

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
CLEVELAND CUYAHOGA COUNTY
PORT AUTHORITY

DOCK 24 & 26 MASTER MODERNIZATION & REHABILITATION PROJECT

CITY OF CLEVELAND
CUYAHOGA COUNTY

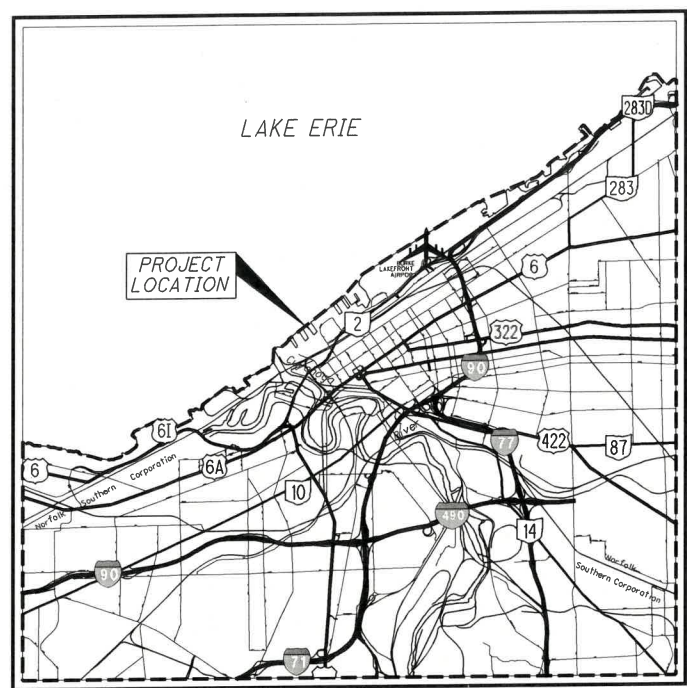
PROJECT DESCRIPTION

REHABILITATION & RAISING OF THE SURFACE ON DOCK 24 AND 26W WITH NEW CONCRETE CAP ON BULKHEAD. 1098' OF BULKHEAD ON DOCK 26W SHALL BE REPLACED WITH NEW SHEET PILE OUTSIDE OF THE EXISTING FOOTPRINT FOR AN ANTICIPATED LIFESPAN OF 50 YEARS. DRAINAGE IMPROVEMENTS ASSOCIATED WITH THIS PROJECT INCLUDE REROUTING/CONSOLIDATION OF OUTFALLS AND WATER QUALITY TREATMENT AND STORAGE. NEW BOLLARDS, FENDERS, AND BOLLARD FOUNDATION REHABILITATION ARE ALSO INCLUDED IN THIS PROJECT.

PROJECT EARTH DISTURBED AREA: 10.11 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 10.36 ACRES

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.



LOCATION MAP

LATITUDE: 41°30'17" N LONGITUDE: 81°42'06" W



PORTION TO BE IMPROVED	-----
INTERSTATE HIGHWAY	-----
FEDERAL ROUTES	-----
STATE ROUTES	-----
COUNTY & TOWNSHIP ROADS	-----
OTHER ROADS	-----

DESIGN DESIGNATION

CURRENT ADT (2019)	SEASONAL
DESIGN YEAR ADT (2039)	SEASONAL
DESIGN HOURLY VOLUME (2039)	N/A
DIRECTIONAL DISTRIBUTION	N/A
TRUCKS (24 HOUR B&C)	N/A
DESIGN SPEED	<25 MPH
LEGAL SPEED	<25 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
LOCAL - PRIVATE	
NHS PROJECT	NO

DESIGN EXCEPTIONS

INDEX OF SHEETS:

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UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

PLAN PREPARED BY:
JMT
559 W. ST. CLAIR AVE. | CLEVELAND, OHIO 44113
P:(216) 400 6230 | F:(216) 400 6238 | www.jmt.com

ENGINEERS SEAL:

SIGNED: _____
DATE: 4/19/21

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS	
CB-1.1	7/19/19	CITY OF CLEVELAND		800	1/15/21		
CB-1.2	1/15/16	STD-H02	STD-T02	832	10/19/18		
CB-1.3	1/15/16	STD-H03	STD-T03	839	1/17/20		
MH-1.1	1/15/16	STD-H04		902	7/19/19		
MH-1.2	1/15/16	STD-H05		939	1/17/20		
DM-1.1	7/17/20	STD-H06					
DM-4.3	1/15/16	STD-H08					
DM-4.4	1/15/16	STD-H09					
BP-1.1	7/28/00	STD-H12					
BP-2.1	7/17/15	STD-H13					
BP-2.2	1/15/21	STD-001					
BP-3.1	1/17/20	STD-005					
F-1.1	7/19/13	STD-006					
F-3.2	7/18/14	STD-008					
RM-4.2	4/17/20	STD-011					
RM-6.1	7/18/14	STD-T01					



APPROVED: PRESIDENT/CEO, CLEVELAND-CUYAHOGA COUNTY PORT AUTHORITY
DATE: 4-27-21

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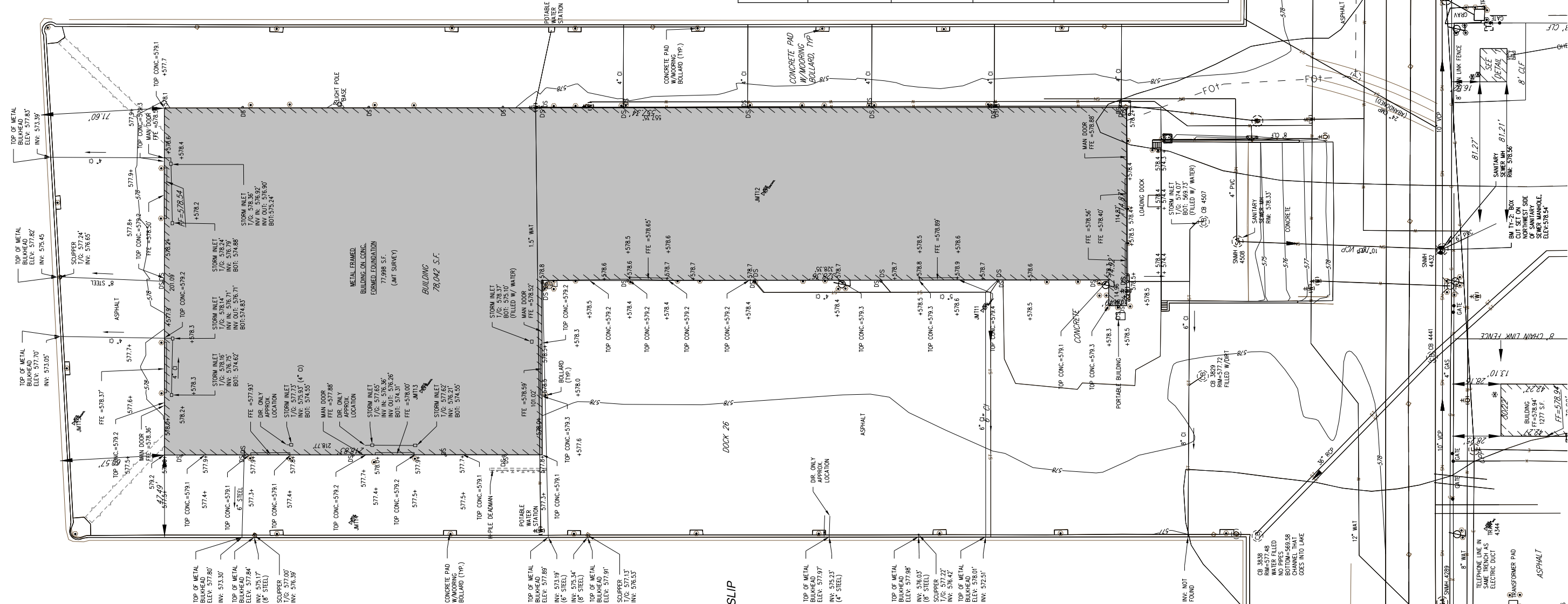
PIDF GRANT NO. 693JF71910010
 PID NO. 113698
 CONSTRUCTION PROJECT NO. OPS-20-A
 RAILROAD INVOLVEMENT NONE
 DOCK 24 & 26W
 1/106

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LEGEND:

■ - EXISTING BUILDING

BENCH MARK CONTROL COORDINATE TABLE				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM-2	70,334.99	86,314.24	581.57	MAGNAIL IN LP CONC. BASE
BM-3	70,945.30	87,143.01	583.36	MAGNAIL IN LP CONC. BASE
BM-TY2	70,791.24	86,900.95	578.54	BOX CUT SET ON SSMH



NOTES:

- HORIZONTAL COORDINATES ARE REFERENCED TO PROVIDED CONTROL (ASSUMED COORDINATE BASE) FROM THE CLEVELAND-CUYAHOGA PORT AUTHORITY (CLIENT) AND WAS TIED DOWN TO THE OHIO STATE PLANE (OH S.P.C.S.-NORTH ZONE). THE ESTABLISHMENT OF HORIZONTAL COORDINATES WERE DERIVED FROM GPS SESSIONS UTILITIZING OHDOT GPS RTK NETWORK.
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). THE BENCHMARK HELD ON THE TOPOGRAPHY VERIFICATIONS IS "BM 3" (POINT NO. 5367), MAGNAIL FOUND IN CONCRETE BASE OF LIGHT POLE, ELEVATION OF 583.36'. AN ADDITIONAL BENCHMARK WAS CHECKED AND VERIFIED (BM-2) AND AN ADDITIONAL BENCHMARK WAS SET FOR PROJECT USE. DIFFERENTIAL LEVELS WERE PERFORMED.

NOTES (CONT):

- NO ATTEMPT HAS BEEN MADE AS A PART OF THIS SURVEY TO OBTAIN OR SHOW ALL DATA CONCERNING EXISTENCE, SIZE, DEPTH, CONDITION, CAPACITY, OR LOCATION OF ANY UTILITY OR MUNICIPAL/PUBLIC SERVICE FACILITY. FOR INFORMATION REGARDING THESE UTILITIES OR FACILITIES, PLEASE CONTACT THE CLEVELAND-CUYAHOGA PORT AUTHORITY FOR UTILITY INFORMATION.
- THE TOPOGRAPHIC FEATURES SHOWN HEREON ARE BASED ON A FIELD SURVEY CONDUCTED DECEMBER 2019 IN CONJUNCTION WITH BASE MAPPING PROVIDED BY THE CLIENT.
- LAKE ERIE WATER SURFACE ELEVATIONS ARE ON INTERNATIONAL GREAT LAKES DATUM (IGLD85) WHICH DIFFERS FROM THE PROJECT DATUM BY 0.26'.
- EXISTING BULKHEAD HAS DEADMAN ANCHORS AND TIE BACKS. CONTRACTOR SHALL REFER TO ORIGINAL CONSTRUCTION DRAWINGS FOR INFORMATION ON THE LOCATION AND DEPTH OF THESE SUBSURFACE FEATURES.

BENCHMARK "BM-2" (PT NO. 3373): MAGNAIL FOUND IN CONCRETE BASE OF LIGHT POLE, ELEV: 581.57' (PROVIDED ELEV: 581.61').

BENCHMARK "BM-3" (PT NO. 5367): MAGNAIL FOUND IN CONCRETE BASE OF LIGHT POLE, ELEV: 583.36'.

BENCHMARK "TY2": BOX CUT SET IN NORTHWEST CORNER OF SANITARY SEWER MANHOLE NO. 4432, ELEV: 578.54'.

J.M.T. SURVEY CONTROL COORDINATE TABLE				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
△ 4344	70,678.22	86,782.62	578.28	TRAV-MAGNAIL
△ JMT11	70,990.30	86,721.99	578.62	FLY-MAGNAIL
△ JMT12	71,133.50	86,706.04	578.61	FLY-CONC NAIL
△ JMT13	71,232.03	86,499.60	578.48	FLY-MAGNAIL
△ JMT14	71,222.66	86,413.61	577.29	FLY-MAGNAIL
△ JMT15	71,387.53	86,370.40	577.25	FLY-MAGNAIL

STATEMENT OF ACCURACY

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THE BASE MAPPING TOPOGRAPHY SHOWN AND DESCRIBED HEREON IS TRUE AND CORRECT, BASED ON A JMT FIELD TOPOGRAPHIC LOCATION/VERIFICATION DURING THE WEEK OF DECEMBER 2ND TO DECEMBER 4TH OF 2019 AND SUPPLEMENTING INTO THE PROVIDED BASE MAPPING INFORMATION (BY OTHERS). THE BASE MAPPING TOPOGRAPHY WAS PROVIDED BY THE CLEVELAND-CUYAHOGA COUNTY PORT AUTHORITY (CLIENT) TO JMT WITH DIRECTION TO UTILIZE FOR DESIGN PURPOSES. THE TOPOGRAPHY WAS SURVEYED BY K & S ASSOCIATES FOR THE PORT OF CLEVELAND DURING 2009.



SURVEY SHEET DOCK 26W

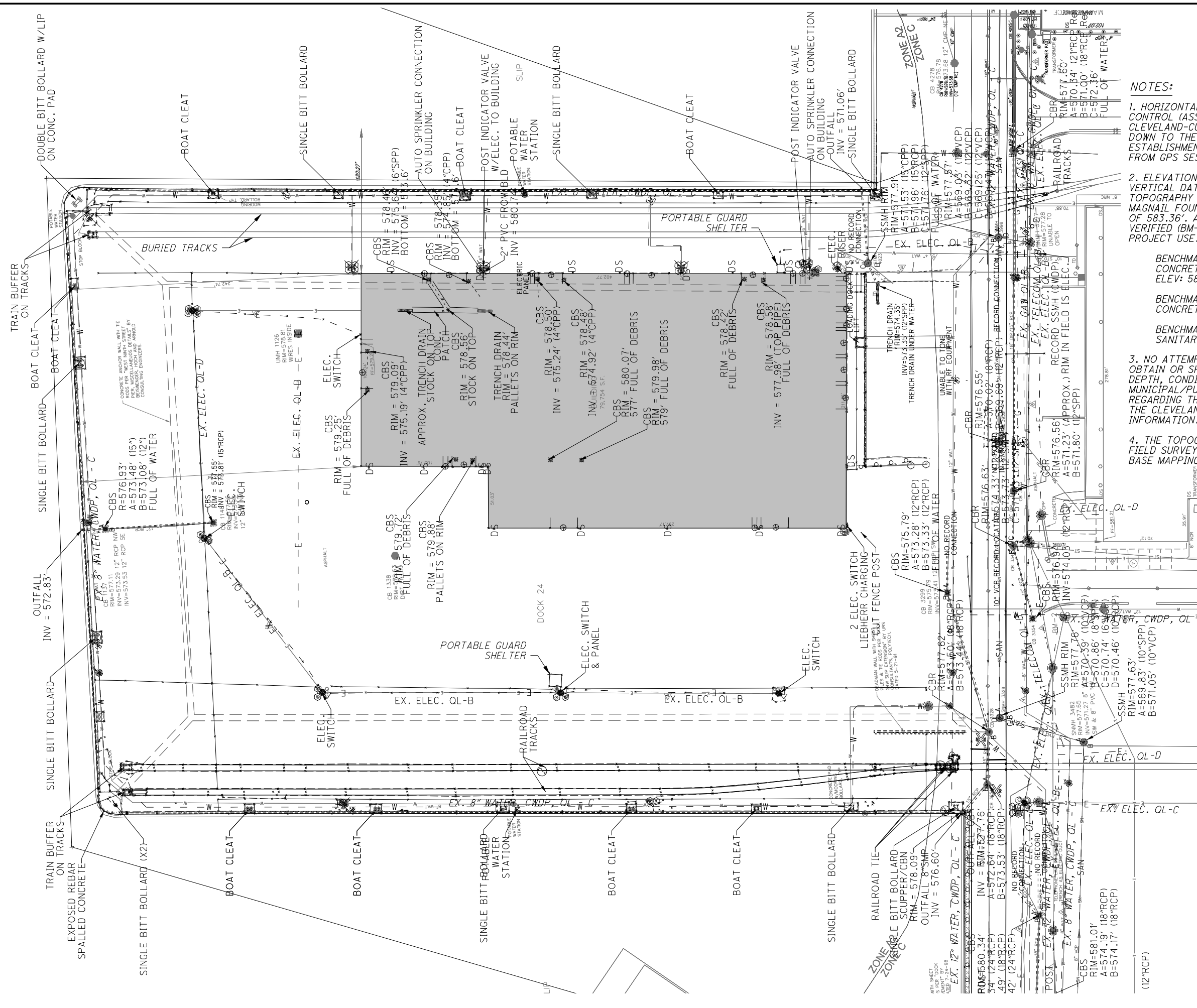
DOCK 24 & 26W

2
106

CALCULATED

CHECKED

15
HORIZONTAL
SCALE IN FEET



LEGEND:
 - EXISTING BUILDING

- NOTES:**
- HORIZONTAL COORDINATES ARE REFERENCED TO PROVIDED CONTROL (ASSUMED COORDINATE BASE) FROM THE CLEVELAND-CUYAHOGA PORT AUTHORITY (CLIENT) AND WAS TIED DOWN TO THE OHIO STATE PLANE (OH S.P.C.S.-NORTH ZONE). THE ESTABLISHMENT OF HORIZONTAL COORDINATES WERE DERIVED FROM GPS SESSIONS UTILITIZING OHDOT GPS RTK NETWORK.
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0 20 40 80
HORIZONTAL SCALE IN FEET

CALCULATED
CHECKED

SURVEY SHEET

DOCK 24

DOCK 24 & 26W

3
106

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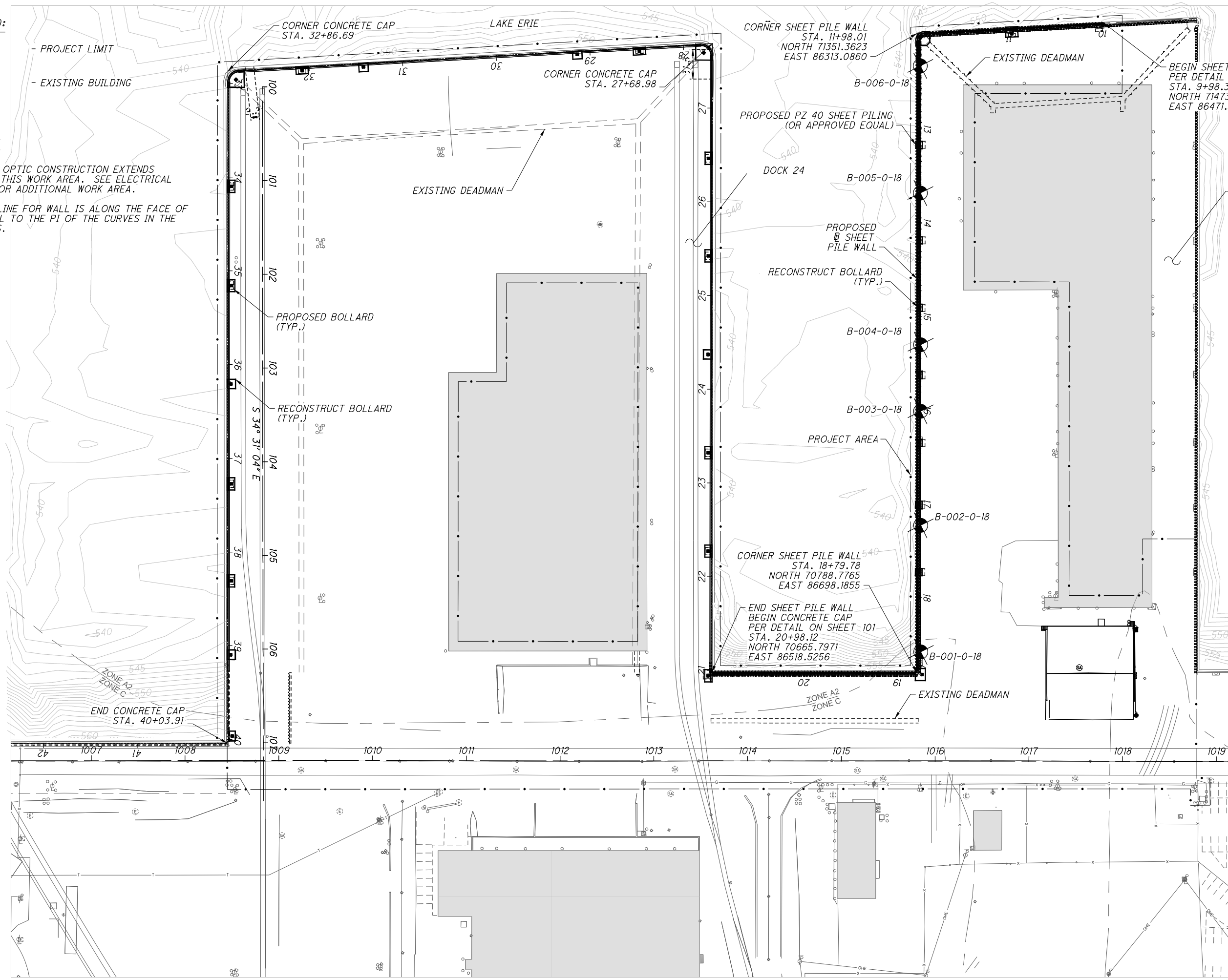
LEGEND:

- - - PROJECT LIMIT
- █ EXISTING BUILDING

NOTES:

1. FIBER OPTIC CONSTRUCTION EXTENDS BEYOND THIS WORK AREA. SEE ELECTRICAL SHEET FOR ADDITIONAL WORK AREA.

2. BASELINE FOR WALL IS ALONG THE FACE OF THE WALL TO THE PI OF THE CURVES IN THE CORNERS.



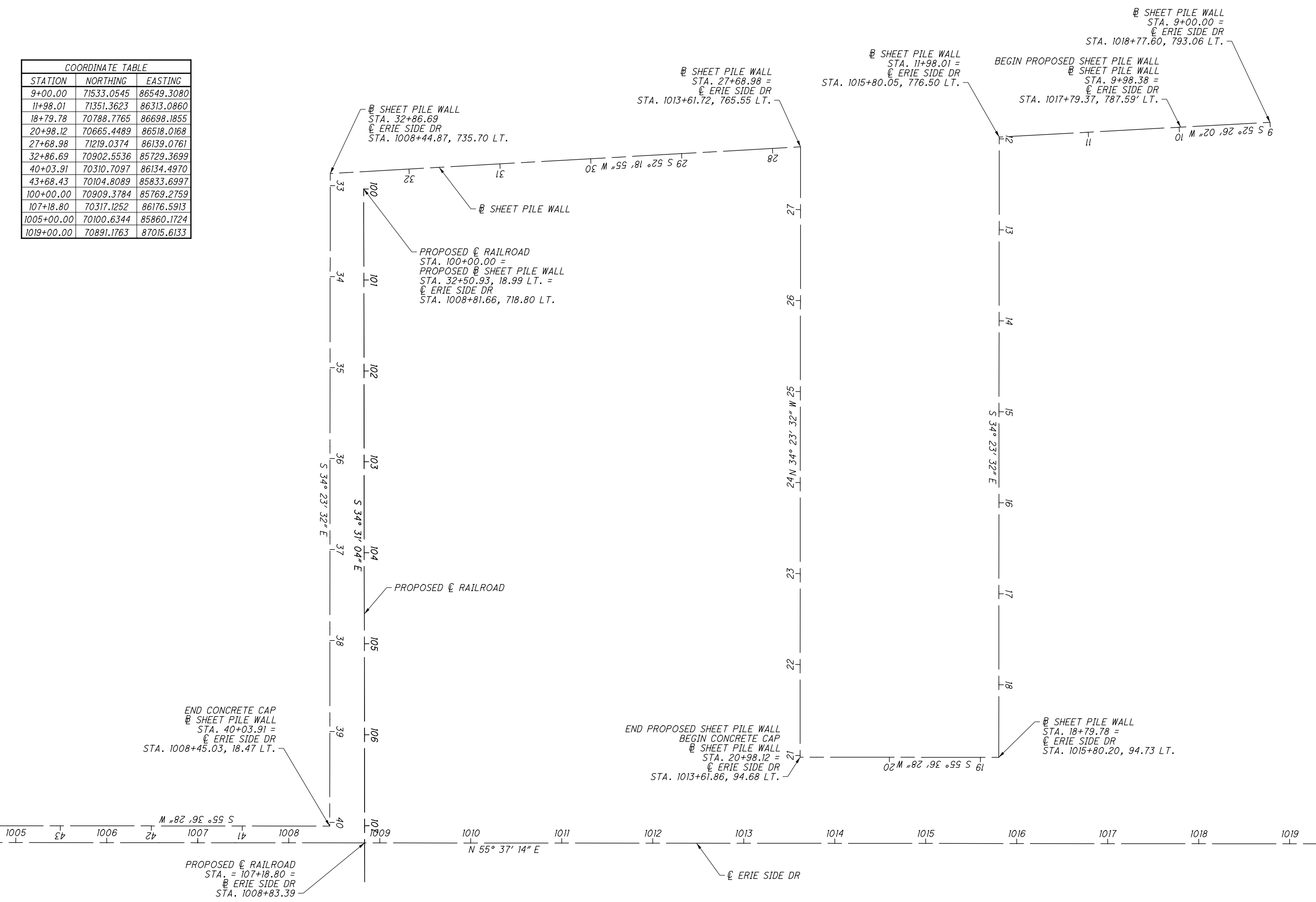
CALCULATED
JAG
CHECKED
XXX

0 50 100
25
HORIZONTAL
SCALE IN FEET

**PROPOSED IMPROVEMENT
DOCK 26W & 24**

DOCK 24 & 26W

COORDINATE TABLE		
STATION	NORTHING	EASTING
9+00.00	71533.0545	86549.3080
11+98.01	71351.3623	86313.0860
18+79.78	70788.7765	86698.1855
20+98.12	70665.4489	86518.0168
27+68.98	71219.0374	86139.0761
32+86.69	70902.5536	85729.3699
40+03.91	70310.7097	86134.4970
43+68.43	70104.8089	85833.6997
100+00.00	70909.3784	85769.2759
107+18.80	70317.1252	86176.5913
1005+00.00	70100.6344	85860.1724
1019+00.00	70891.1763	87015.6133



BASE LINE SCHEMATIC

CALCULATED
JAG
CHECKED
RCM

0 50 100
25
HORIZONTAL
SCALE IN FEET

BASE LINE SCHEMATIC
DOCK 26W & 24

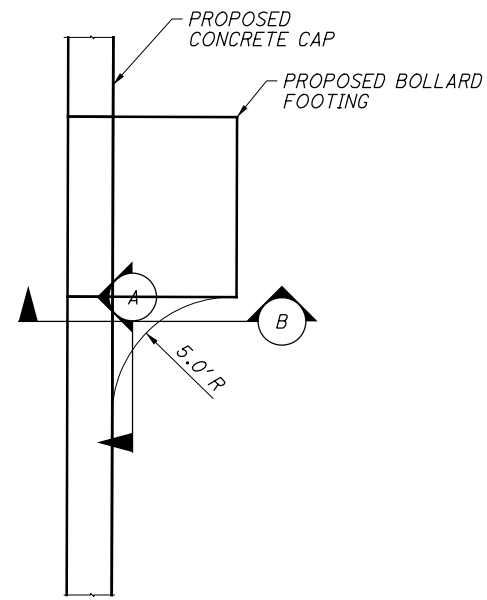
DOCK 24 & 26W

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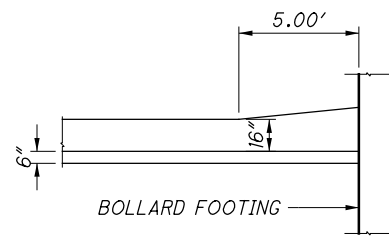
- ① ITEM 441 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22
- ② ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) VARIABLE DEPTH
- ③ ITEM 407 - TACK COAT
- ④ ITEM 451 - 16" REINFORCED CONCRETE PAVEMENT, CLASS QC 1P
- ⑤ ITEM 304 - 6" AGGREGATE BASE

NOTES:

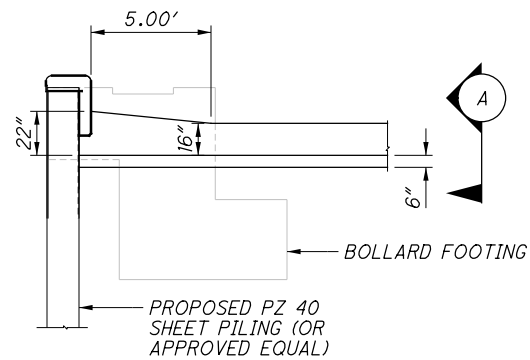
- 1. SEE SHEET 40 FOR RAILROAD SECTION. ITEM SPECIAL - SUBGRADE ENHANCEMENT TO ALL OF DOCK 24 BULKHEAD.
- 2. SEE SHEET 94 FOR CONCRETE CAP DETAILS.



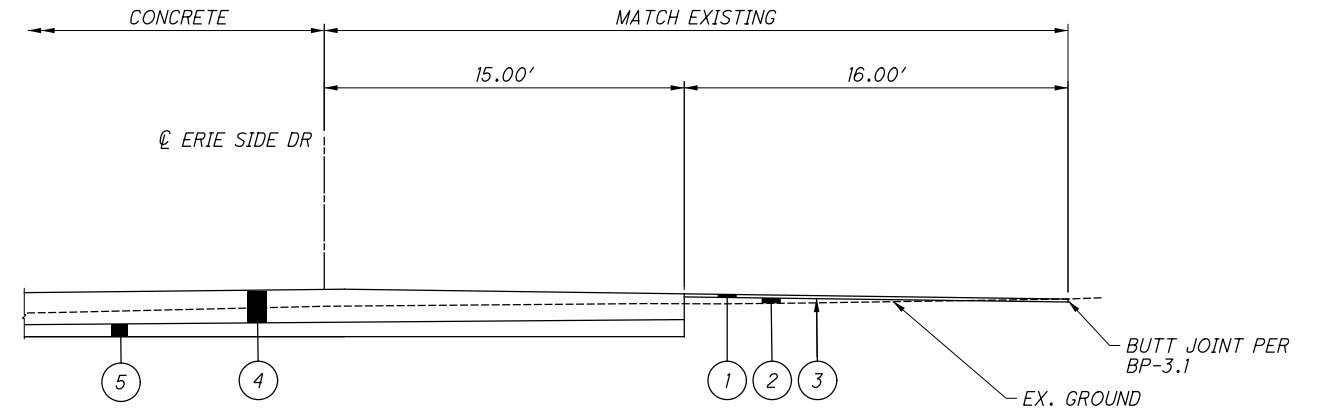
PLAN



SECTION A

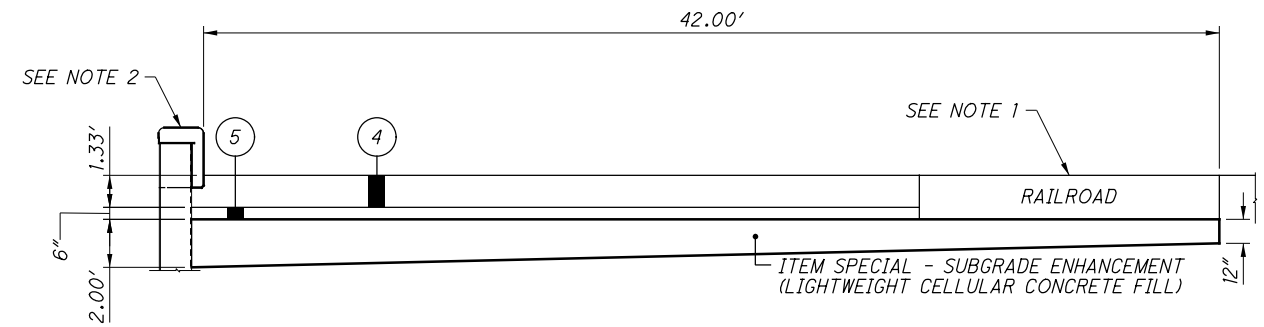


SECTION B



TYPICAL SECTION

☉ ERIE SIDE DR, STA. 1008+44.54 TO ☉ ERIE SIDE DR, STA. 1018+32.78



TYPICAL PAVEMENT BUILDUP

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CALCULATED
CHECKED

TYPICAL SECTION

DOCK 24 & 26W

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

AT&T OHIO
13630 LORAIN AVE. - 2ND FLOOR
CLEVELAND, OHIO 44111
ATTN: JAMES JANIS
PHONE: (216) 476-6142
FAX: (216) 476-6013

CITY OF CLEVELAND
DIVISION OF CLEVELAND PUBLIC POWER
1300 LAKESIDE AVE
CLEVELAND, OHIO 44114
ATTN: CHRIS HERTZEL
PHONE: (216) 664-3922

CITY OF CLEVELAND
DIVISION OF WATER
1201 LAKESIDE AVE.
CLEVELAND, OHIO 44114
ATTN: FRED ROBERTS
PHONE: (216) 644-2444 EXTENSION 75590
fred.roberts@ClevelandWater.com
INSPECTION: (216) 664-2342
EMERGENCY: (216) 664-3060

CITY OF CLEVELAND
DIVISION OF WATER POLLUTION CONTROL
12302 KIRBY ROAD
CLEVELAND, OHIO 44108
ATTN: RACHID ZOGHAIB
PHONE: (216) 664-3785
rzoghaib@ClevelandWPC.com

DOMINION ENERGY OHIO
320 SPRINGSIDE DR., SUITE 320
AKRON, OHIO 44333
ATTN: MICHAEL R. ANTONIUS
PHONE: (330) 664-2481
Michael.r.antonius@dominionenergy.com

LEVEL 3 COMMUNICATIONS
400 CHESTER AVE.
CLEVELAND, OH 44103
PHONE: (216) 906-6284
doug.holloway@centurylink.com

FIRST ENERGY
JOHN M. ZASSICK
6896 MILLER RD, SUITE 101
BRECKSVILLE, OH 44141
OFFICE 440-546-8706
CELL 216-538-1580
jmzassick@firstenergycorp.com

EVERSTREAM
DAVID CHAPPELL, OSP MANAGER
1228 EUCLID AVE.
CLEVELAND, OH 44113
CELL 330-461-1083
dchappell@everstream.net

I.T. & NETWORK SUPPORT - TECHNOLOGY EXPERTS INC. (TXI)
ATTN: ERIC CHAJMOVIC
24000 MERCANTILE RD. STE. 1
BEACHWOOD, OH 44122
PHONE: 216-755-2002

THE UNDERGROUND UTILITIES ON THIS PLAN HAVE BEEN LOCATED FROM EXISTING PLAN INFORMATION. IF THERE ARE ANY DISCREPANCIES BETWEEN FIELD MARKINGS AND WHAT THE PLAN INDICATES, PLEASE CONTACT NICK LAPOINTE, PORT OF CLEVELAND 216-377-1342, PRIOR TO ANY SUBSURFACE WORK BEING INITIATED.

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGHT OTHERWISE SHOWN.

QUALITY CONTROL

ALL QUALITY CONTROL REQUIREMENTS LISTED IN THE SPECIFICATIONS ARE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM AND DOCUMENT. OWNER SHALL HAVE ACCESS TO THE QUALITY CONTROL DOCUMENTATION GENERATED BY THE CONTRACTOR OR BE PROVIDED COPIES OF QUALITY CONTROL DOCUMENTATION. OWNER MAY ELECT TO PERFORM ADDITIONAL QUALITY ASSURANCE TESTING.

EXISTING PLANS

EXISTING PLANS OF DOCKS 24 AND 26 ARE AVAILABLE FROM THE PORT AUTHORITY AT 1100 EAST 9th STREET OR BY CONTACTING NICK LAPOINTE AT 216-377-1342. PLANS ARE NOT AS-BUILT, ARE ON A DIFFERENT DATUM AND MAY NOT REFLECT THE CURRENT CONDITIONS.

EXISTING TIE RODS

EXISTING TIE RODS ARE SHOWN BASED ON EXISTING PLAN INFORMATION. CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING NEAR THEM. REPAIR OF DAMAGE TO TIE RODS TO THE PORT'S SATISFACTION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

LAKE ERIE WATER SURFACE ELEVATIONS

LAKE ERIE WSE FLUCTUATES ON A DAILY BASIS, AND HAS SEASONAL TRENDS THE CONTRACTOR SHOULD FAMILIARIZE THEMSELVES WITH. CONTRACTOR SHALL REFER TO "ARMY CORPS OF ENGINEERS WEEKLY GREAT LAKES WATER LEVEL UPDATE" AND THE CLEVELAND HARBOR TIDE GAUGE (<https://tidesandcurrents.noaa.gov/stationhome.html?id=9063063>) FOR MOST CURRENT LAKE ERIE WSE ON ANY GIVEN WEEK. GROUND WATER ELEVATIONS CLOSELY FOLLOW LAKE ELEVATIONS. CONTRACTOR SHOULD EXPECT AND PLAN FOR HIGH WATER CONDITIONS THAT HAVE EXCEEDED MEAN HIGH LAKE ERIE WATER ELEVATIONS. THE PORT AUTHORITY'S SUBSURFACE INFRASTRUCTURE IS COMMONLY FLOODED. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR DEWATERING AND/OR HANDLING WATER NECESSARY TO PERFORM THE WORK.

LAKE ERIE WATER SURFACE ELEVATIONS ARE GIVEN IN INTERNATIONAL GREAT LAKES DATUM (IGLD85) WHICH DIFFERS FROM THE PROJECT DATUM BY 0.26'.

	IGLD85	NAVD88
MEAN LOW LAKE ERIE WATER ELEVATION =	569.20	569.46
MEAN HIGH LAKE ERIE WATER ELEVATION =	573.40	573.66

PORT AUTHORITY WILL NOT SUPPORT ANY CLAIMS THAT RESULT FROM THE IMPACTS FROM GROUND WATER AND LAKE ERIE WATER SURFACE ELEVATIONS

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 173 FT. CONTRACTOR SHALL COMPLY WITH THE AIRSPACE DETERMINATION REQUIREMENTS INCLUDING FLAGS ON BOOM TIPS, BOOMING DOWN REQUIREMENTS AND/OR NIGHT MARKER LIGHTS.

IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, OR WORK WILL BE PERFORMED OUTSIDE A MARCH 2021 TO AUGUST 2022 TIMEFRAME, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA) AND THE ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO FILE A NEW FAA FORM 7460-1, ADVISING THE FAA THAT AERONAUTICAL STUDY NO. 2020-AGL-19560-OE IS BEING RESUBMITTED AND THAT AN ALTERATION TO THE ORIGINAL SUBMISSION IS REQUESTED.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS (CONT.)

FAA APPROVAL MAY TAKE UP TO 45 DAYS. ALL SUBMISSIONS SHALL BE DIRECTED TO THESE OFFICES:
EXPRESS PROCESSING CENTER
THE FEDERAL AVIATION ADMINISTRATION
SOUTHWEST REGIONAL OFFICE
AIR TRAFFIC 2601 MEACHAN BLVD.
AIRSPACE BRANCH ASW-520
FORT WORTH, TX 76137-4298

CONTRACTION AND/OR EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED, NOT ALL CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. IN ALL CASES, THE PROVISION OF EXPANSION JOINTS AT ALL STRUCTURES, CATCH BASINS, MANHOLES, VALVE BOXES, FIRE HYDRANTS, LIGHT POLE FOUNDATIONS AND BOLLARD FOUNDATIONS INCLUDING THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS IS IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2 AND THE SPECIFICATIONS.

PAYMENT FOR ALL REQUIRED JOINT WORK IS INCLUDED IN ITEM 451 REINFORCED CONCRETE PAVEMENT

HARD EXCAVATING AND DIGGING ANTICIPATED WITH DEBRIS

LAND HAD HISTORIC RAIL BEDS AND WAS CREATED FROM FILLED MATERIAL. CONTRACTORS SHOULD ANTICIPATE HARD EXCAVATING AND DIGGING CONDITIONS WITH MISC. RAIL AND OTHER MASONRY/CONCRETE DEBRIS BELOW GRADE. WHILE THERE ARE SEPARATE PAY ITEMS FOR REMOVAL OF FOUNDATIONS AND BURIED RAILS, NO ADDITIONAL PAYMENT FOR HARD DIGGING CONDITIONS WILL BE CONSIDERED.

ITEM SPECIAL WORK INVOLVING SOLID WASTE, AS DIRECTED BY THE ENGINEER

ANY EXCAVATED MATERIALS FROM THE PROJECT SHOULD BE REUSED TO THE FULLEST EXTENT POSSIBLE. AGGREGATE AND ASPHALT CONCRETE GRINDINGS MAY BE DISPOSED OF ON DOCK 20 AT LOCATIONS APPROVED BY THE AUTHORITY IS 100% OF THE MATERIAL WILL PASS A 1" SIEVE AND THE MATERIAL IS SPREAD EVENLY AND COMPACTED TO A MAXIMUM THICKNESS OF 6 INCHES. HOWEVER, IF THESE MATERIALS CAN'T BE REUSED, THEY SHOULD BE DISPOSED OF OFF SITE UNLESS THE PORT AUTHORITY DETERMINES THEM TO BE A SOLID WASTE. ALL EXCAVATIONS WITHIN THE PROJECT LIMITS SHALL BE PAID FOR UNDER THE ORIGINAL PLAN BID ITEMS.

THE CONTRACTOR SHALL PROPERLY TRANSPORT AND DISPOSE OF THE EXCESS MATERIALS DETERMINED TO BE A SOLID WASTE IN A LOCAL HEALTH DEPARTMENT LICENSED AND OHIO ENVIRONMENTAL PROTECTION AGENCY PERMITTED SOLID WASTE FACILITY. THE CONTRACTOR SHALL FURNISH ALL THE LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PROPERLY HANDLE, STORE, TEST (FOR DISPOSAL), TRANSPORT, AND DISPOSE OF THE EXCAVATED MATERIAL, INCLUDING ANY REQUIRED PERMITS, APPROVALS, OR FEES WITHIN THE LIMITS IDENTIFIED ABOVE. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT PRICE BID PER TON. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM SPECIAL - WORK INVOLVING SOLID WASTE 20 TON

ITEM 203 SINKHOLE INVESTIGATION

THERE ARE THREE EXISTING SINKHOLES ON DOCK 24 THAT HAVE BEEN SHOWN IN THE PLANS. AN UNDERWATER INSPECTION DID NOT FIND ANY HOLES IN THE BULKHEAD. CONTRACTOR SHALL EXCAVATE IN THESE AREAS WITH THE AUTHORITIES REPRESENTATIVE PRESENT TO DETERMINE THE CAUSE OF THE SINKHOLES. EXCAVATION SHOULD BE ASSUMED TO BE TO THE TOP OF THE TIE RODS. ONCE THE CAUSE OF THE SINKHOLE HAS BEEN IDENTIFIED OR THE AUTHORITIES REPRESENTATIVE DIRECTS, CONTRACTOR SHALL BACKFILL THE EXCAVATION TO THE PROPOSED SUBGRADE PER SECTION 203 OF THE CMS USING GRANULAR MATERIAL.

ITEM 203 SINKHOLE INVESTIGATION (CONT.)

ANY REPAIRS NEEDED TO MITIGATE THE CAUSE OF THE SINKHOLE, IF IDENTIFIED, WILL BE BY CHANGE ORDER.

PAYMENT FOR INVESTIGATING SINKHOLES SHALL INCLUDE ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NEEDED TO EXCAVATE THE SINKHOLE AREAS AS NEEDED, INCLUDING BACKFILLING THE CAVITY CREATED BY THE EXCAVATION. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 203 SINKHOLE INVESTIGATION 3 EACH

ITEM 202 STRUCTURE REMOVED

UNKNOWN FOUNDATIONS MAY EXIST WITHIN THE LIMITS OF THE EXCAVATION. SOME MAY HAVE STEEL PILES EXTENDING INTO THE SUBGRADE. FOUNDATIONS, INCLUDING PILES, SHALL BE REMOVED TO A MINIMUM OF 1' BELOW SUBGRADE AND DISPOSED OF. BACKFILL THE CAVITY WITH ITEM 304 AGGREGATE BASE.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 202 STRUCTURE REMOVED	25 CY
ITEM 304 AGGREGATE BASE	25 CY

ITEM 202 REMOVAL MISC.: BUILDING REMOVED, STORED AND RESET

REMOVE THE EXISTING BUILDING WHERE SHOWN ON THE PLANS AND STORE IN THE LAYDOWN AREA. ONCE THE PAVEMENT HAS BEEN PLACED, RESET THE BUILDING ON THE NEW PAVEMENT AT THE SAME LOCATION.

ANY EXISTING UTILITY CONNECTIONS TO THE BUILDING ARE TO BE DISCONNECTED, PROTECTED AND RECONNECTED WHEN THE BUILDING IS RESET.

ITEM 202 REMOVAL MISC.: BUILDING REMOVED, STORED AND RESET WILL BE MEASURED PER EACH BUILDING REMOVED, STORED AND RESET. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NEEDED FOR THE COMPLETE REMOVAL, STORAGE AND RESETTING OF THE BUILDING.

ITEM 202 REMOVAL MISC.: TIMBER CURB REMOVED AND STORED

CAREFULLY REMOVE AND CLEAN THE EXISTING TIMBER CURB AND TIMBER BLOCKS ON DOCKS 24 AND 26 WITHIN THE LIMITS OF THE NEW CAP. TOOLS THAT WOULD BURR, BLEMISH PENETRATE OR PERMANANTLY DEFORM TIMBERS WILL NOT BE PERMITTED. SORT TIMBER CURB AND BLOCKS BY SIZE AND BAND IN GROUPS WITH LIKE SIZES AND STORE ON THE PORT ON PALLETS WHERE DIRECTED BY THE ENGINEER. DAMAGED TIMBER SHALL BE DISPOSED OF BY THE CONTRACTOR OUTSIDE THE PORT.

ITEM 202 REMOVAL MISC.: TIMBER CURB REMOVED AND STORED WILL BE MEASURED BY THE LINEAR FOOT OF TIMBER CURBING REMOVED. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NEEDED FOR THE COMPLETE REMOVAL OF TIMBER CURBS, CLEANING, SORTING, BANDING, PALLETIZING AND DELIVERING TO THE DIRECTED STORAGE LOCATION.

ITEM 202 REMOVAL MISC.: LOADING DOCK REMOVED

EXISTING LOADING DOCKS, WHERE SHOWN ON THE PLANS, INCLUDING PAVEMENT, RETAINING WALLS, RAILING, STAIRS, FENCE, WALKS AND LIFTS ASSOCIATED WITH THE LOADING DOCK SHALL BE REMOVED TO 1' BELOW SUBGRADE AND DISPOSED OF. ELECTRICAL CONNECTIONS FOR LIFTS SHALL BE DISCONNECTED AT THE SERVICE PANEL AND ALL WIRES REMOVED. CONTRACTOR SHALL PROTECT ALL UTILITIES NOT SHOWN TO BE REMOVED OR RELOCATED.

ITEM 202 REMOVAL MISC.: LOADING DOCK REMOVED WILL BE PAID ON A LUMP SUM BASIS. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, AND INCIDENTALS NEEDED FOR THE COMPLETE REMOVAL OF BOTH LOADING DOCKS AS DESCRIBED.

CALCULATED
JAG
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GENERAL NOTES

DOCK 24 & 26W

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ITEM 202 REMOVAL MISC.: BOLLARD REMOVED

EXISTING POST BOLLARDS WITHIN THE WORK AREA ARE TO BE COMPLETELY REMOVED AND DISPOSED. THE CAVITY CREATED BY THE REMOVAL SHALL BE BACKFILLED WITH GRANULAR MATERIAL IN ACCORDANCE WITH CMS 203.

ITEM 202 REMOVAL MISC.: BOLLARD REMOVED WILL BE MEASURED PER EACH. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, AND INCIDENTALS NEEDED FOR THE COMPLETE REMOVAL OF BOLLARDS AS DESCRIBED.

ITEM 202 REMOVAL MISC.: PORTABLE CONCRETE BARRIER REMOVED

THERE ARE VARIOUS SECTIONS AND/OR PIECES OF PORTABLE CONCRETE BARRIER PLACED ON THE DOCKS. THESE BARRIERS SHALL BE REMOVED AND DISPOSED OF OUTSIDE THE PORT WHEN NO LONGER NEEDED AS AGREED TO BY THE ENGINEER.

ITEM 202 REMOVAL MISC.: PORTABLE CONCRETE BARRIER REMOVED WILL BE MEASURED BY THE LINEAR FOOT OF PORTABLE CONCRETE BARRIER REMOVED. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, AND INCIDENTALS NEEDED FOR THE COMPLETE REMOVAL OF PORTABLE CONCRETE BARRIER AS DESCRIBED.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 202 REMOVAL MISC.: PORTABLE CONCRETE BARRIER REMOVED 633 FT

ITEM 202 REMOVAL MISC.: RAIL STOP REMOVED

REMOVE AND DISPOSE OF RAIL STOPS, INCLUDING TIES AND/OR FOUNDATIONS, WHERE SHOWN ON THE PLANS FOR REMOVAL. BACKFILL THE CAVITY CREATED BY THE REMOVAL WITH ITEM 304 AGGREGATE BASE.

ITEM 202 REMOVAL MISC.: RAIL STOP REMOVED SHALL BE MEASURED BY EACH RAIL STOP REMOVED. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NEEDED FOR THE COMPLETE REMOVAL OF RAIL STOP AND ALL REQUIRED BACKFILL.

ITEM 202 REMOVAL MISC.: RAIL REMOVED

REMOVE AND DISPOSE OF RAILROAD TRACKS, INCLUDING TIES, WHERE SHOWN ON THE PLANS FOR REMOVAL. BACKFILL THE CAVITY CREATED BY THE REMOVAL WITH ITEM 304 AGGREGATE BASE.

ITEM 202 REMOVAL MISC.: RAIL REMOVED SHALL BE MEASURED BY THE LINEAR FOOT ALONG THE CENTERLINE OF TRACK. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NEEDED FOR THE COMPLETE REMOVAL OF RAILS AND TIES AND ALL REQUIRED BACKFILL.

ITEM 202 REMOVAL MISC.: BURIED RAIL REMOVED

REMOVE AND DISPOSE OF BURIED RAILROAD TRACKS, INCLUDING TIES, WHERE SHOWN ON THE PLANS FOR REMOVAL. BACKFILL THE CAVITY CREATED BY THE REMOVAL WITH ITEM 304 AGGREGATE BASE.

ITEM 202 REMOVAL MISC.: BURIED RAIL REMOVED SHALL BE MEASURED BY THE LINEAR FOOT ALONG THE CENTERLINE OF TRACK. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NEEDED FOR THE COMPLETE REMOVAL OF RAILS AND TIES AND ALL REQUIRED BACKFILL.

ITEM 202 PAVEMENT REMOVED, AS PER PLAN

THIS WORK INCLUDES THE REMOVAL OF EXISTING CONCRETE PAVEMENT AND AGGREGATE BASE OR SOIL TO THE PROPOSED SUBGRADE.

PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY FOR THE REMOVAL OF PAVEMENT AND EXCAVATION TO THE PROPOSED SUBGRADE.

ITEM 202 PAVEMENT REMOVED, ASPHALT, AS PER PLAN

THIS WORK INCLUDES THE REMOVAL OF EXISTING ASPHALT PAVEMENT AND AGGREGATE BASE OR SOIL TO THE PROPOSED SUBGRADE.

PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY FOR THE REMOVAL OF PAVEMENT AND EXCAVATION TO THE PROPOSED SUBGRADE.

ITEM 202 REMOVAL MISC.: SWITCH REMOVED AND STORED

CAREFULLY REMOVE AND CLEAN RAILROAD SWITCH WHERE SHOWN ON THE PLANS AND STORE ON THE PORT AT A LOCATION DIRECTED BY THE ENGINEER. BACKFILL THE RESULTING CAVITY WITH ITEM 304 AGGREGATE BASE.

ITEM 202 REMOVAL MISC.: SWITCH REMOVED AND STORED SHALL BE MEASURED BY EACH AND SHALL INCLUDE THE COMPLETE REMOVAL OF THE SWITCH AND ALL OF ITS APPURTANCES, DELIVERY TO THE DIRECTED LOCATION AND BACKFILL OF THE RESULTING CAVITY. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY FOR THE COMPLETE REMOVAL AND STORING OF THE SWITCH.

ITEM 202 REMOVAL MISC.: DOWNSPOUT REMOVED

DOWNSPOUTS DISCHARGING 3" OR LESS ABOVE THE PROPOSED SURFACE SHALL BE CUT SUCH THAT THEY DISCHARGE AT LEAST 3" AND NO MORE THAN 6" ABOVE THE SURFACE OF THE NEW PAVEMENT. DOWNSPOUTS SHALL BE CUT WITHOUT DAMAGING OR DISFIGURING THE REMAINING DOWNSPOUT. NEW 90 DEGREE BENDS SHALL BE ADDED AT THE BOTTOM OF THE DOWNSPOUT DIRECTING WATER AWAY FROM THE BUILDING.

ITEM 202 REMOVAL MISC.: DOWNSPOUT REMOVED SHALL BE MEASURED BY EACH. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, TOOLS AND INCIDENTALS NECESSARY TO CUT THE DOWNSPOUT TO THE STATED ELEVATION.

ITEM 202 REMOVAL MISC.: OUTFALL ABANDONED, BY SIZE

EXISTING OUTFALLS THROUGH THE BULKHEAD, IF NO LONGER IN USE, SHALL BE ABANDONED AS DIRECTED BY THE ENGINEER AND DESCRIBED BELOW. THE LAST 8' OF PIPE SHALL BE PLUGGED AND FILLED AS DESCRIBED IN ITEM SPECIAL FILL AND PLUG EXISTING CONDUIT. THE EXISTING BULKHEAD SHALL HAVE 1/2" STEEL PLATE WELDED TO IT TO COMPLETELY COVER THE OPENING IN THE BULKHEAD. WELD SHALL EXTEND ALONG THE ENTIRE PERIMETER OF THE PLATES SUCH THAT THE BULKHEAD WALL IS SEALED. IN ADDITION, IF THERE ARE ANY CRACKS OR OPENINGS BETWEEN THE EXISTING SHEET PILE AND THE BOX FOR THE OUTFALL, THEY SHALL BE WELDED SHUT TO PROVIDE A COMPLETELY SEALED SURFACE ALONG THE WALL.

ITEM 202 REMOVAL MISC.: OUTFALL ABANDONED, BY SIZE SHALL BE PAID FOR BY EACH OUTFALL ABANDONED AND INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO ABANDON THE OUTFALLS. THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 202 REMOVAL MISC.: OUTFALL ABANDONED, UNDER 13" 21 EA

ITEM 202 REMOVAL MISC.: OUTFALL ABANDONED, 13" TO 25" 1 EA

SPECIAL SUBGRADE ENHANCEMENT (LIGHTWEIGHT CELLULAR CONCRETE FILL)

A. DESCRIPTION
THIS WORK CONSISTS OF FURNISHING AND PLACING A LOW DENSITY, LIGHTWEIGHT, FLOWABLE, LOW ABSORBABILITY, CEMENTITIOUS FILL MATERIAL, HEREIN REFERRED TO AS CELLULAR CONCRETE FILL (CCF).

SPECIAL SUBGRADE ENHANCEMENT (LIGHTWEIGHT CELLULAR CONCRETE FILL) (CONT.)

B. QUALIFICATIONS.
1. SUPPLIER/PRODUCER.
PROVIDE CCF FROM A SUPPLIER/PRODUCER REGULARLY ENGAGED IN THE PLACEMENT OF CCF MATERIAL, WHO HAS IN THE PAST THREE YEARS COMPLETED MASS FILLS HAVING A COMBINED QUANTITY OF AT LEAST 10,000 TOTAL CUBIC YARDS (7650 CUBIC METERS).

DOCUMENTATION FOR THE ABOVE QUALIFICATIONS SHALL BE SUBMITTED AT OR BEFORE THE PRECONSTRUCTION CONFERENCE.

2. CCF MATERIAL.

PROVIDE CCF MATERIAL, MEETING THE REQUIREMENT OF SECTION C OF THIS SPECIFICATION, WHICH HAS BEEN SUCCESSFULLY PLACED ON AT LEAST FIVE PROJECTS THAT HAVE PERFORMED SATISFACTORY FOR AT LEAST FIVE YEARS. PREAPPROVAL OF THE CCF MATERIAL WILL BE BASED ON DOCUMENTATION FOR THE ABOVE QUALIFICATIONS. THIS DOCUMENTATION SHALL BE SUBMITTED TO THE LABORATORY. PREAPPROVED CCF MATERIALS WILL BE LISTED ON THE ODOT'S QUALIFIED PRODUCT LIST AND WILL NEED TO BE REAPPROVED YEARLY.

C. MATERIALS

1. FOAM.

USE A FOAMING AGENT CONFORMING TO ASTM C796.

2. CEMENT.

USE PORTLAND CEMENT CONFORMING TO 701.04 OR 701.05.

3. WATER.

USE WATER CONFORMING TO 499.02. POTABLE WATER IS SATISFACTORY FOR USE IN CCF.

4. ADMIXTURES.

USE ADMIXTURES CONFORMING TO 499.02 FOR WATER REDUCING, RETARDING, ACCELERATING, IMPROVING THE BOND, OR FOR OTHER SPECIFIC PROPERTIES, WHEN SPECIFICALLY APPROVED BY THE SUPPLIER/PRODUCER OF THE CCF.

D. MIX DESIGN.

DESIGN OF THE PROPOSED CCF MIX WILL BE PROVIDED BY THE SUPPLIER/PRODUCER. THE PROPOSED MIX DESIGN MUST HAVE A MAXIMUM CAST DENSITY OF 30 LB/CF, A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 40 PSI AND A MAXIMUM WATER ABSORPTION RATE PER ASTM C796 OF 20 PERCENT.

MIX DESIGNS MUST BE APPROVED BY THE LABORATORY PRIOR TO USE. A MINIMUM OF 30 DAYS PRIOR TO PLACING CCF, SUBMIT A PROPOSED MIX DESIGN, WITH CERTIFIED TEST DATA FROM THE SUPPLIER/PRODUCER, TO THE LABORATORY, WITH A COPY TO THE ENGINEER.

E. QUALITY CONTROL.

PERFORM CAST DENSITY MEASUREMENTS ON A MINIMUM OF 8 BATCHES PER PRODUCTION DAY. MAINTAIN A LOG OF THE CAST DENSITY MEASUREMENTS.

F. QUALITY ASSURANCE.

QUALITY ASSURANCE WILL BE BASED ON THE CAST DENSITY AND COMPRESSIVE STRENGTH AT THE POINT OF PLACEMENT. ANY MIXES NOT MEETING THE TABLE A PROPERTIES WILL BE REJECTED.

1. CAST DENSITY.

AT A MINIMUM, THE PORT AUTHORITY WILL CHECK ONE OF THE BATCHES EACH DAY, AS FOLLOWS:

SPECIAL SUBGRADE ENHANCEMENT (LIGHTWEIGHT CELLULAR CONCRETE FILL) (CONT.)

A) WEIGH A CONTAINER OF KNOWN VOLUME AND RECORD THE WEIGHT. A STANDARD CONCRETE CYLINDER MOLD MAY BE USED AS THE CONTAINER.

B) FILL THE CONTAINER WITH CCF, TAPPING THE CONTAINER SIDES BRISKLY WITH A RUBBER HAMMER DURING FILLING.

C) OVERFILL THE CONTAINER, STRIKING OFF THE EXCESS CCF. WIPE OFF THE OUTSIDE SURFACE OF THE CONTAINER.

D) WEIGH THE FULL CONTAINER.

E) SUBTRACT THE WEIGHT OF THE EMPTY CONTAINER FROM THE FULL CONTAINER.

F) CALCULATE THE CAST DENSITY AND COMPARE IT TO THE MAXIMUM DENSITY FOR THE CLASS OF CCF. IF THE CCF MATERIAL EXCEEDS THE MAXIMUM DENSITY FOR THE CLASS OF CCF, ADJUST THE MIX AND RECHECK THE CAST DENSITY.
2. COMPRESSIVE STRENGTH.

TAKE AT LEAST FOUR (4) TEST SPECIMENS FOR EACH 300 CUBIC YARDS (230 CUBIC METERS) OF CCF PLACED OR FOR EACH DAY'S PRODUCTION. PREPARE, CURE, AND TEST THE SPECIMENS IN ACCORDANCE WITH ASTM C796 EXCEPT AS FOLLOWS:

A) FILL AN APPROPRIATE 3 - INCH BY 6 - INCH (75 MM BY 150 MM) CYLINDER MOLD ACCORDING TO ASTM C796, EXCEPT STRIKE OFF THE EXCESS CCF WITH A TROWEL.

B) CURE THE MOLDS IN A CURING BOX.

C) AFTER CURING, DO NOT OVEN DRY THE SPECIMENS THAT ARE TO BE LOAD TESTED. AIR DRY THE SPECIMENS FOR 1 TO 3 DAYS PRIOR TO TESTING.

D) WHILE SPECIMENS MAY BE TESTED AT ANY AGE TO MONITOR COMPRESSIVE STRENGTH OF THE CCF, TEST A MINIMUM OF TWO SPECIMENS AT 28 DAYS FOR ACCEPTANCE.

E) PROVIDE THE 28 DAY TEST RESULTS TO THE ENGINEER.

F) REVIEW THE STATUS OF CCF MATERIAL THAT FAILS TO MEET THE MINIMUM COMPRESSIVE STRENGTH TO DETERMINE IF IT IS ACCEPTABLE AT THAT LOCATION.

G. CONSTRUCTION METHODS.

PLACEMENT OF THE CCF SHALL BE ACCORDING TO PROCEDURES PROVIDED BY THE SUPPLIER/PRODUCER.

1. PREPARATION.

THE ENGINEER WILL EXAMINE THE SUBSOIL CONDITIONS IN THE PLACEMENT AREAS. CORRECT UNSUITABLE SOIL CONDITIONS PRIOR TO PLACING THE CCF. PROPERLY FIX IN PLAN POSITION ITEMS TO BE ENCASED IN THE CCF. COAT ANY ALUMINUM TO PREVENT OXIDATION FROM THE FRESH CONCRETE.

2. WEATHER.

DO NOT PLACE CCF IF THE SUBSOIL IS FROZEN. WHEN THE AMBIENT TEMPERATURE IS LESS THAN 32°F (0°C), FOLLOW THE MANUFACTURER'S RECOMMENDATIONS SUCH AS HEATED MIX WATER OR TYPE III CEMENT. TAKE PRECAUTIONS TO AVOID DAMAGE TO THE CCF FROM FREEZING TEMPERATURES PER THE MANUFACTURER'S RECOMMENDATIONS.

3. MIXING AND CONVEYING.

USE JOB-SITE MIXING AND CONVEYING EQUIPMENT FOR PROPORTIONING, MIXING AND PLACING THE CCF APPROVED BY THE SUPPLIER/PRODUCER. MIX THE MATERIALS ACCORDING TO THE SUPPLIER/PRODUCER MIX DESIGN PROCEDURES AND, PROMPTLY AFTER MIXING, CONVEY THE CCF TO ITS FINAL POSITION. AVOID EXCESSIVE HANDLING OF THE CCF.

CALCULATED
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GENERAL NOTES

DOCK 24 & 26W

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SPECIAL SUBGRADE ENHANCEMENT (LIGHTWEIGHT CELLULAR CONCRETE FILL) (CONT.)

4. PLACEMENT.

THE TOP OF THE CLASS II CCF SHALL NOT BE LESS THAN 22" BELOW THE TOP OF PAVEMENT.

DO NOT PLACE CCF INTO AN AREA OF STANDING WATER.

CONTRACTOR SHALL PROVIDE WORKING DRAWINGS SHOWING THE FINAL HEIGHT TO BE USED IN THE FIELD, PLAN AND SECTIONS LOCATING THE CROWNS, AND LOCATIONS OF STEPS IN THE CLASS II CCF LIFT.

FINISHING THE CCF:

THE TOP SURFACE OF THE CCF SHALL BE FINISHED TO DRAIN AS SHOWN IN THE PLANS. THIS FINISHING MAY BE EXECUTED DURING PLACEMENT, OR GRADED AFTERWARDS, AT THE CONTRACTOR'S DISCRETION. THE FINISHED SURFACE SHALL NOT EXHIBIT EXCESSIVE CRACKING SUBJECT TO THE APPROVAL OF THE ENGINEER.

5. LOADING.

DO NOT APPLY ANY LOAD ONTO THE CCF UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH OF AT LEAST 20 PSI (0.14 MPAJ.)

H. METHOD OF MEASUREMENT.

THE AUTHORITY WILL MEASURE CCF BY THE NUMBER OF CUBIC YARDS COMPLETE IN PLACE.

I. BASIS OF PAYMENT.

THE AUTHORITY WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
SPECIAL	CUBIC YARD	ENHANCED SUBGRADE (LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS II)

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

- SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
- EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. UNSUITABLE SUBGRADE WAS NOT ENCOUNTERED IN THE PROJECT EXPLORATION PROGRAM. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05. IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.
- COMPACT THE SUBGRADE ACCORDING TO 204.03.
- PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.
- EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
- PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.
- FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

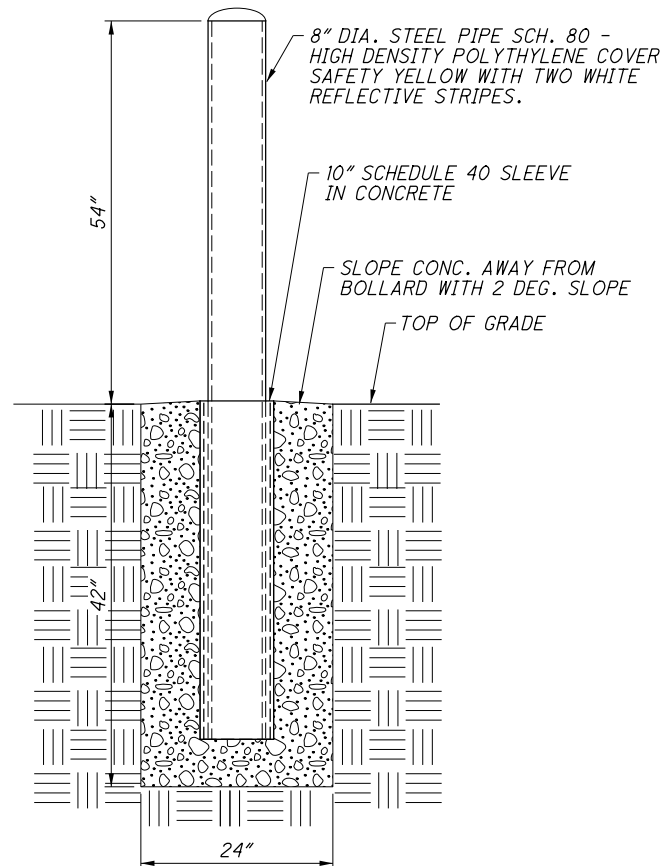
THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 202 PAVEMENT REMOVED, ASPHALT, AS PER PLAN.

ITEM 611 CATCH BASIN 2-2B, 2-3, 2-4, 2-5 AS PER PLAN

CATCH BASINS SHALL BE EXTRA HEAVY DUTY, WATERTIGHT, AND USE 5000 PSI CONCRETE. FRAME AND GRATE SHALL BE A NEENAH R-4994-HAB FRAME WITH A R-4990-HA GRATE OR EAST JORDAN IRON WORKS V5726 OR APPROVED EQUAL. CONTRACTOR SHALL PERFORM SOIL BORINGS TO CONFIRM SOIL DENSITIES IN AREAS WHERE STRUCTURE DEPTH IS LOWER THAN MEAN HIGH LAKE ERIE WATER ELEVATION. ANY STRUCTURE THAT IS LOWER THAN ELEVATION 573.66 (NAVD88) SHALL BE CHECKED FOR BUOYANCY DUE TO SLURRY NATURE OF SUBSURFACE MATERIAL. ENGINEER'S ANALYSIS WAS COMPLETED USING 1.1 G/CM3 AND STRUCTURES WILL NOT FLOAT USING THIS BASIS OF DESIGN. FLOAT RESISTANCE CHECK CALCULATIONS SHALL ACCOMPANY SHOP DRAWINGS FOR ENGINEER'S REVIEW AND APPROVAL PRIOR TO ORDERING. WHERE NECESSARY, PRECASTER SHALL PROVIDE ANTI-FLOTATION COLLARS AT THE BASE OF CATCH BASINS.

ITEM SPECIAL - REMOVABLE BOLLARD

REMOVABLE BOLLARDS SHALL BE CONSTRUCTED AS DETAILED BELOW. ONE SHALL BE PLACED AT EACH GUARD SHACK TO FACILITATE RELOCATION OF THE SHACKS AS DIRECTED BY THE ENGINEER.



TYPICAL BOLLARD DETAIL

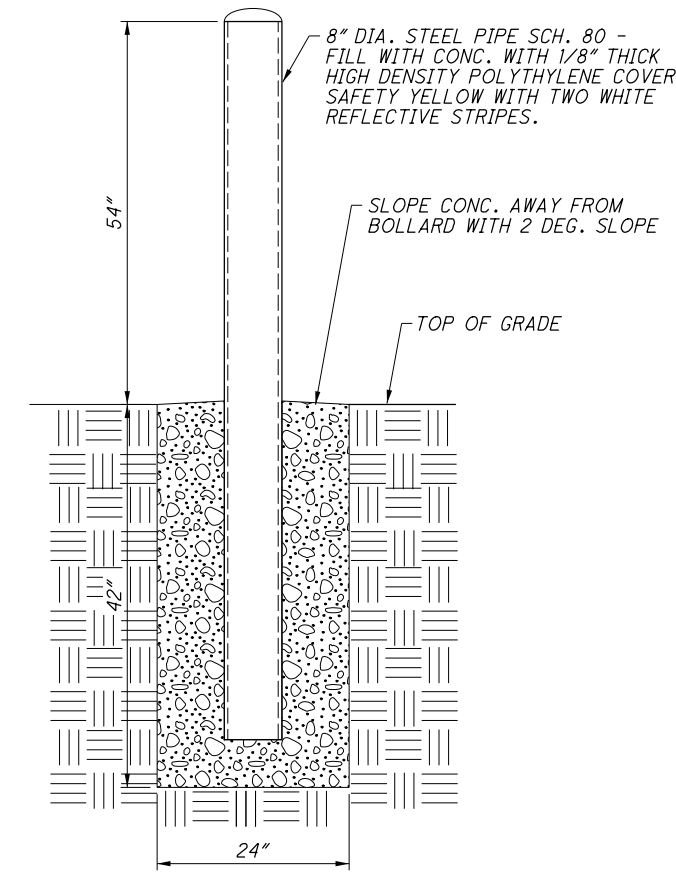
ITEM SPECIAL - REMOVABLE BOLLARD SHALL BE MEASURED BY EACH AND SHALL INCLUDE ALL WORK SHOWN IN THE DETAIL. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, TOOLS, AND INCIDENTALS NECESSARY FOR THE COMPLETE INSTALLATION OF REMOVABLE BOLLARDS AS SHOWN.

ITEM 611 MANHOLE NUMBER 3 AS PER PLAN

MANHOLES SHALL BE EXTRA HEAVY DUTY, WATERTIGHT, AND USE 5000 PSI CONCRETE. FRAME AND GRATE SHALL BE A NEENAH R-3492-B OR EAST JORDAN IRON WORKS 2812APT COVER OR APPROVED EQUAL. CONTRACTOR SHALL PERFORM SOIL BORINGS TO CONFIRM SOIL DENSITIES IN AREAS WHERE STRUCTURE DEPTH IS LOWER THAN MEAN HIGH LAKE ERIE WATER ELEVATION. ANY STRUCTURE THAT IS LOWER THAN ELEVATION 573.66 (NAVD88) SHALL BE CHECKED FOR BUOYANCY DUE TO SLURRY NATURE OF SUBSURFACE MATERIAL. ENGINEER'S ANALYSIS WAS COMPLETED USING 1.1 G/CM3 AND STRUCTURES WILL NOT FLOAT USING THIS BASIS OF DESIGN. FLOAT RESISTANCE CHECK CALCULATIONS SHALL ACCOMPANY SHOP DRAWINGS FOR ENGINEER'S REVIEW AND APPROVAL PRIOR TO ORDERING. WHERE NECESSARY, PRECASTER SHALL PROVIDE ANTI-FLOTATION COLLARS AT THE BASE OF MANHOLES.

ITEM SPECIAL - BOLLARD

BOLLARDS SHALL BE CONSTRUCTED AS DETAILED BELOW AT LOCATIONS SHOWN ON THE PLANS.

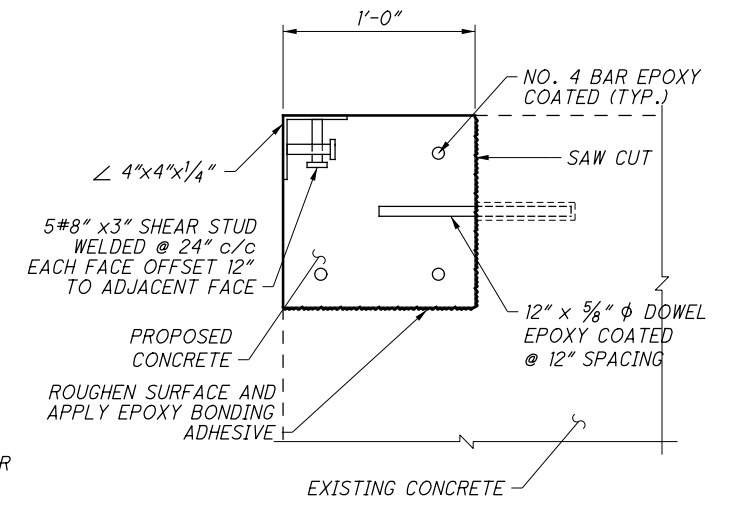


TYPICAL BOLLARD DETAIL

ITEM SPECIAL - BOLLARD SHALL BE MEASURED BY EACH AND SHALL INCLUDE ALL WORK SHOWN IN THE DETAIL. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, TOOLS, AND INCIDENTALS NECESSARY FOR THE COMPLETE INSTALLATION OF BOLLARDS AS SHOWN.

ITEM 511 CONCRETE, MISC.: RECONSTRUCT DOOR SILL

ALL EXISTING OVERHEAD DOOR SILLS TO WAREHOUSES SHALL BE REMOVED AND RECONSTRUCTED. NEW SLAB EDGE TO INCLUDE 4"x4"x1/4" ANGLE IRON. NEW REINFORCING MEMBERS TO BE PROVIDED AND DOWELLED INTO ADJOINING FOOTINGS AND SLAB AND RECAST TO INSIDE EDGE OF DOOR JAM DURING PAVEMENT CONSTRUCTION AS SHOWN IN DETAIL BELOW.



DOOR SILL DETAIL

DOOR SILL SHALL BE MEASURED BY THE LINEAL FOOT OF DOOR SILL RECONSTRUCTED. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, TOOLS, AND INCIDENTALS NECESSARY TO RECONSTRUCT DOOR SILLS AS DESCRIBED.

ITEM 611, MANUFACTURED WATER QUALITY STRUCTURE, AS PER PLAN A

MANUFACTURED WATER QUALITY STRUCTURE SHALL BE EXTRA HEAVY DUTY, WATERTIGHT, AND USE 5000 PSI CONCRETE. DOUBLE WIDE STRUCTURE SHALL ALLOW FOR TWO DIFFERENT FRAME AND GRATES; ONE OF EACH OF THE FOLLOWING. CATCH BASIN FRAME AND GRATE SHALL BE A NEENAH R-4994-HAB FRAME WITH A R-4990-HA GRATE OR EAST JORDAN IRON WORKS V5726 OR APPROVED EQUAL. MANHOLE FRAME AND GRATE SHALL BE A NEENAH R-3492-B OR EAST JORDAN IRON WORKS 2812APT COVER OR APPROVED EQUAL. BOX CONSTRUCTION SHALL BE IN ACCORDANCE WITH DIMENSIONS, MATERIALS AND REINFORCEMENTS OF ODOT CATCH BASIN NUMBER BASED ON THE LARGEST INCOMING OR OUTGOING PIPE SIZE. DIVERSION WEIR SHALL BE CAST INTO THE BOX AND REINFORCED PER THE DETAILS IN THIS PLAN. CONTRACTOR SHALL PERFORM SOIL BORINGS TO CONFIRM SOIL DENSITIES IN AREAS WHERE STRUCTURE DEPTH IS LOWER THAN MEAN HIGH LAKE ERIE WATER ELEVATION. ANY STRUCTURE THAT IS LOWER THAN ELEVATION 573.66 (NAVD88) SHALL BE CHECKED FOR BUOYANCY DUE TO SLURRY NATURE OF SUBSURFACE MATERIAL. ENGINEER'S ANALYSIS WAS COMPLETED USING 1.1 G/CM3 AND STRUCTURES WILL NOT FLOAT USING THIS BASIS OF DESIGN. FLOAT RESISTANCE CHECK CALCULATIONS SHALL ACCOMPANY SHOP DRAWINGS FOR ENGINEER'S REVIEW AND APPROVAL PRIOR TO ORDERING. WHERE NECESSARY, PRECASTER SHALL PROVIDE ANTI-FLOTATION COLLARS AT THE BASE OF CATCH BASINS.

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ITEM SPECIAL - RAILROAD TRACK

THIS ITEM WILL INCLUDE THE CONSTRUCTION OF NEW RAILROAD TRACKS AS SHOWN IN THE PLANS AND AS SPECIFIED.

SUB-BALLAST SHALL BE CRUSHER-RUN DENSE GRADED AGGREGATE, PREFERABLY LIMESTONE OR GRANITE MATERIAL, AND SHALL MEET THE REQUIREMENTS AS SET OUT IN CHAPTER 1, PART 2, ARTICLE 2.11, "SUB-BALLAST SPECIFICATIONS" OF THE AREMA MANUAL.

GRADATION AS FOLLOWS:

SIEVE SIZE	2"	1"	3/8"	NO. 10	NO. 40	NO. 200
% PASSING SIZE (OPTIMUM)	100	95	67	38	21	7
PERMISSIBLE RANGE % PASSING	100	95	67	38	21	7

THE SUBBALLAST SHALL BE COMPACTED TO 95 PERCENT OF ITS MAXIMUM DRY DENSITY AND HAVE A MINIMUM DEPTH OF 6 INCHES.

MATERIAL FOR BALLAST SHALL BE CLEAN CRUSHED LIMESTONE MEETING AREMA SPECIFICATIONS WITH A MINIMUM DEPTH OF 6 INCHES BETWEEN BOTTOM OF TIE AND TOP OF SUB-BALLAST. GRADING SHALL BE AS FOLLOWS:

SIEVE SIZE	1/2"	1"	3/4"	1/2"	3/8"	NO. 4	NO. 200
PERMISSIBLE RANGE % PASSING	100	90-100	40-75	15-35	0-15	0-5	0.5 MAX

RAIL SHALL BE NEW WITH MINIMUM SECTION OF 120 POUNDS/YARD. RAIL SHOULD BE FURNISHED IN LENGTHS NOT LESS THAN 31 FEET AND SHOULD BE DRILLED TO ACCEPT THE PROPER SIZE JOINT BARS FOR THE SECTION OF RAIL BEING USED. RAILS SHOULD BE LAID ONE AT A TIME. THE BOTTOM OF THE RAIL AND THE BEARING SURFACE OF THE TIE PLATE SHOULD BE CLEANED OF ALL DEBRIS BEFORE THE RAIL IS LAID. JOINTS IN OPPOSITE RAILS SHALL BE STAGGERED NOT LESS THAN 8 FEET AND NOT MORE THAN 14 FEET APART. TO MINIMIZE THE CUTTING OF FULL LENGTH RAILS, SHORT RAILS OF NOT LESS THAN 15 FEET MAY BE USED IN ADJUSTING FOR PROPER SPACING OF JOINTS. PROPER ALLOWANCE FOR EXPANSION SHOULD BE PROVIDED AT RAIL JOINTS BY INSTALLING RAIL EXPANSION SHIMS CONFORMING TO THE SECTION OF RAIL BEING USED. WHEN NECESSARY TO CUT AND/OR DRILL A RAIL, IT SHOULD BE CUT WITH AN APPROVED RAIL SAW, AND DRILLED WITH AN APPROVED RAIL DRILL. FLAME CUTTING OF RAIL WILL NOT BE PERMITTED.

TIES SHALL BE NEW AND CONFORM TO NORFOLK SOUTHERN SPECIFICATION NO. NS RT 003 REVISED NOVEMBER 2014. CERTIFICATION OF THE TIES MUST BE FURNISHED FROM THE CONTRACTOR AND/OR SUPPLIER. TIES SHALL BE PLACED ON THE PREPARED SUB-BALLAST AT RIGHT ANGLES OR NORMAL TO THE CENTERLINE OF THE TRACK. TIES SHALL BE SPACED 20 INCHES, CENTER TO CENTER (60 TIES PER 100 FEET) WITH THE ENDS OF THE TIES ALONG ONE SIDE OF THE CENTERLINE BEING PLACED 1'-10 3/4" FROM THE GAGE OF THE NEAREST RAIL.

TIE PLATES SHOULD BE NEW AND OF AN APPROVED DESIGN FOR THE WEIGHT OF RAIL TO BE USED. TWO TIE PLATES PER TIE, UNDER THE BASE OF RAIL, MUST BE USED. THE TIE PLATES SHALL BE DOUBLE SHOULDERED AND HAVE A MINIMUM SIZE OF 7 1/2"x11" WITH PROPER PUNCHING TO FIT THE BASE OF THE RAIL BEING USED. THE DOWN SLOPE (1:40 CANT) OF THE TIE PLATE SHALL BE DIRECTLY OVER AND PARALLEL WITH THE CENTERLINE OF THE CROSSTIE. THE TIE PLATE SHALL BE SET SO THAT THE OUTSIDE SHOULDER OF THE TIE PLATE SHALL BEAR SQUARELY AGAINST THE BASE OF THE RAIL, HAVING A FULL BEARING FOR THE RAIL AND AT THE SAME TIME, A FULL BEARING ON THE CROSSTIE.

ITEM SPECIAL - RAILROAD TRACK WILL BE MEASURED BY THE LINEAL FOOT OF TRACK PLACED MEASURED ALONG THE CENTERLINE OF TRACK. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, TOOLS, AND INCIDENTALS NECESSARY TO CONSTRUCT THE TRACK AS SHOWN ON THE PLANS AND AS SPECIFIED.

ITEM 642 - PAVEMENT MARKING, MISC.: LIGHT POLE FOUNDATION PAINTING

EXISTING LIGHT POLE FOUNDATIONS SHALL BE PAINTED SAFETY YELLOW IN ACCORDANCE WITH 641.08G OF THE CMS

ITEM 642 - PAVEMENT MARKING, MISC.: LIGHT POLE FOUNDATION SHALL BE MEASURED PER EACH LIGHT POLE FOUNDATION PAINTED. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, TOOLS, AND INCIDENTALS NECESSARY TO PAINT LIGHT POLE FOUNDATIONS AS DIRECTED.

ENVIROMENTAL NOTES

CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL REQUIREMENTS INCLUDED IN PERMITS FOR THE PROJECT. PERMITS HAVE BEEN INCLUDED WITH THE BID PACKAGE.

ITEM 611 CONDUIT, MISC.:

ANY FACILITIES TO REMAIN (PIPES, MANHOLES, INLETS ETC.) SHALL ALSO BE DEWATERED, CLEANED AND IN ACCORDANCE WITH THE SPECIFICATIONS INCLUDED IN CMS 611.12B. ANY BLOCKAGES SHALL BE CLEARED AND ANY DEFICIENCIES SHALL BE REMEDIED AS DIRECTED BY THE ENGINEER BASED ON REVIEW OF THE VIDEO. THIS INCLUDES ALL PIPES AND STRUCTURES UPSTREAM OF THE PROJECT AND INSIDE WAREHOUSES ON DOCKS 24 AND 26. CONTRACTOR SHALL COORDINATE WITH THE PORT FOR ACCESS TO STRUCTURES THAT ARE COVERED BY MATERIAL BEING STORED.

SINCE EXISTING STRUCTURES INSIDE WAREHOUSE 24 AND WAREHOUSE 26 ARE BEING OUTLETTET INTO THE SANITARY SEWER, ALL DRAINAGE INSIDE THE WAREHOUSE WILL BE DYE TESTED TO ENSURE ALL DRAINAGE HAS BEEN INCLUDED PRIOR TO PAVING.

THE LUMP SUM PAYMENT FOR ITEM 611 CONDUIT, MISC. IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCITENTALS NECESSARY TO INSPECT CONDUITS AND STRUCTURES AND PROVIDE A REPORT ON THEIR CONDITION. ANY REPAIR WORK NEEDED WILL BE PAID FOR AS A CHANGE ORDER AT UNIT PRICES INCLUDED IN THE PROJECT.

ITEM 202 REMOVAL, MISC.: CLEAT

REMOVE AND DISPOSE OF EXISTING CLEATS AND FOUNDATIONS IN THEIR ENTIRETY WHERE SHOWN ON THE PLANS. BACKFILL THE RESULTING CAVITY TO THE PROPOSED SUBGRADE WITH ITEM 304 AGGREGATE BASE.

THE UNIT PRICE PAID FOR ITEM 202 REMOVAL, MISC.: CLEAT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCITENTALS NECESSARY TO COMPLETELY REMOVE AND DISPOSE OF CLEATS AND THEIR FOUNDATIONS AND BACKFILL THE RESULTING CAVITY.

ITEM 202 REMOVAL, MISC.: MOORING BOLLARD

REMOVE AND DISPOSE OF EXISTING MOORING BOLLARDS AND PILE CAPS IN THEIR ENTIRETY WHERE SHOWN ON THE PLANS. PILES SHALL BE REMOVED TO 1' BELOW SUBGRADE. BACKFILL THE RESULTING CAVITY TO THE PROPOSED SUBGRADE WITH ITEM 304 AGGREGATE BASE.

THE UNIT PRICE PAID FOR ITEM 202 REMOVAL, MISC.: MOORING BOLLARD IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCITENTALS NECESSARY TO COMPLETELY REMOVE AND DISPOSE OF MOORING BOLLARDS AND THEIR FOUNDATIONS AND BACKFILL THE RESULTING CAVITY.

ITEM SPECIAL - AS BUILT CONSTRUCTION PLANS

AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROVIDE A "RED-LINE" SET OF DRAWINGS THAT CLEARLY IDENTIFY ALL CHANGES MADE TO THE CONTRACT DRAWINGS.

THE RECORD DRAWINGS SHALL INCLUDE ALL RED-LINED CHANGES. RED-LINE CHANGE SHALL BE DENOTED UTILIZING THE CLOUDING COMMAND IN A PDF PROGRAM. THE FORMAL RECORD DRAWINGS SHALL HAVE A SIGNED VERIFICATION ON THE TITLE SHEET FROM THE CONTRACTOR INDICATING THAT ALL RED-LINED AND FIELD CHANGES HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

THE CONTRACTOR'S VERIFICATION STATEMENT INDICATES ALL KNOWN FIELD MODIFICATIONS MADE HAVE BEEN INCLUDED IN THE FORMAL RECORD-DRAWING. THE CONTRACTOR'S VERIFICATION STATEMENT SHALL BE SIGNED BY THE CONTRACTOR'S PROJECT MANAGER (OR ACCEPTABLE REPRESENTATIVE). IN ADDITION TO THE INFORMATION SHOWN ON THE CONSTRUCTION PLANS, THE RECORD DRAWING PLANS SHALL SHOW THE FOLLOWING:

1. ALL DEVIATIONS FROM THE ORIGINAL APPROVED CONSTRUCTION PLANS WHICH RESULT IN A CHANGE OF LOCATION, MATERIAL, TYPE OR SIZE OF WORK.
2. ANY UTILITIES, PIPES, WELLHEADS, ABANDONED PAVEMENTS, FOUNDATIONS OR OTHER MAJOR OBSTRUCTIONS DISCOVERED AND REMAINING IN PLACE WHICH ARE NOT SHOWN, OR DO NOT CONFORM TO LOCATIONS OR DEPTHS SHOWN IN THE PLANS. UNDERGROUND FEATURES SHALL BE SHOWN AND LABELED ON THE RECORD DRAWING PLAN IN TERMS OF STATION, OFFSET AND ELEVATION.
3. CONTRACTOR SHALL SURVEY ALL SUBSURFACE INFRASTRUCTURE PLACED OR ENCOUNTERED AND INCLUDE ACCURATE LOCATION IN THE AS BUILT CONSTRUCTION DRAWINGS.
4. ADDITIONAL PLAN SHEETS MAY BE NEEDED, IF NECESSARY TO SHOW WORK NOT INCLUDED IN THE CONSTRUCTION PLANS.

THE PLAN INDEX SHALL SHOW THE PLAN SHEETS WHICH HAVE CHANGES APPEARING ON THEM.

A PDF OF THE RECORD-DRAWING PLANS SHALL BE DELIVERED TO THE PROJECT ENGINEER FOR APPROVAL UPON COMPLETION OF THE PHYSICAL WORK BUT PRIOR TO THE REQUEST FOR FINAL PAYMENT. AFTER THE OWNER HAS APPROVED THE RECORD DRAWING PLANS, THE ASSOCIATED ELECTRONIC FILES SHALL BE DELIVERED TO THE OWNER. ELECTRONIC FILES SHALL COMPLY WITH THE FOLLOWING:

THE DEFINED COORDINATE SYSTEM FOR DELIVERABLES IS NAD 1983 STATE PLANE OHIO NORTH FIPS 3401 (US FEET). THE DATA SHOULD NOT HAVE ANY OFFSETS OR ROTATIONS APPLIED AND SHOULD USE THE GLOBAL ORIGIN. IN THE ODOT SEED FILES, THE POINT CALLED THE GLOBAL ORIGIN IS SET TO THE DESIGN PLANE'S EXACT CENTER (178,956.9707, 178,956.9707) AND ASSIGNED THE COORDINATES 0,0 (2D FILES) AND 0,0,0 (3D FILES).

FILE NAMING SHOULD FOLLOW THE ODOT CADD STANDARD.

LAYER NAMES AND LEVELS WILL USE INDUSTRY STANDARD HIERARCHICAL NAMING CONVENTIONS TO DENOTE THE CLASSIFICATION AND DISPOSITION OF FEATURES. THE ODOT CADD STANDARD CONVENTIONS ARE THE PREFERRED STANDARD.

FILE SUBMISSIONS MUST INCLUDE ALL ASSOCIATED REFERENCE FILES. WHEN POSSIBLE, USE SOFTWARE TOOLS TO CREATE TRANSMITTAL PACKAGES TO ENSURE INCLUSION OF ALL RELEVANT FILES.

ONE ELECTRONIC FILE OF ALL PLANS IN PDF FORMAT AND AN AUTOCADD BASEMAP THAT IS UPDATED TO REFLECT ALL CHANGES MADE DURING CONSTRUCTION.

ACCEPTANCE OF THESE PLANS AND DELIVERY OF THE ASSOCIATED ELECTRONIC FILES IS REQUIRED PRIOR TO THE WORK BEING ACCEPTED AND THE FINAL ESTIMATE APPROVED.

SEQUENCE OF CONSTRUCTION

NO DEMOLITION WORK WILL BEGIN WITHOUT APPROVAL FROM THE ENGINEER. WORK ON DOCK 26 SHALL BE COMPLETED TO A POINT WHERE IT CAN BECOME OPERATIONAL BEFORE ANY WORK ON DOCK 24 THAT WOULD HINDER SHIPPING OPERATIONS BEGINS. DOCK 24 CONSTRUCTION SHALL BE STAGED SUCH THAT ONLY ONE SIDE OF THE DOCK WILL BE OUT OF OPERATION AT A TIME. VEHICULAR AND PEDESTRIAN ACCESS TO WAREHOUSE 24 AND WAREHOUSE 26 SHALL BE MAINTAINED AT ALL TIMES VIA EXISTING OR NEW PAVEMENT AND ADEQUATE SIGNING TO PROPERLY DIRECT TRAFFIC TO THEIR DESTINATION SHALL BE PROVIDED. ONCE DOCK 24 IS COMPLETE, ERIESIDE AVENUE WILL BE CONSTRUCTED ONE SIDE AT A TIME.

DRAINAGE OF THE SITE SHALL BE MAINTAINED THROUGH THE USE OF NEW, EXISTING AND/OR TEMPORARY DRAINAGE FACILITIES. EXISTING DRAINAGE PATTERNS ARE TO REMAIN AS LONG AS PRACTICABLE DURING CONSTRUCTION; AIDED BY TEMPORARY DRAINAGE AS DEEMED NECESSARY BY THE CONTRACTOR AT NO RISK TO THE PORT AUTHORITY. WHEN EXISTING DRAINAGE FACILITIES ARE TO BE REMOVED, THE SYSTEM SHALL FIRST BE PLUGGED AT THE DISCHARGE POINT TO ALLOW FOR DEWATERING OF THE SYSTEM IF IT IS FLOODED DUE TO LAKE ERIE WATER ELEVATION.

ANY PUMP HOSES CROSSING ACTIVE PORT TRAFFIC SHALL BE BURIED AT CONTRACTOR'S EXPENSE.

MAINTAINING TRAFFIC

ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE FOR THE MAINTENANCE OF PEDESTRIAN, EQUIPMENT AND VEHICULAR TRAFFIC, INCLUDING PORT EQUIPMENT, THROUGH THE WORKZONE AS SHOWN ON THESE PLANS AND AS DIRECTED BY THE AUTHORITY SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC.

CALCULATED
JAG
CHECKED
RJM

GENERAL NOTES



DOCK 24 & 26W

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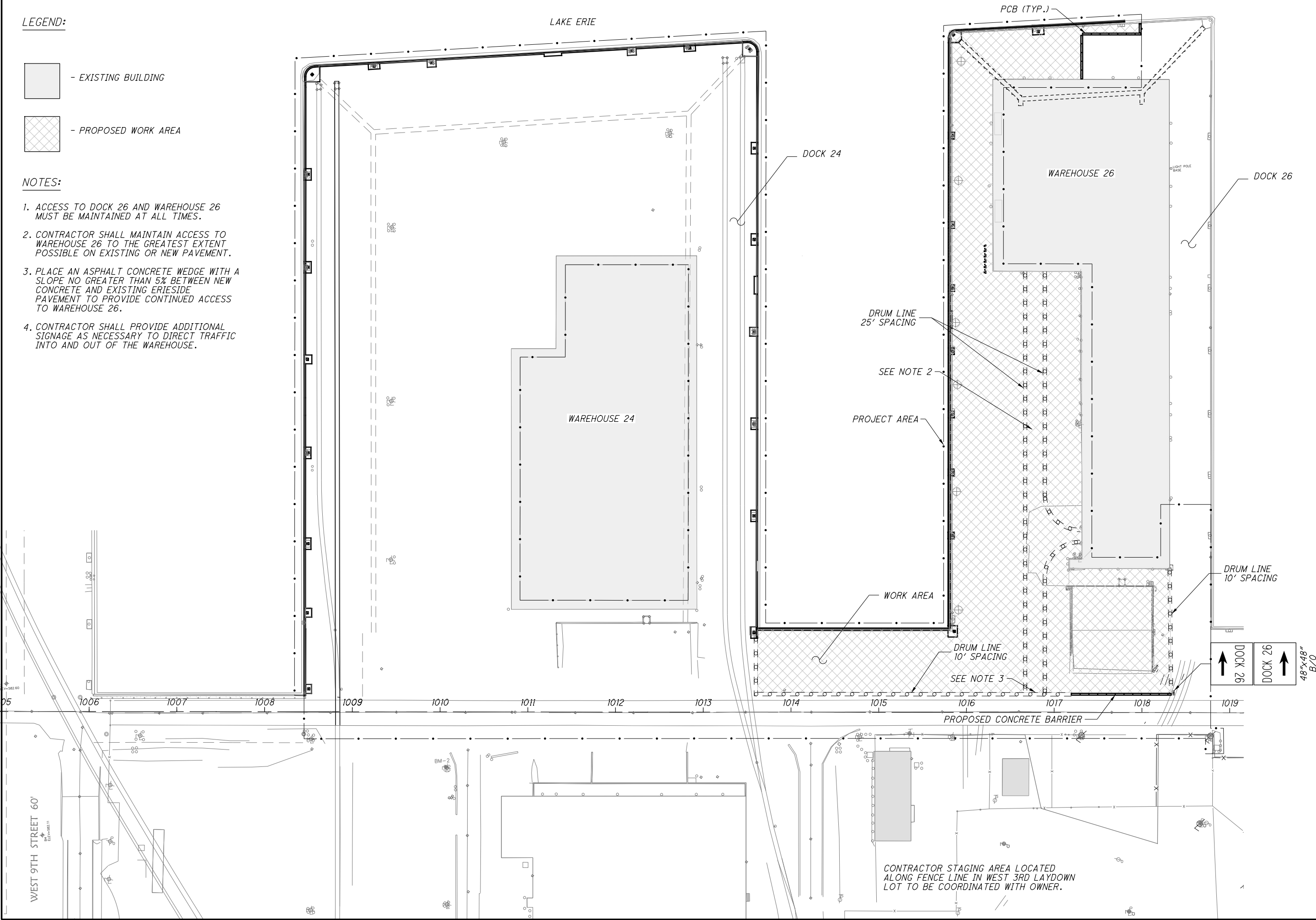
-  - EXISTING BUILDING
-  - PROPOSED WORK AREA

NOTES:

1. ACCESS TO DOCK 26 AND WAREHOUSE 26 MUST BE MAINTAINED AT ALL TIMES.
2. CONTRACTOR SHALL MAINTAIN ACCESS TO WAREHOUSE 26 TO THE GREATEST EXTENT POSSIBLE ON EXISTING OR NEW PAVEMENT.
3. PLACE AN ASPHALT CONCRETE WEDGE WITH A SLOPE NO GREATER THAN 5% BETWEEN NEW CONCRETE AND EXISTING ERIESIDE PAVEMENT TO PROVIDE CONTINUED ACCESS TO WAREHOUSE 26.
4. CONTRACTOR SHALL PROVIDE ADDITIONAL SIGNAGE AS NECESSARY TO DIRECT TRAFFIC INTO AND OUT OF THE WAREHOUSE.

LAKE ERIE

PCB (TYP.)



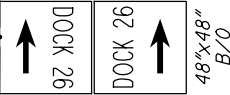
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**CONSTRUCTION PHASING
PHASE 1**



DOCK 24 & 26W

CONTRACTOR STAGING AREA LOCATED
ALONG FENCE LINE IN WEST 3RD LAYDOWN
LOT TO BE COORDINATED WITH OWNER.



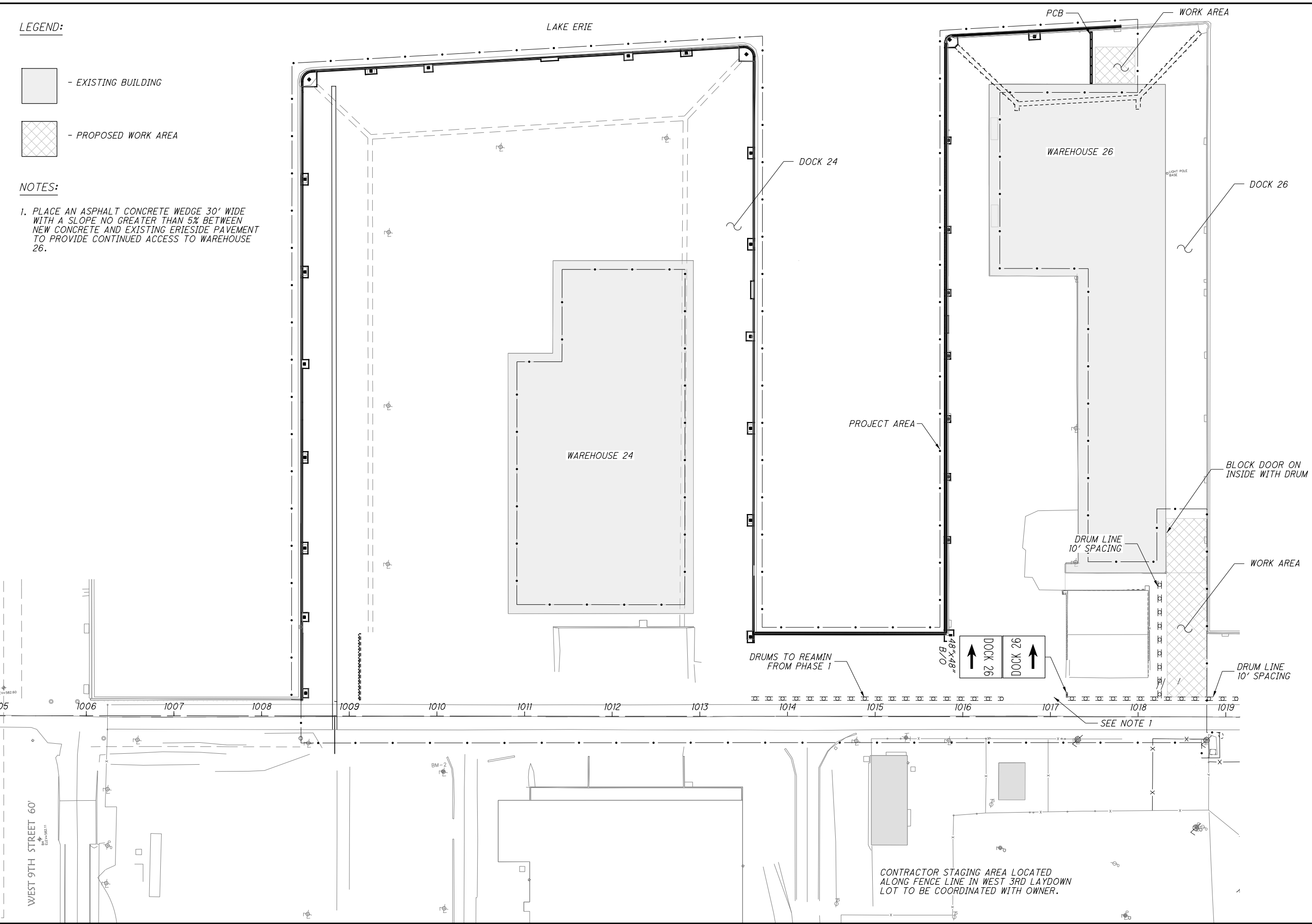
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LEGEND:


-  - EXISTING BUILDING
-  - PROPOSED WORK AREA

NOTES:

1. PLACE AN ASPHALT CONCRETE WEDGE 30' WIDE WITH A SLOPE NO GREATER THAN 5% BETWEEN NEW CONCRETE AND EXISTING ERIESIDE PAVEMENT TO PROVIDE CONTINUED ACCESS TO WAREHOUSE 26.



CALCULATED JAG CHECKED RJM






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**CONSTRUCTION PHASING
PHASE 2**

DOCK 24 & 26W

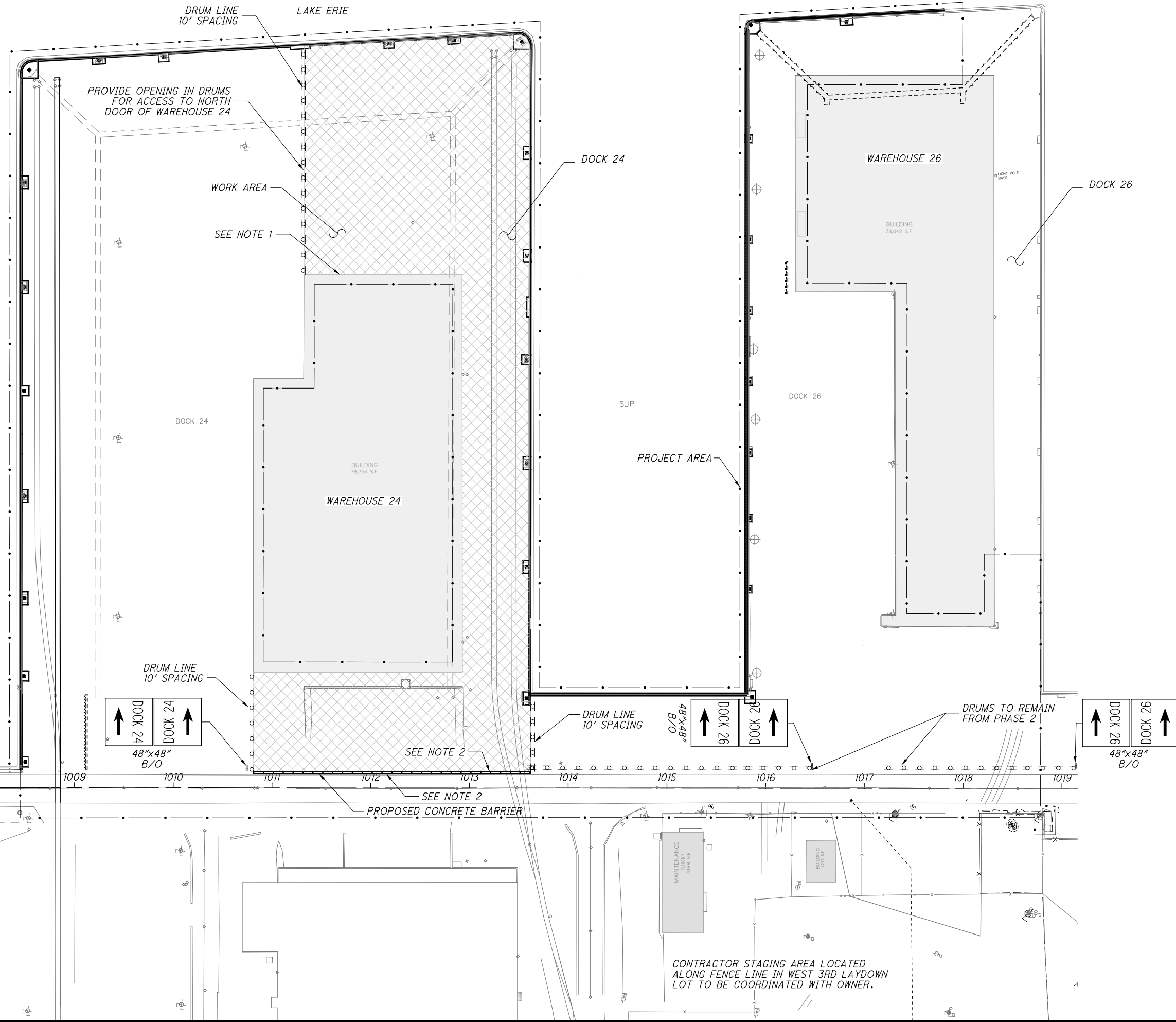
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LEGEND:

-  - EXISTING BUILDING
-  - PROPOSED WORK AREA

NOTES:

1. NORTH DOOR TO WAREHOUSE 24 VEHICLE ACCESS SHALL BE MAINTAINED AT ALL TIMES OF PORT OPERATION ON NEW OR EXISTING PAVEMENT. CONTRACTOR SHALL SCHEDULE WORK AT DOOR DURING TIMES ACCEPTABLE TO THE PORT AUTHORITY.
2. PLACE AN ASPHALT CONCRETE WEDGE 30' WIDE WITH A SLOPE NO GREATER THAN 5% BETWEEN NEW CONCRETE AND EXISTING ERIESIDE PAVEMENT TO PROVIDE CONTINUED ACCESS TO WAREHOUSE 24.






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 CALCULATED JAG CHECKED RJM

**CONSTRUCTION PHASING
PHASE 3**

DOCK 24 & 26W

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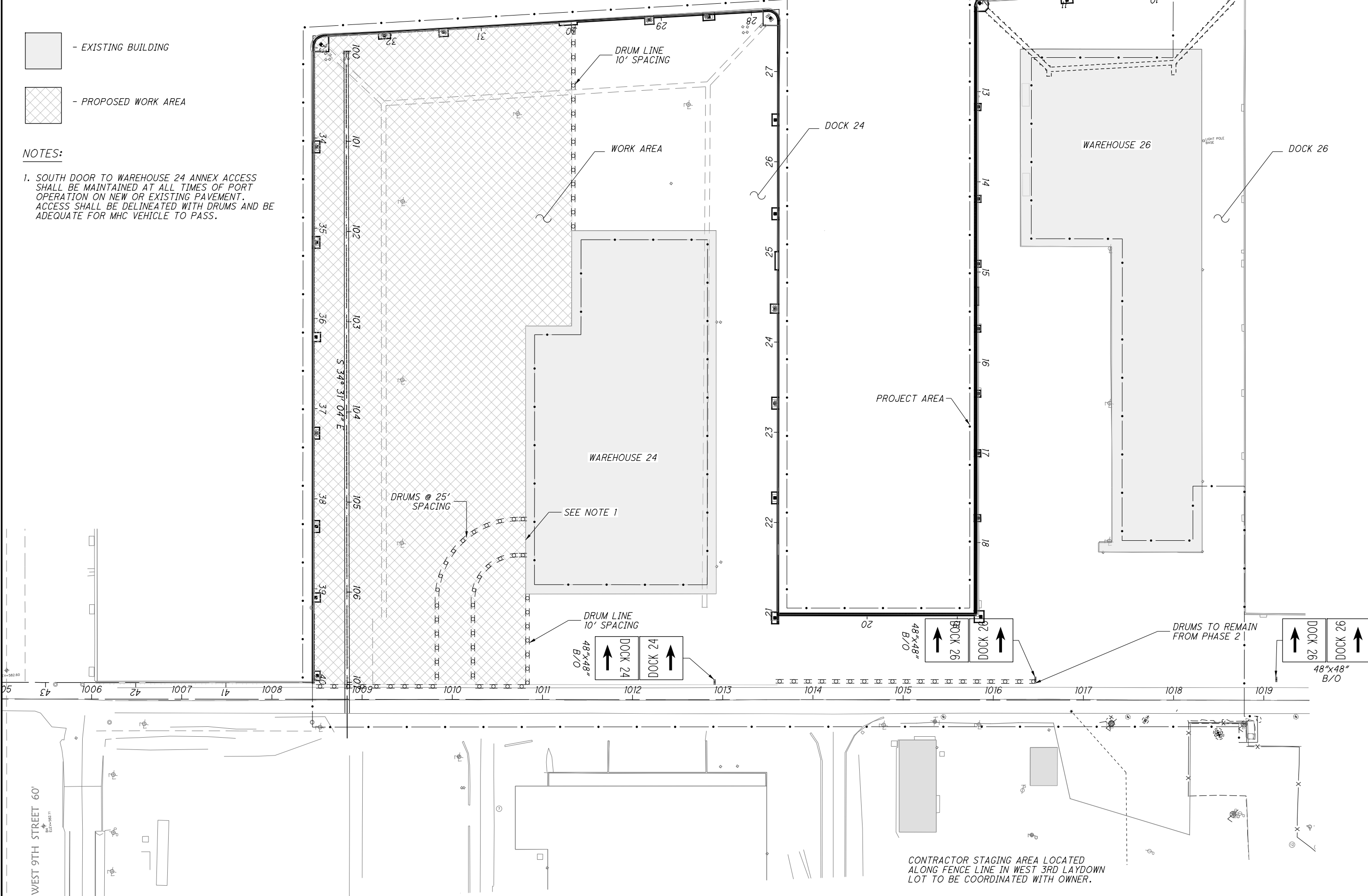
LEGEND:

-  - EXISTING BUILDING
-  - PROPOSED WORK AREA

NOTES:

1. SOUTH DOOR TO WAREHOUSE 24 ANNEX ACCESS SHALL BE MAINTAINED AT ALL TIMES OF PORT OPERATION ON NEW OR EXISTING PAVEMENT. ACCESS SHALL BE DELINEATED WITH DRUMS AND BE ADEQUATE FOR MHC VEHICLE TO PASS.

LAKE ERIE



CONTRACTOR STAGING AREA LOCATED ALONG FENCE LINE IN WEST 3RD LAYDOWN LOT TO BE COORDINATED WITH OWNER.

CALCULATED JAG CHECKED RJM

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HORIZONTAL SCALE IN FEET

**CONSTRUCTION PHASING
PHASE 4**

DOCK 24 & 26W

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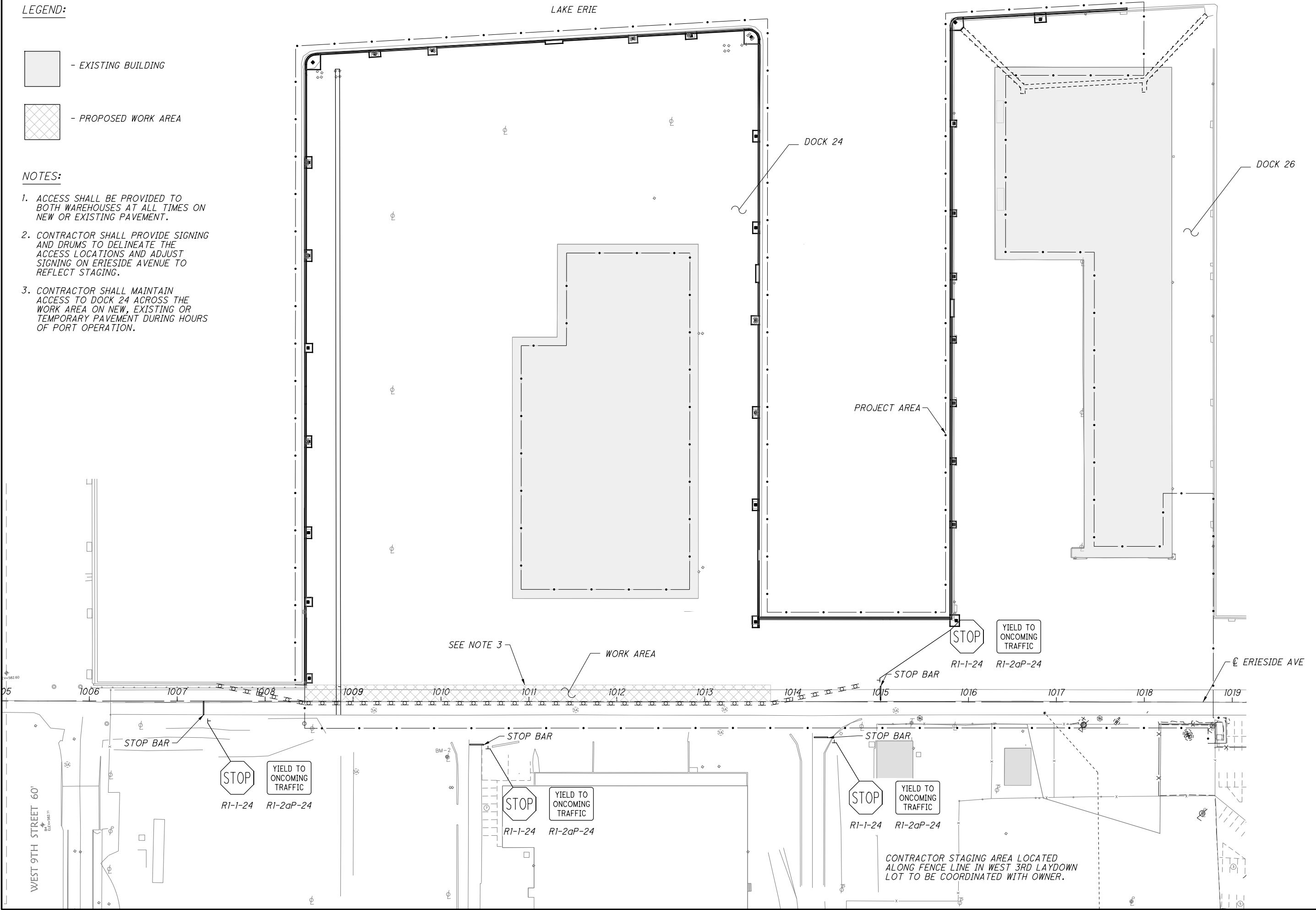
LEGEND:

- EXISTING BUILDING
- PROPOSED WORK AREA

NOTES:

1. ACCESS SHALL BE PROVIDED TO BOTH WAREHOUSES AT ALL TIMES ON NEW OR EXISTING PAVEMENT.
2. CONTRACTOR SHALL PROVIDE SIGNING AND DRUMS TO DELINEATE THE ACCESS LOCATIONS AND ADJUST SIGNING ON ERIESIDE AVENUE TO REFLECT STAGING.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO DOCK 24 ACROSS THE WORK AREA ON NEW, EXISTING OR TEMPORARY PAVEMENT DURING HOURS OF PORT OPERATION.

LAKE ERIE





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SCALE IN FEET

CONSTRUCTION PHASING
PHASE 5

DOCK 24 & 26W

LEGEND:

-  - EXISTING BUILDING
-  - PROPOSED WORK AREA

NOTES:

1. ACCESS SHALL BE PROVIDED TO BOTH WAREHOUSES AT ALL TIMES ON NEW OR EXISTING PAVEMENT.
2. CONTRACTOR SHALL PROVIDE SIGNING AND DRUMS TO DELINEATE THE ACCESS LOCATIONS AND ADJUST SIGNING ON ERIESIDE AVENUE TO REFLECT STAGING.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO DOCK 26 ACROSS THE WORK AREA ON NEW, EXISTING OR TEMPORARY PAVEMENT DURING HOURS OF PORT OPERATION.

LAKE ERIE

DOCK 24

DOCK 26

PROJECT AREA

SEE NOTE 3

ERIESIDE AVE



RI-1-24

RI-2aP-24

STOP BAR

END WORK @ ERIESIDE AVE STA. 1019+05.00

STOP BAR; STOP SIGN; AND ONE LANE ROAD YIELD TO ONCOMING TRAFFIC PLAQUE

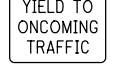


RI-1-24

RI-2aP-24

RI-1-24

RI-2aP-24



RI-1-24

RI-2aP-24

CONTRACTOR STAGING AREA LOCATED ALONG FENCE LINE IN WEST 3RD LAYDOWN LOT TO BE COORDINATED WITH OWNER.



CALCULATED JAG CHECKED RJM



CONSTRUCTION PHASING PHASE 6

DOCK 24 & 26W

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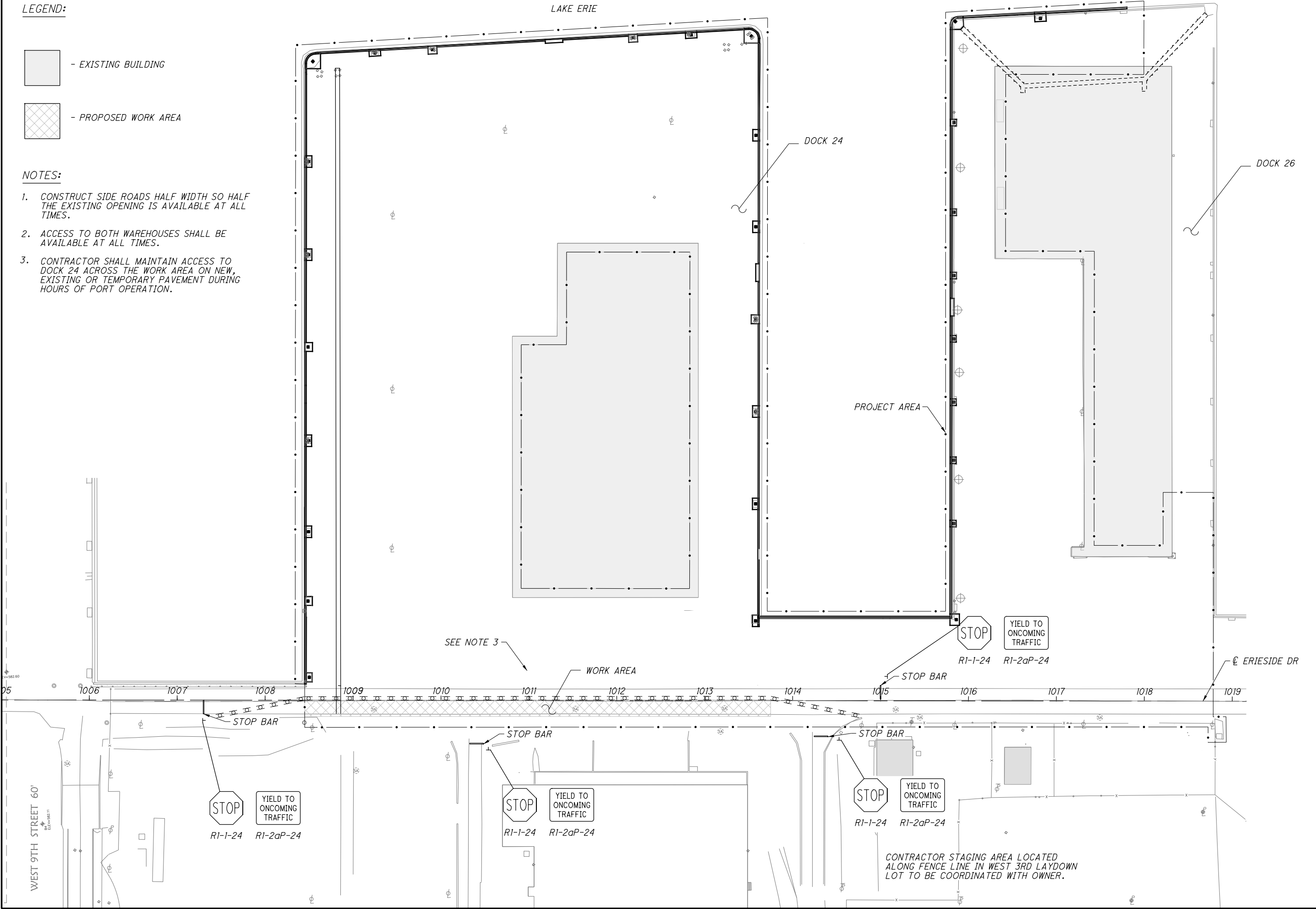
LEGEND:

-  - EXISTING BUILDING
-  - PROPOSED WORK AREA

NOTES:

1. CONSTRUCT SIDE ROADS HALF WIDTH SO HALF THE EXISTING OPENING IS AVAILABLE AT ALL TIMES.
2. ACCESS TO BOTH WAREHOUSES SHALL BE AVAILABLE AT ALL TIMES.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO DOCK 24 ACROSS THE WORK AREA ON NEW, EXISTING OR TEMPORARY PAVEMENT DURING HOURS OF PORT OPERATION.

LAKE ERIE



CALCULATED
JAG
CHECKED
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
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**CONSTRUCTION PHASING
PHASE 7**

DOCK 24 & 26W

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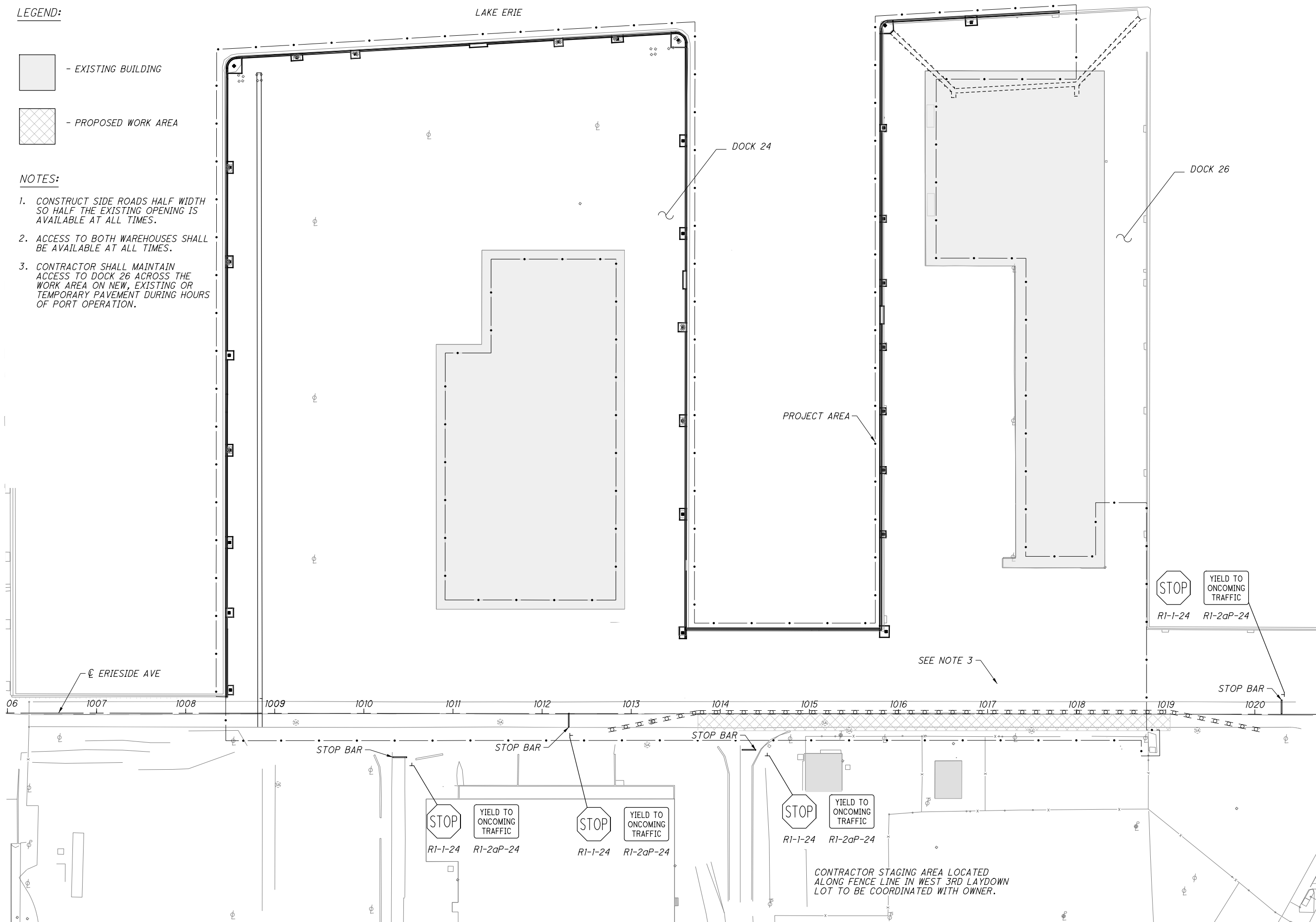
LEGEND:

-  - EXISTING BUILDING
-  - PROPOSED WORK AREA

NOTES:

1. CONSTRUCT SIDE ROADS HALF WIDTH SO HALF THE EXISTING OPENING IS AVAILABLE AT ALL TIMES.
2. ACCESS TO BOTH WAREHOUSES SHALL BE AVAILABLE AT ALL TIMES.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO DOCK 26 ACROSS THE WORK AREA ON NEW, EXISTING OR TEMPORARY PAVEMENT DURING HOURS OF PORT OPERATION.

LAKE ERIE

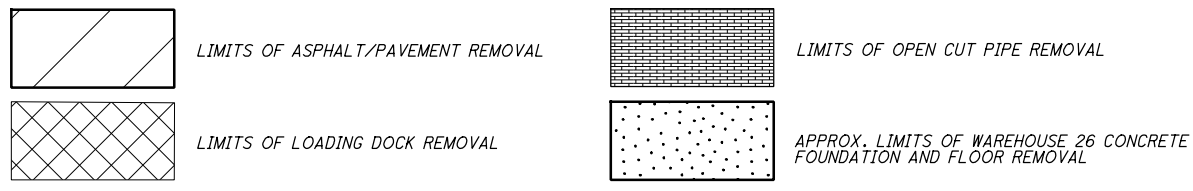
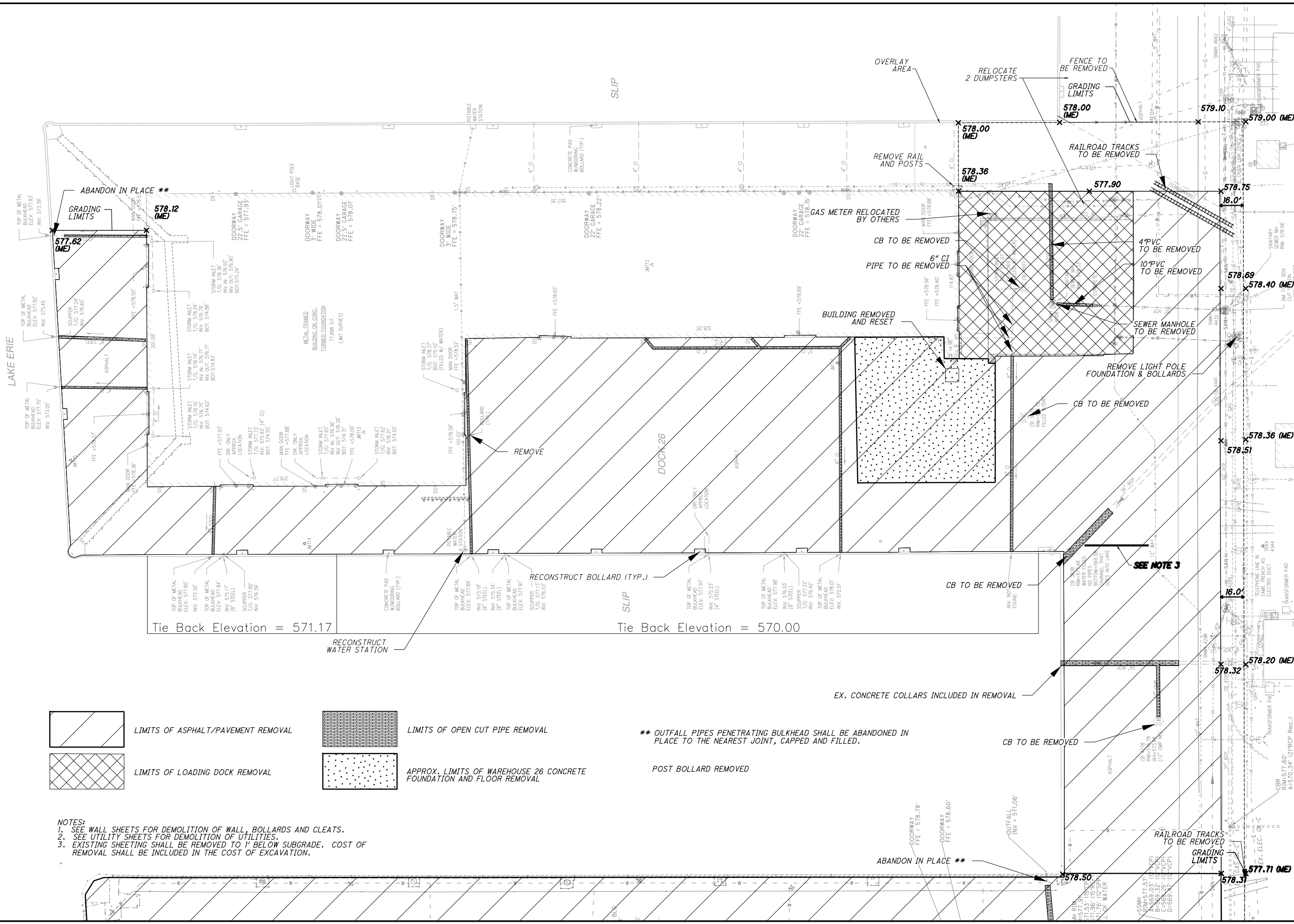


CALCULATED
JAG
CHECKED
RJM

0 50 100
HORIZONTAL
SCALE IN FEET

**CONSTRUCTION PHASING
PHASE 8**

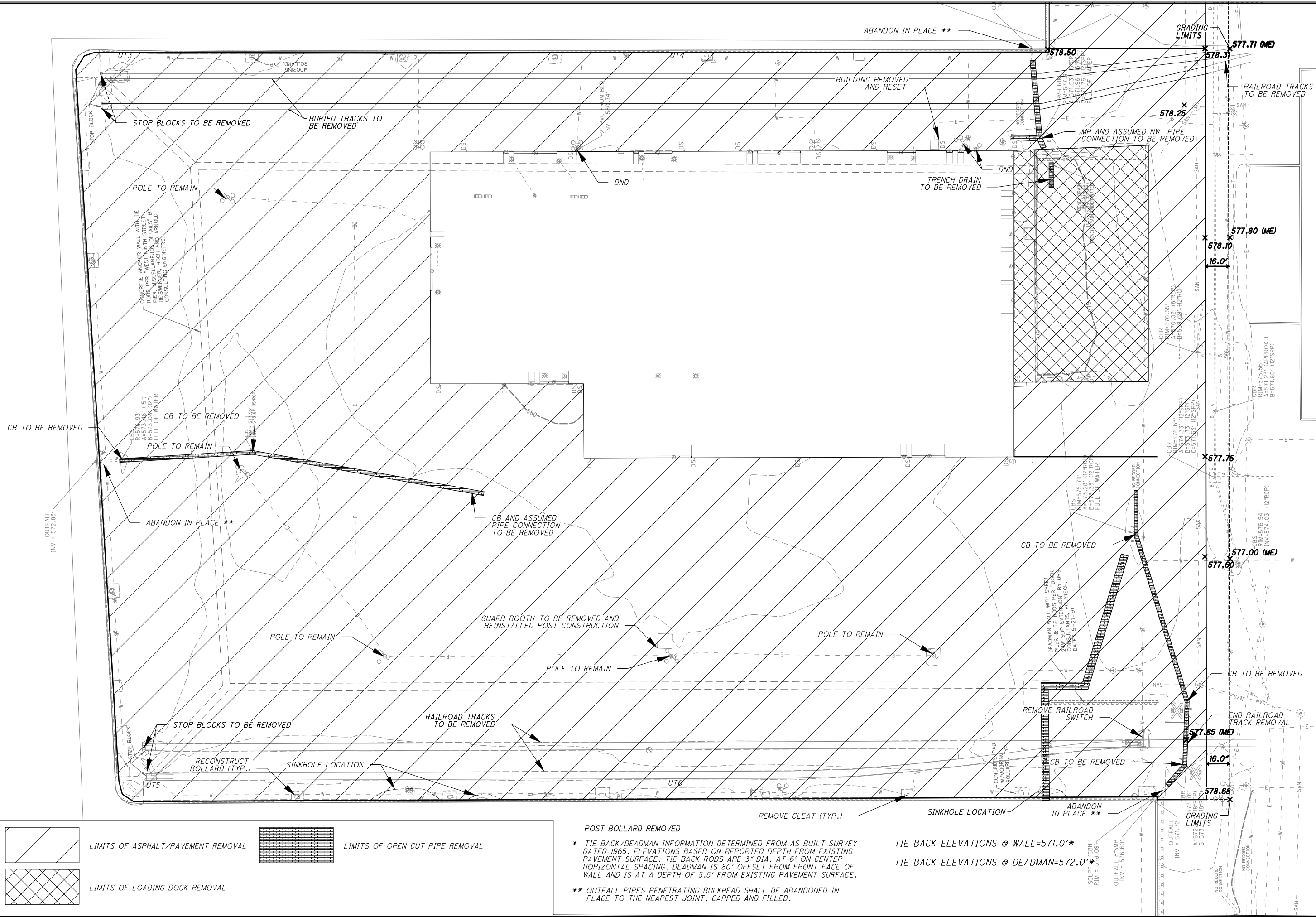
DOCK 24 & 26W



NOTES:
 1. SEE WALL SHEETS FOR DEMOLITION OF WALL, BOLLARDS AND CLEATS.
 2. SEE UTILITY SHEETS FOR DEMOLITION OF UTILITIES.
 3. EXISTING SHEETING SHALL BE REMOVED TO 1' BELOW SUBGRADE. COST OF REMOVAL SHALL BE INCLUDED IN THE COST OF EXCAVATION.

CALCULATED CEG CHECKED NBC
 DEMOLITION PLAN SHEET DOCK 26W
 DOCK 24 & 26W
 19
 106

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	LIMITS OF ASPHALT/PAVEMENT REMOVAL		LIMITS OF OPEN CUT PIPE REMOVAL
	LIMITS OF LOADING DOCK REMOVAL		

POST BOLLARD REMOVED

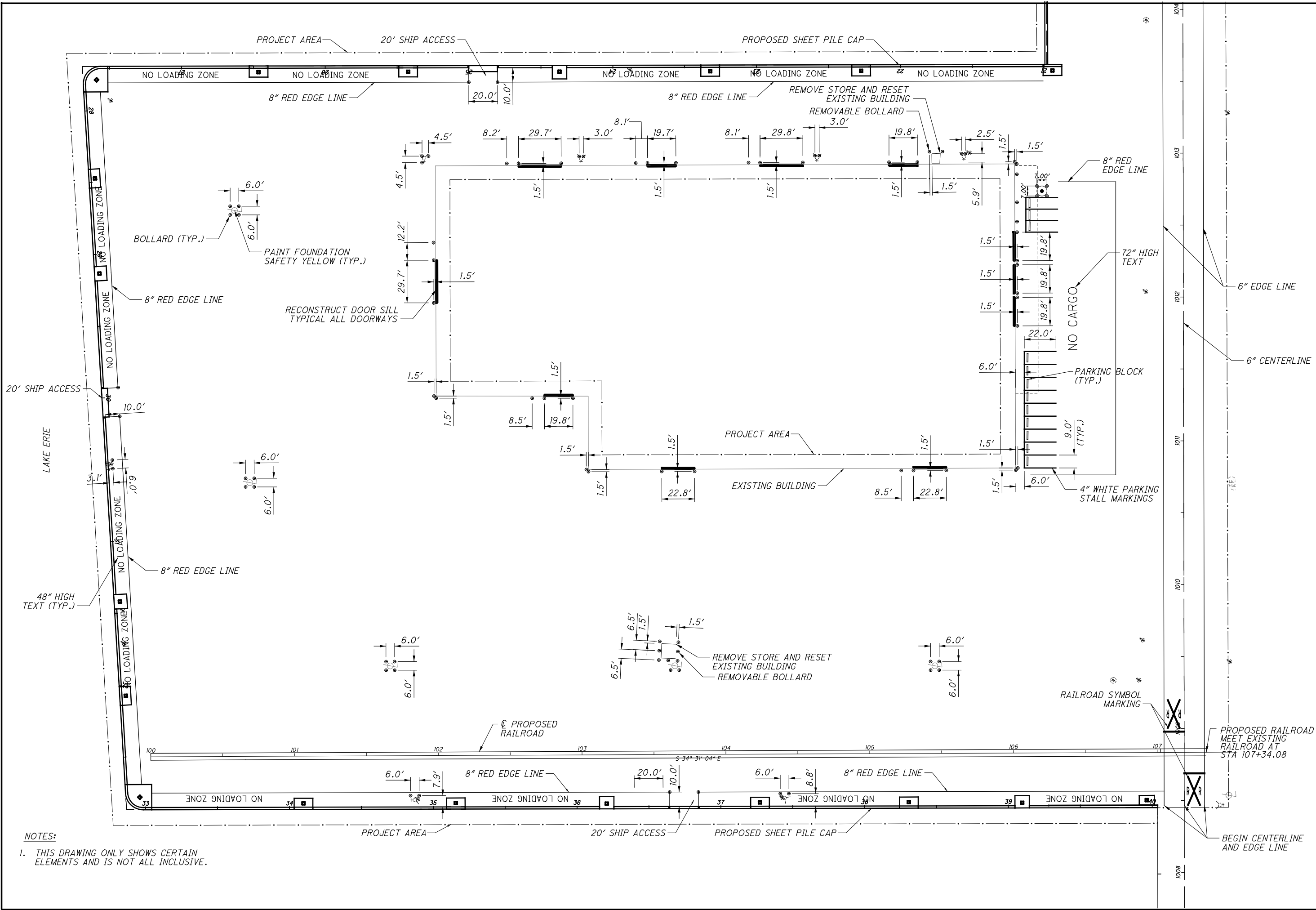
* TIE BACK/DEADMAN INFORMATION DETERMINED FROM AS BUILT SURVEY DATED 1965. ELEVATIONS BASED ON REPORTED DEPTH FROM EXISTING PAVEMENT SURFACE. TIE BACK RODS ARE 3" DIA. AT 6' ON CENTER HORIZONTAL SPACING. DEADMAN IS 80' OFFSET FROM FRONT FACE OF WALL AND IS AT A DEPTH OF 5.5' FROM EXISTING PAVEMENT SURFACE.

** OUTFALL PIPES PENETRATING BULKHEAD SHALL BE ABANDONED IN PLACE TO THE NEAREST JOINT, CAPPED AND FILLED.

TIE BACK ELEVATIONS @ WALL=571.0'*
 TIE BACK ELEVATIONS @ DEADMAN=572.0'

CALCULATED CEG	CHECKED NBC
DEMOLITION PLAN SHEET DOCK 24 & 26W	
20 106	

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NOTES:
 1. THIS DRAWING ONLY SHOWS CERTAIN ELEMENTS AND IS NOT ALL INCLUSIVE.

CALCULATED 0
 CW
 CHECKED RJM

PROPOSED IMPROVEMENTS DOCK 24

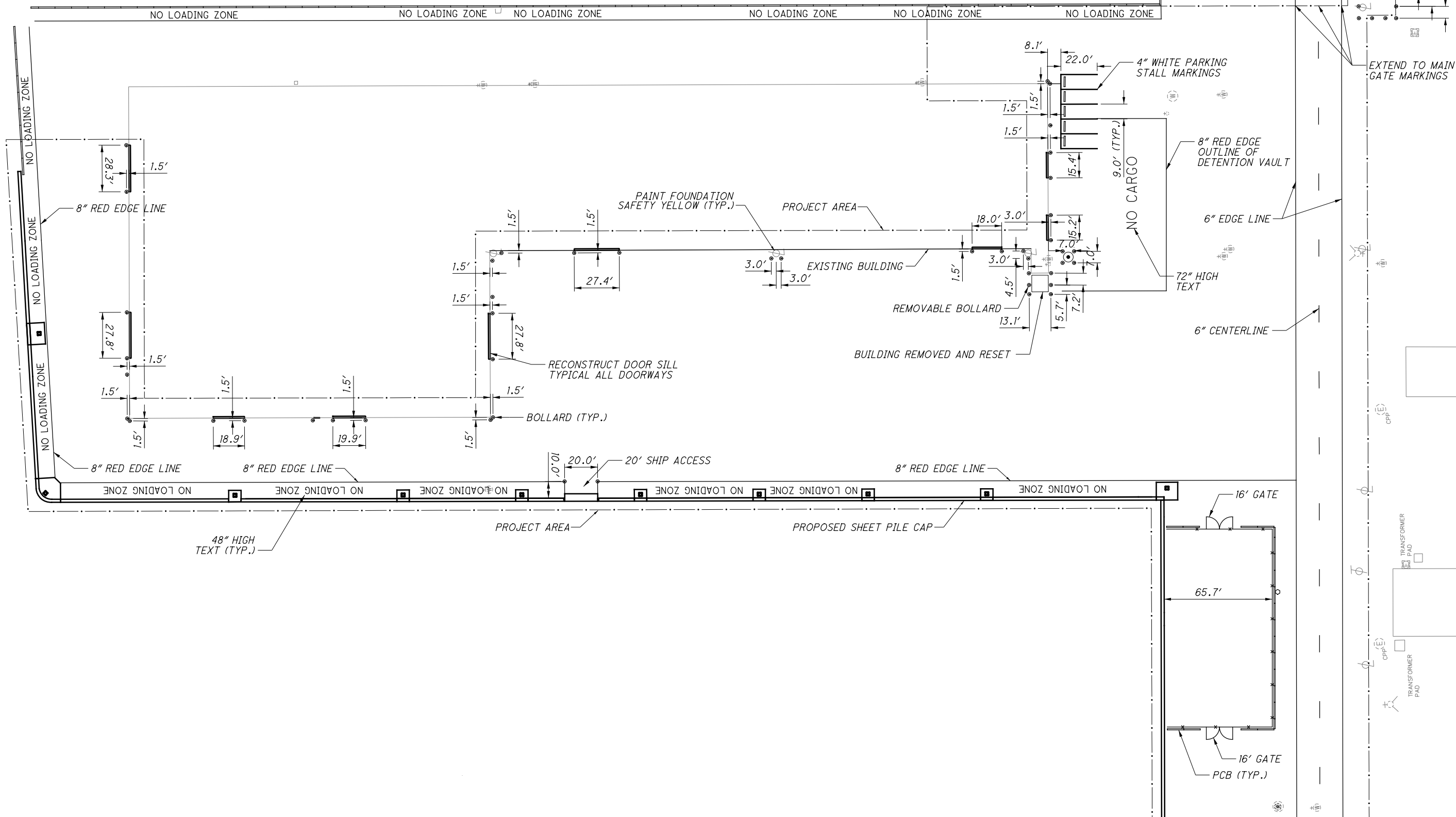
DOCK 24 & 26W

21
 106



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LAKE ERIE



CALCULATED
CW
CHECKED
RJM





0 30 60
15
HORIZONTAL
SCALE IN FEET

**PROPOSED IMPROVEMENTS
DOCK 26W**

DOCK 24 & 26W

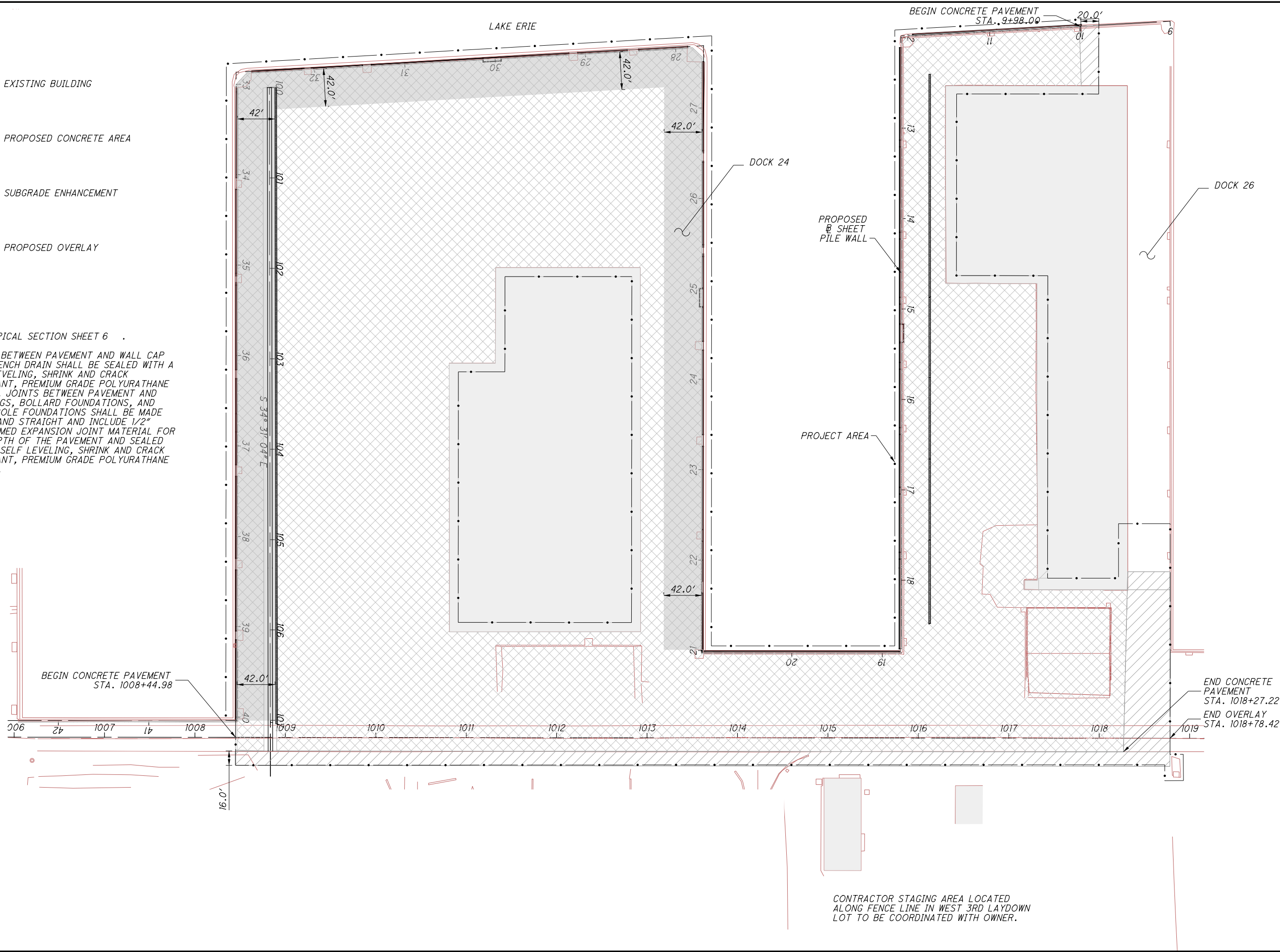
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LEGEND:

-  - EXISTING BUILDING
-  - PROPOSED CONCRETE AREA
-  - SUBGRADE ENHANCEMENT
-  - PROPOSED OVERLAY

NOTES:

1. SEE TYPICAL SECTION SHEET 6 .
2. JOINTS BETWEEN PAVEMENT AND WALL CAP AND TRENCH DRAIN SHALL BE SEALED WITH A SELF LEVELING, SHRINK AND CRACK RESISTANT, PREMIUM GRADE POLYURATHANE SEALER. JOINTS BETWEEN PAVEMENT AND BUILDINGS, BOLLARD FOUNDATIONS, AND LIGHT POLE FOUNDATIONS SHALL BE MADE CLEAN AND STRAIGHT AND INCLUDE 1/2" PREFORMED EXPANSION JOINT MATERIAL FOR THE DEPTH OF THE PAVEMENT AND SEALED WITH A SELF LEVELING, SHRINK AND CRACK RESISTANT, PREMIUM GRADE POLYURATHANE SEALER.



CONTRACTOR STAGING AREA LOCATED ALONG FENCE LINE IN WEST 3RD LAYDOWN LOT TO BE COORDINATED WITH OWNER.

CALCULATED
JAG
CHECKED
XXX

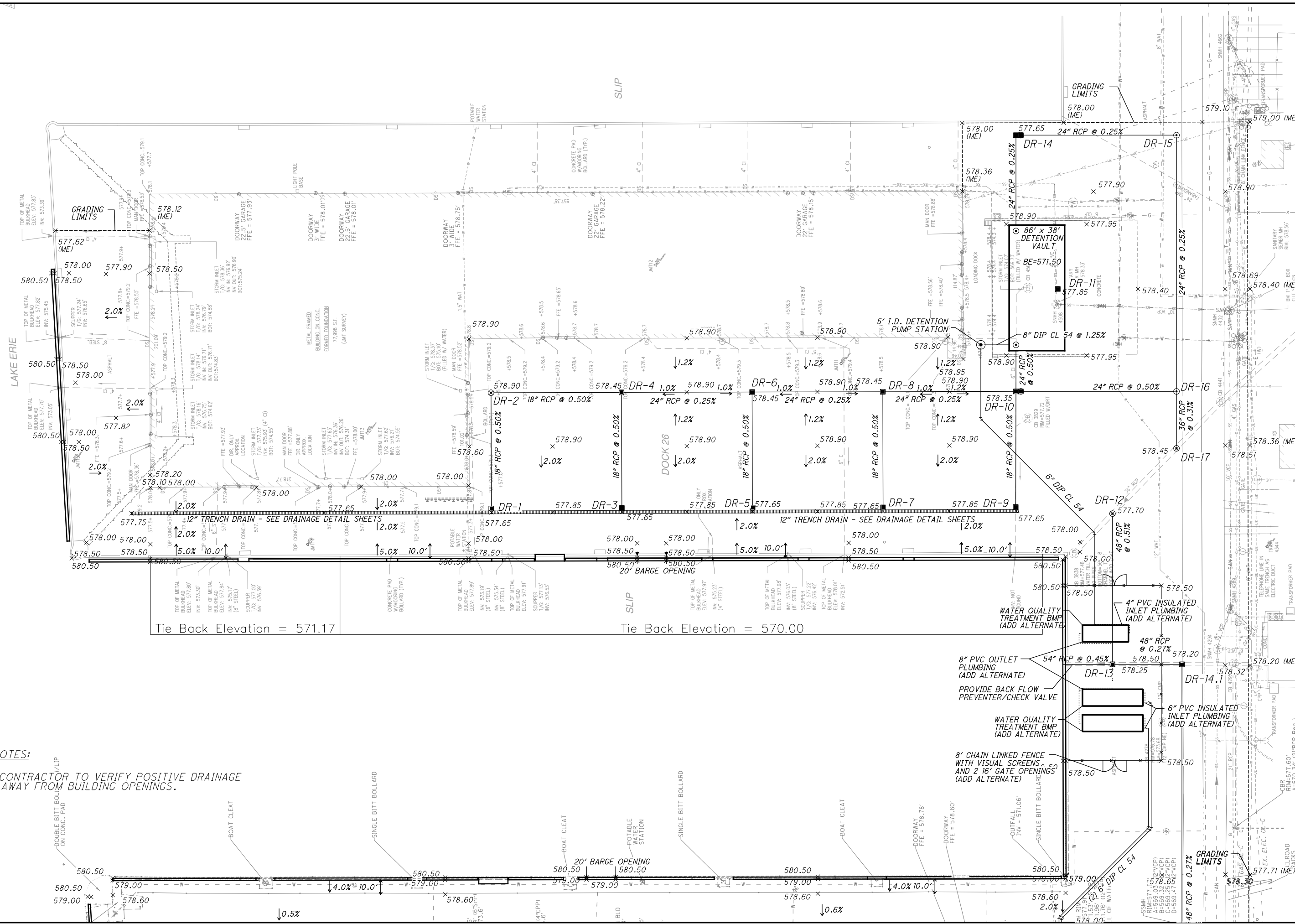
0 50 100
HORIZONTAL
SCALE IN FEET

**PAVEMENT DETAILS
DOCK 26W & 24**

DOCK 24 & 26W

NOTES:

- 1. CONTRACTOR TO VERIFY POSITIVE DRAINAGE AWAY FROM BUILDING OPENINGS.



Tie Back Elevation = 571.17

Tie Back Elevation = 570.00

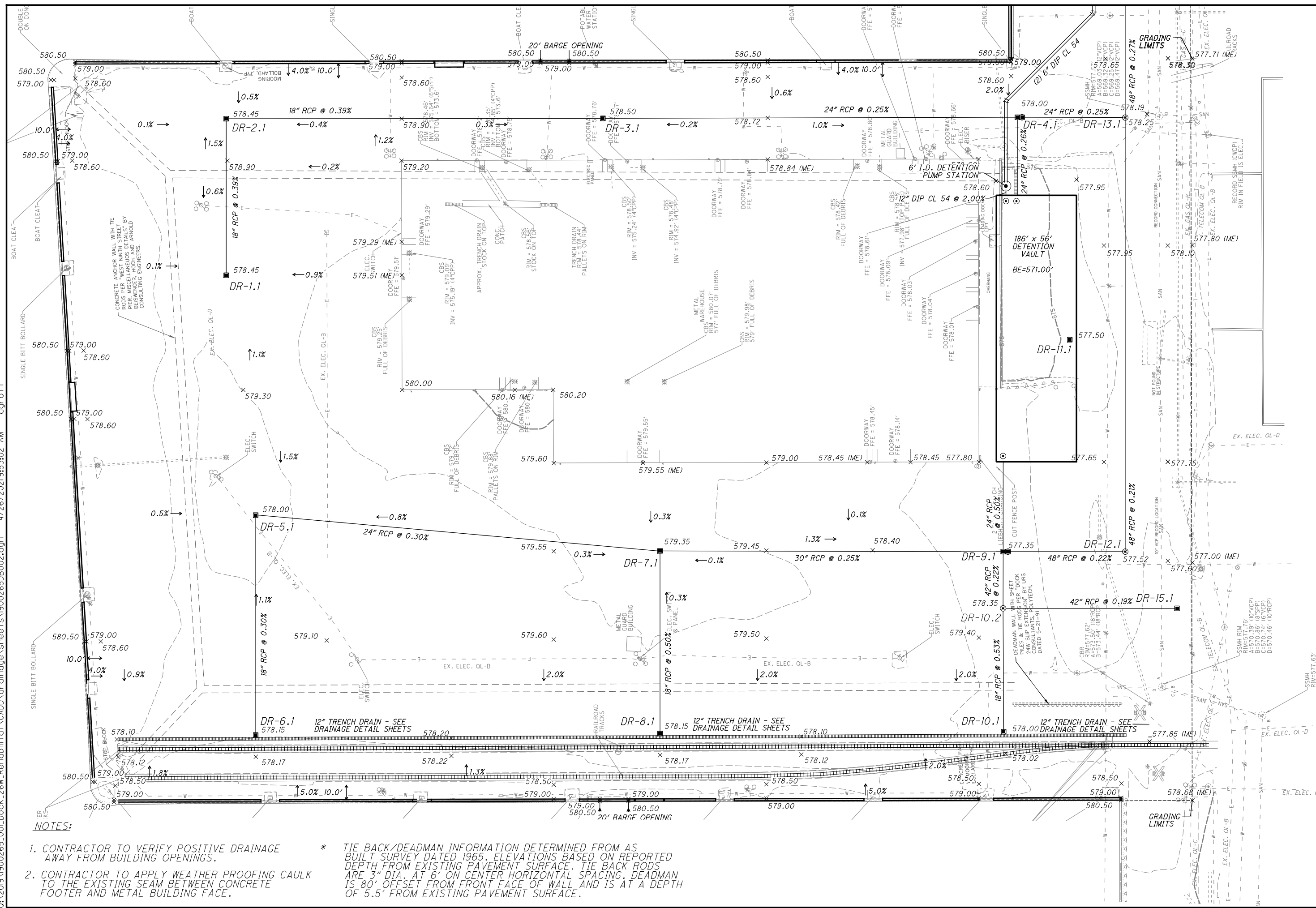
CALCULATED
CEG
CHECKED
NBC

GRADING PLAN SHEET
DOCK 26W

DOCK 24 & 26W

24
106

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NOTES:

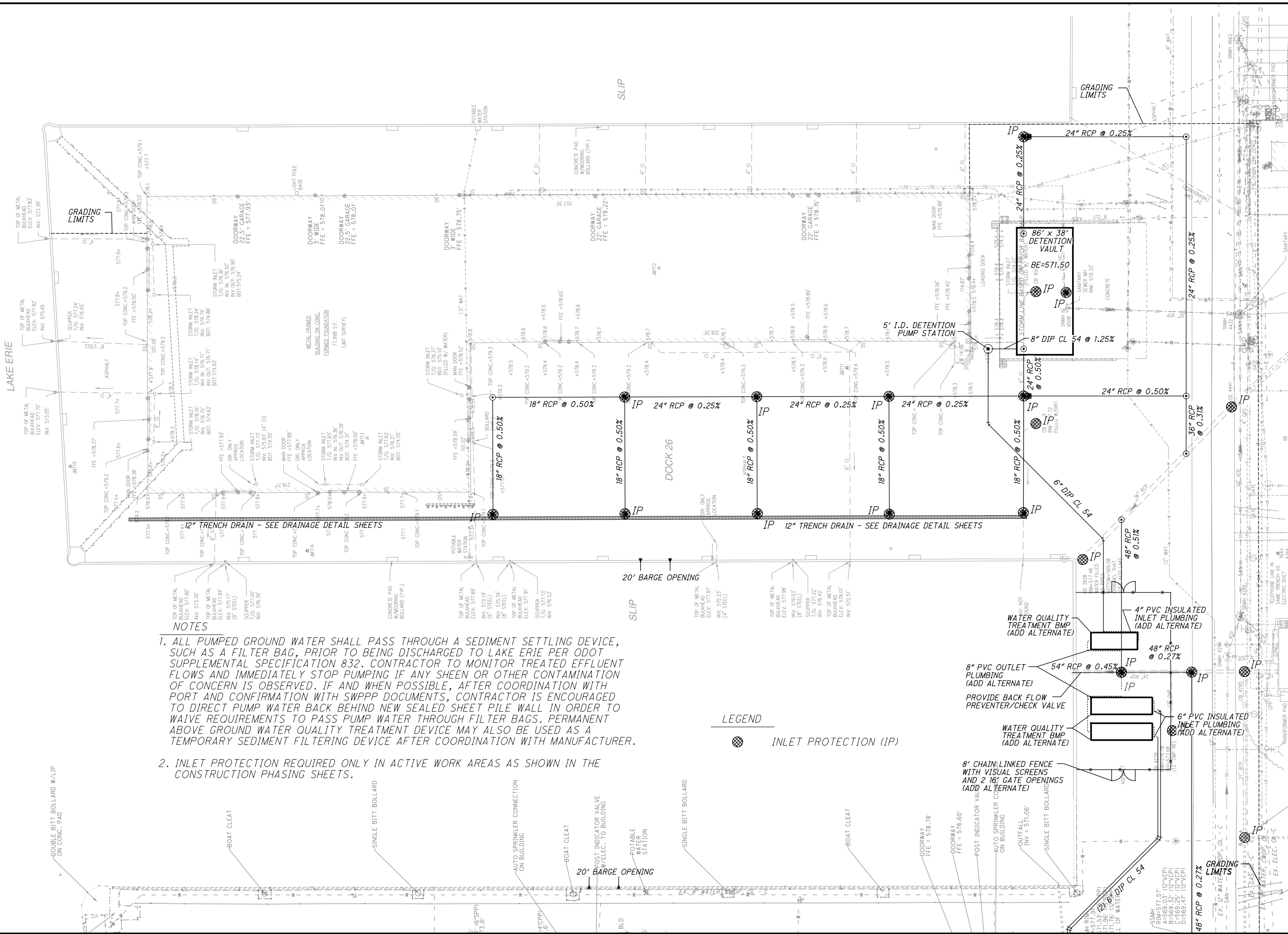
1. CONTRACTOR TO VERIFY POSITIVE DRAINAGE AWAY FROM BUILDING OPENINGS.
 2. CONTRACTOR TO APPLY WEATHER PROOFING CAULK TO THE EXISTING SEAM BETWEEN CONCRETE FOOTER AND METAL BUILDING FACE.
- * TIE BACK/DEADMAN INFORMATION DETERMINED FROM AS BUILT SURVEY DATED 1965. ELEVATIONS BASED ON REPORTED DEPTH FROM EXISTING PAVEMENT SURFACE. TIE BACK RODS ARE 3" DIA. AT 6' ON CENTER HORIZONTAL SPACING. DEADMAN IS 80' OFFSET FROM FRONT FACE OF WALL AND IS AT A DEPTH OF 5.5' FROM EXISTING PAVEMENT SURFACE.

CALCULATED
CEG
CHECKED
NBC

**GRADING PLAN SHEET
DOCK 24**

DOCK 24 & 26W

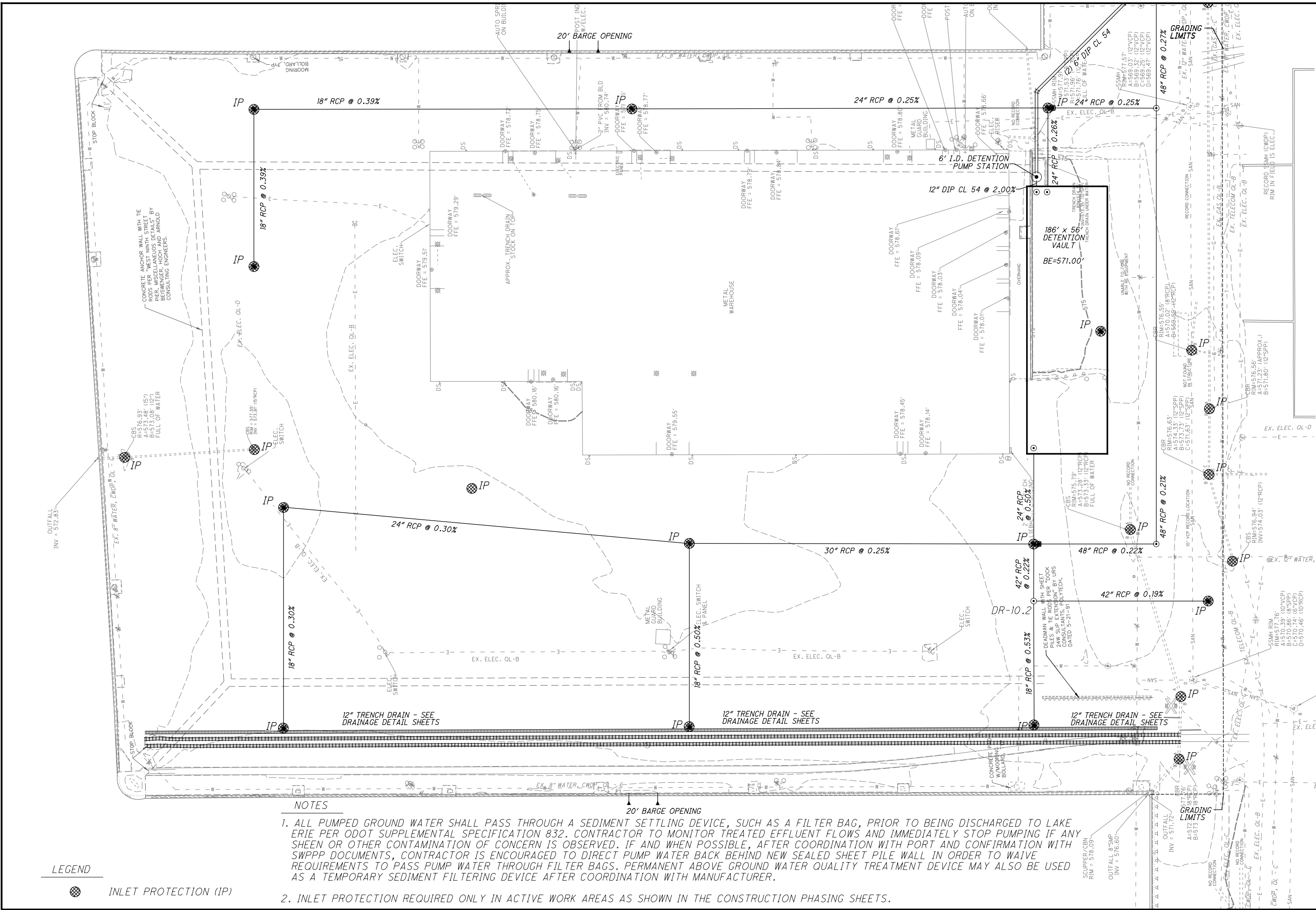
25
106



- NOTES**
1. ALL PUMPED GROUND WATER SHALL PASS THROUGH A SEDIMENT SETTLING DEVICE, SUCH AS A FILTER BAG, PRIOR TO BEING DISCHARGED TO LAKE ERIE PER ODOT SUPPLEMENTAL SPECIFICATION 832. CONTRACTOR TO MONITOR TREATED EFFLUENT FLOWS AND IMMEDIATELY STOP PUMPING IF ANY SHEEN OR OTHER CONTAMINATION OF CONCERN IS OBSERVED. IF AND WHEN POSSIBLE, AFTER COORDINATION WITH PORT AND CONFIRMATION WITH SWPPP DOCUMENTS, CONTRACTOR IS ENCOURAGED TO DIRECT PUMP WATER BACK BEHIND NEW SEALED SHEET PILE WALL IN ORDER TO WAIVE REQUIREMENTS TO PASS PUMP WATER THROUGH FILTER BAGS. PERMANENT ABOVE GROUND WATER QUALITY TREATMENT DEVICE MAY ALSO BE USED AS A TEMPORARY SEDIMENT FILTERING DEVICE AFTER COORDINATION WITH MANUFACTURER.
 2. INLET PROTECTION REQUIRED ONLY IN ACTIVE WORK AREAS AS SHOWN IN THE CONSTRUCTION PHASING SHEETS.

LEGEND
 ● INLET PROTECTION (IP)

CALCULATED CEG CHECKED NBC
 15 HORIZONTAL SCALE IN FEET
EROSION AND SEDIMENT CONTROL PLAN
DOCK 24 & 26W
 26
 106



 0 15 30 60 HORIZONTAL SCALE IN FEET
CALCULATED CEG CHECKED NBC
EROSION AND SEDIMENT CONTROL PLAN DOCK 24
DOCK 24 & 26W
27 106

NOTES

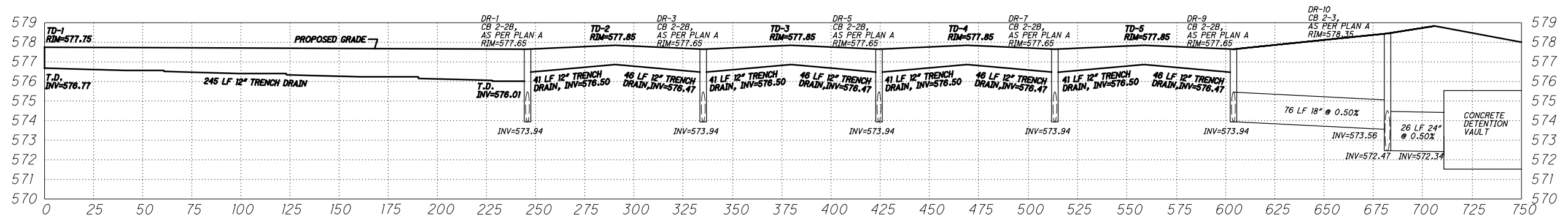
1. ALL PUMPED GROUND WATER SHALL PASS THROUGH A SEDIMENT SETTLING DEVICE, SUCH AS A FILTER BAG, PRIOR TO BEING DISCHARGED TO LAKE ERIE PER ODOT SUPPLEMENTAL SPECIFICATION 832. CONTRACTOR TO MONITOR TREATED EFFLUENT FLOWS AND IMMEDIATELY STOP PUMPING IF ANY SHEEN OR OTHER CONTAMINATION OF CONCERN IS OBSERVED. IF AND WHEN POSSIBLE, AFTER COORDINATION WITH PORT AND CONFIRMATION WITH SWPPP DOCUMENTS, CONTRACTOR IS ENCOURAGED TO DIRECT PUMP WATER BACK BEHIND NEW SEALED SHEET PILE WALL IN ORDER TO WAIVE REQUIREMENTS TO PASS PUMP WATER THROUGH FILTER BAGS. PERMANENT ABOVE GROUND WATER QUALITY TREATMENT DEVICE MAY ALSO BE USED AS A TEMPORARY SEDIMENT FILTERING DEVICE AFTER COORDINATION WITH MANUFACTURER.
2. INLET PROTECTION REQUIRED ONLY IN ACTIVE WORK AREAS AS SHOWN IN THE CONSTRUCTION PHASING SHEETS.

LEGEND

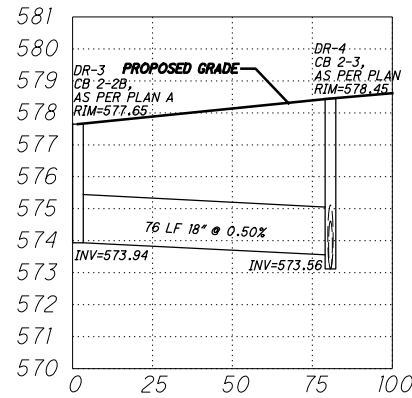
INLET PROTECTION (IP)

VERT SCALE- 10:1
HORIZ SCALE- 1:1

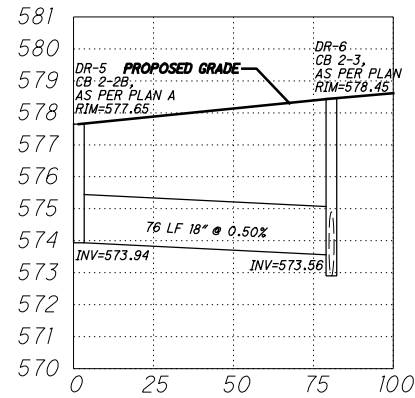
PROFILE TD-1 TO DETENTION VAULT



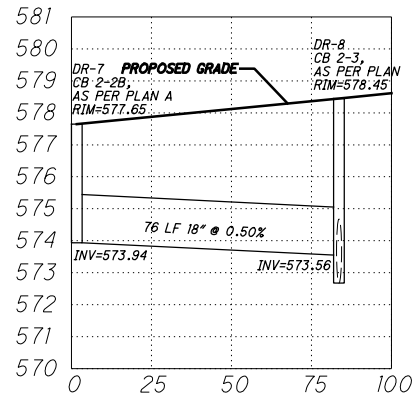
PROFILE DR-3 TO DR-4



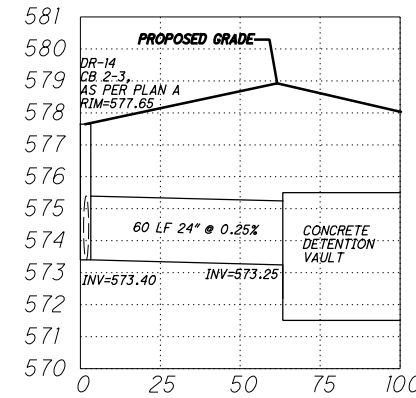
PROFILE DR-5 TO DR-6



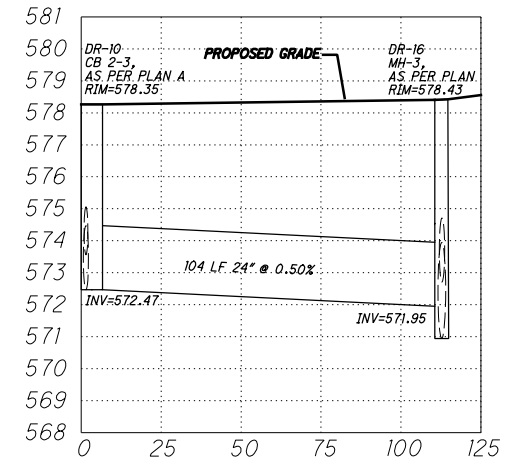
PROFILE DR-7 TO DR-8



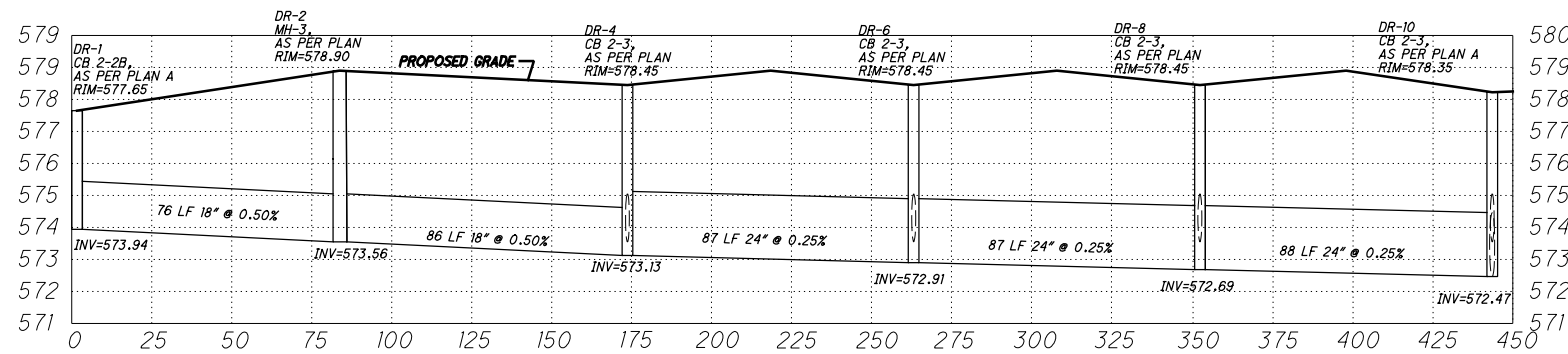
PROFILE DR-14 TO DETENTION VAULT



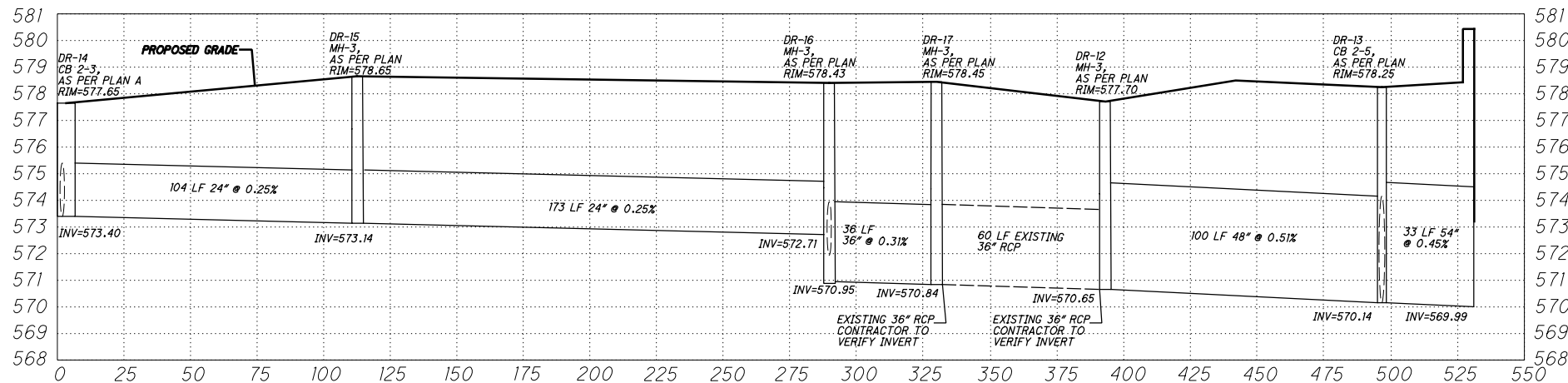
PROFILE DR-10 TO DR-16



PROFILE DR-1 TO DR-10



PROFILE DR-14 TO OUTFALL



NOTES:
1. ALL CONNECTIONS AND JOINTS SHALL BE SILT TIGHT ABOVE MEAN HIGH LAKE ERIE WATER SURFACE ELEVATION.
2. ALL CONNECTIONS AND JOINTS SHALL BE LEAK RESISTANT BELOW MEAN HIGH LAKE ERIE WATER SURFACE ELEVATION.

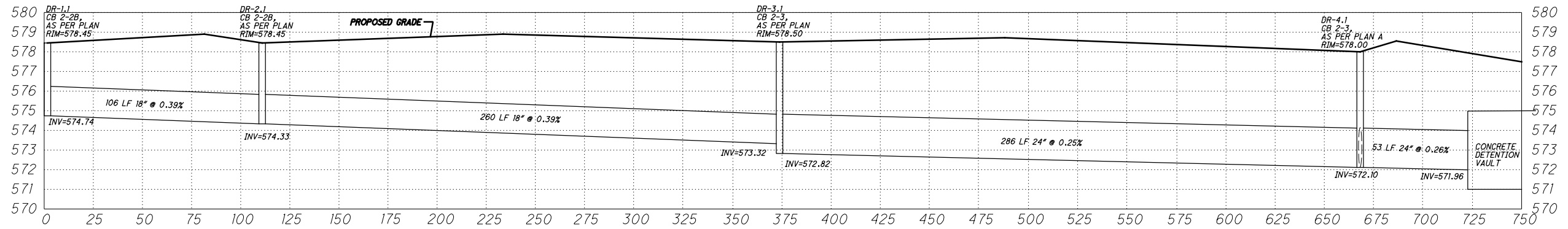
CALCULATED
CEG
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NBC

PROPOSED DRAINAGE PROFILES
DOCK 26W

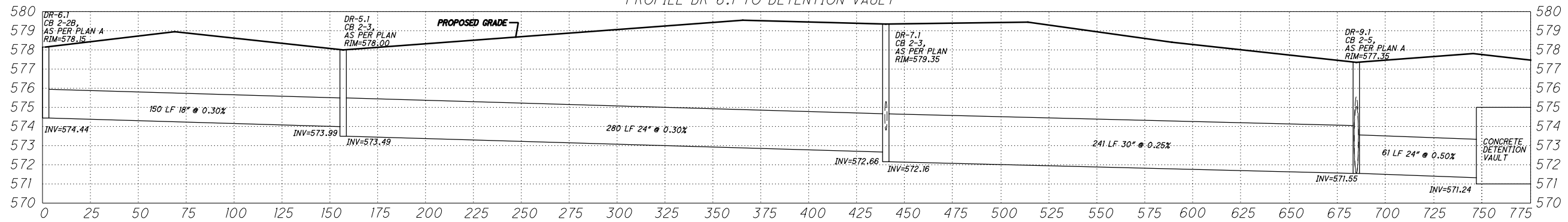
DOCK 24 & 26W

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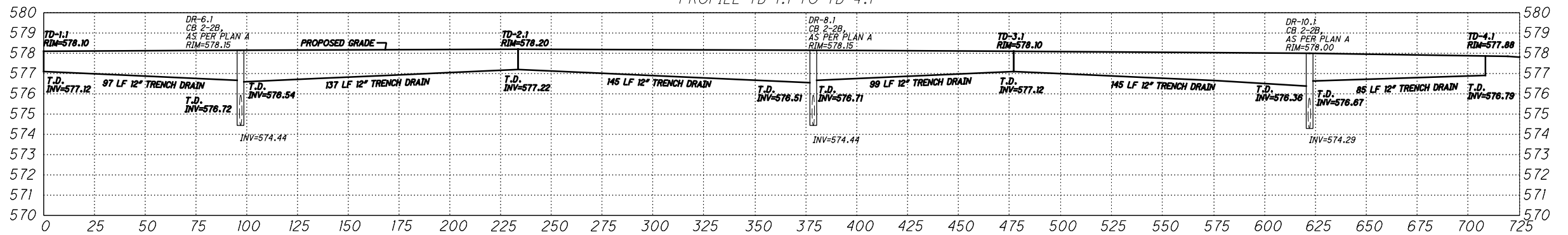
PROFILE DR-1.1 TO DETENTION VAULT



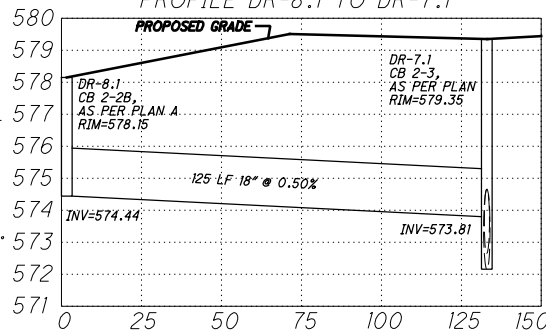
PROFILE DR-6.1 TO DETENTION VAULT



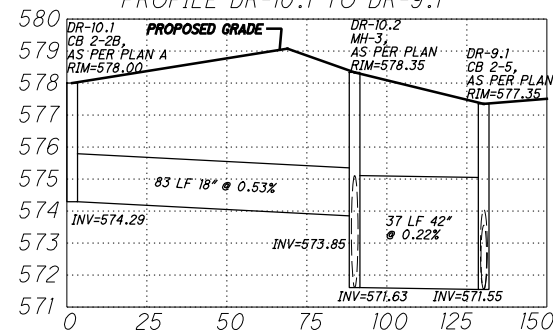
PROFILE TD-1.1 TO TD-4.1



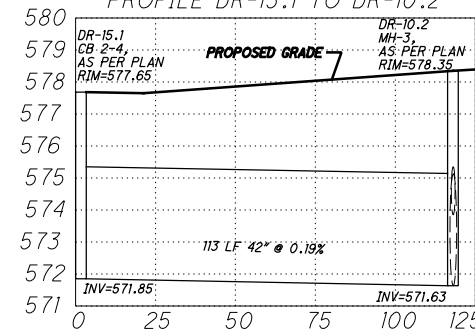
PROFILE DR-8.1 TO DR-7.1



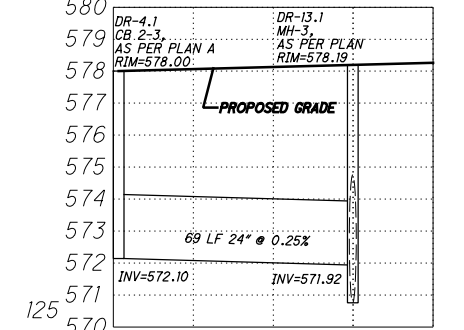
PROFILE DR-10.1 TO DR-9.1



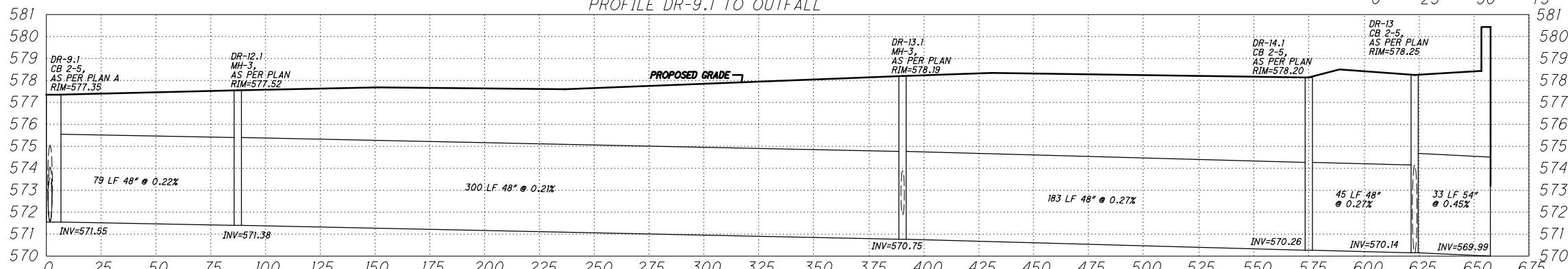
PROFILE DR-15.1 TO DR-10.2



PROFILE DR-4.1 TO DR-13.1



PROFILE DR-9.1 TO OUTFALL



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- NOTES:
1. ALL CONNECTIONS AND JOINTS SHALL BE SILT TIGHT ABOVE MEAN HIGH LAKE ERIE WATER SURFACE ELEVATION.
 2. ALL CONNECTIONS AND JOINTS SHALL BE LEAK RESISTANT BELOW MEAN HIGH LAKE ERIE WATER SURFACE ELEVATION.

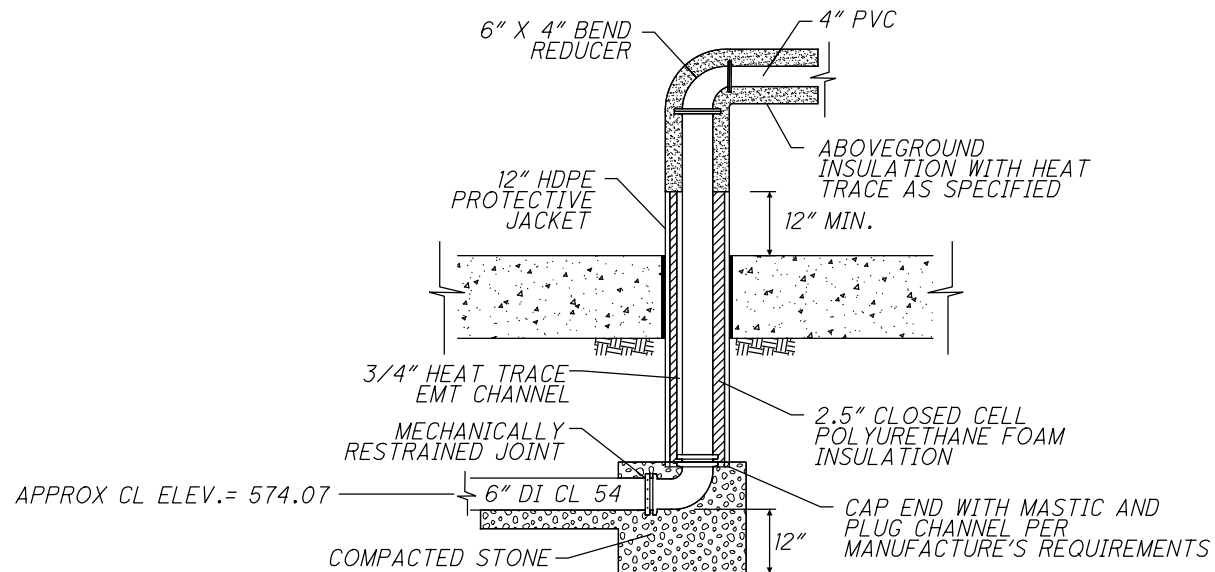
CALCULATED
CEG
CHECKED
NBC

0 30 60
15
HORIZONTAL
SCALE IN FEET

PROPOSED DRAINAGE PROFILES
DOCK 24

DOCK 24 & 26W

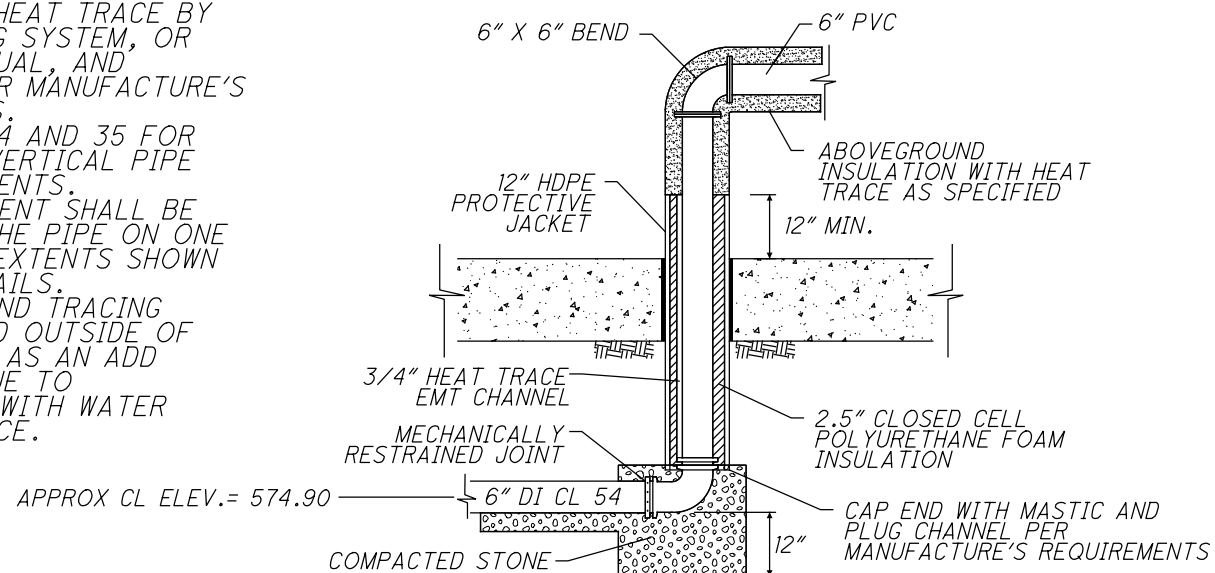
VERT SCALE- 10:1
HORIZ SCALE- 1:1



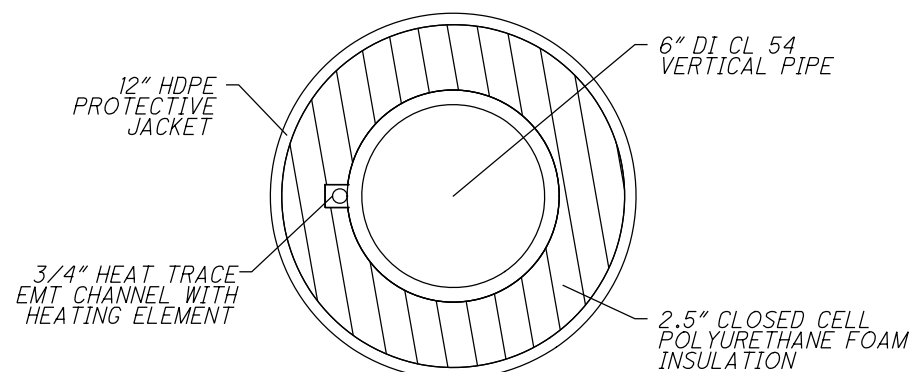
DOCK 26W VERTICAL PIPE HEATING ELEMENT CROSS SECTION DETAIL
N.T.S.

NOTES:

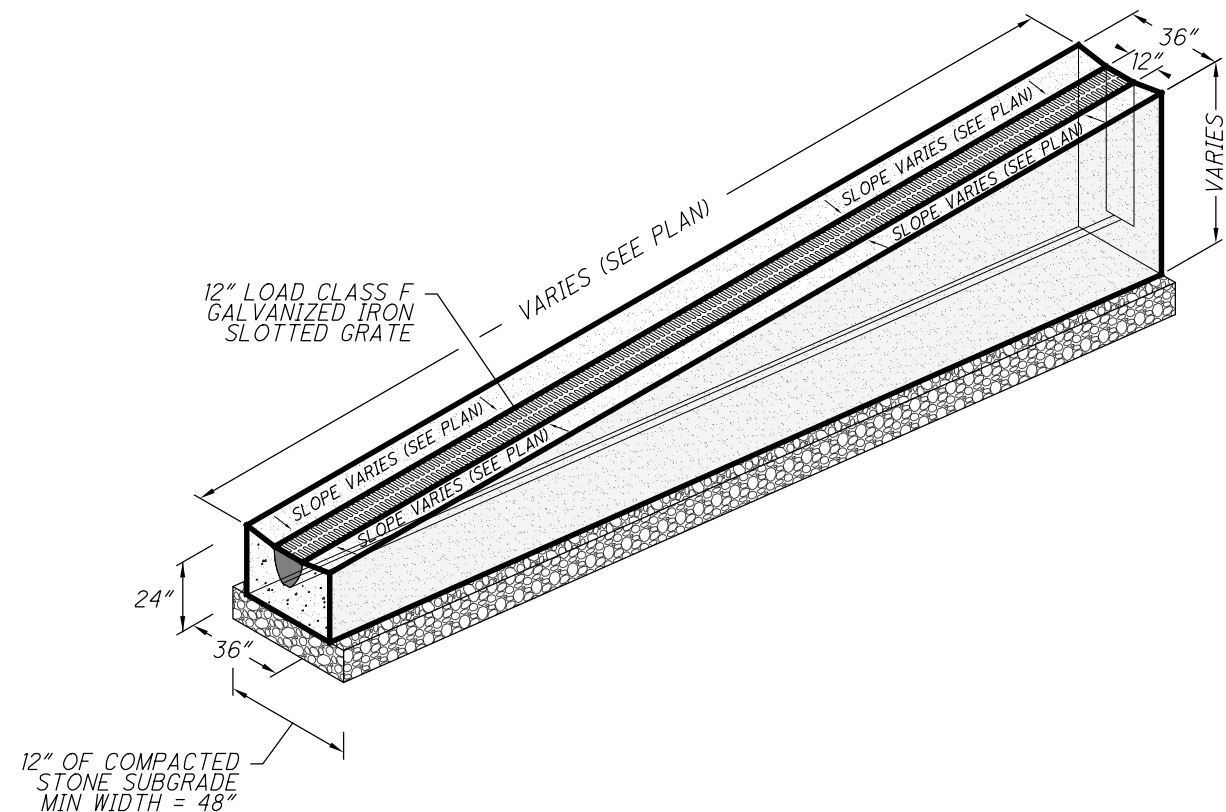
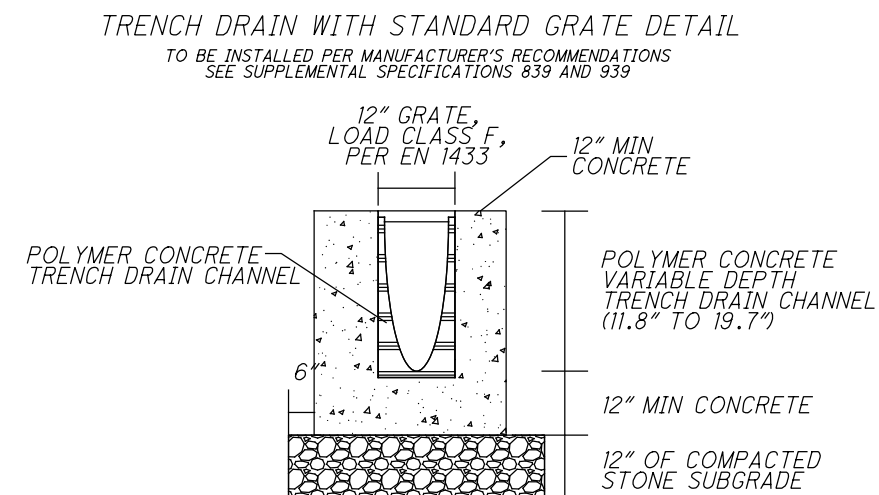
1. BELOW GROUND INSULATION JACKET WITH HEAT TRACE BY TRICON PIPING SYSTEM, OR APPROVED EQUAL, AND INSTALLED PER MANUFACTURE'S REQUIREMENTS.
2. SEE SHEETS 34 AND 35 FOR EXTENTS OF VERTICAL PIPE HEATING ELEMENTS.
3. HEATING ELEMENT SHALL BE AFFIXED TO THE PIPE ON ONE SIDE TO THE EXTENTS SHOWN IN THESE DETAILS.
4. INSULATION AND TRACING SHALL BE PAID OUTSIDE OF THE BASE BID AS AN ADD ALTERNATE DUE TO ASSOCIATION WITH WATER QUALITY DEVICE.



DOCK 24 VERTICAL PIPE HEATING ELEMENT CROSS SECTION DETAIL
N.T.S.



VERTICAL PIPE HEATING ELEMENT PLAN DETAIL
INTAKE PVC AND SUBSURFACE DI REMOVED FOR CLARITY
N.T.S.

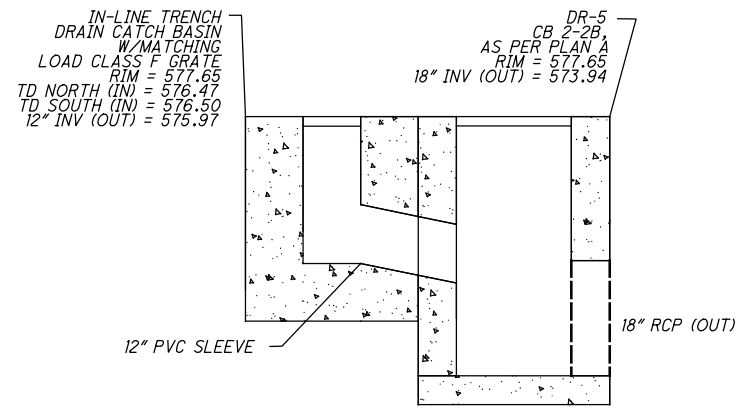
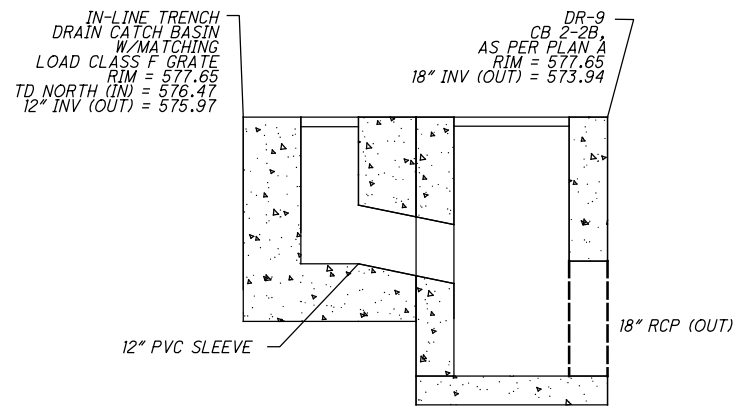
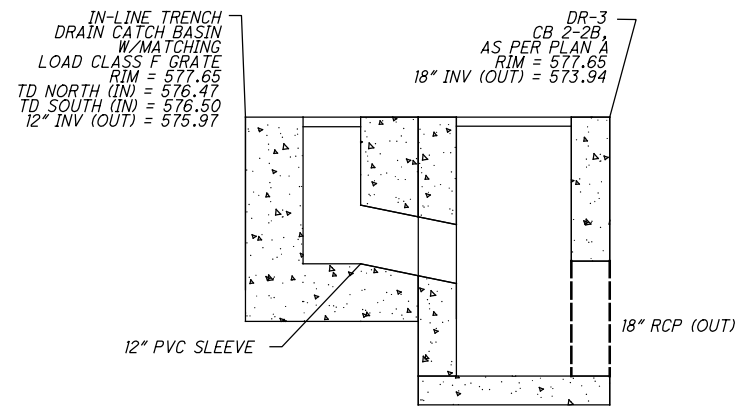
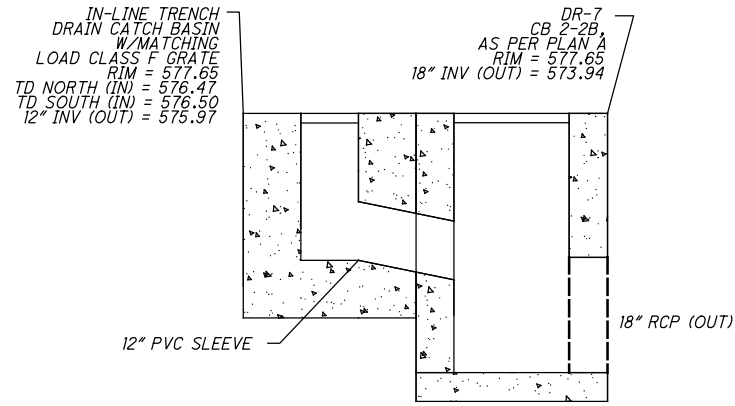
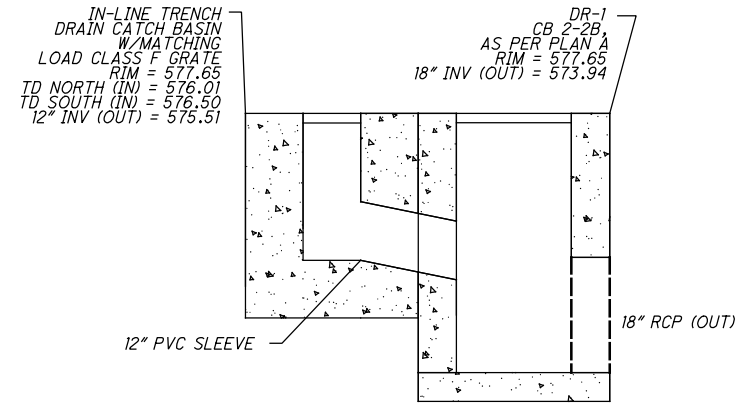


ISOMETRIC TRENCH DRAIN DETAIL
TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS
SEE SUPPLEMENTAL SPECIFICATIONS 839 AND 939

0	30	60
HORIZONTAL SCALE IN FEET		
CALCULATED	CEG	CHECKED
		NBC

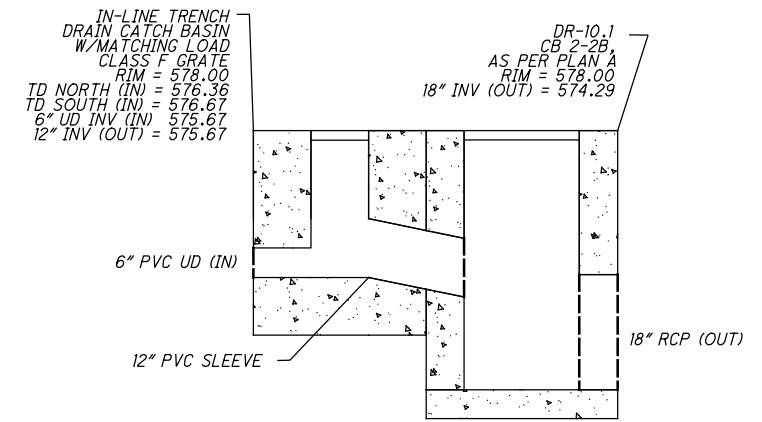
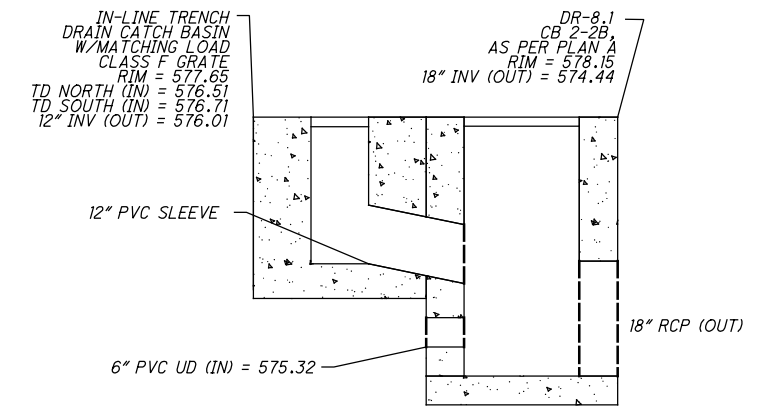
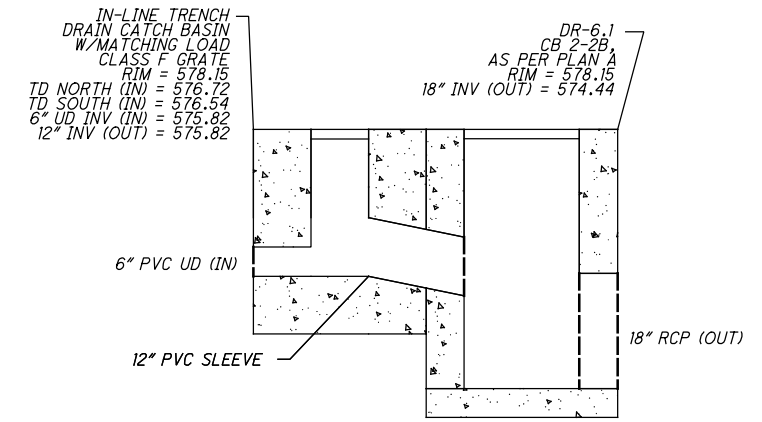
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DOCK 26W TRENCH DRAIN CONNECTION DETAILS



NOTES:
 1. LOAD CLASS F GRATE PER EN 1433.
 2. PIPE OPENINGS SHALL BE GASKETED OR SEALED.

DOCK 24 TRENCH DRAIN/UNDERDRAIN OUTFALL CONNECTION DETAILS



NOTES:
 1. LOAD CLASS F GRATE PER EN 1433.
 2. PIPE OPENINGS SHALL BE GASKETED OR SEALED.

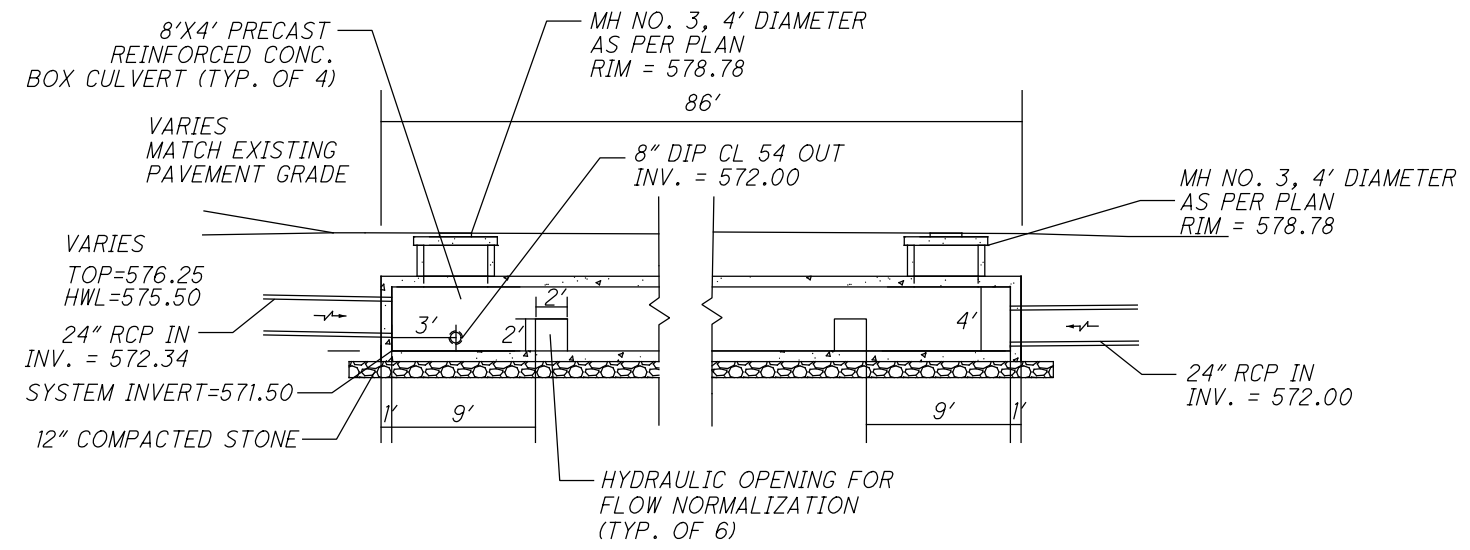
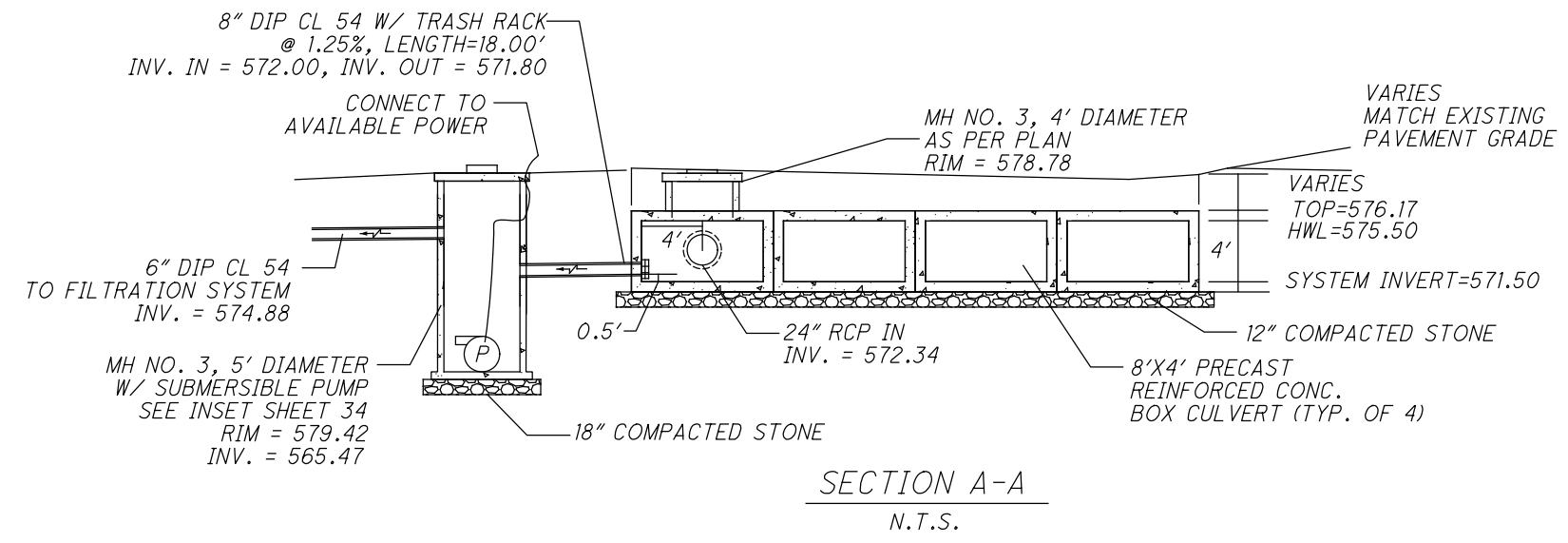
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0	30	60
HORIZONTAL SCALE IN FEET		
CALCULATED	CEG	CHECKED
		NBC

DRAINAGE DETAILS SHEET
DOCK 24 & 26W

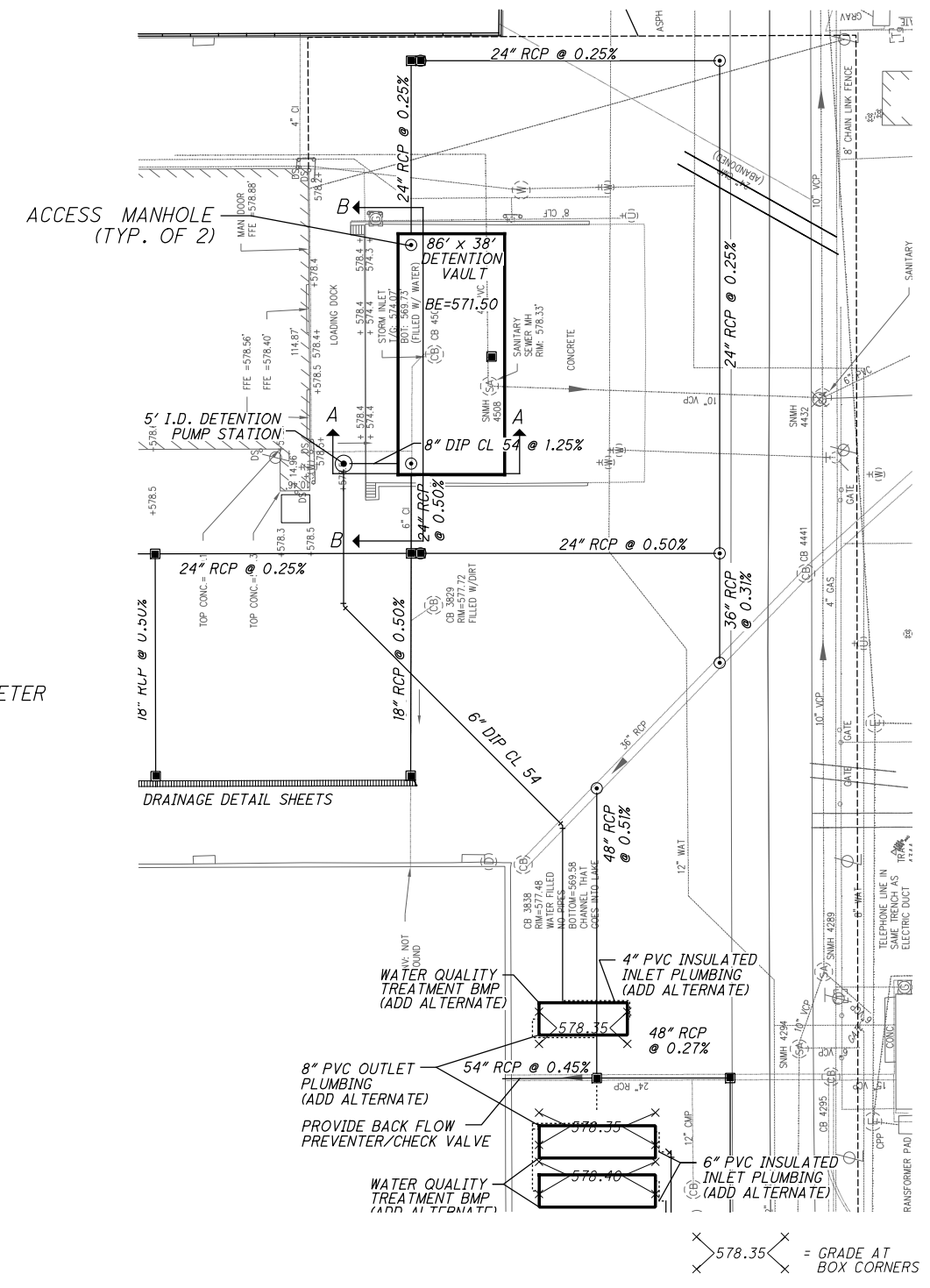
DOCK 24 & 26W

UNDERGROUND CONCRETE DETENTION VAULT DETAILS



- NOTES (CONT.):
6. END BOX SECTIONS SHALL HAVE END WALLS.
 7. PRECAST REINFORCED CONCRETE BOX CULVERT SHALL BE DESIGNED TO SUPPORT A VEHICLE LOAD AT THE SURFACE OF 144K PER AXLE WITH 2 AXLES DISTRIBUTED THROUGH THE PAVEMENT AND EARTH TO THE CULVERT.

TREATMENT SYSTEM INSET
DOCK 26W



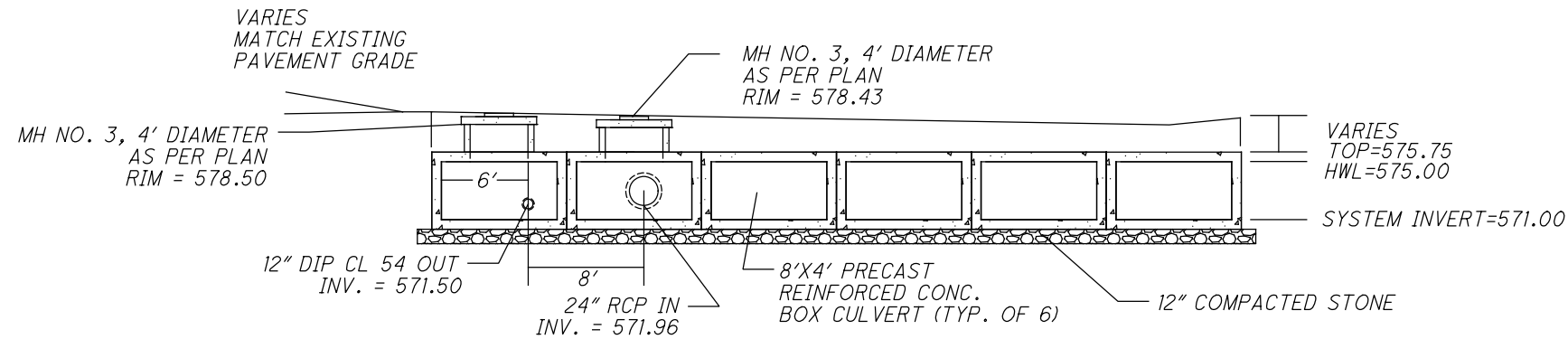
- NOTES:
1. UNDERGROUND DETENTION STRUCTURE SHALL BE WATERTIGHT. SEAL ALL JOINTS BETWEEN CULVERT SECTION OR PROVIDE GASKETS.
 2. OUTSIDE WALLS SHALL BE SEALED WITH TYPE 2 WATERPROOFING MEMBRANE FOR 2' ON EACH SIDE OF JOINTS.
 3. TOP OF CULVERT SHALL BE SEALED WITH TYPE 3 WATERPROOFING MEMBRANE FOR 2' ON EACH SIDE OF JOINTS.
 4. ALL CONNECTIONS AND JOINTS SHALL BE LEAK RESISTANT.
 5. UPSTREAM PIPES SHALL BE GASKETED AND JOINTS GROUTED.

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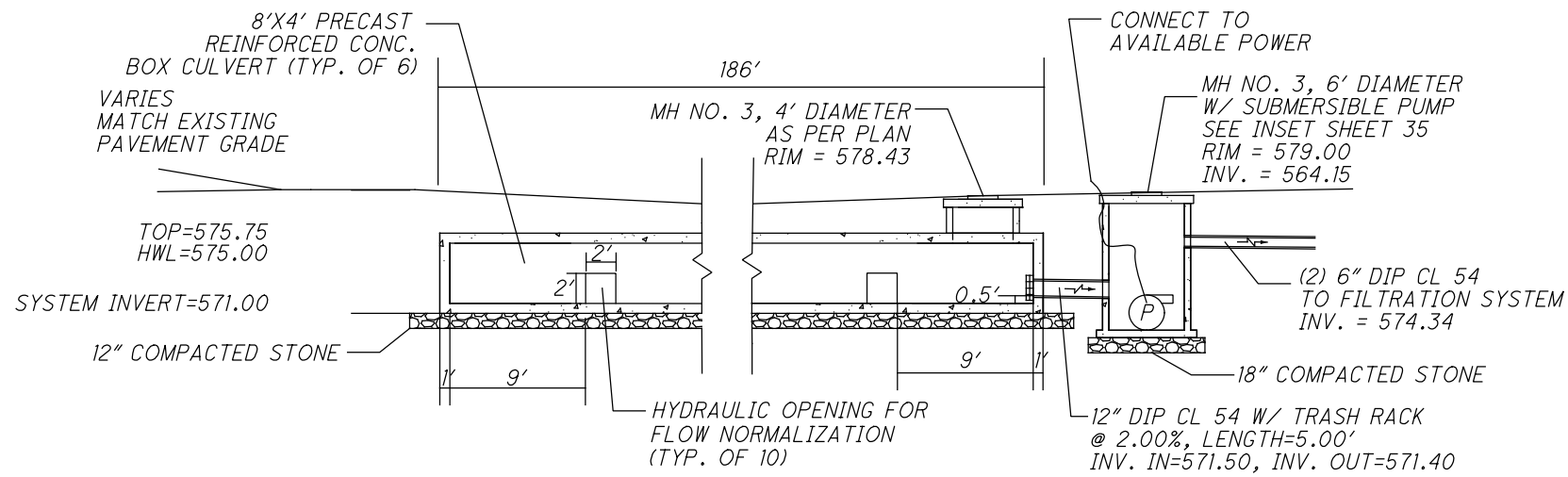
- NOTES:
- UNDERGROUND DETENTION STRUCTURE SHALL BE WATERTIGHT. SEAL ALL JOINTS BETWEEN CULVERT SECTION OR PROVIDE GASKETS.
 - OUTSIDE WALLS SHALL BE SEALED WITH TYPE 2 WATERPROOFING MEMBRANE FOR 2' ON EACH SIDE OF JOINTS.
 - TOP OF CULVERT SHALL BE SEALED WITH TYPE 3 WATERPROOFING MEMBRANE FOR 2' ON EACH SIDE OF JOINTS.
 - ALL CONNECTIONS AND JOINTS SHALL BE LEAK RESISTANT.
 - UPSTREAM PIPES SHALL BE GASKETED AND JOINTS GROUTED.

- NOTES (CONT.):
- END BOX SECTIONS SHALL HAVE END WALLS.
 - PRECAST REINFORCED CONCRETE BOX CULVERT SHALL BE DESIGNED TO SUPPORT A VEHICLE LOAD AT THE SURFACE OF 144K PER AXLE WITH 2 AXLES DISTRIBUTED THROUGH THE PAVEMENT AND EARTH TO THE CULVERT.

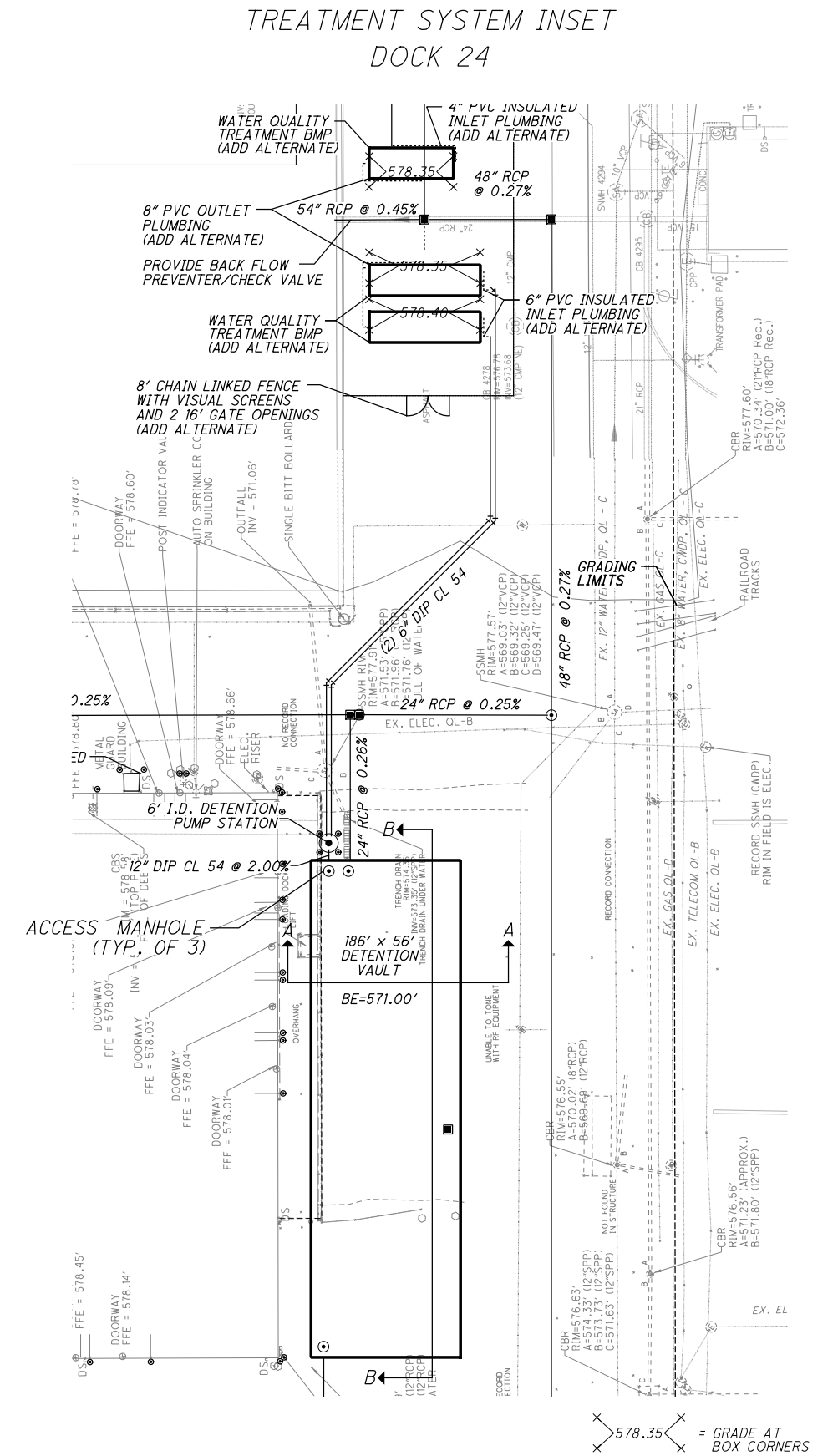
UNDERGROUND CONCRETE DETENTION VAULT DETAILS



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



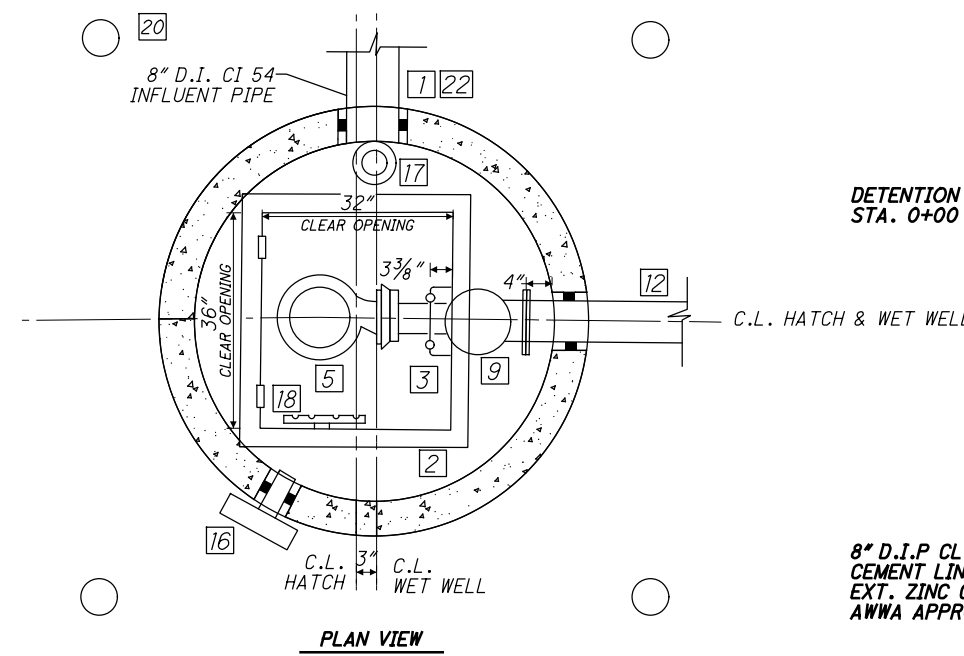
578.35 = GRADE AT BOX CORNERS



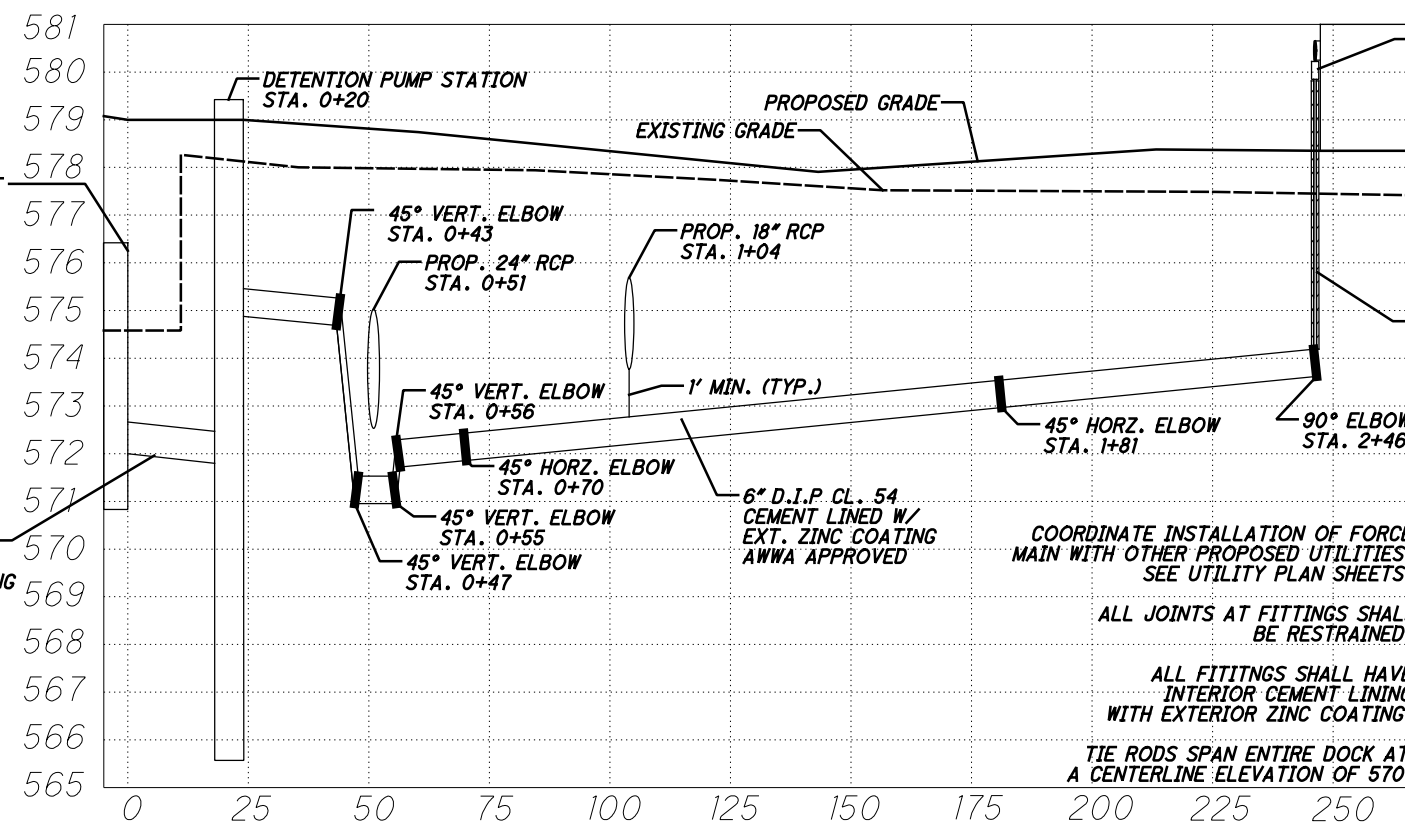
CALCULATED 0
 CEG
 CHECKED NBC
 DRAINAGE DETAILS SHEET
 DOCK 24

DOCK 24 & 26W
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PLAN VIEW



CONNECT TO ABOVEGROUND FILTRATION SYSTEM PIPING PER MANUFACTURER RECOMMENDATION W/ HEAT TRACED INSULATION ON EXPOSED PLUMBING. SUPPORT ABOVE GROUND PIPING AS REQUIRED. (ADD ALTERNATE)

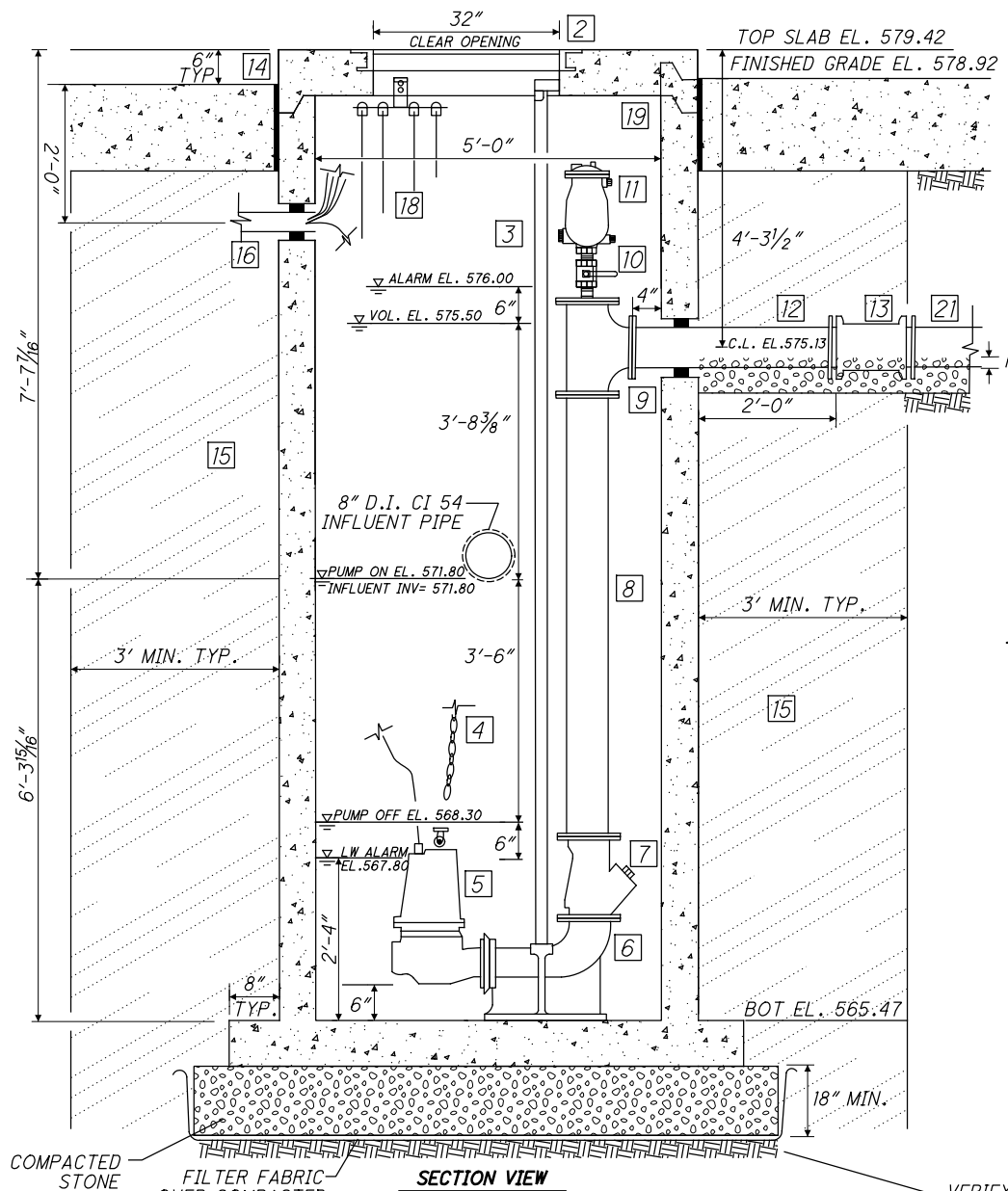
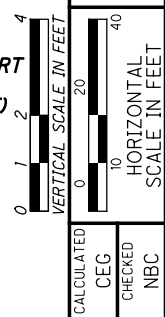
VERTICAL PIPE HEATING ELEMENT SEE SHEET 30 (ADD ALTERNATE)

COORDINATE INSTALLATION OF FORCE MAIN WITH OTHER PROPOSED UTILITIES. SEE UTILITY PLAN SHEETS.

ALL JOINTS AT FITTINGS SHALL BE RESTRAINED.

ALL FITTINGS SHALL HAVE INTERIOR CEMENT LINING WITH EXTERIOR ZINC COATING.

TIE RODS SPAN ENTIRE DOCK AT A CENTERLINE ELEVATION OF 570.

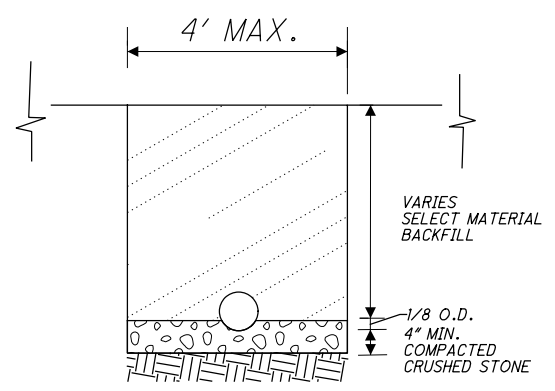


SECTION VIEW
DOCK 26W
5-FT PRECAST CONCRETE
STORMWATER PUMPING STATION



PLACE BEDDING 1/8 O.D.

4" MIN. DEPTH COMPACTED CRUSHED STONE BEDDING



- NOTES:
1. PLACE SELECT MATERIAL AT 8" LOOSE LIFTS AND COMPACT TO 95% PROCTOR DENSITY MIN.
 2. IF POOR SOILS ARE ENCOUNTERED, UNDERCUT AND BACKFILL WITH CRUSHED STONE AT 6" MAX. COMPACT LIFTS.
 3. FORCE MAIN SHALL BE LEAKAGE AND PRESSURE TESTED CONCURRENTLY IN ACCORDANCE WITH AWWA C600. TESTING PRESSURE = 20 PSI.

DOCK 26W
FORCE MAIN TRENCH DETAIL
N.T.S

VERIFY EXISTING SOILS AND REQUIRED STONE BEDDING DEPTH PRIOR TO PLACEMENT OF PRECAST WET WELL. EXISTING SOILS EVALUATION AND RECOMMENDATION SHALL BE PERFORMED BY A LICENSED SOILS ENGINEER.

CONSTRUCTION SCHEDULE

- 1 WALL PENETRATION WITH LINK SEAL. NON-SHRINK GROUT ANNULAR SPACE INSIDE AND OUTSIDE, TYPICAL.
- 2 32" X 36" ANGLE FRAME ALUMINUM ACCESS COVER WITH AUTO LOCK 316 S.S. HOLD OPEN ARM, S.S. LIFT ASSIST, RECESSED LIFTING HANDLE, AND 316 S.S. SLAM LOCK WITH REMOVABLE KEY AND FALL PROTECTION. ALL HINGES AND HARDWARE SHALL BE 316 S.S.; HALLIDAY SIR3236 OR APPROVED EQUAL. COORDINATE HINGE LOCATION AND SLAM LOCK / PADLOCK PREFERENCE WITH OWNER PRIOR TO ORDER.
- 3 (2) 2" DIAMETER S.S. GUIDE RAILS WITH S.S. UPPER GUIDE RAIL BRACKET.
- 4 3/16" 304 S.S. LIFTING CHAIN WITH 304 S.S. SHACKLE AND ALLOY STEEL GRAB HOOK.
- 5 3 HP, 3 PHASE, 4" NON-CLOGGING SOLIDS HANDLING PUMP GOULDS WS30D4 SERIES, OR APPROVED EQUAL. VERIFY WITH STORMWATER TREATMENT SYSTEM MANUFACTURER PRIOR TO ORDER.
 - a. OPERATING POINT: 400 GPM @ 23 FT TDH.
 - b. SHUT OFF HEAD: 46 FT.
 - c. SECONDARY POINT: 480 GPM @ 16.5 FT TDH.
- 6 BASE WITH INTEGRAL CAST ELBOW. 6" 150# ANSI DISCHARGE FLANGE, EPOXY COATED.
- 7 6" DUCTILE IRON EPOXY COATED BALL CHECK VALVE. AWWA APPROVED.
- 8 6" FLANGE CEMENT LINED DUCTILE IRON EPOXY COATED PIPE. AWWA APPROVED.
- 9 6" X 6" D.I. FLANGE TEE, EPOXY COATED CEMENT LINED. AWWA APPROVED.
- 10 2" TAPPED BLIND FLANGE WITH (2) 2" BRASS NIPPLE, 2" FULL PORT BRONZE BALL VALVE WITH S.S. HANDLE.
- 11 2" WASTEWATER AUTOMATIC AIR RELEASE VALVE, EPOXY COATED CAST IRON OR COMPOSITE TYPE.
- 12 6" DUCTILE IRON SPOOL, CL 54 FLANGE X PE EPOXY COATED CEMENT LINED. AWWA APPROVED.
- 13 6" DUCTILE IRON SLEEVE, M.J. RESTRAINED JOINTS.
- 14 1/2" EXPANSION JOINT IN ACCORDANCE WITH PCA RULES AND PRACTICE. TYP.
- 15 APPROVED SELECT MATERIAL, PLACED AT 8" LOOSE LIFTS AND COMPACTED TO 95% THEORETICAL OPTIMAL DENSITY.
- 16 ELECTRICAL CONDUIT WITH LINK SEAL. COORDINATE SIZE AND LOCATION PRIOR TO CORE DRILL. PROVIDE ABOVE GROUND JUNCTION BOX. COORDINATE LOCATION WITH OWNER.
- 17 3" STEEL POWDER COATED MUSHROOM AIR VENT WITH LINK SEAL AND NON-SHRINK GROUT ANNULAR SPACE.
- 18 304 S.S. FLOAT BRACKET WITH (4) CORD GRIPS.
- 19 JOINT SEALANT PER ASTM C900, ASTM C443. FILL ANNULAR SPACE WITH NON-SHRINK GROUT, TYPICAL.
- 20 CONCRETE BOLLARD, TYPICAL.
- 21 6" DUCTILE IRON CL 54 CEMENT LINED ZINC COATED FORCE MAIN. AWWA APPROVED.
- 22 8" DUCTILE IRON SLEEVE, M.J. RESTRAINED JOINTS.

FIELD QUALITY CONTROL

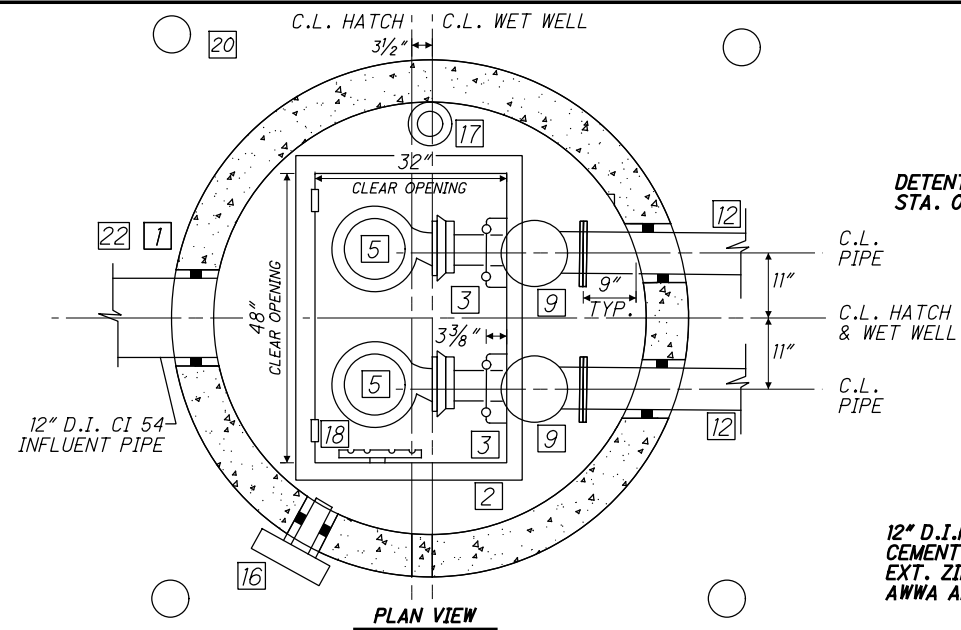
- MANUFACTURER'S FIELD SERVICE:**
1. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT, TEST, AND ADJUST COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS. REPORT RESULTS IN WRITING.
- PERFORM TESTS, INSPECTIONS AND PREPARE TEST REPORTS:**
1. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS, AND TO ASSIST IN TESTING.
- TESTS AND INSPECTIONS:**
1. AFTER INSTALLING PACKAGED STORMWATER PUMPING STATIONS AND AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST FOR COMPLIANCE WITH REQUIREMENTS. FURNISH WATER REQUIRED FOR PUMP TESTS.
 2. LEAK TEST: AFTER INSTALLATION, CHARGE SYSTEMS AND TEST FOR LEAKS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST. HYDROSTATICALLY TEST SYSTEM PIPING FOR LEAKS AT 20 PSIG.
 3. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION AND UNIT OPERATION.
 4. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.
- REMOVE AND REPLACE PACKAGED STORMWATER PUMPING STATIONS THAT DO NOT PASS TESTS AND INSPECTIONS AND RETEST AS SPECIFIED ABOVE.**
- STARTUP SERVICE**
- ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICE:
1. COMPLETE INSTALLATION AND STARTUP CHECKS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
 2. ADJUST PUMP, ACCESSORY, AND CONTROL SETTINGS, AND SAFETY AND ALARM DEVICES.
 3. TEST EACH UNIT ON CLEAR WATER THROUGH MINIMUM OF FOUR COMPLETE CYCLES UNDER SUPERVISION OF MANUFACTURER'S REPRESENTATIVE AND IN PRESENCE OF ARCHITECT/ENGINEER. DEMONSTRATE THAT SYSTEM PERFORMANCE, CONTROL FUNCTIONS, AND ALARMS MEET SPECIFIED REQUIREMENTS.
- EQUIPMENT ACCEPTANCE:**
1. ADJUST, REPAIR, MODIFY, OR REPLACE COMPONENTS FAILING TO PERFORM AS SPECIFIED AND RERUN TESTS.
 2. MAKE FINAL ADJUSTMENTS TO EQUIPMENT UNDER DIRECTION OF MANUFACTURER'S REPRESENTATIVE.
- FURNISH INSTALLATION CERTIFICATE FROM EQUIPMENT MANUFACTURER'S REPRESENTATIVE AT TESTING THAT EQUIPMENT HAS BEEN PROPERLY INSTALLED AND IS READY FOR STARTUP AND TESTING.**
- DEMONSTRATION**
- ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO TRAIN OWNER'S MAINTENANCE PERSONNEL, MINIMUM OF ONE (1) DAY, TO ADJUST, OPERATE, AND MAINTAIN PACKAGED SEWAGE PUMPING STATIONS.
- ADD ALTERNATE**
- INTERNAL COMPONENTS OF THE STORMWATER PUMP STATION SHALL BE INSTALLED AT THE OWNERS DISCRETION AS DETERMINED BY THE BASE BID.

DRAINAGE DETAILS SHEET

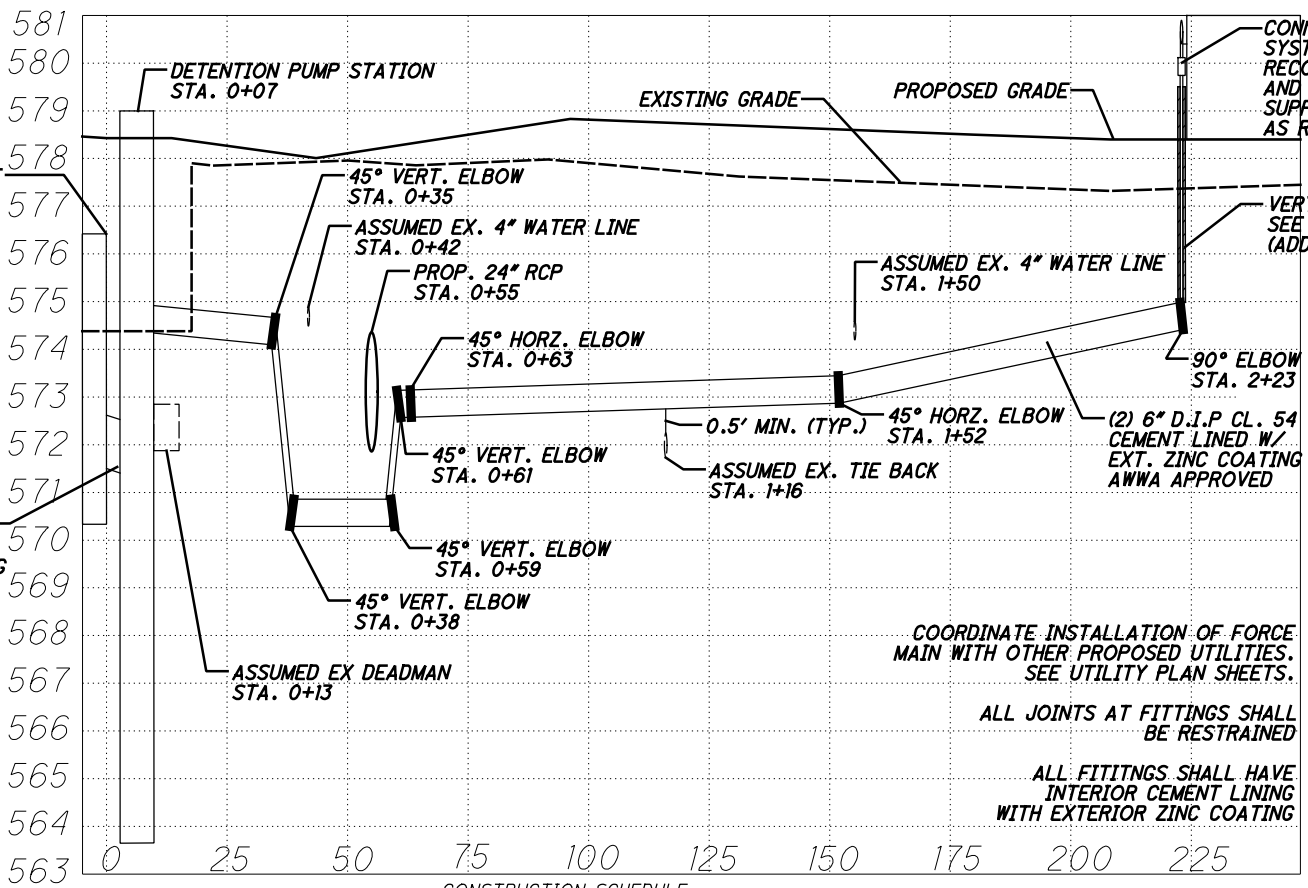
DOCK 24 & 26W

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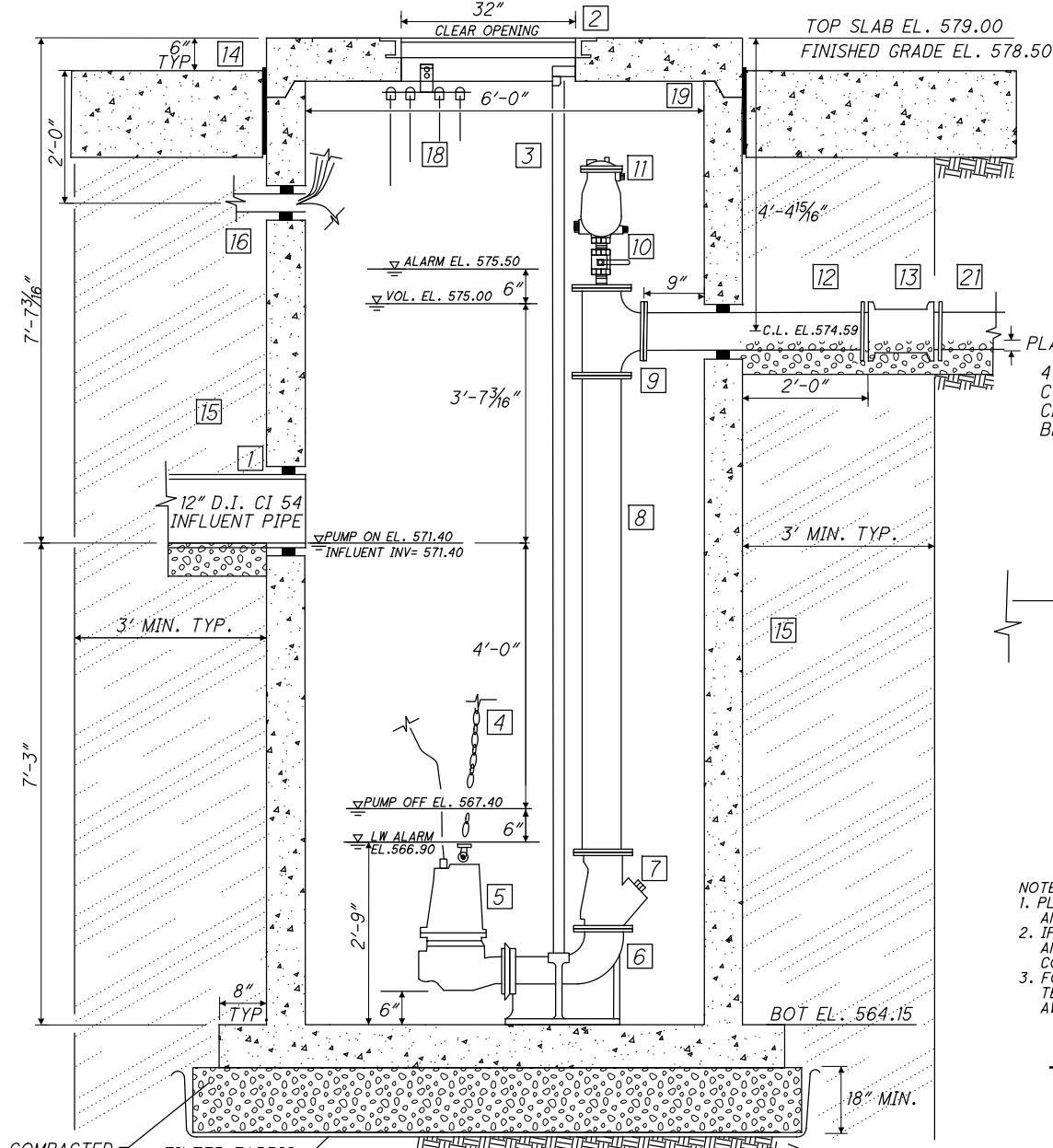
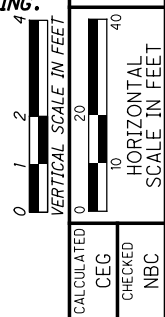
12" D.I.P. CL. 54
CEMENT LINED W/
EXT. ZINC COATING
AWWA APPROVED



COORDINATE INSTALLATION OF FORCE MAIN WITH OTHER PROPOSED UTILITIES. SEE UTILITY PLAN SHEETS.

ALL JOINTS AT FITTINGS SHALL BE RESTRAINED

ALL FITTINGS SHALL HAVE INTERIOR CEMENT LINING WITH EXTERIOR ZINC COATING

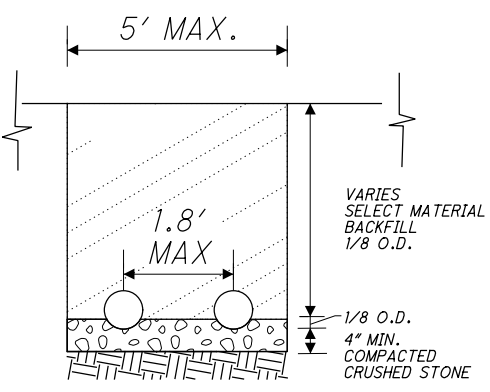


**DOCK 24
6-FT PRECAST CONCRETE
STORMWATER PUMPING STATION**



VERIFY EXISTING SOILS AND REQUIRED STONE BEDDING DEPTH PRIOR TO PLACEMENT OF PRECAST WET WELL. EXISTING SOILS EVALUATION AND RECOMMENDATION SHALL BE PERFORMED BY A LICENSED SOILS ENGINEER.

**DOCK 24
FORCE MAIN TRENCH DETAIL
N.T.S**



- NOTES:
1. PLACE SELECT MATERIAL AT 8" LOOSE LIFTS AND COMPACT TO 95% PROCTOR DENSITY MIN.
 2. IF POOR SOILS ARE ENCOUNTERED, UNDERCUT AND BACKFILL WITH CRUSHED STONE AT 6" MAX. COMPACT LIFTS.
 3. FORCE MAIN SHALL BE LEAKAGE AND PRESSURE TESTED CONCURRENTLY IN ACCORDANCE WITH AWWA C600. TEST PRESSURE= 20 PSI.

CONSTRUCTION SCHEDULE

- 1 WALL PENETRATION WITH LINK SEAL. NON-SHRINK GROUT ANNULAR SPACE INSIDE AND OUTSIDE, TYPICAL.
- 2 32" X 48" ANGLE FRAME ALUMINUM ACCESS COVER WITH AUTO LOCK 316 S.S. HOLD OPEN ARM, S.S. LIFT ASSIST, RECESSED LIFTING HANDLE, AND 316 S.S. SLAM LOCK WITH REMOVABLE KEY AND FALL PROTECTION. ALL HINGES AND HARDWARE SHALL BE 316 S.S.; HALLIDAY SIR3248 OR APPROVED EQUAL. COORDINATE HINGE LOCATION AND SLAM LOCK / PADLOCK PREFERENCE WITH OWNER PRIOR TO ORDER.
- 3 (2) 2" DIAMETER S.S. GUIDE RAILS WITH S.S. UPPER GUIDE RAIL BRACKET.
- 4 3/16" 304 S.S. LIFTING CHAIN WITH 304 S.S. SHACKLE AND ALLOY STEEL GRAB HOOK.
- 5 5 HP, 3 PHASE, 4" NON-CLOGGING SOLIDS HANDLING PUMP; GOULDS W550D4 SERIES, OR APPROVED EQUAL. VERIFY WITH STORMWATER TREATMENT SYSTEM MANUFACTURER PRIOR TO ORDER.
 - a. OPERATING POINT: 445 GPM @ 25 FT TDH.
 - b. SHUT OFF HEAD: 51.5 FT.
 - c. SECONDARY POINT: 530 GPM @ 19.7 FT TDH.
- 6 BASE WITH INTEGRAL CAST ELBOW. 6" 150# ANSI DISCHARGE FLANGE, EPOXY COATED.
- 7 6" DUCTILE IRON EPOXY COATED BALL CHECK VALVE. AWWA APPROVED.
- 8 6" FLANGE CEMENT LINED DUCTILE IRON EPOXY COATED PIPE. AWWA APPROVED.
- 9 6" X 6" D.I. FLANGE TEE, EPOXY COATED CEMENT LINED. AWWA APPROVED.
- 10 2" TAPPED BLIND FLANGE WITH (2) 2" BRASS NIPPLE, 2" FULL PORT BRONZE BALL VALVE WITH S.S. HANDLE.
- 11 2" WASTEWATER AUTOMATIC AIR RELEASE VALVE, EPOXY COATED CAST IRON OR COMPOSITE TYPE.
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- 21 6" DUCTILE IRON CL 54 CEMENT LINED ZINC COATED FORCE MAIN. AWWA APPROVED.
- 22 12" DUCTILE IRON SLEEVE, M.J. RESTRAINED JOINTS.

FIELD QUALITY CONTROL

- MANUFACTURER'S FIELD SERVICE:
1. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT, TEST, AND ADJUST COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS. REPORT RESULTS IN WRITING.
- PERFORM TESTS, INSPECTIONS AND PREPARE TEST REPORTS:
1. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS, AND TO ASSIST IN TESTING.
- TESTS AND INSPECTIONS:
1. AFTER INSTALLING PACKAGED STORMWATER PUMPING STATIONS AND AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST FOR COMPLIANCE WITH REQUIREMENTS. FURNISH WATER REQUIRED FOR PUMP TESTS.
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 3. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION AND UNIT OPERATION.
 4. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.

REMOVE AND REPLACE PACKAGED STORMWATER PUMPING STATIONS THAT DO NOT PASS TESTS AND INSPECTIONS AND RETEST AS SPECIFIED ABOVE.

STARTUP SERVICE

- ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICE:
1. COMPLETE INSTALLATION AND STARTUP CHECKS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
 2. ADJUST PUMP, ACCESSORY, AND CONTROL SETTINGS, AND SAFETY AND ALARM DEVICES.
 3. TEST EACH UNIT ON CLEAR WATER THROUGH MINIMUM OF FOUR COMPLETE CYCLES UNDER SUPERVISION OF MANUFACTURER'S REPRESENTATIVE AND IN PRESENCE OF ARCHITECT/ENGINEER. DEMONSTRATE THAT SYSTEM PERFORMANCE, CONTROL FUNCTIONS, AND ALARMS MEET SPECIFIED REQUIREMENTS.

EQUIPMENT ACCEPTANCE:

1. ADJUST, REPAIR, MODIFY, OR REPLACE COMPONENTS FAILING TO PERFORM AS SPECIFIED AND RERUN TESTS.
2. MAKE FINAL ADJUSTMENTS TO EQUIPMENT UNDER DIRECTION OF MANUFACTURER'S REPRESENTATIVE.

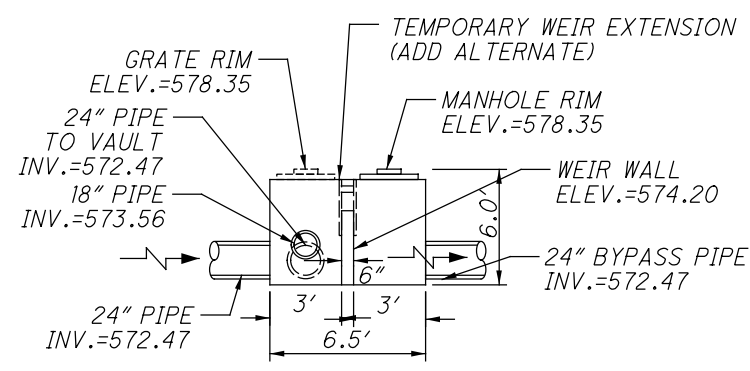
FURNISH INSTALLATION CERTIFICATE FROM EQUIPMENT MANUFACTURER'S REPRESENTATIVE ATTESTING THAT EQUIPMENT HAS BEEN PROPERLY INSTALLED AND IS READY FOR STARTUP AND TESTING.

DEMONSTRATION

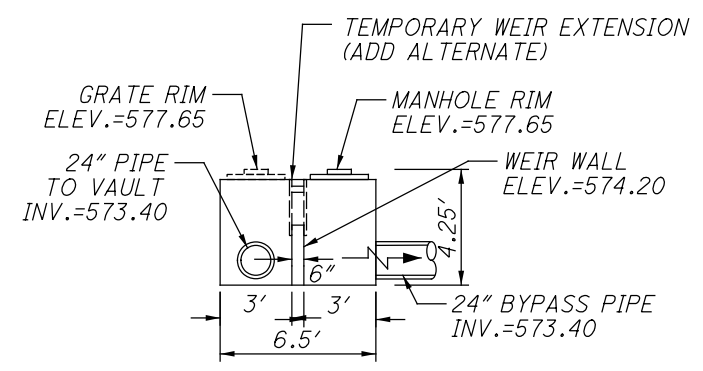
ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO TRAIN OWNER'S MAINTENANCE PERSONNEL, MINIMUM OF ONE (1) DAY, TO ADJUST, OPERATE, AND MAINTAIN PACKAGED SEWAGE PUMPING STATIONS.

ADD ALTERNATE

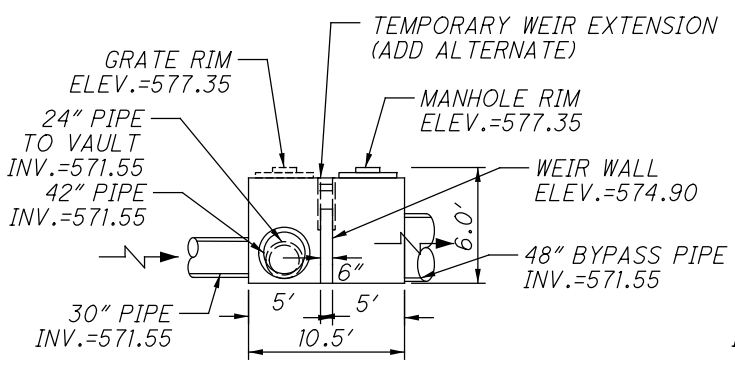
INTERNAL COMPONENTS OF THE STORMWATER PUMP STATION SHALL BE INSTALLED AT THE OWNER'S DISCRETION AS DETERMINED BY THE BASE BID.



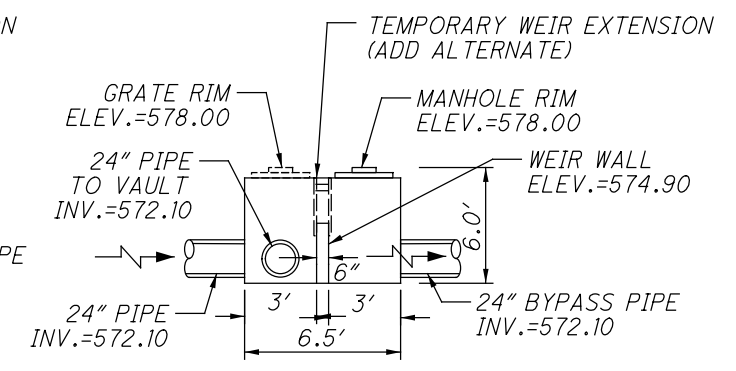
UNDERGROUND ELEVATION DR-10
DUAL CB 2-3, AS PER PLAN A
N.T.S.



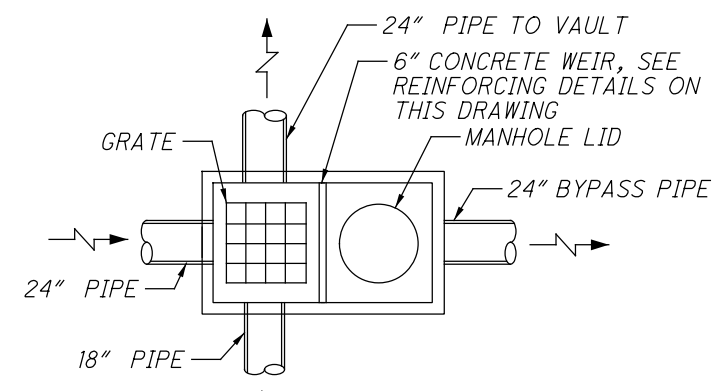
UNDERGROUND ELEVATION DR-14
DUAL CB 2-3, AS PER PLAN A
N.T.S.



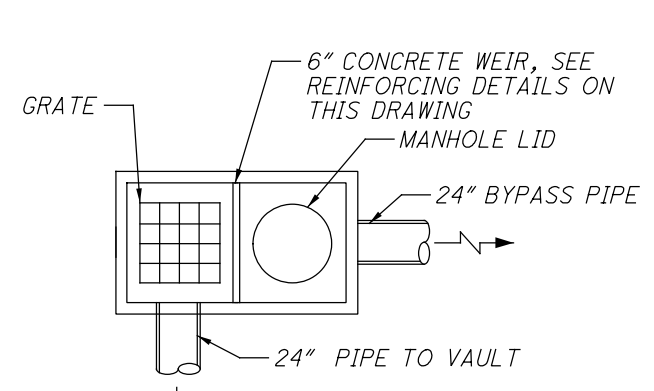
UNDERGROUND ELEVATION DR-9.1
DUAL CB 2-5, AS PER PLAN A
N.T.S.



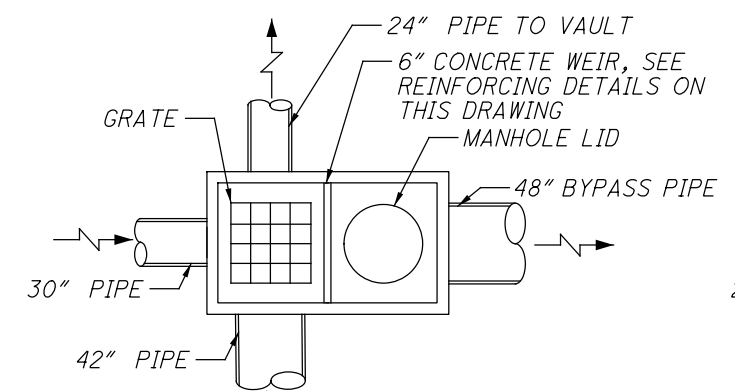
UNDERGROUND ELEVATION DR-4.1
DUAL CB 2-3, AS PER PLAN A
N.T.S.



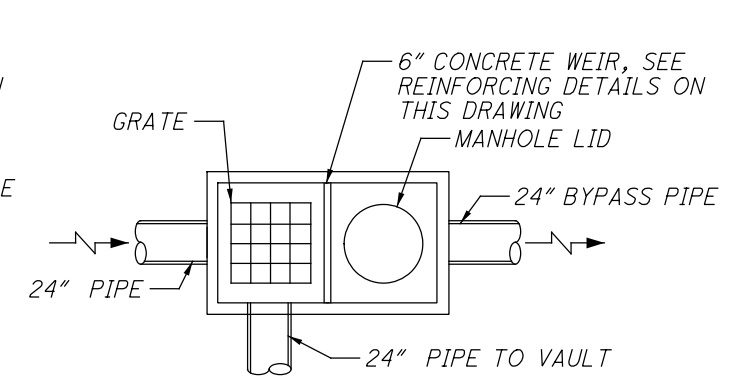
DR-10 PLAN
N.T.S.



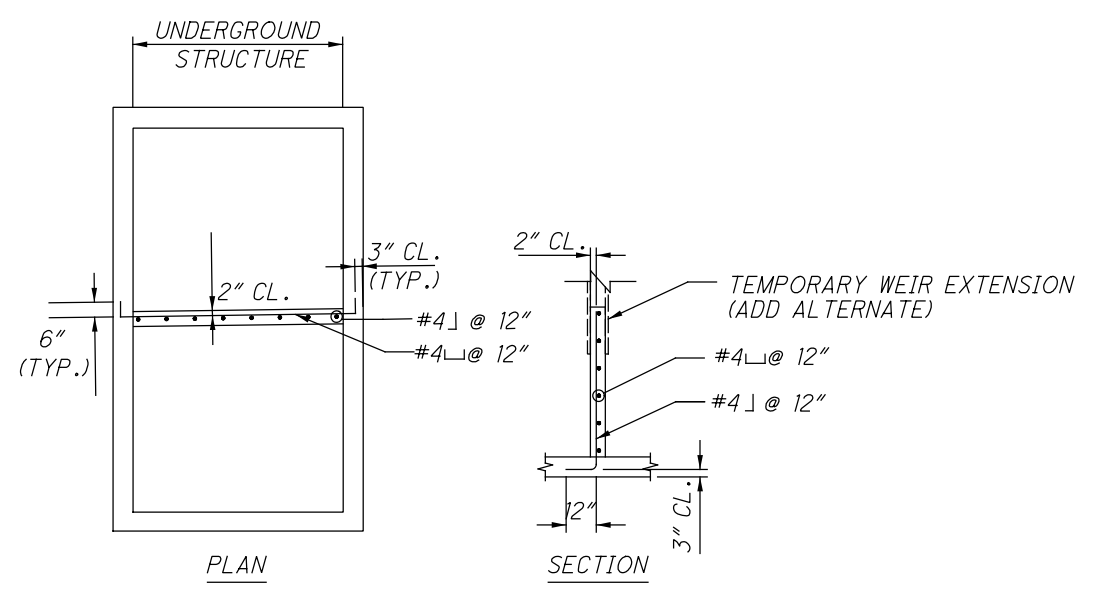
DR-14 PLAN
N.T.S.



DR-9.1 PLAN
N.T.S.



DR-4.1 PLAN
N.T.S.

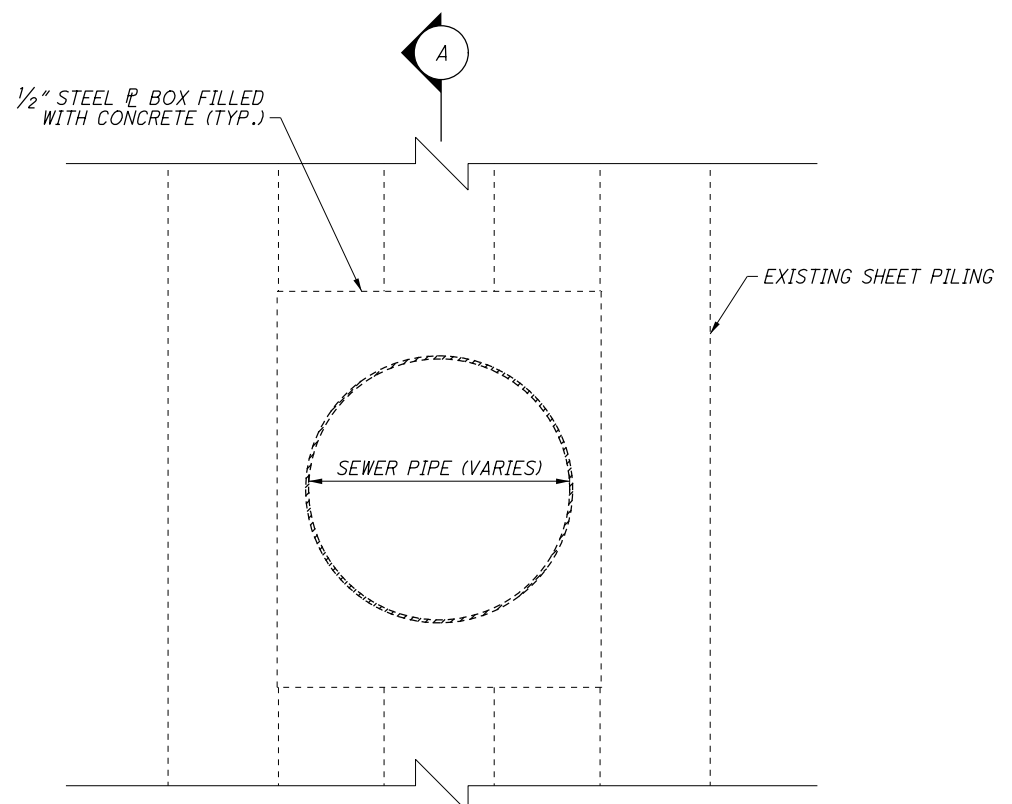


WEIR WALL REINFORCING DETAILS
N.T.S.

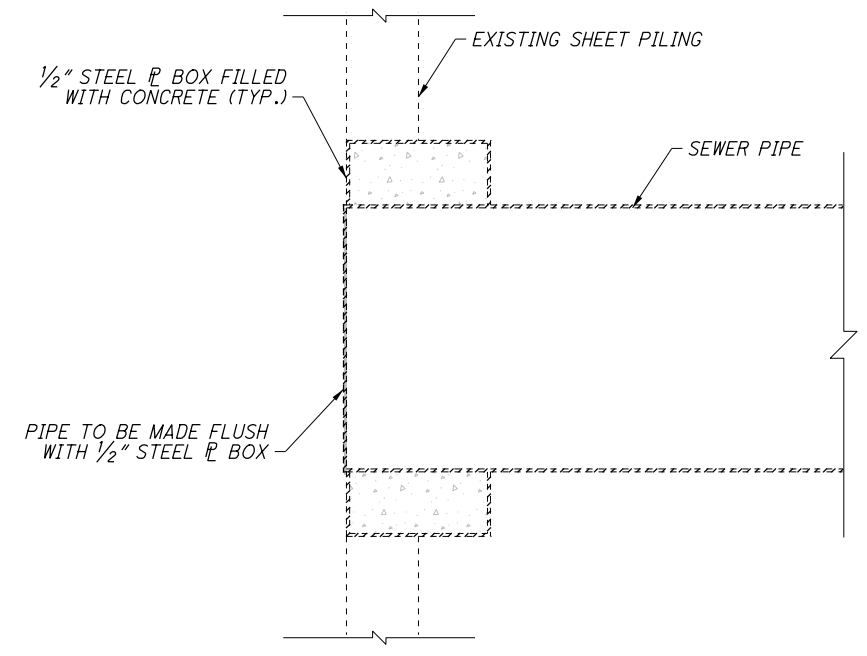
NOTES:
1. PIPE AND HYDRAULIC OPENINGS SHALL BE GASKETED OR SEALED.
2. UPSTREAM PIPES SHALL BE GASKETED AND JOINTS GROUTED.

ADD ALTERNATE TEMPORARY DRAINAGE NOTES:
1. THE CONCRETE WEIR SHALL BE EXTENDED TO THE TOP OF THE STRUCTURE TO DIRECT ALL RUNOFF INTO THE BYPASS PIPE. THIS WORK IS OUTSIDE OF THE BASE BID AND WILL BE PAID AS AN ADD ALTERNATE DUE TO THE ASSOCIATION WITH THE WATER QUALITY TREATMENT DEVICES.
1a. EXTENTION IS ANTICIPATED TO BE METALLIC AND MECHANICALLY AFFIXED TO THE CONCRETE WEIR. SEE DETAILS THIS SHEET FOR INTENT.
2. EXTENSION IS TO BE MADE WATERTIGHT.
3. EXTENSION IS TEMPORARY AND IS TO BE REMOVED DURING INSTALLATION OF THE WATER QUALITY DEVICES.

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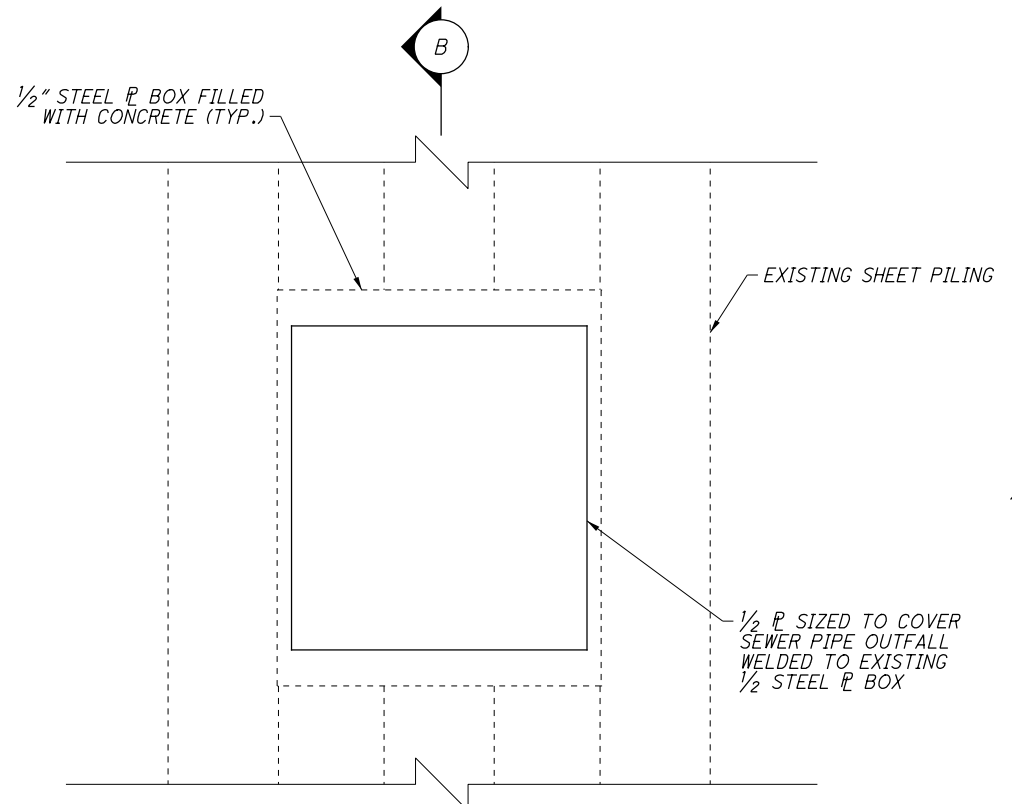


EXISTING ELEVATION
(TYPICAL ALL OUTFALLS)

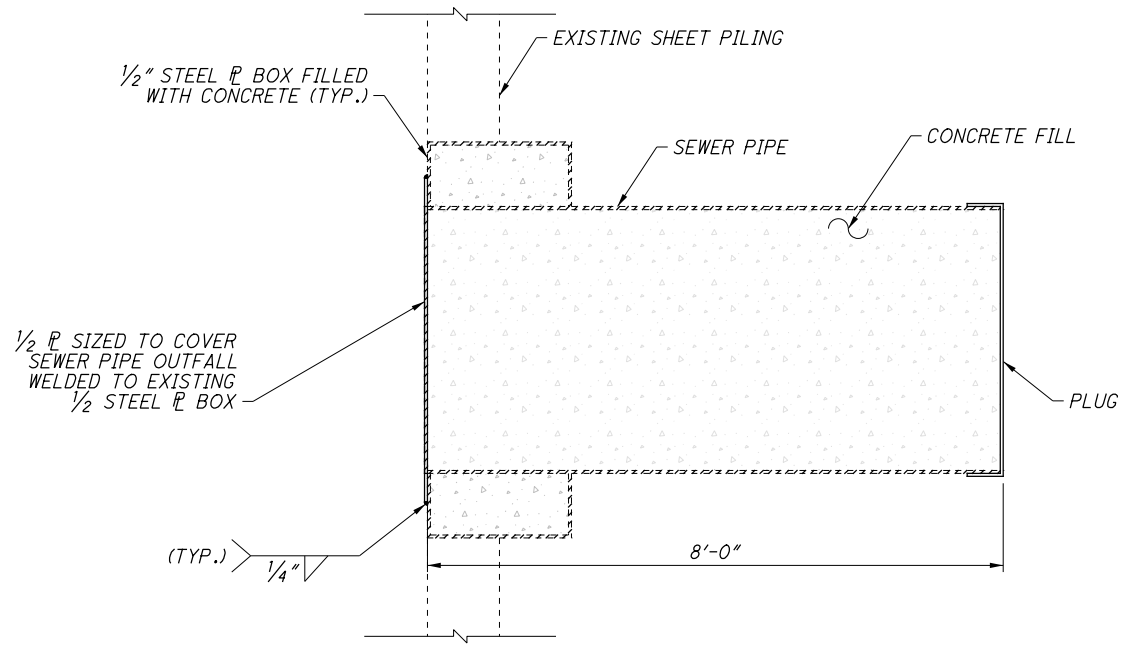


SECTION A

NOTES:
 1. DETAIL SHOWN IS TYPICAL OF MOST WALL PENETRATIONS. HOWEVER, SMALLER PENETRATIONS MAY GO DIRECTLY THROUGH THE SHEET PILE. IN THESE CASES, A 1/2" PLATE THAT EXTENDS AT LEAST 1" PAST THE OPENING SHALL BE WELDED TO THE SHEET PILE.
 2. SOME OUTFALL PIPES HAVE BEEN REPAIRED IN THE PAST AND MAY INCLUDE VARYING AMOUNTS OF GROUT, MORTAR, CONCRETE COLLARS OR OTHER FORMS OF SEALS. THIS MATERIAL SHALL BE REMOVED AS NEEDED TO FACILITATE SEALING THE OPENING.
 3. AS AN ALTERNATIVE TO PLUGGING AND FILLING THE LAST SECTION OF PIPE, THE ENTIRE PIPE MAY BE REMOVED WITHOUT DAMAGING THE EXISTING STEEL PLATE BOX OR SHEET PILE



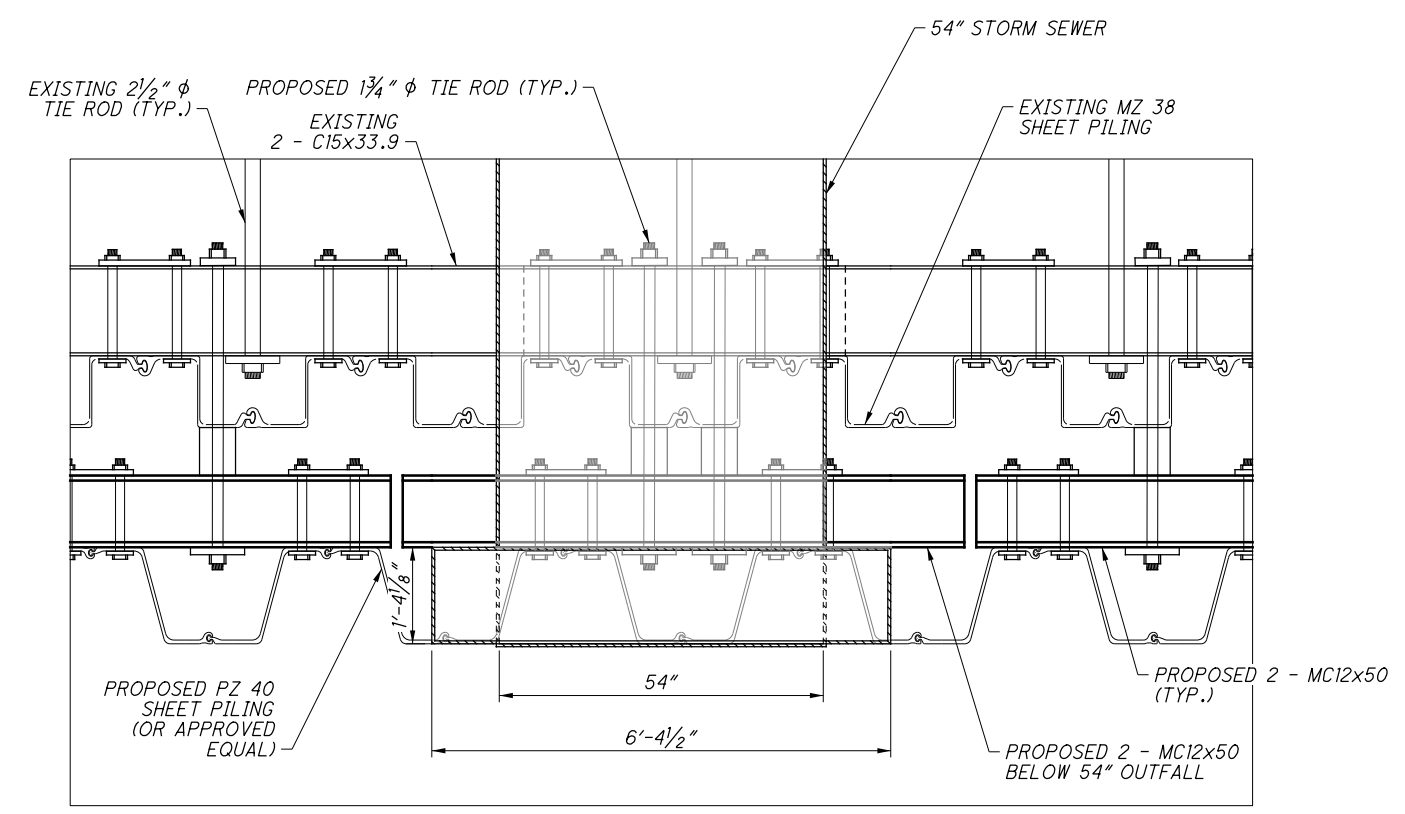
PROPOSED ELEVATION
(TYPICAL ALL OUTFALLS)



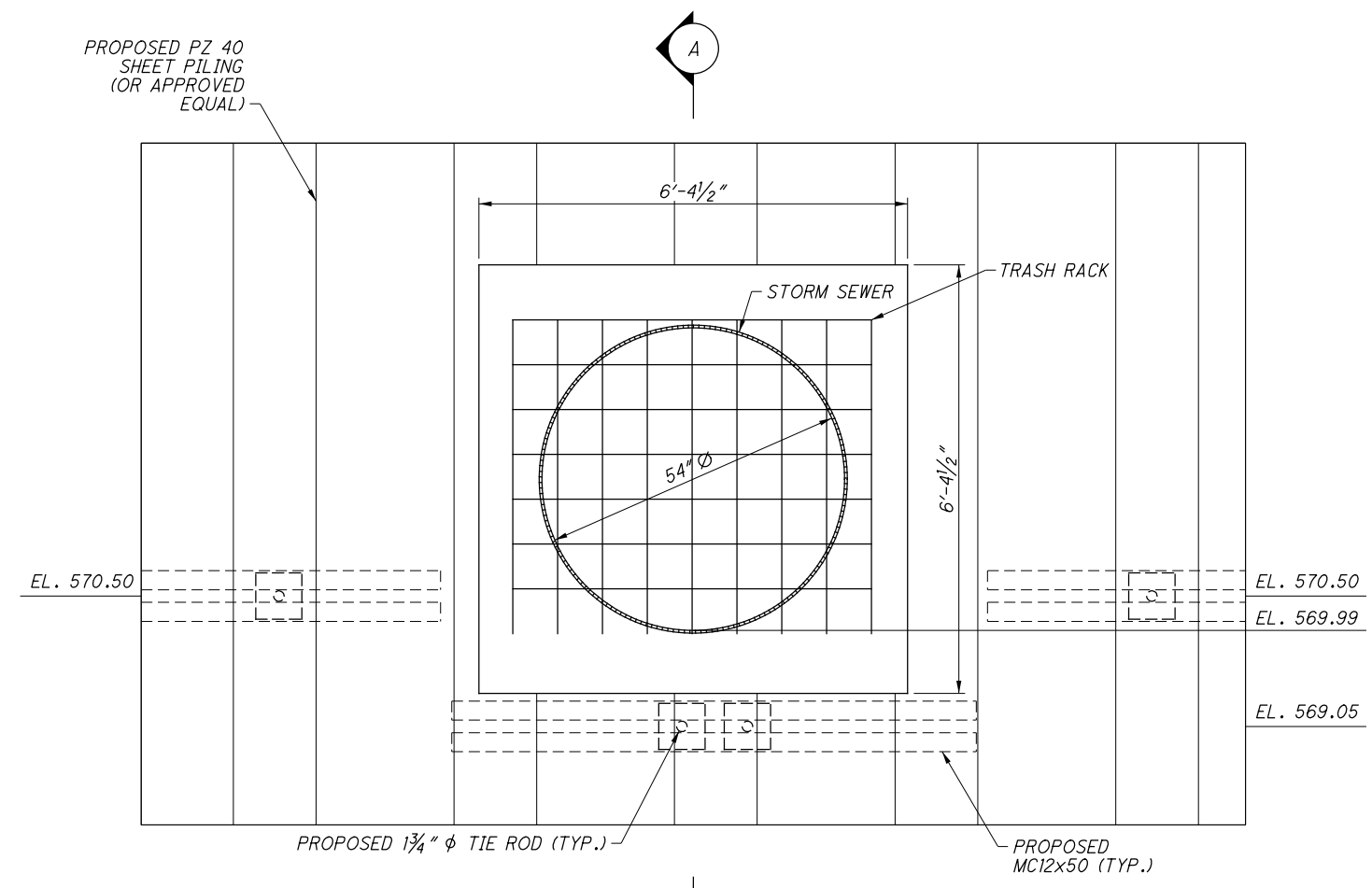
SECTION B

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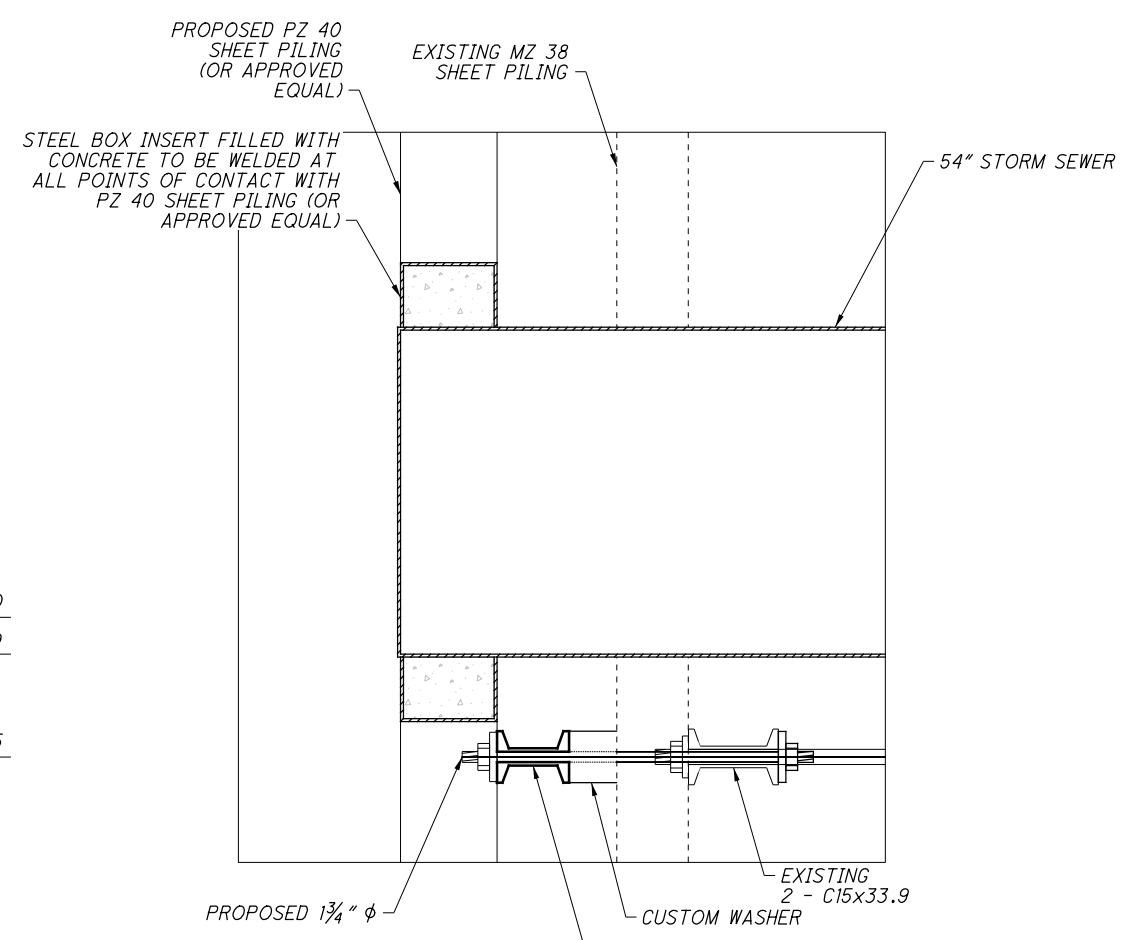
- NOTES:
- TRASH RACKS SHALL BE COMMERCIALY MANUFACTURED WITH A SQUARE GRATE HAVING A MAXIMUM OPENING OF 6" WITH BARS SIZED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. GRATE SHALL BE HINGED TO PERMIT MAINTENANCE OF THE OUTFALL.
 - ALL COSTS ASSOCIATED WITH CONSTRUCTION OF THE OUTFALL AS SHOWN IN THE PLANS SHALL BE INCLUDED IN THE COST OF THE PIPE.



STORM SEWER - PLAN



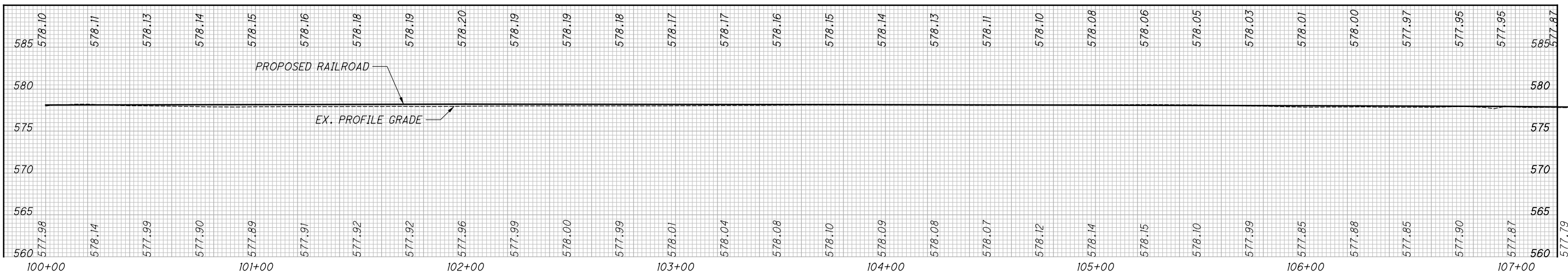
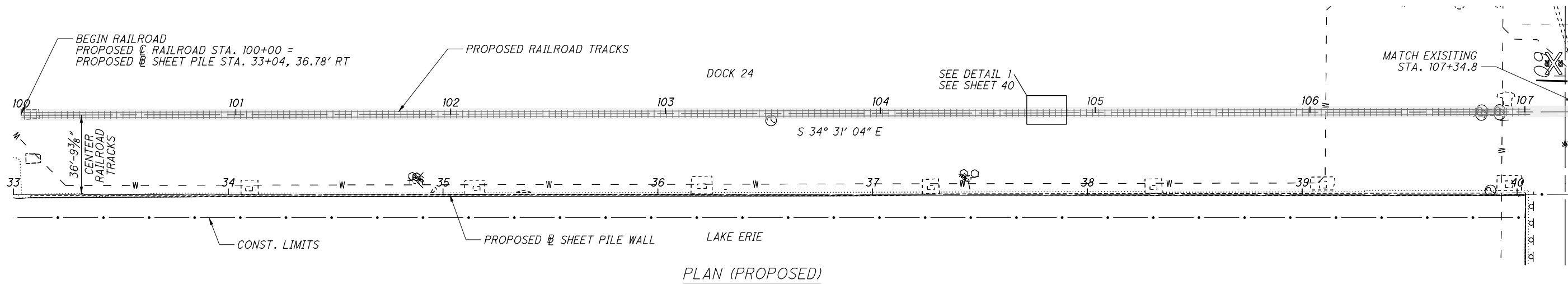
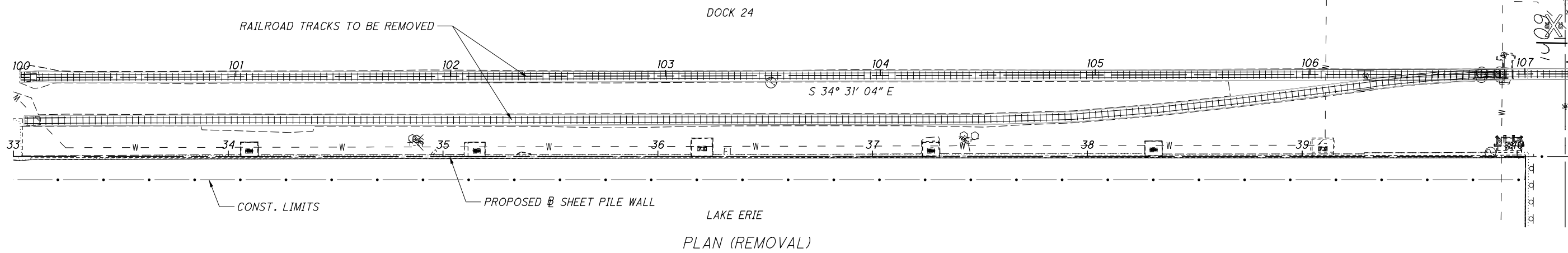
STORM SEWER - ELEVATION



SECTION A



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PROFILE

LEGEND:

-  - PORTION OF RAILROAD TO BE REMOVED
-  - PORTION OF NEW CONSTRUCTION

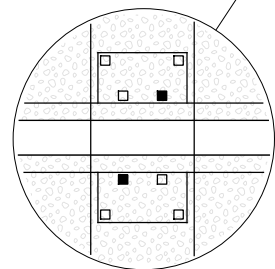
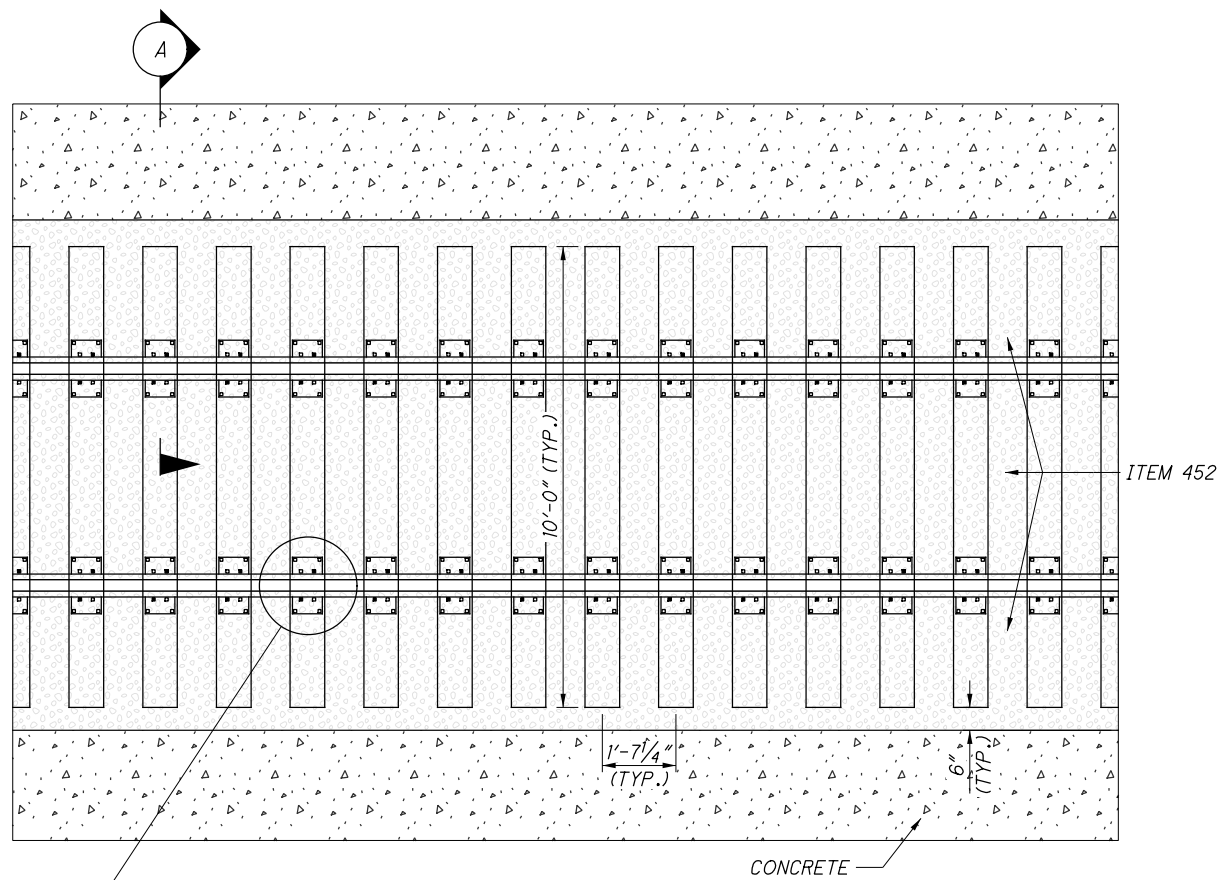
CALCULATED
JAG
CHECKED
RJM

0 25 50
12.5'
HORIZONTAL
SCALE IN FEET

RAILROAD DOCK 24

DOCK 24 & 26W

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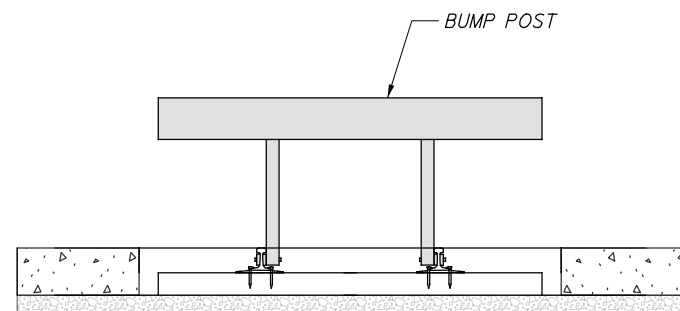


ALL SPIKES FOR RAIL SHALL BE DRIVEN IN HOLES AS SHOWN

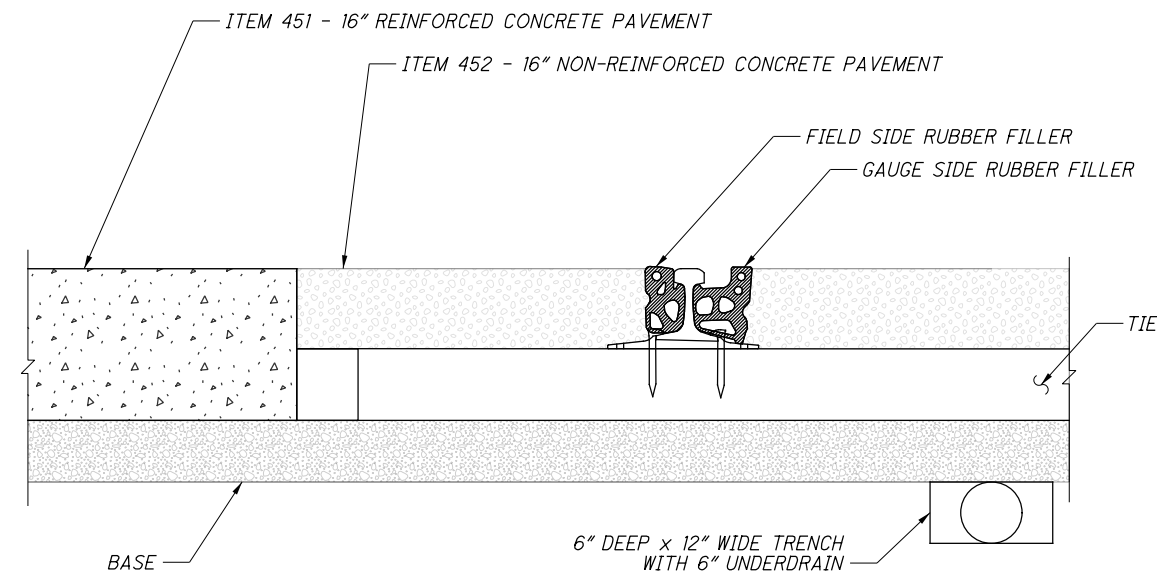
DETAIL 1

NOTES:

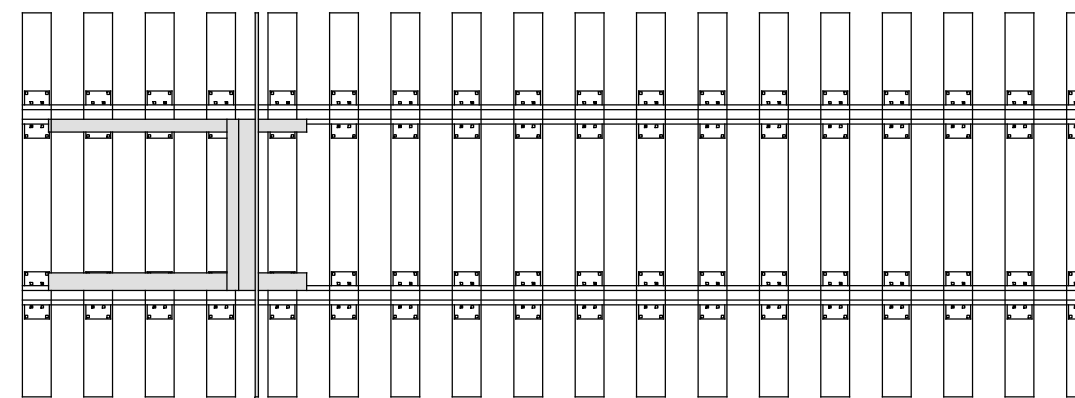
PAINT BUMP POST SAFETY YELLOW



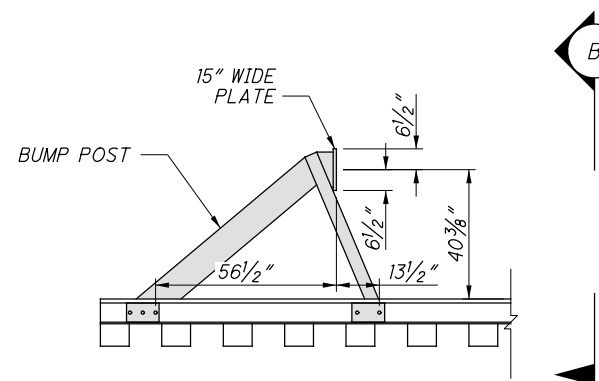
VIEW B



SECTION A



RAILROAD CAR STOP PLAN



ELEVATION

(NOT TO SCALE)

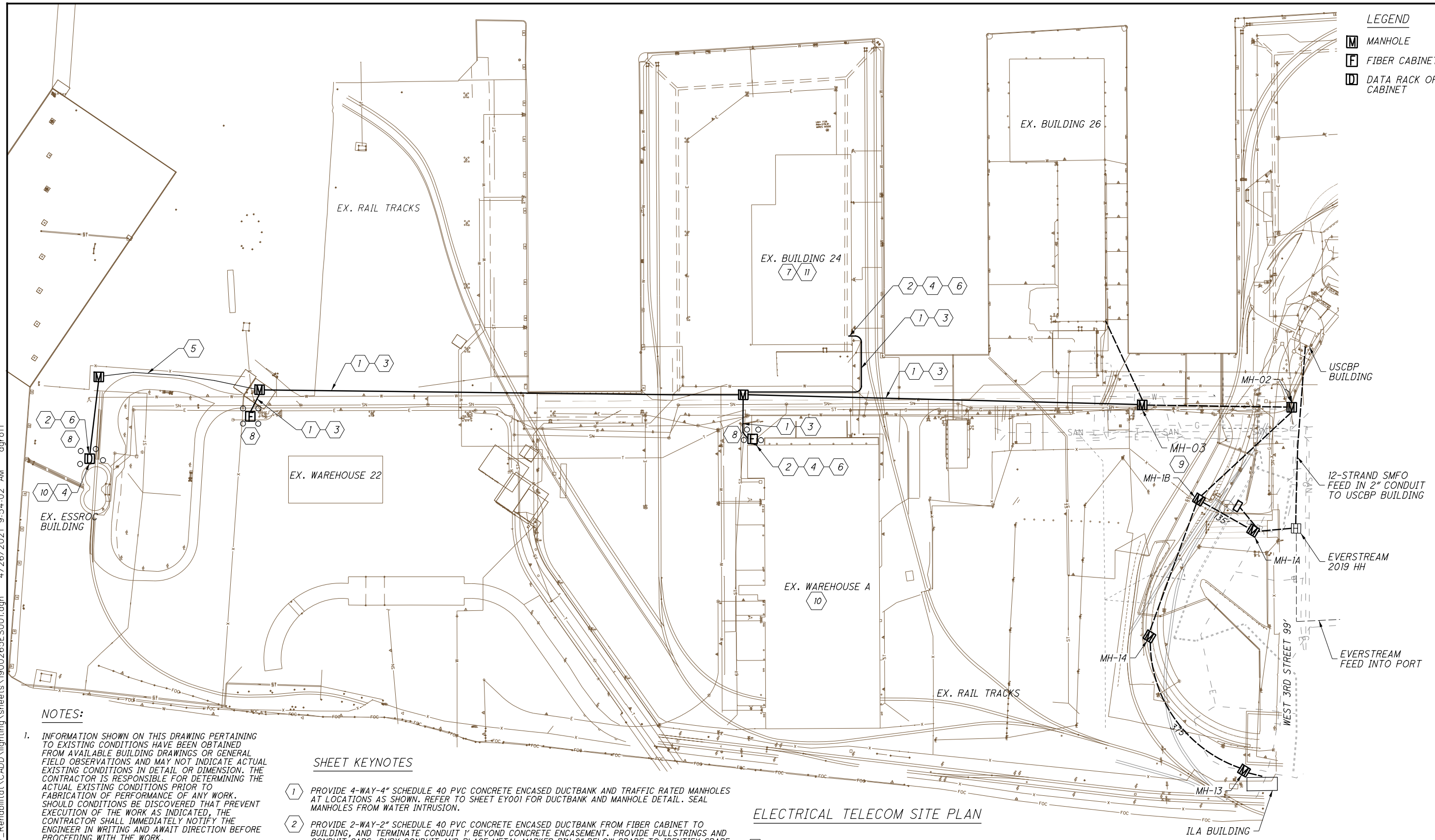
(ACTUAL DIMENSIONS MAY VARY DUE TO TYPE OF BUMP POST SELECTED)

CALCULATED
JAG
CHECKED
RJM

RAILROAD DETAILS

DOCK 24 & 26W

- LEGEND**
- M MANHOLE
 - F FIBER CABINET
 - D DATA RACK OR CABINET



NOTES:

1. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAVE BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS IN DETAIL OR DIMENSION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OF PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
2. COORDINATE INSTALLATION WITH LOCATION OF ALL EXISTING MANHOLES, STRUCTURES, FOUNDATIONS, UTILITIES, FIXTURES, RAILWAYS, ROADS, AND PATHWAYS IN THE FIELD AND WITH CIVIL DRAWINGS.
3. COORDINATE WITH SELECTED VENDOR AT POINT OF CONNECTION. LIMIT CABLE FLEX TO 6'-0".
4. USE WIDE SWEEPING BENDS TO AVOID OBSTACLES IN CONDUIT ROUTE.
5. CONTRACTOR SHALL PERFORM FIELD SURVEY AND TEST PIT PRIOR TO ALL CONSTRUCTION.

SHEET KEYNOTES

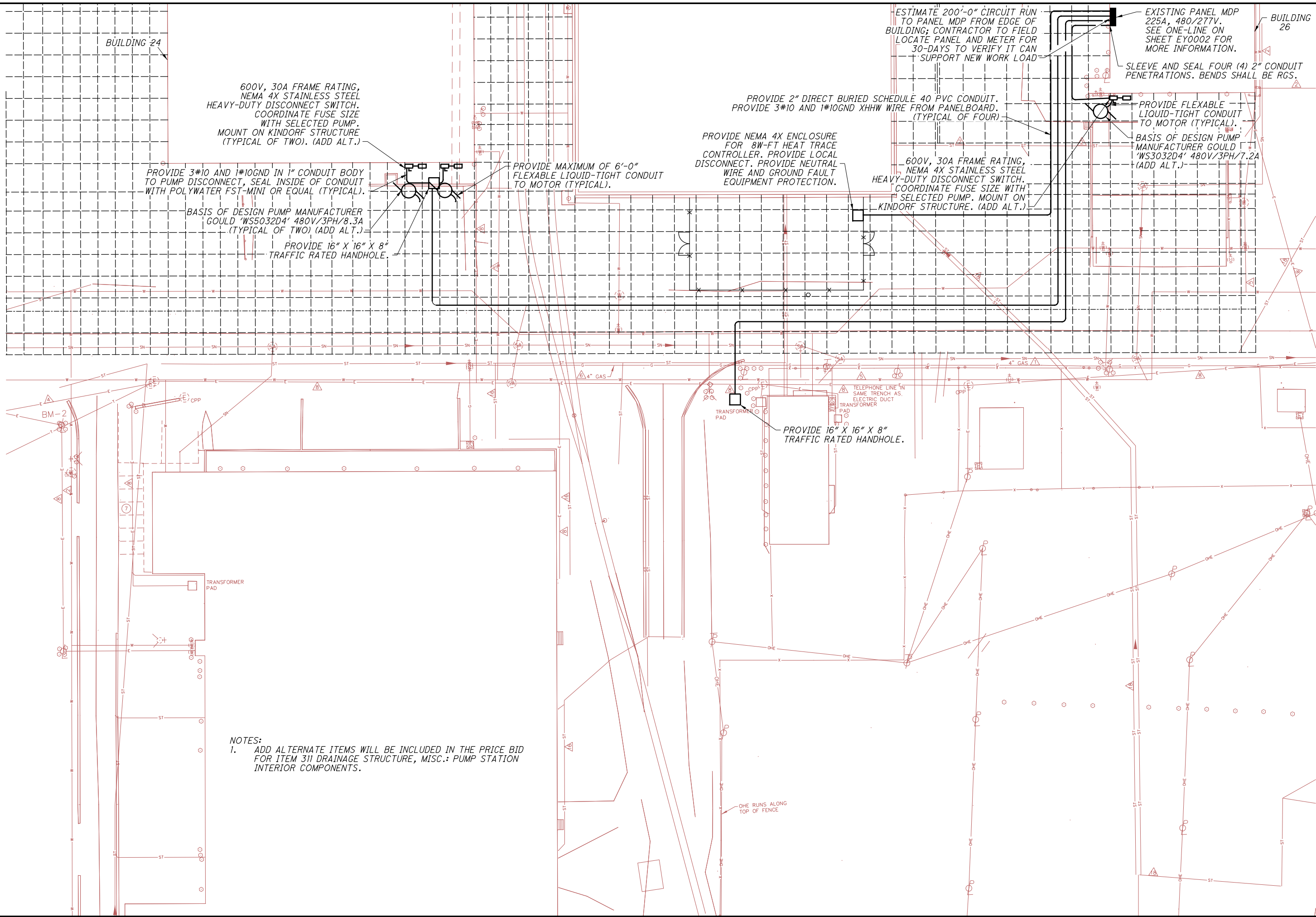
- 1 PROVIDE 4-WAY-4" SCHEDULE 40 PVC CONCRETE ENCASED DUCTBANK AND TRAFFIC RATED MANHOLES AT LOCATIONS AS SHOWN. REFER TO SHEET EY001 FOR DUCTBANK AND MANHOLE DETAIL. SEAL MANHOLES FROM WATER INTRUSION.
- 2 PROVIDE 2-WAY-2" SCHEDULE 40 PVC CONCRETE ENCASED DUCTBANK FROM FIBER CABINET TO BUILDING, AND TERMINATE CONDUIT 1' BEYOND CONCRETE ENCASEMENT. PROVIDE PULLSTRINGS AND CONDUIT CAPS. BURY CONDUIT AND PLACE METAL MARKER PIN 6" BELOW GRADE TO IDENTIFY SPARE CONDUIT LOCATION.
- 3 PROVIDE 144-STRAND SINGLE-MODE FIBER OPTIC CABLE THROUGH DUCTBANK CONDUIT AND MANHOLES FROM MH-03 TO CREATE FIBER OPTIC CONNECTIONS AT EACH BUILDING AS SHOWN ON THIS SITE PLAN. PROVIDE NEMA 4X OUTDOOR FREESTANDING 144-PORT OPTICAL DISTRIBUTION CABINET WHERE SHOWN ON PLAN.
- 4 PROVIDE 24-STRAND SINGLE-MODE FIBER OPTIC CABLE CONNECTIONS (12-IN AND 12-OUT) THROUGH CONDUIT AND MANHOLES LOOPED THROUGH BUILDING 24, WAREHOUSE A, WAREHOUSE 22, AND TERMINATING AT THE ESSROC BUILDING.
- 5 PROVIDE 4-WAY-4" CONCRETE ENCASED DUCTBANK FROM MANHOLE OUTSIDE OF FENCE LINE TO ESSROC BUILDING MANHOLE.
- 6 COORDINATE RACK LOCATION FOR FIBER TERMINATION WITH OWNER TELECOM CONTRACTOR. PROVIDE RGS INTO BUILDING AND CONTINUE TO DATA RACK LOCATION.

ELECTRICAL TELECOM SITE PLAN

- 7 SEE RACK LOCATION PHOTOS ON SHEET EY002 FOR NEW DATA RACK LOCATIONS IN BUILDING DEMARCATION AREA. PROVIDE NEW 18U HANGING RACK THAT IS 23" DEEP WITH AN ENCLOSED BOTTOM; SURFACE MOUNT TO WALL SPACES INDICATED IN PHOTOS. PROVIDE NEW FIBER PATCH PANEL IN RACK AND PROVIDE FIBER FROM TERMINATION CABINET OUTSIDE OF BUILDING TO BE TERMINATED AT PATCH PANEL; OTHER ACTIVE AND PASSIVE EQUIPMENT BY OTHERS. COORDINATE FINAL LOCATION WITH OWNER PRIOR TO PURCHASE AND INSTALLATION. PROVIDE 120V/20A DUPLEX RECEPTACLE AT DATA RACK LOCATION, AND PROVIDE 2#12 AND 1#12 GROUND IN 3/4" CONDUIT BACK TO NEAREST AVAILABLE 120V PANELBOARD IN THE SPACE.
- 8 PROVIDE BOLLARD PROTECTION AROUND CABINETS. SEE CIVIL DRAWINGS FOR MORE DETAIL.
- 9 SPLICE EXISTING FIBER PROVIDED UNDER MAIN GATE TASK AT MANHOLE TO NEW FIBER LOOP UNDER THIS TASK.
- 10 PROVIDE NEMA 4X OUTDOOR CABINET WITH DATA RACK EQUIPMENT MOUNTS. PROVIDE FIBER OPTIC PATCH PANEL AND TERMINATE INCOMING FIBER. OTHER ACTIVE AND PASSIVE EQUIPMENT BY OTHERS.

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BUILDING 24

BUILDING 26

600V, 30A FRAME RATING, NEMA 4X STAINLESS STEEL HEAVY-DUTY DISCONNECT SWITCH. COORDINATE FUSE SIZE WITH SELECTED PUMP. MOUNT ON KINDORF STRUCTURE (TYPICAL OF TWO). (ADD ALT.)

PROVIDE 3#10 AND 1#10GND IN 1" CONDUIT BODY TO PUMP DISCONNECT, SEAL INSIDE OF CONDUIT WITH POLYWATER FST-MINI OR EQUAL (TYPICAL).

BASIS OF DESIGN PUMP MANUFACTURER GOULD 'WS5032D4' 480V/3PH/8.3A (TYPICAL OF TWO) (ADD ALT.)

PROVIDE 16" X 16" X 8" TRAFFIC RATED HANDHOLE.

PROVIDE MAXIMUM OF 6'-0" FLEXIBLE LIQUID-TIGHT CONDUIT TO MOTOR (TYPICAL).

PROVIDE NEMA 4X ENCLOSURE FOR 8W-FT HEAT TRACE CONTROLLER. PROVIDE LOCAL DISCONNECT. PROVIDE NEUTRAL WIRE AND GROUND FAULT EQUIPMENT PROTECTION.

PROVIDE 2" DIRECT BURIED SCHEDULE 40 PVC CONDUIT. PROVIDE 3#10 AND 1#10GND XHHW WIRE FROM PANELBOARD. (TYPICAL OF FOUR)

600V, 30A FRAME RATING, NEMA 4X STAINLESS STEEL HEAVY-DUTY DISCONNECT SWITCH. COORDINATE FUSE SIZE WITH SELECTED PUMP. MOUNT ON KINDORF STRUCTURE. (ADD ALT.)

ESTIMATE 200'-0" CIRCUIT RUN TO PANEL MDP FROM EDGE OF BUILDING; CONTRACTOR TO FIELD LOCATE PANEL AND METER FOR 30-DAYS TO VERIFY IT CAN SUPPORT NEW WORK LOAD

EXISTING PANEL MDP 225A, 480/277V. SEE ONE-LINE ON SHEET EY0002 FOR MORE INFORMATION.

SLEEVE AND SEAL FOUR (4) 2" CONDUIT PENETRATIONS. BENDS SHALL BE RGS.

PROVIDE FLEXIBLE LIQUID-TIGHT CONDUIT TO MOTOR (TYPICAL).

BASIS OF DESIGN PUMP MANUFACTURER GOULD 'WS3032D4' 480V/3PH/7.2A (ADD ALT.)

PROVIDE 16" X 16" X 8" TRAFFIC RATED HANDHOLE.

NOTES:
1. ADD ALTERNATE ITEMS WILL BE INCLUDED IN THE PRICE BID FOR ITEM 311 DRAINAGE STRUCTURE, MISC.: PUMP STATION INTERIOR COMPONENTS.

OHE RUNS ALONG TOP OF FENCE

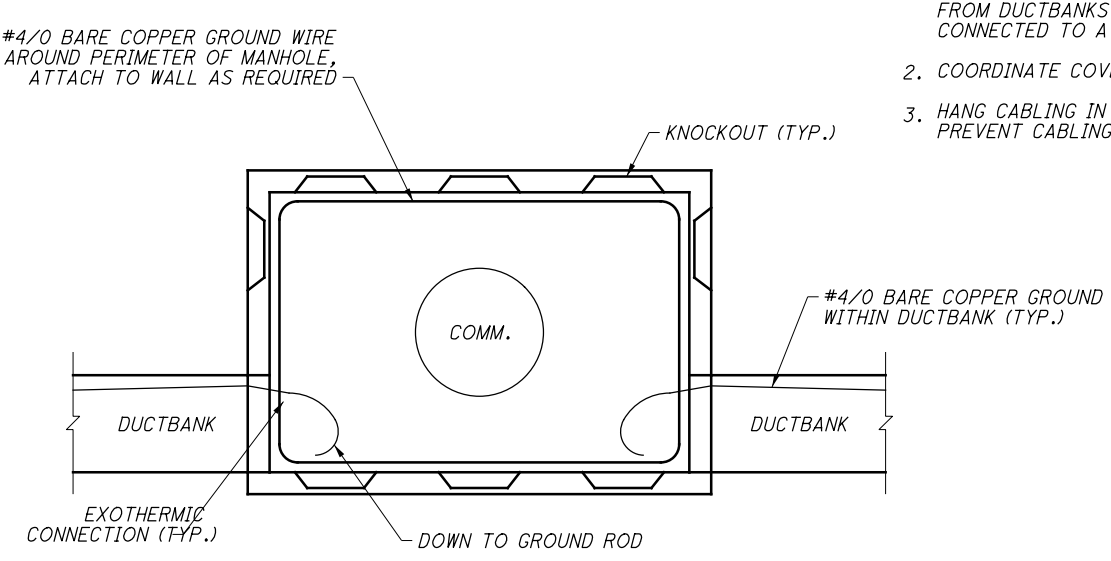
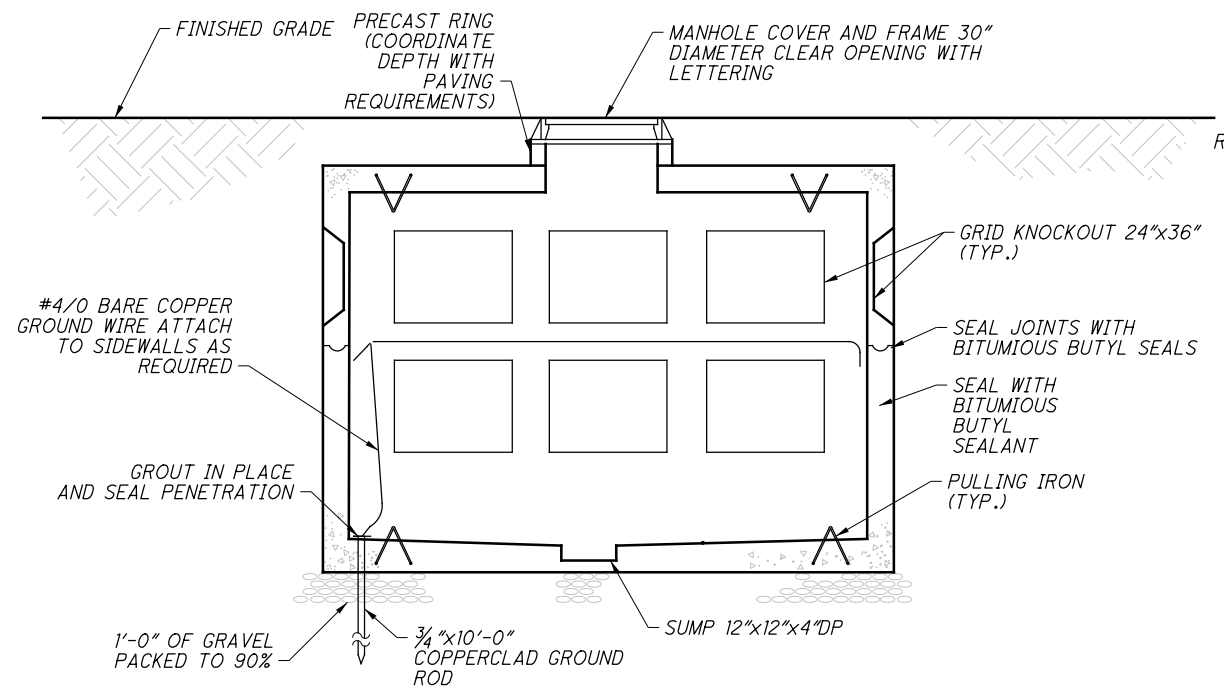


ELECTRICAL PLAN

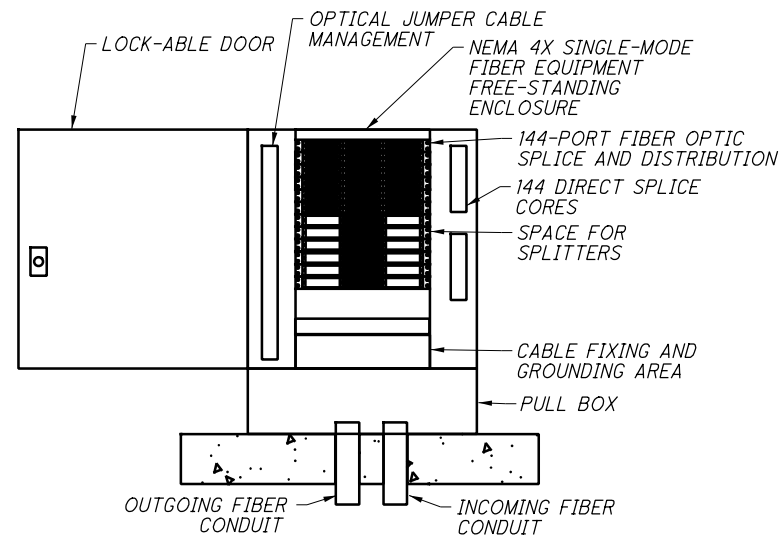
DOCK 24 & 26W

NOTES:

- ELECTRIC MANHOLE SHALL BE TRAFFIC BEARING, 8'-0" X 8'-0" X (HEIGHT COORDINATED BY WATER TABLE NOT LESS THAN 6'-0". DEVIATIONS IN MANHOLE SIZE SHALL BE PER ANSI C2 PART 3. PROVIDE WITH FRAME AND COVER, PULLING IRONS IN FLOOR, ROOF, AND SUMP PIT IN CENTER BOTTOM. PROVIDE FIT UP OF CABLE RACKS ON ALL 4 WALLS AND #4/0 BARE COPPER GROUND FROM DUCTBANKS - LOOPED AROUND ALL FOUR WALLS AND CONNECTED TO A 10'-0" X 3/4" COPPER CLAD GROUND ROD.
- COORDINATE COVER WITH OWNER FOR MARKINGS.
- HANG CABLING IN MANHOLE AND PROVIDE SLACK AS NEEDED TO PREVENT CABLING FROM SITTING ON THE BOTTOM OF THE MANHOLE.

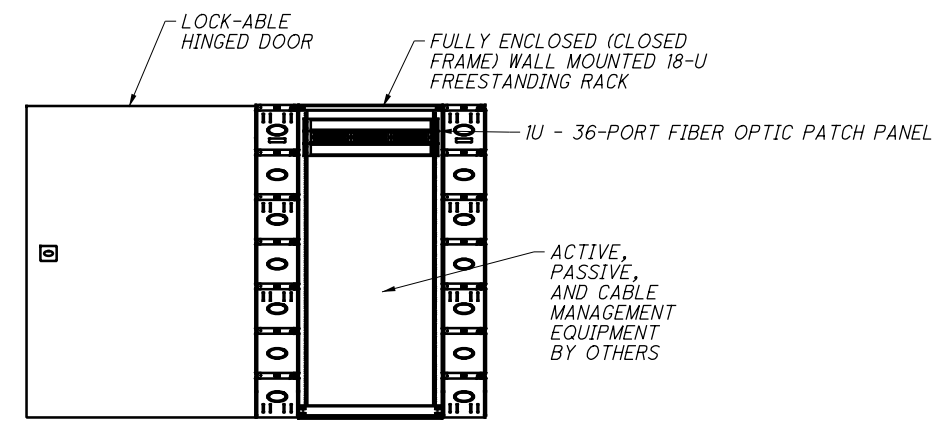


MANHOLE DETAILS



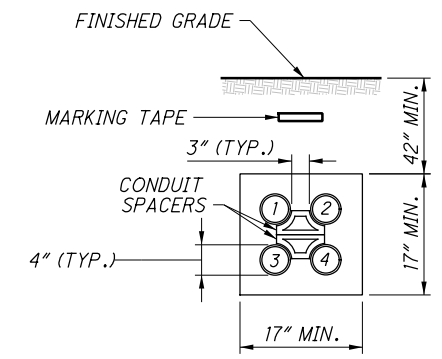
- DETAIL NOTES
- PROVIDE NEW LOCK-ABLE AND FULLY ENCLOSED FIBER PATCH PANEL CABINET
 - PROVIDE 3000PSI CONCRETE PAD WITH 2" OVERHANG AROUND CABINET. PROVIDE CONDUIT FOR BOTTOM ENTRY.
 - PROVIDE FOUR (4) BOLLARDS LOCATED AROUND CABINET. SEE CIVIL SHEETS FOR MORE DETAILS.

OPTICAL DISTRIBUTION CABINET



- DETAIL NOTES
- PROVIDE NEW LOCK-ABLE AND FULLY ENCLOSED DATA EQUIPMENT RACK
 - PROVIDE GROUND CONNECTION TO MAIN TELECOM GROUND BUS.
 - COORDINATE RACK SIZE AND MOUNTING WITH OWNER PRIOR TO PURCHASE AND INSTALLATION.
 - MOUNT AS PER MANUFACTURE RECOMMENDATIONS
 - PROVIDE OUTDOOR FREESTANDING NEMA 4X ENCLOSURE WITH DATA RACK FOR ESSROC BUILDING.

DATA RACK DETAIL

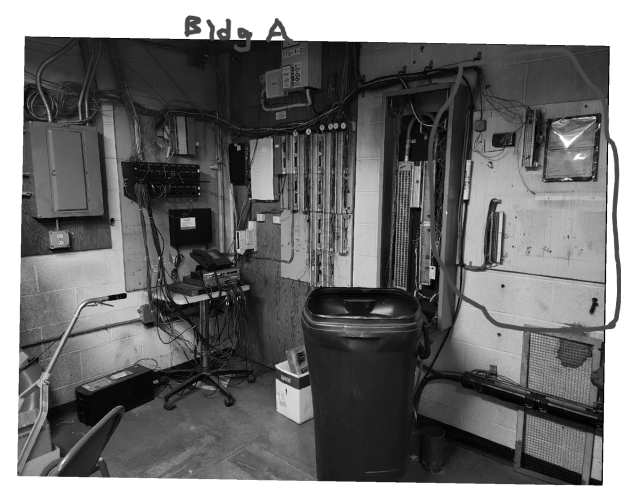
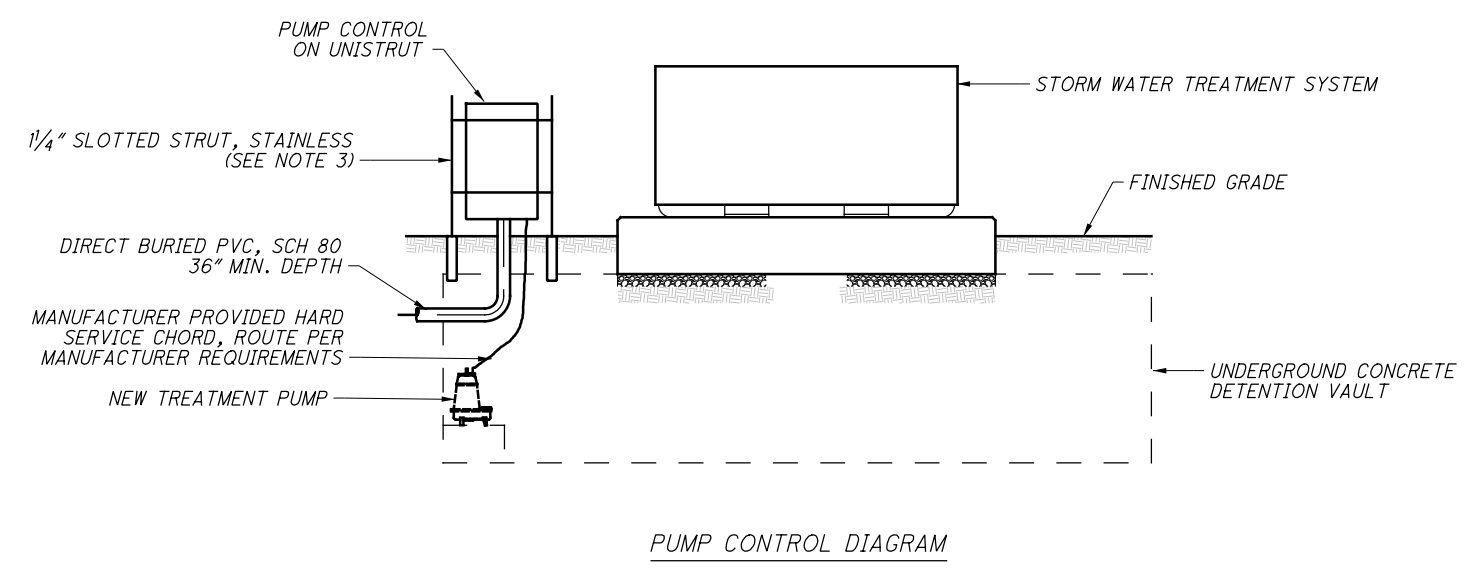
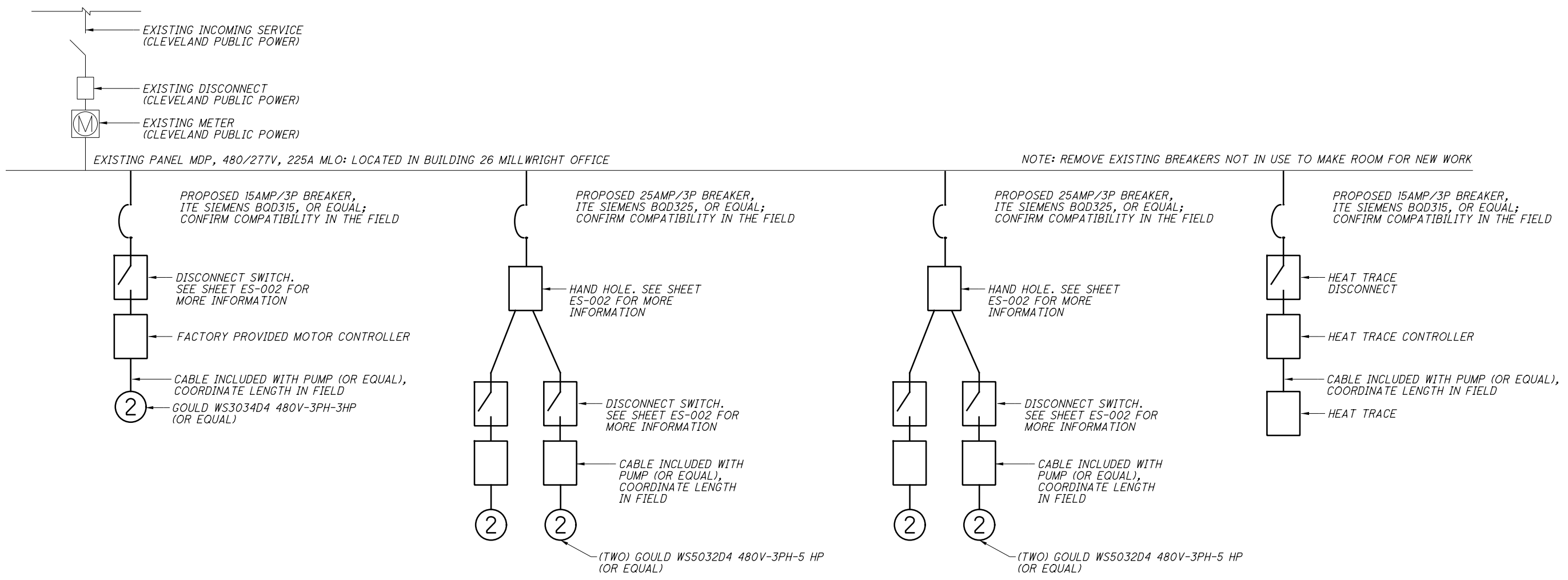


CND	DESCRIPTION
①	4" SCHEDULE 40 PVC CONDUIT WITH (3) 1/4" INNERDUCT FOR SMFO ADD ALT 1, FIBER LOOP: PROVIDE 144-STRAND SINGLE MODE FIBER OPTIC CABLE
②	4" SCHEDULE 40 PVC CONDUIT SPARE
③	4" SCHEDULE 40 PVC CONDUIT SPARE
④	4" SCHEDULE 40 PVC CONDUIT SPARE

NOTES:
 1. ALL PVC CONDUITS SHALL TRANSITION TO RGS CONDUITS FOR STUB UPS. SEE SITE PLAN FOR DUCTBANK AND MANHOLE LOCATIONS

DUCTBANK DETAILS

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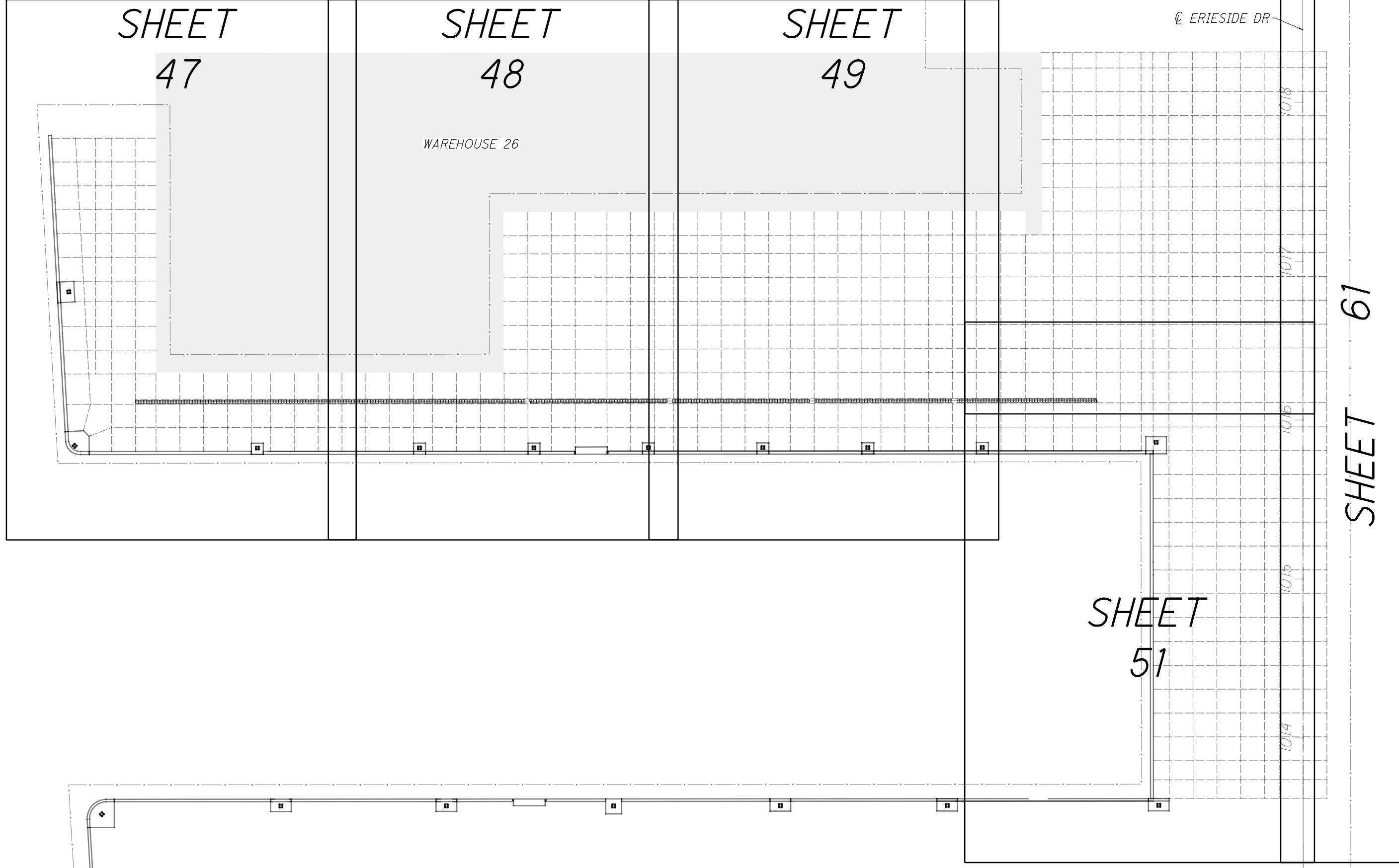


BUILDING A - RACK LOCATION IN NW CORNER



WAREHOUSE 24 - RACK LOCATION 2ND FLOOR

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SHEET 61

SHEET 51

SHEET 50

SHEET 47

SHEET 48

SHEET 49

ERIESIDE DR

WAREHOUSE 26

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SHEET

52

SHEET

53

SHEET

54

SHEET

55

SHEET

56

SHEET

57

SHEET

58

SHEET

59

WAREHOUSE 24

CL ERIESIDE

1013

1012

1011

1010

1009

8

SHEET 60

DOCK 24 & 26W

PAVEMENT JOINT DETAILS
DOCK 24W

CALCULATED JAG CHECKED RJM

0 15 30 60
HORIZONTAL
SCALE IN FEET



46
106

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LAKE ERIE

PROPOSED BOLLARD AND FOUNDATION (TYP.)

PROPOSED PROJECT AREA

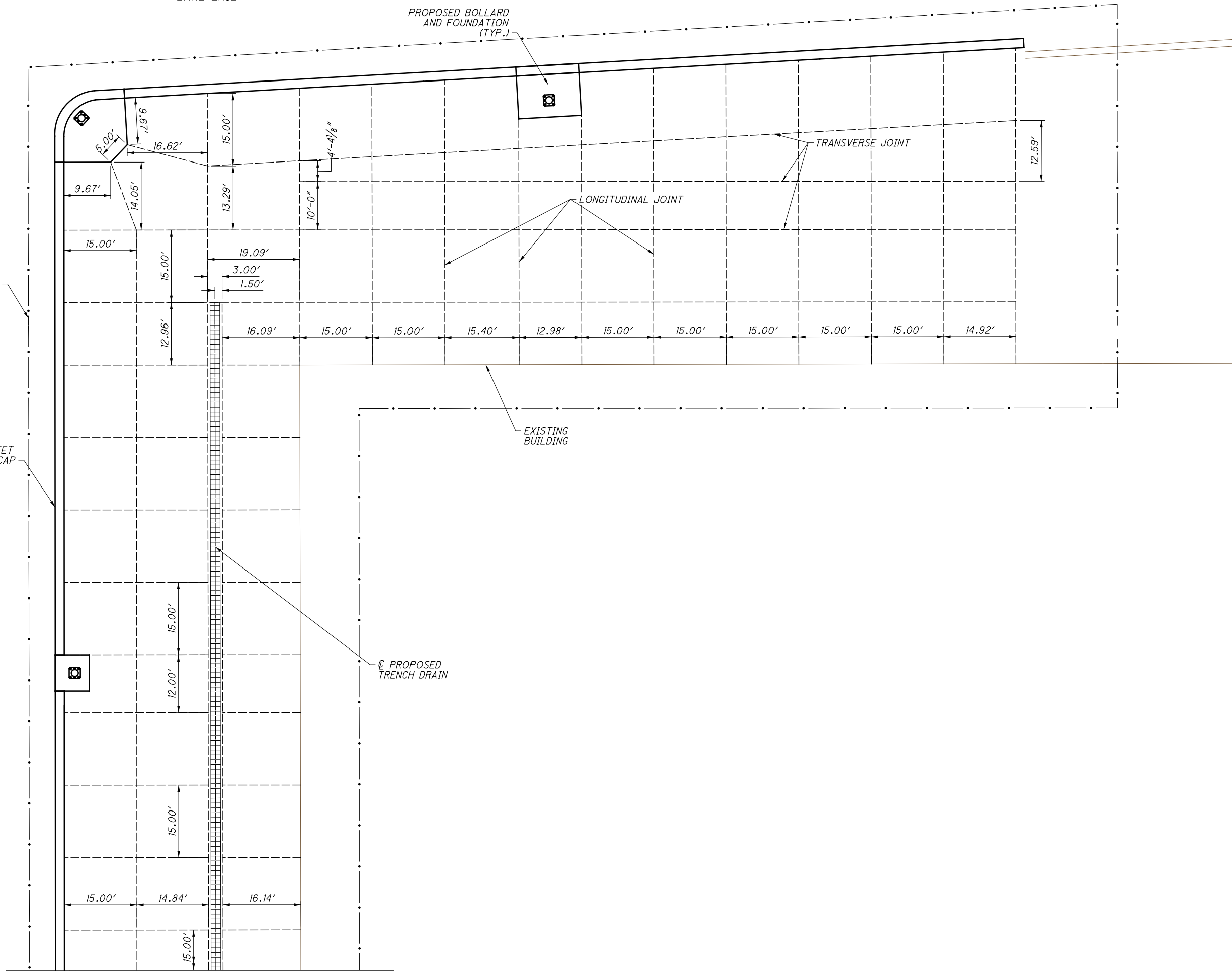
PROPOSED SHEET PILE CAP

EXISTING BUILDING

PROPOSED TRENCH DRAIN

TRANSVERSE JOINT

LONGITUDINAL JOINT



SEE SHEET 48



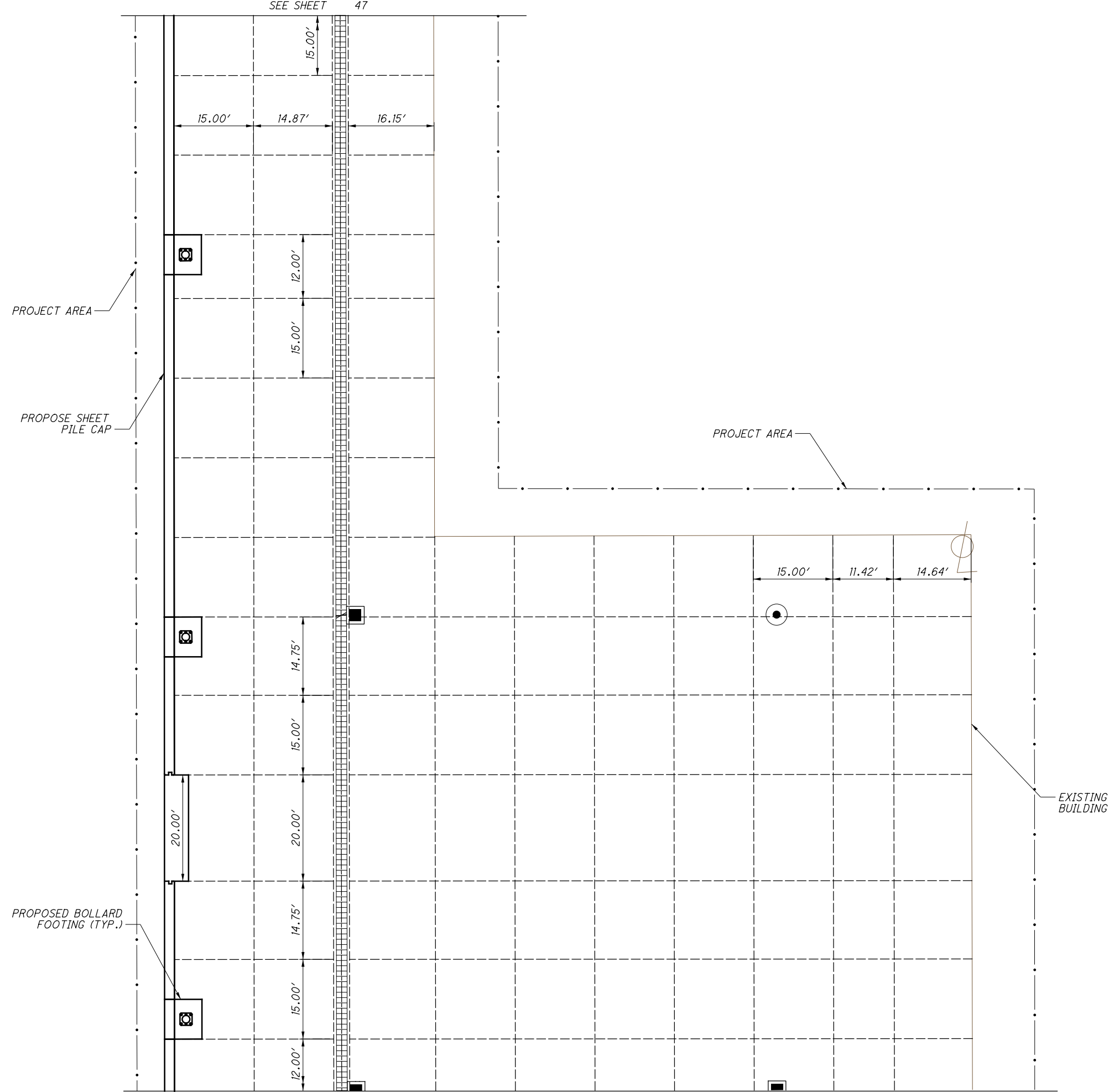
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JAG
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RJM

PAVEMENT JOINT DETAIL
DOCK 26W

DOCK 24 & 26W

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SEE SHEET 47



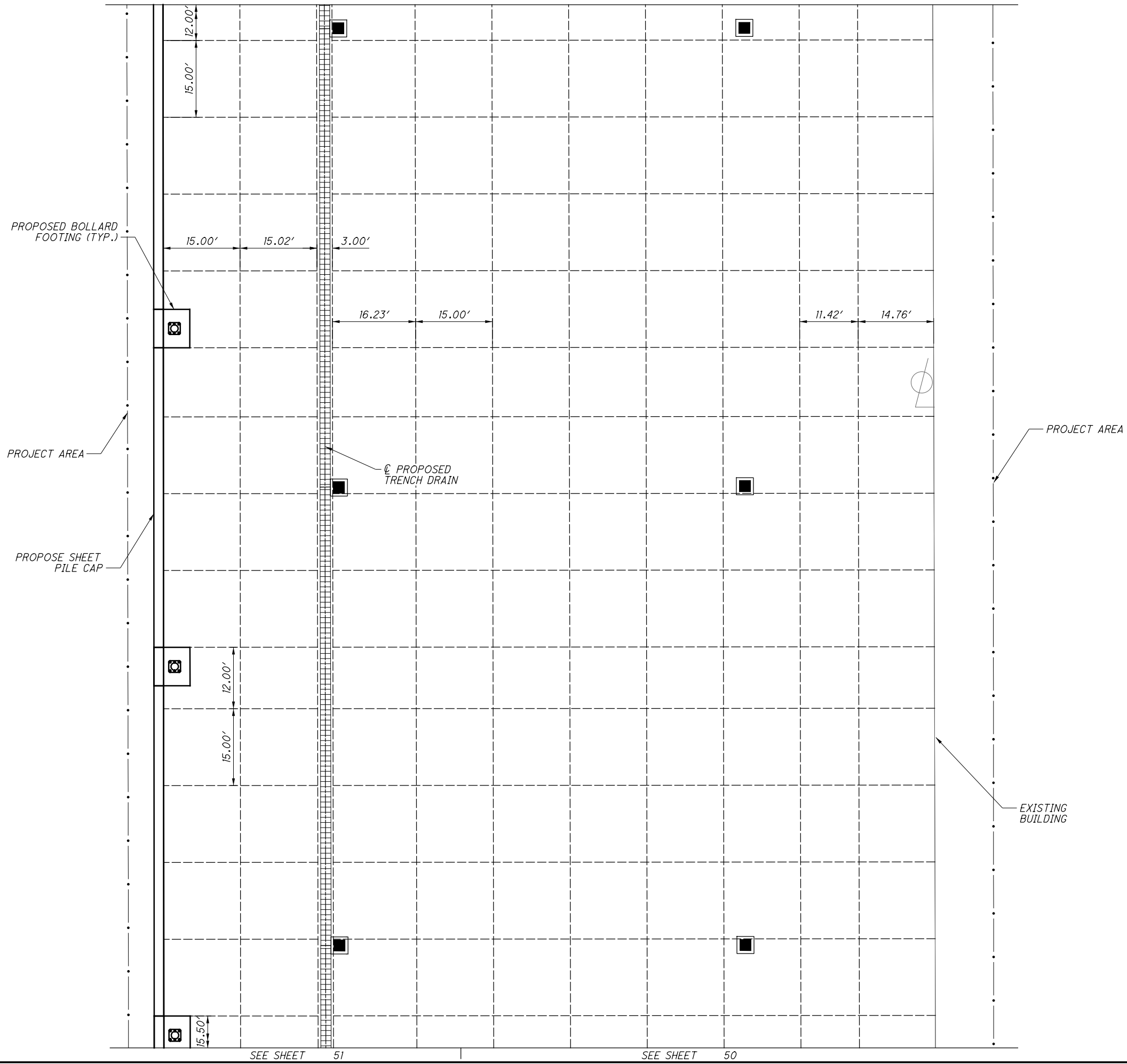
CALCULATED
JAG
CHECKED
RJM

**PAVEMENT JOINT DETAIL
DOCK 26W**

DOCK 24 & 26W

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SEE SHEET 48



SEE SHEET 51

SEE SHEET 50

CALCULATED JAG CHECKED RJM

0 5 10 20

HORIZONTAL SCALE IN FEET

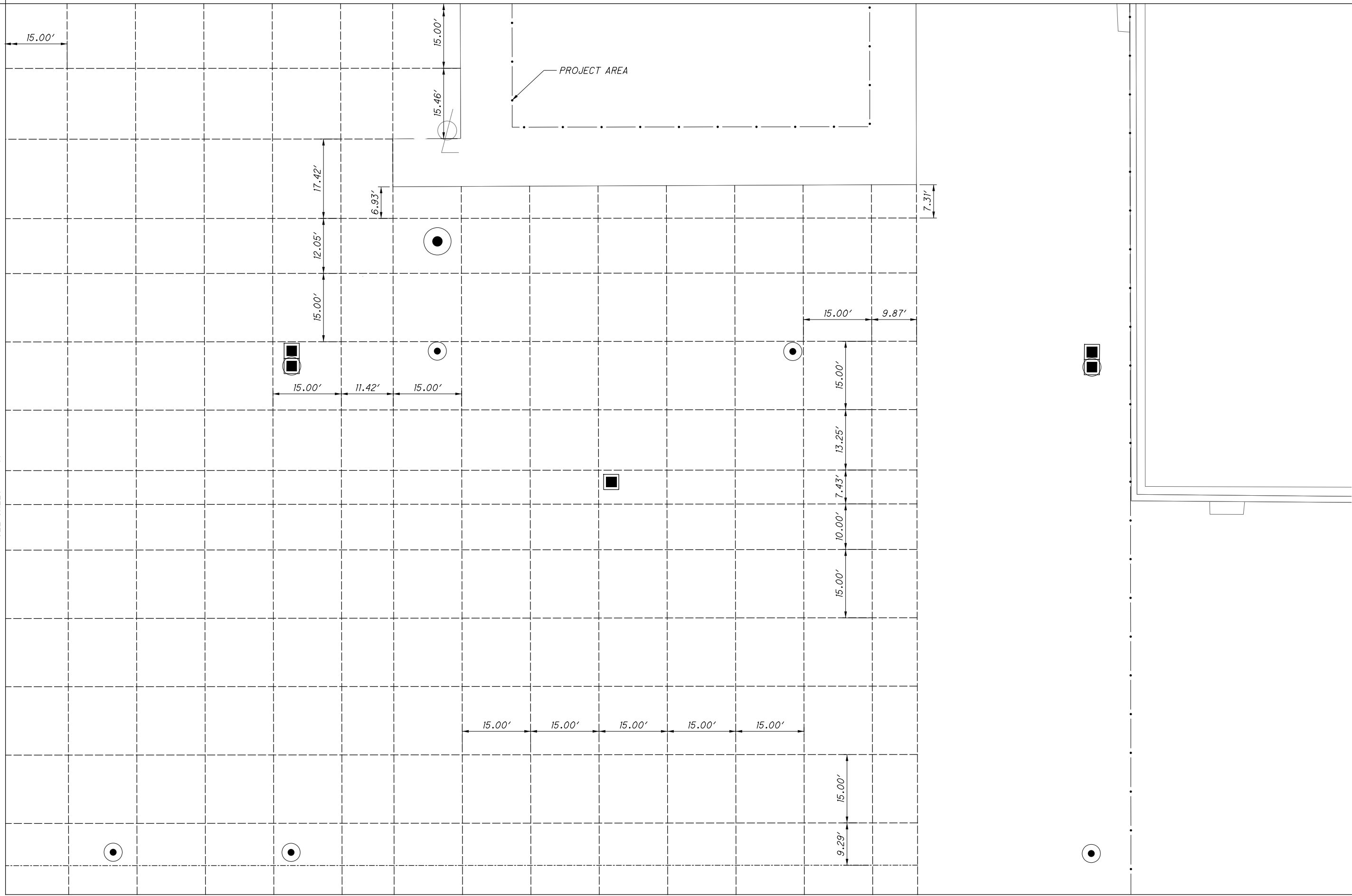
PAVEMENT JOINT DETAILS
DOCK 26W

DOCK 24 AND 26W

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SEE SHEET 51

SEE SHEET 49



SEE SHEET 61

CALCULATED
JAG
CHECKED
RJM

0 5 10 20
HORIZONTAL
SCALE IN FEET

**PAVEMENT JOINT DETAILS
DOCK 26W**

DOCK 24 AND 26W

SEE SHEET 55

11.67' 12.00' 15.00'

PROPOSE SHEET PILE CAP

PROJECT AREA

PROPOSED BOLLARD FOOTING (TYP.)

SEE SHEET 49

15.50'

15.00' 15.15' 16.29' 15.00'

PROPOSED TRENCH DRAIN

3.00'

7.43'

10.00'

15.00'

15.00'

9.24'

SEE SHEET 61

SEE SHEET 50



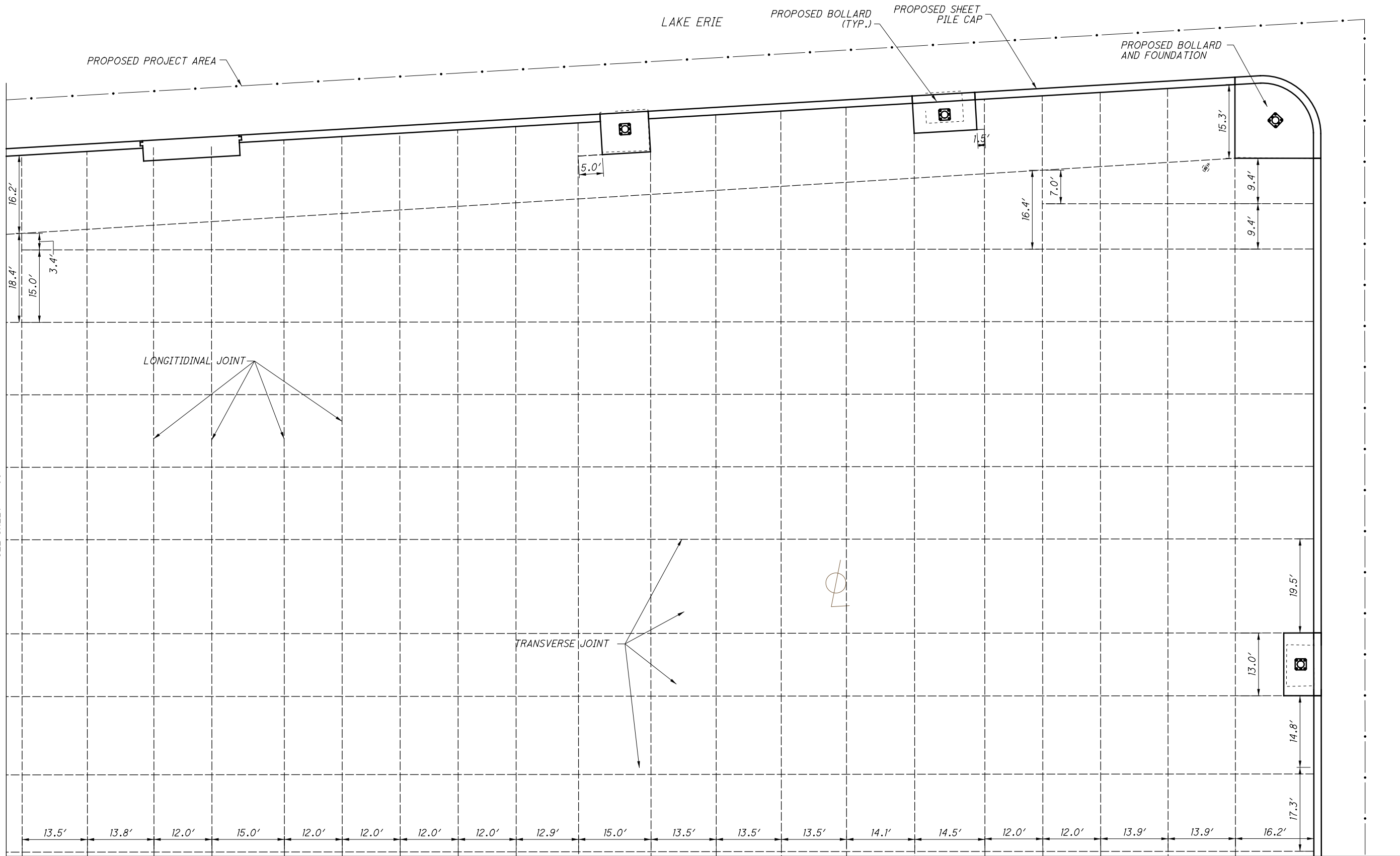
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PAVEMENT JOINT DETAIL DOCK 26W

DOCK 24 AND 26W

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SEE SHEET 56



SEE SHEET 53

CALCULATED CW CHECKED RJM

0 5 10 20

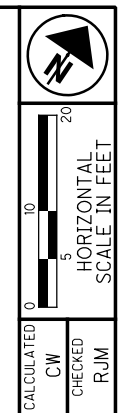
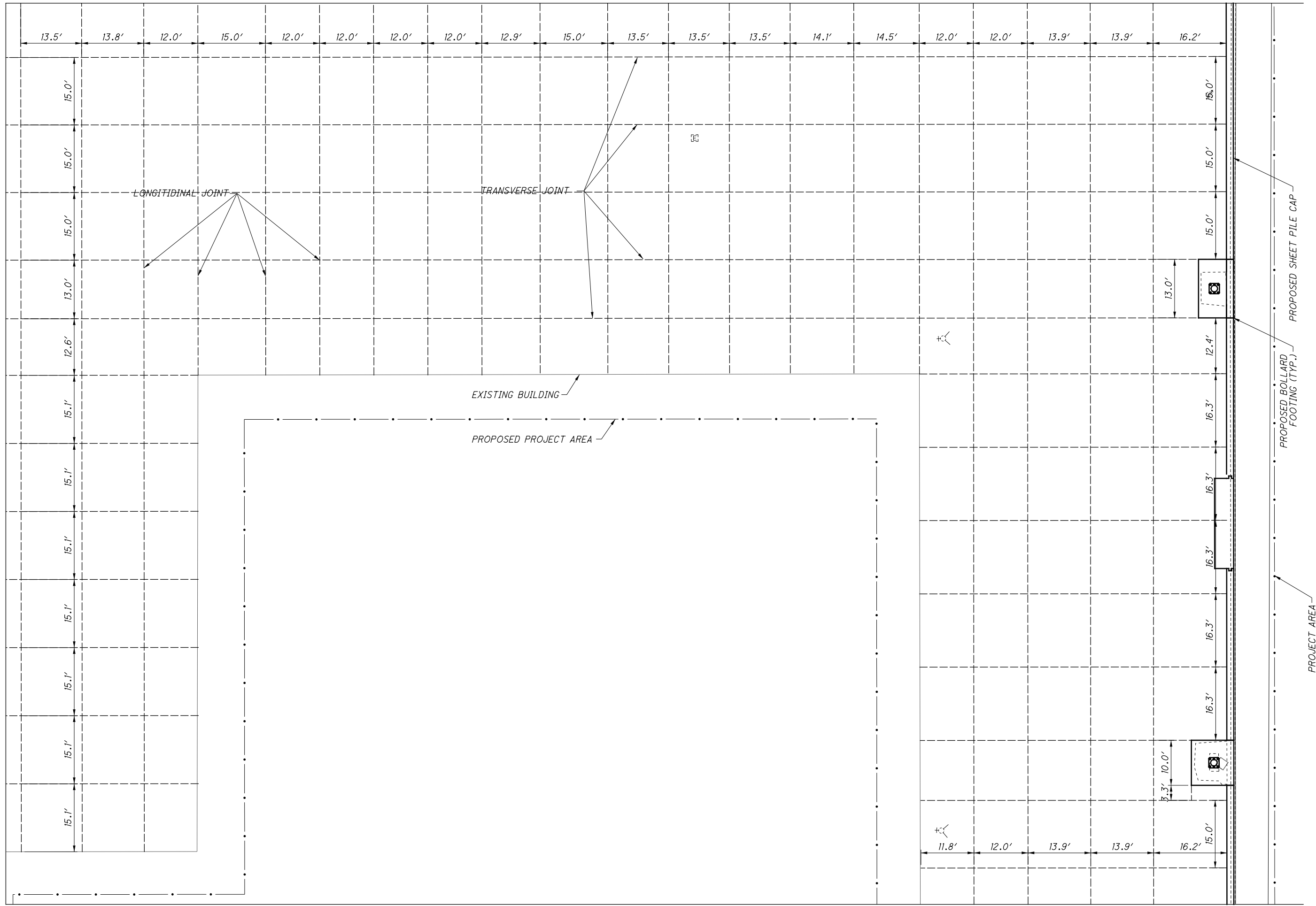
HORIZONTAL SCALE IN FEET

PAVEMENT JOINT DETAIL
DOCK 24

DOCK 24 & 26W

SEE SHEET 57

SEE SHEET 52



DOCK 24 & 26W

PAVEMENT JOINT DETAIL

DOCK 24

PROJECT AREA

PROPOSED SHEET PILE CAP

PROPOSED BOLLARD FOOTING (TYP.)

SEE SHEET 54

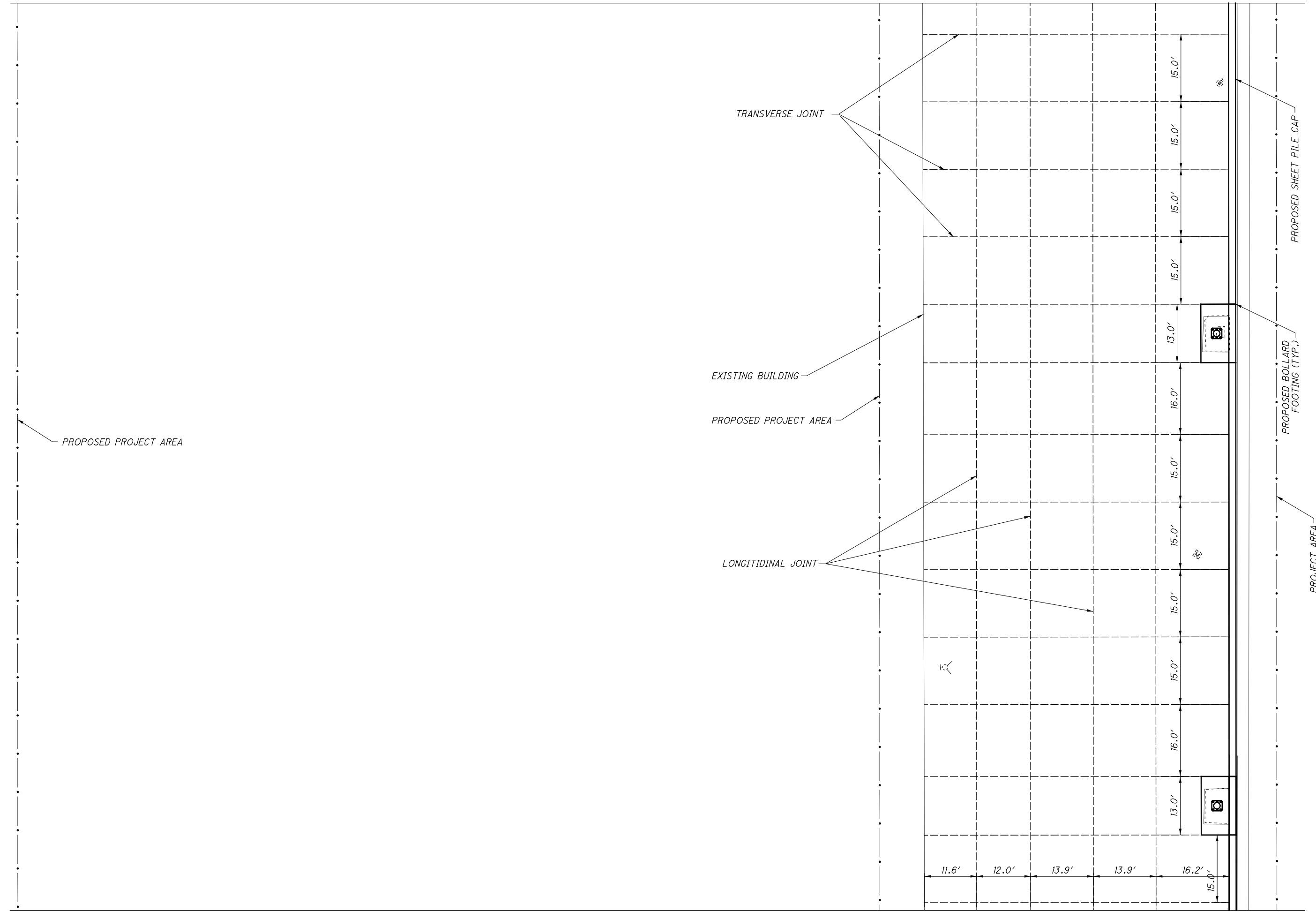


CALCULATED	
CW	
CHECKED	
RJM	

PAVEMENT JOINT DETAIL
DOCK 24

DOCK 24 & 26W

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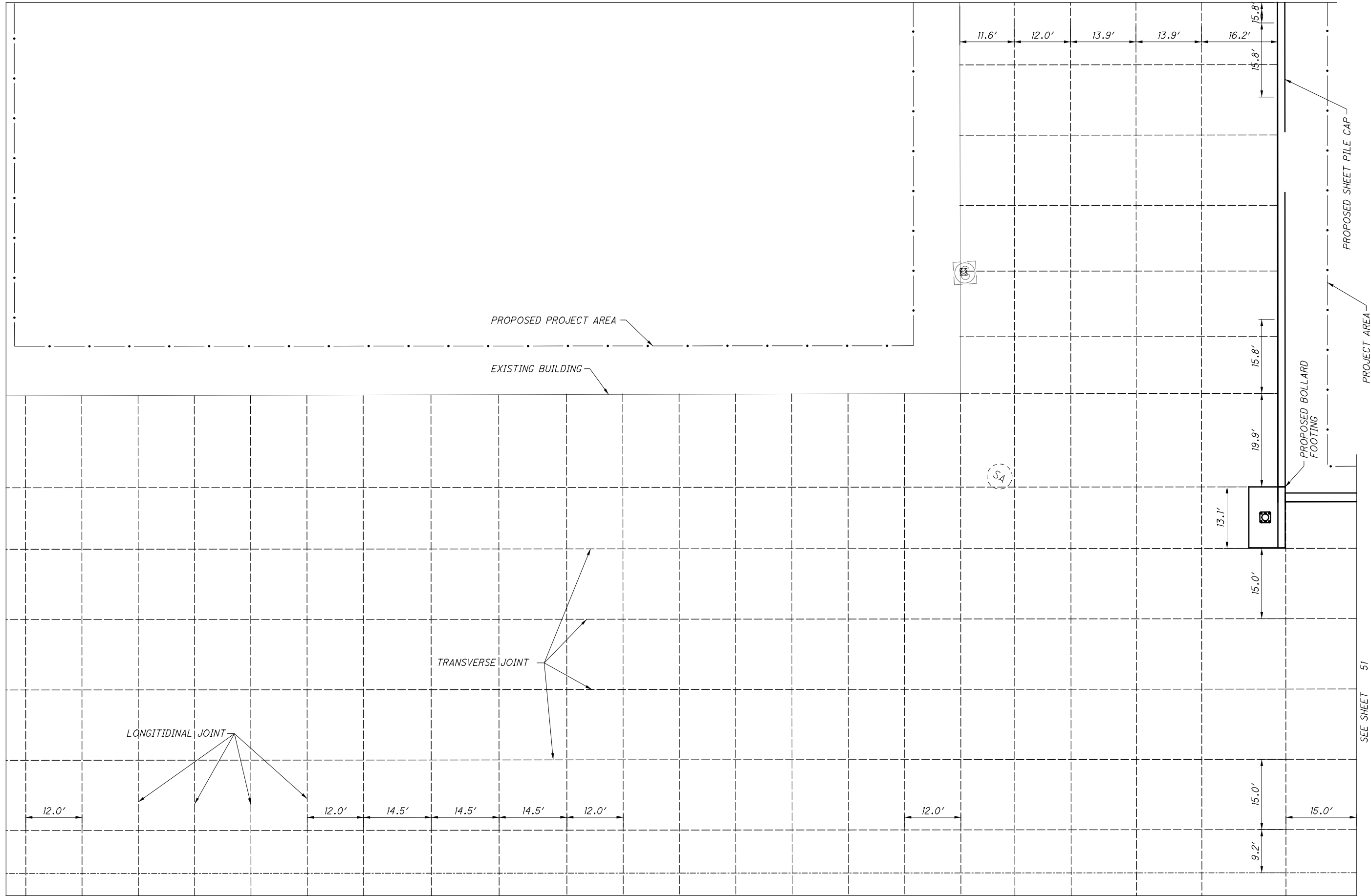
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SEE SHEET 54

SEE SHEET 59

SEE SHEET 51

SEE SHEET 60



CALCULATED CW
CHECKED RJM

0 5 10 20
HORIZONTAL SCALE IN FEET

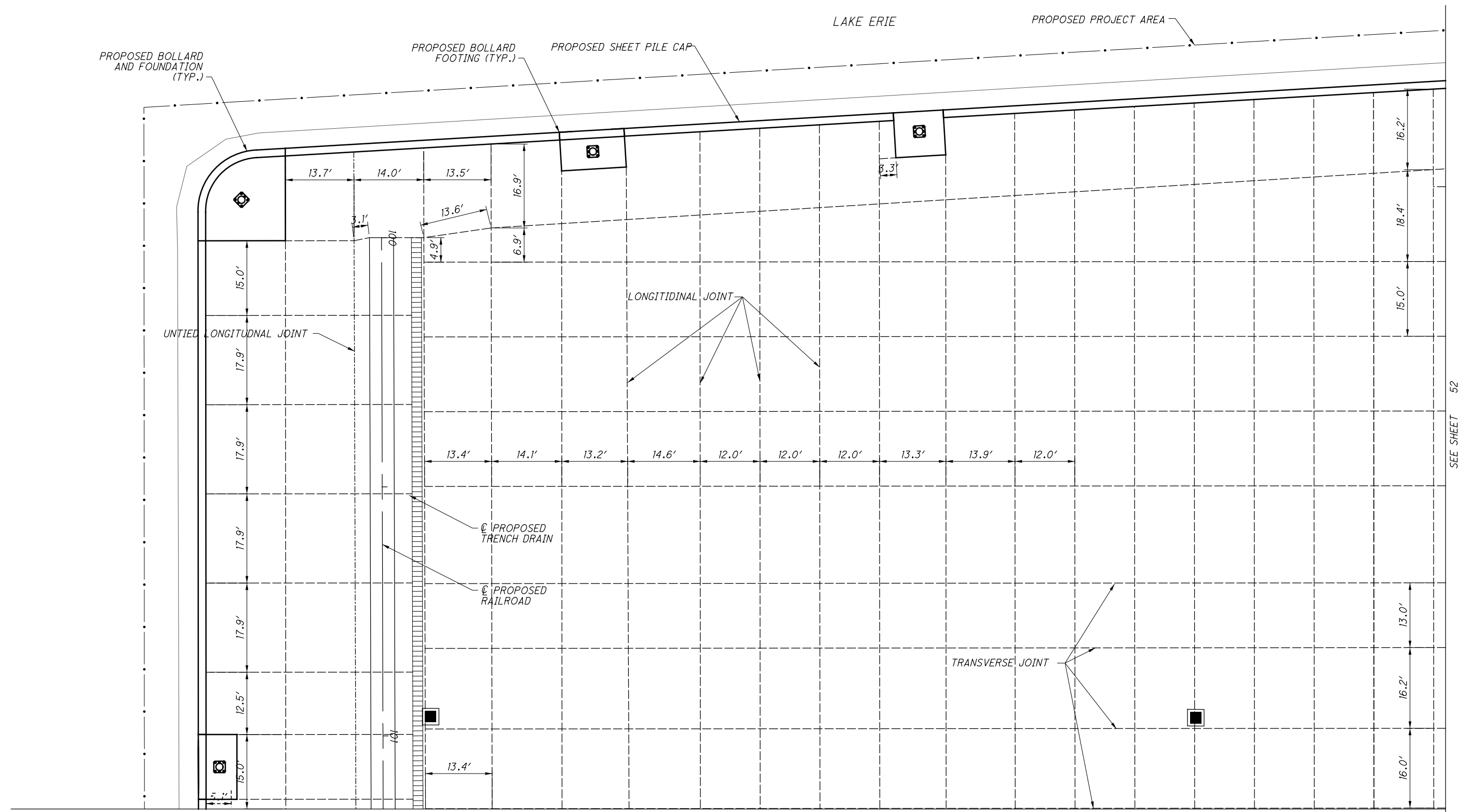
PAVEMENT JOINT DETAIL
DOCK 24

DOCK 24 & 26W

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CALCULATED
CW
CHECKED
RJM

0 5 10 20
HORIZONTAL
SCALE IN FEET



SEE SHEET 57

SEE SHEET 52

PAVEMENT JOINT DETAIL

DOCK 24 & 26W

DOCK 24

56
106

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SEE SHEET 56



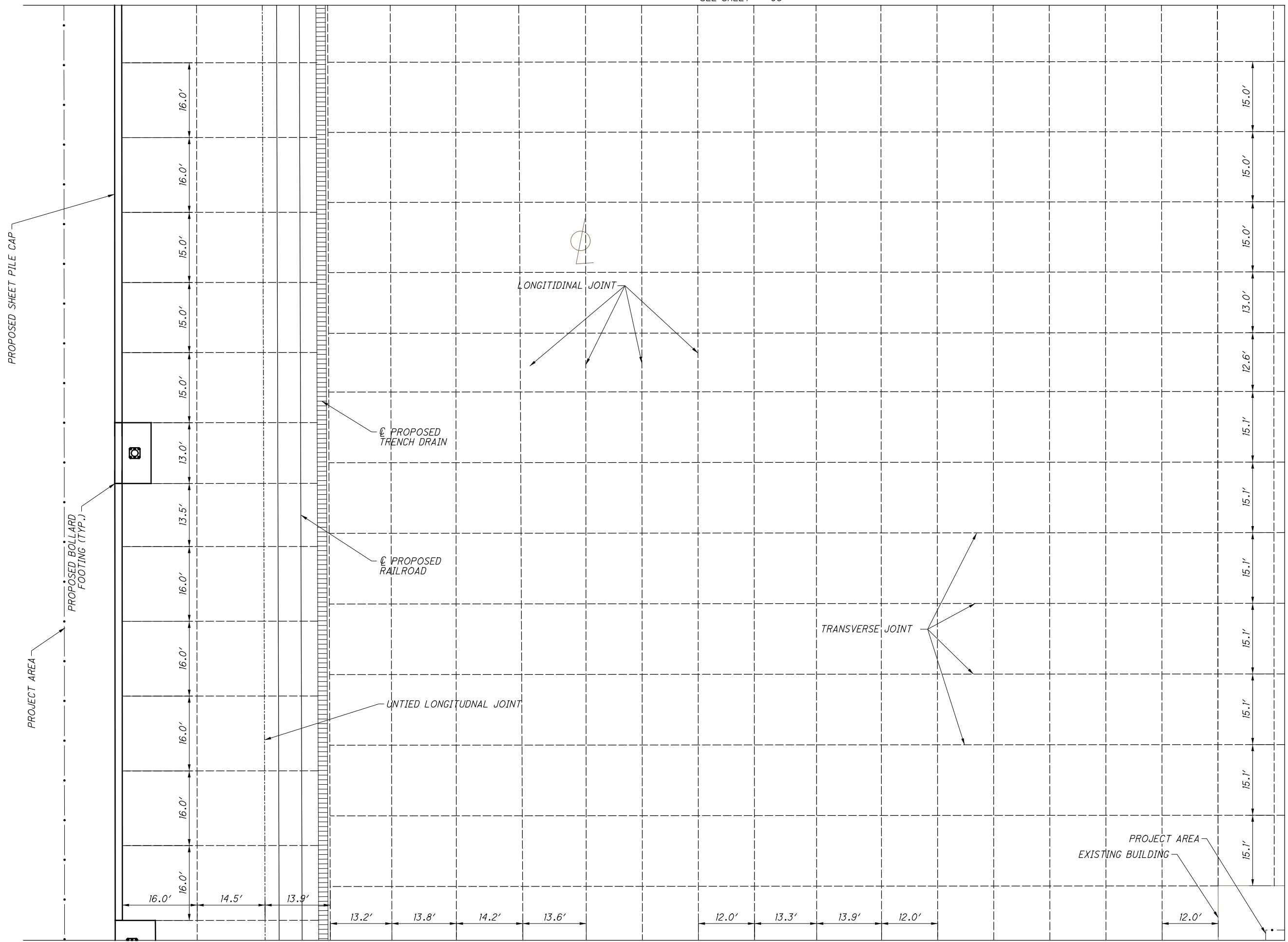
CALCULATED
CW
CHECKED
RJM

**PAVEMENT JOINT DETAIL
DOCK 24**

SEE SHEET 53

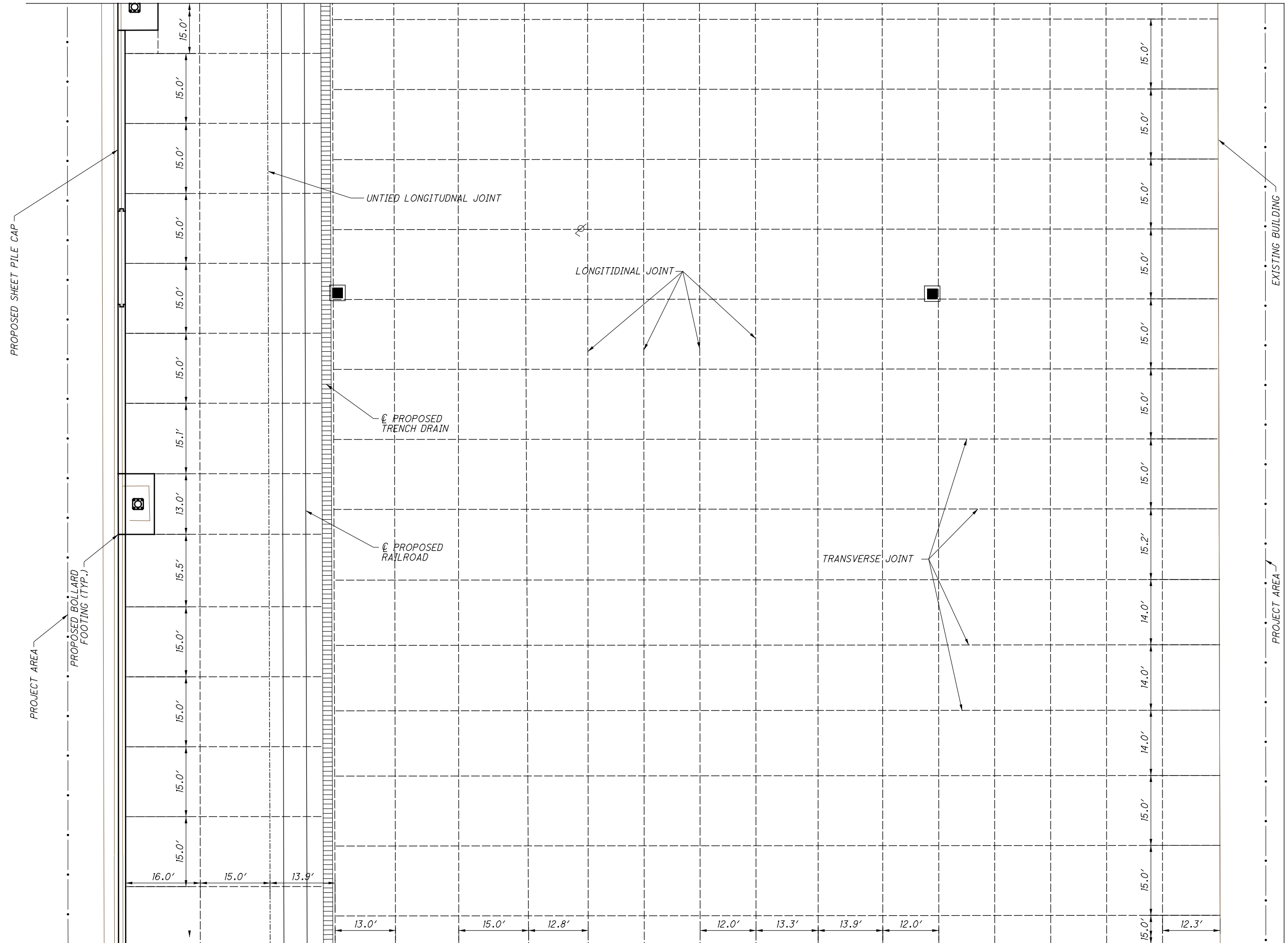
DOCK 24 & 26W

57
106



SEE SHEET 58

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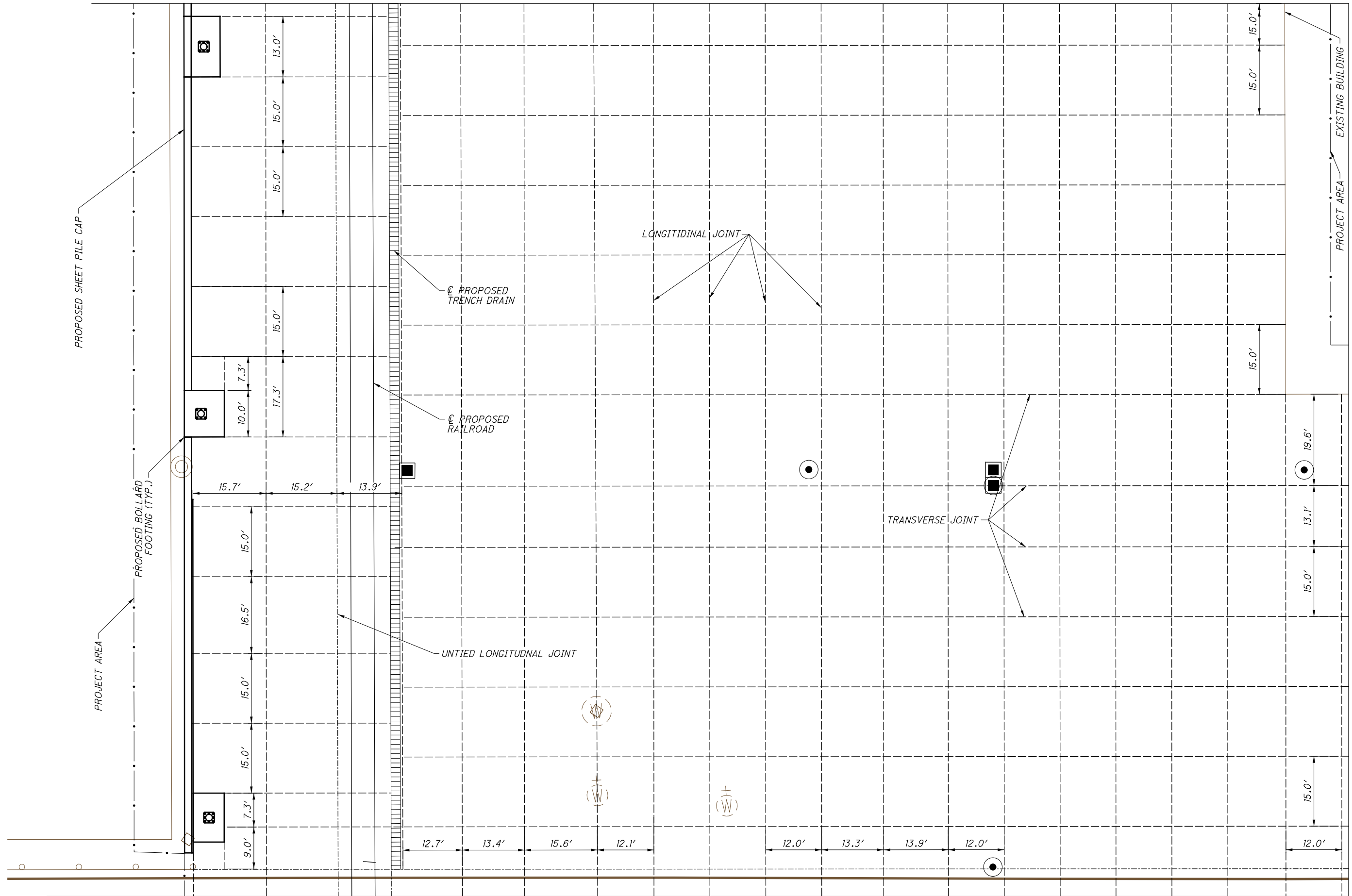
CALCULATED
CHECKED

PAVEMENT JOINT DETAIL
DOCK 24

DOCK 24 & 26W

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SEE SHEET 58



SEE SHEET 60

SEE SHEET 55



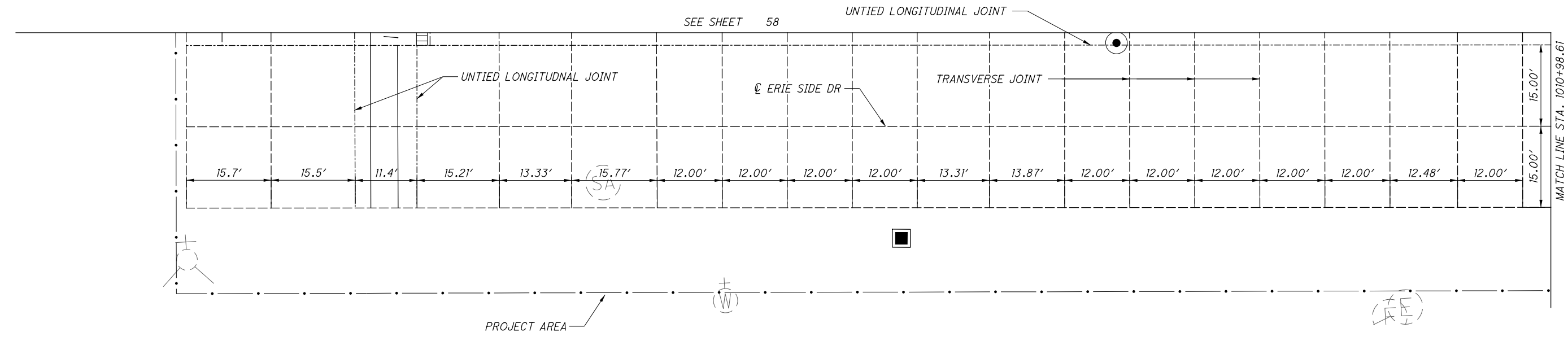
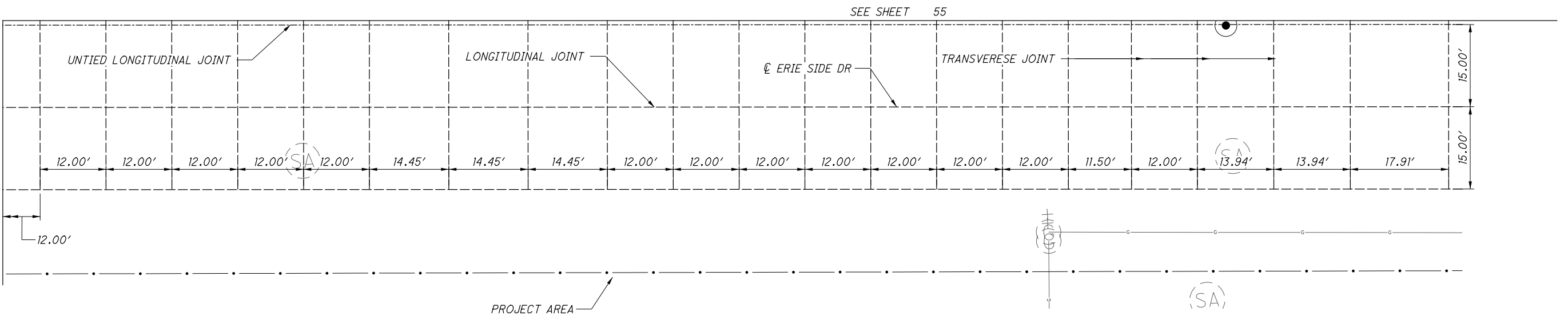
CALCULATED
CW
CHECKED
RJM

0 5 10 20
HORIZONTAL
SCALE IN FEET

PAVEMENT JOINT DETAIL
DOCK 24

DOCK 24 & 26W

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CALCULATED CW CHECKED RJM

0 5 10 20

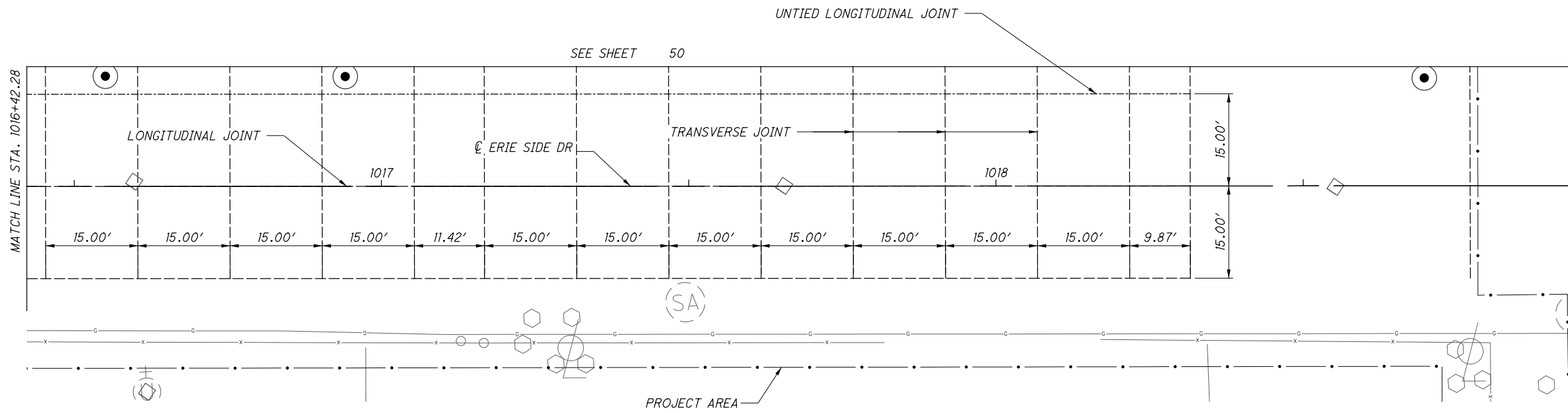
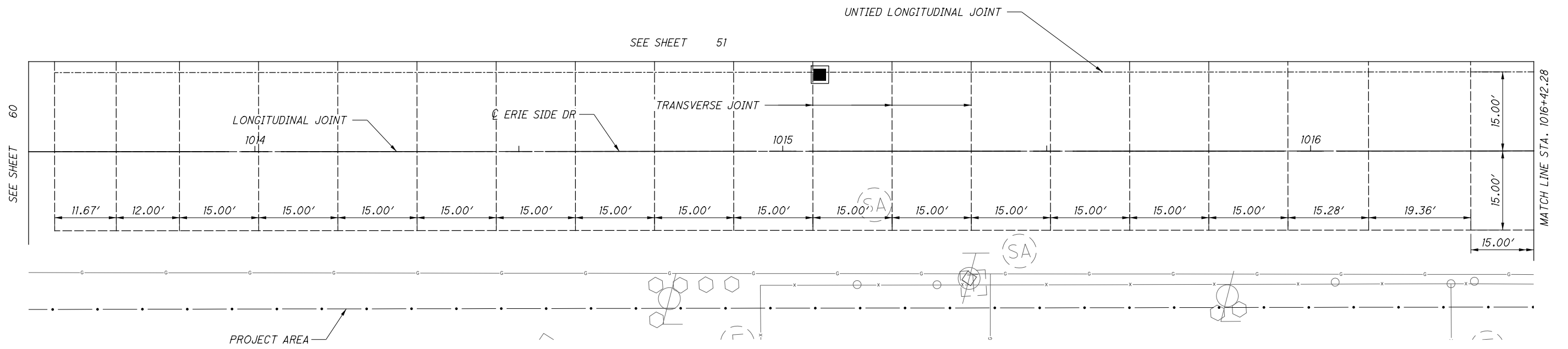
HORIZONTAL SCALE IN FEET

60/106

PAVEMENT JOINT DETAIL DOCK 24

DOCK 24 & 26W

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HORIZONTAL SCALE IN FEET

PAVEMENT JOINT DETAIL DOCK 26W

DOCK 24 AND 26W

UTILITY NOTES

ALL UTILITY ADJUSTMENTS, REPAIRS AND/OR INSTALLATIONS SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF CLEVELAND STANDARD CONSTRUCTION DRAWINGS AND REQUIREMENTS.

CONTRACTOR SHALL FIELD VERIFY SIZE OF ALL WATERLINES, SANITARY SEWERS, AND STORM SEWERS PRIOR TO ORDERING ANY COMPONENTS.

CONTRACTOR SHALL COORDINATE ALL UTILITY WORK WITH THE UTILITY OWNER, INCLUDING OBTAINING NECESSARY PERMITS AND REVIEWS. ALL COST ASSOCIATED WITH COORDINATION AND PERMITS SHALL BE INCLUDED IN THE COST OF THE VARIOUS ITEMS.

COLUMBIA GAS NEEDS TO RELOCATE THE GAS METER NEAR WAREHOUSE 26 TO THE WAREHOUSE. CONTRACTOR SHALL COORDINATE WITH COLUMBIA GAS TO FACILITATE THIS RELOCATION WITHOUT AN IMPACT TO THE SCHEDULE.

ITEM SPECIAL FIRE HYDRANT REMOVED

WHERE SHOWN ON THE PLANS, THE EXISTING FIRE HYDRANT SHALL BE REMOVED. THE CONNECTION TO THE EXISTING MAIN SHALL BE REMOVED AND REPLACED WITH A SECTION OF STRAIGHT PIPE IN ACCORDANCE WITH CITY STANDARDS. IT IS LIKELY THE ADJACENT 12" VALVE WILL NEED TO BE REPLACED TO COMPLY WITH CITY STANDARDS. ANY RESULTING TRENCH OR CAVITIES SHALL BE BACKFILLED WITH ITEM 304 AGGREGATE BASE OR OTHER MATERIAL APPROVED BY THE ENGINEER.

ITEM SPECIAL FIRE HYDRANT REMOVED WILL BE MEASURED PER EACH HYDRANT REMOVED. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, AND INCIDENTALS NEEDED TO COMPLETELY REMOVE THE HYDRANT IN ACCORDANCE WITH CITY STANDARDS AND RESTORE THE DISTURBED AREA INCLUDING REPLACEMENT OF THE 12" VALVE IF NECESSARY.

ITEM SPECIAL FIRE HYDRANT

WHERE SHOWN ON THE PLANS, A NEW HYDRANT, VALVE, VALVE BOX, 6" SERVICE LINE AND TAP INTO THE 12" WATER MAIN SHALL BE INSTALLED IN ACCORDANCE WITH CITY STANDARDS.

ITEM SPECIAL FIRE HYDRANT WILL BE MEASURED PER EACH HYDRANT INSTALLED. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, AND INCIDENTALS NEEDED TO COMPLETELY INSTALL THE HYDRANT IN ACCORDANCE WITH CITY STANDARDS.

ITEM SPECIAL FIRE HYDRANT ADJUSTED TO GRADE

EXISTING FIRE HYDRANTS WITHIN THE NEW PAVEMENT AREA SHALL BE ADJUSTED TO GRADE IN ACCORDANCE WITH CITY STANDARD CONSTRUCTION DRAWINGS EXCEPT THAT EXISTING HYDRANTS MAY BE REUSED. IF EXISTING HYDRANTS ARE REUSED, THEY SHALL BE REPAINTED.

ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NEEDED TO ADJUST HYDRANTS TO THE NEW GRADE SHALL BE INCLUDED IN THE UNIT COST BID PER EACH HYDRANT ADJUSTED TO GRADE.

ITEM 638 REMOVE AND REPLACE WATERLINE

WHERE SHOWN ON THE PLANS, EXISTING WATERLINE SHALL BE REMOVED AND REPLACED WITH NEW WATERLINE. CONTRACTOR SHALL VERIFY SIZE AND TYPE PRIOR TO ORDERING MATERIALS. REPLACEMENT WATERLINE SHALL BE PLACED AS CLOSE TO THE SAME LOCATION AS THE EXISTING AS POSSIBLE WHILE MAINTAINING 18" CLEARANCE FROM ALL STORM AND SANITARY CROSSINGS.

ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, (INCLUDING VALVES AND VALVE BOXES) AND INCIDENTALS NEEDED TO REMOVE AND REPLACE WATERLINE SHALL BE INCLUDED IN THE PER FOOT COST BID FOR ITEM 638 REMOVE AND REPLACE WATERLINE.

ITEM SPECIAL 6" AND 8" GATE VALVE WITH VALVE BOX WILL BE MEASURED PER EACH. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, AND INCIDENTALS NEEDED.

ITEM SPECIAL 6" AND 8" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS

THIS WORK WILL INCLUDE REPLACEMENT OF EXISTING 8" CAST IRON WATERLINE WITH NEW 8" DUCTILE IRON WATER MAIN AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS.

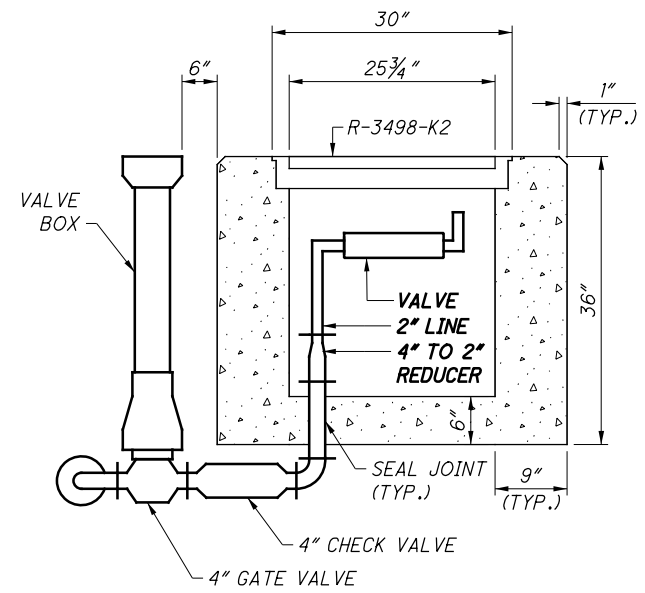
ITEM SPECIAL 8" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS WILL BE MEASURED PER FOOT. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, AND INCIDENTALS NEEDED TO INSTALL WATERLINE AS DIRECTED BY THE ENGINEER.

ITEM SPECIAL 6" FIRE HYDRANT WILL BE MEASURED PER EACH. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, AND INCIDENTALS NEEDED TO REMOVE EXISTING HYDRANTS AND INSTALL NEW HYDRANTS COMPLETE WITH VALVES, VALVE BOXES SERVICE LINE AND BLOCKING AS DIRECTED BY THE ENGINEER.

ITEM 638 WATER WORK, MISC.: RECONSTRUCT WATER STATION

EXISTING ABOVEGROUND WATER STATIONS SHALL BE RECONSTRUCTED WHERE SHOWN IN THE PLANS AND AS SPECIFIED. EXISTING METAL STRUCTURES SHALL BE REMOVED AND DISPOSED OF OFFSITE. THE EXISTING WATER SERVICE LINE SHALL BE REPLACED. THE VALVE AND HOSE CONNECTION SHALL BE WITHIN 12" OF THE SURFACE AND EASILY ACCESSIBLE FOR PORT OPERATIONS WITH THE VALVE PARALLEL WITH THE SURFACE AND THE CONNECTION POINTING UP. VALVES SHALL BE NEW BRASS BALL VALVES. SERVICE VAULT SHALL BE EXTRA HEAVY DUTY WITH A NEENAH R-3498-K2 FRAME AND COVER OR AN EAST JORDAN IRONWORKS 00819581B01 FRAME AND COVER OR APPROVED EQUAL.

A PRECAST VAULT SHALL USE 5,000 PSI CONCRETE, ASTM A-615 GRADE 60 REINFORCING AND BE DESIGNED PER ASTM C858 WITH LOADING PER ASTM C857 INCLUDING AN AASHTO 214,000# WHEEL LOAD. VAULT SHALL BE SEALED SO THAT IT IS WATERTIGHT.



PULL BOX DETAIL

ITEM 638 WATER WORK, MISC.: RECONSTRUCT WATER STATION SHALL BE MEASURED PER EACH. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS, AND INCIDENTALS NEEDED TO REMOVE WATER STATIONS AND INSTALL NEW WATER STATIONS COMPLETE WITH VALVES, VAULTS, SERVICE LINES AND CONNECTIONS AS NEEDED.

ITEM SPECIAL COLD IRONING

THIS WORK WILL CONSIST OF INSTALLING A 6-WAY, 5" CONCRETE ENCASED DUCT BANK WHERE SHOWN ON THE PLANS AND AS SPECIFIED. DUCT BANK SHALL COMPLY WITH CPP STANDARDS AND DIVISION 26 SPECIFICATIONS.

UTILITY VAULT SHALL BE AS SHOWN IN THE MANHOLE DETAILS ON SHEET 43.

MANHOLES SHALL BE 4 FOOT DIAMETER PRECAST CONCRETE PER SCD MH-1.1 WITH THE FOLLOWING MODIFICATIONS. MANHOLES SHALL BE EXTRA HEAVY DUTY, WATERTIGHT, AND USE 5000 PSI CONCRETE. FRAME AND GRATE SHALL BE A NEENAH R-3492-B OR EAST JORDAN IRON WORKS 2812APT COVER OR APPROVED EQUAL.

ITEM 625 LIGHT POLE FOUNDATION REMOVED, AS PER PLAN

WHERE SHOWN ON THE PLANS, COMPLETELY REMOVE LIGHT POLE FOUNDATION. EXISTING WIRES SHALL BE REMOVED, PROTECTED AND RECONNECTED IN A NEW 18"x18" EXTRA HEAVY DUTY PULL BOX SO THE EXISTING CIRCUIT IS MAINTAINED. PULL BOX AND SPLICE CONNECTIONS SHALL BE WATERTIGHT. THE RESULTING CAVITY SHALL BE BACKFILLED WITH LSM PER ITEM 613 OR COMPACTED GRANULAR BACKFILL PER SECTION 503.08.

ITEM 625 - LIGHT POLE FOUNDATION REMOVED, AS PER PLAN SHALL BE MEASURED PER EACH LIGHT POLE FOUNDATION REMOVED. PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT TOOLS, MATERIALS AND INCIDENTALS NEEDED TO COMPLETELY REMOVE THE FOUNDATION, BACKFILL THE CAVITY AND RESTORE THE SURFACE AND ELECTRICAL CIRCUITS INCLUDING PULL BOX AND SPLICE CONNECTIONS.

MAINTAINING SERVICE

IF WATER SERVICE WILL BE INTERRUPTED FOR MORE THAN TWO HOURS, CONTRACTOR WILL PROVIDE PORTABLE SANITARY FACILITIES AND DRINKING WATER OR SCHEDULE THE INTERRUPTION FOR A TIME OUTSIDE PORT WORKING HOURS.

ALL COST ASSOCIATED WITH PROVIDING, MAINTAINING AND REMOVING PORTABLE SANITARY FACILITIES AND DRINKING WATER SHALL BE INCLUDED IN THE VARIOUS ITEMS OF WORK INTERRUPTING THE SERVICE.

REMOVE STAND PIPE

WHERE SHOWN ON THE PLANS FOR REMOVAL, EXISTING STAND PIPE SHALL BE COMPLETELY REMOVED AND DISPOSED OF.

REMOVE STAND PIPE WILL BE MEASURED PER EACH STAND PIPE REMOVED.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS NEEDED TO COMPLETELY REMOVE AND DISPOSE THE STAND PIPE AND BACKFILL OR RESTORE THE RESULTING CAVITY.

ITEM 202 REMOVE SANITARY SERVICE

ABANDONED SANITARY SERVICE TO THE OLD ILA TRAILER LOCATION SHALL BE LOCATED, REMOVED BACK TO THE MAIN, AND THE RESULTING CAVITY BACKFILLED WITH ITEM 304 AGGREGATE BASE OR OTHER MATERIAL APPROVED BY THE ENGINEER. CONNECTION WITH MAIN SHALL BE REMOVED AND REPLACED WITH STRAIGHT PIPE OR IF IN A MANHOLE, PLUGGED.

ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NEEDED TO REMOVE SANITARY SERVICE AS DESCRIBED SHALL BE INCLUDED THE UNIT PRICE PAID FOR ITEM 202 REMOVE SANITARY SERVICE.

ITEM 202 REMOVE WATER SERVICE

ABANDONED WATER SERVICE TO THE OLD ILA TRAILER LOCATION SHALL BE LOCATED, REMOVED BACK TO THE MAIN, AND THE RESULTING CAVITY BACKFILLED WITH ITEM 304 AGGREGATE BASE OR OTHER MATERIAL APPROVED BY THE ENGINEER. CONNECTION WITH MAIN SHALL BE REMOVED AND REPLACED WITH STRAIGHT PIPE IN ACCORDANCE WITH CITY STANDARDS.

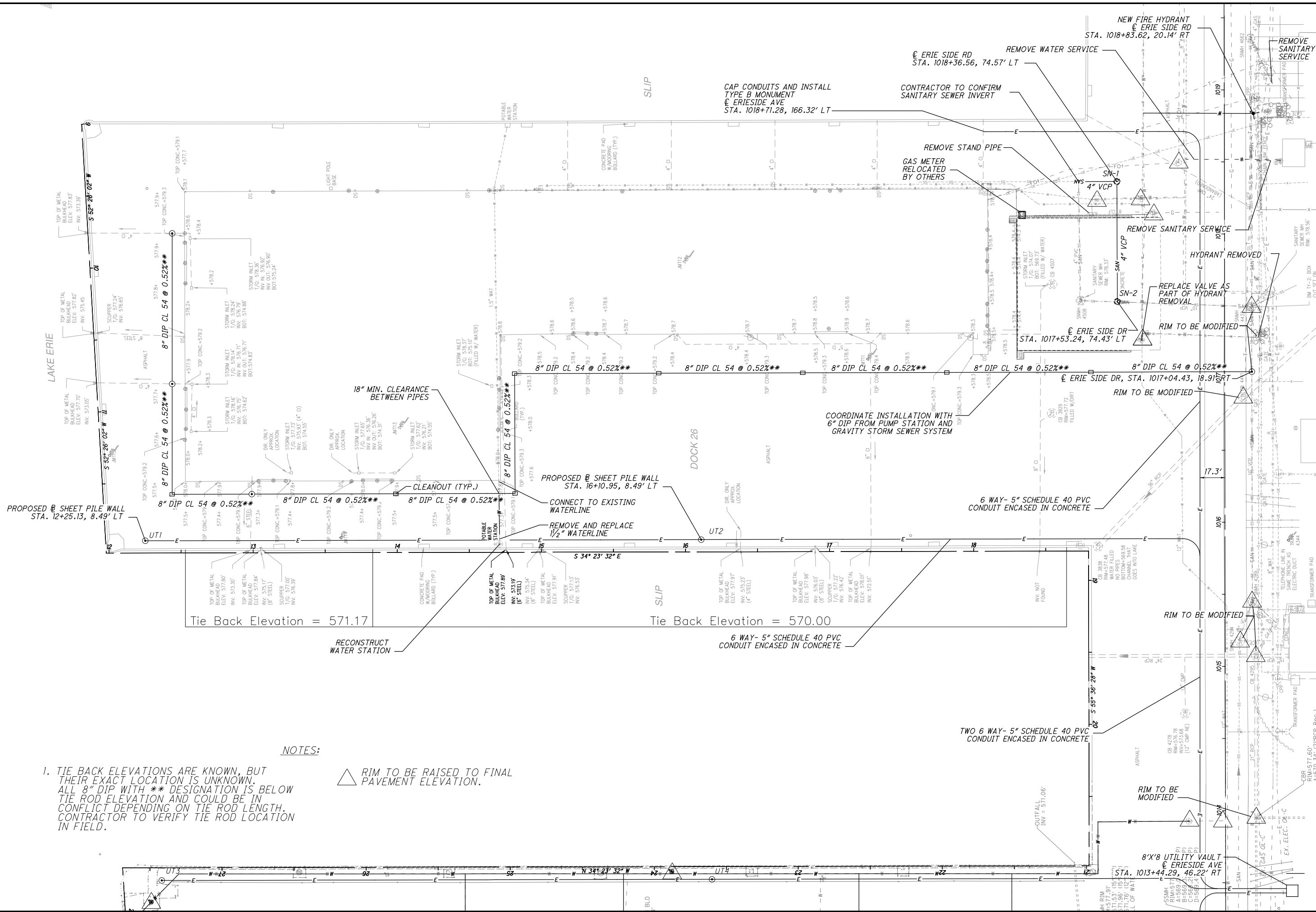
ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NEEDED TO REMOVE WATER SERVICE AS DESCRIBED SHALL BE INCLUDED THE UNIT PRICE PAID FOR ITEM 202 REMOVE WATER SERVICE.

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UTILITY NOTES

DOCK 24 & 26W



1. TIE BACK ELEVATIONS ARE KNOWN, BUT THEIR EXACT LOCATION IS UNKNOWN. ALL 8" DIP WITH ** DESIGNATION IS BELOW TIE ROD ELEVATION AND COULD BE IN CONFLICT DEPENDING ON TIE ROD LENGTH. CONTRACTOR TO VERIFY TIE ROD LOCATION IN FIELD.

NOTES:
 △ RIM TO BE RAISED TO FINAL PAVEMENT ELEVATION.

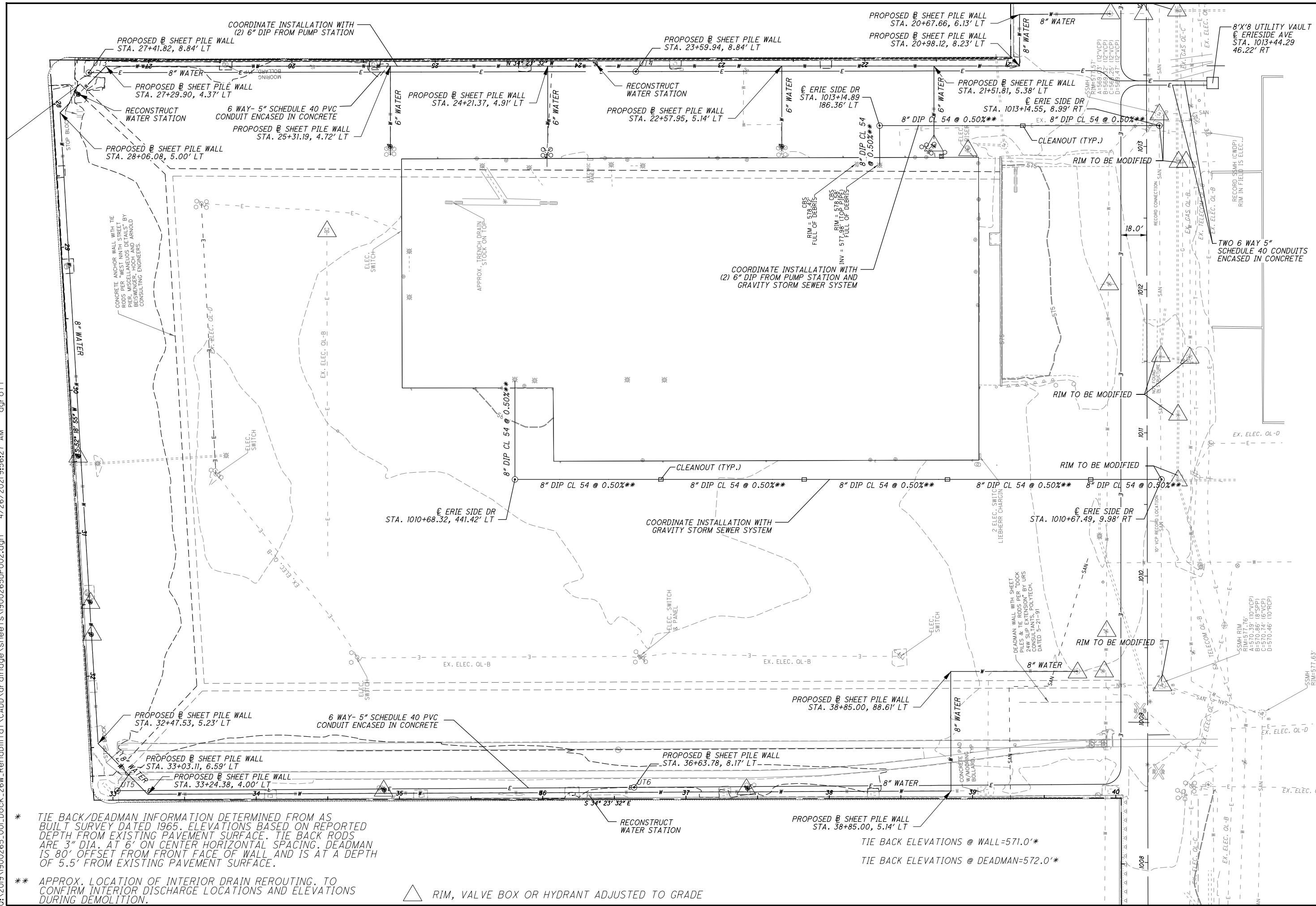
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* TIE BACK/DEADMAN INFORMATION DETERMINED FROM AS BUILT SURVEY DATED 1965. ELEVATIONS BASED ON REPORTED DEPTH FROM EXISTING PAVEMENT SURFACE. TIE BACK RODS ARE 3" DIA. AT 6' ON CENTER HORIZONTAL SPACING. DEADMAN IS 80' OFFSET FROM FRONT FACE OF WALL AND IS AT A DEPTH OF 5.5' FROM EXISTING PAVEMENT SURFACE.

** APPROX. LOCATION OF INTERIOR DRAIN REROUTING. TO CONFIRM INTERIOR DISCHARGE LOCATIONS AND ELEVATIONS DURING DEMOLITION.

△ RIM, VALVE BOX OR HYDRANT ADJUSTED TO GRADE

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DESIGN SPECIFICATION

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, 2017 AND THE ODOT BRIDGE DESIGN MANUAL, 2007, INCLUDING REVISIONS THROUGH JANUARY 2019.

DESIGN DATA

CONCRETE CLASS QC1- COMPRESSIVE STRENGTH 4.0 KSI (CAST-IN-PLACE PILE CAPS, BOLLARD FOUNDATIONS, DEADMAN SLABS)

TIEBACK ANCHOR BAR TENDONS AND DEADMAN BAR TENDONS - ASTM A722, TYPE II, GRADE 150, MINIMUM YIELD STRENGTH 150 KSI.

EPOXY COATED REINFORCING STEEL - ASTM A615, A616, OR A617 GRADE 60, MINIMUM YIELD STRENGTH 60 KSI.

HSS 6x6x5/8 AND ASS 9x7x5/8 - ASTM GRADE 50, YIELD STRENGTH 50 KSI (WALERS).

MC 12-50 BOLTS - A490, TYPE 1, WITH COMPATIBLE NUTS PER ASTM A563 GRADE DH OR A194 2H

CAST-IN-PLACE REINFORCED CONCRETE PILES SHALL BE TYPE 2 WITH $F_y = 35$ KSI AND A WALL THICKNESS OF 0.375" MIN. PZ40 - ASTM A572, GRADE 60, YIELD STRENGTH 60 KSI, HOT ROLLED (SHEET PILE); OR APPROVED OPTION WITH A MOMENT OF INERTIA GREATER THAN OR EQUAL TO 490.8 IN 4/FT, A SECTION MODULUS GREATER THAN OR EQUAL TO 60.7 IN 3/FT, AND AN AREA GREATER THAN OR EQUAL TO 0.75 IN 2/FT.

WELDED WIRE FABRIC - AASHTO M55/ASTM A185 OR A497, GRADE 75.

ALL WELDING WILL BE DONE BY A.W.S. CERTIFIED WELDERS USING ELECTRODES CONFORMING TO A.W.S. SPECIFICATION A5.1 OR A5.5 CLASS E70XX SERIES.

FENDERS - WING TYPE FENDERS SHALL BE GOODYEAR 4106-5491, PACIFIC MARINE & INDUSTRIAL WO-16-10-4 OR APPROVED EQUAL. CYLINDRICAL FENDERS SHALL BE GOODYEAR 4106-5749, PACIFIC MARINE & INDUSTRIAL OO-10-5 OR APPROVED EQUAL.

SHACKLES SHALL BE BOLT TYPE ANCHOR SHACKLES MEETING FEDERAL SPEC RR-C-271D, TYPE IVA, GRADE A, CLASS 3.

BOLLARDS SHALL BE HIGH QUALITY DUCTILE IRON AS MANUFACTURED BY TRELLEBORG, ESC STEEL OR APPROVED EQUAL. BOLLARDS SHALL BE CONCRETE FILLED. BOLLARDS SHALL BE COATED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. COLOR SHALL BE APPROVED BY THE AUTHORITY.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

THIS WORK CONSISTS OF EXCAVATION OF THE SOIL BEHIND THE SHEET PILE WALLS TO INSPECT THE EXISTING TIE RODS AND INSTALL THE 1 1/4" DIAMETER TIE RODS AND WALER. THE EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH CMS 503 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATION AND INSTALLATION OF THE TIE RODS SHALL PROCEED AT A PACE THAT PREVENTS MOVEMENT OF THE WALL.

PAYMENT FOR LABOR, EQUIPMENT, AND MATERIALS FOR THE WORK OUTLINED ABOVE SHALL BE INCLUDED IN THE COST OF ITEM 513 STRUCTURAL STEEL, MISC.: WALER & TIEBACK SYSTEM.

ITEM 613 - LOW STRENGTH MORTAR, AS PER PLAN

THIS WORK CONSISTS OF PLACING LOW STRENGTH MORTAR BETWEEN THE EXISTING SHEET PILE AND THE NEW SHEET PILE IN ACCORDANCE WITH CMS 613 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

MORTAR SHALL INCLUDE ADDITIVES AS NEEDED FOR PLACEMENT UNDERWATER AND SHALL BE PLACED USING A TREMIE METHOD UP TO THE LEVEL OF THE EXISTING SHEETING.

PAYMENT FOR LABOR, EQUIPMENT, AND MATERIALS FOR THE WORK OUTLINED ABOVE AND SHOWN ON THE PLANS SHALL BE INCLUDED IN THE COST OF ITEM 504 STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN.

ITEM 504 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND DRIVING STEEL SHEET PILING TO BE LEFT IN PLACE IN ACCORDANCE WITH CMS 504 WITH THE MINIMUM SECTION MODULUS BEING 60.7 CUBIC INCHES PER FOOT OF WALL.

THE SHEET PILING LAYOUT SHOWN IN THESE PLANS WAS BASED ON THE PROPERTIES FOR PZ 40 STEEL SHEET PILING BY SKYLINE STEEL LLC. IF A DIFFERENT SHEET PILING IS TO BE PROVIDED, THEN THE CONTRACTOR SHALL SUBMIT DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER FOR APPROVAL SHOWING THE REVISED CAST-IN-PLACE FACING JOINT SPACING AND BEND POINT STATIONING BASED ON THE WIDTH OF THE PILES TO BE USED. ALL JOINTS SHALL ALIGN WITH THE SHEET PILING SOCKETS.

THE SHEET PILE SHALL BE INSTALLED TO THE TIP ELEVATIONS SHOWN IN THE PLANS. BASED ON THE SOIL BORINGS, IT MAY BE DIFFICULT TO DRIVE THE SHEET PILE THROUGH DENSE SOIL LAYERS THAT OCCUR ON A SPORADIC BASIS BOTH IN TERMS OF DEPTH AS WELL AS STATION. IF STEEL POINTS ARE THOUGHT TO BE NEEDED, THEY SHALL BE INCLUDED IN THE BID PRICE FOR STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN.

PILES SHALL NOT VARY FROM THE PLAN LOCATION BY MORE THAN 1 INCH. PILES SHALL NOT VARY MORE THAN 1% FROM VERTICAL.

CONTRACTOR SHALL CLEAN/SWEEP DRIVE LINE IN ADVANCE OF PILE DRIVING OPERATION.

ANY TEMPORARY GRADING, STAGING/WORK PLATFORMS, SHORING, BACKFILL OF EXCAVATIONS, AGGREGATE, DRAINAGE, ETC., NEEDED FOR ACCESS TO THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN.

PAYMENT FOR LABOR, EQUIPMENT, AND MATERIALS TO INSTALL THE SHEET PILING AND THE WALERS AND ANY MOBILIZATION OR DEMOBILIZATION NEEDED SHALL BE INCLUDED IN THE PAYMENT PER SQUARE FOOT CONTRACT PRICE FOR ITEM 504 - STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN.

SHEET PILE LAYOUT PLAN FOR SHEET PILING PROPOSED OTHER THAN A PZ 40. CONTRACTOR SHALL INCLUDE TIE ROD PLACEMENT AS WELL TO SHOW AVOIDANCE OF EXISTING TIE RODS.

ITEM 511 - CLASS QC2 CONCRETE, MISC: CAST-IN-PLACE CAP

THIS WORK CONSISTS REMOVING EXISTING STEEL CAPS AND FURNISHING AND INSTALLING CONCRETE CAPS ON TOP OF THE PROPOSED OR EXISTING SHEET PILE WALLS. ALSO INCLUDED IS THE REMOVAL OF THE THREE RESTRICTED ACCESS SIGNS ATTACHED ON THE NORTH END OF BOTH DOCKS AND RE-ATTACHMENT TO THE NEW CAP. THE CAPS SHALL BE CONSTRUCTED TO THE DIMENSIONS AND IN THE LOCATIONS SHOWN IN THE PLANS. REINFORCING SHALL BE AS SHOWN ON THE PLANS. ALL LABOR, EQUIPMENT, TOOLS MATERIALS, INCLUDING REINFORCING STEEL, AND INCIDENTALS NECESSARY TO FURNISH AND PLACE THE CAST-IN-PLACE CAPS SHALL BE INCLUDED IN THE PAYMENT PER LINEAR FOOT ITEM 511 - CLASS QC2 CONCRETE, MISC: CAST-IN-PLACE CAP.

ITEM 511 - CLASS QC2 CONCRETE, MISC: GRADE BEAM

THIS WORK CONSISTS OF FURNISHING AND INSTALLING A REINFORCED GRADE BEAM AS DETAILED IN THE PLANS TO STRENGTHEN THE EXISTING WALER AS DIRECTED BY THE ENGINEER.

ITEM 511 - CLASS QC2 CONCRETE, MISC.: GRADE BEAM SHALL BE MEASURED BY THE FOOT OF GRADE BEAM PLACED. ALL LABOR, EQUIPMENT, TOOLS MATERIALS, INCLUDING REINFORCING STEEL, AND INCIDENTALS NECESSARY TO FURNISH AND PLACE THE GRADE BEAM SHALL BE INCLUDED IN THE PAYMENT PER LINEAR FOOT ITEM 511 - CLASS QC2 CONCRETE, MISC: GRADE BEAM.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 511 - CLASS QC2 CONCRETE, MISC.: GRADE BEAM 1000 FT

ITEM 513 - WALER & TIEBACK SYSTEM

THIS WORK CONSISTS OF INSPECTING THE EXISTING SYSTEM AND FURNISHING AND INSTALLING A WALER AND TIEBACK SYSTEM AS SHOWN IN THE PLANS, INCLUDING WALER, TIE-RODS, SHIMMING, AND HARDWARE NECESSARY TO PROPERLY SECURE AND SUPPORT THE STEEL SHEET PILES.

CONTRACTOR SHALL CAREFULLY EXPOSE THE EXISTING WALER AND TIE RODS AND DOCUMENT THE LOCATION AND CONDITION OF EACH.

ITEM 513 STRUCTURAL STEEL, MISC.: WALER & TIEBACK SYSTEM WILL BE MEASURED BY THE LINEAR FOOT ALONG THE FACE OF WALL.

PAYMENT FOR LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WALER AND TIEBACK SYSTEM SHALL BE INCLUDED IN THE LINEAR FOOT COST FOR ITEM 513 STRUCTURAL STEEL, MISC.: WALER & TIEBACK SYSTEM.

ITEM 690 - SPECIAL: MOORING BOLLARD

THIS WORK CONSISTS OF FURNISHING AND INSTALLING MOORING BOLLARDS AS SHOWN IN THE PLANS AND PER MANUFACTURER'S REQUIREMENTS.

FOUNDATIONS FOR MOORING BOLLARDS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 511 OF THE CMS. SURFACE FINISH SHALL BE A SIDEWALK FINISH. EXPOSED WALLS SHALL BE A RUBBED FINISH. AFTER TORQUEING NUTS, NUT POCKETS SHALL BE FILLED WITH POURABLE RUBBER FLUSH WITH SURFACE OF BOLLARD.

PAYMENT FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE MOORING BOLLARDS SHALL BE INCLUDED IN THE COST PER EACH FOR ITEM 690 SPECIAL: MOORING BOLLARD FOR THE SIZE SPECIFIED.

ITEM 513 - STRUCTURAL STEEL, MISC.: SAFETY LADDER

THIS WORK CONSISTS OF FURNISHING AND INSTALLING SAFETY LADDERS AS SHOWN IN THE PLANS

PAYMENT FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE SAFETY LADDERS SHALL BE INCLUDED IN THE COST PER EACH FOR ITEM 513 STRUCTURAL STEEL, MISC.: SAFETY LADDER.

ITEM 690 - SPECIAL: RECONSTRUCT BOLLARD

THIS WORK CONSISTS OF FURNISHING AND INSTALLING MOORING BOLLARDS AS SHOWN IN THE PLANS AND PER MANUFACTURER'S REQUIREMENTS. THIS INCLUDES DEMOLITION OF THE EXISTING FOUNDATION AND CONSTRUCTION OF THE NEW FOUNDATION AS DETAILED.

FOUNDATIONS FOR BOLLARDS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 511 OF THE CMS. SURFACE FINISH SHALL BE A SIDEWALK FINISH. EXPOSED WALLS SHALL BE A RUBBED FINISH. AFTER TORQUEING NUTS, NUT POCKETS SHALL BE FILLED WITH POURABLE RUBBER FLUSH WITH SURFACE OF BOLLARD.

PAYMENT FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE MOORING BOLLARDS SHALL BE INCLUDED IN THE COST PER EACH FOR ITEM 690 SPECIAL: RECONSTRUCT BOLLARD FOR THE SIZE SPECIFIED.

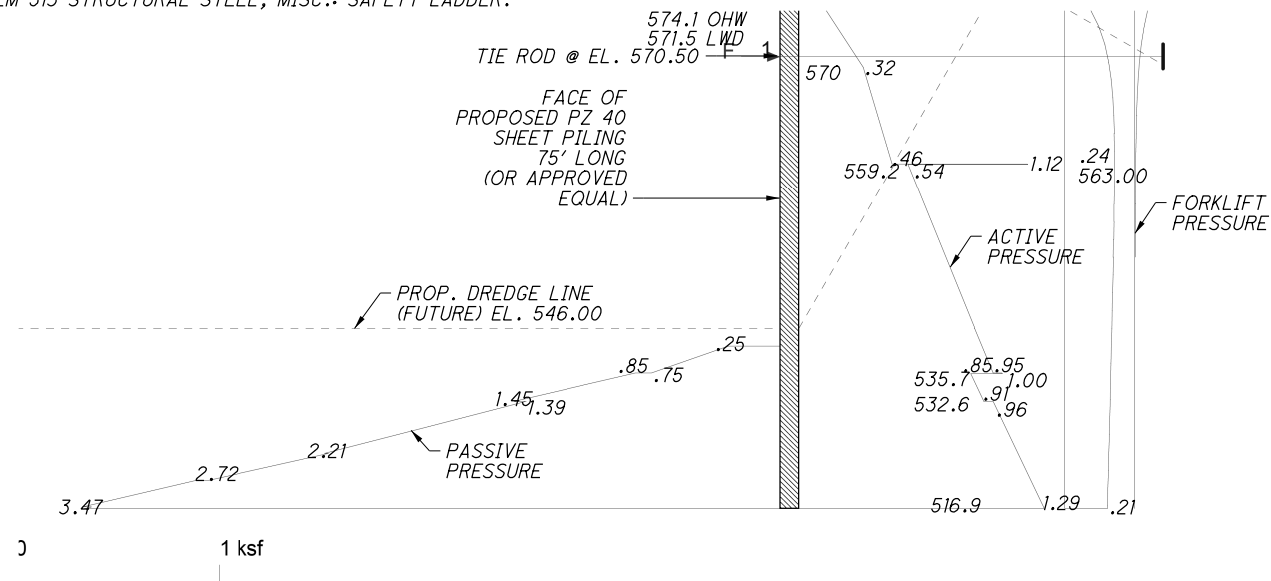
LAKE ERIE WATER SURFACE ELEVATIONS

LAKE ERIE WSE FLUCTUATES ON A DAILY BASIS, AND HAS SEASONAL TRENDS THE CONTRACTOR SHOULD FAMILIARIZE THEMSELVES WITH. CONTRACTOR SHALL REFER TO "ARMY CORPS OF ENGINEERS WEEKLY GREAT LAKES WATER LEVEL UPDATE" AND THE CLEVELAND HARBOR TIDE GAUGE (<https://tidesandcurrents.noaa.gov/stationhome.html?id=9063063>) FOR MOST CURRENT LAKE ERIE WSE ON ANY GIVEN WEEK. GROUND WATER ELEVATIONS CLOSELY FOLLOW LAKE ELEVATIONS. CONTRACTOR SHOULD EXPECT AND PLAN FOR HIGH WATER CONDITIONS THAT HAVE EXCEEDED MEAN HIGH LAKE ERIE WATER ELEVATIONS.

LAKE ERIE WATER SURFACE ELEVATIONS ARE GIVEN IN INTERNATIONAL GREAT LAKES DATUM (IGLD85) WHICH DIFFERS FROM THE PROJECT DATUM BY 0.26'.

	IGLD85	NAVD88
MEAN LOW LAKE ERIE WATER ELEVATION =	569.20	569.46
MEAN HIGH LAKE ERIE WATER ELEVATION =	573.40	573.66

PORT AUTHORITY WILL NOT SUPPORT ANY CLAIMS THAT RESULT FROM THE IMPACTS FROM GROUND WATER AND LAKE ERIE WATER SURFACE ELEVATIONS



BULKHEAD DESIGN PRESSURE DIAGRAM

BULKHEAD DESIGN NOTES:

A SURCHARGE OF 750 PSF WAS USED FOR LOADING FROM A MOBILE HARBOUR CRANE OPERATING MORE THAN 10 FEET FROM THE BULKHEAD.

A SURCHARGE OF 250 PSF WAS USED FOR FORKLIFTS OPERATING WITHIN 10 FEET OF THE BULKHEAD.

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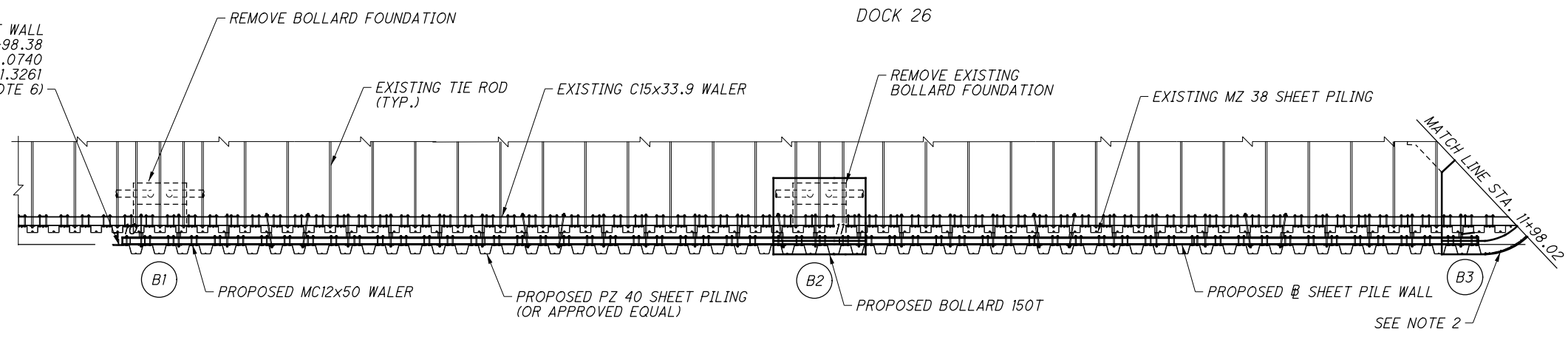
DESIGNED	DATE	REVIEWED	DATE
NL	1/22/21	RJM	1/22/21
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PPA			

SHEET PILE WALL NOTES
DOCK 26 WEST SHEET PILE WALL

DOCK 24 & 26W
PID No. 113698



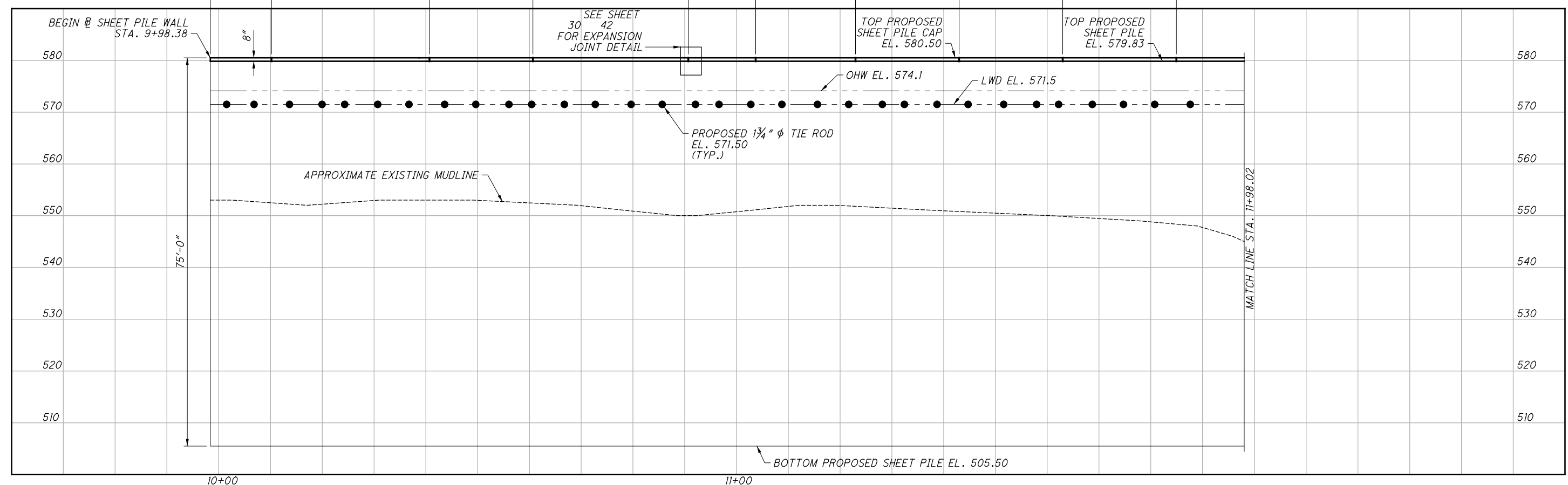
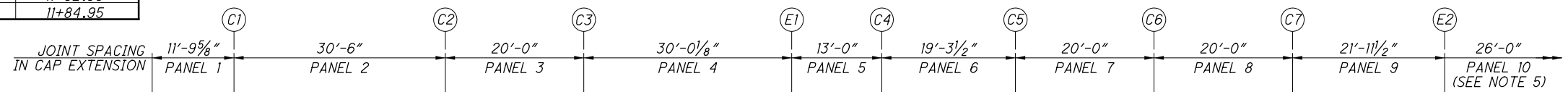
BEGIN @ SHEET PILE WALL
 STA. 9+98.38
 NORTH 71473.0740
 EAST 86471.3261
 (SEE NOTE 6)



- NOTES:
1. CONTRACTOR TO EXPOSE EXISTING TIE RODS AND PROVIDE AS-BUILT LOCATIONS TO VERIFY NO CONFLICTS WITH NEW TIE ROD LOCATIONS. ENGINEER TO APPROVE NEW TIE ROD LOCATION PLAN.
 2. SEE SHEET 20 / 42 FOR DETAILS AT NORTHWEST CORNER.
 3. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
 4. BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
 5. PANEL 10 MEASURED ALONG LAKE ERIE SIDE.
 6. SEE SHEET 20 / 42 FOR BEGIN WALL DETAIL.
 7. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.

C = CONTRACTION JOINT
 E = EXPANSION JOINT

JOINT LOCATION TABLE	
JOINT	STATION
C1	10+10.18
C2	10+40.68
C3	10+60.68
E1	10+90.69
C4	11+03.69
C5	11+22.98
C6	11+42.98
C7	11+62.98
E2	11+84.95



GENERAL PLAN AND PROFILE
 DOCK 26 WEST SHEET PILE WALL
 BEGIN WALL TO STA. 11+98.02

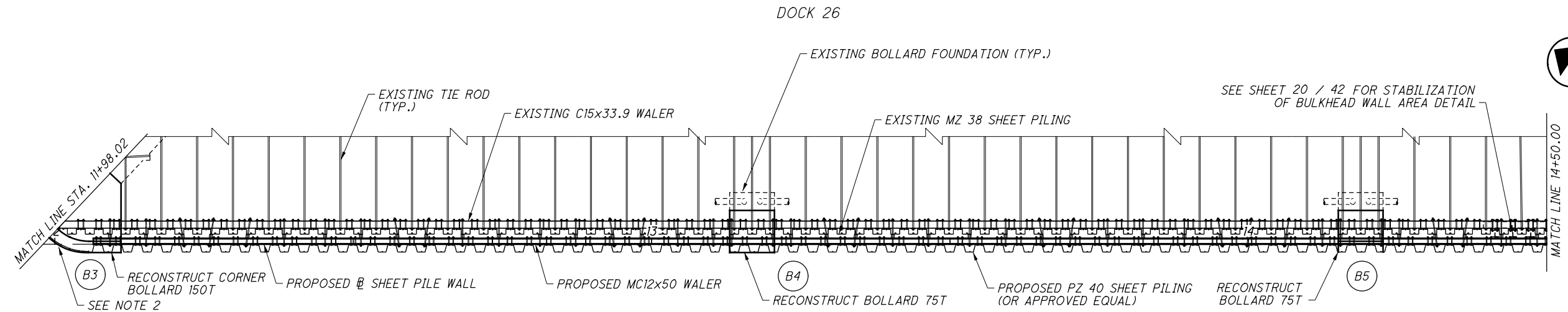
DOCK 24 & 26W
 PID No. 113698

2 / 42

66
 106

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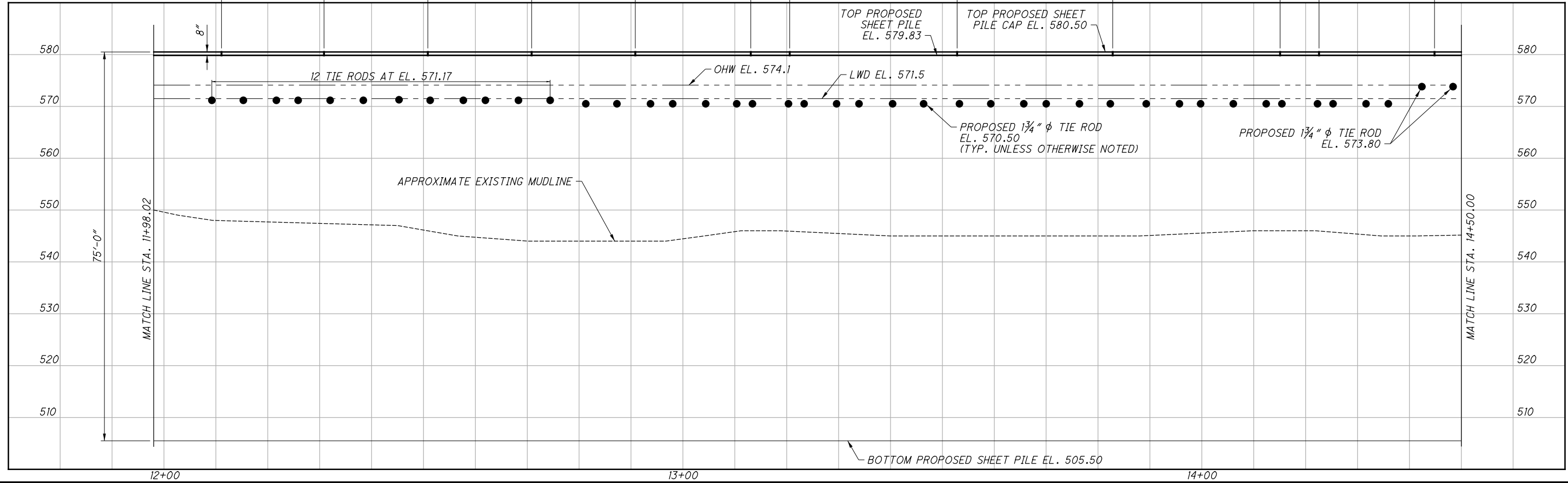
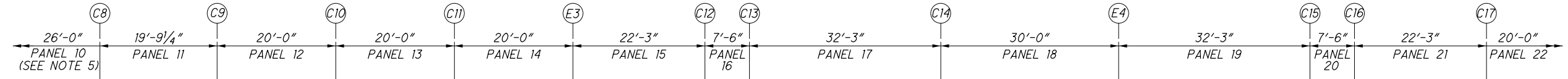
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C = CONTRACTION JOINT
 E = EXPANSION JOINT

JOINT	STATION
C8	12+11.07
C9	12+30.84
C10	12+50.84
C11	12+70.84
E3	12+90.84
C12	13+13.09
C13	13+20.59
C14	13+52.84
E4	13+82.84
C15	14+15.09
C16	14+22.59
C17	14+44.84

- NOTES:**
- CONTRACTOR TO EXPOSE EXISTING TIE RODS AND PROVIDE AS-BUILT LOCATIONS TO VERIFY NO CONFLICTS WITH NEW TIE ROD LOCATIONS. ENGINEER TO APPROVE NEW TIE ROD LOCATION PLAN.
 - SEE SHEET 20 / 42 FOR DETAILS AT NORTHWEST CORNER.
 - PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
 - BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
 - PANEL 10 MEASURED ALONG LAKE ERIE SIDE.
 - FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32/42 THROUGH 36/42.



DESIGN AGENCY

 8811 ST. CHARLES CLEVELAND, OH 44113

DATE
 1/22/21

REVIEWED
 RJM

STRUCTURE FILE NUMBER

DRAWN
 JAG

REVISOR

DESIGNED
 MS

CHECKED
 PPA

GENERAL PLAN AND PROFILE

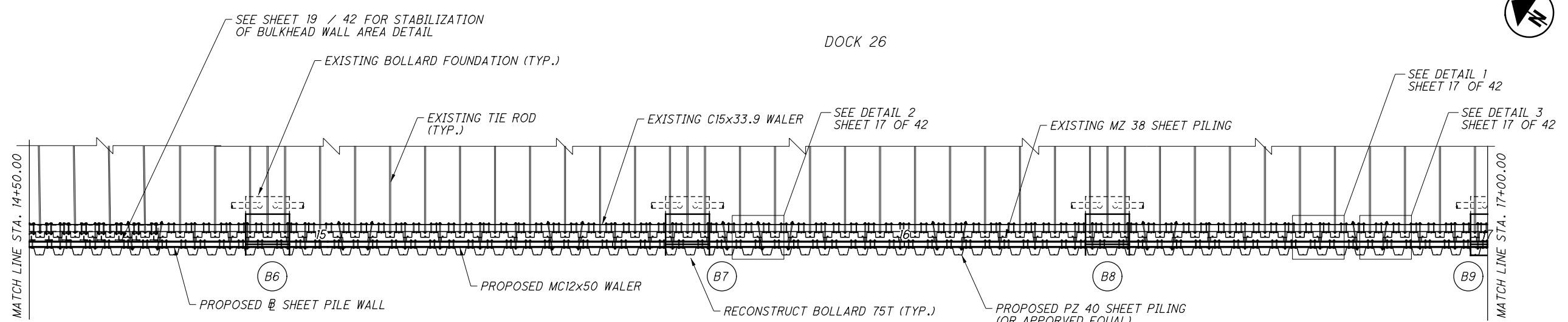
DOCK 26 WEST SHEET PILE WALL
 STA. 11+98.02 TO STA. 14+50.00

DOCK 24 & 26W

PID No. 113698

3 / 42

67
106

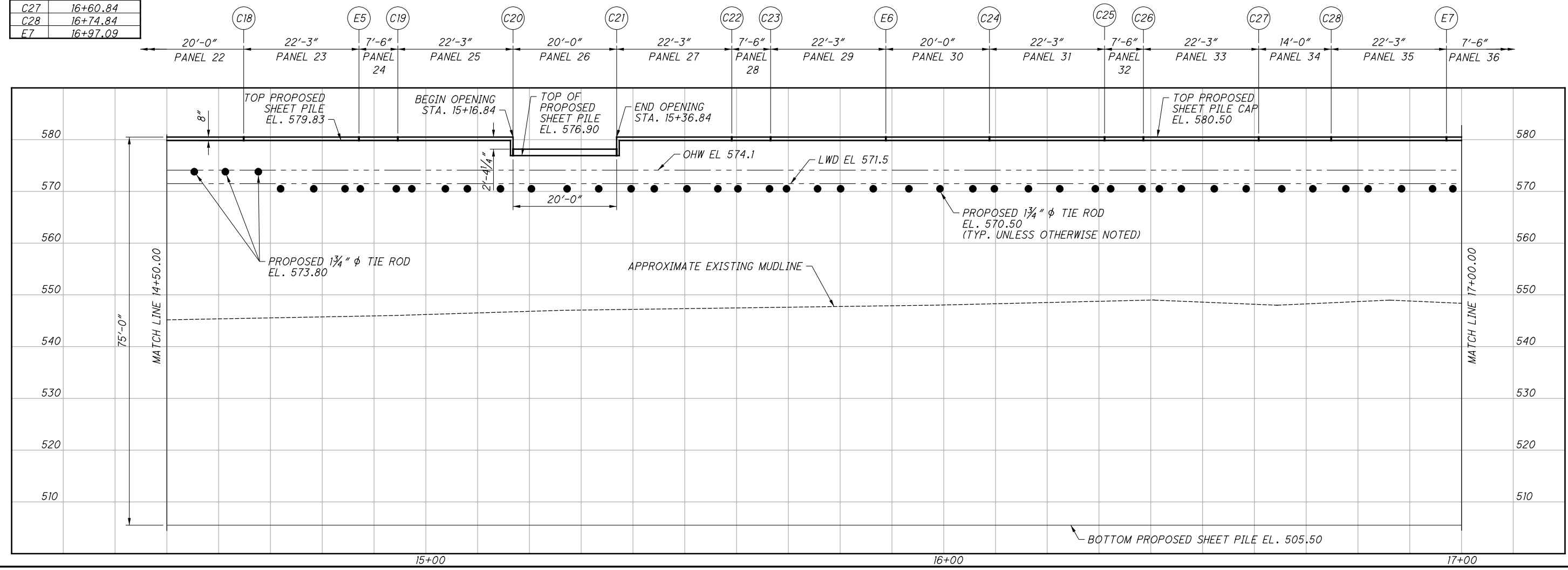


C = CONTRACTION JOINT
 E = EXPANSION JOINT

JOINT LOCATION TABLE	
JOINT	STATION
C18	14+64.84
E5	14+87.09
C19	14+94.59
C20	15+16.84
C21	15+36.84
C22	15+59.09
C23	15+66.59
E6	15+88.84
C24	16+08.84
C25	16+31.09
C26	16+38.59
C27	16+60.84
C28	16+74.84
E7	16+97.09

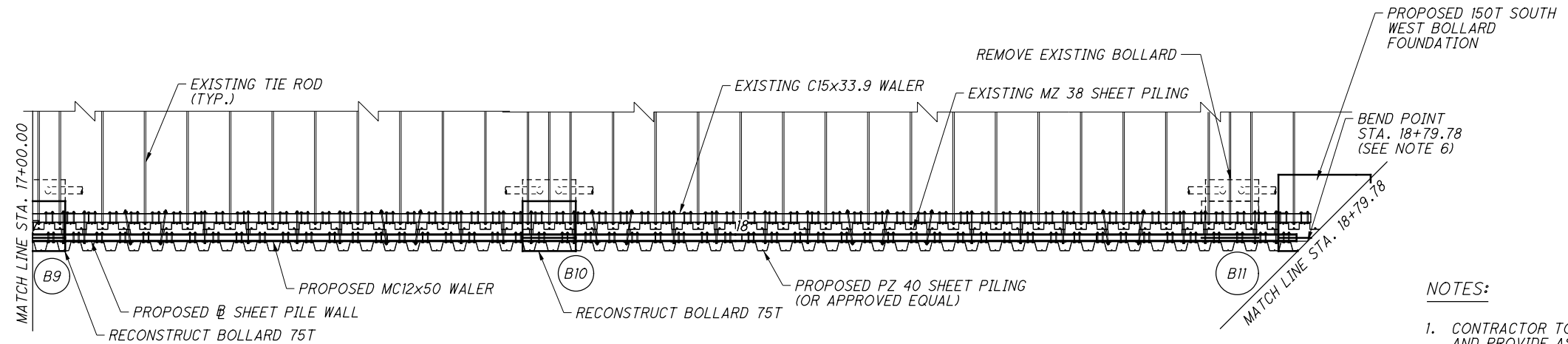
NOTES:

1. CONTRACTOR TO EXPOSE EXISTING TIE RODS AND PROVIDE AS-BUILT LOCATIONS TO VERIFY NO CONFLICTS WITH NEW TIE ROD LOCATIONS. ENGINEER TO APPROVE NEW TIE ROD LOCATION PLAN.
2. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
3. BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
4. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.



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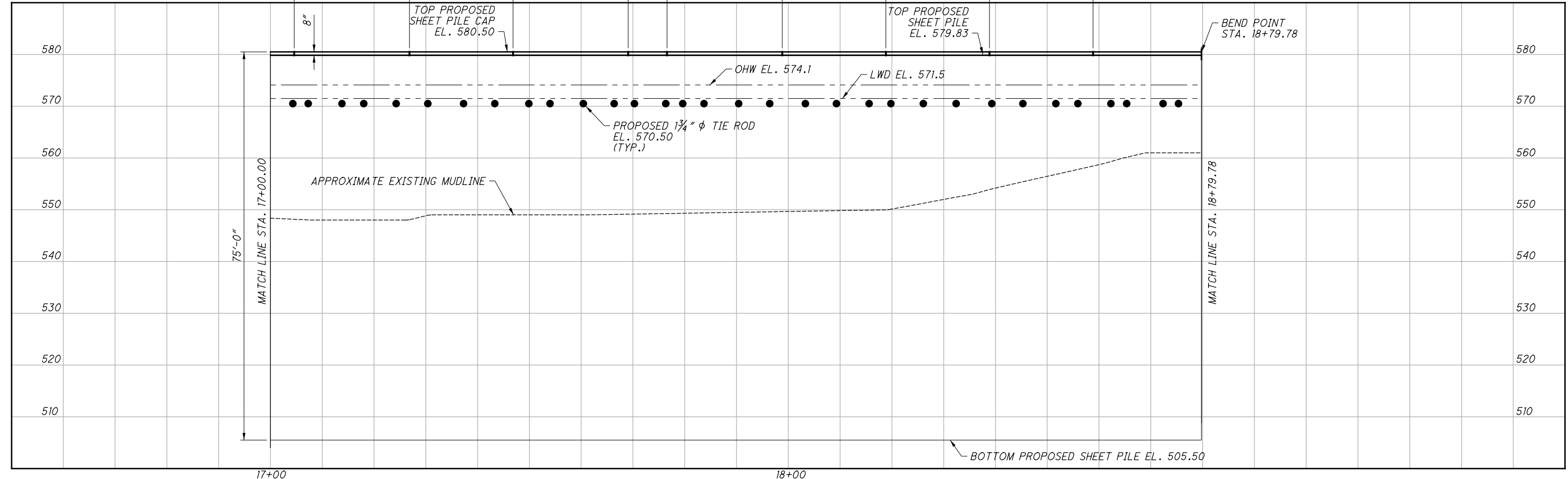
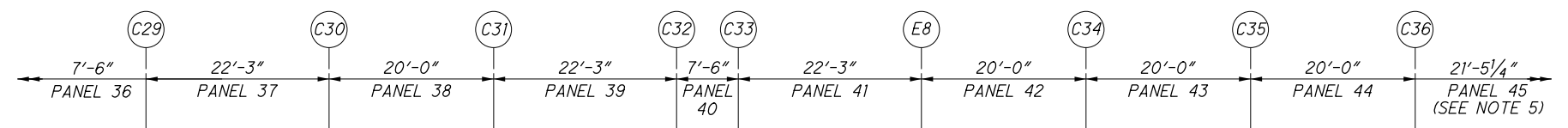
DOCK 26



- NOTES:**
1. CONTRACTOR TO EXPOSE EXISTING TIE RODS AND PROVIDE AS-BUILT LOCATIONS TO VERIFY NO CONFLICTS WITH NEW TIE ROD LOCATIONS. ENGINEER TO APPROVE NEW TIE ROD LOCATION PLAN.
 2. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
 3. BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
 4. PROPOSED BOLLARD NOT SHOWN FOR CLARITY. SEE SHEET \$wm0023 FOR DETAILS.
 5. PANEL 45 MEASURED ALONG DOCK 26 SIDE.
 6. SEE SHEET \$wm0023 FOR CORNER DETAIL.
 7. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.

C = CONTRACTION JOINT
E = EXPANSION JOINT

JOINT	STATION
C29	17+04.59
C30	17+26.84
C31	17+46.84
C32	17+69.09
C33	17+76.59
E8	17+98.84
C34	18+18.84
C35	18+38.84
C36	18+58.84



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DESIGN AGENCY

 8815 ST. CHARLES CLEVELAND, OH 44113

REVIEWED DATE 1/22/21
 RJM STRUCTURE FILE NUMBER

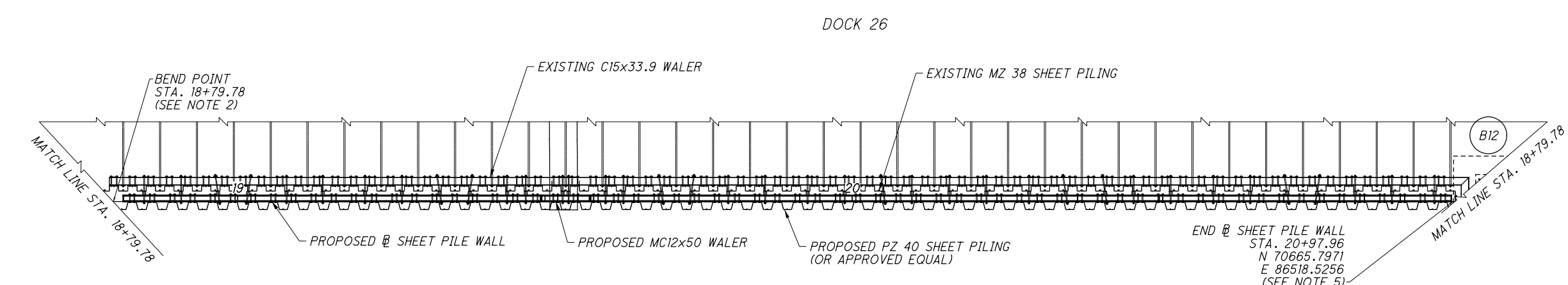
DRAWN JAG
 CHECKED PPA

GENERAL PLAN AND PROFILE
 DOCK 26 WEST SHEET PILE WALL
 STA. 18+79.78 TO STA. 21+00.00

DOCK 24 & 26W
 PID No. 113698

6 / 42

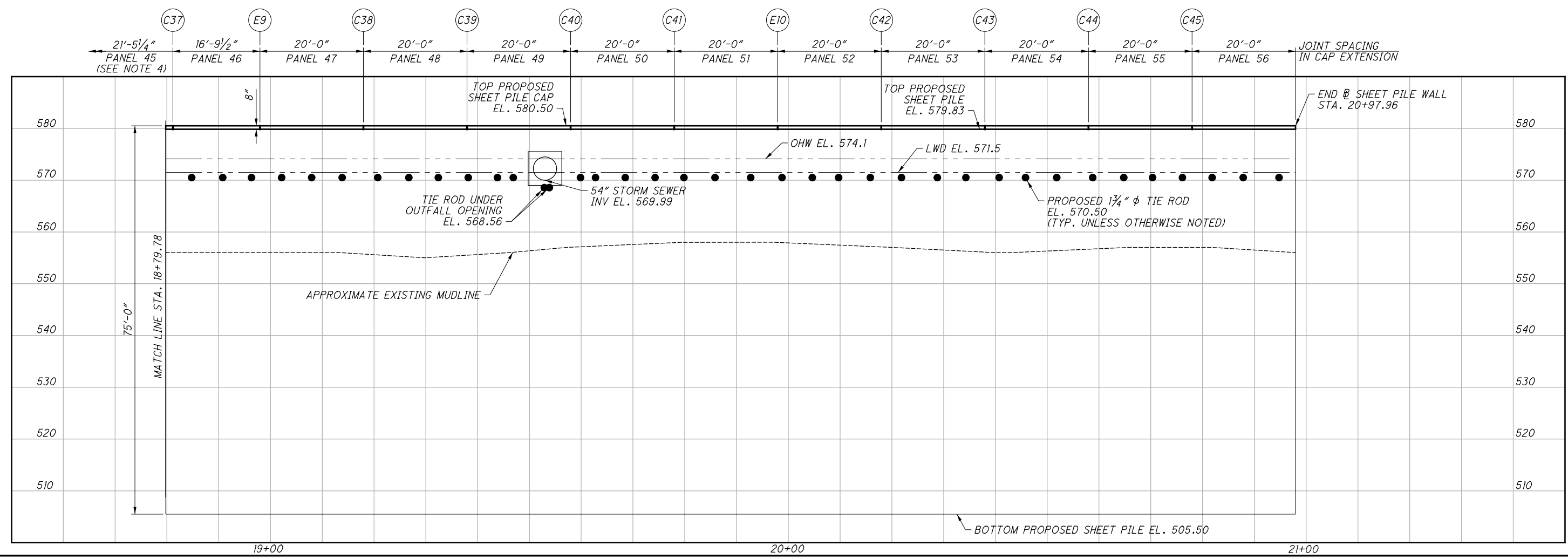
70
 106



C = CONTRACTION JOINT
 E = EXPANSION JOINT

JOINT	STATION
C37	18+81.17
E9	18+97.96
C38	19+17.96
C39	19+37.96
C40	19+57.96
C41	19+77.96
E10	19+97.96
C42	20+17.96
C43	20+37.96
C44	20+57.96
C45	20+77.96

- NOTES:
- CONTRACTOR TO EXPOSE EXISTING TIE RODS AND PROVIDE AS-BUILT LOCATIONS TO VERIFY NO CONFLICTS WITH NEW TIE ROD LOCATIONS. ENGINEER TO APPROVE NEW TIE ROD LOCATION PLAN.
 - SEE SHEET 5 / 42 FOR CORNER DETAIL.
 - PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
 - PANEL 45 MEASURED ALONG DOCK 26 SIDE.
 - SEE SHEET 5 / 42 FOR END WALL DETAIL.
 - FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.



19+00

20+00

21+00

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DESIGN AGENCY

 8871 ST CHARLES CLEVELAND, OH 44113

REVIEWED
 RJM
 DATE
 1/22/21
 STRUCTURE FILE NUMBER

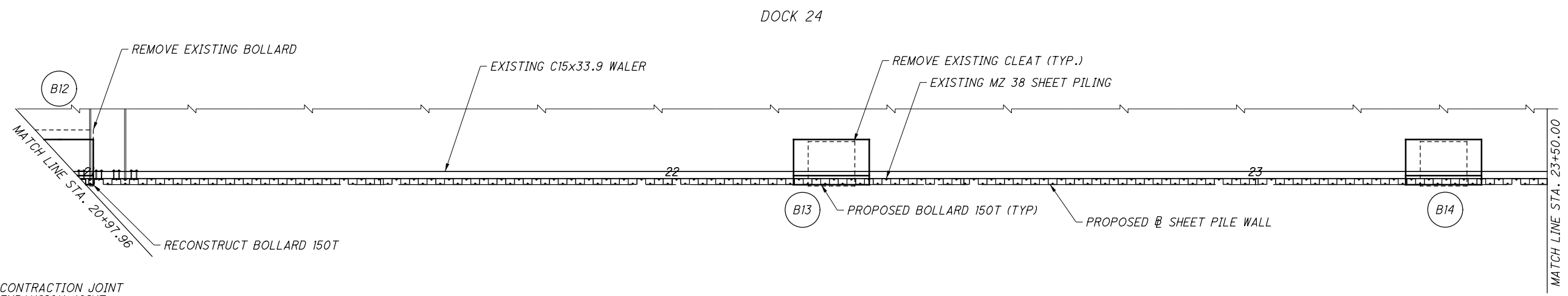
DRAWN
 JAG
 CHECKED
 PPA
 DESIGNED
 MS

GENERAL PLAN AND PROFILE
 DOCK 24 SHEET PILE WALL
 STA. 20+97.96 TO STA. 23+50.00

DOCK 24 & 26W
 PID No. 113698

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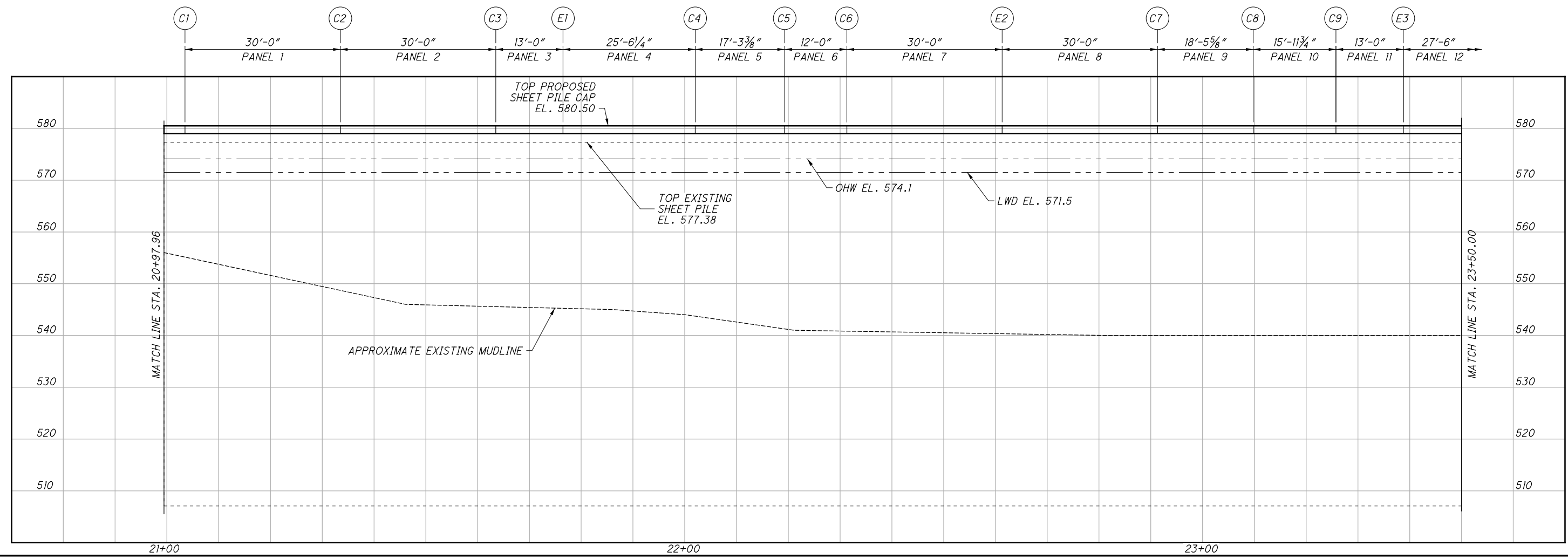
71
 106



C = CONTRACTION JOINT
 E = EXPANSION JOINT

JOINT	STATION
C1	21+03.50
C2	21+33.50
C3	21+63.50
E1	21+76.50
C4	22+02.02
C5	22+19.30
C6	22+31.30
E2	22+61.30
C7	22+91.30
C8	23+09.77
C9	23+25.76
E3	23+38.76

- NOTES:**
1. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
 2. CLEATS AND BOLLARDS NOT SHOWN FOR CLARITY.

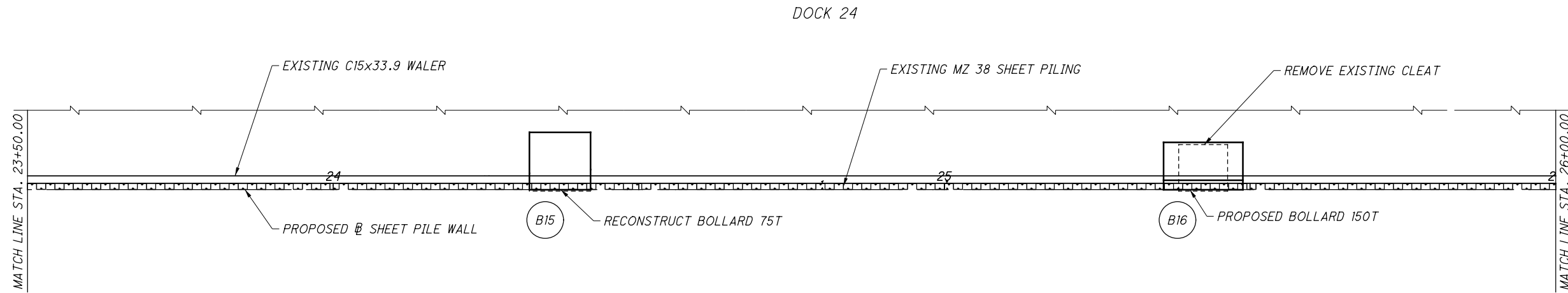


21+00

22+00

23+00

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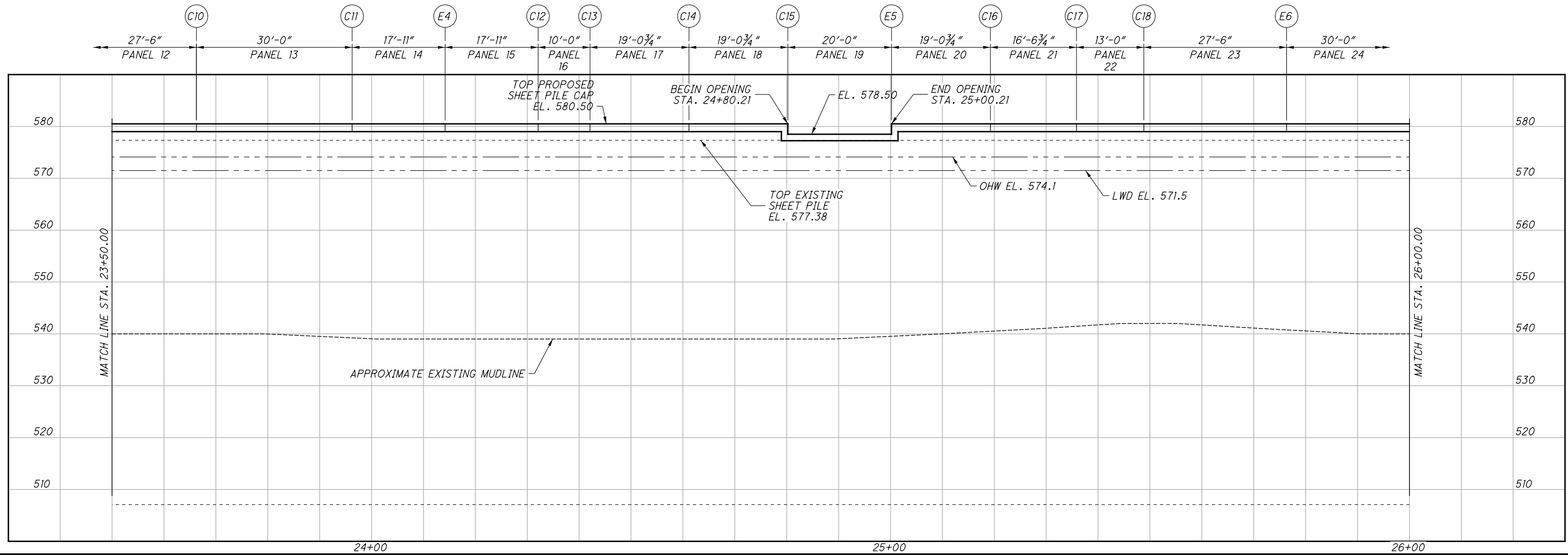


C = CONTRACTION JOINT
E = EXPANSION JOINT

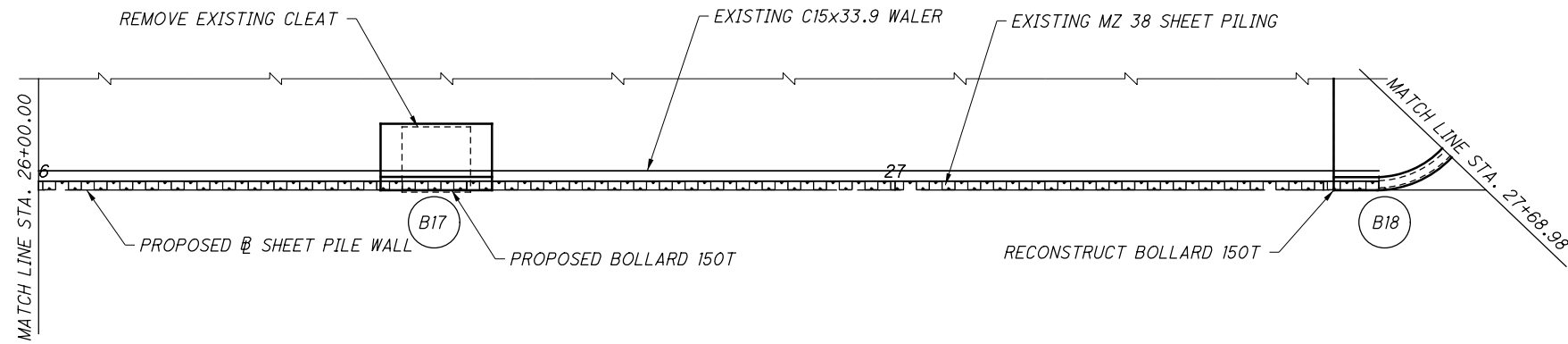
JOINT	STATION
C10	23+66.24
C11	23+96.24
E4	24+14.16
C12	24+32.08
C13	24+42.08
C14	24+61.14
C15	24+80.20
E5	25+00.20
C16	25+19.26
C17	25+35.84
C18	25+48.84
E6	25+76.32

NOTES:

1. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
2. CLEATS AND BOLLARDS NOT SHOWN FOR CLARITY.
3. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32/42 THROUGH 36/42.



DOCK 24



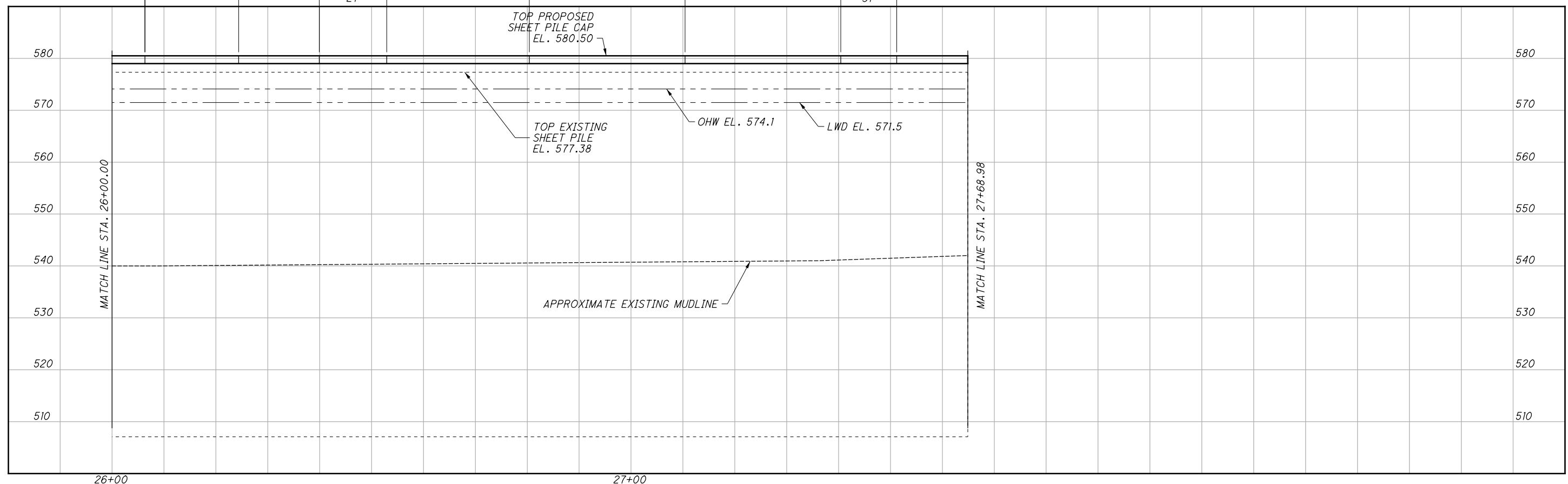
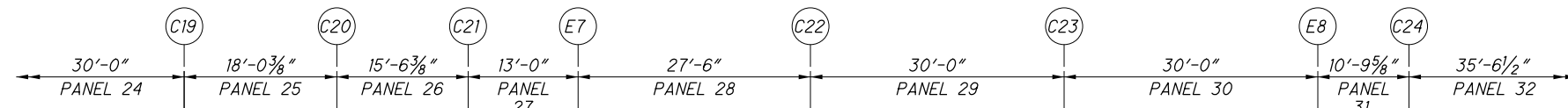
LAKE ERIE

C = CONTRACTION JOINT
E = EXPANSION JOINT

JOINT	STATION
C19	26+06.32
C20	26+24.36
C21	26+39.91
E7	26+52.91
C22	26+80.40
C23	27+10.40
E8	27+40.40
C24	27+51.20

NOTES:

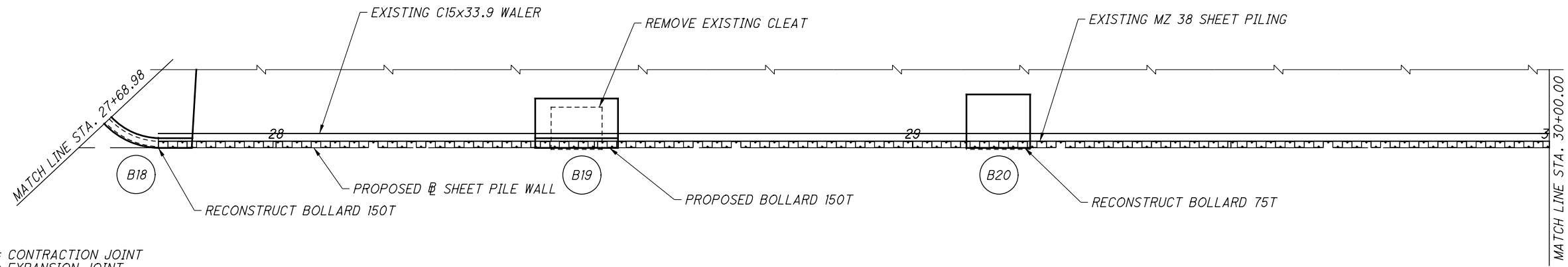
1. SEE SHEET 28 / 42 FOR CORNER DETAIL.
2. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
3. CLEATS AND BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
4. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.



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DOCK 24



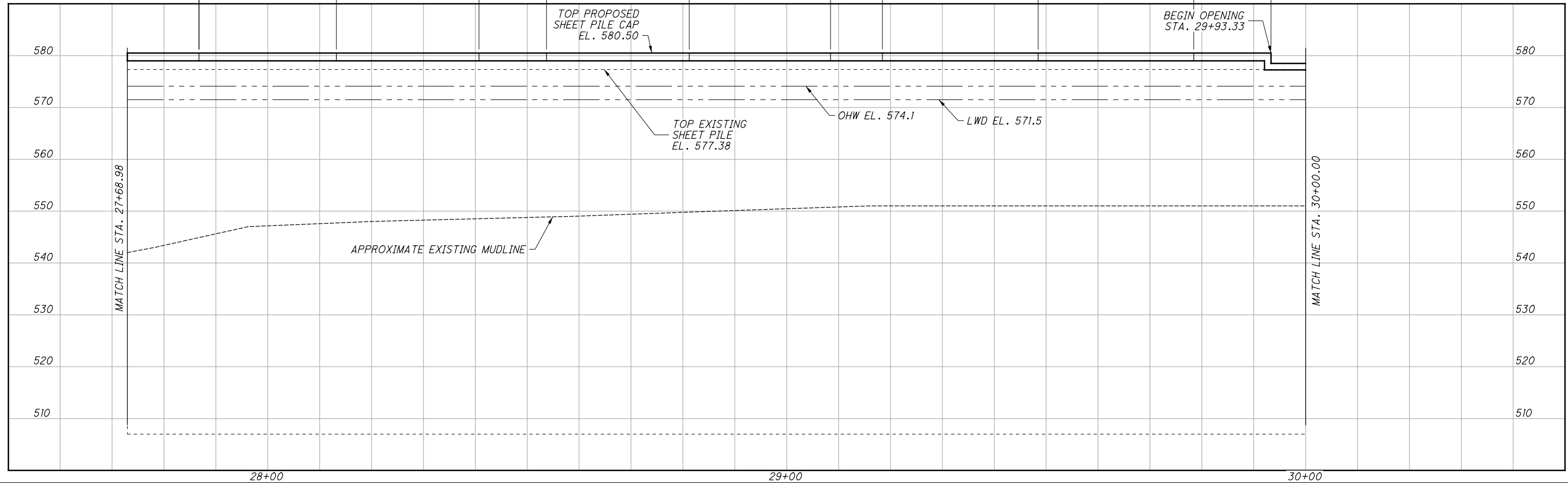
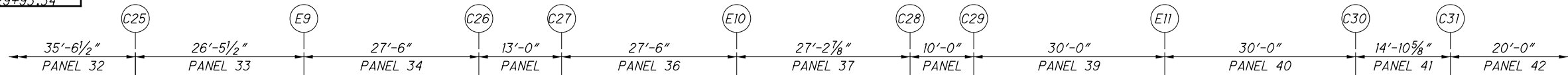
C = CONTRACTION JOINT
 E = EXPANSION JOINT

JOINT	STATION
C25	27+86.76
E9	28+13.22
C26	28+40.71
C27	28+53.71
E10	28+81.22
C28	29+08.45
C29	29+18.45
E11	29+48.45
C30	29+78.45
C31	29+93.34

NOTES:

- SEE SHEET 28 / 42 FOR CORNER DETAIL.
- PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
- CLEATS AND BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
- FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.

LAKE ERIE



GENERAL PLAN AND PROFILE

DOCK 24 SHEET PILE WALL
 STA. 27+68.98 TO STA. 30+00.00

DOCK 24 & 26W

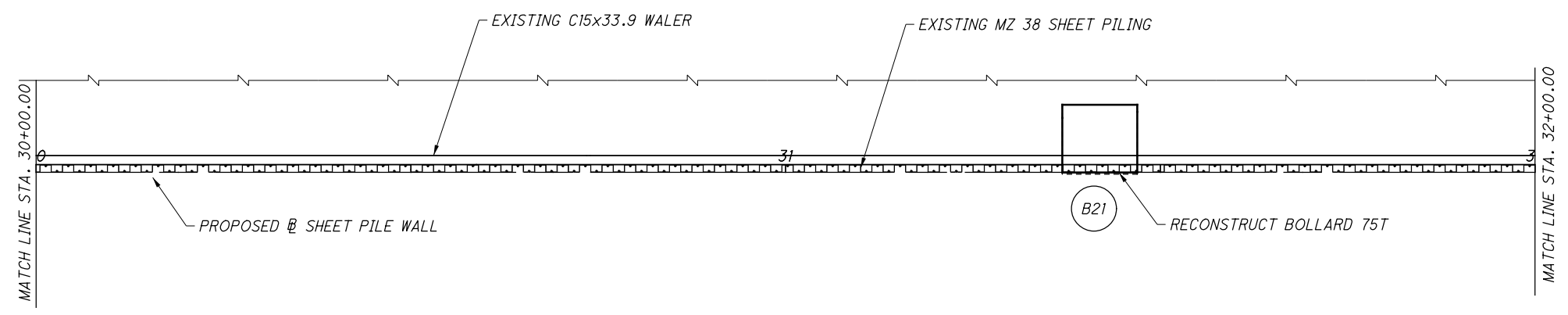
PID No. 113698

10 / 42

74
106



DOCK 24

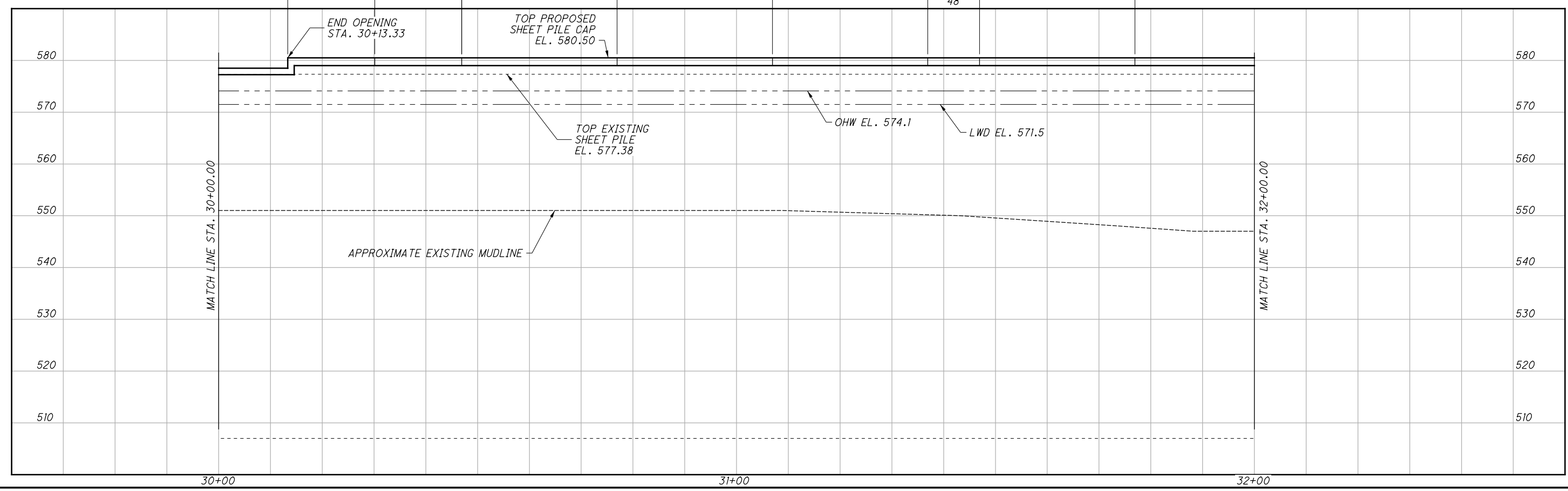
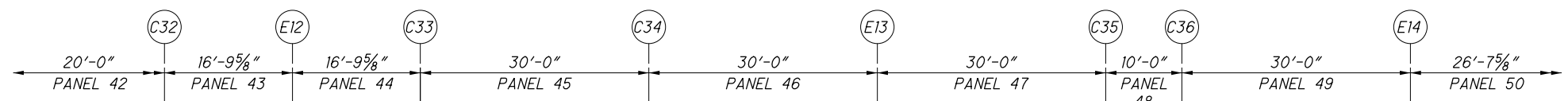


C = CONTRACTION JOINT
 E = EXPANSION JOINT

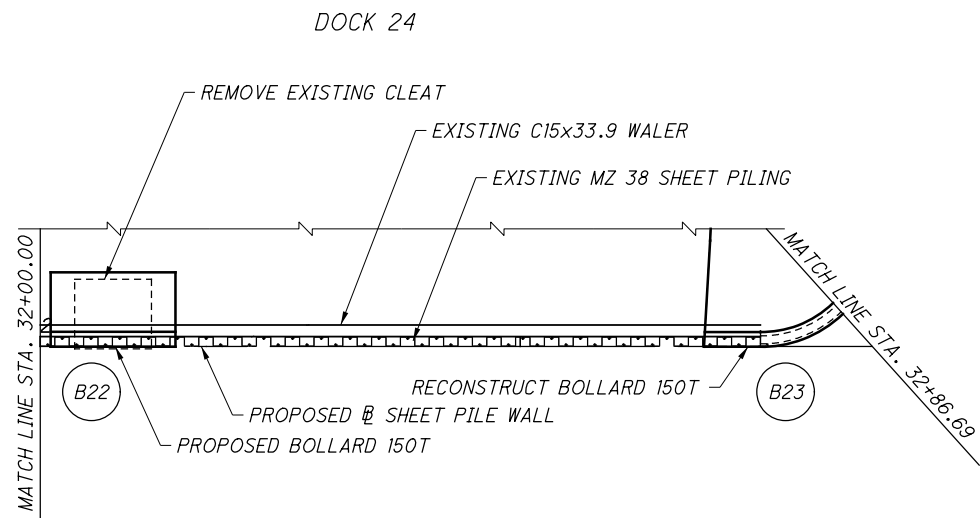
JOINT	STATION
C32	30+13.34
E12	30+30.14
C33	30+46.94
C34	30+76.94
E13	31+06.94
C35	31+36.94
C36	31+46.94
E14	31+76.94

NOTES:

1. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
2. BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
3. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.



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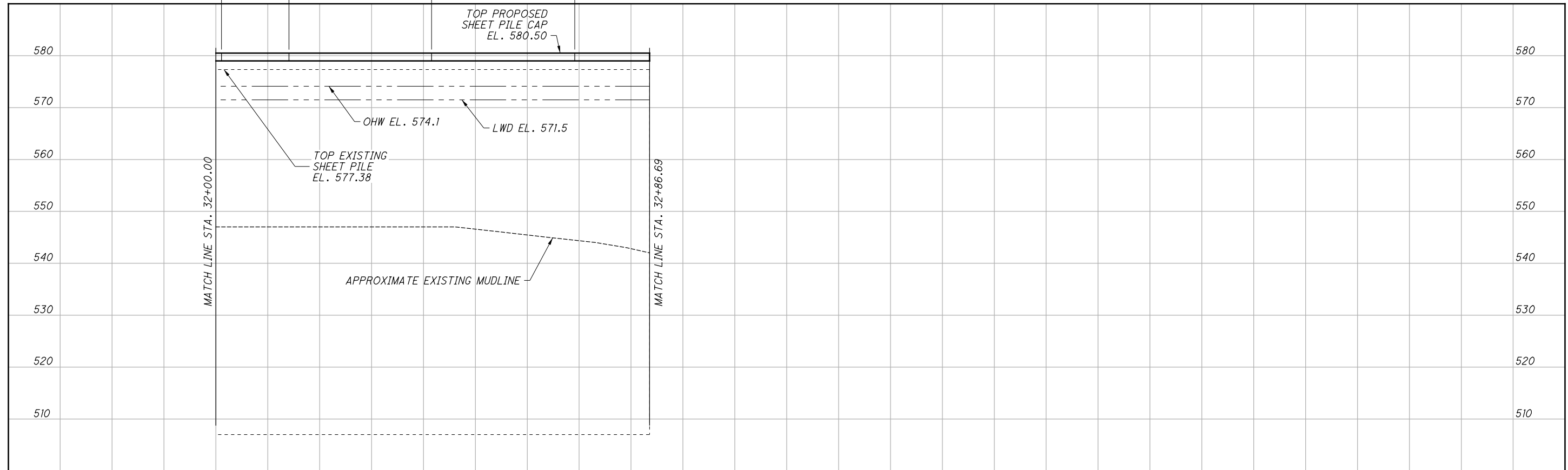
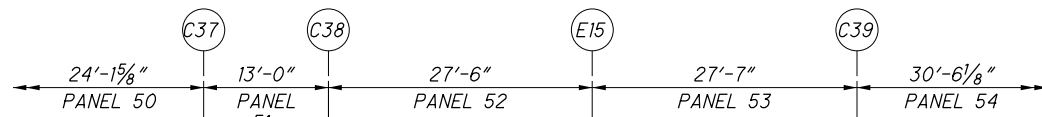


C = CONTRACTION JOINT
 E = EXPANSION JOINT

JOINT	STATION
C37	32+01.08
C38	32+14.08
E15	32+41.58
C39	32+69.12

NOTES:

1. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
2. CLEATS AND BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
3. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.
4. SEE SHEET 28 / 42 FOR CORNER DETAIL.

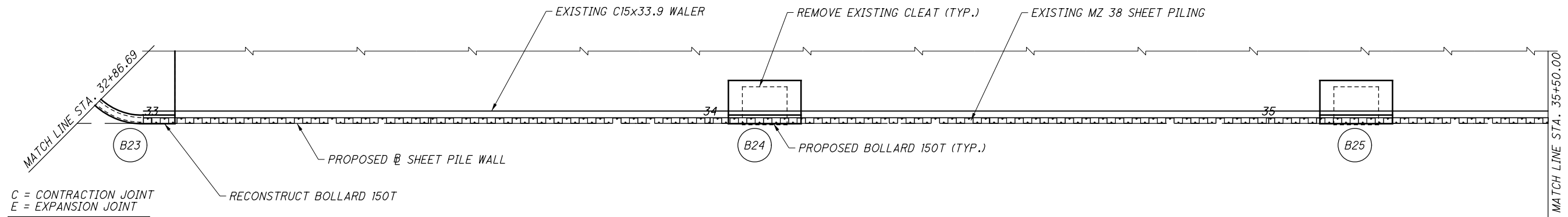


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32+00



DOCK 24



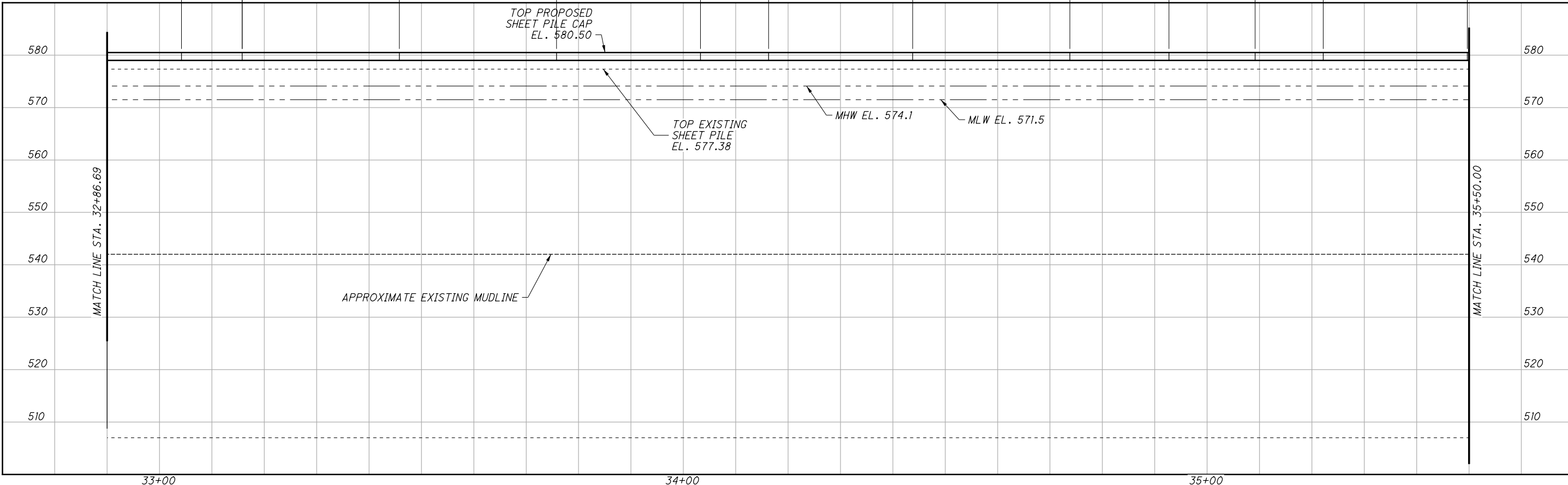
C = CONTRACTION JOINT
 E = EXPANSION JOINT

JOINT	STATION
C40	33+04.19
E16	33+15.79
C41	33+45.79
C42	33+75.79
E17	34+03.28
C43	34+16.28
C44	34+43.79
E18	34+73.79
C45	34+92.73
C46	35+09.18
E19	35+22.18
C47	35+49.68

NOTES:

1. SEE SHEET 28 / 42 FOR CORNER DETAIL.
2. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
3. CLEATS AND BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
4. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.

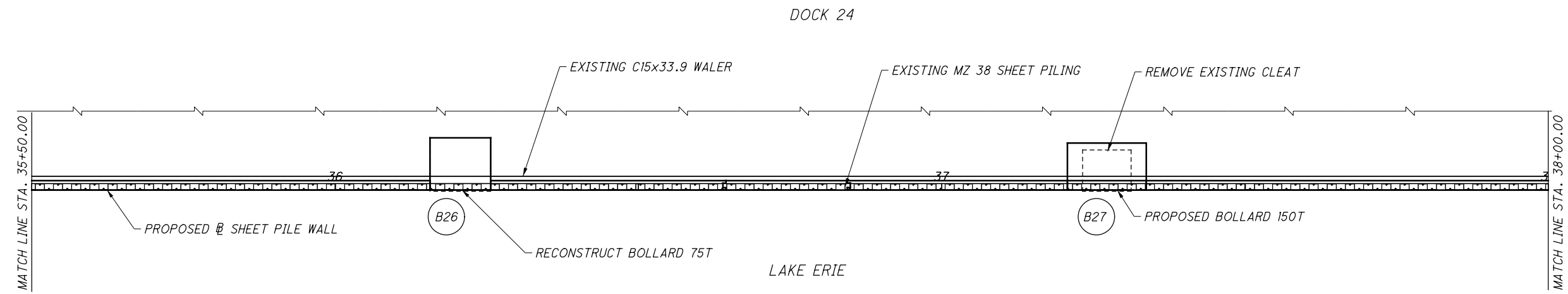
LAKE ERIE



GENERAL PLAN AND PROFILE
 DOCK 24 SHEET PILE WALL
 STA. 32+86.69 TO 35+50.00

DOCK 24 & 26W
 PID No.

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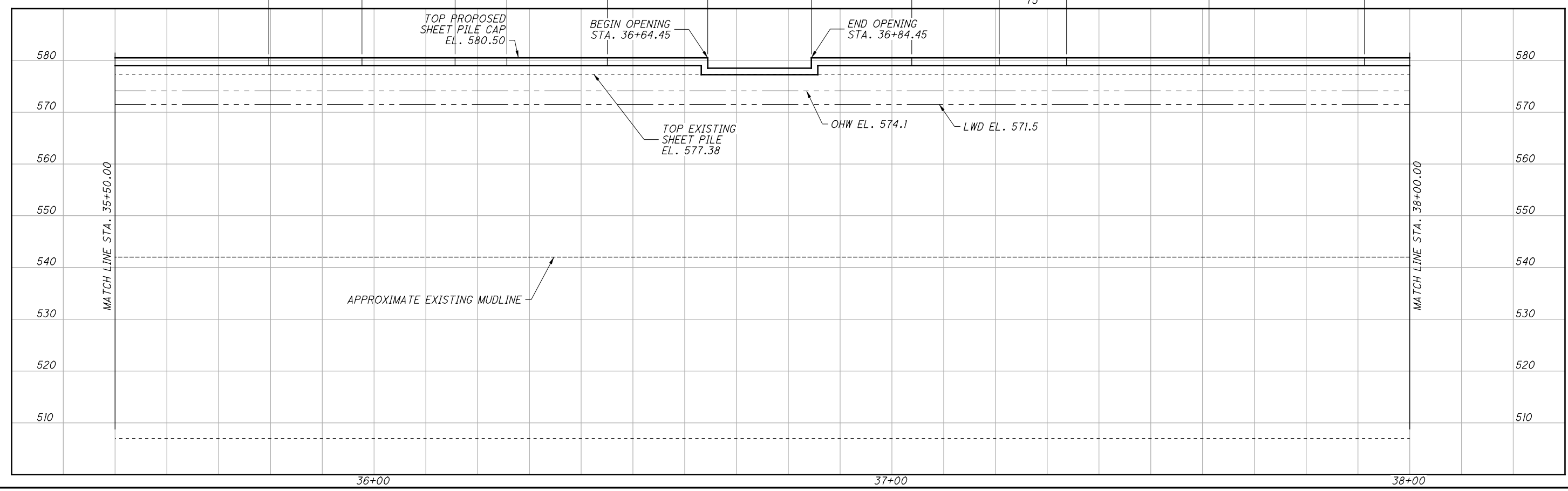
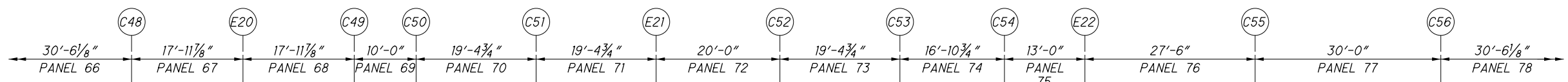


C = CONTRACTION JOINT
 E = EXPANSION JOINT

JOINT	STATION
C48	35+79.68
E20	35+97.67
C49	36+15.66
C50	36+25.66
C51	36+45.06
E21	36+64.45
C52	36+84.45
C53	37+03.85
C54	37+20.75
E22	37+33.75
C55	37+61.25
C56	37+91.25

NOTES:

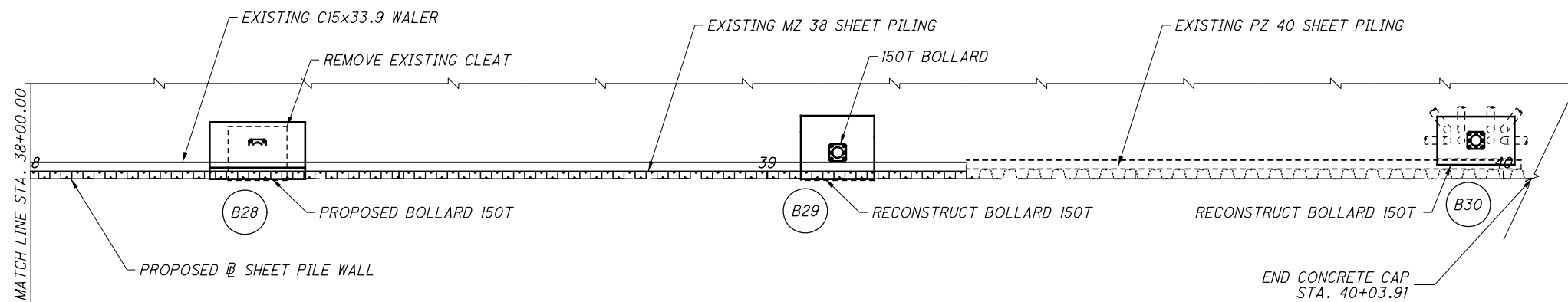
1. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
2. CLEATS AND BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
3. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.



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DOCK 24

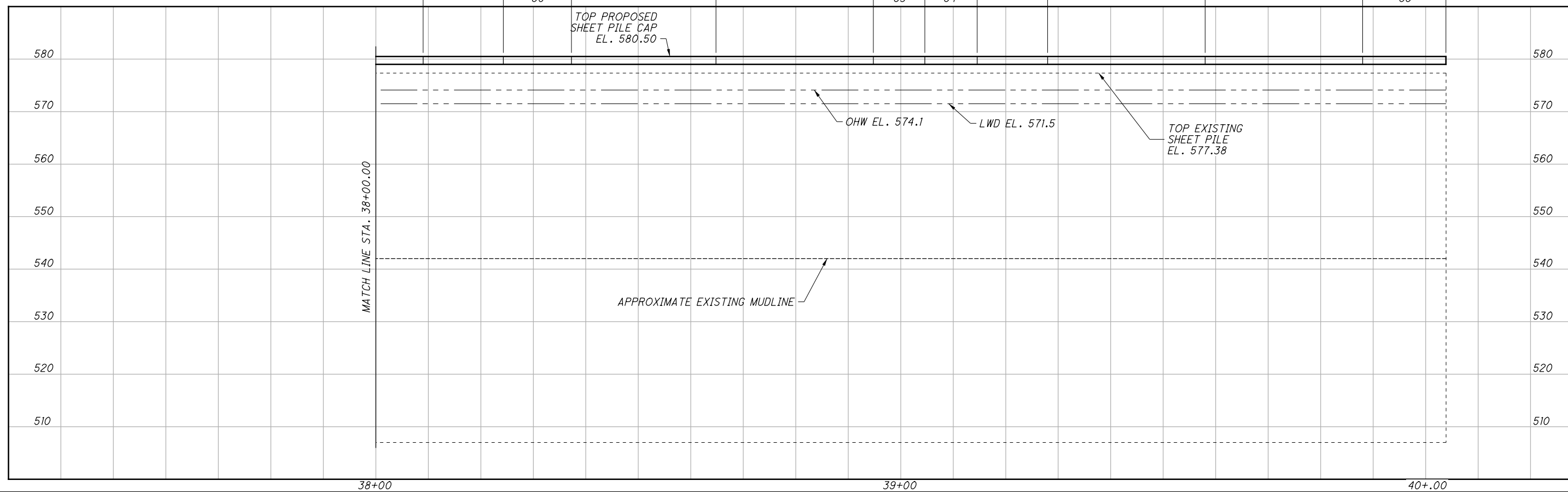
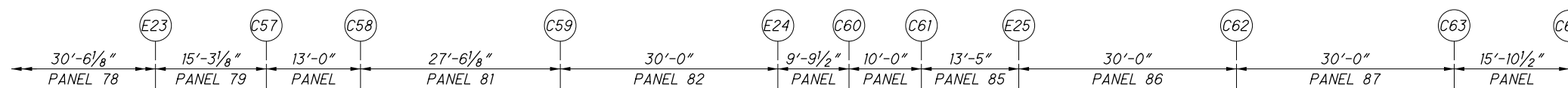


C = CONTRACTION JOINT
E = EXPANSION JOINT

JOINT	STATION
E23	38+09.02
C57	38+24.28
C58	38+37.28
C59	38+64.80
E24	38+94.80
C60	39+04.58
C61	39+14.58
E25	39+27.99
C62	39+57.99
C63	39+87.99
C64	40+03.87

NOTES:

1. PROPOSED SHEET PILE CAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
2. CLEATS AND BOLLARDS NOT SHOWN FOR CLARITY. SEE SHEET 22 / 42 FOR DETAILS.
3. FENDER LAYOUT AND DETAILS NOT SHOWN FOR CLARITY. SEE SHEETS 32 / 42 THROUGH 36 / 42.



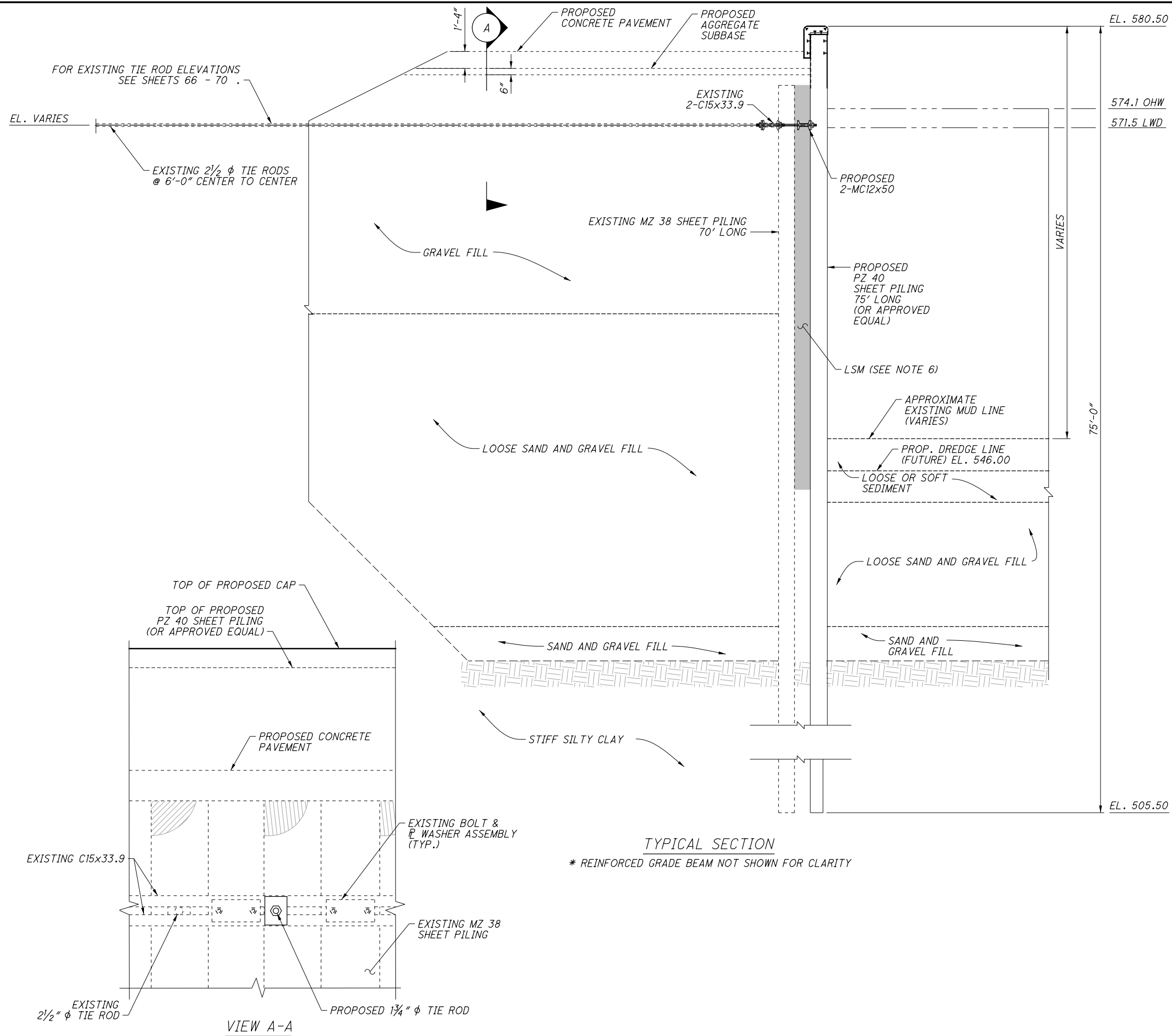
GENERAL PLAN AND PROFILE
DOCK 24 SHEET PILE WALL
STA. 38+00.00 TO 40+03.90

DOCK 24 & 26W
PID No.

15 / 42

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106

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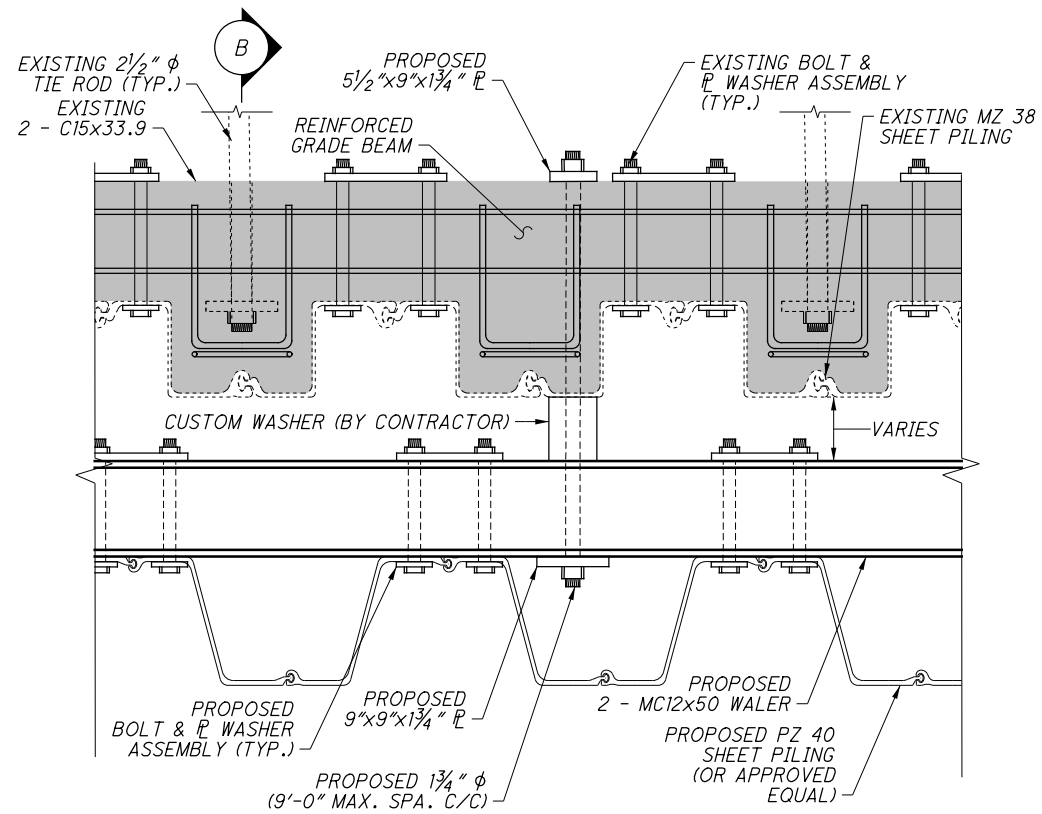
- NOTES:**
- PER THE 1958 PLANS, THE TIE RODS WERE INSTALLED AT 5.83' DEEP, ELEVATION 571.17 IN THE DEADMAN ZONE, AND 6.5' DEEP, ELEVATION 570.05 IN THE TIE ROD ONLY ZONE ALONG THE WEST SIDE OF DOCK 26; 5.5' DEEP, ELEVATION 571.50 ALONG THE NORTH SIDE; AND 8' DEEP, ELEVATION 569.00 ALONG THE WALL BETWEEN DOCK 24 AND DOCK 26. THE TIE ROD ONLY ZONE BEGINS AT STATION 12+82.25. THESE ELEVATIONS COULD VARY. CONTRACTOR SHALL CONFIRM ELEVATIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER IF AS BUILT ELEVATION VARIES FROM PLAN ELEVATION BY MORE THAN 1.0 FOOT. A CHANGE IN ELEVATION OF LESS THAN 1.0 FOOT SHALL NOT BE CONSIDERED A CHANGED CONDITION.
 - THE SOIL STRATA SHOWN IN THE TYPICAL SECTION ARE TYPICAL OF THE CONDITIONS IN THE DEADMAN ZONE AT THE NORTH END OF THE DOCK. SEE STRUCTURE FOUNDATION EXPLORATION SHEETS 2 AND 3 TO VIEW THE SOIL CONDITIONS TO THE SOUTH IN THE TIE ROD ONLY ZONE.
 - THE WIDTH DIMENSION OF THE PROPOSED PZ 40 IS SLIGHTLY DIFFERENT FROM THAT OF THE EXISTING MZ 38 SHEET PILE. THEREFORE, THE SPACING OF THE PROPOSED TIE RODS WILL BE EVERY 6' ± 0.5', BUT WILL VARY ON A CASE BY CASE BASIS. IT WILL BE NECESSARY TO PLACE EACH PROPOSED TIE ROD IN AN OPEN CAVITY IN THE BACK OF THE PZ 40 SUCH THAT IT EXTENDS TO THE BACK OF THE EXISTING WALER WHILE MISSING THE EXISTING TIE ROD AND ITS 9"x9"x1.25" BEARING PLATE, AND THE EXISTING ADJACENT BOLT AND PLATE WASHER ASSEMBLIES. SEE SHEETS 17 OF 42 AND 18 OF 42 FOR POSSIBLE TIE ROD LOCATION OPTIONS.
 - FOR CONCRETE SHEET PILE CAP SEE SHEETS 30 - 42 THROUGH 31 - 42 .
 - FOR HARDWARE DETAILS SEE SHEET 21 - 42 .
 - LOW STRENGTH MORTAR BACKFILL.
 - CUT OFF TOP OF MZ 38 SHEET PILING TO BE BELOW ITEM 304 BASE MATERIAL. IN NO CASE SHALL EXISTING SHEET PILING BE CUT BELOW HIGH WATER ELEVATION.

TYPICAL SECTION
 * REINFORCED GRADE BEAM NOT SHOWN FOR CLARITY

VIEW A-A

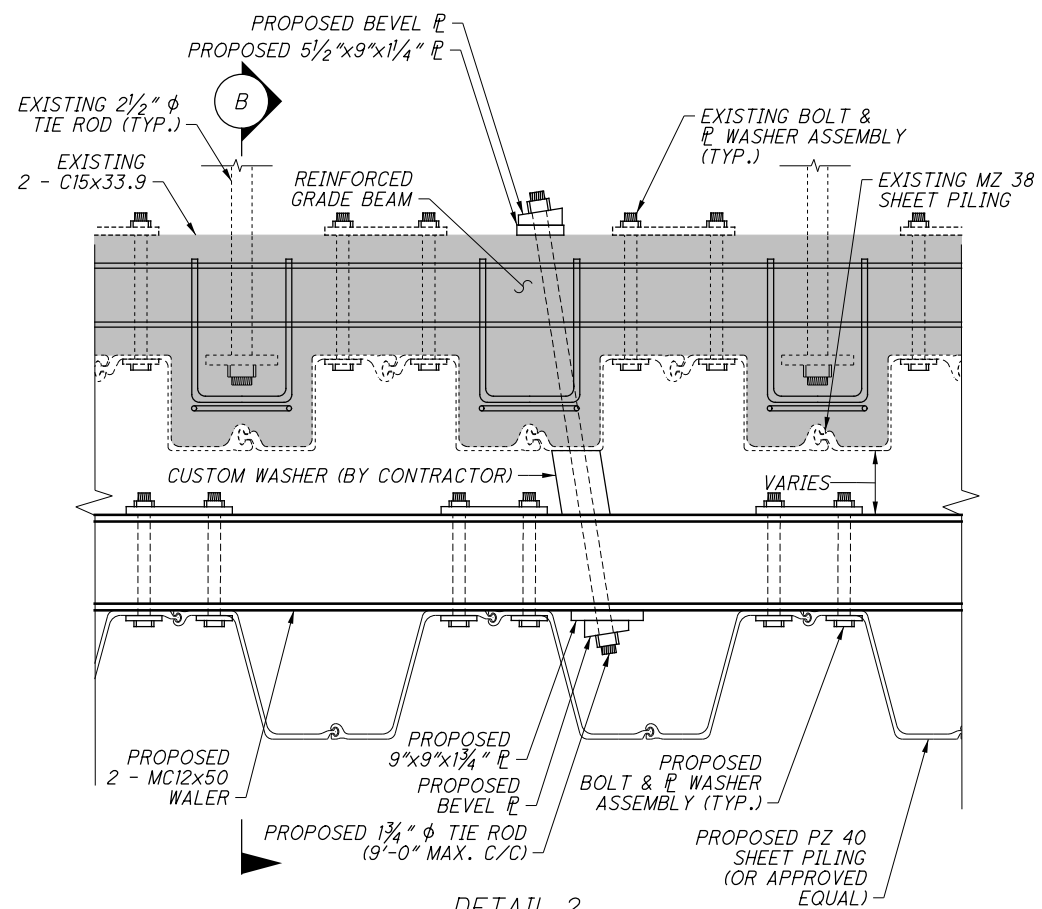
 DESIGN AGENCY ST. CHARLES COUNTY, MISSOURI
DATE: 1/22/21 REVIEWED: RJM DRAWN: JAG DESIGNED: MS
STRUCTURE FILE NUMBER REVISIONS CHECKED: PPA
TYPICAL SECTION DOCK 26 WEST SHEET PILE WALL
DOCK 24 & 26W PID No. 113698
16 / 42
80 106

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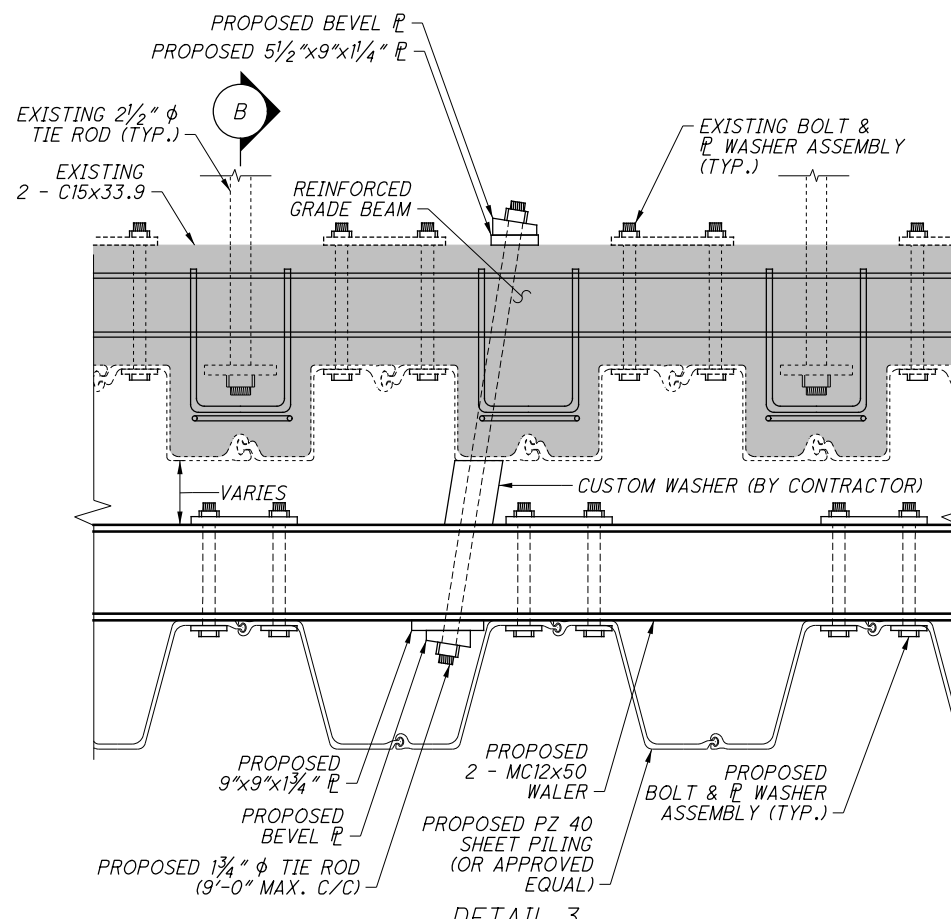
DETAIL 1

(SEE SHEET 4 OF 42 FOR PLAN LOCATION)
 * LSM NOT SHOWN FOR CLARITY
 * BOTTOM BARS NOT SHOWN FOR CLARITY



DETAIL 2

(SEE SHEET 4 OF 42 FOR PLAN LOCATION)
 * LSM NOT SHOWN FOR CLARITY
 * BOTTOM BARS NOT SHOWN FOR CLARITY

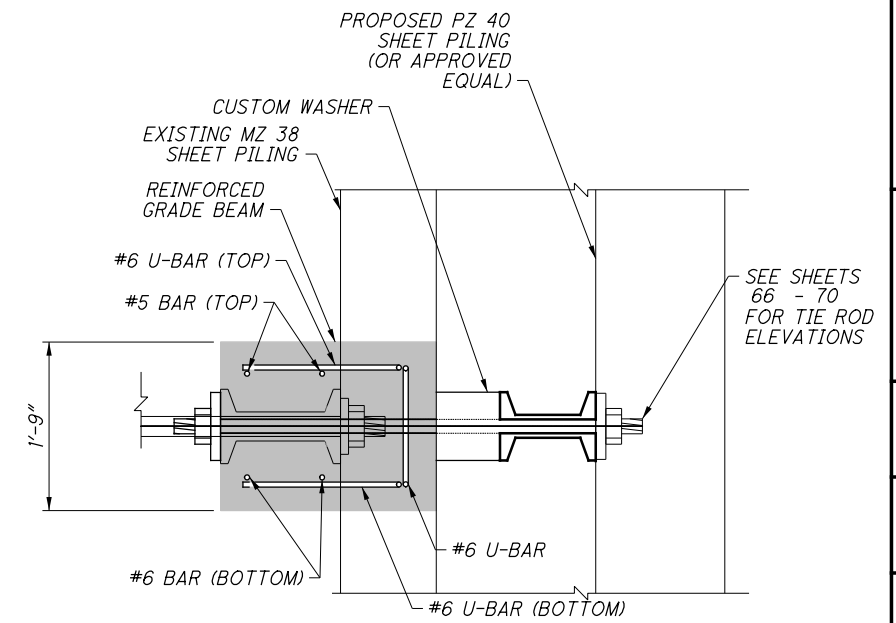


DETAIL 3

(SEE SHEET 4 OF 42 FOR PLAN LOCATION)
 * LSM NOT SHOWN FOR CLARITY
 * BOTTOM BARS NOT SHOWN FOR CLARITY

NOTES:

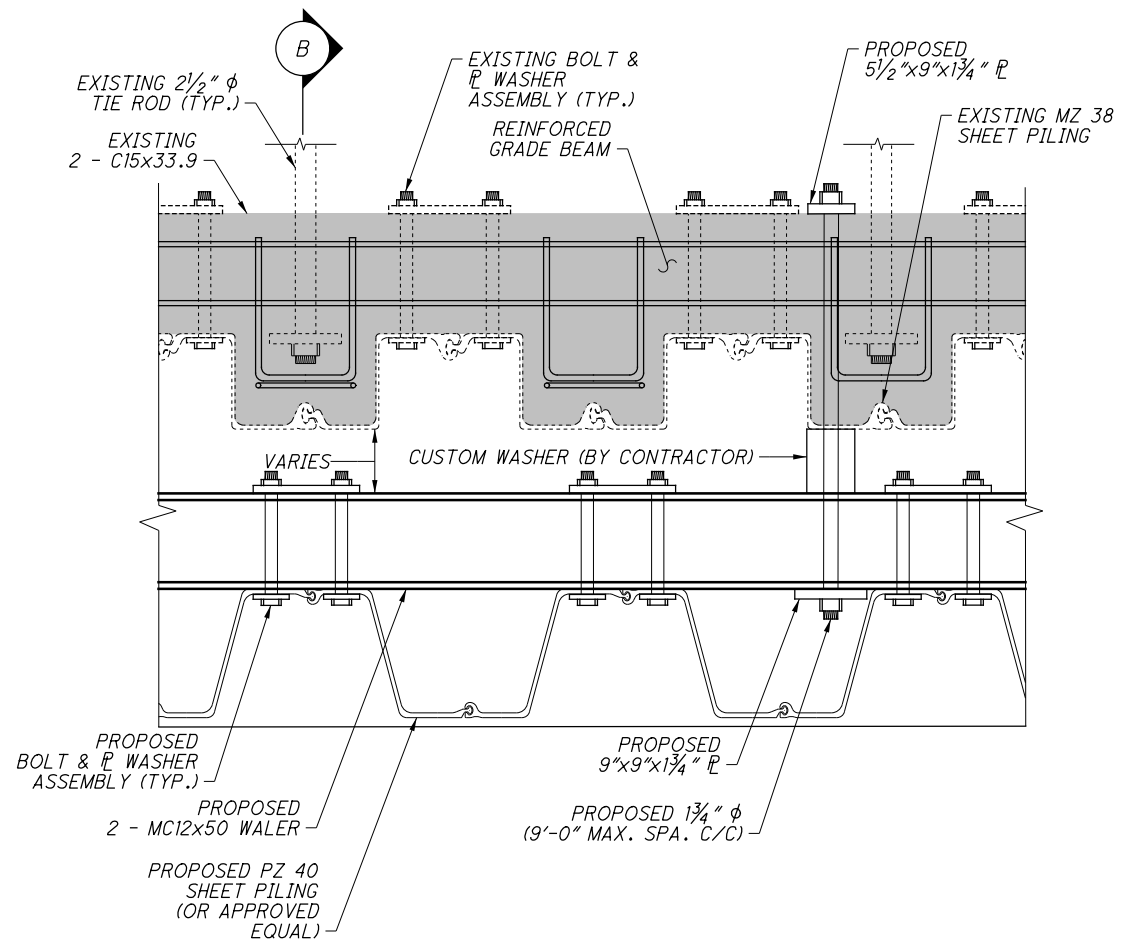
1. DETAILS 1 THROUGH 3 DISPLAY DIFFERENT OPTIONS IN WHICH THE PROPOSED TIE RODS CAN BE INSTALLED TO CONNECT THE PROPOSED WALER TO THE EXISTING WALER WHILE COPING WITH THE GEOMETRIC IRREGULARITIES CAUSED BY THE PZ 40 SHEET PILE HAVING DIFFERENT DIMENSIONS FROM THE EXISTING MZ 38 SHEET PILE.
2. PROPOSED TIE RODS NOT TO GO THROUGH PROPOSED SHEET PILING.
3. SEE SHEET 21 OF 42 FOR PROPOSED BOLT AND PLATE WASHER ASSEMBLY DETAILS.
4. HOLES THROUGH EXISTING SHEET PILE MAY BE TORCH CUT OR DRILLED WITH A MAXIMUM 3" DRILL SIZE.
5. FOR DETAILS 2 AND 3, THE MAXIMUM ALLOWABLE PROPOSED TIE ROD HORIZONTAL ANGLE IS 10 DEGREES.
6. THE CUSTOM WASHERS NEED TO BE FABRICATED IN THE FIELD ON A CASE BY CASE BASIS TO COINCIDE WITH THE INDIVIDUAL TIE ROD HORIZONTAL ANGLES AND SUCH THAT THEY FIT SNUGLY BETWEEN THE EXISTING SHEET PILE AND THE PROPOSED WALER.



SECTION B

* LSM NOT SHOWN FOR CLARITY

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OPTION 1

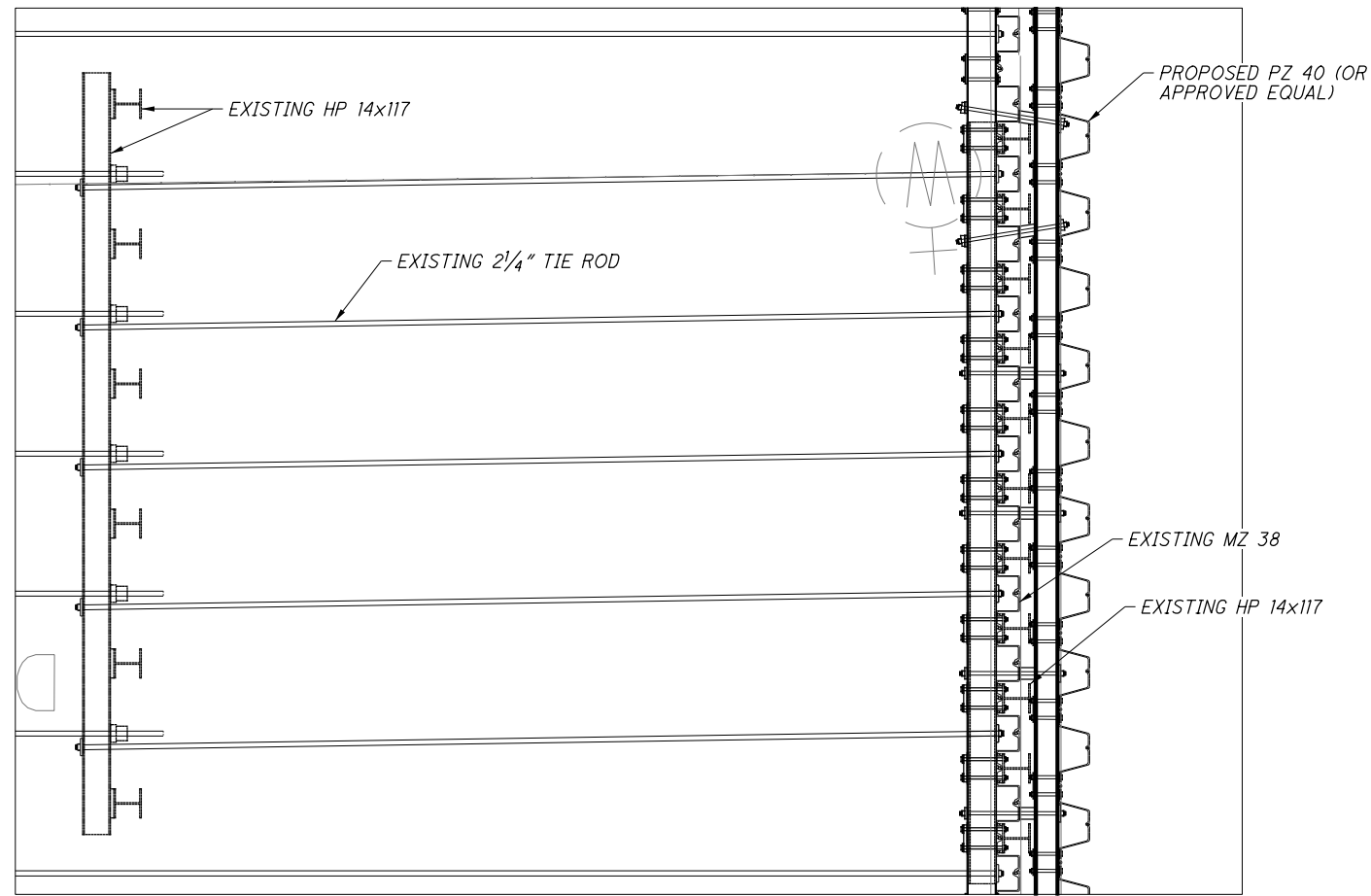
(PROPOSED TIE ROD IN SAME BAY AS EXISTING TIE ROD)

- * LSM NOT SHOWN FOR CLARITY
- * BOTTOM BARS NOT SHOWN FOR CLARITY

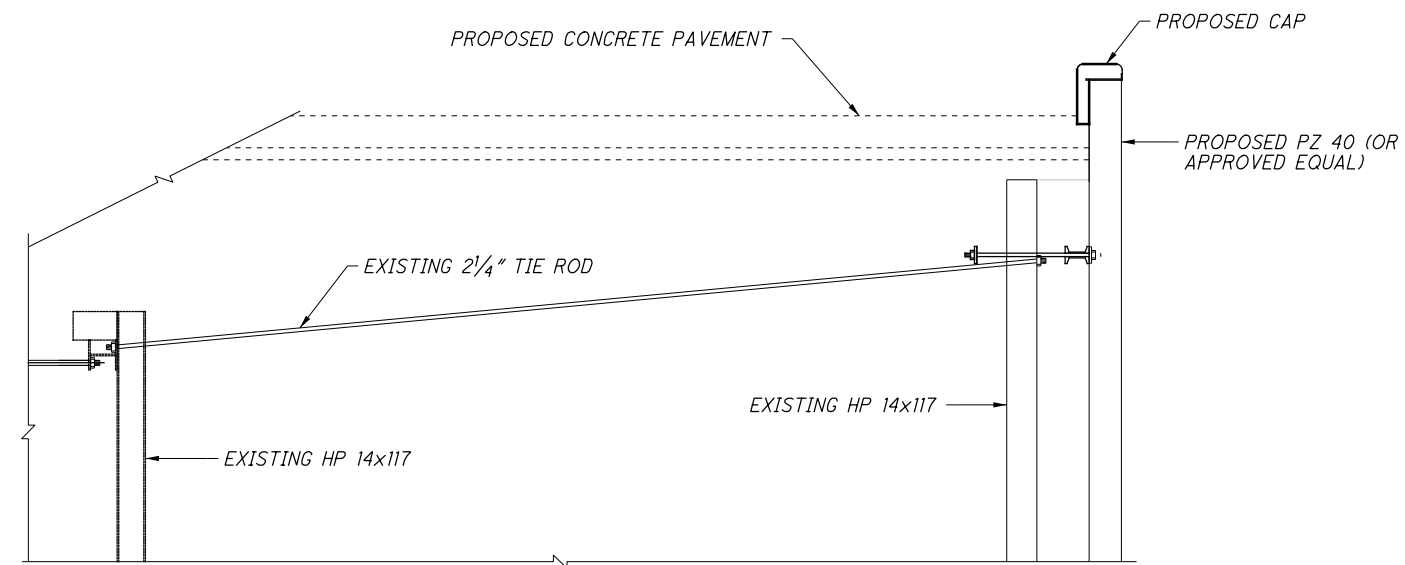
NOTES:

1. OPTION 1 DISPLAYS DIFFERENT OPTIONS IN WHICH THE PROPOSED TIE RODS CAN BE INSTALLED TO CONNECT THE PROPOSED WALER TO THE EXISTING WALER WHILE COPING WITH THE GEOMETRIC IRREGULARITIES CAUSED BY THE PZ 40 SHEET PILE HAVING DIFFERENT DIMENSIONS FROM THE EXISTING MZ 38 SHEET PILE.
2. SEE SHEET 17 OF 42 FOR SECTION B.
3. PROPOSED TIE RODS NOT TO GO THROUGH PROPOSED SHEET PILING.
4. SEE SHEET 21 OF 42 FOR PROPOSED BOLT AND PLATE WASHER ASSEMBLY DETAILS.
5. HOLES THROUGH EXISTING SHEET PILE MAY BE TORCH CUT OR DRILLED WITH A MAXIMUM 3" DRILL SIZE.

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PLAN
(EXISTING STABILIZATION OF BULKHEAD WALL)

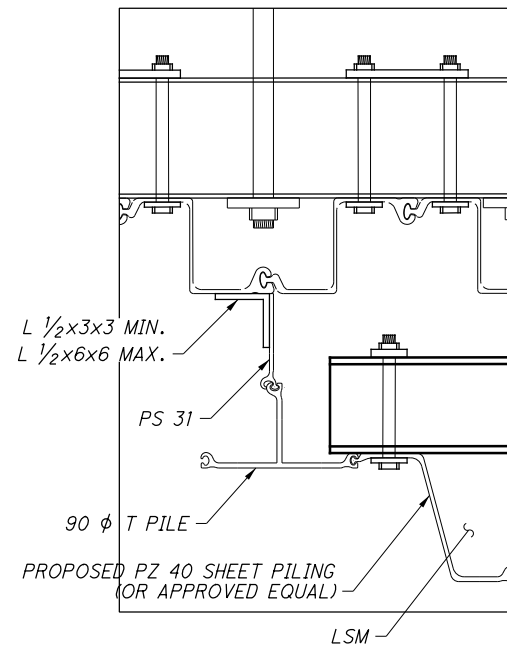


ELEVATION
(EXISTING MZ 38 AND WALER NOT SHOWN FOR CLARITY)

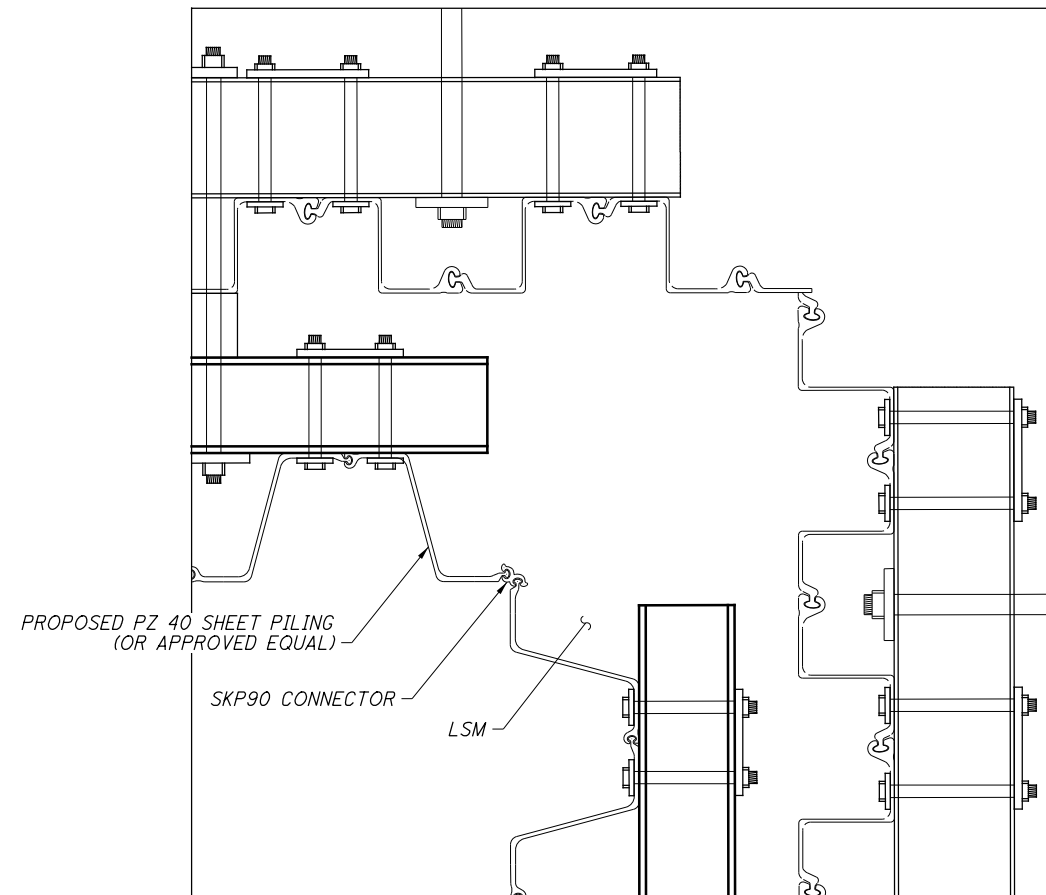
NOTES:

1. NOTCH EXISTING HP 14x117 AS NEEDED TO ACCOMMODATE PROPOSED HARDWARE.

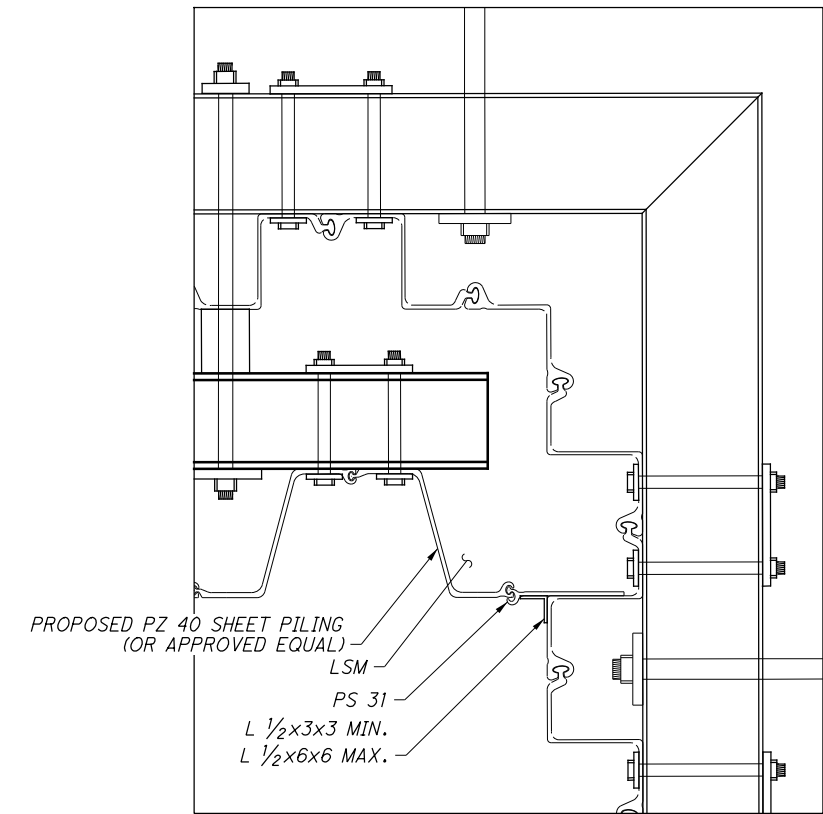
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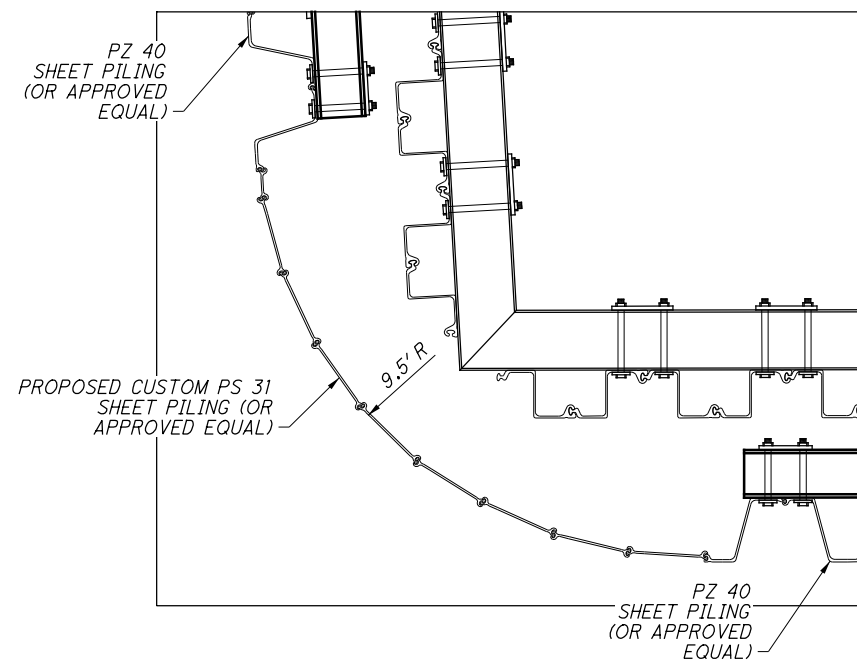
BEGIN WALL
STA. 9+98.38



BEND POINT STA. 18+79.78



END WALL
STA. 20+97.96

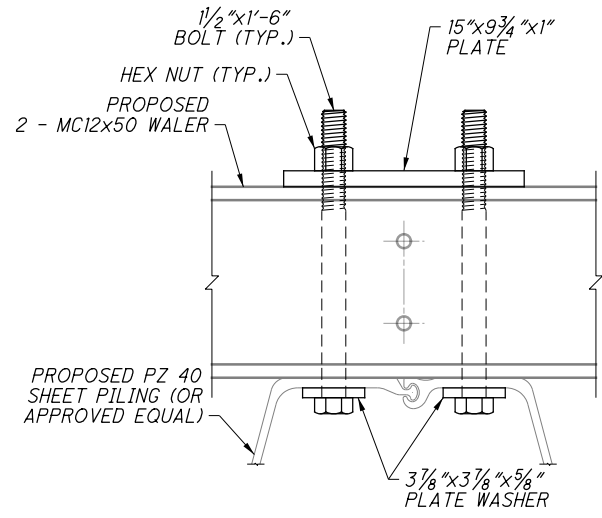


NORTHWEST CORNER DETAIL

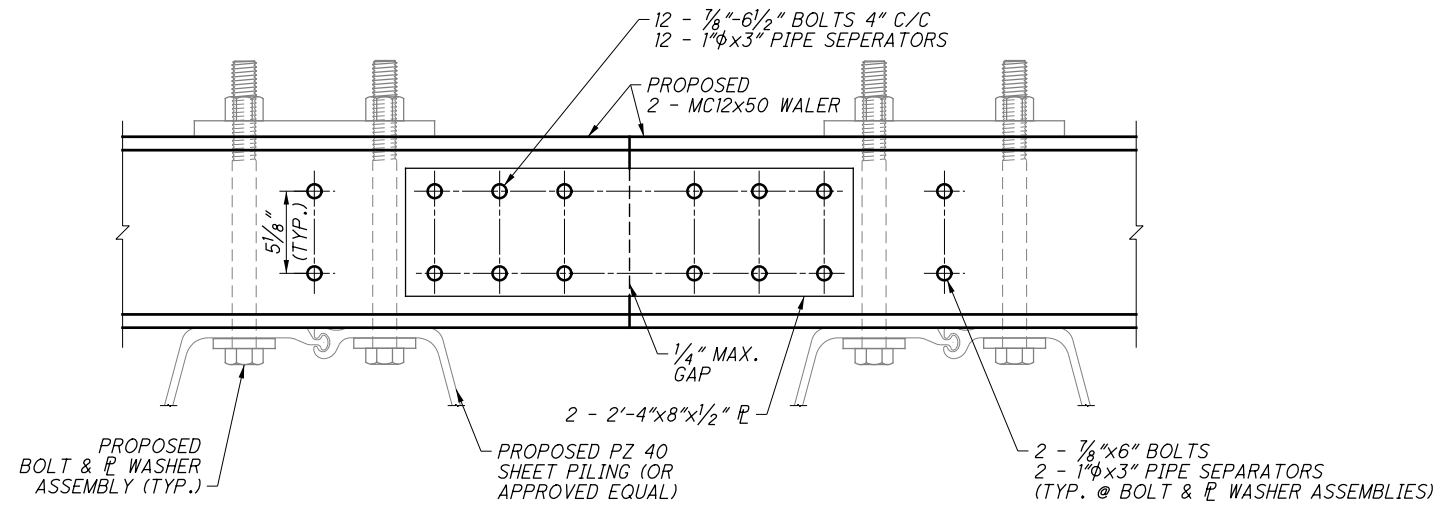
NOTES:

1. ANGLES SHALL BE 30' LONG AND SHALL BE STITCH WELDED TO SHEET PILE ON BOTH SIDES EVERY 2' TO THE MUD LINE.
2. CONTRACTOR SHALL SCRAPE/REMOVE ALL GROWTH AND ORGANICS FROM THE WALL AT THE INTERFACE OF CLOSURES AND SHALL PROVIDE DIVE VIDEO INSPECTION OF THE ENCLOSURES AFTER COMPLETION.

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BOLT AND PLATE WASHER ASSEMBLY - PLAN



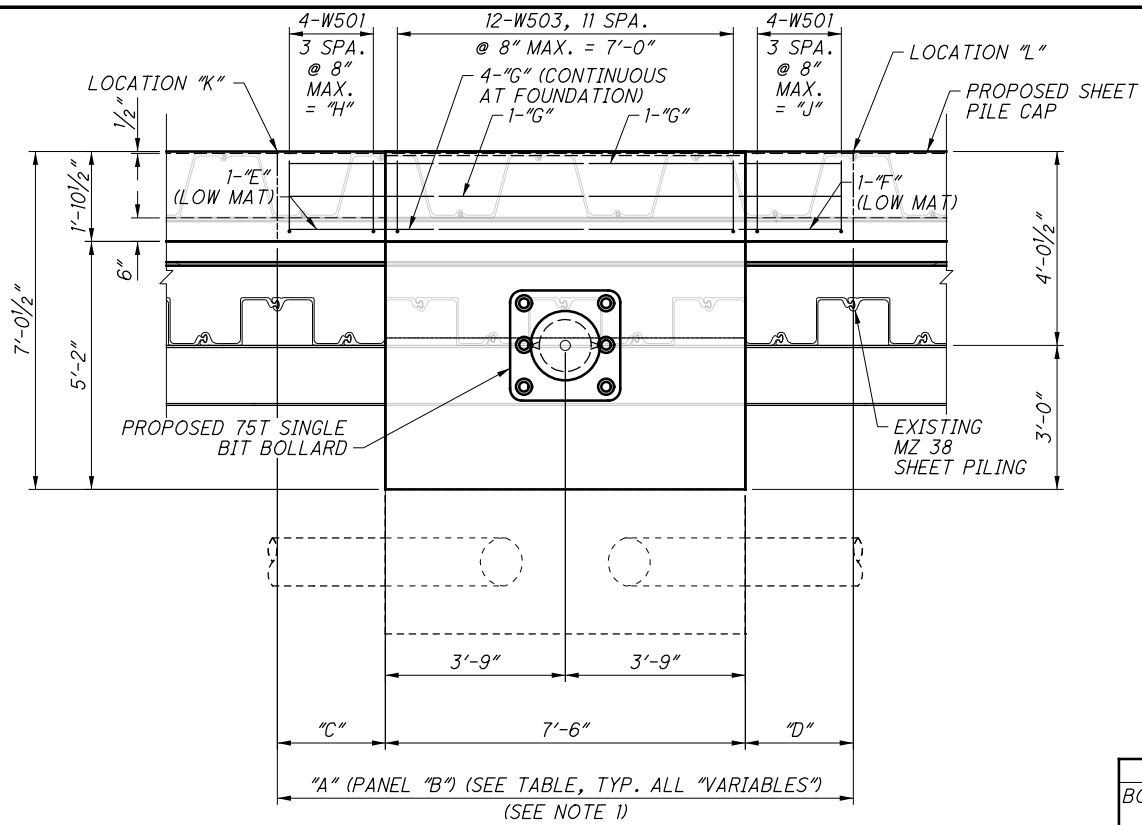
TYPICAL MC 12x50 WALER DETAILS - PLAN

DESIGNED	NI	CHECKED	PPA
DRAWN	JAG	REVISED	
REVIEWED	RJM	STRUCTURE FILE NUMBER	
DATE	1/22/21	FILE NUMBER	

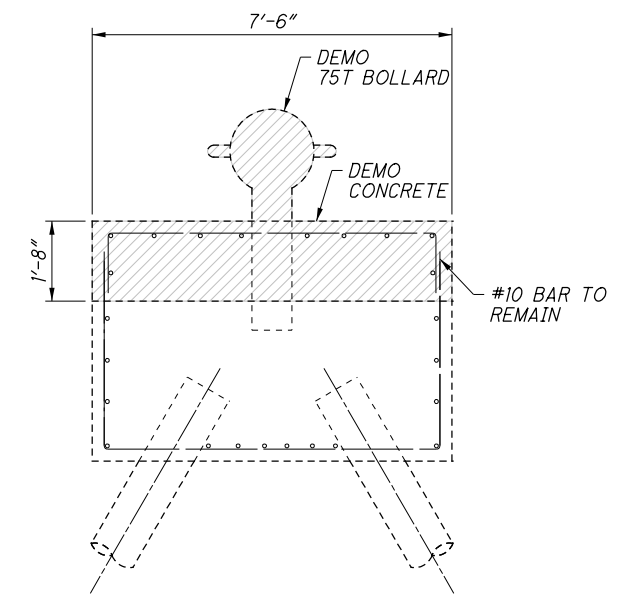
DETAILS
 DOCK 26 WEST SHEET PILE WALL

DOCK 24 & 26W
 PID No. 113698

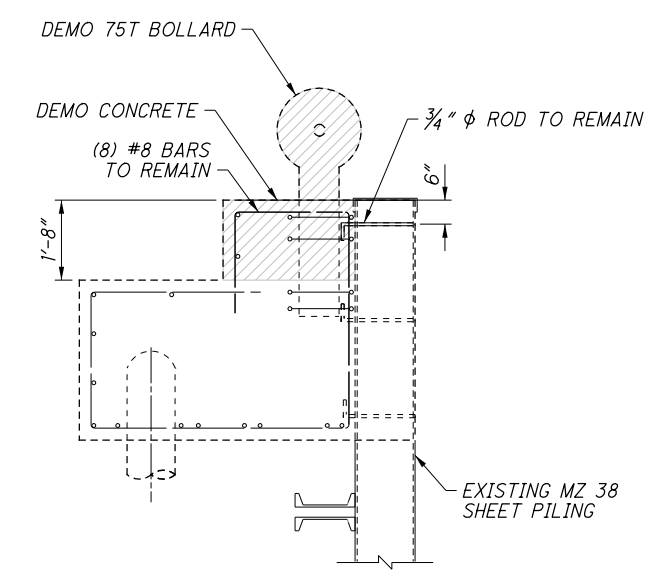
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PLAN - TYPICAL RECONSTRUCT BOLLARD
 (SHEET PILE MOUNTING HARDWARE, LSM, AND REINFORCED GRADE BEAM NOT SHOWN FOR CLARITY)
 (BOLLARD FOUNDATION REINFORCING NOT SHOWN FOR CLARITY; SEE ELEVATION AND SECTION BELOW)



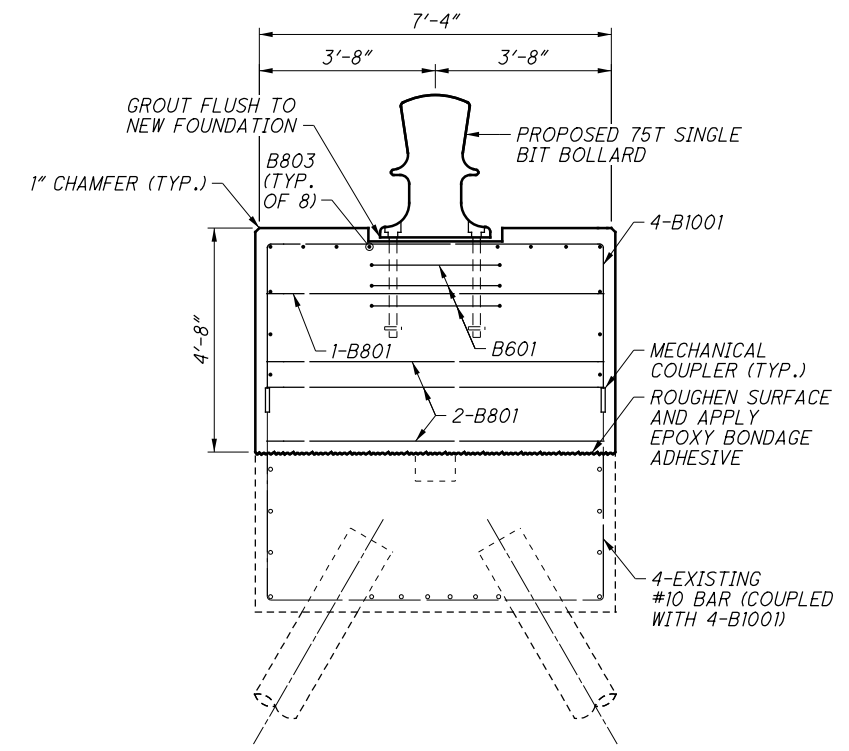
DEMOLITION PLAN - TYPICAL BOLLARD ELEVATION



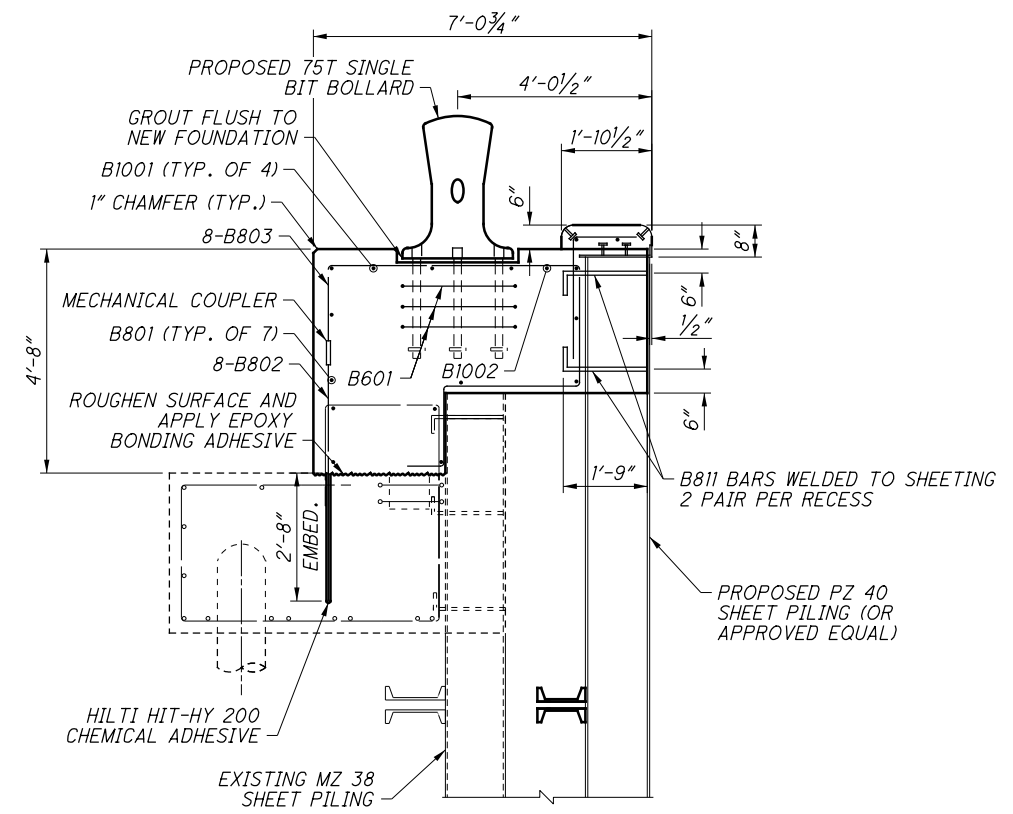
DEMOLITION PLAN - TYPICAL BOLLARD SECTION

BOLLARD NO.	BOLLARD STA.	TABLE VARIABLE										
		A	B	C	D	E	F	G	H	J	K	L
4	13+16.84	12'-0"	16	2'-3"	2'-3"	W611	W611	W614	1'-9"	1'-9"	CJ13	CJ12
5	14+18.84	12'-0"	20	2'-3"	2'-3"	W611	W611	W614	1'-9"	1'-9"	CJ16	CJ15
6	14+90.84	12'-0"	24	2'-3"	2'-3"	W611	W611	W614	1'-9"	1'-9"	CJ19	EJ5
7	15+62.84	12'-0"	28	2'-3"	2'-3"	W611	W611	W614	1'-9"	1'-9"	CJ23	CJ22
8	16+34.84	12'-0"	32	2'-3"	2'-3"	W611	W611	W614	1'-9"	1'-9"	CJ26	CJ25
9	17+00.84	12'-0"	36	2'-3"	2'-3"	W611	W611	W614	1'-9"	1'-9"	CJ29	EJ7
10	17+72.84	12'-0"	40	2'-3"	2'-3"	W611	W611	W614	1'-9"	1'-9"	CJ33	CJ32

NOTE: CJ = CONTRACTION JOINT; EJ = EXPANSION JOINT

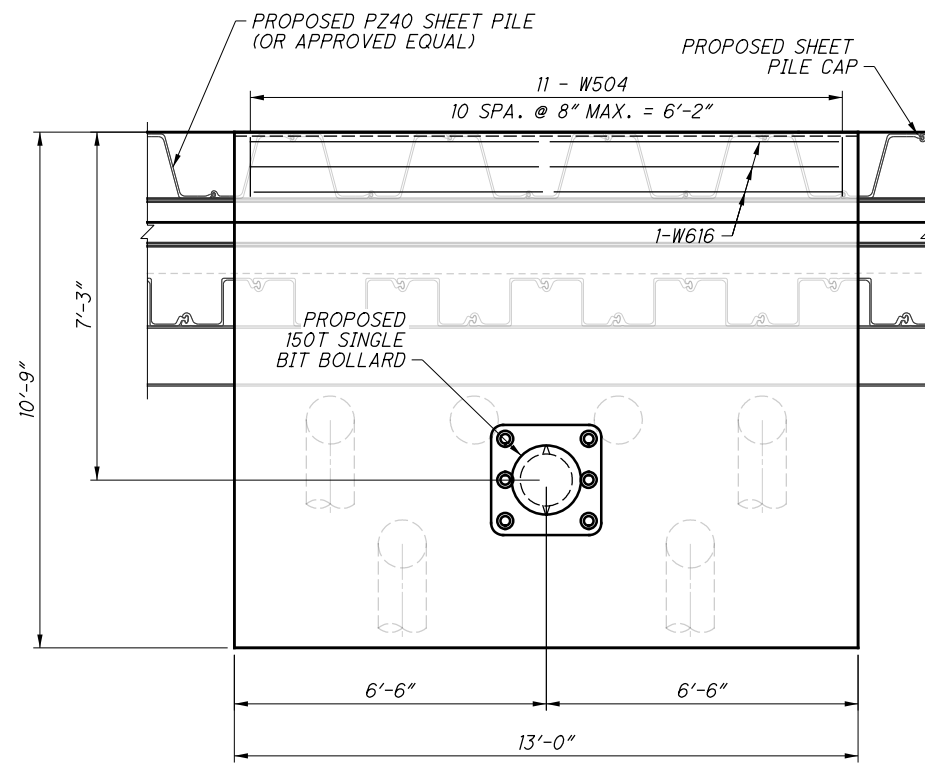


ELEVATION - TYPICAL RECONSTRUCT BOLLARD
 (SHEET PILE WALLS NOT SHOWN FOR CLARITY)



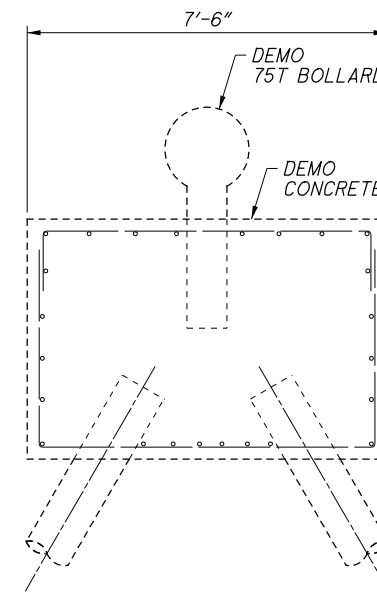
SECTION - TYPICAL RECONSTRUCT BOLLARD
 (REINFORCED GRADE BEAM AND LSM NOT SHOWN FOR CLARITY)

- NOTES:**
- SEE SHEETS 2 / 42 THROUGH 15 / 42 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.
 - DIMENSIONS TO FACE OF WALL MAY VARY DUE TO PLACEMENT OF WALL.
 - SEE SHEETS 40 / 42 AND 41 / 42 FOR BAR SCHEDULE.
 - EXCAVATION UNDER BOLLARD SHALL BE BACKFILLED WITH LOW STRENGTH MORTAR.
 - SHOULD CONTRACTOR ELECT TO REMOVE MORE OF THE FOUNDATION OR EXISTING SHEET PILING, CONTRACTOR SHALL SUBMIT REVISED FOUNDATION DETAILS FOR APPROVAL.

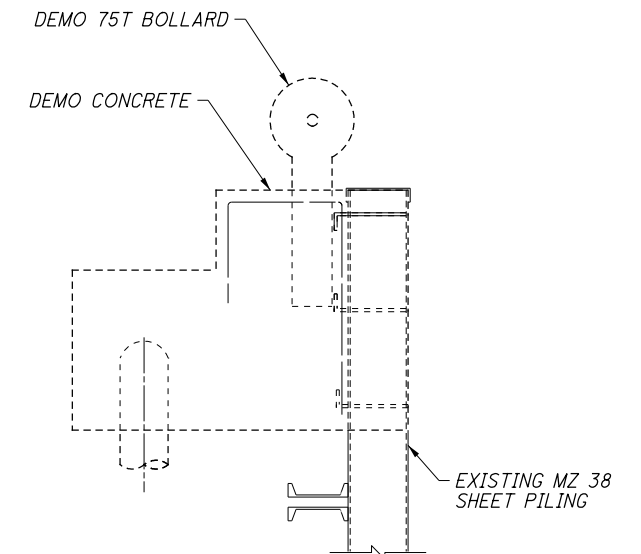


PLAN

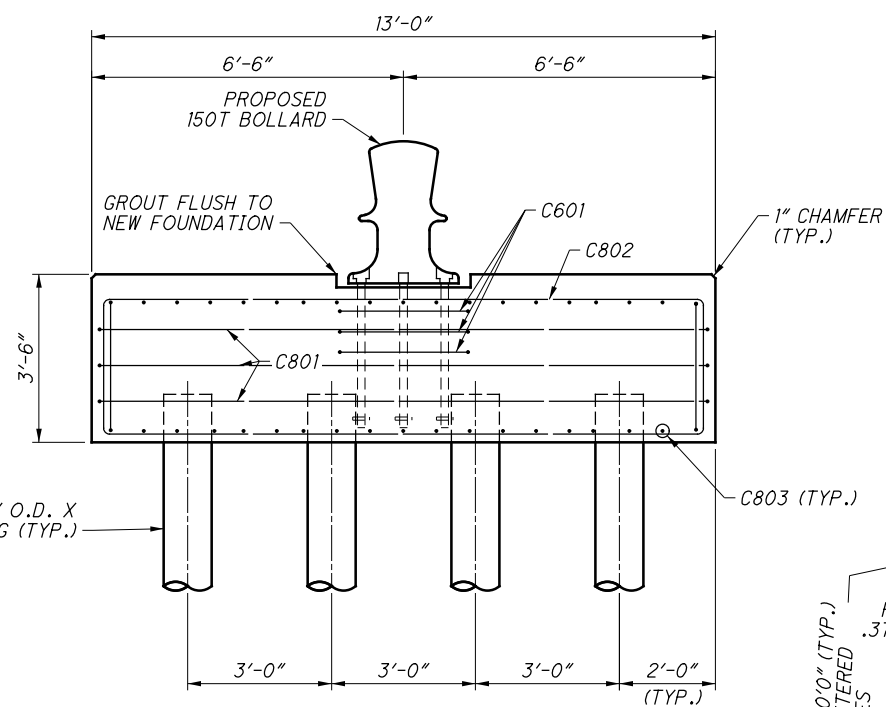
(SHEET PILE MOUNTING HARDWARE, LSM, AND REINFORCED GRADE BEAM NOT SHOWN FOR CLARITY)
 (BOLLARD FOUNDATION REINFORCING NOT SHOWN FOR CLARITY; SEE ELEVATION AND SECTION BELOW)



DEMOLITION PLAN - TYPICAL BOLLARD ELEVATION

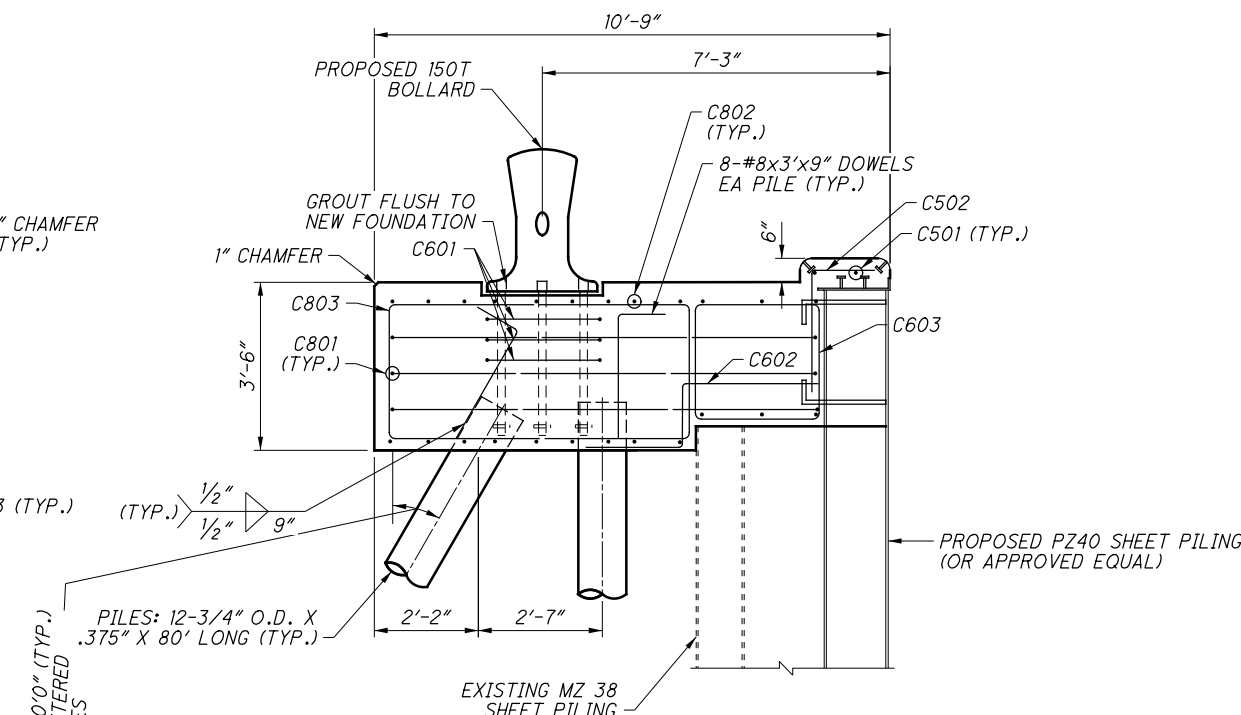


DEMOLITION PLAN - TYPICAL BOLLARD SECTION



ELEVATION

(SHEET PILE WALLS NOT SHOWN FOR CLARITY)



SECTION

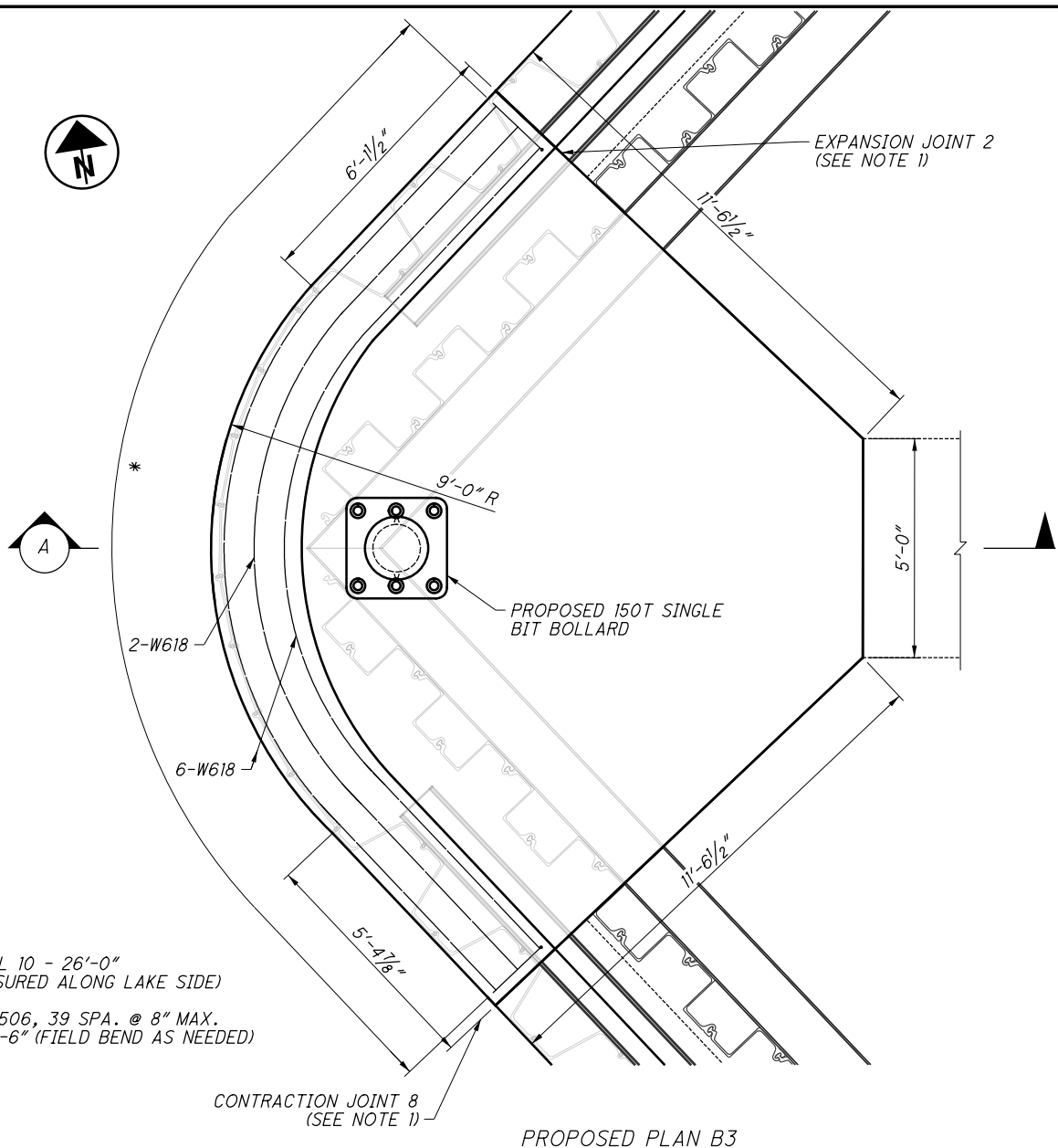
(REINFORCED GRADE BEAM AND LSM NOT SHOWN FOR CLARITY)

NOTES:

1. SEE SHEETS 2 / 42 THROUGH 15 / 42 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.
2. DIMENSIONS TO FACE OF WALL MAY VARY DUE TO PLACEMENT OF WALL.
3. SEE SHEETS 40 / 42 AND 41 / 42 FOR BAR SCHEDULE.
4. EXCAVATION UNDER BOLLARD SHALL BE BACKFILLED WITH LOW STRENGTH MORTAR.
5. SHOULD CONTRACTOR ELECT TO REMOVE MORE OF THE FOUNDATION OR EXISTING SHEET PILING, CONTRACTOR SHALL SUBMIT REVISED FOUNDATION DETAILS FOR APPROVAL.
6. IF AFTER REMOVING THE EXISTING FOUNDATION IT IS DETERMINED THE EXISTING PILES WILL CONFLICT WITH NEW PILES, CONTRACTOR SHALL ADVISE ENGINEER AND AN ALTERNATE LOCATION WILL BE PROVIDED FOR THE NEW BOLLARD.

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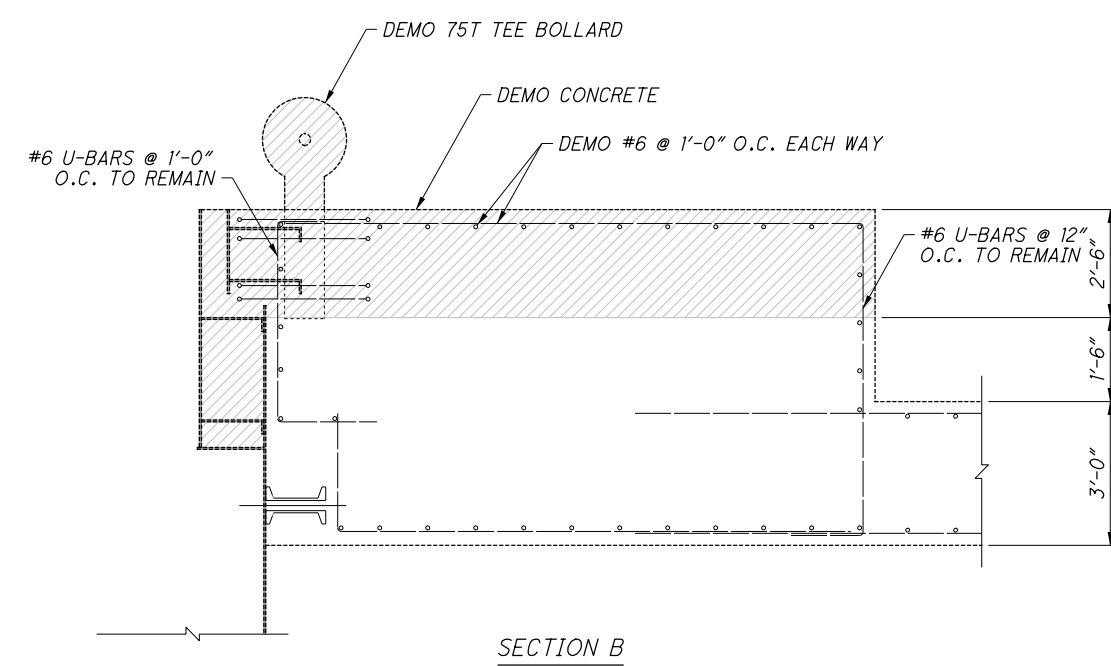
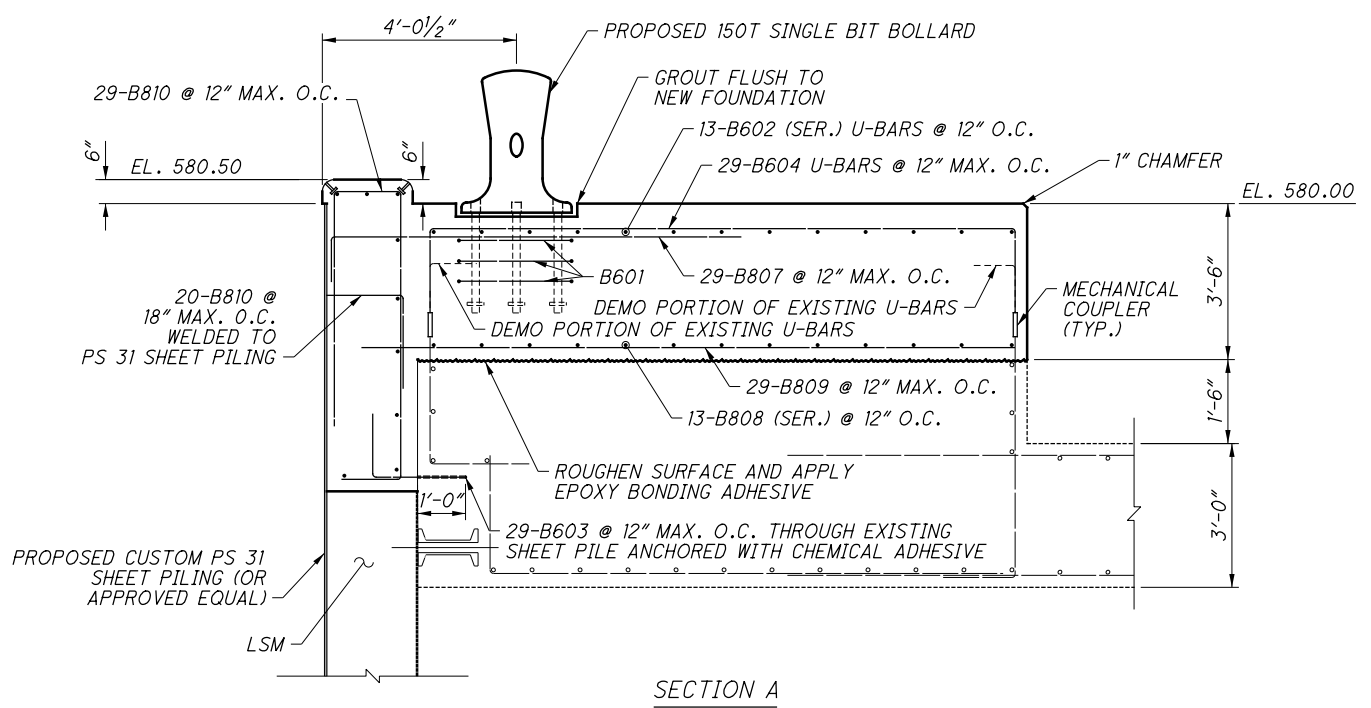
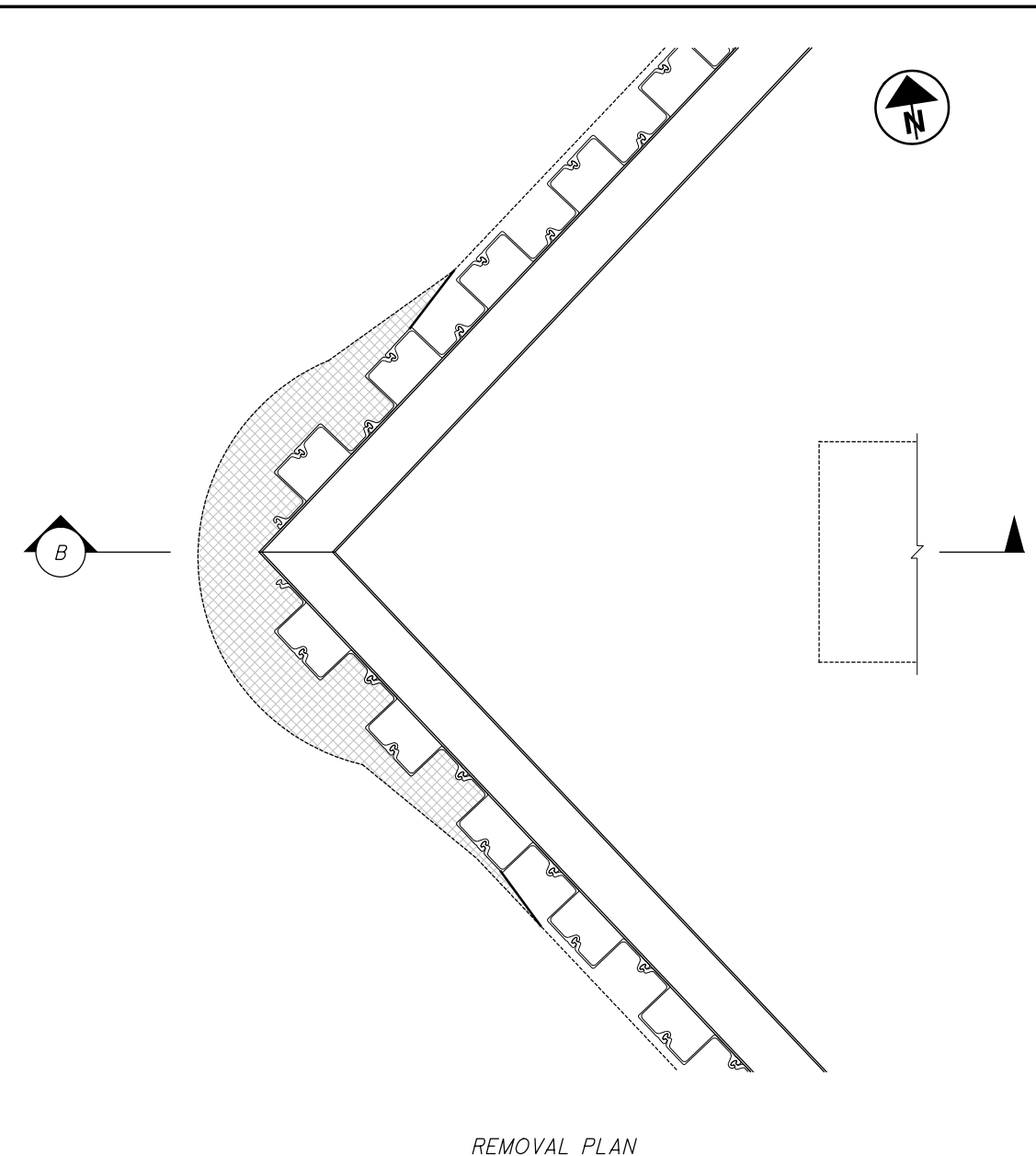
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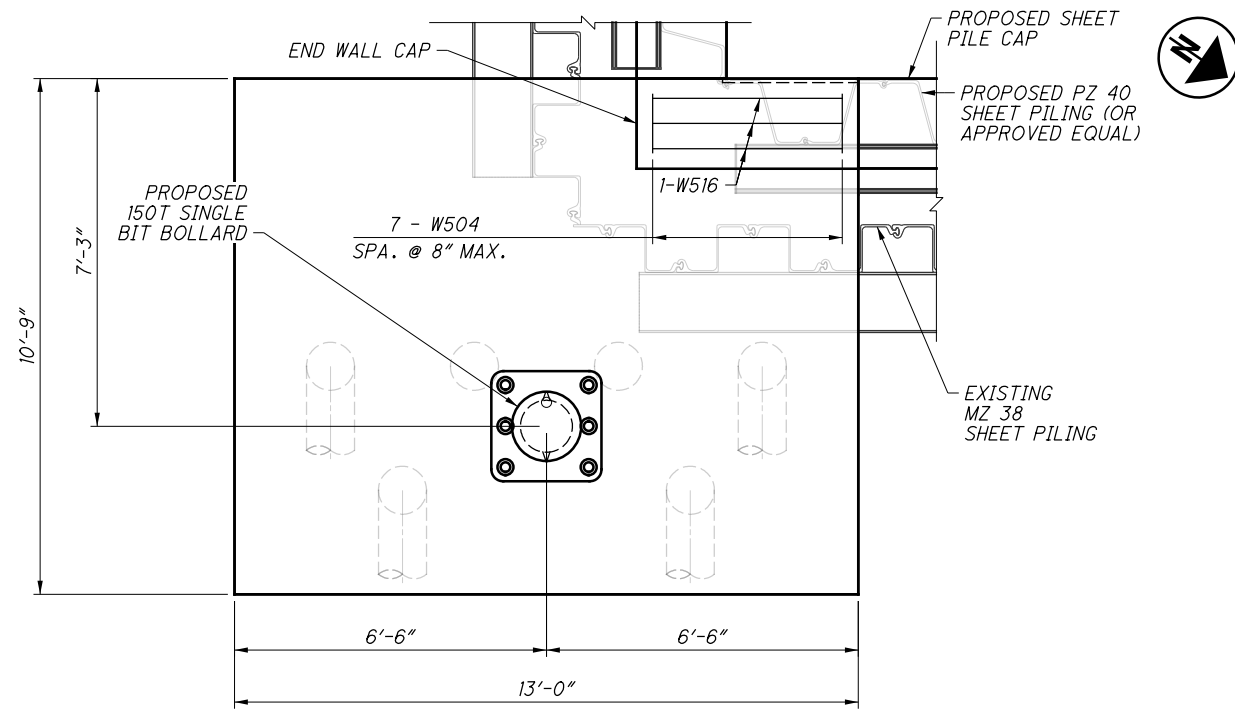
NOTES:

- SEE SHEETS 2 / 42 THROUGH 6 / 42 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.

* PANEL 10 - 26'-0"
(MEASURED ALONG LAKE SIDE)
40-W506, 39 SPA. @ 8" MAX.
= 25'-6" (FIELD BEND AS NEEDED)



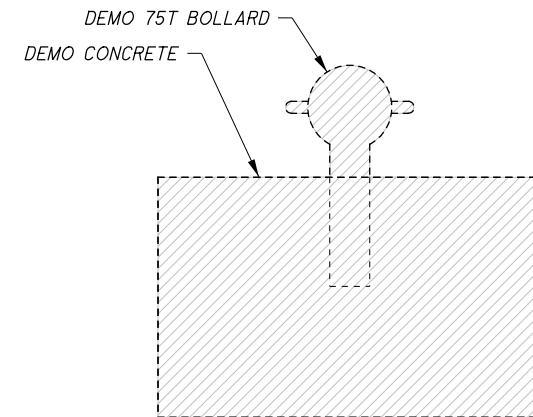
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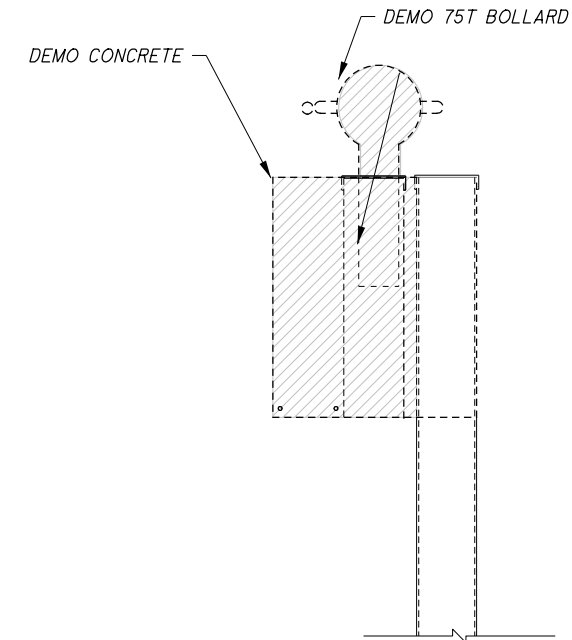
PLAN

(SHEET PILE MOUNTING HARDWARE, LSM, AND REINFORCED GRADE BEAM NOT SHOWN FOR CLARITY)

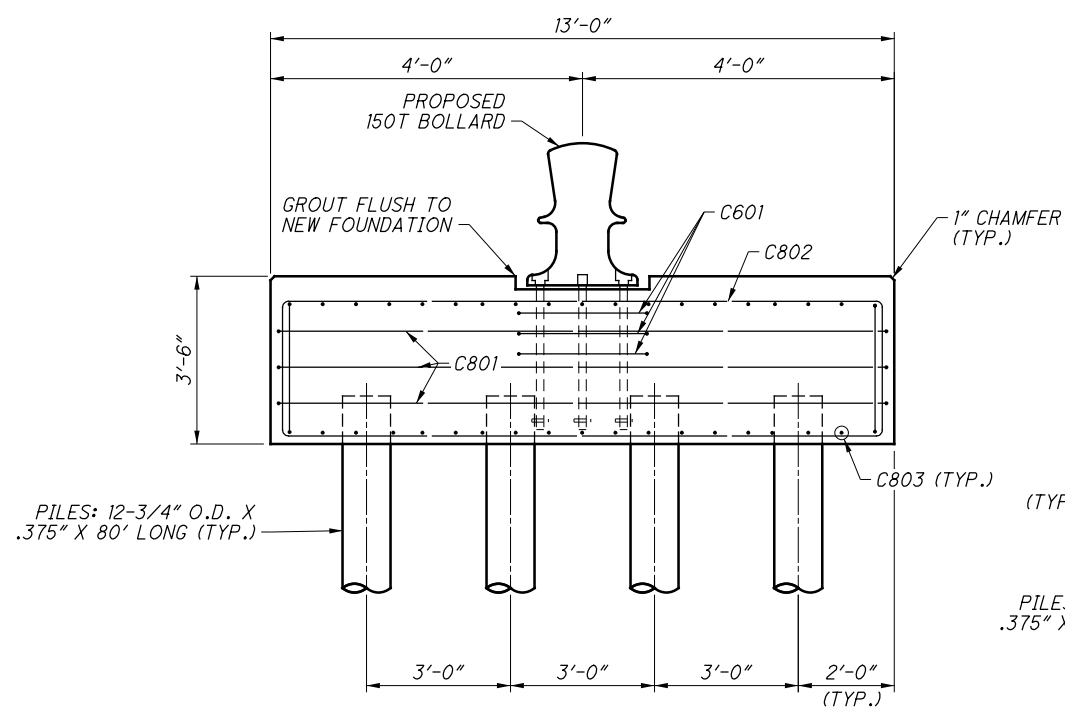
(BOLLARD FOUNDATION REINFORCING NOT SHOWN FOR CLARITY; SEE ELEVATION AND SECTION BELOW)



DEMOLITION PLAN - BOLLARD ELEVATION

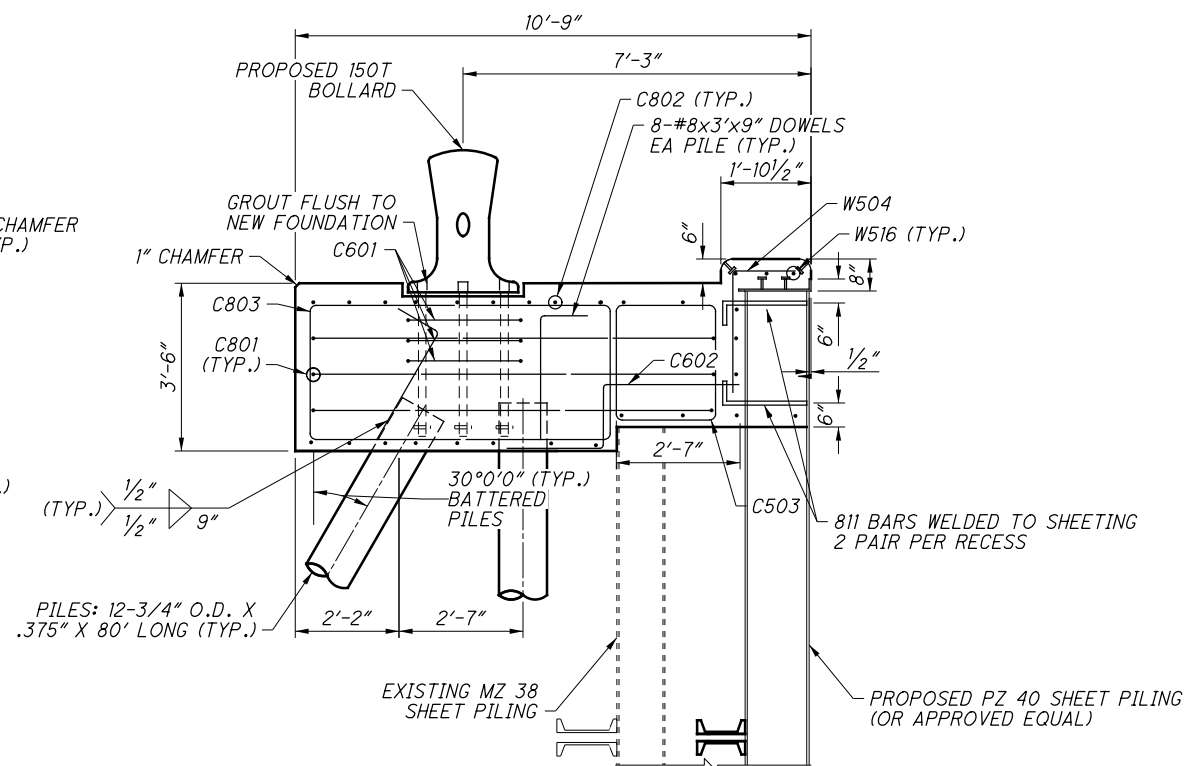


DEMOLITION PLAN - BOLLARD SECTION



ELEVATION

(SHEET PILE WALLS NOT SHOWN FOR CLARITY)

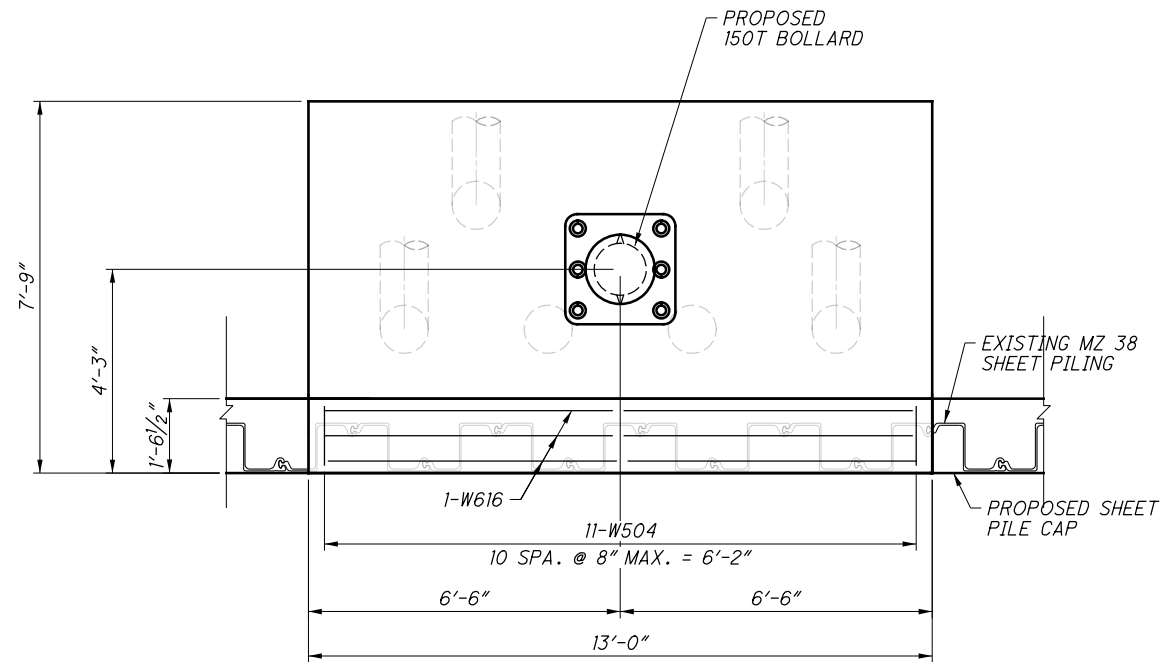


SECTION

(REINFORCED GRADE BEAM AND LSM NOT SHOWN FOR CLARITY)

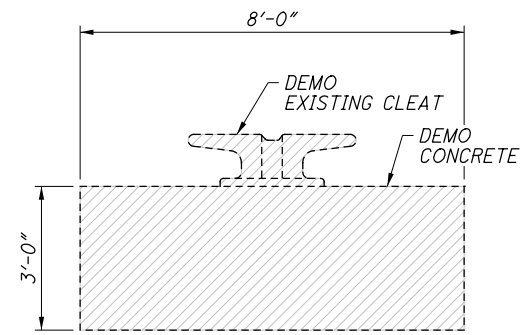
NOTES:

1. SEE SHEETS 2 / 42 THROUGH 15 / 42 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.
2. DIMENSIONS TO FACE OF WALL MAY VARY DUE TO PLACEMENT OF WALL.
3. SEE SHEETS 40 / 42 AND 41 / 42 FOR BAR SCHEDULE.
4. EXCAVATION UNDER BOLLARD SHALL BE BACKFILLED WITH LOW STRENGTH MORTAR.
5. SHOULD CONTRACTOR ELECT TO REMOVE MORE OF THE FOUNDATION OR EXISTING SHEET PILING, CONTRACTOR SHALL SUBMIT REVISED FOUNDATION DETAILS FOR APPROVAL.

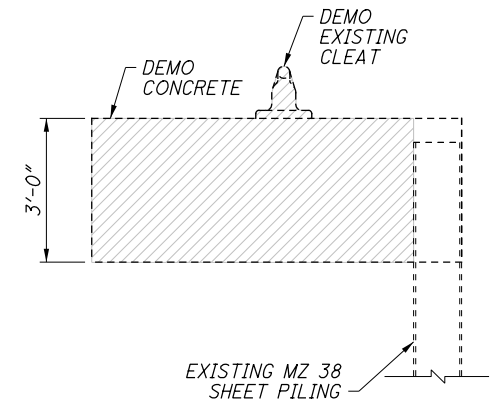


PLAN - 150T BOLLARD

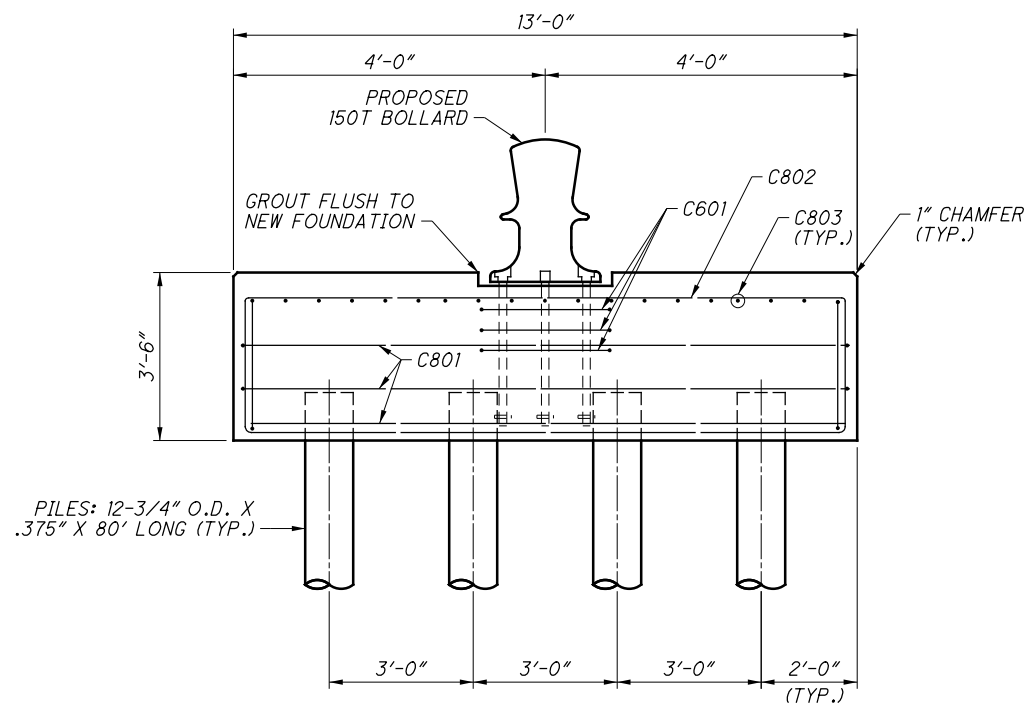
(FOUNDATION REINFORCING NOT SHOWN FOR CLARITY;
SEE ELEVATION AND SECTION BELOW)



DEMOLITION PLAN - CLEAT ELEVATION

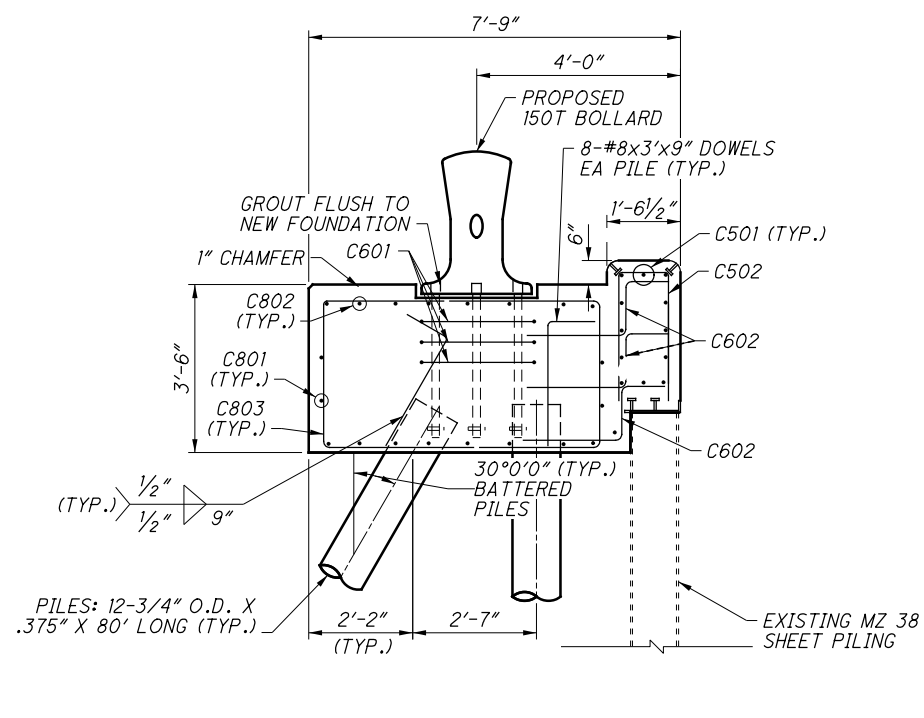


DEMOLITION PLAN - CLEAT SECTION



ELEVATION - 150T BOLLARD

SHEET PILE WALLS NOT SHOWN FOR CLARITY



SECTION - 150T BOLLARD

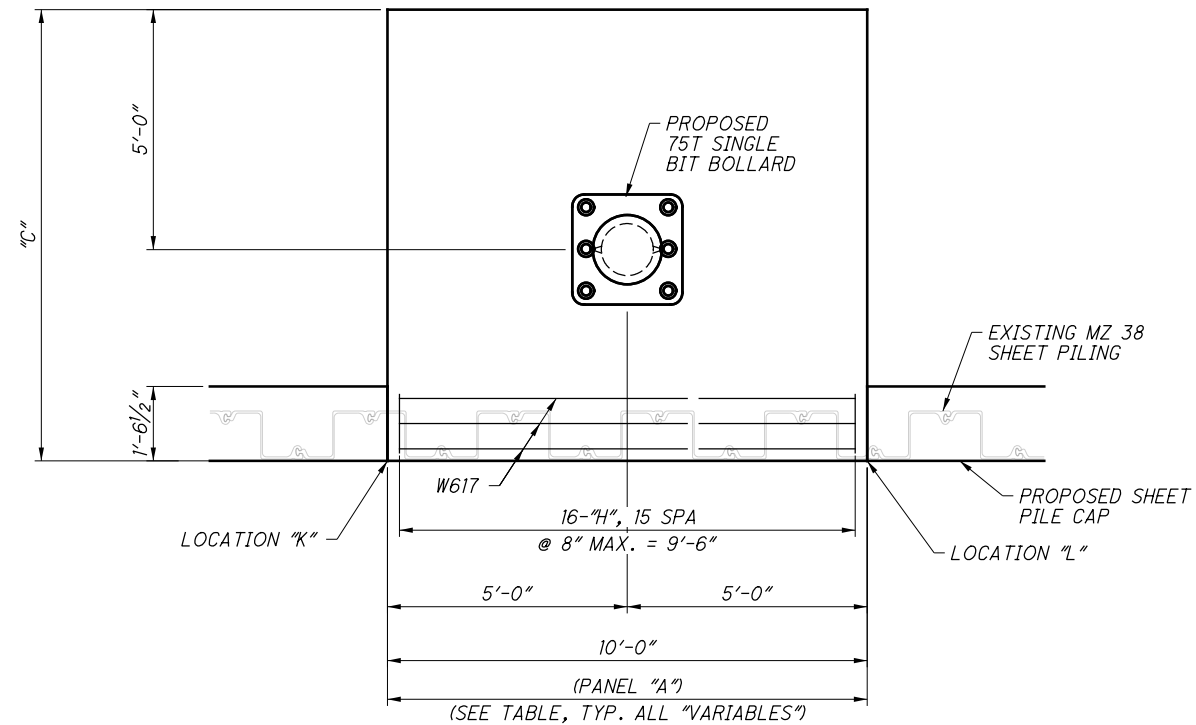
(BATTERED PILES NEAREST SHEET PILE
WALL NOT SHOWN FOR CLARITY)

BOLLARD	STATION
12	20+97.96
13	22+27.30
14	23+31.90
16	25+42.31
17	26+46.67
19	28+47.21
22	32+07.58
24	34+09.93
25	35+15.68
27	37+27.25
28	38+30.79

NOTES:

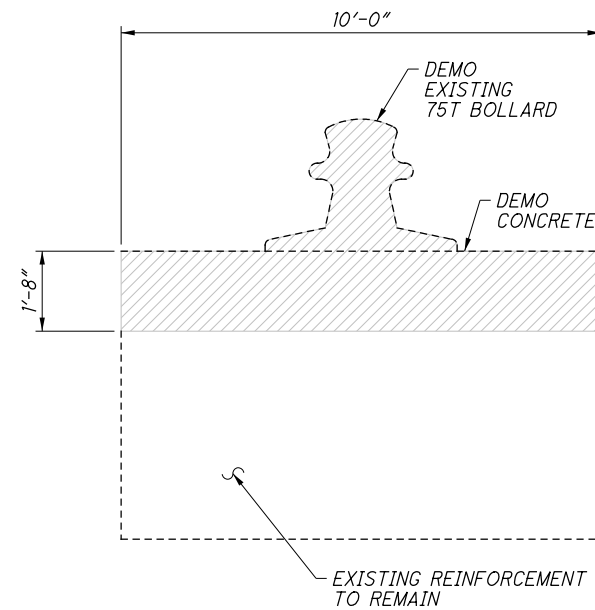
- SEE SHEETS 7 / 42 THROUGH 15 / 42 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.
- IF AFTER REMOVING THE EXISTING FOUNDATION IT IS DETERMINED THE EXISTING PILES WILL CONFLICT WITH NEW PILES, CONTRACTOR SHALL ADVISE ENGINEER AND AN ALTERNATE LOCATION WILL BE PROVIDED FOR THE NEW BOLLARD.

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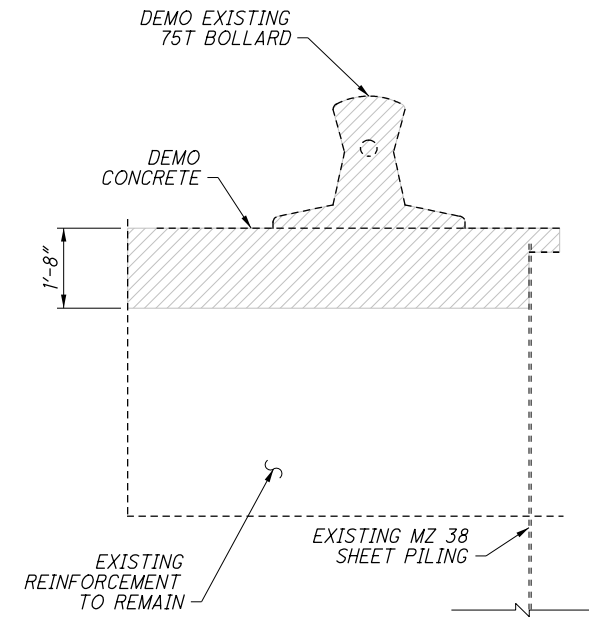


PLAN - DOCK 24 RECONSTRUCT BOLLARD

(BOLLARD FOUNDATION REINFORCING NOT SHOWN FOR CLARITY; SEE ELEVATION AND SECTION BELOW)

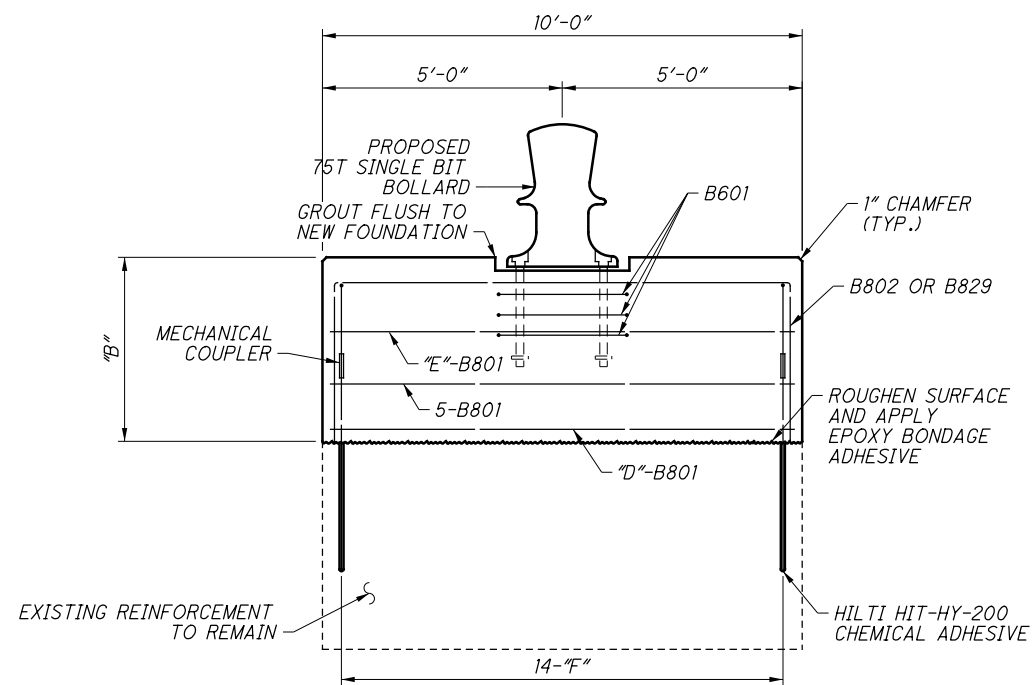


DEMOLITION PLAN - TYPICAL DOCK 24 BOLLARD ELEVATION



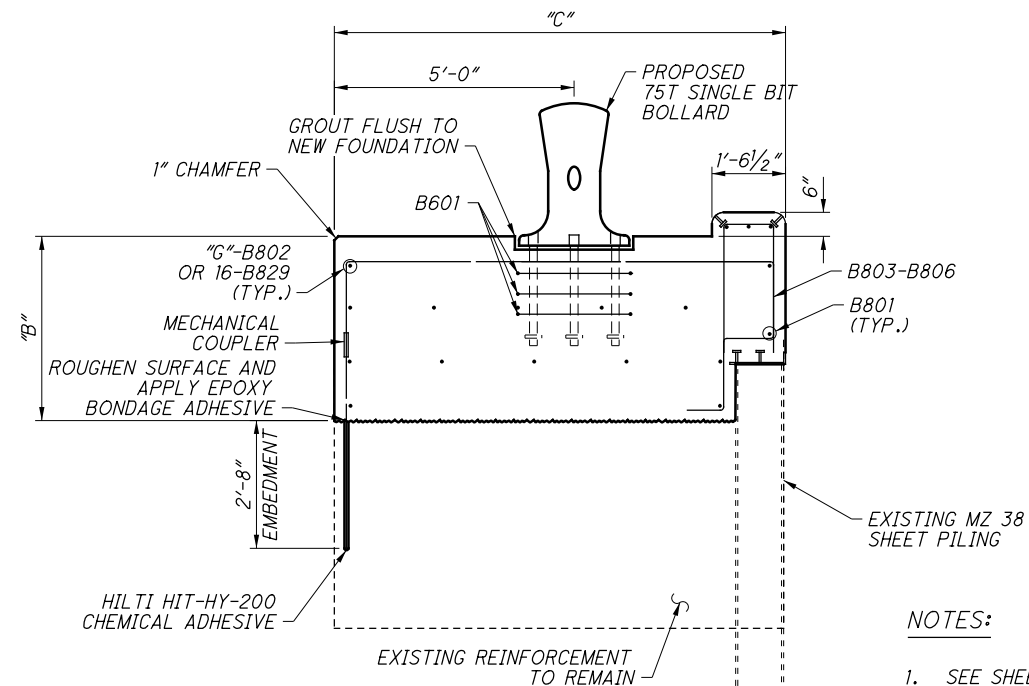
DEMOLITION PLAN - TYPICAL DOCK 24 BOLLARD SECTION

BOLLARD NO.	STATION	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"K"	"L"
15	24+36.87	16	3'-7"	9'-4 7/8"	12	6	B803	9	W505	C12	C13
20	29+13.45	36	3'-10"	8'-4 3/4"	11	5	B804	8	W506	C28	C29
21	31+41.94	47	3'-10"	9'-0 3/8"	12	6	B805	8	W506	C35	C36
26	36+20.65	68	3'-7"	8'-7 1/4"	11	6	B806	8	W505	C49	C50



ELEVATION - DOCK 24 RECONSTRUCT BOLLARD

SHEET PILE WALLS NOT SHOWN FOR CLARITY



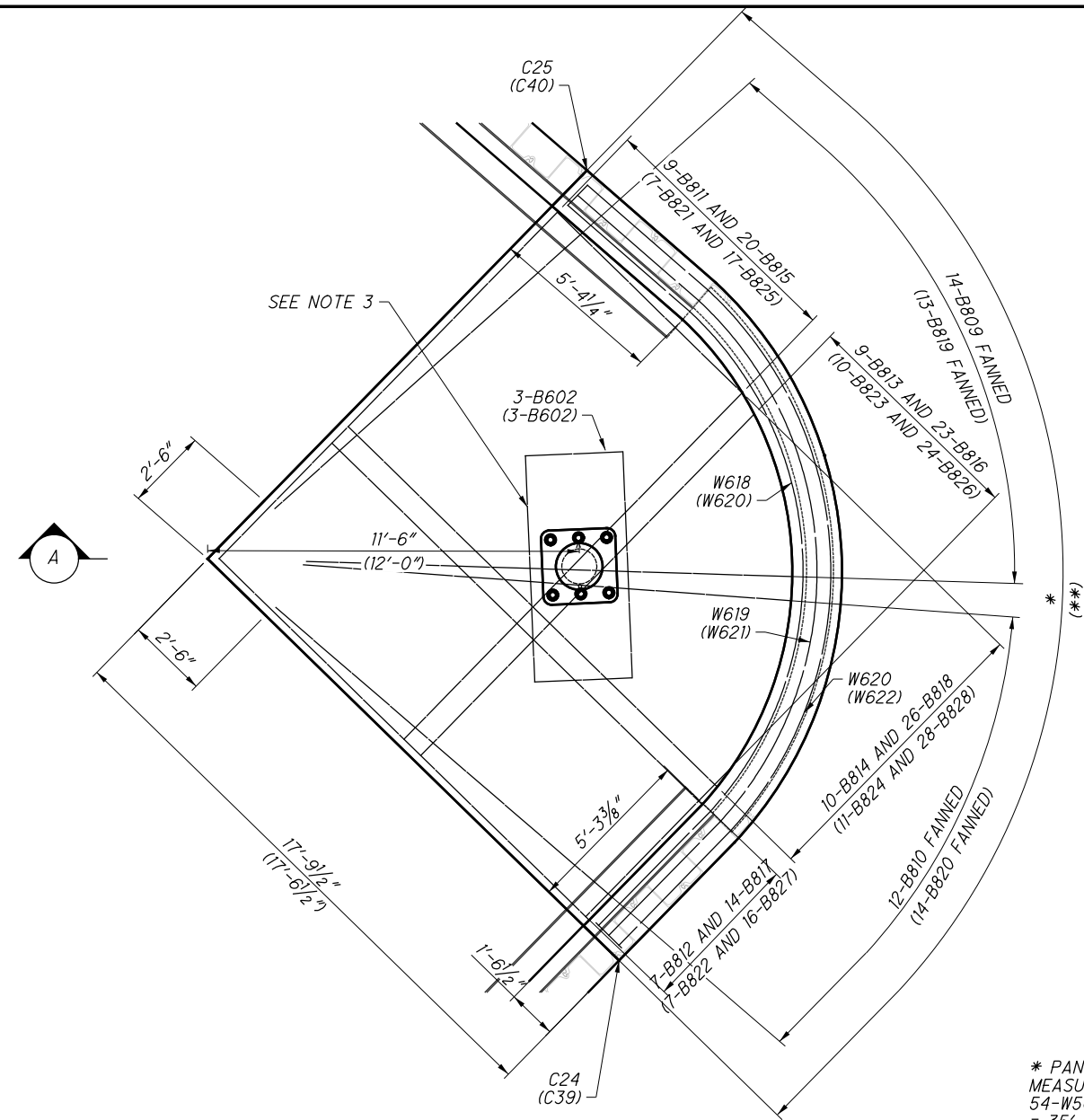
SECTION - DOCK 24 RECONSTRUCT BOLLARD

NOTES:

- SEE SHEETS 7 / 42 THROUGH 15 / 42 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.
- AVOID EXISTING REINFORCEMENT. USE PACHOMETER TO DETERMINE LOCATION OF EXISTING REINFORCEMENT.

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PROPOSED PLAN B18 & B23

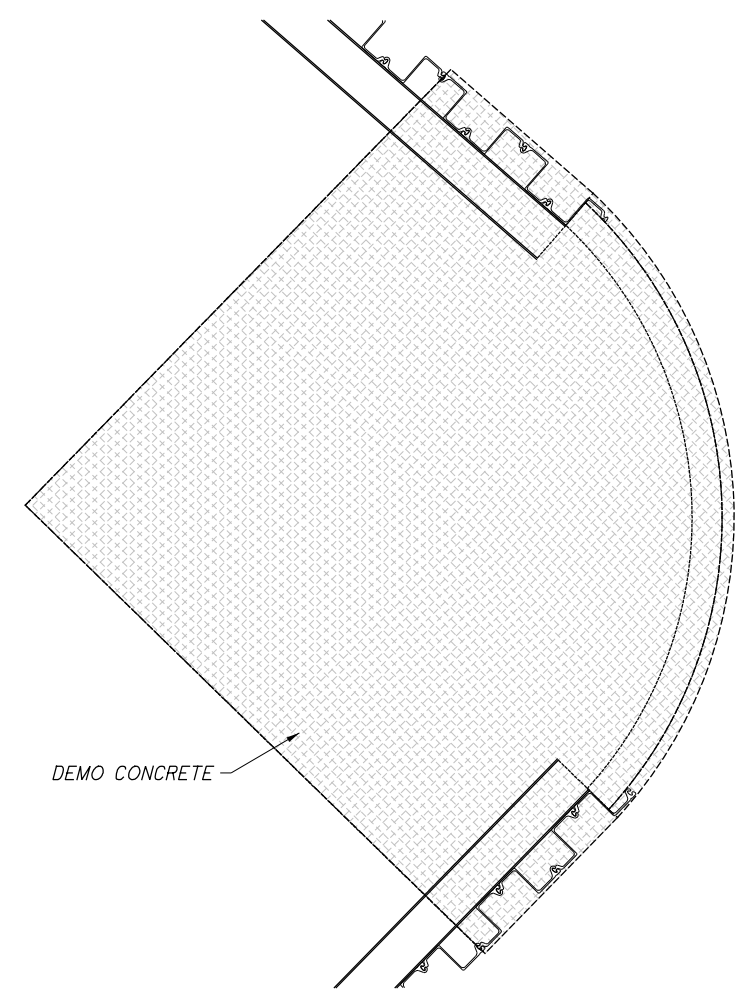
N.E. CORNER BOLLARD SHOWN
(N.W. CORNER BOLLARD SIMILAR IN PARENTHESIS)

NOTES:

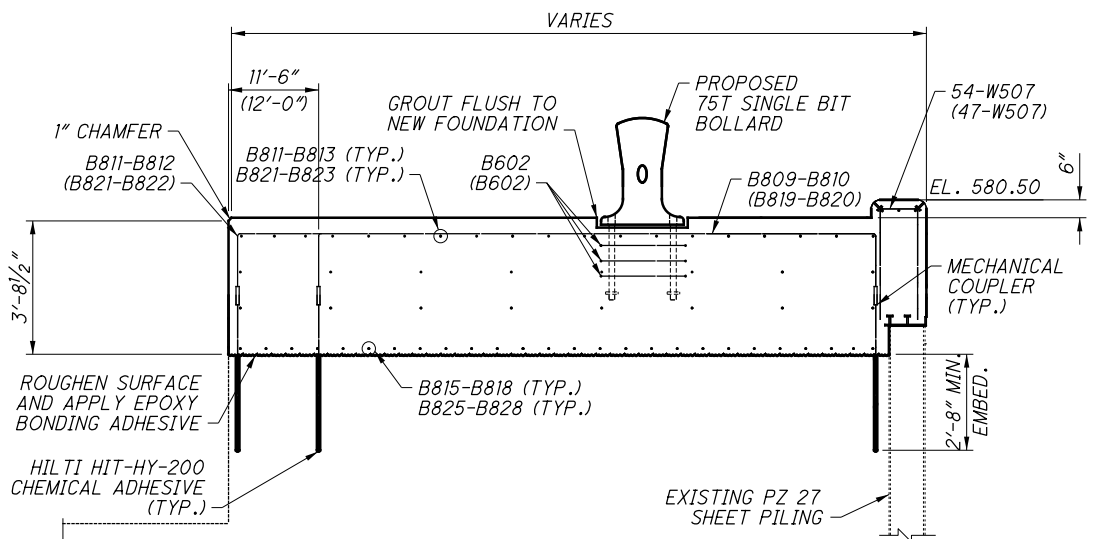
1. SEE SHEETS 2 / 42 THROUGH 6 / 42 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.
2. C= CONTRACTION JOINT.
3. FORM INDIVIDUAL BOLLARD POCKETS FOR EACH BOLLARD.

* PANEL 32 - 35'-6 1/2"
MEASURED ALONG LAKE SIDE
54-W507, 53 SPA. @ 8" MAX.
= 35'-0" (FIELD BEND AS NEEDED)

(** PANEL 53 - 30'-6 1/8"
MEASURED ALONG LAKE SIDE
47-W507, 46 SPA. @ 8" MAX.
= 30'-0" (FIELD BEND AS NEEDED))

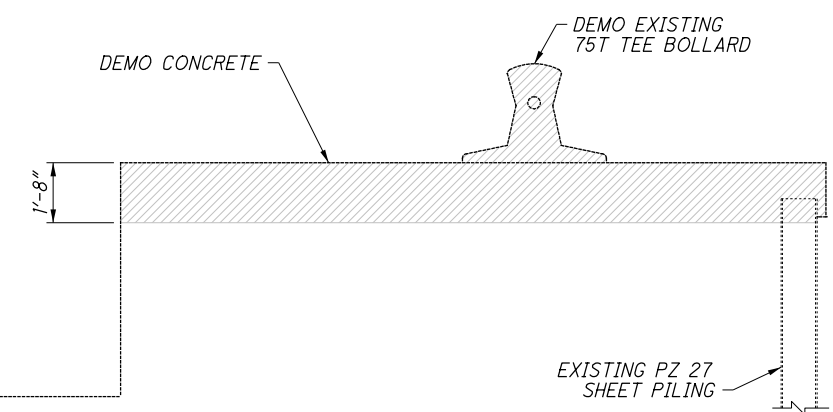


REMOVAL PLAN
N.E. CORNER BOLLARD SHOWN
(N.W. CORNER BOLLARD SIMILAR)



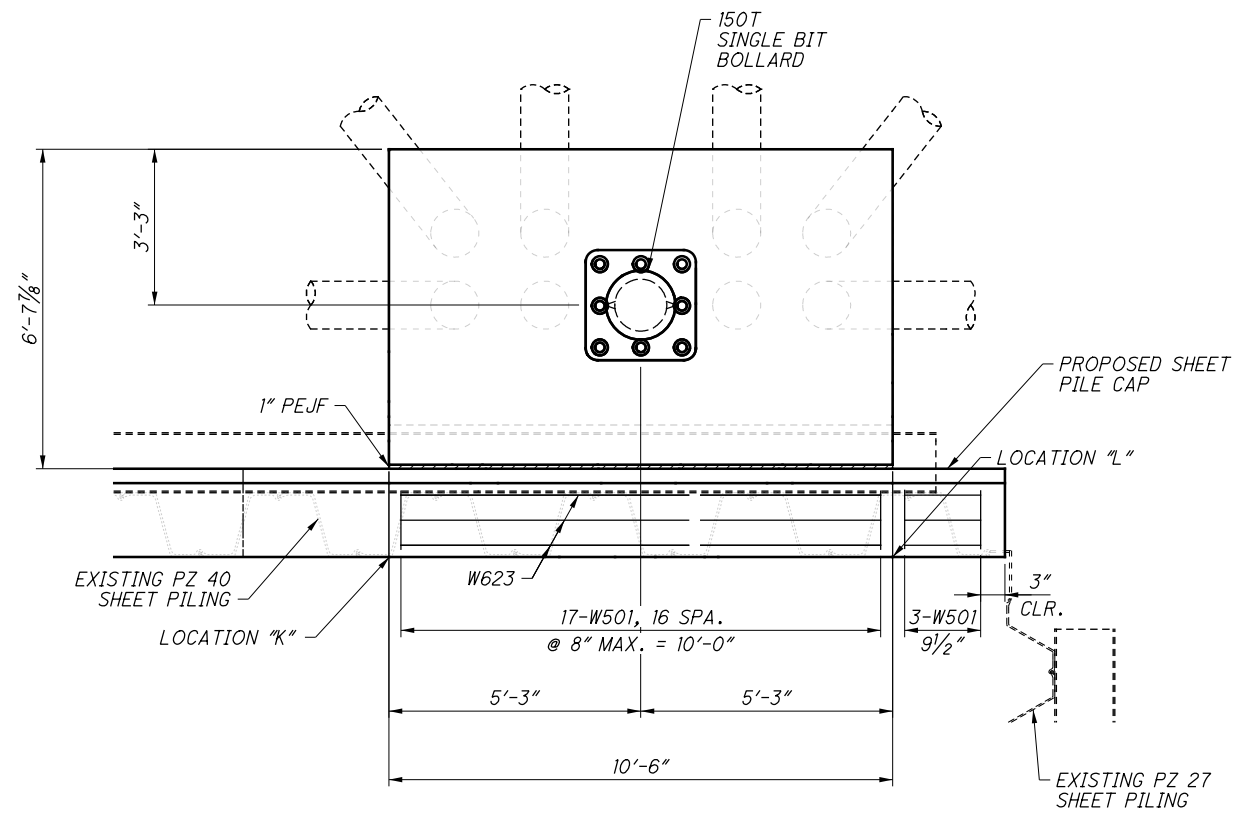
SECTION A

N.E. CORNER BOLLARD SHOWN
(N.W. CORNER BOLLARD SIMILAR IN PARENTHESIS)



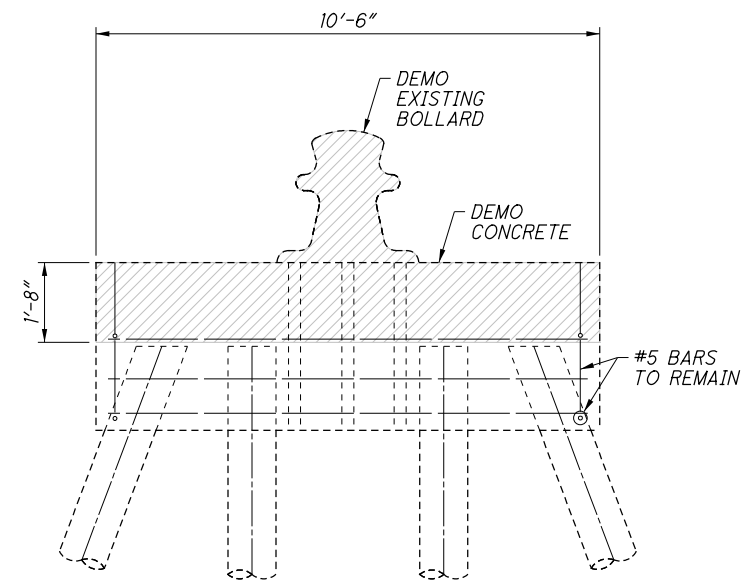
SECTION B

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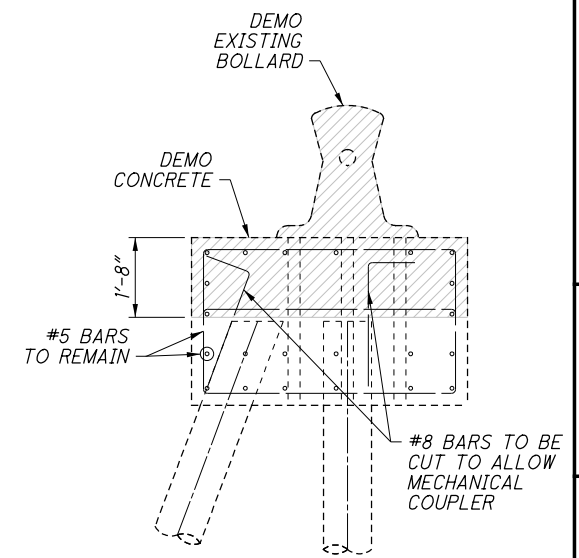


PLAN - DOCK 24 BOLLARD B29 & B30

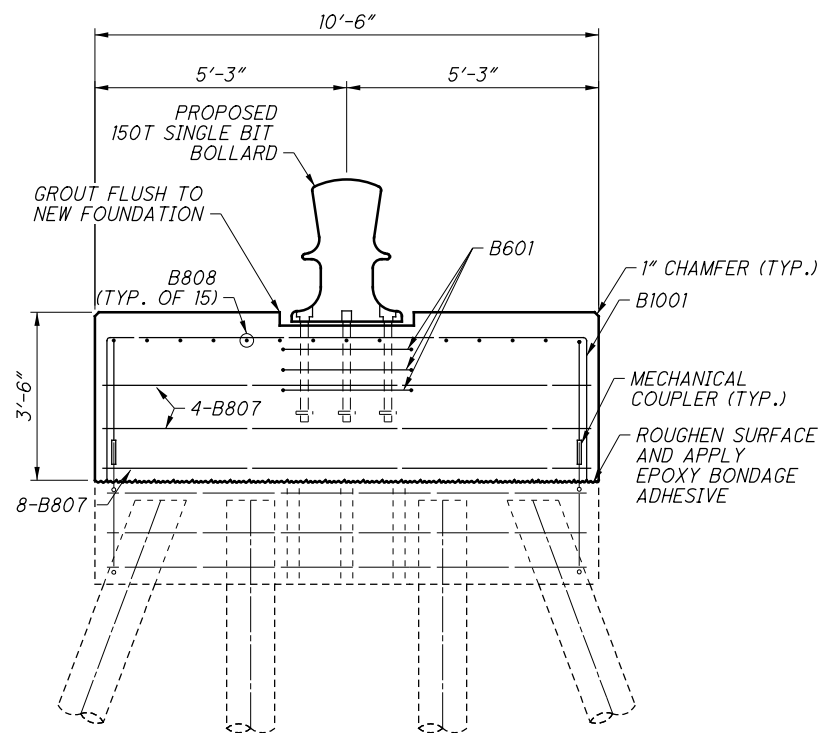
(BOLLARD FOUNDATION REINFORCING NOT SHOWN FOR CLARITY;
SEE ELEVATION AND SECTION BELOW)



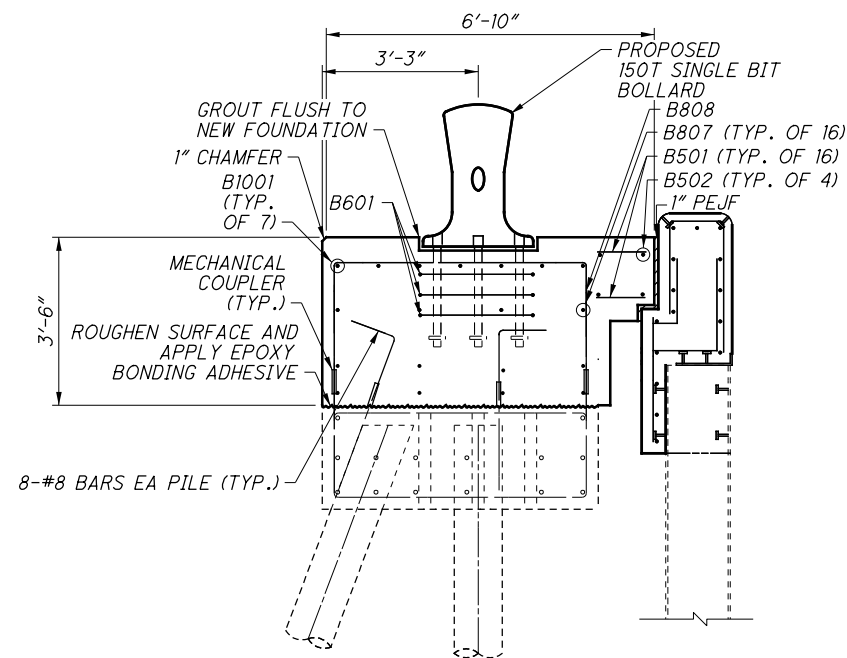
DEMOLITION PLAN - DOCK 24 SW BOLLARD ELEVATION



DEMOLITION PLAN - DOCK 24 SW BOLLARD SECTION



ELEVATION - DOCK 24 B29 & B30 BOLLARD
SHEET PILE WALLS NOT SHOWN FOR CLARITY

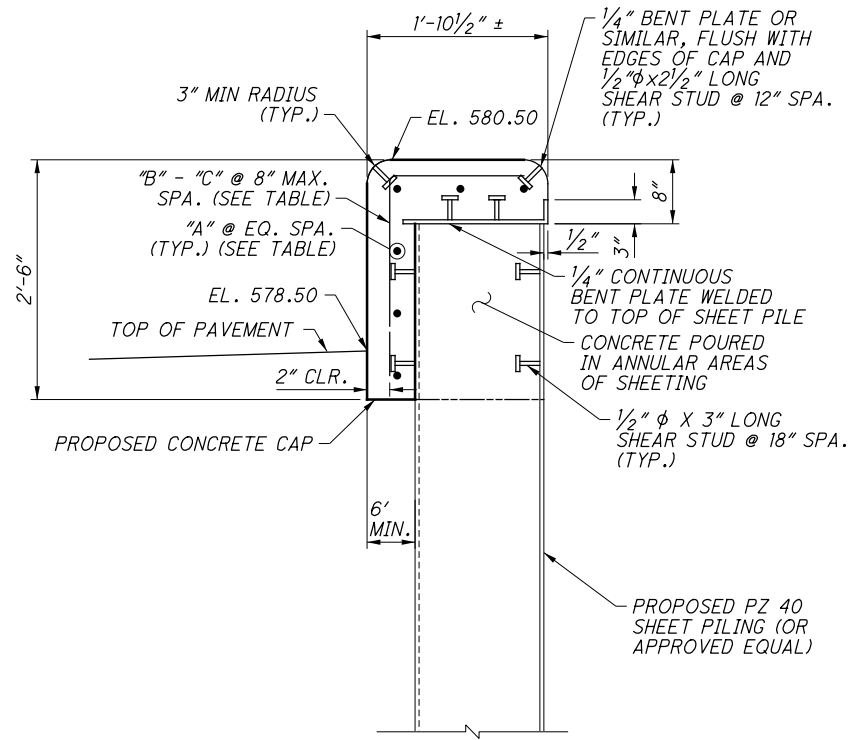


SECTION - DOCK 24 B29 & B30 BOLLARD

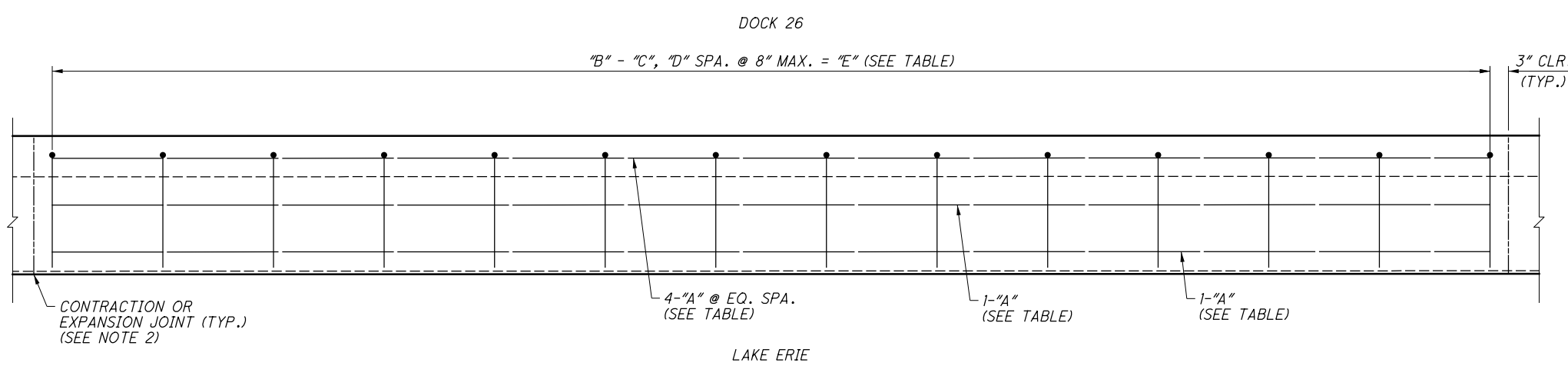
NOTES:

- SEE SHEETS 7 / 42 THROUGH 15 / 42 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.

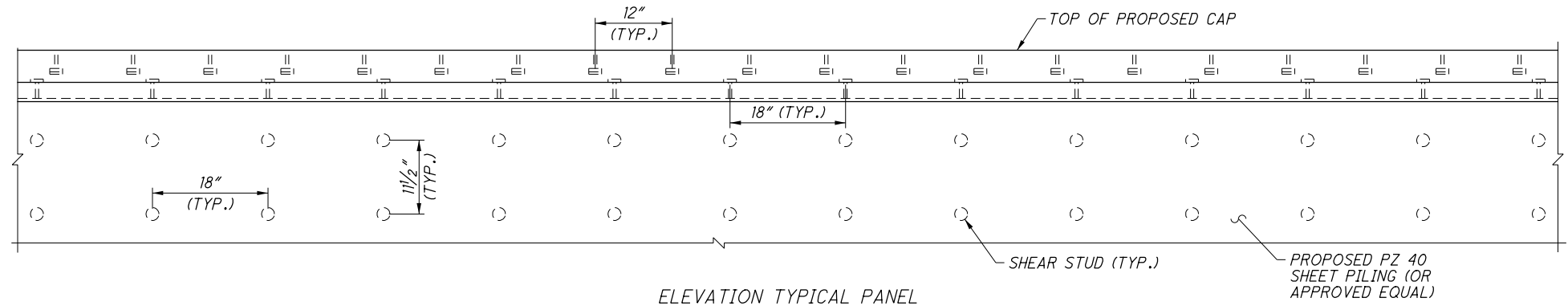
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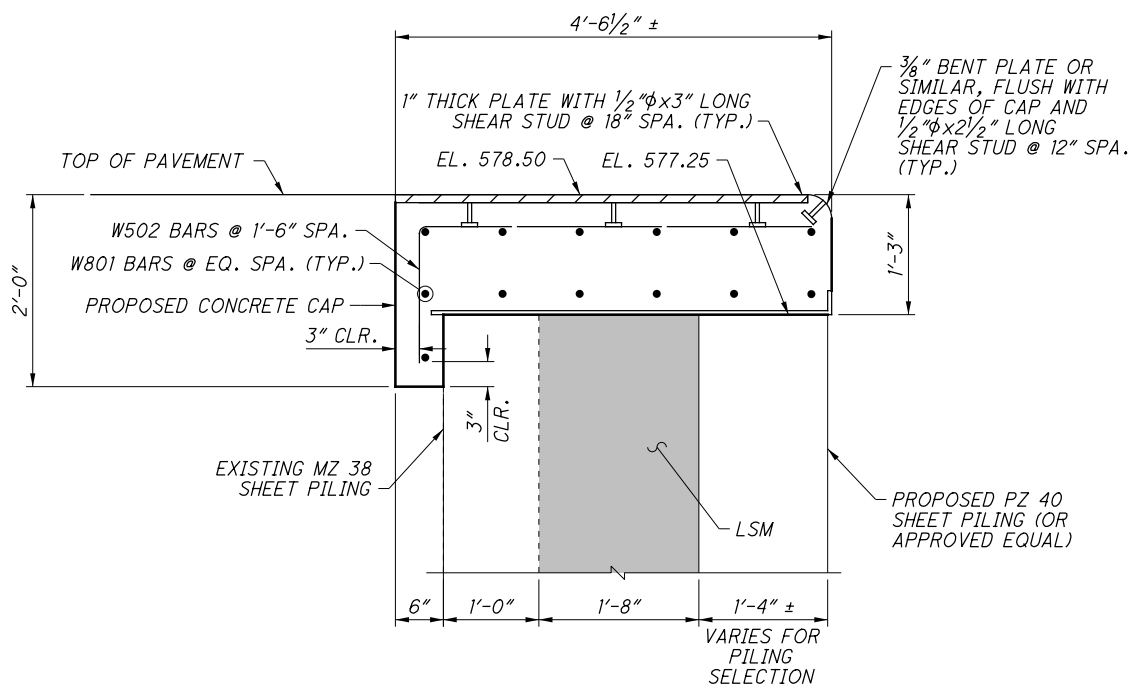
TYPICAL SECTION - PROPOSED CAP



PLAN TYPICAL PANEL - PROPOSED CAP



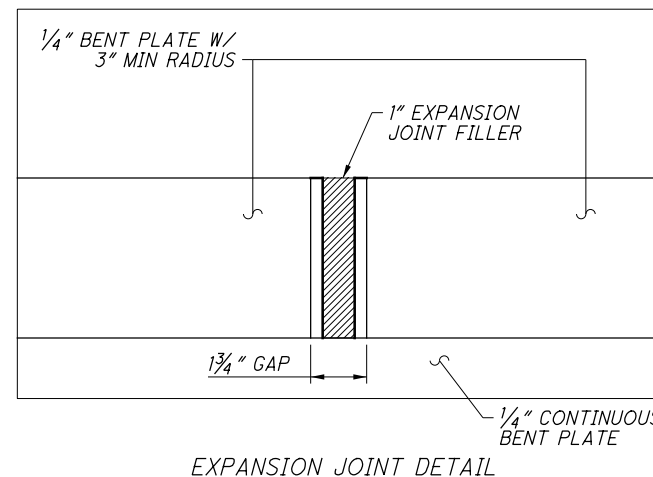
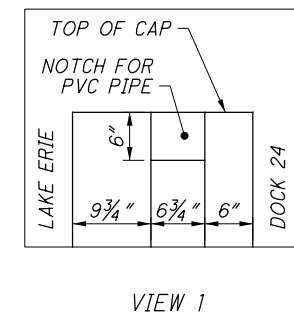
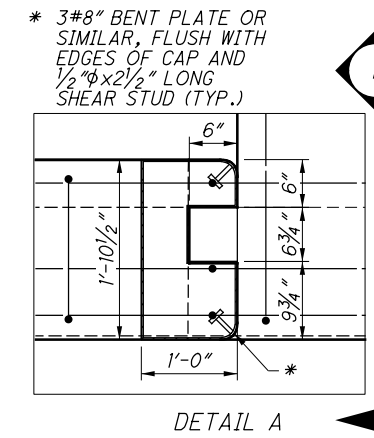
ELEVATION TYPICAL PANEL
(REINFORCING NOT SHOWN FOR CLARITY)



SECTION A - PROPOSED CAP
(TYP. AT SHIP ACCESS OPENINGS)

PANEL LENGTH	PANEL NUMBERS	TABLE VARIABLE				
		A	B	C	D	E
20'-0"	6-9, 11-15, 21-23, 25, 27, 29-31, 33, 35, 37-39, 41-44, 47-56	W601	31	W501	30	19'-6"
30'-6"	2 & 4	W602	46	W501	45	30'-0"
30'-0"	17-19	W603	46	W501	45	29'-6"
14'-0"	34	W604	22	W501	21	13'-6"
16'-9 1/2"	46	W605	26	W501	25	16'-3"

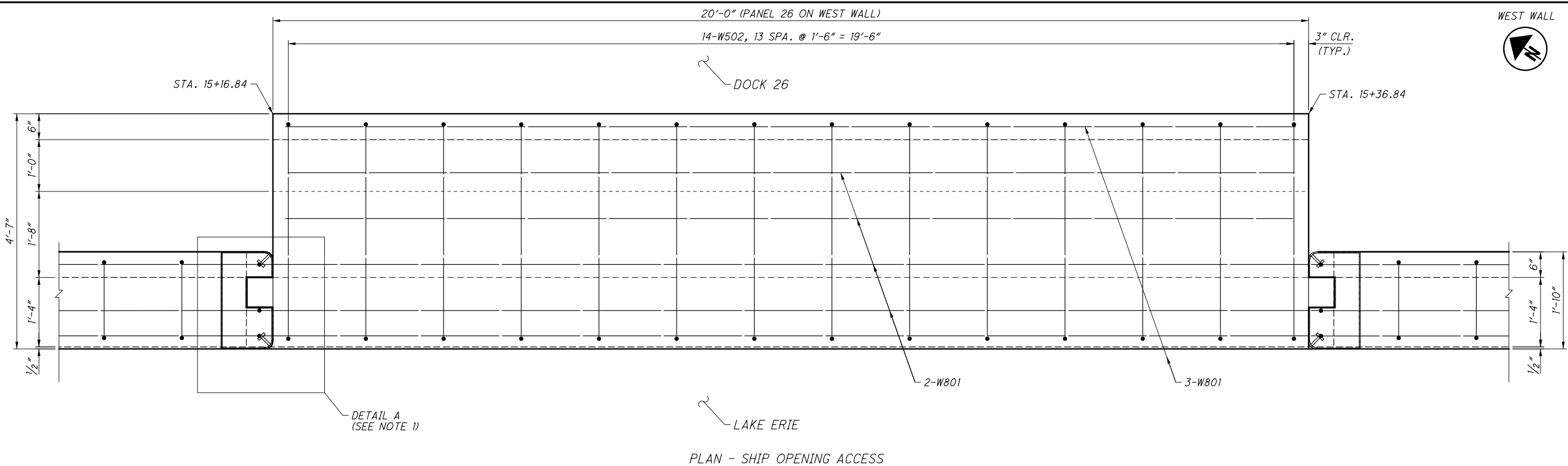
NOTE: SEE SHEET 31 ELEVATION - SHIP ACCESS OPENING FOR ADDITIONAL REINFORCING AT PANELS 2, 4, 25, 27 WHERE PILE CAP TRANSITIONS AT DOCK SIDE



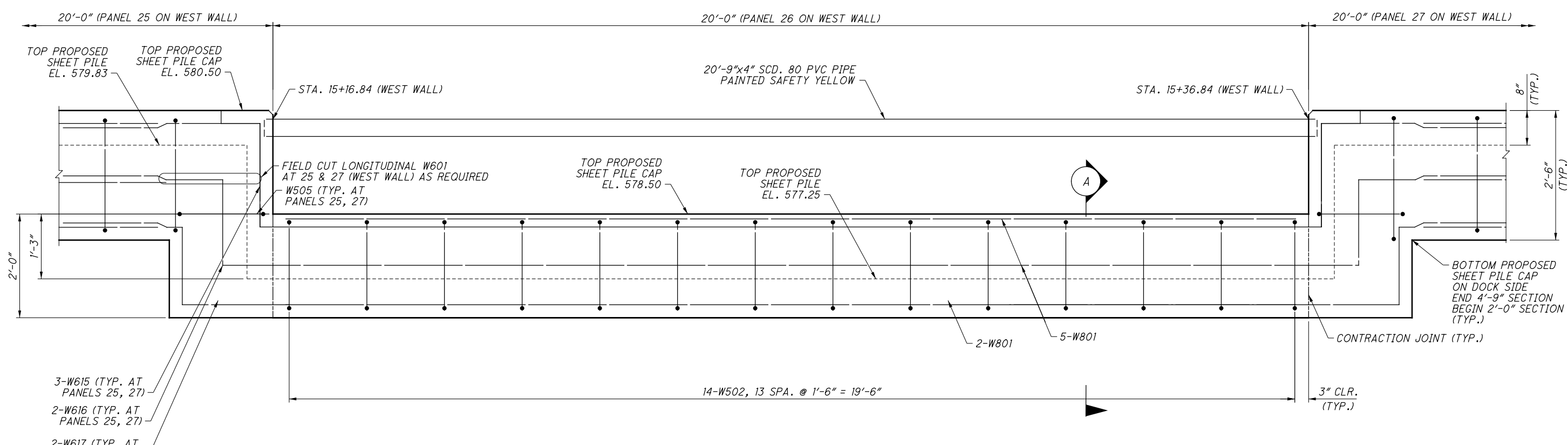
NOTES:

- SEE SHEET 31 OF 42 FOR LOCATIONS OF SECTION A, DETAIL A, AND OTHER SHEET PILING CAP DETAILS.
- SEE SHEETS 2 THROUGH 15 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.
- THE CONTINUOUS BENT PLATE WELDED TO THE TOP OF THE SHEET PILE SHALL BE SIZED TO COMPLETELY COVER THE SHEET PILE. THE HALF INCH OVERHANG ON THE FRONT OF THE SHEET MAY BE INCREASED UP TO 2 INCHES TO ACCOUNT FOR VARIABILITY IN SHEET PILE DRIVING. THE BENT PLATE SHALL NOT EXTEND MORE THAN 1 INCH BEYOND THE BACK OF THE SHEET PILE. BENT PLATE SHALL BE TRIMMED AS NEEDED TO CONFORM AT NO ADDITIONAL COST TO OWNER.

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PLAN - SHIP OPENING ACCESS

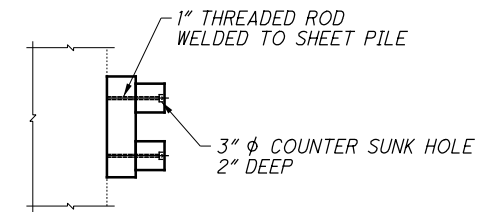
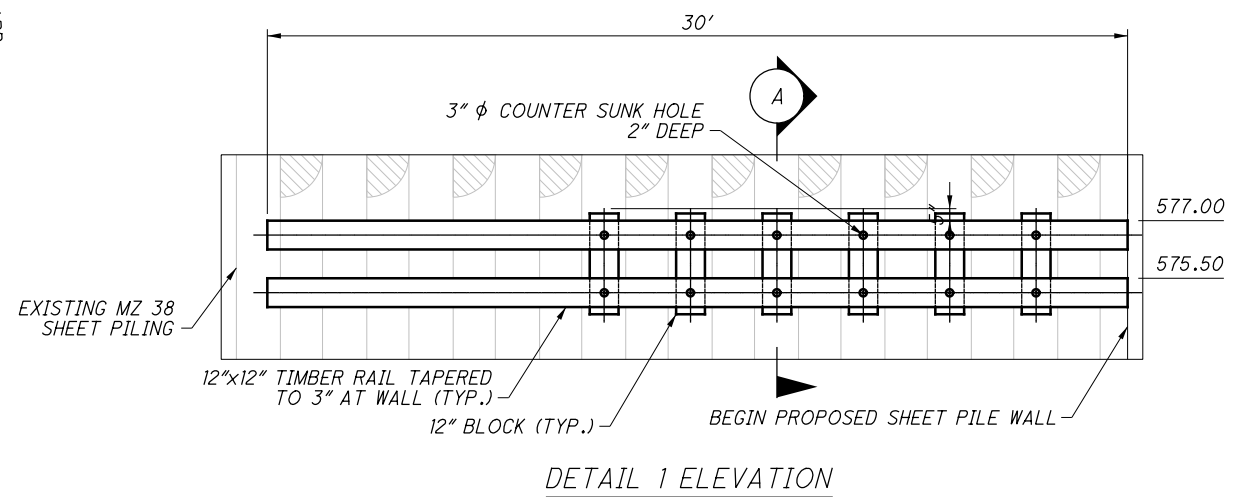
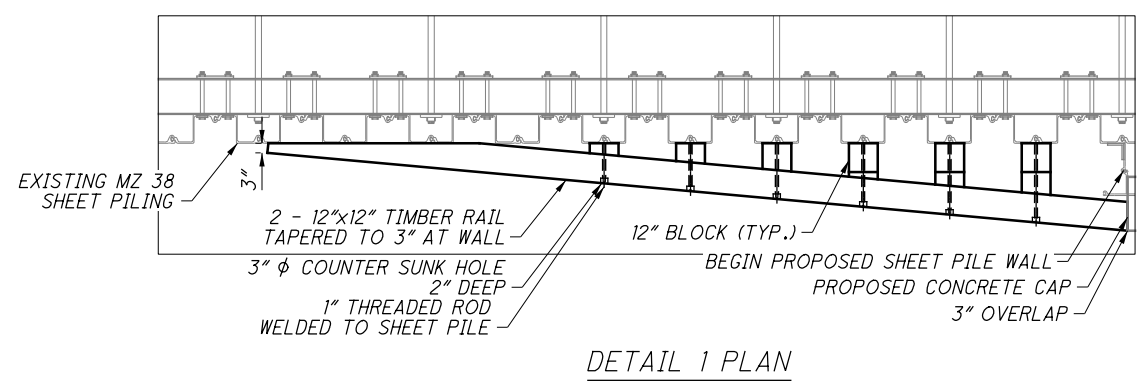
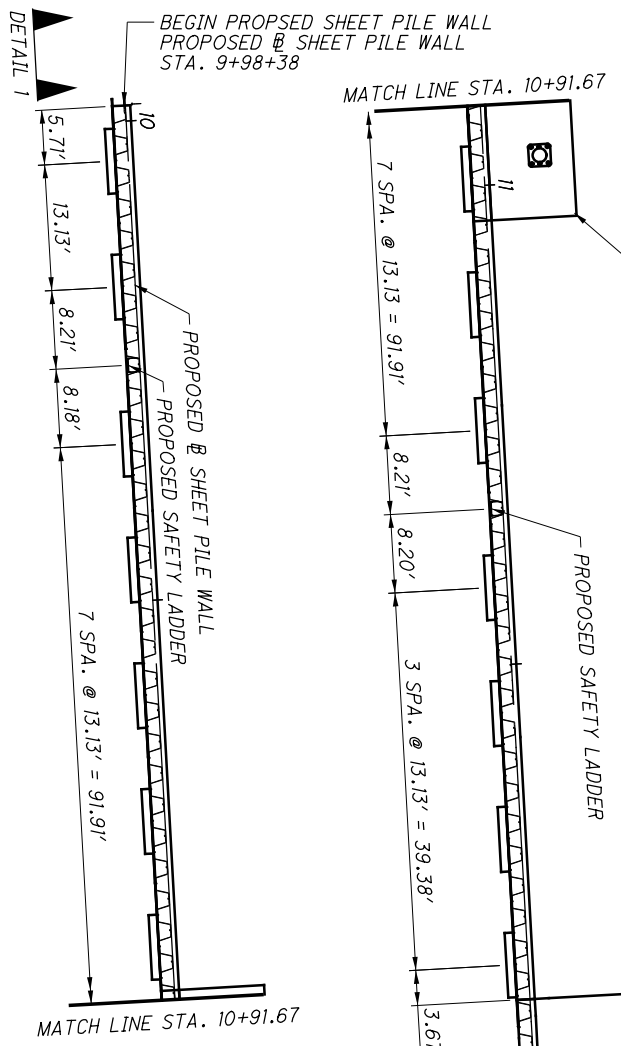


ELEVATION - SHIP OPENING ACCESS
(VIEW LOOKING FROM LAKE ERIE TO DOCK 26)

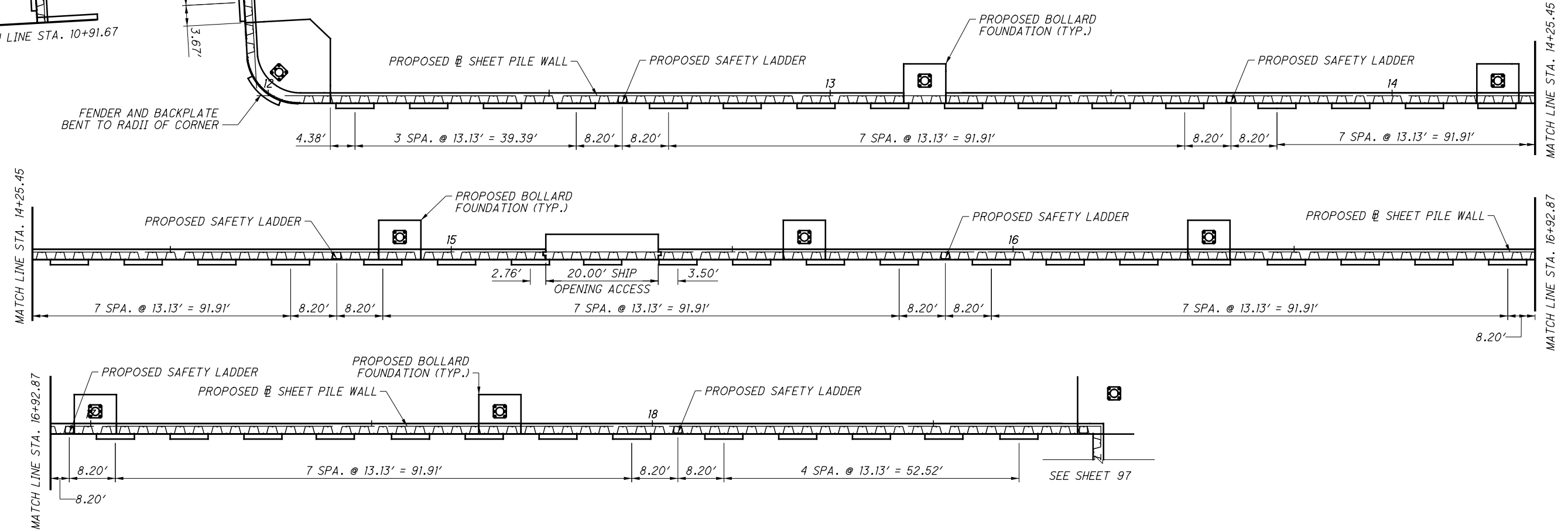
- NOTES:
- SEE SHEET 30 OF 42 FOR SECTION A, DETAIL A, AND OTHER SHEET PILING CAP DETAILS.
 - SEE SHEETS 2 THROUGH 6 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS AND PANEL NUMBERING LAYOUT.

DESIGNED NCM CHECKED PPA	DRAWN JAG REVISED
REVIEWED RJM	DATE 1/22/21 STRUCTURE FILE NUMBER
DOCK 24 & 26W PID No. 113698	
SHEET PILING CAP DETAILS DOCK 26 WEST SHEET PILE WALL OPENING FOR SHIP LOADING	
31 / 42	
95 106	

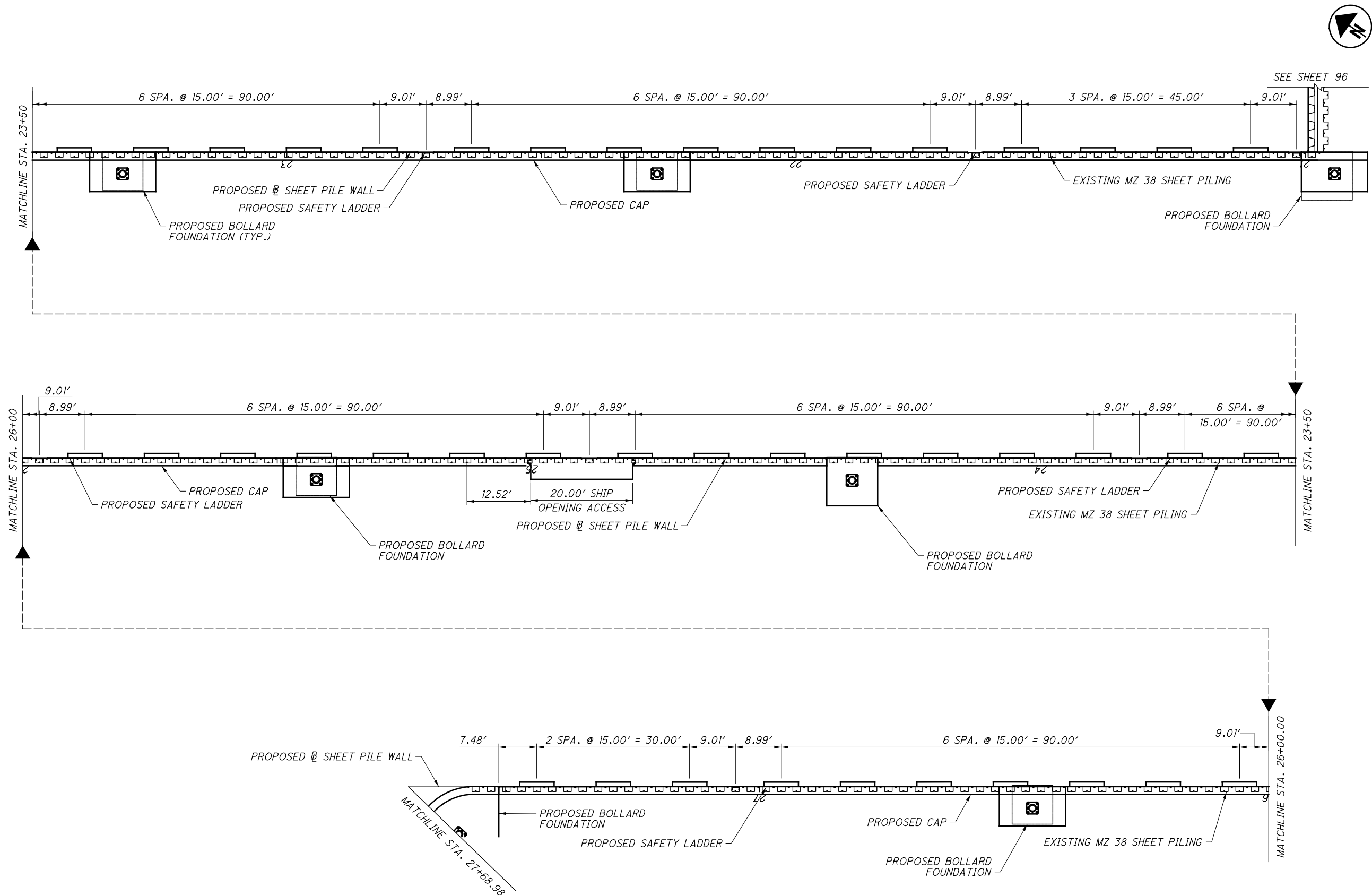
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- NOTES:**
1. FENDER ASSEMBLY DIMENSIONS ARE c/c OF ASSEMBLY.
 2. SEE SHEET 36 OF 42 FOR FENDER DETAILS.
 3. CYLINDRICAL RUBBER FENDERS NOT SHOWN FOR CLARITY.
 4. THE NORTH SIDE OF EACH DOCK SHALL NOT HAVE WING TYPE FENDERS, ONLY CYLINDRICAL.
 5. TIMBER SHALL BE SOUTHERN YELLOW PINE #2 CCA PRESSURE TREATED TO 0.80 PCF.
 6. ALL WORK NECESSARY TO CONSTRUCT THE FENDERS AS SHOWN IN THESE PLANS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID, INCLUDING CYLINDRICAL AND WING TYPE FENDERS, THE TIMBER TRANSITION BETWEEN NEW AND OLD WALLS, BASEPLATE, CHAINS, SHACKLES, HARDWARE, AND REMOVAL OF THE EXISTING FENDER SYSTEM.



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NOTES:

1. FENDER ASSEMBLY DIMENSIONS ARE c/c OF ASSEMBLY.
2. SEE SHEET 36 OF 42 FOR FENDER DETAILS.
3. CYLINDRICAL RUBBER FENDERS NOT SHOWN FOR CLARITY.

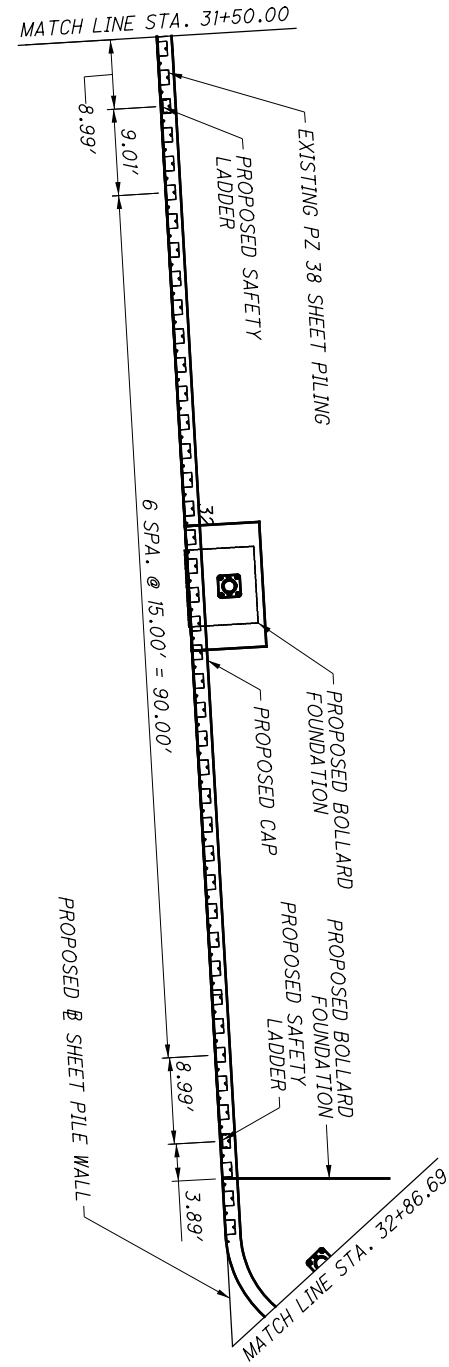
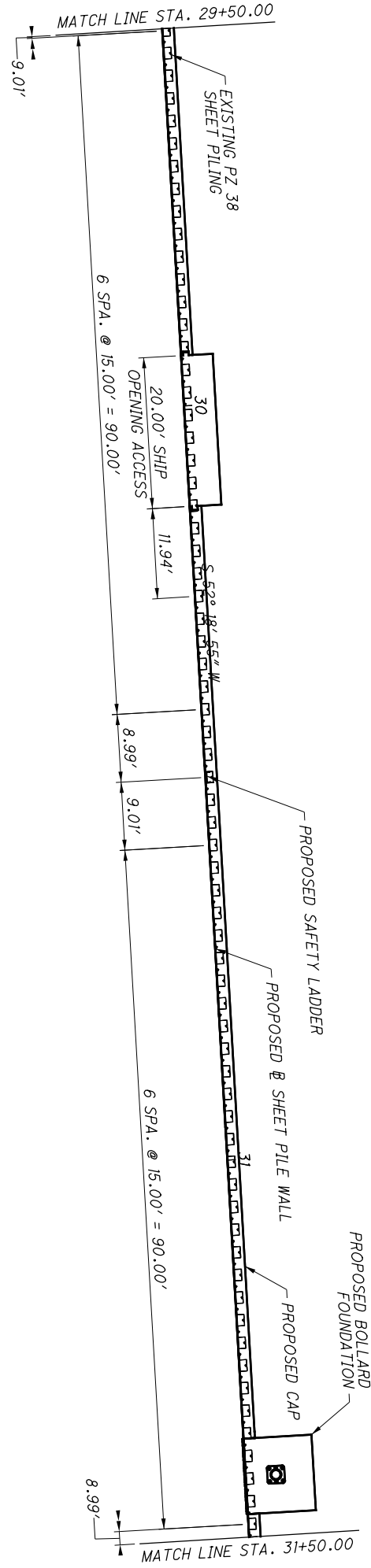
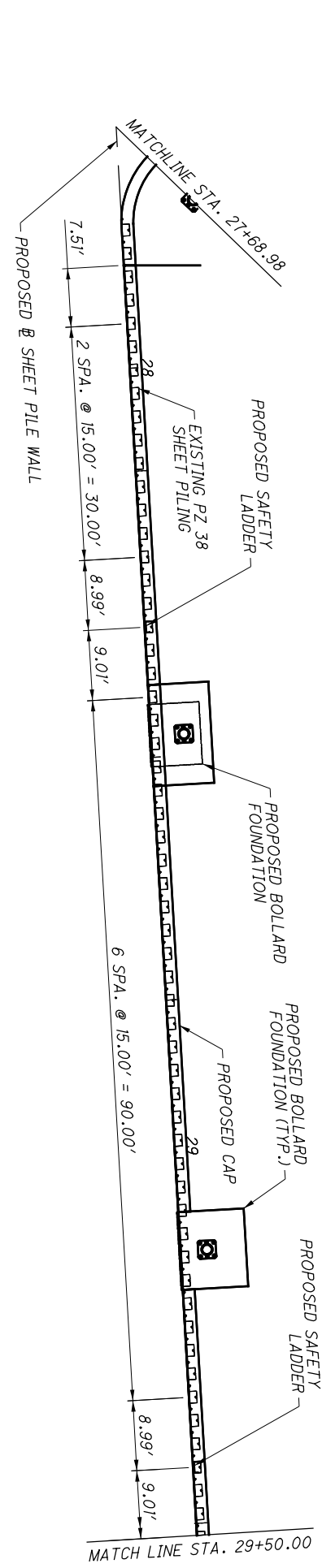


SEE SHEET 96

DESIGNED	NL	CHECKED	PPA
DRAWN	JAG	REVIS	
REVIEWED	RJM	STRUCTURE FILE NUMBER	
DATE	1/22/21		

FENDER LAYOUT
 DOCK 24 SHEET PILE WALL

DOCK 24 & 26W
 PID No. 113698



NOTES:

1. FENDER ASSEMBLY DIMENSIONS ARE c/c OF ASSEMBLY.
2. SEE SHEET 36 OF 42 FOR FENDER DETAILS.
3. CYLINDRICAL RUBBER FENDERS NOT SHOWN FOR CLARITY.
4. INSTALL STEEL PLATE BUT WING TYPE FENDERS NOT REQUIRED ON NORTH WALL OF DOCK 24.



FENDER LAYOUT
DOCK 24 SHEET PILE WALL

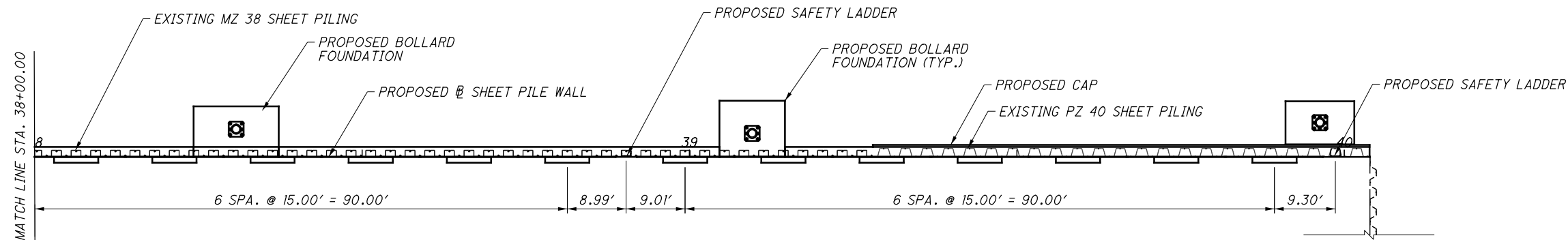
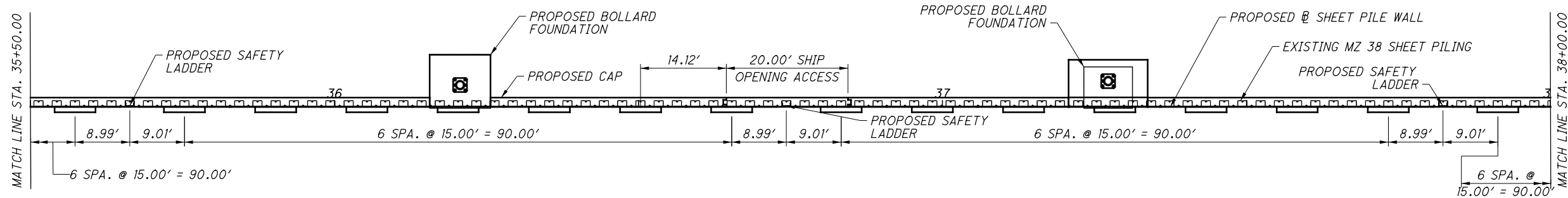
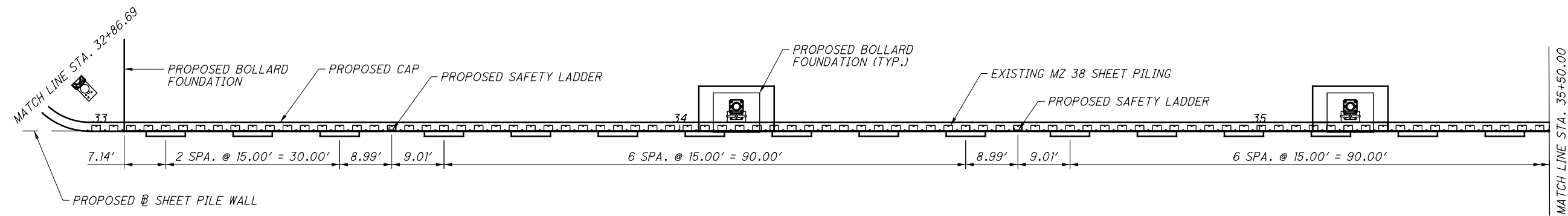
DOCK 24 & 26W
PID No. 113698

34 / 42

98
106

DESIGNED	NI	CHECKED	PPA
DRAWN	JAG	REVISED	
REVIEWED	RJM	STRUCTURE FILE NUMBER	
DATE	1/22/21		

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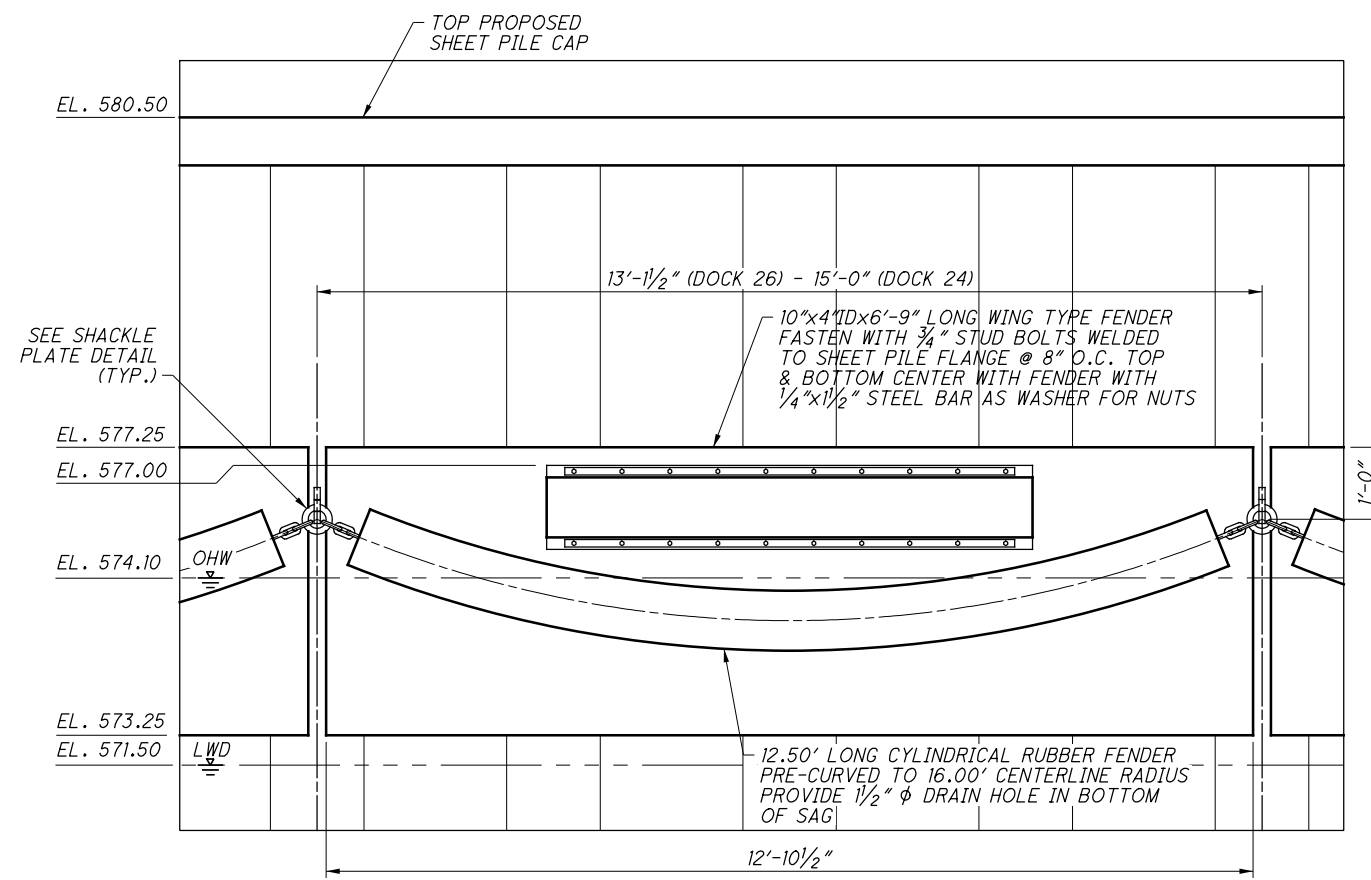


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DRAWN	JAG	REVISED	
REVIEWED	RJM	STRUCTURE FILE NUMBER	
DATE	1/22/21		

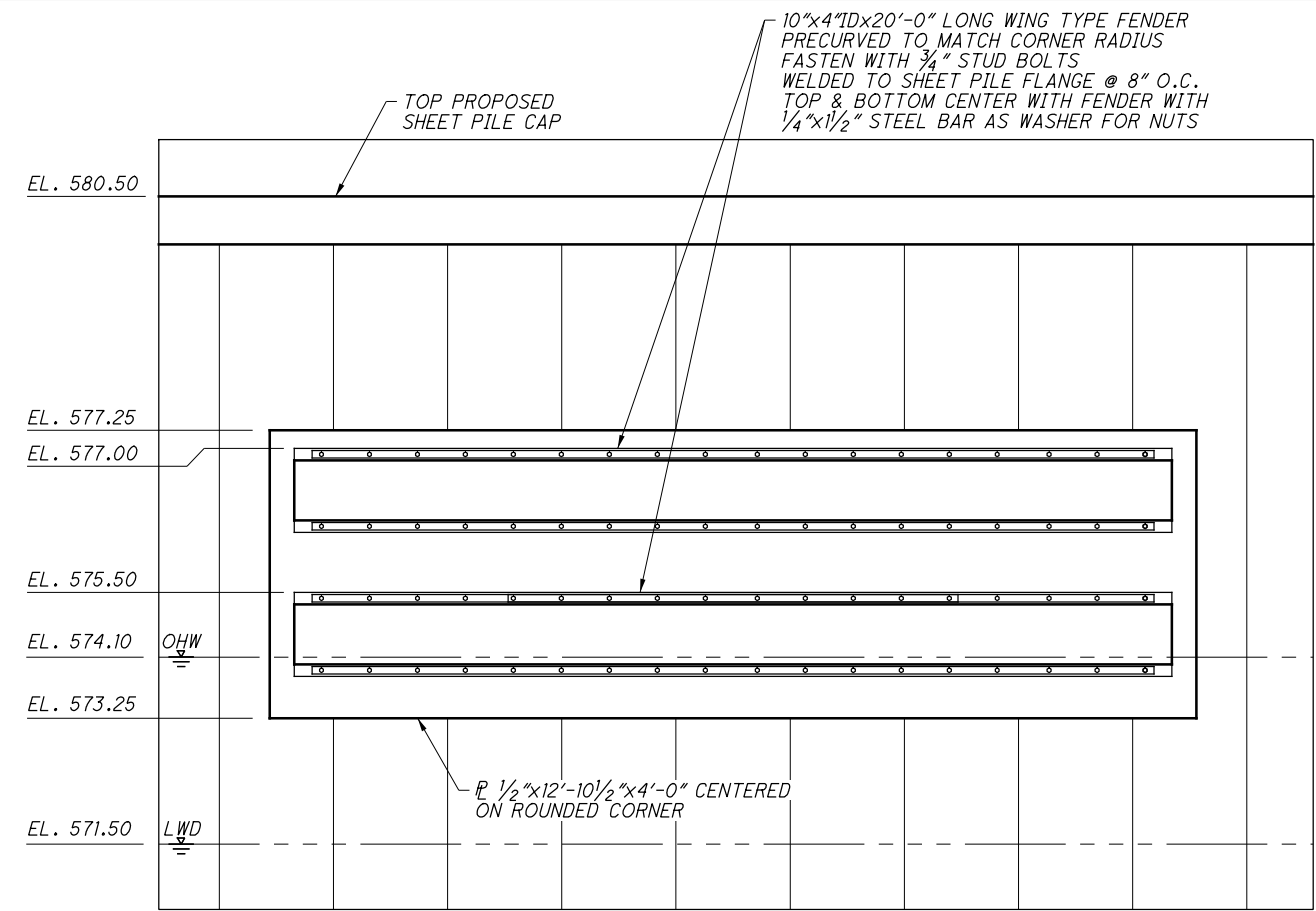
FENDER LAYOUT
 DOCK 24 SHEET PILE WALL

DOCK 24 & 26W
 PID No. 113698

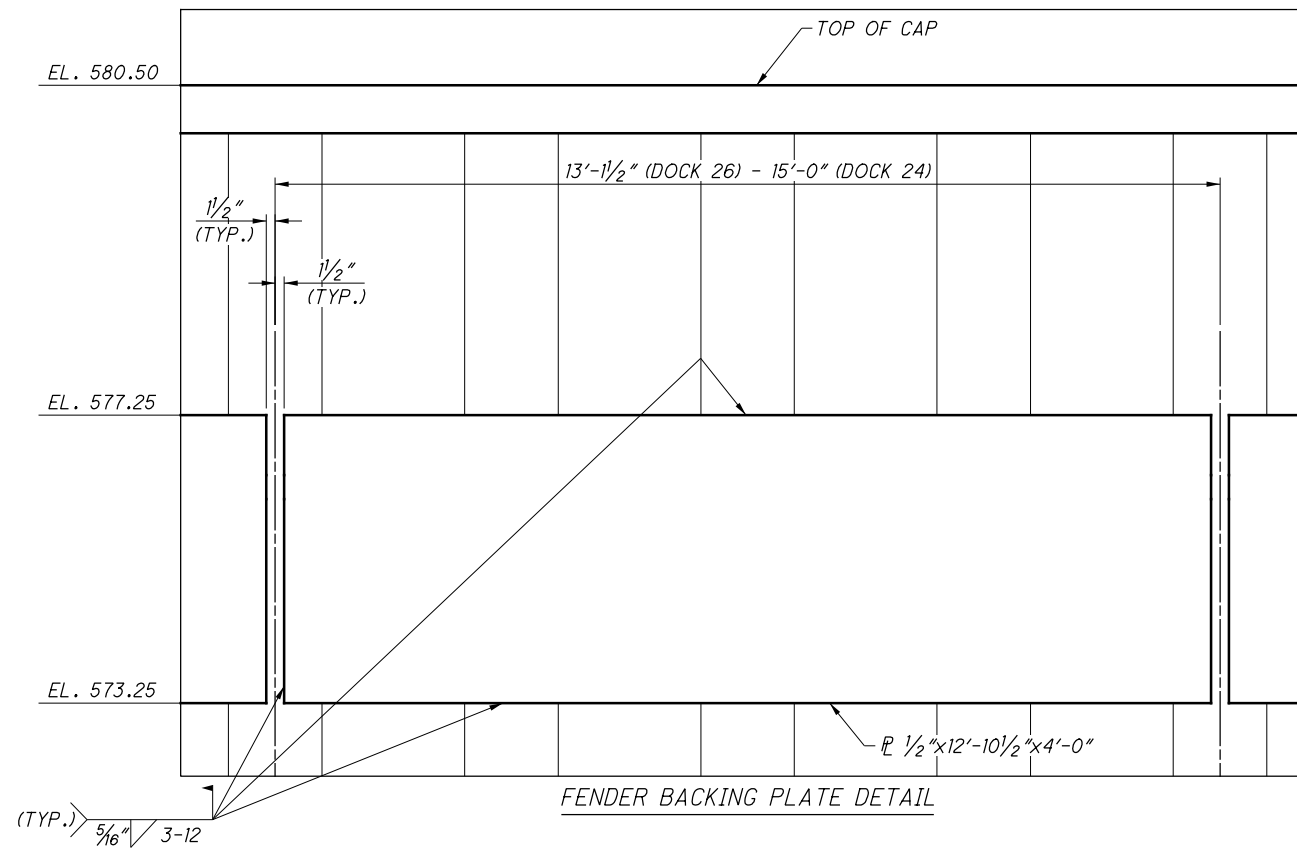
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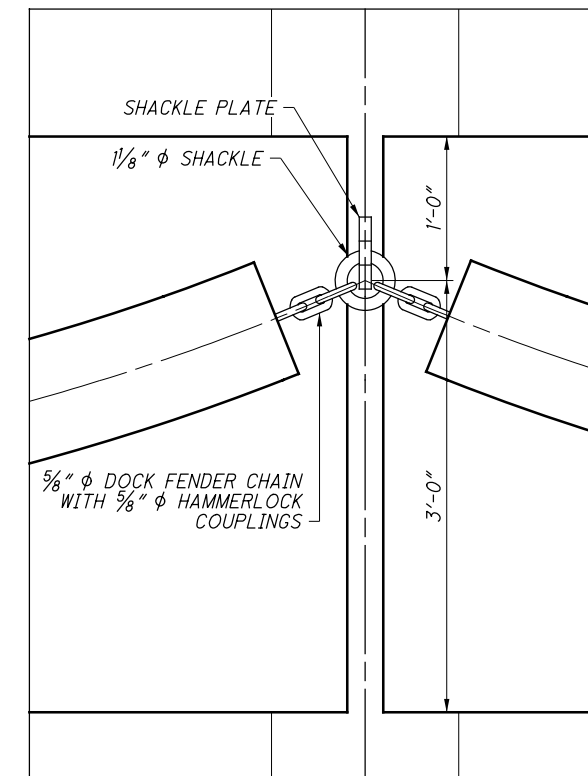
TYPICAL ELEVATION - PILING & FENDER SYSTEM



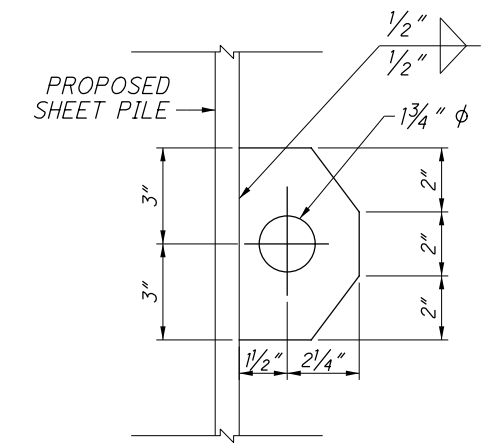
CORNER ELEVATION - PILING & FENDER SYSTEM



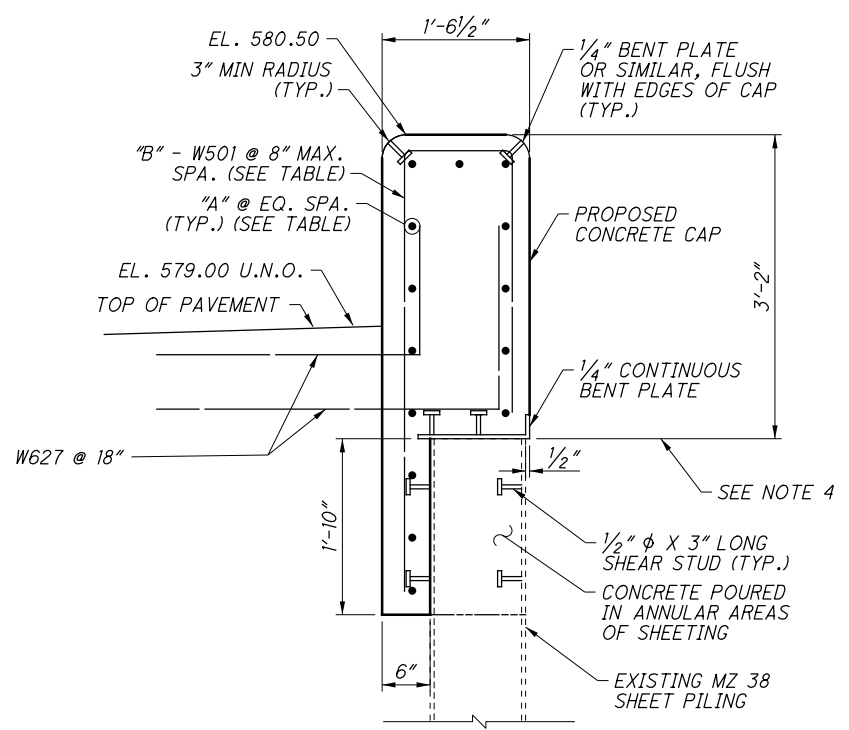
FENDER BACKING PLATE DETAIL



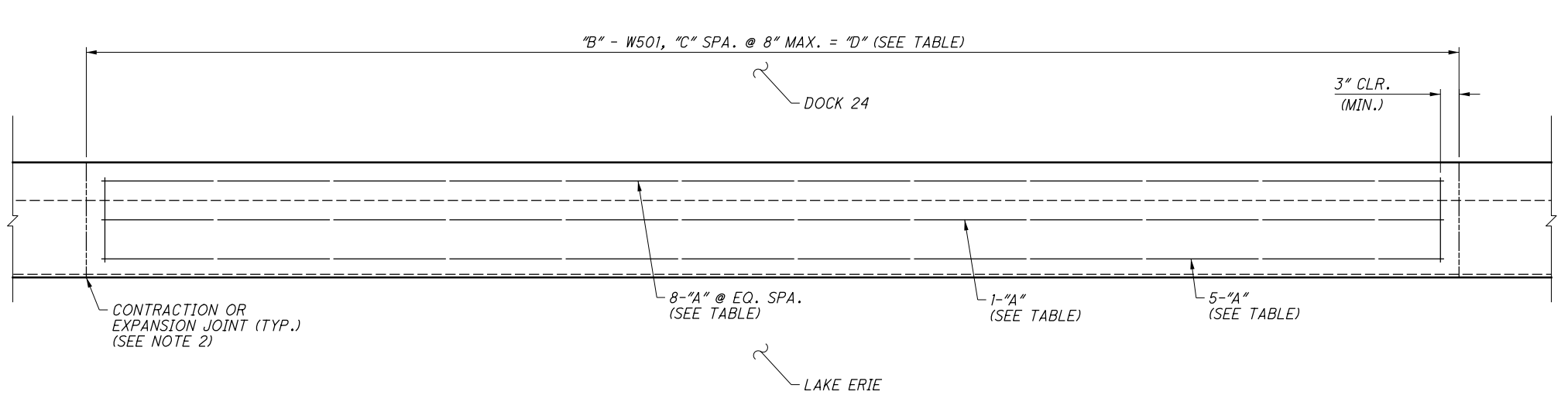
FENDER HANGER DETAIL



SHACKLE PLATE DETAIL



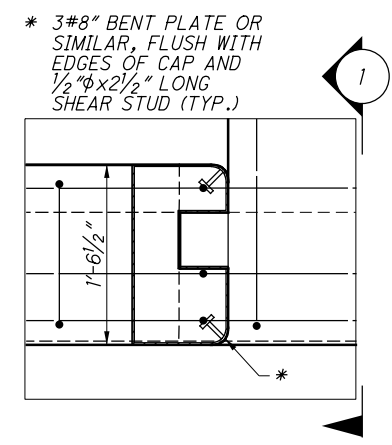
TYPICAL SECTION - PROPOSED CAP DOCK 24 (MZ 38)



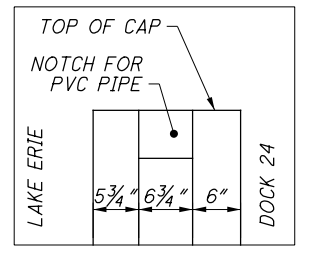
TYPICAL PANEL - PROPOSED CAP

NOTE: SEE SHEET 38 ELEVATION - SHIP ACCESS OPENING FOR ADDITIONAL REINFORCING AT PANELS 18, 20, 41, 43, 71, 73 WHERE PILE CAP TRANSITIONS AT DOCK SIDE

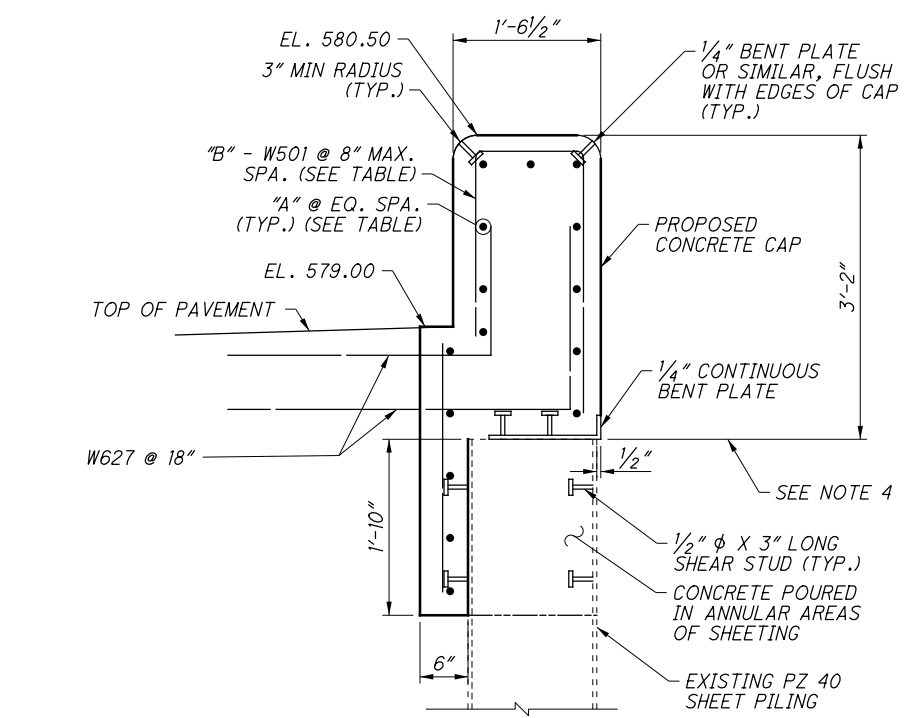
LENGTH	PANEL NUMBERS	TABLE VARIABLE			
		A	B	C	D
30'-0"	1-3, 7-8, 12-13, 23-24, 28-30, 34, 36, 39-40, 45-47, 49, 52, 56-58, 60-61, 65-66, 76-77, 81-82, 85-86	W601	46	45	29'-6"
9'-9 7/16"	83	W602	15	14	9'-3 1/16"
10'-9 5/8"	31	W603	17	16	10'-3 3/8"
11'-7 1/8"	55	W604	18	17	11'-1 1/8"
16'-3 3/8" / 16'-5 3/8"	4, 5 / 87	W605	25	24	15'-9 3/8"
16'-9 5/8"	44	W606	26	25	16'-3 5/8"
17'-9 1/4" / 17'-11" / 17'-11 1/8" / 18'-0 1/16"	78, 79 / 14, 15 / 67, 68 / 25, 26	W607	27	26	17'-3 1/4"
18'-5 11/16"	9, 10	W608	28	27	17'-11 1/16"
18'-11 3/8" / 19'-0 3/4"	62, 63 / 17, 21	W609	29	28	18'-5 3/8"
19'-4 3/4"	70, 74	W610	30	29	18'-10 3/4"
26'-5 1/2" / 26'-7 5/8"	33 / 50	W611	40	39	25'-11 1/2"
27'-2 1/8" / 27'-6 1/16"	37 / 53	W612	42	41	26'-8 1/8"



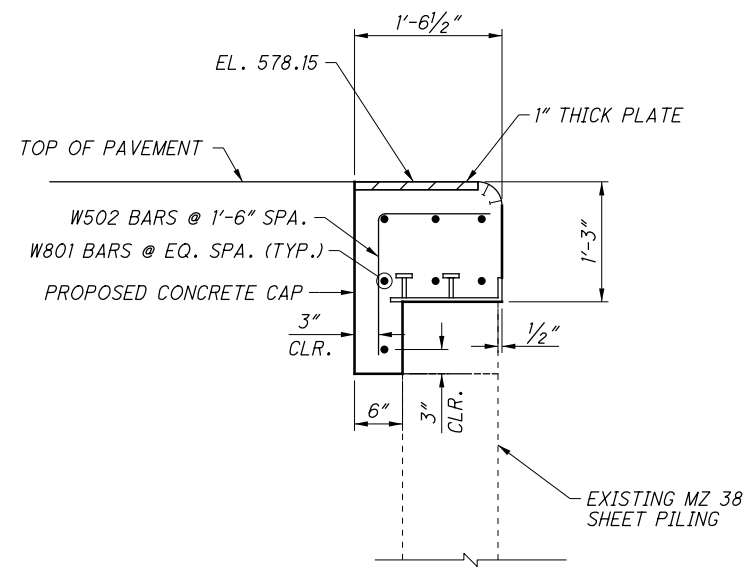
DETAIL A



VIEW 1



TYPICAL SECTION - PROPOSED CAP DOCK 24 (PZ 40)



SECTION A - PROPOSED CAP
 (TYP. AT SHIP ACCESS OPENINGS DOCK 24)

LENGTH	PANEL NUMBERS	TABLE 2 VARIABLE				
		A	B	C	D	E
30'-0"	90-93	W601	46	W510	W601	W601
9'-9 5/8"	89	W624	5, 1, 12	W501 W508 W509	W625	W626

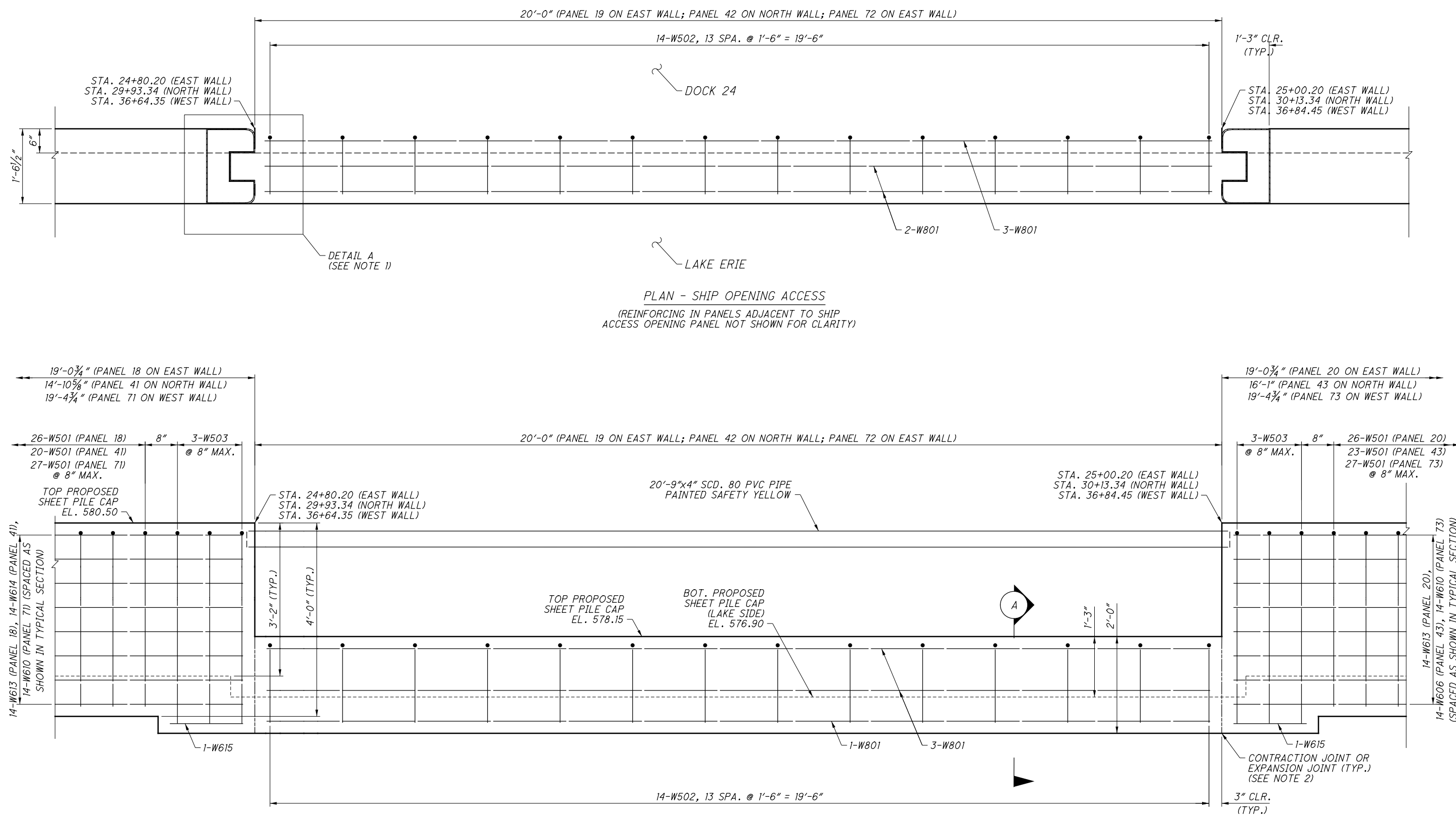
NOTES:

- SEE SHEET 38 OF 42 FOR LOCATIONS OF SECTION A, DETAIL A, AND OTHER SHEET PILING CAP DETAILS.
- SEE SHEETS 7 THROUGH 15 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS, AND PANEL NUMBERING LAYOUT.
- IT IS LIKELY EXISTING TOP OF SHEET PILE MAY VARY FROM PLAN ELEVATION OR MAY NOT BE SUITABLE FOR WELDING. CONTRACTOR SHALL ADJUST ELEVATION OF BENT PLATE AS NEEDED. TOP OF CAP ELEVATION SHALL NOT CHANGE.
- SHOULD CONTRACTOR ELECT TO CUT TOP OF EXISTING SHEET PILING TO GET A CLEANER OR SMOOTHER SURFACE TO WELD TO, CONTRACTOR SHALL ADJUST THE DEPTH OF THE CAP TO MAINTAIN THE TOP ELEVATION AT NO ADDITIONAL COST TO THE PORT. IN NO CASE SHALL EXISTING SHEETING BE CUT BELOW ELEVATION 577.

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EAST WALL NORTH WALL WEST WALL

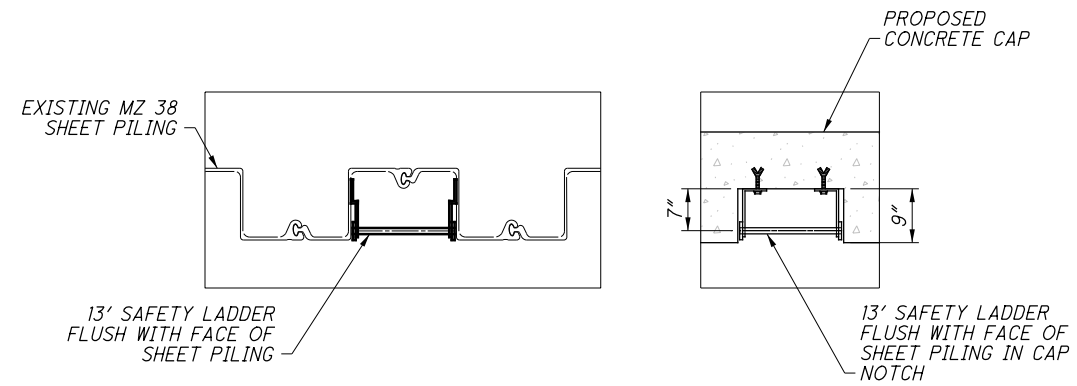


ELEVATION - SHIP OPENING ACCESS
(VIEW LOOKING FROM LAKE ERIE TO DOCK 24)

- NOTES:**
- SEE SHEET 37 OF 42 FOR SECTION A, DETAIL A, TYPICAL SECTION, AND OTHER SHEET PILING CAP DETAILS.
 - SEE SHEETS 7 THROUGH 15 FOR LOCATIONS AND STATIONS OF CONTRACTION JOINTS, EXPANSION JOINTS AND PANEL NUMBERING LAYOUT.

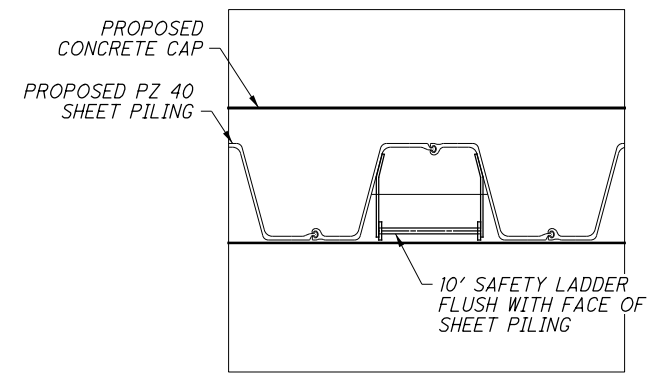
	DESIGN AGENCY WEST COAST CONSULTING ENGINEERS, INC. 889 W. ST. CLAIR BLVD. CLEVELAND, OH 44113	DATE 1/22/21	STRUCTURE FILE NUMBER
REVIEWED RJM	DRAWN JAG	CHECKED NCM	DESIGNED PPA
SHEET PILING CAP DETAILS DOCK 24 SHEET PILE WALL OPENING FOR SHIP LOADING			
DOCK 24 & 26W		PID No. 113698	
38 / 42		102 / 106	

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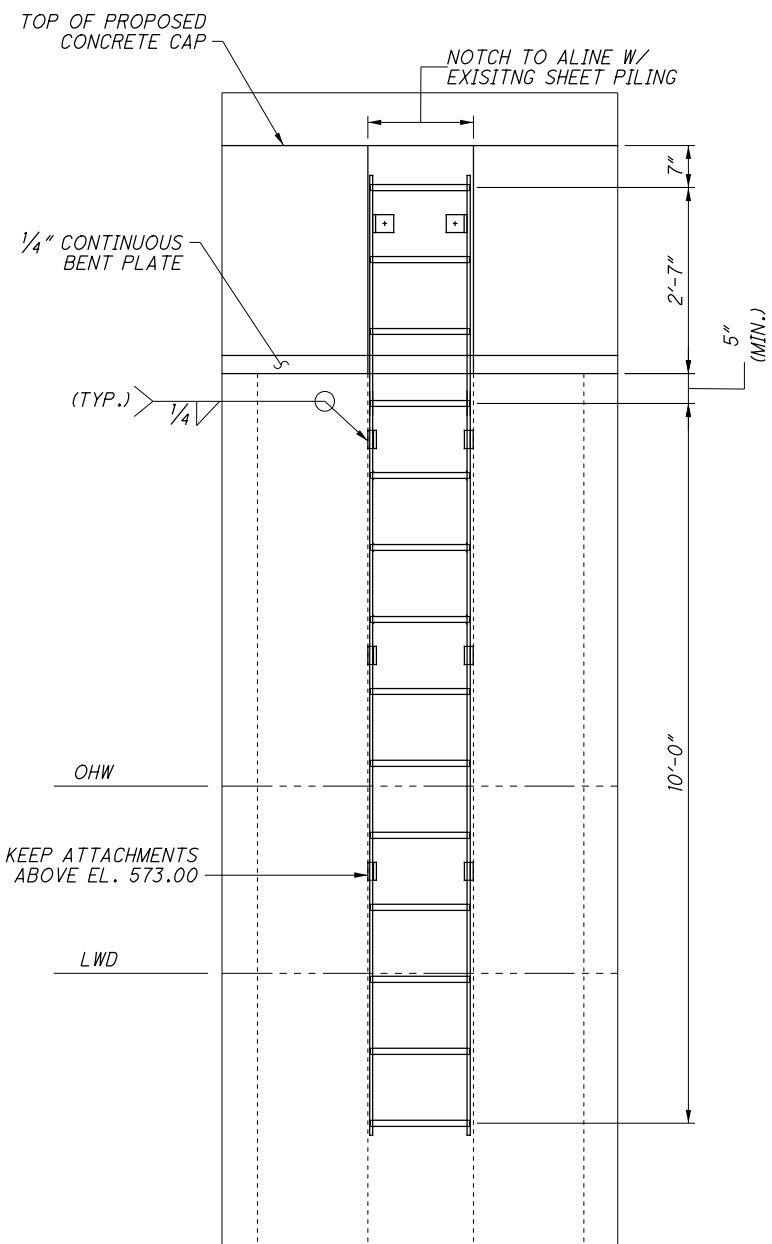


DOCK 24 PLAN

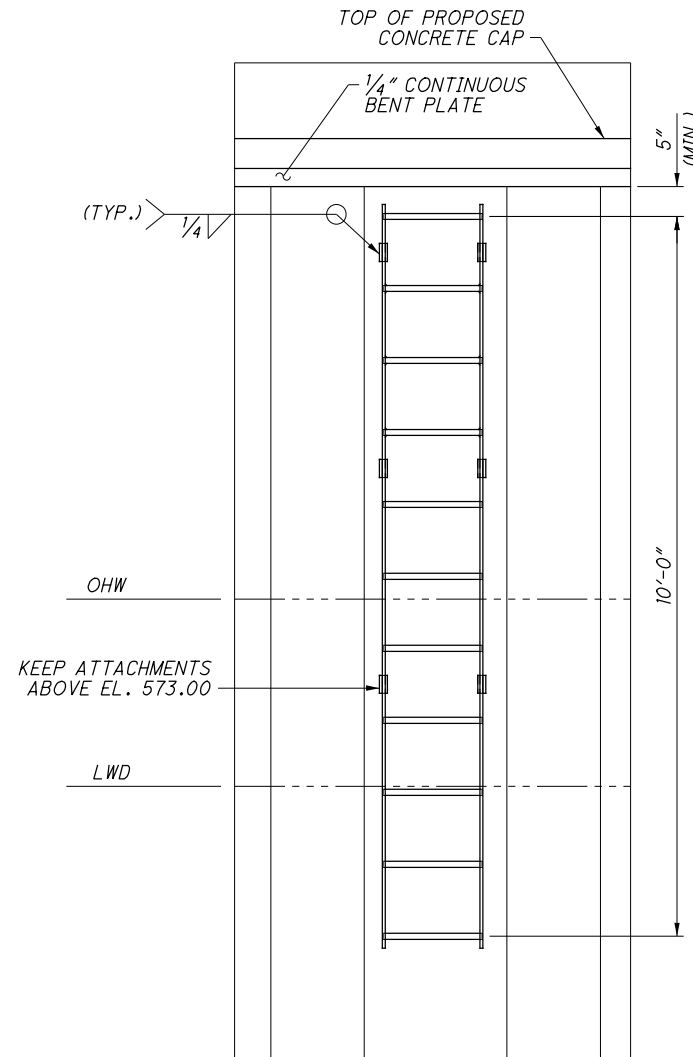
(LADDER ATTACHED TO SHEET PILE AND LADDER ATTACHED TO CONCRETE CAP)



DOCK 26 PLAN



DOCK 24 ELEVATION



DOCK 26 ELEVATION

DESIGNED	DATE	REVIEWED	FILE NUMBER
NCM	1/22/21	RJM	STRUCTURE
CHECKED		REVIS	
PPA			

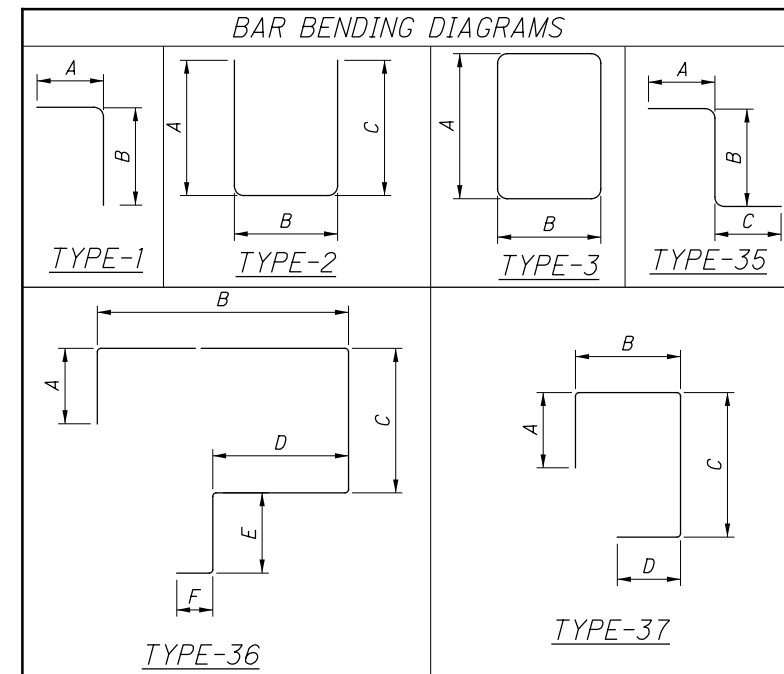
SAFETY LADDER DETAILS
 DOCK 24 AND 26 WEST SHEET PILE WALL

DOCK 24 & 26W
 PID No. 113698

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MARK	TYPE	DIMENSIONS			
		A	B	C	D
WALL CAP EXTENSION					
W501	2	1'-1"	1'-10"	4'-3"	
W502	2	1'-6"	4'-6"	1'-6"	
W503	2	1'-1"	1'-10"	3'-3"	
W504	2	1'-1"	2'-10"	4'-3"	
W505	2	1'-1"	1'-6"	1'-6"	
W506	37	5'-0"	1'-10"	6'-0"	1'-3"
W601	ST.				
W602	ST.				
W603	ST.				
W604	ST.				
W605	ST.				
W606	ST.				
W607	1	20'-0"	0'-11"		
W608	1	20'-11"	1'-10"		
W609	ST.				
W610	1	6'-11"	1'-10"		
W611	ST.				
W612	ST.				
W613	ST.				
W614	ST.				
W615	1	4'-0"	2'-10"		
W616	35	3'-0"	2'-10"	0'-9"	
W617	35	2'-0"	2'-10"	1'-6"	
W618	ST.				
W801	ST.				

MARK	TYPE	DIMENSIONS							
		A	B	C	D	E	F	G	INC.
RECONSTRUCT BOLLARD									
B601	3	3'-0"	3'-0"						
B602	2	3'-0"	TO 4'-6" 27'-6"	3'-0"					1'-11"
B603	ST.								
B604	2	2'-3"	12'-2"	2'-3"					
B801	ST.								
B802	ST.								
B803	36	1'-8"	5'-2"	2'-3"	2'-9"	1'-8"	1'-0"		
B804	ST.								
B805	2	2'-3"	7'-6"	2'-3"					
B806	36	2'-6"	5'-2"	2'-3"	2'-9"	1'-8"	1'-0"		
B807	1	1'-0"	9'-0"						
B808	ST.								1'-11"
B809	ST.								
B810	37	2'-0"	1'-3"						
B811	1	1'-10"	0'-5"						
B1001	2	3'-6"	7'-0"	3'-6"					
B1002	2	2'-3"	7'-0"	2'-3"					



- NOTES:**
1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, W601 IS A NO. 6 BAR.
 2. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.
 3. "ST." INDICATES A STRAIGHT BAR.

 <small>DESIGN AGENCY 3874 ST. CHARLES CLEVELAND, OH 44113</small>	<small>DATE 1/22/21</small> <small>REVIEWED RJM</small> <small>STRUCTURE FILE NUMBER</small>	<small>DRAWN PPA</small> <small>REVISOR</small>	<small>DESIGNED PPA</small> <small>CHECKED NL</small>
WALL REINFORCING SCHEDULE AND ESTIMATED QUANTITIES <small>DOCK 26 WEST SHEET PILE WALL</small>			
DOCK 24 & 26W <small>PID No. 113698</small>			
<small>40 / 42</small>			
<div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <div style="border-right: 1px solid black; padding-right: 5px;">104</div> <div style="padding-left: 5px;">106</div> </div>			

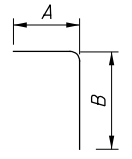
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MARK	TYPE	DIMENSIONS			INC.
		A	B	C	
DOCK 24 WALL CAP REINFORCEMENT					
W501	2	3'-6"	1'-1"	2'-8"	
W502	1	1'-6"	1'-1"		
W503	2	3'-10"	1'-1"	2'-8"	
W504	2	2'-6"	1'-0"	2'-6"	
W505	2	2'-5"	1'-0"	2'-5"	
W506	2	2'-8"	1'-0"	2'-8"	
W507	2	3'-0"	1'-0"	3'-0"	
W508	2	1'-9"	1'-11"	1'-11"	
W509	2	1'-9"	1'-7"	1'-9"	
W510	2	1'-9"	1'-5"	1'-9"	
W601	ST				
W602	ST				
W603	ST				
W604	ST				
W605	ST				
W606	ST				
W607	ST				
W608	ST				
W609	ST				
W610	ST				
W611	ST				
W612	ST				
W613	ST				
W614	ST				
W615	ST				
W616	ST				
W617	ST				
W618	ST				
W619	ST				
W620	ST				
W621	ST				
W622	ST				
W623	ST				
W624	1	2'-4"	7'-2"		
W625	1	3'-0"	7'-9"		
W626	1	3'-8"	8'-3"		
W627	1	2'-0"	6'-0"		
W801	ST				

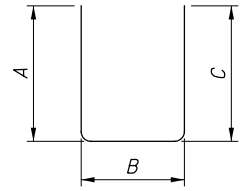
MARK	TYPE	DIMENSIONS			INC.
		A	B	C	
DOCK 24 BOLLARD					
C501	ST	12'-6"			
C502	2	2'-8"	12"	2'-8"	
C601	3	3'-0"	3'-0"		
C602	35	12"	1'-4"	2'-0"	
C801	3	12'-6"	6"-3"		
C802	3	12'-6"	3'-0"		
C803	3	6'-3"	3'-0"		

MARK	TYPE	DIMENSIONS								INC.
		A	B	C	D	E	F	R		
RECONSTRUCT BOLLARD										
B501	ST	1'-0"								
B502	ST	10'-0"								
B601	3	3'-0"	3'-0"							
B602	3	3'-0"	7'-0"							
B801	ST	9'-6"								
B802	2	2'-9 3/4"	9'-6"	2'-9 3/4"						
B803	36	5'-8 3/4"	8'-10 1/2"	2'-9 3/4"	1'-3 1/2"	1'-7"	1'-0"			
B804	36	5'-8 3/4"	8'-1"	2'-9 3/4"	1'-3 1/2"	1'-7"	1'-0"			
B805	36	5'-11 3/4"	7'-10 1/2"	3'- 3/4"	1'-3 1/2"	1'-7"	1'-0"			
B806	36	5'-11 3/4"	8'-6"	3'- 3/4"	1'-3 1/2"	1'-7"	1'-0"			
B807	ST	10'-0"								
B808	2	2'-8 3/4"	5'-3"	2'-8 3/4"						
B809	2	5'-11 1/4"	TO	5'-11 1/4"					2"	
B810	2	5'-11 1/4"	TO	5'-11 1/4"					2 1/2"	
B811	2	5'-11 1/4"	15'-0"	5'-11 1/4"						
B812	2	5'-11 1/4"	16'-0"	5'-11 1/4"						
B813	2	5'-11 1/4"	TO	5'-11 1/4"					11 1/2"	
B814	2	5'-11 1/4"	TO	5'-11 1/4"					9 1/2"	
B815	ST	15'-0"								
B816	ST	TO							4 1/2"	
B817	ST	14'-9"								
B818	ST	TO							3 7/8"	
B819	2	5'-11 1/4"	TO	5'-11 1/4"					1 1/8"	
B820	2	5'-11 1/4"	TO	5'-11 1/4"					2"	
B821	2	5'-11 1/4"	16'-9"	5'-11 1/4"						
B822	2	5'-11 1/4"	15'-9"	5'-11 1/4"						
B823	2	5'-11 1/4"	TO	5'-11 1/4"					1'-0 1/2"	
B824	2	5'-11 1/4"	TO	5'-11 1/4"					10 1/2"	
B825	ST	TO							1/4"	
B826	ST	TO							4 7/8"	
B827	ST	15'-9"								
B828	ST	TO							3 7/8"	
B829	2	3'- 3/4"	9'-6"	3'- 3/4"						
B1001	2	2'-8 3/4"	10'-0"	2'-8 3/4"						

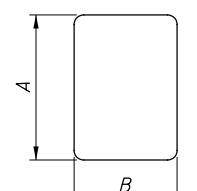
BAR BENDING DIAGRAMS



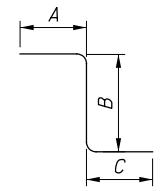
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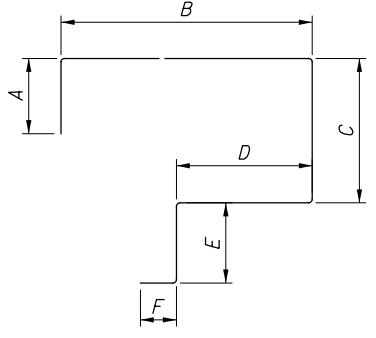
TYPE-2



TYPE-3



TYPE-35



TYPE-36

WALL REINFORCING SCHEDULE AND ESTIMATED QUANTITIES

DOCK 24 SHEET PILE WALL

- NOTES:**
- THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, W601 IS A NO. 6 BAR.
 - BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.
 - "ST." INDICATES A STRAIGHT BAR.

DESIGN AGENCY

 88 W. ST. CHARLES, CLEVELAND, OH 44113

DESIGNED
PPA

CHECKED
NL

DRAWN
PPA

REVIEWED
RJM

DATE
1/22/21

STRUCTURE FILE NUMBER

DOCK 24 & 26W

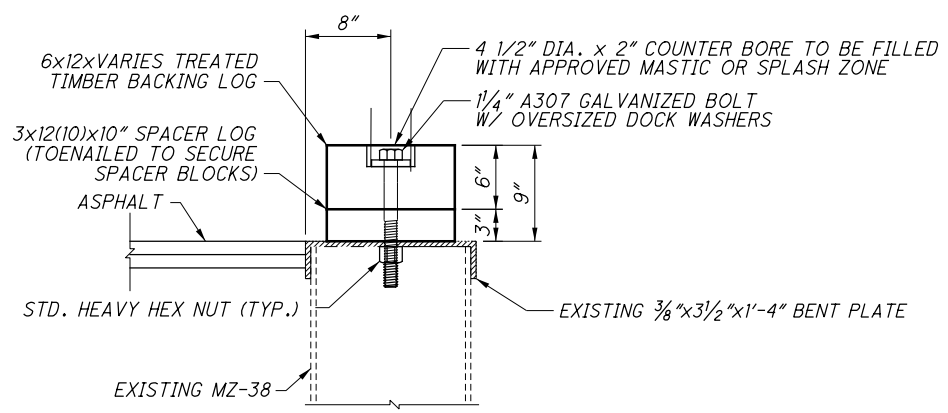
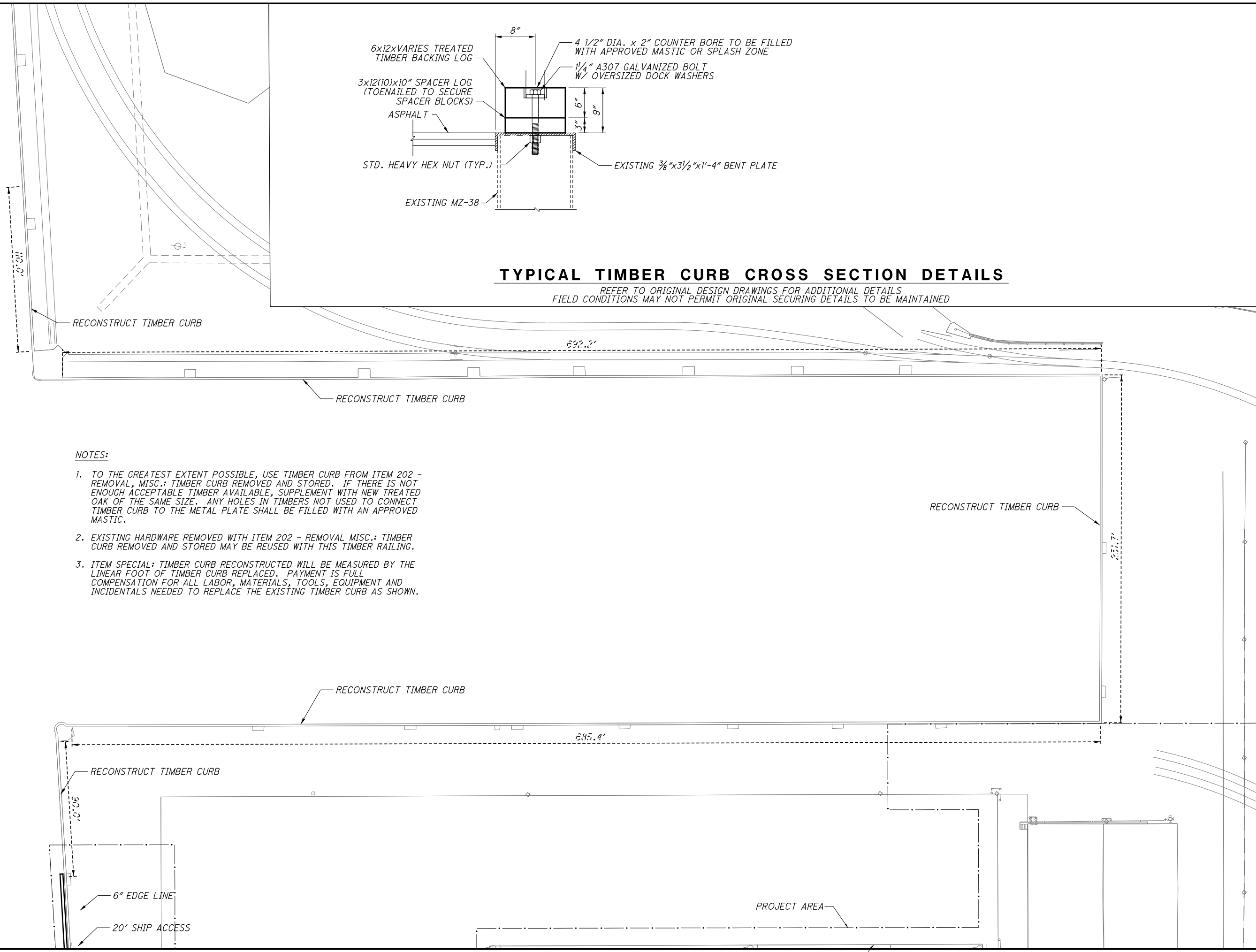
PID No. 113698

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105
106

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LAKE ERIE



TYPICAL TIMBER CURB CROSS SECTION DETAILS

REFER TO ORIGINAL DESIGN DRAWINGS FOR ADDITIONAL DETAILS
FIELD CONDITIONS MAY NOT PERMIT ORIGINAL SECURING DETAILS TO BE MAINTAINED

NOTES:

1. TO THE GREATEST EXTENT POSSIBLE, USE TIMBER CURB FROM ITEM 202 - REMOVAL, MISC.: TIMBER CURB REMOVED AND STORED. IF THERE IS NOT ENOUGH ACCEPTABLE TIMBER AVAILABLE, SUPPLEMENT WITH NEW TREATED OAK OF THE SAME SIZE. ANY HOLES IN TIMBERS NOT USED TO CONNECT TIMBER CURB TO THE METAL PLATE SHALL BE FILLED WITH AN APPROVED MASTIC.
2. EXISTING HARDWARE REMOVED WITH ITEM 202 - REMOVAL MISC.: TIMBER CURB REMOVED AND STORED MAY BE REUSED WITH THIS TIMBER RAILING.
3. ITEM SPECIAL: TIMBER CURB RECONSTRUCTED WILL BE MEASURED BY THE LINEAR FOOT OF TIMBER CURB REPLACED. PAYMENT IS FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS NEEDED TO REPLACE THE EXISTING TIMBER CURB AS SHOWN.

CALCULATED JAG CHECKED RJM

0 15 30 60
HORIZONTAL SCALE IN FEET

TIMBER CURB RECONSTRUCTED
ADD ALTERNATE

DOCK 24 & 26W

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EXISTING BUILDING