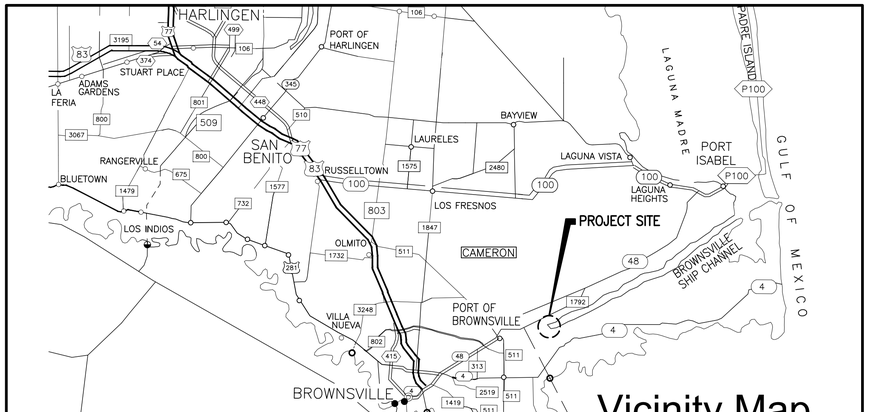
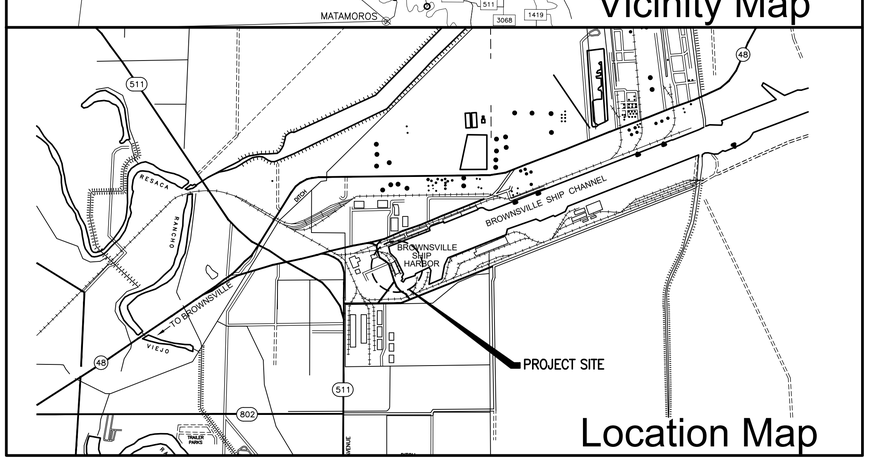
PORT OF BROWNSVILLE

the port that works

HDR Engineering, INC
TBPELS Firm
Registration No. F-754




Construction Drawings For

# Brownsville Navigation District

## Cargo Dock No. 3 Phase 1

Project No.
10320226

BROWNSVILLE, TEXAS
SEPTEMBER 2023

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED PROFESSIONAL ENGINEER
09.22.2023

09/22/2023
STATE OF TEXAS
JUSTIN AARON DE LA ROSA
134885
LICENSED PROFESSIONAL ENGINEER

## INDEX OF DRAWINGS

| | |
|---|---|
| A/C | AIR CONDITIONING |
| A/E | ARCHITECT/ENGINEER |
| A | AMPERE |
| AB | ANCHOR BOLT |
| ABAN | ABANDON |
| ABC | AGGREGATE BASE COURSE |
| ABT | ABOUT |
| AC | ALTERNATING CURRENT |
| ACK | ACKNOWLEDGE |
| ACP | ACOUSTIC CEILING PANEL, ASPHALTIC CONCRETE PAVEMENT |
| ACST | ACOUSTIC |
| AD | ADDENDUM, AREA DRAIN |
| ADDL | ADDITIONAL |
| ADH | ADHESIVE |
| ADJ | ADJUSTABLE, ADJACENT |
| AF | AMP FRAME, AMP FUSE |
| AFF | ABOVE FINISH FLOOR |
| AFG | ABOVE FINISH GRADE |
| AGGR | AGGREGATE |
| AI | AREA INLET, ANALOG INPUT |
| AIC | AMPS INTERRUPTING CAPACITY |
| ALIG | ALIGNMENT |
| ALT | ALTERNATE, ALTITUDE |
| ALUM | ALUMINUM |
| AM | ACOUSTICAL MATERIAL |
| AMB | AMBIENT |
| ANC | ANCHOR |
| AO | ANALOG OUTPUT |
| AP | ACCESS PANEL |
| APRX | APPROXIMATE |
| APVD | APPROVED |
| ARCH | ARCHITECTURAL |
| ASSY | ASSEMBLY |
| AT | ACOUSTICAL TILE, AMP TRIP |
| ATC | ACOUSTICAL TILE CEILING |
| ATM | ATMOSPHERE |
| AUTO | AUTOMATIC |
| AUX | AUXILIARY |
| AVE | AVENUE |
| AVG | AVERAGE |
| AWG | AMERICAN WIRE GAGE |
| AWT | ACOUSTICAL WALL TILE |
| | |
| B TO B | BACK TO BACK |
| BAL | BALANCE |
| BBD | BULLETIN BOARD |
| BC | BASE CABINET, BOTTOM CHORD, BOLT CENTER, BOLT CIRCLE |
| BD | BOARD |
| BE | BOTH ENDS, BELL END |
| BF | BOTH FACES, BOTTOM FACE, BLIND FLANGE, BOARD FEET |
| BITUM | BITUMINOUS |
| BKG | BACKING |
| BL | BASE LINE |
| BLDG | BUILDING |
| BLK | BLOCK |
| BLKG | BLOCKING |
| BM | BENCHMARK, BEAM |
| BOC | BACK OF CURB |
| BOD | BOTTOM OF DUCT |
| BOG | BOTTOM OF GRILLE |
| BOL | BOTTOM OF LOUVER, BOLLARD |
| BOP | BOTTOM OF PIPE |
| BOR | BOTTOM OF REGISTER |
| BOT | BOTTOM |
| BOU | BOTTOM OF UNIT |
| BP | BASE PLATE |
| BRG | BEARING |
| BRGP | BEARING PLATE |
| BRKT | BRACKET |
| BS | BOTH SIDES |
| BTU | BRITISH THERMAL UNIT |
| BTW | BETWEEN |
| BTWLD | BUTT WELD |
| BU | BELL UP, BUILT-UP |
| BUR | BUILT-UP ROOFING |
| BW | BOTH WAYS |
| BYP | BYPASS |
| | |
| C TO C | CENTER TO CENTER |
| C&G | CURB AND GUTTER |
| C | CHANNEL SHAPE, CENTIGRADE, CONDUIT |
| CAB | CABINET |
| CAP | CAPACITY |
| CAT | CATALOG, CATEGORY |
| CAV | CAVITY |
| CB | CATCH BASIN |
| CCB | CONCRETE BLOCK |
| CCW | COUNTER CLOCKWISE |
| CDF | CONTROLLED-DENSITY FILL |
| CE | CONCRETE EDGE |
| CER | CERAMIC |
| CF | CUBIC FEET (FOOT) |
| CFL | COUNTER FLASHING |
| CHBD | CHALKBOARD |
| CHD | CHORD |
| CHFR | CHAMFER |
| CHH | COMMUNICATION HANDHOLE |
| CI | CURB INLET |
| CIP | CAST-IN-PLACE |
| CIPB | CONCRETE INTERLOCKING PAVER BALLAST |
| CIRC | CIRCULATION, CIRCULAR |
| CJ | CONSTRUCTION JOINT |
| CKT | CIRCUIT |
| CL | CENTERLINE, CLASS, CLOSE |
| CLG | CEILING |

| | |
|---|---|
| CLKG | CAULKING |
| CLR | CLEAR |
| CMH | COMMUNICATION MANHOLE |
| CMP | CORRUGATED METAL PIPE |
| CMU | CONCRETE MASONRY UNIT |
| CO | CLEANOUT, CONCRETE OPENING |
| COL | COLUMN |
| COM | COMMON |
| COMB | COMBINATION |
| COMM | COMMUNICATION |
| COMP | COMPOSITION, COMPRESSIBLE, COMPOSITE |
| CON | CONCENTRIC |
| CONC | CONCRETE |
| CONN | CONNECTION |
| CONST | CONSTRUCTION |
| CONT | CONTINUOUS |
| COOR | COORDINATE |
| CORR | CORROSIVE, CORRUGATED |
| CP | CHECKER PLATE, CONTROL POINT |
| CPLG | COUPLING |
| CRL | CORROSION-RESISTANT LINING |
| CSC | COMPRESSION SLEEVE COUPLING |
| CSK | COUNTERSINK |
| CSS | CLINIC SERVICE SINK |
| CT | CERAMIC TILE |
| CTJ | CONTRACTION JOINT |
| CTR | CENTER |
| CTRL | CONTROL |
| CVT | CULVERT |
| CU | COPPER, CUBIC |
| CW | CLOCKWISE |
| CY | CUBIC YARD |
| | |
| d | PENNY (NAIL MEASURE) |
| D | DEEP, DIFFUSER, DRAIN |
| DB | DUCT BANK, DECIBEL, DRY BULB |
| DBA | DEFORMED BAR ANCHOR |
| DBL | DOUBLE |
| DC | DIRECT CURRENT |
| DEG | DEGREE |
| DEG C | DEGREE CENTIGRADE |
| DEG F | DEGREE FAHRENHEIT |
| DEMO | DEMOLITION |
| DEP | DEPRESSED |
| DEPT | DEPARTMENT |
| DET | DETAIL |
| DI | DROP INLET, DUCTILE IRON, DIGITAL INPUT |
| DIA | DIAMETER |
| DIAG | DIAGONAL, DIAGRAM |
| DIFF | DIFFERENTIAL, DIFFERENCE |
| DIM | DIMENSION |
| DISCH | DISCHARGE |
| DIST | DISTANCE, DISTRIBUTION |
| DIV | DIVISION |
| DL | DEAD LOAD |
| DMJ | DOUBLE MECHANICAL JOINT |
| DMPF | DAMP PROOFING |
| DN | DOWN |
| DO | DISSOLVED OXYGEN, DIGITAL OUTPUT, DITTO |
| DP | DEPTH |
| DPDT | DOUBLE POLE, DOUBLE THROW |
| DPST | DOUBLE POLE, SINGLE THROW |
| DS | DOWN SPOUT |
| DT | DOUBLE TEE, DRIP TRAP ASSEMBLY |
| DUP | DUPLICATE |
| DWG | DRAWING |
| DWL | DOWEL |
| DWR | DRAWER |
| | |
| E | EAST |
| EA | EACH, EXHAUST AIR |
| EC | ELECTRICAL CONTRACTOR |
| ECC | ECCENTRIC |
| ED | EQUIPMENT DRAIN |
| EDB | ELECTRICAL DUCT BANK |
| EE | EACH END |
| EF | EACH FACE |
| EFF | EFFLUENT, EFFICIENCY |
| EHH | ELECTRICAL HANDHOLE |
| EIFS | EXTERIOR INSULATION & FINISH SYSTEM |
| EJ | EXPANSION JOINT |
| EL | ELBOW, ELEVATION |
| ELEC | ELECTRICAL |
| EMBD | EMBEDDED |
| EMER | EMERGENCY |
| EMH | ELECTRICAL MANHOLE |
| ENCL | ENCLOSURE |
| ENGR | ENGINEER |
| ENTR | ENTRANCE |
| EOP | EDGE OF PAVEMENT |
| EQ | EQUAL |
| EQUIP | EQUIPMENT |
| EQUIV | EQUIVALENT |
| ES | EACH SIDE, EQUAL SPACE, EMERGENCY SHOWER |
| ESEW | EMERGENCY SHOWER AND EYE WASH |
| EST | ESTIMATE |
| EW | EACH WAY, EMERGENCY, EYE/FACE WASH |
| EWC | ELECTRIC WATER COOLER |
| EWEF | EACH WAY, EACH FACE |
| EWTB | EACH WAY, TOP AND BOTTOM |
| EXC | EXCAVATION |
| EXH | EXHAUST |
| EXP | EXPANSION, EXPOSED |
| EXST | EXISTING |
| EXT | EXTERIOR, EXTERNAL, EXTENSION |

| | |
|---|---|
| F TO F | FACE TO FACE |
| F&B | FACE AND BYPASS |
| FAB | FABRICATE |
| FB | FLOOR BEAM |
| FBD | FIBERBOARD |
| FBG | FIBERGLASS |
| FBM | BOARD FOOT MEASURE |
| FBO | FURNISHED BY OWNER |
| FC | FLUSHING CONNECTION |
| FCA | FLANGED COUPLING ADAPTER |
| FDC | FLEXIBLE DUCT CONNECTION |
| FDR | FEEDER |
| FDTN | FOUNDATION |
| FE | FLANGED END |
| FEC | FIRE EXTINGUISHER CABINET |
| FES | FLARED END SECTION |
| FEXT | FIRE EXTINGUISHER |
| FF | FAR FACE, FACTORY FINISH, FLAT FACE |
| FG | FINISHED GRADE |
| FH | FIRE HYDRANT |
| FIG | FIGURE |
| FIN | FINISH |
| FJT | FLUSH JOINT |
| FL | FLOW, FLOW LINE |
| FLEX | FLEXIBLE |
| FLG | FLANGE |
| FLOR | FLUORESCENT |
| FLR | FLOOR |
| FLS | FLASHING, FLUSH |
| FN | FENCE |
| FO | FINISHED OPENING, FIBER OPTIC |
| FOB | FLAT ON BOTTOM |
| FOC | FACE OF CONCRETE, FACE OF CURB |
| FOF | FACE OF FINISH |
| FOM | FACE OF MASONRY |
| FOS | FACE OF STUDS |
| FOT | FLAT ON TOP |
| FPT | FEMALE PIPE THREAD |
| FR | FRAME |
| FRP | FIBERGLASS REINFORCED PLASTIC |
| FRTM | FIRE RETARDANT TREATED MATERIAL |
| FS | FLOOR SINK, FAR SIDE |
| FT | FEET, FOOT |
| FTG | FOOTING, FITTING |
| FUR | FURRED, FURRING |
| FURN | FURNITURE, FURNISH |
| FUT | FUTURE |
| FV | FACE VELOCITY |
| FW | FIELD WELD, FIRE WALL |
| FWD | FORWARD |
| FWE | FURNISHED WITH EQUIPMENT |
| FXTR | FIXTURE |
| | |
| G | GRILLE, GROUND |
| GA | GAGE (METAL THICKNESS) |
| GAL | GALLON |
| GALV | GALVANIZED |
| GB | GRAB BAR, GRADE BREAK |
| GC | GROOVED COUPLING |
| GD | GUARD |
| GEN | GENERAL |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| GFMU | GROUND FACE MASONRY UNIT |
| GG | GUTTER GRADE |
| GJ | GROOVED JOINT |
| GL | GLASS |
| GLB | GLASS BLOCK, GLULAM BEAM |
| GND | GROUND |
| GP | GUY POLE |
| GR | GRADE |
| GRTG | GRATING |
| GSB | GYPSUM SHEATHING BOARD |
| GT | GREASE TRAP |
| GVL | GRAVEL |
| GW | GUY WIRE |
| GWB | GYPSUM WALLBOARD |
| GYP | GYPSUM HARDBOARD |
| | |
| H | HIGH |
| HB | HOSE BIBB |
| HBD | HARDBOARD |
| HC | HANDICAPPED, HOLLOW CORE, HORIZONTAL, CURVE, HORIZONTAL CENTERLINE |
| HD | HEAD |
| HDG | HOT DIP GALVANIZED |
| HDR | HEADER |
| HDW | HARDWARE |
| HEX | HEXAGONAL |
| HGR | HANGER |
| HH | HANDHOLE |
| HID | HIGH-INTENSITY DISCHARGE |
| HK | HOOK |
| HM | HOLLOW METAL |
| HORIZ | HORIZONTAL |
| HP | HIGH POINT, HORSEPOWER |
| HPC | HORIZONTAL POINT OF CURVATURE |
| HPS | HIGH-PRESSURE SODIUM |
| HPT | HORIZONTAL POINT OF TANGENCY |
| HR | HOSE REEL, HOUR |
| HS | HEADED STUD, HIGH STRENGTH |
| HSS | HOLLOW STRUCTURAL SHAPE |
| HT | HEIGHT |
| HTG | HEATING |
| HV | HIGH VOLTAGE |
| HVAC | HEATING, VENTILATING AND AIR CONDITIONING |
| HWD | HARDWOOD |
| HWL | HIGH WATER LEVEL |
| HYD | HYDRAULIC |
| HZ | HERTZ, CYCLES PER SECOND |

| | |
|---|---|
| ID | INSIDE DIAMETER, INTERIOR DIMENSION |
| IE | INVERT ELEVATION, FOR EXAMPLE |
| IF | INSIDE FACE |
| IH | INTAKE HOOD |
| IMP | IMPACT |
| IN | INCH |
| INC | INCLUDE, INCANDESCENT |
| INF | INFLUENT |
| INSTR | INSTRUMENTATION |
| INSUL | INSULATION |
| INT | INTERIOR, INTERSECTION |
| INTR | INTERMEDIATE, INTERIOR |
| INV | INVERT |
| IPS | IRON PIPE SIZE |
| IPT | INTERNAL PIPE THREAD |
| IR | INSIDE RADIUS, IRON ROD |
| IRR | IRRIGATION |
| ISO | ISOMETRIC |
| | |
| JB | JUNCTION BOX |
| JCT | JUNCTION |
| JF | JOINT FILLER |
| JST | JOIST |
| JT | JOINT |
| | |
| K | KIP |
| KB | KNEE BRACE |
| KCMIL | THOUSAND CIRCULAR MILS |
| KD | KNOCK DOWN |
| KO | KNOCK OUT |
| KSI | KIPS PER SQUARE INCH |
| KW | KILOWATT |
| | |
| L | ANGLE, LENGTH, LAVATORY, LINTEL |
| LAD | LADDER |
| LAM | LAMINATE |
| LATL | LATERAL |
| LB | LAG BOLT, POUND |
| LCTB | LIQUID CHALK AND TACK BOARD |
| LDG | LANDING |
| LDR | LEADER |
| LE | LIFTING EYE |
| LF | LINEAR FOOT |
| LG | LONG |
| LH | LEFT HAND |
| LIN | LINEAR |
| LIQ | LIQUID |
| LLH | LONG LEG HORIZONTAL |
| LLV | LONG LEG VERTICAL |
| LMLU | LIQUID MARKER LECTURE UNIT |
| LNG | LONGITUDINAL |
| LOC | LOCATION |
| LP | LOW POINT |
| LPS | LOW-PRESSURE SODIUM |
| LR | LONG RADIUS |
| LT | LEFT |
| LTD | LIMITED |
| LTG | LIGHTING |
| LTL | LINTEL |
| LTNG | LIGHTNING |
| LV | LOW VOLTAGE |
| LVL | LAMINATED VENEER LUMBER |
| LVR | LOUVER |
| LW | LIGHTWEIGHT |
| LWC | LIGHTWEIGHT CONCRETE |
| LWL | LOW WATER LEVEL |
| | |
| MA | MIXED AIR |
| MACH | MACHINED |
| MAINT | MAINTENANCE |
| MAN | MANUAL |
| MATL | MATERIAL |
| MAX | MAXIMUM |
| MB | MACHINE BOLT |
| MBR | MEMBER |
| MC | MECHANICAL CONTRACTOR, MECHANICAL COUPLING, MOMENT CONNECTION |
| MCB | METAL CORNER BEAD |
| MCJ | MASONRY CONTROL JOINT |
| MDMJ | MODIFIED DOUBLE MECHANICAL JOINT |
| MECH | MECHANICAL |
| MED | MEDIUM |
| MFR | MANUFACTURER |
| MH | MANHOLE, METAL HALIDE |
| MIN | MINIMUM |
| MIR | MIRROR |
| MISC | MISCELLANEOUS |
| MJ | MECHANICAL JOINT |
| ML | MASONRY LINTEL |
| MLO | MAIN LUGS ONLY |
| MMB | MEMBRANE |
| MO | MASONRY OPENING |
| MOD | MODULAR, MODIFY |
| MON | MONUMENT |
| MPT | MALE PIPE THREAD |
| MRGWB | MOISTURE-RESISTANT GYPSUM WALLBOARD |
| MS | MOP SINK |
| MSL | MEAN SEA LEVEL |
| MT | MOUNT |
| MU | MASONRY UNIT |
| MULL | MULLION |
| MV | MEDIUM VOLTAGE |
| MW | MONITORING WELL |

| | |
|---|---|
| N | NORTH, NEUTRAL |
| NA | NOT APPLICABLE |
| NAT | NATURAL, NATIONAL |
| NC | NORMALLY CLOSED |
| NEG | NEGATIVE |
| NF | NEAR FACE, NON-FUSED |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN, NUMBER |
| NOM | NOMINAL |
| NPS | NOMINAL PIPE SIZE |
| NPT | NATIONAL PIPE THREAD |
| NS | NEAR SIDE |
| NTS | NOT TO SCALE |
| NWL | NORMAL WATER LEVEL |
| | |
| O TO O | OUT TO OUT |
| OA | OUTSIDE AIR, OVERALL |
| OC | ON CENTER |
| OCPD | OVER CURRENT PROTECTION DEVICE |
| OD | OUTSIDE DIAMETER |
| OED | OPEN END DUCT |
| OF | OUTSIDE FACE, OFFICE FURNISHING |
| OFCI | OWNER FURNISHED CONTRACTOR INSTALLED |
| OFOI | OWNER FURNISHED OWNER INSTALLED |
| OG | ORIGINAL GROUND |
| OH | OVERHEAD |
| OPNG | OPENING |
| OPP | OPPOSITE |
| OPT | OPTIONAL |
| ORD | OVERFLOW ROOF DRAIN |
| ORIG | ORIGINAL |
| OVFL | OVERFLOW |
| OVHG | OVERHANG |
| OZ | OUNCE |
| | |
| P | PAINT |
| PA | PUBLIC ADDRESS |
| PAR | PARALLEL, PARAPET |
| PB | PANIC BAR, PULL BOX |
| PBD | PARTICLE BOARD |
| PC | POINT OF CURVE, PIECE, PRECAST |
| PCC | POINT OF COMPOUND CURVATURE |
| PCF | POUNDS PER CUBIC FOOT |
| PCT | PERCENT |
| PE | PLAIN END |
| PED | PEDESTAL |
| PEN | PENETRATION |
| PERF | PERFORATED |
| PERM | PERMANENT |
| PERP | PERPENDICULAR |
| PF | POWER FACTOR |
| PFMU | PREFACED MASONRY UNIT |
| PH | PHASE |
| PI | POINT OF INTERSECTION |
| PKG | PACKAGE |
| PL | PLATE, PROPERTY LINE, PRECAST LINTEL |
| PLAS | PLASTER |
| PLAT | PLATFORM |
| PLBG | PLUMBING |
| PLF | POUNDS PER LINEAR FOOT |
| PNEU | PNEUMATIC |
| POL | POLISH |
| POS | POSITIVE, POSITION |
| PP | POLYPROPYLENE, POWER POLE |
| PRC | POINT OF REVERSE CURVATURE |
| PREF | PREFINISHED |
| PREFAB | PREFABRICATED |
| PRELIM | PRELIMINARY |
| PREP | PREPARE |
| PRES | PRESSURE |
| PRI | PRIMARY |
| PROP | PROPERTY, PROPOSED |
| PROT | PROTECTION |
| PS | PIPE SUPPORT |
| PSF | POUNDS PER SQUARE FOOT |
| PSI | POUNDS PER SQUARE INCH |
| PSIA | POUNDS PER SQUARE INCH ABSOLUTE |
| PSIG | POUNDS PER SQUARE INCH GAGE |
| PST | PRESTRESSED |
| PT | POINT, POINT OF TANGENCY |
| PTN | PARTITION |
| PVC | POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE |
| PVC-RGS | PVC COATED RGS |
| PVMT | PAVEMENT |
| PWD | PLYWOOD |
| PWJ | PLYWOOD WEB JOIST |
| PZ | PIEZOMETER |
| | |
| Q | RATE OF FLOW |
| QT | QUARRY TILE |
| QTR | QUARTER |
| QTY | QUANTITY |
| QUAL | QUALITY |

| | |
|---|---|
| R&R | REMOVE AND REPLACE |
| R&S | REMOVE AND SALVAGE |
| R | RADIUS, REGISTER, RISER |
| RA | RETURN AIR |
| RB | RESILIENT BASE, ROCK BERM |
| RCPT | RECEPTACLE |
| RD | ROOF DRAIN |
| REC | RECESS |
| RECD | RECEIVED |
| RECT | RECTANGULAR |
| RED | REDUCER |
| REF | REFERENCE |
| REINF | REINFORCING |
| REM | REMOVE |
| REQD | REQUIRED |
| RESIL | RESILIENT |
| RET | RETAINING, RETURN |
| REV | REVISION, REVERSE |
| RF | RESILIENT FLOORING |
| RFG | ROOFING |
| RFL | REFLECTED, REFLECTOR |
| RGH | ROUGH |
| RGS | RIGID GALVANIZED STEEL |
| RH | RELIEF HOOD, RIGHT HAND, RELATIVE HUMIDITY |
| RL | REQUIRED LAP |
| RLFA | RELIEF AIR |
| RND | ROUND |
| RNG | RUNNING |
| RO | ROUGH OPENING |
| ROW | RIGHT-OF-WAY |
| RPM | REVOLUTIONS PER MINUTE |
| RR | RAILROAD |
| RSP | ROCK SLOPE PROTECTION |
| RT | RIGHT |
| RVT | RESILIENT VINYL TILE |
| RY | READY |
| | |
| S | SOUTH, SINK |
| SA | SUPPLY AIR |
| SAMU | SOUND-ABSORBING MASONRY UNIT |
| SAN | SANITARY |
| SB | SPLASH BLOCK |
| SC | SOLID CORE |
| SCH | SCHEDULE |
| SCHEM | SCHEMATIC |
| SCN | SCREEN |
| SE | STEEL/ALUMINUM EDGE |
| SEC | SECONDARY, SECONDS |
| SECT | SECTION |
| SEP | SEPARATE |
| SF | SQUARE FOOT, SILT FENCE |
| SG | SHEET GLASS, SEALANT GROOVE |
| SH | SHOWER |
| SHT | SHEET |
| SHTG | SHEATHING |
| SIL | SILENCE |
| SIM | SIMILAR |
| SJ | SLAB JOINT |
| SL | SLOPE, STEEL LINTEL |
| SLTD | SLOTTED |
| SLV | SLEEVE |
| SMLS | SEAMLESS |
| SOG | SLAB ON GRADE |
| SP | SOUNDPROOF, STANDPIPE |
| SPA | SPACING |
| SPEC | SPECIFICATION |
| SPLY | SUPPLY |
| SPST | SINGLE POLE SINGLE THROW |
| SPT | SET POINT |
| SQ | SQUARE |
| SR | SHORT RADIUS |
| SS | SERVICE SINK |
| SST | STAINLESS STEEL |
| ST | STREET |
| STA | STATION |
| STD | STANDARD |
| STIF | STIFFENER |
| STIR | STIRRUP |
| STL | STEEL |
| STOR | STORAGE |
| STR | STRUCTURAL, STRAIGHT |
| SUB | SUBSTITUTE |
| SUC | SUCTION |
| SUSP | SUSPENDED |
| SY | SQUARE YARD |
| SYM | SYMBOL |
| SYMM | SYMMETRICAL |
| SYN | SYNTHETIC |
| SYS | SYSTEM |
| | |
| T&B | TOP AND BOTTOM |
| T&G | TONGUE AND GROOVE |
| T | TILE, TREAD |
| TA | TOILET ACCESSORY, TEMPERED AIR |
| TAN | TANGENT |
| TBM | TEMPORARY BENCHMARK |
| TCE | TEMPORARY CONSTRUCTION EASEMENT |
| TEF | TROWELED EPOXY FLOORING |
| TEMP | TEMPORARY, TEMPERATURE |
| THD | THREAD |
| THK | THICK |
| THRESH | THRESHOLD |
| TKBD | TACK BOARD |

| | |
|---|---|
| TOB | TOP OF BOLT, TOP OF BANK, TOP OF BEAM, TOP OF BERM |
| TOC | TOP OF CURB, TOP OF CONCRETE |
| TOD | TOP OF DUCT |
| TOF | TOP OF FOOTING |
| TOG | TOP OF GRATING |
| TOL | TOLERANCE, TOP OF LEDGER |
| TOM | TOP OF MASONRY |
| TOP | TOP OF PLATE |
| TOPO | TOPOGRAPHY |
| TOR | TOP OF RAIL |
| TOS | TOP OF SLAB, TOP OF STEEL, TOE OF SLOPE |
| TOW | TOP OF WALL |
| TP | TOILET PARTITION, TELEPHONE POLE, TOE PLATE, TRAP PRIMER |
| TPD | TOILET PAPER DISPENSER |
| TPG | TOPPING, THROUGH PLATE GIRDER |
| TR | TRANSOM |
| TRANS | TRANSITION |
| TRD | TRENCH DRAIN |
| TYP | TYPICAL |
| | |
| U | URINAL |
| UG | UNDERGROUND |
| ULT | ULTIMATE |
| UNFN | UNFINISHED |
| UNO | UNLESS NOTED OTHERWISE |
| UTIL | UTILITY |
| | |
| V | VENT, VELOCITY, VOLT |
| VA | VOLT AMPERE |
| VAC | VACUUM |
| VAR | VARNISH, VARIABLE, VOLT AMPERES REACTIVE |
| VB | VAPOR BARRIER, VINYL BASE, VALVE BOX |
| VC | VERTICAL CURVE |
| VCP | VITRIFIED CLAY PIPE |
| VCT | VINYL COMPOSITION TILE, VERTICAL CENTERLINE |
| VEL | VELOCITY |
| VENT | VENTILATION |
| VERT | VERTICAL |
| VERTS | VERTICAL REINFORCING |
| VG | VERTICAL GRAIN |
| VIF | VERIFY IN FIELD |
| VIN | VINYL |
| VOL | VOLUME |
| VPC | VERTICAL POINT OF CURVATURE |
| VPI | VERTICAL POINT OF INTERSECTION |
| VPT | VERTICAL POINT OF TANGENCY |
| VS | VERSUS, VAPOR SEAL |
| VTR | VENT THROUGH ROOF |
| VWC | VINYL WALL COVERING |
| | |
| W/ | WITH |
| W/O | WITHOUT |
| W | WATT, WEST, WIDE, WINDOW, WIRE, WIDE FLANGE BEAM |
| WB | WOOD BASE |
| WC | WATER CLOSET, WATER COLUMN |
| WD | WOOD, WIDTH |
| WF | WIDE FLANGE, WASH FOUNTAIN |
| WG | WIRE GLASS, WATER GAGE |
| WH | WALL HYDRANT, WEEP HOLE |
| WI | WROUGHT IRON |
| WL | WATER LEVEL |
| WLD | WELDED |
| WM | WIRE MESH |
| WP | WEATHERPROOF, WORKING POINT |
| WS | WATERSTOP, WATER SURFACE |
| WSCT | WAINSCOT |
| WT | WEIGHT, WATER TIGHT |
| WTHP | WATERPROOF, WORKING POINT |
| WWF | WELDED WIRE FABRIC |
| | |
| XP | EXPLOSION-PROOF |
| XS | EXTRA STRONG |
| XSECT | CROSS SECTION |
| XXS | DOUBLE EXTRA STRONG |
| | |
| YH | YARD HYDRANT |
| YS | YIELD STRENGTH |

## GENERAL NOTES:

1. THESE ABBREVIATIONS APPLY TO THE ENTIRE SET OF CONTRACT DRAWINGS.
2. LISTING OF ABBREVIATIONS DOES NOT IMPLY THAT ALL ABBREVIATIONS ARE USED IN THE CONTRACT DRAWINGS.
3. ABBREVIATIONS SHOWN ON THIS SHEET INCLUDE VARIATIONS OF A WORD. FOR EXAMPLE, "MOD" MAY MEAN MODIFY OR MODIFICATION; "INC" MAY MEAN INCLUDED OR INCLUDING AND "REINF" MAY MEAN EITHER REINFORCE OR REINFORCING.
4. SEE INSTRUMENTATION LEGEND SHEET FOR PROJECT-SPECIFIC EQUIPMENT SYMBOLS, EQUIPMENT ABBREVIATIONS, AND PIPING SYSTEM ABBREVIATIONS.

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

CARGO DOCK 3 PHASE 1
DOCK PACKAGE

# GENERAL ABBREVIATIONS

0 1" 2"

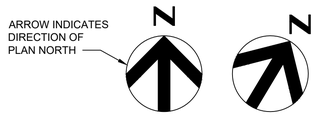
FILENAME 00G02.dwg
SCALE N/A

SHEET 00G02

## MATERIALS IN PLAN/SECTION

- ACOUSTICAL CEILING TILE (SECTION)
- ASPHALT (PLAN OR SMALL-SCALE SECTION)
- ASPHALT (LARGE-SCALE SECTION)
- BATT INSULATION (SECTION)
- BRICK MASONRY (PLAN AND/OR SECTION)
- CHECKERED PLATE (PLAN)
- CONCRETE (PLAN AND/OR SECTION)
- CONCRETE MASONRY (PLAN AND/OR SECTION)
- DEMOLITION (PLAN AND/OR SECTION)
- EARTH (SECTION)
- FILTER POINT MAT (PLAN)
- FINISHED WOOD (SECTION)
- GLULAM LUMBER (SECTION)
- GRANULAR FILL (SECTION)
- GRATING (SECTION)
- GRATING (PLAN)
- GROUT (SECTION)
- GYPSUM BOARD (SECTION)
- METAL (SECTION)
- ORIENTED STRAND BOARD (SECTION)
- PARTICLE BOARD (SECTION)
- PLYWOOD (LARGE-SCALE SECTION)
- PLYWOOD (SMALL-SCALE SECTION)
- PRECAST CONCRETE (PLAN AND/OR SECTION)
- RIGID INSULATION (SECTION)
- RIPRAP (PLAN AND/OR SECTION)
- SAND (SECTION)
- SOD (SECTION)
- WEEP JOINT MORTAR PROTECTION SYSTEM (SECTION)
- WOOD - CONTINUOUS (SECTION)
- WOOD BLOCKING (SECTION)

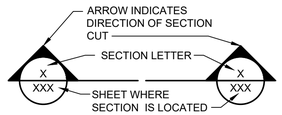
## GENERAL SYMBOLOGY



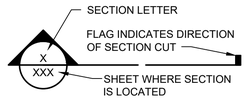

NORTH ARROW

PLAN
1/4" = 1'-0"

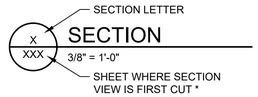
PLAN TITLE



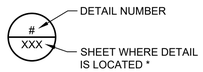

FULL BUILDING SECTION CUT MARKER




SECTION CUT MARKER




SECTION TITLE



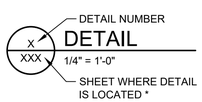

DETAIL MARKER

FOR REFERENCING DETAILS INCLUDED IN DRAWING SET.

XXXXXX

DETAIL MARKER

FOR REFERENCING DETAILS BOUND IN SPECIFICATIONS OR SEPARATE VOLUME.




DETAIL TITLE

* EXCEPTIONS WHERE THE SHEET NUMBER IS REPLACED BY A DASH (-).
1) FOR COMMON DETAILS, SECTIONS, ELEVATIONS OR DETAILS THAT ARE CUT OR CALLED OUT ON MULTIPLE SHEETS.
2) SECTIONS, ELEVATIONS OR DETAILS THAT ARE LOCATED ON THE SAME SHEET THEY ARE CUT OR CALLED OUT ON.

## UTILITY/CIVIL LINE SYMBOLOGY

- PIPELINE
- LARGE PIPELINE
- UTILITY BENEATH STRUCTURE
- RAILROAD
- CENTERLINE
- BOTTOM OF DITCH
- PROPERTY LINE
- EASEMENT
- LIMITS OF CONSTRUCTION
- ROW
- EXISTING CONTOUR (MINOR)
- EXISTING CONTOUR W/ELEVATION (MAJOR) (25)
- EXISTING FENCE
- EXISTING VEGETATION/BRUSH LINE
- FENCE - BARB WIRE
- FENCE - CHAIN LINK
- FENCE - FIELD
- FENCE - OTHER
- FENCE - WOOD
- FENCE - WOVEN WIRE (XX)
- FLOOD LIMIT (25 YEAR)
- FLOOD LIMIT (50 YEAR)
- FLOOD LIMIT (100 YEAR)
- FLOOD LIMIT (200 YEAR)
- FLOOD LIMIT (500 YEAR)
- HIGHWAY GUARDRAIL
- LEVEE TOP
- LEVEE TOE
- NEW CONTOUR (MINOR)
- NEW CONTOUR (MAJOR) (25)
- ROCK BERM (RB)
- SILT FENCE (SF)
- TOE OF SLOPE
- TOP OF SLOPE
- FIBER OPTIC
- FUEL OIL
- NATURAL GAS
- INDUSTRIAL WASTE WATER
- SANITARY SEWER
- STORM SEWER
- DOMESTIC WATER
- DOMESTIC WATER NON-POTABLE

### GENERAL NOTES:

1. THIS IS A STANDARD SHEET SHOWING COMMON SYMBOLOGY. ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
2. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.


HDR Engineering, INC
TBPELS Firm
Registration No. F-754


| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

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| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
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LICENSED PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

CARGO DOCK 3 PHASE 1
DOCK PACKAGE

# GENERAL SYMBOLS & LEGENDS

0 1" 2"

| | |
|---|---|
| FILENAME | 00G03.dwg |
| SCALE | N/A |
| SHEET | 00G03 |

# GENERAL NOTES

## GENERAL

1. THE CONTRACTOR SHALL FIELD CHECK AND VERIFY ALL ELEVATIONS, COORDINATES, DIMENSIONS, AND EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY.
2. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF THE ARMY CORPS OF ENGINEERS PERMIT OBTAINED BY THE OWNER FOR THIS PROJECT. REFER TO ARMY CORPS OF ENGINEERS PERMIT NO. **SWG-2022-00476**.
3. THIS PROJECT IS SUBJECT TO ENVIRONMENTAL PROTECTION AGENCY (EPA) NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION STORM WATER DISCHARGE REGULATIONS AND REQUIREMENTS. THE CONTRACTOR SHALL EXECUTE A NOTICE OF INTENT AND IMPLEMENT THE POLLUTION PREVENTION PLAN PER USACE PERMIT. COMPLY WITH ALL REPORTING AND INSPECTION REQUIREMENTS SET FORTH IN THE NPDES REGULATION.
4. CONTRACTOR, SUBCONTRACTORS AND OTHER CONTRACTED ENTITIES SHALL SUCCESSFULLY COMPLETE ALL THE TRAINING COURSES AND REQUIREMENTS REQUIRED BY OWNER IN ORDER TO ACCESS THE PROJECT SITE AND CARRY OUT THE CONTRACTED WORK. CONTRACTOR SHALL POSSESS ALL THE REQUIRED IDENTIFICATION DOCUMENTS AND SHALL ACCESS THE PROJECT SITE THROUGH OWNER SECURITY CHECK POINT AND FOLLOW OWNER'S CHECK-IN/-OUT PROCEDURE ON A DAILY BASIS. THE IDENTIFICATION DOCUMENTS INCLUDE, AS A MINIMUM, VALID DRIVER'S LICENSE.
5. WORKER SAFETY IN EXCAVATIONS AND TRENCHES SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS. FURNISH AND PLACE EXCAVATION PROTECTION FOR TRENCHES DEEPER THAN 5 FT. THE PROTECTION SYSTEM SHALL BE DESIGNED BY CONTRACTOR'S ENGINEER LICENSED IN THE STATE OF TEXAS. CONTRACTOR SHALL SUBMIT THE SEALED AND SIGNED COPY OF DESIGN TO OWNER FOR REVIEW.
6. CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC CONTROL DEVICES DURING THE COURSE OF CONSTRUCTION.
7. CONTRACTOR SHALL MAINTAIN ALL REGULATORY AND WARNING SIGNS DURING THE CONSTRUCTION PERIOD.
8. CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO NOT INTERFERE WITH, OR BE DETRIMENTAL TO VESSEL AND VEHICULAR TRAFFIC OR TO THE DAILY OPERATION OF THE OWNER DURING THE COURSE OF THE WORK. CONTRACTOR SHALL COORDINATE WITH OWNER FOR MARINE TRAFFIC SCHEDULE IN THE VICINITY OF PROJECT SITE.
9. ALL EXISTING ROADWAYS, UTILITIES, STRUCTURES, AND OTHER FEATURES WHICH ARE DAMAGED BY CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
10. THE CONTRACTOR SHALL KEEP THE ADJOINING STREETS FREE OF TRACKED AND/OR SPILLED MATERIALS GOING TO OR FROM THE CONSTRUCTION AREA. HAND LABOR AND/OR MECHANICAL EQUIPMENT MUST BE USED WHERE NECESSARY TO KEEP THESE ROADWAYS CLEAR OF JOB-RELATED MATERIALS. SUCH WORK MUST BE COMPLETED WITHOUT ANY INCREASE IN THE CONTRACT PRICE.
11. STREETS AND CURB LINE MUST BE CLEANED AT THE END OF THE WORK DAY OR MORE FREQUENTLY, IF NECESSARY. NO VISIBLE MATERIAL THAT COULD BE WASHED INTO STORM SEWER IS ALLOWED TO REMAIN ON THE PROJECT SITE OR ADJOINING STREETS.
12. CONTRACTOR SHALL CLEAN WORK AREA OF ALL ENGINE OIL, TRANSMISSION AND HYDRAULIC FLUIDS OR OTHER UNSIGHTLY MATERIAL PRIOR TO COMPLETING WORK.
13. ANY DETERMINATION AS TO WHEN STREETS AND CURBS REQUIRE CLEARING AND CLEANING DUE TO ANY TRACKING OR SPILLED MATERIALS FALLS ENTIRELY TO THE OWNER ONLY. THE OWNER WILL ALSO BE THE SOLE JUDGE IN DETERMINING WHEN THE TRACKED OR SPILLED MATERIALS HAVE BEEN SATISFACTORILY CLEANED OR CLEARED FROM.
14. CONTRACTOR SHALL PERFORM VIBRATION MONITORING AT ALL EXISTING STRUCTURES AND FEATURES IDENTIFIED IN SPECIFICATIONS SECTION 02 22 13. CONTRACTOR SHALL COORDINATE WITH OWNER WHEN PILE DRIVING OPERATIONS ARE CARRIED OUT WITHIN 100 FT OF THESE STRUCTURES.
15. FOR ADDITIONAL INFORMATION REFER TO FOLLOWING CONTRACT DOCUMENTS THAT ARE RELATED TO WORK SHOWN BUT ARE NOT IN THIS CONTRACT:
    A. DRAWINGS TITLED, "CONSTRUCTION DRAWINGS FOR BROWNSVILLE NAVIGATION DISTRICT, CARGO DOCK NO. 3 DEMOLITION", DATED SEPTEMBER 2023.
    B. PROCUREMENT PACKAGE TITLED, " PILE PROCUREMENT SPECIFICATIONS, BROWNSVILLE NAVIGATION DISTRICT, CARGO DOCK NO. 3 PHASE 1", DATED AUGUST 2023.

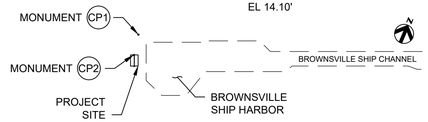
## SOIL BORINGS

1. BORING LOGS ON SHEETS 00G08 AND 00G09 ARE FROM GEOTECHNICAL REPORT TITLED: "GEOTECHNICAL DATA REPORT FOR THE PROPOSED PORT OF BROWNSVILLE CARGO DOCK 3 RECONSTRUCTION, PORT OF BROWNSVILLE, BROWNSVILLE, TEXAS", RETL JOB NUMBER G121490, PREPARED BY ROCK ENGINEERING AND TESTING LABORATORY, INC., CORPUS CHRISTI, TEXAS, SIGNED AND SEALED BY JAMES P. BAUER, P.E. AND FRANCISCO JOSE ARIAS ESCUDERO, P.E.
2. FOR GRAPHICAL LOCATIONS OF ALL BORINGS REFER TO SHEET 00G07.
3. SOIL INVESTIGATION DATA IS PROVIDED FOR THE INFORMATION AND CONVENIENCE OF THE CONTRACTOR. THE OWNER AND ENGINEER DISCLAIM ANY RESPONSIBILITY FOR THE ACCURACY, TRUE LOCATION AND EXTENT OF THE SOIL INVESTIGATION THAT HAS BEEN PREPARED BY OTHERS. THEY FURTHER DISCLAIM RESPONSIBILITY FOR INTERPRETATION OF THAT DATA BY THE CONTRACTOR, AS IN PROJECTING SOIL-BEARING VALUES, SOIL STABILITY, AND THE PRESENCE, LEVEL, AND EXTENT OF UNDERGROUND WATER, ETC. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SUBSURFACE AND GROUND WATER CONDITIONS PRIOR TO CONSTRUCTION.
4. SOIL INVESTIGATION REPORTS ARE NOT A PART OF THE CONTRACT DOCUMENTS. SOIL BORING LOGS ARE INCLUDED IN THIS DRAWING SET FOR REFERENCE PURPOSES ONLY.
5. A COPY OF THE ENTIRE SOIL INVESTIGATION REPORT IS AVAILABLE FOR REVIEW AT THE ENGINEER'S AND THE OWNER'S OFFICE.
6. SURFACE ELEVATIONS SHOWN ON BORING LOGS ARE APPROXIMATE. REFER TO SHEET 00C01 FOR SURVEY ELEVATIONS. CONTRACTOR SHALL CONDUCT HIS OWN SURVEYS FOR CURRENT ELEVATIONS.

## HORIZONTAL AND VERTICAL CONTROL

1. TOPOGRAPHIC SURVEY WAS PERFORMED BY MEJIA & ROSE, JOB NO. 21599, DATED OCTOBER 11, 2021.
2. HYDROGRAPHIC SURVEY WAS PERFORMED BY T. BAKER SMITH ON JANUARY 22, 2021.
3. ALL ELEVATIONS SHOWN REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
4. COORDINATES SHOWN ARE STATE PLANE GRID, TEXAS SOUTH ZONE, NAD'83 IN U.S. FEET.
5. MONUMENTS USED FOR HORIZONTAL AND VERTICAL CONTROL ARE AS FOLLOWS:

| | | |
|---|---|---|
| CP1 | "U.S.E.D. 535' R/L 1948 89+679.68" | N 16,509,591.45<br>E 1,344,712.65<br>EL 13.80' |
| CP2 | "BRASS DISK 9998A 2012" | N 16,509,085.51<br>E 1,344,830.23<br>EL 14.10' |




6. THE FOLLOWING MONUMENTS SHALL BE ADDITIONALLY APPLIED FOR SURVEY CONTROL FOR THIS PROJECT:

    REFERENCE MONUMENT "ZIMCO"
    N 16,518,058.49
    E 1,366,219.45
    ELEV.: +6.6' NAVD88

7. DATUM CORRELATION TABLE:

| | | |
|---|---|---|
| MEAN HIGHER HIGH WATER (MHHW) | 0' MHHW | = 0.35' NAVD88 |
| MEAN HIGH WATER (MHW) | 0' MHW | = 0.28' NAVD88 |
| MEAN SEA LEVEL (MSL) | 0' MSL | = -0.26' NAVD88 |
| MEAN TIDE LEVEL (MTL) | 0' MTL | = -0.32' NAVD88 |
| MEAN LOW WATER (MLW) | 0' MLW | = -0.93' NAVD88 |
| MEAN LOWER LOW WATER (MLLW) | 0' MLLW | = -1.15' NAVD88 |

TIDAL DATA FOR THE PROJECT SITE IS OBTAINED USING VDATUM, AN ONLINE TOOL DEVELOPED JOINTLY BY NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL GEODETIC SURVEY, OFFICE OF COAST SURVEY, AND CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES. WATER SURFACE RANGE BETWEEN MLLW AND MHHW REPRESENTS A NORMAL STATISTICAL WATER SURFACE RANGE. WATER SURFACE WILL BE HIGHER AND/OR LOWER THAN THIS RANGE.

## STEEL PIPE PILING

1. INSTALL STEEL PIPE PILES PROVIDED BY OWNER AT LOCATIONS SHOWN. PILES SHALL BE INSTALLED TO TIP ELEVATIONS INDICATED. DRIVING RESISTANCE MAY BE GREATER THAN THE MINIMUM ULTIMATE PILE CAPACITIES PROVIDED.
2. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS INCLUDING DRIVING TOLERANCES: SECTION 31 62 16.13 FOR STEEL PIPE PILES

## PRECAST AND PRECAST-PRESTRESSED CONCRETE ELEMENTS

1. MIN. 28 DAYS COMPRESSIVE STRENGTH
    A. PRECAST PILECAPS: .....5000 PSI
    B. PRECAST-PRESTRESSED DECK PANELS: .....6500 PSI
2. MIN. COMPRESSIVE STRENGTH @ RELEASE UNO.....4000 PSI
3. LOW RELAXATION STRANDS SHALL BE ASTM A416 GR 270
4. CONTRACTOR SHALL TAKE MEASUREMENTS IN ORDER TO VERIFY SPECIFIED DIMENSIONS OF ALL PRECAST AND PRECAST-PRESTRESSED ELEMENTS PRIOR TO CASTING.
5. DECK PANELS SHALL BE PLACED WHEN THE PILE CAPS HAVE ACHIEVED SPECIFIED 28-DAY COMPRESSIVE STRENGTH AND ARE AT LEAST 10 DAYS OLD.
6. REFER TO SPECIFICATIONS, SECTION 03 45 33 FOR ADDITIONAL REQUIREMENTS.

## CAST-IN-PLACE CONCRETE

1. ALL CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI, UNLESS NOTED OTHERWISE
2. ALL EXPOSED CORNERS SHALL BE CHAMFERED 1 1/2" INCH, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
3. ALL VERTICAL CONSTRUCTION JOINTS SHALL BE LOCATED AT 1/3 SPAN UNLESS NOTED OTHERWISE. CONTRACTOR SHALL SUBMIT FOR ENGINEER'S APPROVAL A PLAN SHOWING LOCATION OF CONSTRUCTION JOINTS AND PLACEMENT SEQUENCE.
4. PRIOR TO CASTING NEW CONCRETE AGAINST EXISTING CONCRETE SURFACE, ROUGHEN THE EXISTING SURFACE. THE EXISTING SURFACE SHALL BE FREE OF LAITANCE AND SHALL BE ROUGHENED TO FULL AMPLITUDE OF APPROX 1/4". APPLY EPOXY BONDING COMPOUND PER SPECIFICATIONS. ALTERNATELY, PROVIDE STAY-FORM, STAY-IN-PLACE CONCRETE FORMS FOR CONSTRUCTION JOINTS, BY ALABAMA METAL INDUSTRIES CORP. OR ENGINEER APPROVED EQUAL TO ACHIEVE THE ROUGHENED SURFACE. THE STAY-FORM SHALL BE ADEQUATELY SUPPORTED DURING CONCRETE PLACEMENT.
5. ALL LOADS (INCLUDING VEHICULAR AND BACKFILL) SHALL BE KEPT AWAY FROM NEW CONCRETE FOR A MINIMUM OF 7 DAYS. PILE DRIVING OPERATIONS SHALL NOT BE CLOSER THAN 100 FT. TO CONCRETE ELEMENTS WHOSE AGE IS 7 DAYS OR LESS.

## CAST-IN-PLACE CONCRETE (CON'T)

6. REFER TO SPECIFICATIONS, SECTION 03 31 30 FOR ADDITIONAL REQUIREMENTS, INCLUDING HOT WEATHER CONCRETING.
7. FINISHING AND SURFACE FLATNESS TOLERANCES SHALL BE CONSISTENT WITH HARDWARE TO BE ATTACHED TO CONCRETE ELEMENTS. REFER TO SPECIFICATIONS, SECTION 03 31 30.

## REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A 615, GRADE 60, UNLESS NOTED OTHERWISE.
2. HEADED DEFORMED BARS (BARS SHOWN WITH HEADS/TERMINATORS) SHALL BE HEADED BARS CONFORMING TO ASTM A970 INCLUDING ANNEX A1 REQUIREMENTS FOR CLASS HA HEAD DIMENSIONS. REINFORCING BARS SHALL CONFORM TO ASTM A706, GRADE 60.
3. CONCRETE CLEAR COVER ON REINFORCING STEEL SHALL BE 3 INCHES, UNLESS NOTED OTHERWISE ON DRAWINGS.
4. ALL LAP SPLICES SHALL BE ACI 318 CLASS B AS INDICATED IN THE TABLE BELOW.
5. ALL TOP BAR SPLICES SHALL OCCUR AT MIDSPAN. ALL BOTTOM BAR SPLICES SHALL OCCUR OVER SUPPORT LOCATIONS
6. ALL MECHANICAL CONNECTORS SHALL BE SHOWN ON THE SHOP DRAWINGS AND SHALL CONFORM TO ACI 318.
7. DETAILING OF REINFORCING STEEL SHOP DRAWINGS SHALL CONFORM TO THE ACI DETAILING MANUAL, SP-66.
8. EMBEDMENT AND LAP SPLICE LENGTHS SHALL BE AS FOLLOWS:

MINIMUM CLASS B
SPLICE AND EMBEDMENT LENGTHS (INCHES)
CONCRETE STRENGTH = 5,000 PSI

| BAR SIZE NUMBER | MINIMUM EMBEDMENT LENGTH | TOP BARS EMBEDMENT LENGTH | MINIMUM SPLICE LENGTH | TOP BARS SPLICE LENGTH |
|---|---|---|---|---|
| 3 | 13 | 17 | 17 | 22 |
| 4 | 17 | 22 | 22 | 29 |
| 5 | 22 | 28 | 28 | 36 |
| 6 | 26 | 33 | 33 | 43 |
| 7 | 37 | 49 | 49 | 63 |
| 8 | 43 | 55 | 55 | 72 |
| 9 | 48 | 63 | 63 | 81 |
| 10 | 54 | 70 | 70 | 91 |
| 11 | 60 | 78 | 78 | 101 |

    A. WHERE BARS ARE OF DIFFERENT SIZE, THE LAP LENGTH SHALL BE BASED ON SMALLER BAR, UNLESS NOTED OTHERWISE.
    B. THE CONTRACTOR SHALL DETERMINE ANY SPLICE LOCATIONS IN ADDITION TO THOSE SHOWN, SUBJECT TO SHOP DRAWING ACCEPTANCE.
    C. TOP BARS ARE HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW DEVELOPMENT LENGTH OR SPLICE.

9. REFER TO SPECIFICATIONS, SECTIONS 03 31 30 FOR ADDITIONAL REQUIREMENTS.

## STRUCTURAL AND MISCELLANEOUS STEEL

1. ALL STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, LATEST EDITION.
2. STRUCTURAL STEEL MEMBERS SHALL BE ASTM A992 GRADE 50 OR A572 GRADE 50 UNLESS NOTED OTHERWISE.
3. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1, LATEST EDITION. FILLET WELDS SHALL BE 3/16" MINIMUM SIZE. ALL BUTT WELDS SHALL BE PRE-QUALIFIED COMPLETE PENETRATION JOINTS. ALL WELDS SHALL BE WITH E70XX WELDING ELECTRODES.
4. SHEAR STUDS SHALL CONFORM TO REQUIREMENTS OF AWS D1.1 CLAUSE 7, STUD WELDING
5. ALL FABRICATED STEEL AND IT'S CONNECTIONS INCLUDING EDGE ARMOR STEEL FOR CURBS AND EXPANSION JOINT PLATES SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 (MINIMUM 2.3 OZ. PER SQUARE FOOT), UNLESS SPECIFIED OTHERWISE. ANY DAMAGED GALVANIZED COATING SHALL BE TOUCHED UP WITH AN APPROVED COLD ZINC GALVANIZING COMPOUND IN ACCORDANCE WITH ASTM A780 AND THE MANUFACTURER'S RECOMMENDATIONS.
6. REFER TO SPECIFICATIONS, SECTION 35 59 13.16 FOR ALL STEEL FABRICATION REQUIRED FOR FENDER SYSTEMS.

## FENDER SYSTEMS

1. ALL CHAINS, FENDER PANELS AND OTHER MISCELLANEOUS CONNECTIONS SHALL BE PROVIDED BY THE CONTRACTOR. CONTRACTOR SHALL FABRICATE ANCHOR BOLT TEMPLATE FOR FENDERS PROVIDED BY FENDER MANUFACTURER. CONTRACTOR SHALL USE BOLTING TEMPLATE TO ENSURE PROPER LOCATION OF THREADED INSERTS DURING THE FABRICATION OF PRECAST PILE CAPS. TEMPLATE SHALL REMAIN IN PLACE FOR MULTIPLE CONCRETE PLACEMENTS TO PROVIDE ACCURATE BOLT PATTERN.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ANCHORAGE REQUIREMENTS WITH FENDER MANUFACTURER.
3. CONTRACTOR SHALL PROVIDE AND INSTALL ANCHOR BOLTS AND/OR INSERTS FOR BOLTS OF EACH APPROVED FENDER MANUFACTURER IN ACCORDANCE WITH APPROVED SHOP DRAWINGS.
4. FENDER SYSTEM SHOWN ON SHEETS 03S22 AND 03S23 IS SCHEMATIC IN NATURE, INCLUDING CONFIGURATION OF CHAINS AND PADEYES. BOLT PATTERN AND DIMENSIONS SHOWN SHALL BE CONFIRMED BY FENDER SYSTEM DESIGNER.
5. ALL PADEYES AND ITS BOLTED CONNECTIONS (INSERTS, BOLTS, WASHERS, NUTS) SHALL BE STAINLESS STEEL.
6. REFER TO SPECIFICATIONS, SECTION 35 59 13.16 FOR ALL OTHER REQUIREMENTS FOR FENDER SYSTEMS.

## MOORING BOLLARD

1. MOORING BOLLARDS SHALL BE CAST STEEL CONFORMING TO REQUIREMENTS OF ASTM A27, GRADE 70-36. BOLLARDS SHALL HAVE A MINIMUM FACTOR OF SAFETY OF 3.0 AGAINST FAILURE. BOLLARDS SHALL HAVE ALLOWABLE LINE PULL CAPACITY OVER THE DIRECTIONAL RANGE SHOWN ON SHEET 00G05:
    A. SINGLE BITT MOORING BOLLARDS ON MOORING STRUCTURES: 200 METRIC TONS
    B. DOUBLE BITT MOORING BOLLARDS ON DOCK PLATFORM: 100 METRIC TONS WITH 50 METRIC TONS PER BITT
2. ALL BOLLARDS SHALL HAVE ALLOWABLE LINE PULL CAPACITY, MANUFACTURER'S MODEL NUMBER, AND MANUFACTURER'S NAME STENCILED ONTO THE SURFACE OF BOLLARD.
3. ALL BOLLARDS SHALL BE PAINTED IN SHOP. BOLLARDS SHALL BE CLEANED WITH SUITABLE DEGREASER AND BLASTED TO SSPC-SP6, COMMERCIAL BLAST CLEANING (NACE NO. 3). PREPARED BOLLARDS SHALL BE FINISHED WITH 3-COAT PAINT SYSTEM (SAFETY YELLOW COLOR) APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS:
    A. PRIMER, 2.0 TO 3.0 MILS DFT OF CARBOZINC 11, SOLVENT BASED INORGANIC ZINC
    B. INTERMEDIATE COAT, 4.0 TO 6.0 MILS DFT OF CARBOGUARD 893, CYCLOALIPHATIC AMINE EPOXY
    C. TOP COAT, 2.0 TO 3.0 MILS DFT OF CARBOTHANE 134 HG, ALIPHATIC ACRYLIC POLYURETHANE
4. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 105. HEX NUTS SHALL CONFORM TO ASTM A563. PLATE WASHER SHALL BE 50 KSI MINIMUM YIELD STRENGTH MATERIAL. ALL HARDWARE SHALL BE HOT DIP GALVANIZED. ALL HARDWARE SHALL BE SUPPLIED BY BOLLARD MANUFACTURER TO ENSURE PROPER FIT WITH SUPPLIED BOLLARD.
5. HOT-DIP GALVANIZING SHALL BE IN ACCORDANCE WITH ASTM A123 OR ASTM A153 AS APPLICABLE.
6. CONCRETE FOR FILLING BOLLARDS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI. ALTERNATIVELY, NON-SHRINK GROUT WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 8000 PSI IN ACCORDANCE WITH ASTM C1107 MAY BE USED. MAXIMUM AGGREGATE SIZE SHALL BE 3/8".
7. SUBMIT SHOP DRAWINGS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR THE PROPOSED BOLLARDS AND ITS HARDWARE PRIOR TO PURCHASE. SHOP DRAWINGS SHALL INCLUDE BOLT CONFIGURATION AND DETAILS OF ALL MOUNTING HARDWARE. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN TEXAS.
8. CONTRACTOR SHALL SUBMIT CATALOG DIMENSIONS, MATERIAL SPECIFICATIONS, AND WORKING AND ULTIMATE LOADS (INCLUDING RANGE OF APPLICATION IN SECTION AND ON PLAN VIEW), AS APPLICABLE. INCLUDE MATERIAL CERTIFICATES SHOWING CONFORMANCE WITH MATERIAL PROPERTIES OF BOLLARDS AND ITS HARDWARE AS MENTIONED ABOVE.
9. SUBMIT DESIGN CALCULATIONS FOR THE MOORING BOLLARD AND ANCHORAGE HARDWARE, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN TEXAS, DEMONSTRATING THAT THE BOLLARD AND ANCHORAGE HARDWARE MEET THE RATED BOLLARD CAPACITY WITH REQUIRED FACTORS OF SAFETY.

## SHOP DRAWINGS

1. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWINGS, PRIOR TO PREPARATION OF SHOP DRAWINGS.
2. SHOP DRAWINGS SHALL BE REVIEWED & ACCEPTED BY THE ENGINEER BEFORE PURCHASE OR START OF FABRICATION.
3. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS IS PROHIBITED.

## CONSTRUCTION NOTES:

1. CONTRACTOR HAS THE OPTION OF PERFORMING THE CONSTRUCTION PER THE SEQUENCE SHOWN BELOW OR HAS THE OPTION OF PROPOSING AN ALTERNATIVE CONSTRUCTION SEQUENCE THAT IS CONSISTENT WITH THE DESIGN PRESENTED. ALTERNATIVE CONSTRUCTION SEQUENCE SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO ORDERING OF MATERIALS. FOLLOWING IS THE CONSTRUCTION SEQUENCE FOR THE DOCK STRUCTURE.
    i. MOBILIZE
    ii. CLEAR SITE AND SECURE WITH TEMPORARY FENCING
    iii. EXCAVATE SOIL AS SHOWN (SHEET 02S03) FOR STEEL PILE INSTALLATION
    iv. INSTALL LANDSIDE PLATFORM PILING AND WATERSIDE PLATFORM PILING (INCLUDES DYNAMIC TESTING OF SELECT PIPE PILES TO CONFIRM AXIAL GEOTECHNICAL CAPACITY)
    v. INSTALL GROUT JACKET INSTALLATION WHERE SPECIFIED.
    vi. BACKFILL UP TO SOFFIT OF LANDSIDE PLATFORM SLAB AS SHOWN (SHEET 02S03)
    vii. INSTALL WATERSIDE PLATFORM PRECAST PILE CAPS AND PRECAST PRESTRESSED DECK PANELS
    viii. INSTALL WATERSIDE PLATFORM TOPPING SLAB AND LANDSIDE PLATFORM CONCRETE SLAB
    ix. INSTALL LANDSIDE MOORING STRUCTURES (INDEPENDENT OF CONSTRUCTION SEQUENCE ABOVE)
    x. INSTALL FENDERS AND MOORING HARDWARE
    xi. SITE WORK, ELECTRICAL AND UTILITIES WORK TO BE PERFORMED DURING VARIOUS CONSTRUCTION STAGES
    xii. DEMOBILIZE

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

**CARGO DOCK 3 PHASE 1 DOCK PACKAGE**

**GENERAL NOTES & DESIGN CRITERIA 1 OF 2**

0 1" 2"

FILENAME 00G04.dwg
SCALE N/A

SHEET 00G04

DESIGN CRITERIA

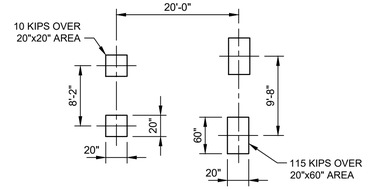
1. WATERSIDE AND LANDSIDE DOCK PLATFORMS FOR CARGO DOCK 3 ARE DESIGNED FOR VERTICAL LIVE LOADS PRESENTED ON THIS SHEET.

2. CONSTRUCTION LIVE LOAD = 50 PSF.

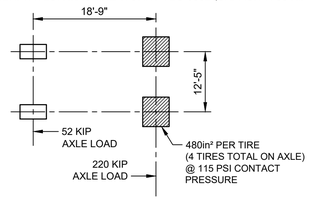
3. UNIFORM LIVE LOAD: 2,000 PSF ON ALL/ANY COMBINATION OF SPANS.

4. TRUCK LOADING: AASHTO HS 25-44 TRUCK

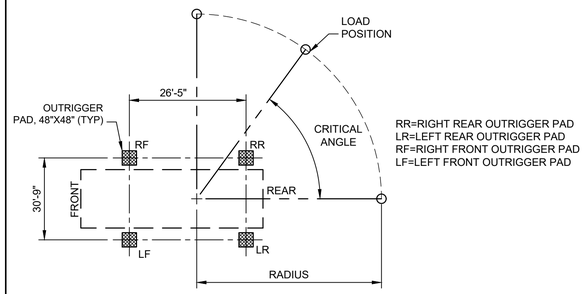
5. FORKLIFT LOADS:




6. CONTAINER HANDLER: TAYLOR MACHINE WORKS TEC-950L (CAPACITY: 80 KIPS).




7. MOBILE CRANE LOADS:




RR=RIGHT REAR OUTRIGGER PAD
LR=LEFT REAR OUTRIGGER PAD
RF=RIGHT FRONT OUTRIGGER PAD
LF=LEFT FRONT OUTRIGGER PAD

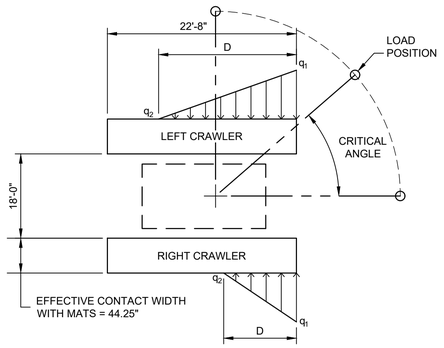
| OUTRIGGER LOAD IN KIPS (300T LOAD @ 18 FT. RADIUS) | | | |
|---|---|---|---|
| OUTRIGGER PAD | LOAD @ REAR | *LOAD AT SIDE | *LOAD @ CRITICAL ANGLE |
| LF | 122 | 141 | 77 |
| RF | 122 | 380 | 234 |
| RR | 428 | 408 | 472 |
| LR | 428 | 169 | 315 |

| OUTRIGGER LOAD IN KIPS (25T LOAD @ 125 FT. RADIUS) | | | |
|---|---|---|---|
| OUTRIGGER PAD | LOAD @ REAR | *LOAD AT SIDE | *LOAD @ CRITICAL ANGLE |
| LF | 33 | 48 | 0.2 |
| RF | 33 | 225 | 116 |
| RR | 241 | 227 | 274 |
| LR | 241 | 50 | 158 |

*RR & LR VALUES REVERSE DEPENDING ON BOOM SWING DIRECTION
*LF & RF VALUES REVERSE DEPENDING ON BOOM SWING DIRECTION

NOTE:
OUTRIGGERS PADS REST ON 12" THK. TIMBER CRIBBING/MAT OF SIZE 6' X 6' MINIMUM.

8. CRAWLER CRANE LOADS:

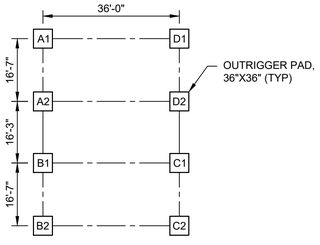



| CRAWLER PRESSURE IN PSF (300T LOAD @ 18 FT. RADIUS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CRAWLER | LOAD @ FRONT/REAR | | | *LOAD AT SIDE | | | *LOAD @ CRITICAL ANGLE | | |
| | $q_1$(psf) | $q_2$(psf) | D(ft) | $q_1$(psf) | $q_2$(psf) | D(ft) | $q_1$(psf) | $q_2$(psf) | D(ft) |
| LEFT | 19,420 | -0- | 16.48 | 10,720 | 10,720 | 22.70 | 20,120 | -0- | 18.19 |
| RIGHT | 19,420 | -0- | 16.48 | 3,370 | 3,370 | 22.70 | 17,400 | -0- | 15.74 |

| CRAWLER PRESSURE IN PSF (25T LOAD @ 125 FT. RADIUS) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CRAWLER | LOAD @ FRONT/REAR | | | *LOAD AT SIDE | | | *LOAD @ CRITICAL ANGLE | | |
| | $q_1$(psf) | $q_2$(psf) | D(ft) | $q_1$(psf) | $q_2$(psf) | D(ft) | $q_1$(psf) | $q_2$(psf) | D(ft) |
| LEFT | 16,800 | -0- | 10.16 | 6,410 | 6,410 | 22.70 | 17,300 | -0- | 11.08 |
| RIGHT | 16,800 | -0- | 10.16 | 1,110 | 1,110 | 22.70 | 15,300 | -0- | 9.79 |

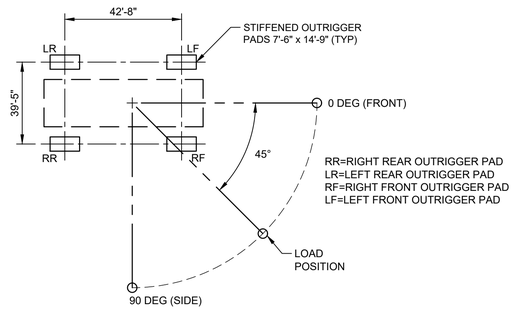
NOTES:
1. THE CRAWLER CRANE TRACKS REST ON 12" THICK TIMBER CRANE MATS.
2. LEFT AND RIGHT CRAWLER PRESSURE VALUES REVERSE DEPENDING UPON THE BOOM SWING DIRECTION.

9. IBAU MOBILE CEMENT LOADER/UNLOADER:




| CEMENT UNLOADER LOAD IN KIPS | |
|---|---|
| OUTRIGGER PAD | MAX. LOAD WORKING |
| A1 | 236 |
| A2 | 236 |
| B1 | 236 |
| B2 | 236 |
| C1 | 118 |
| C2 | 118 |
| D1 | 118 |
| D2 | 118 |

10. GOTTWALD MOBILE HARBOR CRANE:



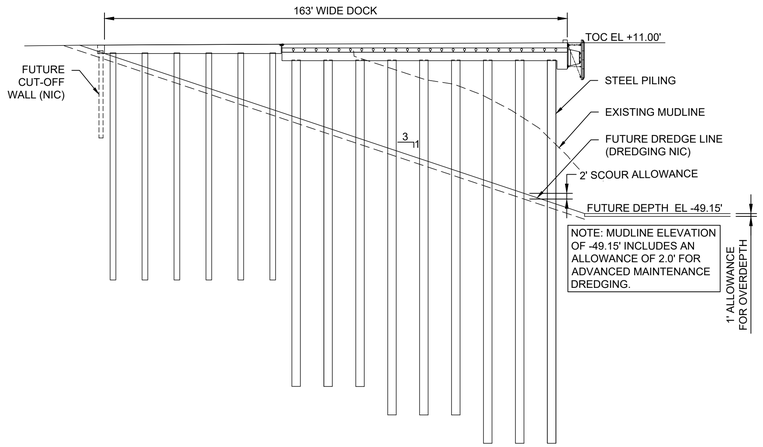

| OUTRIGGER LOAD IN KIPS (220 KIP LOAD @ 65.6 FT. RADIUS) | | | |
|---|---|---|---|
| OUTRIGGER PAD | LOAD @ FRONT | *LOAD AT SIDE | *LOAD @ 45 DEG |
| LF | 434 | 82 | 260 |
| RF | 434 | 448 | 390 |
| LR | 96 | 82 | 140 |
| RR | 96 | 448 | 270 |

| OUTRIGGER LOAD IN KIPS (74 KIP LOAD @ 164 FT. RADIUS) | | | |
|---|---|---|---|
| OUTRIGGER PAD | LOAD @ FRONT | *LOAD AT SIDE | *LOAD @ 45 DEG |
| LF | 371 | 74 | 224 |
| RF | 371 | 383 | 333 |
| LR | 86 | 74 | 124 |
| RR | 86 | 383 | 233 |

*RR & LR VALUES REVERSE DEPENDING ON BOOM SWING DIRECTION
*LF & RF VALUES REVERSE DEPENDING ON BOOM SWING DIRECTION

NOTE:
OUTRIGGERS PADS ARE ASSUMED TO REST ON 12" THK. TIMBER CRIBBING/MAT OF SIZE 12' X 20' MINIMUM.

11. CARGO DOCK 3 - DESIGN CROSS SECTION:




12. SHIP IMPACT @ BERTHING:

A. DESIGN VESSEL:
1. LOADED DISPLACEMENT: 71,000 METRIC TONS (M.T.)
2. L.O.A.: 656 FT.
3. DRAFT: 44 FT.
4. BREADTH: 106 FT.

B. APPROACH VELOCITY: 0.4 FPS ( ⊥ TO DOCK FACE)

C. MAXIMUM BERTHING ANGLE: 6 DEG.

D. FACTOR OF SAFETY AGAINST ABNORMAL BERTHING = 1.75

13. BARGE IMPACT @ BERTHING:

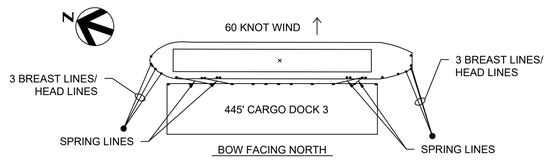
A. DESIGN VESSEL:
1. LOADED DISPLACEMENT: 10,000 TONNES
2. L.O.A.: 250 FT.
3. DRAFT: 20 FT.
4. BREADTH: 50 FT.

B. APPROACH VELOCITY: 0.7 FPS ( ⊥ TO DOCK FACE)

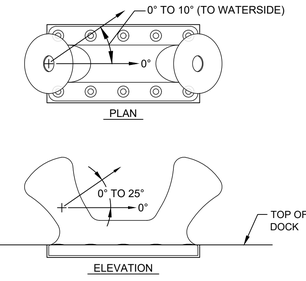
C. MAXIMUM BERTHING ANGLE: 15 DEG.

D. FACTOR OF SAFETY AGAINST ABNORMAL BERTHING = 2.00

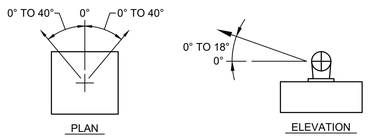
14. DOCKSIDE MOORING ARRANGEMENT:




15. LOAD DIRECTIONAL RANGE FOR BOLLARDS ON DOCK (FOR EACH HORN/BITT)




16. LOAD DIRECTIONAL RANGE FOR BOLLARDS ON MOORING STRUCTURES




HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

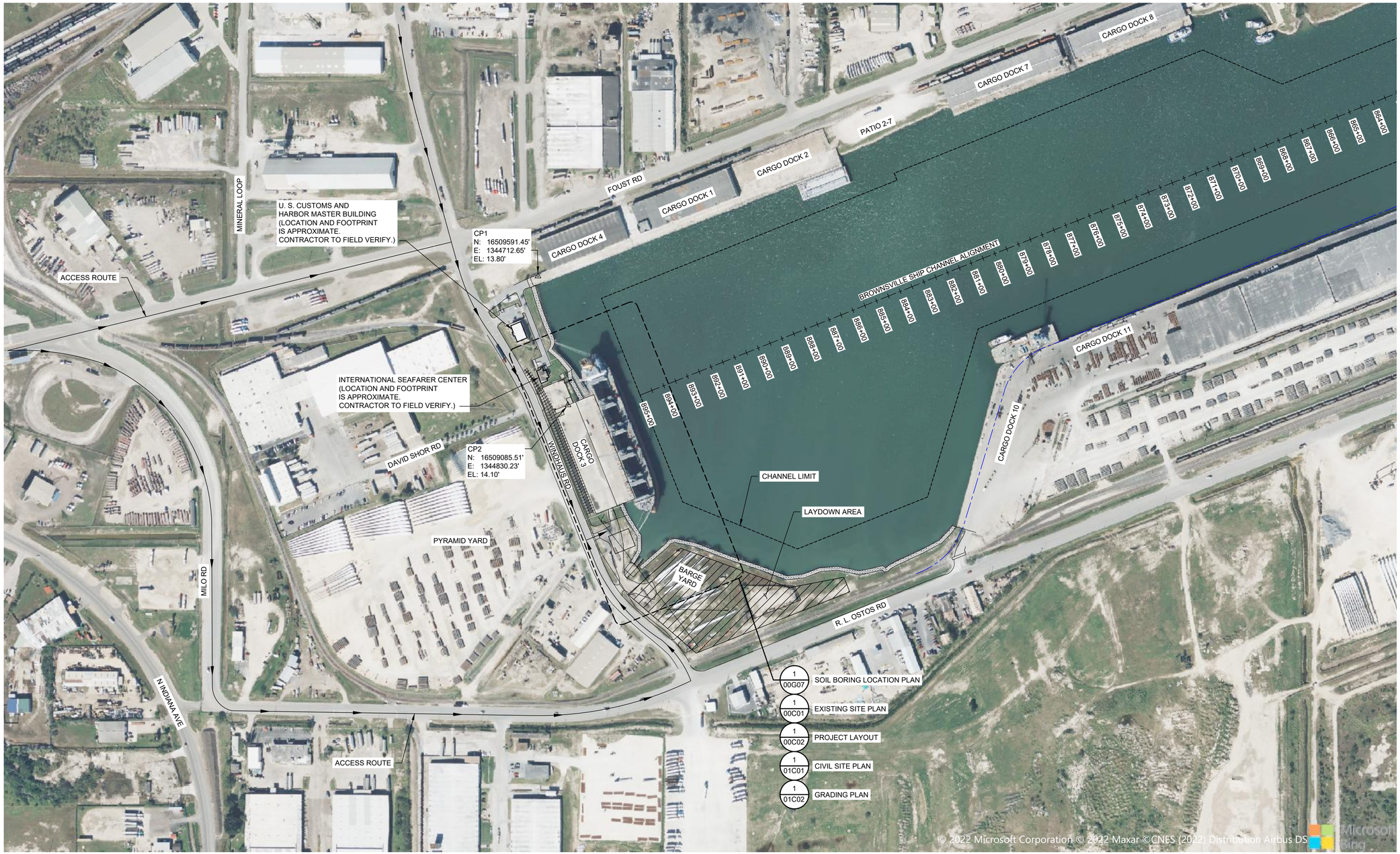
PORT OF BROWNSVILLE
the port that *works*

CARGO DOCK 3 PHASE 1
DOCK PACKAGE

# GENERAL NOTES & DESIGN CRITERIA 2 OF 2

0 1" 2"

| | |
|---|---|
| FILENAME | 00G05.dwg |
| SCALE | N/A |
| SHEET | 00G05 |




1 / 00G07 SOIL BORING LOCATION PLAN

1 / 00C01 EXISTING SITE PLAN

1 / 00C02 PROJECT LAYOUT

1 / 01C01 CIVIL SITE PLAN

1 / 01C02 GRADING PLAN

N

0 200' 400'

1 / -- BASE MAP
1" = 200'

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

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09.22.2023

PORT OF BROWNSVILLE
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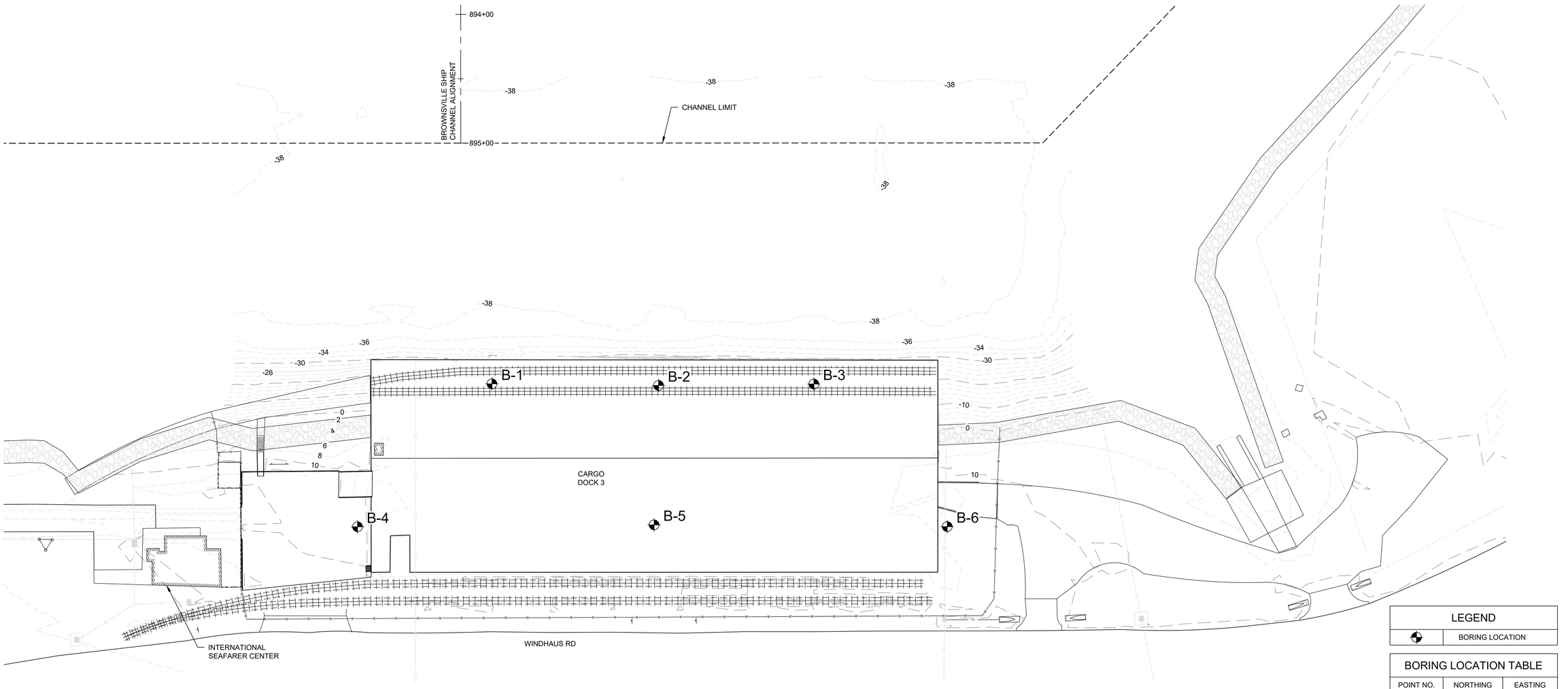
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

BASE MAP

0 1" 2"

FILENAME 00G06.dwg
SCALE 1" = 200'

SHEET 00G06




| LEGEND | |
|---|---|
| ⊕ | BORING LOCATION |

| BORING LOCATION TABLE | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| B-1 | 16509032.56 | 1344948.97 |
| B-2 | 16508911.92 | 1344995.70 |
| B-3 | 16508800.35 | 1345041.37 |
| B-4 | 16509088.40 | 1344807.17 |
| B-5 | 16508875.04 | 1344893.82 |
| B-6 | 16508663.11 | 1344976.84 |

1 / 00G06 SOIL BORING LOCATION PLAN
1" = 40'

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
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the port that *works*

**CARGO DOCK 3 PHASE 1 DOCK PACKAGE**

**SOIL BORING LOCATION PLAN**

0 1" 2"

FILENAME 00G07.dwg
SCALE 1" = 40'

SHEET 00G07

## LOG OF BORING B-1

SHEET 1 of 3

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/12/2021 - 10/13/2021

DRILLING METHOD(S): Mud Rotary

GROUNDWATER INFORMATION:

SURFACE ELEVATION: 14.0

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | N, BLOWS/FT; T: TONS/SQ FT; P: TONS/SQ FT; Qu: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LL | ATTERBERG LIMITS: PL | ATTERBERG LIMITS: PI | DRY DENSITY (POUNDS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | Approximately 13 feet to water from deck. |
| | 30 | SS S-9 | | N= WOR | 78 | | | | | | 85 | **FAT CLAY WITH SAND**, with shells, gray, wet, very soft. |
| | | SH S-10 | | N= WOR | | | | | | | | No recovery. |
| | 35 | SS S-11 | | N= WOH | 53 | 55 | 22 | 33 | | | 84 | **FAT CLAY WITH SAND**, gray, wet, very soft. (CH) |
| | | SH S-12 | | N= WOH | | | | | | | | No recovery. |
| | 40 | SH S-13 | | N= WOH | 29 | | | | | | 66 | **SANDY LEAN CLAY**, brown, moist, very soft. |
| | | SH S-14 | | P= 0.25 | | | | | | | | Same as above, soft. |
| | | SH S-15 | | P= 2.25 | 24 | 48 | 17 | 31 | 102 | 2.4 | | Same as above, very stiff. |
| | 45 | SH S-16 | | P= 2.5 | 25 | | | | | | | **SANDY LEAN CLAY**, brown, moist, very stiff. |
| | 50 | SH S-9 | | P= 4.5 | 24 | | | | | | 100 | **FAT CLAY**, brown, moist, very stiff. |
| | 55 | SH S-10 | | P= 3.75 | 21 | | | | 107 | 3.2 | | Same as above. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950835° W 97.402390°

C:\DL_OF_BORING G121490.GPJ ROCK_FIT.GDT 11/2/21

## LOG OF BORING B-1

SHEET 2 of 3

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/12/2021 - 10/13/2021

DRILLING METHOD(S): Mud Rotary

GROUNDWATER INFORMATION:

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | N, BLOWS/FT; T: TONS/SQ FT; P: TONS/SQ FT; Qu: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LL | ATTERBERG LIMITS: PL | ATTERBERG LIMITS: PI | DRY DENSITY (POUNDS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 60 | SH S-1 | | P= 2.5 | | | | | | | | **FAT CLAY**, brown, moist, stiff. |
| | 65 | SS S-12 | | N= 28 | 19 | | | | | | 98 | Same as above, very stiff. |
| | 70 | SH S-13 | | P= 4.5+ | 23 | 61 | 19 | 42 | 109 | 5.4 | 97 | Same as above. (CH) |
| | 75 | SH S-14 | | P= 4.5 | | | | | | | | **FAT CLAY**, brown, moist, very stiff. |
| | 80 | SS S-15 | | N= 25 | 28 | | | | | | 100 | Same as above. |
| | 85 | SH S-16 | | P= 4.5+ | 22 | 63 | 20 | 43 | 105 | 4.9 | | Same as above. |
| | 90 | SS S-17 | | N= 21 | 30 | | | | | | 100 | **FAT CLAY**, brown, moist, very stiff. |
| | 95 | SH S-18 | | P= 4.25 | | | | | | | | Same as above. |
| | 100 | SH S-19 | | P= 3.75 | 25 | | | | 98 | | | Same as above.<br>C' = 2.3 psi, Ø = 33.1° |
| | 105 | SH S-20 | | P= 4.5+ | 23 | 51 | 22 | 29 | | | | **FAT CLAY**, brown, moist, very stiff. |
| | 110 | SS S-21 | | N= 26 | | | | | | | | Same as above. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950835° W 97.402390°

C:\DL_OF_BORING G121490.GPJ ROCK_FIT.GDT 11/2/21

## LOG OF BORING B-1

SHEET 3 of 3

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/12/2021 - 10/13/2021

DRILLING METHOD(S): Mud Rotary

GROUNDWATER INFORMATION:

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | N, BLOWS/FT; T: TONS/SQ FT; P: TONS/SQ FT; Qu: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LL | ATTERBERG LIMITS: PL | ATTERBERG LIMITS: PI | DRY DENSITY (POUNDS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 115 | SS S-22 | | N= 13 | 30 | | | | | | 97 | **LEAN CLAY**, dark brown, moist, stiff. |
| | 120 | SH S-23 | | P= 2.0 | 34 | 65 | 25 | 40 | 99 | 3.1 | | **FAT CLAY**, dark gray, moist, stiff. |
| | 125 | SH S-24 | | P= 3.0 | | | | | | | | Same as above, dark brown, very stiff. |
| | 130 | SH S-25 | | P= 4.5+ | | | | | | | | Same as above. |
| | 135 | | | | | | | | | | | |
| | 140 | SH S-26 | | P= 2.25 | 28 | 49 | 21 | 28 | | | | **LEAN CLAY**, trace sand, dark brown, moist, stiff. |
| | 145 | | | | | | | | | | | |
| | 150 | SS S-27 | | N= 13 | 30 | | | | | | 99 | Same as above. |
| | 155 | | | | | | | | | | | |
| | 160 | SS S-28 | | N= 19 | | | | | | | | Same as above, very stiff.<br>Boring was terminated at a depth of 160 feet. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950835° W 97.402390°

C:\DL_OF_BORING G121490.GPJ ROCK_FIT.GDT 11/2/21

## LOG OF BORING B-2

SHEET 1 of 3

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/13/2021 - 10/14/2021

DRILLING METHOD(S): Mud Rotary

GROUNDWATER INFORMATION:

SURFACE ELEVATION: 14.0

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | N, BLOWS/FT; T: TONS/SQ FT; P: TONS/SQ FT; Qu: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LL | ATTERBERG LIMITS: PL | ATTERBERG LIMITS: PI | DRY DENSITY (POUNDS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | Approximately 14.5 feet to water from deck. |
| | 5 | | | | | | | | | | | |
| | 10 | | | | | | | | | | | |
| | 15 | | | | | | | | | | | Approximately 28.5 feet to mud line from deck. |
| | 20 | | | | | | | | | | | |
| | 25 | | | | | | | | | | | |
| | 30 | SS S-1 | | N= WOH | 69 | 62 | 24 | 38 | | | 50 | **SANDY FAT CLAY**, with shell, dark gray, moist very soft. (CH) |
| | | SS S-2 | | N= WOH | | | | | | | | Same as above. |
| | 35 | SS S-3 | | N= WOH | 83 | 71 | 24 | 47 | | | | Same as above, brown. |
| | | SS S-4 | | N= WOH | | | | | | | | **FAT CLAY WITH SAND**, with shell, gray, moist, very soft. |
| | | SS S-5 | | N= 1 | 30 | | | | | | 77 | Same as above. |
| | 40 | ST S-6 | | T= 0.1 | 59 | | | | | | 57 | **SANDY FAT CLAY**, dark brown, moist, very soft. |
| | | ST S-7 | | T= 0.2 | 34 | | | | | 0.2 | | **FAT CLAY WITH SAND**, with shell, dark brown, moist, soft. |
| | 45 | SH S-8 | | P= 4.0 | 22<br>18 | | | | | | 88 | **FAT CLAY**, brown, moist, very stiff. |
| | 50 | SH S-9 | | P= 4.0 | | | | | | | | Same as above. |
| | 55 | SH S-10 | | P= 3.0 | 24 | 45 | 16 | 29 | 95 | | | **LEAN CLAY**, brown, moist, very stiff.<br>C' = 2.9 psi, Ø = 30.1° |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950502° W 97.402251°

C:\DL_OF_BORING G121490.GPJ ROCK_FIT.GDT 11/2/21

## LOG OF BORING B-2

SHEET 2 of 3

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/13/2021 - 10/14/2021

DRILLING METHOD(S): Mud Rotary

GROUNDWATER INFORMATION:

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | N, BLOWS/FT; T: TONS/SQ FT; P: TONS/SQ FT; Qu: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LL | ATTERBERG LIMITS: PL | ATTERBERG LIMITS: PI | DRY DENSITY (POUNDS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 60 | SH S-11 | | P= 4.5+ | 24 | 60 | 19 | 41 | | | 100 | **FAT CLAY**, brown, moist, hard. (CH) |
| | 65 | SH S-12 | | P= 4.5+ | | | | | | | | Same as above. |
| | 70 | SH S-13 | | P= 4.5 | 20 | | | | 109 | 5.1 | | Same as above. |
| | 75 | SH S-14 | | P= 1.0 | 23 | | | | | | | **LEAN CLAY WITH SAND**, brown, moist, firm. |
| | 80 | SS S-15 | | N= 24 | | | | | | | | **FAT CLAY**, brown, moist, very stiff. |
| | 85 | SH S-16 | | P= 4.5+ | 20 | 55 | 19 | 36 | 106 | 3.2 | | Same as above, hard. |
| | 90 | SH S-17 | | P= 4.5+ | | | | | | | | Same as above. |
| | 95 | SH S-18 | | P= 3.0 | 21 | | | | | | 95 | **FAT CLAY**, brown, moist, very stiff. |
| | 100 | SS S-19 | | N= 17 | | 32 | 14 | 18 | | | | **LEAN CLAY**, brown, moist, very stiff. |
| | 105 | SH S-20 | | P= 4.5 | 26 | | | | 98 | 4.6 | | **FAT CLAY**, brown, moist, very stiff. |
| | 110 | SH S-21 | | P= 4.5+ | | | | | | | | Same as above, hard. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950502° W 97.402251°

C:\DL_OF_BORING G121490.GPJ ROCK_FIT.GDT 11/2/21

## LOG OF BORING B-2

SHEET 3 of 3

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/13/2021 - 10/14/2021

DRILLING METHOD(S): Mud Rotary

GROUNDWATER INFORMATION:

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | N, BLOWS/FT; T: TONS/SQ FT; P: TONS/SQ FT; Qu: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LL | ATTERBERG LIMITS: PL | ATTERBERG LIMITS: PI | DRY DENSITY (POUNDS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 115 | SH S-22 | | P= 2.75 | 27 | | | | | | 100 | **FAT CLAY**, brown, moist, stiff. |
| | 120 | SH S-23 | | P= 3.25 | | | | | | | | Same as above, very stiff. |
| | 125 | SH S-24 | | P= 3.75 | | | | | | | | Same as above, dark brown. |
| | 130 | SH S-25 | | P= 4.5+ | 35 | | | | 96 | 2.2 | 98 | **FAT CLAY**, dark brown, moist, hard. |
| | 135 | | | | | | | | | | | |
| | 140 | SH S-26 | | P= 4.5+ | 23 | | | | 103 | 4.9 | | Same as above. |
| | 145 | | | | | | | | | | | |
| | 150 | SS S-27 | | N= 16 | | 53 | 21 | 32 | | | | Same as above, very stiff. |
| | 155 | | | | | | | | | | | |
| | 160 | SS S-28 | | N= 59 | | | | | | | | **CLAYEY SAND**, dark brown, moist, very dense.<br>Boring was terminated at a depth of 160 feet. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950502° W 97.402251°

C:\DL_OF_BORING G121490.GPJ ROCK_FIT.GDT 11/2/21

## LOG OF BORING B-3

SHEET 1 of 3

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/15/2021 - 10/18/2021

DRILLING METHOD(S): Mud Rotary

GROUNDWATER INFORMATION:

SURFACE ELEVATION: 14.0

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | N, BLOWS/FT; T: TONS/SQ FT; P: TONS/SQ FT; Qu: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LL | ATTERBERG LIMITS: PL | ATTERBERG LIMITS: PI | DRY DENSITY (POUNDS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | Approximately 13 feet to water from deck. |
| | 5 | | | | | | | | | | | |
| | 10 | | | | | | | | | | | |
| | 15 | | | | | | | | | | | |
| | 20 | | | | | | | | | | | |
| | 25 | | | | | | | | | | | |
| | 30 | SS S-1 | | N= WOH | 44 | | | | | | | **SANDY LEAN CLAY**, brown, wet, very soft. |
| | | SS S-2 | | N= WOH | | | | | | | | Same as above, dark brown. |
| | 35 | SS S-3 | | N= WOH | 42 | | | | | | | Same as above, brown. |
| | | SS S-4 | | N= 3 | | 42 | 17 | 25 | | | | **LEAN CLAY**, brown, moist, soft. |
| | | SS S-5 | | N= 4 | | | | | | | | **FAT CLAY**, brown, moist, firm. |
| | 40 | SS S-6 | | N= 9 | 25 | | | | | | 98 | **LEAN CLAY**, brown, moist, stiff. |
| | | SS S-7 | | | 27 | | | | | | 43 | **CLAYEY SAND**, brown, moist, loose. |
| | | SH S-8 | | P= 3.0 | 23 | | | | 103 | 2.6 | 100 | **FAT CLAY**, brown, moist, very stiff. |
| | 45 | SH S-9 | | P= 4.5+ | 22 | | | | | | 100 | Same as above, hard. |
| | 50 | SH S-9 | | P= 4.0 | | | | | | | | Same as above, very stiff. |
| | 55 | SH S-10 | | P= 3.25 | 22 | | | | 105 | 3.1 | | **FAT CLAY**, brown, moist, very stiff. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950194° W 97.402115°

C:\DL_OF_BORING G121490.GPJ ROCK_FIT.GDT 11/2/21

## LOG OF BORING B-3

SHEET 2 of 3

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/15/2021 - 10/18/2021

DRILLING METHOD(S): Mud Rotary

GROUNDWATER INFORMATION:

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | N, BLOWS/FT; T: TONS/SQ FT; P: TONS/SQ FT; Qu: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LL | ATTERBERG LIMITS: PL | ATTERBERG LIMITS: PI | DRY DENSITY (POUNDS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 60 | SH S-11 | | P= 4.5+ | | | | | | | | **FAT CLAY**, brown, moist, hard. |
| | 65 | SH S-12 | | P= 4.5+ | | | | | | | | Same as above. |
| | 70 | SH S-13 | | P= 3.0 | 19 | 63 | 21 | 42 | 112 | | 99 | Same as above, very stiff.<br>C' = 6.0 psi, Ø = 27.5° |
| | 75 | SH S-14 | | P= 2.0 | | 30 | 20 | 10 | | | | **LEAN CLAY WITH SAND**, dark brown, moist, stiff. |
| | 80 | SH S-15 | | P= 4.5+ | | | | | | | | **FAT CLAY**, brown, moist, hard. |
| | 85 | SH S-16 | | P= 4.5+ | | | | | | | | Same as above. |
| | 90 | SH S-17 | | P= 4.0 | | | | | | | | Same as above, very stiff. |
| | 95 | SH S-18 | | P= 1.5 | 20 | | | | 108 | 3.9 | | **FAT CLAY**, brown, moist, stiff. |
| | 100 | SH S-19 | | P= 4.5 | | | | | | | | Same as above, very stiff. |
| | 105 | SS S-20 | | N= 14 | 24 | | | | | | 14 | **POORLY GRADED SAND WITH SILT**, brown, moist, medium. |
| | 110 | SS S-21 | | N= 16 | | | | | | | | **FAT CLAY**, brown, moist, very stiff. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950194° W 97.402115°

C:\DL_OF_BORING G121490.GPJ ROCK_FIT.GDT 11/2/21

NOTES:

1. SEE SHEET 00G09 FOR RESULTS OF SOIL SAMPLE ANALYSIS AND KEY TO TERMS AND SYMBOLS.

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**SOIL BORING LOGS 1 OF 2**

0 1" 2"

FILENAME 00G08.dwg
SCALE N/A

SHEET 00G08

## LOG OF BORING B-3

SHEET 3 of 3

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/15/2021 - 10/18/2021

DRILLING METHOD(S): Mud Rotary

GROUNDWATER INFORMATION:

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | BLOWS/FT<br>N: BLOWS/FT<br>T: TONS/SQ FT<br>Qc: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS LL | ATTERBERG LIMITS PL | ATTERBERG LIMITS PI | DRY DENSITY (LBS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 115 | SH S-22 | | P= 3.75 | 28 | | | | 97 | 2.3 | | **FAT CLAY**, dark brown, moist, very stiff. |
| | 120 | SH S-23 | | P= 2.0 | 35 | 58 | 19 | 39 | 89 | | | Same as above.<br>C' = 6.1 psi, Ø = 21.3° |
| | 125 | SH S-24 | | P= 2.75 | | | | | | | | Same as above. |
| | 130 | SH S-25 | | P= 3.0 | | | | | | | | **SANDY LEAN CLAY**, dark brown, moist, very stiff. |
| | 135 | | | | | | | | | | | |
| | 140 | SS S-26 | | N= 32 | 26 | | | | | | | Same as above, hard. |
| | 145 | | | | | | | | | | | |
| | 150 | SS S-27 | | N= 14 | | | | | | | | Same as above, stiff. |
| | 155 | | | | | | | | | | | |
| | 160 | SS S-28 | | N= 6 | | | | | | | | **SANDY LEAN CLAY**, dark brown, moist, firm.<br>Boring was terminated at a depth of 160 feet. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950194° W 97.402115°

## LOG OF BORING B-4

SHEET 2 of 2

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/19/2021 - 10/20/2021

DRILLING METHOD(S): Solid Stem Auger/Mud Rotary

GROUNDWATER INFORMATION:
Groundwater (GW) was encountered at a depth of 16.5 feet during drilling.
GW at 16 feet and caved at 20 feet upon completion.
14-Hour Delayed Readings: GW at 7 feet and Caved at 9.5 feet.

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | BLOWS/FT<br>N: BLOWS/FT<br>T: TONS/SQ FT<br>Qc: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS LL | ATTERBERG LIMITS PL | ATTERBERG LIMITS PI | DRY DENSITY (LBS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 60 | SS S-17 | | N= 15 | | | | | | | | **FAT CLAY**, brown, moist, very stiff. |
| | 65 | SH S-18 | | P= 2.5+ | 24 | | | | 99 | | | **LEAN CLAY**, brown, moist, very stiff.<br>Same as above. |
| | 70 | SS S-19 | | N= 17 | | | | | | | | Same as above, very stiff. |
| | 75 | SH S-20 | | P= 4.5+ | 19 | | | | 107 | 5.9 | | **FAT CLAY**, brown, moist, hard. |
| | 80 | SH S-21 | | P= 4.5 | | | | | | | | Same as above, very stiff. |
| | 85 | SH S-22 | | P= 4.5 | | | | | | | | Same as above, dark brown. |
| | 90 | SH S-23 | | P= 4.5 | 29 | | | | 94 | 3.0 | | **FAT CLAY**, dark brown, moist, very stiff. |
| | 95 | SS S-24 | | N= 25 | | | | | | | | Same as above. |
| | 100 | SH S-25 | | P= 2.25 | | | | | | | | Same as above.<br>Boring was terminated at a depth of 100 feet. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950992° W 97.402820°

## LOG OF BORING B-5

SHEET 2 of 2

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/19/2021

DRILLING METHOD(S): Solid Stem Auger/Mud Rotary

GROUNDWATER INFORMATION:
Groundwater (GW) was encountered at a depth of 19.5 feet during drilling.
GW and caved at 19.5 feet upon completion.
.5-Hour Delayed Readings: GW at 18.5 feet and Caved at 19 feet.

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | BLOWS/FT<br>N: BLOWS/FT<br>T: TONS/SQ FT<br>Qc: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS LL | ATTERBERG LIMITS PL | ATTERBERG LIMITS PI | DRY DENSITY (LBS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 60 | ST S-17 | | P= 4.5+ | 21 | | | | | | | **FAT CLAY**, brown, moist, hard. |
| | 65 | ST S-18 | | P= 4.5+ | | | | | | | | Same as above. |
| | 70 | ST S-19 | | P= 3.5 | 23 | | | | 106 | 5.4 | | Same as above, very stiff. |
| | 75 | SS S-20 | | N= 6 | | | | | | | | **LEAN CLAY WITH SAND**, brown, moist, firm. |
| | 80 | SS S-21 | | N= 20 | | | | | | | | **FAT CLAY**, brown, moist, very stiff. |
| | 85 | ST S-22 | | P= 4.5+ | 22 | | | | 105 | 4.7 | | Same as above, hard. |
| | 90 | ST S-23 | | P= 4.5+ | | | | | | | | Same as above. |
| | 95 | ST S-24 | | P= 3.25 | 25 | | | | 103 | 1.9 | | **FAT CLAY**, brown, moist, very stiff. |
| | 100 | SS S-25 | | N= 14 | | | | | | | | **LEAN CLAY WITH SAND**, brown, moist, stiff.<br>Boring was terminated at a depth of 100 feet. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950403° W 97.402582°

## LOG OF BORING B-6

SHEET 2 of 2

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/20/2021 - 10/21/2021

DRILLING METHOD(S): Solid Stem Auger/Mud Rotary

GROUNDWATER INFORMATION:
Groundwater (GW) was encountered at a depth of 12 feet during drilling.
GW at 10.5 feet and caved at 13 feet upon completion.

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | BLOWS/FT<br>N: BLOWS/FT<br>T: TONS/SQ FT<br>Qc: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS LL | ATTERBERG LIMITS PL | ATTERBERG LIMITS PI | DRY DENSITY (LBS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 60 | SS S-17 | | N= 17 | 30 | | | | | | | **FAT CLAY**, brown, moist, very stiff.<br>**SANDY LEAN CLAY**, brown, moist, very stiff. |
| | 65 | SS S-18 | | N= 20 | | | | | | | | **SILTY CLAYEY SAND**, brown, moist, medium.<br>**FAT CLAY**, brown, moist, very stiff. |
| | 70 | SS S-19 | | N= 10 | 25 | | | | | | | **LEAN CLAY WITH SAND**, brown, moist, stiff. |
| | 75 | SS S-20 | | N= 16 | | | | | | | | **FAT CLAY**, brown, moist, very stiff. |
| | 80 | ST S-21 | | P= 4.5+ | 24 | | | | 105 | 3.9 | | Same as above, hard. |
| | 85 | ST S-22 | | P= 4.5+ | | | | | | | | Same as above. |
| | 90 | ST S-23 | | P= 4.5 | | | | | | | | **FAT CLAY**, brown, moist, very stiff. |
| | 95 | SS S-24 | | N= 43 | 26 | | | | | | | **CLAYEY SAND**, brown, moist, dense. |
| | 100 | SS S-25 | | N= 58 | | | | | | | | **SILTY CLAYEY SAND**, dark brown, moist, very dense.<br>Boring was terminated at a depth of 100 feet. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.949618° W 97.402315°

## LOG OF BORING B-4

SHEET 1 of 2

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/19/2021 - 10/20/2021

DRILLING METHOD(S): Solid Stem Auger/Mud Rotary

GROUNDWATER INFORMATION:
Groundwater (GW) was encountered at a depth of 16.5 feet during drilling.
GW at 16 feet and caved at 20 feet upon completion.
14-Hour Delayed Readings: GW at 7 feet and Caved at 9.5 feet.

SURFACE ELEVATION: 11.0

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | BLOWS/FT<br>N: BLOWS/FT<br>T: TONS/SQ FT<br>Qc: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS LL | ATTERBERG LIMITS PL | ATTERBERG LIMITS PI | DRY DENSITY (LBS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SS S-1 | | N= 2 | 37 | | | | | | | **CONCRETE**, approximately 4 inches |
| | | SS S-2 | | | | | | | | | | **SAND**, approximately 7 inches |
| | | SS S-3 | | | | | | | | | | **SANDY LEAN CLAY**, dark brown, moist, soft. |
| | | SS S-4 | | | | | | | | | | **LEAN CLAY**, dark brown, moist, stiff. |
| | 5 | SS S-5 | | Tv= 0.5 | 35 | | | | 89 | 1.3 | 99 | **FAT CLAY**, dark brown, moist, stiff. |
| | | SS S-6 | | Tv= 0.5 | | | | | | | | Same as above. |
| | 10 | SS S-7 | | Tv= 0.3 | 40 | | | | 81 | 0.7 | | Same as above, firm. |
| | | SS S-8 | | Tv= 0.4 | | | | | | | | **FAT CLAY**, dark brown, moist, firm. |
| | 15 | SS S-9 | | Tv= 0.4 | 32 | | | | 90 | 1.0 | | Same as above. |
| | | SS S-10 | | Tv= 0.5 | | | | | | | | Same as above, stiff. |
| | 20 | ST S-9 | | Tv= 0.5 | | | | | | | | **FAT CLAY**, dark brown, moist, stiff. |
| | 25 | ST S-10 | | P= 1.5 | 25 | | | | 96 | 1.2 | 89 | Same as above, stiff. |
| | 30 | SS S-11 | | N= 19 | | | | | | | | **CLAYEY SAND**, with calcareous nodules, dark brown, moist, medium dense. |
| | | SS S-12 | | N= 20 | 31 | | | | | | | **POORLY GRADED SAND**, dark brown, moist, medium dense. |
| | 35 | ST S-13 | | P= 4.5+ | 21 | | | | | | | **FAT CLAY**, with calcareous nodules, dark brown, moist, very stiff. |
| | 40 | SH S-13 | | P= 4.5+ | | | | | | | | Same as above, brown, hard. |
| | 45 | SH S-14 | | P= 4.5+ | 23 | | | | 105 | 5.0 | | Same as above, without calcareous nodules. |
| | 50 | SH S-15 | | P= 2.75 | | | | | | | | **FAT CLAY**, brown, moist, very stiff. |
| | 55 | SH S-16 | | P= 4.5+ | 19 | | | | 109 | 6.1 | | Same as above, hard. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950992° W 97.402820°

## LOG OF BORING B-5

SHEET 1 of 2

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/19/2021

DRILLING METHOD(S): Solid Stem Auger/Mud Rotary

GROUNDWATER INFORMATION:
Groundwater (GW) was encountered at a depth of 19.5 feet during drilling.
GW and caved at 19.5 feet upon completion.
.5-Hour Delayed Readings: GW at 18.5 feet and Caved at 19 feet.

SURFACE ELEVATION: 14.0

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | BLOWS/FT<br>N: BLOWS/FT<br>T: TONS/SQ FT<br>Qc: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS LL | ATTERBERG LIMITS PL | ATTERBERG LIMITS PI | DRY DENSITY (LBS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SS S-1 | | N= 14 | | | | | | | | **CONCRETE**, approximately 10 inches |
| | | SS S-2 | | | | | | | | | | **SILTY SAND**, dark brown, moist, medium. |
| | | SS S-3 | | P= 1.0 | 23 | | | | 101 | 1.2 | | **SANDY LEAN CLAY**, dark brown, moist, stiff. |
| | 5 | SS S-4 | | N= 5 | | | | | | | | **FAT CLAY**, dark gray and dark brown, moist, firm. |
| | | SS S-5 | | Tv= 0.4 | | | | | | | | Same as above, dark brown. |
| | 10 | SS S-6 | | Tv= 0.5 | 38 | | | | | | | Same as above, stiff. |
| | | SS S-7 | | Tv= 0.5 | | 63 | 22 | 41 | | | | **FAT CLAY**, dark brown, moist, stiff. |
| | 15 | SS S-8 | | Tv= 0.5 | 35 | | | | 92 | 1.3 | | Same as above. |
| | | SS S-9 | | P= 1.5 | | | | | | | | Same as above, stiff. |
| | 20 | ST S-9 | | Tv= 0.5 | | | | | | | | **FAT CLAY**, with calcareous nodules, dark brown, moist, stiff. |
| | 25 | ST S-10 | | P= 2.0 | | | | | | | | Same as above, very stiff. |
| | 30 | ST S-11 | | P= 1.5 | 21 | | | | 107 | 2.0 | 94 | Same as above, stiff. |
| | 35 | ST S-12 | | P= 4.5+ | | | | | | | | **FAT CLAY**, with calcareous nodules, brown, moist, hard. |
| | 40 | ST S-13 | | P= 4.5+ | 19 | | | | | | | **POORLY GRADED SAND**, brown, moist, hard. |
| | 45 | SS S-14 | | N= 24 | | | | | | | | **FAT CLAY**, brown, moist, very stiff.<br>**CLAYEY SAND**, brown, moist, medium dense. |
| | 50 | ST S-15 | | P= 4.5+ | 23 | | | | 104 | 4.4 | | **FAT CLAY**, brown, moist, hard. |
| | 55 | ST S-16 | | P= 4.5 | | | | | | | | Same as above, very stiff. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.950403° W 97.402582°

## LOG OF BORING B-6

SHEET 1 of 2

Rock Engineering & Testing Lab. Inc
6817 Leopard Street
Corpus Christi, Texas 78409
Telephone: 361-883-4555
Fax: 361-883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Port of Brownsville Cargo Dock 3
LOCATION: Brownsville, Texas
NUMBER: G121490

DATE(S) DRILLED: 10/20/2021 - 10/21/2021

DRILLING METHOD(S): Solid Stem Auger/Mud Rotary

GROUNDWATER INFORMATION:
Groundwater (GW) was encountered at a depth of 12 feet during drilling.
GW at 10.5 feet and caved at 13 feet upon completion.

SURFACE ELEVATION: 11.0

| SOIL SYMBOL | DEPTH (FT) | SAMPLE NUMBER | SAMPLES | BLOWS/FT<br>N: BLOWS/FT<br>T: TONS/SQ FT<br>Qc: TONS/SQ FT | MOISTURE CONTENT (%) | ATTERBERG LIMITS LL | ATTERBERG LIMITS PL | ATTERBERG LIMITS PI | DRY DENSITY (LBS/CU FT) | COMPRESSIVE STRENGTH (TONS/SQ FT) | MINUS NO. 200 SIEVE (%) | DESCRIPTION OF STRATUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SS S-1 | | N= 2 | | | | | | | | **SANDY LEAN CLAY**, dark gray, moist, soft. |
| | | SS S-2 | | N= 6 | | | | | | | | **LEAN CLAY**, dark gray and dark brown, moist, firm. |
| | 5 | SS S-3 | | P= 1.5 | | | | | | | | **FAT CLAY**, dark brown, moist, stiff. |
| | | SS S-4 | | P= 1.0 | 34 | | | | 91 | 1.5 | | Same as above, firm. |
| | | SS S-5 | | Tv= 0.4 | | | | | | | | Same as above. |
| | 10 | SS S-6 | | Tv= 0.5 | 32 | | | | 94 | 0.6 | | **FAT CLAY**, dark brown, moist, stiff. |
| | | SS S-7 | | Tv= 0.6 | | | | | | | | Same as above. |
| | 15 | SS S-8 | | Tv= 0.1 | | | | | | | | Same as above, very soft. |
| | | SS S-9 | | | | | | | | | | |
| | 20 | ST S-9 | | P= 2.0 | 18 | | | | 112 | 2.4 | | **FAT CLAY**, dark brown, moist, very stiff. |
| | 25 | ST S-10 | | P= 2.75 | | | | | | | | Same as above. |
| | 30 | SS S-11 | | N= 16 | 24 | | | | | | | **LEAN CLAY**, brown, moist, very stiff. |
| | 35 | SS S-12 | | N= 49 | | | | | | | | **SILTY SAND**, brown, moist, dense.<br>**LEAN CLAY WITH SAND**, brown, moist, hard. |
| | 40 | ST S-13 | | P= 4.5+ | 22 | | | | 108 | 3.0 | | **SANDY LEAN CLAY**, brown, moist, hard. |
| | 45 | ST S-14 | | P= 4.5+ | | | | | | | | **FAT CLAY**, brown, moist, hard. |
| | 50 | ST S-15 | | P= 3.75 | 22 | | | | 105 | 2.0 | 100 | Same as above, very stiff. |
| | 55 | ST S-16 | | P= 4.5+ | | | | | | | | Same as above, hard. |

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:
Drilling operations were performed by RETL at GPS Coordinates
N 25.949618° W 97.402315°

Engineering & Testing Laboratory, Inc.

Rock Engineering & Testing Laboratory
6817 Leopard Street
Corpus Christi, TX 78409-1703
Telephone: 361-883-4555
Fax: 361-883-4711

### KEY TO SOIL CLASSIFICATION AND SYMBOLS

UNIFIED SOIL CLASSIFICATION SYSTEM

| MAJOR DIVISIONS | | SYMBOL | NAME |
|---|---|---|---|
| COARSE GRAINED SOILS | GRAVEL AND GRAVELLY SOILS | GW | Well Graded Gravels or Gravel-Sand mixtures, little or no fines |
| | | GP | Poorly Graded Gravels or Gravel-Sand mixtures, little or no fines |
| | | GM | Silty Gravels, Gravel-Sand-Silt mixtures |
| | | GC | Clayey Gravels, Gravel-Sand-Clay Mixtures |
| | SAND AND SANDY SOILS | SW | Well Graded Sands or Gravelly Sands, little or no fines |
| | | SP | Poorly Graded Sands or Gravelly Sands, little or no fines |
| | | SM | Silty Sands, Sand-Silt Mixtures |
| | | SC | Clayey Sands, Sand-Clay mixtures |
| FINE GRAINED SOILS | SILTS AND CLAYS LL < 50 | ML | Inorganic Silts and very fine Sands, Rock Flour, Silty or Clayey fine Sands or Clayey Silts |
| | | CL | Inorganic Clays of low to medium plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays |
| | | OL | Organic Silts and Organic Silt-Clays of low plasticity |
| | SILTS AND CLAYS LL > 50 | MH | Inorganic Silts, Micaceous or Diatomaceous fine Sandy or Silty soils, Elastic Silts |
| | | CH | Inorganic Clays of high plasticity, Fat Clays |
| | | OH | Organic Clays of medium to high plasticity, Organic Silts |
| HIGHLY ORGANIC SOILS | | PT | Peat and other Highly Organic soils |

TERMS CHARACTERIZING SOIL STRUCTURE

SLICKENSIDED - having inclined planes of weakness that are slick and glossy in appearance

FISSURED - containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical

LAMINATED (VARVED) - composed of thin layers of varying color and texture, usually grading from sand or silt at the bottom to clay at the top

CRUMBLY - cohesive soils which break into small blocks or crumbs on drying

CALCAREOUS - containing appreciable quantities of calcium carbonate, generally nodular

WELL GRADED - having wide range in grain sizes and substantial amounts of all intermediate particle sizes

POORLY GRADED - predominantly of one grain size uniformly graded) or having a range of sizes with some intermediate size missing (gap or skip graded)

SYMBOLS FOR TEST DATA

- Groundwater Level (Initial Reading)
- Groundwater Level (Final Reading)
- Shelby Tube Sample
- SPT Samples
- Auger Sample
- Rock Core

TERMS DESCRIBING CONSISTENCY OF SOIL

| COARSE GRAINED SOILS | | FINE GRAINED SOILS | | |
|---|---|---|---|---|
| DESCRIPTIVE TERM | NO. BLOWS/FT, STANDARD PEN. TEST | DESCRIPTIVE TERM | NO. BLOWS/FT, STANDARD PEN. TEST | UNCONFINED COMPRESSION TONS PER SQ. FT. |
| Very Loose | 0 - 4 | Very Soft | < 2 | < 0.25 |
| Loose | 4 - 10 | Soft | 2 - 4 | 0.25 - 0.50 |
| Medium | 10 - 30 | Firm | 4 - 8 | 0.50 - 1.00 |
| Dense | 30 - 50 | Stiff | 8 - 15 | 1.00 - 2.00 |
| Very Dense | over 50 | Very Stiff | 15 - 30 | 2.00 - 4.00 |
| | | Hard | over 30 | over 4.00 |

Field Classification for "Consistency" is determined with a 0.25" diameter penetrometer

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

PROJECT MANAGER KYLE M. WUNDT
DESIGNED BY L. CRESSMAN
DRAWN BY A. VILLARREAL
CHECKED BY N. GALANI
PROJECT NUMBER 10320226

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

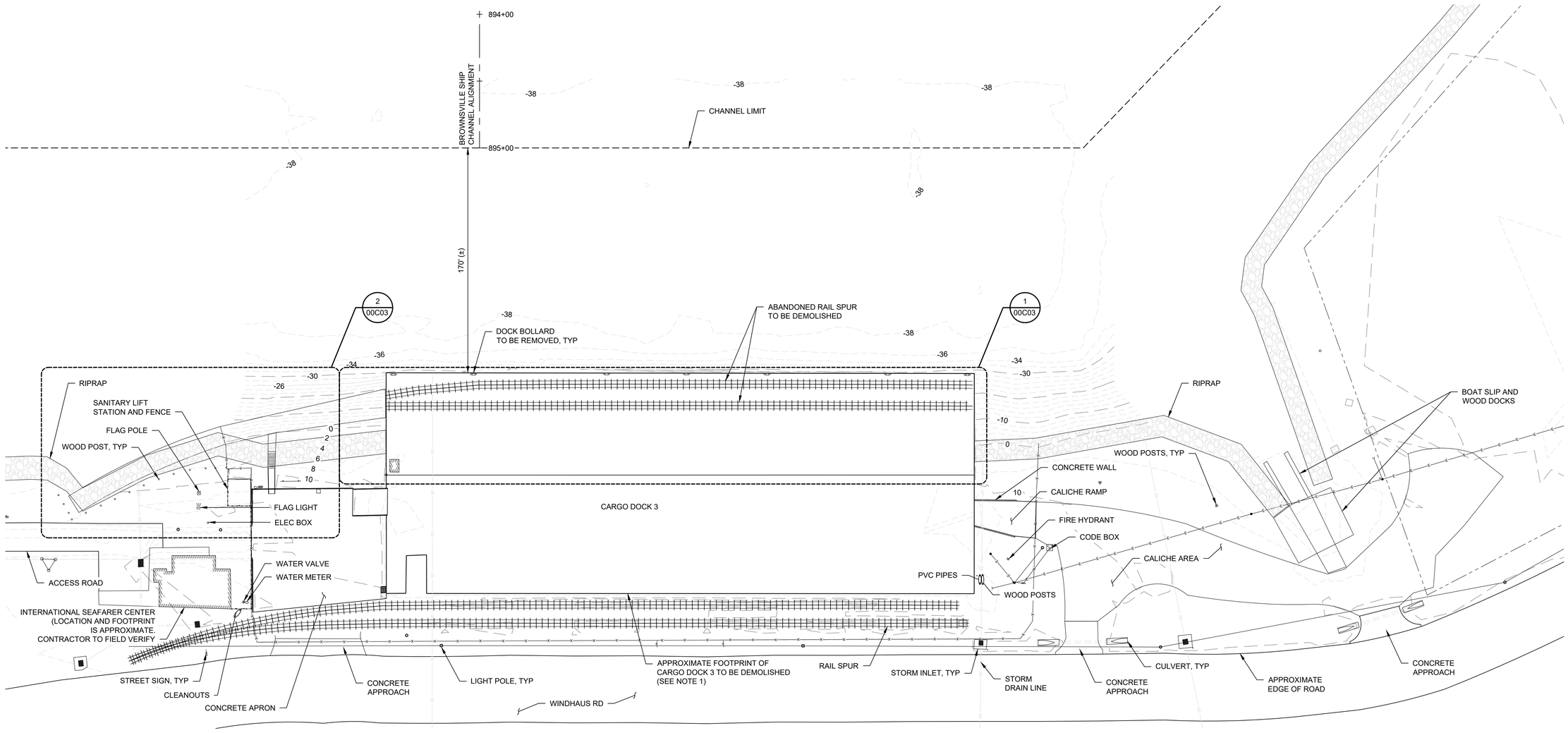
PORT OF BROWNSVILLE
the port that *works*
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

SOIL BORING LOGS 2 OF 2

0 1" 2"

FILENAME 00G09.dwg
SCALE N/A

SHEET 00G09




1 00G06 EXISTING SITE PLAN
1" = 40'

NOTES:

1. DOCK FEATURES SHOWN ARE AS SURVEYED PRIOR TO DEMOLITION OF EXISTING CARGO DOCK 3. CONTRACTOR TO OBTAIN FROM OWNER THE RECORD DRAWINGS OF DEMOLITION WORK, PERFORMED BY OTHERS. SHEET 00C03 SHOWS PILE PLAN FOR THE EXISTING DOCK. CONTRACTOR TO FIELD VERIFY THE INFORMATION SHOWN PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY DISCREPANCY.

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

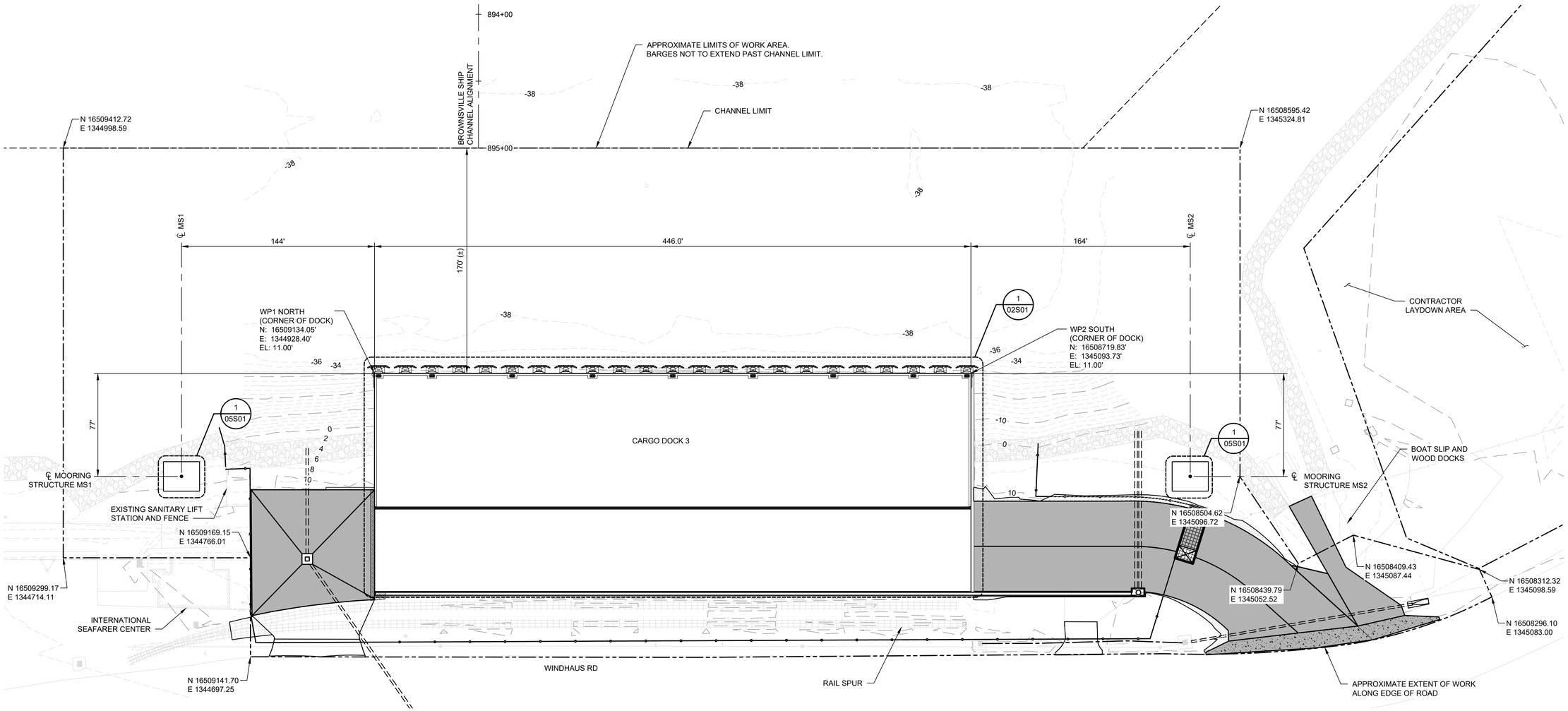
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

EXISTING SITE PLAN

0 1" 2"

FILENAME 00C01.dwg
SCALE 1" = 40'

SHEET 00C01




1 / 00G06 PROJECT LAYOUT
1" = 40'

NOTES:

1. LIMITS OF WORK AREA AND LAYDOWN AREA SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SURVEY THE AREA AND PROVIDE TEMPORARY FENCING. SUBMIT SURVEY PLAN TO OWNER FOR APPROVAL PRIOR TO START OF WORK.


HDR Engineering, INC
TBPELS Firm
Registration No. F-754


| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED PROFESSIONAL ENGINEER
09.22.2023

09/22/2023
STATE OF TEXAS
JUSTIN AARON DE LA ROSA
134885
LICENSED PROFESSIONAL ENGINEER

PORT OF BROWNSVILLE
the port that *works*

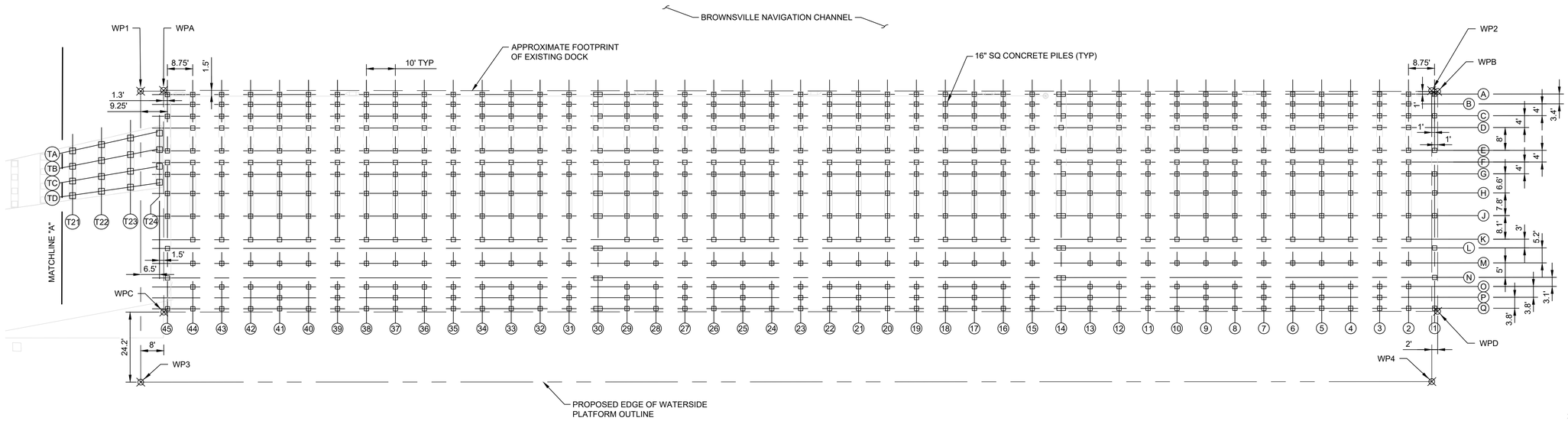
**CARGO DOCK 3 PHASE 1**
**DOCK PACKAGE**

**PROJECT LAYOUT**

0 1" 2"

FILENAME 00C02.dwg
SCALE 1" = 40'

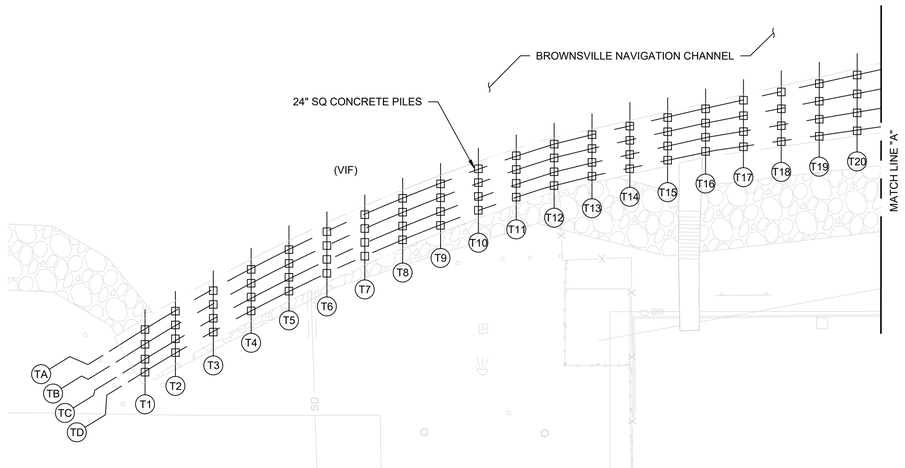
SHEET **00C02**




1 00C01 **EXISTING DOCK PILES PLAN**
1" = 20'

| WORKING POINTS EXISTING DOCK | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WPA | 16509126.80 | 1344931.58 |
| WPB | 16508717.80 | 1345094.24 |
| WPC | 16509098.35 | 1344860.48 |
| WPD | 16508689.68 | 1345023.69 |

| WORKING POINTS PROPOSED WATERSIDE PLATFORM | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP1 | 16509134.05 | 1344928.40 |
| WP2 | 16508719.83 | 1345093.73 |
| WP3 | 16509096.79 | 1344835.06 |
| WP4 | 16508682.57 | 1345000.39 |




2 00C01 **EXISTING DOCK PILES PLAN**
1" = 20'

NOTES:

1. INFORMATION SHOWN IS PER DEMOLITION DRAWINGS REFERENCED ON SHEET 00G04. EXISTING DOCK FEATURES AND DIMENSIONS SHOWN ARE APPROXIMATE. PILE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL PILE LOCATIONS AND/OR ORIENTATIONS MAY DIFFER. CONTRACTOR TO OBTAIN FROM OWNER THE RECORD DRAWINGS OF DEMOLITION WORK, PERFORMED BY OTHERS.
2. CONTRACTOR TO FIELD VERIFY THE INFORMATION SHOWN PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY DISCREPANCY.

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

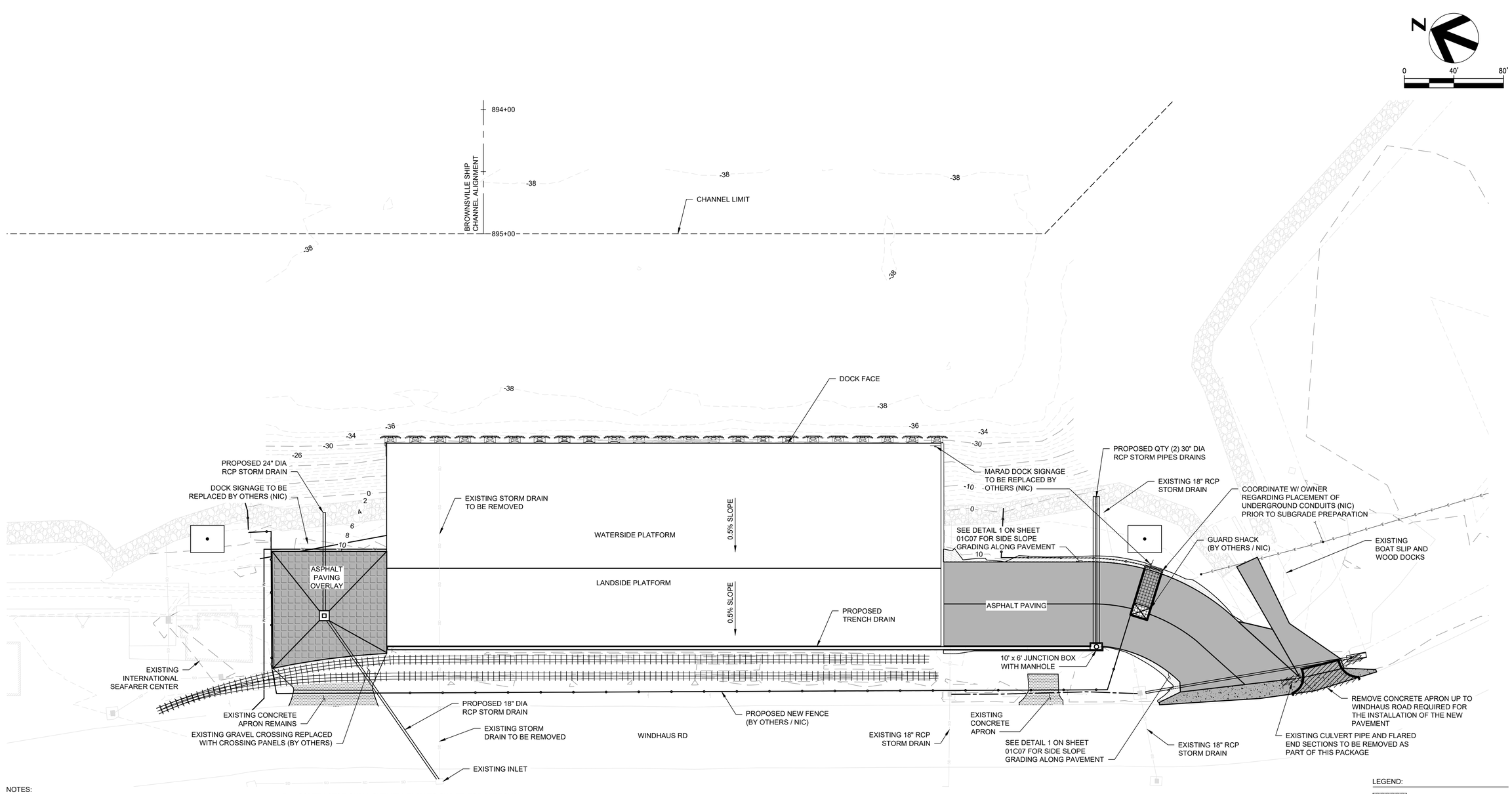
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**EXISTING DOCK PILES PLAN**

0 1" 2"

FILENAME 00C03.dwg
SCALE 1" = 20'

SHEET **00C03**




NOTES:

1. GENERAL ROUTING OF PERIMETER FENCES SHOWN. GUARD SHACK, SHACK FOUNDATION, FENCING, AND GATES ARE BY OTHERS (NIC).
2. COMPOSITE RAIL CROSSINGS MUST MEET OMNITRAX SPECS AND SHOULD BE COORDINATED W/ THE PORT AND BRG RAIL.
3. ADDITIONAL PAVED AREAS BEYOND THE SOUTH ACCESS AND NORTH PARKING LOT AREA ARE NIC.
4. EXISTING CONCRETE PIPE STORM DRAIN OUTFALLING BENEATH DOCK SHALL REMAIN IN PLACE AND IN SERVICE UNTIL NEW DRAIN SYSTEM ON THE NORTH SIDE IS FULLY IN SERVICE.
5. CONTRACTOR SHALL SUBMIT A PLAN TO OWNER FOR APPROVAL FOR THE ITEMS TO BE DEMOLISHED OR REMOVED. THE PLAN SHALL INCLUDE DRAWINGS AND CALCULATIONS FOR SHORING AND SHEETING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, HIRED BY THE CONTRACTOR.
6. ANY EXCAVATION REQUIRED FOR REMOVAL OF EXISTING PILE SHOWN SHALL BE BACKFILLED TO EXISTING GRADE WITH SELECT FILL MATERIAL IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 23 00.00 20.
7. DEMOLISHED MATERIAL SHALL BECOME THE PROPERTY OF CONTRACTOR AND SHALL BE DISPOSED OF LEGALLY AND PROPERLY.

1 / 00G06 CIVIL SITE PLAN
1" = 40'

LEGEND:
- RIPRAP
- ASPHALT PAVING
- CONCRETE EXISTING
- ASPHALT PAVING OVERLAY
- CONCRETE APRON PAVING
- SLOPE PAVERS

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | J. DE LA ROSA |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | S. SALDIVAR |
| PROJECT NUMBER | 10320226 |

09/22/2023
STATE OF TEXAS
JUSTIN AARON DE LA ROSA
134885
LICENSED PROFESSIONAL ENGINEER
Justin Aaron De La Rosa, P.E.

PORT OF BROWNSVILLE
the port that *works*

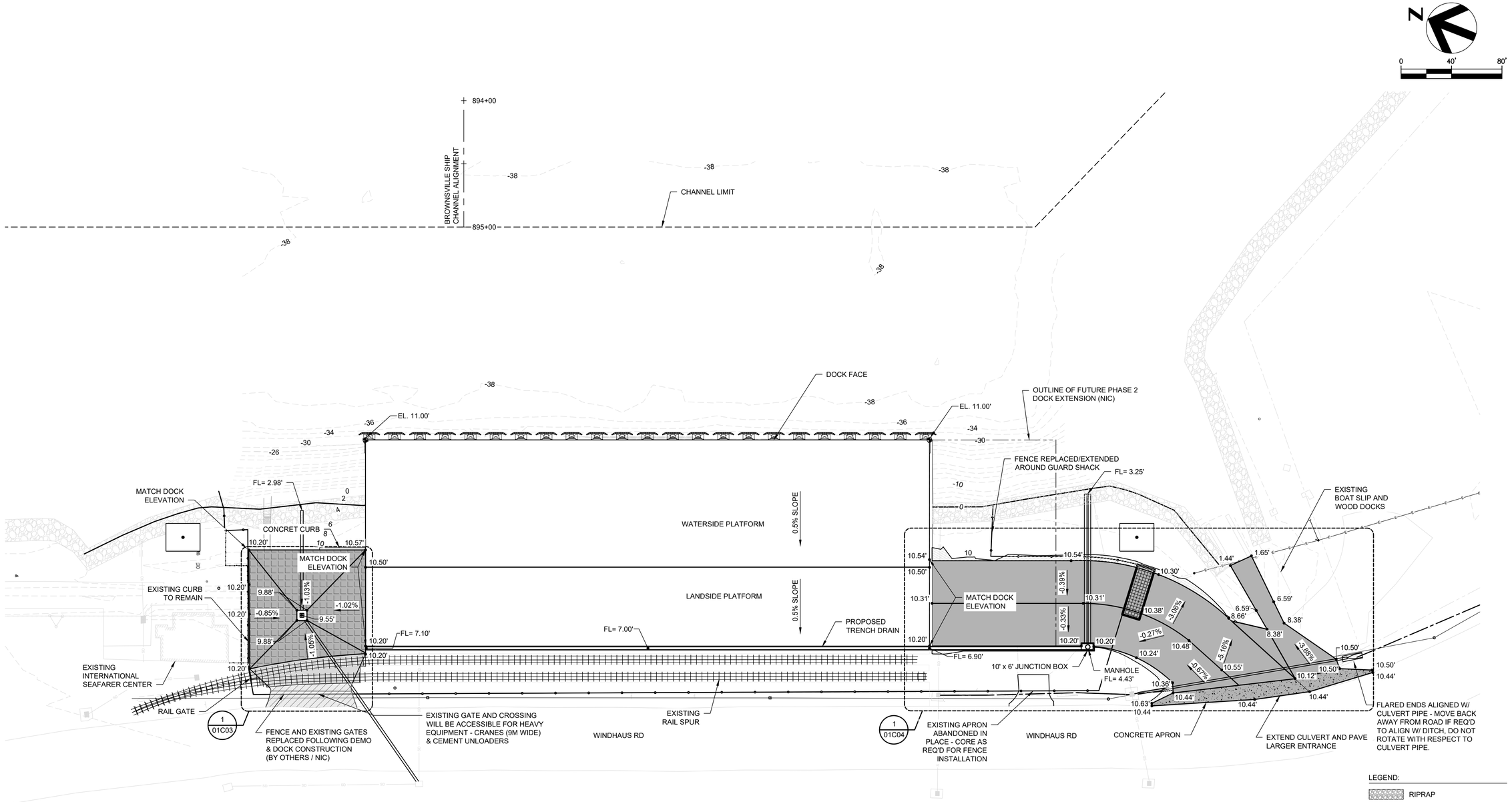
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**CIVIL SITE PLAN**

0 1" 2"

FILENAME 01C01.dwg
SCALE 1" = 40'

SHEET 01C01




1 / 00G06 GRADING PLAN

1" = 40'

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CARGO DOCK 3 PHASE 1
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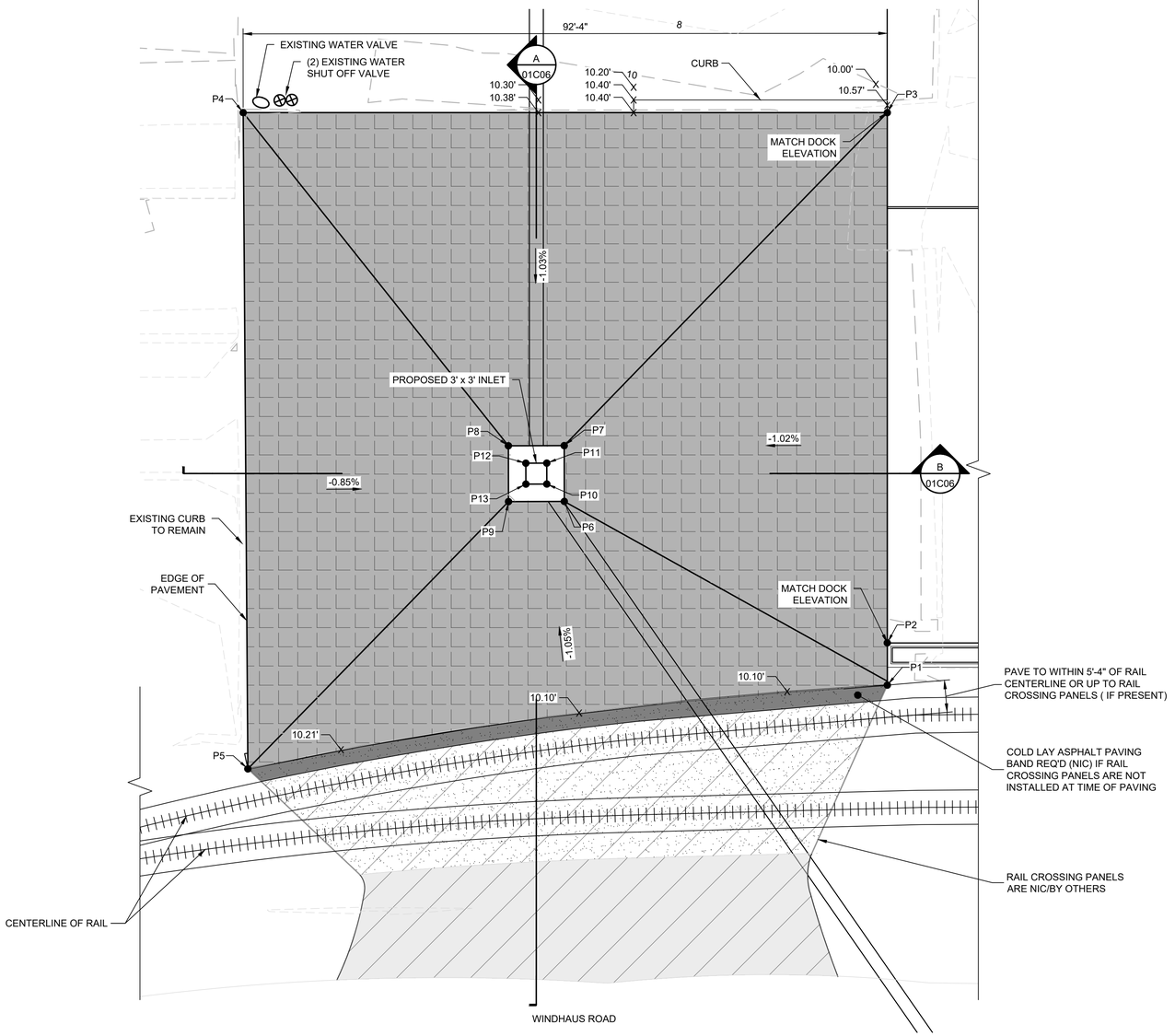
GRADING PLAN

0 1" 2"

FILENAME 01C02.dwg
SCALE 1" = 40'

SHEET 01C02




1 / 01C02 ENLARGED PAVING PLAN - NORTH

1" = 10'

N

0 10' 20'

| POINT TABLE | | | |
|---|---|---|---|
| POINT NO. | NORTHING | EASTING | ELEVATION |
| P1 | 16509071.38 | 1344771.39 | 10.20 |
| P2 | 16509073.63 | 1344777.01 | 10.20 |
| P3 | 16509101.80 | 1344847.59 | 10.57 |
| P4 | 16509187.54 | 1344813.37 | 10.20 |
| P5 | 16509152.05 | 1344726.27 | 10.20 |
| P6 | 16509124.13 | 1344778.67 | 9.88 |
| P7 | 16509127.12 | 1344786.10 | 9.88 |
| P8 | 16509134.54 | 1344783.11 | 9.88 |
| P9 | 16509131.56 | 1344775.69 | 9.88 |
| P10 | 16509127.38 | 1344780.06 | 9.55 |
| P11 | 16509128.50 | 1344782.84 | 9.55 |
| P12 | 16509131.29 | 1344781.73 | 9.55 |
| P13 | 16509130.17 | 1344778.94 | 9.55 |

LEGEND:

- ASPHALT PAVING OVERLAY
- DEMO ASPHALT PAVING (NIC)
- COLD LAY ASPHALT BY OTHERS
- CROSSING PANELS BY OTHERS (NIC)

HDR Engineering, INC
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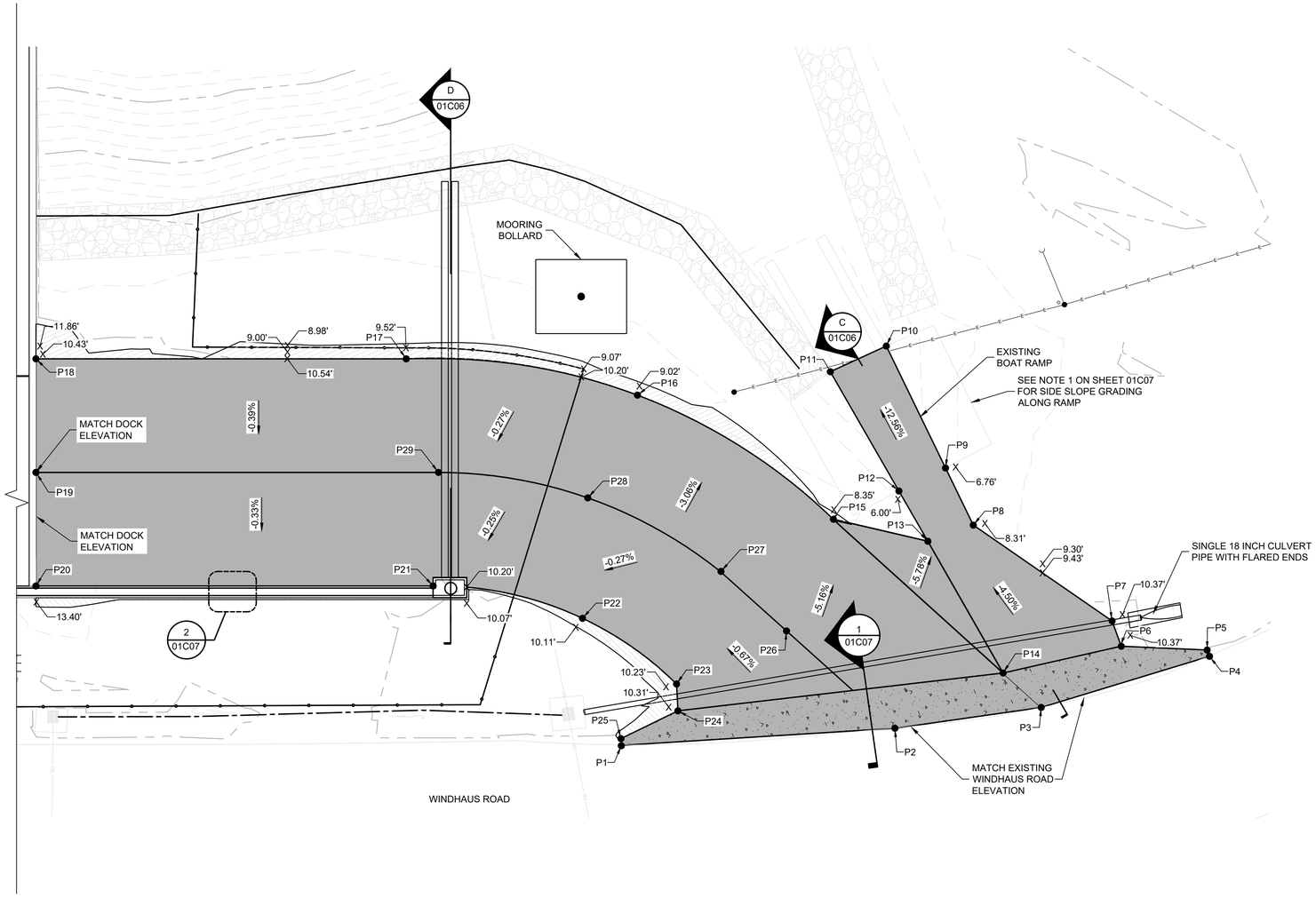
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

# ENLARGED PAVING PLAN - NORTH

0 1" 2"

FILENAME 01C03.dwg
SCALE 1" = 10'

SHEET 01C03




1 / 01C02 ENLARGED PAVING PLAN - SOUTH

1" = 20'

| POINT TABLE | | | |
|---|---|---|---|
| POINT NO. | NORTHING | EASTING | ELEVATION |
| P1 | 16508478.43 | 1344963.45 | 10.65 |
| P2 | 16508404.86 | 1344998.40 | 10.44 |
| P3 | 16508366.80 | 1345020.26 | 10.44 |
| P4 | 16508326.00 | 1345052.90 | 10.44 |
| P5 | 16508327.35 | 1345054.37 | 10.50 |
| P6 | 16508351.45 | 1345045.97 | 10.50 |
| P7 | 16508356.78 | 1345051.94 | 10.50 |
| P8 | 16508405.63 | 1345063.10 | 8.38 |
| P9 | 16508419.58 | 1345075.81 | 6.59 |
| P10 | 16508449.35 | 1345102.95 | 1.65 |
| P11 | 16508461.96 | 1345089.70 | 1.44 |
| P12 | 16508429.89 | 1345064.33 | 6.59 |
| P13 | 16508416.38 | 1345053.65 | 8.38 |
| P14 | 16508381.11 | 1345025.58 | 8.66 |
| P15 | 16508444.86 | 1345049.32 | 8.66 |
| P16 | 16508512.60 | 1345062.01 | 10.30 |
| P17 | 16508580.40 | 1345046.55 | 10.44 |
| P18 | 16508682.56 | 1345005.78 | 10.44 |
| P19 | 16508670.05 | 1344974.43 | 10.31 |
| P20 | 16508657.54 | 1344943.09 | 10.20 |
| P21 | 16508547.95 | 1344986.83 | 10.20 |
| P22 | 16508503.18 | 1344994.35 | 10.24 |
| P23 | 16508469.98 | 1344986.57 | 10.36 |
| P24 | 16508466.65 | 1344979.31 | 10.44 |
| P25 | 16508479.31 | 1344965.37 | 10.63 |
| P26 | 16508445.50 | 1345013.33 | 10.55 |
| P27 | 16508470.15 | 1345022.55 | 10.48 |
| P28 | 16508514.99 | 1345028.17 | 10.31 |
| P29 | 16508558.99 | 1345018.76 | 10.31 |

LEGEND:

ASPHALT PAVING

CONCRETE APRON PAVING

HDR Engineering, INC
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Registration No. F-754

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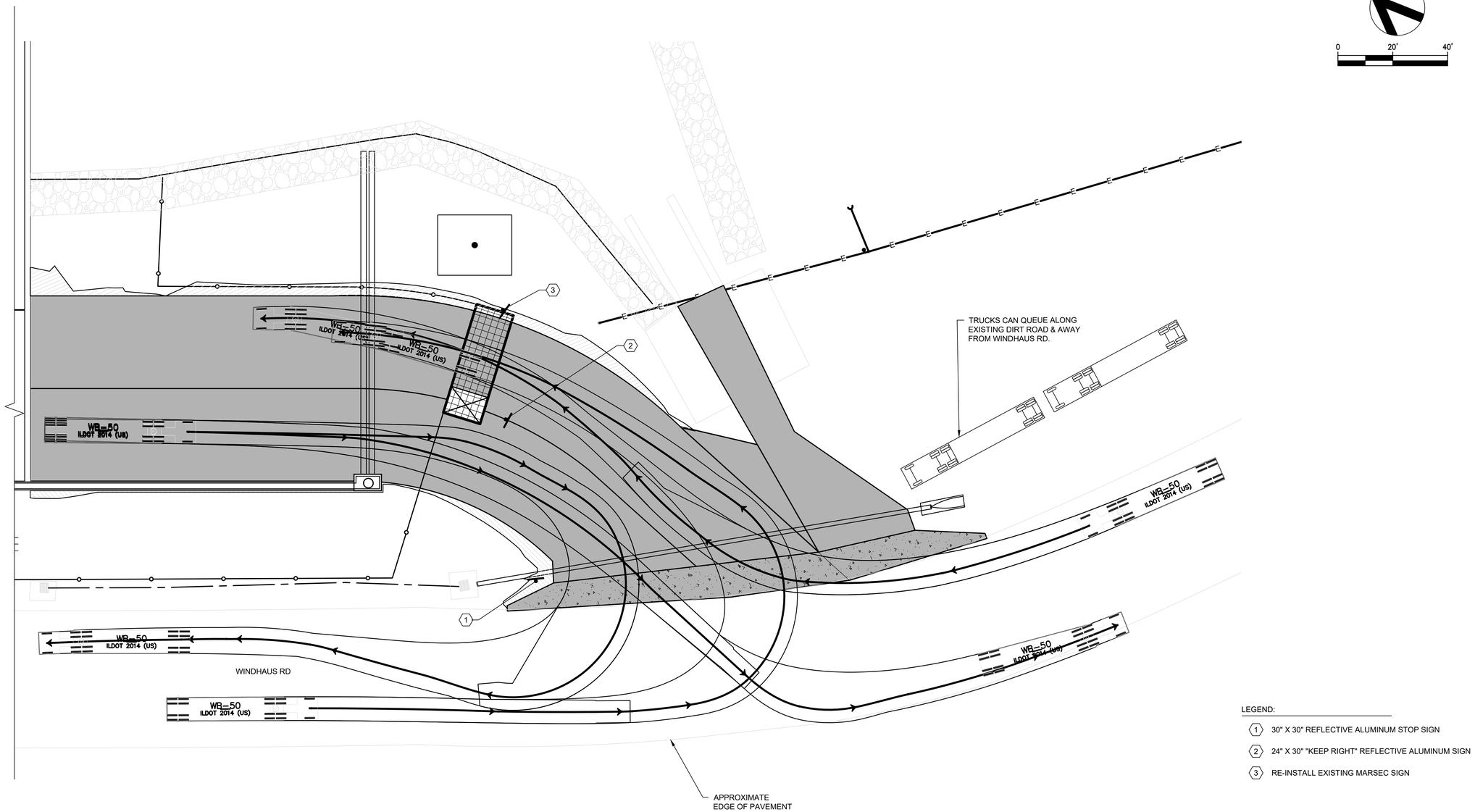
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

ENLARGED PAVING PLAN - SOUTH

0 1" 2"

FILENAME 01C04.dwg
SCALE 1" = 20'

SHEET 01C04




LEGEND:

1. 30" X 30" REFLECTIVE ALUMINUM STOP SIGN
2. 24" X 30" "KEEP RIGHT" REFLECTIVE ALUMINUM SIGN
3. RE-INSTALL EXISTING MARSEC SIGN

NOTE:

1. DESIGN VEHICLE FOR MOVEMENT SHOWN IS FOR A WB-50.

1 / 01C02 TRAFFIC PLAN & SIGNAGE
1" = 20'

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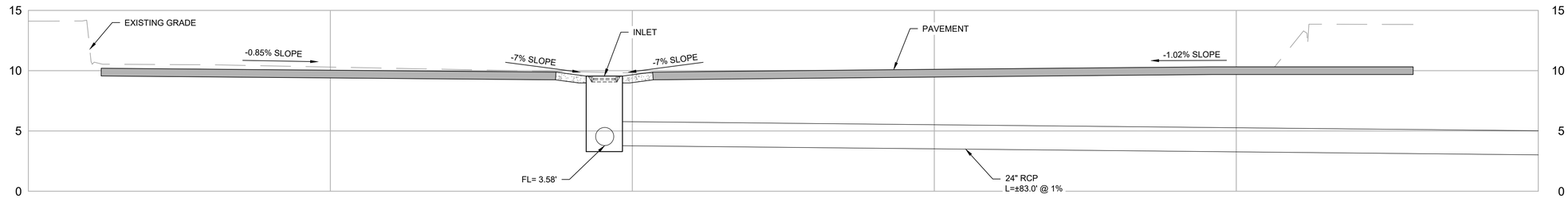
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

TRAFFIC PLAN & SIGNAGE

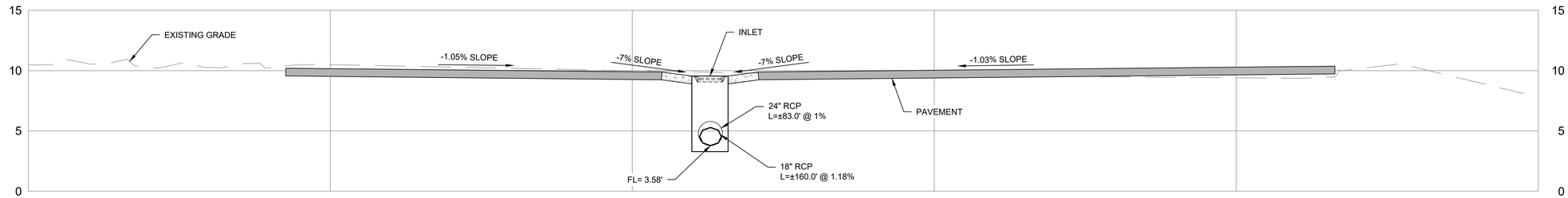
0 1" 2"

FILENAME 01C05.dwg
SCALE 1" = 20'

SHEET 01C05

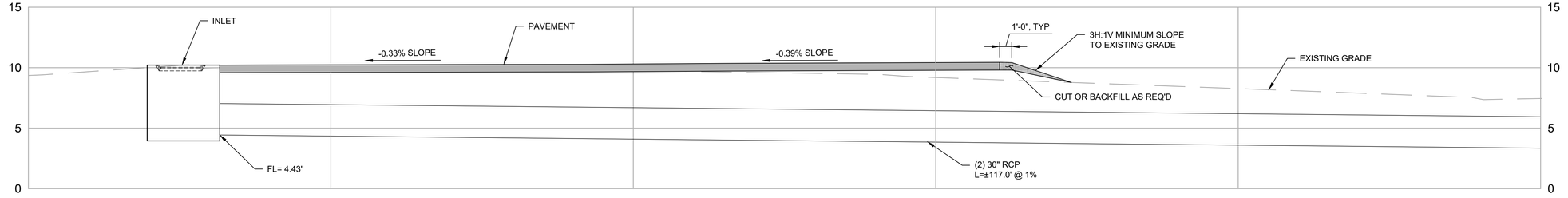



A 01C03 PAVEMENT SECTION
1" = 5'




B 01C03 PAVEMENT SECTION
1" = 5'


C 01C04 PAVEMENT SECTION
1" = 5'




D 01C04 PAVEMENT SECTION
1" = 5'

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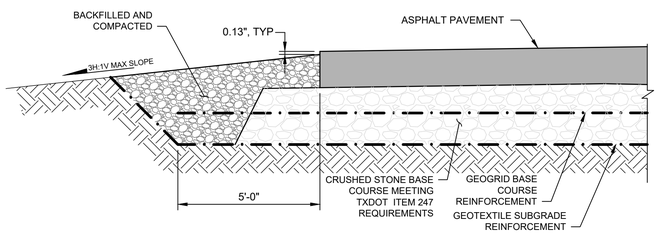
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**PAVING SECTIONS**

0 1" 2"

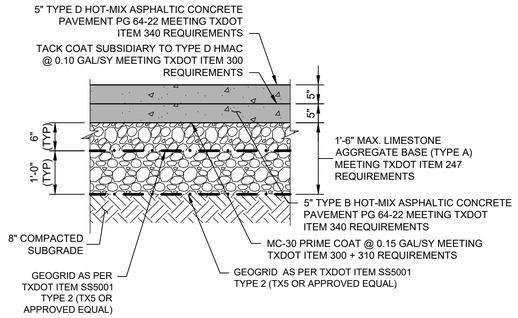
FILENAME 01C06.dwg
SCALE 1" = 5'

SHEET 01C06



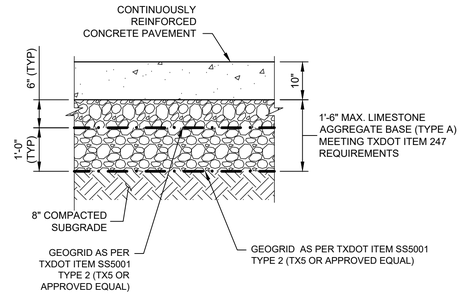

A -- TYPICAL SECTION AT EDGE OF PAVING

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



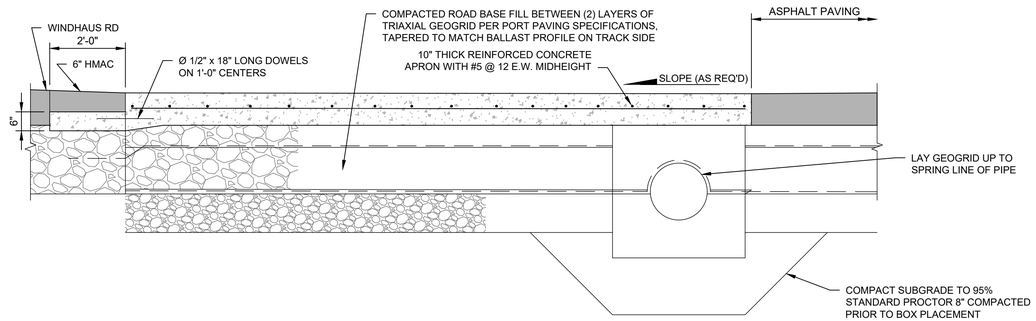

B -- TYPICAL PAVEMENT SECTION

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



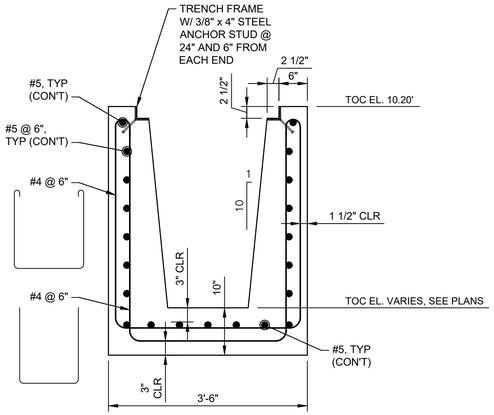

C -- TYPICAL PAVEMENT SECTION

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




1 -- TYPICAL PAVEMENT DETAIL

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




2 -- TYPICAL TRENCH DETAIL

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

NOTES:

1. FOR AREAS AROUND BOAT RAMP, SLOPE BACK TOWARDS PAVEMENT AS INDICATED.

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CARGO DOCK 3 PHASE 1
DOCK PACKAGE

# PAVING DETAILS

0 1" 2"

FILENAME 01C07.dwg
SCALE AS NOTED

SHEET 01C07

| | Size | MAX DEPTH = 15 ft. to top of BASE SLAB | | | | | | | | | | MAX DEPTH = 25 ft. to top of BASE SLAB | | | | | | | | | | Min Height (See Gen Note 3) | Max HOLE DIA (See Fab Note 2) | Max KO DIA (See Fab Note 2) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Base Slab | | | Base Unit or Riser Walls | | | Below Grade Slab (w/PJB) Reducing Slab (w/PB) | | | | Base Slab | | | Base Unit or Riser Walls | | | Below Grade Slab (w/PJB) Reducing Slab (w/PB) | | | | | | |
| | | Short Span Reinf Steel Area | Long Span Reinf Steel Area | Thickness | Short Span Reinf Steel Area | Long Span Reinf Steel Area | Thickness | Reduced Riser Size | Short Span Reinf Steel Area | Long Span Reinf Steel Area | Thickness | Short Span Reinf Steel Area | Long Span Reinf Steel Area | Thickness | Short Span Reinf Steel Area | Long Span Reinf Steel Area | Thickness | Reduced Riser Size | Short Span Reinf Steel Area | Long Span Reinf Steel Area | Thickness | | | |
| | X x Y | Ashort | Along | BS | Bshort | Blong | W | RWSxRWL or ID | Dshort | Dlong | TS | Ashort | Along | BS | Bshort | Blong | W | RWSxRWL or ID | Dshort | Dlong | TS | BH MIN | HOLE DIA | KO DIA |
| | ft. | $in^2/ft$ | $in^2/ft$ | in. | $in^2/ft$ | $in^2/ft$ | in. | ft. ** | $in^2/ft$ | $in^2/ft$ | in. | $in^2/ft$ | $in^2/ft$ | in. | $in^2/ft$ | $in^2/ft$ | in. | ft. ** | $in^2/ft$ | $in^2/ft$ | in. | ft. | in. | in. |
| *Precast Junction Box (PJB)* | 3x3 | 0.23 | 0.23 | 6 | 0.19 | 0.19 | 6 | N/A | 0.37 | 0.37 | 9 | 0.29 | 0.29 | 6 | 0.24 | 0.24 | 6 | N/A | 0.37 | 0.37 | 9 | 3.5 | 36 | 36 |
| | 4x4 | 0.29 | 0.29 | 6 | 0.24 | 0.24 | 6 | N/A | 0.41 | 0.41 | 9 | 0.47 | 0.47 | 6 | 0.38 | 0.38 | 6 | N/A | 0.41 | 0.41 | 9 | 4.5 | 48 | 48 |
| | 3x5 | 0.29 | 0.18 | 6 | 0.19 | 0.35 | 6 | N/A | 0.48 | 0.48 | 9 | 0.39 | 0.18 | 6 | 0.23 | 0.59 | 6 | N/A | 0.48 | 0.48 | 9 | 3.5 | 36/60 | 36/60 |
| | 4x5 | 0.36 | 0.18 | 6 | 0.22 | 0.34 | 6 | N/A | 0.42 | 0.42 | 9 | 0.53 | 0.26 | 6 | 0.39 | 0.59 | 6 | N/A | 0.42 | 0.42 | 9 | 4.5 | 48/60 | 48/60 |
| | 5x5 | 0.36 | 0.36 | 6 | 0.34 | 0.34 | 6 | N/A | 0.43 | 0.43 | 9 | 0.62 | 0.62 | 6 | 0.59 | 0.59 | 6 | N/A | 0.43 | 0.43 | 9 | 5.5 | 60 | 60 |
| | 5x6 | 0.27 | 0.27 | 9 | 0.34 | 0.45 | 6 | N/A | 0.48 | 0.48 | 9 | 0.47 | 0.45 | 9 | 0.38 | 0.54 | 8 | N/A | 0.48 | 0.48 | 9 | 5.5 | 60/72 | 60/72 |
| | 6x6 | 0.27 | 0.27 | 9 | 0.45 | 0.45 | 6 | N/A | 0.56 | 0.56 | 9 | 0.52 | 0.52 | 9 | 0.54 | 0.54 | 8 | N/A | 0.56 | 0.56 | 9 | 6.5 | 72 | 72 |
| | 8x8 | 0.46 | 0.46 | 9 | 0.51 | 0.51 | 8 | N/A | 0.45 | 0.45 | 12 | 0.87 | 0.87 | 9 | 0.59 | 0.59 | 10 | N/A | 0.45 | 0.45 | 12 | 8.5 | 96 | 72 |
| *Precast Base (PB)* | 3x3 | 0.23 | 0.23 | 6 | 0.19 | 0.19 | 6 | N/A | N/A | N/A | N/A | 0.29 | 0.29 | 6 | 0.24 | 0.24 | 6 | N/A | N/A | N/A | N/A | 3.5 | 36 | 36 |
| | 4x4 | 0.29 | 0.29 | 6 | 0.24 | 0.24 | 6 | N/A | N/A | N/A | N/A | 0.47 | 0.47 | 6 | 0.38 | 0.38 | 6 | N/A | N/A | N/A | N/A | 4.5 | 48 | 48 |
| | 3x5 | 0.29 | 0.18 | 6 | 0.19 | 0.35 | 6 | 3x3 | 0.30 | 0.34 | 9 | 0.39 | 0.18 | 6 | 0.23 | 0.59 | 6 | 3x3 | 0.40 | 0.40 | 9 | 3.5 | 36/60 | 36/60 |
| | 4x5 | 0.36 | 0.18 | 6 | 0.22 | 0.34 | 6 | 3x3 | 0.30 | 0.30 | 9 | 0.53 | 0.26 | 6 | 0.39 | 0.59 | 6 | 3x3 | 0.46 | 0.37 | 9 | 4.5 | 48/60 | 48/60 |
| | 4x5 | 0.36 | 0.18 | 6 | 0.22 | 0.34 | 6 | 4x4 | 0.30 | 0.30 | 9 | 0.53 | 0.26 | 6 | 0.39 | 0.59 | 6 | 4x4 | 0.39 | 0.39 | 9 | 4.5 | 48/60 | 48/60 |
| | 4x5 | 0.36 | 0.18 | 6 | 0.22 | 0.34 | 6 | 48" | 0.39 | 0.39 | 9 | 0.53 | 0.26 | 6 | 0.39 | 0.59 | 6 | 48" | 0.47 | 0.47 | 9 | 4.5 | 48/60 | 48/60 |
| | 4x5 | 0.36 | 0.18 | 6 | 0.22 | 0.34 | 6 | 3x5 | 0.33 | 0.40 | 9 | 0.53 | 0.26 | 6 | 0.39 | 0.59 | 6 | 3x5 | 0.48 | 0.48 | 9 | 4.5 | 48/60 | 48/60 |
| | 5x5 | 0.36 | 0.36 | 6 | 0.34 | 0.34 | 6 | 3x3 | 0.34 | 0.34 | 9 | 0.62 | 0.62 | 6 | 0.59 | 0.59 | 6 | 3x3 | 0.53 | 0.53 | 9 | 5.5 | 60 | 60 |
| | 5x5 | 0.36 | 0.36 | 6 | 0.34 | 0.34 | 6 | 4x4 | 0.36 | 0.36 | 9 | 0.62 | 0.62 | 6 | 0.59 | 0.59 | 6 | 4x4 | 0.64 | 0.64 | 9 | 5.5 | 60 | 60 |
| | 5x5 | 0.38 | 0.38 | 6 | 0.34 | 0.34 | 6 | 48" | 0.36 | 0.36 | 9 | 0.62 | 0.62 | 6 | 0.59 | 0.59 | 6 | 48" | 0.64 | 0.64 | 9 | 5.5 | 60 | 60 |
| | 5x5 | 0.36 | 0.36 | 6 | 0.34 | 0.34 | 6 | 3x5 | 0.34 | 0.40 | 9 | 0.62 | 0.62 | 6 | 0.59 | 0.59 | 6 | 3x5 | 0.53 | 0.53 | 9 | 5.5 | 60 | 60 |
| | 5x6 | 0.31 | 0.31 | 9 | 0.34 | 0.45 | 6 | 3x3 | 0.34 | 0.34 | 9 | 0.47 | 0.45 | 9 | 0.38 | 0.54 | 8 | 3x3 | 0.61 | 0.50 | 9 | 5.5 | 60/72 | 60/72 |
| | 5x6 | 0.27 | 0.27 | 9 | 0.34 | 0.45 | 6 | 4x4 | 0.36 | 0.45 | 9 | 0.47 | 0.45 | 9 | 0.38 | 0.54 | 8 | 4x4 | 0.74 | 0.57 | 9 | 5.5 | 60/72 | 60/72 |
| | 5x6 | 0.29 | 0.29 | 9 | 0.34 | 0.45 | 6 | 48" | 0.36 | 0.45 | 9 | 0.47 | 0.45 | 9 | 0.38 | 0.54 | 8 | 48" | 0.74 | 0.57 | 9 | 5.5 | 60/72 | 60/72 |
| | 5x6 | 0.29 | 0.29 | 9 | 0.34 | 0.45 | 6 | 3x5 | 0.45 | 0.45 | 9 | 0.47 | 0.45 | 9 | 0.38 | 0.54 | 8 | 3x5 | 0.61 | 0.61 | 9 | 5.5 | 60/72 | 60/72 |
| | 6x6 | 0.29 | 0.29 | 9 | 0.45 | 0.45 | 6 | 3x3 | 0.41 | 0.41 | 9 | 0.52 | 0.52 | 9 | 0.54 | 0.54 | 8 | 3x3 | 0.74 | 0.74 | 9 | 6.5 | 72 | 72 |
| | 6x6 | 0.27 | 0.27 | 9 | 0.45 | 0.45 | 6 | 4x4 | 0.45 | 0.45 | 9 | 0.52 | 0.52 | 9 | 0.54 | 0.54 | 8 | 4x4 | 0.87 | 0.87 | 9 | 6.5 | 72 | 72 |
| | 6x6 | 0.29 | 0.29 | 9 | 0.45 | 0.45 | 6 | 48" | 0.45 | 0.45 | 9 | 0.52 | 0.52 | 9 | 0.54 | 0.54 | 8 | 48" | 0.87 | 0.87 | 9 | 6.5 | 72 | 72 |
| | 6x6 | 0.29 | 0.29 | 9 | 0.45 | 0.45 | 6 | 3x5 | 0.45 | 0.45 | 9 | 0.52 | 0.52 | 9 | 0.54 | 0.54 | 8 | 3x5 | 0.87 | 0.87 | 9 | 6.5 | 72 | 72 |
| | 8x8 | 0.52 | 0.52 | 9 | 0.51 | 0.51 | 8 | 3x3 | 0.61 | 0.61 | 12 | 0.91 | 0.91 | 9 | 0.70 | 0.70 | 10 | 3x3 | 0.85 | 0.85 | 12 | 8.5 | 96 | 72 |
| | 8x8 | 0.52 | 0.52 | 9 | 0.51 | 0.51 | 8 | 4x4 | 0.70 | 0.70 | 12 | 0.87 | 0.87 | 9 | 0.70 | 0.70 | 10 | 4x4 | 1.01 | 1.01 | 12 | 8.5 | 96 | 72 |
| | 8x8 | 0.52 | 0.52 | 9 | 0.51 | 0.51 | 8 | 48" | 0.70 | 0.70 | 12 | 0.87 | 0.87 | 9 | 0.70 | 0.70 | 10 | 48" | 1.01 | 1.01 | 12 | 8.5 | 96 | 72 |
| | 8x8 | 0.52 | 0.52 | 9 | 0.51 | 0.51 | 8 | 3x5 | 0.70 | 0.85 | 12 | 0.87 | 0.87 | 9 | 0.70 | 0.70 | 10 | 3x5 | 1.01 | 1.01 | 12 | 8.5 | 96 | 72 |

** Unless otherwise indicated.



DATE:
FILE:

## FABRICATION NOTES:

1. Maximum spacing of reinforcement is 8".
2. At manufacturer's option, provide cast or cored holes or thin wall panels (KO) to the maximum diameter shown for each. When no penetration is required, it is acceptable to provide a wall with no sectional reduction.

## GENERAL NOTES:

1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PJB for details.
2. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PB for details.
3. Min Height shown is for stock base units. Use stock base units whenever practical. Smaller height base units can be used in special installation circumstances, when noted elsewhere in the plans. Absolute minimum height of base units is 2'-6".

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

# DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX

PDD

| FILE: prestd10-20.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | | | | |
| | DIST | COUNTY | | SHEET NO. |

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | J. DE LA ROSA |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | S. SALDIVAR |
| PROJECT NUMBER | 10320226 |

09/22/2023
STATE OF TEXAS
JUSTIN AARON DE LA ROSA
134885
LICENSED PROFESSIONAL ENGINEER

PORT OF BROWNSVILLE
the port that *works*

CARGO DOCK 3 PHASE 1
DOCK PACKAGE

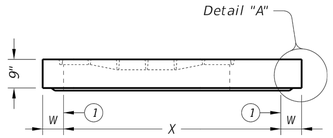
**TxDOT TYPICAL DETAILS 1**

0 1" 2"

FILENAME 01C08.dwg
SCALE AS NOTED

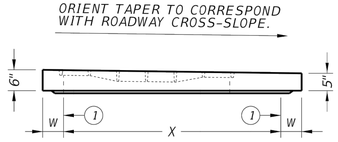
SHEET 01C08

DATE:
FILE:

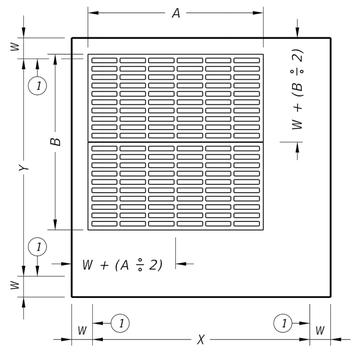



STYLE 'FG'

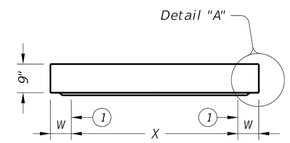
ORIENT TAPER TO CORRESPOND WITH ROADWAY CROSS-SLOPE.




STYLE 'SFG'
ELEVATION VIEW

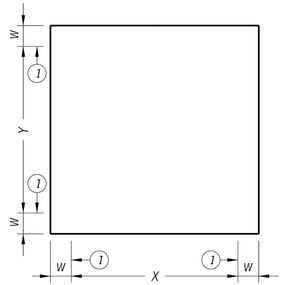



PLAN VIEW
CAST-IN FRAME & GRATE
STYLES 'FG' & 'SFG'



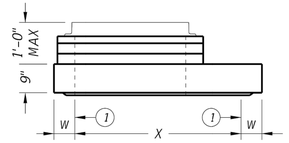

ELEVATION VIEW

STYLE 'SL'



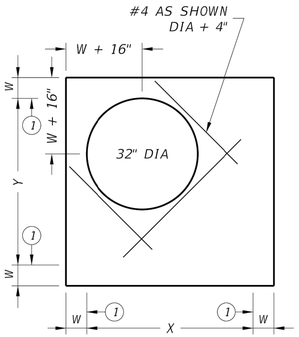

PLAN VIEW
NO OPENINGS

STYLE 'SL'



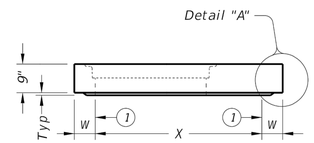

ELEVATION VIEW

STYLE 'RH'



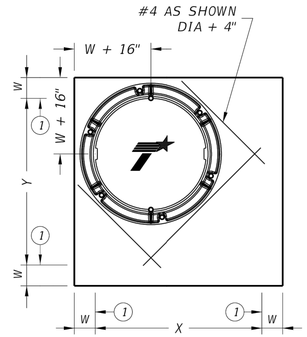

PLAN VIEW
SHIP LOOSE RING & COVER

STYLE 'RH'



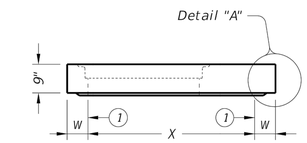

ELEVATION VIEW

STYLE 'RC'



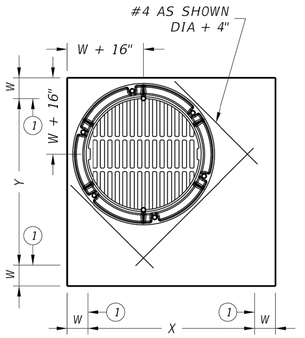

PLAN VIEW
32" DIA CAST-IN RING & COVER

STYLE 'RC'



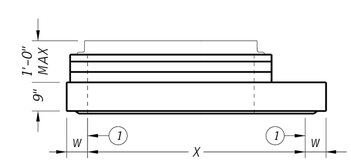

ELEVATION VIEW

STYLE 'RG'



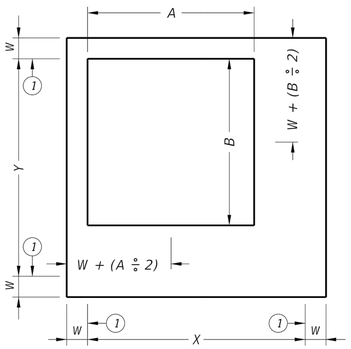

PLAN VIEW
32" DIA CAST-IN RING & GRATE

STYLE 'RG'



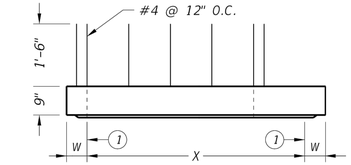

ELEVATION VIEW

STYLE 'SH'



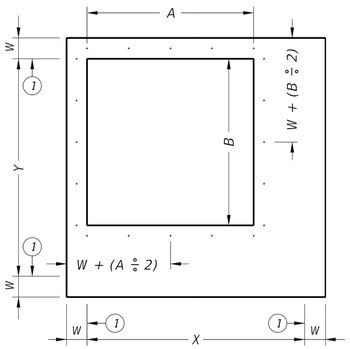

PLAN VIEW
SHIP LOOSE FRAME & GRATE

STYLE 'SH'




ELEVATION VIEW

STYLE 'S1'




PLAN VIEW
EXPOSED REBAR

STYLE 'S1'

(1) Matches inside face of wall of precast base or riser below inlet.

HL93 LOADING

SHEET 1 OF 2

Texas Department of Transportation | Bridge Division Standard

# PRECAST SLAB LID

PSL

| FILE: prestd05-20.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
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| REVISIONS | | | | |
| | DIST | COUNTY | | SHEET NO. |

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

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| DESIGNED BY | J. DE LA ROSA |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | S. SALDIVAR |
| PROJECT NUMBER | 10320226 |

09/22/2023
STATE OF TEXAS
JUSTIN AARON DE LA ROSA
134885
LICENSED PROFESSIONAL ENGINEER
Justin Aaron De La Rosa, P.E.

PORT OF BROWNSVILLE
the port that works
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

TxDOT TYPICAL DETAILS 2

0 1" 2"

FILENAME 01C09.dwg
SCALE AS NOTED

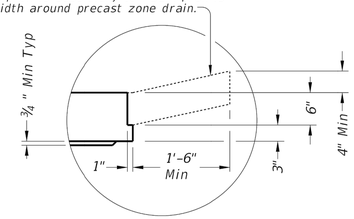
SHEET 01C09

DATE:
FILE:

| Style | Size (X x Y) | W (2) | A x B (nominal) | Short Span Reinf Steel Area | Long Span Reinf Steel Area |
|---|---|---|---|---|---|
| SL | 3'x3' | 6" | n/a | 0.37 in²/ft | 0.37 in²/ft |
| RH,RC,RG,SH,S1,FG | 3'x3' | 6" | 3'x3' or 32" Dia | 0.37 in²/ft | 0.37 in²/ft |
| SFG | 3'x3' | 6" | 3'x3' | 0.32 in²/ft | 0.32 in²/ft |
| SL | 4'x4' | 6" | n/a | 0.34 in²/ft | 0.34 in²/ft |
| RH,RC,RG,SH,S1,FG | 4'x4' | 6" | 3'x3' or 32" Dia | 0.41 in²/ft | 0.41 in²/ft |
| SH,S1,FG | 4'x4' | 6" | 4'x4' | 0.41 in²/ft | 0.41 in²/ft |
| SFG | 4'x4' | 6" | 4'x4' | 0.32 in²/ft | 0.32 in²/ft |
| SL | 3'x5' | 6" | n/a | 0.39 in²/ft | 0.39 in²/ft |
| RH,RC,RG,SH,S1,FG | 3'x5' | 6" | 3'x3' or 32" Dia | 0.48 in²/ft | 0.48 in²/ft |
| SH,S1,FG | 3'x5' | 6" | 3'x5' | 0.48 in²/ft | 0.48 in²/ft |
| SFG | 3'x5' | 6" | 3'x5' | 0.32 in²/ft | 0.32 in²/ft |
| SL | 4'x5' | 6" | n/a | 0.42 in²/ft | 0.42 in²/ft |
| RH,RC,RG,SH,S1,FG | 4'x5' | 6" | 3'x3' or 32" Dia | 0.42 in²/ft | 0.42 in²/ft |
| SH,S1,FG | 4'x5' | 6" | 4'x4' | 0.63 in²/ft | 0.63 in²/ft |
| SH,S1,FG | 4'x5' | 6" | 3'x5' | 0.66 in²/ft | 0.66 in²/ft |
| SL | 5'x5' | 6" | n/a | 0.36 in²/ft | 0.36 in²/ft |
| RH,RC,RG,SH,S1,FG | 5'x5' | 6" | 3'x3' or 32" Dia | 0.43 in²/ft | 0.43 in²/ft |
| SH,S1,FG | 5'x5' | 6" | 4'x4' | 0.63 in²/ft | 0.63 in²/ft |
| SH,S1,FG | 5'x5' | 6" | 3'x5' | 0.63 in²/ft | 0.63 in²/ft |
| SL | 5'x6' | 6"/8" | n/a | 0.48 in²/ft | 0.48 in²/ft |
| RH,RC,RG,SH,S1,FG | 5'x6' | 6"/8" | 3'x3' or 32" Dia | 0.48 in²/ft | 0.48 in²/ft |
| SH,S1,FG | 5'x6' | 6"/8" | 4'x4' | 0.60 in²/ft | 0.60 in²/ft |
| SH,S1,FG | 5'x6' | 6"/8" | 3'x5' | 0.60 in²/ft | 0.60 in²/ft |
| SL | 6'x6' | 6"/8" | n/a | 0.43 in²/ft | 0.43 in²/ft |
| RH,RC,RG,SH,S1,FG | 6'x6' | 6"/8" | 3'x3' or 32" Dia | 0.56 in²/ft | 0.56 in²/ft |
| SH,S1,FG | 6'x6' | 6"/8" | 4'x4' | 0.56 in²/ft | 0.56 in²/ft |
| SH,S1,FG | 6'x6' | 6"/8" | 3'x5' | 0.59 in²/ft | 0.59 in²/ft |
| SL | 8'x8' | 8"/10" | n/a | 0.45 in²/ft | 0.45 in²/ft |
| RH,RC,RG,SH,S1,FG | 8'x8' | 8"/10" | 3'x3' or 32" Dia | 0.45 in²/ft | 0.45 in²/ft |
| SH,S1,FG | 8'x8' | 8"/10" | 4'x4' | 0.45 in²/ft | 0.45 in²/ft |
| SH,S1,FG | 8'x8' | 8"/10" | 3'x5' | 0.45 in²/ft | 0.45 in²/ft |

(2) See sheet PDD for corresponding wall thickness (W) of base unit or riser.

Construct cast-in-place reinforced concrete apron, when shown elsewhere in plans. Use Class "A" concrete. Apron is subsidiary to PSL. Apron is 1'-6" Min width around precast zone drain.




## DETAIL "A"

(Reinforcing not shown for clarity)

When an apron is to be cast around PSL, use detail above to create an apron ledge on all 4 sides.

### FABRICATION NOTES:

1. Locate penetration (Style 'RH'), ring and cover (Style 'RC'), ring and grate (Style 'RG'), and frame and grate (Style 'FG') in a corner. Only one penetration is allowed per slab lid.
2. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
3. Provide Grade 60 reinforcing steel or equivalent area of WWR.
4. Provide clear cover of ¾" to reinforcing from lower outside shoulder of slab for structural reinforcement, and 2" from top of slab for shrinkage and temperature reinforcement. Place short span reinforcing closest to surface.
5. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing. Provide steel area = 0.11 in²/ft each way.
6. No substitution is allowed for diagonal #4 bars around openings.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾".
8. Provide lifting devices in conformance with Manufacturer's recommendations.

### INSTALLATION NOTES:

1. Precast slab lids are intended for direct traffic and may be placed in roadway.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. Initial installation of grade adjustment rings for Styles 'RH' and 'SH' is limited to 1'-0" Max as shown.
5. Grade adjustment rings for Styles 'RH' and 'SH' may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments greater than 2'-0" with additional risers. Adjustments can be made up to Max depth shown on sheet PDD. Structure must be evaluated if Max depth will be exceeded.
6. Orient long dimension of grate slots perpendicular to traffic, unless noted otherwise on plans

### GENERAL NOTES:

1. Designed according to ASTM C913.
2. Payment for lid is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, style, size, and opening size (when applicable).

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation | Bridge Division Standard

# PRECAST SLAB LID

## PSL

| FILE: prestd05-20.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
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HDR Engineering, INC
TBPELS Firm
Registration No. F-754

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| PROJECT MANAGER | KYLE M. WUNDT |
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| DRAWN BY | A. VILLARREAL |
| CHECKED BY | S. SALDIVAR |
| PROJECT NUMBER | 10320226 |

09/22/2023
STATE OF TEXAS
JUSTIN AARON DE LA ROSA
134885
LICENSED PROFESSIONAL ENGINEER
Justin Aaron De La Rosa, P.E.

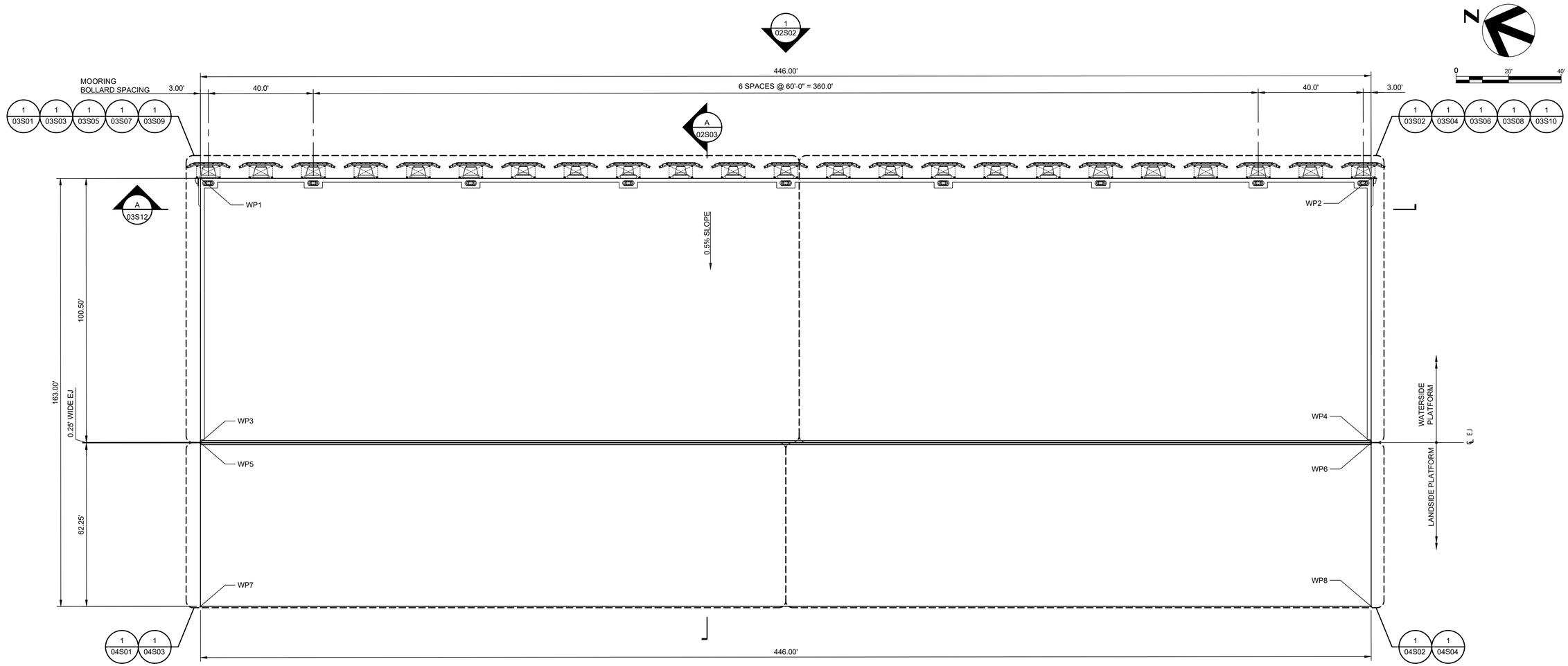
PORT OF BROWNSVILLE
the port that works
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

TxDOT TYPICAL DETAILS 3

0 1" 2"

FILENAME 01C10.dwg
SCALE AS NOTED

SHEET 01C10




| WORKING POINTS PROPOSED WATERSIDE PLATFORM | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP1 | 16509134.05 | 1344928.40 |
| WP2 | 16508719.83 | 1345093.73 |
| WP3 | 16509096.79 | 1344835.06 |
| WP4 | 16508682.57 | 1345000.39 |

| WORKING POINTS PROPOSED LANDSIDE PLATFORM | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP5 | 16509096.70 | 1344834.82 |
| WP6 | 16508682.48 | 1345000.16 |
| WP7 | 16509073.63 | 1344777.01 |
| WP8 | 16508659.40 | 1344942.34 |

1 / 00C02 DOCK LAYOUT
1" = 20'

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

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|---|---|---|
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| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS · NAVIN K. GALANI · 103513 · LICENSED PROFESSIONAL ENGINEER · 09.22.2023

PORT OF BROWNSVILLE
the port that *works*

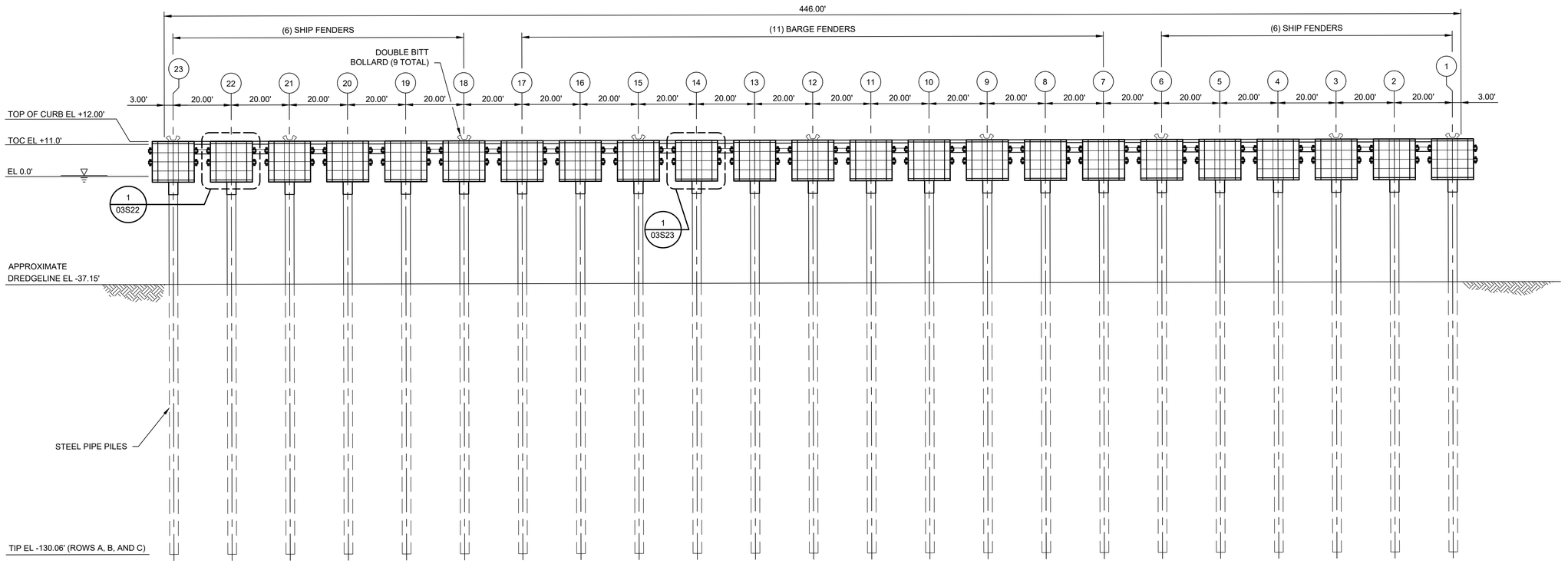
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

DOCK LAYOUT

0 1" 2"

FILENAME 02S01.dwg
SCALE 1" = 20'

SHEET 02S01




1 / 02S01 DOCK EAST ELEVATION

1" = 20'

NOTE:

1. TIP ELEVATION SHOWN IS FOR PRODUCTION PILES ONLY. SEE SHEETS 03S03 AND 03S04 FOR TEST PILE LOCATIONS. SEE SHEET 03S13 FOR PILE SCHEDULE.

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

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| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

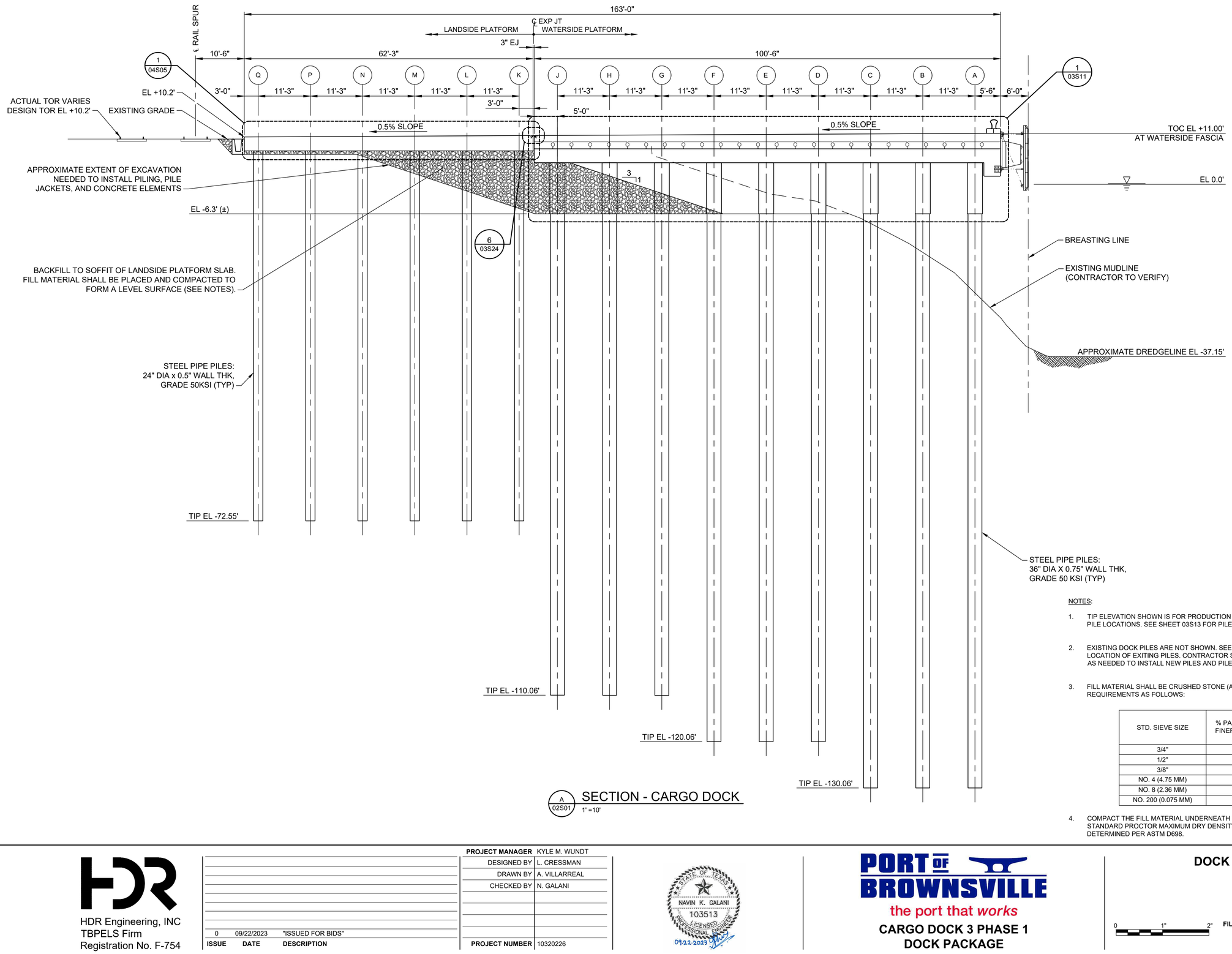
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

DOCK EAST ELEVATION

0 1" 2"

FILENAME 02S02.dwg
SCALE 1" = 20'

SHEET 02S02




A 02S01 SECTION - CARGO DOCK
1" =10'

NOTES:

1. TIP ELEVATION SHOWN IS FOR PRODUCTION PILES ONLY. SEE SHEETS 03S03 AND 03S04 FOR TEST PILE LOCATIONS. SEE SHEET 03S13 FOR PILE SCHEDULE.
2. EXISTING DOCK PILES ARE NOT SHOWN. SEE SHEETS 00C03, 03S03, AND 03S04 FOR APPROXIMATE LOCATION OF EXITING PILES. CONTRACTOR SHALL EXCAVATE SOIL BETWEEN THE EXISTING PILES AS NEEDED TO INSTALL NEW PILES AND PILE JACKETS
3. FILL MATERIAL SHALL BE CRUSHED STONE (ANGULAR) FILL AND SHALL MEET THE GRADATION REQUIREMENTS AS FOLLOWS:

| STD. SIEVE SIZE | % PASSING (AMOUNT FINER THAN SIEVE SIZE) |
|---|---|
| 3/4" | 100 |
| 1/2" | 95-100 |
| 3/8" | 50-100 |
| NO. 4 (4.75 MM) | 0-50 |
| NO. 8 (2.36 MM) | 0-8 |
| NO. 200 (0.075 MM) | 0 |

4. COMPACT THE FILL MATERIAL UNDERNEATH THE LANDSIDE PLATFORM TO A MINIMUM OF 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY, AT +/- 3% OF THE OPTIMUM MOISTURE CONTENT, DETERMINED PER ASTM D698.

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the port that *works*

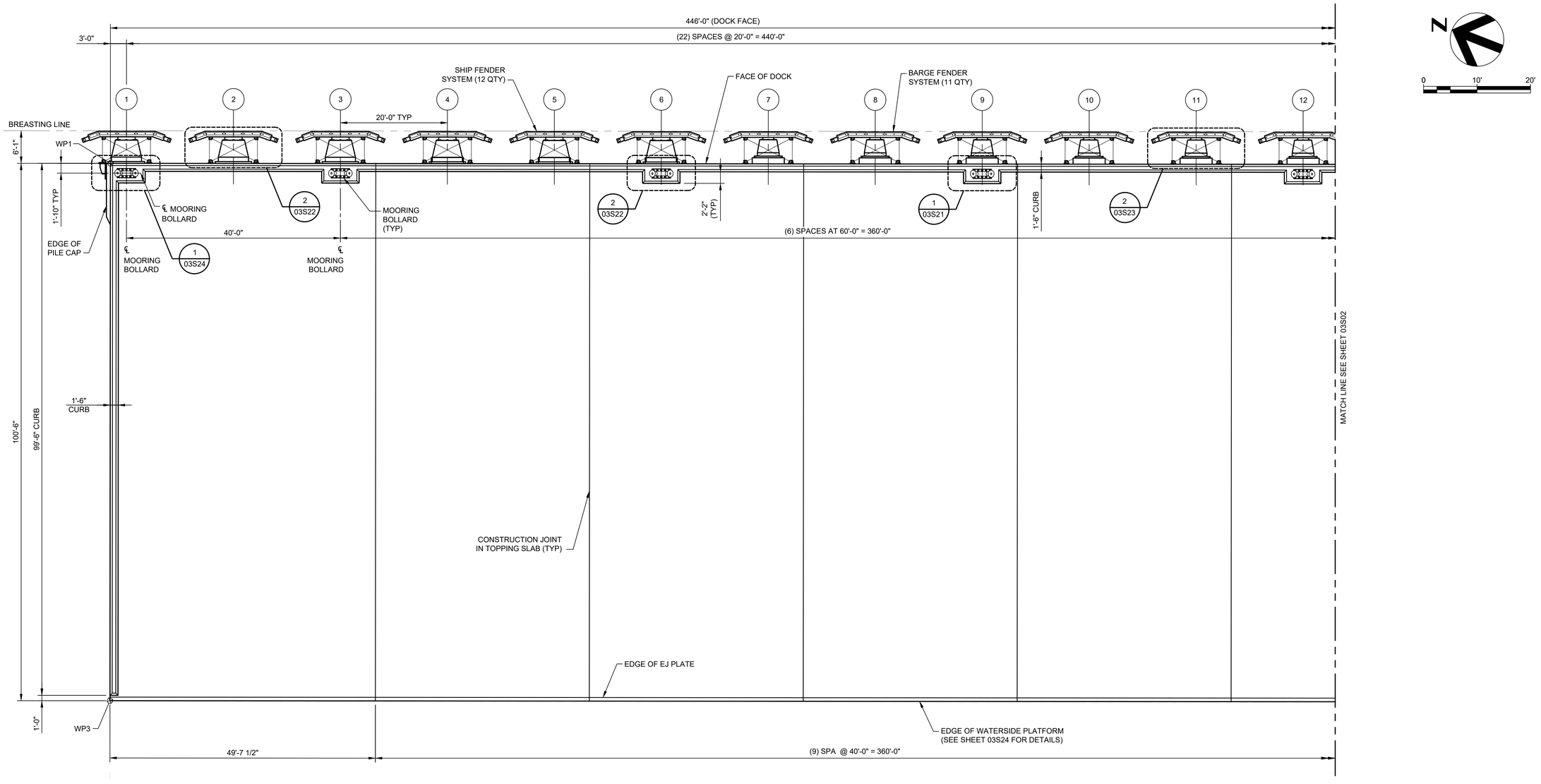
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**DOCK CROSS SECTION**

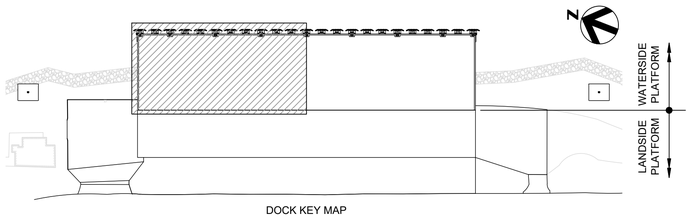
0 1" 2"

FILENAME 02S03.dwg
SCALE 1' =10'

SHEET
02S03




1 / 02S01 PERIMETER PLAN 1 OF 2
1" = 10' - 0"




DOCK KEY MAP

| WORKING POINT TABLE | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP1 | 16509134.05 | 1344928.40 |
| WP3 | 16509096.79 | 1344835.06 |

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

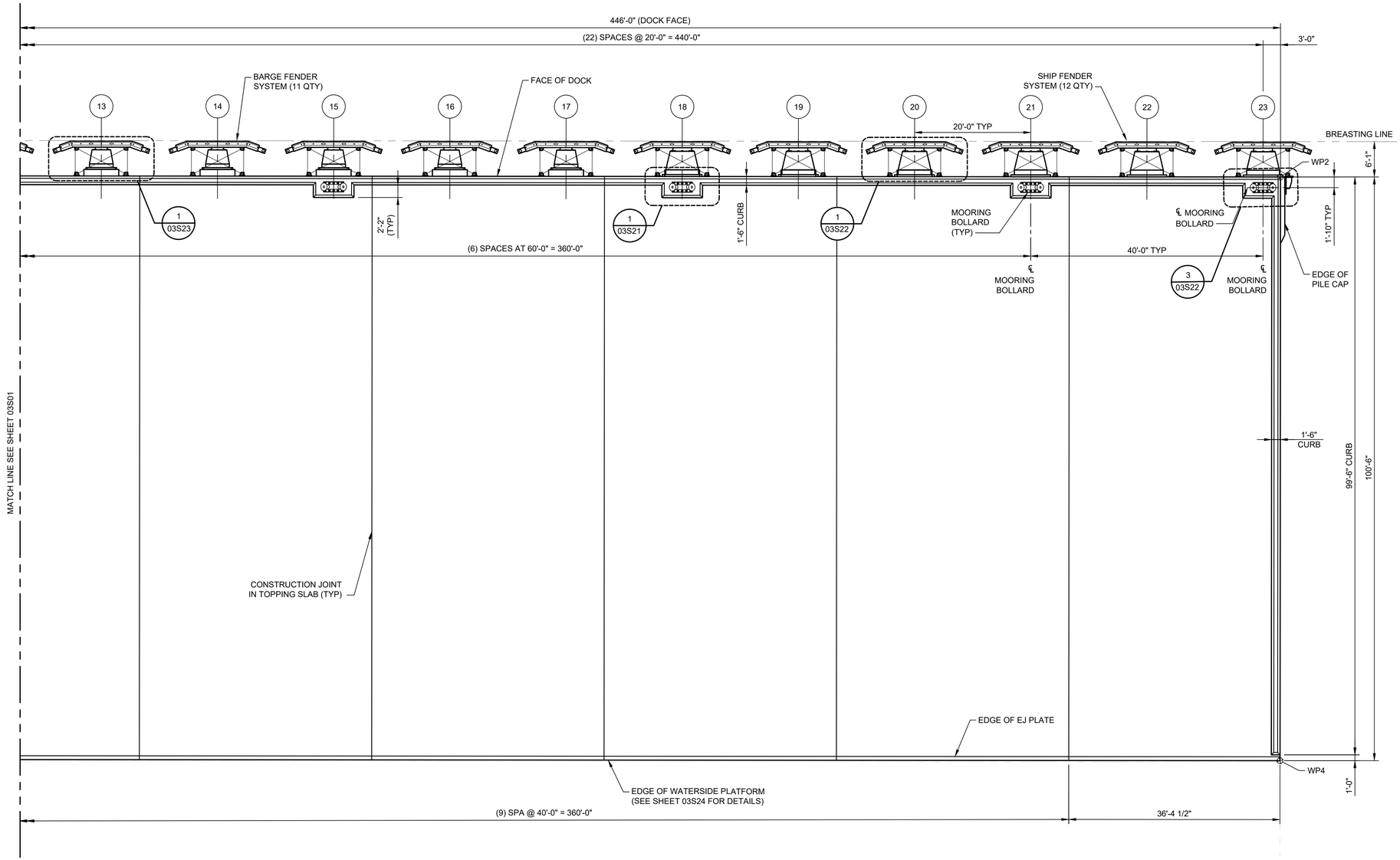
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**PERIMETER PLAN 1 OF 2**

0 1" 2"

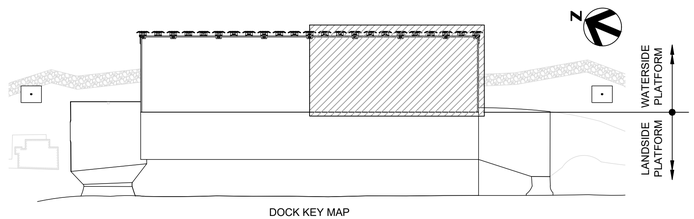
FILENAME 03S01.dwg
SCALE 1" = 10' - 0"

SHEET 03S01




1 / 02S01 PERIMETER PLAN 2 OF 2

1" = 10' - 0"




DOCK KEY MAP

| WORKING POINT TABLE | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP2 | 16508719.83 | 1345093.73 |
| WP4 | 16508682.57 | 1345000.39 |

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PORT OF BROWNSVILLE
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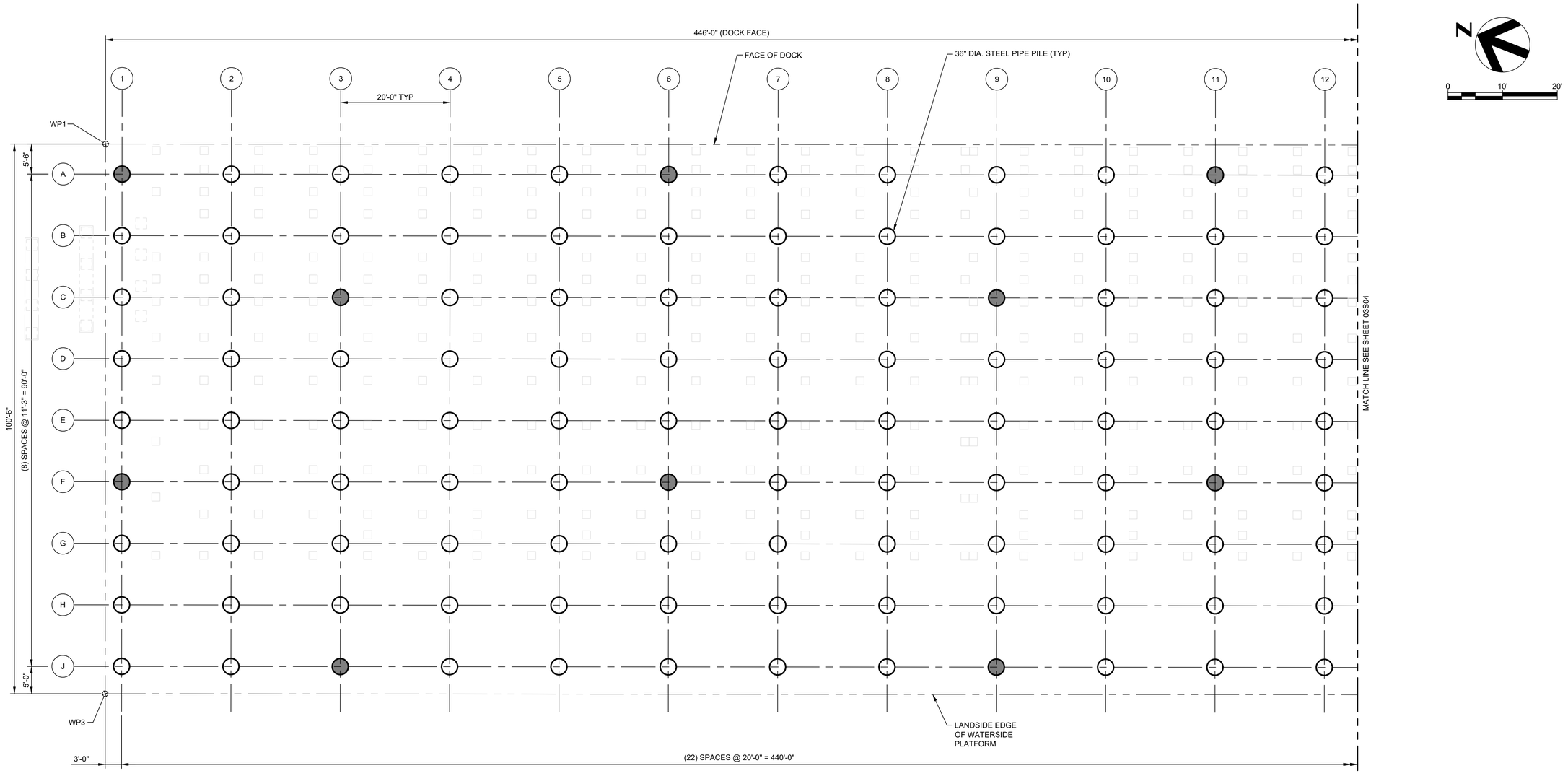
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**PERIMETER PLAN 2 OF 2**

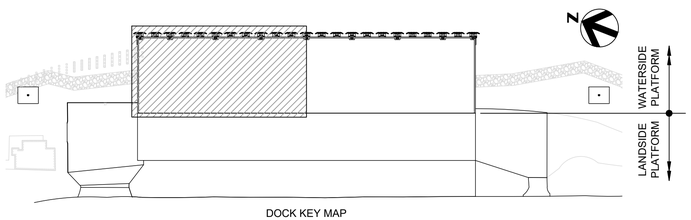
0 1" 2"

| | |
|---|---|
| FILENAME | 03S02.dwg |
| SCALE | 1" = 10' - 0" |

SHEET **03S02**




1 / 02S01 PILE PLAN 1 OF 2
1" = 10' - 0"




DOCK KEY MAP

| LEGEND | |
|---|---|
| ● | TEST PILE LOCATION |
| □ | EXISTING PILE |

| WORKING POINT TABLE | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP1 | 16509134.05 | 1344928.40 |
| WP3 | 16509096.79 | 1344835.06 |

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the port that *works*

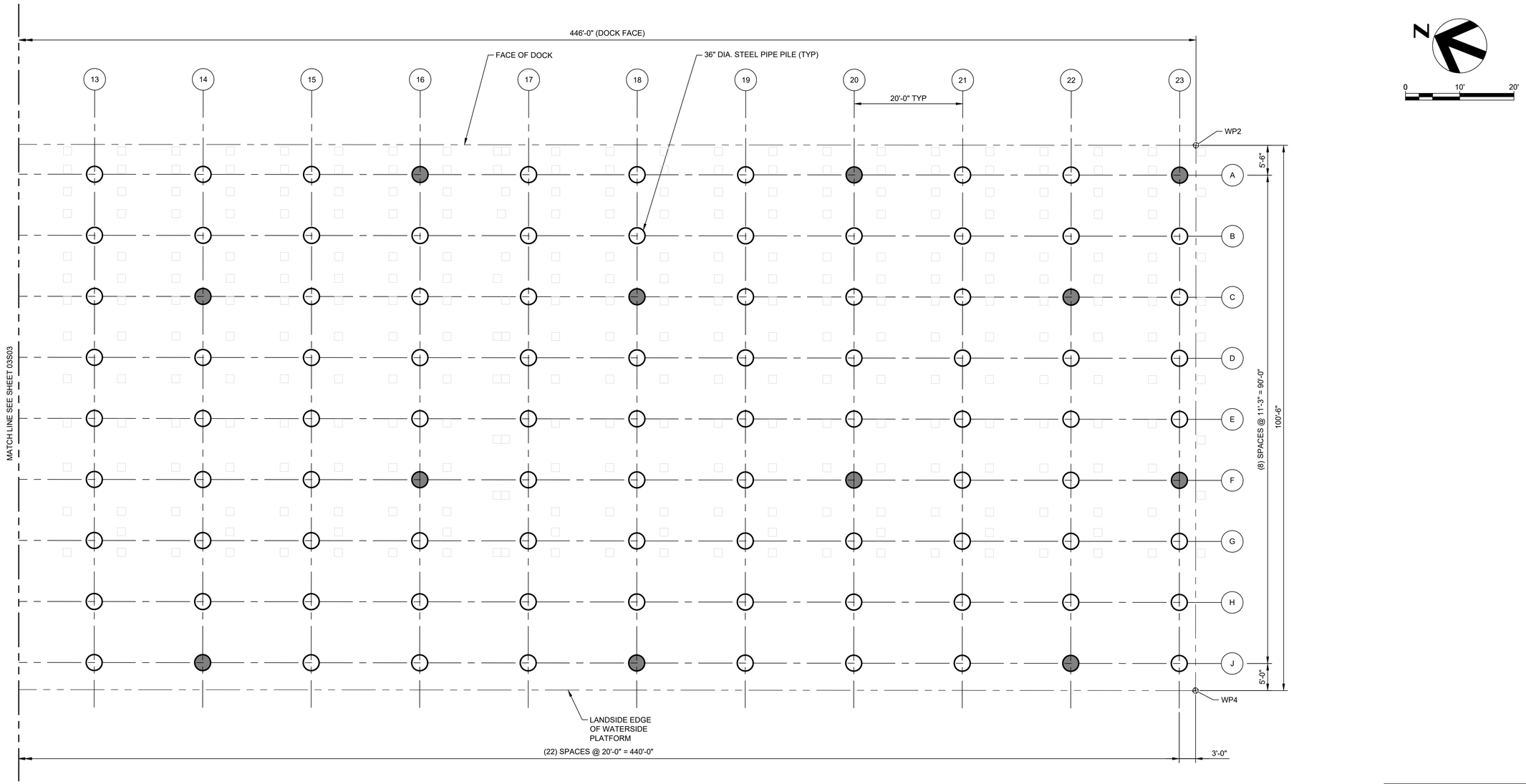
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**PILE PLAN 1 OF 2**

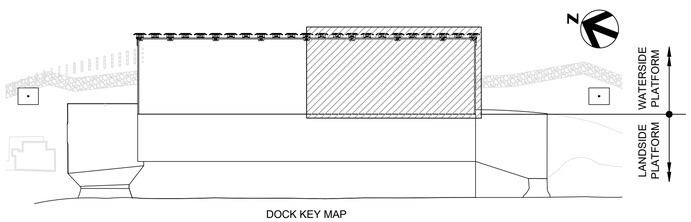
0 1" 2"

FILENAME 03S03.dwg
SCALE 1" = 10' - 0"

SHEET 03S03




1 02S01 PILE PLAN 2 OF 2
1" = 10' - 0"




DOCK KEY MAP

| LEGEND | |
|---|---|
| ● | TEST PILE LOCATION |
| □ | EXISTING PILE |

| WORKING POINT TABLE | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP2 | 16508719.83 | 1345093.73 |
| WP4 | 16508682.57 | 1345000.39 |

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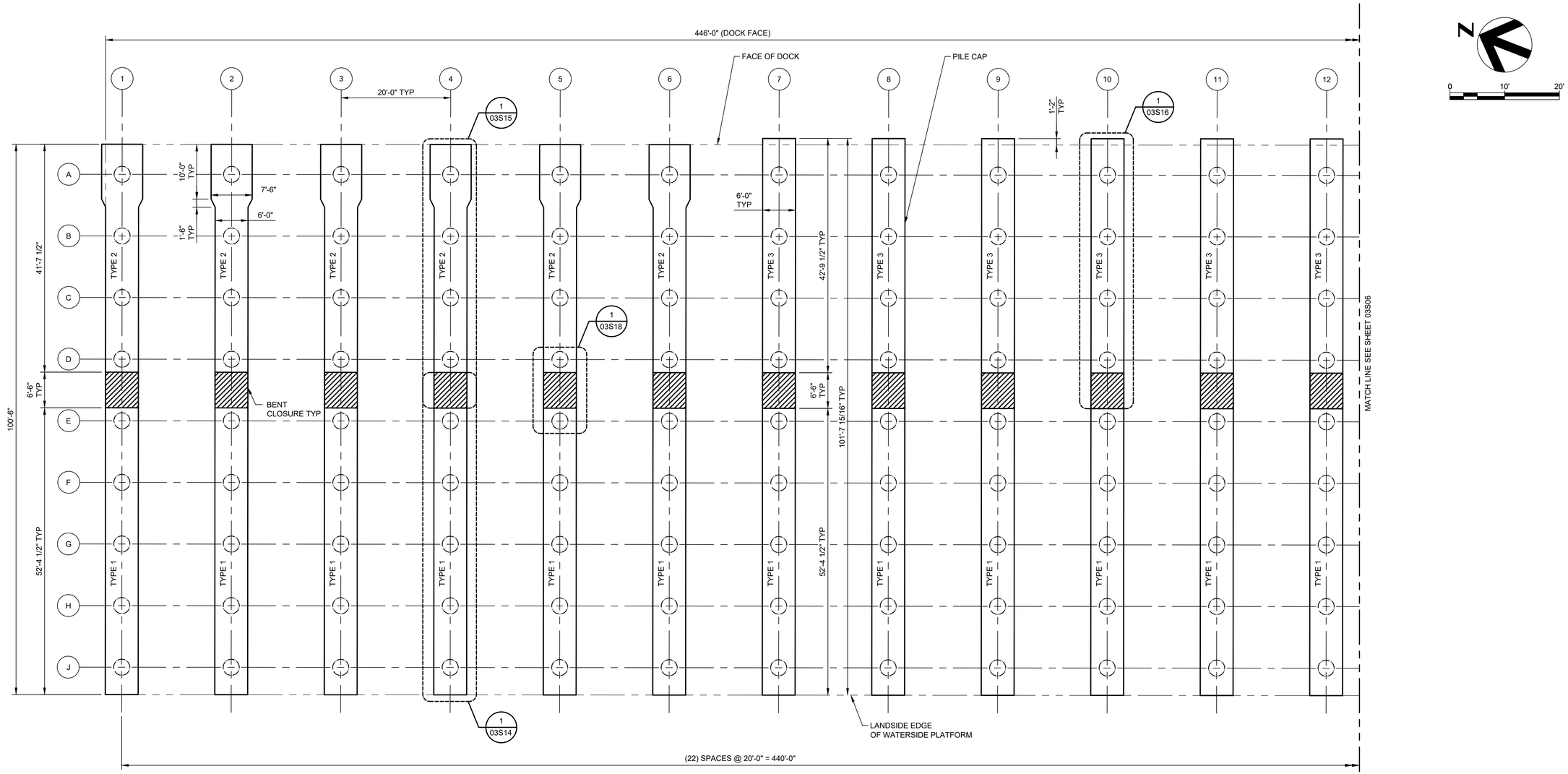
**CARGO DOCK 3 PHASE 1**
**DOCK PACKAGE**

**PILE PLAN 2 OF 2**

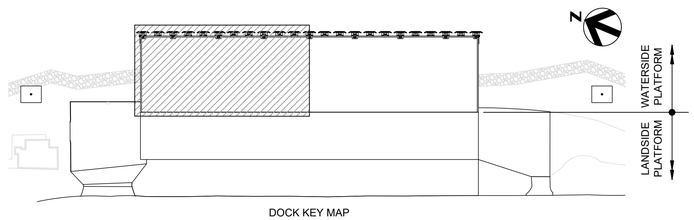
0 1" 2"

FILENAME 03S04.dwg
SCALE 1" = 10' - 0"

SHEET **03S04**




1 / 02S01 PILE CAP PLAN 1 OF 2
1" = 10' - 0"




DOCK KEY MAP

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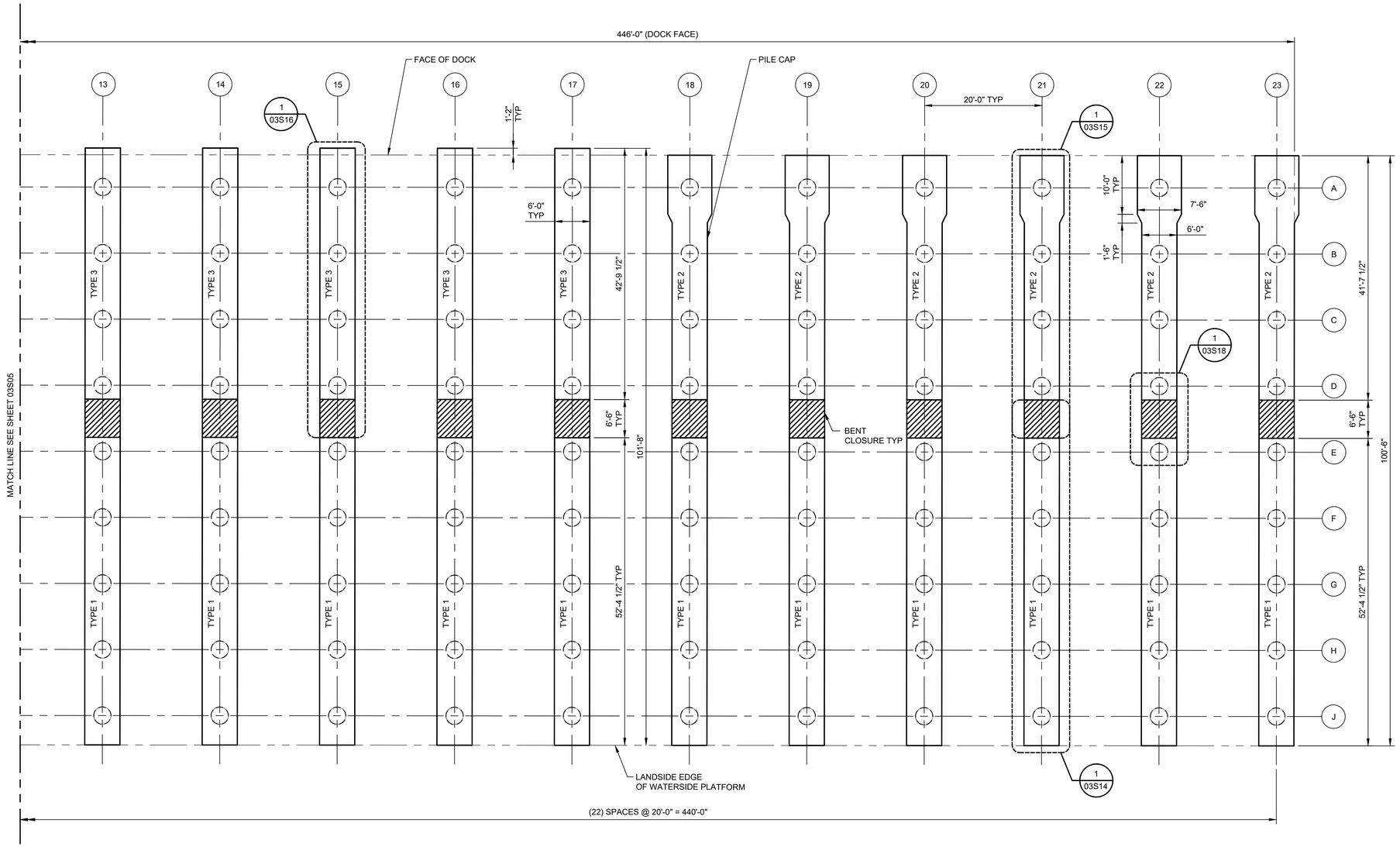
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

PILE CAP PLAN 1 OF 2

0 1" 2"

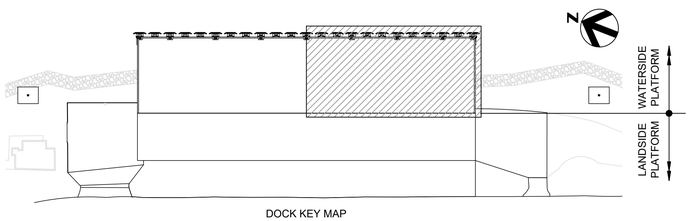
FILENAME 03S05.dwg
SCALE 1" = 10' - 0"

SHEET
03S05




1 02S01 PILE CAP PLAN 2 OF 2

1" = 10' - 0"




DOCK KEY MAP

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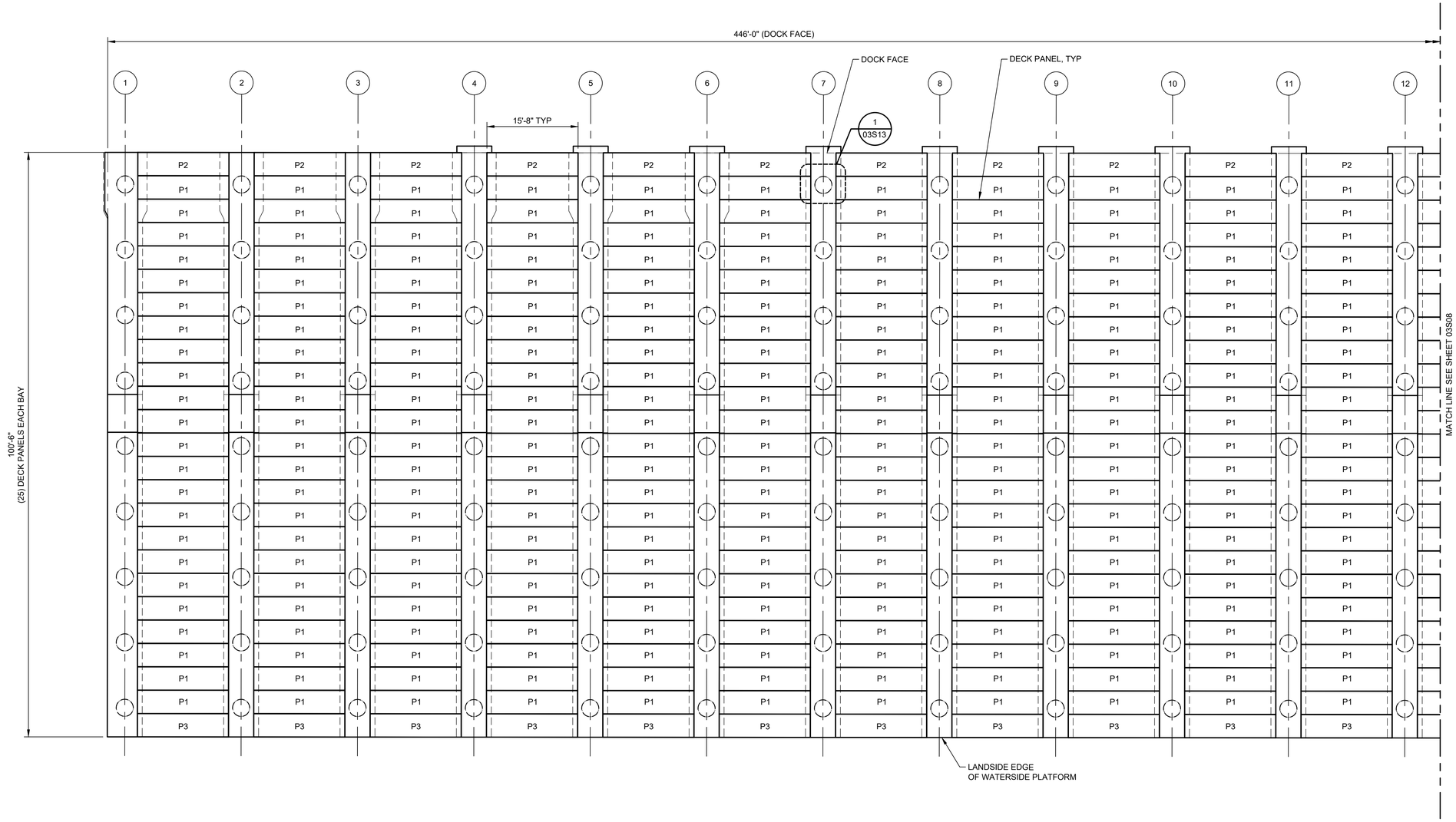
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**PILE CAP PLAN 2 OF 2**

0 1" 2"

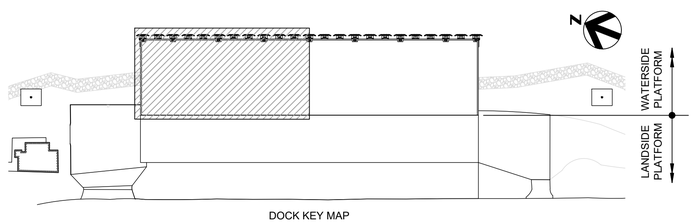
FILENAME 03S06.dwg
SCALE 1" = 10' - 0"

SHEET 03S06




1 02S01 DECK PANEL PLAN 1 OF 2

1" = 10' - 0"




DOCK KEY MAP

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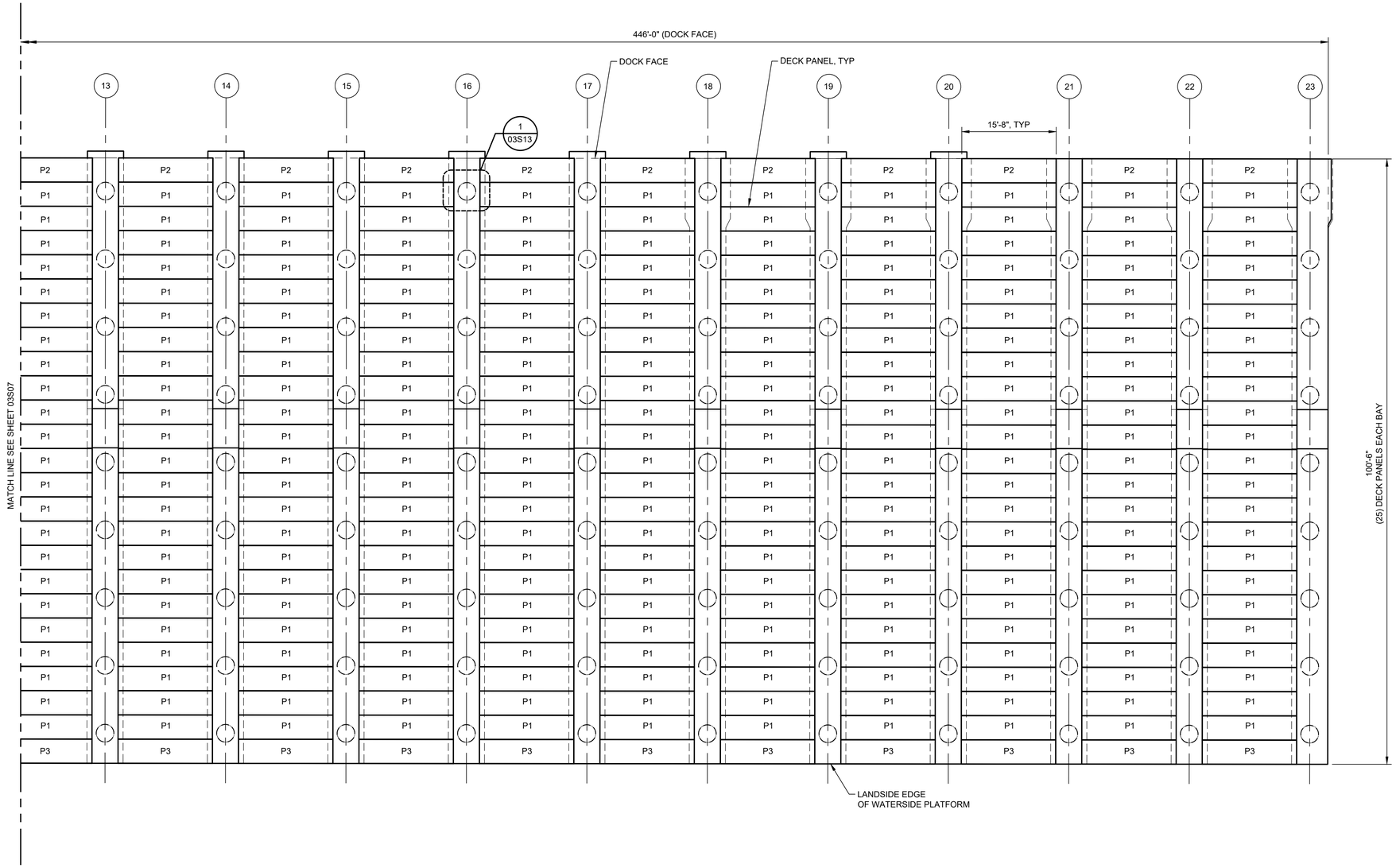
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

# DECK PANEL PLAN 1 OF 2

0 1" 2"

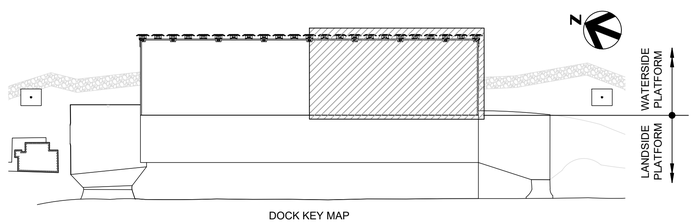
| | |
|---|---|
| FILENAME | 03S07.dwg |
| SCALE | 1" = 10' - 0" |

SHEET **03S07**




1 / 02S01 DECK PANEL PLAN 2 OF 2

1" = 10' - 0"




DOCK KEY MAP

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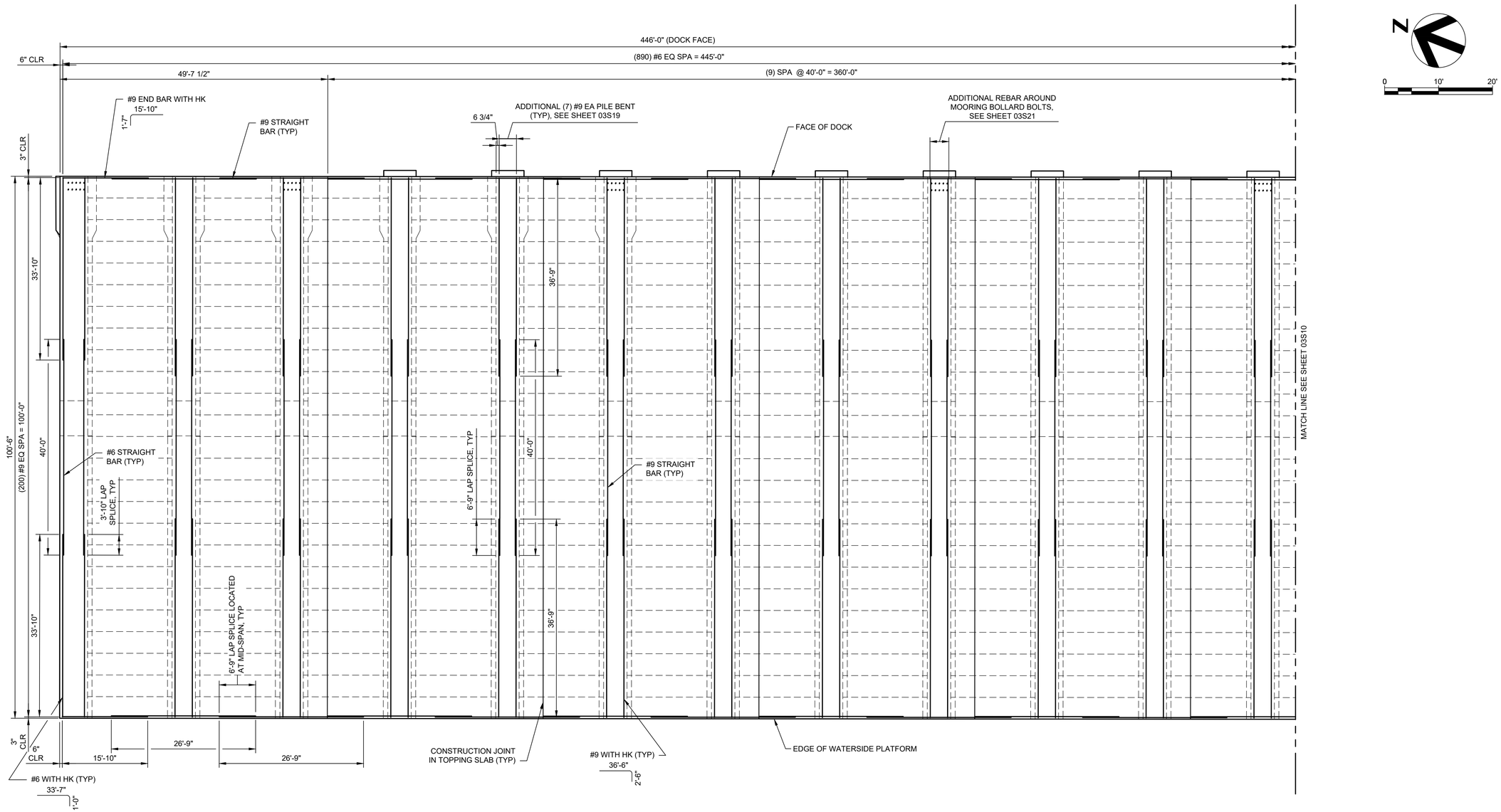
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

DECK PANEL PLAN 2 OF 2

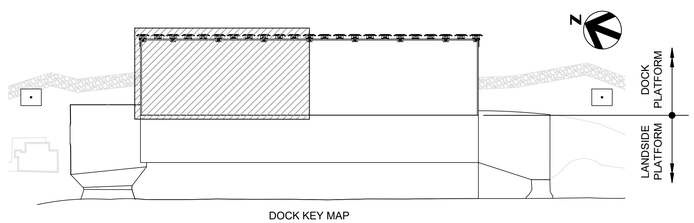
FILENAME 03S08.dwg
SCALE 1" = 10' - 0"

SHEET 03S08




1 / 02S01 TOPPING SLAB PLAN 1 OF 2

1" = 10' - 0"




DOCK KEY MAP

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PORT OF BROWNSVILLE
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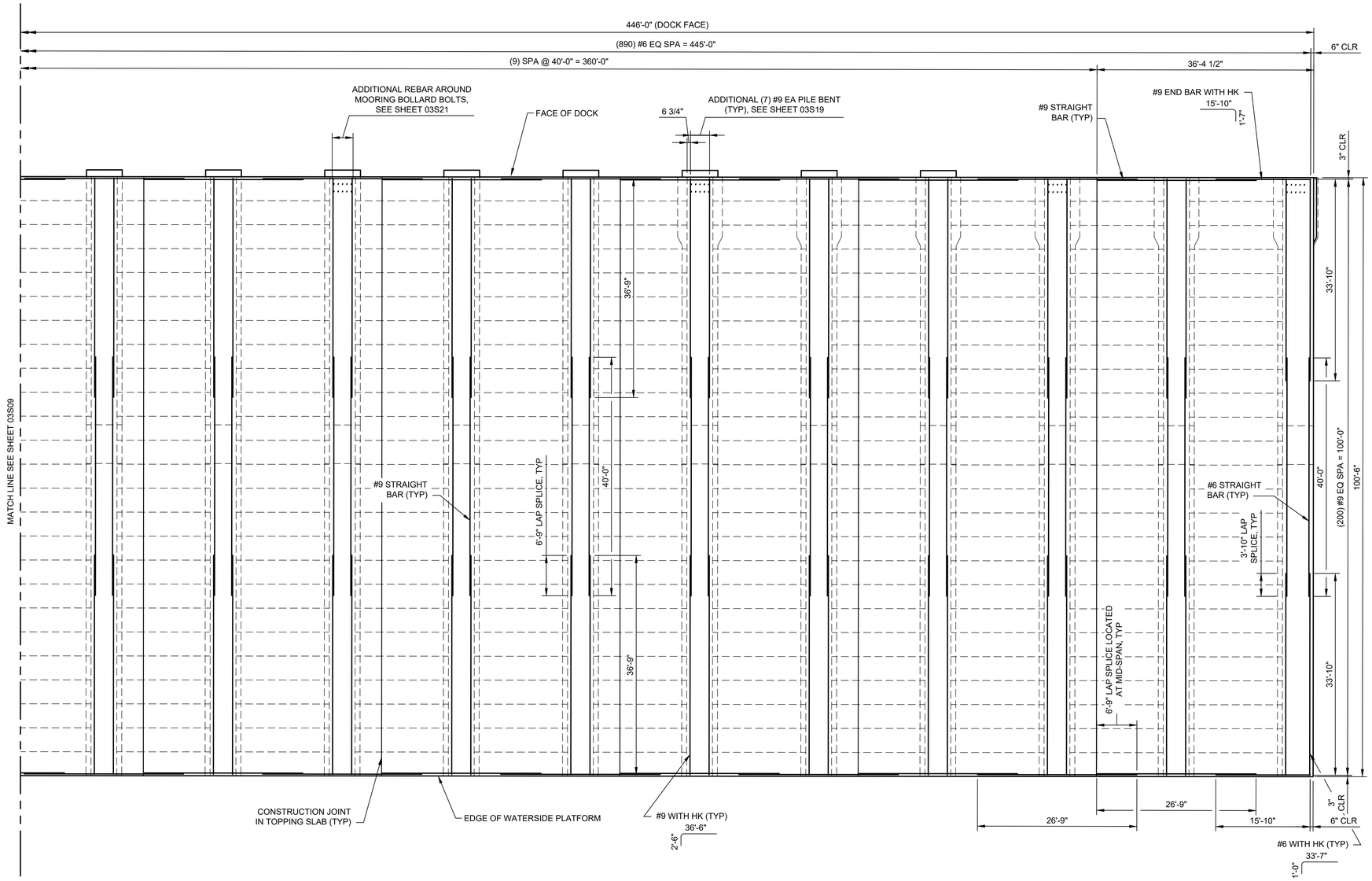
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

TOPPING SLAB PLAN 1 OF 2

0 1" 2"

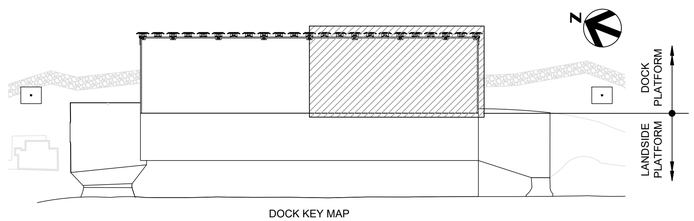
FILENAME 03S09.dwg
SCALE 1" = 10' - 0"

SHEET 03S09




1 / 02S01 TOPPING SLAB PLAN 2 OF 2

1" = 10' - 0"




DOCK KEY MAP

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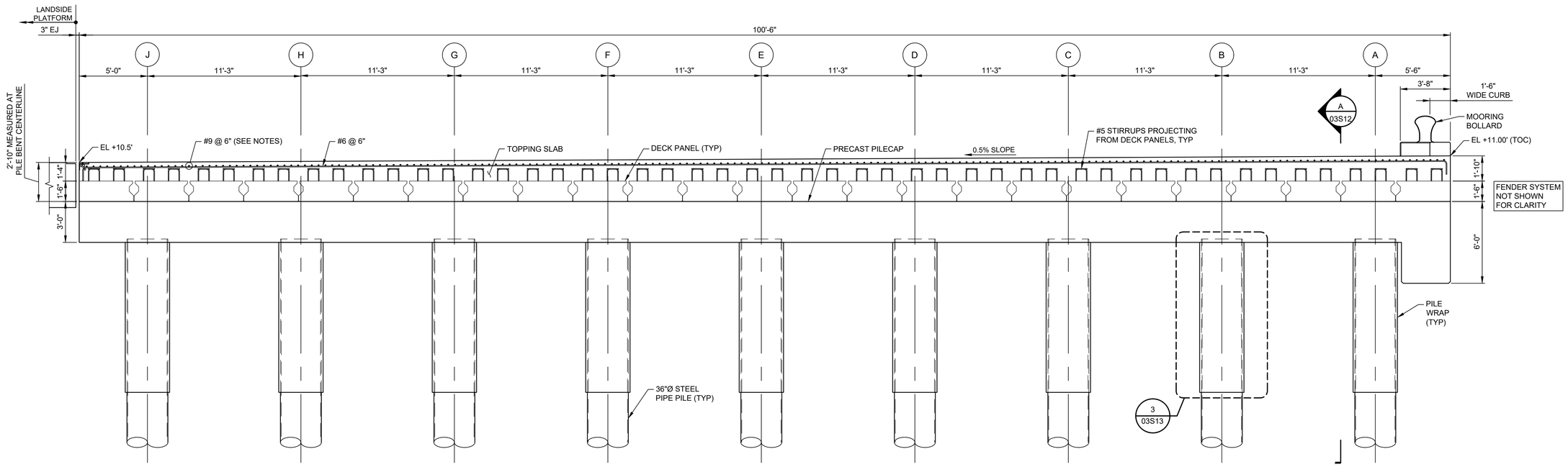
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

TOPPING SLAB PLAN 2 OF 2

FILENAME 03S10.dwg
SCALE 1" = 10' - 0"

SHEET 03S10




1 02S03 TYPICAL CROSS SECTION - WATERSIDE PLATFORM

1/4" = 1'-0"

NOTES:

1. PROVIDE SUPPORT/CHAIRS AS NEEDED TO MAINTAIN THE 3" CLR ALONG THE SLOPING SURFACE OF TOPPING SLAB.

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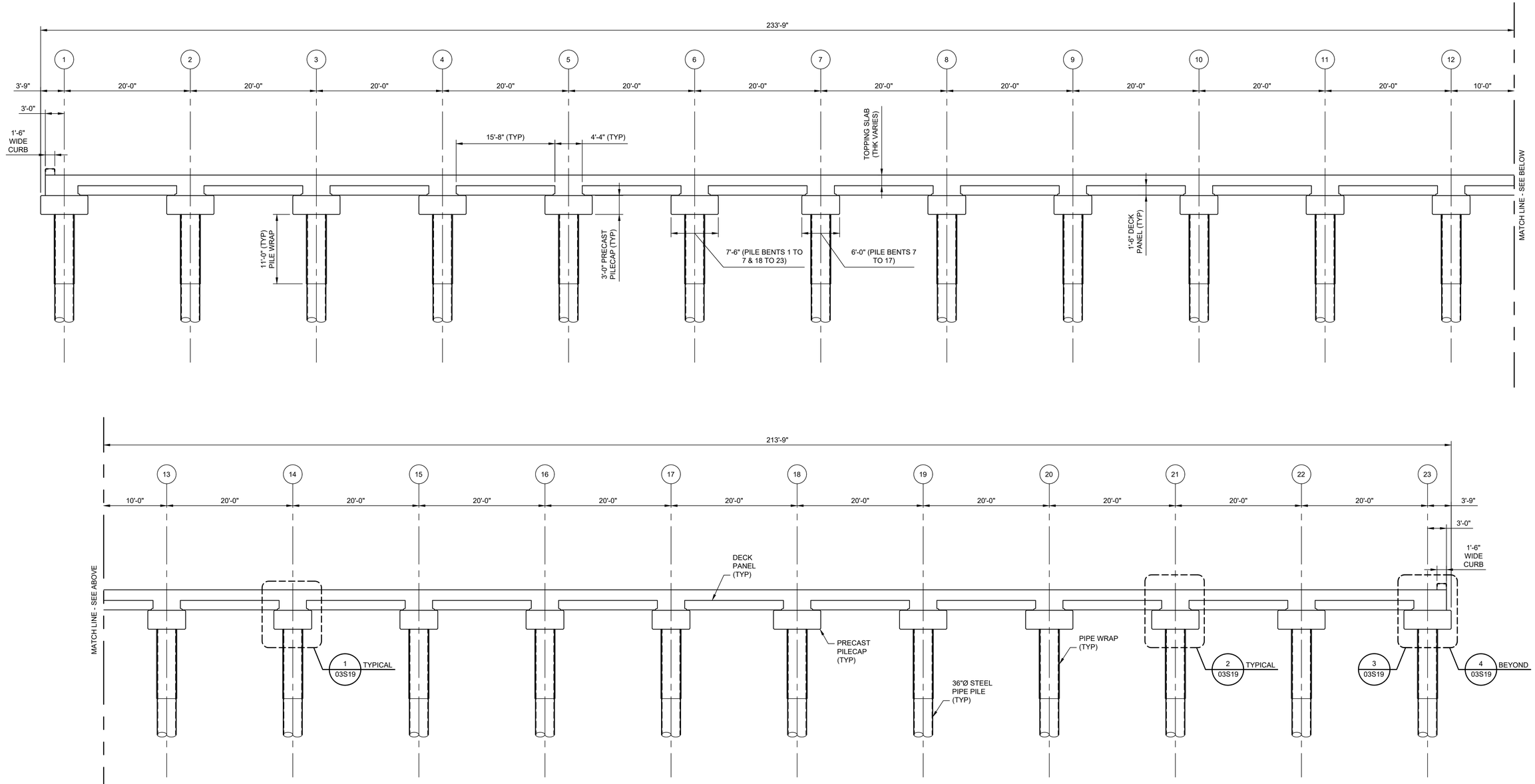
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

SECTIONS 1 OF 2

0 1" 2"

FILENAME 03S11.dwg
SCALE 1/4" = 1'-0"

SHEET 03S11




A 02S01 LONGITUDINAL SECTION - WATERSIDE PLATFORM

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

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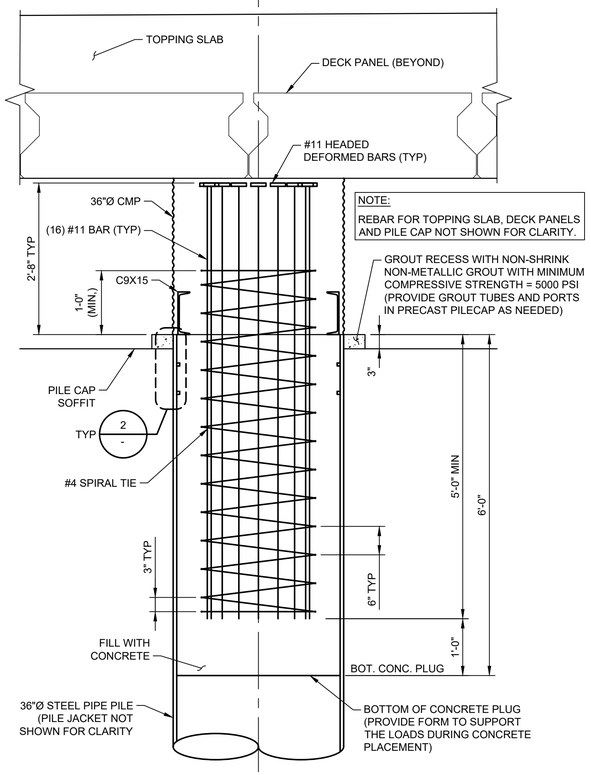
**CARGO DOCK 3 PHASE 1 DOCK PACKAGE**

**SECTIONS 2 OF 2**

0 1" 2"

| | |
|---|---|
| FILENAME | 03S12.dwg |
| SCALE | 1/8" = 1'-0" |

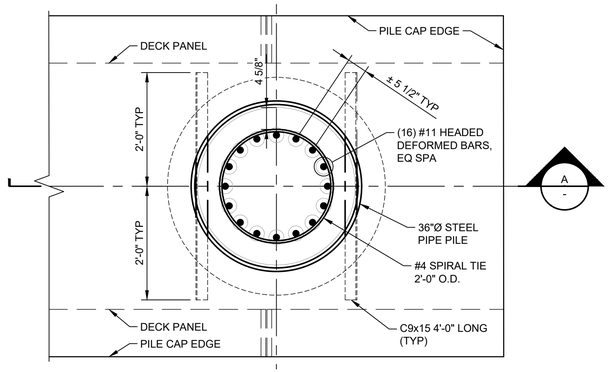
SHEET 03S12



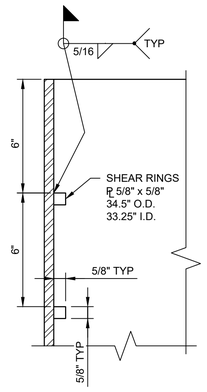

A - DETAIL - PILE TO PILE CAP CONN
3/4" = 1'-0"

| WATERSIDE PLATFORM - PILE SCHEDULE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PILE LOCATION | QTY. | TYPE/SIZE | WALL THK. | TIP EL | CUT OFF EL | MIN INSTALLATION LENGTH | REQUIRED COATING LIMITS (ELEV.) | | LENGTH OF COATING | ULTIMATE PILE CAPACITY (KIPS) 1 |
| | | | | | | | TOP EL | BOT EL | | |
| ROW A | 17 | 36" PIPE | 0.75" | -130.06' | 4.94' | 135' | 4.94' | -58.06' | 63' | 1298 |
| ROW A - TEST PILES | 6 | 36" PIPE | 0.75" | -140.06' | 4.94' | 145' | 4.94' | -68.06' | 73' | 1298 (@EI -130') 1608 (@EI -140') |
| ROW B | 23 | 36" PIPE | 0.75" | -130.06' | 4.94' | 135' | 4.94' | -58.06' | 63' | 1298 |
| ROW C | 18 | 36" PIPE | 0.75" | -130.06' | 4.94' | 135' | 4.94' | -58.06' | 63' | 1312 |
| ROW C - TEST PILES | 5 | 36" PIPE | 0.75" | -140.06' | 4.94' | 145' | 4.94' | -68.06' | 73' | 1312 (@EI -130') 1624 (@EI -140') |
| ROW D | 23 | 36" PIPE | 0.75" | -120.06' | 4.94' | 125' | 4.94' | -46.06' | 51' | 1215 |
| ROW E | 23 | 36" PIPE | 0.75" | -120.06' | 4.94' | 125' | 4.94' | -46.06' | 51' | 1215 |
| ROW F | 17 | 36" PIPE | 0.75" | -120.06' | 4.94' | 125' | 4.94' | -46.06' | 51' | 1215 |
| ROW F - TEST PILES | 6 | 36" PIPE | 0.75" | -130.06' | 4.94' | 135' | 4.94' | -58.06' | 63' | 1215 (@EI -120') 1313 (@EI -130') |
| ROW G | 23 | 36" PIPE | 0.75" | -110.06' | 4.94' | 115' | 4.94' | -35.06' | 40' | 1127 |
| ROW H | 23 | 36" PIPE | 0.75" | -110.06' | 4.94' | 115' | 4.94' | -35.06' | 40' | 1127 |
| ROW J | 18 | 36" PIPE | 0.75" | -110.06' | 4.94' | 115' | 4.94' | -35.06' | 40' | 1127 |
| ROW J - TEST PILES | 5 | 36" PIPE | 0.75" | -120.06' | 4.94' | 125' | 4.94' | -46.06' | 51' | 1127 (@EI -110') 1222 (@EI -120') |

NOTES:
1. ULTIMATE PILE CAPACITIES ARE PROVIDED FOR TEST PILES AT END OF INITIAL DRIVING TIP ELEVATION AND AT FINAL TIP ELEVATION.




1 03S07 - DETAIL - PILE TO PILE CAP CONNECTION
3/4" = 1'-0"
ROTATED 90°




2 - DETAIL - SHEAR RING
3" = 1'-0"




3 03S11 - DETAIL - PILE JACKET
3/4" = 1'-0"

HDR Engineering, INC
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Registration No. F-754

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| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

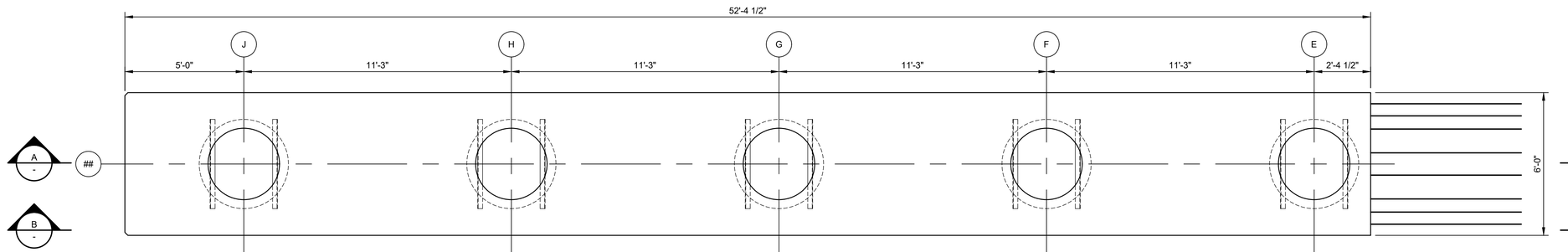
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**PILE DETAILS**

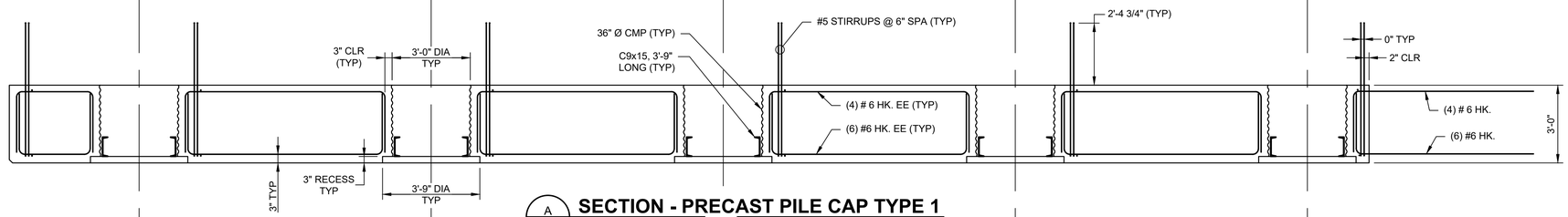
0 1" 2"

FILENAME 03S13.dwg
SCALE AS NOTED

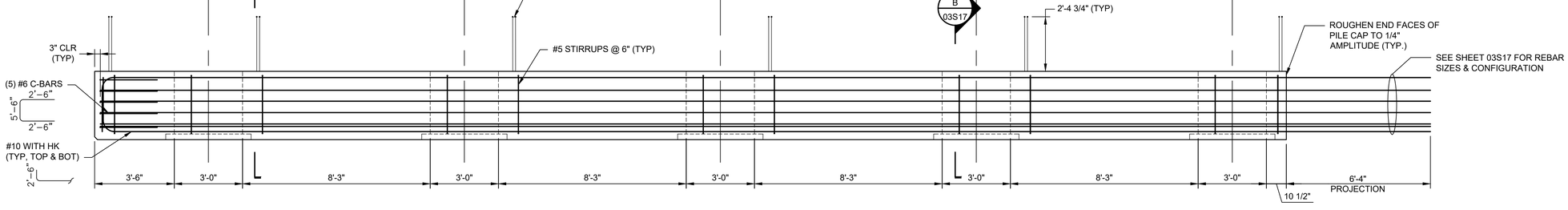
SHEET 03S13




1 / 03S05 **PRECAST PILE CAP TYPE 1**
SCALE: 3/8" = 1'-0"
ROTATED 90°




A / - **SECTION - PRECAST PILE CAP TYPE 1**
SCALE: 3/8" = 1'-0"




B / - **SECTION - PRECAST PILE CAP TYPE 1**
SCALE: 3/8" = 1'-0"

NOTES:

1. FABRICATOR SHALL DESIGN PILE CAPS TO SAFELY RESIST LIFTING AND HANDLING LOADS. PRESTRESSING STRANDS, IF REQUIRED BY DESIGN, SHALL BE SHOWN ON SHOP DRAWINGS INCLUDING SIZE AND LOCATION OF STRANDS AND MATERIAL SPECIFICATIONS.
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4. ROUGHEN ALL SURFACES TO 1/4" AMPLITUDE THAT ARE TO BE BONDED TO CAST-IN-PLACE CONCRETE.THOROUGHLY CLEAN THE ROUGHENED SURFACE OF ALL LOOSE MATERIAL, LAITANCE, DIRT, AND FOREIGN MATTER, AND SATURATE IT WITH WATER. THE CLEANED SURFACE SHOULD BE SATURATED, SURFACE DRY WITH NO FREE OR STANDING WATER AT THE TIME THE CONCRETE IS PLACED AGAINST IT.

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STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

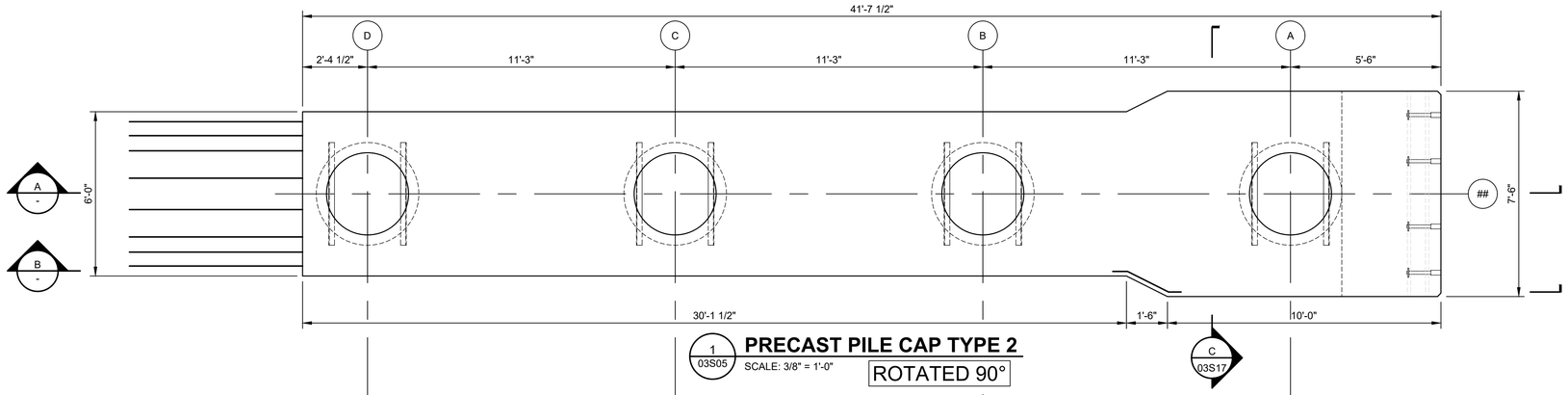
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**PRECAST CAP TYPE 1**

0 1" 2"

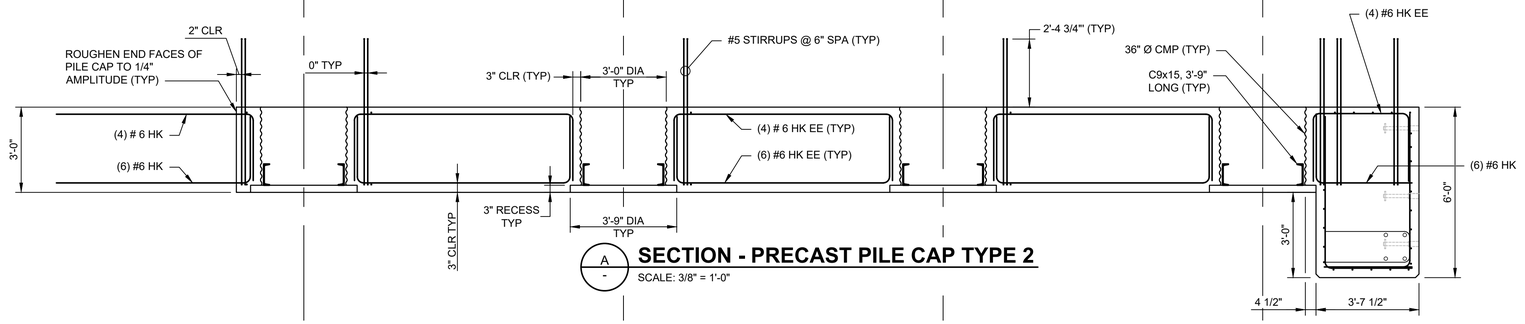
| | |
|---|---|
| FILENAME | 03S14.dwg |
| SCALE | 3/8" = 1'-0" |

SHEET 03S14

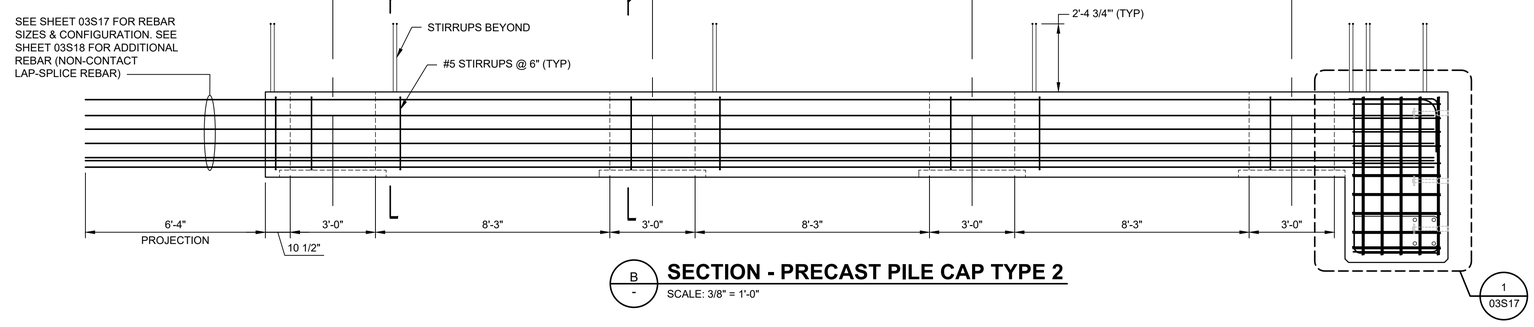



1 / 03S05 **PRECAST PILE CAP TYPE 2**
SCALE: 3/8" = 1'-0"
ROTATED 90°

C / 03S17




A / - **SECTION - PRECAST PILE CAP TYPE 2**
SCALE: 3/8" = 1'-0"




B / - **SECTION - PRECAST PILE CAP TYPE 2**
SCALE: 3/8" = 1'-0"

NOTES:

1. FABRICATOR SHALL DESIGN PILE CAPS TO SAFELY RESIST LIFTING AND HANDLING LOADS. PRESTRESSING STRANDS, IF REQUIRED BY DESIGN, SHALL BE SHOWN ON SHOP DRAWINGS INCLUDING SIZE AND LOCATION OF STRANDS AND MATERIAL SPECIFICATIONS.
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| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

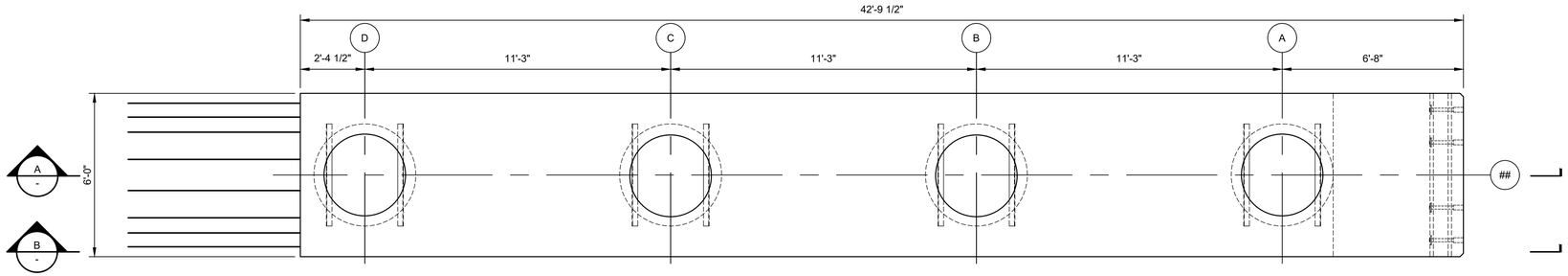
PORT OF BROWNSVILLE
the port that *works*
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**PRECAST CAP TYPE 2**

0 1" 2"

| | |
|---|---|
| FILENAME | 03S15.dwg |
| SCALE | 3/8" = 1'-0" |

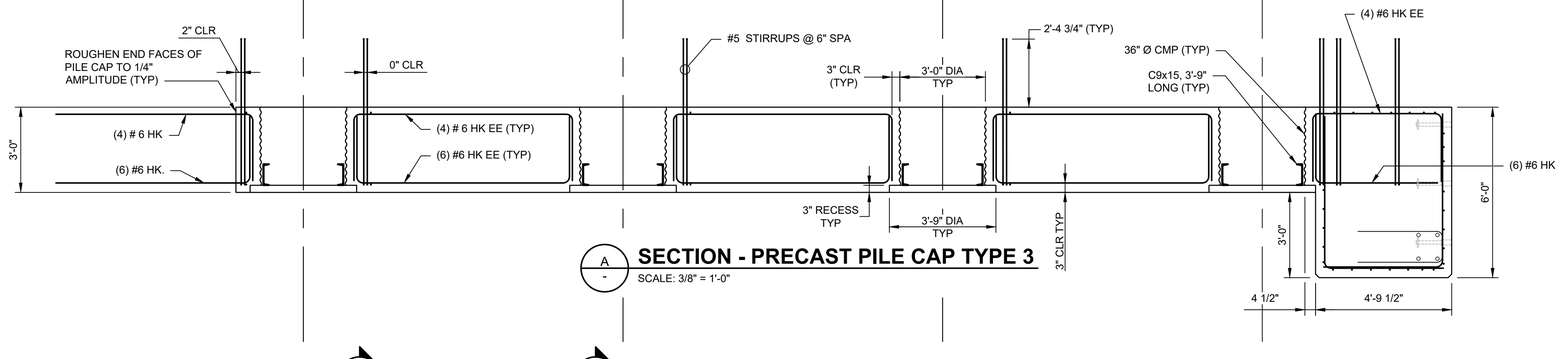
SHEET 03S15




1 / 03S05 **PRECAST PILE CAP TYPE 3**

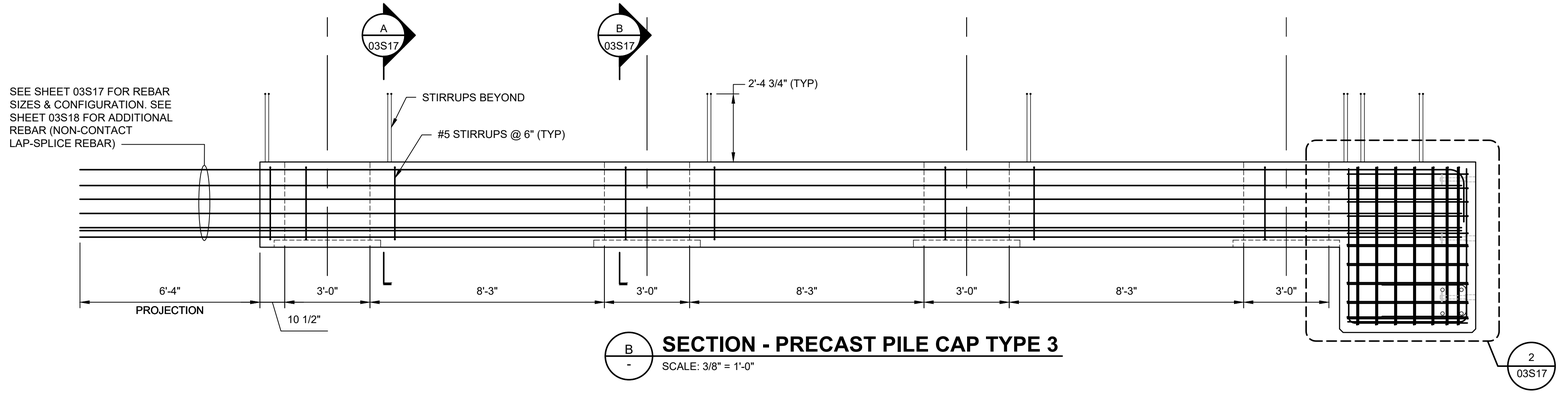
SCALE: 3/8" = 1'-0"

ROTATED 90°




A / - **SECTION - PRECAST PILE CAP TYPE 3**

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




B / - **SECTION - PRECAST PILE CAP TYPE 3**

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

NOTES:

1. FABRICATOR SHALL DESIGN PILE CAPS TO SAFELY RESIST LIFTING AND HANDLING LOADS. PRESTRESSING STRANDS, IF REQUIRED BY DESIGN, SHALL BE SHOWN ON SHOP DRAWINGS INCLUDING SIZE AND LOCATION OF STRANDS AND MATERIAL SPECIFICATIONS.
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| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

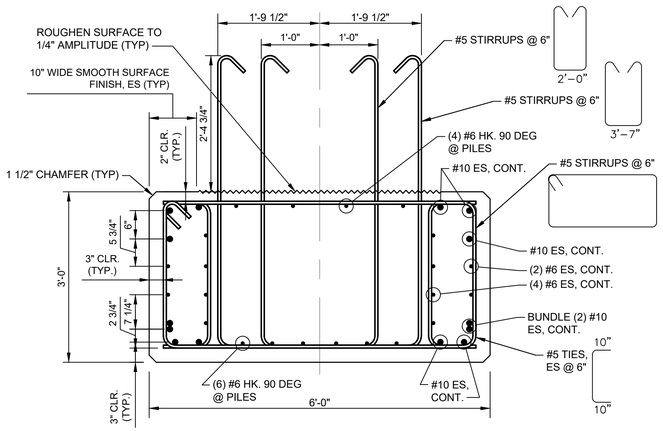
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

PRECAST CAP TYPE 3

0 1" 2"

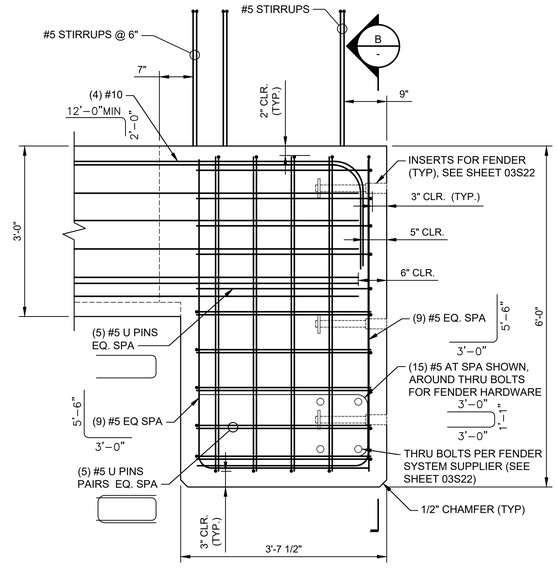
FILENAME 03S16.dwg
SCALE 3/8" = 1'-0"

SHEET 03S16



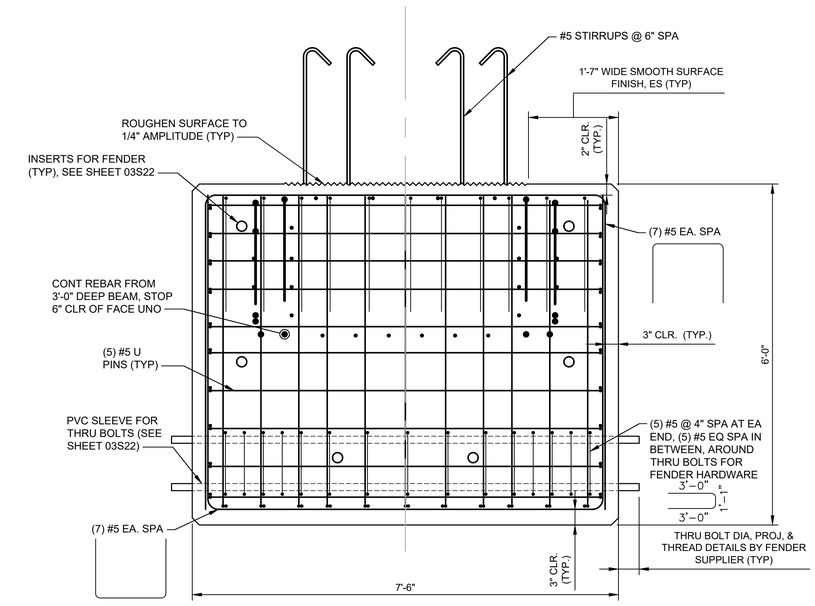

A 03S14 TYPICAL SECTION - PILE CAP

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



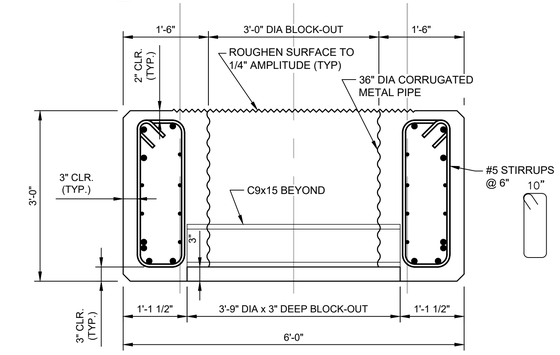

1 03S15 TYPICAL DETAIL - TYPE 2 PILE CAP

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



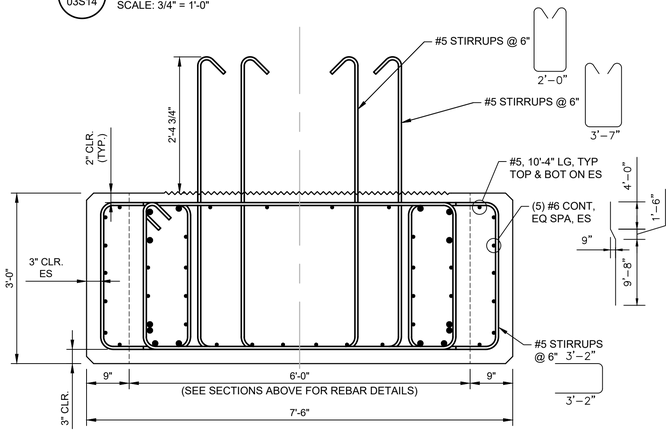

B - TYPICAL SECTION - TYPE 2 PILE CAP

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



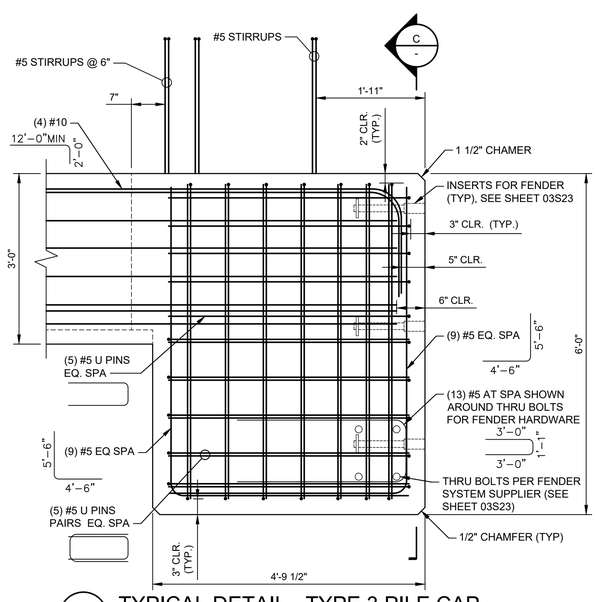

B 03S14 TYPICAL SECTION - AT PILE BLOCKOUT

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



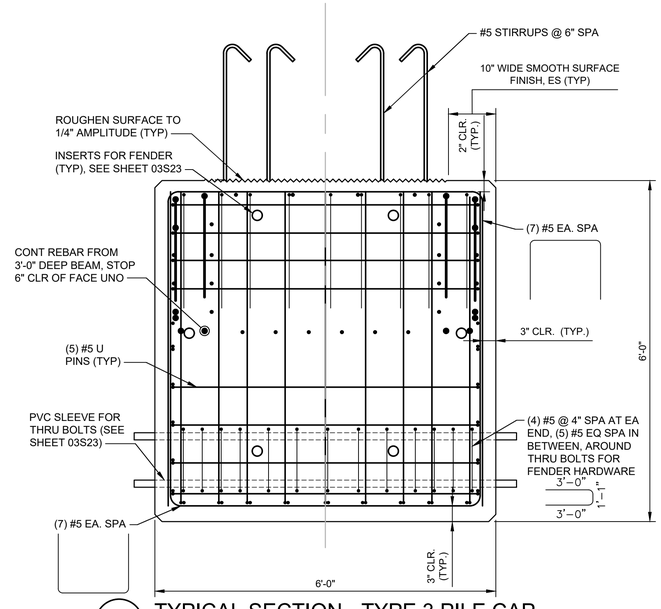

C 03S15 TYPICAL SECTION -7'-6" PILE CAP

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




2 03S16 TYPICAL DETAIL - TYPE 3 PILE CAP

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




C - TYPICAL SECTION - TYPE 3 PILE CAP

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

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| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

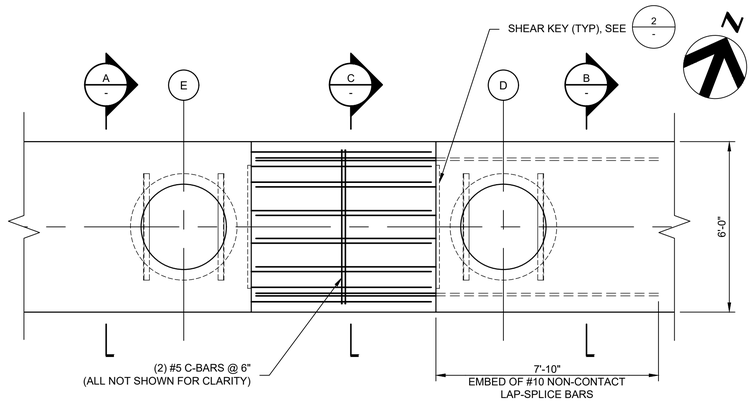
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**PRECAST CAP SECTIONS 1 OF 2**

0 1" 2"

FILENAME 03S17.dwg
SCALE 3/4" = 1'-0"

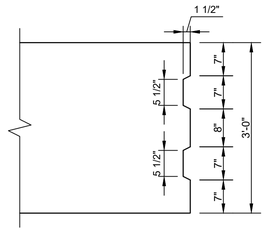
SHEET 03S17



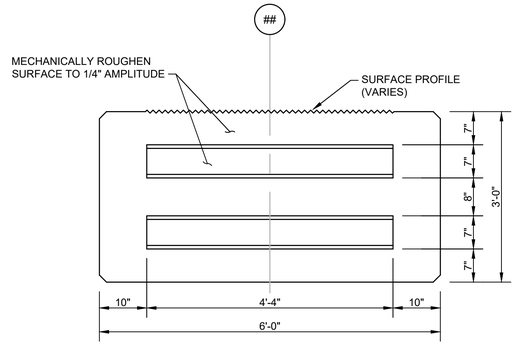

1 / 03S05 PLAN - TYPICAL PRECAST PILE CAP CLOSURE

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

ROTATED 90°



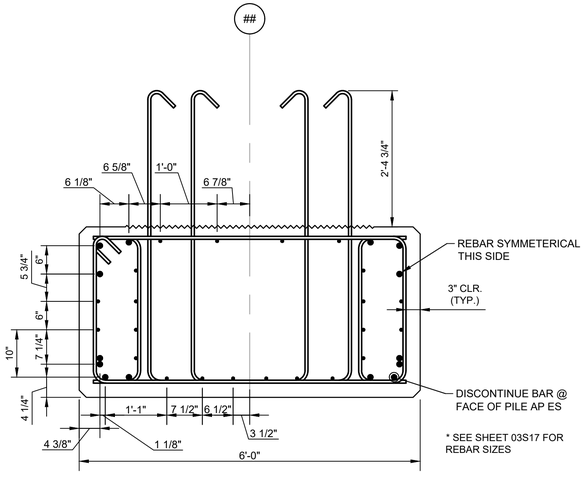

SIDE ELEVATION VIEW




END ELEVATION VIEW

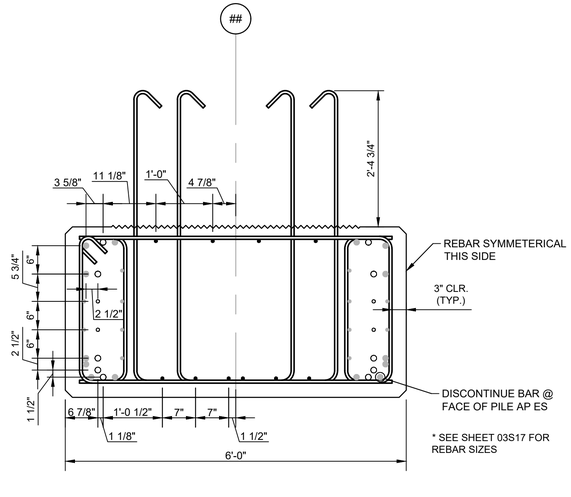
2 / - DETAIL - TYPICAL CLOSURE SHEAR KEYS

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



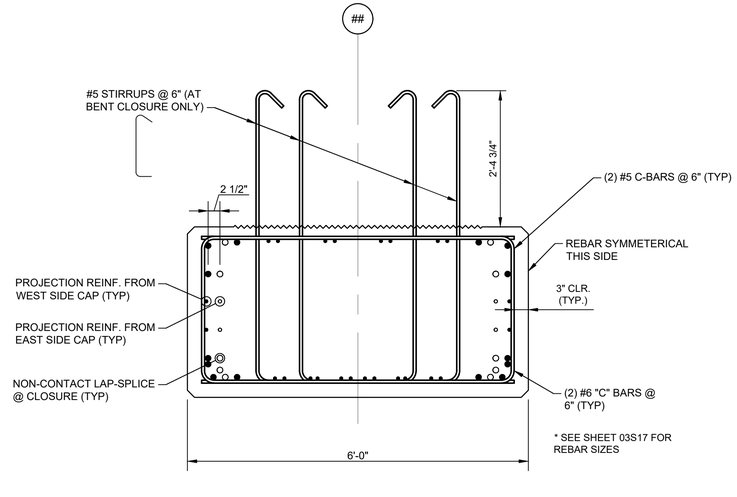

A / - SECTION - REBAR SPACING @ CLOSURE (WESTERN CAP)

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




B / - SECTION - REBAR SPACING @ CLOSURE (EASTERN CAP)

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




C / - SECTION - CLOSURE REIFORCEMENT

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

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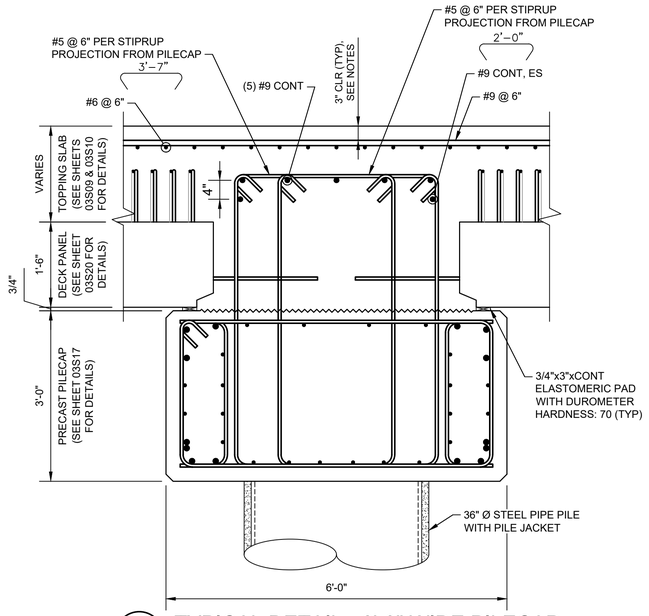
DOCK PACKAGE

**PRECAST CAP SECTIONS 2 OF 2**

0 1" 2"

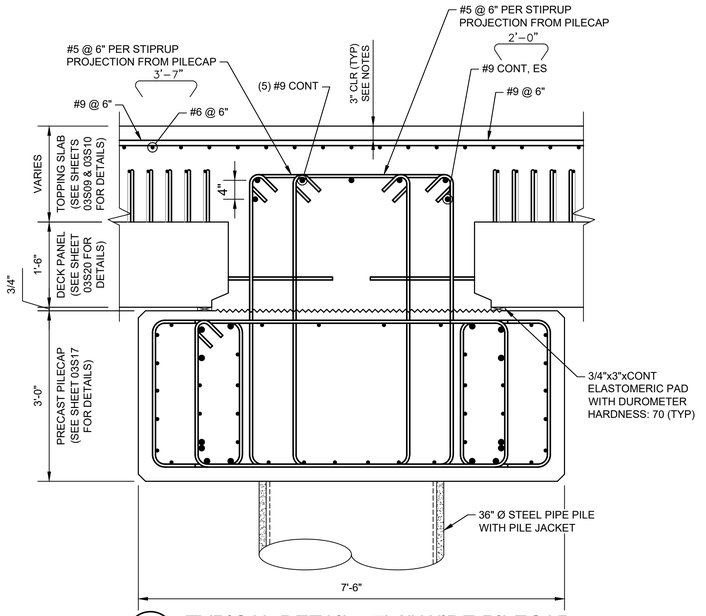
FILENAME 03S18.dwg
SCALE AS NOTED

SHEET 03S18



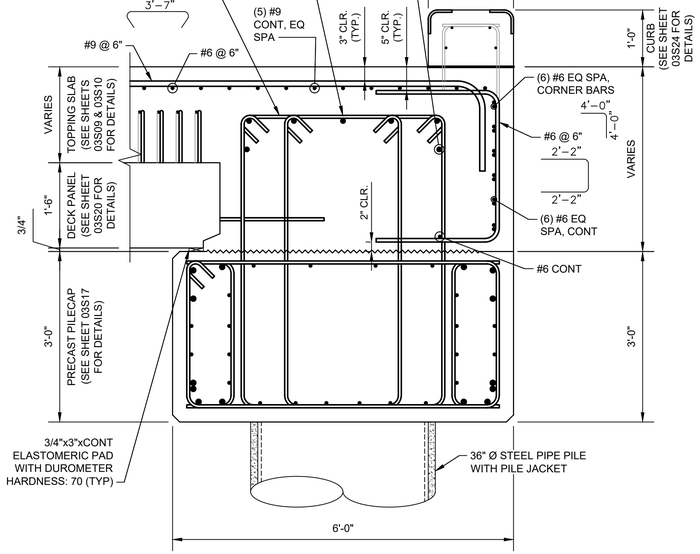

1 03S12 TYPICAL DETAIL - 6'-0" WIDE PILECAP

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




2 03S12 TYPICAL DETAIL - 7'-6" WIDE PILECAP

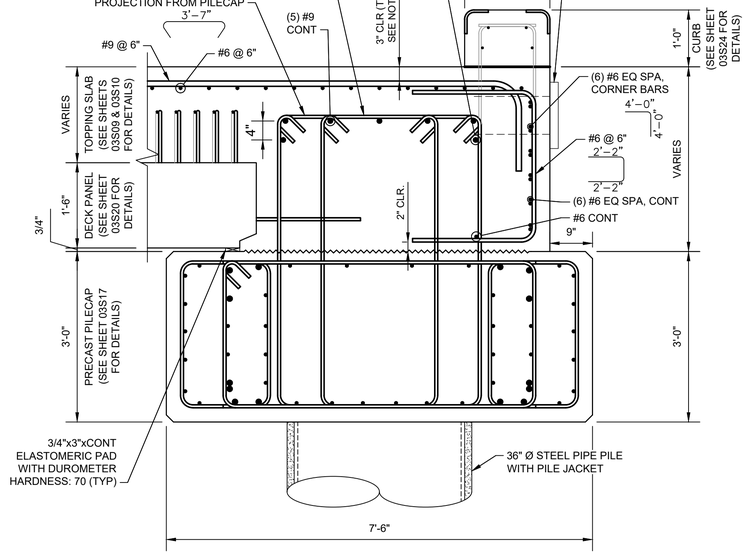
SCALE: 3/4" = 1'-0"




3 03S15 DETAIL - 6'-0" WIDE END PILECAP

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

MIRRORED AT PILE BENT 1




4 03S12 DETAIL - 7'-6" WIDE END PILECAP

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

MIRRORED AT PILE BENT 1

NOTES:

1. PROVIDE SUPPORT/CHAIRS AS NEEDED TO MAINTAIN THE 3" CLR ALONG THE SLOPING SURFACE OF TOPPING SLAB.

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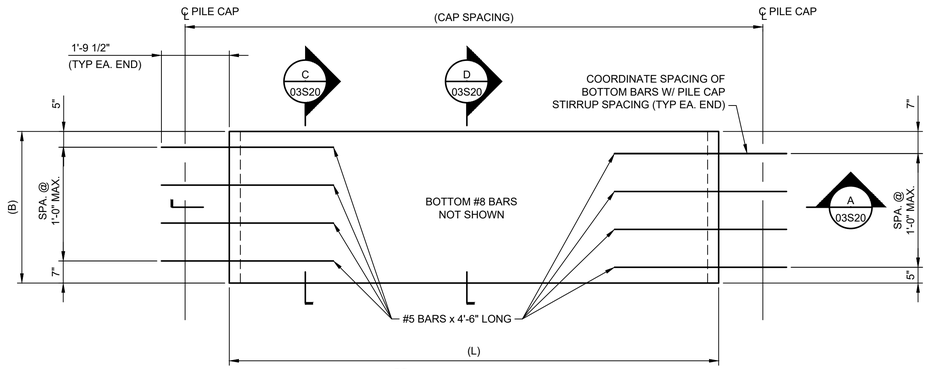
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

# PILE BENT SECTIONS AND DETAILS

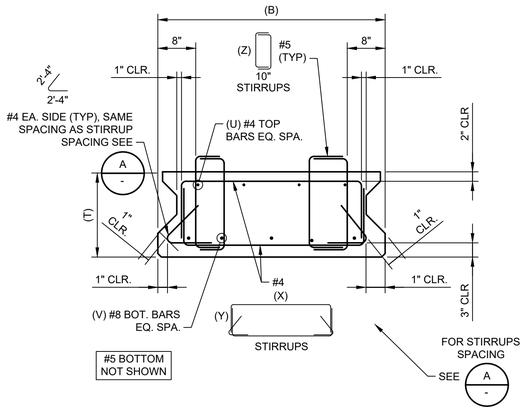
0 1" 2"

FILENAME 03S19.dwg
SCALE 3/4" = 1'-0"

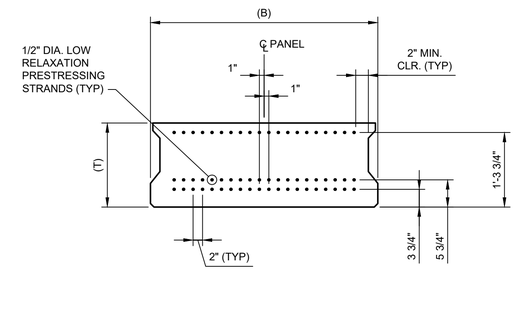
SHEET 03S19



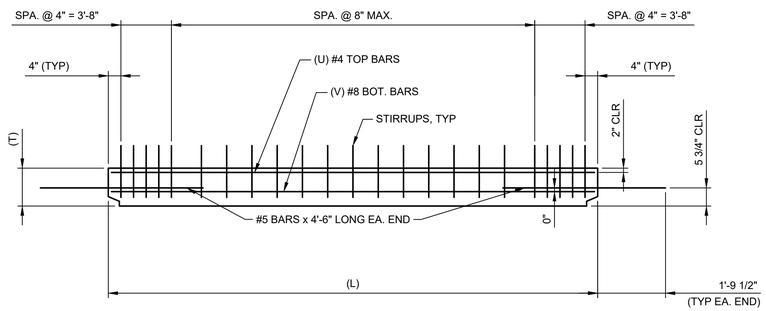

B -- SECTION - DECK PANEL
SCALE: 1/2" = 1'-0"



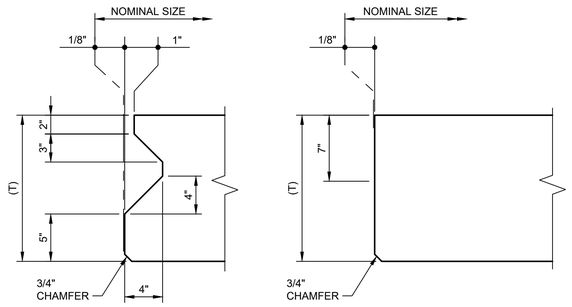

C -- SECTION - REINFORCING LAYOUT
SCALE: 3/4" = 1'-0"



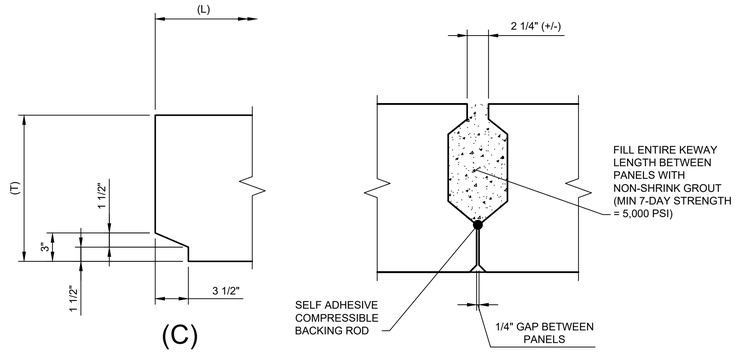

D -- SECTION - STRAND LAYOUT
SCALE: 3/4" = 1'-0"




A -- SECTION - DECK PANEL
SCALE: 1/2" = 1'-0"




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




2 / 03S11 EDGE CONDITIONS
SCALE: 1-1/2" = 1'-0"

| PANEL DESIGNATION | PANEL QUANTITY | LENGTH | THICKNESS | WIDTH | SIDE/END DETAILS | | | | PRESTRESSING STRANDS PER LEVEL | | | ASTM A615, GRADE 60 | | | | STIRRUP HEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (L) | (T ) | (B) | (N) | (S) | (E) | (W) | 3 3/4" | 5 3/4" | 1'-3 3/4" | (U) | (V) | (X) | (Y) | (Z) |
| P1 | 506 | 15' - 8" | 1' - 6" | 4' - 0" | (C) | (C) | (A) | (A) | 21 | 11 | 3 | 6 | 6 | 3' - 2" | 1' - 1" | 2' - 2" |
| P2 | 22 | 15' - 8" | 1' - 6" | 4' - 0" | (C) | (C) | (B) | (A) | 21 | 11 | 3 | 6 | 6 | 3' - 2" | 1' - 1" | 2' - 2" |
| P3 | 22 | 15' - 8" | 1' - 6" | 4' - 0" | (C) | (C) | (A) | (B) | 21 | 11 | 3 | 6 | 6 | 3' - 2" | 1' - 1" | 2' - 2" |

NOTES:

1. CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (150 PCF) WITH A 28 DAY COMPRESSIVE STRENGTH OF 6500 PSI, AND A RELEASE STRENGTH OF 4000 PSI.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. PRESTRESSING STRANDS SHALL BE 1/2" DIA., UNCOATED, 7-WIRE, LOW RELAXATI0N STRAND, CONFORMING TO ASTM A416, SUPPLEMENT 1, GRADE 270K. INITIAL TENSION SHALL BE 30.98 KIPS PER STRAND.
3. TOPS OF PRECAST AND PRESTRESSED UNITS SHALL BE ROUGHENED TO A FULL AMPLITUDE OF APPROX. 1/4". THOROUGHLY CLEAN THE ROUGHENED SURFACE OF ALL LOOSE MATERIAL, LAITANCE, DIRT, AND FOREIGN MATTER, AND SATURATE IT WITH WATER. THE CLEANED SURFACE SHOULD BE SATURATED, SURFACE DRY WITH NO FREE OR STANDING WATER AT THE TIME THE CONCRETE IS PLACED AGAINST IT.
4. ANTICIPATE CAMBER/DEFLECTION OF DECK PANELS:
   AT RELEASE = 0.16" AT MIDSPAN, 0.05' AT SUPPORTS
   AT ERECTION = 0.24" AT MIDSPAN, 0.09' AT SUPPORTS

HDR Engineering, INC
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| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

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NAVIN K. GALANI
103513
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09.22.2023

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the port that *works*

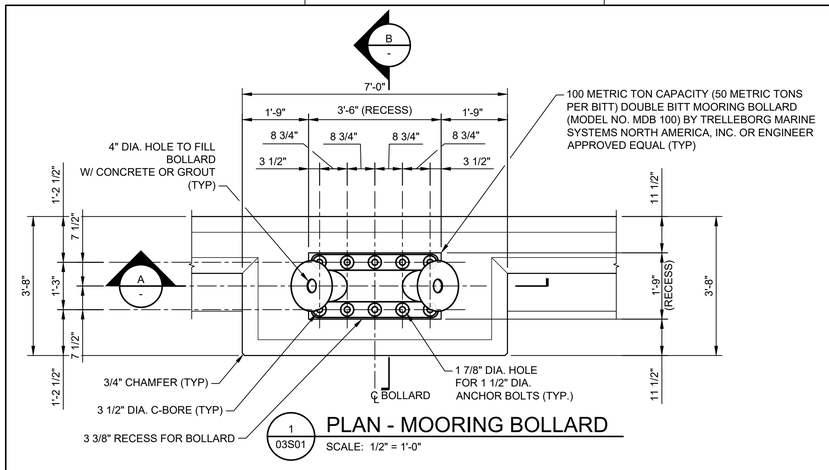
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

# DECK PANEL SECTIONS AND DETAILS

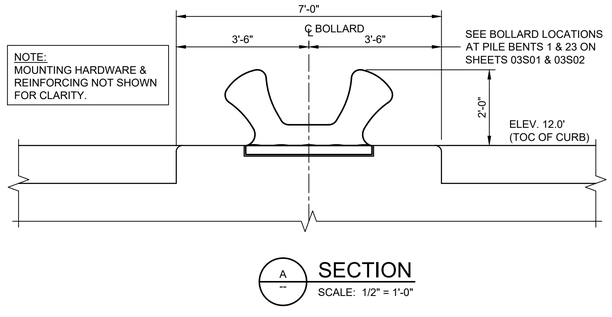
0 1" 2"

FILENAME 03S20.dwg
SCALE AS NOTED

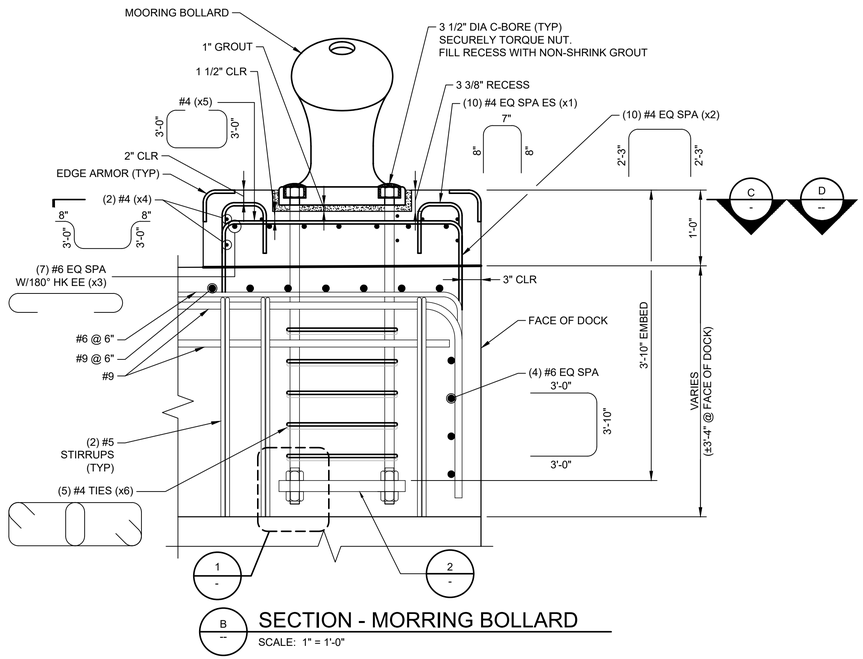
SHEET
03S20



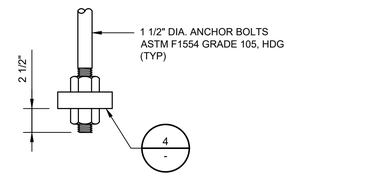

PLAN - MOORING BOLLARD



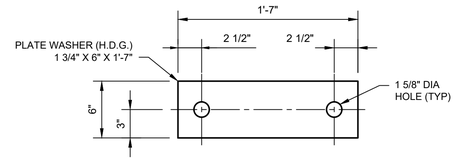

SECTION



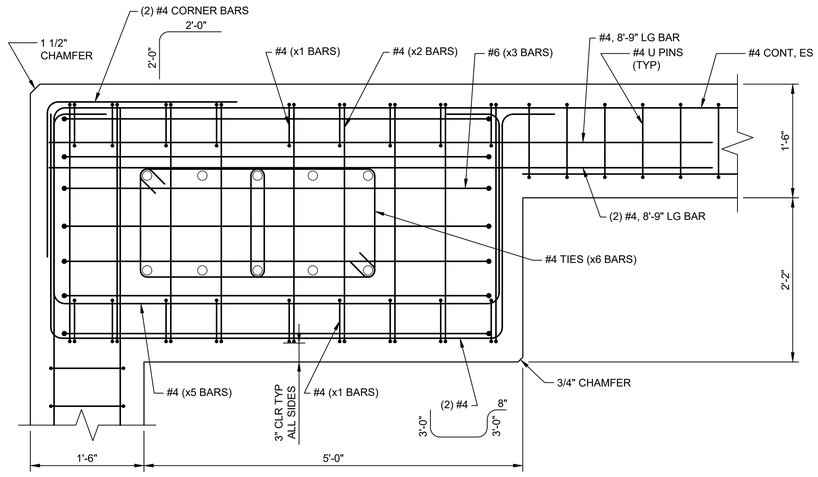

SECTION - MORRING BOLLARD



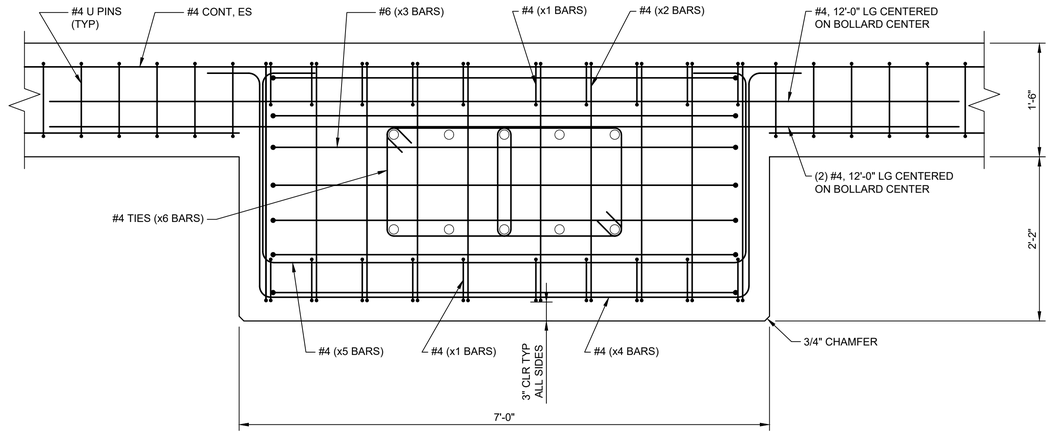

DETAIL




WASHER PLATE DETAIL




DETAIL - AT CORNER OF DOCK (MIRRORED)




DETAIL - TYPICAL REBAR LAYOUT FOR BOLLARED

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CARGO DOCK 3 PHASE 1
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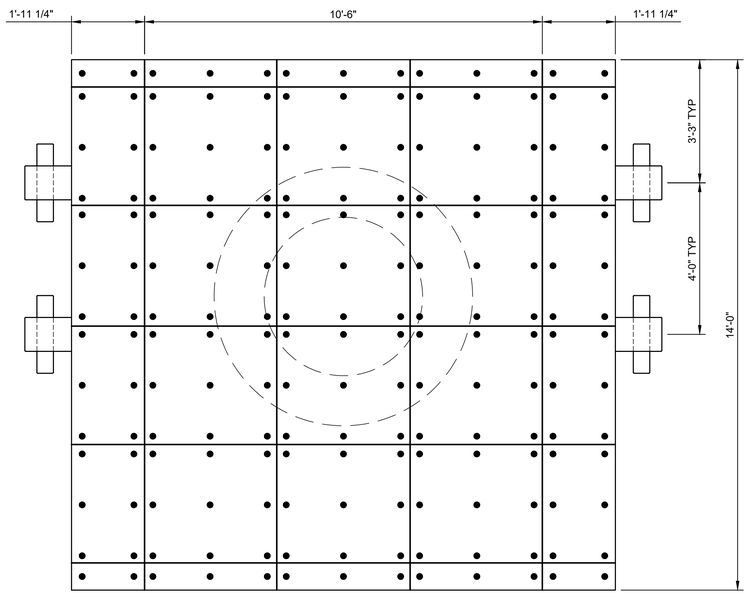
**MOORING BOLLARD DETAILS**

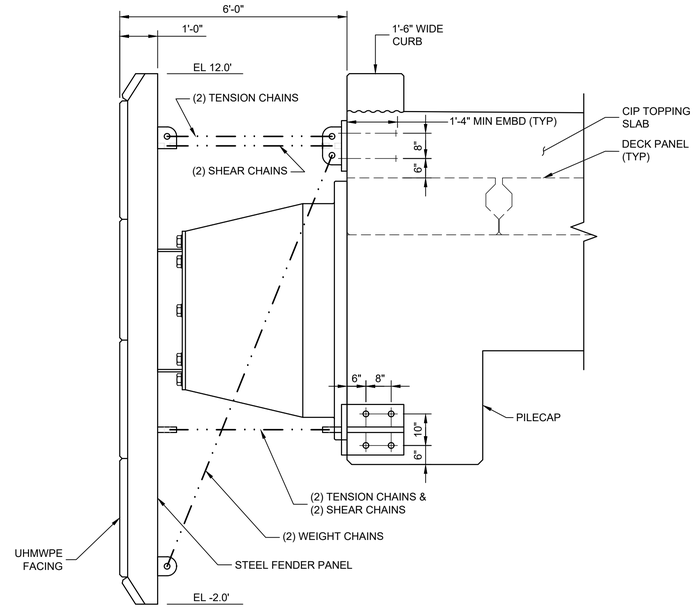
0 1" 2"

| | |
|---|---|
| FILENAME | 03S21.dwg |
| SCALE | AS NOTED |

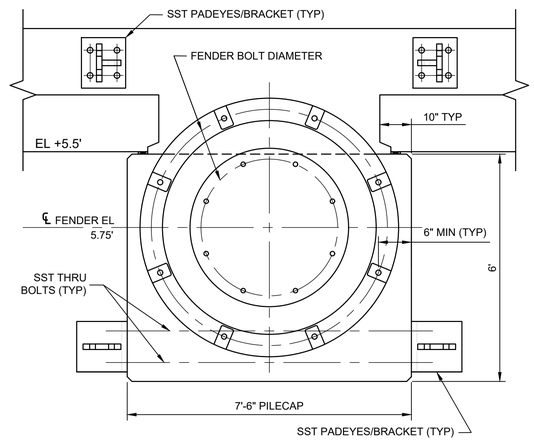
SHEET 03S21



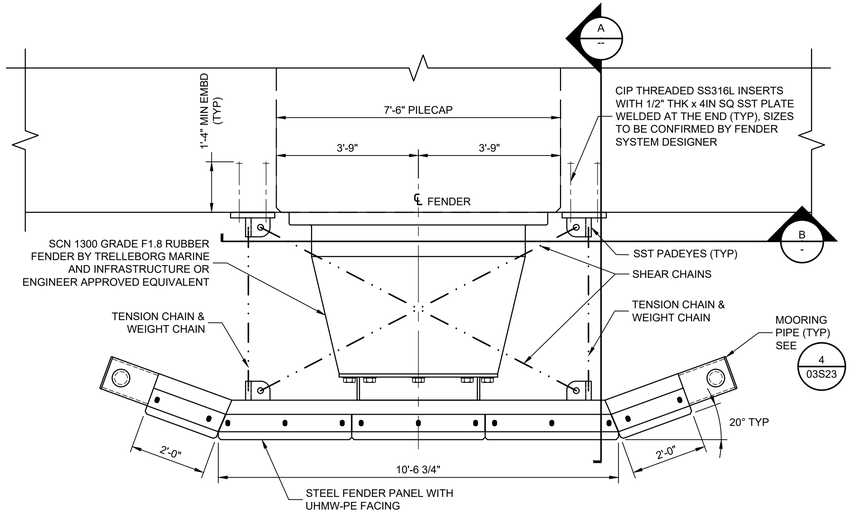

1 / 02S02 ELEVATION
SCALE: 1/2" = 1'-0"



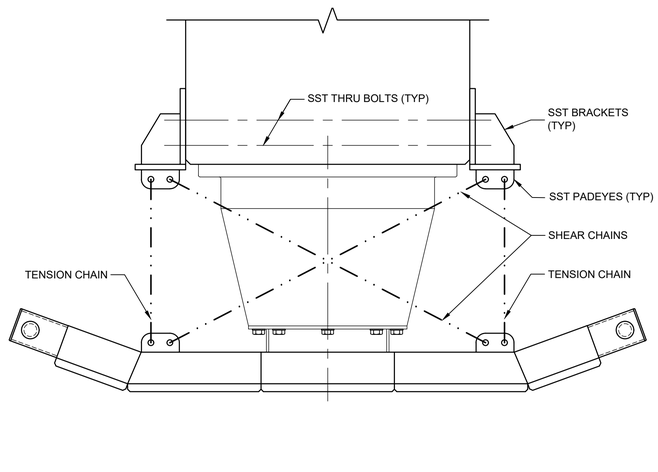

A / -- SECTION A
SCALE: 1/2" = 1'-0"



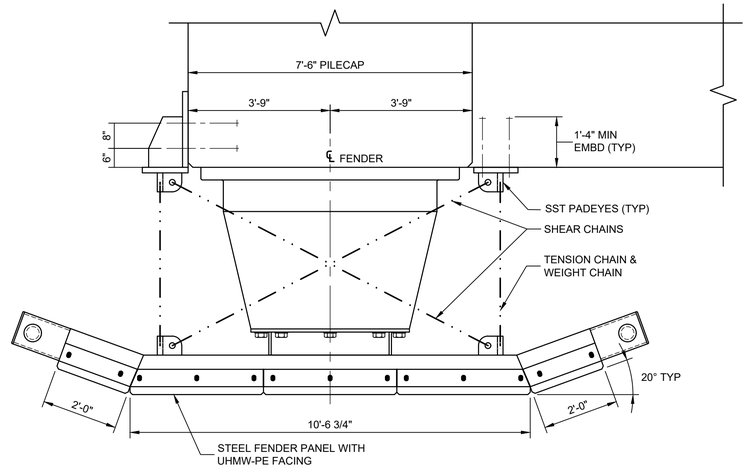

B / -- SECTION B
SCALE: 1/2" = 1'-0"




2 / 03S01 PLAN - FENDER SYSTEM W/TOP CHAINS
SCALE: 1/2" = 1'-0"
ROTATED 180°




3 / 03S01 PLAN - FENDER SYSTEM W/BOT CHAINS
SCALE: 1/2" = 1'-0"




4 / -- PLAN - FENDER SYSTEM @ BENT 1
SCALE: 1/2" = 1'-0"
MIRRORED @ BENT 23

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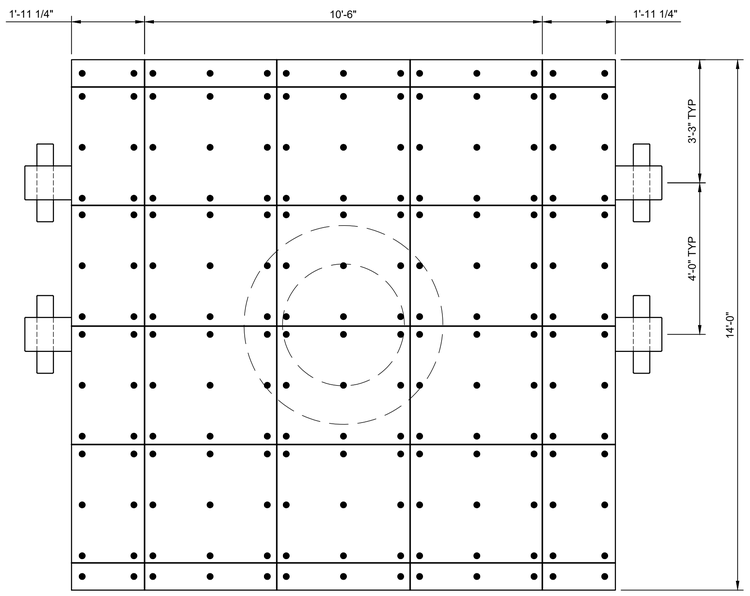
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

**SHIP FENDER SYSTEM**

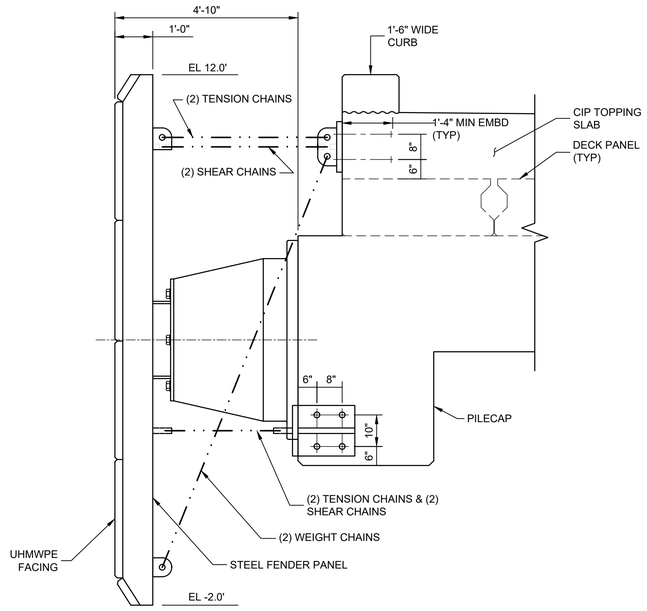
0 1" 2"

FILENAME 03S22.dwg
SCALE 1/2" = 1'-0"

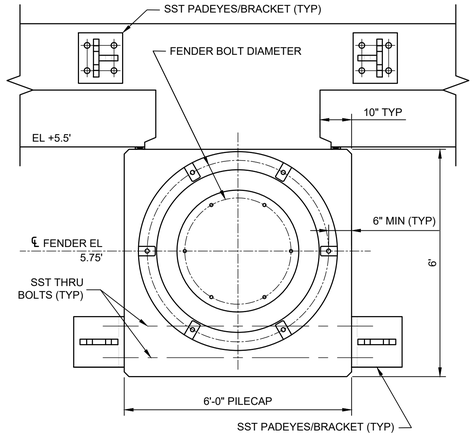
SHEET 03S22



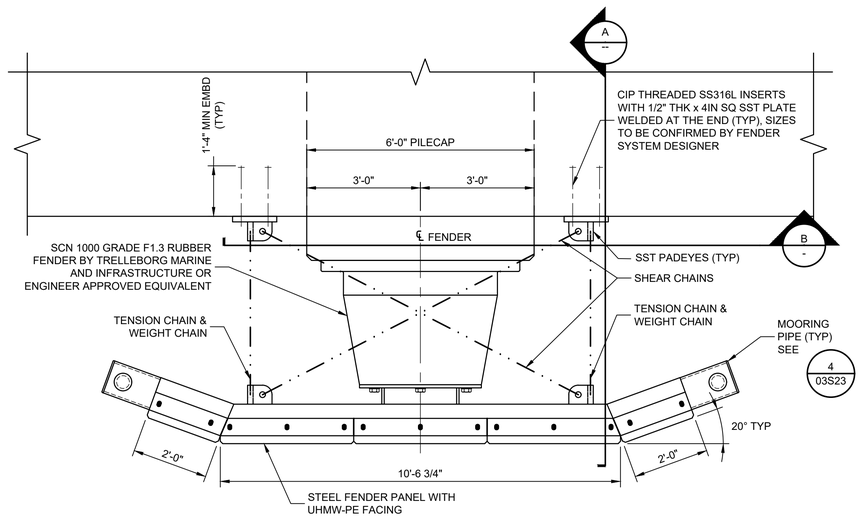

1 / 03S02 ELEVATION
SCALE: 1/2" = 1'-0"



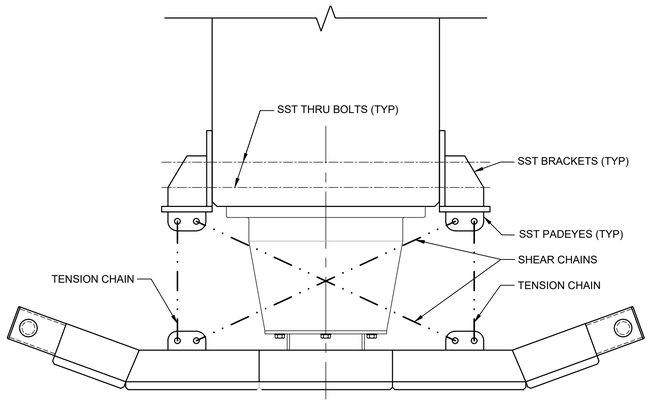

A / -- SECTION A
SCALE: 1/2" = 1'-0"



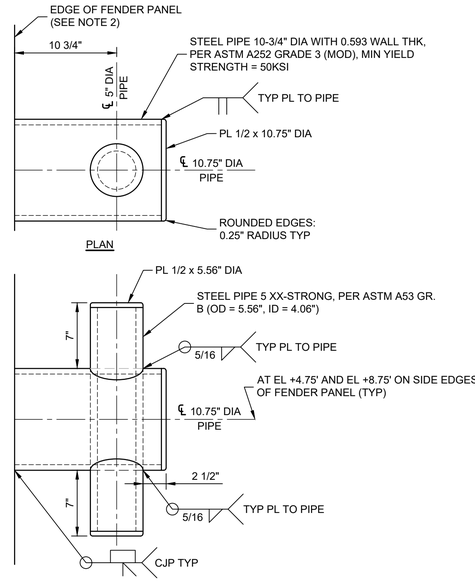

B / -- SECTION B
SCALE: 1/2" = 1'-0"




2 / 03S01 PLAN - FENDER SYSTEM W/TOP CHAINS
SCALE: 1/2" = 1'-0"
ROTATED 180°




3 / 03S01 PLAN - FENDER SYSTEM W/BOT CHAINS
SCALE: 1/2" = 1'-0"




NOTES:
1. THE CONNECTION OF 10-3/4" DIA PIPE TO FENDER PANEL, FENDER PANEL, AND THE FENDER PANEL CHAINS SHALL BE DESIGNED TO RESIST 60 KIPS MOORING LOAD APPLIED IN ANY DIRECTION ALONG THE EXPOSED HEIGHT OF 5" DIA XX-S PIPE.
2. END PLATE OF FENDER PANEL TO WHICH MOORING PIPE IS ATTACHED SHALL BE MINIMUM 3/4" THK AND SHALL BE STIFFENED AT MOORING PIPE LOCATIONS TO ENSURE MOORING LOAD IS TRANSFERRED SAFELY TO THE CHAINS.

4 / 03S22 FENDER PANEL - BARGE MOORING PIPE
SCALE: 1-1/2" = 1'-0"

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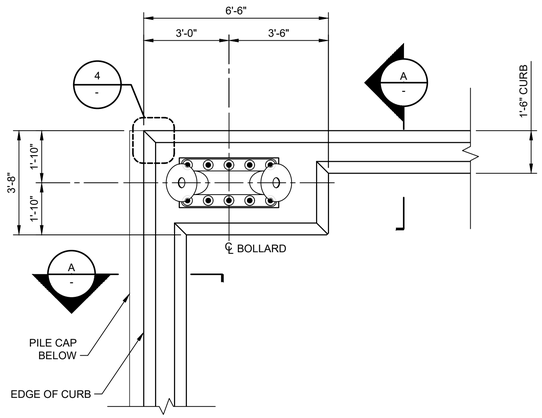
DOCK PACKAGE

**BARGE FENDER SYSTEM**

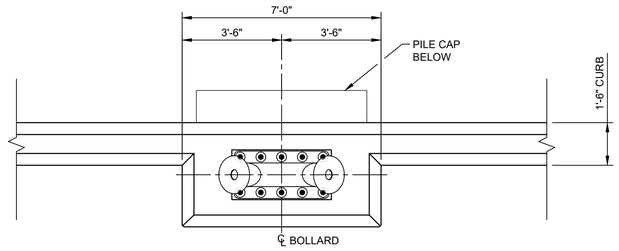
0 1" 2"

FILENAME 03S23.dwg
SCALE AS NOTED

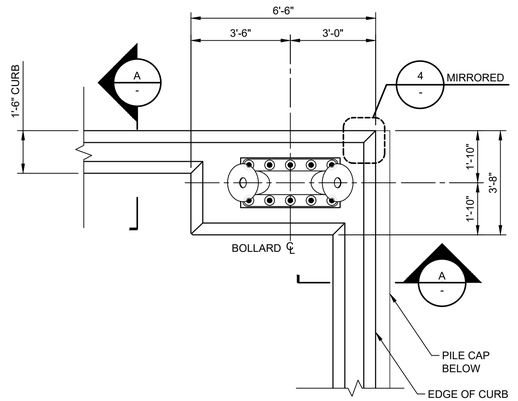
SHEET 03S23



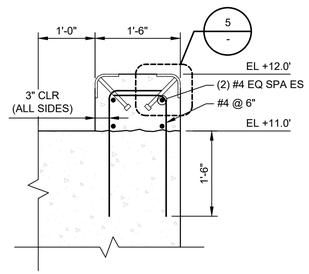

1 / 03S01 PLAN - CURB
SCALE: 3/8" = 1'-0"



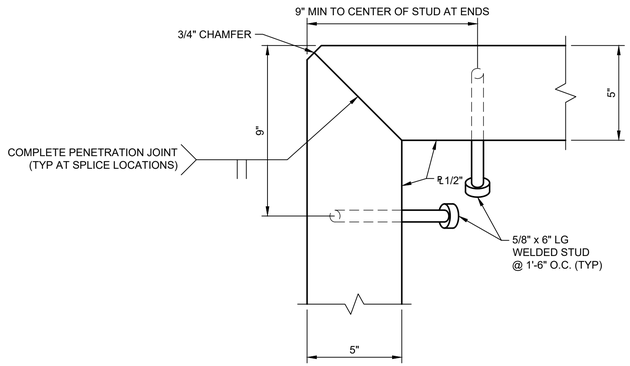

2 / 03S01 PLAN - CURB
SCALE: 3/8" = 1'-0"



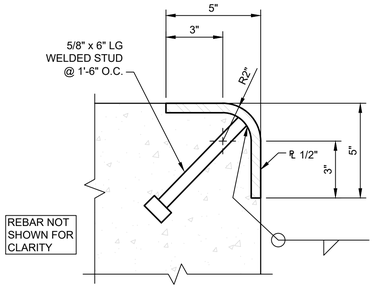

3 / 03S02 PLAN - CURB
SCALE: 3/8" = 1'-0"



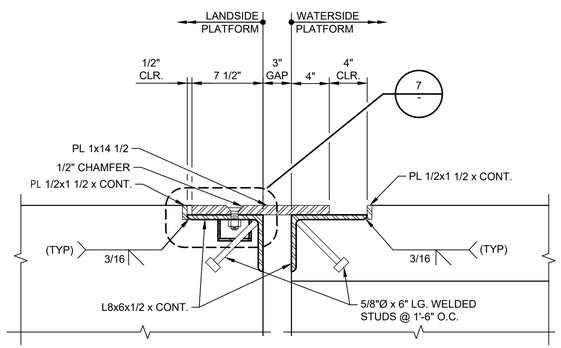

A / - SECTION - CURB
SCALE: 3/4" = 1'-0"



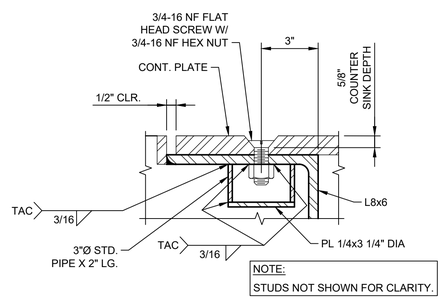

4 / - TYPICAL DETAIL - EDGE ARMOR
SCALE: 3" = 1'-0"




5 / - TYPICAL SECTION DETAIL - EDGE ARMOR
SCALE: 3" = 1'-0"




6 / 02S03 SECTION - TYPICAL EXPANSION JOINT
1-1/2" = 1'-0"




7 / - DETAIL - TYPICAL EXPANSION JOINT
3" = 1'-0"

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PORT OF BROWNSVILLE
the port that *works*

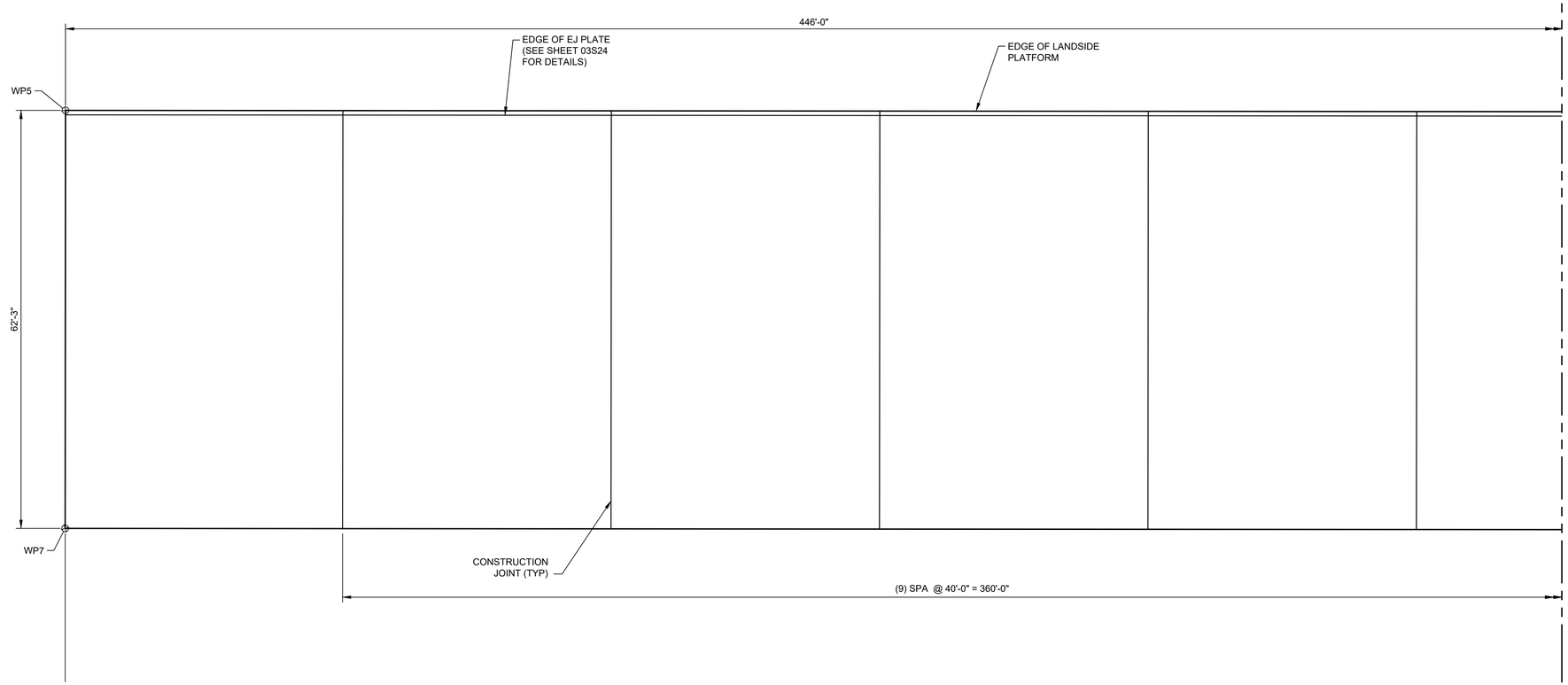
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

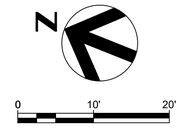
# MISCELLANEOUS DETAILS

0 1" 2"

| | |
|---|---|
| FILENAME | 03S24.dwg |
| SCALE | AS NOTED |

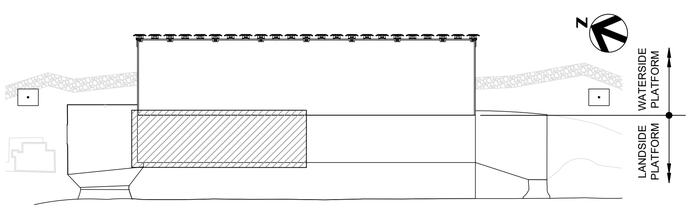
SHEET 03S24




1 / 02S01 PERIMETER PLAN 1 OF 2

SCALE: 1" = 10' - 0"




DOCK KEY MAP

| WORKING POINT TABLE | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP5 | 16509096.70 | 1344834.82 |
| WP7 | 16509073.63 | 1344777.01 |

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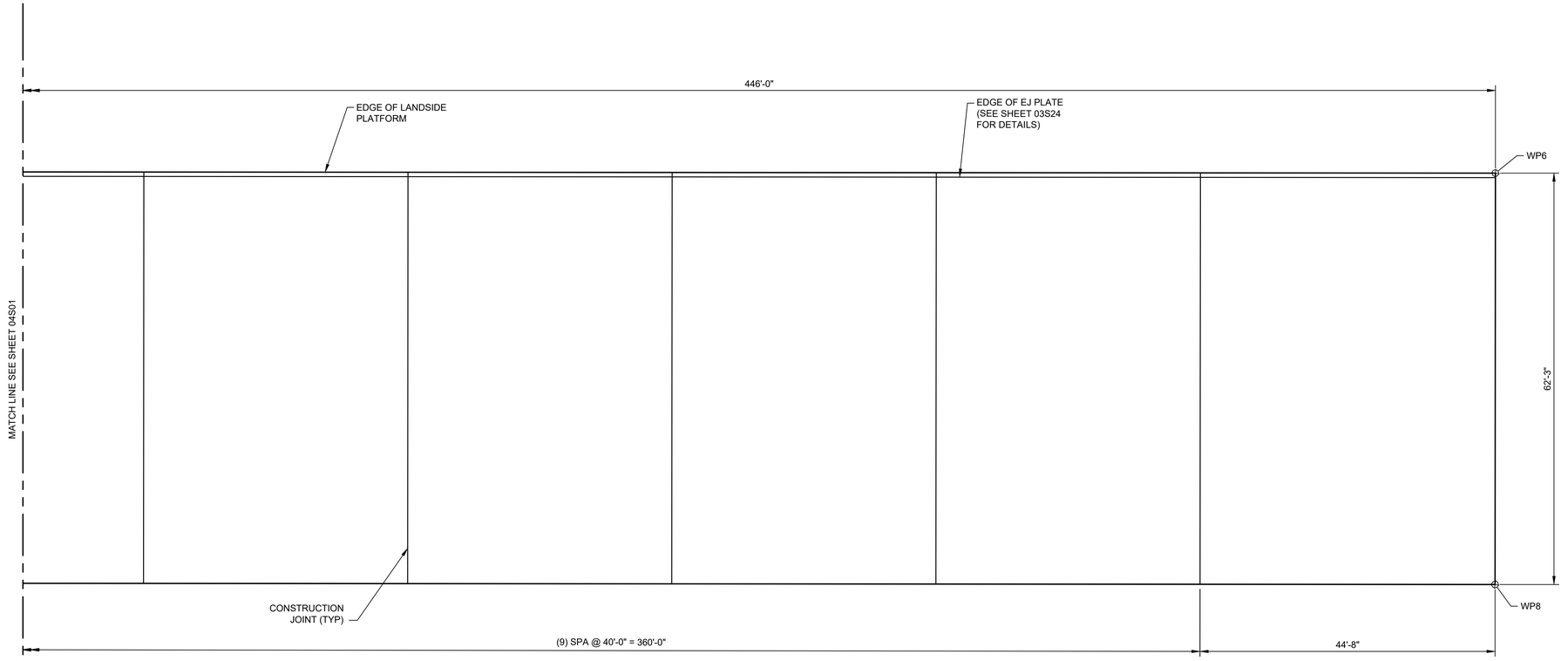
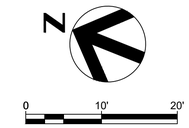
**PERIMETER PLAN 1 OF 2**

0 1" 2"

FILENAME 04S01.dwg
SCALE 1" = 10' - 0"

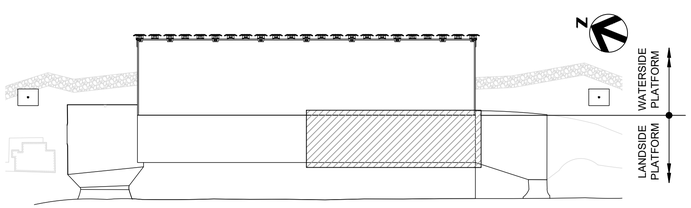
SHEET 04S01




1 / 02S01 PERIMETER PLAN 2 OF 2

SCALE: 1" = 10' - 0"




DOCK KEY MAP

| WORKING POINT TABLE | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP6 | 16508682.48 | 1345000.16 |
| WP8 | 16508659.40 | 1344942.34 |

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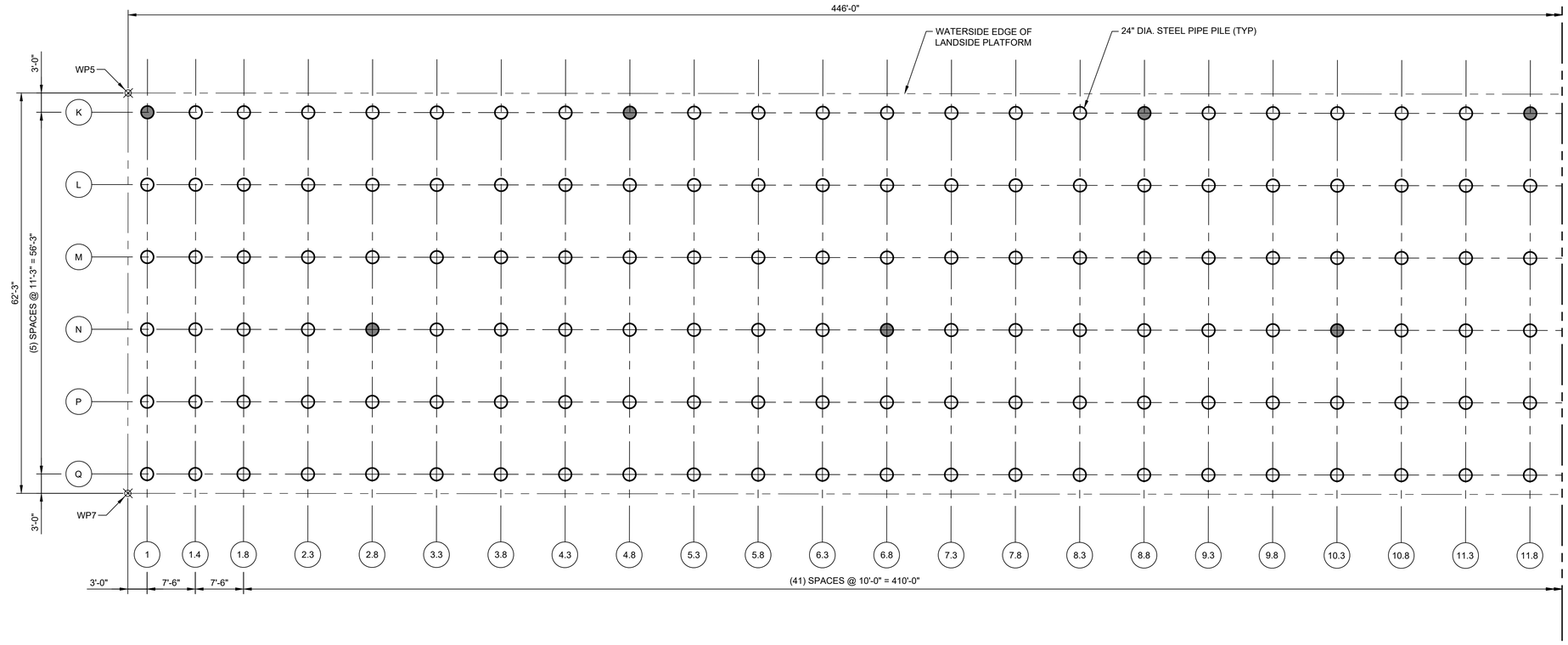
**PERIMETER PLAN 2 OF 2**

0 1" 2"

FILENAME 04S02.dwg
SCALE 1" = 10' - 0"

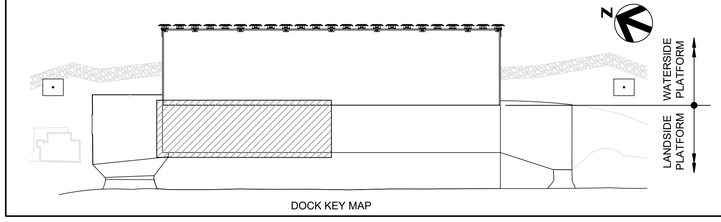
SHEET 04S02




1 / 02S01 PILE PLAN 1 OF 2
SCALE: 1" = 10' - 0"

| LEGEND | |
|---|---|
| ● | TEST PILE LOCATION |

| WORKING POINT TABLE | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP5 | 16509096.70 | 1344834.82 |
| WP7 | 16509073.63 | 1344777.01 |




DOCK KEY MAP

HDR Engineering, INC
TBPELS Firm
Registration No. F-754

| ISSUE | DATE | DESCRIPTION |
|---|---|---|
| 0 | 09/22/2023 | "ISSUED FOR BIDS" |

| | |
|---|---|
| PROJECT MANAGER | KYLE M. WUNDT |
| DESIGNED BY | L. CRESSMAN |
| DRAWN BY | A. VILLARREAL |
| CHECKED BY | N. GALANI |
| PROJECT NUMBER | 10320226 |

STATE OF TEXAS
NAVIN K. GALANI
103513
LICENSED
PROFESSIONAL ENGINEER
09.22.2023

PORT OF BROWNSVILLE
the port that *works*

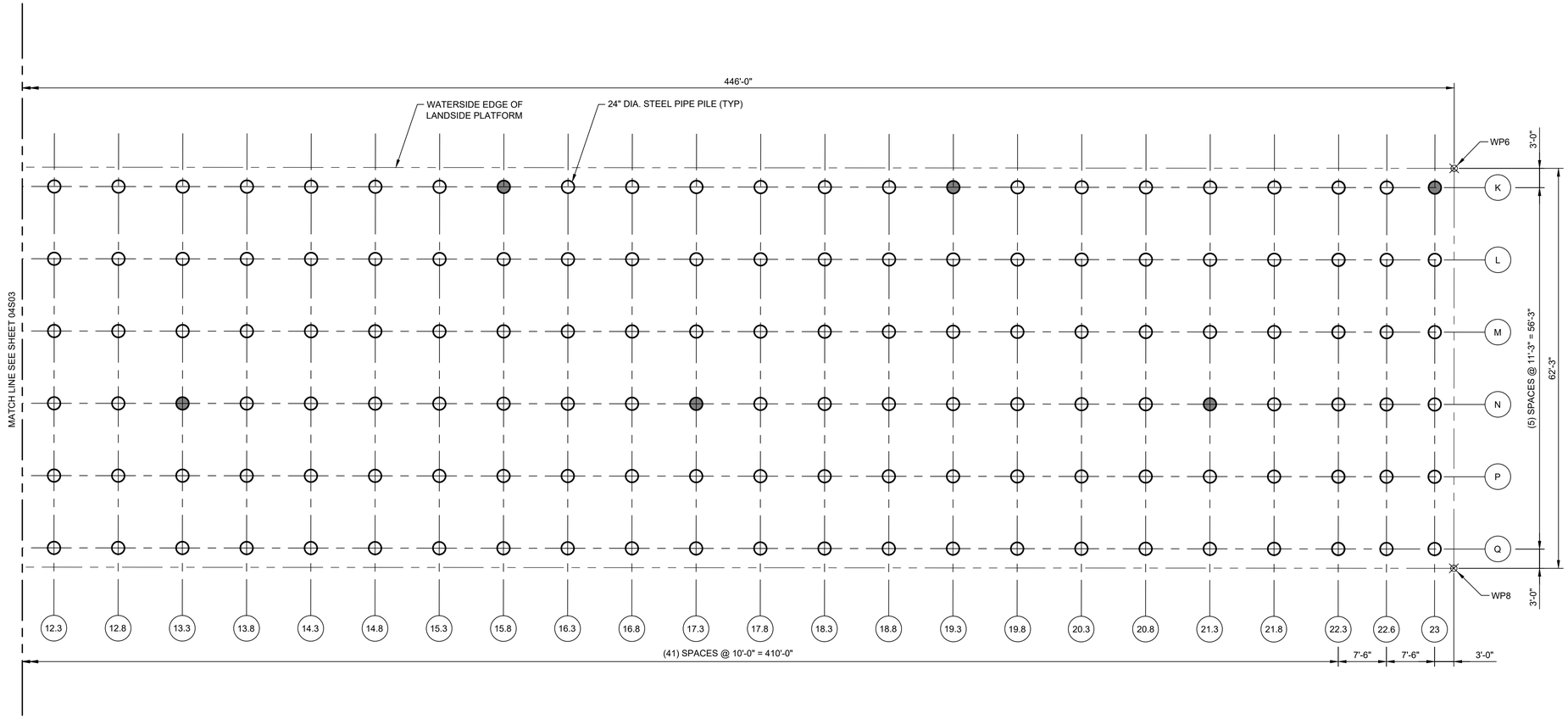
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

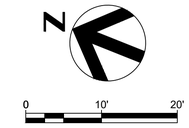
**PILE PLAN 1 OF 2**

0 1" 2"

FILENAME 04S03.dwg
SCALE 1" = 10' - 0"

SHEET 04S03

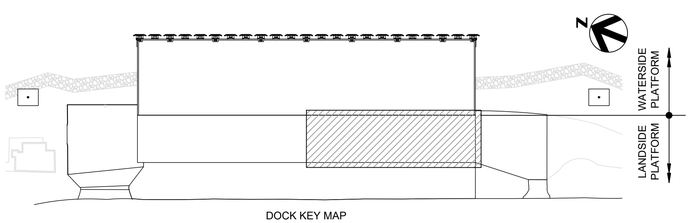



1 / 02S01 PILE PLAN 2 OF 2
SCALE: 1" = 10' - 0"

| LEGEND | |
|---|---|
| ● | TEST PILE LOCATION |

| WORKING POINT TABLE | | |
|---|---|---|
| POINT NO. | NORTHING | EASTING |
| WP5 | 16509096.70 | 1344834.82 |
| WP7 | 16509073.63 | 1344777.01 |




DOCK KEY MAP

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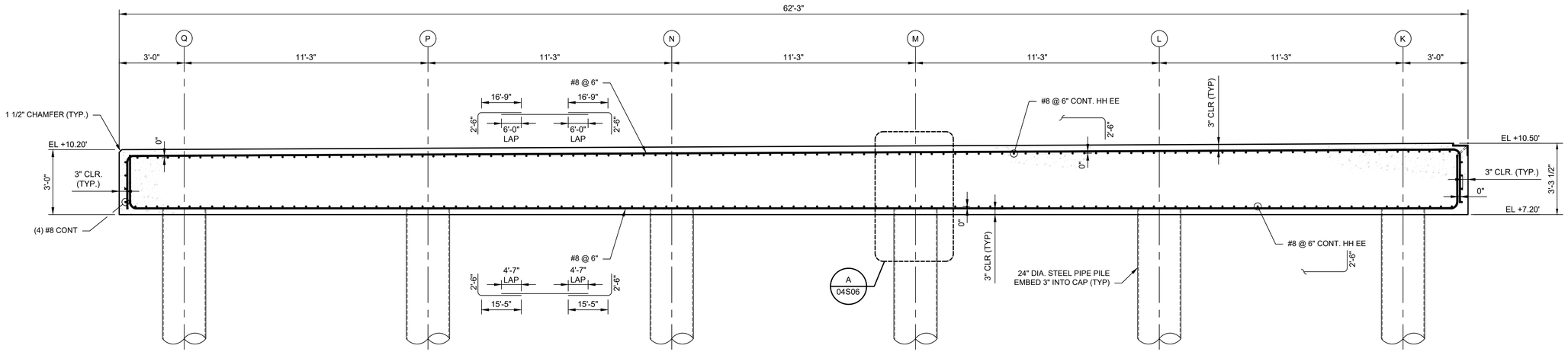
**CARGO DOCK 3 PHASE 1**
**DOCK PACKAGE**

**PILE PLAN 2 OF 2**

0 1" 2"

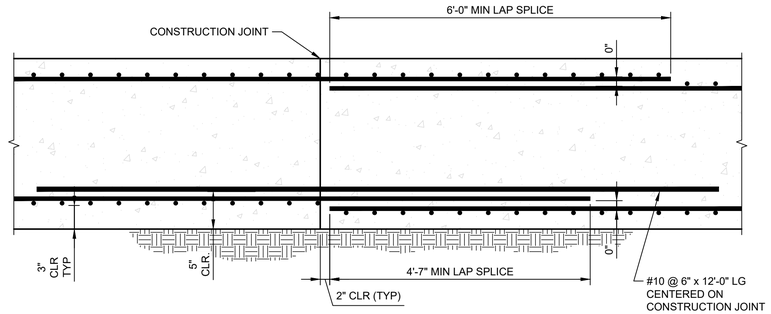
**FILENAME** 04S04.dwg
**SCALE** 1" = 10' - 0"

**SHEET** 04S04




1 / 02S03 LANDSIDE PLATFORM REINFORCING DETAILS

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




A / -- TYPICAL SECTION - CONSTRUCTION JOINT

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

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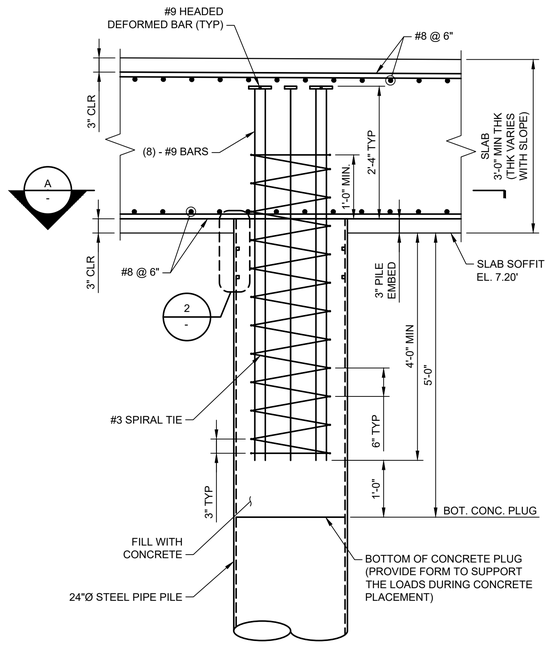
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

SECTIONS & DETAILS

0 1" 2"

FILENAME 04S05.dwg
SCALE AS NOTED

SHEET 04S05

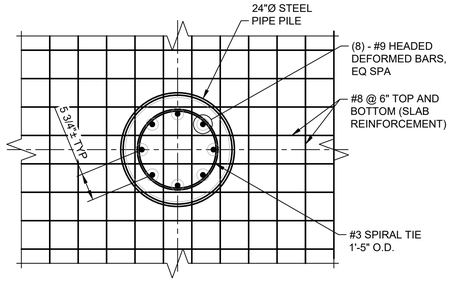



1 / 04S06 DETAIL -
PILE TO PILE CAP CONNECTION

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

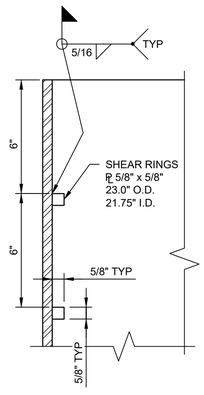
| LANDSIDE PLATFORM - PILE SCHEDULE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PILE LOCATION | QTY. | TYPE/SIZE | WALL THK. | TIP EL | CUT OFF EL | MIN INSTALLATION LENGTH | REQUIRED COATING LIMITS (ELEV.) | | LENGTH OF COATING | ULTIMATE PILE CAPACITY (KIPS) |
| | | | | | | | TOP EL | BOT EL | | |
| ROW K | 39 | 24" PIPE | 0.5" | -72.55' | 7.45' | 80' | 7.45' | -24.55' | 32' | 695 |
| ROW K - TEST PILES | 7 | 24" PIPE | 0.5" | -82.55' | 7.45' | 90' | 7.45' | -34.55' | 42' | 695 (@EI -73') 864 (@EI -82') |
| ROW L | 46 | 24" PIPE | 0.5" | -72.55' | 7.45' | 80' | 7.45' | -24.55' | 32' | 695 |
| ROW M | 46 | 24" PIPE | 0.5" | -72.55' | 7.45' | 80' | 7.45' | -24.55' | 32' | 695 |
| ROW N | 40 | 24" PIPE | 0.5" | -72.55' | 7.45' | 80' | 7.45' | -24.55' | 32' | 695 |
| ROW N - TEST PILES | 6 | 24" PIPE | 0.5" | -82.55' | 7.45' | 90' | 7.45' | -34.55' | 42' | 695 (@EI -73') 864 (@EI -82') |
| ROW P | 46 | 24" PIPE | 0.5" | -72.55' | 7.45' | 80' | 7.45' | -24.55' | 32' | 695 |
| ROW Q | 46 | 24" PIPE | 0.5" | -72.55' | 7.45' | 80' | 7.45' | -24.55' | 32' | 695 |

NOTES:
1. ULTIMATE PILE CAPACITIES ARE PROVIDED FOR TEST PILES AT END OF INITIAL DRIVING TIP ELEVATION AND AT FINAL TIP ELEVATION.




A / - SECTION -
PILE TO PILE CAP CONNECTION

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




2 / - DETAIL - SHEAR RING

SCALE: 3" = 1'-0"

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09.22.2023

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the port that *works*

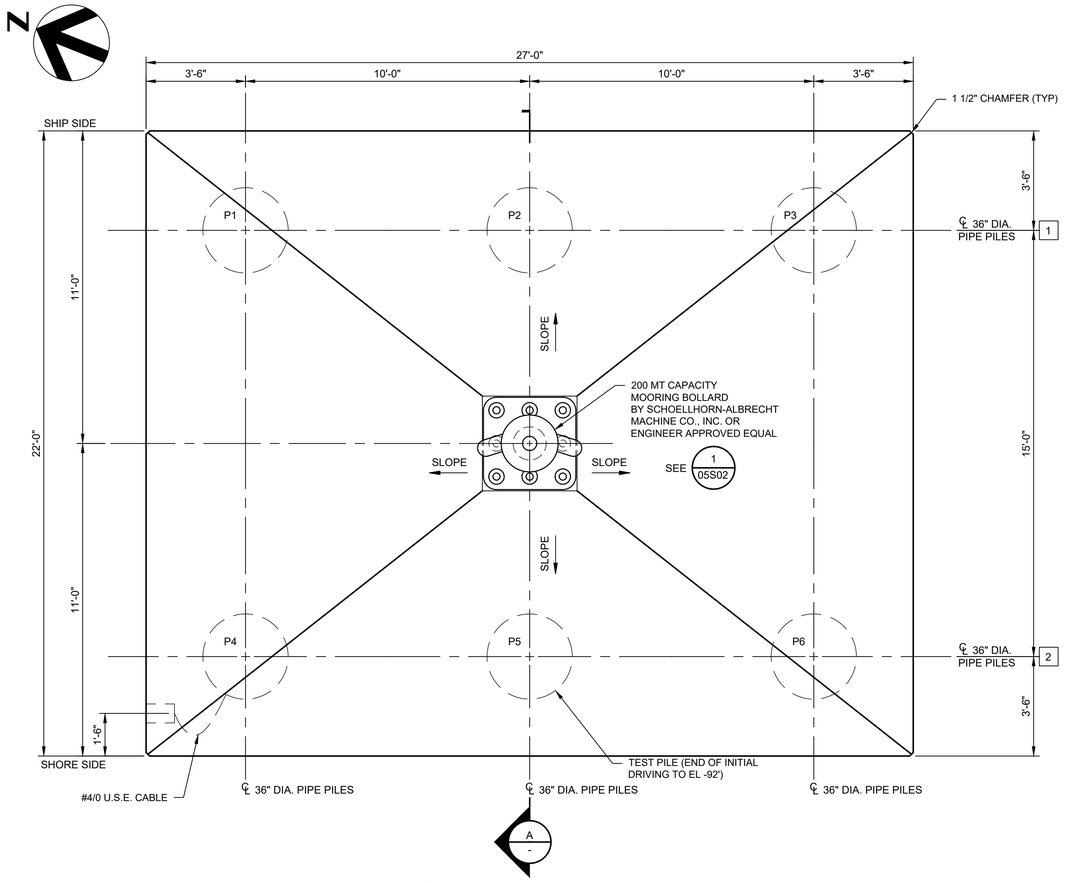
CARGO DOCK 3 PHASE 1
DOCK PACKAGE

PILE DETAILS

0 1" 2"

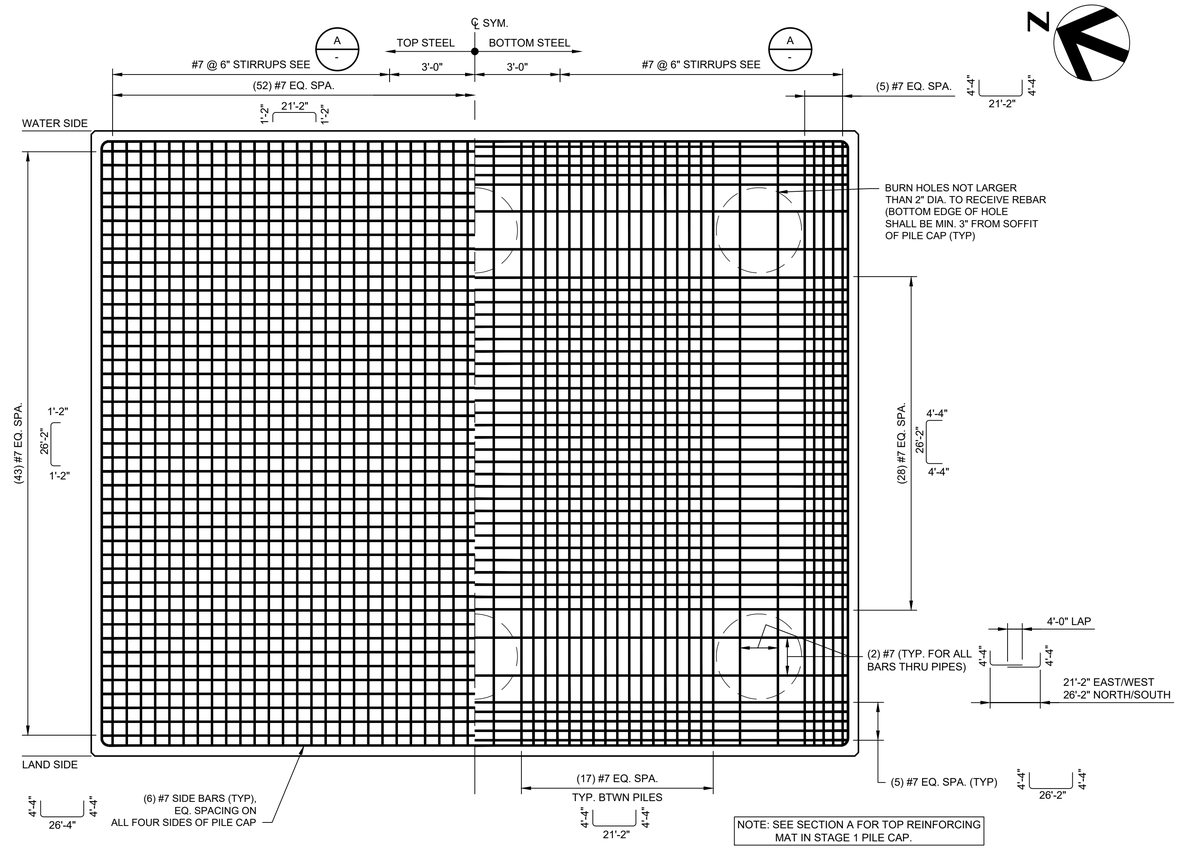
FILENAME 04S06.dwg
SCALE AS NOTED

SHEET 04S06




1 / 00C02 PLAN - MS1/MS2

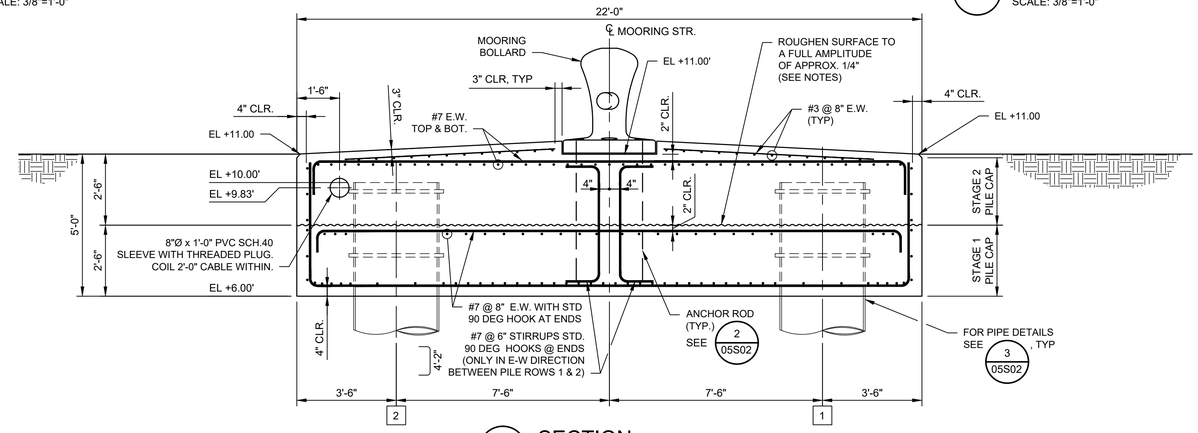
SCALE: 3/8"=1'-0"




NOTE: SEE SECTION A FOR TOP REINFORCING MAT IN STAGE 1 PILE CAP.

2 / -- PLAN - @ EL. +6.50' & EL. +10.83'

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




A / -- SECTION

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

NOTES:

1. THOROUGHLY CLEAN THE ROUGHENED SURFACE OF ALL LOOSE MATERIAL, LAITANCE, DIRT, AND FOREIGN MATTER, AND SATURATE IT WITH WATER. THE PREPARED SURFACE SHOULD BE SATURATED, SURFACE DRY WITH NO FREE OF STANDING WATER AT THE TIME CONCRETE IS PLACED AGAINST IT.

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PORT OF BROWNSVILLE
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**CARGO DOCK 3 PHASE 1 DOCK PACKAGE**

**PLAN & DETAILS**

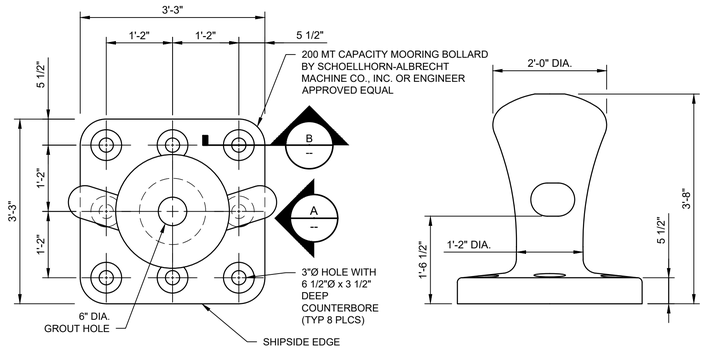
0 1" 2"

| | |
|---|---|
| FILENAME | 05S01.dwg |
| SCALE | 3/8"=1'-0" |

SHEET **05S01**

| MOORING STRUCTURES - PILE SCHEDULE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PILE LOCATION | QTY. | TYPE/SIZE | WALL THK. | TIP EL | CUT OFF EL | MIN INSTALLATION LENGTH | REQUIRED COATING LIMITS (ELEV.) | | LENGTH OF COATING | ULTIMATE PILE CAPACITY (KIPS) |
| | | | | | | | | | | |
| MS1 and MS2 (PILES P1, P2, P3, P4, P6) | 10 | 36" PIPE | 0.75" | -105' | 10' | 115' | 8' | -37' | 45' | 1077 |
| MS1 and MS2 (P5 - TEST PILE) | 2 | 36" PIPE | 0.75" | -105' | 10' | 115' | 8' | -37' | 45' | 842 (@EI -92') 1077 (@EI -105') |

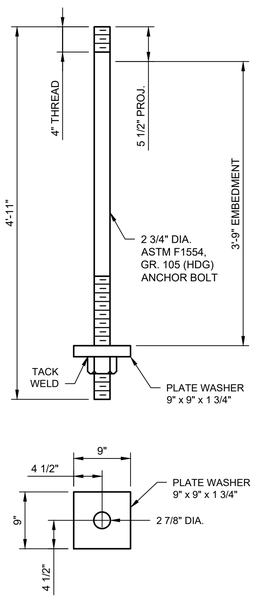
NOTES:
1. ULTIMATE PILE CAPACITIES ARE PROVIDED FOR TEST PILES AT END OF INITIAL DRIVING TIP ELEVATION AND AT FINAL TIP ELEVATION.



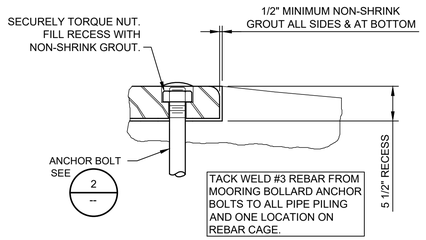

1 / 05S01 MOORING BOLLARD DETAIL
SCALE: 3/4" = 1'-0"



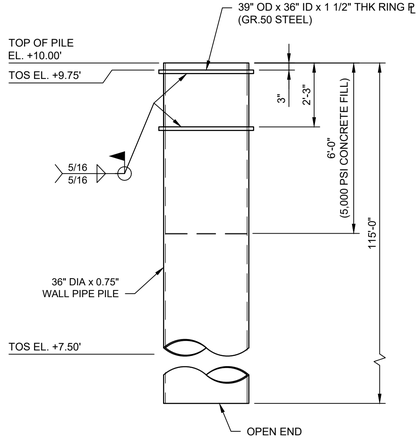

A / -- ELEVATION
SCALE: 3/4" = 1'-0"




2 / -- ANCHOR BOLT DETAIL
SCALE: 1" = 1'-0"




B / -- SECTION
SCALE: 1" = 1'-0"




3 / 05S01 PILE DETAIL
SCALE: 3/8" = 1'-0"

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CARGO DOCK 3 PHASE 1
DOCK PACKAGE

# MISCELLANEOUS DETAILS & PILE SCHEDULE

0 1" 2"

FILENAME 05S02.dwg
SCALE AS NOTED

SHEET 05S02