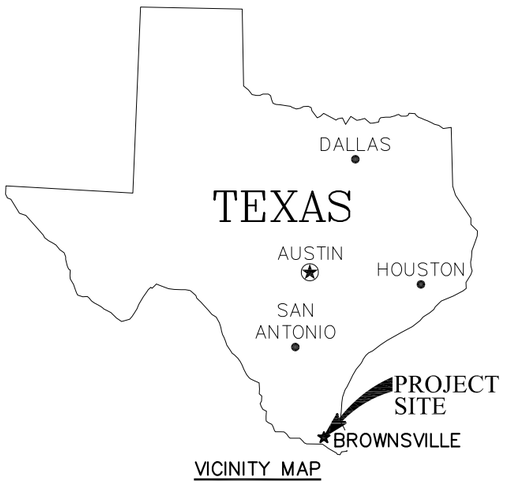
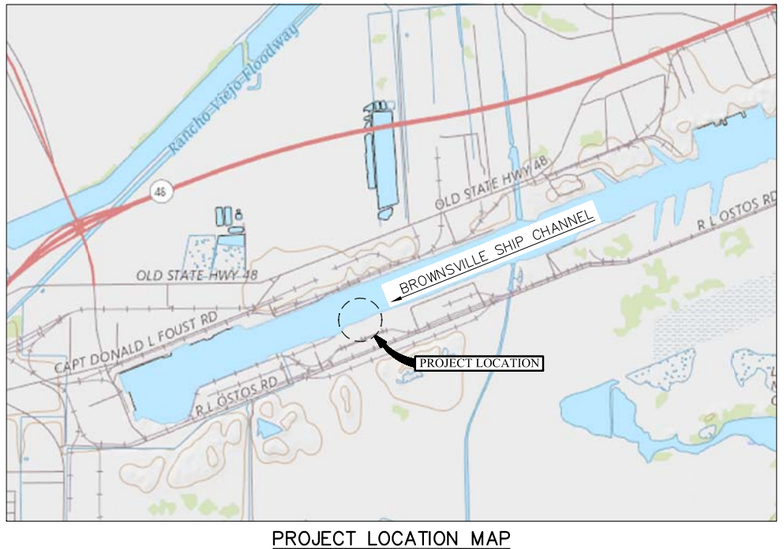
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS
BROWNSVILLE, TEXAS



VICINITY MAP

SITE MAP
SCALE: N.T.S



PROJECT LOCATION MAP

	DRAWING INDEX
DRAWING No.	TITLE
CS-001	COVER SHEET AND DRAWING INDEX
GN-001	GENERAL NOTES SHEET 1 OF 2
GN-002	GENERAL NOTES SHEET 2 OF 2
GN-003	GENERAL NOTES – BORING LOGS
GN-004	GENERAL NOTES – BORING LOGS
SP-001	SITE PLAN
SP-002	CHANNEL CROSS SECTION
D-001	CONCRETE DEMOLITION PLAN
D-002	CONCRETE DEMOLITION DETAIL NO. 1
D-003	CONCRETE DEMOLITION DETAIL NO. 2
D-004	LOWER BRACING FRAMING DEMOLITION PLAN
D-005	LOWER BRACING DEMOLITION SECTIONS "A" & "B"
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D-007	LOWER BRACING DEMOLITION SECTIONS "E" & "F"
PP-001	WEST SIDE STEEL PIPE PILE LOCATION PLAN
PP-002	EAST SIDE STEEL PIPE PILE LOCATION PLAN
PP-003	STEEL PIPE PILE ELEVATION AND DETAILS
F-001	MODIFICATION CONCRETE PLAN AND SECTION
F-002	MISCELLANEOUS SECTION AND DETAILS
F-003	LANDSIDE MOORING FOUNDATION
S-001	MONOPILE/FENDER AND OVERBOARD LADDER LOCATION PLAN
S-002	MONOPILE ELEVATION, SECTIONS AND DETAILS
S-003	OVERBOARD LADDER SECTIONS AND DETAILS

May 07, 2018
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DAVID R. KOSLOSKI, P.E.
TX. LICENSE NO. 111211

NO.	BY	REVISION	CHK'D	APP'D	DATE
B	CMZ	ISSUED FOR BID	MDP	DRK	05/07/18
A	CRD	FOR CLIENT REVIEW	MDP	DRK	01/31/18

CLIENT			
PROJECT			
CHECK			
DRAFT	CRD	01/22/18	

PORT OF BROWNSVILLE
the port that works

WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS
BULK CARGO DOCK
COVER SHEET AND DRAWING INDEX

JOB NO. 6966.003 | DWG. NO. 6966-CS-001 | A

24x36

GENERAL

1. DESIGN AND CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE FEDERAL/STATE/LOCAL CODES, THE PROJECT SPECIFICATIONS AND THESE GENERAL NOTES. PROJECT SPECIFICATIONS SHALL TAKE PRECEDENCE OVER GENERAL NOTES. STATE/LOCAL CODES SHALL TAKE PRECEDENCE OVER PROJECT SPECIFICATIONS AND GENERAL NOTES.

2. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

3. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THE GENERAL STRUCTURAL NOTES, THE SPECIFICATIONS OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN. COORDINATE WITH ALL DRAWINGS FOR INFORMATION RELATED TO STRUCTURAL WORK.

4. ALL STRUCTURES ARE DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER ERECTION IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE DOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THE COMPLETION OF THE PROJECT.

5. ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ON DESIGN DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION OF MATERIALS. VERIFICATION SHALL BE BY SUBMITTAL OF DWGS TO ENGINEER WITH MEASURED DIMENSIONS & ELEVATIONS CONFIRMING OR DISPUTING INFO. SHOWN ON THE DESIGN DWGS.

6. ALL ITEMS ON THESE DRAWINGS ARE TO BE FABRICATED USING ONLY THE DIMENSIONAL INFORMATION. ANY GRAPHICAL REPRESENTATION USED FOR FABRICATION PURPOSES SHOULD BE VERIFIED. THEIR ACCURACY FOR THAT USAGE IS THE RESPONSIBILITY OF THE FABRICATOR.

7. DEMOLISHED EQUIPMENT AND MATERIAL TO BE DISPOSED OF BY CONTRACTOR.

8. GOVERNING CODE(S):
   2012 INTERNATIONAL BUILDING CODE
   ASCE 7-10
   AISC 360-10
   ACI 318-11

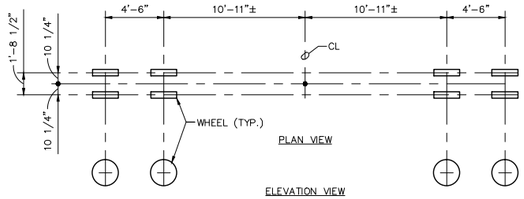
9. DESIGN LOADS

LIVE:	
DESIGN AREA LOAD	50 PSF

WIND:	
BASIC WIND SPEED, V	STORM ~ 140 MPH
	OPERATING ~ 60 MPH
EXPOSURE CATEGORY	D
RISK CATEGORY	I

BERTHING:	
DESIGN VESSEL	75.076T
	650 FT. L.O.A.
	35 FT. DRAFT
	1.06 FT. BREADTH
APPROACH VELOCITY	0.25 FT./S
MAXIMUM BERTHING ANGLE	10 DEGREES

SHIP LOADER:	
DESIGN SHIP LOADER	MASABA 48"x180
	MAGNUM TELESCOPING SHIP LOADER – 50,000 BPH



(4) WHEEL SETS
UNFACTORED WHEEL SET LOAD = 26.4kips
UNFACTORED WHEEL LOAD = 13.2kips

10. COORDINATE/TOPOGRAPHICAL INFORMATION:
    A. HORIZONTAL DATUM NAD27 TEXAS, SOUTH ZONE.
    B. VERTICAL DATUM U.S.C.E. MEAN LOW TIDE (MLT).
    C. MEAN HIGHER HIGH WATER ELEVATION: 1.62' MLT
    D. MEAN HIGH WATER ELEVATION: 1.56' MLT
    E. MEAN SEA LEVEL: 1.06' MLT
    F. MEAN TIDE LEVEL: 0.99' MLT
    G. MEAN LOW WATER ELEVATION: 0.42' MLT
    H. MEAN LOWER LOW WATER ELEVATION: 0.26' MLT
    I. NORTH AMERICAN VERTICAL DATUM 1988: 0' NAVD'88 = 1.21' MLT
    J. NATIONAL GEODETIC VERTICAL DATUM 1929: 0' NGVD'29 = 0.89' MLT
    K. HYDROGRAPHIC SURVEY WAS PERFORMED BY NAISMITH MARINE SERVICES ON DECEMBER 19, 2014.

11. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL LAYOUT AND SURVEYING REQUIRED FOR THE CONSTRUCTION AS SHOWN ON THE DRAWINGS.

12. DRAWING SCALES INDICATED ON THE DRAWINGS REFER TO FULL SIZE DWGS. (24"x36")

SOIL BORINGS

1. SOIL BORING LOGS PROVIDED INCLUDE:
   A. B-1 PERFORMED BY MEG ENGINEERS, REPORT TITLED "PROPOSED GRAIN ELEVATOR AT RL OSTOS ROAD" DATED DECEMBER 30, 2015.
   B. USACE BORINGS 2513ST-7 AND 2513ST-6 OBTAINED FROM TEXAS SEDIMENT WEBSITE.
2. FOR GRAPHICAL LOCATIONS OF BORINGS REFER TO SHEET NO. 6966-GN-003 AND 6966-GN-004.
3. SOIL BORING INFORMATION PROVIDED FOR REFERENCE ONLY. OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THE PROVIDED INFORMATION AND SOIL STUDY CARRIED OUT BY OTHERS. INTERPRETATION OF SOIL INFORMATION PROVIDED IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHOULD BECOME FAMILIAR WITH EXISTING SURFACE, SUBSURFACE AND GROUND WATER CONDITIONS AT THE SITE BEFORE PROCEEDING WITH ANY WORK.
4. FULL SOIL INVESTIGATION IS AVAILABLE UPON REQUEST.

STRUCTURAL STEEL

1. SPECIFICATIONS: DESIGN, FABRICATION, AND ERECTION ARE TO BE GOVERNED BY THE LATEST REVISIONS OF THE FOLLOWING U.N.O.:
   A. AISC CODE OF STANDARD PRACTICE.
   B. AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
   C. PROJECT SPECIFICATIONS.
   D. STRUCTURAL WELDING CODE, AWS D1.1 OF THE AMERICAN WELDING SOCIETY. WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS D1.1.
2. MATERIALS:
   A. WIDE FLANGE AND WT SHAPES SHALL BE ASTM A992, Fy = 50 KSI, U.N.O. ALL OTHER HOT-ROLLED SHAPES SHALL BE ASTM A36, Fy = 36 KSI, U.N.O. STEEL PIPES SHALL BE ASTM A53 GRADE B, TYPE-S (SEAMLESS) GRADE B OR API 5L, GR.B (35KSI), SEAMLESS OR API 5L, GRADE X52 (GR.50). HOLLOW STRUCTURAL SECTIONS (HSS) SHALL BE ASTM A500, GRADE B, U.N.O. PLATES AND BARS SHALL BE ASTM A36, GR. 36 U.N.O.
   B. ALL BOLTS SHALL BE F3125 GR. A325 WITH HARDENED WASHERS AND HEAVY HEX NUTS U.N.O. BOLTS SHALL BE TYPE "N" BEARING WITH THREADS INCLUDED IN THE SHEAR PLANE. ALL BOLT HOLES SHALL BE 1/16" LARGER THAN THE BOLT DIAMETER U.N.O. ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED, PER ASTM A153 U.N.O.
3. ALL STEEL IS NEW UNLESS NOTED OTHERWISE.
4. WELDS:
   A. ALL WELDS SHALL BE E70XX ELECTRODES IN ACCORDANCE WITH AWS D1.1. USE HIGHER STRENGTH ELECTRODE IF REQUIRED BY AWS D1.1.
   B. MINIMUM SIZE OF FILLET WELD SHALL BE 3/16" UNLESS NOTED OTHERWISE.
   C. SEAL WELD AROUND ALL WELDED CONNECTIONS WHERE WELDING IS NOT INDICATED TO PROVIDE WATERTIGHT CONNECTION.
   D. ALL WELDED CONNECTIONS TO BE FULL PENETRATION WELDS AND TO DEVELOP FULL CAPACITY OF MEMBERS UNLESS OTHERWISE NOTED.
   E. ALL WELDS MAY BE SUBJECTED TO NON-DESTRUCTIVE TESTING BY AN INDEPENDENT LABORATORY.
5. COATING/PAINTING:
   A. ALL NEW STEEL PILES SHALL BE COATED WITH 16 MILS OF COAL TAR EPOXY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED.
   B. ALL NEW STEEL SHALL BE COATED WITH 16 MILS OF COAL TAR EPOXY U.N.O.
   C. AFTER ERECTION CONTRACTOR SHALL "TOUCH UP" WITH PAINT, GALVANIZING COMPOUND, OR APPROVED COATING ALL ABRADED AREAS.
   D. ALL COATINGS TO CONFORM TO PROJECT SPECIFICATIONS.
6. MISCELLANEOUS:
   A. OBTAIN APPROVAL OF ENGINEERING PRIOR TO CUTTING OPENING IN ANY MEMBER.
7. NO MATERIAL OR MEMBER SIZE SUBSTITUTIONS MAY BE MADE WITHOUT APPROVAL OF SUPERVISING PROFESSIONAL ENGINEER.

STEEL PILES

1. ALL PILES SHALL BE DRIVEN THEIR ENTIRE LENGTH TO THE DESIGN "TOP OF PILE" ELEVATIONS, AND SHALL ACHIEVE THE DESIGN CAPACITIES AS SHOWN ON THE DRAWINGS.
2. ALL SPLICES SHALL BE MADE WITH COMPLETE FULL PENETRATION WELDS DEVELOPING THE FULL STRENGTH OF THE SECTION.
3. ALL PILES SHALL BE COATED WITH 16 MILS COAL TAR EPOXY FROM THE TOP OF PILE FOR THE LENGTH SHOWN ON THE SCHEDULE.
4. THE LENGTH OF THE PILE SHOWN ON THE SCHEDULE IS THE TRUE LENGTH MEASURED ALONG THE CENTERLINE AXIS OF THE PILE AND IS THE LENGTH REQUIRED AFTER THE PILE IS DRIVEN AND CUT-OFF IS ACCOMPLISHED. CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING PILES OF SUFFICIENT LENGTH TO ACCOUNT FOR THE ADDED LENGTH REQUIRED FOR THE HAMMER IN USE AND FOR CUT-OFF SUCH THAT THE FINAL, DRIVEN, CUT-OFF PILE IS THE LENGTH SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE

1. GENERAL
   A. CONCRETE WORK SHALL CONFORM TO PROJECT SPECIFICATIONS.
2. MATERIALS
   A. STRUCTURAL CONCRETE: NORMAL WEIGHT TYPE II OR TYPE IIA, MAXIMUM WATER/CEMENT RATIO SHALL BE 0.45 U.N.O. MAXIMUM WATER/CEMENT RATIO SHALL BE 0.40 FOR CONCRETE IN MARINE ENVIRONMENTS.
   B. ALL CONCRETE SHALL BE ENTRAINED WITH 4% TO 6% AIR ENTRAINMENT.
   C. CONCRETE STRENGTHS SHALL BE PER FOLLOWING TABLE:

TYPE	DESCRIPTIONS	F'c @ 28 DAYS
1	STRUCTURAL CONCRETE	5000 psi

   D. CALCIUM CHLORIDE SHALL NOT BE PERMITTED NOR SHALL ANY ADMIXTURE CONTAINING CALCIUM CHLORIDE BE PERMITTED, TOTAL CHLORIDE IONS SHALL NOT EXCEED 0.15% EXPRESSED AS A PERCENT WEIGHT OF CEMENT.
   E. ALUMINUM PIPE SHALL NOT BE USED WITH CONCRETE PUMPS.
   F. REINFORCING STEEL:
      1. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60 DEFORMED. REBAR TO BE WELDED SHALL CONFORM TO ASTM A706M, GRADE 60 DEFORMED.
      2. REINFORCING STEEL AND ACCESSORIES SHALL BE PLACED AS SHOWN ON PROJECT DRAWINGS AND REVIEWED SHOP DRAWINGS. PLACEMENT DETAILS NOT SHOWN ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH ACI SP-66 OR ACI 318.
      3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064/A1064M, DELIVERED IN FLAT SHEETS.
      4. SPIRAL REINFORCEMENT SHALL CONFORM TO ASTM A1064/A1064M.
   G. AGGREGATE SHALL CONFORM TO ASTM C33 WITH A MAXIMUM SIZE OF 1 1/2".
   H. BOND BREAKER MATERIAL SHALL BE 30# FELT PAPER, U.N.O.
   I. EMBEDDED STEEL SHALL CONFORM TO ASTM A36, U.N.O.
   J. EMBEDDED STEEL SHALL BE GALVANIZED, WITH 2 OUNCE PER SQ. FEET OF SURFACE IN ACCORDANCE WITH ASTM A123, U.N.O.
   K. ANCHOR BOLT MATERIAL SHALL BE ASTM F1554 GRADE 105 U.N.O.
   L. ANCHOR BOLT MATERIAL SHALL BE HOR DIP GALVANIZED IN ACCORDANCE WITH ASTM A153, U.N.O.
   M. GROUT SHALL BE NON-SHRINK CEMENTIOUS GROUT, SIKA GROUT 212 OR EQUAL.
3. FIELD MANUAL: RETAIN AT LEAST ONE COPY OF THE ACI FIELD REFERENCE MANUAL, MNL-15(16), IN THE FIELD AT ALL TIMES.
4. FORM WORK:
   A. CONSTRUCT FORMS COMPLYING WITH ACI 347, TO SIZES, SHAPES, LINES AND DIMENSIONS SHOWN AND BUILT TO OBTAIN ACCURATE ALIGNMENT, LOCATION, GRADES, LEVEL AND PLUMB WORK IN FINISHED STRUCTURES, INCLUDING ADEQUATE SUPPORTING FALSE WORK FOR OVER WATER FORMS. PROVIDE FOR BULKHEADS, AND OTHER FEATURES. PROVIDE BACKUP AT JOINT TO PREVENT LEAKAGE OF CEMENT. OPENINGS, OFFSETS, SINKAGES, KEYWAYS, RECESSES, MOLDINGS, REGLETS, CHAMFERS, BLOCKS, SCREEDS,
5. OPENINGS AND EMBEDMENTS:
   A. OPENINGS AND EMBEDMENTS SHOWN SHALL BE RECONCILED WITH VENDOR CERTIFIED DRAWING PRIOR TO CONSTRUCTION.
   B. IF ANY OPENING OR EMBEDMENT NOT SHOWN ON THE PLANS IS REQUIRED, SECURE APPROVAL OF THE OWNER'S STRUCTURAL ENGINEER BEFORE PROCEEDING.
   C. SETTING OF ALL WELD PLATES, ANCHOR BOLTS, SLEEVES AND INSERTS SHALL BE VERIFIED WITH ALL AFFECTED PARTIES PRIOR TO PLACING CONCRETE.
6. REINFORCING STEEL:
   A. ALL REINFORCING DETAILS SHALL CONFORM TO ACI 315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.
   B. WHERE BAR LENGTHS ARE GIVEN ON THE DRAWINGS, THE LENGTH OF ANY HOOK, IF REQUIRED, IS NOT INCLUDED, U.N.O.
   C. CONTRACTOR SHALL PROVIDE SPACERS, CHAIRS, BOLSTERS, ETC. NECESSARY TO SUPPORT REINFORCING STEEL. SUPPORT ITEMS WHICH BEAR ON EXPOSED CONCRETE SURFACES SHALL HAVE ENDS WHICH ARE PLASTIC TIPPED OR STAINLESS STEEL. CONCRETE CUBES SHALL BE USED FOR THE SUPPORT OF REINFORCING ON GRADE.
   D. REINFORCING BARS REQUIRED FOR PROPER SUPPORT OF PRINCIPAL REINFORCING SHALL BE DETAILED AND SUPPLIED BY THE CONTRACTOR WHETHER OR NOT THEY ARE INDICATED ON THE DRAWINGS. THE MINIMUM BAR SIZE SHALL BE #4 AND MAXIMUM SPACING SHALL BE 36" O.C. FOR ALL BARS THAT NEED SUPPORT. WELDED WIRE FABRIC SHALL NOT BE USED FOR THE SUPPORT OF PRINCIPAL REINFORCING.
   E. WELDING OF REINFORCING STEEL IS NOT PERMITTED, UNLESS SHOWN ON THE DRAWINGS.
7. SPLICES:
   A. LAP ALL REINFORCING BARS IN ACCORDANCE WITH ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT," UNLESS OTHERWISE NOTED ON THE DRAWINGS.
   B. SPLICES MAY NOT BE ADDED TO REINFORCING WITHOUT REVIEW AND APPROVAL OF THE OWNER'S ENGINEER.
8. JOINTS
   A. WHERE CONSTRUCTION JOINTS ARE REQUIRED BUT ARE NOT INDICATED ON THE DRAWINGS, THEY SHALL BE LOCATED BY THE CONTRACTOR, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE. ALL CONSTRUCTION JOINTS SHALL BE ARTIFICIALLY ROUGHENED AND CLEANED, WITH DOWELS THROUGH THE JOINT.
   B. PROVIDE CONTROL JOINTS IN ALL SLABS ON GRADE AS SHOWN ON THE DRAWINGS.
9. PLACEMENT:
   A. COMPLY WITH ACI 304 "GUIDE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE".
   B. FOR HOT WEATHER PLACEMENT, COMPLY WITH ACI 305 "HOT WEATHER CONCRETING".
   C. FOR COLD WEATHER PLACEMENT, COMPLY WITH ACI 306 "COLD WEATHER CONCRETING".
10. FINISH
   A. SLAB FINISH FOR ALL CONCRETE SHALL BE NON-SLIP BROOM FINISH, U.N.O.
   B. PROVIDE 1" CHAMFER STRIPS AT ALL CORNERS ON PERMANENTLY EXPOSED FOUNDATIONS, PIERS AND CULVERTS AND A 3/4" CHAMFER FOR CORNERS OF BEAMS, COLUMNS AND SLAB ABOVE GRADE, U.N.O.
11. CURING:
   A. CURE CONCRETE IN ACCORDANCE WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE" PROCEDURES.
12. CONSTRUCTION TOLERANCES:
   A. CONSTRUCTION TOLERANCES SHALL BE WITHIN THE TOLERANCES SPECIFIED IN ACI 117 "STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS".
   B. ANCHOR BOLT/ROD TOLERANCES SHALL BE WITHIN THE TOLERANCE SPECIFIED IN ACI 355.1R "ANCHORAGE TO CONCRETE".

TIMBER PILES

1. GENERAL:
   A. TIMBER PILES SHALL CONFORM TO PROJECT SPECIFICATIONS.
2. MATERIALS:
   A. ALL TREATED TIMBER PILES SHALL BE 14" MINIMUM BUTT DIAMETER AND 9" MINIMUM TIP DIAMETER ROUND PILES CONFORMING TO ASTM DESIGNATION D25, SPECIES SHALL BE SOUTHERN PINE.
3. INSTALLATION:
   A. HAMMER SHALL BE AIR TYPE CAPABLE OF CONSISTENTLY DELIVERING ADEQUATE PEAK-FORCE DURATION AND MAGNITUDE TO DEVELOP THE PILE ULTIMATE CAPACITY OR PILE REFUSAL PER GEOTECHNICAL ENGINEER RECOMMENDATIONS.
   B. THE HAMMER USED SHALL BE OPERATED AT THE PRESSURE AND SPEED RECOMMENDED BY MANUFACTURER.
   C. TYPE OF HAMMER TO BE USED SHALL BE FURNISHED TO THE DESIGN CONSULTANT FOR APPROVAL BEFORE WORK BEGINS.
   D. CUTTING OFF – ALL PILES SHALL BE SAWED OFF AT THE ELEVATION SHOWN ON THE PROJECT DRAWINGS WITH FULL EMBEDMENT OR IF REFUSAL IS MET AS DETERMINED IN THE FIELD. BROKEN, SPLIT, OR MISPLACED PILES SHALL BE DRAWN AND REPLACED. NO SPLICING SHALL BE DONE. PILES DRIVEN BELOW THE CUT OFF GRADE SHALL BE WITHDRAWN AND REPLACED BY NEW, AND IF NECESSARY, LONGER PILES. AFTER CUTTING HAS BEEN DONE, THE HEADS OF PILES SHALL BE TREATED WITH MINIMUM THREE COATS OF PRESERVATIVE TREATMENT ACCORDING TO AWPA M4.
   E. MAINTAIN 1 INCH IN 4 FEET FROM VERTICAL, OR A MAXIMUM OF 4 INCHES, MEASURED WHEN PILE IS ABOVE GROUND IN LEADS. A MAXIMUM DEVIATION OF 3 INCHES WILL ALSO BE PERMITTED FROM THE DESIGN PLANS POSITION.

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EDG
ENGINEERING DESIGN GROUP, LLC

CLIENT		
PROJECT		
CHECK		
DRAFT	CRD	01/18/18

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

GENERAL NOTES SHEET 1 OF 2

JOB NO. 6966.003 | DWG. NO. 6966-GN-001 | B

24x36

CIVIL SITE NOTES

1. SITE PREPARATION

A. STRIPPING

1. STRIPPING SHALL CONSIST OF THE EXCAVATION, REMOVAL, AND SATISFACTORY DISPOSAL OF ALL TOPSOIL CONTAINING ORGANIC MATERIAL. THE EXCAVATION DEPTH SHALL BE TO THE BOTTOM OF THE ROOT ZONE BUT SHALL BE NO LESS THAN 6 INCHES.

2. REUSABLE MATERIALS SHALL BE STOCKPILED IN AREAS APPROVED BY THE OWNER. OTHER POOR SOIL AND VEGETATION/RUBBISH MATERIALS TO BE DISPOSED OF AS DIRECTED BY OWNER. VERY POOR EXISTING SOILS SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL. PROVIDE GEOTEXTILE AS NECESSARY FOR A SUITABLE WORKING SURFACE.

B. ROUGH GRADING

1. FOUNDATIONS SHALL BE EXCAVATED TO SUB GRADE ELEVATIONS SHOWN IN THESE DRAWINGS.

2. EXCAVATION

A. STRUCTURAL EXCAVATION

1. STRUCTURAL EXCAVATION SHALL INCLUDE EXCAVATIONS FOR MOORING FOUNDATIONS.

2. EXCAVATION SHALL BE PERFORMED TO THE DIMENSIONS, GRADES, AND ELEVATIONS AS NOTED AND AS REQUIRED FOR FORMWORK.

3. ALL EXCAVATION AND TRENCHING SHALL INCORPORATE APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS REGARDING SAFETY.

4. WHEN SOFT AND COMPRESSIBLE SOIL IS ENCOUNTERED AT FOOTING GRADES, SUCH SOIL SHALL BE REMOVED AND REPLACED WITH COMPACTED SELECT STRUCTURAL FILL.

5. OVER-EXCAVATION AT FOOTINGS MAY BE BACKFILLED WITH LEAN CONCRETE OR CLSM.

B. EARTHEN STRUCTURES

1. INCLUDE ITEMS SUCH AS DITCHES, BERMS, ETC. EXCAVATION FOR SUCH WORK SHALL BE MADE TO THE LINES, GRADES, AND CROSS SECTIONS AS SHOWN IN THESE DRAWINGS.

2. SIDE SLOPES AND BOTTOMS OF EXCAVATIONS SHALL BE CUT TRUE AND STRAIGHT AND SHALL BE GRADED TO THE PROPER CROSS SECTION. UNSTABLE SOIL SHALL BE REMOVED.

3. OVER-EXCAVATION SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED.

C. TRENCHING

1. WALLS OF TRENCHES FOR UNDERGROUND PIPE SHALL BE ESSENTIALLY VERTICAL. THE BOTTOMS OF TRENCHES SHALL BE SMOOTH AND FREE FROM AGGREGATE LARGER THAN 1/2 IN. (13 MM).

2. BRACING, SHORING, AND SHEATHING SHALL BE PROVIDED AS NECESSARY.

3. IF EXCAVATION DEPTHS GREATER THAN 4 FEET ARE REQUIRED, THE EXCAVATIONS MUST PROTECTED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL SAFETY REGULATIONS AND CODES, AND ESPECIALLY WITH THE EXCAVATION STANDARDS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

4. IF WORKMEN ARE TO BE IN TRENCHES, TRENCHES NEED TO BE SLOPED AT 1.5H:1V OR TRENCH BOXES OR SHORING NEED TO BE UTILIZED DURING CONSTRUCTION.

5. IF THE EXCAVATION IS BELOW THE REQUIRED LEVEL, THE EXCESS EXCAVATED AREA SHALL BE REFILLED WITH COMPACTED STRUCTURAL FILL OR CLSM.

6. THE ACCUMULATION OF WATER IN EXCAVATED AREAS SHALL BE PREVENTED BY THE USE OF PUMPS OR OTHER APPROVED MEANS.

3. DRAINAGE

A. SITE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES TO PREVENT PONDING OF SURFACE WATER BY PROVIDING TEMPORARY DITCHES, SWALES, CULVERTS, AND/OR PUMPING SYSTEMS.

4. FILL AND BACKFILL

A. AREAS TO RECEIVE FILL OR BACKFILL SHALL BE PREPARED IN ACCORDANCE WITH THE FOLLOWING:

1. EXISTING SUB-GRADE SHOULD BE PROOF-ROLLED PRIOR TO PLACEMENT OF NEW MATERIAL. PROOF-ROLLING SHOULD BE PERFORMED USING A LOADED TANDEM-AXLE DUMP TRUCK WEIGHING AT LEAST 20 TONS.

2. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 9 INCHES IN LOOSE DEPTH.

3. ALL ON-SITE SOILS AND IMPORTED FILL SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D698) IN THE RANGE OF ±2 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT.

4. FILL AND BACKFILL ADJACENT TO STRUCTURES SUCH AS RETAINING WALLS SHALL BE COMPACTED ONLY WITH HAND-OPERATED EQUIPMENT TO A DISTANCE OF 5 FEET OR GREATER BEYOND THE SIDES OF THE STRUCTURES. PLACE BACKFILL MATERIALS SYMMETRICALLY AND IN UNIFORM LAYERS TO PREVENT ECCENTRIC LOADING ON THE STRUCTURE. DO NOT BACKFILL AROUND OR OVER CAST-IN-PLACE CONCRETE UNTIL THE CONCRETE HAS ATTAINED 75% OF ITS SPECIFIED STRENGTH. BACKFILL MAY BE FLOWABLE FILL, OR AS APPROVED BY THE OWNER.

5. COMPACTED SURFACES OF FILL AND BACKFILL SHALL BE FINISH-GRADED TO THE CROSS SECTIONS, LINES, GRADES, AND ELEVATIONS INDICATED.

5. FILL AND BACKFILL MATERIALS

A. GENERAL REQUIREMENTS

1. FILL AND BACKFILL SHALL CONTAIN NO ROCKS OR STONES LARGER THAN 4 INCHES AND SHALL BE FREE OF LUMPS, ORGANIC MATTER, TRASH, CHUNKS OF HIGHLY PLASTIC CLAY, CONTAMINATION, OR OTHER UNSATISFACTORY MATERIAL. IMPORTED FILL SHALL BE CLEAN SOILS WITH A LIQUID LIMIT (LL) OF LESS THAN 40 AND A PLASTICITY INDEX (PI) OF LESS THAN 20.

2. BORROW MATERIAL AND SUPPLY SOURCES SHALL BE REVIEWED AND ACCEPTED BY THE OWNER.

B. STRUCTURAL FILL MATERIAL

1. COMMON FILL SHALL CONSIST OF SUITABLE EXISTING SURFACE SOILS, SAND, GRAVEL, CRUSHED STONE OR OTHER APPROVED MATERIAL SUITABLY GRADED, PER DRAWINGS.

C. CONTROLLED LOW-STRENGTH MATERIAL (CLSM)

1. CLSM OR FLOWABLE FILL SHALL CONFORM TO ACI 229. THE MIX DESIGN SHALL PRODUCE A MINIMUM 28-DAY COMPRESSIVE STRENGTH BETWEEN 100 AND 200 PSI, AND SHALL BE APPROVED BY THE OWNER BEFORE USE ON THE PROJECT.

GENERAL CONCRETE REPAIR OF STRUCTURES

1. REQUIREMENTS BEFORE ANY REPAIR MATERIAL PRODUCTS ARE INSTALLED

A. CONTRACTOR SHALL FOLLOW THE REPAIR MATERIAL MANUFACTURER'S INSTALLATION INSTRUCTIONS.

B. AS INDICATED IN THE CONSTRUCTION DRAWINGS, CONTRACTOR SHALL IDENTIFY AND MARK THE LIMIT OF THE REPAIR AREA. THE AREA OF THE REPAIR SHALL BE IN SQUARE OR RECTANGULAR SECTIONS MINIMIZING THE NUMBER OF RE-ENTRANT CORNERS TO THE AREA OF REPAIR.

C. CONTRACTOR TO REMOVE ALL LOOSE AND DAMAGED CONCRETE UNTIL SOUND CONCRETE IS FOUND. IF REINFORCING STEEL IS EXPOSED, CONTRACTOR SHALL REMOVE ALL CONCRETE BEHIND THE REINFORCING STEEL TO PREVENT THE "HALO" EFFECT AFTER REPAIR.

D. IF CRACKING IS OBSERVED AFTER REACHING SOUND CONCRETE, CONTRACTOR SHALL REPAIR THE CRACKS USING A STRUCTURAL EPOXY CRACK INJECTION SYSTEM.

E. CONTRACTOR TO SAW-CUT AREA TO BE REPAIRED, TAKING CARE TO AVOID CUTTING ANY REINFORCING STEEL.

F. CONTRACTOR SHALL PREPARE CONCRETE SURFACE AREA AND REINFORCING STEEL IN ACCORDANCE WITH ICRI GUIDELINE 310.1R.

G. THE CONTRACTOR SHALL ACHIEVE AN OPEN PORE STRUCTURE AND SURFACE PROFILE PER ICRI GUIDELINE 310.2R CSP5-9, TAKING CARE TO AVOID MICRO-CRACKING IN THE PROCESS.

H. ALL REINFORCEMENT STEEL TO STAY IN PLACE SHALL BE CLEANED AND ALL CORROSION, RUST, AND SURFACE CONTAMINANTS SHALL BE REMOVED.

I. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE LISTED MAY BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD (EOR) FOR REVIEW.

2. GENERAL CONCRETE REPAIR SYSTEM SHALL CONSIST OF A STEEL REINFORCING PRIMER, A BONDING AGENT, A HIGH PERFORMANCE EPOXY MORTAR REPAIR PRODUCT, AND PROTECTIVE COATING.

A. THE REINFORCEMENT STEEL PRIMER SHALL BE ABLE TO PROTECT THE STEEL FROM CORROSION AND MEET THE FOLLOWING PERFORMANCE STANDARD:

TEST STANDARD	PROPERTY	CRITERIA	RESULT
ASTM D1654	CORROSION	1008 HOURS	RATING OF AT LEAST 9

PRE-APPROVED PRODUCTS INCLUDE: SIMPSON STRONG-TIE "FX-406" ZINC-RICH EPOXY PRIMER

B. THE BONDING AGENT SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:

TEST STANDARD	PROPERTY	CRITERIA	RESULT
ASTM C881	GEL TIME	@ 73°F	1 HOUR
ASTM D695	COMPRESSION	@ 60°F @ 7 DAYS	8,100 PSI
ASTM C882	SLANT SHEAR BOND STRENGTH WET TO HARD CONCRETE	@ 60°F @ 14 DAYS	1,500 PSI
ASTM D638	TENSILE STRENGTH	@ 73°F @ 7 DAYS	2,500 PSI

FOR APPLICATIONS 60°F (15.6°C) AND ABOVE. BONDING AGENT SHALL MEET THE REQUIREMENTS OF ASTM C881, TYPE II, GRADE 2, CLASS C. PRE-APPROVED PRODUCTS INCLUDE: SIMPSON STRONG-TIE "FX-792LPL" EPOXY BONDING AGENT

C. EPOXY REPAIR MORTAR TO BE USED AS FOR FORM AND POURED APPLICATIONS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:

TEST STANDARD	PROPERTY	CRITERIA	RESULT
ASTM C109	COMPRESSION	@ 28 DAYS	16,000 PSI
ASTM C882	SLANT SHEAR BOND STRENGTH	@ 73°F @ 28 DAYS	1,900 PSI
ASTM C1202	PERMEABILITY	@ 29 DAYS	<1000 COULOMBS

PRE-APPROVED PRODUCTS INCLUDE: SIMPSON STRONG-TIE "FX-763" TROWEL-GRADE EPOXY. THE "FX-763" CAN BE COMBINED WITH THE "FX-702" OVEN DRIED ROUNDED SILICA FILLER FOR ENHANCED PERFORMANCE.

D. THE PROTECTION COATING SYSTEM SHALL BE A HIGH-PERFORMANCE BREATHABLE SYSTEM, ABLE TO REDUCE WATER ABSORPTION INTO CONCRETE AND UV RESISTANT WITH THE FOLLOWING MINIMUM PROPERTIES:

TEST STANDARD	PROPERTY	CRITERIA	RESULT
ASTM E96	PERMEANCE	@ 28 DAYS	14 PERMS
ASTM C642	WATER ABSORPTION INTO CONCRETE		>72%
ASTM G154	UV RESISTANCE	2500 HOURS UV-B, CYCLE 3	NO CRACKING OR DELAMINATION

PRE-APPROVED COATING SYSTEMS INCLUDE: SIMPSON STRONG-TIE HIGH PERFORMANCE BREATHABLE COATING SYSTEM "FX207". SYSTEM SHALL INCLUDE 1 COAT OF "FX-207" WATER BASED PENETRATING SEALER AND TWO COATS OF THE "FX-207" MODIFIED SILICONE EMULSION COATING. SURFACE PREPARATION, MIXING, AND APPLICATION SHALL BE AS NOTED BY THE COATING SYSTEM MANUFACTURER.

E. CONTRACTOR SHALL REFER TO THE TECHNICAL DATA SHEET OF EACH REPAIR PRODUCT THAT WILL BE USED AS PART OF THE PROTECTION COATING SYSTEM TO GET FAMILIAR WITH EACH PRODUCT'S LIMITATIONS, SURFACE PREPARATION, MIXING, AND APPLICATION OF THE PRODUCT FOR THE PROJECT'S CONDITION. PRODUCT TECHNICAL DATA SHEETS CAN BE FOUND AT WWW.STRONGTIE.COM.

FABRICATION

1. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1 (LATEST EDITION) AND SHALL BE COMPLETE PENETRATION UNLESS NOTED OTHERWISE.

2. ALL CONTACTING STEEL SURFACES SHALL BE CONTINUOUSLY SEALED WITH MINIMUM FILLET WELDS. ALL INACCESSIBLE AREAS SHALL BE SEALED WITH PL 1/4 CLOSURES. ALL BURRS, ROUGH EDGES AND CORNERS SHALL BE GROUND SMOOTH UNLESS NOTED OTHERWISE.

3. INTERMITTENT WELDING IS NOT ALLOWED UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS.

4. ALL HOLES SHALL BE DRILLED OR MACHINED UNLESS NOTED OTHERWISE.

5. FABRICATOR SHALL PROVIDE EDGE PREPARATION OF MEMBERS TO BE FIELD WELDED, PRIOR TO LOAD-OUT, UNLESS NOTED OTHERWISE.

6. FABRICATOR SHALL TEST-FIT ALL FIELD-INSTALLED ITEMS. TEST FIT SHALL BE WITNESSED AND ACCEPTED BY INSTALLATION CONTRACTOR.

7. FABRICATOR SHALL RECEIVE, ASSEMBLE AND TIE-DOWN ALL INSTALLATION CONTRACTOR'S SLINGS, SHACKLES, SLING HANDLING PLATFORMS OR OTHER RIGGING AS REQUESTED BY THE INSTALLATION CONTRACTOR.

FENDER SYSTEM

1. ALL CHAINS, FENDER PANELS AND HARDWARE SHALL BE PROVIDED BY CONTRACTOR.

2. INSTALL FENDERING SYSTEM PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS.

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A	CRD	FOR CLIENT REVIEW	MDP	DRK	01/31/18

CLIENT: PORT OF BROWNSVILLE — the port that *works*
PROJECT:
CHECK:
DRAFT: CRD 01/18/18

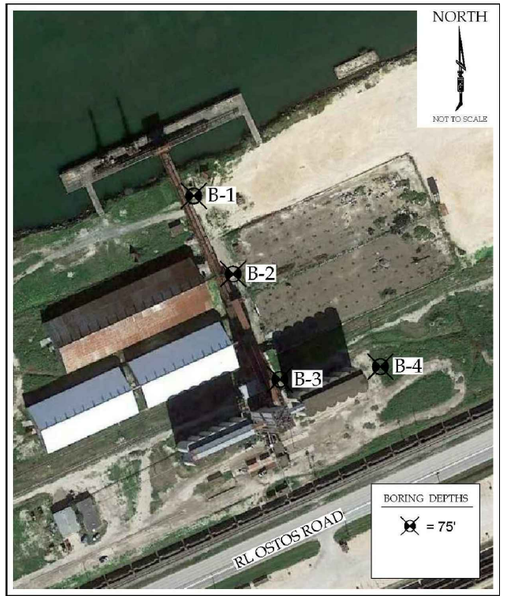
EDG — ELEVATE DESIGN GROUP
WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

GENERAL NOTES SHEET 2 OF 2

JOB NO. 6966.003 | DWG. NO. 6966-GN-002 | B

24x36



BORING LOCATION PLAN

PROPOSED GRAIN ELEVATOR
AT RL OSTOS ROAD

BROWNSVILLE, CAMERON COUNTY, TEXAS

MILLENNIUM ENGINEERS GROUP, INC.
5614 N. CUMWOOD AVENUE
PHARR, TEXAS 78577
WWW.MEGENGINEERS.COM
TEL: 956-702-8506
FAX: 956-702-8149

BORING LAYOUT

Project: Proposed Grain Elevator at RL Ostos Road
Project Location: Brownsville, Cameron County, Texas
Project Number: 01-15-29209

Log of Boring B-1

Sheet 1 of 1

Date(s) Drilled: **November 11, 2015**	Logged By: **J.P. Palma**	Checked By: **R. Palma**
Drilling Method: **straight flight / rotary wash**	Drill Bit Size/Type: **4 in. soil bit**	Total Depth of Borehole: **75 feet bgs**
Drill Rig Type: **CME 45**	Drilling Contractor: **Jedi Drilling**	Approximate Surface Elevation: **5 Feet Natural Ground (assumed)**
Groundwater Level and Date Measured: **10 feet ATD**	Sampling Method(s): **2 in. Split Spoon, Tube**	Hammer Data: **140 lb., 30 in. drop, Automatic**
Borehole Backfill: **Subgrade Cuttings**	Location: **See Boring Location Map**	

Elevation, feet	Depth, feet	Sample Type	Sample Number	Recovery, Penetration Resistance, Blows/foot	Relative Consistency	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Moisture Content, %	Dry Unit Weight, pcf	Percent Fines	LL, %	PI, %	Shear Strength (tsf)	REMARKS AND OTHER TESTS
0	0		1	11		CH		lean CLAY w/ sand to fat CLAY, dk. brown to brown, moist to wet, med. stiff to stiff	8						
-5	5		2	5					17			28	12	PP=1.0	
-10	10		3	6					25					PP=0.25	
-15	15		4	12					33			31	9	PP=0.5	
-20	20		5	6				(ATD) ▽	23						
-25	25		6	12					18			34	16		
-30	30		7	8					19						
-35	35		8	9					24			54	29		
-40	40		9	21		SC-CL		clayey SAND to sandy lean CLAY, brown, wet, stiff	26						
-45	45		10	14					26			15			
-50	50		11	25					23						
-55	55		12	13					23			56			
-60	60		13	19		CH-CH		lean CLAY w/ sand to fat CLAY, brown, moist to wet, med. stiff to stiff	21			88			
-65	65		14	20					21						
-70	70		15	23					24						
-75	75		16	14					27			31	13		
-80	80		17	40		CL		sandy lean CLAY, brown, moist to wet, stiff to hard	66			32			
			18	43					23						
								Bottom of Boring at 75 feet bgs							

Figure

BORING B–1

Project: Proposed Grain Elevator at RL Ostos Road
Project Location: Brownsville, Cameron County, Texas
Project Number: 01-15-29209

Key to Log of Boring

Sheet 1 of 1

[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16]

COLUMN DESCRIPTIONS

1. **Elevation, feet:** Elevation (MSL, feet)
2. **Depth, feet:** Depth in feet below the ground surface.
3. **Sample Type:** Type of soil sample collected at the depth interval shown.
4. **Sample Number:** Sample identification number.
5. **Sampling Resistance, blows/foot:** Number of blows to advance driven sampler foot or distance shown) beyond seating interval using the hammer identified on the boring log.
6. **Relative Consistency:** Relative consistency of the subsurface material.
7. **USCS Symbol:** USCS symbol of the subsurface material.
8. **Graphic Log:** Graphic depiction of the subsurface material encountered.
9. **MATERIAL DESCRIPTION:** Description of material encountered. May include consistency, moisture, color, and other descriptive text.
10. **Moisture Content, %:** Water content of the soil sample, expressed as percentage of dry weight of sample.
11. **Dry Unit Weight, pcf:** Dry weight per unit volume of soil sample measured in laboratory, in pounds per cubic foot.
12. **Percent Fines:** The percent fines (soil passing the No. 200 Sieve) in the sample. WA indicates a Wash Sieve, SA indicates a Sieve Analysis.
13. **LL, %:** Liquid Limit, expressed as a water content.
14. **PI, %:** Plasticity Index, expressed as a water content.
15. **Shear Strength (tsf):** Unconfined Compressive Strength.
16. **REMARKS AND OTHER TESTS:** Comments and observations regarding drilling or sampling made by driller or field personnel.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity.
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

TYPICAL MATERIAL GRAPHIC SYMBOLS

TYPICAL SAMPLER GRAPHIC SYMBOLS

OTHER GRAPHIC SYMBOLS

- Water level (at time of drilling, ATD)
- Water level (after waiting a given time.)
- Minor change in material properties within a stratum
- Inferred or gradational contact between strata
- ? — Queried contact between strata

GENERAL NOTES

1. Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2. Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

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TX. LICENSE NO. 111211

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CLIENT		
PROJECT		
CHECK		
DRAFT	CRD	01/19/18

PORT OF BROWNSVILLE
the port that works

WESTPLAINS

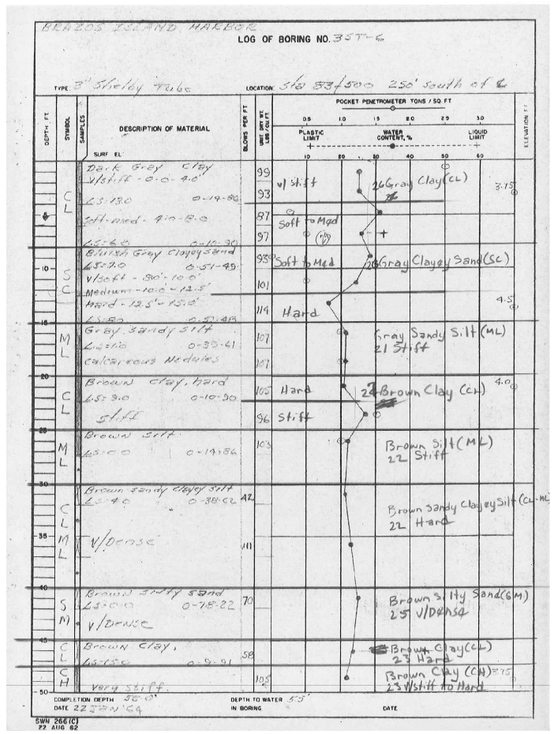
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

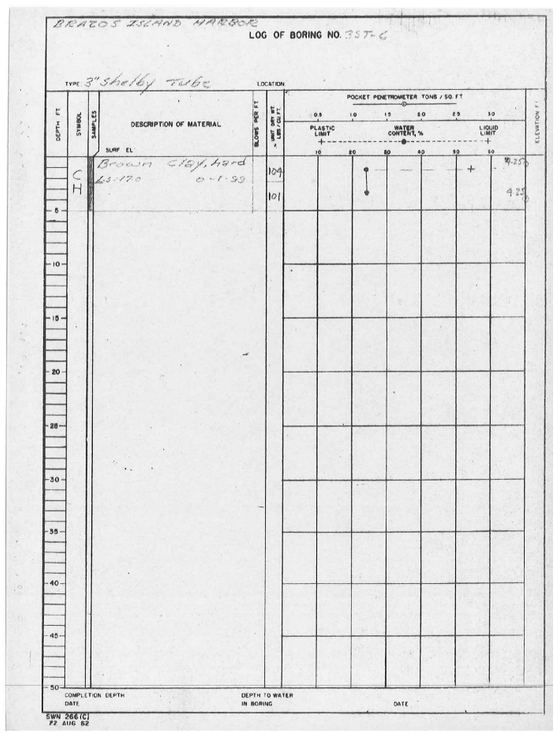
GENERAL NOTES – BORING LOGS

JOB NO. 6966.003 | DWG. NO. 6966-GN-003 | B

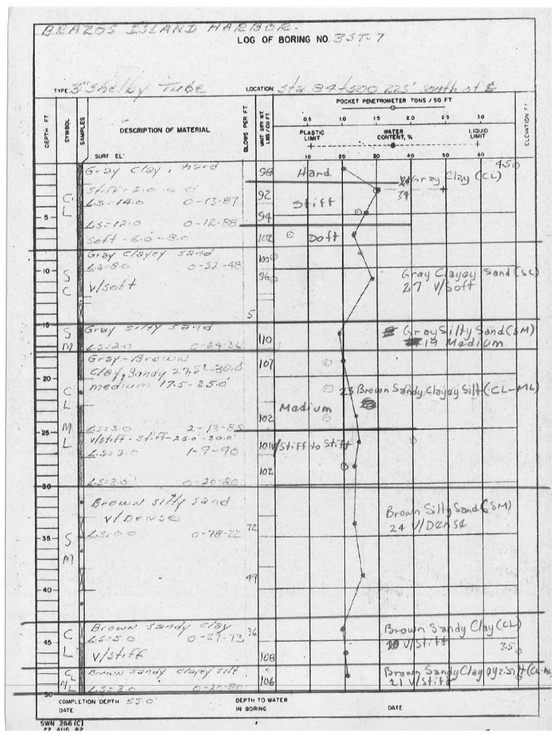
24x36

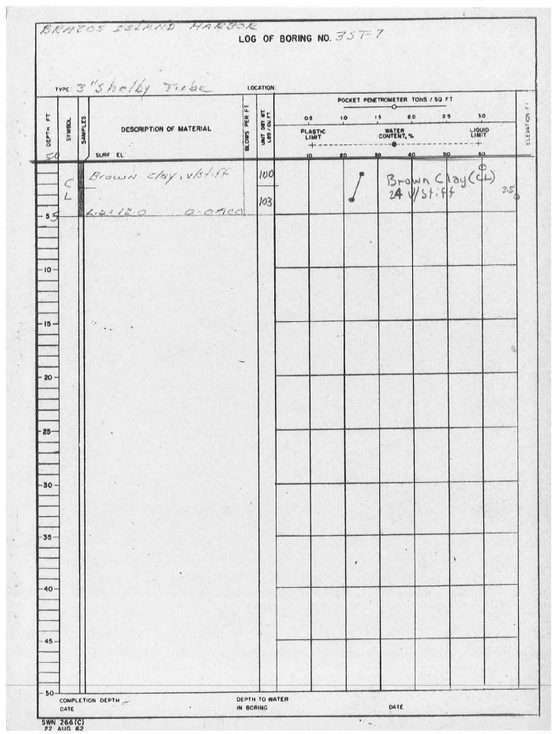
BORING LAYOUT





BORING 2513ST–6





BORING 2513ST–7

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EDG

CLIENT		
PROJECT		
CHECK		
DRAFT	CRD	01/19/18

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

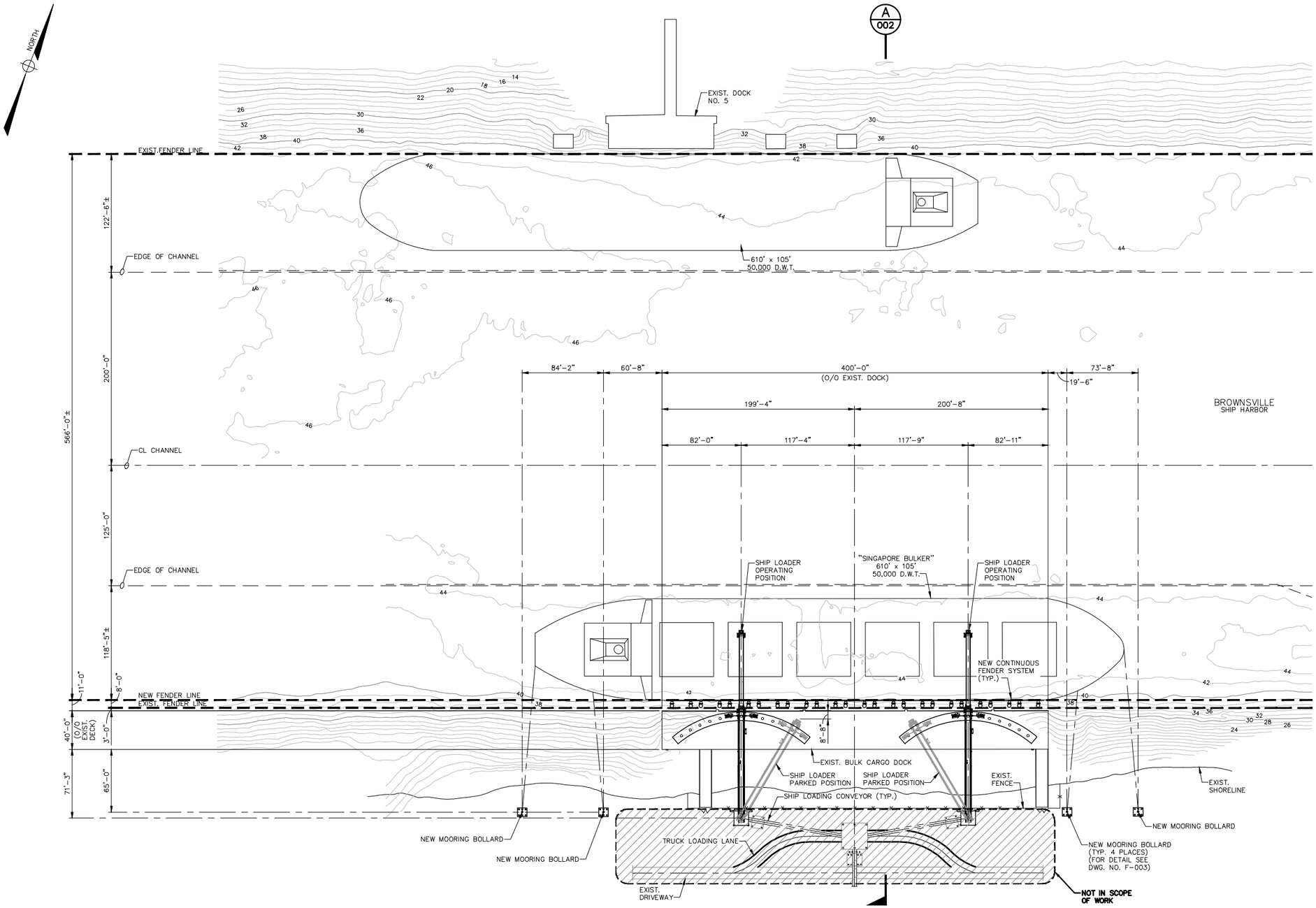
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

GENERAL NOTES – BORING LOGS

JOB NO. 6966.003 | DWG. NO. 6966-GN-004 | B

24x36

NOTES:
1. CENTERLINE OF CHANNEL LOCATION AND CHANNEL WIDTH PER US ARMY CORPS OF ENGINEERS 2004 ORTHO AERIAL MAP OF THE BROWNSVILLE SHIP CHANNEL MAP.
2. HYDROGRAPH PROVIDED BY NAISMITH MARINE SEA FLOOR SERVICES ON Dec. 19, 2014.



BULK CARGO DOCK AND NO. 5 DOCK SITE PLAN

SCALE: 1"=50'-0"

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A	CMZ	ISSUED FOR CLIENT REVIEW	–	DRK	12/14/17

DRAFT	CMZ	12/14/17	
CLIENT			
PROJECT			
CHECK			

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

PORT OF BROWNSVILLE
BULK CARGO DOCK
BULK CARGO DOCK AND NO. 5 DOCK
SITE PLAN

JOB NO. 6966.003 | DWG. NO. 6966-SP-001 | 0

24x36

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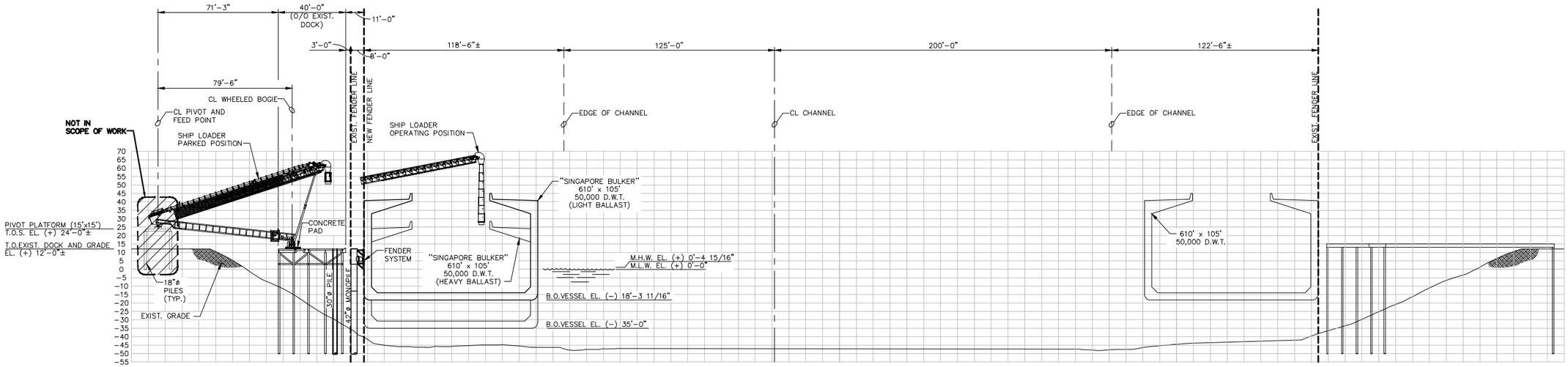

CHANNEL CROSS SECTION

SCALE: 1"=30'-0"

A / 001

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DRAFT	CMZ	12/14/17
CLIENT		
PROJECT		
CHECK		

PORT OF BROWNSVILLE
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WESTPLAINS

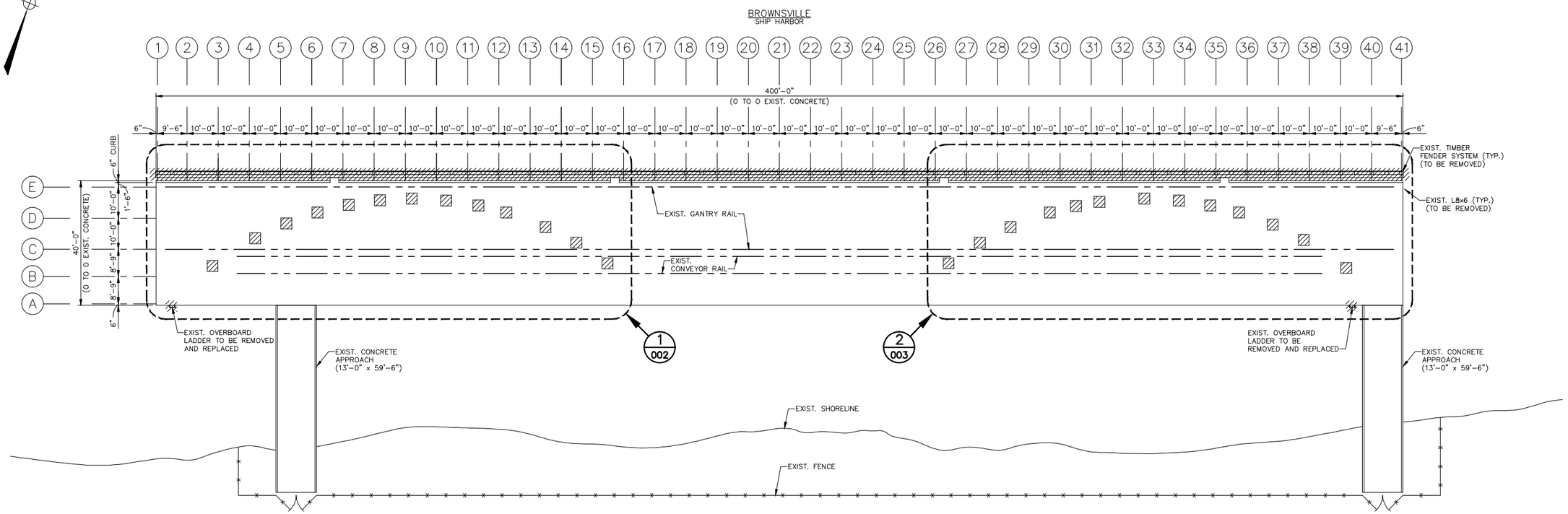
PORT OF BROWNSVILLE
BULK CARGO DOCK
CHANNEL CROSS SECTION

JOB NO. 6966.003 | DWG. NO. 6966-SP-002 | 0

24x36

NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. ▨ DENOTES ITEMS TO BE REMOVED.
3. CONTRACTOR SHALL NOT CUT INTO OR THROUGH EXIST. STEEL FRAMING LOCATED BENEATH CONCRETE DECK WHILE MAKING CUT-OUTS IN EXIST. CONCRETE DECK.
4. CONTRACTOR TO REMOVE EXISTING CONCRETE REINFORCEMENT BARS AS REQUIRED.
5. FOR REFERENCE SEE EXISTING DRAWING: BROWNSVILLE NAVIGATION DISTRICT BULK HANDLING DOCK PLANS AND DETAILS BY R.L. REID CONSULTING ENGINEERS.



(T.O.CONC. EL. (+) 12'-0" U.N.O.)

BULK CARGO DOCK CONCRETE DEMOLITION PLAN

SCALE: 1/16"=1'-0"

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CLIENT		
PROJECT		
CHECK		
DRAFT	CMZ	01/08/18

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

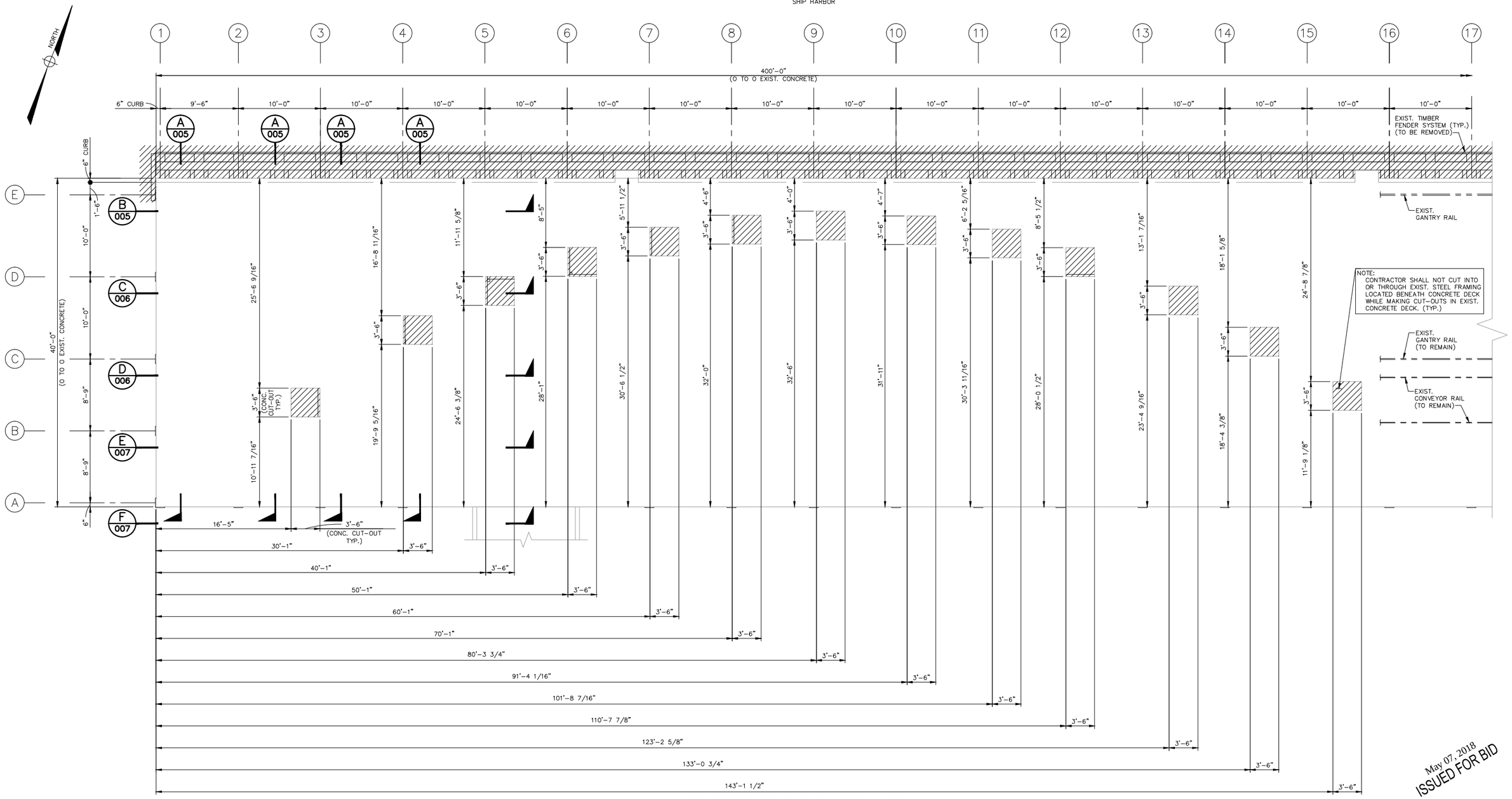
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

CONCRETE DEMOLITION PLAN

JOB NO. 6966.003 | DWG. NO. 6966-D-001 | A

24x36

BROWNSVILLE
SHIP HARBOR



CONCRETE DEMOLITION DETAIL 1/001

SCALE: 3/16"=1'-0"

May 07, 2018
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NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. ▨ DENOTES ITEMS TO BE REMOVED.
3. FOR DECK CUT-OUTS CONTRACTOR TO SAW-CUT THROUGH CONCRETE AND REBAR TO ACCEPT NEW PILES.

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PROJECT		
CHECK		
DRAFT	CMZ	01/08/18

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WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

CONCRETE DEMOLITION DETAIL NO. 1

JOB NO. 6966.003 | DWG. NO. 6966-D-002 | B

24x36

BROWNSVILLE
SHIP HARBOR

NORTH

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41

400'-0"
(0 TO 0 EXIST. CONCRETE)

10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 9'-6" 6"

EXIST. TIMBER FENDER SYSTEM (TYP.) (TO BE REMOVED)

EXIST. GANTRY RAIL

NOTE:
CONTRACTOR SHALL NOT CUT INTO OR THROUGH EXIST. STEEL FRAMING LOCATED BENEATH CONCRETE DECK WHILE MAKING CUT-OUTS IN EXIST. CONCRETE DECK. (TYP.)

EXIST. GANTRY RAIL (TO REMAIN)

EXIST. CONVEYOR RAIL (TO REMAIN)

6"-6" CURB

1'-6"

10'-0"

10'-0"

8'-9"

8'-9"

40'-0"
(0 TO 0 EXIST. CONCRETE)

E D C B A

6"

3'-6" (CONC. CUT-OUT TYP.)

16'-5"

3'-6" (CONC. CUT-OUT TYP.)

30'-1"

3'-6" 40'-1"

3'-6" 50'-10 1/8"

3'-6" 60'-1"

3'-6" 70'-1 15/16"

3'-6" 81'-2 1/4"

3'-6" 95'-7 3/16"

3'-6" 103'-1 1/2"

3'-6" 111'-6 7/16"

3'-6" 124'-1 3/16"

3'-6" 133'-11 1/4"

3'-6" 144'-0"

24'-8 7/8"	3'-6"	11'-9 1/8"			
18'-1 5/8"	3'-6"	18'-4 3/8"			
13'-1 1/2"	3'-6"	23'-4 1/2"			
8'-5 1/2"	3'-6"	28'-0 1/2"			
6'-3 5/8"	3'-6"	30'-2 3/8"			
4'-11 7/8"	3'-6"	31'-6 1/8"			
4'-0"	3'-6"	32'-6"			
4'-7"	3'-6"	31'-11"			
6'-1 5/8"	3'-6"	30'-4 3/8"			
8'-5 1/2"	3'-6"	28'-0 1/2"			
12'-4"	3'-6"	24'-2"			
17'-2 1/2"	3'-6"	19'-3 1/2"			
26'-2 3/4"	3'-6"	10'-3 1/4"			

CONCRETE DEMOLITION DETAIL 2
SCALE: 3/16"=1'-0" 001

May 07, 2018
ISSUED FOR BID

NOTE:
1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. ▨ DENOTES ITEMS TO BE REMOVED.
3. FOR DECK CUT-OUTS CONTRACTOR TO SAW-CUT THROUGH CONCRETE AND REBAR TO ACCEPT NEW PILES.

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DAVID R. KOSLOSKI, P.E.
TX. LICENSE NO. 111211

NO.	BY	REVISION	CHK'D	APP'D	DATE
B	CMZ	ISSUED FOR BID	MDP	DRK	05/07/18
A	CMZ	FOR CLIENT REVIEW	MDP	DRK	01/31/18

CLIENT		
PROJECT		
CHECK		
DRAFT	CMZ	01/08/18

PORT OF BROWNSVILLE
the port that works

WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

CONCRETE DEMOLITION DETAIL NO. 2

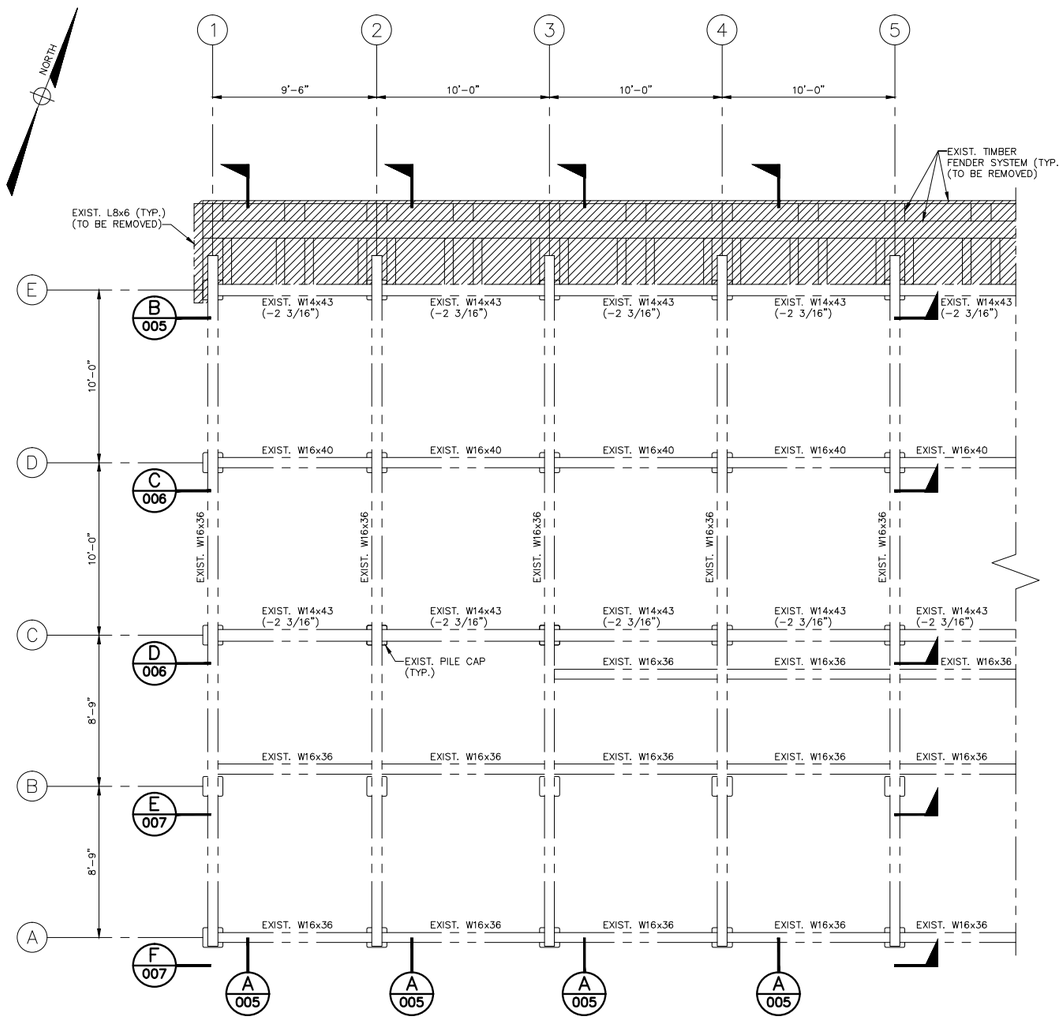
JOB NO. 6966.003 | DWG. NO. 6966-D-003 | A

24x36

NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. DENOTES ITEMS TO BE REMOVED.
3. DENOTES ITEMS TO BE REMOVED AND REPLACED IN KIND OR WITH APPROVED EQUIVALENT.
4. FOR REFERENCE SEE EXISTING DRAWING: BROWNSVILLE NAVIGATION DISTRICT BULK HANDLING DOCK PLANS AND DETAILS BY R.L. REID CONSULTING ENGINEERS.

BROWNSVILLE
SHIP HARBOR

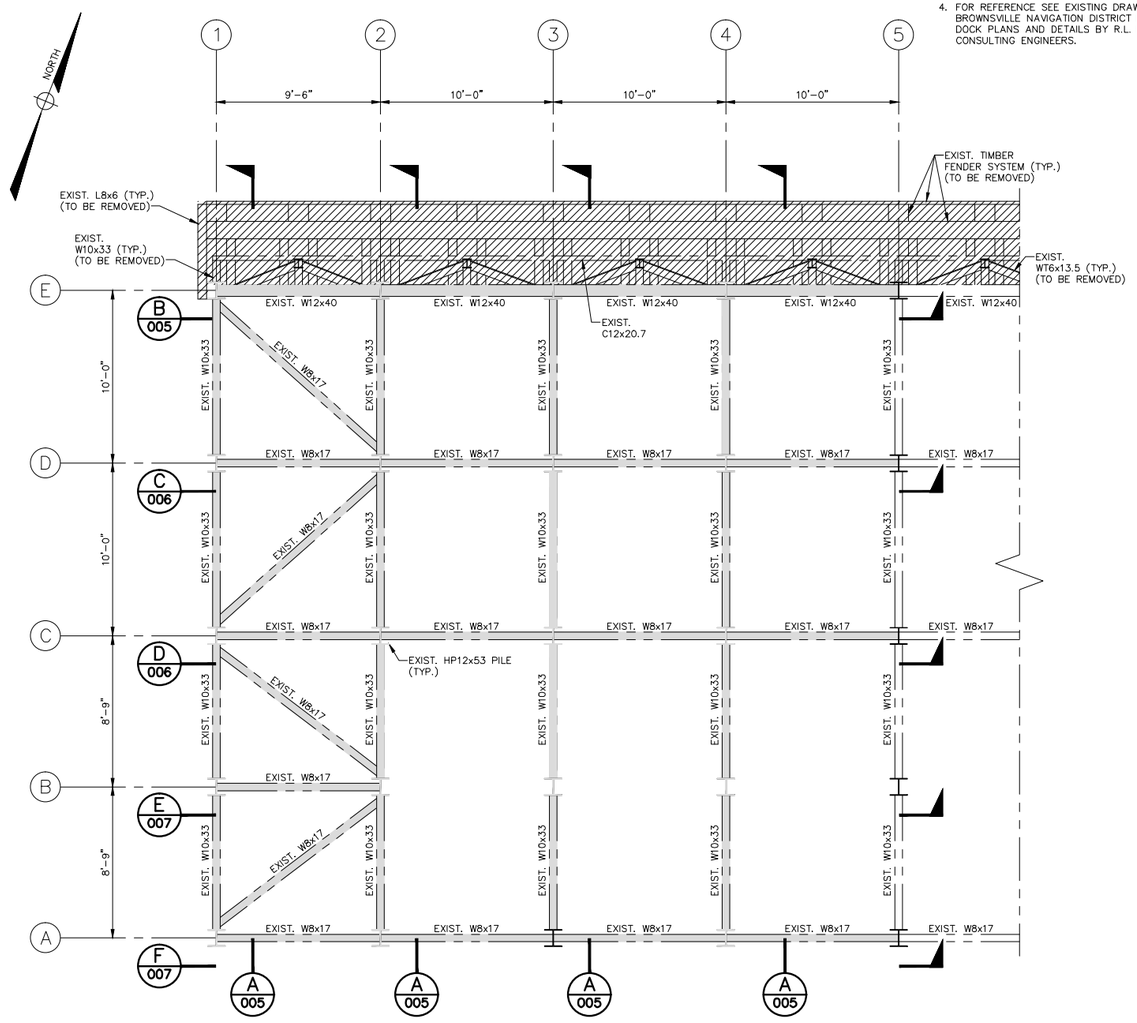


(T.O.S EL. (+) 11'-3" U.N.O.)

PARTIAL BULK CARGO DOCK PILE CAP FRAMING DEMOLITION PLAN

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

BROWNSVILLE
SHIP HARBOR



(T.O.S EL. (+) 3'-6" U.N.O.)

PARTIAL BULK CARGO DOCK LOWER BRACING FRAMING DEMOLITION PLAN

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

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CLIENT		
PROJECT		
CHECK		
DRAFT	CMZ	01/08/18

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

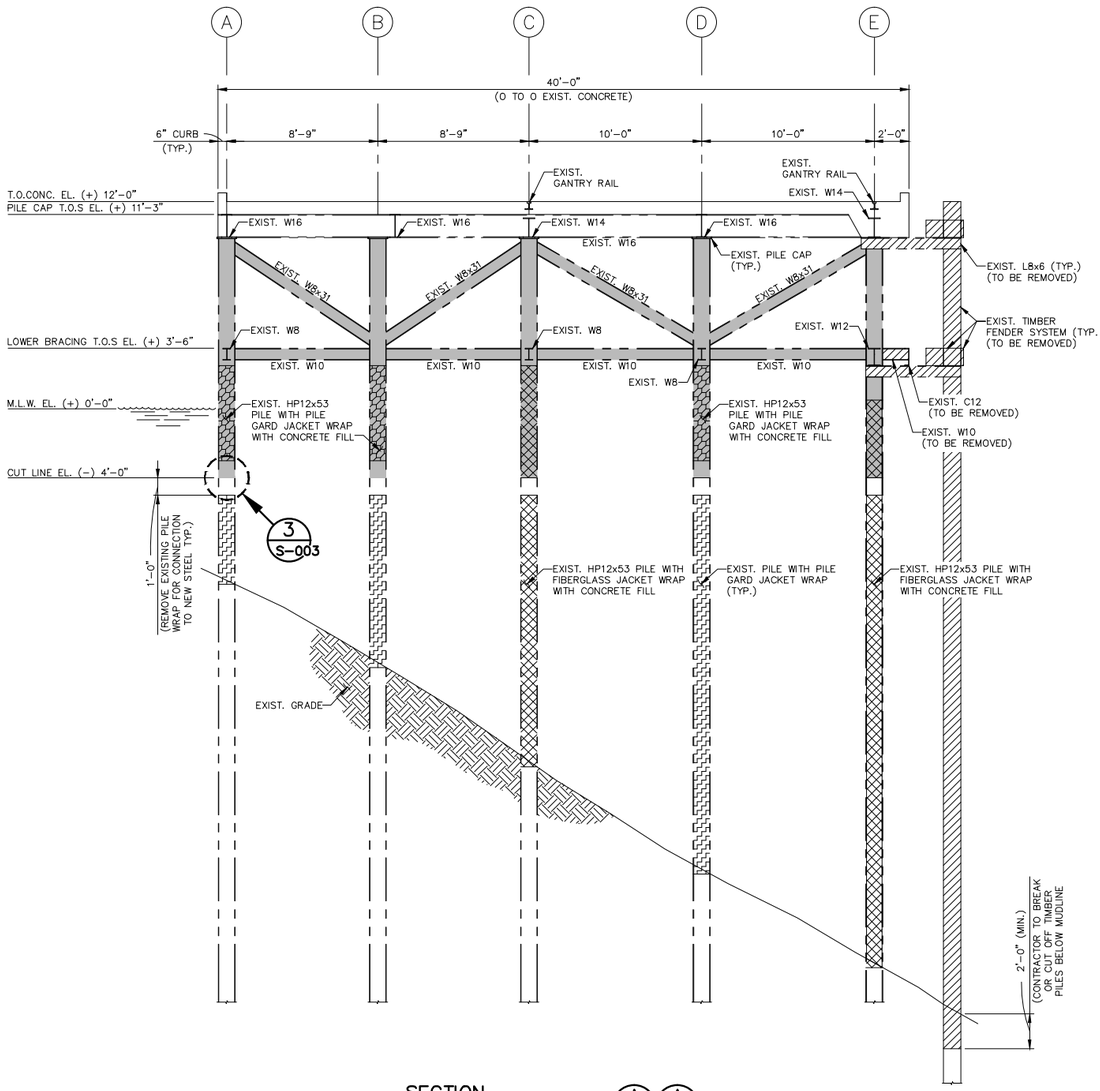
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS
PARTIAL BULK CARGO DOCK PILE CAP AND LOWER BRACING FRAMING DEMOLITION PLAN

JOB NO. 6966.003 | DWG. NO. 6966-D-004 | B

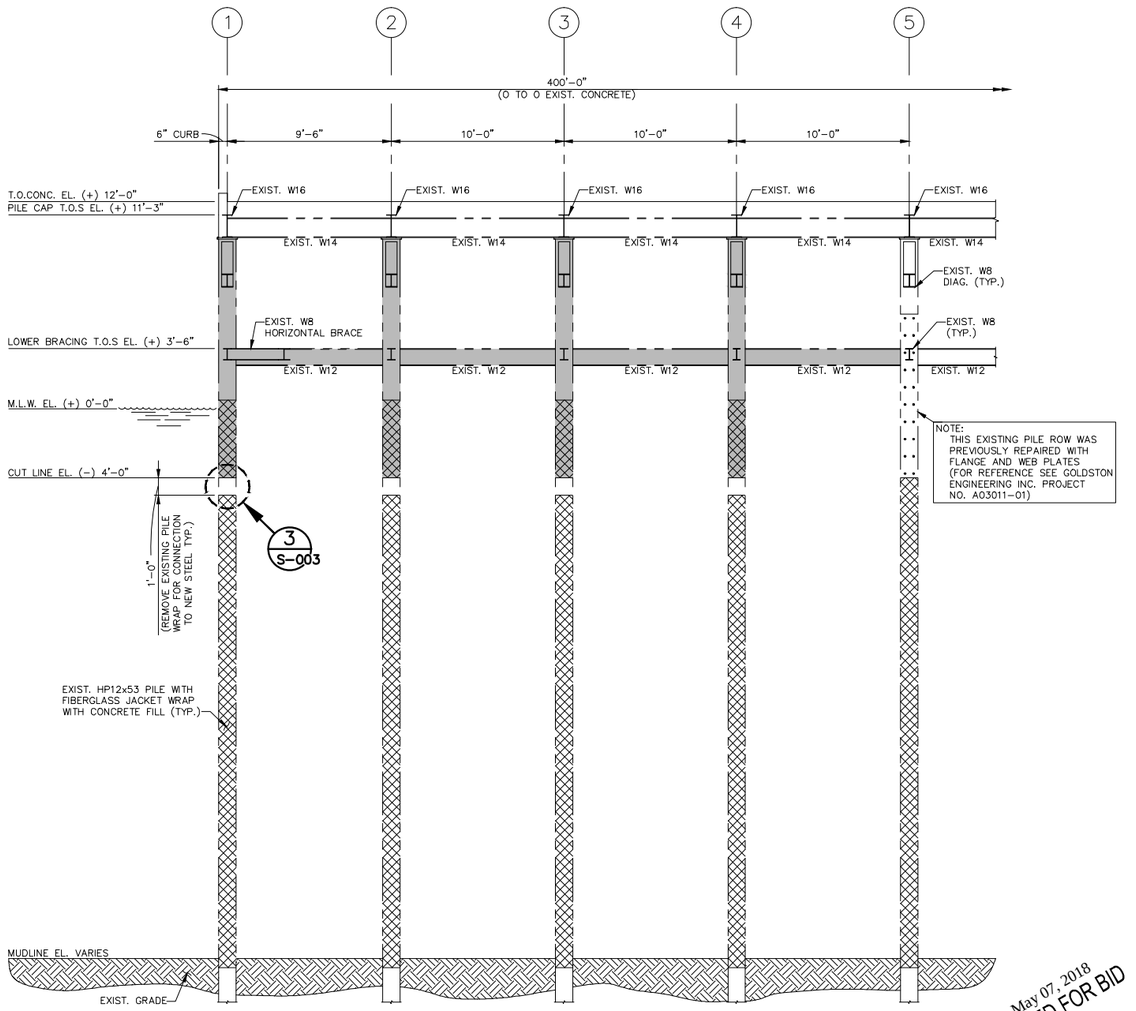
24x36

NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. DENOTES ITEMS TO BE REMOVED.
3. DENOTES ITEMS TO BE REMOVED AND REPLACED IN KIND OR WITH APPROVED EQUIVALENT.
4. DENOTES ITEMS WITH PILE GARD JACKET WRAP
5. DENOTES ITEMS WITH FIBERGLASS JACKET WRAP WITH CONCRETE FILL
6. DENOTES ITEMS WITH PILE GARD JACKET WRAP WITH CONCRETE FILL
7. FOR REFERENCE SEE EXISTING DRAWING: BROWNSVILLE NAVIGATION DISTRICT BULK HANDLING DOCK PLANS AND DETAILS BY R.L. REID CONSULTING ENGINEERS.
8. FOR EXISTING PILE ROW REPAIR DETAILS SEE GOLDSTON ENGINEERING INC. PROJECT NO. A03011-01.



SECTION
SCALE: 1/4"=1'-0" (A 002 / A 004)



SECTION
SCALE: 1/4"=1'-0" (B 002 / B 004)

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CLIENT			
PROJECT			
CHECK			
DRAFT	CMZ	01/08/18	

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS
PARTIAL PILE CAP AND
LOWER BRACING DEMO. SECTIONS "A" & "B"

JOB NO. 6966.003 | DWG. NO. 6966-D-005 | B

24x36

NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. DENOTES ITEMS TO BE REMOVED.
3. DENOTES ITEMS TO BE REMOVED AND REPLACED IN KIND OR WITH APPROVED EQUIVALENT.
4. DENOTES ITEMS WITH PILE GARD JACKET WRAP
5. DENOTES ITEMS WITH FIBERGLASS JACKET WRAP WITH CONCRETE FILL
6. DENOTES ITEMS WITH PILE GARD JACKET WRAP WITH CONCRETE FILL
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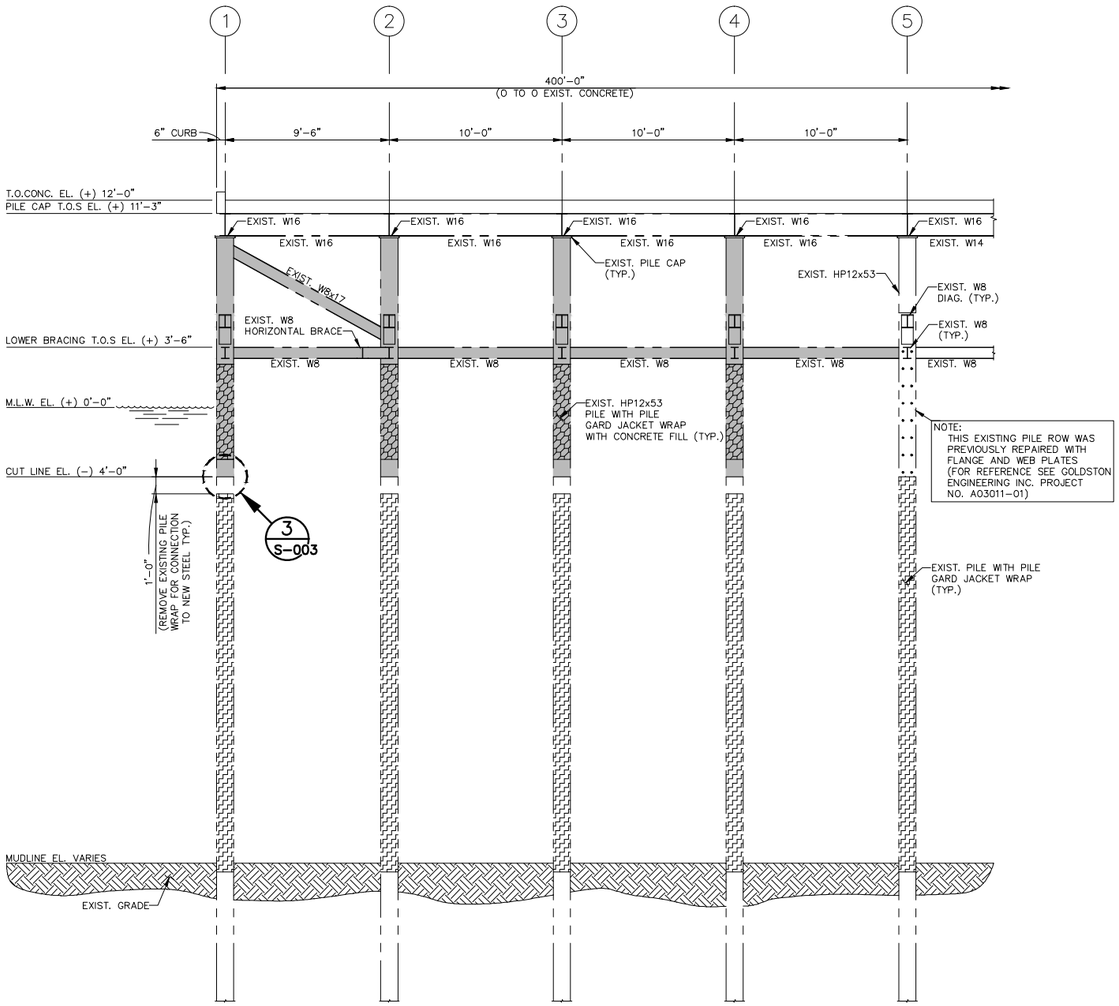
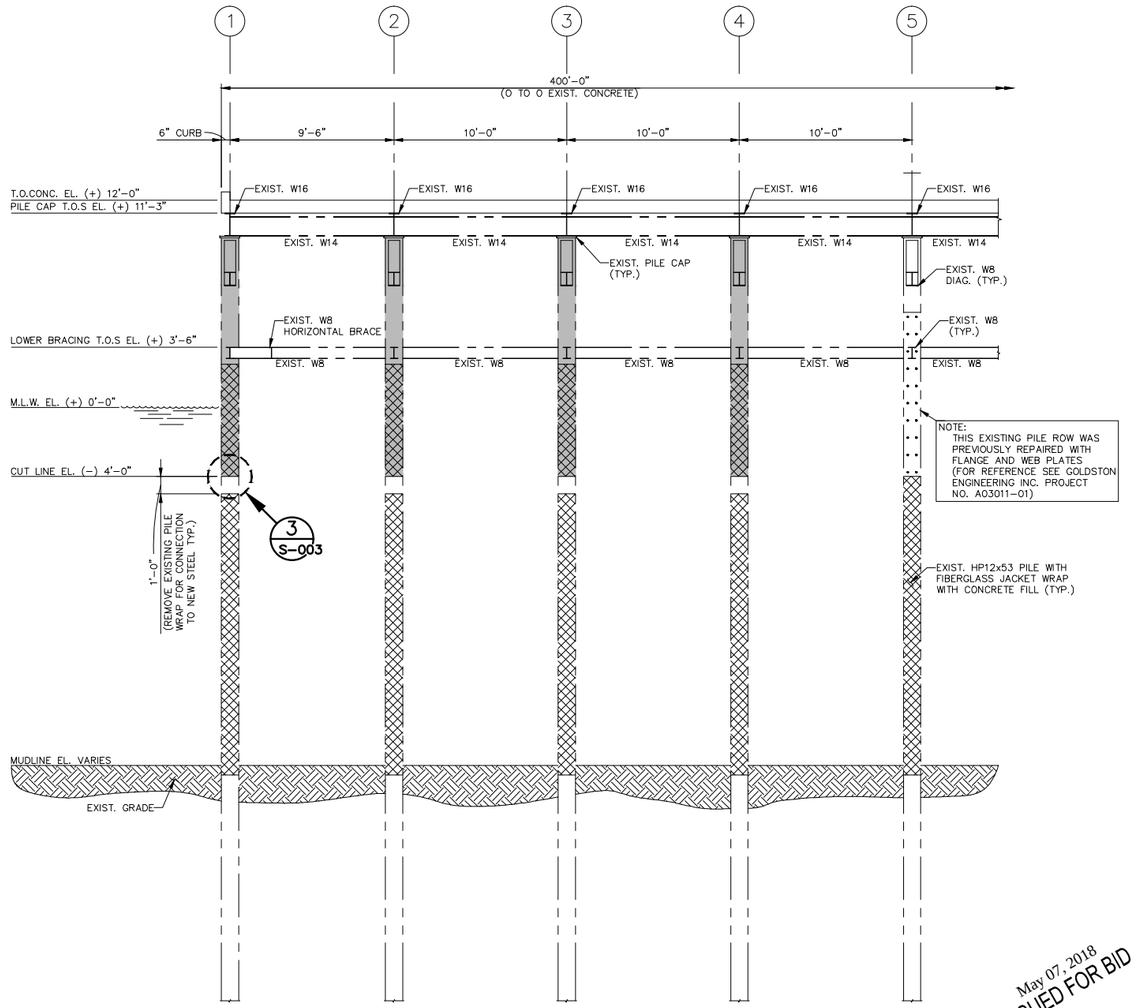
8. FOR EXISTING PILE ROW REPAIR DETAILS SEE GOLDSTON ENGINEERING INC. PROJECT NO. A03011-01.



SECTION C/002 C/004
SCALE: 1/4"=1'-0"



SECTION D/002 D/004
SCALE: 1/4"=1'-0"

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A	CMZ	FOR CLIENT REVIEW	MDP	DRK	01/31/18

DRAFT	CMZ	01/08/18
CHECK		
PROJECT		
CLIENT		

PORT OF BROWNSVILLE
the port that works

WESTPLAINS

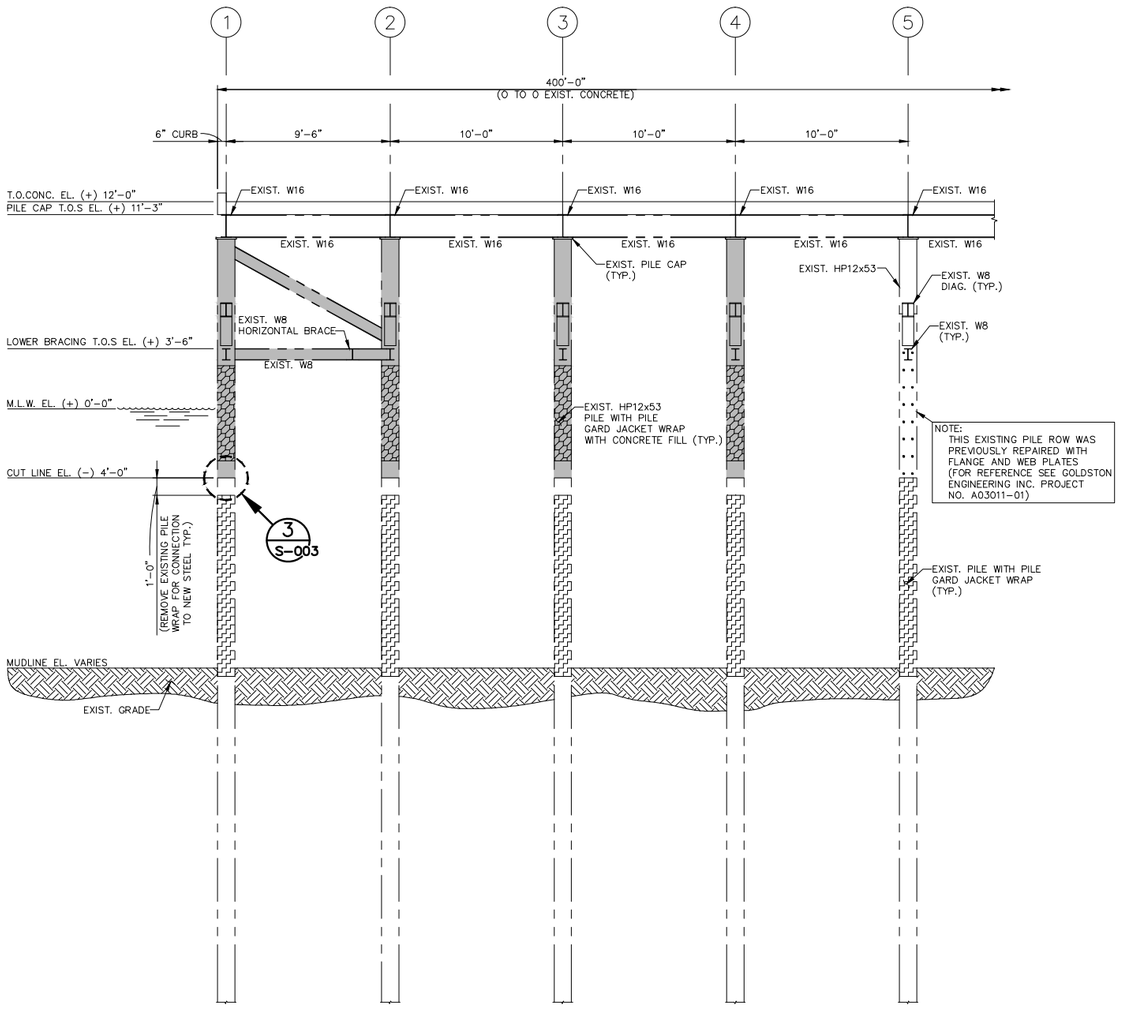
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS
PARTIAL PILE CAP AND
LOWER BRACING DEMO. SECTIONS "C" & "D"

JOB NO. 6966.003 | DWG. NO. 6966-D-006 | B

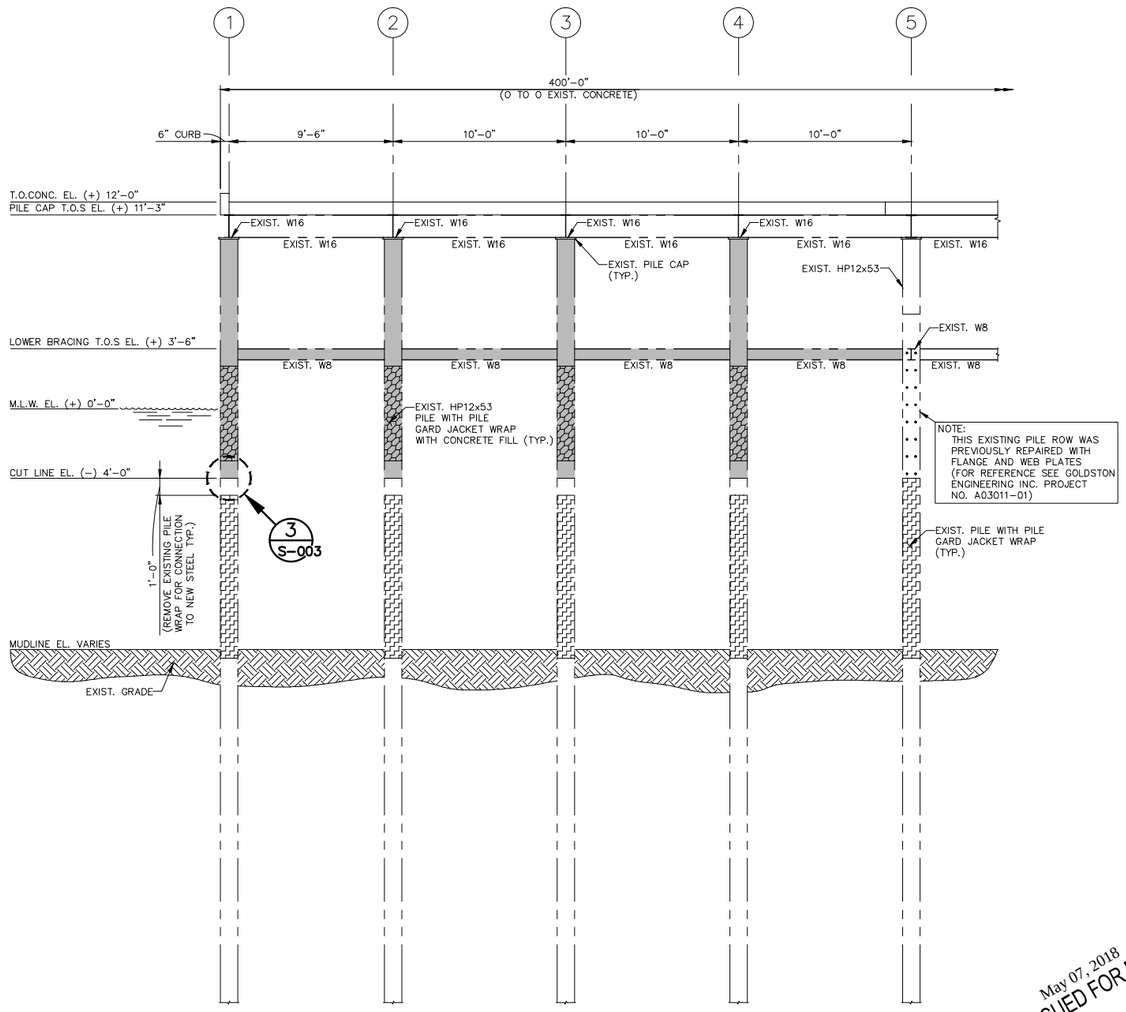
24x36

NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. DENOTES ITEMS TO BE REMOVED.
3. DENOTES ITEMS TO BE REMOVED AND REPLACED IN KIND OR WITH APPROVED EQUIVALENT.
4. DENOTES ITEMS WITH PILE GARD JACKET WRAP
5. DENOTES ITEMS WITH FIBERGLASS JACKET WRAP WITH CONCRETE FILL
6. DENOTES ITEMS WITH PILE GARD JACKET WRAP WITH CONCRETE FILL
7. FOR REFERENCE SEE EXISTING DRAWING: BROWNSVILLE NAVIGATION DISTRICT BULK HANDLING DOCK PLANS AND DETAILS BY R.L. REID CONSULTING ENGINEERS.
8. FOR EXISTING PILE ROW REPAIR DETAILS SEE GOLDSTON ENGINEERING INC. PROJECT NO. A03011-01.



SECTION E 002 / E 004
SCALE: 1/4"=1'-0"



SECTION F 002 / F 004
SCALE: 1/4"=1'-0"

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CLIENT		
PROJECT		
CHECK		
DRAFT	CMZ	01/08/18

PORT OF BROWNSVILLE
the port that works

WESTPLAINS

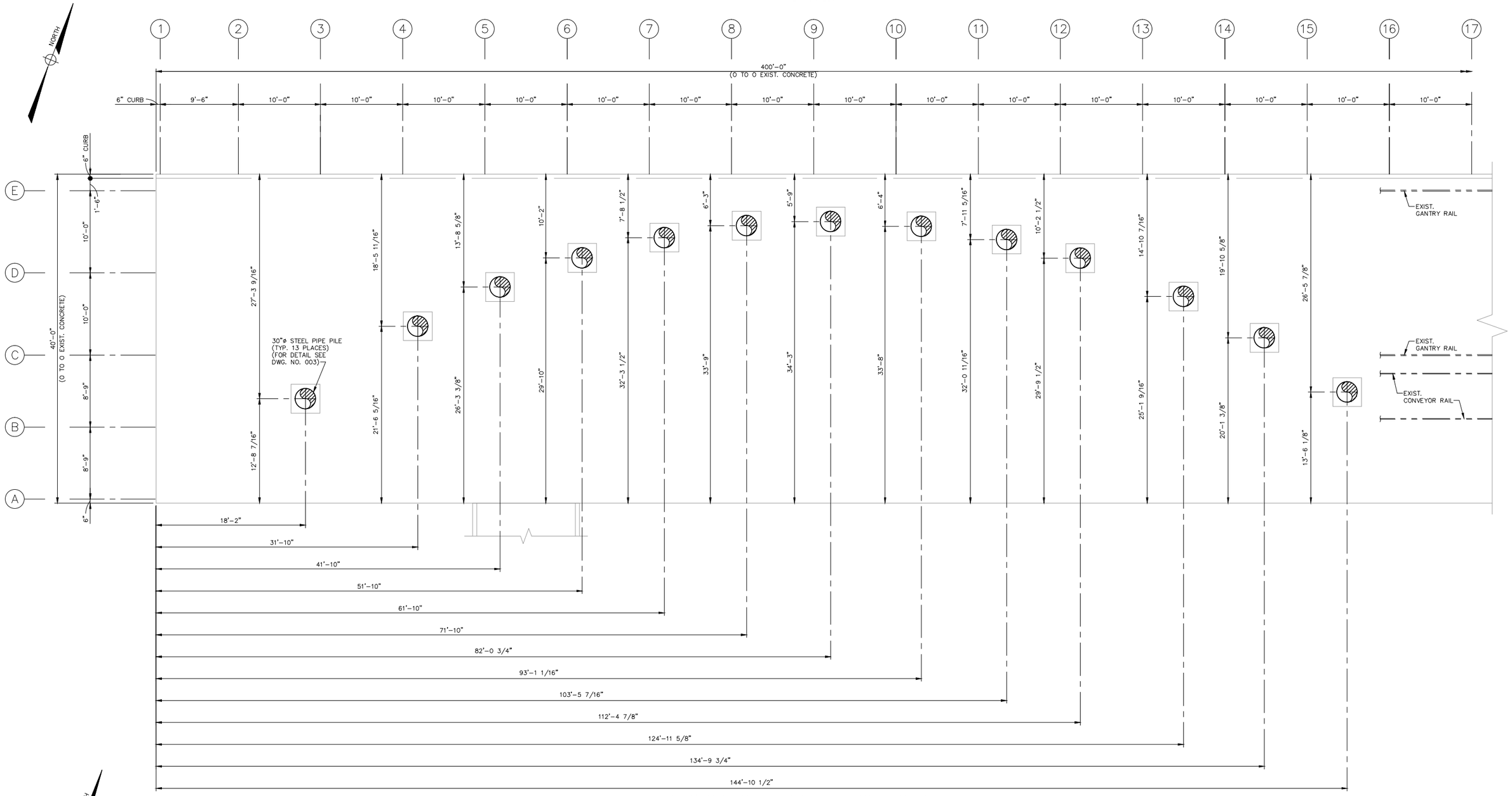
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS
PARTIAL PILE CAP AND
LOWER BRACING DEMO. SECTIONS "E" & "F"

JOB NO. 6966.003 | DWG. NO. 6966-D-007 | B

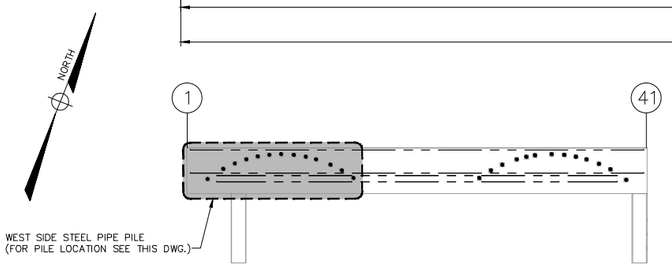
24x36

BROWNSVILLE
SHIP HARBOR

NOTE:
1. FOR GENERAL NOTES SEE DWG. NO. GN-001



WEST SIDE STEEL PIPE PILE LOCATION PLAN
SCALE: 3/16"=1'-0"



STEEL PIPE PILE LOCATION KEY PLAN
SCALE: 1"=60'-0"

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CLIENT		
PROJECT		
CHECK		
DRAFT	CMZ	01/08/18

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

WEST SIDE STEEL PIPE PILE LOCATION PLAN

JOB NO. 6966.003 | DWG. NO. 6966-PP-001 | B

24x36

BROWNSVILLE
SHIP HARBOR

NOTE:
1. FOR GENERAL NOTES SEE DWG. NO. GN-001

NORTH

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41

400'-0"
(0 TO 0 EXIST. CONCRETE)

10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 10'-0" 9'-6" 6"

EXIST. GANTRY RAIL

30"ø STEEL PIPE PILE (TYP. 13 PLACES) (FOR DETAIL SEE DWG. NO. 003)

EXIST. GANTRY RAIL

EXIST. CONVEYOR RAIL

26'-5 7/8"
19'-10 5/8"
14'-10 1/2"
10'-2 1/2"
8'-0 5/8"
6'-8 7/8"
5'-9"
6'-4"
7'-10 5/8"
10'-2 1/2"
14'-1"
18'-11 1/2"
27'-11 3/4"

13'-6 1/8"
20'-1 3/8"
25'-1 1/2"
29'-9 1/2"
31'-11 3/8"
33'-3 1/8"
34'-3"
33'-8"
32'-1 3/8"
29'-9 1/2"
25'-11"
21'-0 1/2"
12'-0 1/4"

6" CURB
1'-6"
10'-0"
10'-0"
8'-9"
8'-9"
6"
40'-0"
(0 TO 0 EXIST. CONCRETE)

E D C B A

18'-2"
31'-10"
41'-10"
52'-7 1/8"
61'-10"
71'-11"
82'-11 1/4"
97'-4 1/8"
104'-10 1/2"
113'-3 3/8"
125'-10 1/4"
135'-8 1/4"
145'-9"

(REF. DWG. NO. 001)

EAST SIDE STEEL PIPE PILE LOCATION PLAN
SCALE: 3/16"=1'-0"

NORTH

1 41

EAST SIDE STEEL PIPE PILE
(FOR PILE LOCATION SEE THIS DWG.)

STEEL PIPE PILE LOCATION KEY PLAN
SCALE: 1"=60'-0"

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A	CMZ	FOR CLIENT REVIEW	MDP	DRK	01/31/18

CLIENT
PROJECT
CHECK
DRAFT CMZ 01/08/18

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

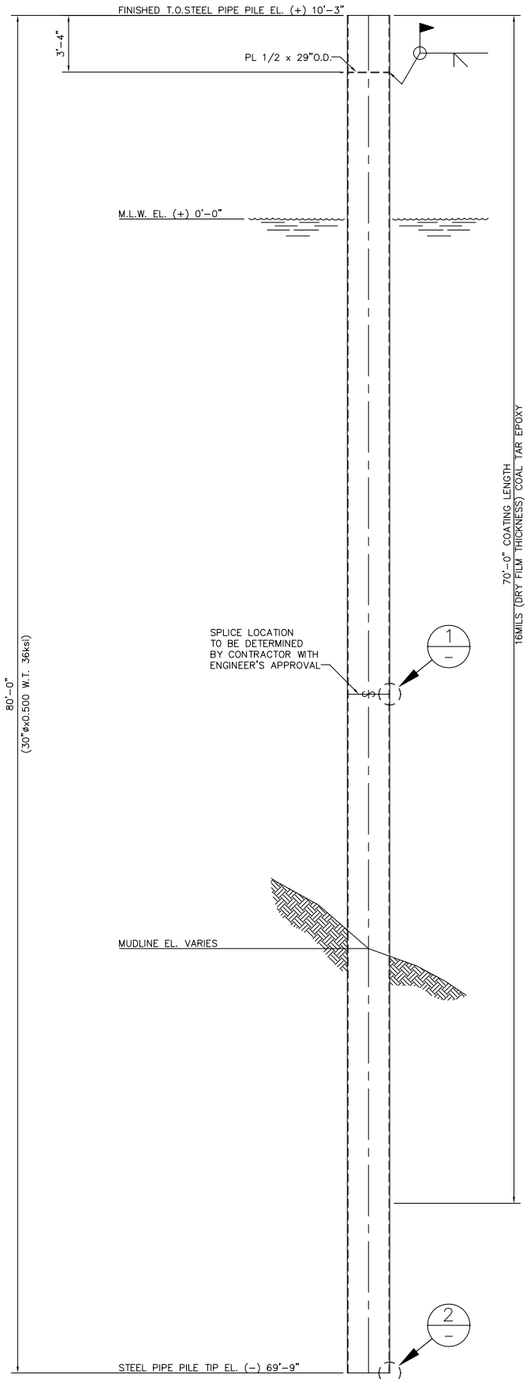
EAST SIDE STEEL PIPE PILE LOCATION PLAN

JOB NO. 6966.003 DWG. NO. 6966-PP-002 B

24x36

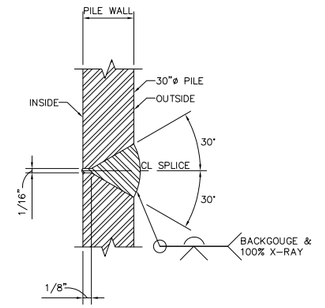
NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001



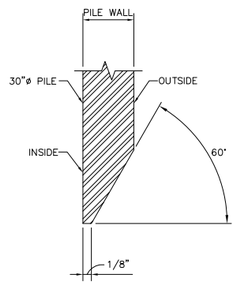
STEEL PIPE PILE ELEVATION

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



TYPICAL SHOP SPLICE DETAIL 1/–

SCALE: N.T.S.



DETAIL 2/–

SCALE: N.T.S.

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CLIENT		
PROJECT		
CHECK		
DRAFT	CMZ	01/08/18

PORT OF BROWNSVILLE
the port that works

WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

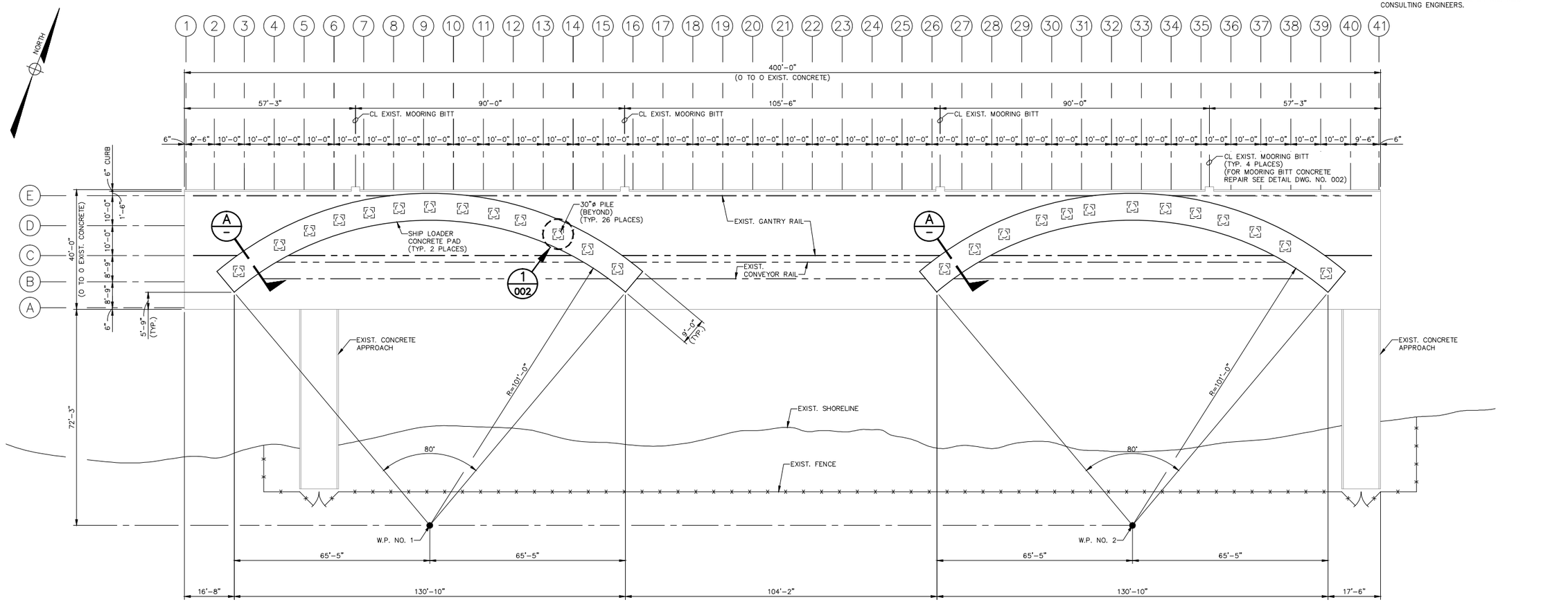
STEEL PIPE PILE ELEVATION AND DETAILS

JOB NO. 6966.003 | DWG. NO. 6966-PP-003 | A

24x36

NOTE:

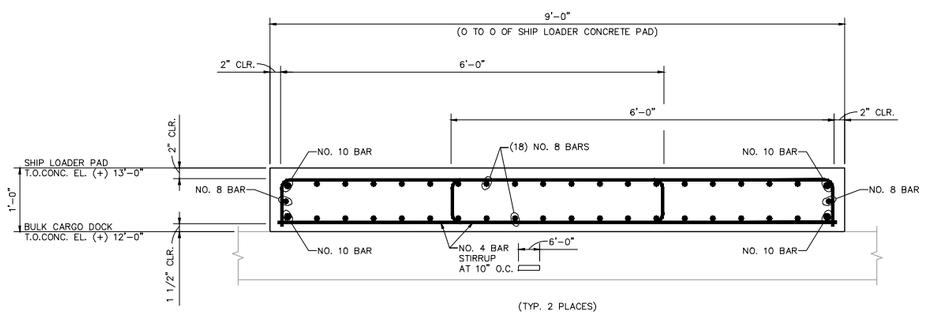
1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. FOR REFERENCE SEE EXISTING DRAWING: BROWNSVILLE NAVIGATION DISTRICT BULK HANDLING DOCK PLANS AND DETAILS BY R.L. REID CONSULTING ENGINEERS.



(T.O.CONC. EL. (+) 12'-0" U.N.O.)

BULK CARGO DOCK MODIFICATION CONCRETE PLAN

SCALE: 1/16"=1'-0"



(TYP. 2 PLACES)

SECTION A

SCALE: 1"=1'-0"

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CLIENT			
PROJECT			
CHECK			
DRAFT	CMZ	01/08/18	

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

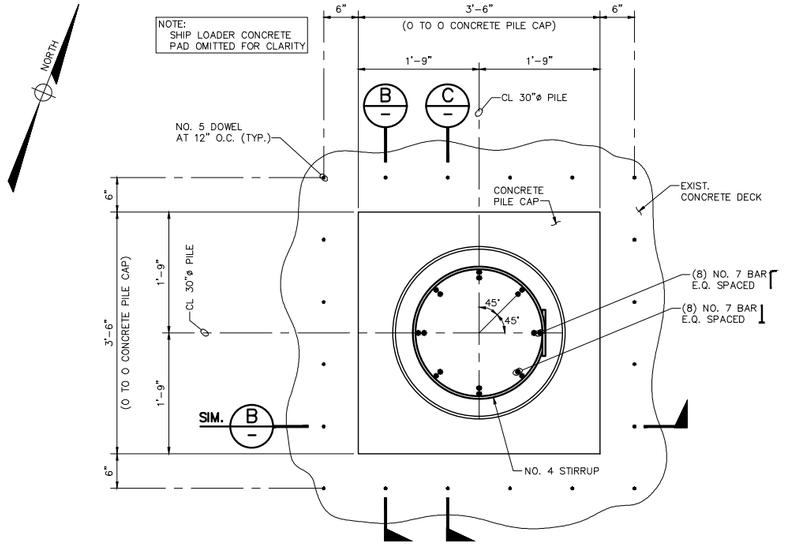
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

MODIFICATION CONCRETE PLAN AND SECTION

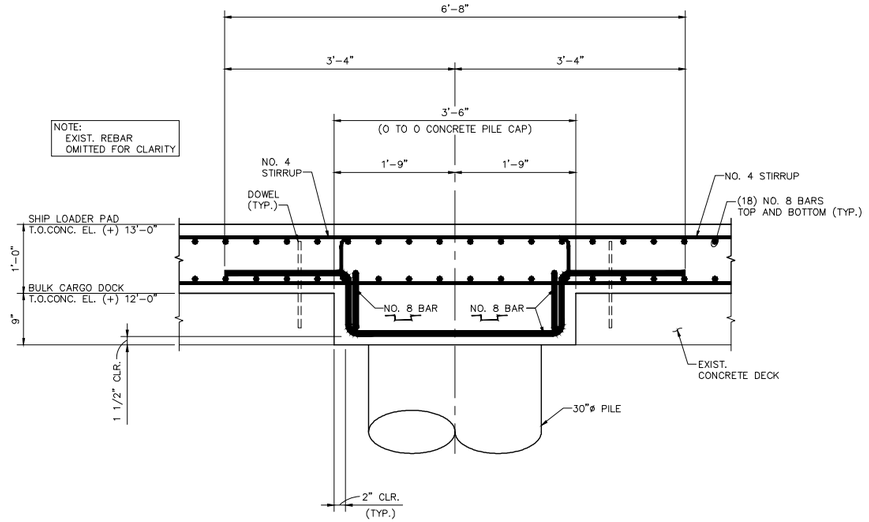
JOB NO. 6966.003 | DWG. NO. 6966-F-001 | B

24x36

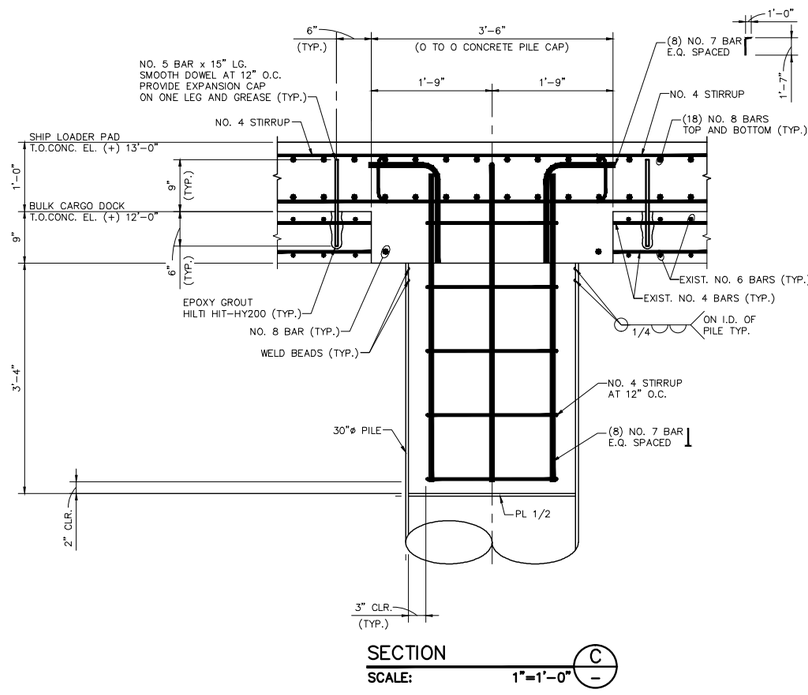
NOTE:
1. FOR GENERAL NOTES SEE DWG. NO. GN-001



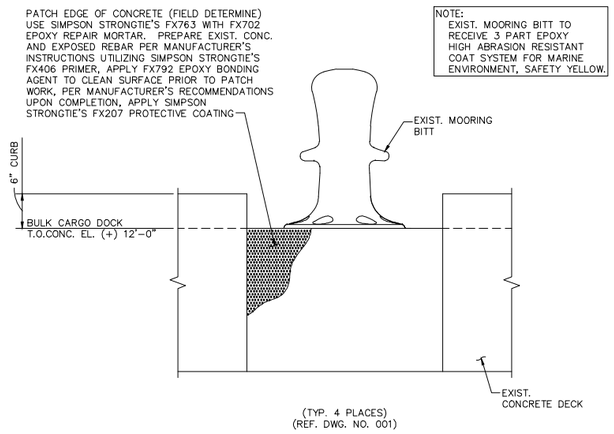
DETAIL 1/001
SCALE: 1"=1'-0"



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



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



TYPICAL MOORING BITT CONCRETE REPAIR DETAIL
SCALE: 1"=1'-0"

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DRAFT	CMZ	01/08/18
CHECK		
PROJECT		
CLIENT		

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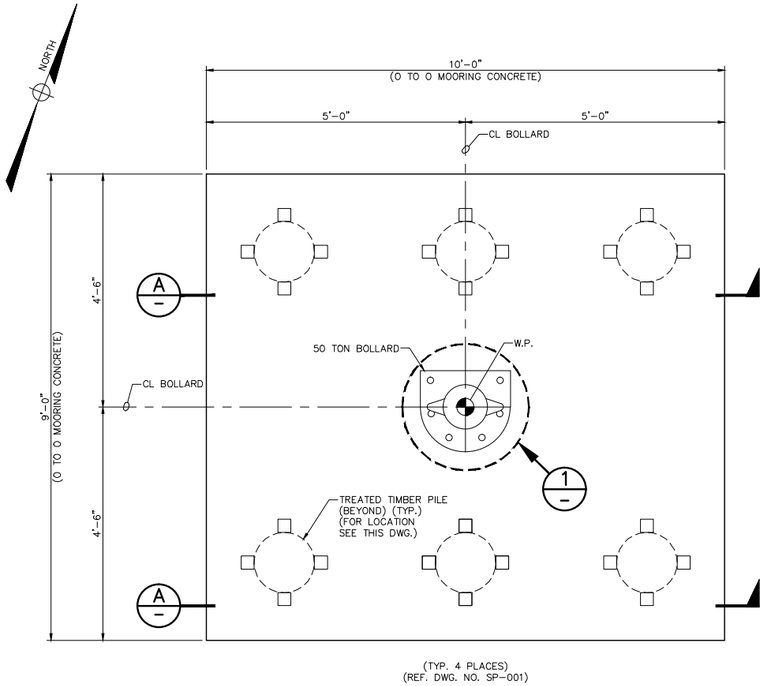
WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

MISCELLANEOUS SECTIONS AND DETAILS

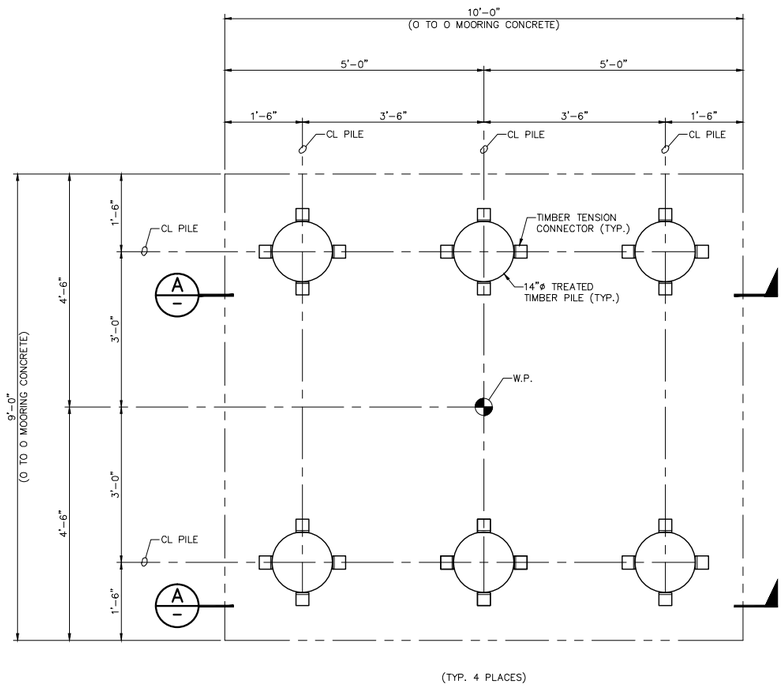
JOB NO. 6966.003 | DWG. NO. 6966-F-002 | B

24x36



(TYP. 4 PLACES)
(REF. DWG. NO. SP-001)

MOORING CONCRETE PLAN
SCALE: 3/4"=1'-0"

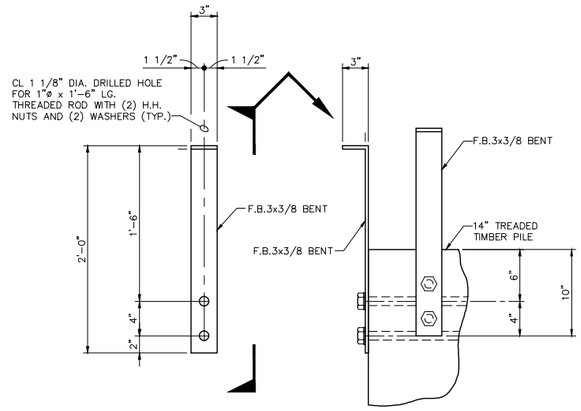


(TYP. 4 PLACES)

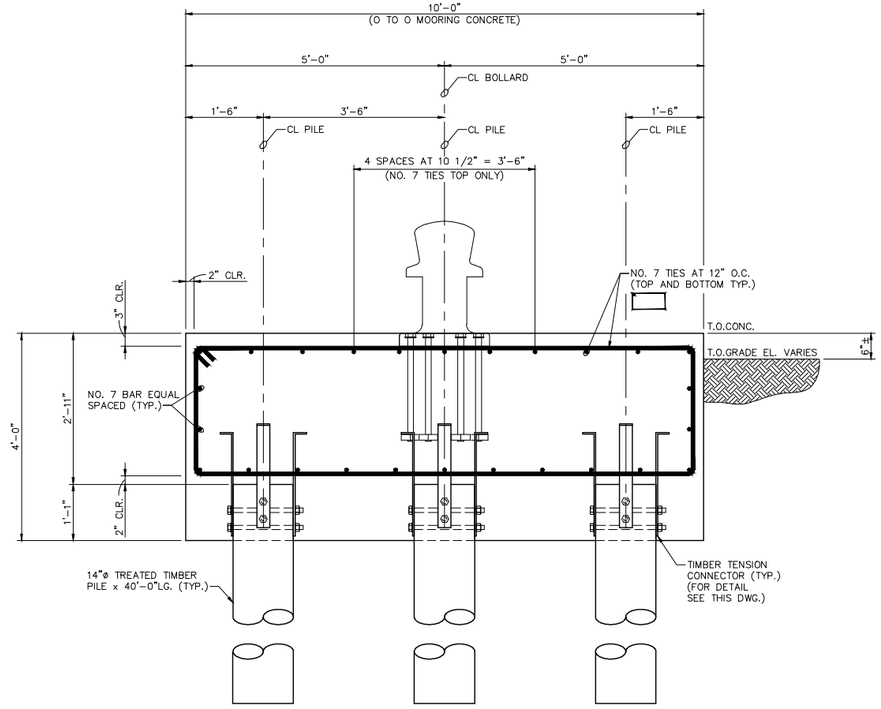
TIMBER PILE LOCATION PLAN
SCALE: 3/4"=1'-0"

NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001

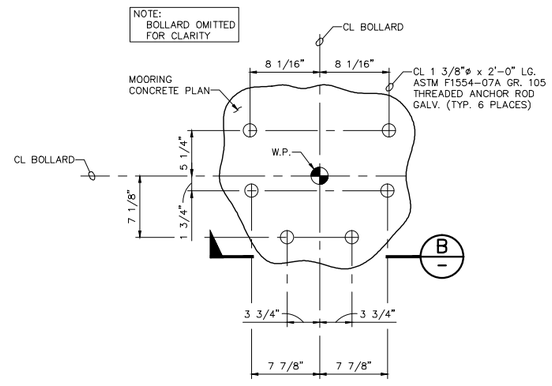


TIMBER TENSION CONNECTOR DETAIL
SCALE: 1 1/2"=1'-0"

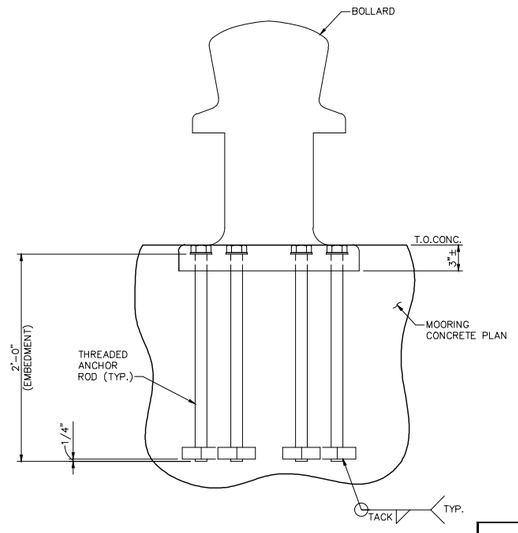


(TYP. 2 PLACES)

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



DETAIL
SCALE: 1 1/2"=1'-0" (1)



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

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A	CMZ	FOR CLIENT REVIEW	MDP	DRK	01/31/18

CLIENT			
PROJECT			
CHECK			
DRAFT	CMZ	01/08/18	

PORT OF BROWNSVILLE
the port that *works*

WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

LANDSIDE MOORING FOUNDATION

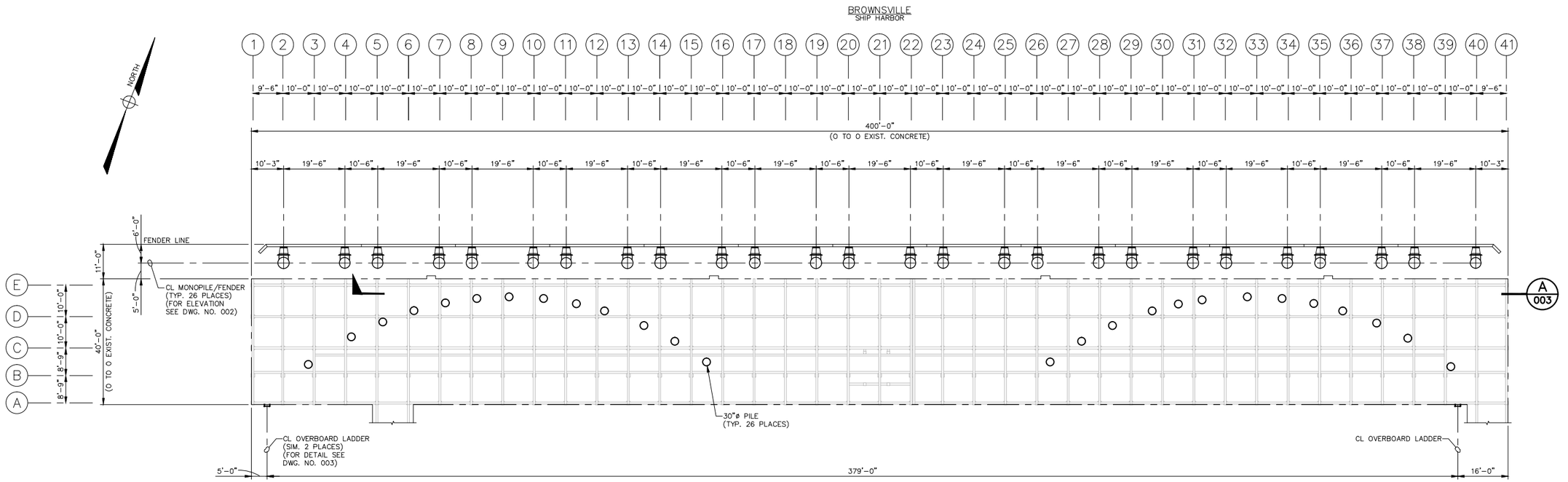
JOB NO. 6966.003 | DWG. NO. 6966-F-003 | B

24x36

NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. FOR REFERENCE SEE EXISTING DRAWING: BROWNSVILLE NAVIGATION DISTRICT BULK HANDLING DOCK PLANS AND DETAILS BY R.L. REID CONSULTING ENGINEERS.

BROWNSVILLE
SHIP HARBOR



(T.O.S. EL. (+) 13'-3" U.N.O.)

MONOPILE/FENDER AND OVERBOARD LADDER LOCATION PLAN

SCALE: 1/16"=1'-0"

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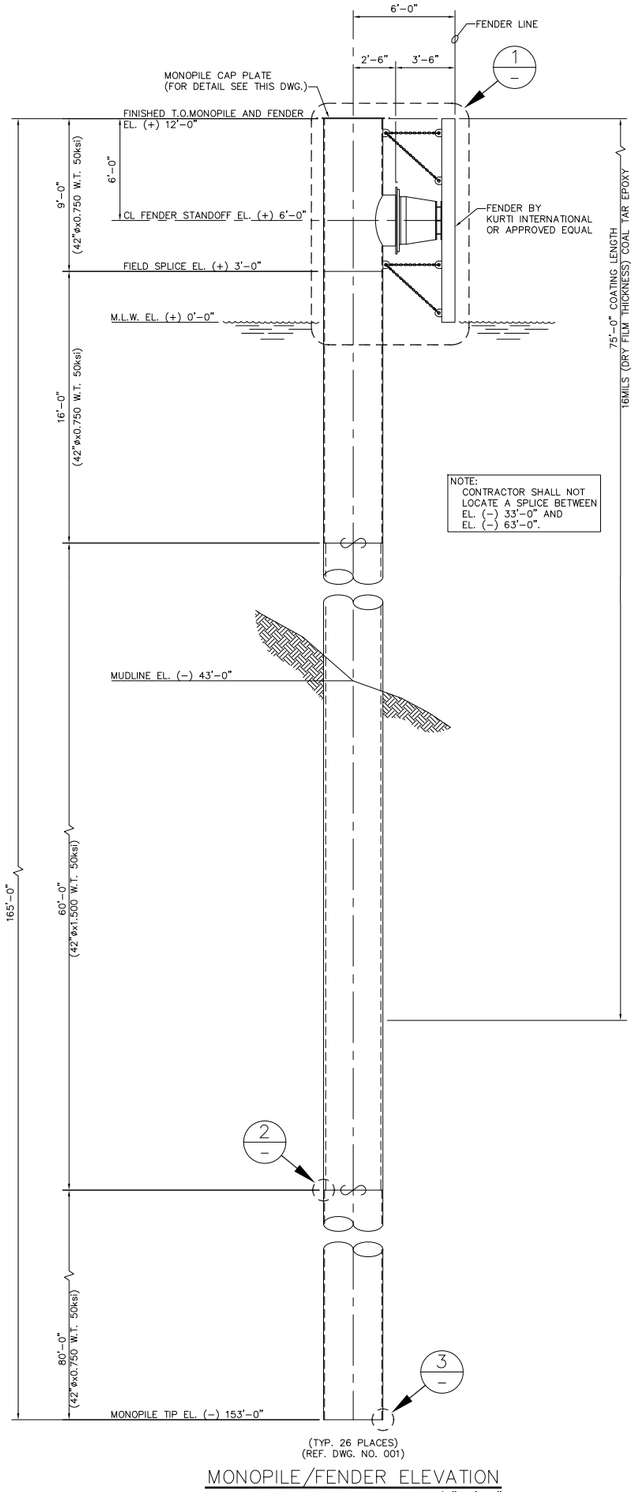
WESTPLAINS

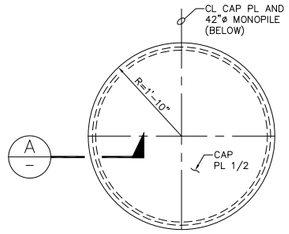
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS
MONOPILE/FENDER AND OVERBOARD LADDER LOCATION PLAN

JOB NO. 6966.003 | DWG. NO. 6966-S-001 | B

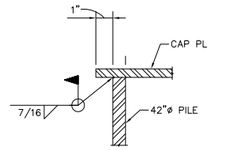
24x36



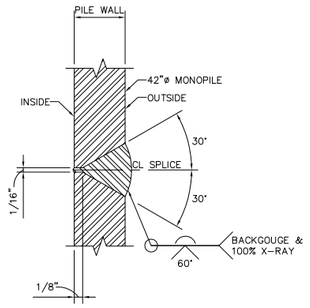
MONOPILE/FENDER ELEVATION
SCALE: 1/4"=1'-0"



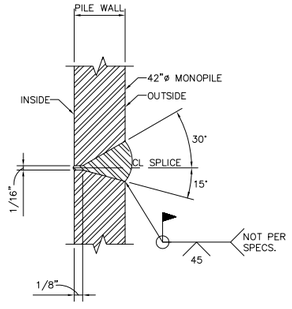
MONOPILE CAP PLATE DETAIL
SCALE: 3/4"=1'-0"



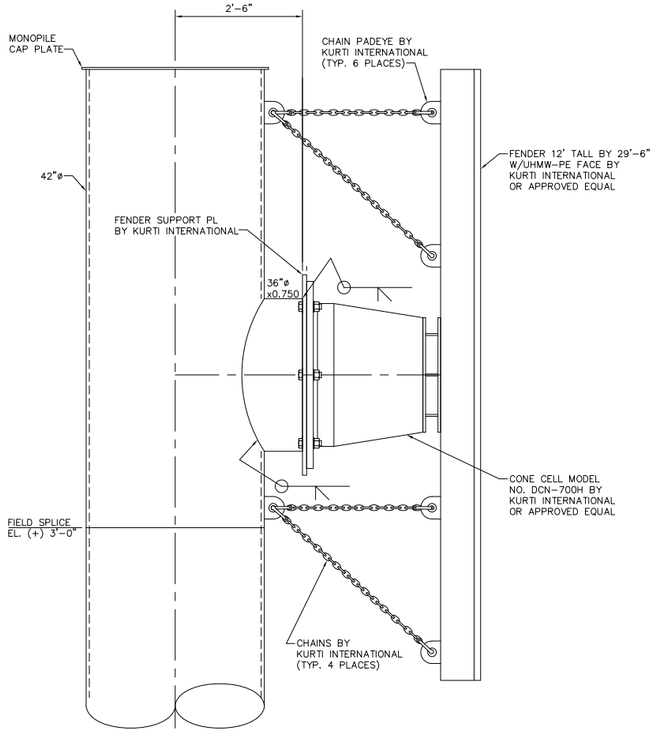
SECTION A
SCALE: 3"=1'-0"



TYPICAL SHOP SPLICE DETAIL
SCALE: N.T.S.

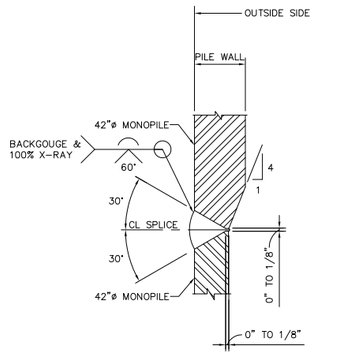


TYPICAL FIELD SPLICE DETAIL
SCALE: N.T.S.

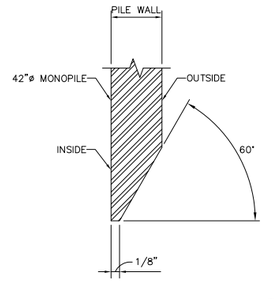


(TYP. 26 PLACES)

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



DETAIL 2
SCALE: N.T.S.



DETAIL 3
SCALE: N.T.S.

NOTE:

1. FOR GENERAL NOTES SEE DWG. NO. GN-001

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CHECK			
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PORT OF BROWNSVILLE
the port that works
WESTPLAINS

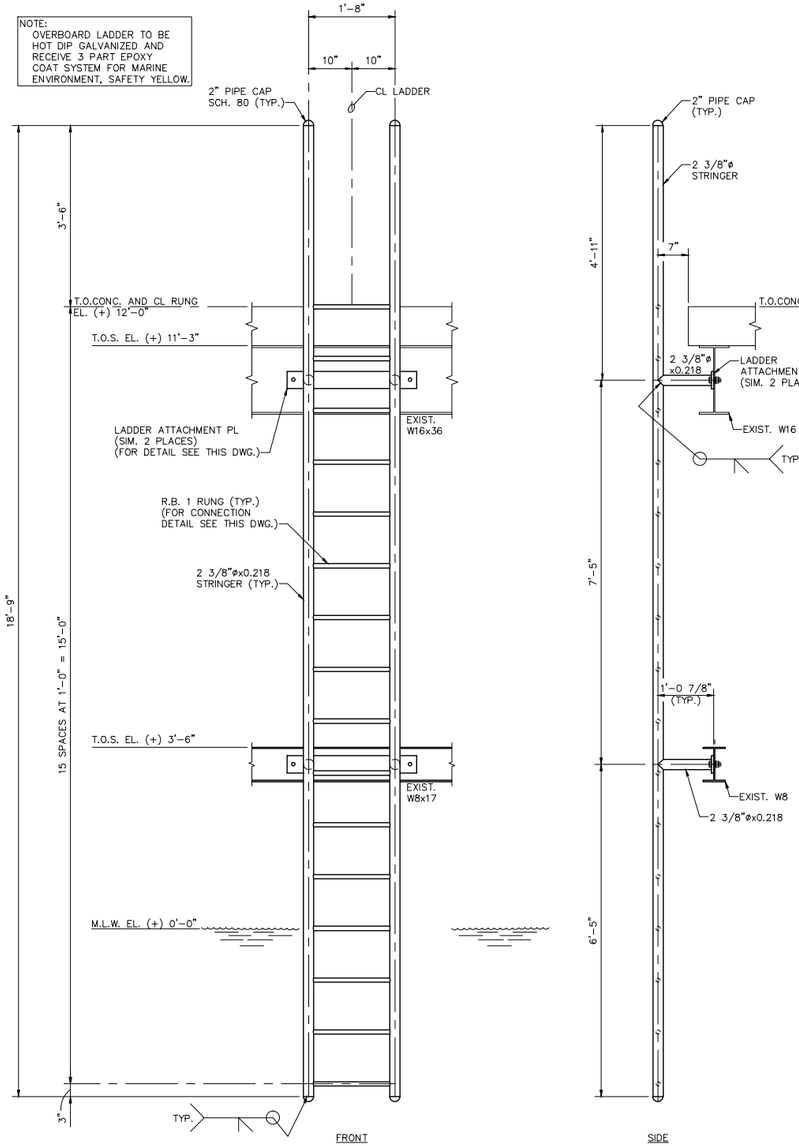
BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

MONOPILE ELEVATION, SECTIONS & DETAILS

JOB NO. 6966.003 | DWG. NO. 6966-S-002 | B

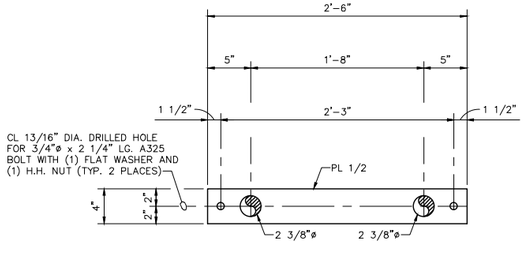
24x36

NOTE:
OVERBOARD LADDER TO BE HOT DIP GALVANIZED AND RECEIVE 3 PART EPOXY COAT SYSTEM FOR MARINE ENVIRONMENT, SAFETY YELLOW.



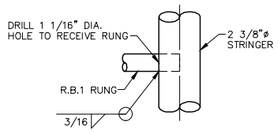
(SIM. 2 PLACES)
(REF. DWG. NO. 001)

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

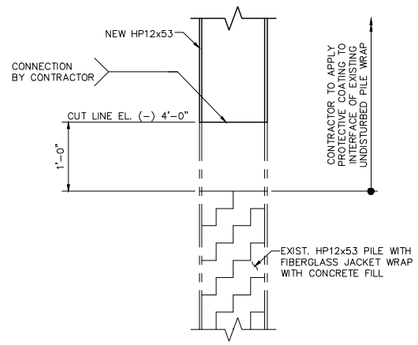


(SIM. 4 PLACES)

LADDER ATTACHMENT PL DETAIL
SCALE: 1 1/2"=1'-0"

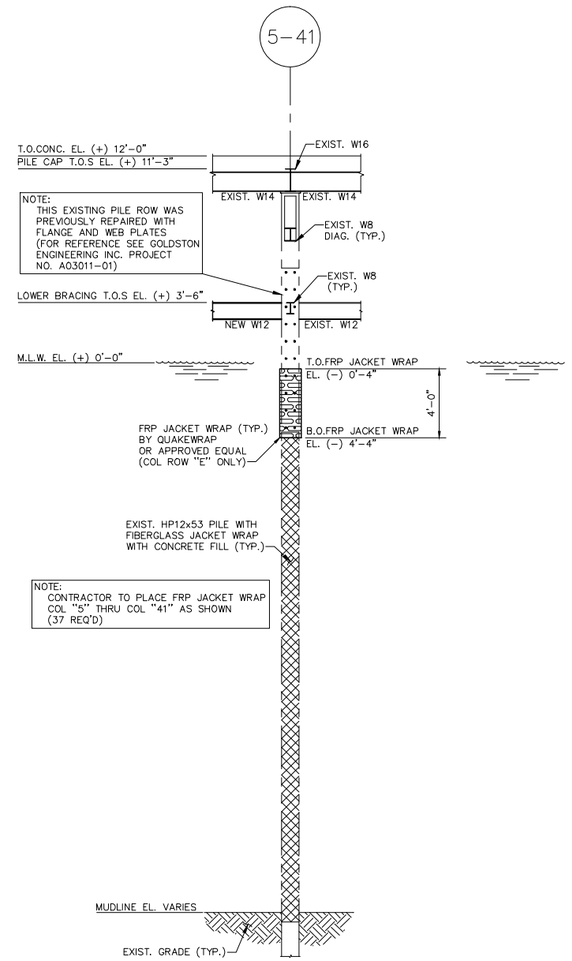


RUNG CONNECTION DETAIL
SCALE: 3"=1'-0"



DETAIL 3
SCALE: 1"=1'-0" D-005 – 007

NOTE:
1. FOR GENERAL NOTES SEE DWG. NO. GN-001
2. FRP JACKET WRAP BY QUAKEWRAP OR APPROVED EQUAL
3. DENOTES ITEMS WITH PILE GUARD JACKET WRAP
4. DENOTES ITEMS WITH FIBERGLASS JACKET WRAP WITH CONCRETE FILL



SECTION A
SCALE: 1/4"=1'-0" 001

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WESTPLAINS

BROWNSVILLE NAVIGATION DISTRICT
BULK CARGO DOCK IMPROVEMENTS

OVERBOARD LADDER SECTIONS AND DETAILS

JOB NO. 6966.003 | DWG. NO. 6966-S-003 | A

24x36