CLEVELAND – CUYAHOGA COUNTY PORT AUTHORITY

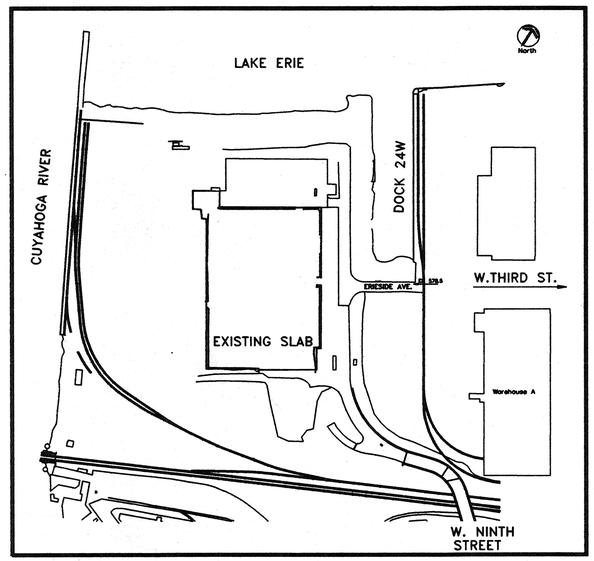
DOCK 24W SLIP EXTENSION

JANUARY, 1992

REPRINTED CONSTRUCTION ISSUE REVISED TO INCLUDE REV. WATER DESIGN SHT. 11
PGP 5/96

LIST OF DRAWINGS

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 800–362–2764 (TOLL FREE) OHIO UTILITIES PROTECTION SERVICE
NON–MEMBERS MUST BE CALLED DIRECTLY



LOCATION PLAN

NOTE: ALL ELEVATIONS IN CRGS DATUM. FOR IGLD DATUM SUBTRACT 1.7'

Turner
URS CONSULTANTS
POLYTECH

BOARD OF DIRECTORS

JAY C. EHLE (CHAIRMAN)
THOMAS E. WAGNER (VICE CHAIRMAN)
REVEREND STERLING E. GLOVER (SECRETARY)
ELLA H. BECTON
HOWARD W. BROADBENT
WILLIAM J. McCARTHY
RENOLD D. THOMPSON
CARLA M. TRICARICHI

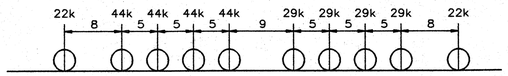
APPROVED BY _____ DATE _____
ANTHONY F. FUGARO, EXEC. DIRECTOR

APPROVED BY _____ DATE _____
JAY C. EHLE, CHAIRMAN OF THE BOARD

BULKHEAD DESIGN CRITERIA
VERTICAL DESIGN LOAD

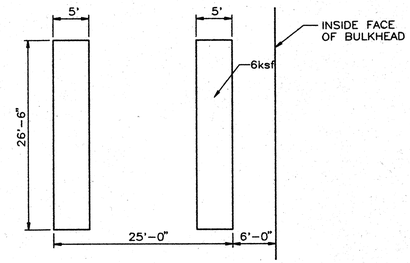
1.) DESIGN UNIFORM LIVE LOAD 1000 PSF
(SURCHARGE = 1000 PSF)

2.) RAILROAD LOCOMOTIVE (COOPER E 80)

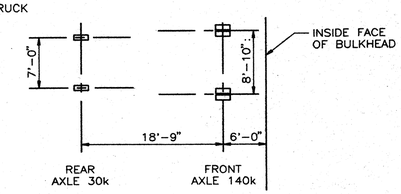


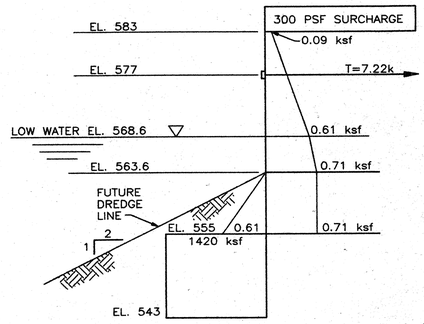
(LOADS FOR EACH RAIL)
LOADS INCLUDE 10% IMPACT

3.) CRAWLER CRANE 4600 S-5
FOOT PRINT LOADING 6 KSF
(LIFTING 50T @ SHIP CENTERLINE)



4.) 35 TON LIFT TRUCK

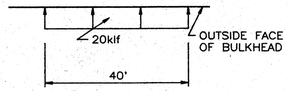




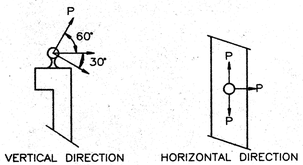
BULKHEAD DESIGN PRESSURE DIAGRAM
FOR ERIE AVENUE BULKHEAD

BULKHEAD DESIGN CRITERIA
LATERAL LOADING

1.) LATERAL DESIGN LOADS BERTHING
VESSEL 25,000 DWT

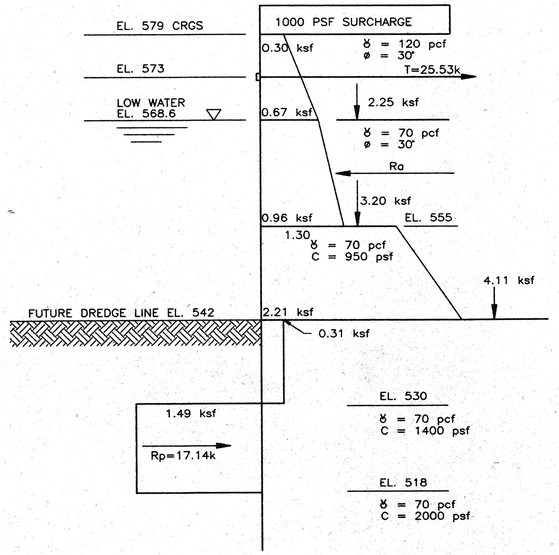


2.) MOORING LINE FORCES
BOLLARD PULL P= 150 KIPS
BOLLARDS ARE AT 60' ON CENTER



3.) SEISMIC ZONE 1
OHIO BASIC BUILDING CODE – 1989

4.) DESIGN WIND SPEED 90 MPH
OHIO BASIC BUILDING CODE – 1989



BULKHEAD DESIGN PRESSURE DIAGRAM
FOR 24W EXTENSION

GENERAL NOTES:

1.) THE FOLLOWING NOTES WILL APPLY TO ALL STRUCTURAL/ CIVIL WORK ON THIS PROJECT:

2.) FIELD VERIFY ALL DIMENSIONS.

REINFORCED CONCRETE

1.) FORMED SURFACES SHALL BE FREE OF AIR POCKETS OR HONEYCOMBS.

2.) REINFORCING BARS SHALL CONFORM TO ASTM SPECIFICATION A615 (DEFORMED BAR). GRADE 60.

3.) ALL HOOKS SHALL BE "ACI STANDARD" UNLESS SHOWN OTHERWISE.

4.) CUT AND HOOK OR DEFLECT BARS AT OPENINGS, AS REQUIRED.

5.) MINIMUM REBAR SPLICE TO BE 36 BAR DIAMETERS.

6.) UNLESS NOTED OTHERWISE, CHAMFER ALL EXPOSED CORNERS 3/4".

7.) NON-FORMED SURFACES SHALL HAVE A STEEL TROWEL FINISH.

SUGGESTED TIE BAR INSTALLATION

1.) EXCAVATE CONSTRUCTION AREA TO 2 FT. ABOVE TIE BAR LEVEL.

2.) EXCAVATE TIE BAR TRENCHES 2 FT. 4 IN. WIDE, 3 FT. DEEP.

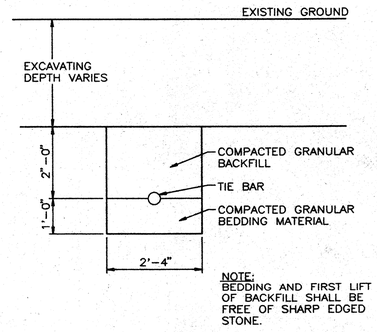
3.) INSTALL TIE BAR.

4.) INSTALL AND COMPACT GRANULAR BACKFILL MATERIAL IN 8 INCH LIFTS TO TOP OF TRENCH.

5.) COMPLETE AREA BACKFILL, LEAVING ACCESS FOR PRE-TENSIONING OF TIE BARS.

6.) PRE-TENSION BARS.

7.) COMPLETE BACKFILLING AND COMPACTING.



NOTE:
BEDDING AND FIRST LIFT OF BACKFILL SHALL BE FREE OF SHARP EDGED STONE.

TIE BAR INSTALLATION

STRUCTURAL AND MISCELLANEOUS STEEL

1.) ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM SPECIFICATION A36. UNLESS NOTED OTHERWISE.

2.) SHEET PILE STEEL SHALL CONFORM TO ASTM SPECIFICATION A572-GRADE 50.

3.) MATERIALS, WORKMANSHIP, FABRICATION, ERECTION AND CONNECTION DESIGN SHALL CONFORM TO "A.I.S.C. SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", EIGHTH EDITION.

4.) ALL BOLTED CONNECTIONS SHALL BE BEARING TYPE WITH THREADS INCLUDED IN SHEAR PLANE, AND MADE WITH 1 1/4"ø & 1 3/4"ø HIGH STRENGTH GALVANIZED BOLTS CONFORMING TO ASTM SPECIFICATION A325, UNLESS NOTED OTHERWISE. HOLES FOR BOLTS SHALL BE 1/16" LARGER THAN THE NORMAL DIAMETER OF THE BOLT.

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

6.) FIELD CONNECTIONS SHALL BE BOLTED UNLESS SHOWN OTHERWISE. SHOP CONNECTIONS SHALL BE BOLTED OR WELDED.

7.) STEEL PIPE SHALL BE STANDARD WEIGHT CONFORMING TO ASTM SPECIFICATION A501 OR A53 TYPE E OR S GRADE "B", UNLESS SHOWN OTHERWISE. JOINTS SHALL BE WELDED AND GROUND SMOOTH.

8.) ALL STRUCTURAL STEEL SUCH AS WALERS & BOLLARD SHALL BE SHOP PRIMED WITH AN INORGANIC ZINC PRIMER TO 2.5 MIL MINIMUM THICKNESS AND FIELD PAINTED WITH A HIGH BUILD POLYMIDE EPOXY TO A MINIMUM OF 5 MIL DRY THICKNESS, COLOR PER OWNER'S SPECIFICATION.

9.) ALL SPLICES SHALL BE DESIGNED TO DEVELOP THE FULL STRENGTH OF THE MEMBERS, EXCEPT AS DETAILED.

10.) ALL CONNECTION HARDWARE INCLUDING CUT WASHERS AND FABRICATED CONNECTION ASSEMBLIES, SHALL CONFORM TO ASTM A36 STEEL.

11.) TIE BACK BARS SHALL CONFORM TO ASTM SPECIFICATION A722 GRADE 150.

12.) PILES FOR BOLLARDS SHALL BE 12 3/4" O.D.x.375" WALL THICKNESS, ASTM 252, GRADE 2.

13.) ALL MISCELLANEOUS STEEL SUCH AS BOLTS, NUTS, WASHER PLATES AND DOCK FENDER CHAIN SYSTEM SHALL BE HOT-DIP GALVANIZED. SEE SPECIFICATIONS.

MISCELLANEOUS

1.) ALL HEAVY TIMBER IN THE BULLRAIL SYSTEM SHALL BE NO.1 STRUCTURAL GRADE DOUGLAS FIR AND SHALL BE PRESSURE TREATED WITH CCA WATER-BORNE PRESERVATIVE IN ACCORDANCE WITH AWPA STANDARD C-2. FOR STORING AND HANDLING, USE AWPA STANDARD M4. FOR FIELD BORED HOLES, USE PRESSURE HOLE TREATER.

2.) TIEBACK RODS SHALL BE TAR COATED AS SHOWN IN NOTE 2, SHEET 7.

3.) GROUT UNDER ALL BASE PLATES AND EQUIPMENT PADS SHALL BE NON-SHRINK NON-METALLIC AND HAVE MINIMUM 28 DAYS STRENGTH OF 6500 PSI.

4.) ANCHOR BOLTS AND EMBEDDED METALS SHALL CONFORM TO ASTM SPECIFICATION A307 OR A36 RESPECTIVELY UNLESS NOTED OTHERWISE.

5.) ALL CONCRETE ANCHORS FOR EMBEDDED METALS SHALL BE WELDED PER MANUFACTURER'S INSTRUCTIONS TO DEVELOP THE FULL STRENGTH OF ANCHOR STUD OR REBAR.

6.) PVC PIPE SHALL CONFORM TO ASTM SPECIFICATION D1785.

7.) SHOP DRAWINGS: CONTRACTOR SHALL COORDINATE THE SUBMITTAL OF SHOP DRAWINGS WITH THE ENGINEER. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A SCHEDULE OF SHOP DRAWINGS WITHIN TWO WEEKS AFTER RECEIVING NOTICE TO PROCEED. PROVIDE THE ENGINEER ONE (1) REPRODUCIBLE COPY AND TWO (2) PRINTED COPIES OF ALL SHOP DRAWINGS.

8.) SCHEDULE OF VALUES: CONTRACTOR SHALL PROVIDE A SCHEDULE OF VALUES PROVIDING A LABOR AND MATERIAL COST BREAKDOWN IN ACCORDANCE WITH AIA 6703 FORMAT. SCHEDULE OF VALUES TO BE SUBMITTED TO THE ENGINEER FOR HIS APPROVAL WITHIN FOURTEEN (14) DAYS OF NOTICE TO PROCEED.

9.) CONTRACTOR SHALL COORDINATE WITH THE ENGINEER THE USE OF THE OWNER'S TRUCK SCALE FOR PURPOSES OF MEASURING EXCAVATED MATERIAL REMOVED FROM THE SITE. MEASUREMENTS SHALL BE USED BY THE ENGINEER IN APPROVING CONTRACTOR'S APPLICATION FOR PAYMENT.

No.	Date	By	Revision
2	3/4/92	WAJ	APPROVED FOR CONSTRUCTION ADDENDUM #3
1	1/7/92	WAJ	BID ISSUE ONLY
A	5/8/91	WAJ	FOR CLIENT REVIEW

Turner
URS CONSULTANTS
POLYTECH

DESIGNED BY: WAJ	DATE: 5/8/91
DRAWN BY: H.HOLT	DATE: 5/8/91
CHECKED BY: DSP	DATE: 5/21/91
SCALE 1" = 100'	

DOCK 24W SLIP EXTENSION
CLEVELAND-CUYAHOGA COUNTY PORT AUTHORITY

ANTHONY F. FUGARO, EXEC. DIRECTOR
JAY C. EHLE, CHAIRMAN OF THE BOARD

DESIGN CRITERIA AND GENERAL NOTES

PROJECT NO. 8921300

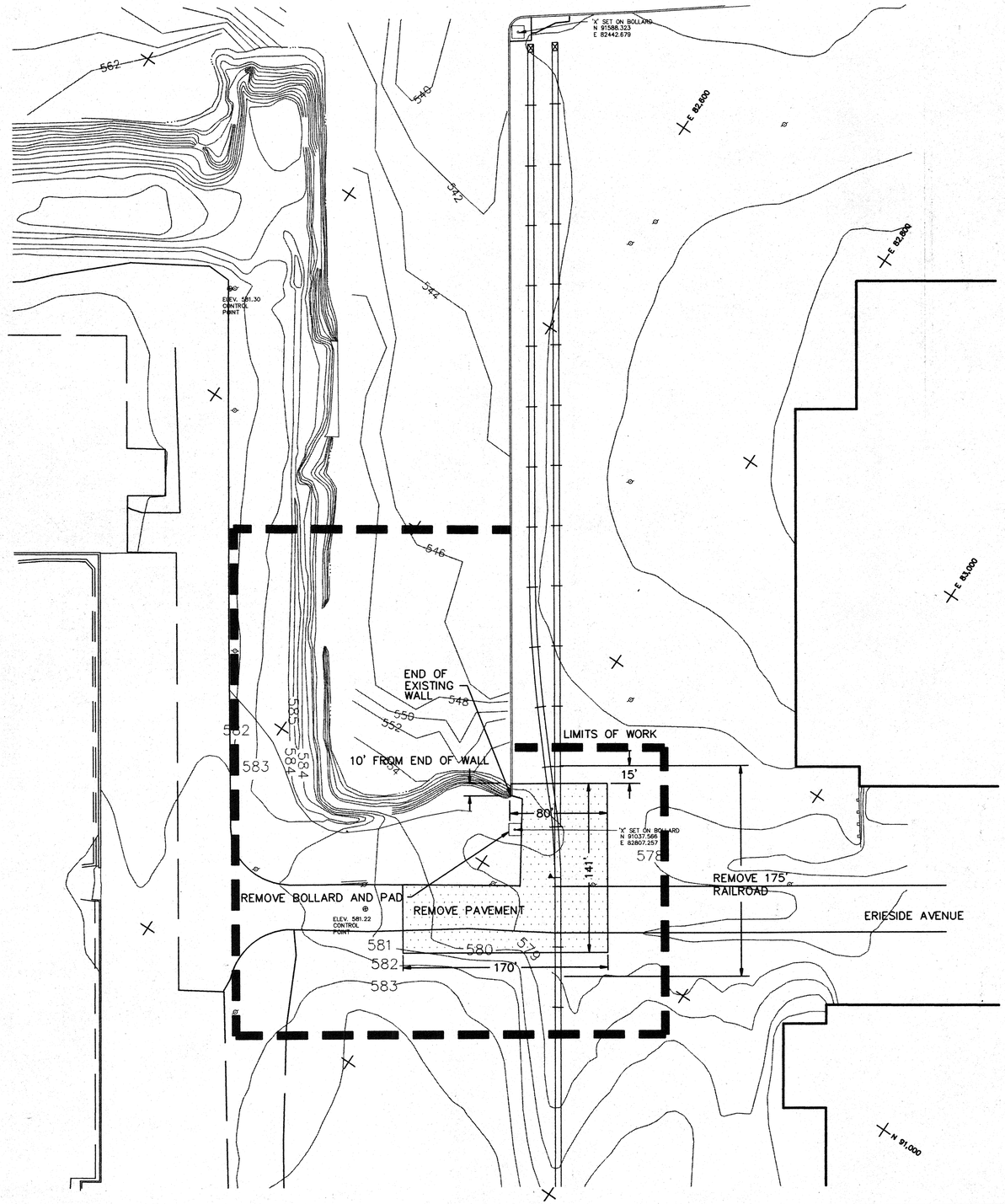
NOTES

1) FOR UTILITIES SEE SHEETS 11, 12, 12A, AND 13.

2) RAILROAD – ALL RAIL TO BE REINSTALLED, AS WELL AS TIES IN GOOD CONDITION (AS DETERMINED BY THE ENGINEER).

3) EXISTING ELECTRIC/LIGHT POLES WITHIN LIMITS OF WORK TO BE REMOVED BY OTHERS.

4) REMOVE ALL BROKEN CONCRETE AND LARGE BOULDERS FROM EXISTING SLOPE, AND PLACE ON FACE OF NEW SLOPE TO PROTECT AGAINST WAVE ACTION.



No.	Date	By	Revision
2	3/4/92	PGP	APPROVED FOR CONSTRUCTION
1	1/13/92	PGP	BID ISSUE ONLY

Turner
URS CONSULTANTS
POLYTECH

DESIGNED BY: PGP	DATE: 5/15/91	
DRAWN BY: PGP	DATE: 5/21/91	
CHECKED BY: DSP	DATE: 7/17/91	
SCALE 1" = 50'		

DOCK 24W SLIP EXTENSION
CLEVELAND–CUYAHOGA COUNTY PORT AUTHORITY

ANTHONY F. FUGARO, EXEC. DIRECTOR
JAY C. EHLE, CHAIRMAN OF THE BOARD

DEMOLITION PLAN

PROJECT NO. 8921300

NOTES

1) GRADE PAVEMENT TOWARDS DOCK.

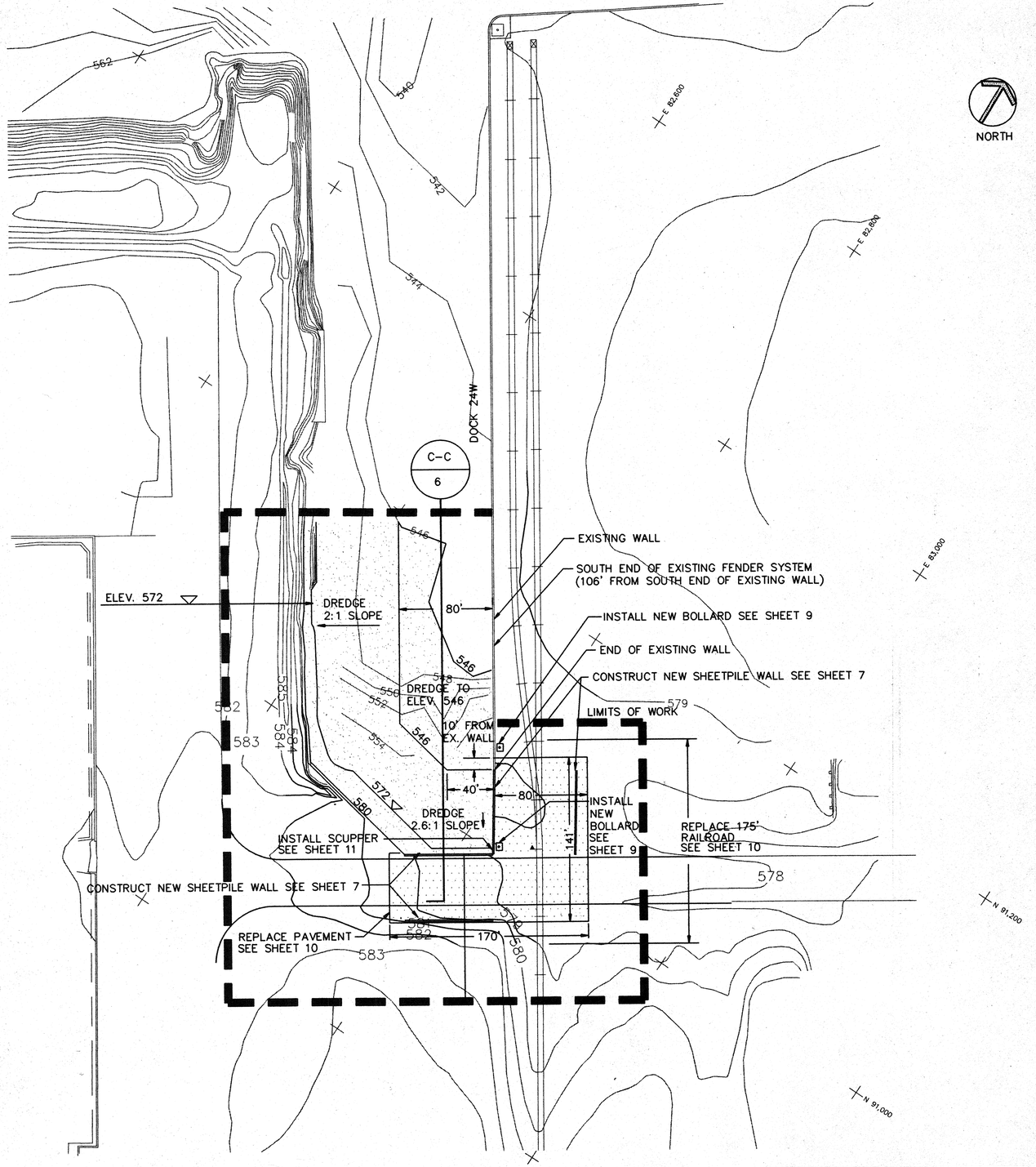
2) REPLACE PAVEMENT TO MEET EXISTING EDGES AND NEW RAILROAD.

3) REPLACE RAILROAD TO MEET EXISTING ELEVATIONS AT EACH END.

4) DREDGE LIMITS SHALL BE CONSIDERED TO BE AT ELEVATION 572 AND BELOW. ALL EARTHWORK ABOVE ELEVATION 572 SHALL BE CONSIDERED NORMAL EXCAVATION.

5) PROVIDE 120' OF TEMPORARY CONCRETE MEDIAN BARRIER PER ODOT 622. INCLUDE TERMINAL SECTIONS AT EACH END. INDIVIDUAL SECTIONS SHALL BE PLACED ON FINAL PAVEMENT SURFACE NEAR NEW SOUTH SHEETPILE WALL AS DIRECTED BY THE ENGINEER. EACH SECTION SHALL BE CONNECTED TO THE ADJACENT SECTIONS BY MEANS OF RACEWAY DOWEL BARS OR AS OTHERWISE APPROVED BY THE ENGINEER.

6) CONTRACTOR SHALL INSTALL AND MAINTAIN A TEMPORARY ROAD AROUND THE EXISTING PAVEMENT REPLACEMENT AREA UNTIL RESTORATION OF THE FINAL ROADWAY PAVEMENT IS ACCEPTED BY THE ENGINEER. TEMPORARY ROADWAY SHALL BE FORTY (40) FEET WIDE AND CONSIST OF TWELVE (12) INCHES OF ODOT ITEM 304. CONTRACTOR SHALL MAINTAIN DUST CONTROL REQUIREMENTS OF ODOT SPECIFICATION 616.



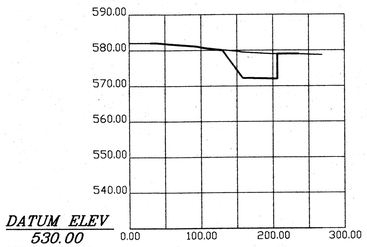
No.	Date	By	Revision
2	3/4/92	PGP	APPROVED FOR CONSTRUCTION
1	1/13/92	PGP	BID ISSUE ONLY

Turner
URS CONSULTANTS
POLYTECH

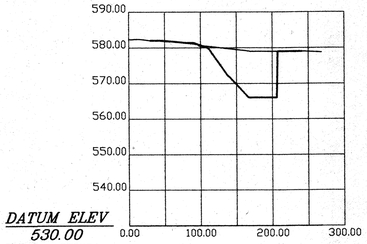
DESIGNED BY: PGP	DATE: 5/15/91
DRAWN BY: PGP	DATE: 5/21/91
CHECKED BY: DSP	DATE: 7/17/91
SCALE 1" = 50'	

DOCK24W SLIP EXTENSION
CLEVELAND–CUYAHOGA COUNTY PORT AUTHORITY
ANTHONY F. FUGARO, EXEC. DIRECTOR
JAY C. EHLE, CHAIRMAN OF THE BOARD

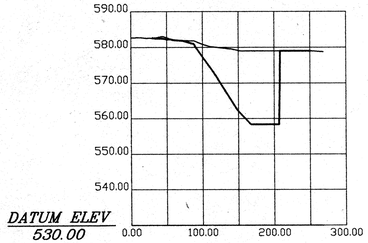
CONSTRUCTION PLAN
PROJECT NO. 8921300



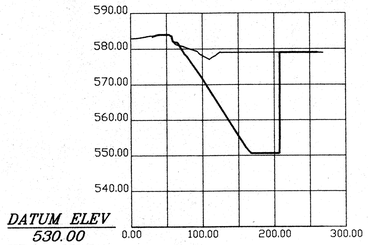
DATUM ELEV
530.00
GROUP DOCK24
SECTION OFFSET 1' NORTH OF NEW SOUTH SHEETPILE WALL



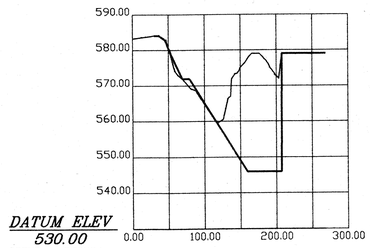
DATUM ELEV
530.00
GROUP DOCK24
SECTION OFFSET20'



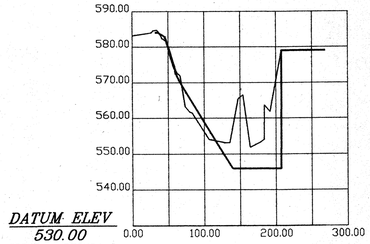
DATUM ELEV
530.00
GROUP DOCK24
SECTION OFFSET40'



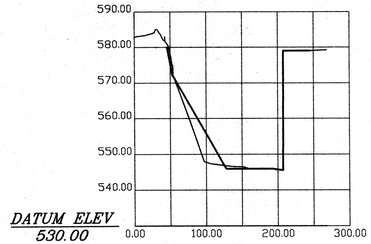
DATUM ELEV
530.00
GROUP DOCK24
SECTION OFFSET60'



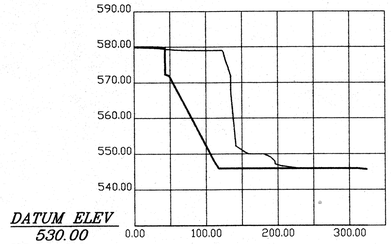
DATUM ELEV
530.00
GROUP DOCK24
SECTION OFFSET80'



DATUM ELEV
530.00
GROUP DOCK24
SECTION OFF100'



DATUM ELEV
530.00
GROUP DOCK24
SECTION OFF200'



DATUM ELEV
530.00
GROUP C-C
SECTION SEC.C-C SHEET 4

LEGEND

EXISTING GROUND ELEVATION ———

PROPOSED GROUND ELEVATION ———

No.	Date	By	Revision
2	3/4/92	PGP	APPROVED FOR CONSTRUCTION
1	1/13/92	PGP	BID ISSUE ONLY

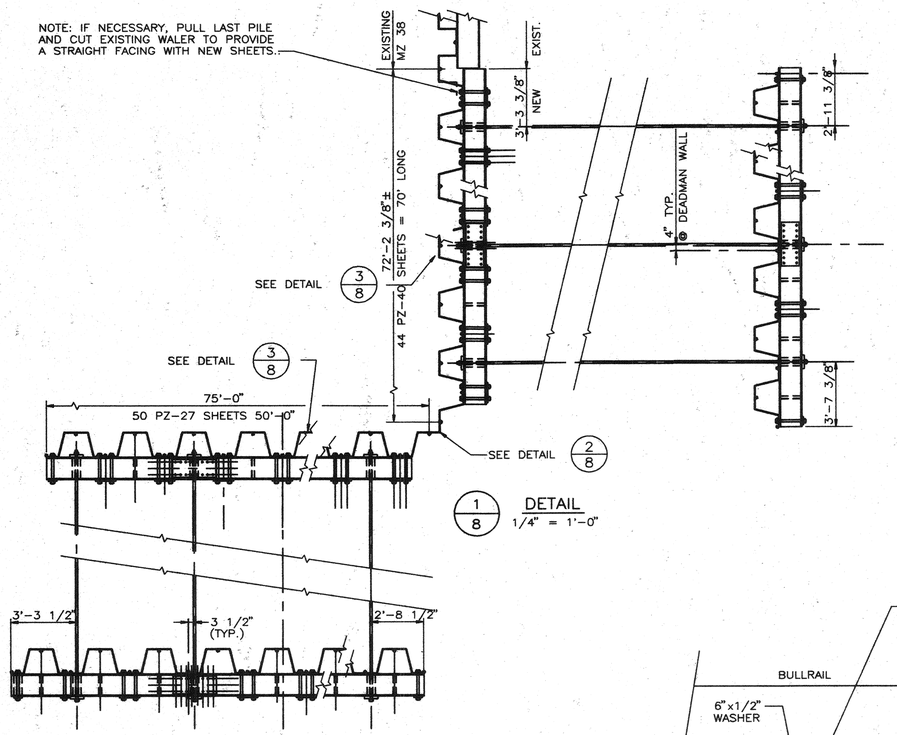
Turner
URS CONSULTANTS
POLYTECH

DESIGNED BY: PGP	DATE: 5/19/91
DRAWN BY: PGP	DATE: 5/21/91
CHECKED BY: DSP	DATE: 5/21/91
SCALE 1" = 100'	

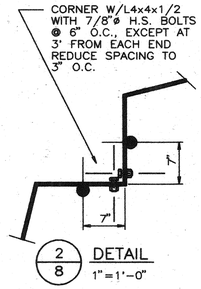
DOCK 24W SLIP EXTENSION
CLEVELAND-CUYAHOGA COUNTY PORT AUTHORITY
ANTHONY F. FUGARD, EXEC. DIRECTOR
JAY C. EHLE, CHAIRMAN OF THE BOARD

DREDGE SECTIONS

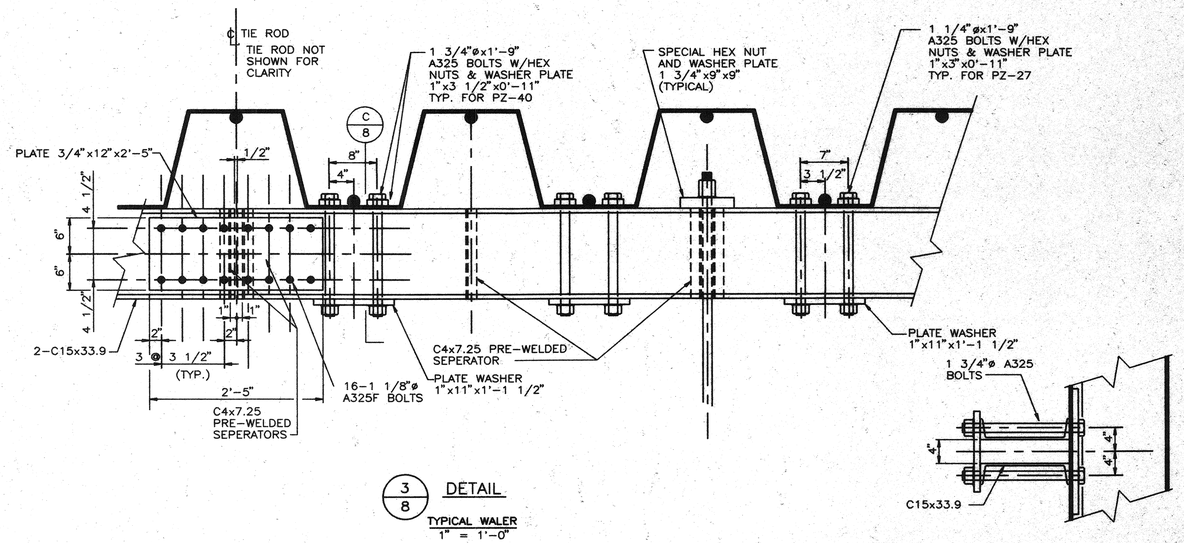
PROJECT NO. 8921300



1/8 DETAIL
1/4" = 1'-0"

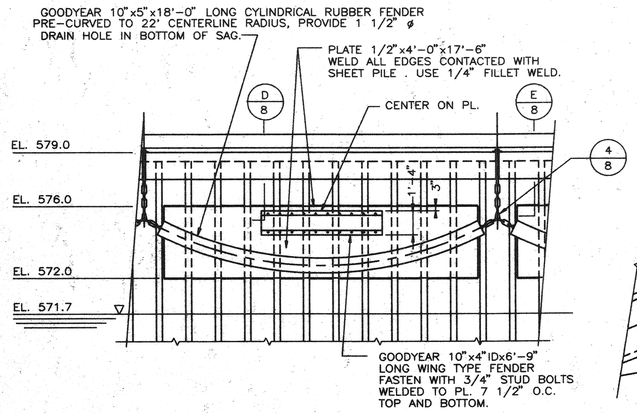


2/8 DETAIL
1"=1'-0"

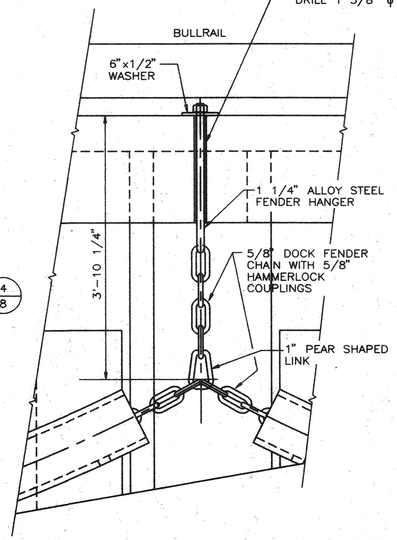


3/8 DETAIL
TYPICAL WALER
1" = 1'-0"

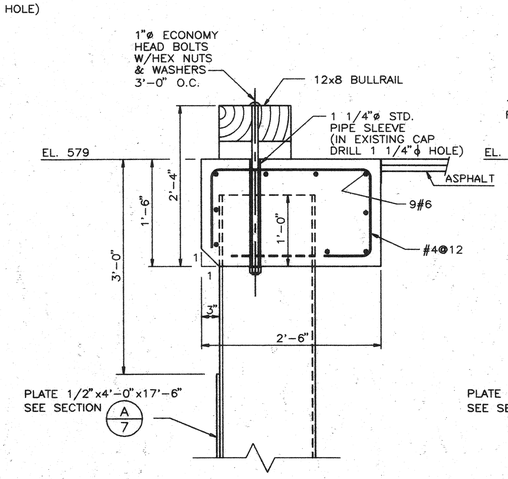
C 8 SECTION
1" = 1'-0"



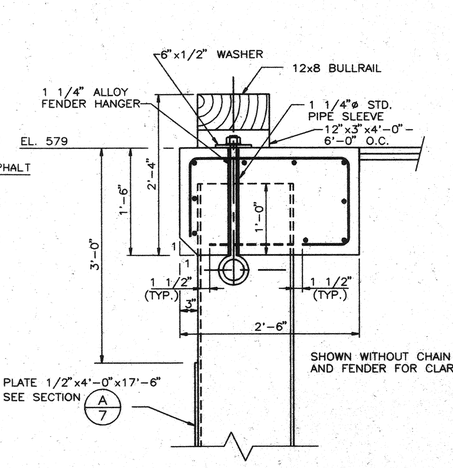
TYPICAL ELEVATION – PILING & FENDER SYSTEM
N. T. S.



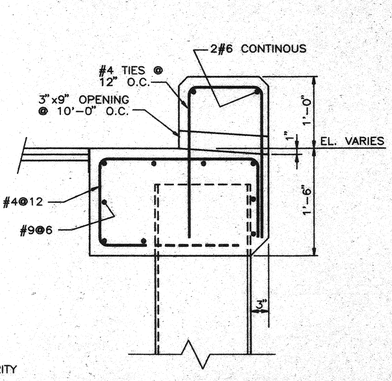
4/8 DETAIL
FENDER HANGER
1" = 1'-0"



D 8 SECTION
1" = 1'-0"
ALSO SEE SHEET 7



E 8 SECTION
1" = 1'-0"



F 7 SECTION
1" = 1'-0"

ERIESIDE AVE.

NOTES:

1.) FOR GENERAL NOTES SEE SHEET 2.

2.) TIMBER BULLRAIL SHALL BE TREATED SEE MISC. NOTE 1, SHEET 2.

No.	Date	By	Revision
2	3/4/92	WAJ	APPROVED FOR CONSTRUCTION ADDENDUM #3
1	1/7/92	WAJ	BID ISSUE ONLY

Turner
URS CONSULTANTS
POLYTECH

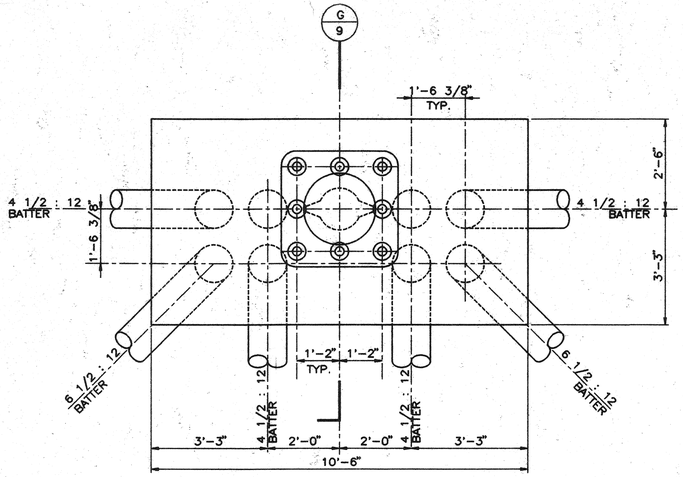
DESIGNED BY: WAJ	DATE: 5/8/91
DRAWN BY: H.HOLT	DATE: 5/8/91
CHECKED BY: GVD	DATE: 5/28/91
SCALE: AS SHOWN	

DOCK 24W SLIP EXTENSION
CLEVELAND-CUYAHOGA COUNTY PORT AUTHORITY
ANTHONY F. FUGARO, EXEC. DIRECTOR
JAY C. EHLE, CHAIRMAN OF THE BOARD

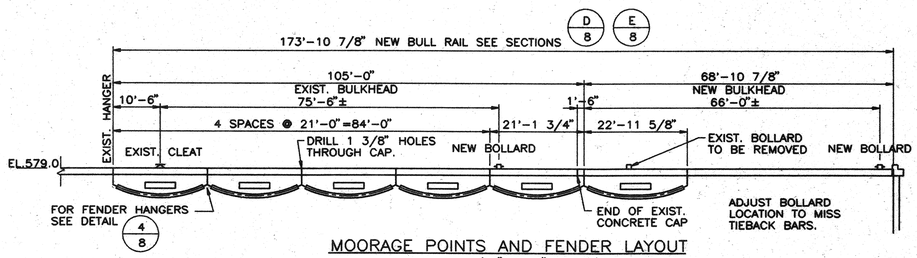
STRUCTURAL DETAILS AND SECTIONS

PROJECT NO. 8921300

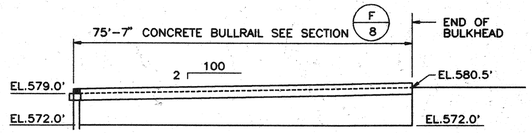
GSTRUC 05/17/91 1408



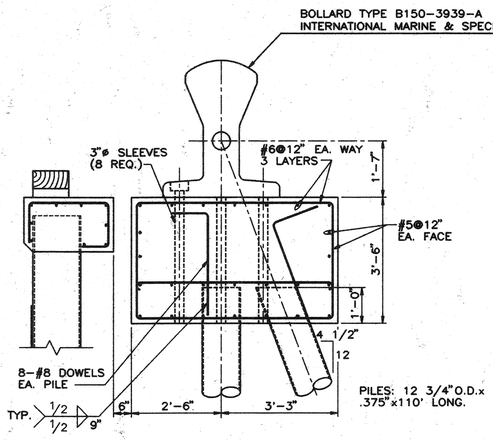
BOLLARD PLAN
1/2"=1'-0"



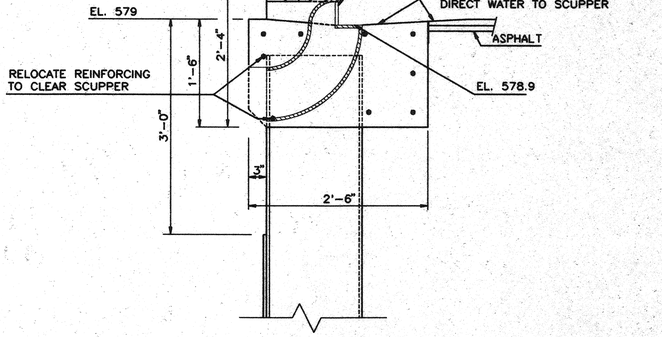
MOORAGE POINTS AND FENDER LAYOUT
1/16"=1'-0"



ERIESIDE AVE. ELEVATION
1/16"=1'-0"



G
9
SECTION
1/2"=1'-0"



6
9
SCUPPER DETAIL
1" = 1'-0"

No.	Date	By	Revision
2	3/4/92	WAJ	APPROVED FOR CONSTRUCTION
1	1/7/92	WAJ	BID ISSUE ONLY
A	5/8/91	WAJ	FOR CLIENT REVIEW

Turner
URS CONSULTANTS
POLYTECH

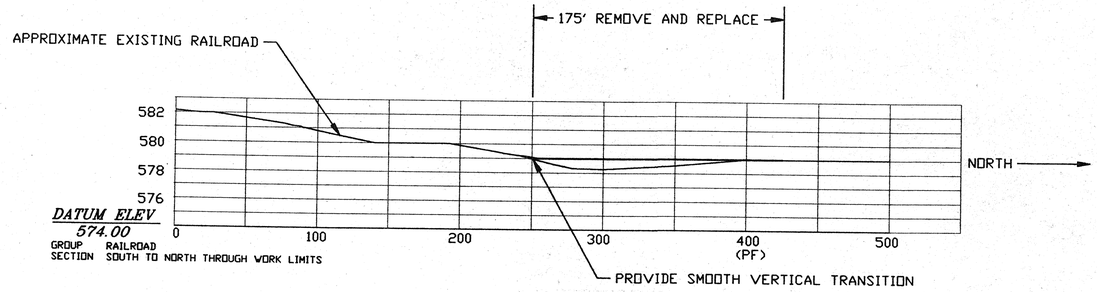
DESIGNED BY: WAJ	DATE: 5/8/91
DRAWN BY: P.FLURY	DATE: 5/8/91
CHECKED BY: DSP	DATE: 5/28/91
SCALE: AS NOTED	

DOCK 24W SLIP EXTENSION
CLEVELAND-CUYAHOGA COUNTY
PORT AUTHORITY

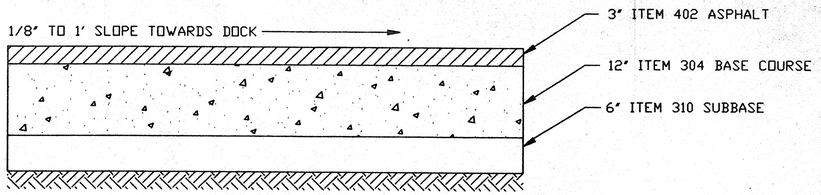
ANTHONY F. FUGARO, EXEC. DIRECTOR
JAY C. EHLE, CHAIRMAN OF THE BOARD

ADDITIONAL MARINE
DETAILS

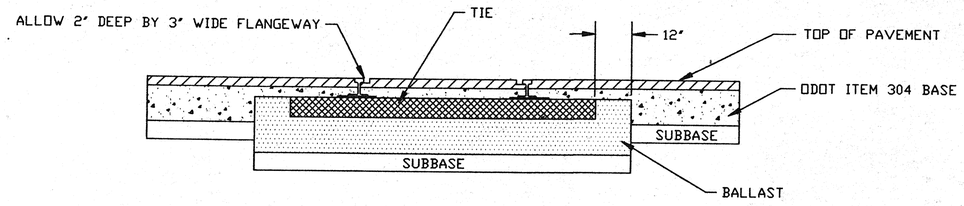
PROJECT NO. 8921300



RAILROAD PROFILE

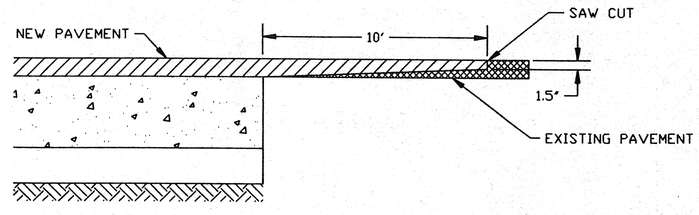


TYPICAL PAVEMENT SECTION

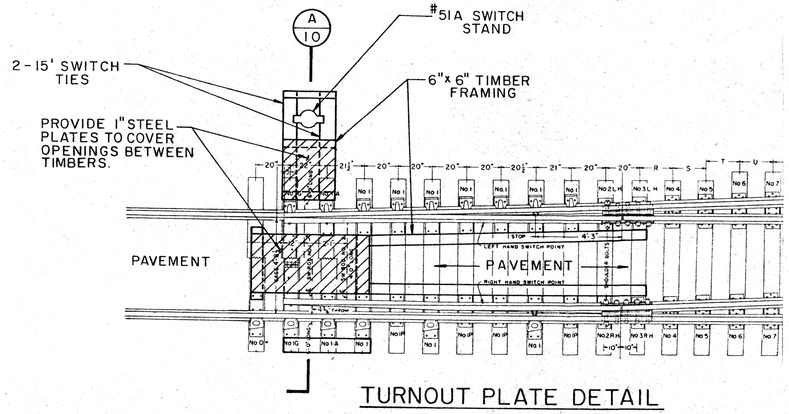


TYPICAL RAILROAD SECTION IN PAVEMENT

SCALE: 1/2" = 1'

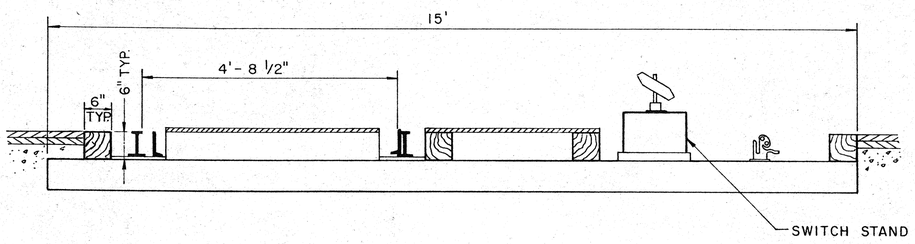


PAVEMENT JOINT DETAIL



TURNOUT PLATE DETAIL

N.T.S.



A/10 SECTION

NOTES

1) ALL FINISHED GRADES TO BE CONFIRMED FOR APPROVAL BY ENGINEER.
2) ALL PAVEMENT TO BE PLACED IN A SINGLE LIFT

No.	Date	By	Revision
1	1/13/92	PGP	BID ISSUE ONLY

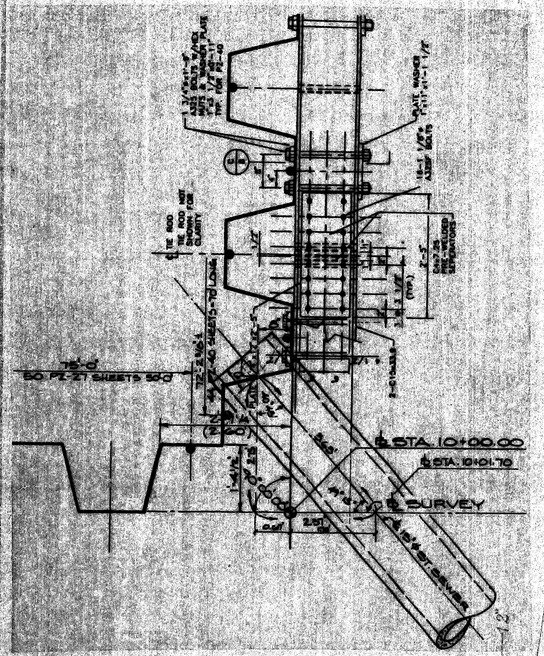
Turner
URS CONSULTANTS
POLYTECH

DESIGNED BY: PGP	DATE: 5/17/91
DRAWN BY: PGP	DATE: 5/21/91
CHECKED BY: DSP	DATE: 5/21/91
SCALE 1" = 1' OR AS NOTED	

DOCK 24W SLIP EXTENSION
CLEVELAND-CUYAHOGA COUNTY PORT AUTHORITY
ANTHONY F. FUGARO, EXEC. DIRECTOR
JAY C. EHLE, CHAIRMAN OF THE BOARD

MISCELLANEOUS DETAILS

PROJECT NO. 8921300



DETAIL - 15" OUTLET PIPE
(FOR STORM SEWER)
NO SCALE

STA. 9+99.00 (3.13' LT.) -
INSTALL NEW OPENING IN NEW SHEETPILES FOR OUTLET OF NEW 15" ST. SEWER.
15" INV. EL. 572.70 (E)
SEE DETAIL OF OUTLET PIPE ON THIS SHEET

ADJUST EXIST. OPENING TO INSTALL NEW PIPE; PARGH. WITH BRICK AND MORTAR AND CONCRETE

30 L.F. 16" STEEL CASING (SEE NOTE 9)

30 L.F. 30" STEEL CASING (SEE NOTE 9)

84 L.F. 8" W

24" SS

28 L.F.

8" CL 52, CEMENT LINED W/CL 350 RET. MECH. JT. FITTINGS

24" SS

25 MIN.

STA. 11+78.00 (10.92' LT.)
INSTALL NEW PRECAST CONC. CATCH BASIN (O.D.O.T. 2-2-B)
GRATE EL. 577.00
12" INV. EL. 574.43 (SW)

STA. 12+26.66 (10.92' LT.) -
℄ EXIST. CATCH BASIN
RIM EL. 576.42
(EXIST. C.B. TO BE REMOVED & OUTLET PIPE TO BE PLUGGED)

577

11+50 12+00 12+50

122.00' - 12" R.C.P. ST. SEWER @ 0.30%

ASPH. PAVEMENT

NOTE:
CONTRACTOR SHALL REGRADE AREA TO SLOPE PAVEMENT TOWARD NEW CATCH BASIN LOCATION

BULKHEAD ABANDONED WATER MAIN END

REMOVE HYDRANT & VALVE BOX (SEE NOTE 8)

INSTALL SCUPPER 7'-9" NORTH OF CORNER OF SHEETPILE WALLS SEE DETAIL (C) (9)

REMOVE METER & VAULT (SEE NOTE 8 & 12)

SHEETPILE WALLS

TIEBACKS

33.17' - 15" R.C.P. ST. SEWER @ 0.92%

STA. 10+19 (19.00 RT.)
INSTALL NEW 4'ø PRECAST CONC. M.H.W. DRAINAGE CASTG.
GRATE EL. 578.38
15" INV. EL. 573.01 (W)
15" INV. EL. 573.06 (NE)

10' 10'

ERIESIDE AVENUE

UNDERGROUND OHIO BELL TEL. CABLE (TO BE RELOCATED BY OTHERS)

8" W 12" SS

12" SS

6" W

PLUG

BULKHEAD ABANDONED WATER MAIN END

107 L.F. @ 2.6%

12" DUCTILE IRON CLASS 52 CEMENT LINED WATER MAIN WITH CLASS 350 RET. MECH. JT. FITTINGS

STA. 34+10 (48'R) INSTALL NEW 6" HYDRANT ASSEMBLY, COMPLETE (SEE NOTE 7)

STA. 10+28.45 (75'R) INSTALL 6" HYDRANT ASSEMBLY, COMPLETE (SEE NOTE 7)

REMOVE HYDRANT & VALVE BOX (SEE NOTE 8)

30 L.F. 20" STEEL CASING (SEE NOTE 9)

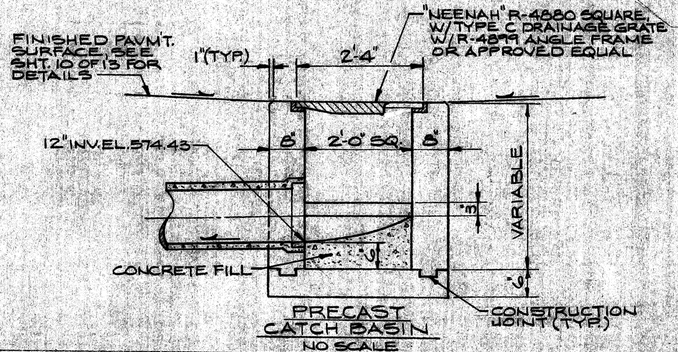
20 L.F. 30" STEEL CASING (SEE NOTE 9)

44.00' - 12" R.C.P. STM. @ 0.30%

STA. 10+13.5 (75'R) INSTALL 12" - 45° RETAINER MEC. JOINT BEND WITH CONC. COLLAR

RAILROAD TRACKS TO BE REMOVED AND REPLACED WITHIN WORK LIMITS (REFER TO SPECIFICATIONS)

STA. 10+61.00 (19' RT.)
INSTALL NEW 4'ø PRECAST CONC. M.H.W. DRAINAGE CASTG.
GRATE EL. 578.00
12" INV. EL. 573.06 (NW)
15" INV. EL. 573.19 (SW)



PRECAST CATCH BASIN
NO SCALE

NOTES:
REFER TO UTILITY DETAILS ON SHEET NO. 13 OF 13 FOR STORM SEWER CONSTRUCTION DETAILS.

ALL PIPE TRENCH EXCAVATION SHALL BE TO A DEPTH OF THE PIPE O.D. USED (+) 6 INCHES

ALL BACK-FILL & BEDDING MATERIAL SHALL BE #57 LIMESTONE TO THE SUBGRADE ELEVATION UNDER ALL PAVED AREAS

ALL EXISTING WATER MAINS ARE ASSUMED TO HAVE 5.5 FT. OF COVER AT ALL CROSSING

LEGEND

EXISTING	PROPOSED	
		FIRE HYDRANT
		WATER VALVE
		MANHOLE/CATCH BASIN
		POWER POLE
SAN	SAN	SANITARY SEWER
SS	SS	STORM SEWER
W	W	WATER LINE
		AERIAL POWER LINE
		ABANDON UTILITY LINE
		REMOVE UTILITY LINE
(2)		MANHOLE IDENTIFICATION (SEE SHEET 13)

No.	Date	By	Revision
4	5-19-92	PGP	REVISED LOCATION OF ST. SEWER FOR ERIESIDE AVE.
3	3/2/92	PGP	CONSTRUCTION ISSUE
2	1/13/92		NORTH SCUPPER DELETED
1	5/28/91		REVISED LOCATION OF NEW 8" W; ADDED LOCATION OF SCUPPERS; REVISED WORDING.

Turner
URS CONSULTANTS
POLYTECH

DESIGNED BY: D.R.B.	DATE: 5/91	
DRAWN BY: D.R.B.	DATE: 5/91	
CHECKED BY: E.D.V.	DATE: 5/91	
SCALE: 1"=20'		

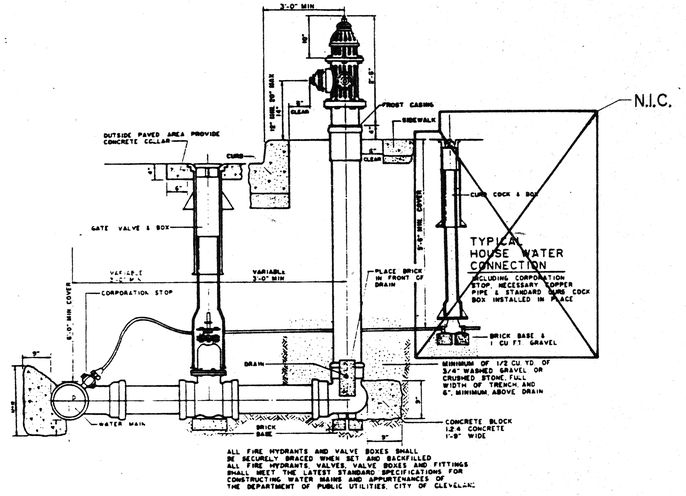
DOCK 24W
SLIP EXTENSION
CLEVELAND-CUYAHOGA COUNTY PORT AUTHORITY

CHIEF ENGINEER
DIRECTOR
PROJECT NO.

UTILITIES PLAN

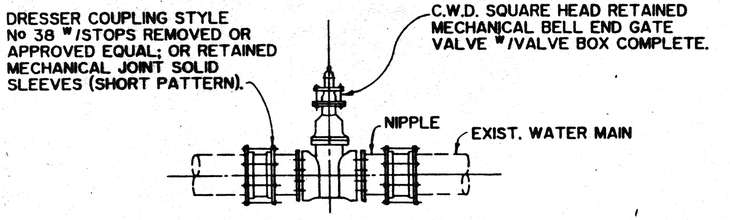
SHEET NO. 11 of 13

RECEIVED
SEP 21 1992
TURNER CONSTRUCTION COMPANY



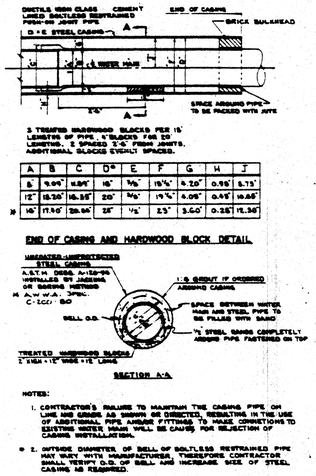
ALL FIRE HYDRANTS AND VALVE BOXES SHALL BE SECURELY BRACED WHEN SET AND BACKFILLED ALL FIRE HYDRANTS, VALVES, VALVE BOXES AND FITTINGS SHALL MEET THE LATEST STANDARD SPECIFICATIONS FOR CONSTRUCTING WATER MAINS AND APPURTENANCES OF THE DEPARTMENT OF PUBLIC UTILITIES, CITY OF CLEVELAND

TYPICAL 6" FIRE HYDRANT ASSEMBLY INSTALLATION



NOTE:
BEFORE CUTTING EXISTING WATER MAIN THE NIPPLES SHALL BE CONNECTED TO THE MECHANICAL JOINT BELL END GATE VALVE. AFTER CUTTING PIPE FINAL CONNECTIONS SHALL BE MADE WITH COUPLINGS/SOLID SLEEVES AS SPECIFIED.

CUT-IN VALVE DETAIL

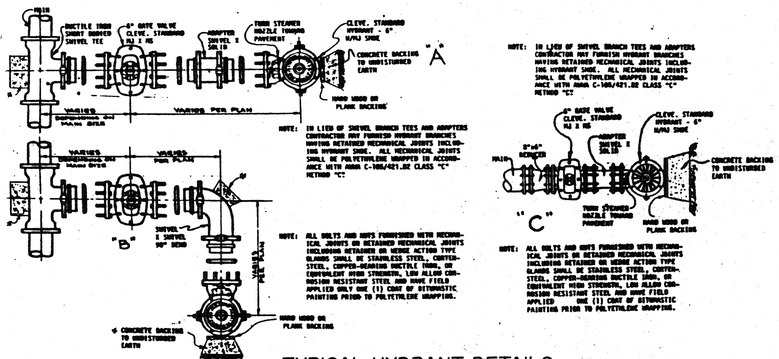


A	B	C	D*	E	F	G	H	J
6	9.05"	13.84"	18"	5/8	19 1/2"	9.20"	0.93"	8.73"
12"	15.30"	16.35"	20"	3/4	19 1/4"	9.05"	0.49"	10.65"
16"	17.60"	20.06"	24"	1 1/8	23"	9.40"	0.28"	15.36"

END OF CASING AND HARDWOOD BLOCK DETAIL

NOTES:
1. CONTRACTOR'S FAILURE TO MAINTAIN THE CASING PIPE ON LINE AND GRADE AS SHOWN OR DIRECTED, RESULTING IN THE USE OF ADDITIONAL PIPE AND/OR FITTINGS TO MAKE CONNECTIONS TO EXISTING WATER MAINS WILL BE CAUSE FOR REJECTION OF CASING INSTALLATION.
2. * OUTSIDE DIAMETER OF BELL OF DUCTILESS RESTRAINED PIPE MAY VARY WITH MANUFACTURER, THEREFORE CONTRACTOR SHALL VERIFY O.D. OF BELL AND INCREASE SIZE OF STEEL CASING AS REQUIRED.

CASING DETAIL



PLAN

NOTE: PRESSURE TESTING OF WATER MAINS, WHERE THEY ARE CONNECTED TO AN EXISTING WATER MAIN TO TEST, RESULTING IN FAILURE OF TEST OR ANY DAMAGE TO EXISTING WATER MAIN FACILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

PRESSURE TESTING

TYPICAL HYDRANT DETAILS

GENERAL NOTES

1. THE VARIOUS UNDERGROUND UTILITIES SHOWN IN THE PLAN ARE BASED ON PUBLIC AND PRIVATE RECORDS WHICH MAY OR MAY NOT BE ACCURATE. THE CONTRACTOR SHALL NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 1-800-362-2764 TWO WORKING DAYS PRIOR TO ALL EXCAVATION.

2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS AND DEPTHS OF THE UNDERGROUND UTILITIES TO MAKE PROPER CONNECTIONS AND MAINTAIN ADEQUATE CLEARANCE. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES SO AS TO NOT INTERRUPT SERVICE OR CAUSE ANY DAMAGE.

3. THE CONTRACTOR SHALL NOTIFY THE DIVISION OF WATER AT 271-4264 THREE WORKING DAYS BEFORE BEGINNING ANY WORK ON WATERLINES.

4. WATER SERVICE SHALL BE MAINTAINED AT ALL TIMES, EXCEPT WHILE INDIVIDUAL CONNECTIONS ARE BEING TRANSFERRED FROM THE EXISTING MAIN TO THE NEW MAIN.

5. WATERLINES SHALL BE INSTALLED WITH A MINIMUM DEPTH OF COVER OF 6'-0".

6. THE CONTRACTOR SHALL ADJUST WATERLINES, VERTICALLY TO PROVIDE MINIMUM 12" CLEARANCE BETWEEN WATER MAIN AND STORM SEWER AND MINIMUM 18" CLEARANCE BETWEEN WATER MAIN AND SANITARY SEWERS.

7. 6" HYDRANT ASSEMBLY: 12"x6" RETAINED MECHANICAL JOINT TEE (ALL BELL) WITH CONCRETE PIER; 6" RETAINED MECHANICAL JOINT BELL END SQUARE HEAD GATE VALVE WITH VALVE BOX COMPLETE; 6" DUCTILE IRON CLASS 52 CEMENT LINED PIPE AND RETAINED MECHANICAL JOINT FITTINGS AS NECESSARY; 6" CLEVELAND WATER DEPARTMENT STANDARD HYDRANT WITH RETAINED MECHANICAL JOINT SHOE.

8. WHERE INDICATED ON THE PLAN, OR AS ORDERED, THE CONTRACTOR SHALL REMOVE EXISTING HYDRANTS, VALVES, VALVE BOXES OR VAULT/MANHOLE FRAME AND COVER AND DELIVER THE SAME TO HARVARD YARDS AT 4600 HARVARD AVENUE.

9. STEEL PIPE CASING

THE STEEL PIPE CASING SHALL BE OF THE SIZE AND THICKNESS AS CALLED FOR ON THE DETAIL ON THIS SHEET. THE STEEL PIPE SHALL BE IN ACCORDANCE WITH ASTM DESIGNATION A-136, CLASS A OR A-283 GRADE C. THE PIPE SHALL BE OF FABRICATED BUTT-WELDED STEEL SHEETS WITH STRAIGHT OR SPIRAL SEAMS. THE ENDS OF EACH PIPE SECTION SHALL BE PROPERLY BEVELED FOR FIELD WELDING. COATING AND LINING OF THE STEEL CASING PIPE WILL NOT BE REQUIRED, BUT THE PIPE SHALL BE PROPERLY PROTECTED PRIOR TO ITS INSTALLATION.

THE MINIMUM SIZE OF THE PIPE CASING IS NOTED ON THE DETAILS. THE CONTRACTOR WILL BE PERMITTED TO USE A LARGE SIZE, IF SO DESIRED.

CEMENT MORTAR GROUT SHALL CONSIST OF CEMENT, FINE SAND AND WATER. CEMENT SHALL MEET THE REQUIREMENTS OF 701 AND SAND SHALL MEET THE REQUIREMENTS OF 703.03 OF OHIO DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS.

AFTER THE WATER MAIN HAS BEEN INSTALLED IN ITS FINAL POSITION INSIDE THE CASING AND HAS BEEN TESTED, A BRICK BULKHEAD AT LEAST SIX INCHES THICK SHALL BE BUILT IN ONE END OF THE CASING COMPLETELY FILLING THE SPACE BETWEEN THE WATER MAIN AND THE CASING. FOLLOWING THE COMPLETION OF THE BULKHEAD, SAND SHALL BE PACKED INTO THE CASING COMPLETELY FILLING THE SPACE BETWEEN IT AND THE WATER MAIN. THE METHOD USED FOR PLACING THIS SAND SHALL BE SUCH THAT IT WILL NOT DAMAGE THE COATING ON THE WATER MAIN. AFTER THE SAND BACKFILL IS COMPLETED, ANOTHER BRICK BULKHEAD SHALL BE INSTALLED AT THE OPPOSITE END OF THE CASING TO PREVENT ESCAPE OF BACKFILL MATERIAL.

10. GENERAL WATER SUPPLY CONNECTION

ALL WORK, MATERIAL, AND ARRANGEMENTS RELATED TO WATERLINES SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE DIVISION OF WATER. THE DIVISION OF WATER RESERVES THE RIGHT TO DETERMINE THE CONFIGURATION OF ALL INSTALLATION. THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, EQUIPMENT AND DO ALL NECESSARY EXCAVATION, SHEETING, SHORING AND BACKFILLING. THE DIVISION OF WATER WILL INSTALL THE PRESSURE TAP, ASSEMBLE AND INSTALL METER SETTING, AND INSTALL METER ASSEMBLY FURNISHED BY THE CONTRACTOR. ALL METERS FURNISHED BY THE CONTRACTOR SHALL BE APPROVED BY THE DIVISION OF WATER. WHERE ADDITIONAL MATERIALS ARE REQUIRED FOR INSTALLATION OF THE METER ASSEMBLY, OR AS ORDERED, THE CONTRACTOR SHALL FURNISH SAME.

11. WATER METER SETTING

THE CONTRACTOR SHALL BE REQUIRED TO FURNISH ALL MATERIAL IN ACCORDANCE WITH DETAILED DRAWINGS AND MATERIALS LIST OBTAINABLE FROM THE PERMITS AND SALES SECTION OF THE DIVISION OF WATER AND HEREIN MADE A PART OF THESE SPECIFICATIONS. THE MATERIALS FURNISHED SHALL BE DELIVERED TO THE HARVARD YARDS, 4600 HARVARD AVENUE, FOR ASSEMBLY. THE SETTING SHALL BE DELIVERED TO THE CONNECTION LOCATION AND INSTALLED BY THE DIVISION OF WATER IN THE EXCAVATION PREPARED BY THE CONTRACTOR.

12. WATER METER

THE CONTRACTOR SHALL PURCHASE FROM THE DIVISION OF WATER, NEW WATER METERS IN ACCORDANCE WITH CHAPTER 533, WATER METERS OF THE CODIFIED ORDINANCES, PART FIVE MUNICIPAL UTILITIES AND SERVICE CODE OF THE CITY OF CLEVELAND. THE WATER METER SHALL BE INSTALLED IN CONJUNCTION WITH THE WATER METER SETTING.

WHERE WATER METERS ARE TO BE REMOVED AS PART OF THE WORK UNDER THIS ITEM, THE CONTRACTOR SHALL COOPERATE WITH THE DIVISION OF WATER BY DOING ALL EXCAVATING AND SITE PREPARATION, INCLUDING METER VAULT PARTIAL REMOVAL TO AID IN PROVIDING ACCESS TO METER. THE METER WILL BE REMOVED BY THE DIVISION OF WATER. ALL METERS ARE THE PROPERTY OF THE DIVISION OF WATER AND SHALL BE INSTALLED, REMOVED AND RESET BY THIS DIVISION ONLY.

13. WATER METER VAULT

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR METER VAULT, ALL IN CONFORMANCE WITH RULES AND REGULATIONS OF THE DEPARTMENT OF PUBLIC UTILITIES. VAULTS SHALL BE IN ACCORDANCE WITH THOSE APPROVED BY THE DEPARTMENT OF PUBLIC UTILITIES AS TO SIZE AND USE DESIGNATION AS ON FILE IN THE PERMITS AND SALES SECTION OF THE DIVISION OF WATER. SPECIAL VAULTS SHALL BE CONSTRUCTED ONLY AFTER APPROVAL BY THE DEPARTMENT OF PUBLIC UTILITIES.

14. ALL CASTINGS USED SHALL BE RATED FOR HEAVY-DUTY USE.

15. THE CONTRACTOR SHALL PAY ALL LABOR COSTS INCURRED BY THE CLEVELAND DIVISION OF WATER FOR WORK SUCH AS CHLORINATION, RETAPPING, METER SETTINGS, METER SAMPLING, AND OTHER TASKS AS REQUIRED TO EXECUTE THE WORK. COMPLETE INFORMATION ON RATES AND PRICES OF THE CLEVELAND DIVISION OF WATER MAY BE OBTAINED BY CALLING PERMIT AND SALES AT 664-2740.

REVISIONS		
NO.	DATE	BY

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO

SUBJECT: ERIESIDE AVENUE (ACCESS ROAD)
DETAILS & NOTES

DRAWN BY
DESIGNED BY
CHECKED BY
DATE
SCALE

No. B-2827

No.	Date	By	Revision
2	3/2/92	PGP	CONSTRUCTION ISSUE
1	5/28/91		ADDED NOTE 15, REVISED NOTE 3

Turner
URS CONSULTANTS
POLYTECH

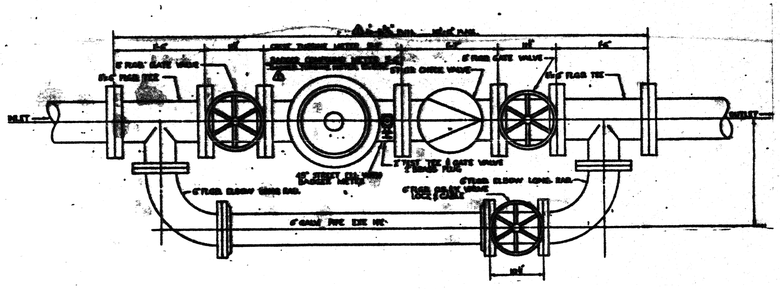
DESIGNED BY: D.R.B	DATE: 5/91	
DRAWN BY: M.A.C.	DATE: 5/91	
CHECKED BY: E.D.V.	DATE: 5/91	
SCALE		

DOCK 24 W
SLIP EXTENSION
CLEVELAND-CUYAHOGA COUNTY
PORT AUTHORITY

CHIEF ENGINEER
DIRECTOR
PROJECT NO.

UTILITY DETAILS

SHEET NO. 12 of 13



B-1698

REVISED 3-11-04

8" METER SETTING

MATERIALS REQUIRED FOR INSTALLATION

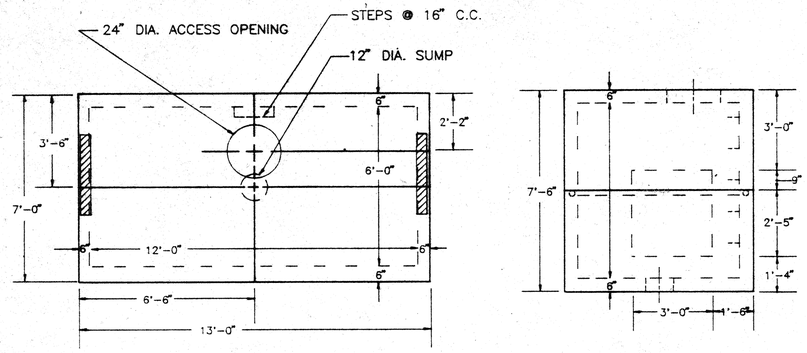
8" CONNECTION FOR GENERAL OR FIRE PROTECTION SERVICE

1	SCM* X 8"	Branch Sleeve - (Square Seal or Mechanical Joint)
1	8"	Cast Iron Tap Valve with Ball Outlet
1	8"	Square Head Gate Valve
1	#2	Valve Box Top
1	#2	Valve Box Cover
1	#2	Valve Box Bottom
1	8"	Connection Piece, P-8, OR 1-8" Connection Piece, P-8, OR 1-8" Flanged Coupling Adapter
X ft	8"	Ductile Iron, Class 56 Cement Lined Pipe
X lbs		Pig Lead (If Required)

*SCM means Size of Main

8" METER SETTING

1	2"	H.W. Gate Valve, Screwed
2	8"	Flange Gaskets
8	3/4"x3¼"	Machine Bolts
8	3/4"x3-3/4"	Stud Bolts
16	3/4"	Hex Nuts
1	2"x10"	Brass Nipple
1	6"	O.S.Y. Valve, Flanged
2	8"	H.W. Gate Valves, Flanged
1	8"	Swing Gate Check Valve, Flanged,
2	8"x6"	Cast Iron Tees, Flanged, LR
2	6"	Cast Iron Elbows, Flanged, LR
2	6"x11"	Flange, Cast Iron, 8 Hole
5	8"	Gaskets
7	6"	Gaskets
40	3/4"x3"	Machine Bolts
48	3/4"x3¼"	Machine Bolts
8	3/4"x3-3/4"	Stud Bolts
16	3/4"	Hex Nuts
72"	6"	Galvanized Pipe-Extra Heavy
1	8"	CURRENT Meter

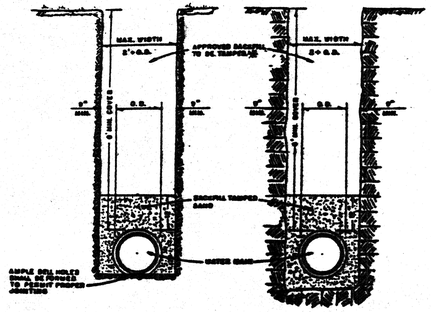


TOP VIEW

RIGHT SIDE VIEW

HOLLOW KNOCKOUT AREA FOR SERVICE LINE

MI2MV METER VAULT: TRAFFIC BEARING



IN EARTH IN ROCK

WATER MAIN TRENCH DETAIL

*PREMIUM BACKFILL, CONSISTING OF SAND, SHALL BE USED BENEATH ALL PAVEMENT AND SIDEWALKS

SPECIFICATIONS FOR METER VAULTS

TYPE OF DESIGN: TRAFFIC-BEARING RECTANGULAR VAULTS

CONCRETE

METER VAULT WALLS AND TOP ARE 6" THICK. ALL CONCRETE HAS A COMPRESSION STRENGTH OF NOT LESS THAN 4,500 PSI @ 28 DAYS.

REINFORCING

ALL REINFORCING STEEL IS #5 AND #6 GRADE 60 DEFORMED REBAR STRATEGICALLY PLACED SO AS TO ALLOW THE STRUCTURE TO WITHSTAND NORMAL EARTH PRESSURES.

JOINTS

ALL JOINTS SHALL BE SEALED WITH A FLEXIBLE BUTYL RESIN SEALANT MANUFACTURED BY CON-SEAL.

KNOCKOUTS

EACH METER VAULT SHALL HAVE ONE (1) KNOCKOUT WITH DIMENSIONS OF 3'-0" x 3'-0" ON EACH END WALL. THE KNOCKOUT OPENINGS SHALL EXTEND FROM APPROXIMATELY THREE (3) FEET TO SIX (6) FEET BELOW THE TOP OF THE METER VAULT. THE THICKNESS OF THE CONCRETE WALL IN THE KNOCKOUT AREA IS TWO (2) INCHES, ALLOWING FOR EASY ENTRY OF THE WATER LINES INTO THE VAULT AFTER IT HAS BEEN SET IN THE EXCAVATION.

SUMP

A 12" DIAMETER THRU SUMP SHALL BE CENTRALLY LOCATED IN THE BOTTOM OF ALL VAULTS.

INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING A STABLE EXCAVATION, ACCESSIBLE FROM ONE SIDE AND HAVING A FIRM AND LEVEL BOTTOM. HE SHALL ALSO BE RESPONSIBLE FOR CEMENTING AROUND WATER LINES AT THE POINTS OF ENTRY TO THE VAULT AND BRINGING THE FRAME AND COVER TO GRADE IN A MANNER EXHIBITING GOOD ENGINEERING PRACTICES.

REVISIONS		
NO.	DATE	BY

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO

SUBJECT ERIESIDE AVENUE (ACCESS ROAD)
DETAILS

DRAWN BY
DESIGNED BY
CHECKED BY DATE
SCALE

No. B-2828

No.	Date	By	Revision
1	3/2/92	PGP	CONSTRUCTION ISSUE

Turner
URS CONSULTANTS
POLYTECH

DESIGNED BY: D.R.B.	DATE: 5/28/91
DRAWN BY: D.R.B.	DATE: 5/28/91
CHECKED BY: E.D.V.	DATE: 5/28/91

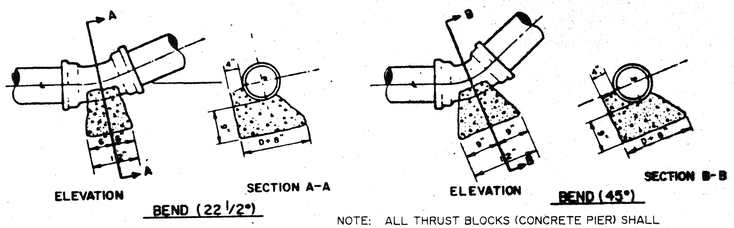
DOCK 24W
SLIP EXTENSION
CLEVELAND-CUYAHOGA COUNTY
PORT AUTHORITY

CHIEF ENGINEER
DIRECTOR

UTILITY DETAILS

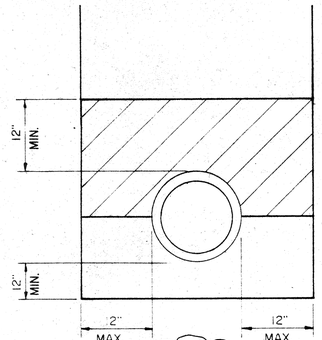
PROJECT NO.

SHEET NO. 12A of 13



NOTE: ALL THRUST BLOCKS (CONCRETE PIER) SHALL BE CARRIED TO UNDISTURBED EARTH.

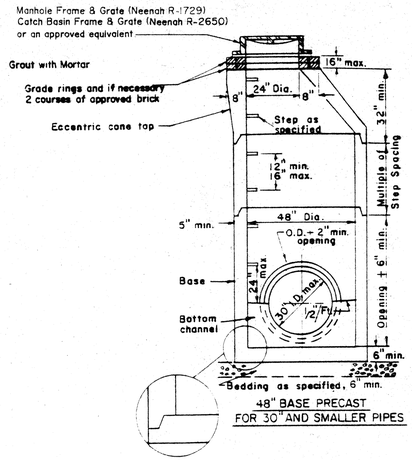
TYPICAL THRUST BLOCK INSTALLATION



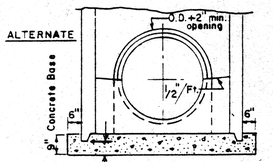
SEWER PIPE BEDDING ⚠

BEDDING MATERIAL AGGREGATE NO. 57, COMPACTED TO 95% MAX. LAB. DRY WEIGHT AS PER AASHTO T99.

APPROVED GRANULAR BACKFILL MATERIAL, COMPACTED IN ACCORDANCE TO SPECIFICATION SECTION 02200.

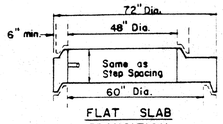


48" BASE PRECAST FOR 30" AND SMALLER PIPES

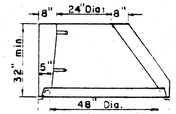


60" BASE FOR CAST IN PLACE 36" AND SMALLER PIPES

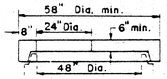
48" BASE FOR CAST IN PLACE 18" AND SMALLER PIPES



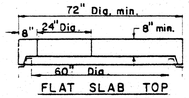
FLAT SLAB TRANSITION



ALTERNATE ECCENTRIC CONE TOP



FLAT SLAB TOP



FLAT SLAB TOP

NOTES:

Sections of the precast manhole shall be cast and assembled with either all tongue or all groove ends up. Lift holes may be provided in each section for handling.

TOP AND TRANSITION (or reducer) Sections may be either eccentric cone, concentric cone or flat slab.

BASES for Manholes are shown with monolithic floor and riser which may be cast in one or two operations. A permissable alternate is to cast and ship the floor and barrel separately. Openings for inlet and outlet pipes shall be provided, either when the unit is cast or later, to meet project requirements. Bottom channels may be formed of concrete precast in the base or by field construction. Bases may also be poured in place.

OPENINGS IN RISER SECTIONS for 18" and smaller inlet pipes shall be prefabricated. Flexible connections shall be provided for sanitary and combined sewers.

BRICK shall conform to ASTM C-32.

JOINT SEAL between precast manhole sections on sewers shall be resilient and flexible gasket joints per A.S.T.M. C443 – or latest edition.

MATERIALS for bases and other precast sections, including reinforcement not specified hereon, shall comply with the specifications.

LANDING PLATFORMS as shown on the Landing Details shall be installed in manholes that are over 28 feet deep to the invert with a maximum vertical spacing of 20 feet.

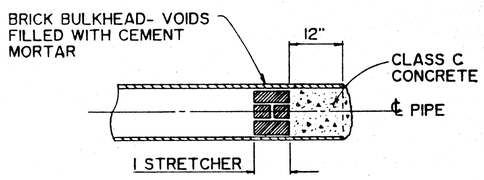
PRECAST MANHOLE shall conform to the requirements of A.S.T.M. C 478.

SEAL lift holes with approved concrete plugs and bit.

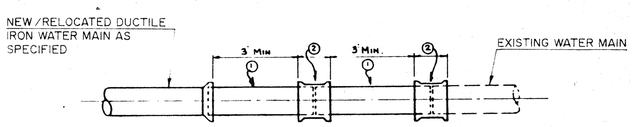
PRECAST CONCRETE MANHOLE

STORM SEWER MANHOLE SCHEDULE

MANHOLE NUMBER	STATION & OFFSET	INVERT ELEVATIONS IN	INVERT ELEVATIONS OUT	REMARKS:
1	STA. 10+22± (60.0'R)	EXISTING SEWER 576.5 ±	24"W 576.50 MATCH CROWN OF EXISTING SEWER	CATCH BASIN FRAME & GRATE
2	STA. 9+15 (60.0'R)	24"E 574.36	24"N 574.35	MANHOLE FRAME & COVER
3	STA. 10+85 (78.0'L)	24"S 571.75	24"W 571.74	MANHOLE FRAME & COVER
4	STA. 10+85 (50.0'L±)	24"SE 571.9 ±	24"N 571.86 MATCH CROWN OF EXISTING SEWER	CATCH BASIN FRAME & GRATE



PLUGGING ABANDONED PIPE



① PLAIN END X PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT-TO-SUIT)

② DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT PATTERN). TWO MAY BE REQUIRED AS SHOWN.

SLEEVE-IN CONNECTION ⚠

REVISIONS NO.	DATE	BY

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
CLEVELAND, OHIO

SUBJECT ERIESIDE AVENUE (ACCESS ROAD) DETAILS

DRAWN BY
DESIGNED BY
CHECKED BY
DATE
SCALE

No. B-2829

No.	Date	By	Revision
2	3/2/92	PGP	CONSTRUCTION ISSUE
⚠1	5/28/91		REVISED TITLE OF DETAIL

Turner
URS CONSULTANTS
POLYTECH

DESIGNED BY: D.R.B.	DATE: 5/91	
DRAWN BY: M.A.C	DATE: 5/91	
CHECKED BY: E.D.V.	DATE: 5/91	
SCALE		

DOCK 24W
SLIP EXTENSION
CLEVELAND–CUYAHOGA COUNTY PORT AUTHORITY

CHIEF ENGINEER
DIRECTOR

UTILITY DETAILS

PROJECT NO.

SHEET NO. 13 of 13