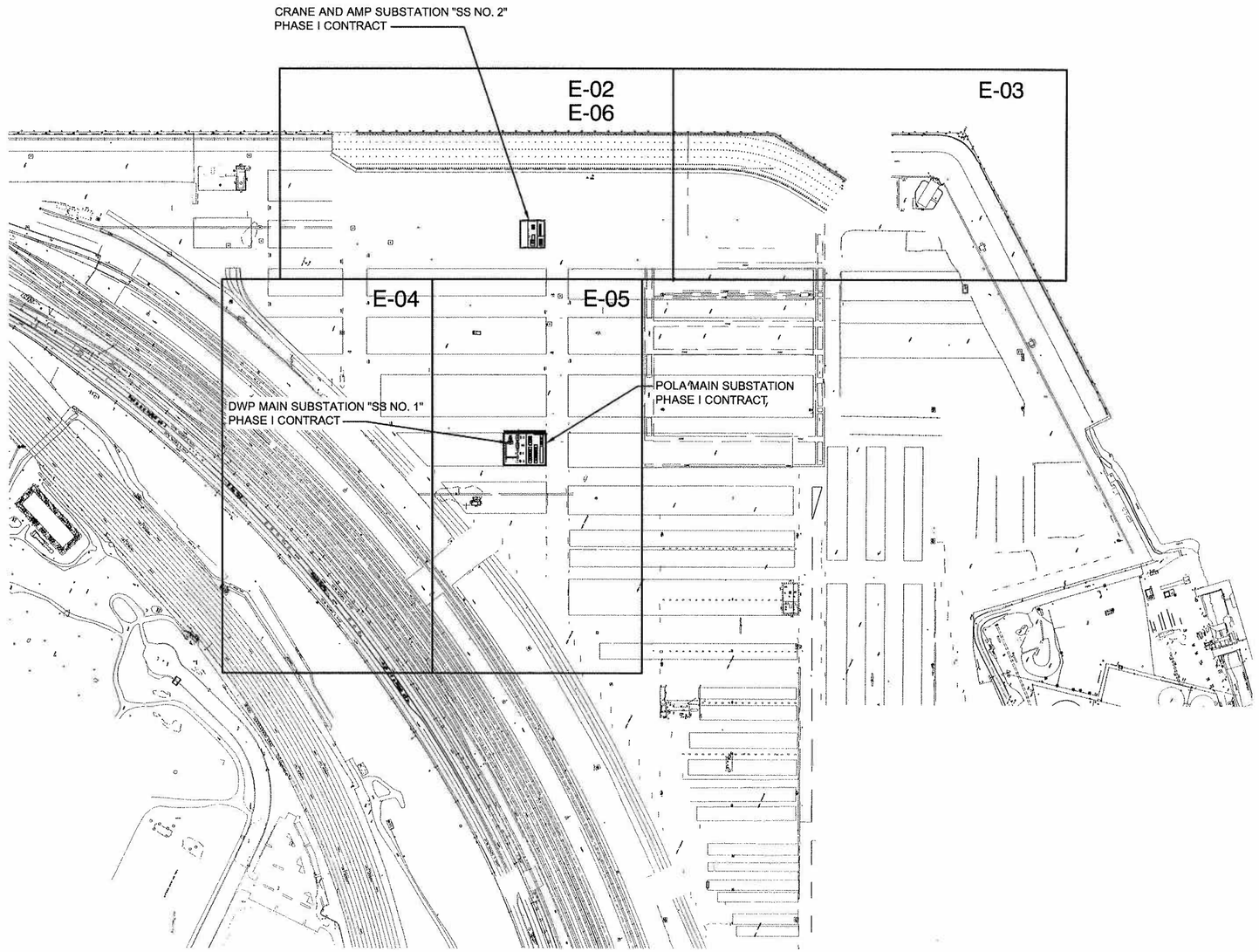

1E-01A / E-01A **ELECTRICAL OVERALL SITE PLAN**
SCALE: 1"=200'

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ELECTRICAL OVERALL SITE PLAN

THE PORT OF LOS ANGELES
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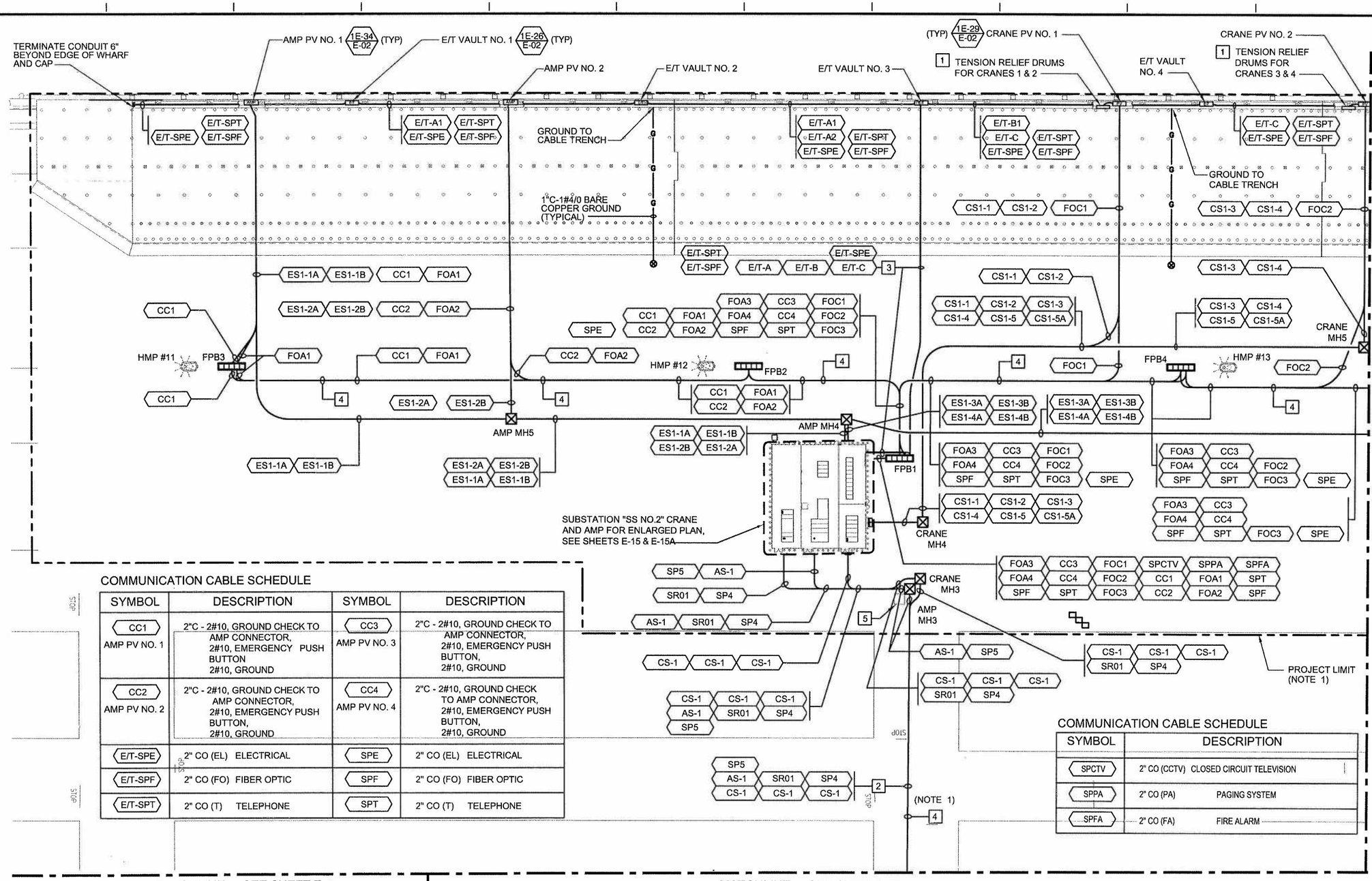


COMM & 480V POWER CABLE SCHEDULE

SYMBOL	DESCRIPTION
FOA1	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR AMP PV NO.1
FOA2	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR AMP PV NO.2
FOA3	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR AMP PV NO.3
FOA4	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR AMP PV NO.4
FOC1	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR CRANE PV NO. 1
FOC2	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR CRANE PV NO. 2
FOC3	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR CRANE PV NO. 3
E/T	E/T VAULT 480V POWER
E/T-A	2"C - 3#6, E/T VAULT #1, CKT. H1A-1,3,5 3#6, E/T VAULT #2, CKT. H1A-2,4,6 2#8, XFMR E/T VAULT #1, CKT. H1A-14,16 ; 2#8, XFMR E/T VAULT #2, CKT. H1A-18,20 1#8 GROUND
E/T-A1	2"C - 3#6, E/T VAULT #1, CKT. H1A-1,3,5 2#8, XFMR E/T VAULT #1, CKT. H1A-14,16 1#8 GROUND
E/T-A2	2"C - 3#6, E/T VAULT #2, CKT. H1A-14,16,18 2#8, XFMR E/T VAULT #2, CKT. H1A-18,20 1#8 GROUND
E/T-B	2"C - 3#6, E/T VAULT #3, CKT. H1A-7,9,11 3#6, E/T VAULT #4, CKT. H1A-8,10,12 2#8, XFMR E/T VAULT #3, CKT. H1A-22,24 ; 2#8, XFMR E/T VAULT #4, CKT. H1A-19,21 1#8 GROUND
E/T-B1	2"C - 3#6, E/T VAULT #4, CKT. H1A-8,10,12 2#8, XFMR E/T AULT #4, CKT. H1A-19,21 1#8 GROUND
E/T-C	2"C - 3#6, E/T VAULT #5, CKT. H1A-13,15,17 2#8, XFMR E/T VAULT #5, CKT. H1A-23,25 1#8 GROUND

COMMUNICATION CABLE SCHEDULE

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CC1 AMP PV NO. 1	2"C - 2#10, GROUND CHECK TO AMP CONNECTOR, 2#10, EMERGENCY PUSH BUTTON 2#10, GROUND	CC3 AMP PV NO. 3	2"C - 2#10, GROUND CHECK TO AMP CONNECTOR, 2#10, EMERGENCY PUSH BUTTON, 2#10, GROUND
CC2 AMP PV NO. 2	2"C - 2#10, GROUND CHECK TO AMP CONNECTOR, 2#10, EMERGENCY PUSH BUTTON, 2#10, GROUND	CC4 AMP PV NO. 4	2"C - 2#10, GROUND CHECK TO AMP CONNECTOR, 2#10, EMERGENCY PUSH BUTTON, 2#10, GROUND
E/T-SPE	2" CO (EL) ELECTRICAL	SPE	2" CO (EL) ELECTRICAL
E/T-SPF	2" CO (FO) FIBER OPTIC	SPF	2" CO (FO) FIBER OPTIC
E/T-SPT	2" CO (T) TELEPHONE	SPT	2" CO (T) TELEPHONE

COMMUNICATION CABLE SCHEDULE

SYMBOL	DESCRIPTION
SPCTV	2" CO (CCTV) CLOSED CIRCUIT TELEVISION
SPPA	2" CO (PA) PAGING SYSTEM
SPFA	2" CO (FA) FIRE ALARM

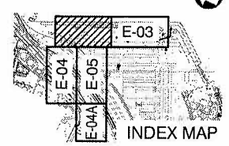
KEY NOTES:

1. TENSION RELIEF DRUM PIT TO BE DESIGNED FOR (2) CRANES.
2. PART OF PHASE I CONTRACT.
3. TERMINATE (3) 3"C TO PANEL H1A. SEE SHEET E-32 FOR PANEL SCHEDULE & SHEET E-15A FOR PANEL LOCATION.
4. DUCTBANK IN JOINT TRENCH WITH OTHER CONDUITS AS SHOWN ON SHEETS E-03, E-05 & E-06. PROVIDE CONSOLIDATED DUCTBANK PER 3E23.
5. COMMUNICATION PULLBOX SHOWN ON SHEET E-06.

1E-02 / E-02 **ELECTRICAL PLAN**
SCALE: 1"=40'

NOTES:

1. WORK OUTSIDE OF PROJECT LIMIT SHALL BE PART OF PHASE I WHEN SO NOTED.
2. FOR CONDUIT & CABLE SIZES, SEE SINGLE LINE DIAGRAM ON SHEET E-09 FOR CRANE POWER & SHEET E-11 FOR AMP POWER.



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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

ELECTRICAL PLAN

THE PORT OF LOS ANGELES
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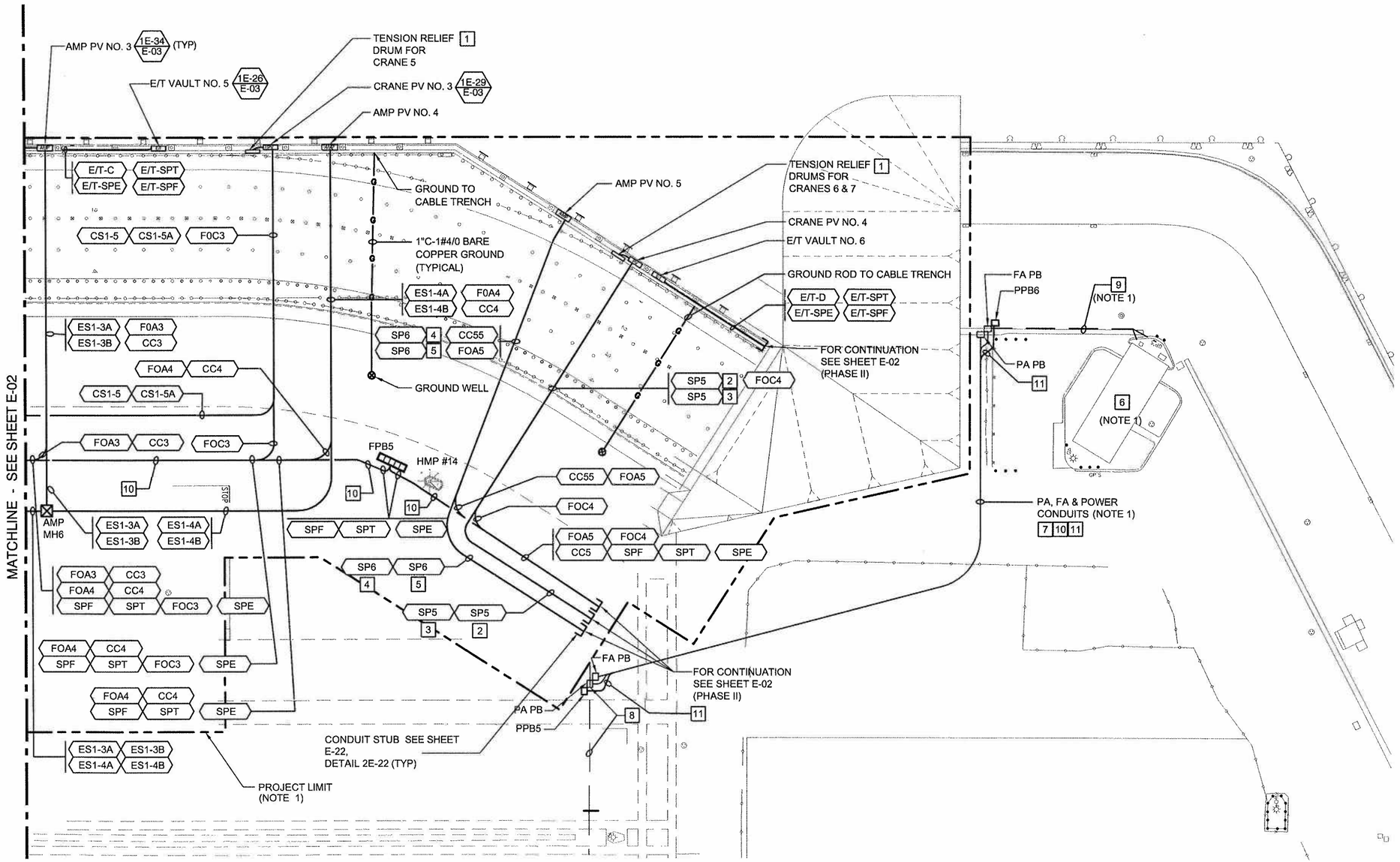
DRAWING NUMBER
E-02



COMM & 480V POWER CABLE SCHEDULE

SYMBOL	DESCRIPTION
FOA3	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR AMP PV NO. 3
FOA4	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR AMP PV NO. 4
FOA5	2" CO FOR AMP PV NO. 5 FO, CABLES TO BE INSTALLED UNDER PHASE II
FOC3	2"C (FO) WITH 4 PAIRS MULTI-MODE FOR CRANE PV NO. 3
FOC4	2" CO FOR CRANE PV NO. 4 POWER, CABLES TO BE INSTALLED UNDER PHASE II
CC3 AMP PV NO. 3	2"C - 2#10, GROUND CHECK TO AMP CONNECTOR, 2#10, EMERGENCY PUSH BUTTON, 2#10, GROUND
CC4 AMP PV NO. 4	2"C - 2#10, GROUND CHECK TO AMP CONNECTOR, 2#10, EMERGENCY PUSH BUTTON, 2#10, GROUND
CC5 AMP PV NO. 5	2" CO FOR AMP PV NO. 5 CONTROL, CABLES TO BE INSTALLED UNDER PHASE II
E/T	E/T VAULT 480V POWER
E/T-C	2"C - 3#6, E/T VAULT #5, CKT. H1A-13,15,17 2#8, XFMR E/T VAULT #5, CKT. H1A-23,25 1#8 GROUND
E/T-D	2" CO FOR E/T VAULT #6, CABLE TO BE INSTALLED UNDER PHASE II
E/T-SPE	2" CO (E) ELECTRICAL
E/T-SPF	2" CO (FO) FIBER OPTIC
E/T-SPT	2" CO (T) TELEPHONE
SPE	2" CO (E) ELECTRICAL
SPF	2" CO (FO) FIBER OPTIC
SPT	2" CO (T) TELEPHONE
SP5	5" CO FOR CRANE POWER
SP6	6" CO FOR AMP POWER

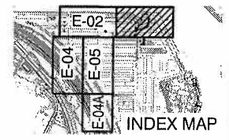
KEY NOTES:

1. TENSION RELIEF DRUM PIT TO BE DESIGNED FOR (2) CRANES.
2. 5" CO FOR CRANE #6 POWER & 2" CO (FO), CABLES TO BE INSTALLED UNDER PHASE II
3. 5" CO FOR CRANE #7 POWER & 2" CO (FO), CABLES TO BE INSTALLED UNDER PHASE II
4. 6" CO FOR AMP PV NO. 5 RECEPTACLE 5A POWER & 2" CO (FO), CABLES TO BE INSTALLED UNDER PHASE II
5. 6" CO FOR AMP PV NO. 5 RECEPTACLE 5B POWER & 2" CO (FO), CABLES TO BE INSTALLED UNDER PHASE II
6. (E) MARINE OPERATION BLDG.
7. ROUTE (N) PA & FA CABLES UP TO SOURCE & RE-FEED (E) MARINE OPERATION BLDG.
8. DISCONNECT & REMOVE (E) CABLES UP TO SOURCE. INTERCEPT (E) CONDUIT WITH (N) PULL BOX AS SHOWN. INSTALL NEW CABLES AS REQUIRED.
9. (E) CONDUIT TO ROUTE NEW CABLES AS REQUIRED TO RE-FEED (E) MARINE OPERATION BLDG.
10. DUCTBANK IN JOINT TRENCH WITH OTHER CONDUITS AS SHOWN ON SHEETS E-02 & E-03. PROVIDE CONSOLIDATED DUCTBANK PER 3E23.
11. INTERCEPT AND SPLICE NEW WIRES FROM NEW PPB5 VIA NEW 5" CONDUIT UP TO NEW PPB6.

1E-03 / E-03 ELECTRICAL PLAN
SCALE: 1"=40'

NOTES:

1. WORK OUTSIDE OF PROJECT LIMIT SHALL BE PART OF PHASE I.
2. FOR CONDUIT & CABLE SIZES, SEE SINGLE LINE DIAGRAM ON SHEET E-09 FOR CRANE POWER & SHEET E-11 FOR AMP POWER.



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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

ELECTRICAL PLAN

THE PORT OF LOS ANGELES
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DRAWING NUMBER
E-03

KEY NOTES:

1. 34.5 KV SERVICES FED FROM ALTERNATE POWER SOURCES TO PROVIDE POWER TO SS NO. 1 (TBD BY DWP)
2. SEE SHEET E-07 FOR CONDUIT SIZES.

(E) DWP POWER POLE #

1 DWP UNDERGROUND SERVICE CONDUIT 1-6"CO

(E) DWP POWER POLE #

1 DWP UNDERGROUND SERVICE CONDUIT 1-6"CO

(E) DWP POWER POLE #

DWP DWP DWP SP6
UNDER RAILROAD TRACK 1 2

DWP DWP DWP SP6
UNDER RAILROAD TRACK 1 2

MH1
MH2
MH3

JOHN S GIBSON BLVD

ST-3 TRK
LT-1 TRK
LT-5 TRK
LT-2 TRK
LT-3 TRK
LT-4 TRK

70' CC
75' CC

U P RR

CONC
PIPE CORR
PIPELINE CORRIDOR
ROCKS
ASPH
STOP
SP PB
FENCE

MATCHLINE - SEE SHEET E-02

MATCHLINE - SEE SHEET E-05

1E-04 / E-04 ELECTRICAL PLAN
SCALE: 1"=40'

E-02 E-03 E-04A E-05
INDEX MAP

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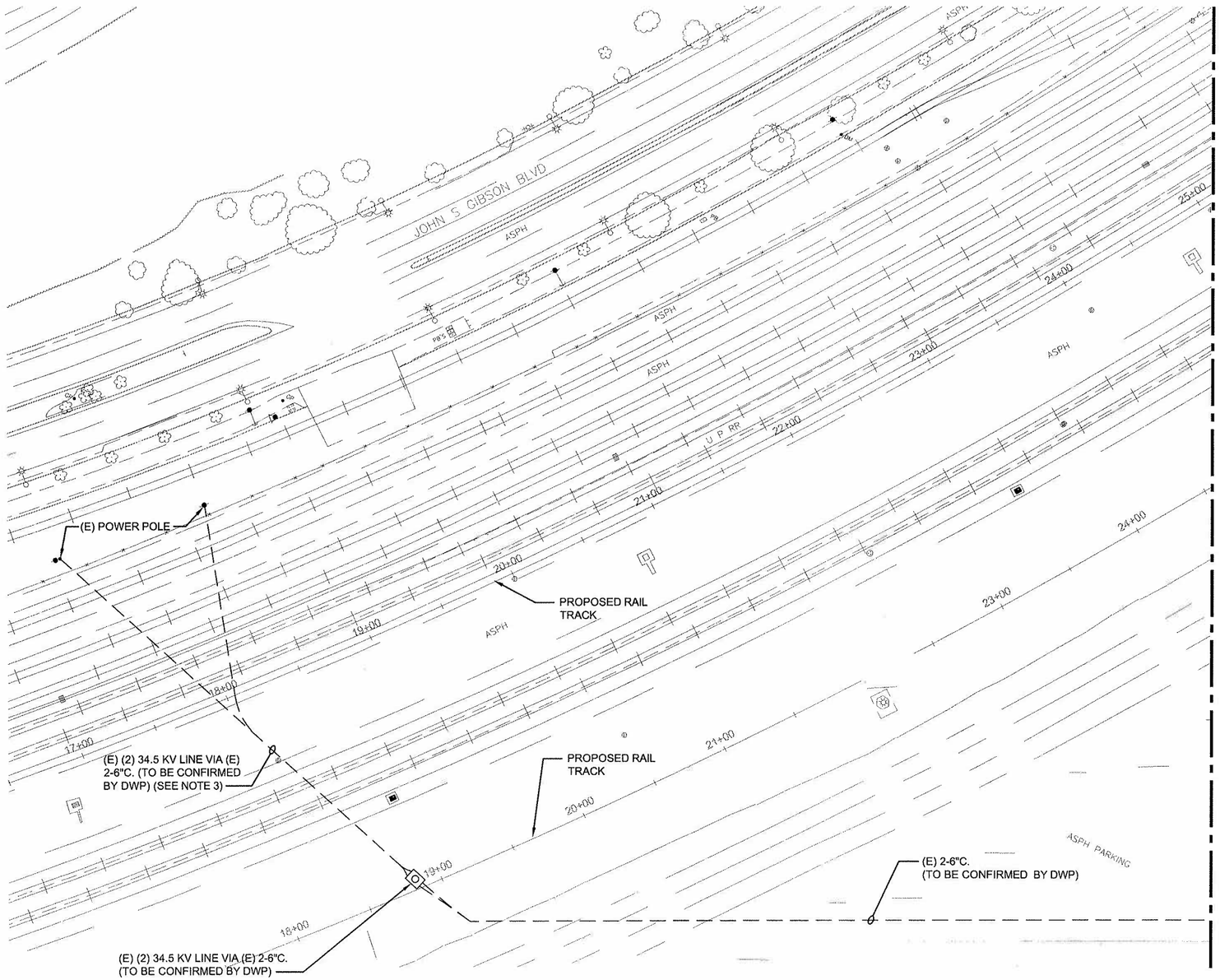
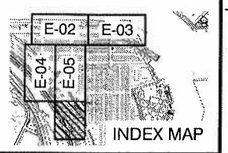
E-04



NOTES:

1. SEE SHEET E-01 FOR GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. WORK DEPICTED ON THIS SHEET SHALL BE PART OF PHASE I.
3. DWP TO VERIFY AVAILABILITY OF SPARE CONDUITS THAT MAY BE USABLE FOR THE THIRD 34.5 KV LINE. THIS 3RD LINE WILL BE PROVIDED BY DWP.
4. DWP TO VERIFY ADEQUACY OF EXISTING 34.5 KV LINE FOR NEW ESTIMATED LOAD.

1E-04A / E-04A ELECTRICAL PLAN
SCALE: 1"=40'



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DRAWING NUMBER
E-04A

MATCHLINE - SEE SHEET E-04

MATCHLINE - SEE SHEET E-04A

MATCHLINE - SEE SHEET E-02

1 5 DWP DWP DWP SP5
ALTERNATE #1

DWP MH1

DWP MH2

SUBSTATION "SS-NO. 1"
FOR ENLARGED PLAN,
SEE SHEETS E-13 & E-14

DWP DWP DWP 4

DWP MH3

SP5 SP5 SP5
SP5 SP5 SP5

PB-ERTG

SP4 SP4
SP4 SP4

CRANE MH1

AMP MH1

EPB2

CMH1

SPT SPF
SPT SPF

SPT SPF
SPT SPF 2
SR01 SP4

AS-1 AS-2
SP5 SP5

CS-1 CS-1 CS-1
CS-2 CS-2 CS-2

AS-1 AS-2
SP5 SP5
CS-1 CS-1 CS-1
CS-2 CS-2 CS-2

SP4 SP4
SR02 SR01

AS-1 SP5
CS-1 CS-1 CS-1

SP5
AS-1 SR01 SP4
CS-1 CS-1

AS-1 SP5

AS-2 SP5
CS-2 CS-2 CS-2 3

3 SR02 SP4

CONDUIT STUB FOR PHASE II
CONTRACT. SEE SHEET E-23,
DETAIL 2E-23

FOR CLARITY SEE SHEET E-06
FOR COMMUNICATION

2 SPT SPF
SPT SPF

CMH2 AMP MH2

AS-1 SP5

CRANE MH2

CS-1 CS-1 CS-1
SR01 SP4

SP5
AS-1 SR01 SP4
CS-1 CS-1 CS-1

DWP DWP DWP 4

(E) HV MH

4

(E) 2-6"C.
(TO BE CONFIRMED BY DWP)

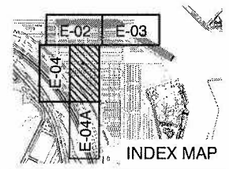
KEY NOTES:

1. CONDUITS AND PULL ROPE TO BE PROVIDED BY CONTRACTOR AND CABLES TO BE PROVIDED BY DWP.
2. (2) 2" CO TELEPHONE, (2) 2" CO FIBER OPTIC
3. PROVIDE CONDUIT ONLY ON PHASE I. ROUTE CABLES UNDER PHASE II.
4. DWP TO EXTEND (3) 34.5 KV LINE TO NEW SS NO. 1 VIA (E) MANHOLE.
5. ALTERNATE ROUTE OF NEW 34.5 KV SERVICES TO NEW SS NO. 1 (TBD BY DWP)

1E-05 / E-05 ELECTRICAL PLAN
SCALE: 1"=40'

NOTES:

1. SEE SHEETS E-07, E-08, E-11 & E-12 FOR FEEDER SCHEDULES.



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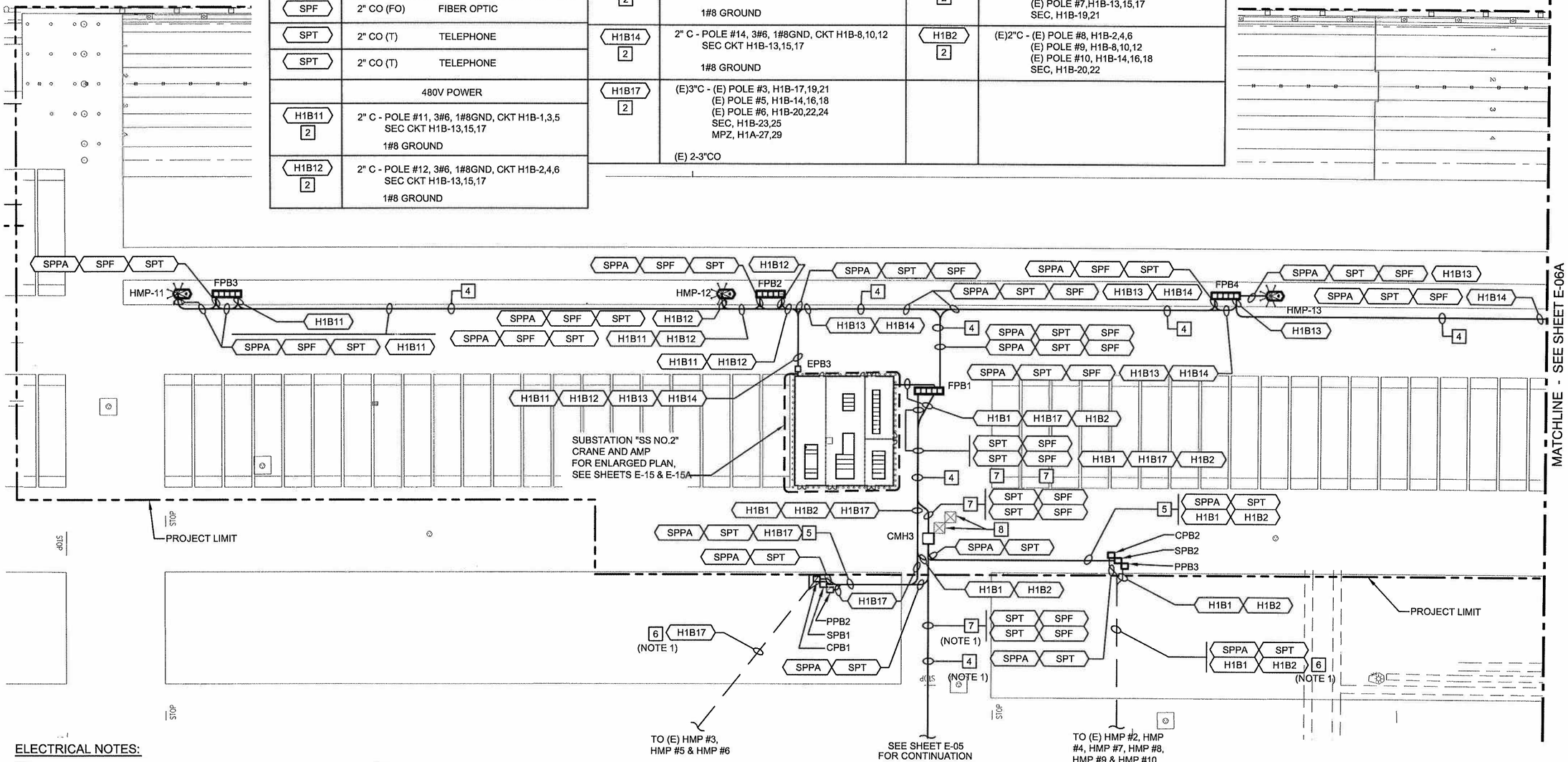
DRAWING NUMBER
E-05

COMM & 480V POWER CABLE SCHEDULE

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
SPPA	2" CO (PA) PAGING SYSTEM	H1B13 2	2" C - POLE #13, 3#6, 1#8GND, CKT H1B-7,9,11 SEC CKT H1B-13,15,17 1#8 GROUND	H1B1 2	(E)2"C - (E) POLE #2, H1B-1,3,5 (E) POLE #4, H1B-7,9,11 (E) POLE #7,H1B-13,15,17 SEC, H1B-19,21
SPF	2" CO (FO) FIBER OPTIC	H1B14 2	2" C - POLE #14, 3#6, 1#8GND, CKT H1B-8,10,12 SEC CKT H1B-13,15,17 1#8 GROUND	H1B2 2	(E)2"C - (E) POLE #8, H1B-2,4,6 (E) POLE #9, H1B-8,10,12 (E) POLE #10, H1B-14,16,18 SEC, H1B-20,22
SPT	2" CO (T) TELEPHONE	H1B17 2	(E)3"C - (E) POLE #3, H1B-17,19,21 (E) POLE #5, H1B-14,16,18 (E) POLE #6, H1B-20,22,24 SEC, H1B-23,25 MPZ, H1A-27,29 (E) 2-3"CO		
SPT	2" CO (T) TELEPHONE				
	480V POWER				
H1B11 2	2" C - POLE #11, 3#6, 1#8GND, CKT H1B-1,3,5 SEC CKT H1B-13,15,17 1#8 GROUND				
H1B12 2	2" C - POLE #12, 3#6, 1#8GND, CKT H1B-2,4,6 SEC CKT H1B-13,15,17 1#8 GROUND				



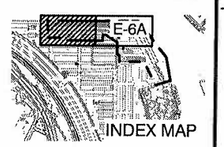
ELECTRICAL NOTES:

1. FOR CONDUIT & CABLE SIZES. SEE SINGLE LINE DIAGRAM ON SHEET E-12A.
2. SEE SHEET E-32 FOR PANEL SCHEDULE.
3. TELEPHONE PULL BOX
4. DUCTBANK IN JOINT TRENCH WITH OTHER CONDUITS AS SHOWN ON SHEETS E-02, E-03 & E-05. PROVIDE CONSOLIDATED DUCTBANK PER 3E23.
5. EXTEND CONDUIT & WIRES TO NEW PULL BOX.
6. ROUTE (N) WIRES TO (E) CONDUIT ON (E) HIGH MAST POLE AS NOTED.
7. (2) 2" CO TELEPHONE, (2) 2" CO FIBER OPTIC
8. COMMUNICATION PULLBOX SHOWN ON SHEET E-02.

1E-06 / E-06 ELECTRICAL PLAN
SCALE: 1"=40'

NOTES:

1. WORK OUTSIDE OF PROJECT LIMIT SHALL BE PART OF PHASE I.



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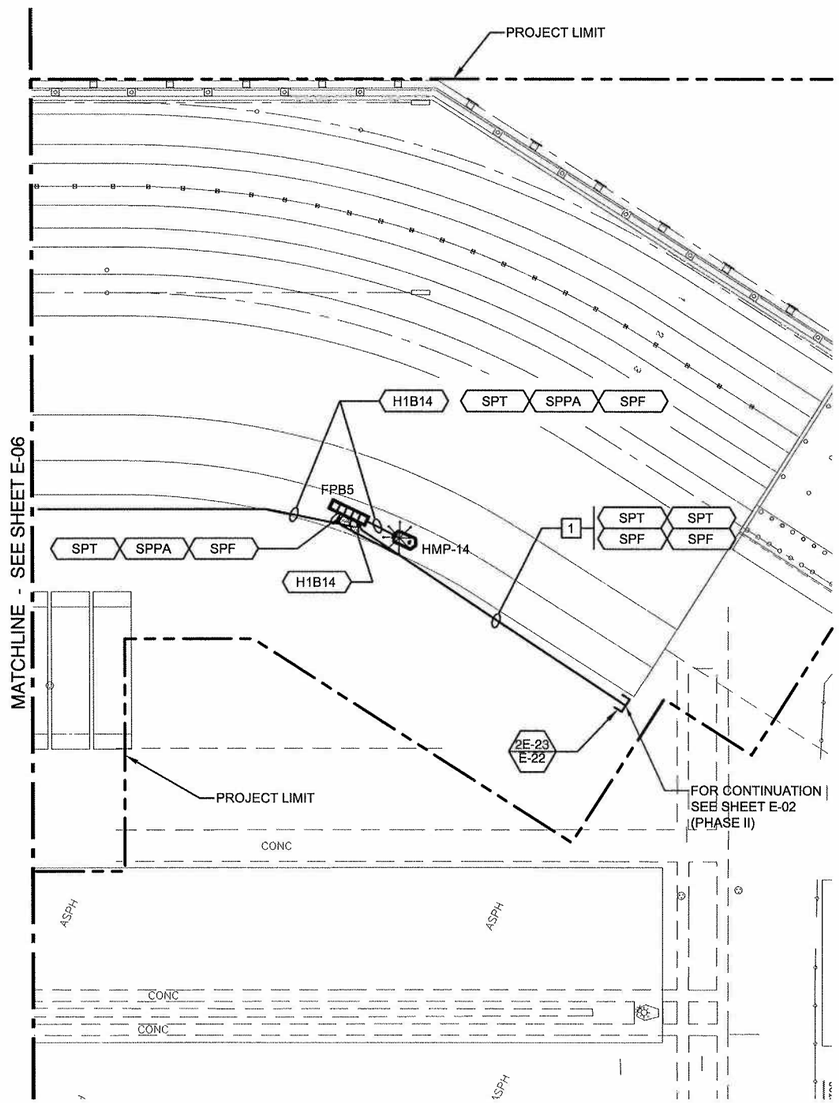
DRAWING NUMBER E-06



ELECTRICAL NOTES:

1 (2) 2" CO TELEPHONE, (2) 2" CO FIBER OPTIC

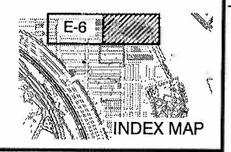
NOTES:

1. SEE SHEET E-32 FOR PANEL SCHEDULE.
2. WORK OUTSIDE OF LIMITS OF WORK SHALL BE PART OF PHASE I WHEN SO NOTED.

COMM & 480V POWER CABLE SCHEDULE

SYMBOL	DESCRIPTION	
SPPA	2" CO (PA)	PAGING SYSTEM
SPF	2" CO (FO)	FIBER OPTIC
SPT	2" CO (T)	TELEPHONE
	480V POWER	
H1B14 (NOTE 1)	2" C - POLE #14, 3#6, 1#8GND, CKT H1B-8,10,12 SEC CKT H1B-13,15,17 1#8 GROUND	

1E-06
E-06
ELECTRICAL PLAN
SCALE: 1"=40'



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DRAWING NUMBER
E-06A

FEEDER SCHEDULE:

CKT NO	Load/Circuit	Amps	Volts	Par Fdr	FEEDER Qty	Wire	Qty	Gnd	Conduit	L Ft	% VD
DWP	SERVICE POLE TO DWP XFMR	-	-	-	CONDUIT ONLY				(3) 6" C	800	-
AMS-1	AMP SWITCHGEAR AMS-1	115	34,500	1	3	# 1/0	1	# 1/0	5" C	30	0.00
CMS1-1A	CRANE SWITCHGEAR CMS1-1A	1,041	4,160	3	3	# 500	1	# 500	5" C	30	0.02
CMS1-1B	CRANE SWITCHGEAR CMS1-1B	1,041	4,160	3	3	# 500	1	# 500	5" C	30	0.02
BRL-1	BLDG,REEFER,LTG SWGR "BRL-1"	416.4	4,160	1	3	# 750	1	# 750	5" C	30	0.02
ERTG1-1A	ERTG1 SWITCHGEAR ERTG1-1A	CONDUIT ONLY							5" C	30	-
ERTG1-1B	ERTG1 SWITCHGEAR ERTG1-1B	CONDUIT ONLY							5" C	30	-

FEEDER SCHEDULE NOTES:

1. DEPICTION OF PARALLEL FEEDERS ON PLANS & SECTIONS SHALL BE PER DUCTBANK CALL OUT NOMENCLATURE ON SHEET E-01.

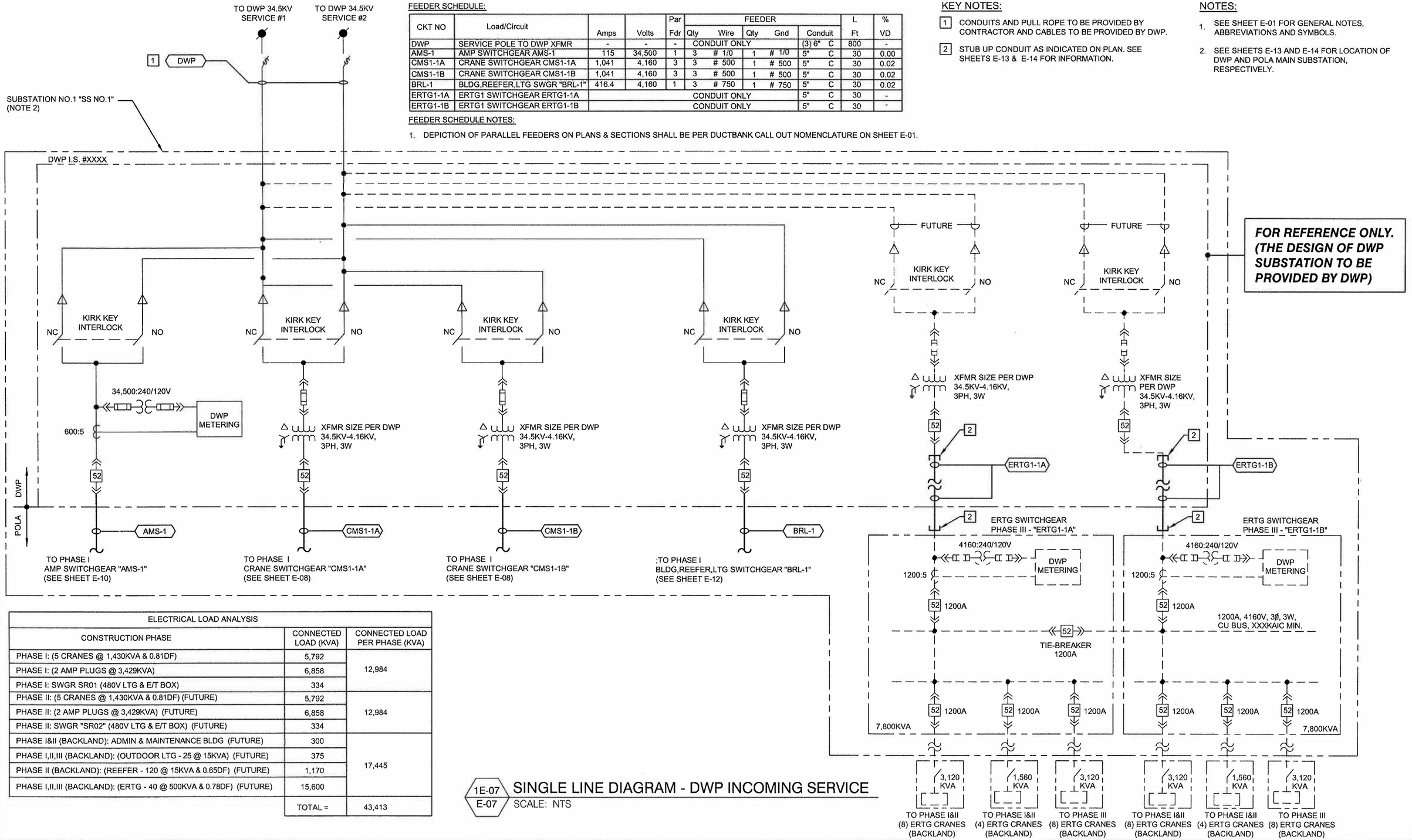
KEY NOTES:

1 CONDUITS AND PULL ROPE TO BE PROVIDED BY CONTRACTOR AND CABLES TO BE PROVIDED BY DWP.

2 STUB UP CONDUIT AS INDICATED ON PLAN. SEE SHEETS E-13 & E-14 FOR INFORMATION.

NOTES:

1. SEE SHEET E-01 FOR GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. SEE SHEETS E-13 AND E-14 FOR LOCATION OF DWP AND POLA MAIN SUBSTATION, RESPECTIVELY.



ELECTRICAL LOAD ANALYSIS		
CONSTRUCTION PHASE	CONNECTED LOAD (KVA)	CONNECTED LOAD PER PHASE (KVA)
PHASE I: (5 CRANES @ 1,430KVA & 0.81DF)	5,792	12,984
PHASE I: (2 AMP PLUGS @ 3,429KVA)	6,858	
PHASE I: SWGR SR01 (480V LTG & E/T BOX)	334	
PHASE II: (5 CRANES @ 1,430KVA & 0.81DF) (FUTURE)	5,792	12,984
PHASE II: (2 AMP PLUGS @ 3,429KVA) (FUTURE)	6,858	
PHASE II: SWGR "SR02" (480V LTG & E/T BOX) (FUTURE)	334	
PHASE I&II (BACKLAND): ADMIN & MAINTENANCE BLDG (FUTURE)	300	17,445
PHASE I,II,III (BACKLAND): (OUTDOOR LTG - 25 @ 15KVA) (FUTURE)	375	
PHASE II (BACKLAND): (REEFER - 120 @ 15KVA & 0.65DF) (FUTURE)	1,170	
PHASE I,II,III (BACKLAND): (ERTG - 40 @ 500KVA & 0.78DF) (FUTURE)	15,600	
	TOTAL =	43,413

1E-07 / E-07 SINGLE LINE DIAGRAM - DWP INCOMING SERVICE

SCALE: NTS

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

PRELIMINARY
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PLANS PREPARED BY:
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AECOM
www.aecom.com

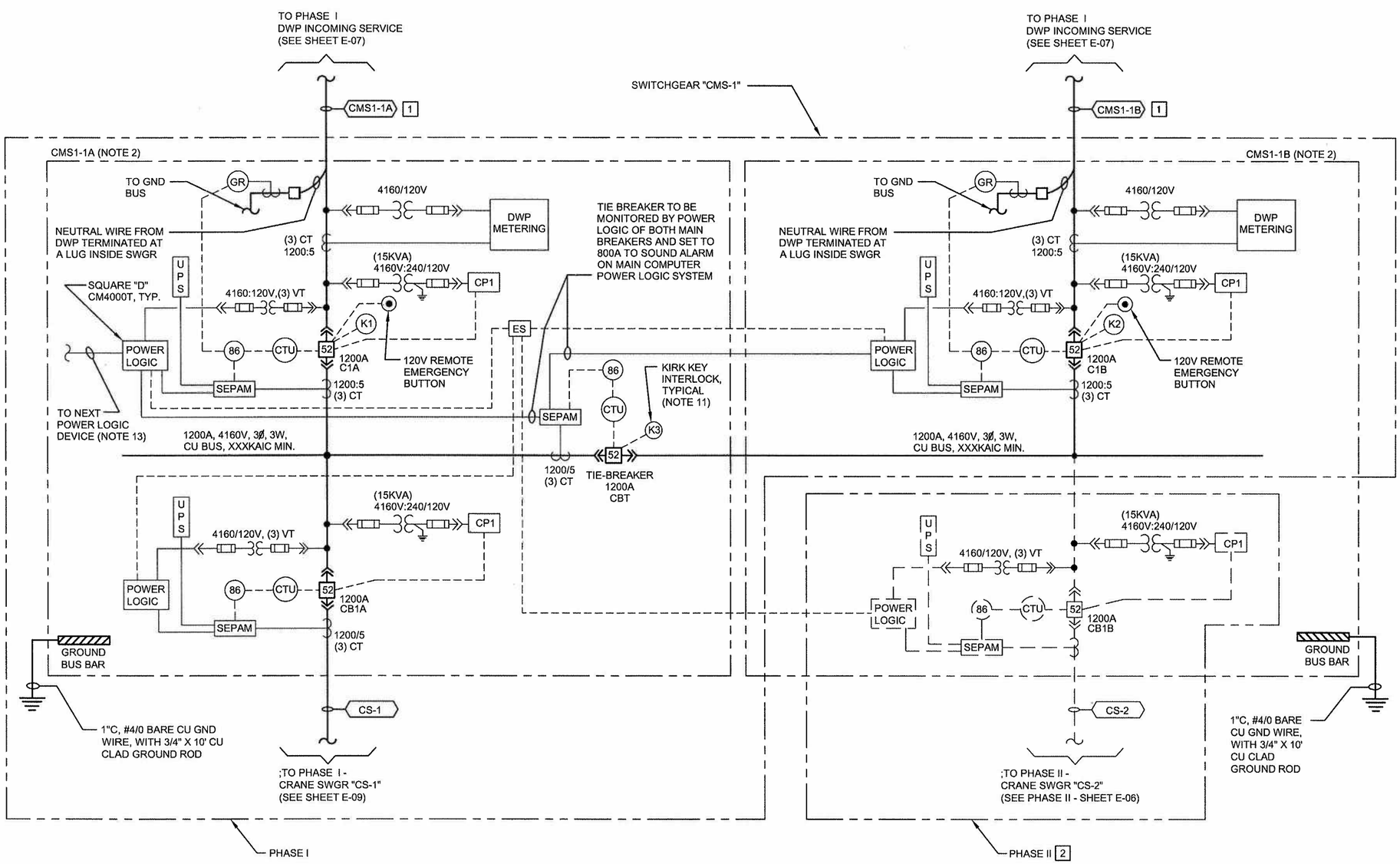
DATE: OCTOBER 30, 2009
DRAWN: T. DIEP
CHECKED:
DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

SINGLE LINE DIAGRAM - DWP INCOMING SERVICE

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER E-07



NOTES:

1. SEE SHEET E-01 FOR GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. SEE SHEETS E-04, E-13 & E-14 FOR LOCATION OF DWP AND POLA MAIN SUBSTATION "SS N0. 1".
3. OVERCURRENT SETTING OF PROTECTIVE RELAYS SHALL BE PROVIDED BY SWITCHGEAR MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN THE SETTING DATA FROM THE MANUFACTURER AND SUBMIT TO POLA.
4. SWITCHGEAR MANUFACTURER SHALL PERFORM SHORT CIRCUIT AND COORDINATION STUDY OF ALL OVERCURRENT PROTECTION DEVICES AND SUBMITTED TO THE ENGINEER FOR APPROVAL. MANUFACTURER SHALL SET ALL OVERCURRENT DEVICES PER COORDINATION STUDY & FIELD TESTED. CONTRACTOR SHALL SUBMIT THE APPROVED FIELD TEST RESULTS TO POLA.
5. CONDUCTORS SHALL BE AWG AND COPPER.
6. SECONDARY OF ALL CURRENT TRANSFORMERS AND ALL POTENTIAL TRANSFORMERS SHALL BE GROUNDED. ALL VOLTAGE TRANSFORMERS SHALL BE PROPERLY FUSED ON BOTH PRIMARY AND SECONDARY PER CODE.
7. ALL 5KV CABLES SHALL BE SINGLE CONDUCTOR, SHIELDED, COPPER WITH EPR INSULATION, PVC JACKET WITH 133% INSULATION LEVEL CABLES SHALL BE TYPE MV-105. CABLES SAHLL BE SUITABLE FOR WET AND DRY LOCATIONS. CABLE SHALL BE UL LISTED. SEE SPECSFOR HIGH POTENTIAL TEST AND ADDITIONAL REQUIREMENTS
   - O.D. OF 1000 MCM SHIELDED: 1.63" Z/1000' = 0.016 + 0.034
   - O.D. OF 500 MCM NON-SHIELDED: 1.29"
8. CONDUCTORS RATED 600V OR LESS SHALL BE HOUSED IN SEPARATE ENCLOSURE FROM CONDUCTORS RATED ABOVE 600V.
9. DWP METERING SECTION INCLUDING FUSES, PT, CT AND METER ARE PER DWP ELECTRIC SERVICE REQUIREMENTS. CONTACT MR. DONALD ALECXIH, DWP CUSTOMER STATION ENGINEER AT (213) 367-8019.
10. SEPAM RELAYS SHALL BE "SQUARE D, CUTLER HAMMER, GE ZENITH OR APPROVED EQUAL. RELAYS SHALL BE POWER LOGIC DIGITAL RELAYS WITH DATA COMMUNICATIONS WITH CAPABILITY TO COMMUNICATE WITH "SQUARE D" POWER LOGIC SYSTEM OF SMS 3000, AND BE CONSISTENT WITH OTHER POWER LOGIC DEVICES THROUGHOUT THE PORT.
11. PROVIDE TOTAL OF 3 KIRK KEY INTERLOCK WITH ONLY TWO KEYS FOR BOTH CMS1-1A AND CMS1-1B. FURNISH A SCHEME WITH THE SHOP DRAWINGS FOR APPROVAL.
12. CONNECT ALL "SQUARE D" METERING DEVICES TOGETHER WITH RS-485 WIRES, BELDEN 8723.
13. INSTALL RS-485 TWISTED PAIR BETWEEN MAIN BREAKER AND INDIVIDUAL POWER LOGIC WITHIN THE SAME SWITCHGEAR IN A DAISY CHAIN MANNER PER MANUFACTURER'S RECOMMENDATION.
14. ALL MAIN 52 BREAKERS SHALL HAVE CONTROL POWER OF 120V, CAPACITOR TRIP UNIT, AND UPS POWER.

1E-08 / E-08 SINGLE LINE DIAGRAM MAIN SWITCHGEAR "CMS-1" - CRANE

SCALE: NTS

FEEDER SCHEDULE

CKT NO	Load/Circuit	Amps	Volts	Par	FEEDER					L	%
				Fdr	Qty	Wire	Qty	Gnd	Conduit	Ft	VD
CS-1	CRANE SWITCHGEAR CS-1	1,041	4,160	3	3	# 500	1	# 500	5" C	740	0.50
CS-2	CRANE SWITCHGEAR CS-2	CONDUIT ONLY							(3) 5" C	740	

FEEDER SCHEDULE NOTES:

1. DEPICTION OF PARALLEL FEEDERS ON PLANS & SECTIONS SHALL BE PER DUCTBANK CALL OUT NOMENCLATURE ON SHEET E-01.

KEY NOTES:

1 SEE SHEET E-07 FOR FEEDER SCHEDULE.

2 THE CUBICLE FOR PHASE II SHALL BE PROVIDED WITH A PROVISION TO INCLUDE BUS BAR ONLY.

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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DESIGNED:
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KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

SINGLE LINE DIAGRAM MAIN SWITCHGEAR "CMS-1" - CRANE

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

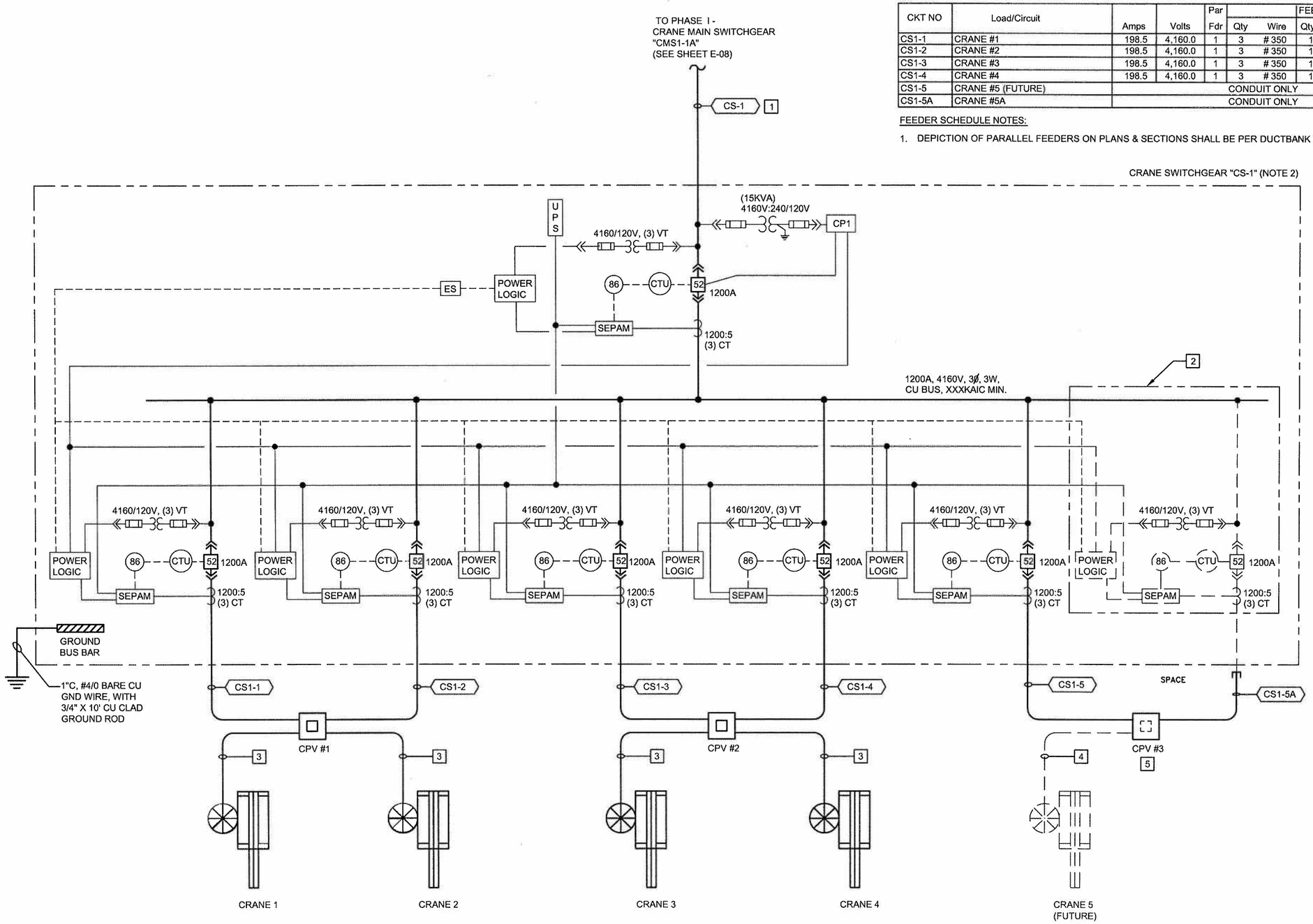
DRAWING NUMBER
E-08

FEEDER SCHEDULE:

CKT NO	Load/Circuit	Amps	Volts	Par Fdr	FEEDER Qty	Wire	Qty	Gnd	Conduit	L Ft	% VD
CS1-1	CRANE #1	198.5	4,160.0	1	3	# 350	1	# 3/0	5" C	2300	1.08
CS1-2	CRANE #2	198.5	4,160.0	1	3	# 350	1	# 3/0	5" C	2300	1.08
CS1-3	CRANE #3	198.5	4,160.0	1	3	# 350	1	# 3/0	5" C	2300	1.08
CS1-4	CRANE #4	198.5	4,160.0	1	3	# 350	1	# 3/0	5" C	2300	1.08
CS1-5	CRANE #5 (FUTURE)	CONDUIT ONLY							5" C	2300	
CS1-5A	CRANE #5A	CONDUIT ONLY							5" C	2300	

FEEDER SCHEDULE NOTES:

1. DEPICTION OF PARALLEL FEEDERS ON PLANS & SECTIONS SHALL BE PER DUCTBANK CALL OUT NOMENCLATURE ON SHEET E-01.



NOTES:

1. SEE SHEET E-01 FOR GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. SEE SHEET E-15 FOR LOCATION OF CRANE SWITCHGEAR "CS-1".
3. OVERCURRENT SETTING OF PROTECTIVE RELAYS SHALL BE PROVIDED BY SWITCHGEAR MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN THE SETTING DATA FROM THE MANUFACTURER AND SUBMIT TO THE POLA.
4. SWITCHGEAR MANUFACTURER SHALL PERFORM SHORT CIRCUIT AND COORDINATION STUDY OF ALL OVERCURRENT PROTECTION DEVICES AND SUBMITTED TO THE ENGINEER FOR APPROVAL. MANUFACTURER SHALL SET ALL OVERCURRENT DEVICES PER COORDINATION STUDY & FIELD TESTED. CONTRACTOR SHALL SUBMIT THE APPROVED FIELD TEST RESULTS TO POLA.
5. CONDUCTORS SHALL BE AWG AND COPPER.
6. SECONDARY OF ALL CURRENT TRANSFORMERS AND ALL VOLTAGE TRANSFORMERS SHALL BE GROUNDED. ALL VOLTAGE TRANSFORMERS SHALL BE PROPERLY FUSED ON BOTH PRIMARY AND SECONDARY PER CODE.
7. ALL 5KV CABLES SHALL BE SINGLE CONDUCTOR, SHIELDED, COPPER WITH EPR INSULATION, PVC JACKET WITH 133% INSULATION LEVEL CABLES SHALL BE TYPE MV-105. CABLES SHALL BE SUITABLE FOR WET AND DRY LOCATIONS. CABLES SHALL BE UL LISTED. SEE SPECS FOR HIGH POTENTIAL TEST AND ADDITIONAL REQUIREMENTS.
   - O.D. OF 1000 MCM SHIELDED: 1.63" Z/1000' = 0.016 + 0.034
   - O.D. OF 500 MCM NON-SHIELDED: 1.29"
   - O.D. OF 350 MCM SHIELDED: 1.13"
8. CONDUCTORS RATED 600V OR LESS SHALL BE HOUSED IN SEPARATE ENCLOSURE FROM CONDUCTORS RATED ABOVE 600V.
9. SEPAM AND POWER LOGIC SHALL BE "SQUARE D, CUTLER HAMMER, GE ZENITH OR APPROVED EQUAL. RELAYS SHALL BE POWER LOGIC DIGITAL RELAYS WITH DATA COMMUNICATIONS WITH CAPABILITY TO COMMUNICATE WITH "SQUARE D" POWER LOGIC SYSTEM OF SMS 3000, AND BE CONSISTENT WITH OTHER POWER LOGIC DEVICES THROUGHOUT THE PORT.
10. INSTALL RS-485 TWISTED PAIR BETWEEN MAIN BREAKER AND INDIVIDUAL POWER LOGIC WITHIN THE SAME SWITCHGEAR IN A DAISY CHAIN MANNER PER MANUFACTURER'S RECOMMENDATION.
11. ALL MAIN 52 BREAKERS SHALL HAVE CONTROL POWER OF 120V, CAPACITOR TRIP UNIT, AND UPS POWER.

KEY NOTES:

1. SEE SHEET E-08 FOR FEEDER SCHEDULE.
2. THE CUBICLE FOR PHASE II SHALL BE PROVIDED WITH A PROVISION TO INCLUDE BUS BAR ONLY.
3. CRANE CABLES FURNISHED WITH CABLE MANAGEMENT SYSTEM ON CRANE.
4. FUTURE CRANE CABLES
5. CRANE POWER VAULT PIT ONLY.

1E-09 / E-09 SINGLE LINE DIAGRAM - CRANE SWITCHGEAR "CS-1"
SCALE: NTS

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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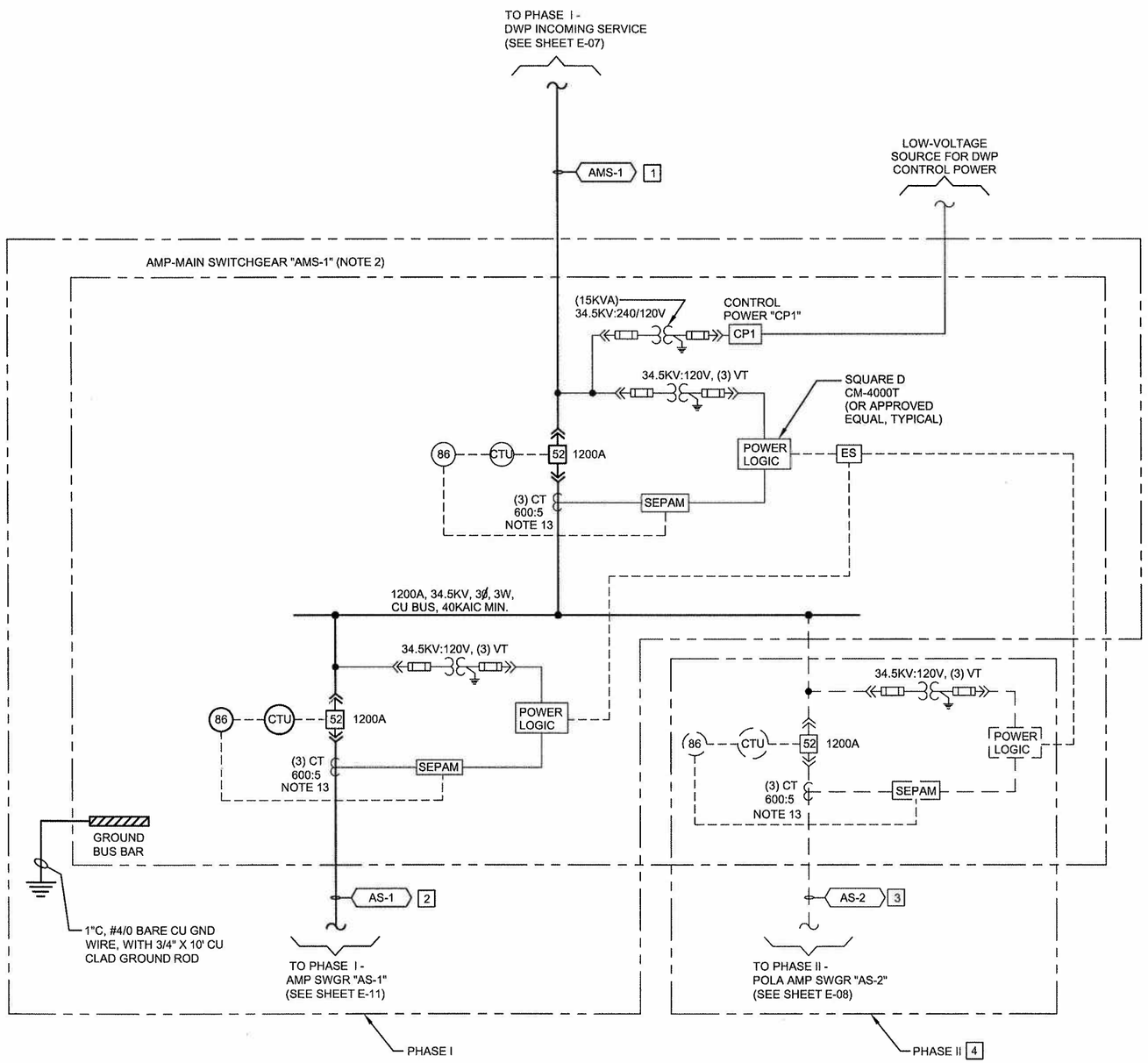
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

SINGLE LINE DIAGRAM - CRANE SWITCHGEAR "CS-1"

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
E-09



NOTES:

1. SEE SHEET E-01 FOR GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. SEE SHEET E-14 FOR LOCATION OF DWP AND POLA AMP MAIN SUBSTATION "SS NO. 1".
3. OVERCURRENT SETTING OF PROTECTIVE RELAYS SHALL BE PROVIDED BY SWITCHGEAR MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN THE SETTING DATA FROM THE MANUFACTURER AND SUBMIT TO POLA.
4. SHORT CIRCUIT STUDY, COORDINATION STUDY, AND SETTINGS OF REVERSE POWER RELAY 32P, AND EARTH FAULT 67 OF ALL OVERCURRENT PROTECTION DEVICES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL ALONG WITH THE SWITCHGEAR SUBMITTALS, BY SWITCHGEAR MANUFACTURER. CONTRACTOR SHALL SET ALL OVERCURRENT DEVICES PER MANUFACTURER COORDINATION STUDY & VERIFIED & FIELD TESTED BY A REGISTERED CALIFORNIA ELECTRICAL ENGINEER. CONTRACTOR SHALL SUBMIT THE APPROVED FIELD TEST RESULTS TO POLA.
5. CONDUCTORS SHALL BE AWG AND COPPER.
6. SECONDARY OF ALL CURRENT TRANSFORMERS AND ALL VOLTAGE TRANSFORMERS SHALL BE GROUNDED. ALL VLOTAGE TRANSFORMERS SHALL BE PROPERLY FUSED ON BOTH PRIMARY AND SECONDARY PER CODE.
7. ALL 34.5 KV BREAKERS SHALL BE 38 KV CLASS, 3 POLES, RATED FOR 40KA INTERRUPTING RATING AT K=1.0, 150KV BIL VOLTAGE RATING.
8. CONDUCTORS RATED 600V OR LESS SHALL BE HOUSED IN SEPARATE ENCLOSURE FROM CONDUCTORS RATED ABOVE 600V.
9. INSTALL RS-485 TWISTED PAIR BELDEN 8723 BETWEEN ALL INDIVIDUAL POWER LOGIC WITHIN SAME SWITCHGEAR, IN A DAISY CHAIN MANNER PER MANUFACTURER RECOMMENDATION.
10. ALL BREAKERS SHALL HAVE CONTROL POWER OF 120V AND PROVIDED WITH A CAPACITOR TRIP UNIT.
11. ALL SQUARE D SEPAM 1000 + S42 RELAYS SHALL BE DIGITAL RELAYS WITH DATA COMMUNICATIONS AND HAVE THE FOLLOWING FUNCTIONS: MAIN BREAKER 50/51, 50N, 67, 67N, 32P, 27, 47, AND 59 FEEDER BREAKER 50/51, 50N, 67, 67N, 32P, 27, 47, 59, 81L AND 81H, AND SHALL BE COMPATIBLE AND INTERCHANGEABLE WITH ALL OTHER SEPAM RELAYS THROUGHOUT THE PORT.
12. INSTALL 120V INPUT FROM VT'S TO EACH DIGITAL RELAY, FOR REVERSE POWER RELAY.
13. MULTI TAP CURRENT TRANSFORMER, RATED 600/5, AND SET AS INDICATED ON PLANS
14. 86 LOCK OUT RELAY, WHICH LOCKS BREAKER IN OPEN POSITION AFTER FAULT WILL REMAIN OPEN UNTIL RELAY IS MANUALLY RESET.
15. PROVIDE 120V INPUT POWER TO EACH POWER LOGIC DEVICES FROM 120V VT'S SECONDARY, WHICH IS DEDICATED TO POWER LOGIC SYSTEM.
16. SEPARATE DAISY CHAINS SHALL BE SUPPLIED FOR CM4000T AND SEPAM/DIGITAL RELAYS. EACH DAISY RS485 CHAIN TO TERMINATE AT SEPARATE PORTS ON EGX400. A 24VDC POWER SUPPLY SHALL BE REQUIRED FOR EGX400. AN ETHERNET HUB FOR USE WITH CAT 5 OR FIBER OPTIC CABLE AND POLA CONNECTION FOR COMMUNICATION. PHOENIX CONTACT OR ACOPIAN DEVICE CAN BE USED.
17. "SQUARE D" POWER LOGIC CIRCUIT MONITOR, MODEL NO CM4000T, WITH ALL BUILT-IN FEATURES, AND CVMT CAPABILITY TO DETECT AND CAPTURE HIGH VOLTAGE TRANSIENT, AND IOC44 AND IOX08 CARDS, WITH CAPABILITY TO COMMUNICATE WITH POWER LOGIC SYSTEM, AT TERMINAL AND AT POLA'S MAIN BUILDING. NO SUBSTITUTION. THE POWER LOGIC SHALL TAKE INPUTS FROM BREAKERS, 86 RELAY, VT'S, CPT'S, BATTERIES. PROVIDE ALL NECESSARY HARDWARES FOR POWER LOGIC SYSTEM TO BE WEB ENABLED.
18. INSTALL RS-485 TWISTED PAIR BELDEN 8723 BETWEEN ALL INDIVIDUAL SEPAM AND DIGITAL RELAYS WITHIN SAME SWITCHGEAR, IN A DAISY CHAIN MANNER PER MANUFACTURER RECOMMENDATION.
19. ONLY ONE (3) VT'S IN BUS CONNECTED AS A VOLTAGE INPUT TO ALL BREAKER DIGITAL RELAYS FOR REVERSE POWER.

KEY NOTES:

1. SEE SHEET E-07 FOR FEEDER SCHEDULE.
2. SEE SHEET E-11 FOR FEEDER SCHEDULE.
3. SEE PHASE II FEEDER SCHEDULE.
4. THE CUBICLE FOR PHASE II SHALL BE PROVIDED WITH A PROVISION TO INCLUDE BUS BAR ONLY.

1E-10 / E-10 SINGLE LINE DIAGRAM AMP MAIN SWITCHGEAR "AMS-1"
SCALE: NTS

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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PLANS PREPARED BY:
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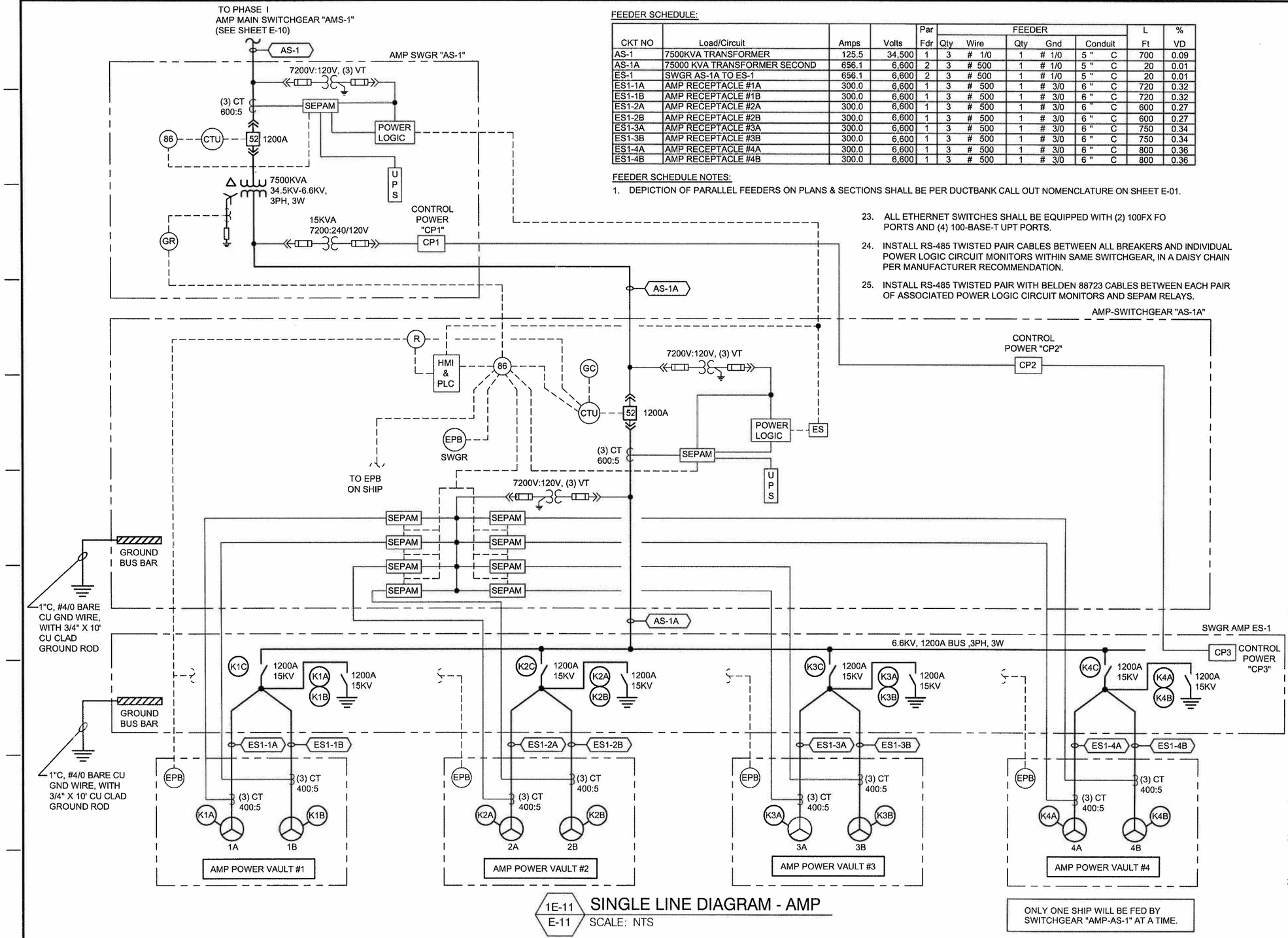
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

SINGLE LINE DIAGRAM AMP MAIN SWITCHGEAR "AMS-1"

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
E-10



1E-11
E-11

SINGLE LINE DIAGRAM - AMP

SCALE: NTS

FEEDER SCHEDULE:

CKT NO	Load/Circuit	Amps	Volts	Par Fdr	FEEDER Qty	Wire	Qty	Gnd	Conduit	L Ft	% VD
AS-1	7500KVA TRANSFORMER	125.5	34,500	1	3	# 1/0	1	# 1/0	5 " C	700	0.09
AS-1A	75000 KVA TRANSFORMER SECOND	656.1	6,600	2	3	# 500	1	# 1/0	5 " C	20	0.01
ES-1	SWGR AS-1A TO ES-1	656.1	6,600	2	3	# 500	1	# 1/0	5 " C	20	0.01
ES1-1A	AMP RECEPTACLE #1A	300.0	6,600	1	3	# 500	1	# 3/0	6 " C	720	0.32
ES1-1B	AMP RECEPTACLE #1B	300.0	6,600	1	3	# 500	1	# 3/0	6 " C	720	0.32
ES1-2A	AMP RECEPTACLE #2A	300.0	6,600	1	3	# 500	1	# 3/0	6 " C	600	0.27
ES1-2B	AMP RECEPTACLE #2B	300.0	6,600	1	3	# 500	1	# 3/0	6 " C	600	0.27
ES1-3A	AMP RECEPTACLE #3A	300.0	6,600	1	3	# 500	1	# 3/0	6 " C	750	0.34
ES1-3B	AMP RECEPTACLE #3B	300.0	6,600	1	3	# 500	1	# 3/0	6 " C	750	0.34
ES1-4A	AMP RECEPTACLE #4A	300.0	6,600	1	3	# 500	1	# 3/0	6 " C	800	0.36
ES1-4B	AMP RECEPTACLE #4B	300.0	6,600	1	3	# 500	1	# 3/0	6 " C	800	0.36

FEEDER SCHEDULE NOTES:

1. DEPICTION OF PARALLEL FEEDERS ON PLANS & SECTIONS SHALL BE PER DUCTBANK CALL OUT NOMENCLATURE ON SHEET E-01.

23. ALL ETHERNET SWITCHES SHALL BE EQUIPPED WITH (2) 100FX FO PORTS AND (4) 100-BASE-T UPT PORTS.
24. INSTALL RS-485 TWISTED PAIR CABLES BETWEEN ALL BREAKERS AND INDIVIDUAL POWER LOGIC CIRCUIT MONITORS WITHIN SAME SWITCHGEAR, IN A DAISY CHAIN PER MANUFACTURER RECOMMENDATION.
25. INSTALL RS-485 TWISTED PAIR WITH BELDEN 88723 CABLES BETWEEN EACH PAIR OF ASSOCIATED POWER LOGIC CIRCUIT MONITORS AND SEPAM RELAYS.

NOTES:

1. SEE SHEET E-01 FOR GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. SEE SHEET E-02 FOR LOCATION OF POLA AMP SUBSTATION.
3. OVERCURRENT SETTING OF PROTECTIVE RELAYS SHALL BE PROVIDED BY SWITCHGEAR MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN THE SETTING DATA FROM THE MANUFACTURER AND SUBMIT TO THE POLA.
4. SWITCHGEAR MANUFACTURER SHALL PERFORM SHORT CIRCUIT AND COORDINATION STUDY OF ALL OVERCURRENT PROTECTION DEVICES AND SUBMITTED TO THE ENGINEER FOR APPROVAL. MANUFACTURER SHALL SET ALL OVERCURRENT DEVICES PER COORDINATION STUDY & FIELD TESTED. CONTRACTOR SHALL SUBMIT THE APPROVED FIELD TEST RESULTS TO POLA.
5. ALL CURRENT TRANSFORMER SHOWN SHALL BE MULTI-TAP TYPE.
6. SECONDARY OF ALL CURRENT TRANSFORMERS AND ALL VOLTAGE TRANSFORMERS SHALL BE GROUNDED. ALL VOLTAGE TRANSFORMERS SHALL BE PROPERLY FUSED ON BOTH PRIMARY AND SECONDARY PER CODE.
7. CONDUCTORS RATED 600V OR LESS SHALL BE HOUSED IN SEPARATE ENCLOSURE FROM CONDUCTORS RATED ABOVE 600V.
8. ALL 52 MAIN BREAKERS SHALL HAVE CONTROL POWER OF 120V, CAPACITOR TRIP UNIT AND UPS POWER.
9. UL APPROVAL PENDING (UL FILE NO. 05CA05142) FOR AMP PLUG CONNECTORS/RECEPTACLES: 16,000 AIC RATING AT 7.2KV.
10. ALL AMP PLUG RECEPTACLES SHALL BE RATED FOR 350A, 7.2KV.
11. SHORE AND SHIP PLC'S SHALL MATCH. COORDINATE ALL INPUT/OUTPUT REQUIREMENTS WITH THE TENANT IN THE FIELD, AND TEST SYSTEM FOR SUCCESSFUL OPERATION.
12. ALL 15KV SWITCHES SHOWN SHALL HAVE THE FOLLOWING: OUTDOOR METAL-ENCLOSED LOAD INTERRUPTER SWITCHGEAR WITH HVL SWITCHES, RATED 15KV, NON-FUSED, UL LISTED. SWITCH IS 1200A, 38,000AIC MOMENTARY, FAULT CLOSE 38KA, AND 95KV BIL. PROVIDE PROVISIONS FOR PADLOCK AND SHATTER RESISTANT SAFETY GLASS INSPECTION WINDOW FOR VIEWING. OUTDOOR HVL IS "SQUARE D" CLASS 6040 OR APPROVED EQUAL.
13. ALL 15KV AND 35KV CABLES SHALL BE SINGLE CONDUCTOR, SHIELDED, COPPER WITH EPR-I INSULATION, PVC JACKET WITH 133% INSULATION LEVEL. CABLES SHALL BE TYPE MV-105. CABLES SHALL BE SUITABLE FOR WET & DRY LOCATIONS. CABLES SHALL BE UL LISTED. SEE SPECS FOR HIGH POTENTIAL TEST AND ADDITIONAL REQUIREMENTS.
14. MANUFACTURER SHALL CONDUCT AN OVERALL POWER FLOW ANALYSIS BETWEEN SHIP AND SHORE SYSTEM TO INDICATE VALUE OF REVERSE POWER AND REVERSE EARTH FAULT, POWER DISTURBANCES AND STABILITY.
15. SEE SPEC FOR GROUNDING FIELD TESTS. GROUNDING FIELD TESTS SHALL BE DONE WHEN AMP SHIP IS PRESENT AND SHALL INCLUDE THE SHIP AS PART OF THE GROUNDING TEST.
16. FOR SEPAM 1000 + S42 RELAYS SHALL BE POWER LOGIC DIGITAL RELAYS WITH DATA COMMUNICATIONS AND HAVE THE FOLLOWING FUNCTIONS: MAIN BREAKER 50/51, 50N, 67, 67N, 32P, 27, 47, 47; AND 59 FEEDER BREAKER 50/51, 50N, 67, 67N, 32P, 27, 47, 59, 81L AND 81H.
17. FOR SEPAM RELAYS MONITORING THE SHIP'S FAULT CURRENT CONTRIBUTION, THE 67 FUNCTION SHALL BE SET TO TRIP WHEN THE SHIP'S CONTRIBUTION EXCEEDS 180A.
18. ALL POWER LOGIC CIRCUIT MONITORS SHALL BE "SQUARE D" MODEL CM-4000T OR APPROVED EQUAL.
19. ALL 34.5KV BREAKERS SHALL BE 38KV CLASS, 3 POLES, RATED FOR 40KA INTERRUPTING RATING AT K=1.0, 150KV BIL VOLTAGE RATING.
20. 86 LOCK-OUT RELAYS SHALL LOCK ASSOCIATED BREAKERS IN OPEN POSITION AFTER A FAULT WILL REMAIN OPEN UNTIL RELAY IS MANUALLY RESET.
21. IF PERSONNEL ATTEMPTS TO OPEN THE AMP'S CONNECTOR HANDLE AT LOAD, THE CONNECTOR'S GS PINS SHALL PROVIDE DISENGAGE FIRST, CAUSING THE CONTINUITY CHECK RELAY TO TRIP THE ASSOCIATED 6.6KV FEEDER BREAKER.
22. THE EMERGENCY PUSH BUTTONS THAT ARE LOCATED INSIDE THE AMP VAULTS AND ON THE SHIPS SHALL PROVIDE PERSONNEL A MEANS TO SHUT DOWN THE ASSOCIATED 6.6KV FEEDER BREAKER DURING EMERGENCY CONDITIONS.

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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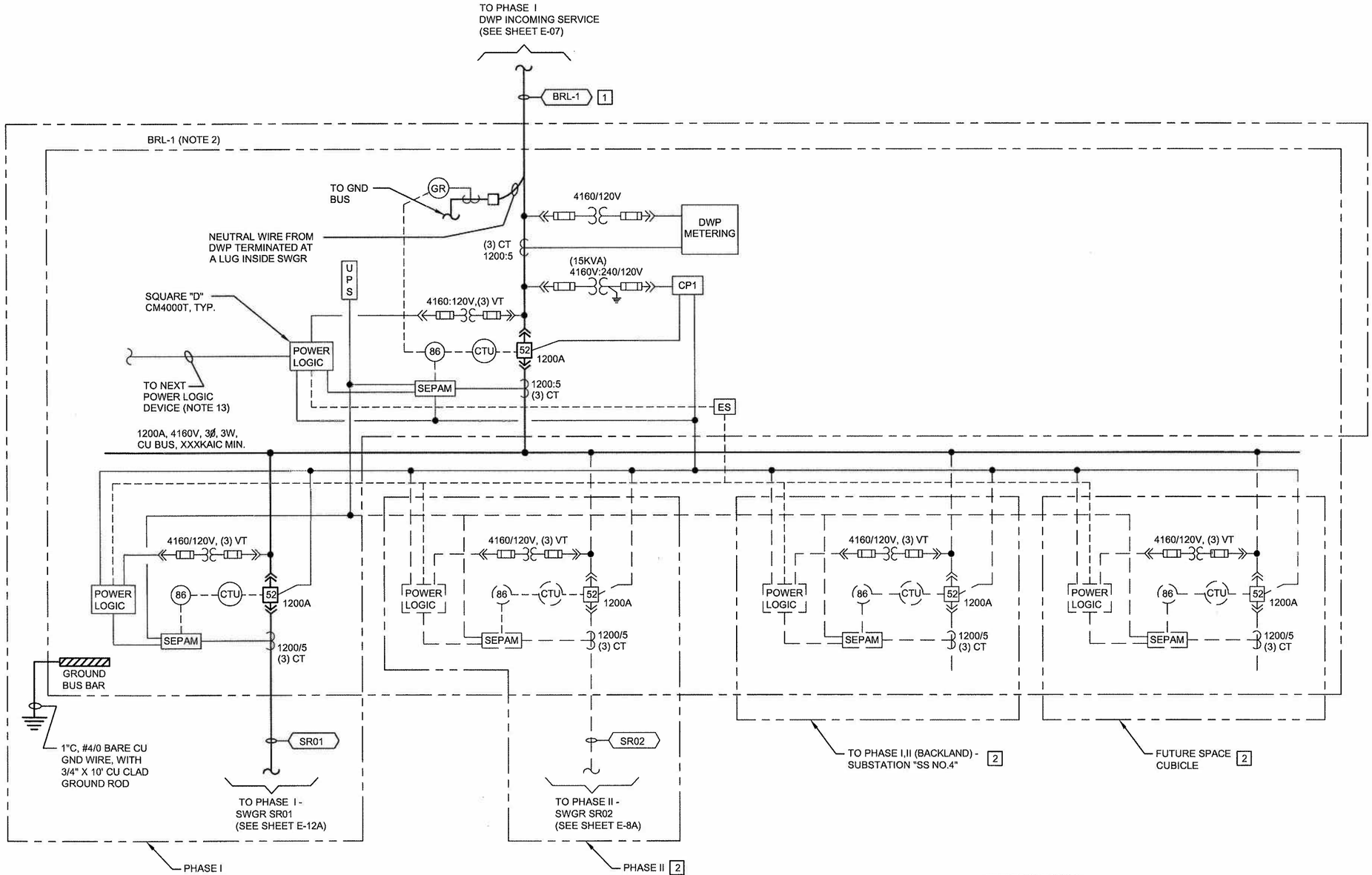
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

SINGLE LINE DIAGRAM - AMP

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
E-11



NOTES:

1. SEE SHEET E-01 FOR GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. SEE SHEET E-14 FOR ENLARGED PLAN OF BRL-1 SWITCHGEAR.
3. OVERCURRENT SETTING OF PROTECTIVE RELAYS SHALL BE PROVIDED BY SWITCHGEAR MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN THE SETTING DATA FROM THE MANUFACTURER AND SUBMIT TO POLA.
4. SWITCHGEAR MANUFACTURER SHALL PERFORM SHORT CIRCUIT AND COORDINATION STUDY OF ALL OVERCURRENT PROTECTION DEVICES AND SUBMITTED TO THE ENGINEER FOR APPROVAL. MANUFACTURER SHALL SET ALL OVERCURRENT DEVICES PER COORDINATION STUDY & FIELD TESTED. CONTRACTOR SHALL SUBMIT THE APPROVED FIELD TEST RESULTS TO POLA.
5. CONDUCTORS SHALL BE AWG AND COPPER.
6. SECONDARY OF ALL CURRENT TRANSFORMERS AND ALL POTENTIAL TRANSFORMERS SHALL BE GROUNDED. ALL VOLTAGE TRANSFORMERS SHALL BE PROPERLY FUSED ON BOTH PRIMARY AND SECONDARY PER CODE.
7. ALL 5KV CABLES SHALL BE SINGLE CONDUCTOR, SHIELDED, COPPER WITH EPR INSULATION, PVC JACKET WITH 133% INSULATION LEVEL CABLES SHALL BE TYPE MV-105. CABLES SAHLL BE SUITABLE FOR WET AND DRY LOCATIONS. CABLE SHALL BE UL LISTED. SEE SPECSFOR HIGH POTENTIAL TEST AND ADDITIONAL REQUIREMENTS
   - O.D. OF 1000 MCM SHIELDED: 1.63" Z/1000' = 0.016 + 0.034
   - O.D. OF 500 MCM NON-SHIELDED: 1.29"
8. CONDUCTORS RATED 600V OR LESS SHALL BE HOUSED IN SEPARATE ENCLOSURE FROM CONDUCTORS RATED ABOVE 600V.
9. DWP METERING SECTION INCLUDING FUSES, PT, CT AND METER ARE PER DWP ELECTRIC SERVICE REQUIREMENTS. CONTACT MR. DONALD ALECXIH, DWP CUSTOMER STATION ENGINEER AT (213) 367-8019.
10. SEPAM RELAYS SHALL BE "SQUARE D, CUTLER HAMMER, GE ZENITH OR APPROVED EQUAL. RELAYS SHALL BE POWER LOGIC DIGITAL RELAYS WITH DATA COMMUNICATIONS WITH CAPABILITY TO COMMUNICATE WITH "SQUARE D" POWER LOGIC SYSTEM OF SMS 3000, AND BE CONSISTENT WITH OTHER POWER LOGIC DEVICES THROUGHOUT THE PORT.
11. CONNECT ALL "SQUARE D" METERING DEVICES TOGETHER WITH RS-485 WIRES, BELDEN 8723.
12. INSTALL RS-485 TWISTED PAIR BETWEEN MAIN BREAKER AND INDIVIDUAL POWER LOGIC WITHIN THE SAME SWITCHGEAR IN A DAISY CHAIN MANNER PER MANUFACTURER'S RECOMMENDATION.
13. ALL MAIN 52 BREAKERS SHALL HAVE CONTROL POWER OF 120V, CAPACITOR TRIP UNIT, AND UPS POWER.

KEY NOTES:

1 SEE SHEET E-07 FOR FEEDER SCHEDULE.

2 THE CUBICLE FOR PHASE II AND PHASE I,II (BACKLAND) SHALL BE PROVIDED WITH A PROVISION TO INCLUDE BUS BAR ONLY.

FEEDER SCHEDULE:

CKT NO	Load/Circuit	Amps	Volts	Par Fdr	FEEDER Qty	Wire	Qty	Gnd	Conduit	L Ft	% VD
SR01	SWGR SR01 (480V POWER)	69.4	4,160	1	3	# 4	1	# 4	4" C	740	0.65
SR02	SWGR SR02 (480V POWER)	CONDUIT ONLY							4" C		
SS-4	SUBSTATION NO.4 (480V POWER)	CONDUIT ONLY							4" C		

FEEDER SCHEDULE NOTES:

1. DEPICTION OF PARALLEL FEEDERS ON PLANS & SECTIONS SHALL BE PER DUCTBANK CALL OUT NOMENCLATURE ON SHEET E-01.

1E-12 / E-12 SINGLE LINE DIAGRAM SWITCHGEAR "BRL-1" - BLDG, REEFER, LTG
SCALE: NTS

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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PLANS PREPARED BY:
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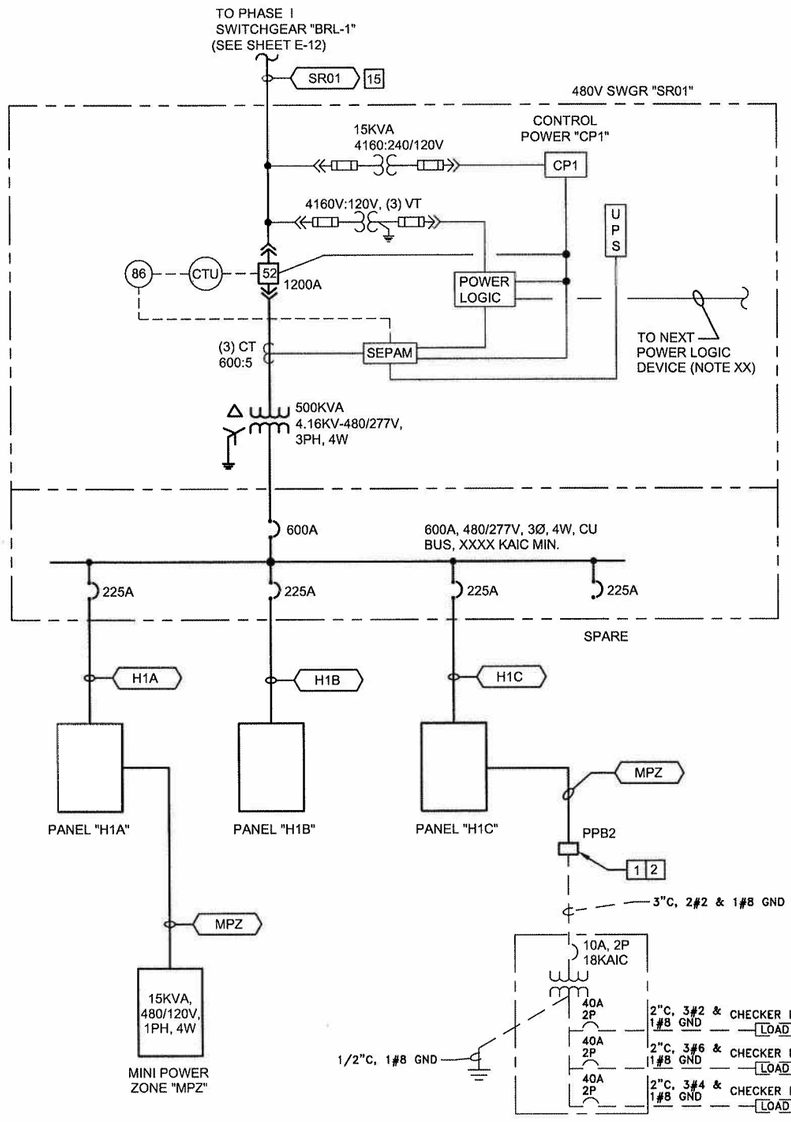
DRAWN: T. DIEP
CHECKED:
DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

SINGLE LINE DIAGRAM SWITCHGEAR "BRL-1" - BLDG, REEFER, LTG

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER E-12



1E-12A
E-12A
SINGLE LINE DIAGRAM - 480V SWITCHGEAR "SR01"

SCALE: NTS

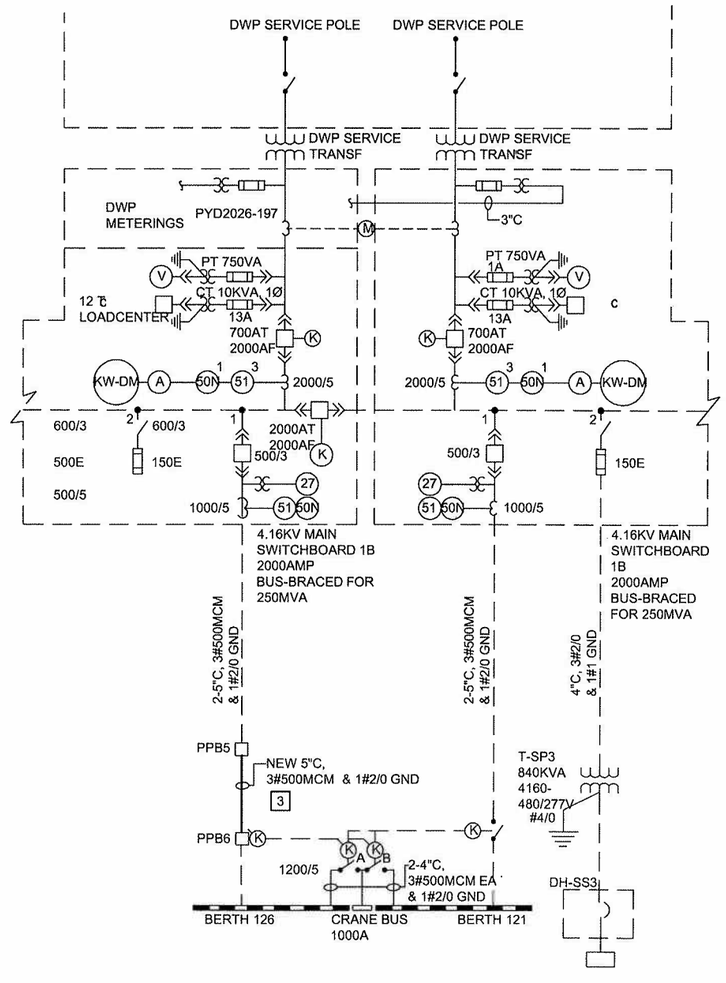
CKT NO	Load/Circuit	Amps	Volts	Par Fdr	FEEDER Qty	Wire	Qty	Neutral	Qty	Gnd	Conduit	L Ft	% VD
H1A	480V E/T PANEL "H1A"	225	480	1	3	# 4/0	1	# 4/0	1	# 4	3" C	15	0.09
H1B	480V LTG PANEL "H1B"	225	480	1	3	# 4/0	1	# 4/0	1	# 4	3" C	15	0.09
H1C	480V LTG PANEL "H1C"	225	480	1	3	# 4/0	1	# 4/0	1	# 4	3" C	15	0.11
MPZ	120V MINI POWER ZONE "MPZ"	40	480	1	3	# 2			1	# 2	2" C	15	0.14

FEEDER NOTES:
1. DEPICTION OF PARALLEL FEEDERS ON PLANS & SECTIONS SHALL BE PER DUCTBANK CALL OUT NOMENCLATURE ON SHEET E-01.

NOTES:
1. SEE SHEET E-01 FOR GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
2. SEE SHEET E-15A FOR ENLARGED PLAN OF "SR01" SWITCHGEAR.
3. OVERCURRENT SETTING OF PROTECTIVE RELAYS SHALL BE PROVIDED BY SWITCHGEAR MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN THE SETTING DATA FROM THE MANUFACTURER AND SUBMIT TO POLA.
4. SWITCHGEAR MANUFACTURER SHALL PERFORM SHORT CIRCUIT AND COORDINATION STUDY OF ALL OVERCURRENT PROTECTION DEVICES AND SUBMITTED TO THE ENGINEER FOR APPROVAL. MANUFACTURER SHALL SET ALL OVERCURRENT DEVICES PER COORDINATION STUDY & FIELD TESTED. CONTRACTOR SHALL SUBMIT THE APPROVED FIELD TEST RESULTS TO POLA.
5. CONDUCTORS SHALL BE AWG AND COPPER.
6. SECONDARY OF ALL CURRENT TRANSFORMERS AND ALL POTENTIAL TRANSFORMERS SHALL BE GROUNDED. ALL VOLTAGE TRANSFORMERS SHALL BE PROPERLY FUSED ON BOTH PRIMARY AND SECONDARY PER CODE.
7. ALL 5KV CABLES SHALL BE SINGLE CONDUCTOR, SHIELDED, COPPER WITH EPR INSULATION, PVC JACKET WITH 133% INSULATION LEVEL CABLES SHALL BE TYPE MV-105. CABLES SAHLL BE SUITABLE FOR WET AND DRY LOCATIONS. CABLE SHALL BE UL LISTED. SEE SPECSFOR HIGH POTENTIAL TEST AND ADDITIONAL REQUIREMENTS
   - O.D. OF 1000 MCM SHIELDED: 1.63" Z/1000' = 0.016 + 0.034
   - O.D. OF 500 MCM NON-SHIELDED: 1.29"
8. CONDUCTORS RATED 600V OR LESS SHALL BE HOUSED IN SEPARATE ENCLOSURE FROM CONDUCTORS RATED ABOVE 600V.
9. SEPAM RELAYS SHALL BE "SQUARE D, CUTLER HAMMER, GE ZENITH OR APPROVED EQUAL. RELAYS SHALL BE POWER LOGIC DIGITAL RELAYS WITH DATA COMMUNICATIONS WITH CAPABILITY TO COMMUNICATE WITH "SQUARE D" POWER LOGIC SYSTEM OF SMS 3000, AND BE CONSISTENT WITH OTHER POWER LOGIC DEVICES THROUGHOUT THE PORT.
10. CONNECT ALL "SQUARE D" METERING DEVICES TOGETHER WITH RS-485 WIRES, BELDEN 8723.
11. INSTALL RS-485 TWISTED PAIR BETWEEN MAIN BREAKER AND INDIVIDUAL POWER LOGIC WITHIN THE SAME SWITCHGEAR IN A DAISY CHAIN MANNER PER MANUFACTURER'S RECOMMENDATION.
12. ALL MAIN 52 BREAKERS SHALL HAVE CONTROL POWER OF 120V, CAPACITOR TRIP UNIT, AND UPS POWER.

KEY NOTES:
1. FOR PULL BOX LOCATION, SEE SHEET E-06.
2. SPLICE NEW WIRES TO (E) WIRES.
3. INTERCEPT AND SPLICE EXISTING WIRES FROM PPB5 AND EXTEND TO PPB6 VIA NEW CONDUIT.

NOTES:
1. ALL LIGHT LINES INDICATE (E) TO REMAIN.
2. ALL DARK LINES INDICATE NEW.



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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

SINGLE LINE DIAGRAM - 480V SWITCHGEAR "SR01"

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
E-12A

FOR CONTINUATION, SEE SHEET E-05

ALTERNATE ROUTE OF 34.5 KV SERVICES

DWP DWP DWP

DWP DWP DWP

GROUND WELL, TYP

#4/0 BARE COPPER GND GRID, TYP

DWP CABLE BUSDUCT, TYP.

FRONT

FUTURE DWP 34.5KV SWITCHING

XFMR SIZE PER DWP 34.5KV-4.16KV, 3PH, 3W

DWP SWITCHGEAR

DWP YARD

GUARD POST, TYP

FRONT

DWP 34.5KV SWITCHING (PHASE I-CRANE)

(PHASE I-CRANE) 7500KVA XFMR 34.5KV-4.16KV 3Ø, 3W

DWP SWITCHGEAR (PHASE I-CRANE)

CMS1-1A

FRONT

DWP 34.5KV SWITCHING (PHASE I-CRANE)

(PHASE I-CRANE) 7500KVA XFMR 34.5KV-4.16KV 3Ø, 3W

DWP SWITCHGEAR (PHASE I-CRANE)

CMS1-1B

FRONT

DWP 34.5KV SWITCHING (PHASE I-AMP)

DWP SWITCHGEAR (PHASE I-AMP)

AMS-1

FRONT

FUTURE DWP 34.5KV SWITCHING (PHASE III-BLDG, REEFER & LRG)

(PHASEIII BLDG,REEFER,LTG) 2500KVA XFMR 34.5KV-4.16KV 3Ø, 3W

DWP SWITCHGEAR (PHASE III-BLDG,REEFER,LTG)

BRL-1

2

ERTG1-1A

ERTG1-1A

MATCHLINE - SEE SHEET E-14

KEY NOTES:

1. GATE SHALL BE EQUIPPED WITH PANIC BARS, PRESSURE PLATES OR OTHER DEVICES THAT ARE NORMALLY LATCHED BUT OPEN UNDER SIMPLE PRESSURE.
2. STUB UP & CAP CONDUITS 12" FROM THE POLA SUBSTATION FENCE FOR FUTURE CONNECTION TO DWP SWITCHGEAR.

NOTES:

1. THE DWP EQUIPMENT LAYOUT IS SHOWN FOR REFERENCE ONLY. DWP TO PROVIDE FINAL LAYOUT. ALL EQUIPMENT INSIDE DWP YARD TO BE PROVIDED AND INSTALLED BY DWP.
2. SEE SHEET E-07 FOR CABLE AND CONDUIT SCHEDULE.

1E-13 / E-04

DWP MAIN SUBSTATION "SS NO. 1" ENLARGED PLAN

SCALE: 3"=1'-0"

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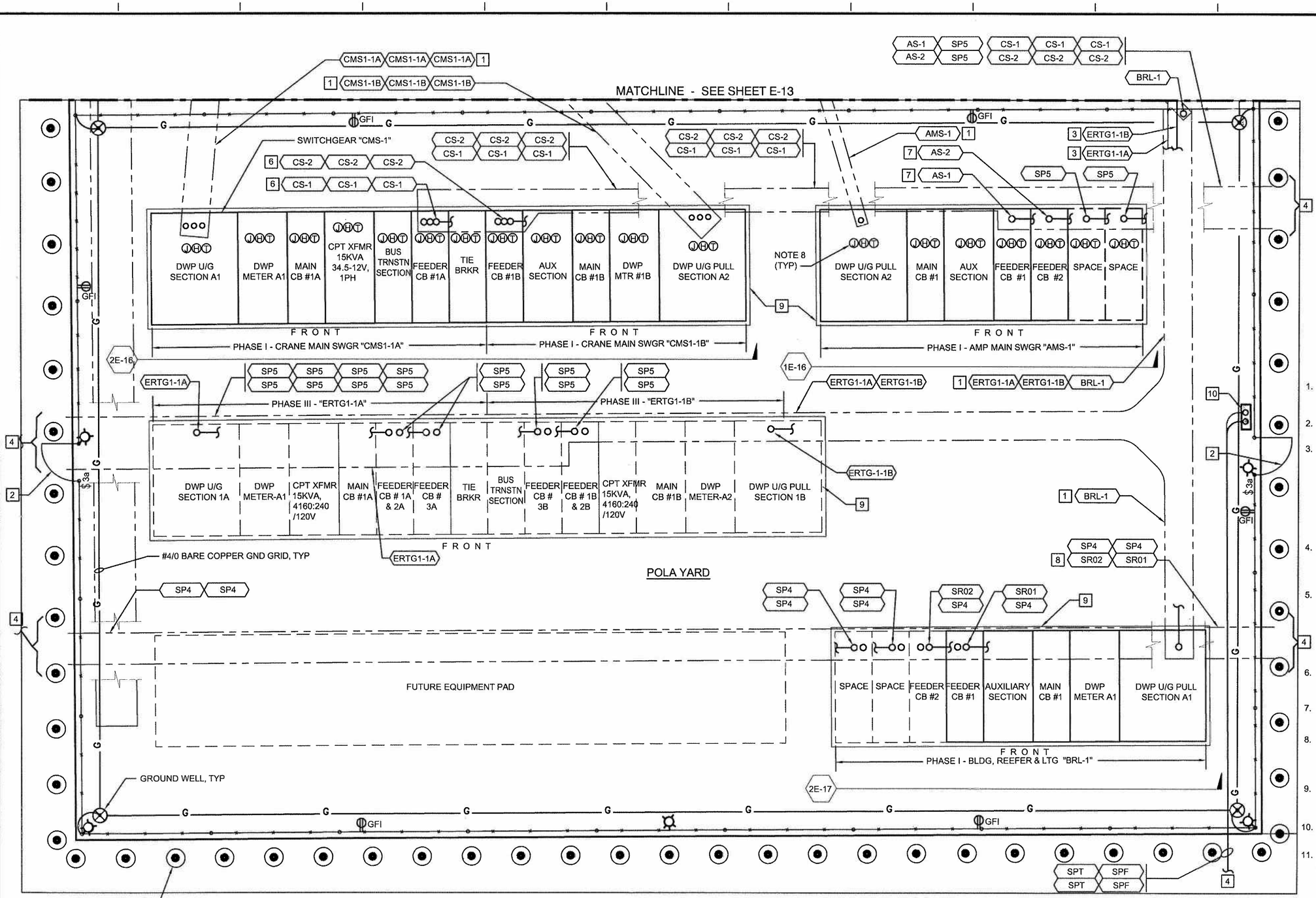
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DWP MAIN SUBSTATION "SS NO. 1" ENLARGED PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER E-13



KEY NOTES:

1. SEE SHEET E-07 FOR FEEDER SCHEDULE.
2. GATE SHALL BE EQUIPPED WITH PANIC BARS, PRESSURE PLATES OR OTHER DEVICES THAT ARE NORMALLY LATCHED BUT OPEN UNDER SIMPLE PRESSURE.
3. ROUTE CONDUIT ONLY ON PHASE I FOR FUTURE CONNECTION TO DWP SWITCHGEAR. SEE SHEET E-13 FOR ADDITIONAL INFORMATION.
4. SEE SHEET E-05 FOR CONTINUATION.
5. PROVIDE (2) 5" SPARE CONDUIT AND CAPPED CONDUIT 12" FROM THE SUBSTATION PAD FOR FUTURE.
6. SEE SHEET E-08 FOR FEEDER SCHEDULE.
7. SEE SHEET E-011 FOR FEEDER SCHEDULE.
8. SEE SHEET E-012 FOR FEEDER SCHEDULE.
9. INSTALL HOUSEKEEPING PAD IN THIS CONTRACT.
10. COMMUNICATIONS CABINET

SUBSTATION NOTES FOR SWGRS "CMS-1A" & "CMS-1B"

1. ALL EQUIPMENT AND POST SHALL BE GROUNDED TO MEET CODE REQUIRMENT. GROUND WIRE SHALL BE COPPER.
2. CONTRACTOR SHALL PLACE CONDUITS ENTERING EQUIPMENT PER MANUFACTURER REQUIREMENT.
3. FURNISH & INSTALL A PAINTED SIGN (8" x 24") ON GALVANIZED SHEET METAL ON THE MIDDLE OF EACH FOUR SIDES OF EACH SUBSTATION. SIGN SHALL BE 5' AFF. SIGN SHOULD READ AS FOLLOWS:

DANGER
HIGH VOLTAGE
KEEP OUT
SUBSTATION NO. 1

4. CONTRACTOR SHALL BE RESPONSIBLE WHEN NECESSARY TO MODIFY CONDUITS ROUTING TO SUIT FIELD & MEET NATIONAL ELECTRICAL CODE REQUIREMENTS.
5. SWITCHGEAR LAYOUT & COMPONENTS SPECIFICATION IS BASED ON "SQUARE D" COMPANY'S EQUIPMENT. TOTAL NUMBER OF CUBICAL SECTIONS AND DIMENSIONS SHALL BE AS SHOWN ON PLANS. NO MODIFICATIONS IS ALLOWED. THE OVERALL LENGTH AND WIDTH OFSUBSTATION SHALL NOT EXCEED AS INDICATED ON PLANS. TO ELIMINATE ANY ADDITIONAL LOS OF CONTAINER SPACES.
6. ORIENTATION OF SUBSTATION SHALL BE AS SHOWN ON PLAN.
7. ALL CONDUITS LEAVING OR ENTERING CUBICALS SHALL BE TERMINATED AT 2" ABOVE BOTTOM OF CUBICAL (TYP.
8. (JHT) CORRESPOND TO JUNCTION BOX. 500W HEATER WITH THERMOSTAT, 120 VOLT. THESE ITEMS SHALL BE FACTORY INSTALLED AND CONTRACTOR SHALL PROVIDE POWER TO THESE ITEMS (TYP).
9. ALL LOW VOLTAGE CONDUCTORS (LESS THAN 600V) SHALL NOT OCCUPY SAME ENCLOSURES AND RACEWAYS WITH CONDUCTORS 600V OR MORE.
10. CLEARANCES FOR THE EQUIPMENT SHALL BE AS SHOWN ON SHEETS.
11. GUARD RAILS SHALL BE PER CITY OF LOS ANGELES STD PLAN S-462-1 (TYPE 3).

N

1E-14 / E-04 POLA MAIN SUBSTATION "SS NO. 1" ENLARGED PLAN

SCALE: 3"=1'-0"

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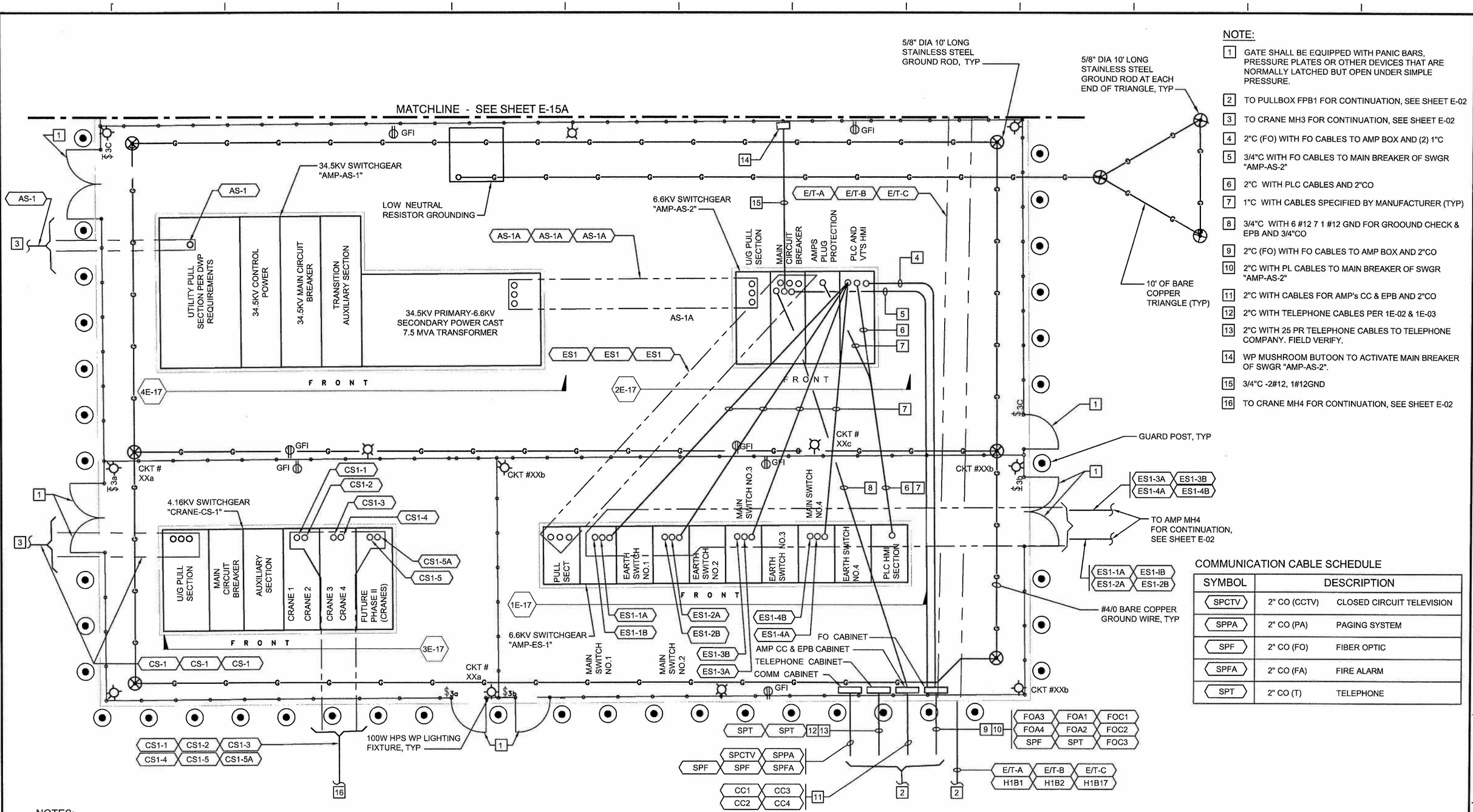
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

POLA MAIN SUBSTATION "SS NO. 1" ENLARGED PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
E-14



NOTE:

1. GATE SHALL BE EQUIPPED WITH PANIC BARS, PRESSURE PLATES OR OTHER DEVICES THAT ARE NORMALLY LATCHED BUT OPEN UNDER SIMPLE PRESSURE.
2. TO PULLBOX FPB1 FOR CONTINUATION, SEE SHEET E-02
3. TO CRANE MH3 FOR CONTINUATION, SEE SHEET E-02
4. 2"C (FO) WITH FO CABLES TO AMP BOX AND (2) 1"C
5. 3/4"C WITH FO CABLES TO MAIN BREAKER OF SWGR "AMP-AS-2"
6. 2"C WITH PLC CABLES AND 2"CO
7. 1"C WITH CABLES SPECIFIED BY MANUFACTURER (TYP)
8. 3/4"C WITH 6 #12 7 1 #12 GND FOR GROOUND CHECK & EPB AND 3/4"CO
9. 2"C (FO) WITH FO CABLES TO AMP BOX AND 2"CO
10. 2"C WITH PL CABLES TO MAIN BREAKER OF SWGR "AMP-AS-2"
11. 2"C WITH CABLES FOR AMP's CC & EPB AND 2"CO
12. 2"C WITH TELEPHONE CABLES PER 1E-02 & 1E-03
13. 2"C WITH 25 PR TELEPHONE CABLES TO TELEPHONE COMPANY. FIELD VERIFY.
14. WP MUSHROOM BUTOON TO ACTIVATE MAIN BREAKER OF SWGR "AMP-AS-2".
15. 3/4"C -2#12, 1#12GND
16. TO CRANE MH4 FOR CONTINUATION, SEE SHEET E-02

COMMUNICATION CABLE SCHEDULE

SYMBOL	DESCRIPTION	
SPCTV	2" CO (CCTV)	CLOSED CIRCUIT TELEVISION
SPPA	2" CO (PA)	PAGING SYSTEM
SPF	2" CO (FO)	FIBER OPTIC
SPFA	2" CO (FA)	FIRE ALARM
SPT	2" CO (T)	TELEPHONE

NOTES:

1. SEE SHEETS E-09 & E-11 FOR FEEDER SCHEDULES.
2. SEE SHEETS E-02 & E-03 FOR COMM & 480V POWER CABLE SCHEDULES.

1E-15 / E-02 CRANE AND AMP SUBSTATION "SS NO. 2" ENLARGED PLAN - SHEET 1 OF 2

SCALE: 3"=1'-0"

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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

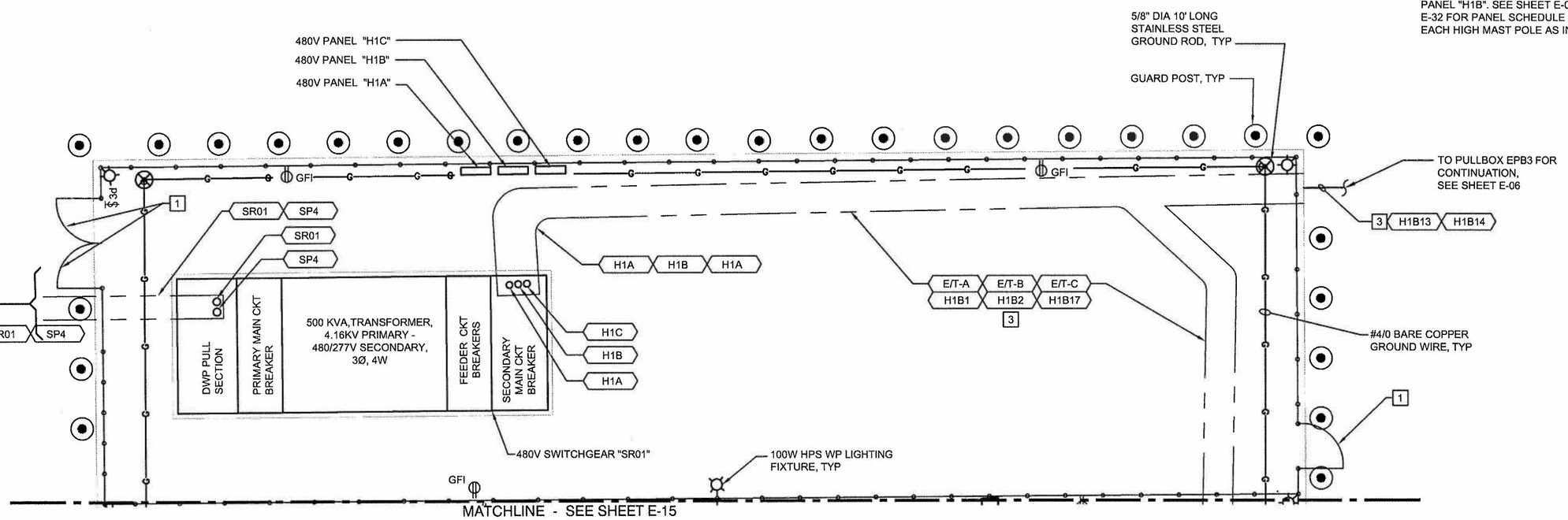
CRANE AND AMP SUBSTATION "SS NO. 2" ENLARGED PLAN - SHEET 1 OF 2

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER E-15

KEY NOTES:

1. GATE SHALL BE EQUIPPED WITH PANIC BARS, PRESSURE PLATES OR OTHER DEVICES THAT ARE NORMALLY LATCHED BUT OPEN UNDER SIMPLE PRESSURE.
2. SEE SHEET E-02 FOR CONTINUATION
3. TERMINATE LIGHTING CIRCUIT(S) FOR THE HIGH MAST POLE AT PANEL "H1B". SEE SHEET E-06 FOR CONDUIT SIZES AND SHEET E-32 FOR PANEL SCHEDULE & CORRESPONDING CIRCUIT FOR EACH HIGH MAST POLE AS INDICATED ON PLANS.



NOTES:

1. SEE SHEETS E-12 & E-12A FOR FEEDER SCHEDULES.

1E-15A / E-02 CRANE AND AMP SUBSTATION "SS NO. 2" ENLARGED PLAN - SHEET 2 OF 2

SCALE: 3"=1'-0"

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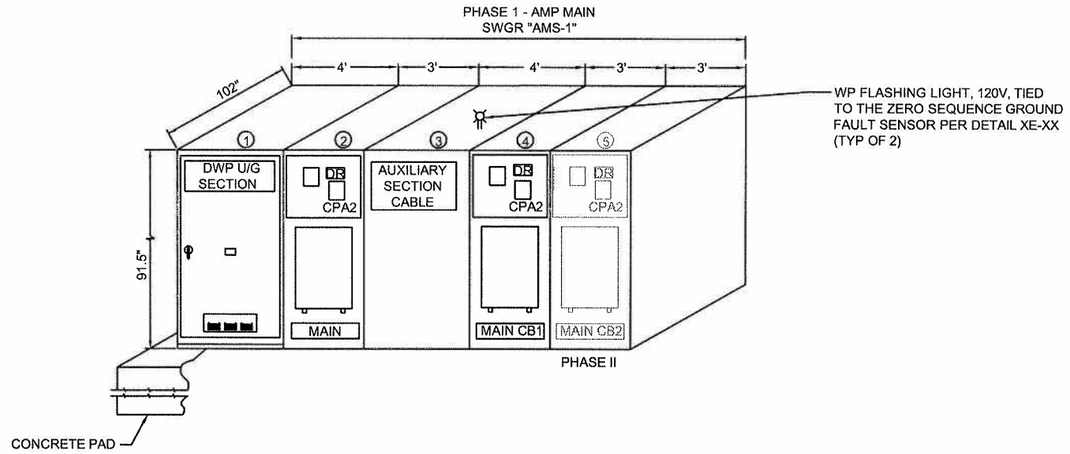
CRANE AND AMP SUBSTATION "SS NO. 2" ENLARGED PLAN - SHEET 2 OF 2

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

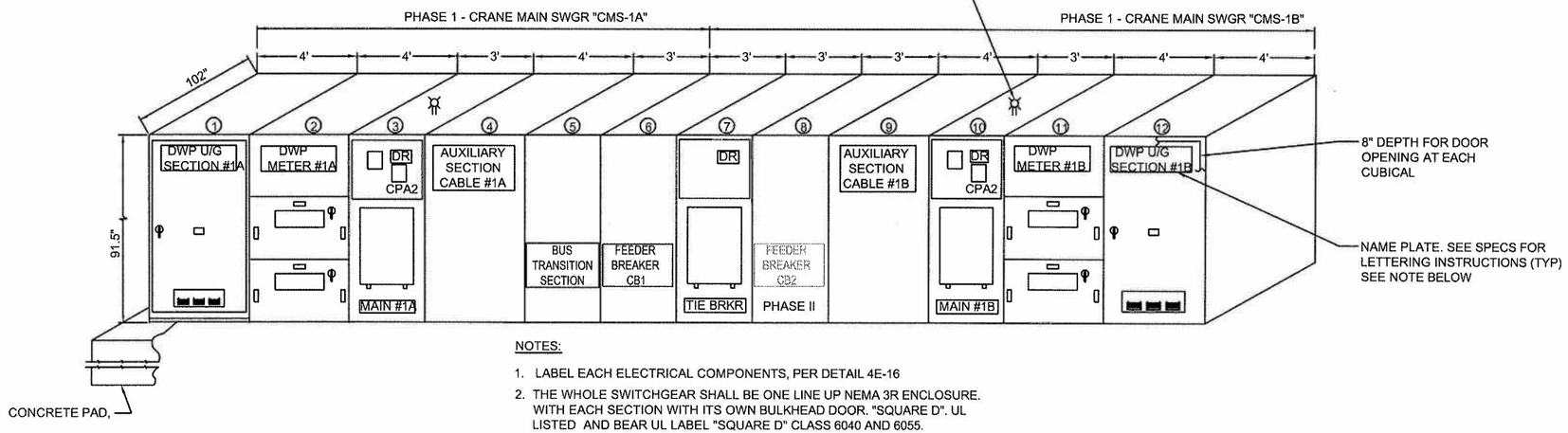
DRAWING NUMBER E-15A

SWITCHGEAR LINE-UP FOR "AMS-1" SEE DETAIL 1E-10 FOR SINGLE LINE DIAGRAM		
CUBICLE	NAMEPLATE	MAJOR EQUIPMENT REQUIRED
①	DEPARTMENT OF WATER & POWER PULL SECTION	DEPARTMENT OF WATER & POWER PULL SECTION WITH LANDING LUGS.
②	MAIN CIRCUIT BREAKER	CT, PT, 50/51, 51N, CAP, TRIP CONTROL POWER KIRK LOCK, POWER LOGIC, ZERO SEQUENCE, METER RELAY AND CONTROL POWER TRANSFORMER.
③	AUXILIARY SECTION	BUSSING & MEANS TO TERMINATE INCOMING CABLES.
④	MAIN CIRCUIT BREAKER CB1	CT, PT, 50/51, 51N, CAP, TRIP CONTROL POWER KIRK LOCK, POWER LOGIC, ZERO SEQUENCE, METER RELAY AND CONTROL POWER TRANSFORMER.
⑤	MAIN CIRCUIT BREAKER CB2	CT, PT, 50/51, 51N, CAP, TRIP CONTROL POWER KIRK LOCK, POWER LOGIC, ZERO SEQUENCE, METER RELAY AND CONTROL POWER TRANSFORMER.



1E-16 / E-16 ELEVATION OF AMP SWITCHGEAR "AMS-1"
SCALE: NTS

FOR 4.16KV SWITCHGEAR LINE-UP FOR "CMS-1A" & "CMS-1B" SEE DETAIL 1E-08 FOR SINGLE LINE DIAGRAM		
CUBICLE	NAMEPLATE	MAJOR EQUIPMENT REQUIRED
①	DEPARTMENT OF WATER & POWER PULL SECTION #A1	DEPARTMENT OF WATER & POWER PULL SECTION WITH LANDING LUGS.
②	DEPARTMENT OF WATER & POWER METER SECTION #A1	CT, PT, AND CONTROL FOR DWP METER.
③	MAIN CIRCUIT BREAKER #A1	CT, PT, SEPAM, 51N, CAP, TRIP CONTROL POWER KIRK LOCK, POWER LOGIC, ZERO SEQUENCE, METER RELAY AND CONTROL POWER TRANSFORMER.
④	AUXILIARY SECTION #A1	BUSSING & MEANS TO TERMINATE INCOMING CABLES.
⑤	BUS TRANSITION SECTION	BUSSING AND MEANS TO TERMINATE INCOMING CABLES.
⑥	FEEDER BREAKER	CT, PT,SEPAM, POWER LOGIC, CONTROL POWER TRANSFORMER
⑦	TIE BREAKER	CT, PT, 50/51, 51N, CAP, TRIP CONTROL POWER KIRK LOCK.
⑧	FEEDER BREAKER	CT, PT,SEPAM, POWER LOGIC, ONTROL POWER TRANSFORMER. PHASE II
⑨	AUXILIARY SECTION #A2	BUSSING & MEANS TO TERMINATE INCOMING CABLES.
⑩	MAIN CIRCUIT BREAKER #A2	CT, PT, 50/51, 51N, CAP, TRIP CONTROL POWER KIRK LOCK, POWER LOGIC, ZERO SEQUENCE, METER RELAY AND CONTROL POWER TRANSFORMER.
⑪	DEPARTMENT OF WATER & POWER METER SECTION #A2	CT, PT, AND CONTROL FOR DWP METER.
⑫	DEPARTMENT OF WATER & POWER PULL SECTION #A2	DEPARTMENT OF WATER & POWER PULL SECTION WITH LANDING LUGS.



NOTES:

1. LABEL EACH ELECTRICAL COMPONENTS, PER DETAIL 4E-16
2. THE WHOLE SWITCHGEAR SHALL BE ONE LINE UP NEMA 3R ENCLOSURE. WITH EACH SECTION WITH ITS OWN BULKHEAD DOOR. "SQUARE D". UL LISTED AND BEAR UL LABEL "SQUARE D" CLASS 6040 AND 6055.
3. THE NAMEPLATE SHALL BE INSTALLED ON OUTSIDE DOOR & AT FRONT PANEL.
4. SEE DETAIL 1E-08 FOR ADDITIONAL ELECTRICAL COMPONENTS.

2E-16 / E-16 ELEVATION OF CRANE SWITCHGEARS "CMS1"
SCALE: NTS

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

PRELIMINARY
40% SUBMITTAL
NOT FOR CONSTRUCTION

PLANS PREPARED BY:
TRANSPORTATION

AECOM USA, Inc.
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AECOM
www.aecom.com

DATE:	OCTOBER 30, 2009
DRAWN:	T. DIEP
CHECKED:	
DESIGNED:	
ENGR/ARCH	KOSAL KRISHNAN

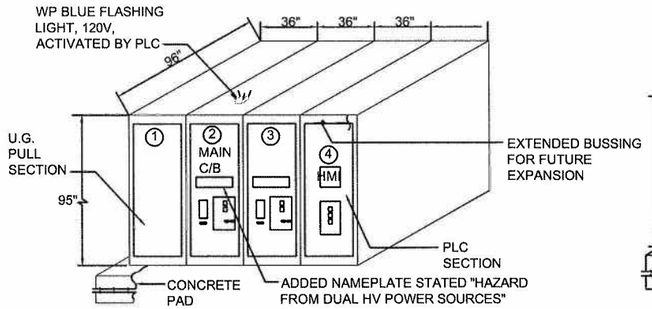
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

CRANE & AMP SWITCHGEARS ELEVATION

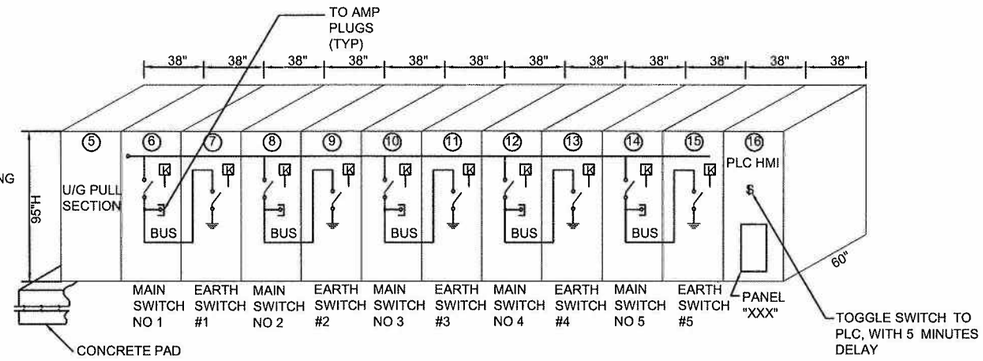
THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER E-16

EQUIPT. I.D. FOR 6.6 KV SWGR. AMP-AS-1A AND ES-1		
CUBICLE	NAMEPLATE	MAJOR EQUIPMENT REQUIRED
(1)	PULL SECTION	BUSSING AND LUGS
(2)	MAIN 6.6KV CIRCUIT BREAKER SEPAM 1000 + S42 RELAYS	CT, PT, 50/51, 51N, CAP. TRIP CONT POWER, POWER LOGIC, METER RELAY & CONTROL PWR. TRANSFORMER
(3)	(2) AMPS' PLUGS PROTECTION, SEPAM 1000+ S42 RELAYS	CT, PT, 50/51, 51N, CAP. TRIP CONT POWER
(4)	PLC AND HMI AT TOP OF SECTION 4, AND VT'S AT BOTTOM OF SECTION	PLC TO DIAGNOSE SYSTEM PROBLEM
(5)	PULL SECTION	BUSSING AND LUGS
(6) (8) (10) (12) (14)	HVL DISCONNECT SWITCH MAIN SWITCH	15KV HVL SWITCH, KIRK KEY LOCKS, REAR DOOR ACCESS, AUX. CONTACTS
(7) (9) (11) (13) (15)	HVL SWITCH EARTH SWITCH	15KV HVL SWITCH, KIRK KEY LOCKS, REAR DOOR ACCESS, AUX. CONTACTS
(16)	PLC HMI AND PANEL "CP3"	HMI (SEE NOTE 5), PANEL "CP3", AND ROTARY SWITCH AS INPUT TO PLC

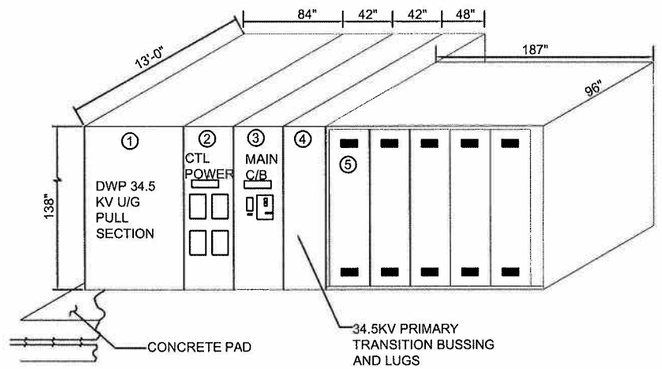


2E-17 / E-17 ELEVATION - SWITCHGEAR "AMP-AS-1A"
SCALE: NTS

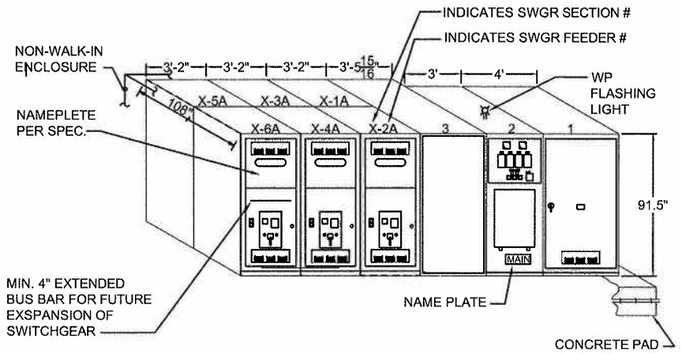


1E-17 / E-17 ELEVATION - SWITCHGEAR "AMP-ES-1"
SCALE: NTS

EQUIPT. I.D. FOR 6.6 KV SWGR. AMP-AS-1		
CUBICLE	NAMEPLATE	MAJOR EQUIPMENT REQUIRED
(1)	PER DWP UTILITY PULL SECTION	BUSSING AND LUGS
(2)	34.5 KV CONTROL POWER	CPT AND BATTERY
(3)	34.5 KV MAIN BREAKER	CT AND PT
(4)	TRANSITION AUXILIARY	BUSSING AND LUGS
(5)	34.5 KV PRIMARY TO 6.6KV STEP DOWN XFMR	POWER CAST TRANSFORMER HARDWARES



4E-17 / E-17 ELEVATION - SWITCHGEAR "AMP-AS-1"
SCALE: NTS



3E-17 / E-17 ELEVATION - SWITCHGEAR "CRANE-CS-1"
SCALE: NTS

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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DRAWN: T. DIEP
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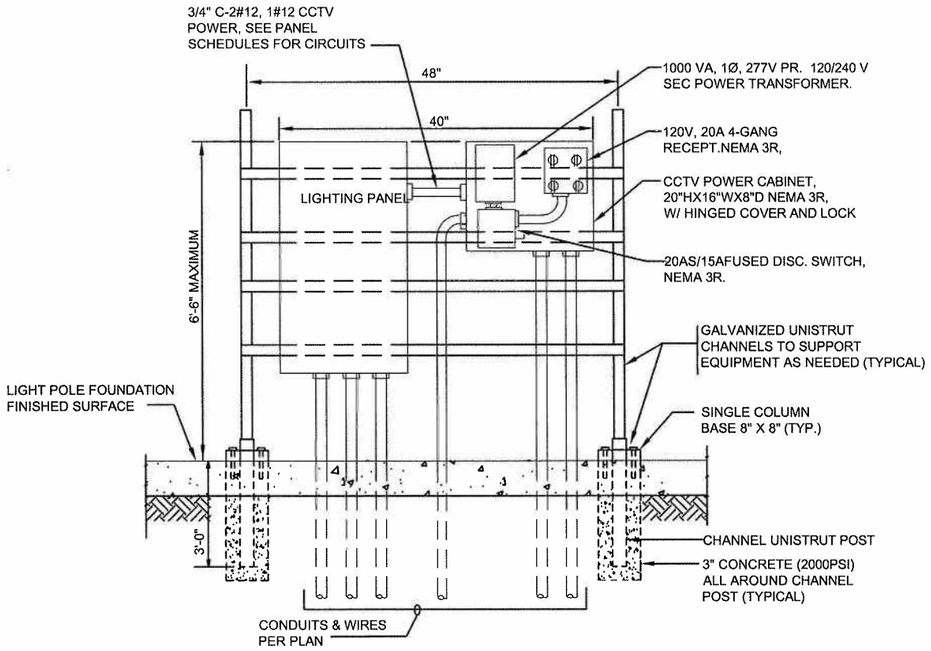
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

CRANE AND AMP SWITCHGEAR ELEVATION

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

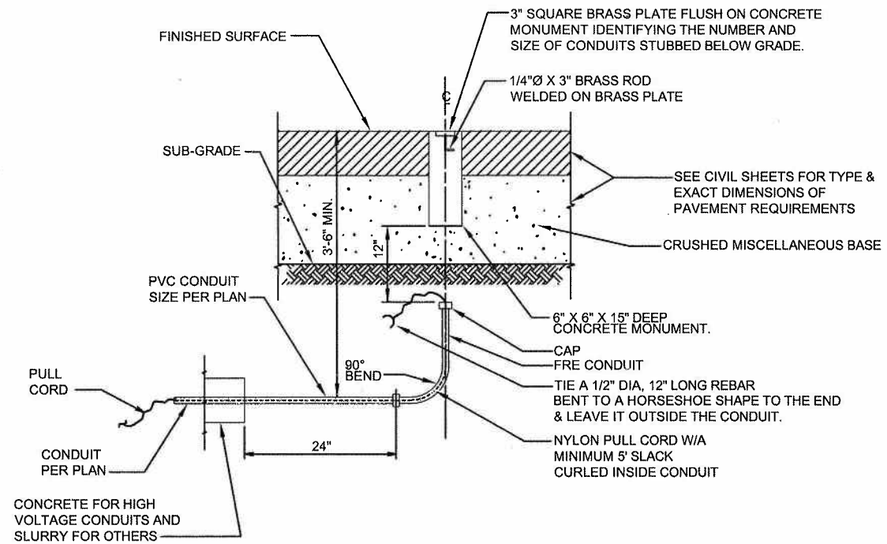
DRAWING NUMBER
E-17



NOTES:

1. THIS DETAIL SHOWS THE INSTALLATION OF ANY ELECTRICAL EQUIPMENT SPECIFIED ON PLANS TO BE INSTALLED AT UNISTRUT CHANNEL.
2. WIDTH AND HEIGHT TO ACCOMMODATE THE INTENDED ELECTRICAL EQUIPMENT, AND INSTALLED PER CODE.

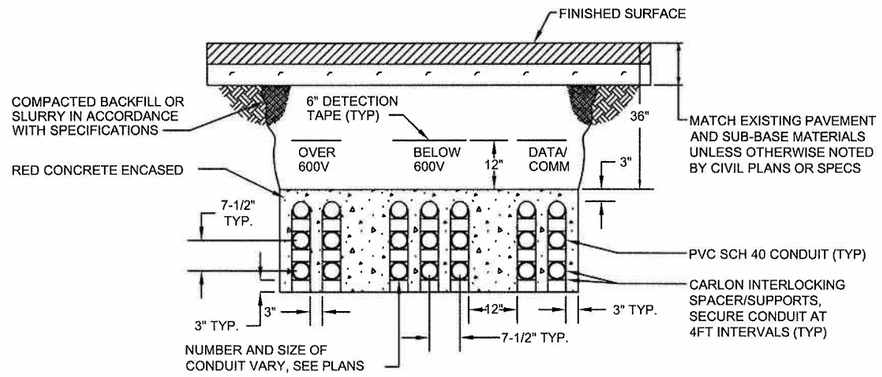
1E-23 EQUIPMENT'S INSTALLATION - ELEVATION
E-06A, E-06 SCALE: NONE



2E-23 SECTION-BELOW GRADE CONDUIT STUB (TYP)
E-03, E-05, E-06A SCALE: NONE

DUCTBANK SECTION NOTES:

1. ARRANGE CONDUIT AND DUCTBANK DEPTH FOR SHORT LENGTHS AS REQUIRED TO AVOID NEW AND EXISTING UNDERGROUND UTILITIES.
2. SLOPE DUCTBANKS DOWN TOWARD MANHOLES, 4 INCHES PER 100 FEET OF DUCTBANK.
3. MANUFACTURED BENDS FOR RGS AND SCH 40 PVC SHALL HAVE A MINIMUM RADIUS OF 48 INCHES FOR DUCTS 3 INCHES IN DIAMETER AND LARGER AND A RADIUS OF 36 INCHES FOR DUCTS 2-1/2 INCHES SMALLER.
4. DUCTBANKS SHALL BE ENCASED IN CONCRETE WITH AT LEAST 3 INCHES OF CONCRETE AT THE TOP, BOTTOM, AND EACH SIDE. A HORIZONTAL AND VERTICAL SEPARATION OF 3 INCHES BETWEEN DUCTS SHALL BE MAINTAINED BY INSTALLING CARLON HIGH IMPACT SPACERS OR EQUAL WITH HORIZONTAL AND VERTICAL LOCKING INTERVALS OF 4 FEET.
5. AN ASSEMBLED SYSTEM SHALL BE WIRED TOGETHER FOR ADDITIONAL SUPPORT.
6. SEPARATION BETWEEN OVER 600V AND DATA/COMM IS 20 INCHES.
7. A RUN OF CONDUIT SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360°).
8. ALL ELBOWS AT BELOW GRADE TO ABOVE GRADE TRANSITIONS SHALL BE RIGID GALVANIZED STEEL. RIGID GALVANIZED STEEL CONDUIT NOT ENCASED IN CONCRETE SHALL BE PVC TAPE WRAPPED OR BITUMASTIC COATED FOR CORROSION PROTECTION.
9. PROVIDE 6-INCH WIDE X 0.004-INCH POLYETHYLENE PLASTIC WITH A METALLIC CORE DETECTION TAPE CONTINUOUSLY OVER DUCTBANK.
5. SEGMENTS OF FEEDER INSTALLED UNDER WHARF SHALL UTILIZE FIBERGLASS MATERIALS PER THE SPECIFICATIONS.



3E-23 TYPICAL DUCT BANK SECTION DETAIL
E-03, E-05 SCALE: NONE

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

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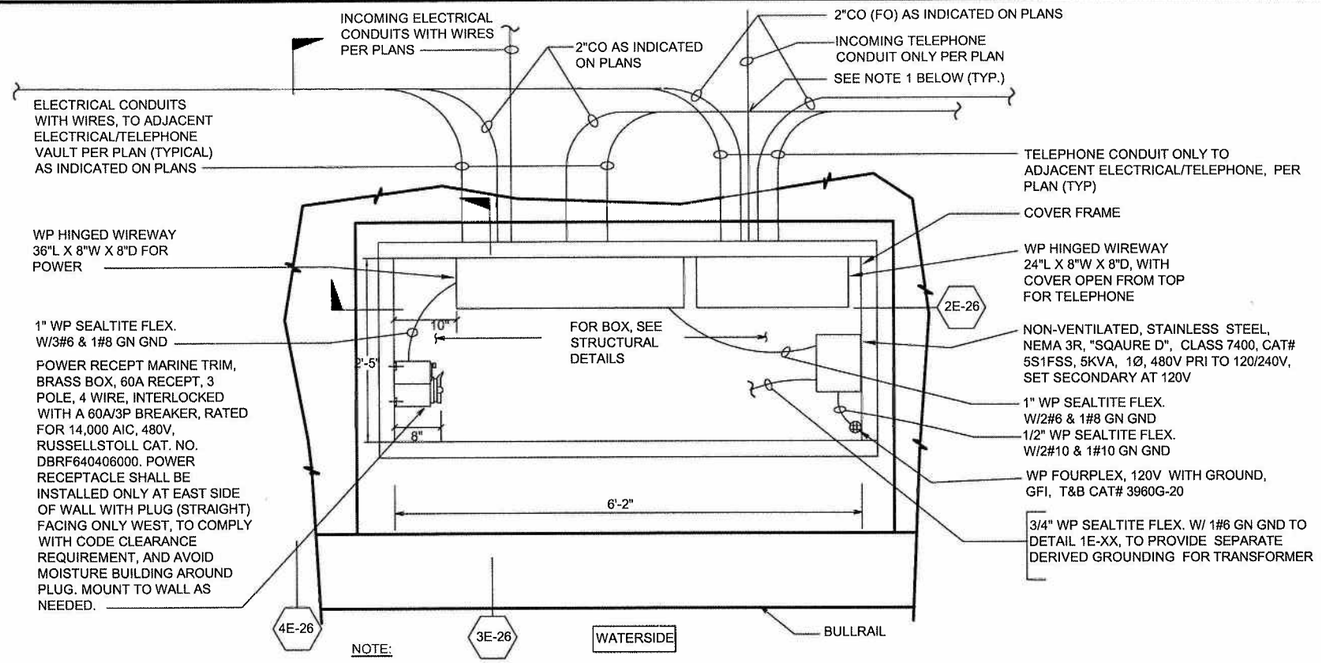
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

DUCTBANK SECTIONS AND DETAILS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
E-23



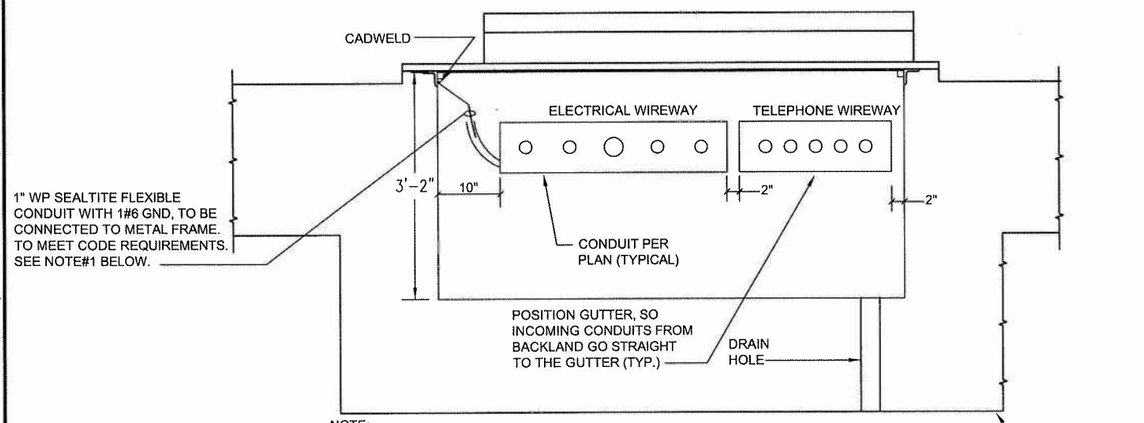
NOTE:

1. IN CASE OF CONDUIT INTERFERENCES, CONTRACTOR SHALL REROUTE ONLY THE CONDUITS CROSSING THE WHARF EAST AND WEST, TO AVOID INTERFERENCES FROM THE INCOMING CONDUIT FROM BACKLAND.
2. SEE STRUCTURAL SHEETS FOR MORE STRUCTURAL INFORMATION
3. ALL CONDUITS SHALL ENTER BOX ONLY AT THE NORTHERN WALL.
4. INSTALL ALL ELECTRICAL MATERIALS TO COMPLY WITH CODE.

1E-26 / E-26 PLAN - ELECTRICAL/TELEPHONE VAULT

SCALE: 1" = 1'-0"

N

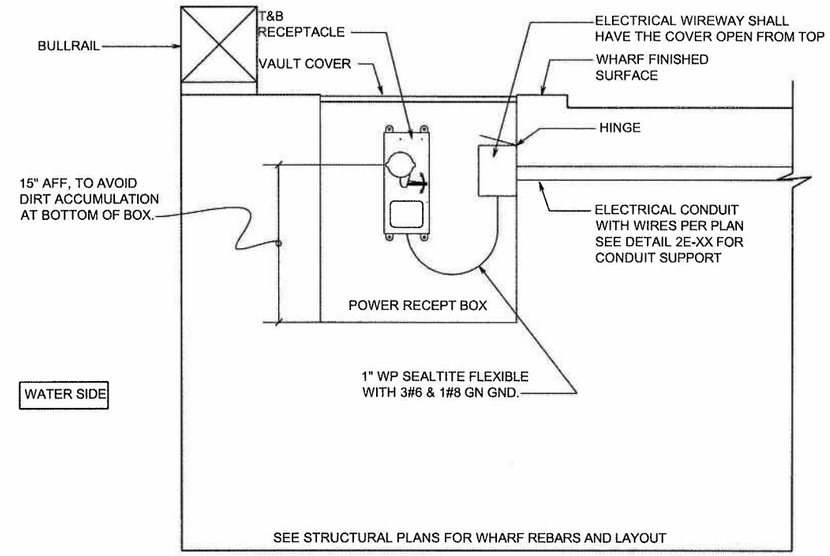


NOTE:

1. EXPOSED NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT, CONDUCTOR SUPPORTS OR RACKS, CONDUITS & OTHER METAL APPURTENANCES, INCLUDING ANY METAL COVER AND ITS SUPPORTING RING SHALL BE BONDED TOGETHER AND CONNECTED TO A COMMON GROUND, AND TO THE INCOMING GROUND WIRES, PER CODE.

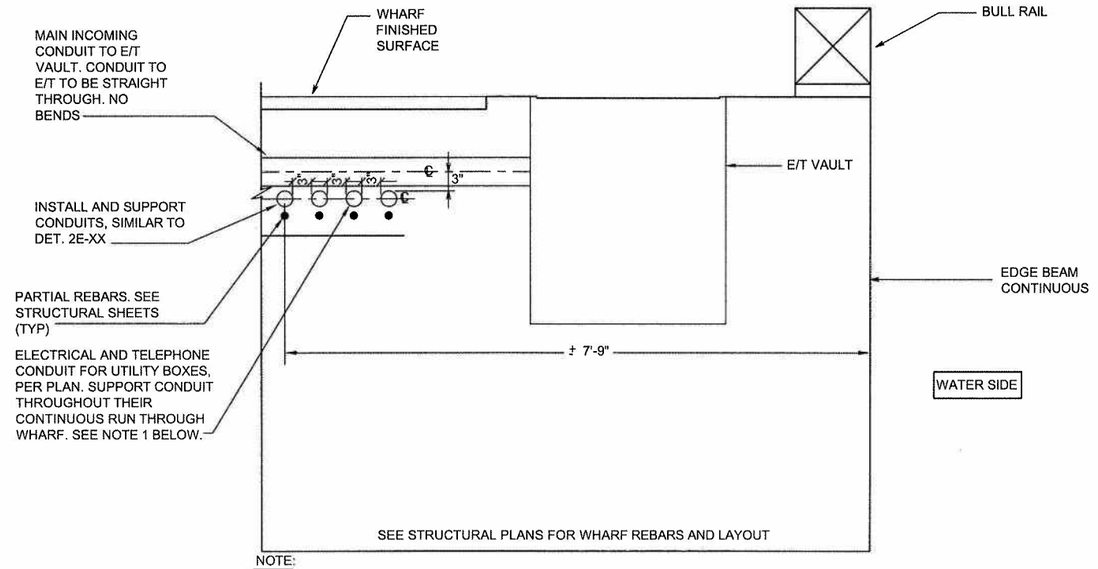
2E-26 / E-26 SECTION - ELECTRICAL/TELEPHONE VAULT

SCALE: 1"= 1'-0"



3E-26 / E-26 SECTION - ELECTRICAL/TELEPHONE VAULT

SCALE: NONE



NOTE:

1. IN CASE OF CONDUIT INTERFERENCES, CONTRACTOR SHALL REROUTE ONLY THE CONDUITS CROSSING THE WHARF LONGITUDINALLY, TO AVOID INTERFERENCES FROM THE INCOMING CONDUIT FROM BACKLAND.

4E-26 / E-26 SECTION - ELECTRICAL/TELEPHONE VAULT

SCALE: NONE

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

PRELIMINARY

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PLANS PREPARED BY:

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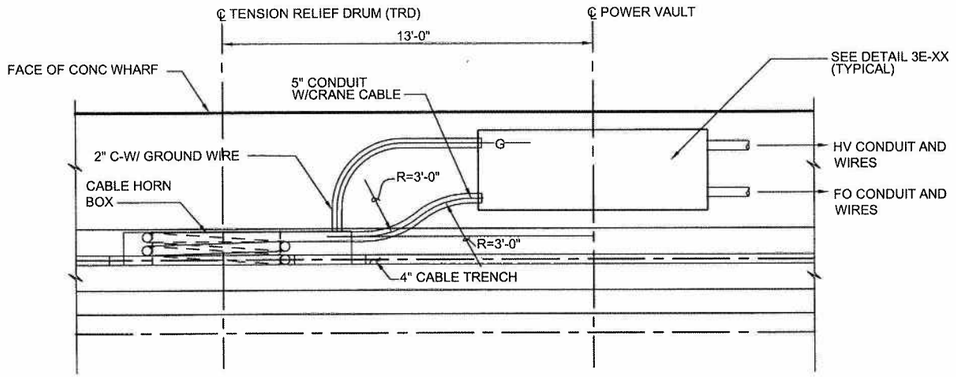
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

ELECTRICAL/TELEPHONE VAULT - DETAILS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER E-26



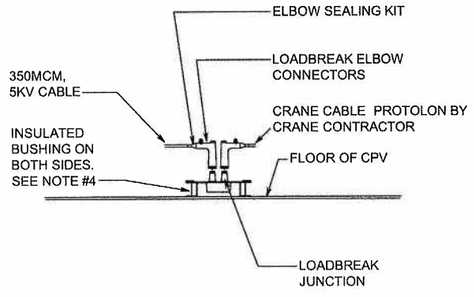
NOTE:

SEE SHEETS D-02 TO D-07 FOR POWER VAULT LOCATIONS AND S-26 & S-29 FOR CABLE HORN DETAILS.

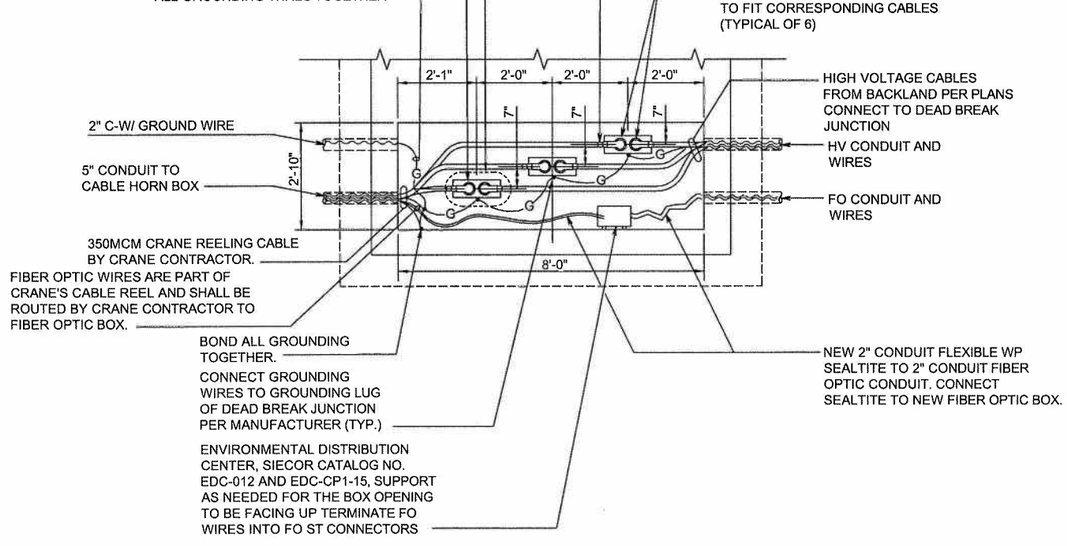
1E-29 / E-02, E-03 **CRANE POWER VAULT & LAYOUT**
SCALE: 3/8" = 1'-0"

NOTES:

1. GROUND ALL METALLIC PARTS AND TERMINATE GROUND WIRE AS AS SHOWN ON DETAIL XX-XX INSTALL THE GROUNDING SYSTEM IN ACCORDANCE WITH LOS ANGELES ELECTRICAL CODE, ARTICLE 250.
2. PROVIDE CABLE SUPPORTS FOR ALL HIGH VOLTAGE CABLES, PROTOLON CABLE AND LOADBREAK JUNCTIONS WITH PLASTI-BOND RED STEEL CONDUIT SUPPORT SYSTEM OR APPROVED EQUAL. ANCHOR THE CABLES WITH GALVANIZED KELLEMS GRIPS AND CLAMPS.
3. ALL HIGH VOLTAGE CABLE SPLICES SHALL BE PERFORMED BY A QUALIFIED HIGH VOLTAGE CONTRACTOR. LOADBREAK ELBOW CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE ELASTIMOLD MANUFACTURER'S INSTRUCTION. CONTACT SOUTHWEST POWER, INC. AT (562) 801-4577 FOR DETAILS.
4. FURNISH ELASTIMOLD #K650 SOP INSULATED PARKING BUSHING WITH MOUNTING HARDWARES, ELASTIMOLD #160 GLR GROUNDING ELBOW AND A HOT STICK TOOL. PROVIDE STRUT SUPPORTS AS NECESSARY.
5. INSTALLATION OF THE FIBEROPTIC SHALL BE PERFORMED BY A EXPERIENCED FIBEROPTIC CONTRACTOR POSSESSING A CERTIFICATE OF TRAINING FROM THE SIECOR CORP. CONTACT SIECOR CORP. AT (619) 721-0105. CONTRACTOR MUST SUBMIT CERTIFICATE OF SIECOR CORP. PROOF OF COMPLETION. FIBEROPTIC TERMINATION SHALL ALSO BE IN ACCORDANCE WITH SIEMENS OPTOFLEX TERMINATION PROCEDURES. CONTACT SIEMENS ENERGY AND AUTOMATION, INC., AT (714) 699-7794.
6. FIBEROPTIC CABLES SHALL BE PROVIDED WITH A HEAT SHRINK BREAKOUT BOOT ASSEMBLY.
7. FIBEROPTIC INSTALLER SHALL TEST THE SYSTEM IN COMPLIANCE WITH TIA/EIA-568A, FOTPS INCLUDING END TO END ATTENUATION, OTDR AND TRANSMITTER RECEIVER LEVEL TESTINGS. SUBMIT TEST REPORTS TO THE ENGINEER. CONTRACTOR SHALL CORRECT ANY SYSTEM FAULT WITHOUT EXTRA COST TO THE PORT.
8. THE PORTOLON CABLE SHALL BE INSTALLED WITH A BENDING RADIUS NOT TO EXCEED 12 TIMES THE OUTSIDE DIAMETER OF CABLE.
9. CONTRACTOR SHALL SECURELY FASTEN ALL POWER VAULT COVERS IN PLACE BY BOLTING COVER TO THE FRAME RINGS.
10. CONTRACTOR SHALL PROVIDE AND FURNISH PERMANENT IDENTIFICATION ON ALL POWER VAULT COVERS BY WELDING 2" x 1/8" RAISED LETTERS ON STEEL COVERS THE IDENTIFICATION SHALL READ "POWER VAULT NO.xxx" ON FIRST LINE AND "DANGER - HIGH VOLTAGE - KEEP OUT" ON SECOND LINE.



2E-29 / E-02 **DETAIL**
SCALE: 1/2" = 1'-0"



3E-29 / E-02, E-03 **PLAN - CABLE HORN POWER VAULT**
SCALE: 1/2" = 1'-0"

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D

PRELIMINARY
40% SUBMITTAL
NOT FOR CONSTRUCTION

PLANS PREPARED BY:
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KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

CRANE CABLE HORN DETAILS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
E-29

PANEL : H1A

Location: ELECT RM
Main: 225 A

Bus Rating Amps: 225

Volts: 480 / 277
Phase/Wires: 3 / 4

Mounting: SURFACE

LOAD INFORMATION LOAD	Note	Type	VOLTAMPS PH-A	PH-B	PH-C	Ckt	P	CB	CB RATING/POLES PH	CB	P	Ckt	VOLTAMPS PH-A	PH-B	PH-C	Type	Note	LOAD INFORMATION LOAD
E/T VAULT NO. 1			4,033			1	3	30	A	30	3	2	4,033			L	1	E/T VAULT NO. 2
E/T VAULT NO. 1	0			4,033		3	-	-	B	-	-	4		4,033		L	1	E/T VAULT NO. 2
E/T VAULT NO. 1	0				4,033	5	-	-	C	-	-	6			4,033	L	1	E/T VAULT NO. 2
E/T VAULT NO. 3			4,033			7	3	30	A	30	3	8	2,200			L	1	E/T VAULT NO. 4
E/T VAULT NO. 3				4,033		9	-	-	B	-	-	10		2,200		L	1	E/T VAULT NO. 4
E/T VAULT NO. 3					4,033	11	-	-	C	-	-	12			1,000	L	1	E/T VAULT NO. 4
E/T VAULT NO. 5			4,433			13	3	30	A	20	2	14	2,500			L	1	XFMR OF E/T VAULT NO. 1
E/T VAULT NO. 5				4,433		15	-	-	B	-	-	16		2,500		L	1	XFMR OF E/T VAULT NO. 1
E/T VAULT NO. 5					4,433	17	-	-	C	20	2	18			2,500	L	1	XFMR OF E/T VAULT NO. 2
XFMR OF E/T VAULT NO. 4			2,500			19	2	20	A	20	-	20	2,500			L	1	XFMR OF E/T VAULT NO. 2
XFMR OF E/T VAULT NO. 4				2,500		21	-	-	B	20	2	22		2,500		L	1	XFMR OF E/T VAULT NO. 3
XFMR OF E/T VAULT NO. 5					2,500	23	2	20	C	20	-	24			2,500	L	1	XFMR OF E/T VAULT NO. 3
XFMR OF E/T VAULT NO. 5			2,500			25	-	-	A	20	1	26						SPARE
MINI POWER ZONE MPZ				2,400		27	2	20	B	20	1	28						SPARE
MINI POWER ZONE MPZ					2,400	29	-	-	C	20	1	30						SPARE
SPARE						31	1	20	A	20	1	32						SPARE
SPARE						33	1	20	B	20	1	34						SPARE
SPARE						35	1	20	C	20	1	36						SPARE
SPARE						37	1	20	A	20	1	38						SPARE
SPARE						39	1	20	B	20	1	40						SPARE
SPARE						41	1	20	C	20	1	42						SPARE
			17,499	22499	22499			A	B	C			11,233	11,233	10,033			
TOTAL/PHASE:								28,732	33732	32532								

TOTAL:

Load Breakdown		DF	VAxDF	VA
CONTINUOUS LOAD	X	1.25	0	0
LARGEST MOTOR	X	1.25	0	0
RECEPTACLE LOAD	X	NEC	0	0
DWELLING TYPE LOADS	X	1.00	0	0
OTHER LOADS	X	1.00	94996	94996
SUM			94996	94996
CALC'D AMPERES			114.3	

	NOTES
1	
2	
3	
4	
5	
6	
7	

	Load Types
L	LIGHTING LOAD
R	RECEPTACLE LOAD
M	LARGEST MOTOR
D	DWELLING/RESIDENTIAL LOAD

PANEL : H1C

Location: ELECT RM
Main: 225 A

Bus Rating Amps: 225

Volts: 480 / 277
Phase/Wires: 3 / 4

Mounting: SURFACE

LOAD INFORMATION LOAD	Note	Type	VOLTAMPS PH-A	PH-B	PH-C	Ckt	P	CB	CB RATING/POLES PH	CB	P	Ckt	VOLTAMPS PH-A	PH-B	PH-C	Type	Note	LOAD INFORMATION LOAD
HMP #2	1	L	4,033			1	3	30	A	30	3	2	4,033			L	1	HMP #8
HMP #2	1	L		4,033		3	-	-	B	30	-	4		4,033		L	1	HMP #8
HMP #2	1	L			4,033	5	-	-	C	30	-	6			4,033	L	1	HMP #8
HMP #4	1	L	4,033			7	3	30	A	30	3	8	4,033			L	1	HMP #9
HMP #4	1	L		4,033		9	-	-	B	30	-	10		4,033		L	1	HMP #9
HMP #4	1	L			4,033	11	-	-	C	30	-	12			4,033	L	1	HMP #9
HMP #7	1	L	4,033			13	3	30	A	30	3	14	4,033			L	1	HMP #10
HMP #7	1	L		4,033		15	-	-	B	30	-	16		4,033		L	1	HMP #10
HMP #7	1	L			4,033	17	-	-	C	30	-	18			4,033	L	1	HMP #10
HMP #2,#4,#7	1	L	2,200			19	2	20	A	20	2	20	2,200			L	1	HMP #8,#9,#10
HMP #2,#4,#7	1	L		2,200		21	-	30	B	-	2	22		2,200		L	1	HMP #8,#9,#10
						23	1	20	C	20	1	24						
						25	1	20	A	20	1	26						
						27	1	20	B	20	1	28						
						29	1	20	C	20	1	30						
						31	1	20	A	20	1	32						
						33	1	20	B	20	1	34						
						35	1	20	C	20	1	36						
						37	1	20	A	20	1	38						
						39	1	20	B	20	1	40						
						41	1	20	C	20	1	42						
			14,299	14,299	12,099			A	B	C			14,299	14,299	12,099			
TOTAL/PHASE:								28,598	28,598	24,198								

TOTAL:

Load Breakdown		DF	VAxDF	VA
CONTINUOUS LOAD	X	1.25	101,743	81,394
LARGEST MOTOR	X	1.25	0	0
RECEPTACLE LOAD	X	NEC	0	0
DWELLING TYPE LOADS	X	1.00	0	0
OTHER LOADS	X	1.00	0	0
SUM			101,743	81,394
CALC'D AMPERES			122.4	

	NOTES
1	VIA LIGHTING CONTROLLER
2	
3	
4	
5	
6	
7	

	Load Types
L	LIGHTING LOAD
R	RECEPTACLE LOAD
M	LARGEST MOTOR
D	DWELLING/RESIDENTIAL LOAD

PANEL : H1B

Location: ELECT RM
Main: 225 A

Bus Rating Amps: 225

Volts: 480 / 277
Phase/Wires: 3 / 4

Mounting: SURFACE

LOAD INFORMATION LOAD	Note	Type	VOLTAMPS PH-A	PH-B	PH-C	Ckt	P	CB	CB RATING/POLES PH	CB	P	Ckt	VOLTAMPS PH-A	PH-B	PH-C	Type	Note	LOAD INFORMATION LOAD
HMP #11	1	L	4,433			1	3	30	A	30	3	2	4,033			L	1	HMP #12
HMP #11	1	L		4,433		3	-	-	B	-	-	4		4,033		L	1	HMP #12
HMP #11	1	L			4,433	5	-	-	C	-	-	6			4,033	L	1	HMP #12
HMP #13	1	L	4,433			7	3	30	A	30	3	8	4,033			L	1	HMP #14
HMP #13	1	L		4,433		9	-	-	B	-	-	10		4,033		L	1	HMP #14
HMP #13	1	L			4,433	11	-	-	C	-	-	12			4,033	L	1	HMP #14
SECURITY HMP #11,#12,#13,#14	1	L	2,200			13	2	20	A	30	3	14	4,033			L	1	HMP #5
SECURITY HMP #11,#12,#13,#14	1	L		2,200		15	-	-	B	-	-	16		4,033		L	1	HMP #5
HMP #3	1	L			4,033	17	3	30	C	-	-	18			4,033	L	1	HMP #5
HMP #3	1	L	4,033			19	-	-	A	30	3	20	4,033			L	1	HMP #6
HMP #3	1	L		4,033		21	-	-	B	-	-	22		4,033		L	1	HMP #6
SECURITY HMP #3,#5,#6	1				2,200	23	2	20	C	-	-	24			4,033	L	1	HMP #6
SPARE	1	L	2,200			25	-	-	A	20	1	26						SPARE
SPARE						27	1	20	B	20	1	28						SPARE
SPARE						29	1	20	C	20	1	30						SPARE
SPARE						31	1	20	A	20	1	32						SPARE
SPARE						33	1	20	B	20	1	34						SPARE
SPARE						35	1	20	C	20	1	36						SPARE
SPARE						37	1	20	A	20	1	38						SPARE
SPARE						39	1	20	B	20	1	40						SPARE
SPARE						41	1	20	C	20	1	42						SPARE
			17,299	15,099	15,099			A	B	C			16,132	16,132	16,132			
TOTAL/PHASE:								33,431	31,231	31,231								

TOTAL:

Load Breakdown		DF	VAxDF	VA
CONTINUOUS LOAD	X	1.25	117,116	93,693
LARGEST MOTOR	X	1.25	0	0
RECEPTACLE LOAD	X	NEC	0	0
DWELLING TYPE LOADS	X	1.00	0	0
OTHER LOADS	X	1.00	2,200	2,200
SUM			119,316	95,893
CALC'D AMPERES			143.5	

	NOTES
1	VIA LIGHTING CONTROLLER
2	
3	
4	
5	
6	
7	

	Load Types
L	LIGHTING LOAD
R	RECEPTACLE LOAD
M	LARGEST MOTOR
D	DWELLING/RESIDENTIAL LOAD

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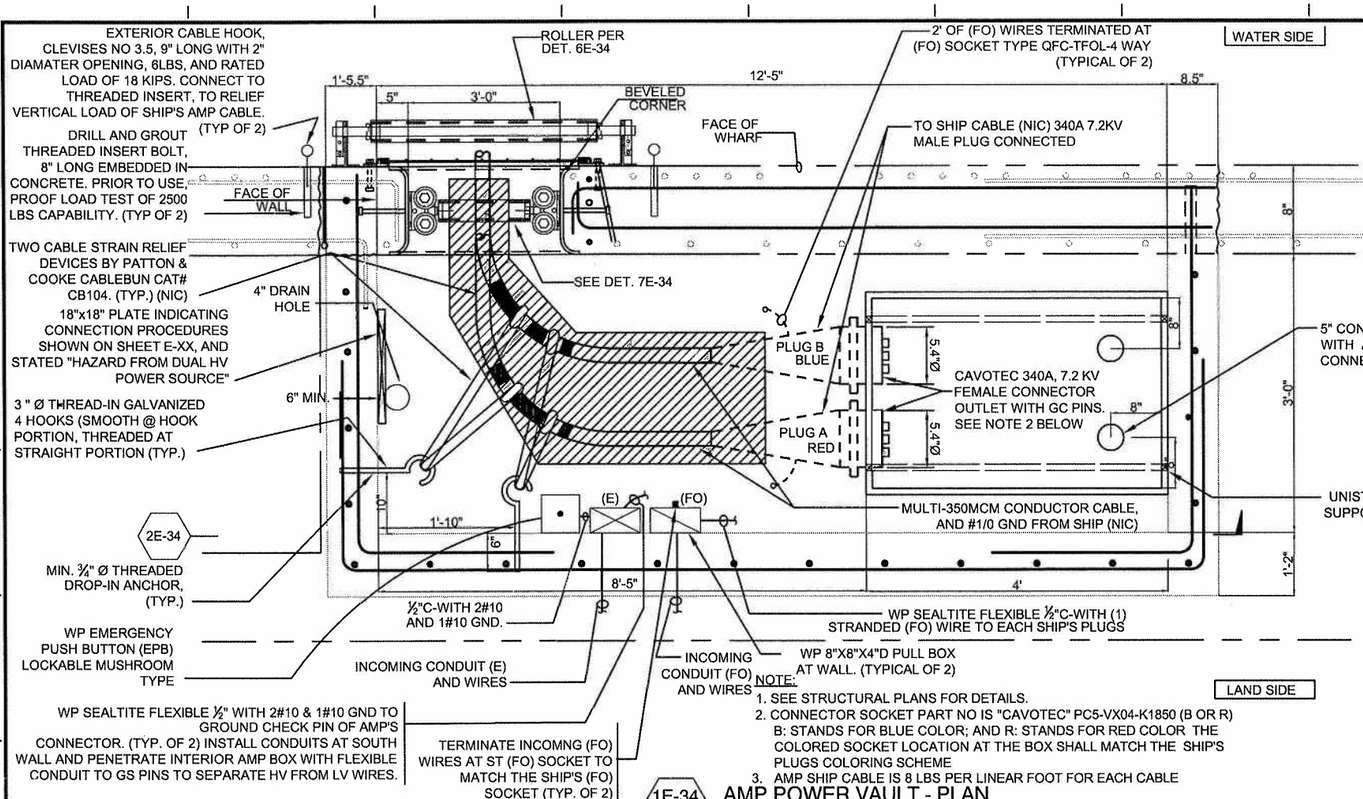
DRAWN: C. CANLOBO
CHECKED:
DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

PANEL SCHEDULES

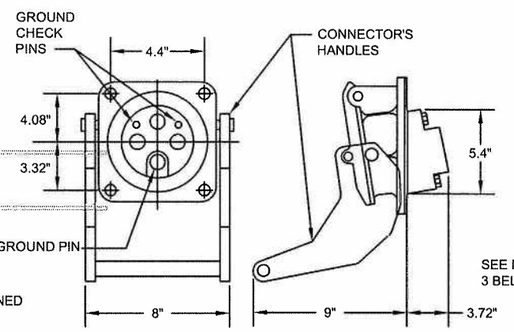
THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER: E-32



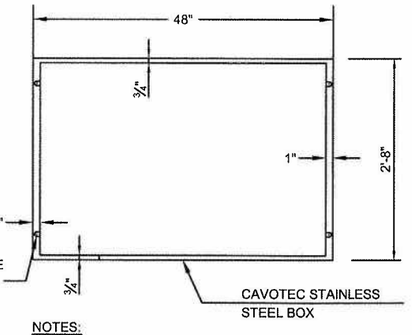
NOTE:
1. SEE STRUCTURAL PLANS FOR DETAILS.
2. CONNECTOR SOCKET PART NO IS "CAVOTEC" PC5-VX04-K1850 (B OR R) B: STANDS FOR BLUE COLOR; AND R: STANDS FOR RED COLOR THE COLORED SOCKET LOCATION AT THE BOX SHALL MATCH THE SHIP'S PLUGS COLORING SCHEME
3. AMP SHIP CABLE IS 8 LBS PER LINEAR FOOT FOR EACH CABLE

1E-34 / E-02, E-03 AMP POWER VAULT - PLAN
SCALE: NONE

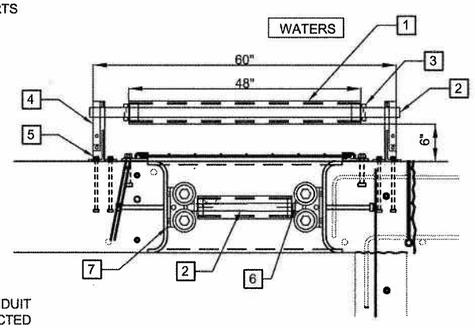


VAULT LID SHALL BE SPRING-ASSISTED ONE-HAND LIFT TYPE; CAVOTEC MODEL# 24MC-36/44/149

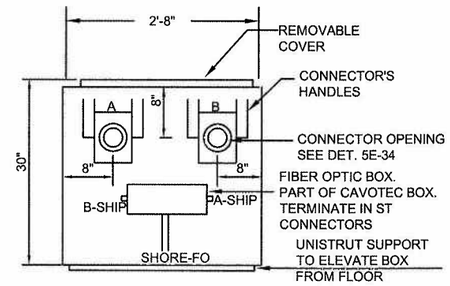
5E-34 / E-34 AMP OUTLET
SCALE: NONE



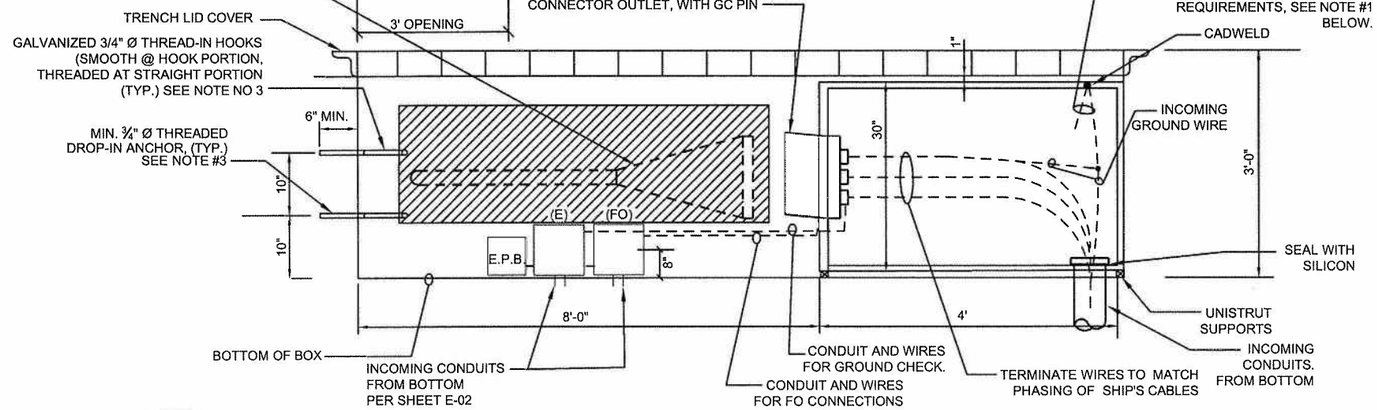
NOTES:
1. ALL BOLTS AND STRUT SUPPORT CHANNELS SHALL BE STAINLESS STEEL 316.
2. CONTRACTOR SHALL INSTALL ALL BOLTS AND UNISTRUT SUPPORT CHANNELS.
3. BOLT DOWN BOX WITH (4) 1/2" DIAMETER STAINLESS STEEL, 6" LONG BOLT, EMBEDED IN CONCRETE (TYPICAL)



3E-34 / E-34 INTERIOR AMP POWER VAULT - PLAN
SCALE: 1" = 1'-0"



NOTE:
THE COMPLETE 48"Wx32"Lx30"D STAINLESS STEEL BOX, AND FEMALE CONNECTORS SHALL BE MANUFACTURED BY CAVOTEC TO MATCH "CAVOTEC" SHIPS AMPS' MALE PLUGS. THE WHOLE ASSEMBLY POWER UNIT IS "CAVOTEC" PART NO PC5-AX04-K1855. CONTACT MR. ROB THOMPSON AT (714) 668-2233 FOR QUOTE



1" WP SEALTITE FLEXIBLE CONDUIT WITH 1#1/0 GND. TO BE CONNECTED TO METAL FRAME, AND INCOMING GROUND WIRES TO MEET CODE REQUIREMENTS, SEE NOTE #1 BELOW.

NOTES:
1. EXPOSED NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT, CONDUCTOR SUPPORTS OR RACKS, CONDUITS AND OTHER METAL APPURTENANCES, INCLUDING ANY METAL COVER AND ITS SUPPORTING RING SHALL BE BONDED TOGETHER AND CONNECTED TO A COMMON GROUND, AND TO THE INCOMING GROUND WIRES PER CODE
2. THE OUTLET AND CORRESPONDING BREAKER SHALL HAVE A MATCHING KIRKLOCK TO PREVENT SHORE POWER CONNECTION OR DISCONNECTION WHILE ENERGIZED.
3. CONTRACTOR SHALL SUBMIT THE TYPE OF DROP-IN ANCHOR & THREADED HOOK TO ENGINEER FOR APPROVAL PRIOR TO DRILLING.

2E-34 / E-34 AMP POWER VAULT - ELEVATION
SCALE: NONE

CONTRACTOR SHALL OBTAIN A UL FIELD LISTING FOR EACH OF THE OVERALL AMP BOX ASSEMBLY. CONTACT ED ARSHI AT (714) 281-2642 FOR UL QUOTE (TOTAL OF 2 AMP POWER VAULT)

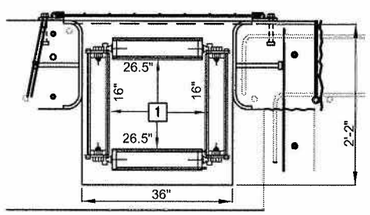
6E-34 / E-34 ROLLER INSTALLATION - PLAN
SCALE: NONE

KEY NOTES: FOR DETAIL 6E-34 AND 7E-34

- THE ROLLERS ASSEMBLY ARE CUSTOM MADE TO FIT THIS APPLICATION, AND MADE BY "LITH-O-ROLL CORPORATION". CONTACT MR. JERRY WHIPPIE AT (626) 579-0340 LOCATED AT EL MONTE, CALIFORNIA

1. 1/4" THICK DURO EPDM RUBBER ROLLER, OZONE AND ULTRA-VIOLET RESISTANCE, APPROVED FOR SEA WATER APPLICATION.
2. 1" THICK STAINLESS STEEL SQUARE SHAFT BAR
3. DERLIN BEARINGS AT BOTH SIDE FOR ROLLERS TO ROTATE AROUND SHAFT.
4. 12" LONG SUPPORT STAINLESS STEEL BRACKET AT EACH END WITH HEX BOLTS, WASHERS, NUTS,... SUPPORT SHALL HANDLE 1000lbs. PRESSURE LOAD.
5. (4) ⅝" DIAMETER STAINLESS STEEL, 8" LONG BOLT, EMBEDED IN CONCRETE (TYPICAL)
6. OILITE BEARING AT BOTH SIDE FOR ROLLERS TO ROTATE AROUND SHAFT, RATED FOR 500lbs. PRESSURE LOAD.
7. ROLLER SHALL BE HINGED AT THIS POINT TO ALLOW TOP ROLLER TO OPEN AT TIME OF INSTALLING SHIP CABLE

4E-34 / E-34 INTERIOR BOX DETAIL - FRONT ELEVATION
SCALE: 1" = 1'-0"



7E-34 / E-34 ROLLER INSTALLATION - ELEVATION
SCALE: NONE

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KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

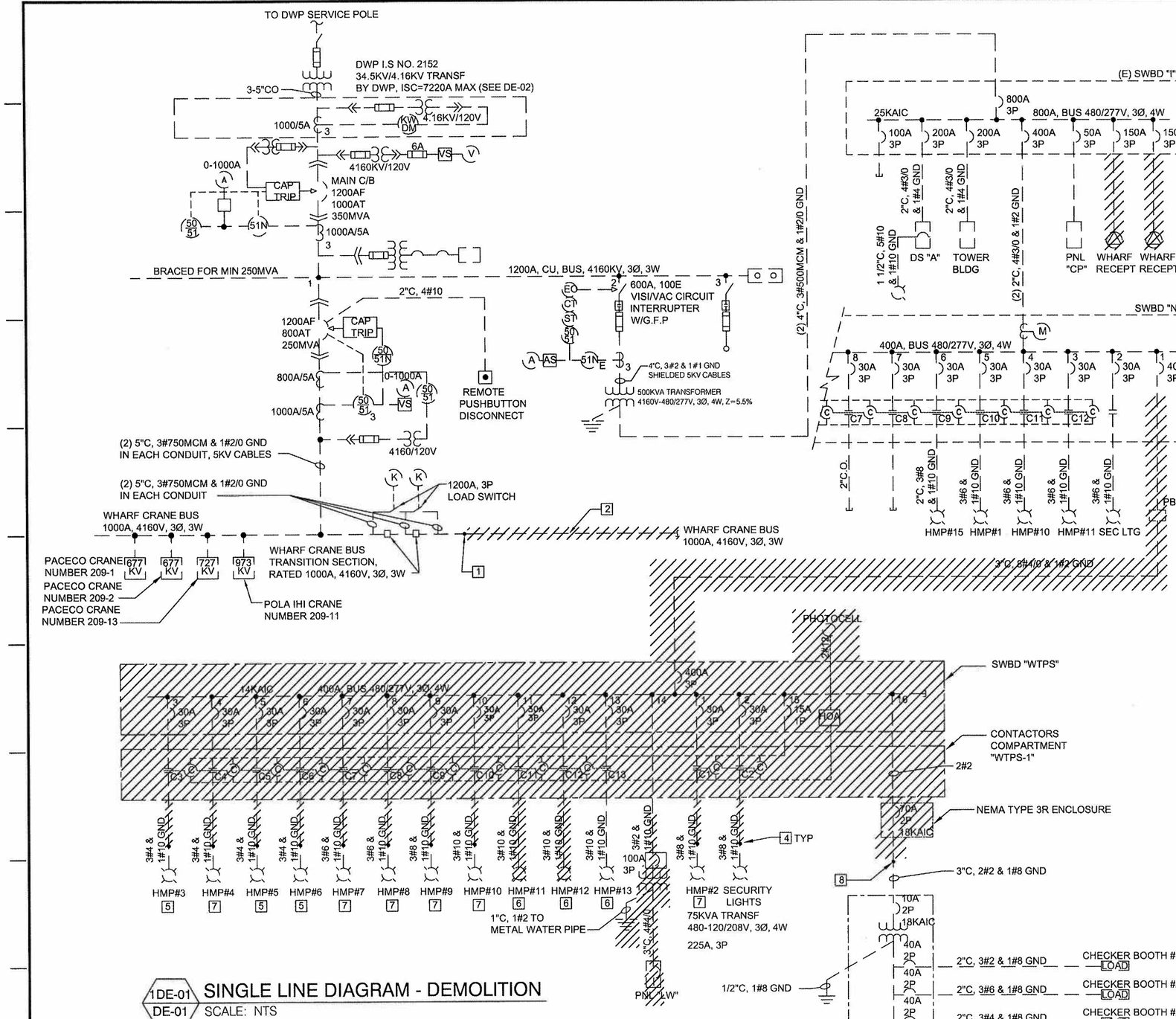
AMP - BOX DETAILS

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

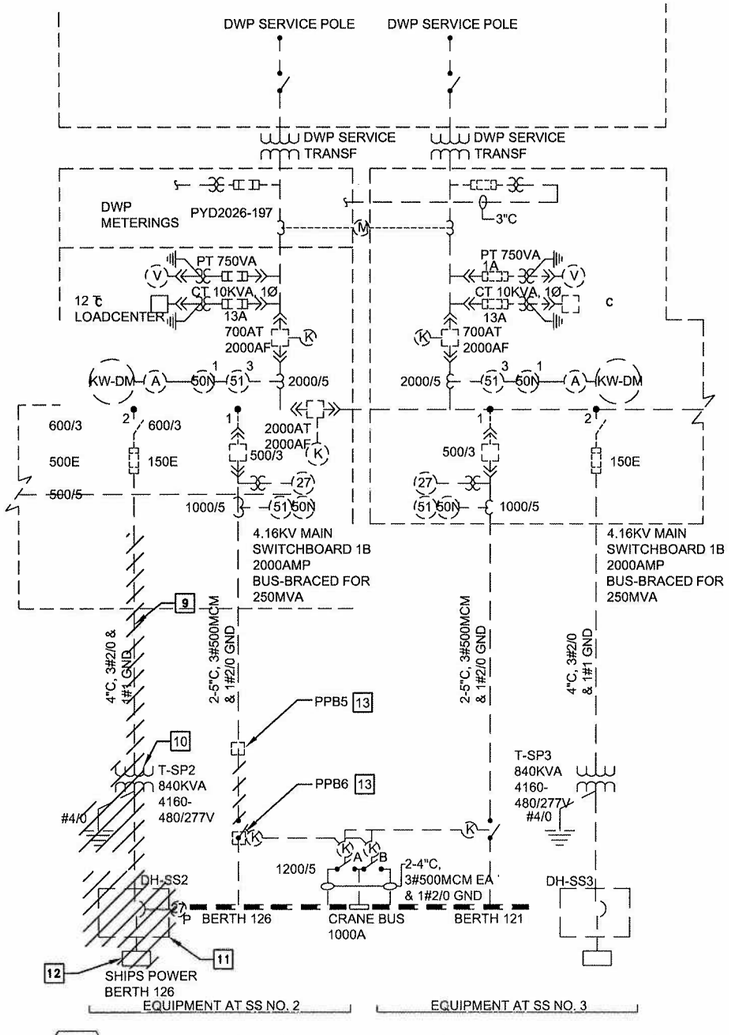
DRAWING NUMBER
E-34

DEMOLITION NOTES:

1. CONTRACTOR TO CUT (E) WHARF CRANE BUS AT THIS POINT REF SHEETS 1-1706 E-6, E-8 & E-13.
2. (E) PORTION OF CRANE RAIL AND BUS TO BE REMOVED. REF SHEETS 1-1706 E-6, E-8 & E-13.
3. (E) SWITCHBOARD "I" TO REMAIN AND PROTECT IN PLACE. REF SHEET 1-1706 E-3 & E-4.
4. INTERCEPT (E) CONDUIT & CABLES AS NOTED AT THIS POINT. REF SHEET 1-2187 E-2, E-3 & E-4.
5. RECIRCUIT TO PANEL HIB.
6. (E) HIGH MAST LIGHT POLE TO BE REMOVED INCLUDING ELECTRICAL DEVICES AND OTHER ACCESSORIES. FIELD VERIFY. REF SHEET 1-2187 E-2, REF SHEET 1-1923 E-2.
7. RECIRCUIT TO PANEL HIC.
8. SEE E-12-A FOR NEW REQUIRED WORK.
9. DISCONNECT AND REMOVE EXISTING WIRES BACK TO SOURCE OR NEAREST PULLBOX TO REMAIN. ABANDON CONDUIT AS REQUIRED.
10. (E) TRANSFORMER TO BE REMOVED INCLUDING ELECTRICAL DEVICES AND OTHER ACCESSORIES. FIELD VERIFY.
11. (E) SWITCHGEAR TO BE REMOVED INCLUDING ELECTRICAL DEVICES AND OTHER ACCESSORIES. FIELD VERIFY.
12. (E) SHIPS POWER RECEPTACLES TO BE REMOVED AND OTHER ACCESSORIES. FIELD VERIFY.
13. FOR NEW WORK SEE SHEET E-12A.



1DE-01 / DE-01 SINGLE LINE DIAGRAM - DEMOLITION
SCALE: NTS



2DE-01 / DE-01 PARTIAL SINGLE LINE DIAGRAM - DEMOLITION
SCALE: NTS (LOCATED AT SUBSTATION "SS NO. 1")

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CHECKED:
DESIGNED:
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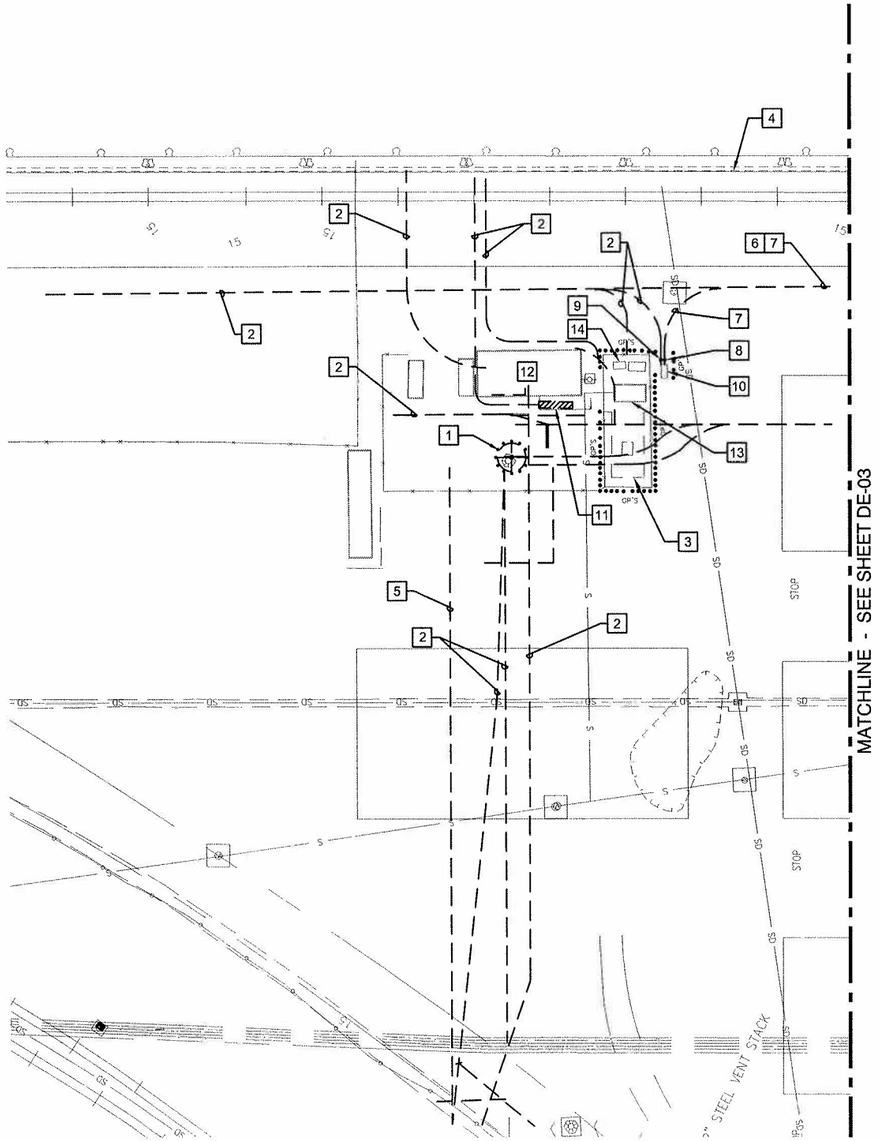
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I
SINGLE LINE DIAGRAM - DEMOLITION

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

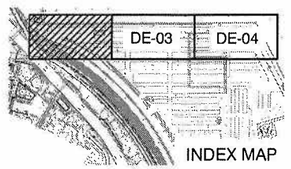
DRAWING NUMBER
DE-01



ELECTRICAL DEMOLITION NOTES:

1. (E) EXISTING HIGH MAST LIGHT POLE TO REMAIN AND PROTECT IN PLACE. FIELD VERIFY
2. (E) CONDUIT AND WIRES TO REMAIN AND PROTECT IN PLACE.
3. (E) DWP SUBSTATION "IS 2152" TO REMAIN.
4. CRANE BUS TRENCH WITH 1000A, 2.4/4.16KV, 3-PHASE CRANE BUS TO REMAIN.
5. (E) TELEPHONE CONDUIT TO REMAIN AND PROTECT IN PLACE.
6. (E) SIGNAL & COMM CONDUITS & CABLES TO REMAIN.
7. (E) CONDUIT AND WIRES FOR (E) SWBD "WTPS" TO BE DISCONNECTED AND REMOVE BACK TO SOURCE.
8. (E) POWER PULL BOX TO REMAIN.
9. (E) COMMUNICATION PULL BOX TO REMAIN.
10. (E) SWITCHBOARD "N" TO REMAIN.
11. (E) SWITCHBOARD "DSA" TO REMAIN.
12. (E) LONGSHORE BUILDING & RESTROOM TO REMAIN.
13. (E) H.V. SWITCHGEAR "MN" TO REMAIN.
14. (E) DISTRIBUTION SWBD "I" TO REMAIN.

1DE-02 / DE-02 ELECTRICAL DEMOLITION PLAN
SCALE: 1"=40'



INDEX MAP

NO.	DATE	DRAWN	REVISIONS –	CH'KD	APP'D
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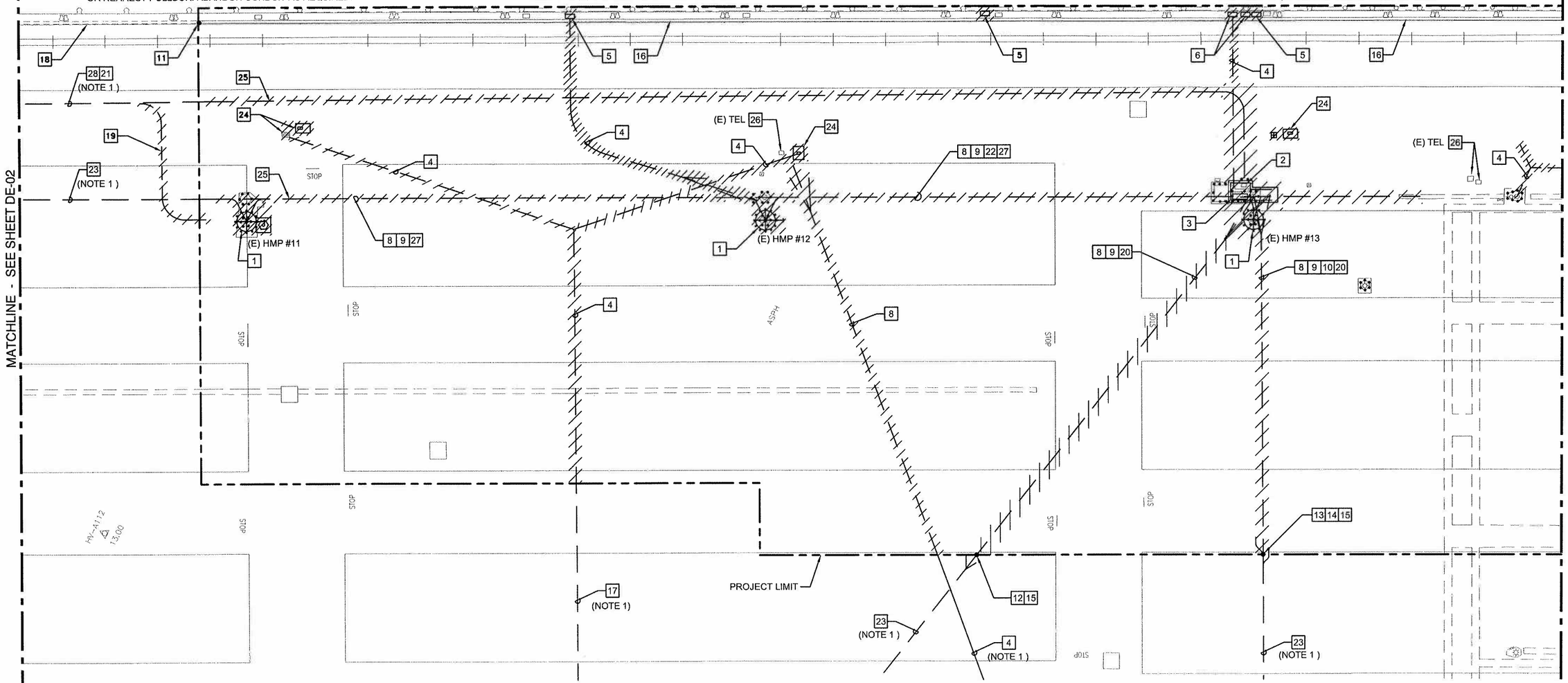
BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I
ELECTRICAL DEMOLITION PLAN
THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309
DRAWING NUMBER
DE-02

ELECTRICAL DEMOLITION NOTES:

1. SEE DEMOLITION NOTE #6 ON SHEET DE-01.
2. (E) SWBD "WTPS" TO BE RELOCATED. SEE SHEET E-15 FOR NEW WORK.
3. CRANE BUS INTERCHANGE SWITCHGEAR TO BE REMOVED INCLUDING ELECTRICAL DEVICES AND OTHER ACCESSORIES. FIELD VERIFY. REF SHEET 1-1366 E-7 & E-12 REF SHEET 1-1706 E-4.
4. (E) WIRES TO BE DISCONNECTED AND REMOVED BACK TO SOURCE OR NEAREST PULLBOX. REMOVE CONDUIT AS REQUIRED. FIELD VERIFY.
5. TELEPHONE, POWER RECEPTACLE AND ELECTRICAL BOX TO BE REMOVED. FIELD VERIFY
6. CRANE BUS INTERCHANGE ELECTRICAL BOX TO BE REMOVED INCLUDING ELECTRICAL DEVICES AND OTHER ACCESSORIES. REF SHEET 1-1706 E-12.
7. MAINTAIN CONTINUITY OF THE CIRCUIT(S) IN OPERATION SERVING (E) EQUIPMENT TO REMAIN.
8. DISCONNECT AND REMOVE TELEPHONE CABLES BACK TO SOURCE OR NEAREST PULLBOX. ABANDON CONDUIT AS REQUIRED.
9. DISCONNECT AND REMOVE PA CABLES BACK TO SOURCE OR NEAREST PULLBOX. ABANDON CONDUIT AS REQUIRED.
10. DISCONNECT AND REMOVE FA CABLES BACK TO SOURCE OR NEAREST PULLBOX. ABANDON CONDUIT AS REQUIRED.
11. CUT CRNAE BUS AT THIS POINT. REMOVE BUS WITHIN PROJECT LIMIT. SEE DEMOLITION NOTE #2 ON SHEET DE-01.
12. INTERCEPT (E) 3"C WITH 3#4, HMP #6, CKT. WTPS-6, 3#4, HMP #3, CKT. WTPS-3, 3#4, HMP #5, CKT. WTPS-5, 6#10 SEC CKT. WTPS-2, 3#2, MPZ, CKT. WTPS-16 & 1#8GND AT THIS POINT. FIELD VERIFY. ROUTE (N) CABLES TO MATCH (E) VIA (N) PULLBOX TO (E) CONDUIT AS NOTED. REF SHEET 1-2187 E-2 & E-3.
13. INTERCEPT (E) 2"C WITH 3#10, HMP #2, CKT. WTPS-1, 3#6, HMP #7, CKT. WTPS-7; 3#6, HMP #4, CKT. WTPS-4; & 1#10GND AT THIS POINT. FIELD VERIFY. ROUTE (N) CABLES TO MATCH (E) VIA (N) PULLBOX TO (E) CONDUIT AS NOTED. REF SHEET 1-2187 E-2 & E-3.
14. INTERCEPT (E) 2"C WITH 3#10, HMP #10, CKT. WTPS-10, 3#8, HMP #9, CKT. WTPS-9; 3#6, HMP #8, CKT. WTPS-8, 2#10, SEC CKT WTPS-2 & 1#10GND AT THIS POINT. FIELD VERIFY. ROUTE (N) CABLES TO MATCH (E) VIA (N) PULLBOX TO (E) CONDUIT AS NOTED. REF SHEET 1-2187 E-2 & E-3.
15. INTERCEPT (E) 2"C FOR TELEPHONE, (E) 2"C FOR FA SYSTEM & (E) 1"C FOR PA SYSTEM AT THIS POINT. FIELD VERIFY.
16. SEE DEMOLITION NOTE #2 ON SHEET DE-01.
17. (E) CONDUIT TO BE ABANDON IN PLACE.
18. CRANE BUS TRENCH WITH 1000A, 2.4/4.16KV, 3-PHASE CRANE BUS TO REMAIN.
19. (E) 2"C WITH TEL 24 PR CABLE TO BE REMOVED BACK TO SOURCE & UP TO (E) WHARF CONTROL TOWER. REMOVE CONDUIT AS REQUIRED. REF SHEET 1-2187 E-2.
20. DISCONNECT & REMOVE (E) CABLES BACK TO SOURCE OR NEAREST PULLBOX.
21. (E) CONDUIT TO REMAIN IN PLACE. REMOVE CABLES UP TO NEAREST SOURCE OR PULL BOX. SEE SHEET E-06 FOR NEW WORK.
22. (E) 3#10 WIRES, CKT WTPS-12 SERVING HMP #12 TO BE DISCONNECTED AND REMOVED BACK TO SOURCE OR NEAREST PULLBOX.
23. SEE DEMOLITION NOTE #5 ON SHEET DE-01.
24. (E) PULLBOX TO BE REMOVED. FIELD VERIFY.
25. DISCONNECT & REMOVE (E) CABLES BACK TO SOURCE OR NEAREST PULLBOX. ROUTE (N) CABLES TO MATCH (E) VIA (N) PULLBOX TO (E) CONDUIT AS NOTED.REF SHEET 1-2187 E-2 & E-3.
26. DISCONNECT AND REMOVE PULL BOX AND WIRES.
27. DISCONNECT AND REMOVE (E) 3#8, CKT WTPS-11, SERVING HMP #11, 2#10, CKT WTPS-2 SERVING SECURITY & 1#10GND BACK TO SOURCE OR NEAREST PULLBOX. REF SHEET 1-2187 E-2 & E-3.



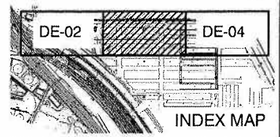
ELECTRICAL DEMOLITION NOTES (continuation):

28. (E) 2"C WITH TEL 24 PR CABLE & 1"C (PA) TO REMAIN, REMOVE 24 PAIR TEL CABLES PER DEMOLITION NOTE #19. REF SHEET 1-2187 E-2.

1DE-03 / DE-03 **ELECTRICAL DEMOLITION PLAN**
SCALE: 1"=40'

NOTES:

1. WORK OUTSIDE OF PROJECT LIMIT SHALL BE PART OF PHASE I.



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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I
ELECTRICAL DEMOLITION PLAN
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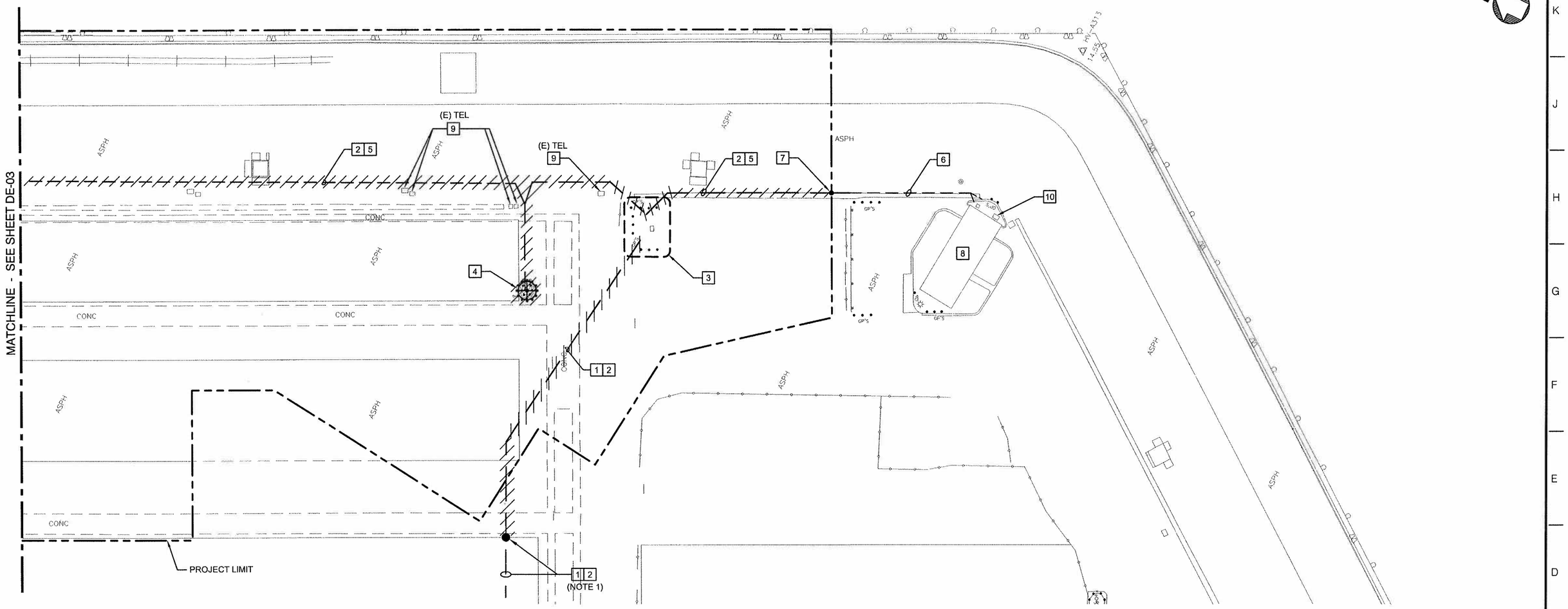
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309
DRAWING NUMBER DE-03



1DE-04 / DE-04 ELECTRICAL DEMOLITION PLAN

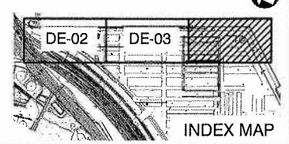
SCALE: 1"=40'

ELECTRICAL DEMOLITION NOTES:

1. (E) FEEDERS SERVING (E) SUBSTATION SS NO. 2 TO BE DISCONNECTED & REMOVED BACK TO MAIN SUBSTATION SS NO. 1. REMOVE CRANE FEEDER FROM CRANE BUS DISCONNECT TO SS NO. 1. REMOVE (E) CONDUIT AS REQUIRED. FIELD VERIFY. REF SHEET 1-1366 E-4
2. (E) COMM. SIGNAL CONDUITS TO BE REMOVED AS INDICATED IN HATCH AREA. REMOVE (E) CABLES BACK TO SOURCE. EXTEND (2) COMM CONDUITS & POWER CONDUIT TO NEW RESPECTIVE PULLBOXES. SEE DWG E-03 FOR NEW WORK.FIELD VERIFY. REF SHEET 1-1366 E-4
3. (E) SUBSTATION "SS NO. 2" TO BE REMOVED INCLUDING ASSOCIATED ELECTRICAL EQUIPMENTS, CONDUITS AND TURN OVER TO OWNER.
4. (E) HIGH MAST & ASSOCIATED CONDUITS /WIRES TO BE REMOVED & TURN OVER TO OWNER.
5. REMOVE CRANE POWER FEEDER FROM CRANE BUS DISCONNECT AT SS NO. 2 TO CIS (CRANE INTERCHANGE SWITCH). REMOVE (E) CONDUIT AS REQUIRED. FIELD VERIFY.
6. (E) POWER, COMM, SIGNAL CONDUITS & WIRES TO REMAIN (PHASE II CONTRACT).
7. CUT (E) POWER, COMM, SIGNAL CONDUITS AT THIS POINT FOR INTERCEPTION. SEE PHASE II CONTRACT SHEET E-XX FOR NEW WORK.
8. (E) MARINE OPERATION BUILDING TO REMAIN.
9. DISCONNECT AND REMOVE PULL BOX AND WIRES.
10. (E) CRANE INTERCHANGE SWITCH (CIS).

NOTES:

1. WORK OUTSIDE OF PROJECT LIMIT SHALL BE PART OF PHASE I.



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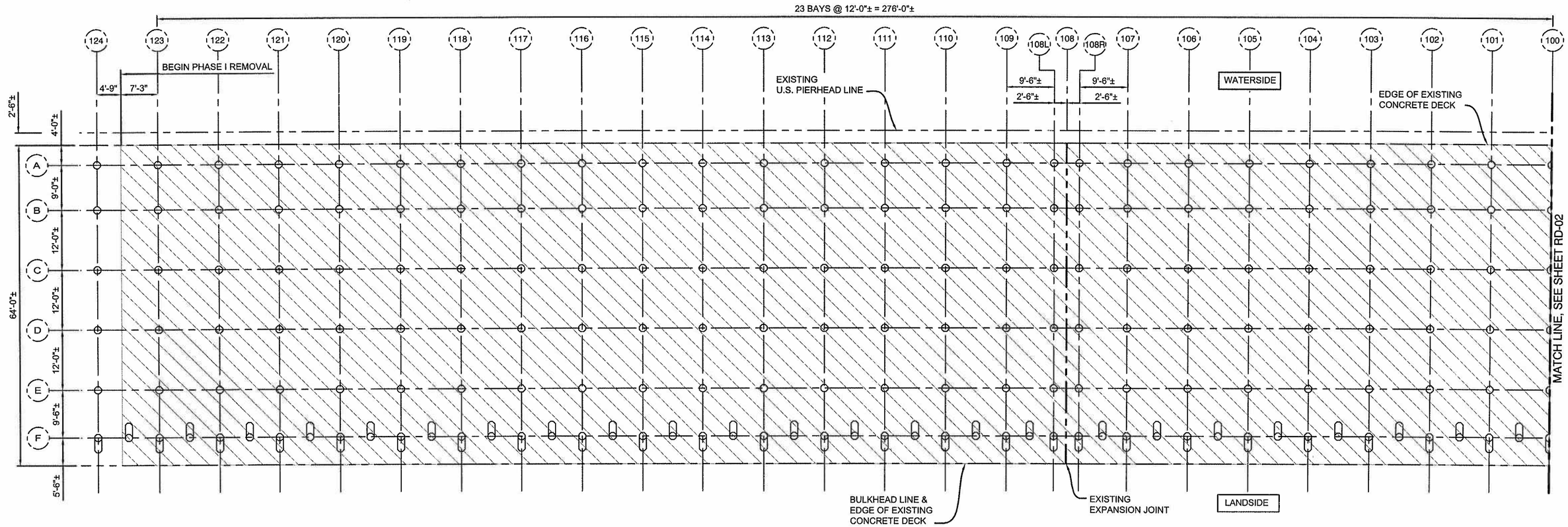
DATE: OCTOBER 30, 2009
DRAWN: C. CANLOBO
CHECKED:
DESIGNED:
ENGR/ARCH
KOSAL KRISHNAN

BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

ELECTRICAL DEMOLITION PLAN

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
DE-04

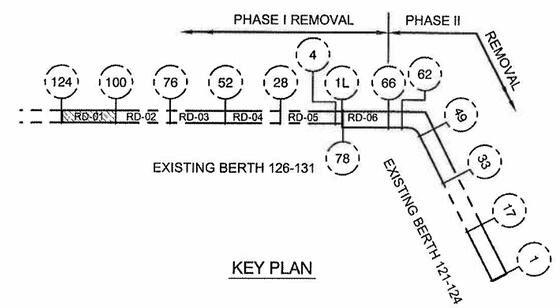


1RD-01 / RD-01 REMOVAL - EXISTING WHARF PILE AND DECK

SCALE: 1"=10'

LEGEND:

- EXISTING PILE TO BE REMOVED
- EXISTING BATTERED PILE TO BE REMOVED
- EXISTING WHARF DECK TO BE REMOVED



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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

REMOVAL - PILE AND DECK PLAN - BENTS 100 TO 124

THE PORT OF LOS ANGELES
ENGINEERING DIVISION
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

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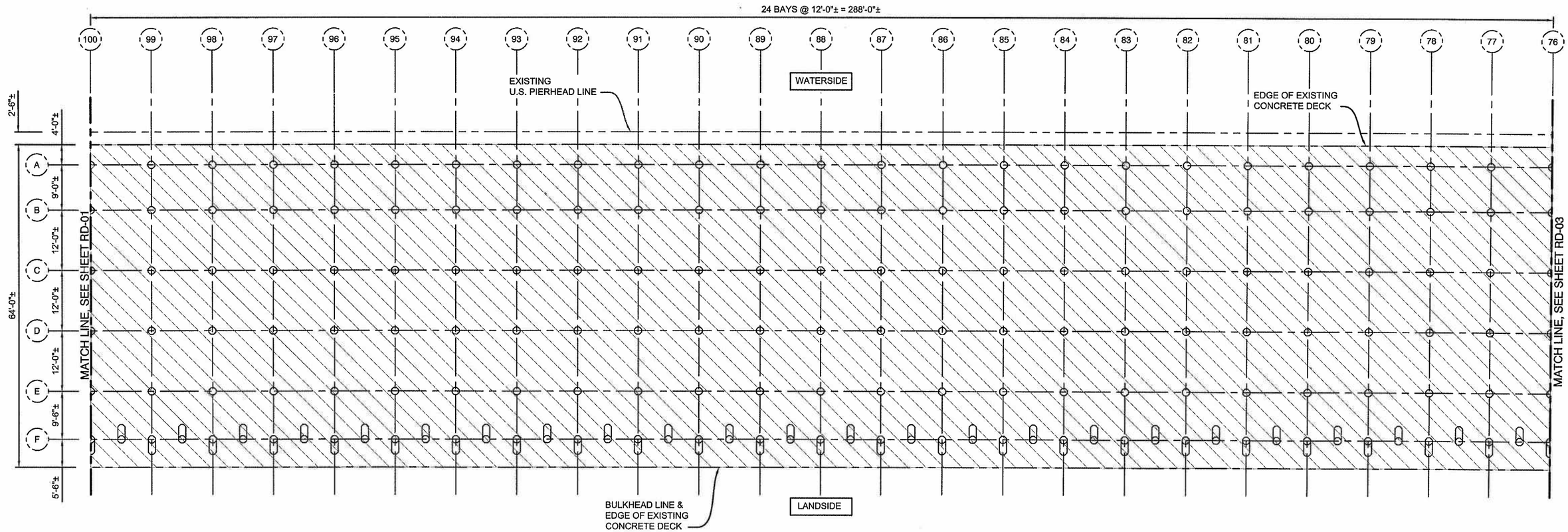
RD-01

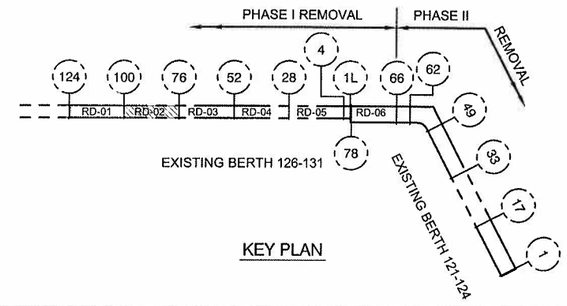


1RD-02 / RD-02 REMOVAL - EXISTING WHARF PILE AND DECK

SCALE: 1"=10'

LEGEND:

- EXISTING PILE TO BE REMOVED
- EXISTING BATTERED PILE TO BE REMOVED
- EXISTING WHARF DECK TO BE REMOVED



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REMOVAL - PILE AND DECK PLAN - BENTS 76 TO 100

THE PORT OF LOS ANGELES
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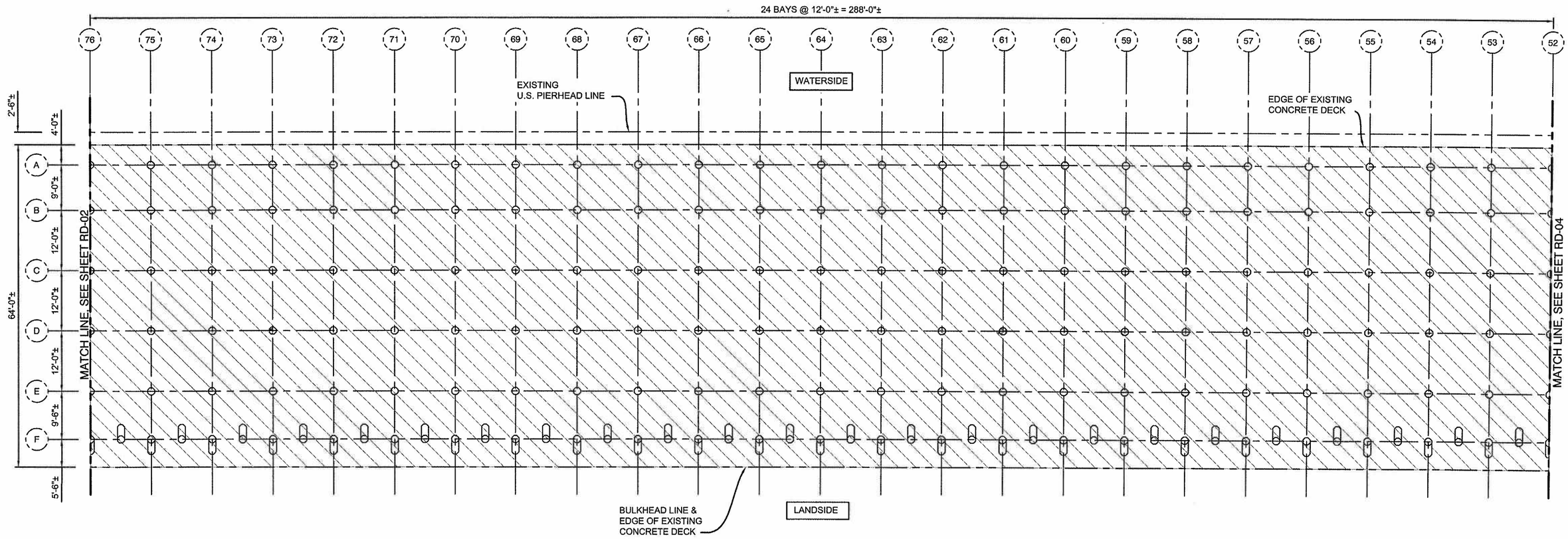
RD-02

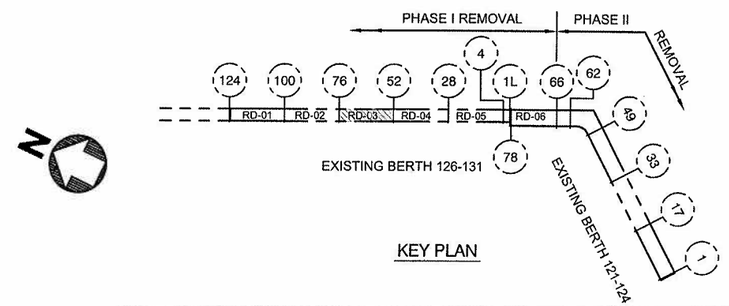


1RD-03 REMOVAL - EXISTING WHARF PILE AND DECK

RD-03 SCALE: 1"=10'

LEGEND:

- EXISTING PILE TO BE REMOVED
- EXISTING BATTERED PILE TO BE REMOVED
- EXISTING WHARF DECK TO BE REMOVED



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REMOVAL - PILE AND DECK PLAN - BENTS 52 TO 76

THE PORT OF LOS ANGELES
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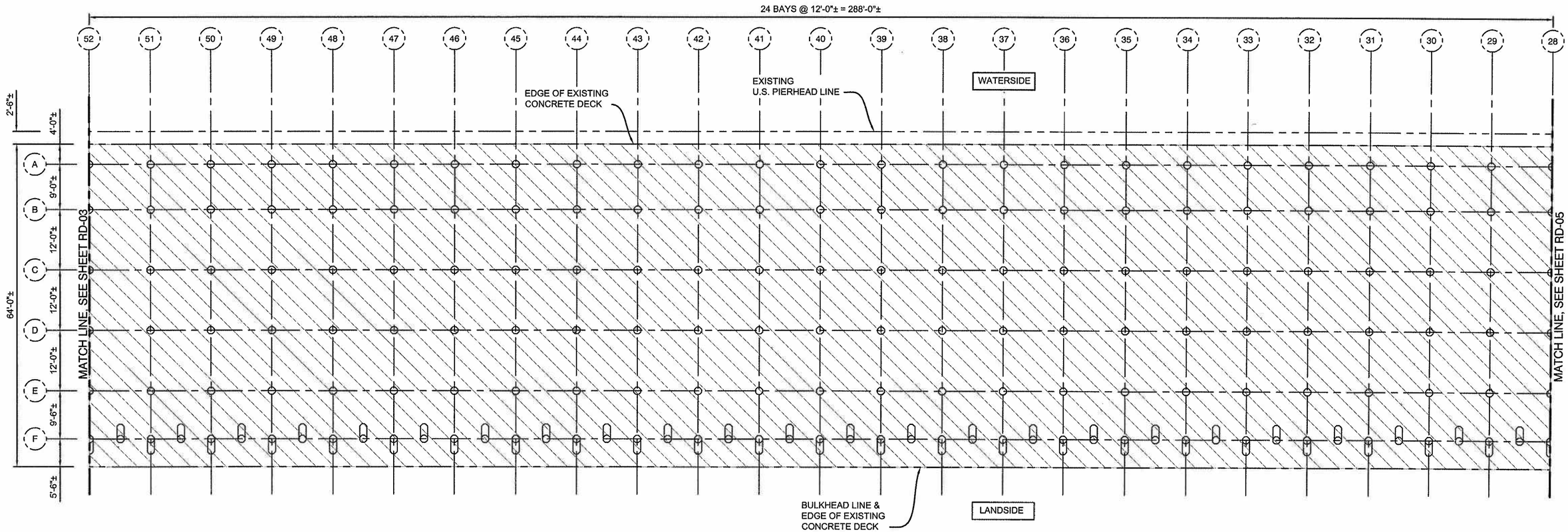
RD-03

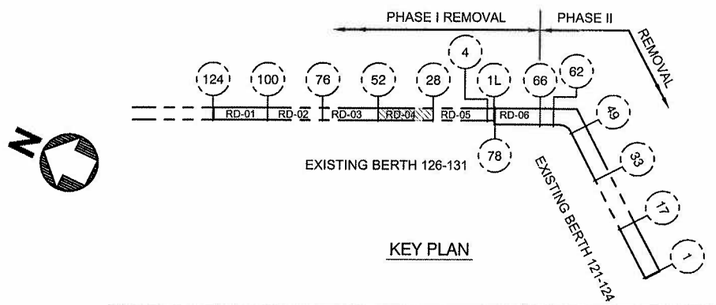


1RD-04 / RD-04 REMOVAL - EXISTING WHARF PILE AND DECK

SCALE: 1"=10'

LEGEND:

- EXISTING PILE TO BE REMOVED
- EXISTING BATTERED PILE TO BE REMOVED
- EXISTING WHARF DECK TO BE REMOVED



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REMOVAL - PILE AND DECK PLAN - BENTS 28 TO 52

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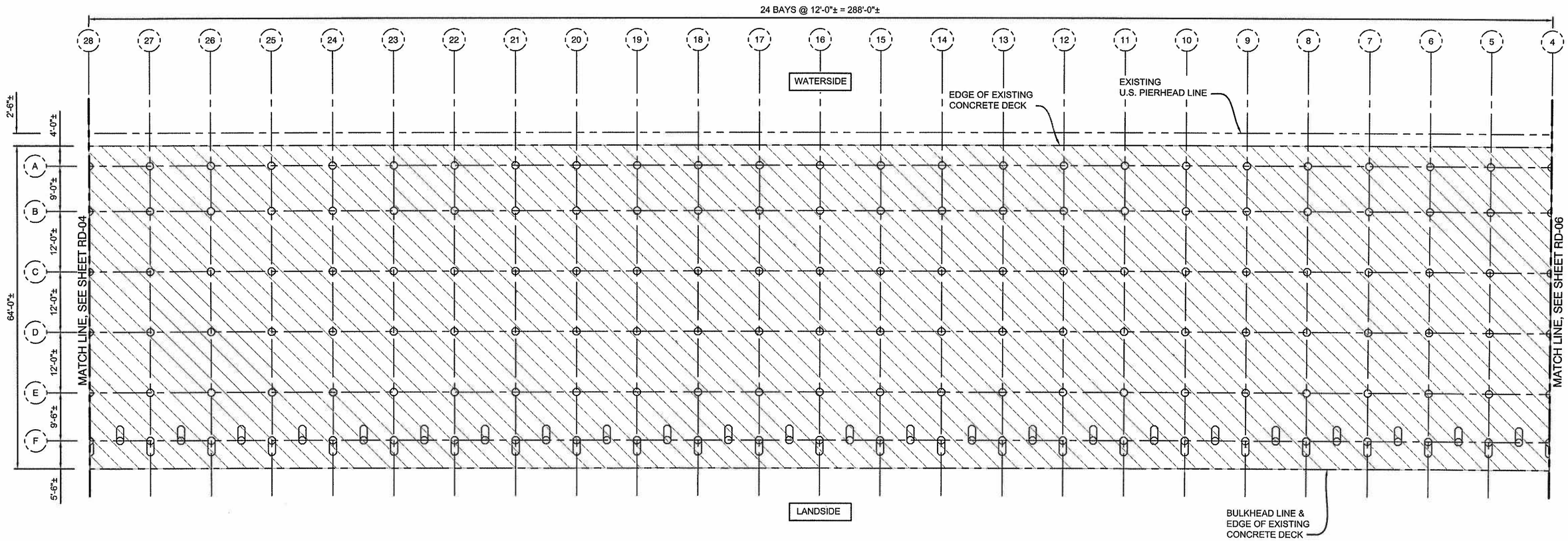
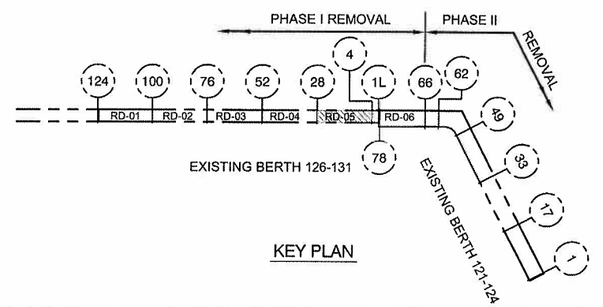


1RD-05 / RD-05 REMOVAL - EXISTING WHARF PILE AND DECK

SCALE: 1"=10'

LEGEND:

- EXISTING PILE TO BE REMOVED
- EXISTING BATTERED PILE TO BE REMOVED
- EXISTING WHARF DECK TO BE REMOVED



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REMOVAL - PILE AND DECK PLAN - BENTS 4 TO 28

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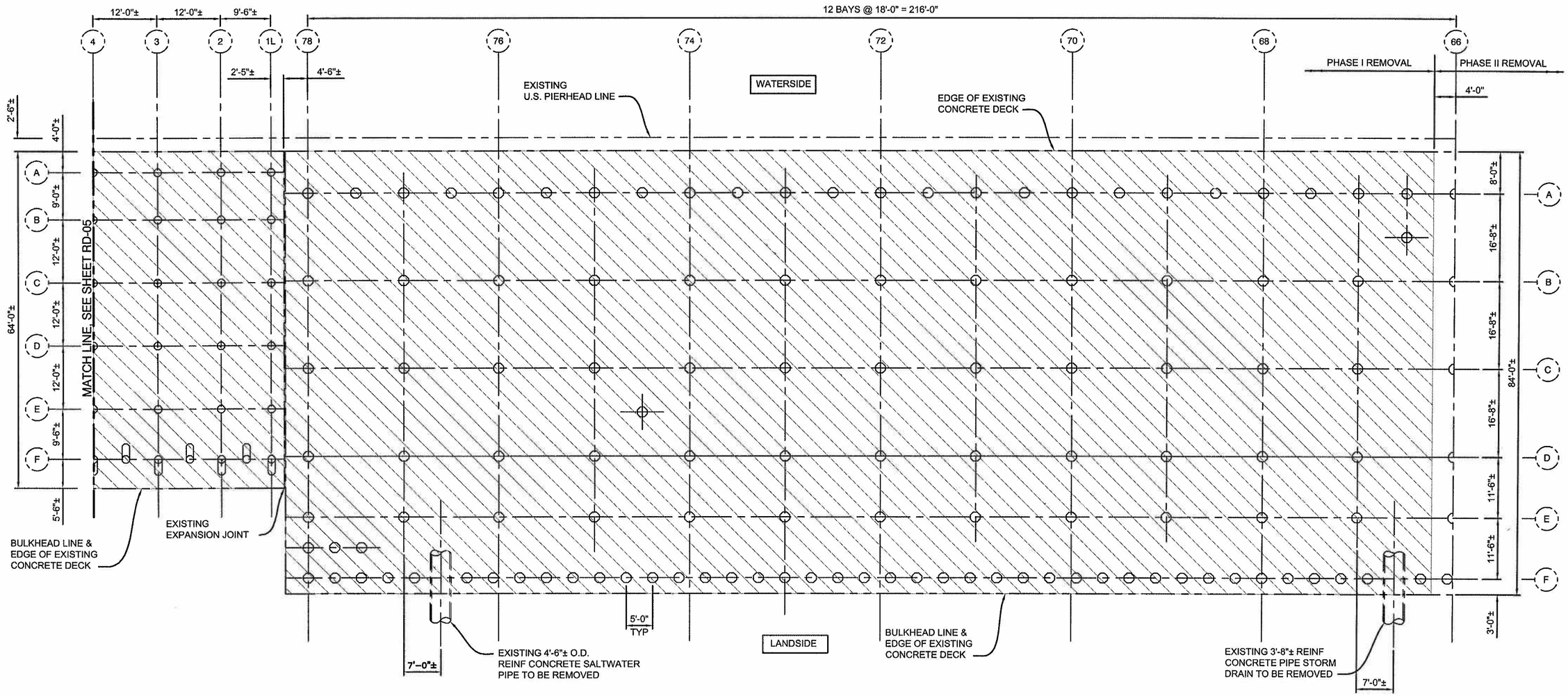
425 S. PALOS VERDES STREET SAN PEDRO CA 90731-3309

DRAWING NUMBER
RD-05

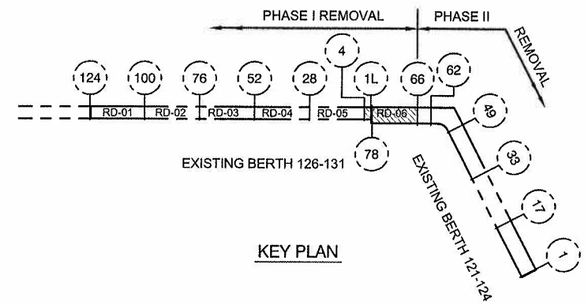


1RD-06 / RD-06 REMOVAL - EXISTING WHARF PILE AND DECK

SCALE: 1"=10'

LEGEND:

- EXISTING PILE TO BE REMOVED
- EXISTING BATTERED PILE TO BE REMOVED
- EXISTING WHARF DECK TO BE REMOVED



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BERTH 121-131 WHARF AND BACKLAND IMPROVEMENTS PHASE I

REMOVAL - PILE AND DECK PLAN - BENTS 1L TO 4, 66 TO 78

THE PORT OF LOS ANGELES
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RD-06