CLEVELAND HARBOR EASTERN EMBAYMENT RESILIENCE STRATEGY (CHEERS)

EARLY ACTION PROJECT, HABITAT LOOP

90% DESIGN



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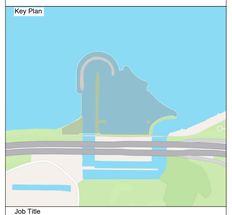
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
Cleveland Metroparks
4101 Fulton Parkway, Cleveland Oh 44144
(216) 635-3200

The Port Of Cleveland
1100 W. 9th Street - Suite 300, Cleveland, Oh 44113
(216) 241-8004

Drawing Title

COVER SHEET

Job No: 292054 Scale: N.T.S
Status: 90% DESIGN
Drawn By:
Checked By:
Approved By:
Date: 1/22/2026

Drawing No

G-001

CHEERS-ARUP-DR-HL-G-001.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:09 PM

Arup US, Inc.

DRAWING SHEET LIST		
SHEET NUMBER	**DRAWING TITLE**	**SCALE**
G - GENERAL		
G-001	COVER SHEET	N.T.S
G-002	DRAWING INDEX	N.T.S
G-100	PROJECT KEY PLAN	1"=50'
V - EXISTING CONDITIONS DRAWINGS		
V-001	OWNERSHIP MAP	N.T.S
V-002	SURVEY NOTES, SYMBOLS AND ABBREVIATIONS	N.T.S
V-100	OVERALL EXISTING CONDITIONS PLAN	1"=50'
V-101	EXISTING CONDITIONS PLAN	1"=20'
V-102	EXISTING CONDITIONS PLAN	1"=20'
V-103	EXISTING CONDITIONS PLAN	1"=20'
V-104	EXISTING CONDITIONS PLAN	1"=20'
CS - COASTAL DRAWINGS		
CS-001	SURVEY NOTES, SYMBOLS AND ABBREVIATIONS	N.T.S
CS-100	OVERALL MARINE BREAKWATER PLAN	1"=50'
CS-101	MARINE BREAKWATER PLAN	1"=20'
CS-102	MARINE BREAKWATER PLAN	1"=20'
CS-103	MARINE BREAKWATER PLAN	1"=20'
CS-104	MARINE BREAKWATER PLAN	1"=20'
CS-201	MARINE BREAKWATER SECTIONS	AS NOTED
CS-202	MARINE BREAKWATER SECTIONS	AS NOTED
CS-203	MARINE BREAKWATER SECTIONS	AS NOTED
CS-204	MARINE BREAKWATER SECTIONS	AS NOTED
CS-300	OVERALL DREDGE PLACEMENT PIPELINE PLAN	1"=50'
CS-600	MARINE BREAKWATER DETAILS	AS NOTED
PH - PHASING DIAGRAMS		
PH-200	PHASING NOTES	N.T.S
PH-201	BREAKWATER YEAR 1	1"=50'
PH-202	BREAKWATER YEAR 2	1"=50'
PH-203	BREAKWATER YEAR 3	1"=50'
PH-204	BREAKWATER YEAR 4	1"=50'
PH-205	BREAKWATER YEAR 5	1"=50'
PH-206	DREDGE PLACEMENT CYCLE 1	1"=50'
PH-207	DREDGE PLACEMENT CYCLE 2	1"=50'
PH-208	DREDGE PLACEMENT CYCLE 3	1"=50'
PH-209	FINAL PLACEMENT CONDITION	1"=50'
C - CIVIL DRAWINGS		
C-001	SYMBOL LEGEND, ABBREVIATIONS, GENERAL NOTES	N.T.S
C-100	OVERALL SITE PREPARATION & DEMOLITION PLAN	1"=50'
C-101	SITE PREPARATION & DEMOLITION PLAN	1"=20'
C-102	SITE PREPARATION & DEMOLITION PLAN	1"=20'
C-103	SITE PREPARATION & DEMOLITION PLAN	1"=20'
C-104	SITE PREPARATION & DEMOLITION PLAN	1"=20'
C-200	OVERALL GRADING AND DRAINAGE PLAN	1"=50'
C-201	GRADING AND DRAINAGE PLAN	1"=20'
C-202	GRADING AND DRAINAGE PLAN	1"=20'
C-203	GRADING AND DRAINAGE PLAN	1"=20'
C-204	GRADING AND DRAINAGE PLAN	1"=20'
C-601	STORMWATER PROFILES	AS NOTED
C-701	STORMWATER DETAILS	AS NOTED
C-702	CIVIL DETAILS	AS NOTED
L - LANDSCAPE DRAWINGS		
L-001	SYMBOL LEGEND, ABBREVIATIONS, GENERAL NOTES	N.T.S.
L-100	OVERALL LAYOUT & MATERIALS PLAN	1"=50'
L-101	LAYOUT & MATERIALS PLAN	1"=20'
L-102	LAYOUT & MATERIALS PLAN	1"=20'
L-103	LAYOUT & MATERIALS PLAN	1"=20'
L-104	LAYOUT & MATERIALS PLAN	1"=20'
L-150	COORDINATE POINTS SCHEDULE	N.T.S.
L-200	OVERALL PLANTING PLAN	1"=50'
L-201	PLANTING PLAN	1"=20'
L-202	PLANTING PLAN	1"=20'
L-203	PLANTING PLAN	1"=20'
L-204	PLANTING PLAN	1"=20'
L-500	SITE SECTIONS	AS NOTED
L-501	SITE SECTIONS	AS NOTED
L-600	SITE DETAILS	AS NOTED
L-601	SITE DETAILS	AS NOTED
L-602	HABITAT DETAILS	AS NOTED
L-700	PLANT SCHEDULES	AS NOTED
L-701	PLANT DETAILS	AS NOTED

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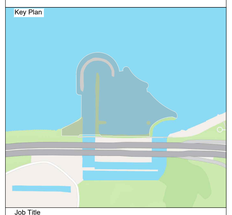
0	90% DESIGN	1/22/2026
Issue	Description	Date

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

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Drawing Title

DRAWING INDEX

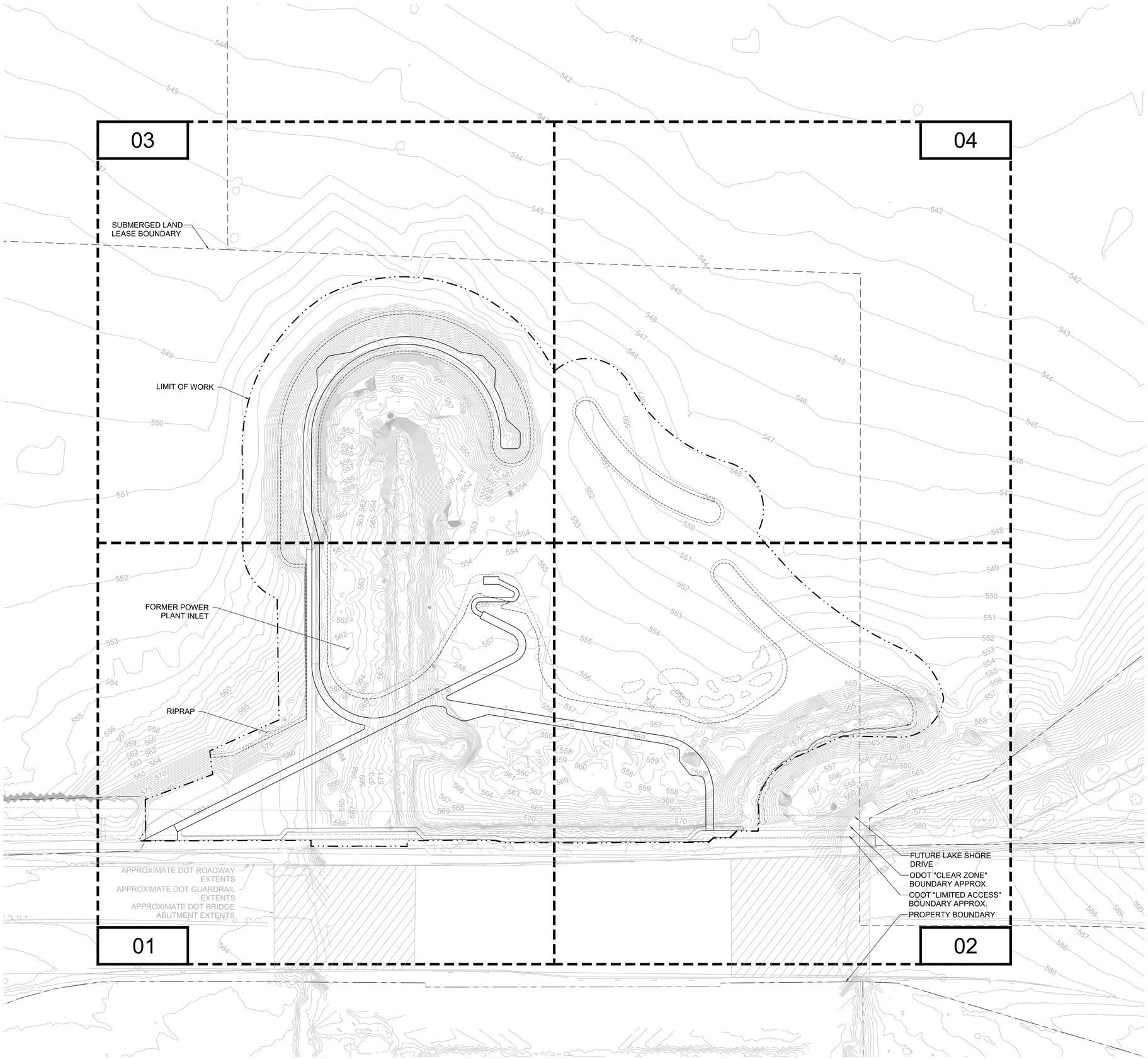
Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: N.T.S

Drawing No

G-002

CHEERS-ARUP-DR-HL-G-002.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:07 PM

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50' 0 50' 100'

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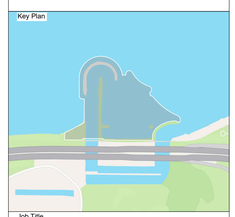
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

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Drawing Title

PROJECT KEY PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: 1" = 50'

Drawing No

G-100

Arup US, Inc.

CHEERS-ARUP-DR-HL-G-100.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:06 PM

SUB-0514-CU

SUB-0071-CU

SUB-1511-CU

SUB-2410-CU

105-02-002
CITY OF CLEVELAND LAND
REUTILIZATION PROGRAM
5500 N MARGINAL DRIVE
CLEVELAND, OHIO 44103

105-35-001
CLEVELAND CITY
GORDON PARK
740 E 72 STREET
CLEVELAND, OHIO 44103

PUBLIC RIGHT OF WAY

SUB-1511-CU

PUBLIC RIGHT OF WAY

105-02-001
LAKE SHORE ACQUISITION
COMPANY LLC
6800 SOUTH MARGINAL AVE
CLEVELAND, OHIO 44103

105-35-001
CLEVELAND CITY
GORDON PARK
740 E 72 STREET
CLEVELAND, OHIO 44103

LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- SUBMERGED LAND LEASE BOUNDARY
- SUB-XXXX-CU — SUBMERGED LAND LEASE ID
- AREAS LEASED BY CLEVELAND METROPOLITAN PARK DISTRICT
- AREAS LEASED BY CLEVELAND - CUYAHOGA COUNTY PORT AUTHORITY
- AREAS LEASED BY LAKE SHORE ACQUISITION COMPANY, LLC

50' 0 50' 100'

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Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

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Key Plan

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Drawing Title

OWNERSHIP MAP

Job No: 292054 Scale: 1"=50'
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026

Drawing No

V-001

Arup US, Inc.

CHEERS-KS-DR-HLV-001.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 2:52 PM

SURVEYOR'S NOTES

1. HORIZONTAL DATUM IS OHIO STATE PLANE, NORTH ZONE NAD83(2011) GRID NORTH BASED ON GPS OBSERVATIONS ON OCTOBER 13, 2022.

2. VERTICAL DATUM IS IGLD 1985.

3. PERTINENT RECORDS USED ARE AS SHOWN HEREON.

4. THIS MAP AND THE SURVEY ON WHICH IT IS BASED HAVE BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND ARE NOT INTENDED TO REFLECT ALL EASEMENTS, ENCUMBRANCES, OR OTHER CIRCUMSTANCES AFFECTING THE TITLE TO THE PROPERTY SHOWN HEREON.

5. THE UTILITIES, SEWERS AND THEIR LOCATIONS SHOWN HEREON ARE DERIVED FROM A COMBINATION OF FIELD SURVEYING OF VISIBLE UTILITY STRUCTURES, AVAILABLE PLANS AND A LEVEL C SUBSURFACE UTILITY INVESTIGATION. ACTUAL LOCATION OF UTILITIES MAY VARY FROM THE DEPICTED LOCATIONS. OTHER UNKNOWN UTILITIES MAY EXIST AND NECESSARY PRECAUTIONS SHOULD BE FOLLOWED WHEN EXCAVATING. ADDITIONAL INVESTIGATION SUCH AS VIDEOTAPING PIPE RUNS, NON-DESTRUCTIVE EXPOSURE OF UTILITIES MAY DETERMINE THE UNKNOWN UTILITY INFORMATION. CONTACT OHIO UTILITIES PROTECTION SERVICE (OUPS) AT 1-800-362-2764 PRIOR TO EXCAVATION.

6. PROPERTY AND RIGHT OF WAY LINES ARE SHOWN FROM CUYAHOGA COUNTY GIS INFORMATION AND ARE NOT INTENDED TO REPRESENT A COMPLETE BOUNDARY SURVEY.

7. SURVEY DATES ARE LISTED ON SHEET C-001.00 (SYMBOL LEGEND, ABBREVIATIONS, GENERAL NOTES).

LEGEND

- △ KS CONTROL POINT MAG NAIL SET
- ⊛ CATCH BASIN
- ⬡ BOLLARD/POST
- DECIDUOUS TREE

- PROPERTY LINE
- RIGHT OF WAY
- ST STORM LINE
- SN SANITARY LINE
- G GAS LINE
- W WATER LINE
- OHE OVERHEAD ELECTRIC
- E UNDERGROUND ELECTRIC
- T UNDERGROUND TELEPHONE

ABBREVIATIONS

ABAN	ABANDONED
ASPH	ASPHALT
CONC	CONCRETE
INV	INVERT
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
STL	STEEL
ST	STORM
VCP	VITRIFIED CLAY PIPE

Control Point Table (KS Associates)

Point #	Northing	Easting	Elevation	Description
207	682833.75	2203556.08	579.92	CNPT MAGS
208	682864.28	2203495.57	574.32	CNPT MAGS
209	682595.32	2203251.28	581.53	CNPT MAGS
210	682204.22	2202746.20	581.48	CNPT SPIKES

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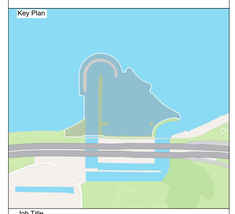
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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Drawing Title

SURVEY NOTES, SYMBOLS AND ABBREVIATIONS

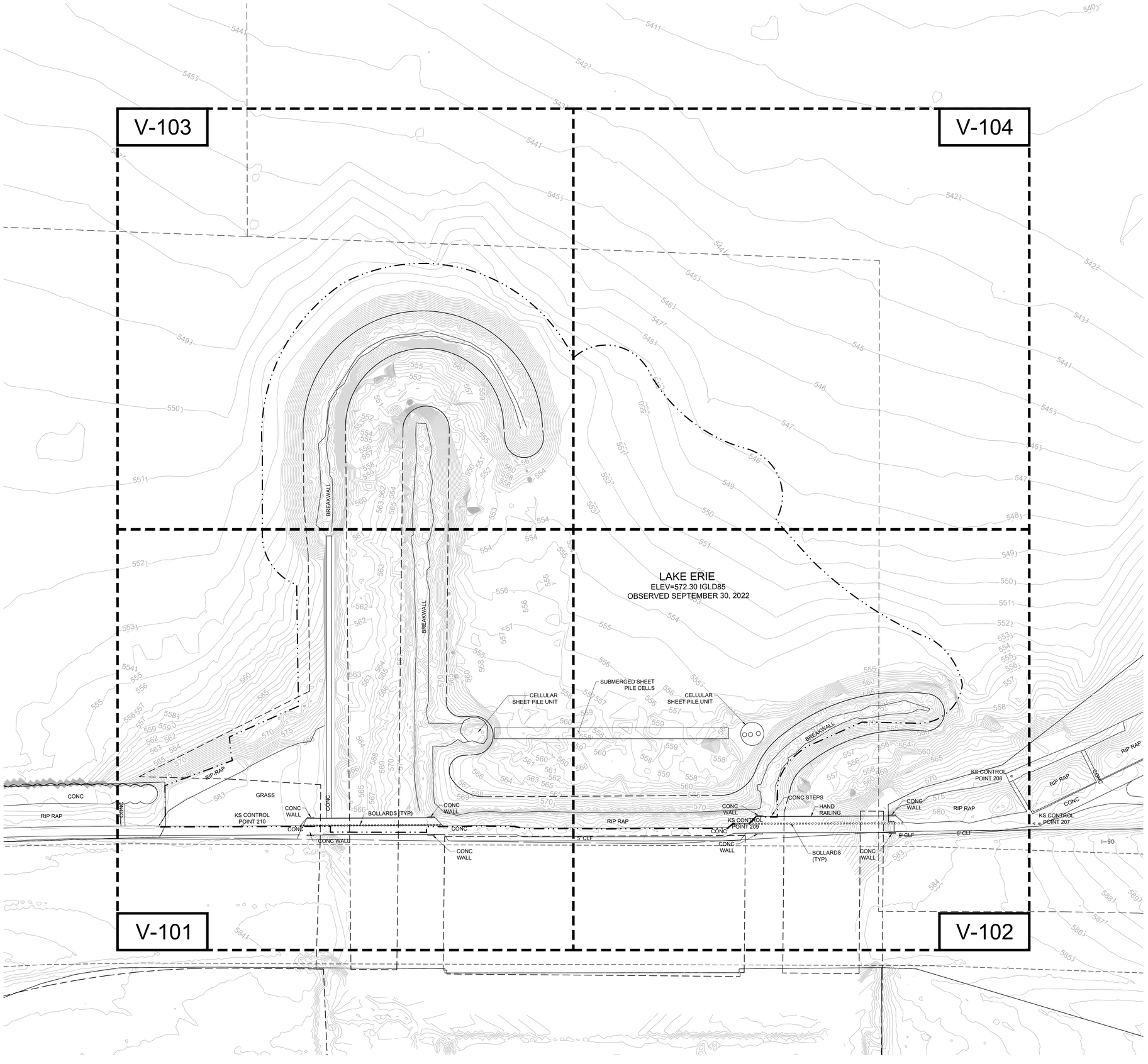
Job No:	292054
Status:	90% DESIGN
Drawn By:	MC
Checked By:	MC
Approved By:	KS
Date:	1/22/2026
Scale:	N.T.S

Drawing No

V-002

CHEERS-KS-DR-HLV-002.DWG PLOT BY: calveym PLOT TIME: 1/22/2026 2:51 PM

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LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- SUBMERGED LAND LEASE BOUNDARY

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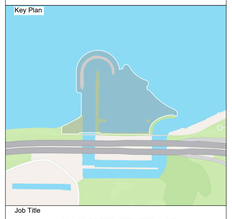
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Drawing Title

OVERALL EXISTING CONDITIONS PLAN

Job No:	292054	Scale:	1"=50'
Status:	90% DESIGN		
Drawn By:	MC		
Checked By:	MC		
Approved By:	KS		
Date:	1/22/2026		

Drawing No

V-100

50' 0 50' 100'

CHEERS-KS-DR-HL-V-100.DWG PLOT BY: calveym PLOT TIME: 1/22/2026 2:51 PM

Arup US, Inc.

MATCHLINE: FOR CONTINUATION SEE SHEET V-103

MATCHLINE: FOR CONTINUATION SEE SHEET V-102

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

BREAKWALL

CELLULAR SHEET PILE UNIT

SUBMERGED SHEET PILE CELLS

RIP-RAP

GRASS

CONC

CONC WALL

BOLLARDS (TYP)

KS CONTROL POINT 210

LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- SUBMERGED LAND LEASE BOUNDARY

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CHEERS-KS-DR-HL-V-101.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 2:52 PM

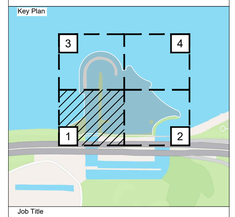
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Drawing Title

EXISTING CONDITIONS PLAN

Job No:	292054	Scale:	1"=20'
Status:	90% DESIGN		
Drawn By:	MC		
Checked By:	MC		
Approved By:	KS		
Date:	1/22/2026		

Drawing No

V-101

20' 0 20' 40'

Arup US, Inc.

MATCHLINE: FOR CONTINUATION SEE SHEET V-104

MATCHLINE: FOR CONTINUATION SEE SHEET V-101



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- SUBMERGED LAND LEASE BOUNDARY

20' 0 20' 40'

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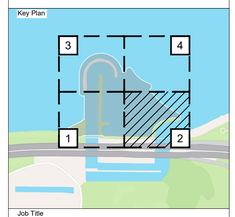
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Drawing Title

EXISTING CONDITIONS PLAN

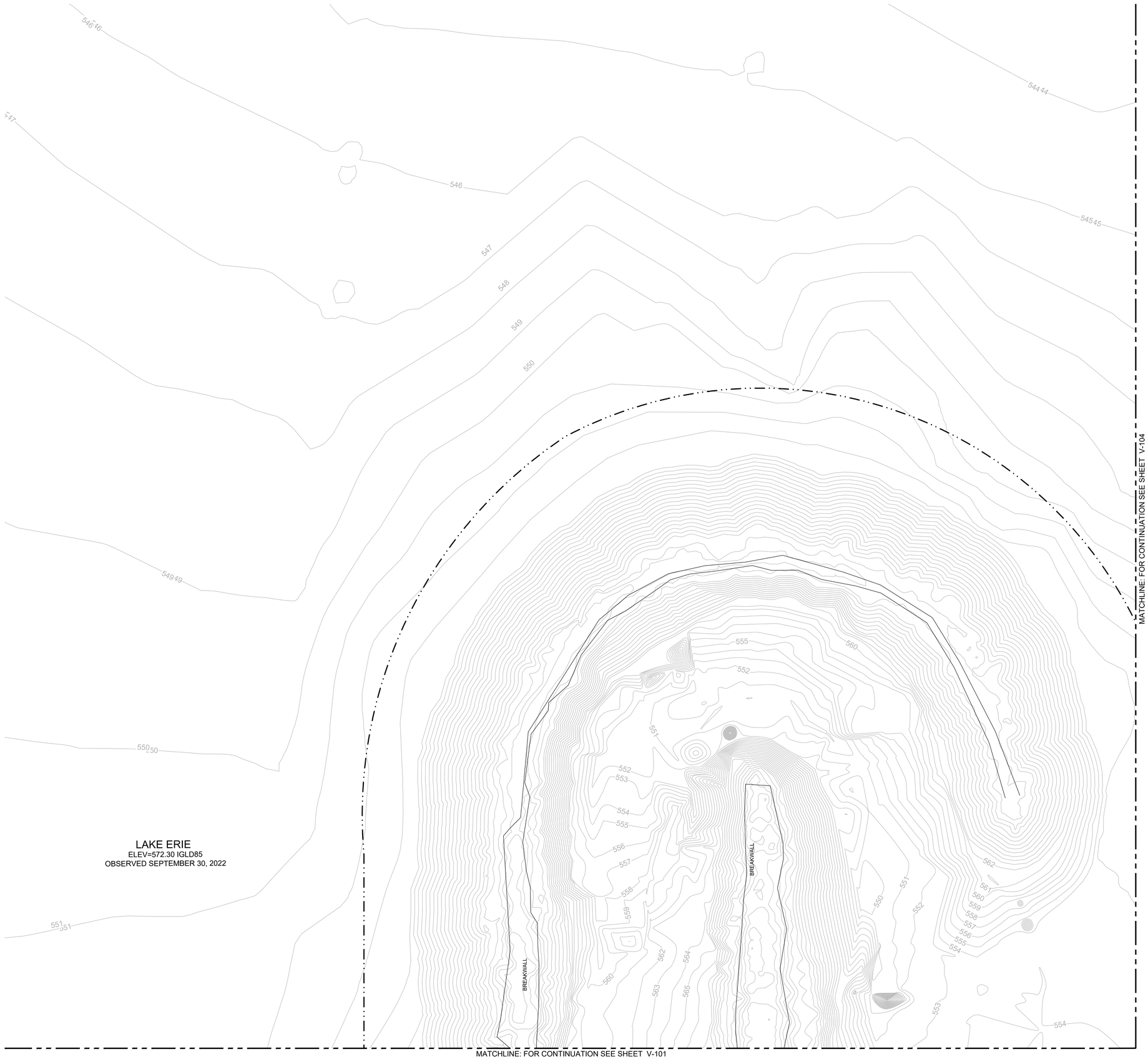
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Status:	90% DESIGN		
Drawn By:	MC		
Checked By:	MC		
Approved By:	KS		
Date:	1/22/2026		

Drawing No

V-102

CHEERS-KS-DR-HL-V-102.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 2:53 PM

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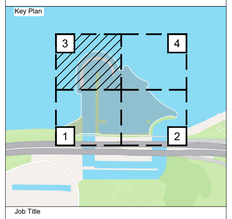
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
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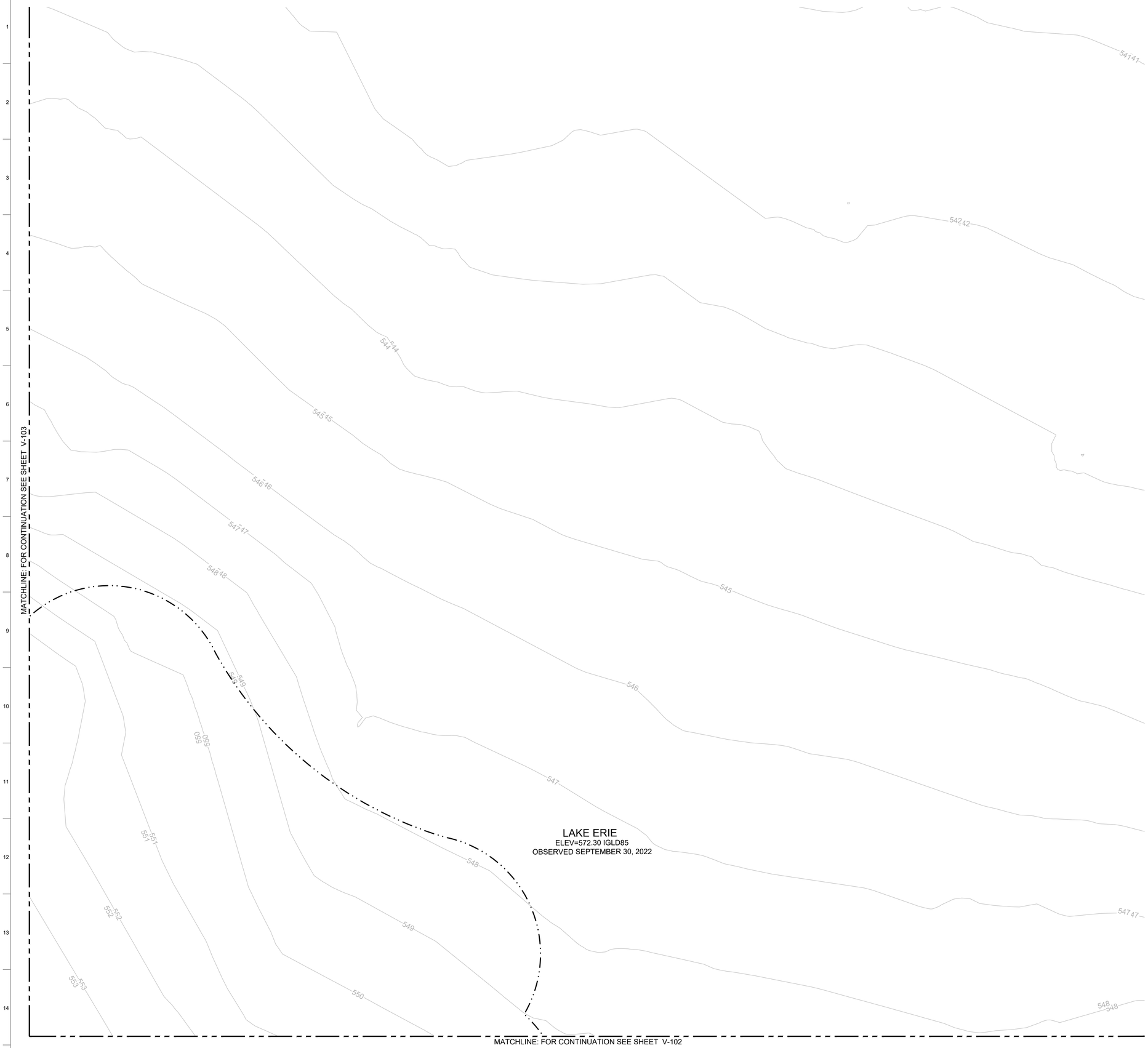
EXISTING CONDITIONS PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: 1"=20'

Drawing No

V-103

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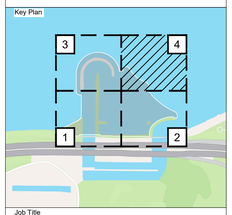
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



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Drawing Title

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Job No: 292054
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Scale: 1"=20'

Drawing No

V-104

CHEERS-KS-DR-HL-V-104.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 2:52 PM

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GENERAL NOTES

REFERENCES

1. REFERENCES TO OWNER SHALL REFER TO THE PORT OF CLEVELAND.
2. REFERENCES TO ENGINEER SHALL REFER TO FIRM PROVIDING ON SITE CONSTRUCTION INSPECTION SERVICES ON BEHALF OF THE OWNER.
3. REFERENCES TO THE CITY SHALL REFER TO THE CITY OF CLEVELAND.
4. REFERENCES TO THE PERMITTING AGENCIES SHALL REFER TO THE U.S. ARMY CORPS OF ENGINEERS, THE OHIO DEPARTMENT OF NATURAL RESOURCES, AND THE OHIO ENVIRONMENTAL PROTECTION AGENCY.
5. WORK SHALL CONFIRM TO THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (2023) WHERE NOTED.

SURVEYING AND LAYOUT PARAMETERS

1. VERTICAL DATUM IS INTERNATIONAL GREAT LAKES DATUM 1985 (IGLD 1985).
   - 1.1. LOW WATER DATUM IS 569.2 FEET IGLD 1985.
   - 1.2. ORDINARY HIGH WATER IS 573.4 FEET IGLD 1985.
2. PRIMARY PROJECT CONTROL INFORMATION IS AS SHOWN ON THE CONTRACT DOCUMENTS.
3. UNITS ARE IN U.S. SURVEY FEET.
4. CONTRACTOR FIELD ENGINEERING SERVICES: LOCATE SITE FEATURES AND ESTABLISH GRADES, LINES, AND LEVELS, BY USE OF RECOGNIZED ENGINEERING SURVEY PRACTICES.
5. CONTRACTOR SHALL LOCATE AND PROTECT CONTROL AND REFERENCE POINTS AND ESTABLISH NEW POINTS AS REQUIRED.
6. THE EXISTING CONDITIONS DEPICTED ON DRAWINGS WERE PREPARED FROM FIELD SURVEY DATA COLLECTED BY KS ASSOCIATES INC. IN OCTOBER 2022 AND APRIL-AUGUST 2023. HYDROGRAPHIC SURVEY PERFORMED BY KS ASSOCIATES IN OCTOBER 2022.
7. FIELD CONDITIONS MAY VARY FROM CONDITIONS SHOWN ON DRAWINGS.

UTILITIES

1. AT LEAST FIVE WORKING DAYS PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE CITY, CLEVELAND METROPARKS, AND OUPS TO DETERMINE THE LOCATION OF ANY EXISTING UNDERGROUND UTILITIES NOT INDICATED ON THE PRINTS. IF UNCHARTED UTILITIES ARE ENCOUNTERED THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY.
2. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION ACTIVITIES. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

REPORTING & STATUS MEETINGS

1. THE CONTRACTOR SHALL COORDINATE AND ATTEND A PRE-CONSTRUCTION MEETING PRIOR TO THE BREAKWATER CONSTRUCTION WITH THE OWNER AND THE ENGINEER.
2. THE CONTRACTOR SHALL PREPARE AND SUBMIT A CONSTRUCTION SCHEDULE PRIOR TO THE PRE-CONSTRUCTION MEETING.
3. THE CONTRACTOR SHALL PREPARE AND SUBMIT DAILY REPORTS OF CONSTRUCTION ACTIVITIES. THE DAILY REPORTS SHALL INCLUDE THE DATE, QUANTITY OF MATERIALS DELIVERED AND INSTALLED, WORK COMPLETED, PERSONNEL ONSITE, ANY SUBCONTRACTORS PRESENT ONSITE AND HOURS WORKED. LAKE LEVELS AND WEATHER CONDITIONS SHOULD BE RECORDED IF RELEVANT TO THE WORK PERFORMED.
4. THE CONTRACTOR SHALL PREPARE AND SUBMIT WEEKLY REPORTS SUMMARIZING WORK COMPLETED EACH WEEK. THE REPORT SHALL INCLUDE A SUMMATION OF QUANTITIES OF MATERIALS DELIVERED AND INSTALLED EACH WEEK.
5. THE CONTRACTOR SHALL COORDINATE AND ATTEND BI-WEEKLY CONSTRUCTION STATUS MEETINGS FOR THE DURATION OF THE PROJECT.
6. SITE ACCESS REQUIREMENTS
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ANY VESSEL MOORING OR DOCKING AT THE FACILITY.
8. CONSTRUCTION ACTIVITIES SHALL HAVE MINIMUM POSSIBLE IMPACTS TO NAVIGATION.
9. THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. CONTRACTOR SHALL PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL DEVICES AND SIGNAGE REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THE WORK LIMITS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY POTENTIAL NAVIGATION HAZARDS DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING APPROVAL FOR TEMPORARY MOORING OF EQUIPMENT INCLUDING BUOYS WITH THE U.S. COAST GUARD, INCLUDING TEMPORARY NAVIGATION LIGHTING AND NOTICE TO MARINERS REQUIREMENTS WITH THE U.S. COAST GUARD AND OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF WATERCRAFT:

U.S. COAST GUARD, NINTH DISTRICT
WATERWAYS MANAGEMENT BRANCH
1240 EAST NINTH STREET
CLEVELAND, OHIO 44119
(216) 902-6073

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATERCRAFT
NAVIGATION AIDS PROGRAM
2045 MORSE ROAD
COLUMBUS, OHIO 43229-6693
265-6410

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING SITE ACCESS WITH CLEVELAND METROPARKS, INCLUDING ANY REQUIRED ACCESS EASEMENTS.

MARINE CONSTRUCTION

1. THE CONTRACTOR SHALL PREPARE AND SUBMIT A SITE-SPECIFIC SAFETY PLAN FOR REVIEW BY THE OWNER.
2. THE CONTRACTOR SHALL PERSONALLY VISIT THE PROJECT SITE TO BECOME FAMILIAR WITH THE NATURE OF THE WORK AND EXISTING SITE CONDITIONS.
3. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND ELEVATIONS AS NOTED ON THE DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IMMEDIATELY OF ANY INCONSISTENCIES BETWEEN THE DRAWINGS AND THE FIELD MEASUREMENTS.
4. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS INCLUDING SPECIFIC CONDITIONS IN THE PERMITS ISSUED BY THE PERMITTING AGENCIES.
5. ONCE CONSTRUCTION IS STARTED THE CONTRACTOR SHALL CONTINUE CONSTRUCTION THROUGH COMPLETION IN A SINGLE MOBILIZATION/OPERATION FOR EACH PHASE OF CONSTRUCTION.
6. SECURITY OF ALL CONTRACTOR EQUIPMENT, MATERIALS, TOOLS AND HARDWARE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. EROSION AND SEDIMENT CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
8. COORDINATE WORK TO ASSURE EFFICIENT AND ORDERLY SEQUENCES OF INSTALLATION OF CONSTRUCTION ELEMENTS, WITH PROVISIONS FOR ACCOMMODATING ITEMS INSTALLED LATER.
9. FOR PRODUCTS SPECIFIED BY ASSOCIATION OR TRADE STANDARDS, COMPLY WITH REQUIREMENTS OF THE STANDARD, EXCEPT WHEN MORE RIGID REQUIREMENTS ARE SPECIFIED OR ARE REQUIRED BY APPLICABLE CODES.
10. THE DATE OF THE STANDARD IS THAT WHICH IS IN EFFECT AS OF THE CONTRACT DATE
11. OBTAIN COPIES OF STANDARDS WHEN REQUIRED BY SPECIFICATIONS. MAINTAIN COPY AT JOBSITE DURING PROGRESS OF THE SPECIFIC WORK.
12. ALL SOLIDS DISTURBED SHALL BE PUT BACK IN PLACE OR REMAIN ON-SITE. IF SOLIDS ARE REQUIRED TO BE REMOVED FROM THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL AT A LICENSED LANDFILL.
13. CONTRACTOR SHALL INSTALL TEMPORARY FENCING AND SIGNAGE TO ISOLATE CONSTRUCTION ACTIVITIES FROM ACCESS BY UNAUTHORIZED PERSONNEL.
14. ALL AREAS IMPACTED BY CONSTRUCTION SHALL BE RESTORED TO THEIR PRECONSTRUCTION CONDITION OR BETTER.
15. STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL, HYDROSTATIC, AND BACKFILL LOADS ON THE COMPLETED STRUCTURES. THE STRUCTURES HAVE NOT BEEN DESIGNED TO RESIST THESE LOADS WHILE ONLY PARTIALLY CONSTRUCTED. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED FROM ALL CONSTRUCTION LOADS BY BRACING AND BALANCING UNTIL ALL STRUCTURAL ELEMENTS ARE IN PLACE, AND ALL CONCRETE HAS REACHED THE REQUIREMENTS OF THE SPECIFICATIONS. OVERLOADING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.
16. ALL WELDING SHALL BE BY THE SHIELDED ARC METHOD AND SHALL CONFORM TO AWS D1.1 FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. QUALIFICATIONS OF WELDERS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR STANDARD QUALIFICATION PROCEDURE OF THE AWS. CONTRACTOR SHALL SUBMIT CURRENT WELDERS' CERTIFICATIONS PRIOR TO COMMENCING WORK ON THE FACILITY. ALL COSTS ASSOCIATED WITH QUALIFICATIONS SHALL BE AT THE CONTRACTOR'S EXPENSE.
17. THE CONTRACTOR SHALL VISUALLY INSPECT ALL WELDS FOR WELD SIZE, DIMENSIONAL VARIANCES, WARPAGE, UNIFORMITY OF WELD BEAD, CRACKS, INADEQUATE PENETRATION, SURFACE POROSITY, UNFILLED CRATERS, APPEARANCE FLAWS, AND GAS OR SLAG INCLUSIONS.
18. IN THE EVENT THAT ON-SITE VISUAL INSPECTIONS REVEAL WELDS OF MARGINAL QUALITY, POROSITY, CRACKS, ETC.: THE WELDS SHALL BE TESTED AND THE REPORT FORWARDED TO THE ENGINEER FOR REVIEW AND ACTION. THE COST OF TESTING IS CONSIDERED INCIDENTAL TO THE WELDING OPERATION AND SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.
19. UNLESS OTHERWISE NOTED OR SPECIFIED ALL STRUCTURAL CONCRETE SHALL BE EXPOSURE CLASS F2, WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI IN 28 DAYS.
20. CONTRACTOR SHALL COORDINATE WITH LOCAL, STATE, FEDERAL, AND COUNTY AGENCIES TO USE ROADS AND DETERMINE SAFE ROUTES TO SITE OVER EXISTING ROADS AND BRIDGES. ANY PERMITS OR REQUIREMENTS SHALL BE THE RESPONSIBILITY AND EXPENSE OF THE CONTRACTOR.

WATER LEVELS

1. LAKE ERIE WATER LEVELS VARY CONSIDERABLY BASED ON LONG TERM DRAINAGE VARIATIONS IN THE GREAT LAKES BASIN, SEASONALLY, AND DUE TO SHORT TERM STORM EVENTS.
2. THE WATER LEVELS SHOWN ON THE DRAWINGS ARE FOR VERTICAL REFERENCE ONLY AND ARE NOT INTENDED TO BE PREDICTIVE OF WATER LEVELS AT THE TIME OF CONSTRUCTION. THE DRAWINGS GENERALLY REFERENCE ORDINARY HIGH WATER (OHW) AT AN ELEVATION OF 573.4 FEET IGLD 1985 AND LOW WATER DATUM AT AN ELEVATION OF 569.2 FEET IGLD 1985.
3. PLEASE NOTE: RECENT LAKE ERIE WATER LEVELS HAVE BEEN VARIED CONSIDERABLE, HAVE OFTEN BEEN HIGHER THAN LONG TERM AVERAGES, AND HAVE FREQUENTLY EXCEEDED THE ORDINARY HIGH WATER MARK.
4. WATER LEVELS ARE TYPICALLY LOWEST IN DECEMBER-JANUARY (JUST BEFORE LAKE ICE FORMS AND SLOWS EVAPORATION) AND HIGHEST IN JULY-AUGUST.
5. THE USACE PROVIDES SIX-MONTH WATER LEVEL PREDICTIONS THAT ARE UPDATED MONTHLY. FLUCTUATIONS ARE POSSIBLE FROM PREDICTED WATER LEVELS. THE CONTRACTOR SHOULD BE AWARE OF THE VARIABILITY OF LAKE ERIE WATER LEVELS AND PLAN FOR POTENTIAL EFFECTS TO CONSTRUCTION OPERATIONS.

ENVIRONMENTAL RESTRICTIONS AND PERMIT CONDITIONS

1. THE CONTRACTOR SHALL PROPERLY TRANSPORT AND DISPOSE OF ANY UN-REUSABLE, EXCAVATED PROJECT SOIL AT A LICENSED LANDFILL.
2. THE CONTRACTOR SHALL ADHERE TO ALL APPROPRIATE PERMIT CONDITIONS OF AUTHORIZATIONS FROM THE USACE, ODNR, AND OR OEPA THROUGHOUT CONSTRUCTION. A COPY OF THE AUTHORIZATIONS ARE INCLUDED IN THE CONTRACT DOCUMENTS.
3. PRIOR TO CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY ALL RELATED PERMITTING AGENCIES, IN WRITING, OF THE ANTICIPATED DATE WHEN CONSTRUCTION WILL COMMENCE AND THE DATE WHEN THE PROJECT IS EXPECTED TO BE COMPLETED. THE CONTRACTOR SHALL ALSO NOTIFY ALL PERMITTING AGENCIES, IN WRITING, WHEN SIGNIFICANT SUSPENSION OF WORK OCCURS ON THE PROJECT.

VISITS BY REGULATORY AGENCIES HAVING JURISDICTION

1. AUTHORIZED REPRESENTATIVES OF THE FEDERAL, STATE OR LOCAL REGULATORY AGENCIES HAVING JURISDICTION SHALL BE ALLOWED TO INSPECT THE AUTHORIZED ACTIVITY AT REASONABLE TIMES TO SURE WORK IS CARRIED OUT IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE REGULATORY PERMITS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER IF ALL SUCH VISITS BY REGULATORY AGENCY REPRESENTATIVES.

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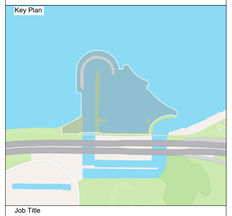
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

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Drawing Title

SURVEY NOTES, SYMBOLS AND ABBREVIATIONS

Job No: 292054 Scale: N.T.S
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026

Drawing No

CS-001

CHEERS-KS-DR-HL-CS-001.DWG PLOT BY: calwynn PLOT TIME: 1/22/2026 3:15 PM

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CS-103

CS-104

CS-101

CS-102

8 CS-600 NAVIGATION LIGHT

5 CS-600 BOATER EXCLUSION SIGN

BOATER EXCLUSION SIGN 5 CS-600

CREST ELEV. 578'

LIMIT OF WORK

BOATER EXCLUSION SIGN 5 CS-600

BOATER EXCLUSION SIGN 5 CS-600

CONCRETE WALL TO REMAIN, TIE BREAKWATER INTO EXISTING WALL

BOATER EXCLUSION SIGN 4 CS-600

FORMER POWER PLANT INLET

QUARRY RUN STONE TO EXTEND ACCESS PATH

TIE REVETMENT INTO EXISTING WALL

RIPRAP

REPAIR EXISTING REVETMENT

2-4 TON DECORATIVE ARMOR STONE

QUARRY RUN STONE BREAKWATER ALONG LENGTH OF BRIDGE, CREST ELEV. 580'

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

5 CS-600 BOATER EXCLUSION SIGN

WEIR, CREST ELEV. 568'

3 CS-600 BOATER EXCLUSION SIGN

5-7 TON ARMOR STONE; 2H:1V

CREST ELEV. 578'

3 CS-600 BOATER EXCLUSION SIGN

WEIR, CREST ELEV. 568'

1 CS-100 BOATER EXCLUSION SIGN

LAKE ERIE

ELEV=572.30 IGLD85

OBSERVED SEPTEMBER 30, 2022

3 CS-600 BOATER EXCLUSION SIGN

OHW, 573.4'

AWL, 571.3'

CREST ELEV. 578'

3 CS-600 BOATER EXCLUSION SIGN

GRAVEL, 2' THICK; 1.5H:1V

CHOKE OFF FILL SIDE OF EXISTING BREAKWATER WITH GRAVEL LIFT, 2' THICK, CREST ELEV. 578'

PROTECT SHEET PILE CELL

2 CS-600 BOATER EXCLUSION SIGN

5 CS-600 BOATER EXCLUSION SIGN

TIE NEW BREAKWATER INTO EXISTING BREAKWATER

2 CS-600 BOATER EXCLUSION SIGN

LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)
- BREAKWATER STONE

NOTES

1. LOCATION OF NAVIGATION LIGHTS AND BOATER EXCLUSION SIGNS ARE SUBJECT TO CHANGE.
2. AIDS TO NAVIGATION SHALL BE PLACED IN ACCORDANCE WITH U.S. COAST GUARD PERMIT CONDITIONS.

50' 0 50' 100'

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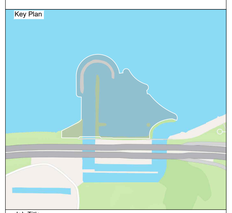
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Drawing Issue and Revision History

Seal

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Key Plan



Job Title

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The Port Of Cleveland
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(216) 241-8004

Drawing Title

OVERALL MARINE BREAKWATER PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: 1"=50'

Drawing No

CS-100

CHEERS-KS-DR-HL-CS-100.DWG PLOT BY: calwynn PLOT TIME: 1/22/2026 3:13 PM

Arup US, Inc.

MATCHLINE: FOR CONTINUATION SEE SHEET CS-103

BOATER EXCLUSION SIGN 5 CS-600

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

CONCRETE WALL TO REMAIN, TIE BREAKWATER INTO EXISTING WALL

BOATER EXCLUSION SIGN 4 CS-600

FORMER POWER PLANT INLET

QUARRY RUN STONE TO EXTEND ACCESS PATH

CREST ELEV. 578'

02+00 BW

TIE REVETMENT INTO EXISTING WALL

OHW, 573.4'

AWL, 571.3'

01+60 WR

REPAIR EXISTING REVETMENT

RIPRAP

04+00 BM

02+00 BM

04+00 BW

QUARRY RUN STONE BREAKWATER ALONG LENGTH OF BRIDGE, CREST ELEV. 580'

2-4 TON DECORATIVE ARMOR STONE

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

I-90

MATCHLINE: FOR CONTINUATION SEE SHEET CS-102

LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)
- BREAKWATER STONE

NOTES

1. LOCATION OF NAVIGATION LIGHTS AND BOATER EXCLUSION SIGNS ARE SUBJECT TO CHANGE.
2. AIDS TO NAVIGATION SHALL BE PLACED IN ACCORDANCE WITH U.S. COAST GUARD PERMIT CONDITIONS.

20' 0 20' 40'

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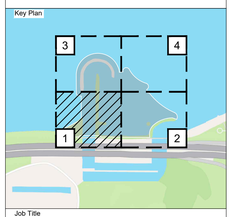
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
Cleveland Metroparks
4101 Fulton Parkway, Cleveland Oh 44144
(216) 635-3200
The Port Of Cleveland
1100 W. 9th Street - Suite 300, Cleveland, Oh 44113
(216) 241-8004

Drawing Title

MARINE BREAKWATER PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: 1"=20'

Drawing No

CS-101

CHEERS-KS-DR-HL-CS-101.DWG PLOT BY: calwynn PLOT TIME: 1/22/2026 3:11 PM

Arup US, Inc.

MATCHLINE: FOR CONTINUATION SEE SHEET CS-104

MATCHLINE: FOR CONTINUATION SEE SHEET CS-101

OHW, 573.4'

3 CS-600 BOATER EXCLUSION SIGN

14+00 SW

WEIR, CREST ELEV. 568'

GRAVEL, 2' THICK; 1.5H:1V

AWL, 571.3'

3 CS-600 BOATER EXCLUSION SIGN

15+80 SW

ELEV. 578'

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

CHOKE OFF FILL SIDE OF EXISTING BREAKWATER WITH GRAVEL LIFT, 2' THICK, CREST ELEV. 578'

18+00 SW

PROTECT SHEET PILE CELL

2 CS-600 BOATER EXCLUSION SIGN

TIE NEW BREAKWATER INTO EXISTING BREAKWATER

5 CS-600 BOATER EXCLUSION SIGN

FORMER POWER PLANT OUTLET

2 CS-600 BOATER EXCLUSION SIGN

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

I-90

20' 0 20' 40'

LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)
- BREAKWATER STONE

NOTES

1. LOCATION OF NAVIGATION LIGHTS AND BOATER EXCLUSION SIGNS ARE SUBJECT TO CHANGE.
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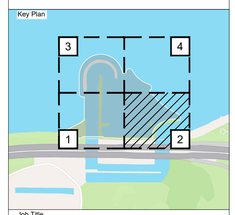
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
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Drawing Title

MARINE BREAKWATER PLAN

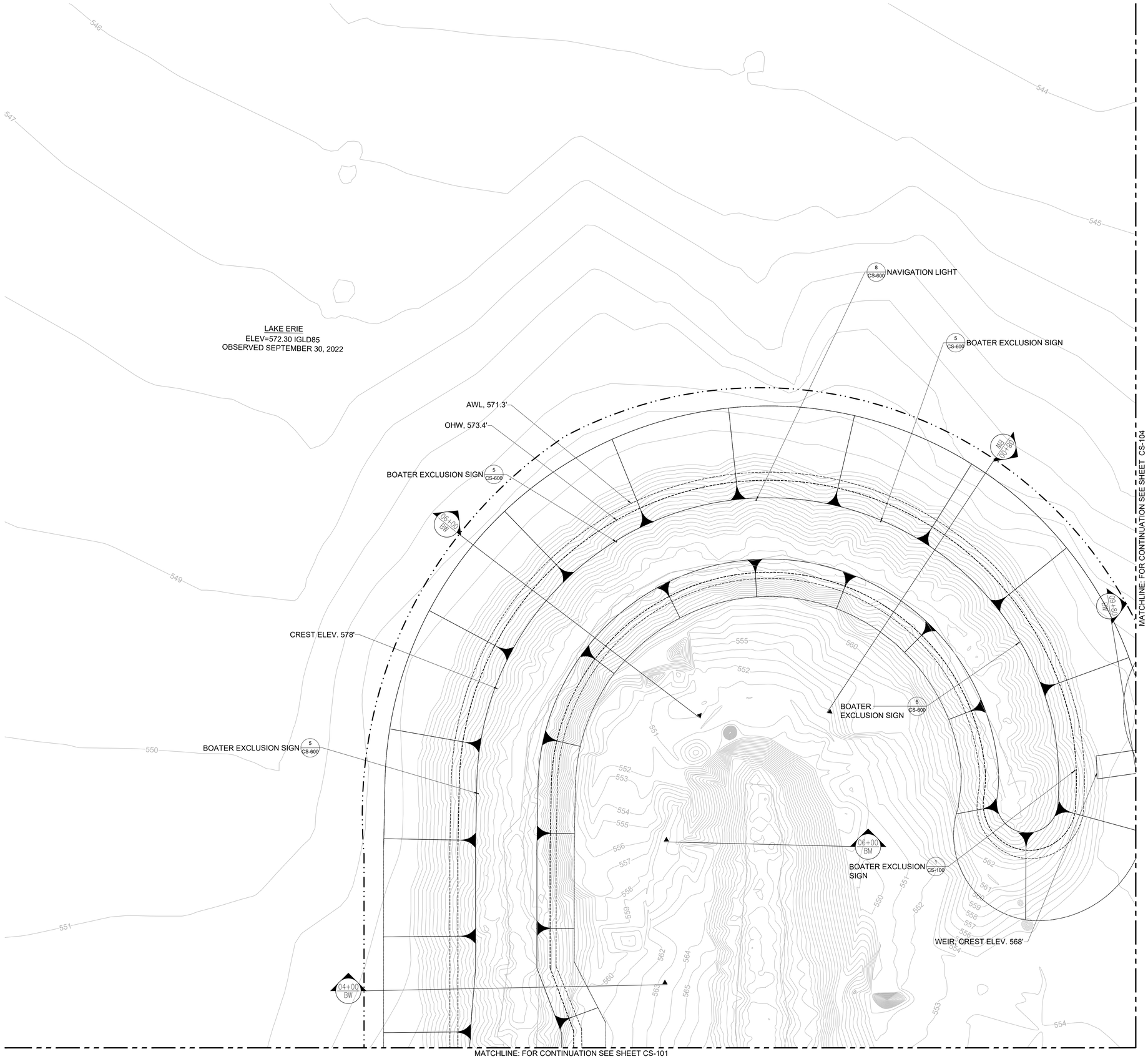
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Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: 1"=20'

Drawing No

CS-102

CHEERS-KS-DR-HL-CS-102.DWG PLOT BY: calwynn PLOT TIME: 1/22/2026 3:09 PM

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)
- BREAKWATER STONE

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20' 0 20' 40'

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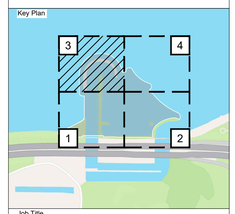
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

MARINE BREAKWATER PLAN

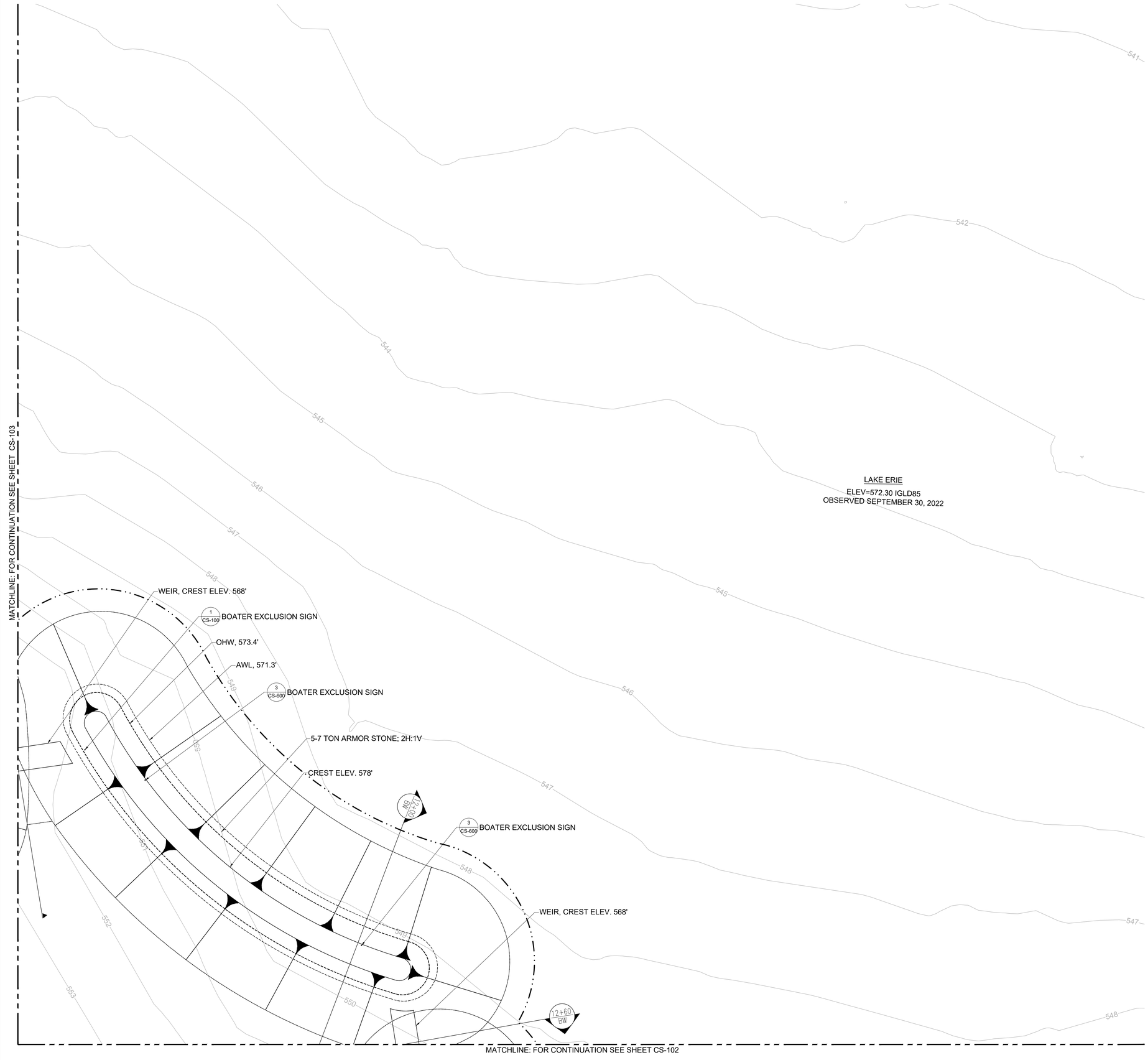
Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: 1"=20'

Drawing No

CS-103

CHEERS-KS-DR-HL-CS-103.DWG PLOT BY: calwynn PLOT TIME: 1/22/2026 3:15 PM

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
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- BREAKWATER STONE

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20' 0 20' 40'

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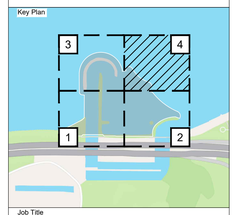
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

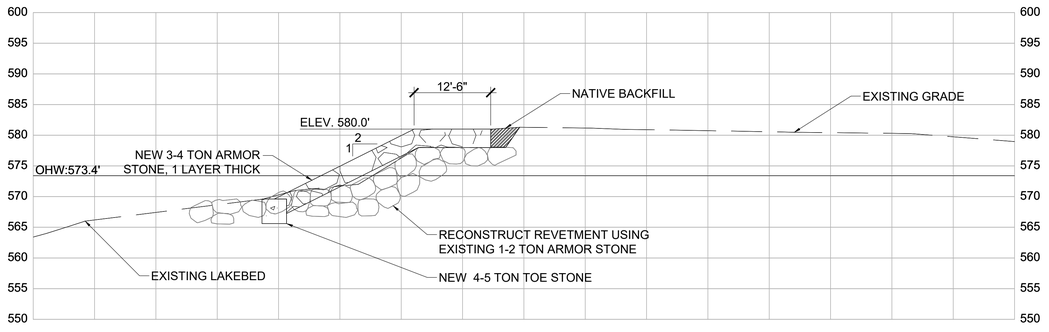
MARINE BREAKWATER PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: 1"=20'

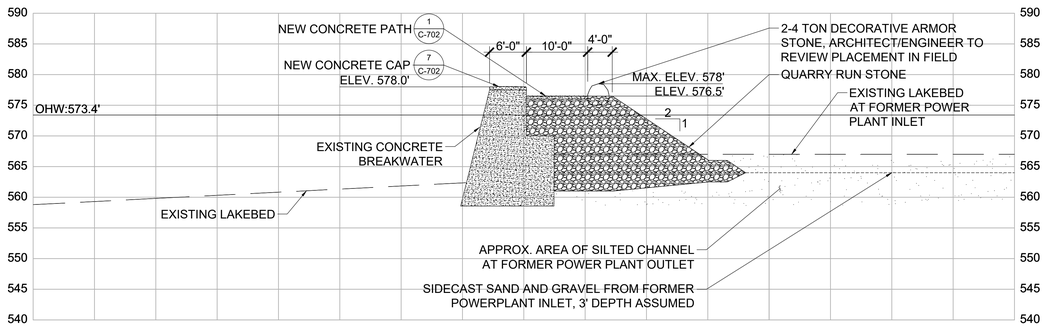
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CS-104

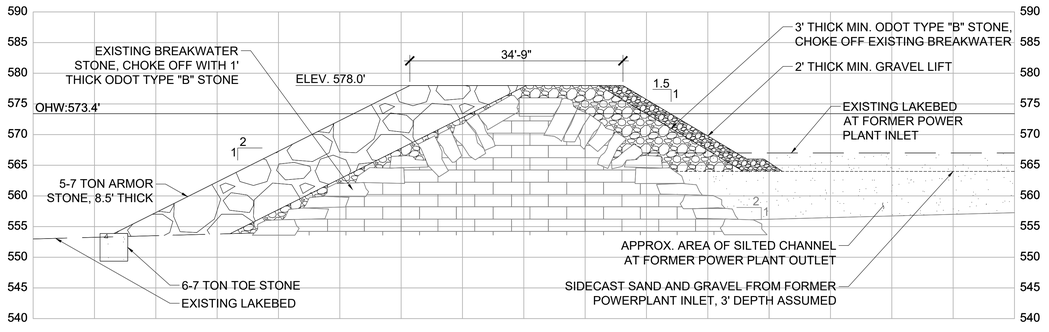
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Arup US, Inc.



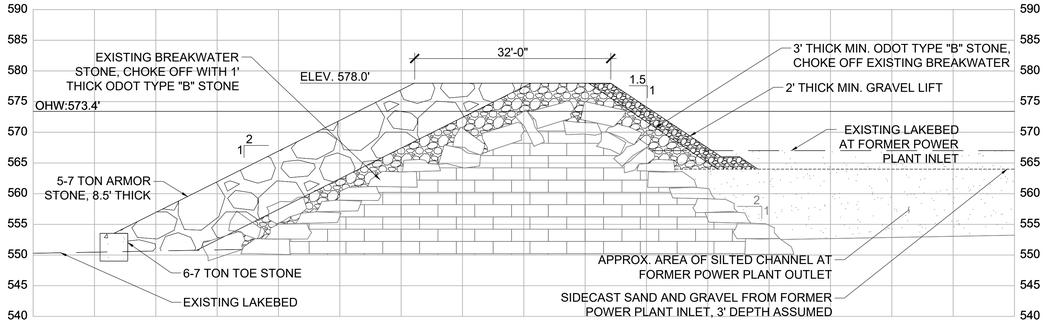
WR STA. 00+60.00



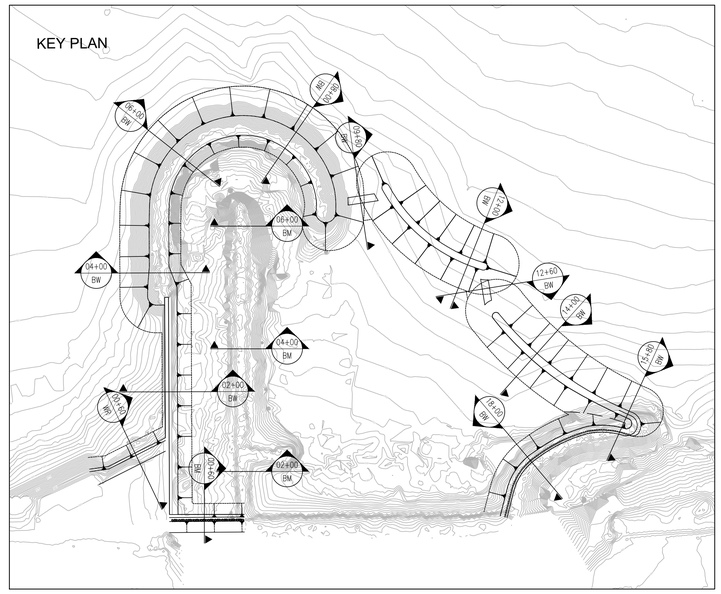
BW STA. 02+00.00



BW STA. 04+00.00



BW STA. 06+00.00



NOTES

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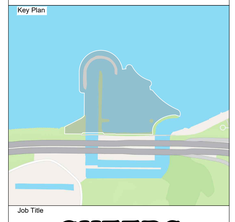
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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Drawing Title

MARINE BREAKWATER SECTIONS

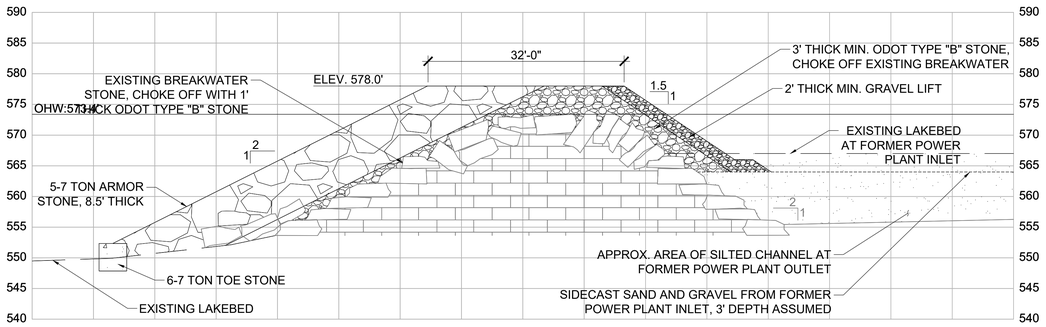
Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

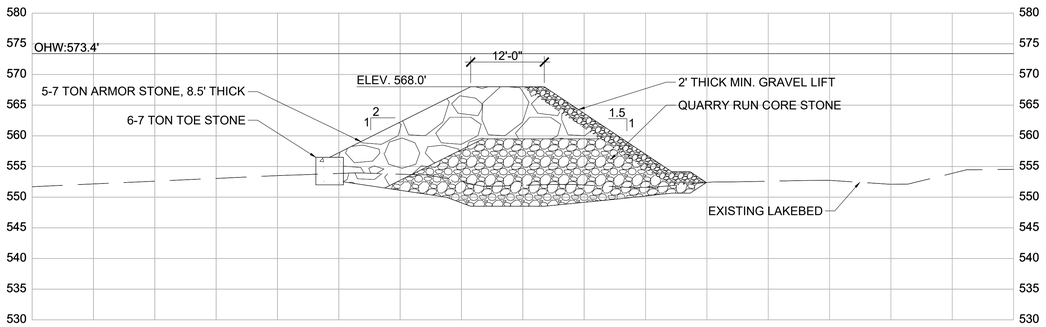
CS-201

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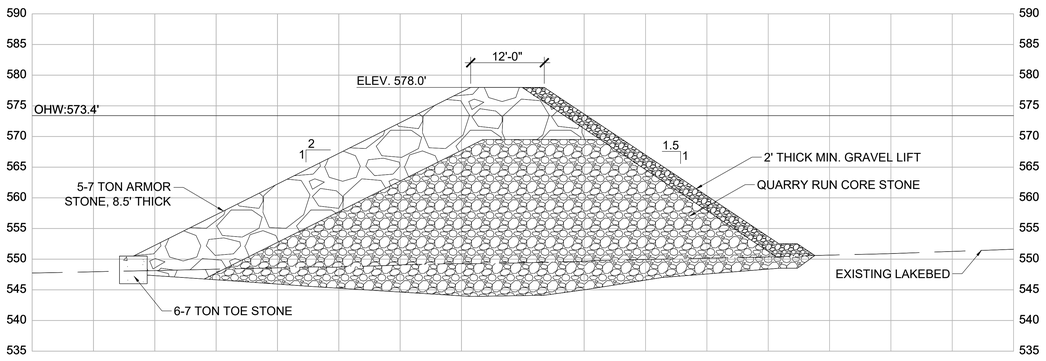
CHEERS-KS-DR-HL-CS-201.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 4:11 PM



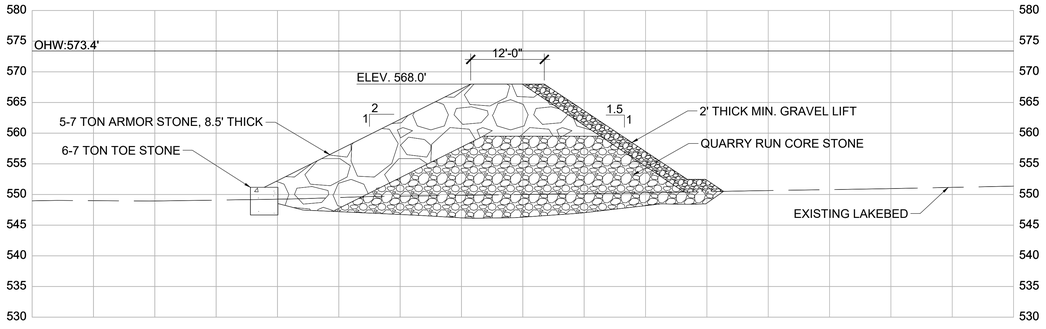
BW STA. 08+00.00



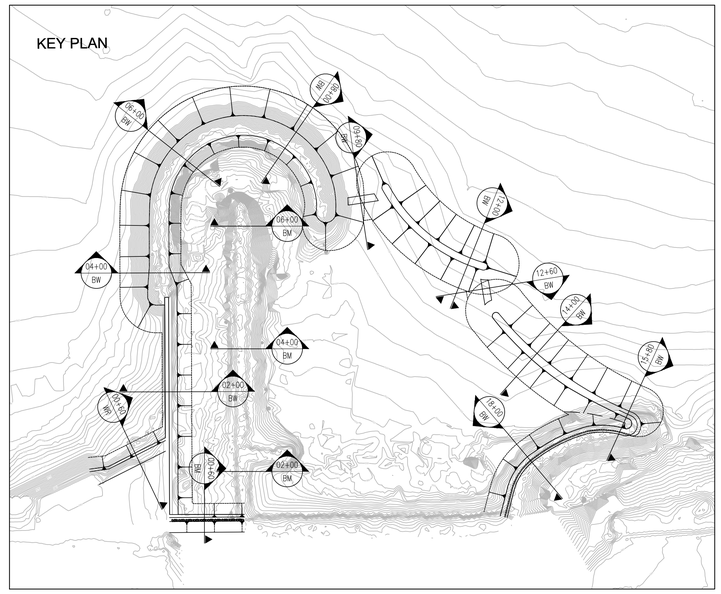
BW STA. 09+80.00



BW STA. 12+00.00



BW STA. 12+60.00



NOTES

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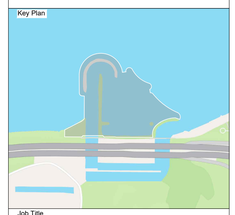
0	90% DESIGN	1/22/2026
Issue	Description	Date

Drawing Issue and Revision History

Seal

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Key Plan



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CHEERS
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Drawing Title

MARINE BREAKWATER SECTIONS

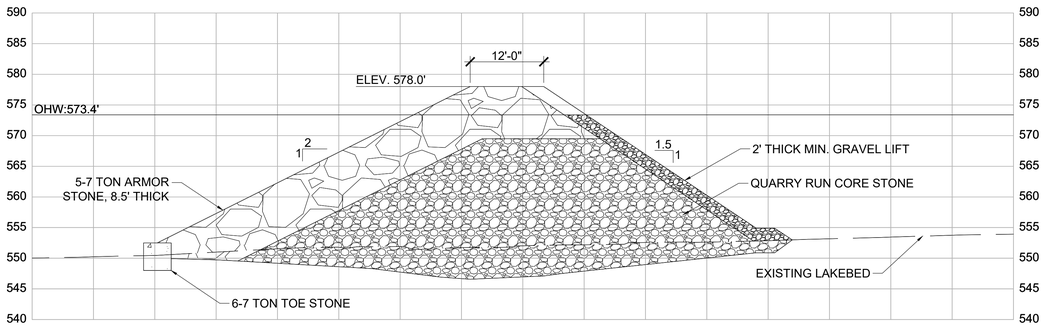
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Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

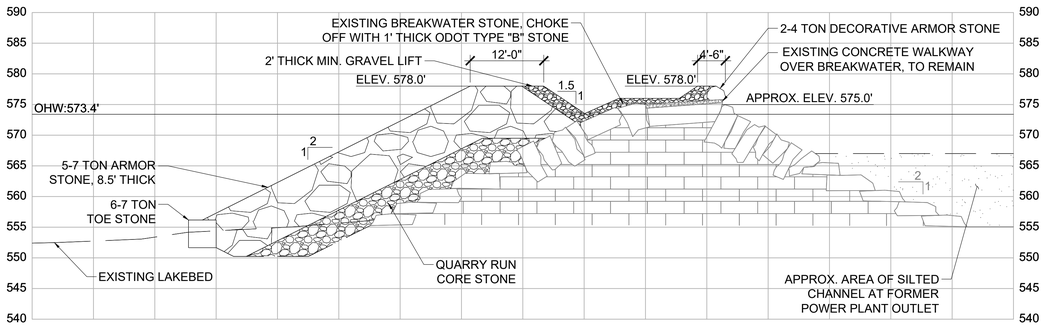
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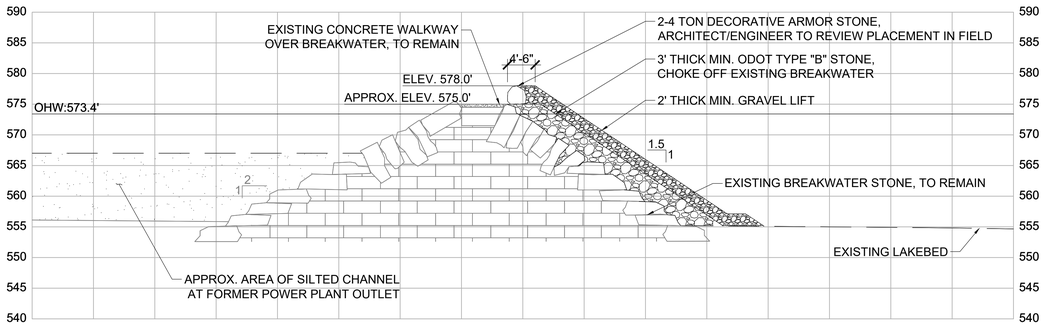
Arup US, Inc.



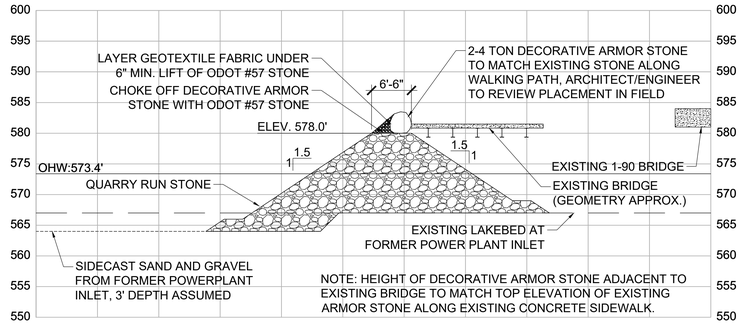
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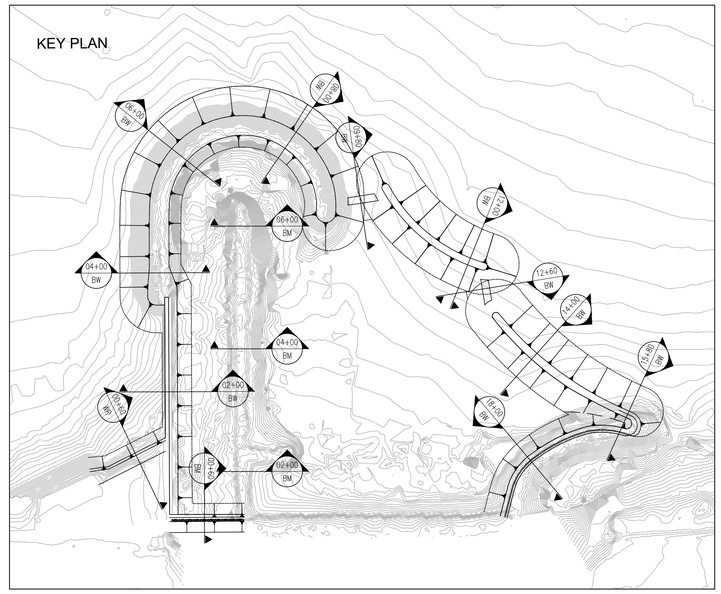
BW STA. 15+80.00



BW STA. 18+00.00



BM STA. 00+60.00



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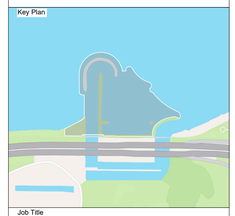
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Issue	Description	Date

Drawing Issue and Revision History

Seal

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Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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4101 Fulton Parkway, Cleveland Oh 44144
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Drawing Title

MARINE BREAKWATER SECTIONS

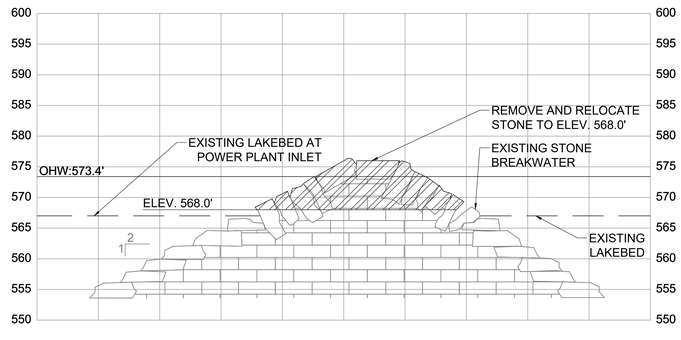
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Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

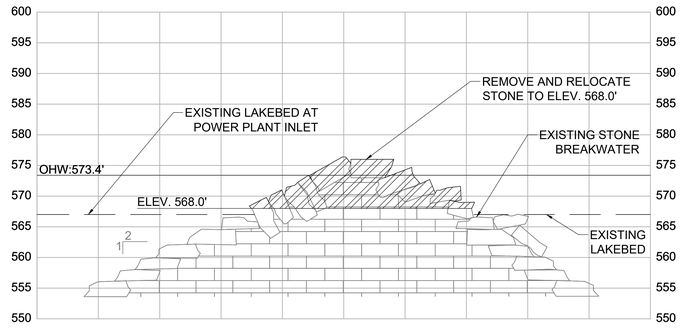
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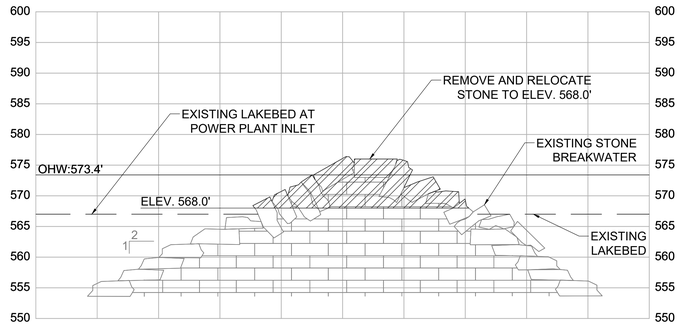
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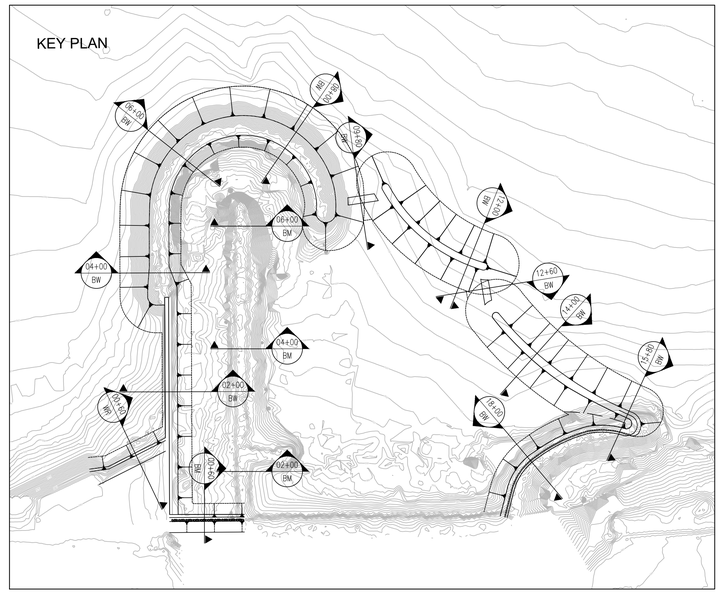
BM STA. 02+00.00



BM STA. 04+00.00



BM STA. 06+00.00



NOTES

1. ALL SAND AND GRAVEL IN THE FOOTPRINT OF THE PROPOSED STRUCTURE SHALL BE SIDECAST LAKEWARD IN COMPLIANCE WITH THE CONDITIONS OF FEDERAL AND STATE PERMITS.
2. THE FINAL CONDITION OF PLACED AND GRADED DREDGE MATERIAL IS NOT SHOWN FOR CLARITY.
3. PRIOR TO THE START OF EACH BREAKWATER CONSTRUCTION PHASE, PREVIOUSLY CONSTRUCTED LIFTS SHOULD BE INSPECTED FOR DIFFERENTIAL SETTLING AND DRESSED WITH ADDITIONAL STONE AS NEEDED.
4. DREDGING OPERATIONS ARE NOT INCLUDED AS PART OF THE DESIGN. ALL STONE SHOWN BELOW THE EXISTING LAKEBED ACCOUNTS FOR NATURAL SETTLEMENT OF THE STRUCTURE UNLESS OTHERWISE NOTED.
5. INTERSECTIONS OF WEIR STRUCTURES AND ADJACENT BREAKWATERS SHALL BE FIELD ADJUSTED BASED ON STRUCTURE SLOPES AND SETTLEMENT.
6. THE DISPLACEMENT/SETTLEMENT DURING CONSTRUCTION AT THE BREAKWATER CENTERLINE IS ESTIMATED TO BE 6 FEET BUT ACTUAL DISPLACEMENT/SETTLEMENTS MAY VARY.

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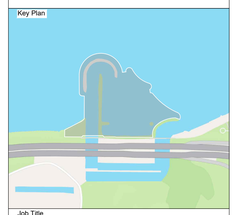
0	90% DESIGN	1/22/2026
Issue	Description	Date

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

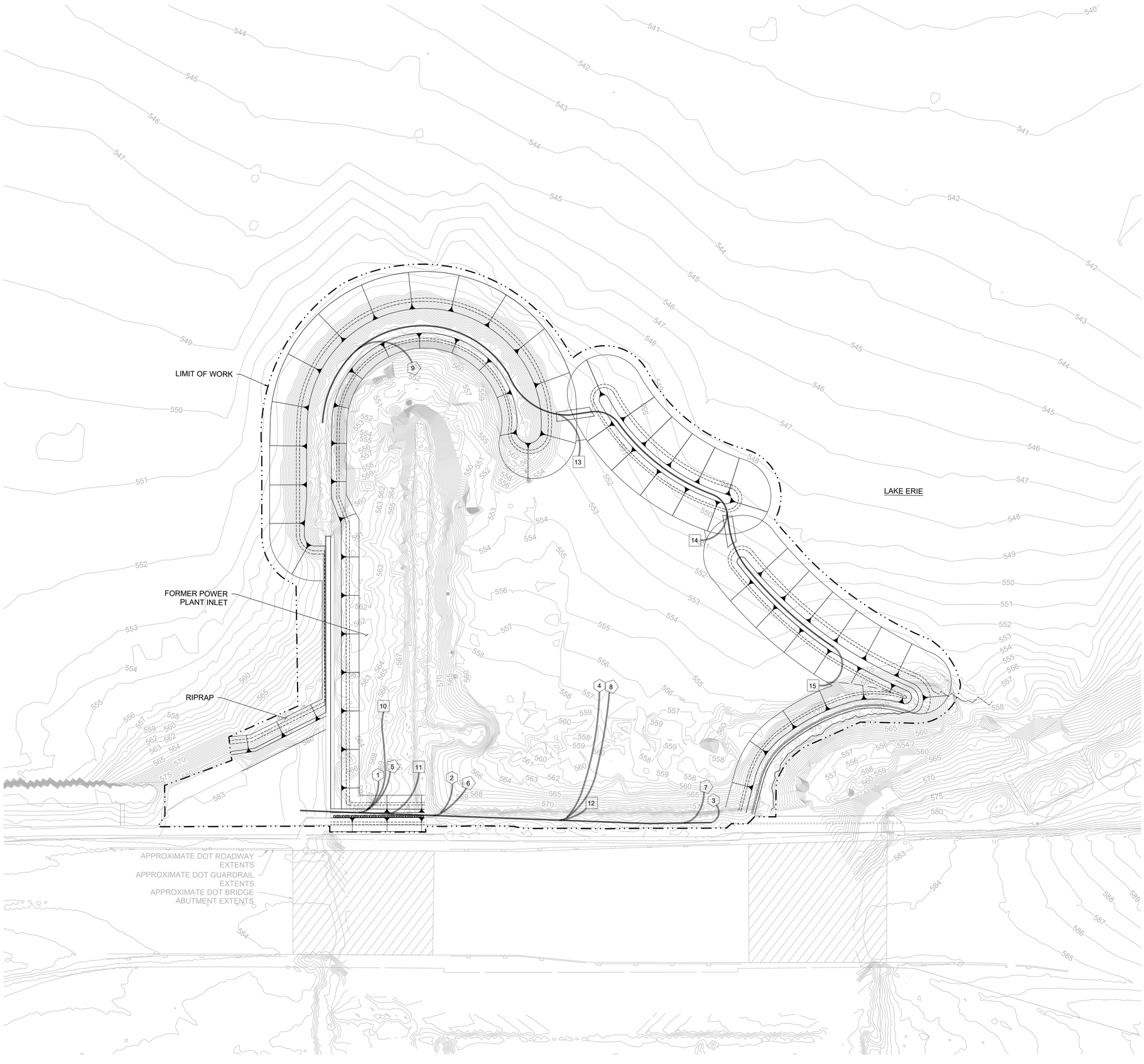
MARINE BREAKWATER SECTIONS

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

CS-204

CHEERS-KS-DR-HL-CS-204.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:14 PM



NOTES

1. THIS REPRESENTS A SINGLE PHASING SCHEME AND MUST BE REVIEWED BY ENGINEER OF RECORD PRIOR TO FINALIZING DESIGN.
2. INSTALL THE MAIN DISPOSAL PIPELINE FROM FLEX CONNECTION TO THE SHORE CONNECTION.
   a. SHORE CONNECTION TO PROVIDE A VALVE TO ISOLATE PIPELINE FROM MAIN HEADER LINE.
   b. SHORE CONNECTION WILL PROVIDE A BLIND FLANGE BULKHEAD TO FACILITATE PIPELINE CLEANOUT - FOR BLOCKAGE REMOVALS.
   c. FUSE POLYETHYLENE PIPELINE WITH FLANGES IN LENGTHS OF 100 LF.
      i. LENGTHS TO BE DETERMINED TO BE MODULAR TO BE COMPATIBLE WITH DEPOSITION DISTANCES FROM THE MAIN HEADER PIPELINE.
      ii. CONNECT DISCHARGE LINE TO JUNCTION LATERAL CONNECTION.
3. BEGIN DEPOSITION IN DREDGE CYCLE 1 FILLING AREA.
4. BEGIN MATERIAL PLACEMENT AT LOCATION 1.
5. CONSECUTIVE NUMBERS ARE TO BE FOLLOWED FOR MATERIAL PLACEMENT. IF THE CHARACTER OF THE MATERIAL IS SUITABLE GRANULAR OR SANDY MATERIAL, DREDGE MATERIAL CAN BE PLACED IN THE NEXT NUMERICAL SEQUENCE AS A STABLE WORK AREA. I.E. PLACEMENT SEQUENCE IS 1 TO 2 IF MATERIAL IS SILTY OR 1 TO 3 IF THE MATERIAL IS GRANULAR FOR A STABLE BASE.
6. CONTINUE DEPOSITION INTO SUBSEQUENT DREDGE PLACEMENT CYCLES FOLLOWING THE SAME NUMERICAL SEQUENCE AND METHODOLOGY AS DEFINED ABOVE.
7. DOCK WILL NOT BE PROVIDED EXCEPT AS SHOWN ON THE CONTRACT DOCUMENTS. CONTRACTOR SHALL HAVE EQUIPMENT THAT ANCHORS TO ANY FIXED PUMP OUT LOCATION OR IS CAPABLE OF SELF-UNLOADING WITHOUT ANY TYPE OF DOCKAGE PROVIDED.

LEGEND

- (#) DREDGE PLACEMENT CYCLE 1 SEQUENCE
- (#) DREDGE PLACEMENT CYCLE 2 SEQUENCE
- (#) DREDGE PLACEMENT CYCLE 3 SEQUENCE

LOCATION	ESTIMATED FILL QUANTITY (C.Y.)	PIPE LENGTH (LF)	CYCLE
1	20,000	40 +/-	1
2	15,000	40 +/-	1
3	15,000	30 +/-	1
4	15,000	170 +/-	1
5	15,000	70 +/-	2
6	15,000	60 +/-	2
7	15,000	50 +/-	2
8	10,000	190 +/-	2
9	10,000	90 +/-	2
10	15,000	145 +/-	3
11	10,000	70 +/-	3
12	10,000	40 +/-	3
13	10,000	65 +/-	3
14	10,000	55 +/-	3
15	10,000	75 +/-	3

50' 0 50' 100'

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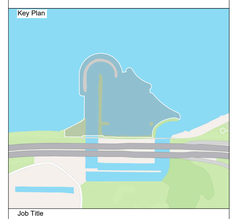
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

OVERALL DREDGE PLACEMENT PIPELINE PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: 1"=50'

Drawing No

CS-300

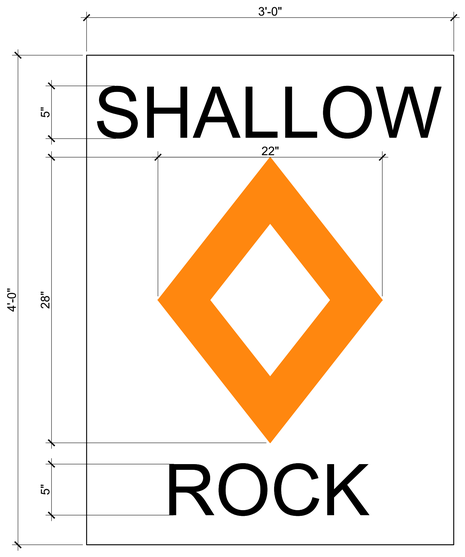
CHEERS-KS-DR-HL-CS-300.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:12 PM

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01 – RESTRICTED ACCESS SIGN

SCALE: 1" = 6"



02 – BOATER EXCLUSION SIGN - TYPE 1

SCALE: 1" = 6"



03 – BOATER EXCLUSION SIGN - TYPE 2

SCALE: 1" = 6"



04 – BOATER EXCLUSION SIGN - TYPE 3

SCALE: 1" = 6"



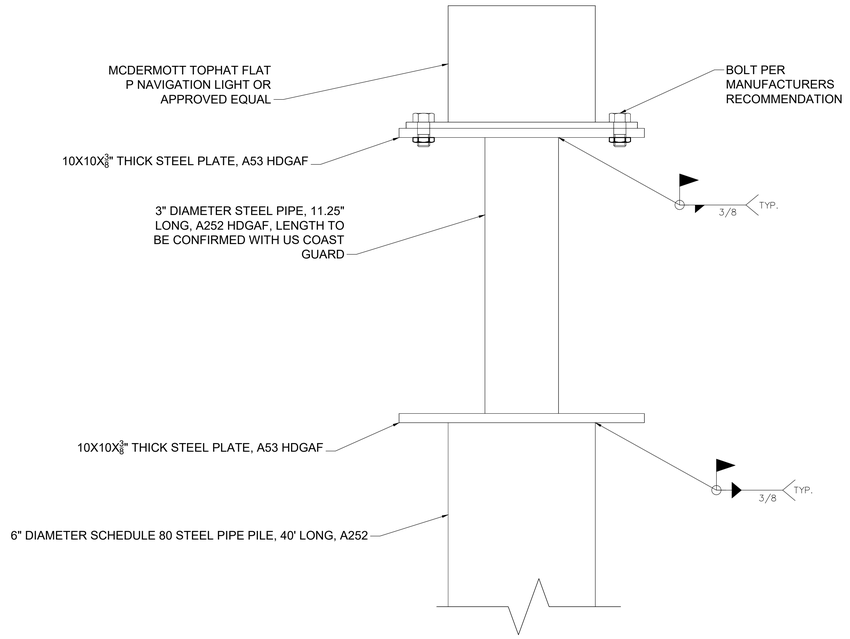
05 – BOATER EXCLUSION SIGN - TYPE 4

SCALE: 1" = 6"



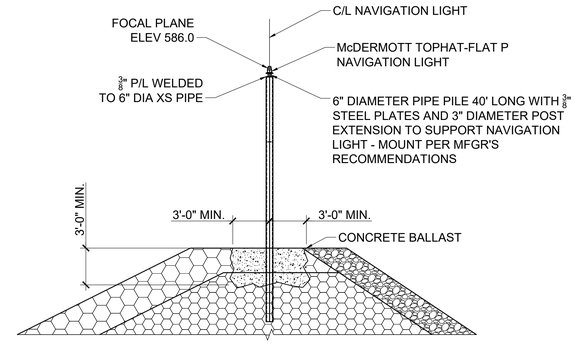
06 – BOATER EXCLUSION SIGN - TYPE 5

SCALE: 1" = 6"



07 – NAVIGATION LIGHT MOUNTING DETAIL

SCALE: 1" = 6"



08 – NAVIGATION LIGHT DETAIL

SCALE: 1" = 5'

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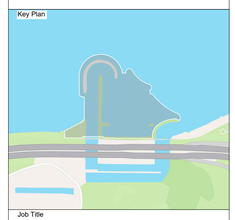
Issue	Description	Date
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Drawing Title

MARINE BREAKWATER DETAILS

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

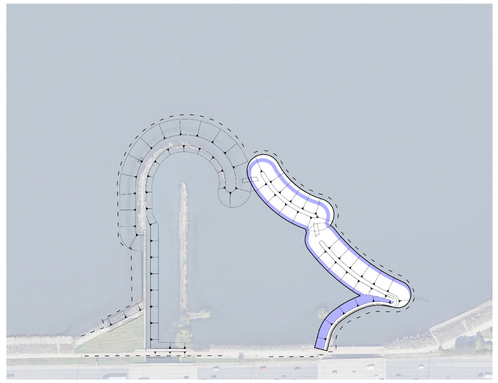
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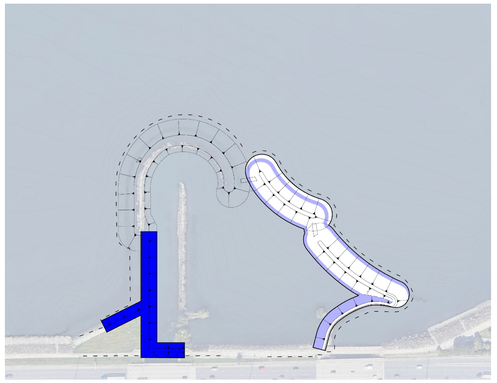
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ANTICIPATED CONSTRUCTION SEQUENCE

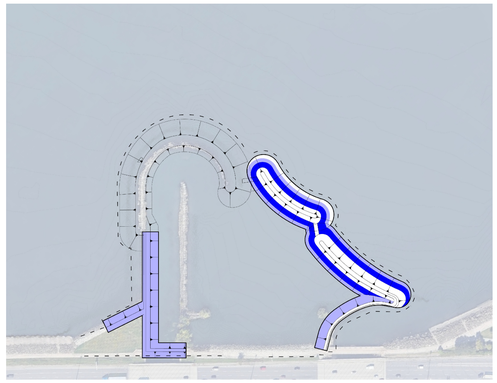
CONSTRUCTION SEQUENCE PLANS ARE PROVIDED FOR GENERAL INFORMATION ONLY AND DEPICT A CONCEPTUAL SEQUENCE OF OPERATIONS FOR BREAKWATER CONSTRUCTION, DREDGED MATERIAL PLACEMENT, AND SUBSEQUENT DREDGED MATERIAL SETTLEMENT ANTICIPATED TO OCCUR PRIOR TO PARK CONSTRUCTION. THE PLANS DO NOT DEFINE OR PRESCRIBE CONSTRUCTION MEANS, METHODS, SEQUENCING, OR PHASING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE FINAL SEQUENCING AND PHASING OF ALL WORK IN ACCORDANCE WITH THE BID DOCUMENT.



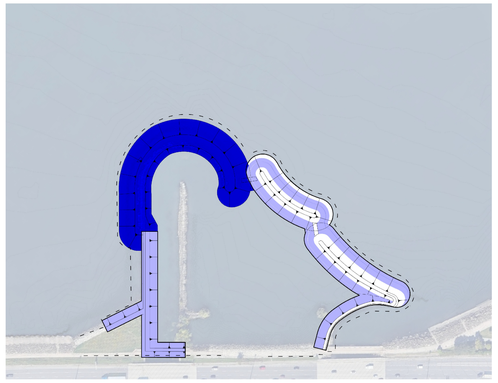
PHASE 1 - BREAKWATER CONSTRUCTION



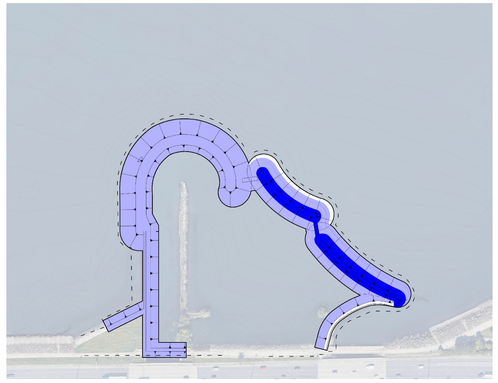
PHASE 2 - BREAKWATER CONSTRUCTION



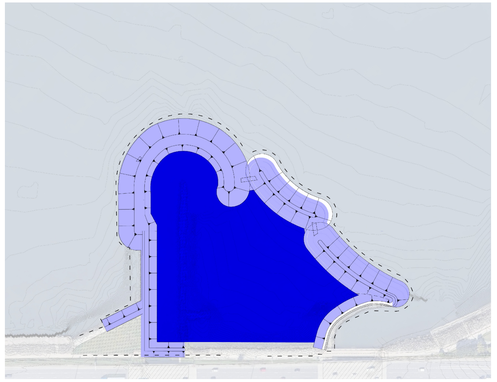
PHASE 3 - BREAKWATER CONSTRUCTION



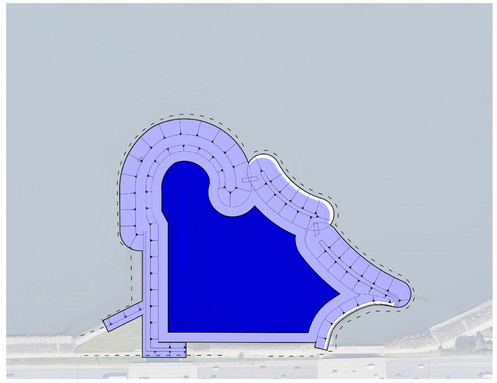
PHASE 4 - BREAKWATER CONSTRUCTION



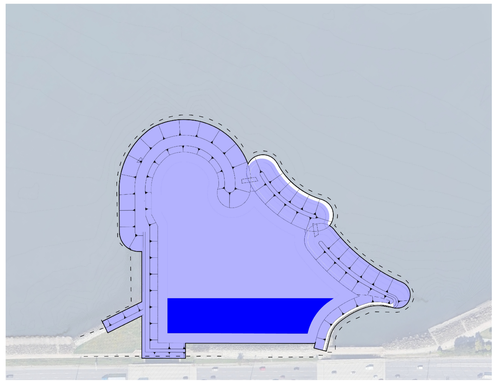
PHASE 5 - BREAKWATER CONSTRUCTION



PHASE 6 - DREDGE PLACEMENT



PHASE 7 - DREDGE PLACEMENT

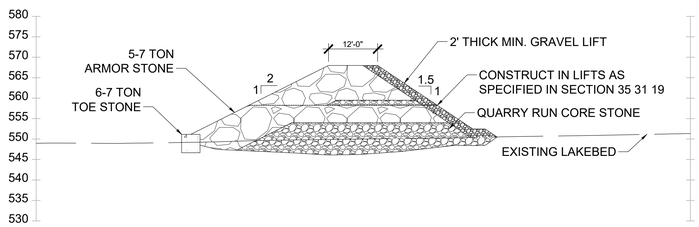


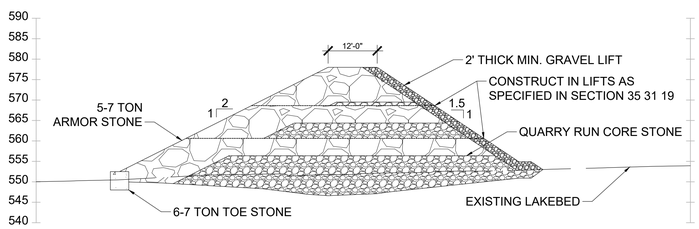
PHASE 8 - DREDGE PLACEMENT

PHASING NOTES

CONSTRUCTION OF THE HABITAT LOOP PROJECT, AS SHOWN IN THESE PLANS, WILL REQUIRE CONSTRUCTION IN PHASES OVER MULTIPLE YEARS. PHASES MAY BE PERFORMED UNDER SEPARATE CONTRACTS BY SPECIALIZED CONTRACTORS. THESE DRAWINGS ARE INTENDED TO DEPICT THE COMPLETED PROJECT. SEPARATE CONSTRUCTION DRAWINGS MAY BE REQUIRED FOR EACH PHASE OF CONSTRUCTION. THE DESIGN WAS BASED ON THE FOLLOWING SEQUENCE OF CONSTRUCTION:

1. BREAKWATER CONSTRUCTION: THE BREAKWATER CONSTRUCTION WILL REQUIRE PLACEMENT OF STONE IN LIFTS TO ALLOW TIME FOR SETTLEMENT. ANTICIPATED SETTLEMENT IS SHOWN ON THE BREAKWATER CROSS SECTIONS ON SHEETS CS-201 THROUGH CS-203. A POTENTIAL SEQUENCE OF CONSTRUCTION IS SHOWN ON SHEETS PH-201 THROUGH PH-205. CONSTRUCTION SEQUENCING WILL BE DEPENDENT ON FUNDING AVAILABILITY AND CONTRACTOR MEANS AND METHODS.
   a. THE CONSTRUCTION SEQUENCE PLANS AND CROSS SECTIONS ARE INTENDED TO ILLUSTRATE THE DESIGN INTENT TO ALLOW FOR ADEQUATE SETTLEMENT OF THE BREAKWATER CORE STONE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION. ALL CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. SEE SECTION 35 31 19.
   b. THE DESIGN INTENT IS FOR THE STONE BREAKWATERS TO BE CONSTRUCTED IN LIFTS AND ALLOWED TO SETTLE PRIOR TO PROCEEDING WITH PLACEMENT OF THE NEXT LIFT OF STONE. THE MAXIMUM LIFT HEIGHT SHALL BE AS SPECIFIED IN SECTION 35 31 19. THE CONTRACTOR SHALL ALLOW SUFFICIENT TIME FOR SETTLEMENT OR SHALL SUBMIT SURVEY DATA DEMONSTRATING SUFFICIENT SETTLEMENT BETWEEN LIFTS OF STONE, AS REQUIRED BY SECTION 35 31 19. AT THE CONTRACTOR'S DISCRETION, SETTLEMENT GAUGES/PLATES MAY BE INSTALLED TO FACILITATE MONITORING SURVEYS.
   c. AT THE CONTRACTOR'S DISCRETION, ARMOR STONE MAY BE INSTALLED AS TEMPORARY PROTECTION BETWEEN PLACEMENT OF SUBSEQUENT LIFTS OF STONE. THE COST OF THE TEMPORARY ARMOR STONE SHALL BE INCIDENTAL TO THE COST OF THE QUARRY RUN CORE STONE FOR THE BREAKWATER CONSTRUCTION.
   d. THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FORM STONE MOVEMENT OR SHIFTING BEYOND THE LIMITS OF CONSTRUCTION BETWEEN SUBSEQUENT LIFTS OF STONE. THE CONTRACTOR SHALL REPAIR OR REPLACE STONE THAT HAS BEEN RELOCATED DUE TO MOVEMENT PRIOR TO THE COMMENCEMENT OF ADDITIONAL LIFTS AT NO COST TO THE OWNER.
2. DREDGE PLACEMENT: THE HABITAT LOOP PROJECT IS INTENDED TO BENEFICIALLY RE-USE MATERIAL DREDGED BY THE U.S. ARMY CORPS OF ENGINEERS FROM THE CUYAHOGA RIVER AND CLEVELAND HARBOR FEDERAL NAVIGATION CHANNELS. MATERIAL IS TYPICALLY DREDGED TWICE PER YEAR IN THE SPRING AND FALL. THE PROJECT IS EXPECTED TO HAVE SUFFICIENT CAPACITY FOR THREE (3) DREDGE CYCLES OR 1.5 YEARS OF DREDGING OPERATIONS AS SHOWN ON SHEETS PH-206 THROUGH PH-208. THE CAPACITY IS PLANNED BASED ON THE ASSUMPTION THAT THE PORT OF CLEVELAND'S CURRENT BENEFICIAL USE OPERATIONS CONTINUE. IT IS ASSUMED THAT DREDGE MATERIAL WILL BE HYDRAULICALLY PLACED INTO THE HABITAT LOOP PROJECT.
   a. CONSTRUCTION OPERATIONS AT THE HABITAT LOOP SITE WILL BE REQUIRED DURING DREDGE PLACEMENT TO SET AND RELOCATE THE DREDGE PUMPOUT LINE.
   b. POTENTIAL DREDGE PLACEMENT SEQUENCING IS SHOWN ON SHEET CS-300. ACTUAL DREDGE PLACEMENT SEQUENCING WILL BE DEPENDENT ON THE AREAS OF THE CUYAHOGA RIVER TO BE DREDGED EACH YEAR MATERIAL IS TO BE PLACED IN THE HABITAT LOOP PROJECT AND THE CHARACTERISTICS OF THE MATERIAL TO BE PLACED.
3. MONITORING DURING DREDGE PLACEMENT: MONITORING SURVEYS WILL BE REQUIRED BEFORE AND AFTER EACH DREDGE PLACEMENT EVENT. SURVEYS MAY ALSO BE REQUIRED TO MONITOR SETTLEMENT OF THE STONE BREAKWATERS.
   a. ADDITIONAL CONSTRUCTION MAY BE REQUIRED IF ADDITIONAL STONE IS REQUIRED TO MAINTAIN THE BREAKWATERS AT THE REQUIRED CREST ELEVATION FOR DREDGE PLACEMENT.
   b. ADDITIONAL MONITORING REQUIREMENTS MAY BE REQUIRED BY REGULATORY AGENCIES AS CONDITIONS OF THE STATE AND FEDERAL COASTAL AND WATERWAY PERMITS.
4. MONITORING DURING DREDGE CONSOLIDATION: AFTER THE DREDGE PLACEMENT AREA HAS BEEN FILLED TO THE CAPACITY REQUIRED TO OBTAIN THE FINAL GRADING FOR CONSTRUCTION OF THE HABITAT AND PARK AMENITIES, AS SHOWN ON THE GRADING PLAN ON SHEET C-200, THE DREDGE MATERIAL WILL REQUIRE TIME TO SETTLE AND CONSOLIDATE.
   a. ANY AREAS WHERE DREDGE MATERIAL IS ABOVE THE CURRENT WATER LINE SHALL BE COVERED WITH A TEMPORARY SEED MIX TO REDUCE THE PREVALENCE OF INVASIVE SPECIES.
   b. MONITORING WILL BE REQUIRED DURING THE SETTLEMENT TIME. THIS IS ANTICIPATED TO REQUIRE VISUAL INSPECTIONS, HYDROGRAPHIC SURVEYS, AND TOPOGRAPHIC SURVEYS. COMPACTION TESTING WILL BE REQUIRED PRIOR TO GRADING.
   c. SETTLEMENT AND CONSOLIDATION IS ANTICIPATED TO TAKE APPROXIMATELY 2 YEARS BUT TIMES WILL VARY BASED ON THE CHARACTERISTICS OF DREDGE MATERIAL PLACED IN THE PROJECT.
   d. ADDITIONAL MONITORING REQUIREMENTS MAY BE REQUIRED BY REGULATORY AGENCIES AS CONDITIONS OF THE STATE AND FEDERAL COASTAL AND WATERWAY PERMITS.
5. EXISTING CONDITIONS SURVEY AND GRADING PLAN: ONCE COMPACTION TESTS DEMONSTRATE THAT THE DREDGE MATERIAL CAN SUPPORT LOW GROUND PRESSURE EQUIPMENT FOR GRADING, A HYDROGRAPHIC AND TOPOGRAPHIC SURVEY WILL BE PERFORMED. THIS SURVEY WILL BE USED TO PREPARE AN EXISTING CONDITIONS PLAN AND TO CALCULATE VOLUMES REQUIRED TO BE EXCAVATED AND RELOCATED TO ACHIEVE THE GRADING, AS SHOWN ON SHEET C-200.
6. HABITAT AND PARK CONSTRUCTION: ONCE GRADING IS COMPLETE, THE PARK AMENITIES AND HABITAT AREAS CAN BE CONSTRUCTED.
7. POST-CONSTRUCTION MONITORING AND MAINTENANCE: POST-CONSTRUCTION MONITORING IS ANTICIPATED TO INCLUDE INSPECTIONS OF THE BREAKWATER CONDITION, ASSESSMENTS OF VEGETATIVE QUALITY, AND INVASIVE SPECIES MANAGEMENT.
   a. MONITORING IS ANTICIPATED TO REQUIRE VISUAL INSPECTIONS/PHOTOGRAPHS, TOPOGRAPHIC AND HYDROGRAPHIC SURVEYS, STRUCTURAL ASSESSMENTS, VEGETATION ASSESSMENTS (VIBI), HABITAT ASSESSMENTS, AND SUBMISSION OF MONITORING REPORTS TO STATE AND FEDERAL AGENCIES.
8. ADDITIONAL MONITORING REQUIREMENTS MAY BE REQUIRED BY REGULATORY AGENCIES AS CONDITIONS OF THE STATE AND FEDERAL COASTAL AND WATERWAY PERMITS.





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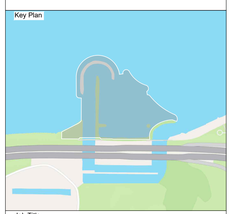
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
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The Port Of Cleveland
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(216) 241-8004

Drawing Title

PHASING NOTES

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

PH-200

CHEERS-KS-DR-HL-G-200.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:14 PM

Arup US, Inc.

SUBMERGED LAND LEASE BOUNDARY

LIMIT OF WORK

PHASE 1 BREAKWATER CONSTRUCTION

APPROX. CREST OF LIFT COMPLETED DURING PHASE 1 BREAKWATER CONSTRUCTION

FORMER POWER PLANT INLET

RIPRAP

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

FUTURE LAKE SHORE DRIVE

ODOT "CLEAR ZONE" BOUNDARY APPROX.

ODOT "LIMITED ACCESS" BOUNDARY APPROX.

PROPERTY BOUNDARY

LEGEND

- LIMIT OF WORK
- BREAKWATER STONE
- CURRENT PHASE BREAKWATER CONSTRUCTION

NOTES

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Key Plan

Job Title

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Drawing Title

PHASE 1 - BREAKWATER CONSTRUCTION

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

PH-201

CHEERS-KS-DR-HL-G-201.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:12 PM

Arup US, Inc.

SUBMERGED LAND LEASE BOUNDARY

LIMIT OF WORK

FORMER POWER PLANT INLET

RIPRAP

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

PHASE 2 BREAKWATER CONSTRUCTION

FUTURE LAKE SHORE DRIVE

ODOT "CLEAR ZONE" BOUNDARY APPROX.

ODOT "LIMITED ACCESS" BOUNDARY APPROX.

PROPERTY BOUNDARY

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

50' 0 50' 100'

LEGEND

- LIMIT OF WORK
- BREAKWATER STONE
- CURRENT PHASE BREAKWATER CONSTRUCTION
- PREVIOUS PHASE BREAKWATER CONSTRUCTION

NOTES

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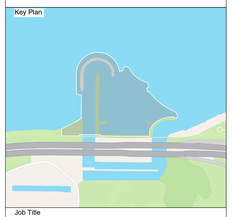
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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(216) 241-8004

Drawing Title

PHASE 2 - BREAKWATER CONSTRUCTION

Job No: 292054 Scale: AS NOTED
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026

Drawing No

PH-202

CHEERS-KS-DR-HL-G-202.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:10 PM

Arup US, Inc.

SUBMERGED LAND LEASE BOUNDARY

LIMIT OF WORK

FORMER POWER PLANT INLET

RIPRAP

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

PHASE 3 BREAKWATER CONSTRUCTION

APPROX. CREST OF LIFT COMPLETED DURING PHASE 3 BREAKWATER CONSTRUCTION

FUTURE LAKE SHORE DRIVE

ODOT "CLEAR ZONE" BOUNDARY APPROX.

ODOT "LIMITED ACCESS" BOUNDARY APPROX.

PROPERTY BOUNDARY

LEGEND

- LIMIT OF WORK
- BREAKWATER STONE
- CURRENT PHASE BREAKWATER CONSTRUCTION
- PREVIOUS PHASE BREAKWATER CONSTRUCTION

NOTES

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Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

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Key Plan

Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
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(216) 241-8004

Drawing Title

PHASE 3 - BREAKWATER CONSTRUCTION

Job No:	292054	Scale:	AS NOTED
Status:	90% DESIGN		
Drawn By:	MC		
Checked By:	MC		
Approved By:	KS		
Date:	1/22/2026		

Drawing No

PH-203

Arup US, Inc.

CHEERS-KS-DR-HL-G-203.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:16 PM

SUBMERGED LAND LEASE BOUNDARY

PHASE 4 BREAKWATER CONSTRUCTION

LIMIT OF WORK

FORMER POWER PLANT INLET

RIPRAP

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

FUTURE LAKE SHORE DRIVE

ODOT "CLEAR ZONE" BOUNDARY APPROX.

ODOT "LIMITED ACCESS" BOUNDARY APPROX.

PROPERTY BOUNDARY

LEGEND

- LIMIT OF WORK
- BREAKWATER STONE
- CURRENT PHASE BREAKWATER CONSTRUCTION
- PREVIOUS PHASE BREAKWATER CONSTRUCTION

NOTES

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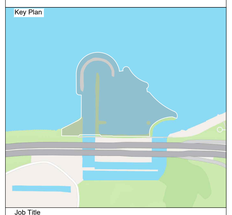
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
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(216) 241-8004

Drawing Title

PHASE 4 - BREAKWATER CONSTRUCTION

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

PH-204

CHEERS-KS-DR-HL-G-204.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:14 PM

Arup US, Inc.

SUBMERGED LAND LEASE BOUNDARY

LIMIT OF WORK

APPROX. CREST OF LIFT COMPLETED DURING PHASE 5 BREAKWATER CONSTRUCTION

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

FORMER POWER PLANT INLET

PHASE 5 BREAKWATER CONSTRUCTION

RIPRAP

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

FUTURE LAKE SHORE DRIVE

ODOT "CLEAR ZONE" BOUNDARY APPROX.

ODOT "LIMITED ACCESS" BOUNDARY APPROX.

PROPERTY BOUNDARY

LEGEND

- LIMIT OF WORK
- BREAKWATER STONE
- CURRENT PHASE BREAKWATER CONSTRUCTION
- PREVIOUS PHASE BREAKWATER CONSTRUCTION

NOTES

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Issue	Description	Date
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Drawing Issue and Revision History

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Key Plan

Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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Drawing Title

PHASE 5 - BREAKWATER CONSTRUCTION

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

PH-205

CHEERS-KS-DR-HL-G-205.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:12 PM

Arup US, Inc.

SUBMERGED LAND LEASE BOUNDARY

LIMIT OF WORK

FORMER POWER PLANT INLET

RIPRAP

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

PHASE 6 DREDGE PLACEMENT

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

FUTURE LAKE SHORE DRIVE

ODOT "CLEAR ZONE" BOUNDARY APPROX.

ODOT "LIMITED ACCESS" BOUNDARY APPROX.

PROPERTY BOUNDARY

50' 0 50' 100'

LEGEND

- LIMIT OF WORK
- BREAKWATER STONE
- CURRENT PHASE BREAKWATER CONSTRUCTION
- PREVIOUS PHASE BREAKWATER CONSTRUCTION
- CURRENT PHASE DREDGE PLACEMENT CYCLE

NOTES

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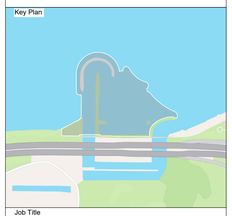
Issue	Description	Date
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Drawing Issue and Revision History

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Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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(216) 241-8004

Drawing Title

PHASE 6 -DREDGE PLACEMENT CYCLE 1

Job No:	292054	Scale:	AS NOTED
Status:	90% DESIGN		
Drawn By:	MC		
Checked By:	MC		
Approved By:	KS		
Date:	1/22/2026		

Drawing No

PH-206

CHEERS-KS-DR-HL-G-206.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:11 PM

Arup US, Inc.

SUBMERGED LAND LEASE BOUNDARY

LIMIT OF WORK

FORMER POWER PLANT INLET

RIPRAP

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

PHASE 7 DREDGE PLACEMENT

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

FUTURE LAKE SHORE DRIVE

ODOT "CLEAR ZONE" BOUNDARY APPROX.

ODOT "LIMITED ACCESS" BOUNDARY APPROX.

PROPERTY BOUNDARY

LEGEND

- LIMIT OF WORK
- BREAKWATER STONE
- CURRENT PHASE BREAKWATER CONSTRUCTION
- PREVIOUS PHASE BREAKWATER CONSTRUCTION
- CURRENT PHASE DREDGE PLACEMENT CYCLE
- PREVIOUS PHASE DREDGE PLACEMENT CYCLE

NOTES

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Issue	Description	Date
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Drawing Issue and Revision History

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Key Plan

Job Title

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Project Partners

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Drawing Title

PHASE 7 -DREDGE PLACEMENT CYCLE 2

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

PH-207

CHEERS-KS-DR-HL-G-207.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:17 PM

Arup US, Inc.

SUBMERGED LAND LEASE BOUNDARY

LIMIT OF WORK

FORMER POWER PLANT INLET

RIPRAP

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

PHASE 8 DREDGE PLACEMENT

LAKE ERIE
ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

FUTURE LAKE SHORE DRIVE

ODOT "CLEAR ZONE" BOUNDARY APPROX.

ODOT "LIMITED ACCESS" BOUNDARY APPROX.

PROPERTY BOUNDARY

LEGEND

- LIMIT OF WORK
- BREAKWATER STONE
- CURRENT PHASE BREAKWATER CONSTRUCTION
- PREVIOUS PHASE BREAKWATER CONSTRUCTION
- CURRENT PHASE DREDGE PLACEMENT CYCLE
- PREVIOUS PHASE DREDGE PLACEMENT CYCLE

NOTES

1. CONSTRUCTION SEQUENCE PLANS ARE PROVIDED FOR GENERAL INFORMATION ONLY AND DEPICT A CONCEPTUAL SEQUENCE OF OPERATIONS FOR BREAKWATER CONSTRUCTION, DREDGED MATERIAL PLACEMENT, AND SUBSEQUENT DREDGE MATERIAL SETTLEMENT ANTICIPATED TO OCCUR PRIOR TO PARK CONSTRUCTION. THE PLANS DO NOT DEFINE OR PRESCRIBE CONSTRUCTION MEANS, METHODS, SEQUENCING, OR PHASING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE FINAL SEQUENCING AND PHASING OF ALL WORK IN ACCORDANCE WITH THE BID DOCUMENT.

50' 0 50' 100'

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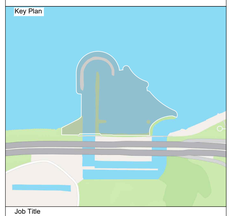
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
Cleveland Metroparks
4101 Fulton Parkway, Cleveland Oh 44144
(216) 635-3200

The Port Of Cleveland
1100 W. 9th Street - Suite 300, Cleveland, Oh 44113
(216) 241-8004

Drawing Title

PHASE 8 -DREDGE PLACEMENT CYCLE 3

Job No:	292054	Scale:	AS NOTED
Status:	90% DESIGN		
Drawn By:	MC		
Checked By:	MC		
Approved By:	KS		
Date:	1/22/2026		

Drawing No

PH-208

CHEERS-KS-DR-HL-G-208.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:15 PM

Arup US, Inc.

SUBMERGED LAND LEASE BOUNDARY

LIMIT OF WORK

FORMER POWER PLANT INLET

RIPRAP

APPROXIMATE DOT ROADWAY EXTENTS

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

ELEV=572.30 IGLD85
OBSERVED SEPTEMBER 30, 2022

FUTURE LAKE SHORE DRIVE

ODOT "CLEAR ZONE" BOUNDARY APPROX.

ODOT "LIMITED ACCESS" BOUNDARY APPROX.

PROPERTY BOUNDARY

LEGEND

- LIMIT OF WORK
- BREAKWATER STONE
- CONSTRUCTED BREKWATER
- DREDGE MATERIAL

NOTES

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50' 0 50' 100'

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Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan

Job Title

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Drawing Title

FINAL PLACEMENT CONDITION

Job No: 292054
Status: 90% DESIGN
Drawn By: MC
Checked By: MC
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

PH-209

CHEERS-KS-DR-HLG-209.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:13 PM

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GENERAL NOTES

1. EXISTING CONDITIONS INDICATED HEREON ARE PROVIDED AS BACKGROUND INFORMATION AND SURVEYS PERFORMED ON THE FOLLOWING DATES:
   - 1.1. CLEVELAND HARBOR FEDERAL NAVIGATION CHANNEL: DECEMBER 7-22, 2022 BY THE U.S. ARMY CORPS OF ENGINEERS.
   - 1.2. ALL OTHER AREAS BELOW ORDINARY HIGH WATER (573.4 FEET IGLD 1985): SEPTEMBER 30, 2022 TO JUNE 13, 2023 BY KS ASSOCIATES, INC.
   - 1.3. EXISTING RUBBLE-MOUND STRUCTURES IN SUBMERGED LANDS LEASE SUB-1511-CU: NOVEMBER 9-26, 2019 BY WOOLPERT, INC. AND THE OHIO GEOGRAPHICALLY REFERENCED INFORMATION PROGRAM.
   - 1.4. ALL OTHER AREAS ABOVE ORDINARY HIGH WATER: NOVEMBER 9-26, 2019 BY WOOLPERT, INC. AND THE OHIO GEOGRAPHICALLY REFERENCED INFORMATION PROGRAM.
   - 1.5. I-90 EXISTING ROADWAY EXTENTS, GUARDRAIL, AND BRIDGE ABUTMENTS LOCATIONS DRAWN AND ESTIMATED FROM 1993 ODOT CUY-90-18.63 PLANS.
2. SUPPLEMENTAL EXISTING CONDITIONS INFORMATION BEYOND THE SITE PROPERTY HAS BEEN SOURCED FROM CITY OF CLEVELAND GIS MAPS.
3. CONTRACTOR SHALL ESTABLISH PROPERTY LINES PRIOR TO COMMENCING WORK AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
4. THE CONTRACTOR SHALL VERIFY THE LOCATION AND RELATIVE ELEVATION OF BENCHMARKS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER.
5. CONTRACTOR SHALL FIELD VERIFY UTILITY INVERTS AT CONNECTIONS TO EXISTING UTILITIES AND SHALL VERIFY SPOT GRADES PRIOR TO BEGINNING GRADING WORK. CONTRACTOR SHALL NOTIFY ENGINEER IF DISCREPANCIES EXIST FROM ELEVATIONS INDICATED ON THE PLANS.
6. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS, WHETHER OR NOT SHOWN HEREON.
7. CONTRACTOR SHALL VERIFY UTILITY LOCATION PRIOR TO COMMENCING WORK AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
8. SAFETY MEASURES, CONSTRUCTION METHODS AND CONTROL OF WORK SHALL BE RESPONSIBILITY OF CONTRACTOR.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION THAT ARE NOT DESIGNATED FOR DEMOLITION AND/OR REMOVAL HEREON. DAMAGED IMPROVEMENTS SHALL BE REPAIRED TO THE SATISFACTION OF THEIR RESPECTIVE OWNERS.
10. CONTRACTOR SHALL COORDINATE WITH THE CLEVELAND METROPARKS AND CITY OF CLEVELAND AND THE PROPERTY OWNER(S) REGARDING MAINTAINING ACCESS TO BUILDING EXITS, WALKWAYS AND DRIVEWAYS.
11. CONTRACTOR SHALL MAKE THEMSELF AWARE OF ALL CONSTRUCTION REQUIREMENTS, CONDITIONS, AND LIMITATIONS IMPOSED BY PERMITS AND APPROVALS ISSUED BY REGULATORY AUTHORITIES PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL COORDINATE AND OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY REGULATORY AUTHORITIES
12. GROUNDWATER AND SUBSURFACE DRAINAGE MAY NOT BE DISCHARGED TO ANY SANITARY OR COMBINED SEWER WITHOUT APPROVAL BY THE NORTH EAT REGIONAL SEWER DISTRICT STRUCTURE DETAILS FROM INDEPENDENT VENDORS ARE CONSTANTLY CHANGING. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THAT DETAILS SHOWN MATCH CURRENT DETAILS AND SPECIFICATIONS FROM VENDORS.
13. CONTRACTOR SHALL CONSULT WITH OWNER REGARDING SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION.
14. CONTRACTOR SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NEEDED TO PREVENT TRANSPORT OF SEDIMENT FROM THE WORK SITE TO PAVED SURFACES, STORM SEWERS, AND WETLANDS IN THE AREA. ANY SEDIMENT TRACKED FROM THE WORK SITE ONTO PAVED SURFACES SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
15. CONTRACTOR SHALL IDENTIFY AND PROVIDE SILTATION PROTECTION FOR ALL CATCH BASINS DOWNGRADIENT OF THE PROJECT LIMIT OF WORK.

SITE PREPARATION AND DEMOLITION

1. ANY DEMOLITION NECESSITATED BY FIELD CONDITIONS OR REQUIRED TO COMPLETE THE PROPOSED CONSTRUCTION NOT COVERED HEREON SHALL BE IDENTIFIED BY THE CONTRACTOR AND REVIEWED AND APPROVED BY ENGINEER PRIOR TO IMPLEMENTATION.
2. CONTRACTOR TO ERECT A MINIMUM 8 FOOT HIGH FENCE AROUND THE PERIMETER OF ALL DEMOLITION AND SITE CONSTRUCTION ACTIVITIES. FENCE TO HAVE LIMITED ACCESS FOR CONSTRUCTION PERSONNEL ONLY. IT SHALL BE THE CONTRACTOR'S OPTION TO RELOCATE/REARRANGE CONSTRUCTION/SAFETY FENCING IN ORDER TO MAINTAIN ACCESS AND CONTINUE DEMOLITION AND CONSTRUCTION OPERATIONS AND ACTIVITIES. FENCE SHALL REMAIN IN PLACE UNTIL REMOVAL IS DIRECTED BY THE CONTRACTING OFFICER.
3. REMOVE AND RESET ALL REGULATORY SIGNAGE PER CITY REQUIREMENTS.
4. CONTRACTOR SHALL SALVAGE ALL LIGHT FIXTURES AND PROVIDE TO CLEVELAND METROPARKS AND CITY OF CLEVELAND. DEMOLISH AND DISPOSE OF ALL POLES, BASES, AND FOUNDATIONS, UNLESS OTHERWISE NOTED
5. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITHIN THE LIMITS OF PROPOSED WORK BY AERATING SOILS AND TOP DRESSING TO MEET FINAL GRADES, UNLESS OTHERWISE REQUIRED BY THE PROJECT ENGINEER OR OWNER.
6. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
7. THE DISPOSAL OF ALL DEMOLISHED MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL MUNICIPAL REQUIREMENTS.
8. EXISTING TREES SHALL BE PRESERVED AND PROTECTED PER THE CITY OF CLEVELAND AND CLEVELAND METROPARKS STANDARDS.
9. CONTRACTOR TO PROTECT TREES FROM DAMAGE DURING CONSTRUCTION. FOR EXCAVATIONS WITHIN THE DRIP LINE OF TREES:
   - 9.1. DO NOT CUT ROOTS OVER 1 INCH IN DIAMETER WITHOUT APPROVAL OF THE ENGINEER.
   - 9.2. PROTECT EXPOSED ROOTS OVER 1 INCH IN DIAMETER WITH DRY SACKING DURING EXCAVATION, REMOVE DRY SACKING BEFORE BACKFILLING, AND COMPACT BACKFILL WITH CARE AROUND THE RETAINED ROOTS.
   - 9.3. PRUNE ROOTS WHICH HAVE TO BE REMOVED USING A SHARP TOOL; MAKE A CLEAN CUT AND LEAVE AS SMALL A WOUND AS POSSIBLE.
10. DO NOT STORE MATERIALS, EQUIPMENT, OR STOCKPILE SOIL WITHIN THE DRIP LINE OF TREES.
11. CONTRACTOR TO NOTIFY ENGINEER PRIOR TO DEMOLITION OF ANY STORM OR SANITARY SEWER PIPE SCHEDULED TO BE DEMOLISHED IF DRY-WEATHER RUNOFF IS ENCOUNTERED IN THE PIPE.

LAYOUT

1. ANY DISCREPANCIES WITH THE DESIGN SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING PRIOR TO COMMENCING WORK.

GRADING AND DRAINAGE

1. PATHWAY LONGITUDINAL SLOPES SHALL NOT EXCEED 5%. PATHWAY CROSS SLOPES SHALL NOT EXCEED 2% IN ANY DIRECTION. ADA RAMP LONGITUDINAL SLOPE SHALL NOT EXCEED 8.3%.
2. ALL PAVED AREAS SHALL BE SLOPED TO DRAIN WITH A MINIMUM SLOPE OF 0.5%
3. ALL PAVED PLAZA SLOPES SHALL NOT EXCEED 2% SLOPE IN ALL DIRECTIONS
4. ALL AREA DRAIN, CATCH BASIN AND TRENCH DRAIN GRATES SHALL BE ADA COMPLIANT ALONG PEDESTRIAN WALKWAYS, EMERGENCY EGRESS ROUTES, AND PEDESTRIAN PLAZAS
5. ALL STORM DRAIN PIPE SHALL BE 12" HDPE UNLESS OTHERWISE NOTED.
6. ALL PERFORATED PIPE SHALL BE 6" HDPE UNLESS OTHERWISE NOTED.

ABBREVIATIONS

SYMBOL	DESCRIPTION
AD	AREA DRAIN
BC	BOTTOM OF CURB
BW	BOTTOM OF WALL
C, CDT	CONDUIT
CB	CATCH BASIN
CL	CENTERLINE
CO	CLEAN OUT
COMM	COMMUNICATIONS
DIA	DIAMETER
DWG	DRAWING
EA	EACH
ELEV., EL	ELEVATION
EQ	EQUAL
EX	EXISTING
GR	GRATE ELEVATION
HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT ELEVATION
LF	LINEAR FOOT
LOW	LIMIT OF WORK
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
N,E	NORTHING, EASTING
NA, N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO, #	NUMBER
NTS	NOT TO SCALE
O.C.	ON CENTER
OS	OUTLET STRUCTURE
PA	PLANTING AREA
PC	POINT OF CURVATURE
PHDPE	PERFORATED HIGH DENSITY POLYETHYLENE
PR	PROPOSED
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RELOCATE
R&S	REMOVE AND SALVAGE
R,L,D	RADIUS, LENGTH, DEGREE
RCP	REINFORCED CONCRETE PIPE
RIM	MANHOLE RIM ELEVATION
TC	TOP OF CURB
TW	TOP OF WALL
TYP	TYPICAL
UC	UTILITY CORIDOR
VIF	VERIFY IN FIELD
W/	WITH

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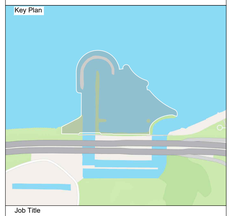
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

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Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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Drawing Title

SYMBOL LEGEND, ABBREVIATIONS, GENERAL NOTES

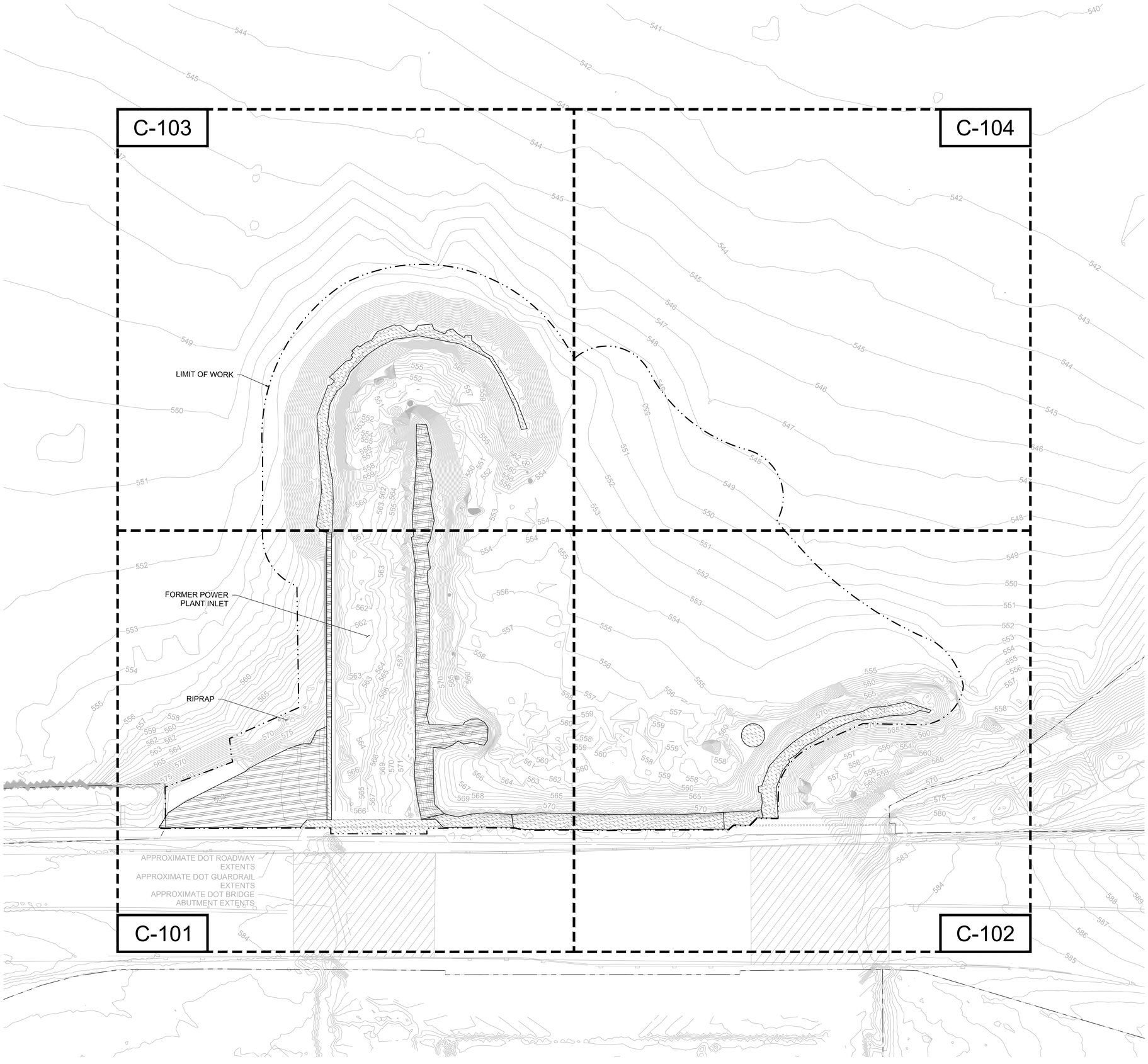
Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: N.T.S

Drawing No

C-001

Arup US, Inc.

CHEERS-ARUP-DR-HL-C-001.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:04 PM



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY

SYMBOLS	DESCRIPTION
	EXISTING CONTOUR
	AREA OF DEMOLITION
	AREA OF PROTECTION

50' 0 50' 100'

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CHEERS-ARUP-DR-HL-C-100.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:08 PM

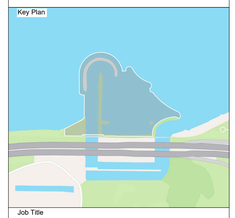
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

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Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

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(216) 241-8004

Drawing Title

OVERALL SITE PREPARATION & DEMOLITION PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: 1" = 50'

Drawing No

C-100

Arup US, Inc.

MATCHLINE: FOR CONTINUATION SEE SHEET C-103



MATCHLINE: FOR CONTINUATION SEE SHEET C-102

LEGEND

LIMIT OF WORK

PROPERTY BOUNDARY

SYMBOLS	DESCRIPTION	DETAIL
5XX	EXISTING CONTOUR	
+	R & S TREE	
	R & D SHEET PILE	
	PROTECT SHEET PILE	
	PROTECT TREE	
	R & S RIPRAP	
	PROTECT RIPRAP	
	PROTECT CONCRETE STRUCTURE	
	R&D CONCRETE STRUCTURE	
	PROTECT NATURAL DEBRIS	
	R & S NATURAL DEBRIS	

NOTES & ABBREVIATIONS

OHW ORDINARY HIGH WATER (573.4 FT - IGLD 1985)
R & S REMOVE AND SALVAGE
R & D REMOVE AND DEMOLISH

1. DEMOLISH RIP-RAP AND SHEET PILES DOWN TO OHW EXCEPT IF OTHERWISE NOTED.
2. SALVAGED TREES AND NATURAL DEBRIS SHALL BE STOCKPILED AT LOCATION DETERMINED BY OWNER.

20' 0 20' 40'

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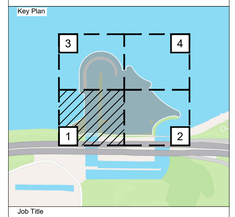
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

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Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

SITE PREPARATION & DEMOLITION PLAN

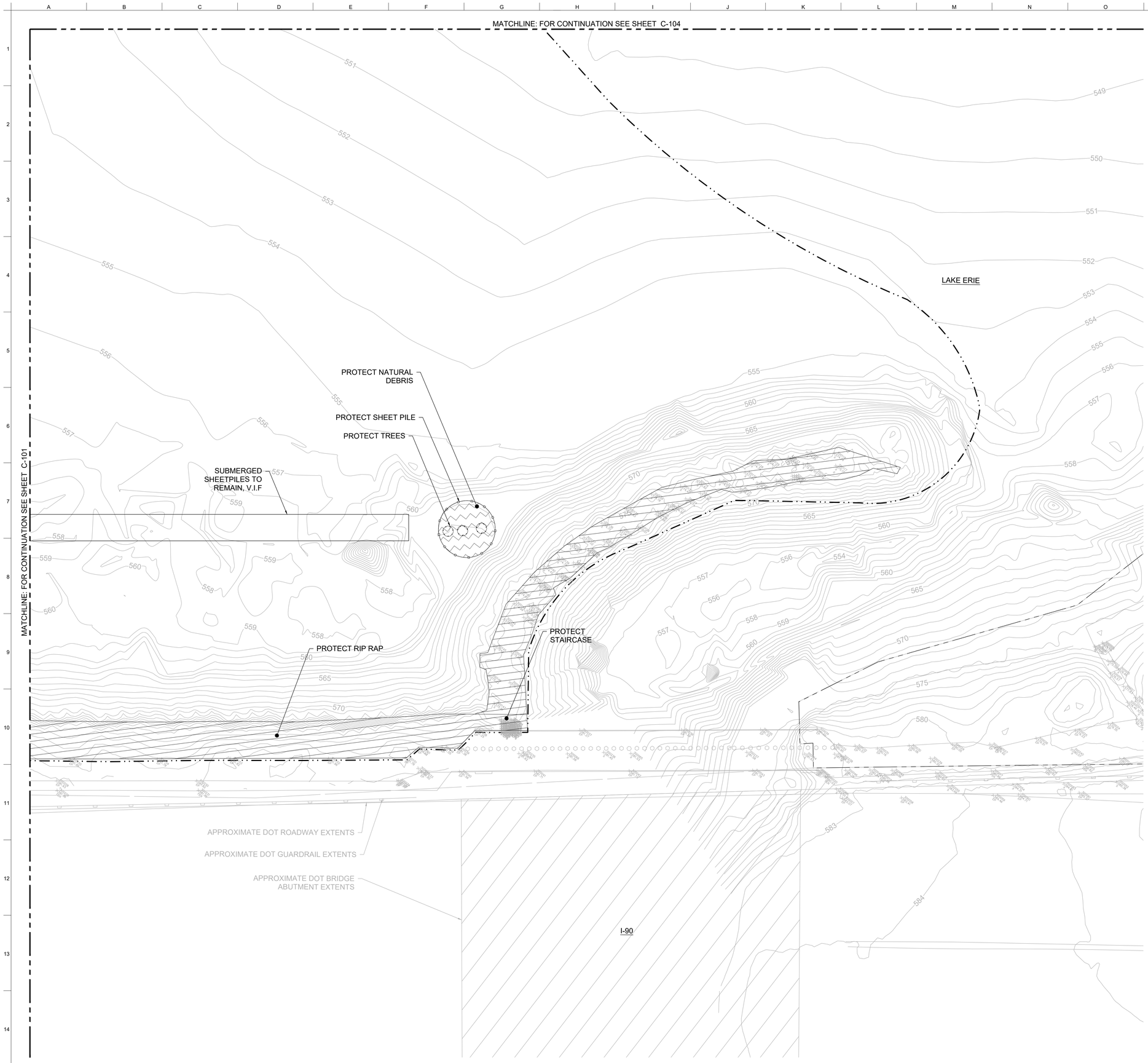
Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: 1" = 20'

Drawing No

C-101

CHEERS-ARUP-DR-HL-C-101.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:06 PM

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY

SYMBOLS	DESCRIPTION	DETAIL
5XX	EXISTING CONTOUR	
+	R & S TREE	
	R & D SHEET PILE	
	PROTECT SHEET PILE	
	PROTECT TREE	
	R & S RIPRAP	
	PROTECT RIPRAP	
	PROTECT CONCRETE STRUCTURE	
	R&D CONCRETE STRUCTURE	
	PROTECT NATURAL DEBRIS	
	R & S NATURAL DEBRIS	

NOTES & ABBREVIATIONS

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R & S REMOVE AND SALVAGE
R & D REMOVE AND DEMOLISH

1. DEMOLISH RIP-RAP AND SHEET PILES DOWN TO OHW EXCEPT IF OTHERWISE NOTED.
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20' 0 20' 40'

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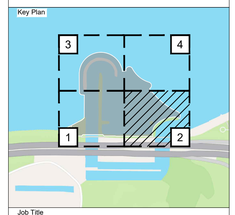
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Drawing Title

SITE PREPARATION & DEMOLITION PLAN

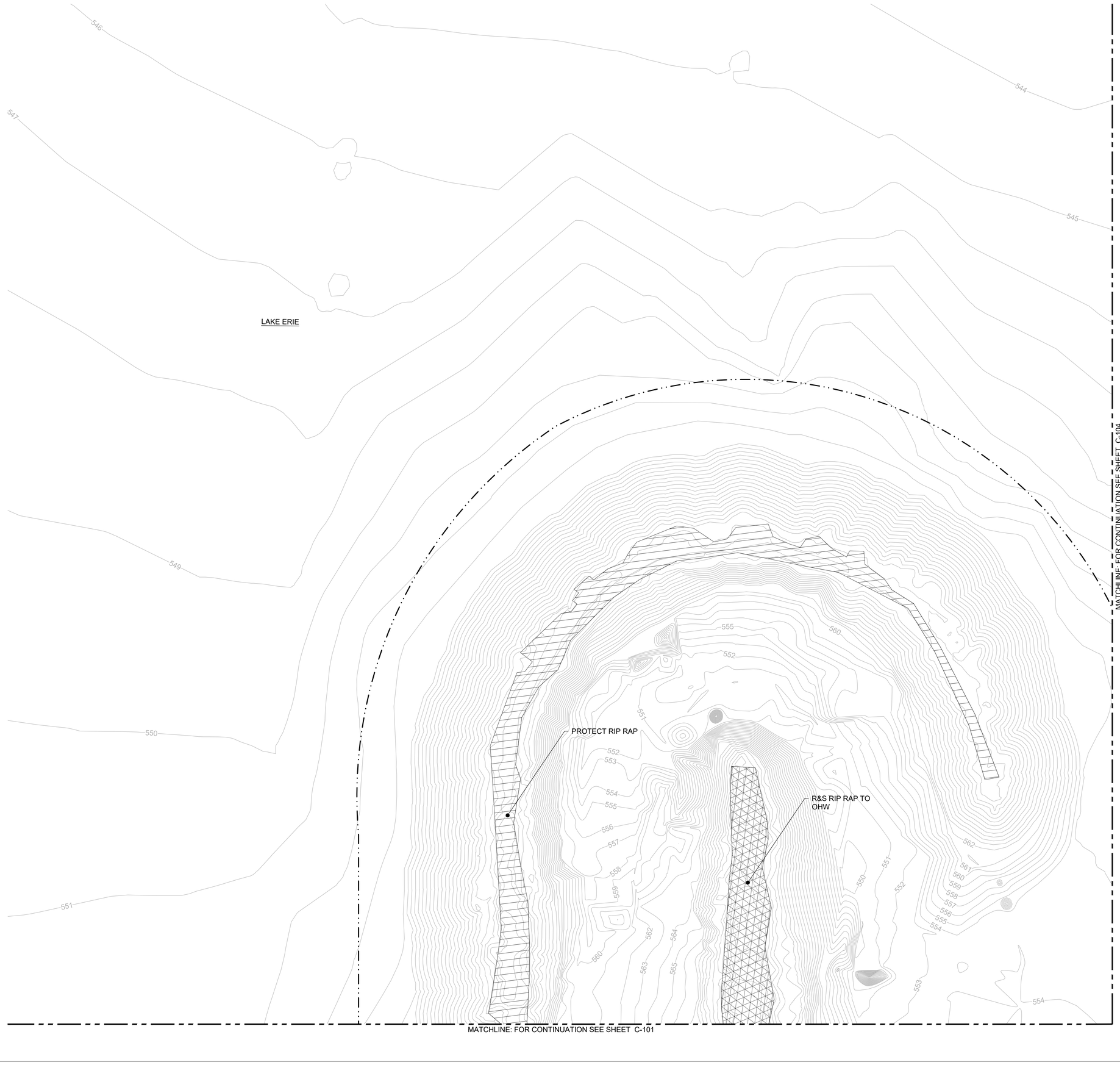
Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: 1" = 20'

Drawing No

C-102

CHEERS-ARUP-DR-HL-C-102.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:05 PM

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY

SYMBOLS	DESCRIPTION	DETAIL
5XX	EXISTING CONTOUR	
+	R & S TREE	
	R & D SHEET PILE	
	PROTECT SHEET PILE	
	PROTECT TREE	
	R & S RIPRAP	
	PROTECT RIPRAP	
	PROTECT CONCRETE STRUCTURE	
	R&D CONCRETE STRUCTURE	
	PROTECT NATURAL DEBRIS	
	R & S NATURAL DEBRIS	

NOTES & ABBREVIATIONS

OHW ORDINARY HIGH WATER (573.4 FT - IGLD 1985)
R & S REMOVE AND SALVAGE
R & D REMOVE AND DEMOLISH

1. DEMOLISH RIP-RAP AND SHEET PILES DOWN TO OHW EXCEPT IF OTHERWISE NOTED.
2. SALVAGED TREES AND NATURAL DEBRIS SHALL BE STOCKPILED AT LOCATION DETERMINED BY OWNER.

20' 0 20' 40'

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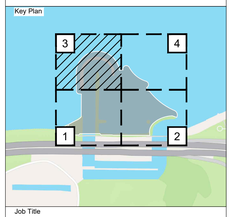
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
Cleveland Metroparks
4101 Fulton Parkway, Cleveland Oh 44144
(216) 635-3200
The Port Of Cleveland
1100 W. 9th Street - Suite 300, Cleveland, Oh 44113
(216) 241-8004

Drawing Title

SITE PREPARATION & DEMOLITION PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: 1" = 20'

Drawing No

C-103

CHEERS-ARUP-DR-HL-C-103.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:04 PM
Arup US, Inc.

MATCHLINE: FOR CONTINUATION SEE SHEET C-103

541
542
544
545
546
547
548
549
550
551
552
553
559

LAKE ERIE

SHEET INTENTIONALLY LEFT BLANK. NO SITE PREPARATION OR DEMOLITION SCOPE ON THIS SHEET.

MATCHLINE: FOR CONTINUATION SEE SHEET C-102

20' 0 20' 40'

LEGEND

LIMIT OF WORK

PROPERTY BOUNDARY

SYMBOLS	DESCRIPTION	DETAIL
5XX	EXISTING CONTOUR	
+	R & S TREE	
	R & D SHEET PILE	
	PROTECT SHEET PILE	
	PROTECT TREE	
	R & S RIPRAP	
	PROTECT RIPRAP	
	PROTECT CONCRETE STRUCTURE	
	R&D CONCRETE STRUCTURE	
	PROTECT NATURAL DEBRIS	
	R & S NATURAL DEBRIS	

NOTES & ABBREVIATIONS

OHW ORDINARY HIGH WATER (573.4 FT - IGLD 1985)
R & S REMOVE AND SALVAGE
R & D REMOVE AND DEMOLISH

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2. SALVAGED TREES AND NATURAL DEBRIS SHALL BE STOCKPILED AT LOCATION DETERMINED BY OWNER.

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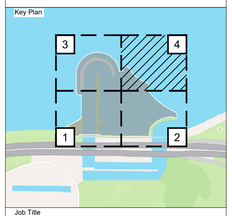
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

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Drawing Title

SITE PREPARATION & DEMOLITION PLAN

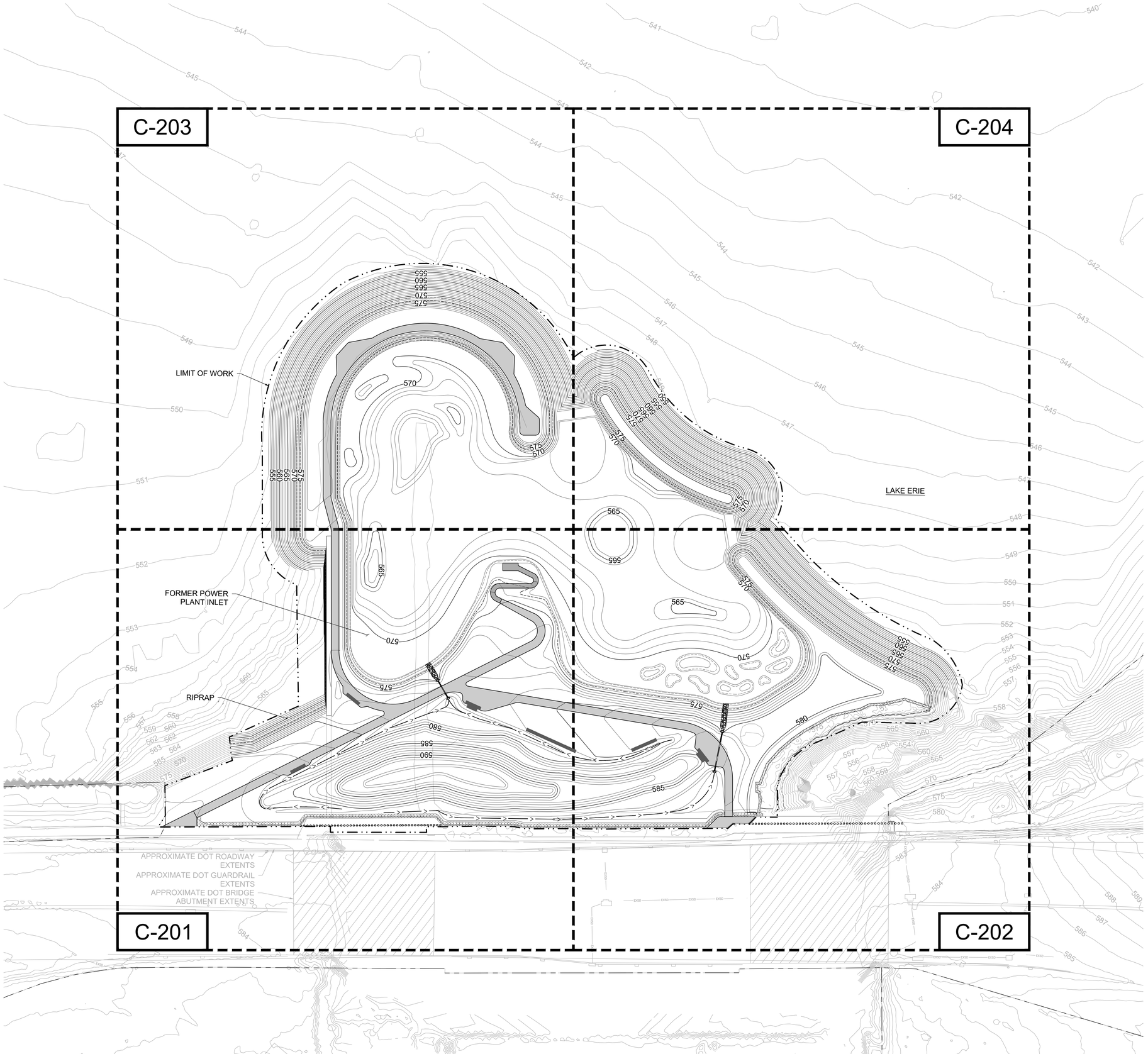
Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: 1" = 20'

Drawing No

C-104

CHEERS-ARUP-DR-HL-C-104.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:08 PM

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION
	EXISTING CONTOUR
570	MAJOR CONTOUR (FT, IGLD 1985)
	MINOR CONTOUR (FT, IGLD 1985)
>	PROPOSED SWALE
	FLARED END SECTION (4/C-701)
	RIPRAP (2/C-701)
	HDPE DRAIN PIPE
	SANDSTONE BLOCKS (3/L-600)
	CRUSHED STONE PATH (1/L-600)
	ARMOR STONE

50' 0 50' 100'

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CHEERS-ARUP-DR-HL-C-200.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 5:18 PM

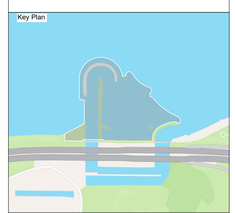
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

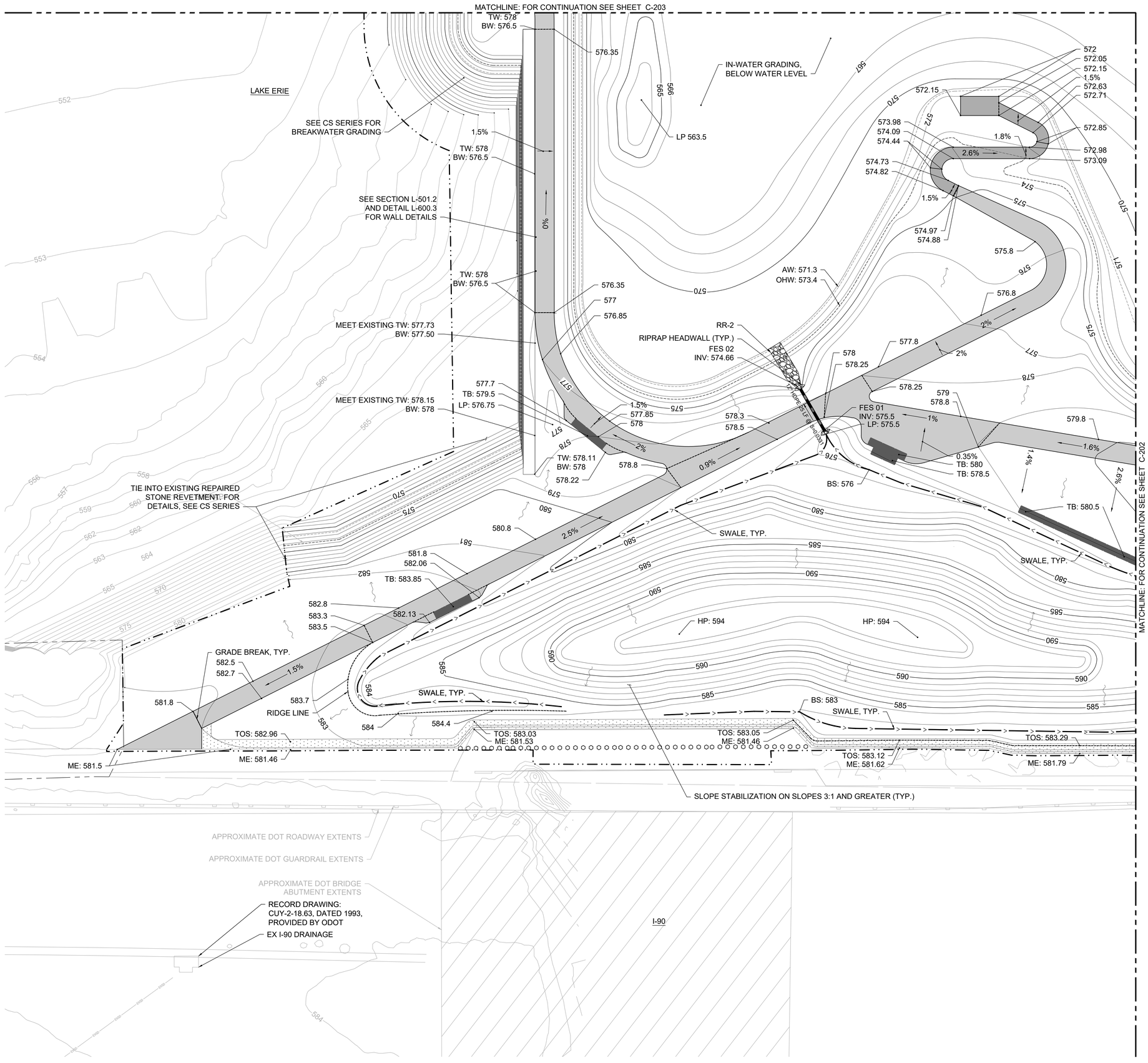
OVERALL GRADING AND DRAINAGE PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: 1" = 50'

Drawing No

C-200

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION	DETAIL
5XX	EXISTING CONTOUR	
5XX	MAJOR CONTOUR	
	MINOR CONTOUR	
5XX	SPOT ELEVATION	
	DIRECTION OF SURFACE FLOW	
	FLARED END SECTION	(4/C-701)
	RIPRAP	(2/C-701)
	HDPE DRAIN PIPE	(1/C-701)
	GRADE BREAK	
	PROPOSED SWALE	(4/C-701)
	SANDSTONE BLOCKS	(1/L-600)
	CRUSHED STONE PATH	(3/L-600)
	ARMOR STONE	

NOTES & ABBREVIATIONS

AW	AVERAGE WATER
BOS	BOTTOM OF STONE
BS	BOTTOM SWALE
BW	BOTTOM OF WALL
FES	FLARED END SECTION
HP	HIGH POINT
LP	LOW POINT
ME	MEET EXISTING
OHW	ORDINARY HIGH WATER
TB	TOP OF SANDSTONE BLOCK
TOS	TOP OF STONE
TW	TOP OF WALL

1. ALL CONTOURS AND SPOT ELEVATIONS ARE SHOWN IN IGLD 1985 DATUM (FEET).
2. SLOPE STABILIZATION SUCH AS BIODEGRADABLE GEOTEXTILE IS REQUIRED FOR SLOPES 3:1 OR GREATER TO PREVENT EROSION BEFORE PLANTING IS ESTABLISHED.
3. ALL CRUSHED STONE PATHS TO HAVE MAXIMUM CROSS SLOPE OF 2%.

STRUCTURE TABLE

NAME	DETAILS	NORTHING, EASTING
FLARED END SECTION 01	RIM=577.02 12" OUT 575.50	682497.9980, 2202855.7074
FLARED END SECTION 02	RIM=576.18 12" IN 574.66	682507.6302, 2202832.2659
FLARED END SECTION 03	RIM=581.75 12" OUT 580.50	682633.2131, 2203187.4498
FLARED END SECTION 04	RIM=580.91 12" IN 579.66	682680.3409, 2203164.0339

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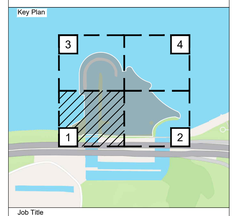
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

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Drawing Title

GRADING AND DRAINAGE PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: 1" = 20'

Drawing No

C-201

CHEERS-ARUP-DR-HL-C-201.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 5:18 PM

Arup US, Inc.

MATCHLINE: FOR CONTINUATION SEE SHEET C-204

MATCHLINE: FOR CONTINUATION SEE SHEET C-201

LP

HP: 568
SEE CS SERIES FOR BREAKWATER WEIR DETAILS

IN-WATER GRADING, BELOW WATER LEVEL

SEE CS SERIES FOR BREAKWATER GRADING

HP: 578

LAKE ERIE

HP: 572.5

HP

AW: 571.3
OHW: 573.4

TOS: 578
BOS: 575

SEE CS SERIES FOR BREAKWATER TRANSITION

STONE TO REMAIN

3' STONE WALL. SEE C-202 FOR SECTION

SLOPE STABILIZATION ON SLOPES 3:1 AND GREATER (TYP.)

TOP OF EXISITING SHEETPILE VARIES BETWEEN ELEV. 577' AND 580' (V.I.F). OWNER TO REVIEW AND CONFIRM FINAL GRADING REQUIREMENTS. CONTRACTOR SHALL PROVIDE 3:1 SLOPES TO TIE INTO THE APPROVED PROPOSED GRADES.

RIPRAP HEADWALL (TYP.)
TOS: 578
BOS: 575
GRADE BREAK, TYP.
TIE INTO EXISTING STONE REVETMENT
TIE INTO EXISTING CONCRETE STAIR
TOS: 582.8
ME: 581.25

RR-1
FES 04
INV: 579.66

580.8
581.8
582.3
582.5
582.97
583.05
583.10
583.36
583.47
581.65
581.74

1.6%
1.9%
0.5%
1.9%

BS: 580.3
TB: 580.5
TB: 582.5
SWALE, TYP.

TB: 585.04
TB: 586.54

12" HDPE 53 LF @ -0.0160

0.5%
582.97
583.04

1.5%
FES 03
INV: 580.5
LP: 580.5

SWALE, TYP.

TOS: 583.30
TOS: 583.32
TOS: 583.46
581.79

ME: 581.38
ME: 581.52

TOS: 583.39
ME: 581.82
ME: 581.82
RIDGE LINE
ME: 581.82
ME: 581.82
ME: 581.78

APPROXIMATE DOT ROADWAY EXTENTS

EX I-90 DRAINAGE

APPROXIMATE DOT GUARDRAIL EXTENTS

APPROXIMATE DOT BRIDGE ABUTMENT EXTENTS

RECORD DRAWING:
CUY-2-18.63, DATED 1993,
PROVIDED BY ODOT

EX I-90 DRAINAGE

I-90

LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION	DETAIL
5XX	EXISTING CONTOUR	
5XX	MAJOR CONTOUR	
	MINOR CONTOUR	
5XX	SPOT ELEVATION	
	DIRECTION OF SURFACE FLOW	
	FLARED END SECTION (4/C-701)	
	RIPRAP (2/C-701)	
	HDPE DRAIN PIPE (1/C-701)	
	GRADE BREAK	
	PROPOSED SWALE (4/C-701)	
	SANDSTONE BLOCKS (1/L-600)	
	CRUSHED STONE PATH (3/L-600)	
	ARMOR STONE	

NOTES & ABBREVIATIONS

AW	AVERAGE WATER
BOS	BOTTOM OF STONE
BS	BOTTOM SWALE
BW	BOTTOM OF WALL
FES	FLARED END SECTION
HP	HIGH POINT
LP	LOW POINT
ME	MEET EXISTING
OHW	ORDINARY HIGH WATER
TB	TOP OF SANDSTONE BLOCK
TOS	TOP OF STONE
TW	TOP OF WALL

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3. ALL CRUSHED STONE PATHS TO HAVE MAXIMUM CROSS SLOPE OF 2%.

STRUCTURE TABLE

NAME	DETAILS	NORTHING, EASTING
FLARED END SECTION 01	RIM=577.02 12" OUT 575.50	682497.9980, 2202855.7074
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FLARED END SECTION 03	RIM=581.75 12" OUT 580.50	682633.2131, 2203187.4498
FLARED END SECTION 04	RIM=580.91 12" IN 579.66	682680.3409, 2203164.0339

20' 0 20' 40'

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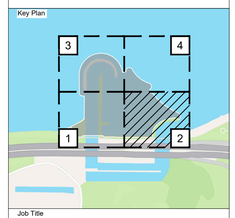
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

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Drawing Title

GRADING AND DRAINAGE PLAN

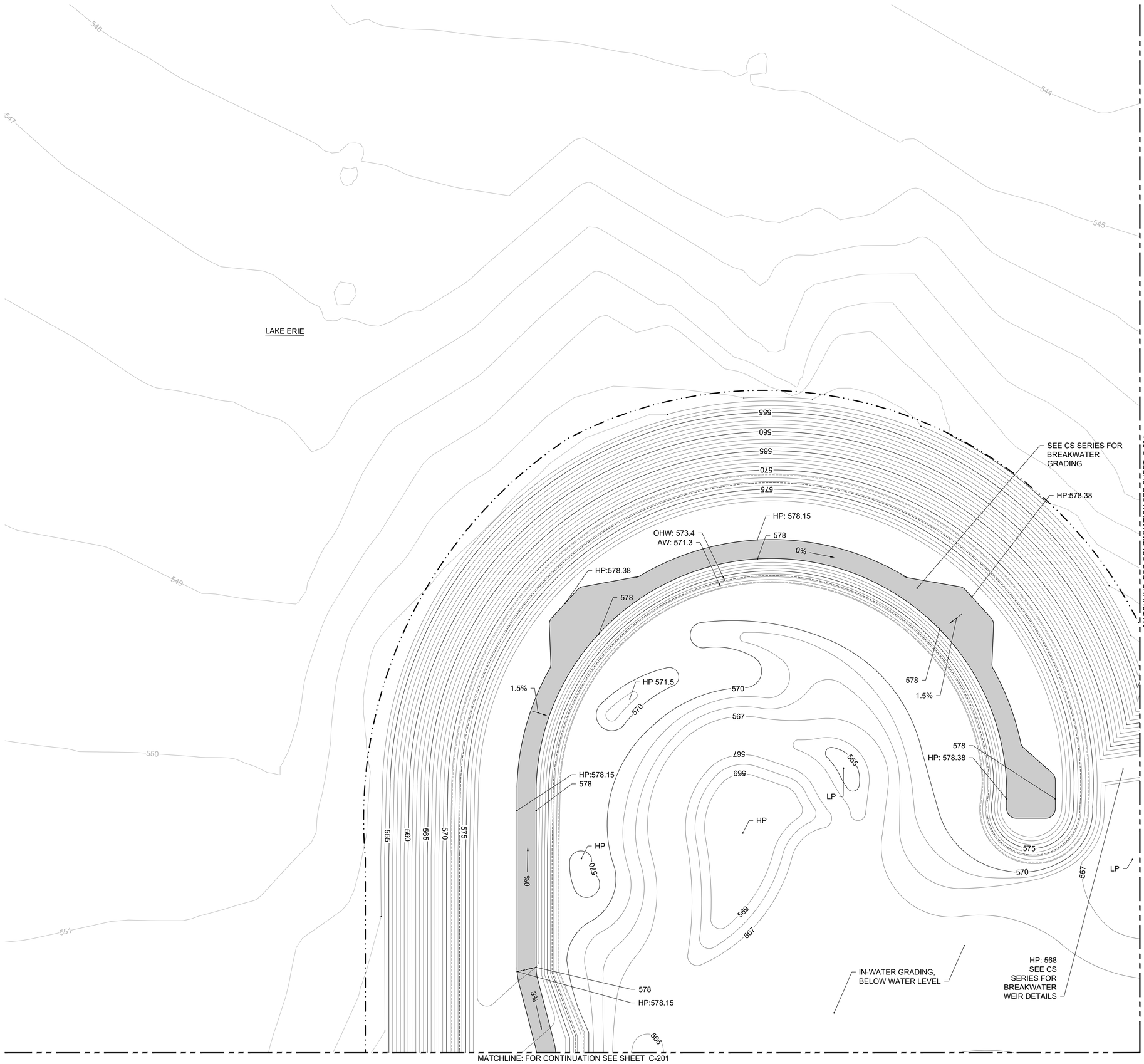
Job No: 292054
Status: 90% DESIGN
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Checked By: KS
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Date: 1/22/2026
Scale: 1" = 20'

Drawing No

C-202

CHEERS-ARUP-DR-HL-C-202.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 5:21 PM

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION	DETAIL
5XX	EXISTING CONTOUR	
5XX	MAJOR CONTOUR	
	MINOR CONTOUR	
5XX	SPOT ELEVATION	
	DIRECTION OF SURFACE FLOW	
	FLARED END SECTION	(4/C-701)
	RIPRAP	(2/C-701)
	HDPE DRAIN PIPE	(1/C-701)
	GRADE BREAK	
	PROPOSED SWALE	(4/C-701)
	SANDSTONE BLOCKS	(1/L-600)
	CRUSHED STONE PATH	(3/L-600)
	ARMOR STONE	

NOTES & ABBREVIATIONS

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FES	FLARED END SECTION
HP	HIGH POINT
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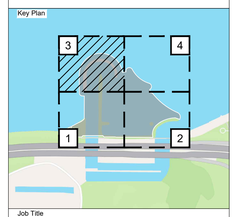
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

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Drawing Title

GRADING AND DRAINAGE PLAN

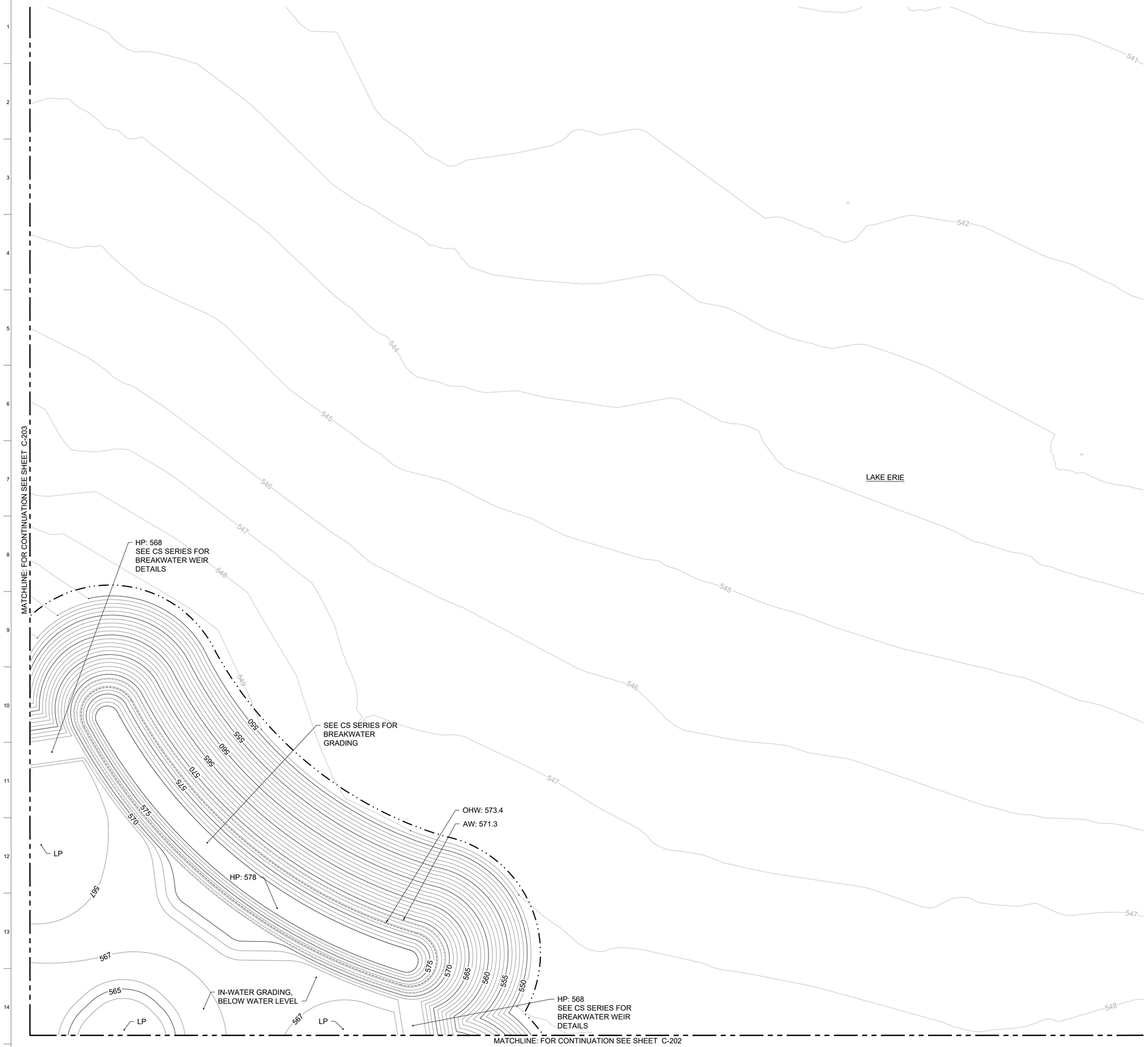
Job No: 292054
Status: 90% DESIGN
Drawn By: EB, LB
Checked By: KS
Approved By: VL
Date: 1/22/2026
Scale: 1" = 20'

Drawing No

C-203

20' 0 20' 40'

CHEERS-ARUP-DR-HL-C-203.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:08 PM



LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION	DETAIL
5XX	EXISTING CONTOUR	
5XX	MAJOR CONTOUR	
	MINOR CONTOUR	
5XX	SPOT ELEVATION	
	DIRECTION OF SURFACE FLOW	
	FLARED END SECTION	(4/C-701)
	RIPRAP	(2/C-701)
	HDPE DRAIN PIPE	(1/C-701)
	GRADE BREAK	
	PROPOSED SWALE	(4/C-701)
	SANDSTONE BLOCKS	(1/L-600)
	CRUSHED STONE PATH	(3/L-600)
	ARMOR STONE	

NOTES & ABBREVIATIONS

AW	AVERAGE WATER
BOS	BOTTOM OF STONE
BS	BOTTOM SWALE
BW	BOTTOM OF WALL
FES	FLARED END SECTION
HP	HIGH POINT
LP	LOW POINT
ME	MEET EXISTING
OHW	ORDINARY HIGH WATER
TB	TOP OF SANDSTONE BLOCK
TOS	TOP OF STONE
TW	TOP OF WALL

1. ALL CONTOURS AND SPOT ELEVATIONS ARE SHOWN IN IGLD 1985 DATUM (FEET).
2. SLOPE STABILIZATION SUCH AS BIODEGRADABLE GEOTEXTILE IS REQUIRED FOR SLOPES 3:1 OR GREATER TO PREVENT EROSION BEFORE PLANTING IS ESTABLISHED.
3. ALL CRUSHED STONE PATHS TO HAVE MAXIMUM CROSS SLOPE OF 2%.

STRUCTURE TABLE

NAME	DETAILS	NORTHING, EASTING
FLARED END SECTION 01	RIM=577.02 12" OUT 575.50	682497.9980, 2202855.7074
FLARED END SECTION 02	RIM=576.18 12" IN 574.66	682507.6302, 2202832.2659
FLARED END SECTION 03	RIM=581.75 12" OUT 580.50	682633.2131, 2203187.4498
FLARED END SECTION 04	RIM=580.91 12" IN 579.66	682680.3409, 2203164.0339

20' 0 20' 40'

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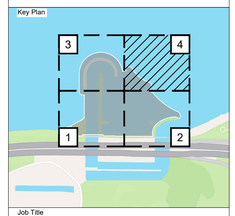
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
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Drawing Title

GRADING AND DRAINAGE PLAN

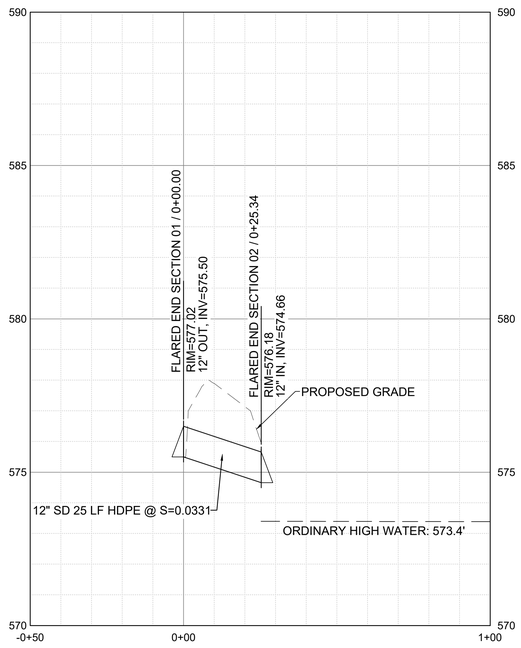
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Checked By:	KS		
Approved By:	VL		
Date:	1/22/2026		

Drawing No

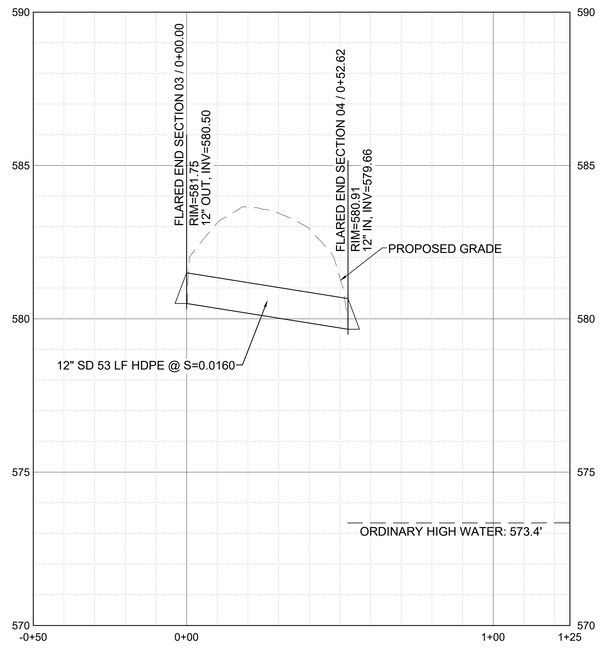
C-204

CHEERS-ARUP-DR-HL-C-204.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:07 PM

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1 STORM PIPE ALIGNMENT 1 (FES 01)
SCALE: 1" = 20' - 0"



2 STORM PIPE ALIGNMENT 2 (FES 03)
SCALE: 1" = 20' - 0"

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CHEERS-ARUP-DR-HL-C-601.DWG PLOT BY: lena.bakalian PLOT TIME: 1/22/2026 3:06 PM

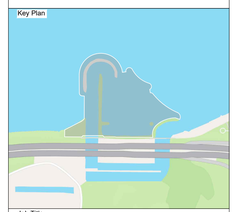
0	90% DESIGN	1/22/2026
Issue	Description	Date

Drawing Issue and Revision History

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Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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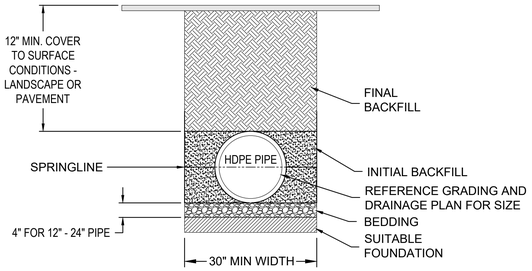
STORMWATER PROFILES

Job No:	292054	Scale:	AS NOTED
Status:	90% DESIGN		
Drawn By:	EB, LB		
Checked By:	KS		
Approved By:	VL		
Date:	1/22/2026		

Drawing No

C-601

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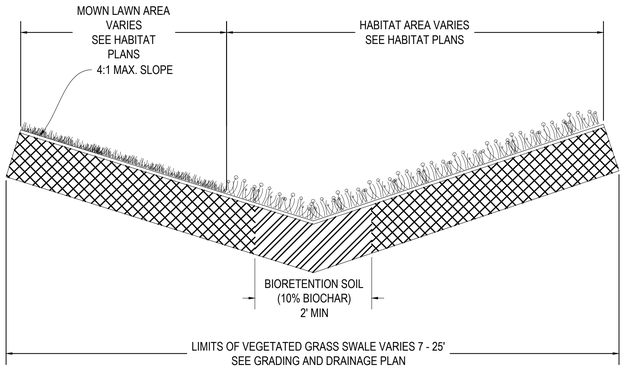


NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING TO THE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR TRAFFIC APPLICATIONS WITH LESS THAN FOUR FEET OF COVER, EMBEDMENT OF THE PIPE SHALL BE USING ONLY A CLASS I OR CLASS II BACKFILL

1 TYPICAL TRENCH FOR HDPE PIPE

N.T.S.

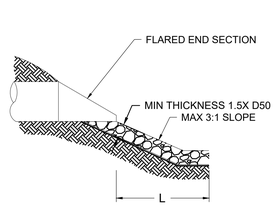


NOTES:

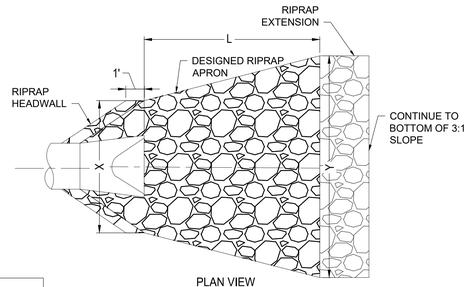
1. LONGITUDINAL SLOPES BETWEEN 0.5% AND 5%. FOR SLOPES >3% CHECK DAMS 12" HIGH MADE OF NATURAL DEBRIS SHALL BE PLACED EVERY 50-FT.

3 VEGETATED GRASS SWALE

N.T.S.



PROFILE VIEW



PLAN VIEW

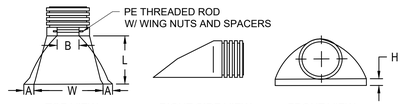
DESIGNED RIPRAP APRON					
RR ID	L (FT)	X (FT)	Y (FT)	D50 (IN)	T (IN)
RR-1	6	3	7	6.0	9.0
RR-2	8	3	9	6.0	9.0

NOTES:

1. ALL RIPRAP HEADWALLS SHALL USE SAME D50 ROCK SIZING AS INDICATED FOR RIPRAP APRON.
2. RIPRAP EXTENSION INCLUDED TO REDUCE SCOUR ON SLOPE. THE SAME THICKNESS AND APRON BOTTOM WIDTH SHALL BE MAINTAINED TO BOTTOM OF 3:1 SLOPE.

2 RIPRAP

N.T.S.



TOP VIEW RIGHT SIDE VIEW FRONT VIEW

PART #	PIPE SIZE	A	B(MAX)	H	L	W
1215NP	12 (300 mm)	6.5 in (165 mm)	10.0 in (254 mm)	6.5 in (165 mm)	25.0 in (635 mm)	29.0 in (737 mm)

4 FLARED END SECTION

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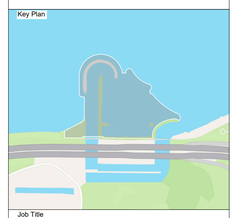
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

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Key Plan



Job Title

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STORMWATER DETAILS

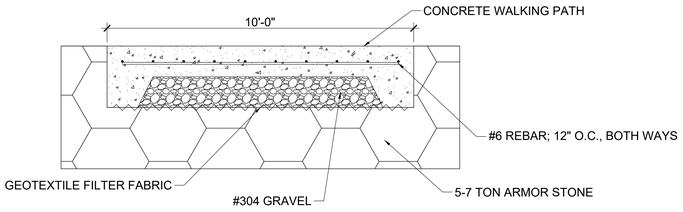
Job No: 292054
Status: 90% DESIGN
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Date: 1/22/2026
Scale: AS NOTED

Drawing No

C-701

CHEERS-ARUP-DR-HL-C-701.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:05 PM

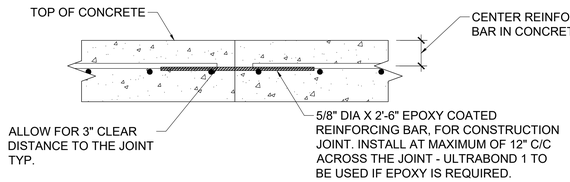
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01 – CAST-IN-PLACE CONCRETE PAVING AT BREAKWATER

SCALE: 1" = 2'

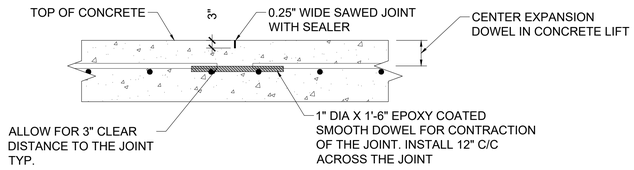
JOINT SPACING AS SHOWN ON LANDSCAPE SHEETS



02 – CONSTRUCTION JOINT

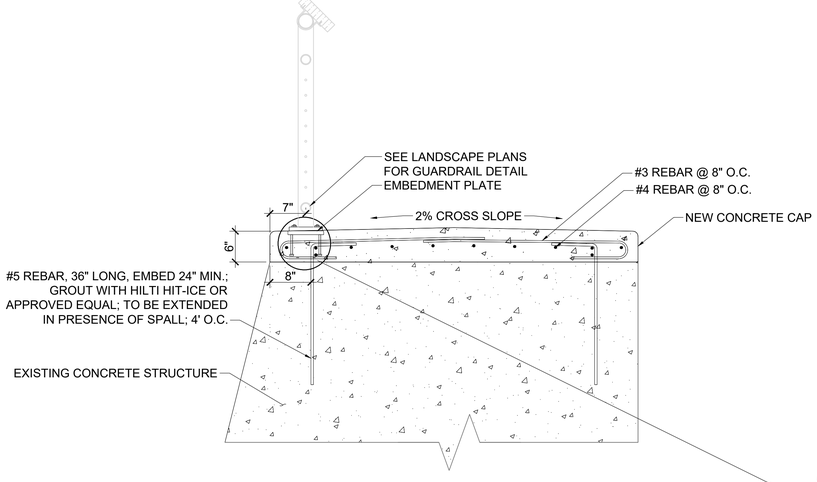
SCALE: 1" = 1'

JOINT SPACING AS SHOWN ON LANDSCAPE SHEETS



03 – CONTROL JOINT

SCALE: 1" = 1'

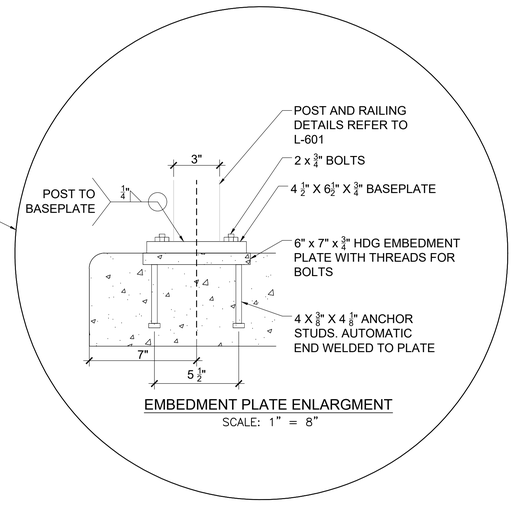


STRUCTURAL NOTES

1. CAST IN PLACE CONCRETE SHALL BE CLASS A(AE) WITH A MINIMUM COMPRESSIVE STRENGTH OF 4KSI
2. CONCRETE COVER 2"
3. CONCRETE CORNERS SHALL HAVE A 1" CHAMFER
4. ALL REINFORCEMENT SHALL BE EPOXY-COATED DEFORMED BARS CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60. EPOXY COAT SHALL CONFORM TO ASTM A775.
5. BOLTS SHALL BE SLIP CRITICAL AND CONFORM TO ASTM F3125 GRADE A325, HDG.
6. WHERE EMBEDMENT PLATES REQUIRE REPLACEMENT, CONTRACTOR TO PROVIDE FOR APPROVAL ALTERNATIVE FASTENING METHOD PREVENTING WATER AND ICE FROM PENETRATING IN THE CONCRETE SLAB.

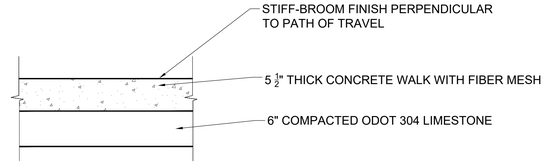
07 – CAST-IN-PLACE CONCRETE CAP AT EXISTING CONCRETE WALL

SCALE: 1" = 1'



EMBEDMENT PLATE ENLARGMENT

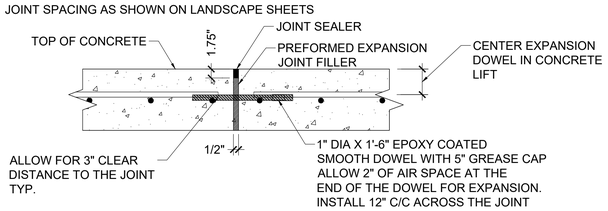
SCALE: 1" = 8"



04 – CAST-IN-PLACE CONCRETE PAVING

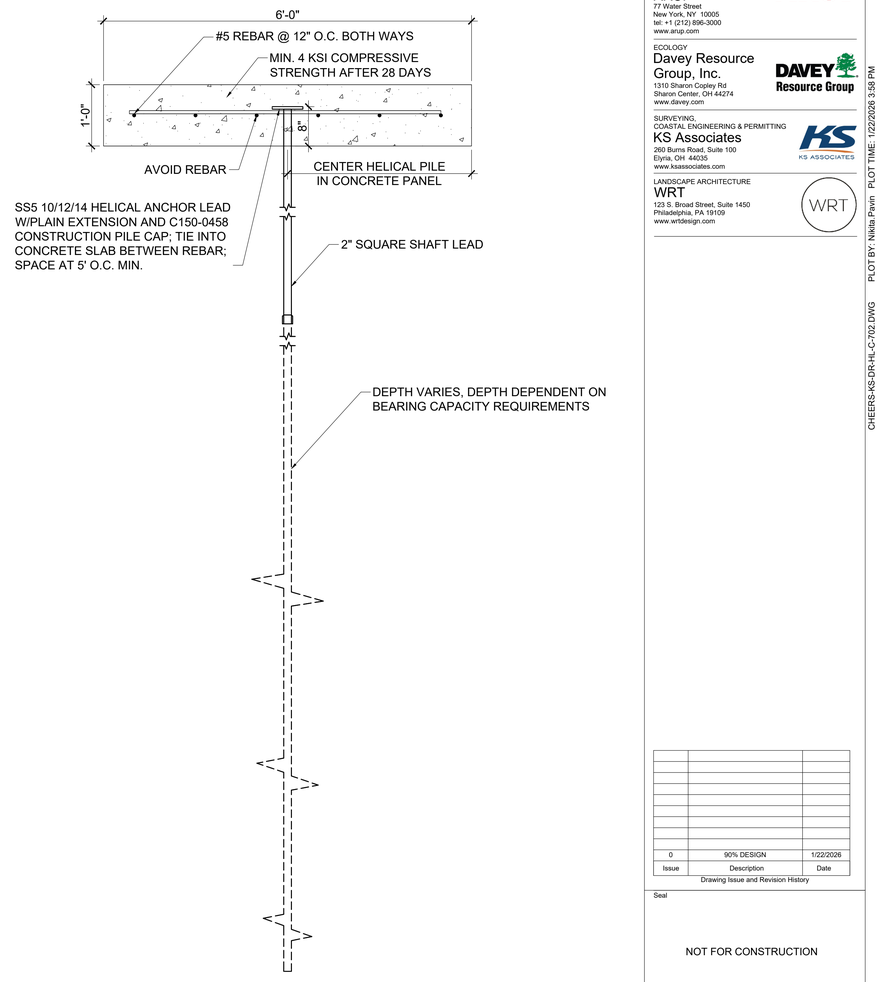
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JOINT SPACING AS SHOWN ON LANDSCAPE SHEETS



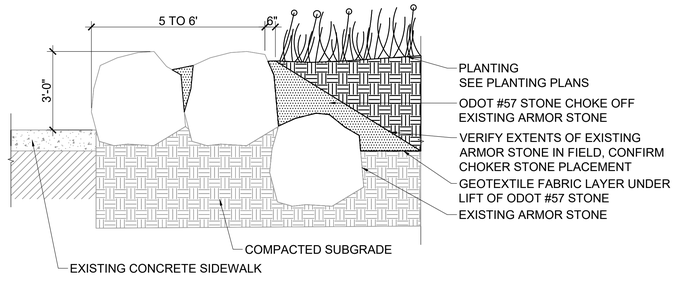
05 – EXPANSION JOINT

SCALE: 1" = 1'



06 – CAST-IN-PLACE CONCRETE PAVING AT DREDGE MATERIAL

SCALE: 1" = 1'



08 – CHOKER STONE AT EXISTING ARMOR STONE

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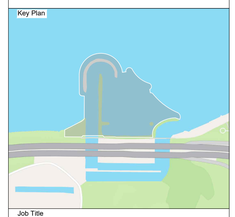
Issue	Description	Date
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Drawing Issue and Revision History

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Key Plan



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Drawing Title

CIVIL DETAILS

Job No:	292054
Status:	90% DESIGN
Drawn By:	MC
Checked By:	MC
Approved By:	KS
Date:	1/22/2026
Scale:	AS NOTED

Drawing No

C-702

CHEERS-KS-DR-HL-C-702.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:58 PM

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PROJECT SYMBOLS

FOR ADDITIONAL SYMBOLS SEE INDIVIDUAL SHEETS

1 / X-000	SECTION
1 / X-000	DETAIL
℄	CENTERLINE
Level +/- 0'-0"	ELEVATION KEY
0.00	ELEVATION SPOT KEY

	DIMENSION LINE
N.I.C.	NOT IN CONTRACT
C.I.P.	CAST IN PLACE
V.I.F.	VERIFY IN FIELD

ABBREVIATIONS

ABV	ABOVE
ALUM	ALUMINUM
ACOUS	ACOUSTICAL
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
APPLIC	APPLICABLE
B.L.	BORROWED LIGHT
BL'K	BLOCK
BRG	BEARING
BLKG	BLOCKING
BLDG	BUILDING
C.I.P.	CAST-IN-PLACE
C.C.	CENTER TO CENTER
CONC	CONCRETE
CONT	CONTINUOUS
COL	COLUMN
CMU	CONCRETE MASONRY UNIT
C.J.	CONTROL JOINT
CLG	CEILING
COMP	COMPOSITION
CG	CORNER GUARD
CU	CONDENSER UNIT
DTL	DETAIL
DN	DOWN
DIM	DIMENSION
DS	DOWNSPOUT
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EX.	EXISTING
E.J.	EXPANSION JOINT
EWC	ELECTRIC WATER COOLER
EA	EACH
EQ	EQUAL
ELEC	ELECTRICAL
ELEV	ELEVATOR
EF	EXHAUST FAN
ETR	EXISTING TO REMAIN

FT	FOOT
F.F.	FINISH FLOOR
F.SLAB	FINISH SLAB
F.R.	FIRE RESISTIVE
FE	FIRE EXTINGUISHER
FEC	FIRE EXT IN CAB
F.O.S.	FACE OF STUD
F.S.W.	FIRE SEPARATION WALL
GYP.BD.	GYPSUM BOARD
GL	GLASS
GA	GAGE OR GAUGE
GWB	GYPSUM WALL BOARD
H.M.	HOLLOW METAL
HR	HOUR
INSUL	INSULATION
INT	INTERIOR
J.B.	JOIST BEARING
JAN	JANITOR
MAX	MAXIMUM
MECH	MECHANICAL
MTL	METAL
MT(D)	MOUNT(ED)
N.I.C.	NOT IN CONTRACT
O.C.	ON CENTER
OPP	OPPOSITE
OPNG	OPENING
O.A.DUCT	OUTSIDE AIR DUCT
P.C	PRECAST
P.I.P.	POURED IN PLACE
PLLAM	PLASTIC LAMINATE
PNT	PAINT
PTD	PAINTED
P.C.	POINT OF CURVATURE
P.C.C.	POINT OF COMPOUND CURVATURE
P.O.B.	POINT OF BEGINNING
P.O.E.	POINT OF END
P.R.C.	POINT OF REVERSE CURVATURE
P.T.	POINT OF TANGENCY

R	RADIUS
RTN	RETURN
REINF	REINFORCEMENT
REF	REFER
REV	REVERSE
RES	RESILIENT
RWC	RAIN WATER CONDUCTOR
S.C.	SOLID CORE
SIM.	SIMILAR
STOR	STORAGE
STL	STEEL
SCHED	SCHEDULE
STRUCT	STRUCTURAL
ST	STAINLESS
STD	STANDARD
SAN	SANITARY
S.S.	SANITARY SEWER
SB	SPLASH BLOCK
T.B.D	TO BE DETERMINED
T.B.S.	TO BE SELECTED
T.O.M.	TOP OF MASONRY
TYP.	TYPICAL
TELE	TELEPHONE
TEMP	TEMPERED
U.L.	UNDERWRITER'S LAB
U/S	UNDERSIDE
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
V	VENT
VF	VENTILATION FAN
W/	WITH
W/O	WITHOUT
WD	WOOD
WDW	WINDOW

PROJECT MANAGEMENT
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PLOT BY: ncohen PLOT TIME: 1/22/2026 3:19 PM
CHEERS-WRT-DR-HL-L-001.DWG

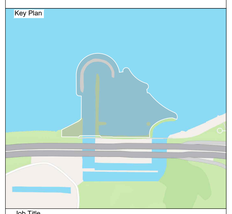
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland | Ohio Department of Natural Resources | Ohio Department of Transportation | The Port of Cleveland | Cleveland Metroparks | Black Environmental Leaders Association

KEY CLIENT CONTACT:
Cleveland Metroparks
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1100 W. 9th Street - Suite 300, Cleveland, Oh 44113
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Drawing Title

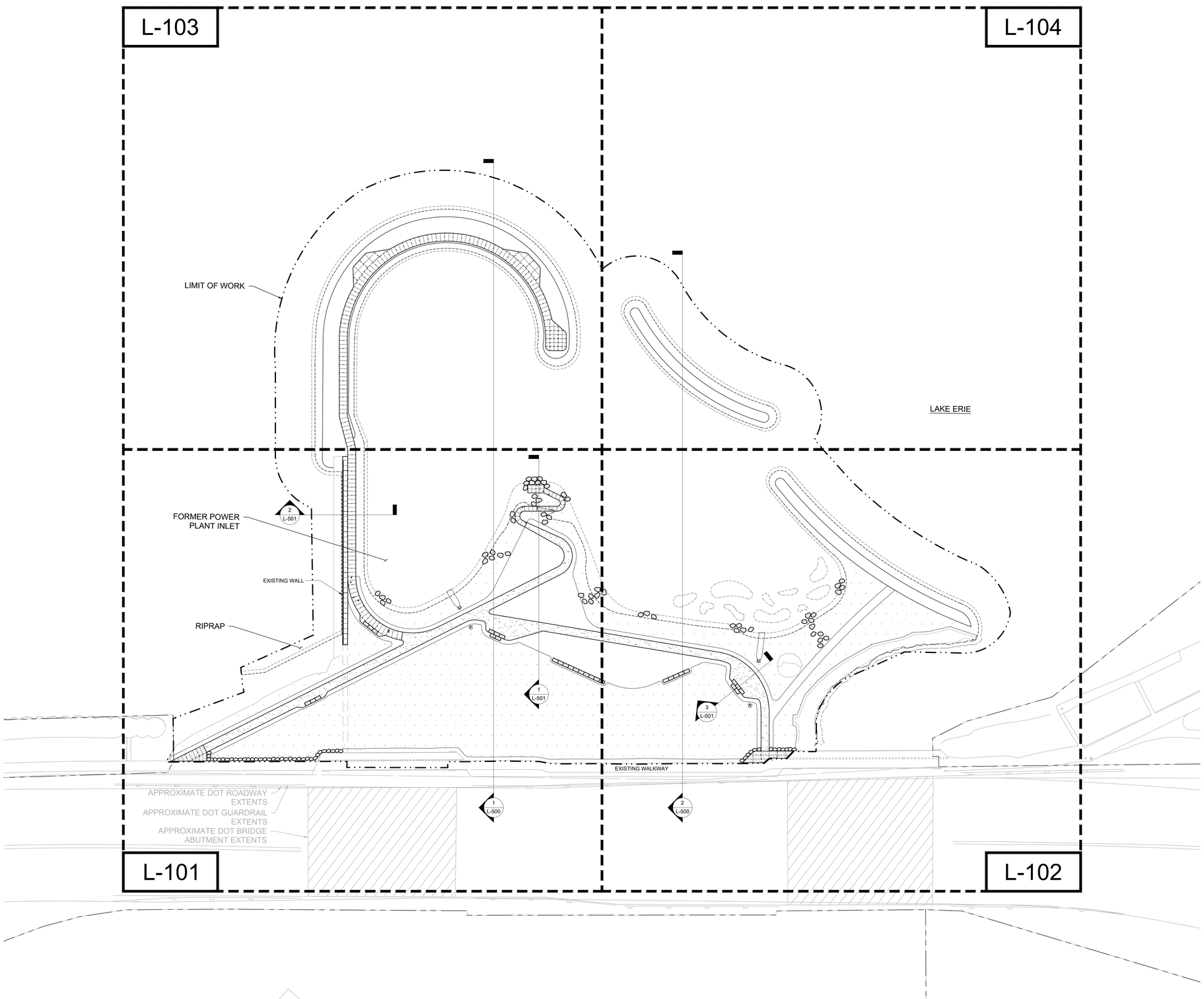
SYMBOL LEGEND, ABBREVIATIONS, GENERAL NOTES

Job No:	292054	Scale:	N.T.S.
Status:	90% DESIGN		
Drawn By:	NC		
Checked By:	JM		
Approved By:	KC		
Date:	1/22/2026		

Drawing No

L-001

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION	DETAIL
	CRUSHED STONE PAVING	1/L-600
	CAST-IN-PLACE CONCRETE PAVING	4/C-702
	CAST-IN-PLACE CONCRETE PAVING @ BREAKWATER	1/C-702
	CAST-IN-PLACE CONCRETE PAVING @ DREDGE MATERIAL	6/C-702
	UPLAND HABITAT AREA	SEE PLANTING PLANS
	LAWN	SEE PLANTING PLANS
	STONE BOULDERS	4/L-600
	SANDSTONE BLOCKS	5,6,7/L-600
	2-4 TON DECORATIVE ARMOR STONE	3/L-600
	CONTROL JOINT	3/C-702
	EXPANSION JOINT	5/C-702

NOTES

1. STONE BOULDERS AND SANDSTONE BLOCKS TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT

50' 0 50' 100'

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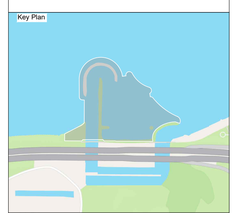
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
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4101 Fulton Parkway, Cleveland Oh 44144
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Drawing Title

OVERALL LAYOUT & MATERIALS PLAN

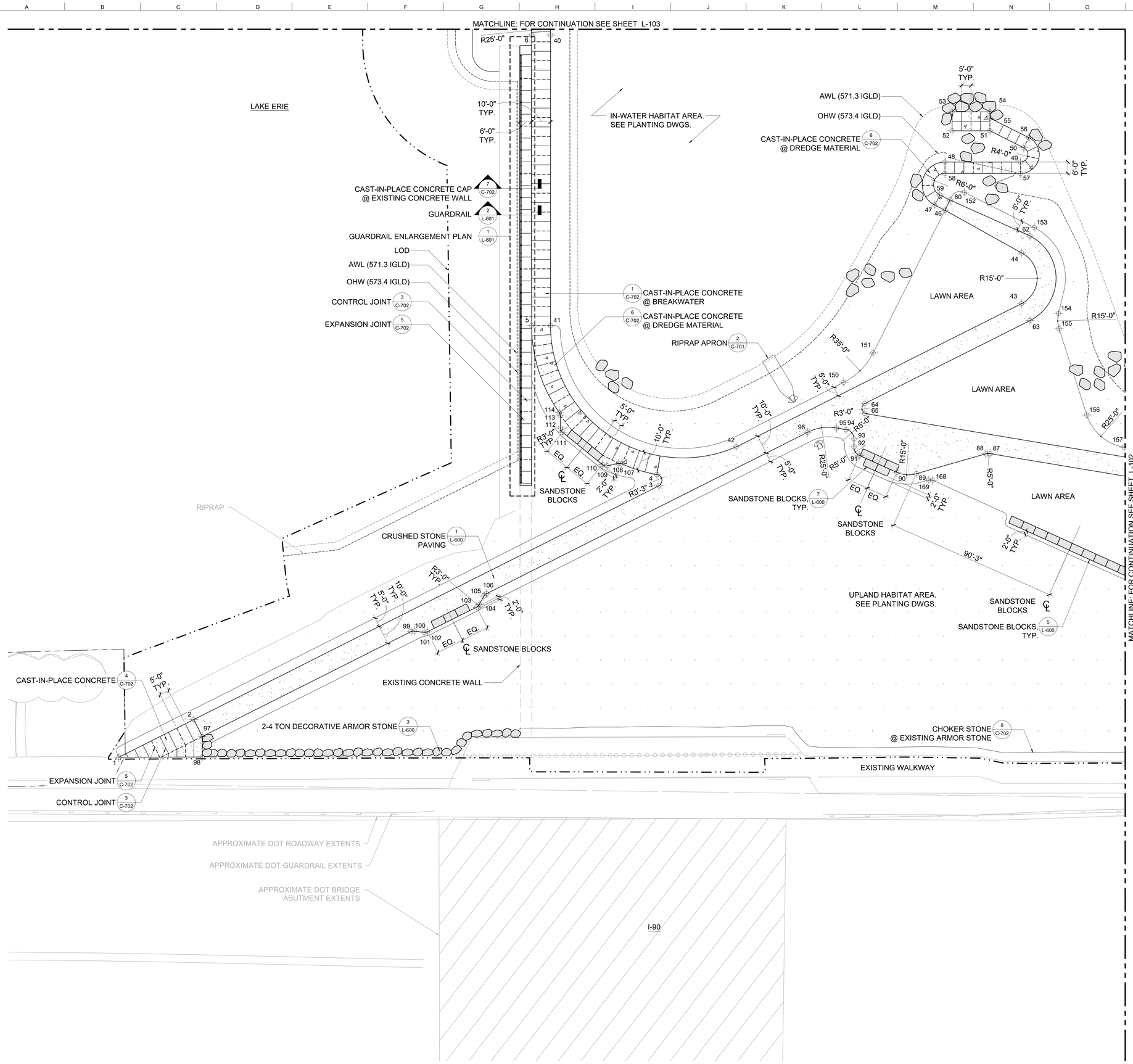
Job No: 292054
Status: 90% DESIGN
Drawn By: NC
Checked By: JM
Approved By: KC
Date: 1/22/2026
Scale: 1" = 50'

Drawing No

L-100

CHEERS-WRT-DR-HL-L-100.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:17 PM

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION	DETAIL
	CRUSHED STONE PAVING	1/L-600
	CAST-IN-PLACE CONCRETE PAVING	4/C-702
	CAST-IN-PLACE CONCRETE PAVING @ BREAKWATER	1/C-702
	CAST-IN-PLACE CONCRETE PAVING @ DREDGE MATERIAL	6/C-702
	UPLAND HABITAT AREA	SEE PLANTING PLANS
	LAWN	SEE PLANTING PLANS
	STONE BOULDERS	4/L-600
	SANDSTONE BLOCKS	5,6,7/L-600
	2-4 TON DECORATIVE ARMOR STONE	3/L-600
	CONTROL JOINT	3/C-702
	EXPANSION JOINT	5/C-702

NOTES

1. STONE BOULDERS AND SANDSTONE BLOCKS TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT

20' 0 20' 40'

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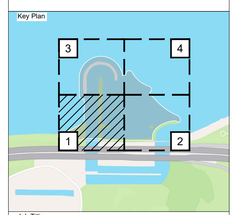
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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Drawing Title

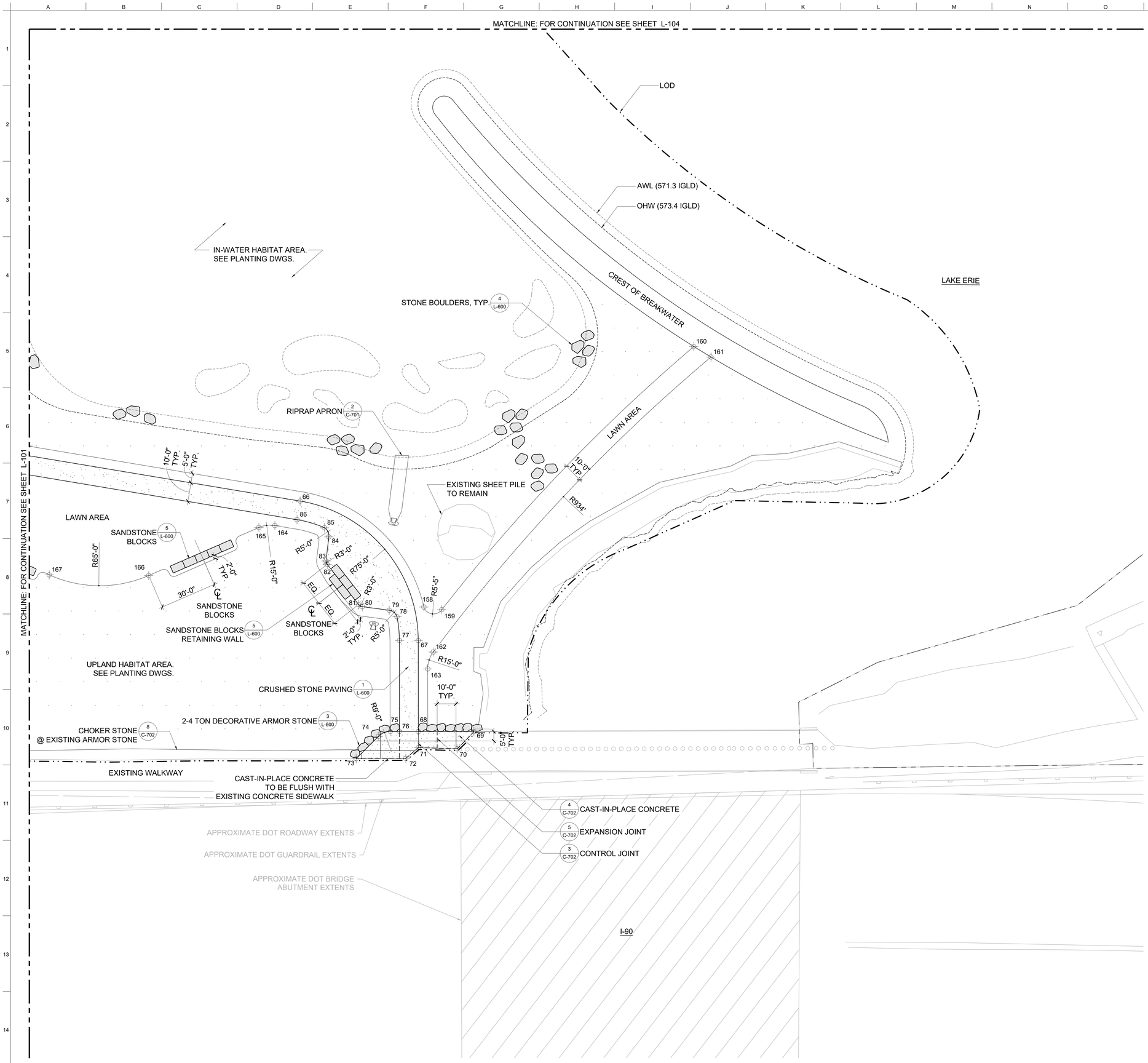
LAYOUT & MATERIALS PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: NC
Checked By: JM
Approved By: KC
Date: 1/22/2026
Scale: 1" = 20'

Drawing No

L-101

CHEERS-WRT-DR-HL-L-101.DWG PLOT BY: ncohen PLOT TIME: 1/22/2026 3:18 PM
Arup US, Inc.



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION	DETAIL
	CRUSHED STONE PAVING	1/L-600
	CAST-IN-PLACE CONCRETE PAVING	4/C-702
	CAST-IN-PLACE CONCRETE PAVING @ BREAKWATER	1/C-702
	CAST-IN-PLACE CONCRETE PAVING @ DREDGE MATERIAL	6/C-702
	UPLAND HABITAT AREA	SEE PLANTING PLANS
	LAWN	SEE PLANTING PLANS
	STONE BOULDERS	4/L-600
	SANDSTONE BLOCKS	5,6,7/L-600
	2-4 TON DECORATIVE ARMOR STONE	3/L-600
	CONTROL JOINT	3/C-702
	EXPANSION JOINT	5/C-702

NOTES

1. STONE BOULDERS AND SANDSTONE BLOCKS TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT

20' 0 20' 40'

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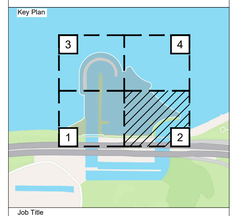
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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Drawing Title

LAYOUT & MATERIALS PLAN

Job No:	292054	Scale:	1" = 20'
Status:	90% DESIGN		
Drawn By:	NC		
Checked By:	JM		
Approved By:	KC		
Date:	1/22/2026		

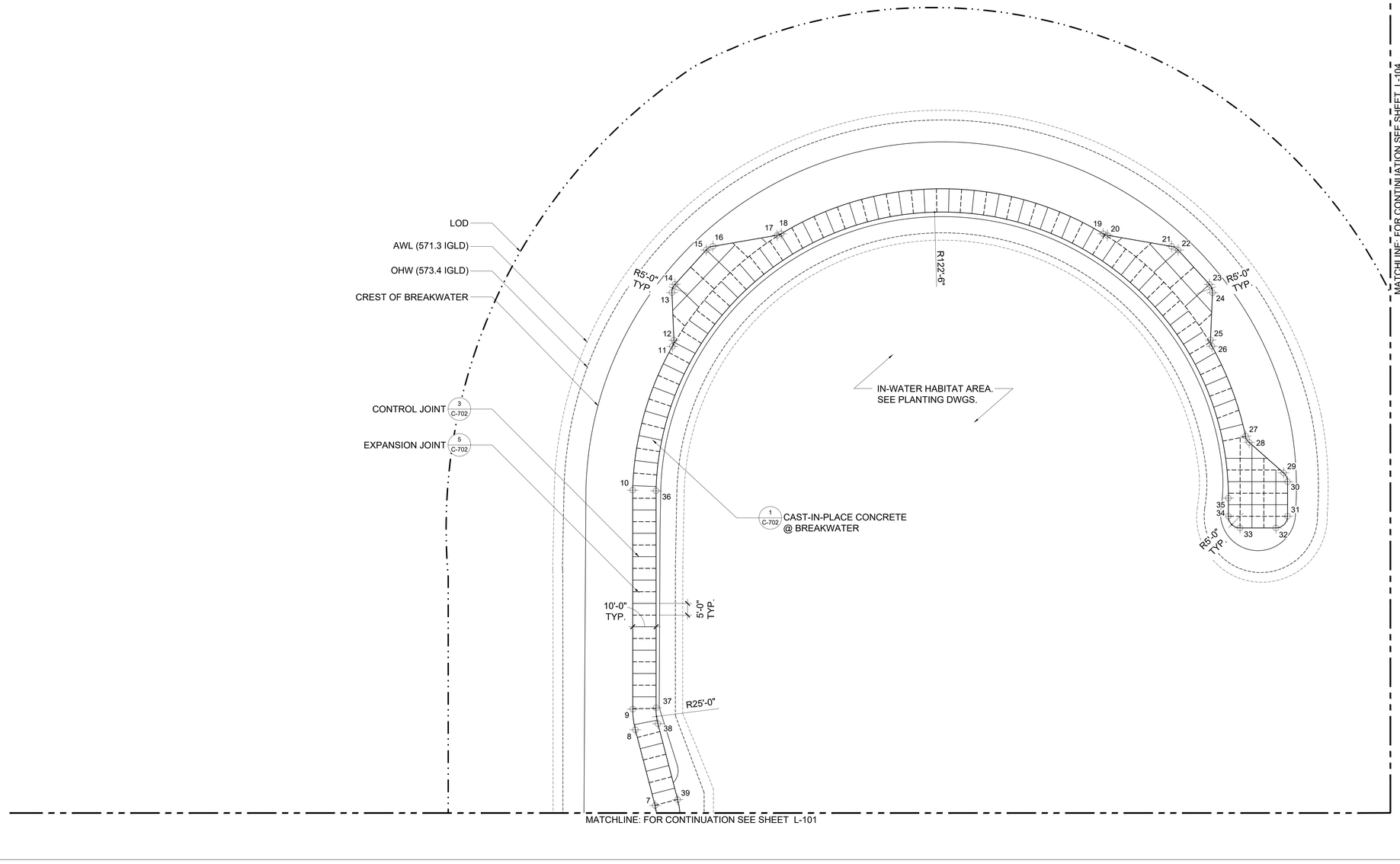
Drawing No

L-102

CHEERS-WRT-DR-HL-L-102.DWG PLOT BY: ncohen PLOT TIME: 1/22/2026 3:16 PM

Arup US, Inc.

LAKE ERIE



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION	DETAIL
	CRUSHED STONE PAVING	1/L-600
	CAST-IN-PLACE CONCRETE PAVING	4/C-702
	CAST-IN-PLACE CONCRETE PAVING @ BREAKWATER	1/C-702
	CAST-IN-PLACE CONCRETE PAVING @ DREDGE MATERIAL	6/C-702
	UPLAND HABITAT AREA	SEE PLANTING PLANS
	LAWN	SEE PLANTING PLANS
	STONE BOULDERS	4/L-600
	SANDSTONE BLOCKS	5,6,7/L-600
	2-4 TON DECORATIVE ARMOR STONE	3/L-600
	CONTROL JOINT	3/C-702
	EXPANSION JOINT	5/C-702

NOTES

1. STONE BOULDERS AND SANDSTONE BLOCKS TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT

20' 0 20' 40'

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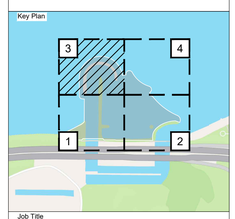
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

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Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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Drawing Title

LAYOUT & MATERIALS PLAN

Job No: 292054 Scale: 1" = 20'
Status: 90% DESIGN
Drawn By: NC
Checked By: JM
Approved By: KC
Date: 1/22/2026

Drawing No

L-103

CHEERS-WRT-DR-HL-L-103.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:20 PM

Arup US, Inc.

MATCHLINE: FOR CONTINUATION SEE SHEET L-103

LAKE ERIE

LOD

AWL (571.3 IGLD)

OHW (573.4 IGLD)

CREST OF BREAKWATER

IN-WATER HABITAT AREA.
SEE PLANTING DWGS.

MATCHLINE: FOR CONTINUATION SEE SHEET L-102

20' 0 20' 40'

LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	DESCRIPTION	DETAIL
	CRUSHED STONE PAVING	1/L-600
	CAST-IN-PLACE CONCRETE PAVING	4/C-702
	CAST-IN-PLACE CONCRETE PAVING @ BREAKWATER	1/C-702
	CAST-IN-PLACE CONCRETE PAVING @ DREDGE MATERIAL	6/C-702
	UPLAND HABITAT AREA	SEE PLANTING PLANS
	LAWN	SEE PLANTING PLANS
	STONE BOULDERS	4/L-600
	SANDSTONE BLOCKS	5,6,7/L-600
	2-4 TON DECORATIVE ARMOR STONE	3/L-600
	CONTROL JOINT	3/C-702
	EXPANSION JOINT	5/C-702

NOTES

1. STONE BOULDERS AND SANDSTONE BLOCKS TO BE FIELD LOCATED BY LANDSCAPE ARCHITECT

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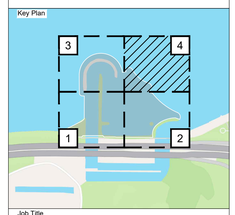
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

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(216) 241-8004

Drawing Title

LAYOUT & MATERIALS PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: NC
Checked By: JM
Approved By: KC
Date: 1/22/2026
Scale: 1" = 20'

Drawing No

L-104

CHEERS-WRT-DR-HL-L-104X.DWG PLOT BY: ncohen PLOT TIME: 1/22/2026 3:17 PM

Arup US, Inc.

COORDINATE POINTS SCHEDULE

POINT	DESCRIPTION	NORTHING	EASTING
1	EDGE OF CONCRETE PAVING / EDGE OF EXISTING PAVING	N 682140.49182	E 2202664.81640
2	TRANSITION BETWEEN CONCRETE PAVING AND CRUSHED STONE PAVING	N 682180.45270	E 2202683.98109
3	PC EDGE OF CRUSHED STONE PAVING	N 682428.55866	E 2202802.96930
4	PT/PC EDGE OF CRUSHED STONE PAVING / TRANSITION TO CONCRETE PAVING ON DREDGE MATERIAL	N 682432.63768	E 2202798.47461
5	PT EDGE OF CONCRETE PAVING / TRANSITION BETWEEN CONCRETE PAVING ON DREDGE MATERIAL AND CONCRETE PAVING ON BREAKWATER	N 682454.47402	E 2202697.93442
6	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682576.00541	E 2202604.01293
7	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682580.48503	E 2202599.53752
8	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682600.99309	E 2202573.05216
9	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682607.26455	E 2202566.78658
10	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682681.42886	E 2202509.46123
11	PT/PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682740.49954	E 2202485.28897
12	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682742.98619	E 2202484.15283
13	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682758.57194	E 2202471.07539
14	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682762.18476	E 2202469.92162
15	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682781.98251	E 2202471.50636
16	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682784.96372	E 2202472.80607
17	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682805.52315	E 2202491.66811
18	PT/PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682807.11327	E 2202492.65235
19	PT/PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682891.33719	E 2202601.63700
20	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682891.88691	E 2202603.42066
21	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682904.93760	E 2202628.08347
22	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682905.44116	E 2202631.29646
23	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682901.96784	E 2202650.85147
24	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682899.93795	E 2202654.05509
25	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682883.41903	E 2202665.77406
26	PT/PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682881.70649	E 2202667.90567
27	PT/PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682860.08496	E 2202702.75686
28	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682858.88596	E 2202705.67951
29	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682857.55184	E 2202725.29823
30	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682855.62082	E 2202728.91525
31	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682843.89419	E 2202737.97779
32	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682836.88048	E 2202737.07900
33	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682827.51732	E 2202724.96338
34	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682828.41612	E 2202717.94967
35	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682834.53387	E 2202713.22177
36	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682687.33420	E 2202517.53135
37	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682613.80882	E 2202574.35299
38	PT EDGE OF CONCRETE PAVING ON BREAKWATER	N 682608.92739	E 2202579.13894
39	PC EDGE OF CONCRETE PAVING ON BREAKWATER	N 682588.39179	E 2202605.65986
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41	PC EDGE OF CONCRETE PAVING ON DREDGE MATERIAL / TRANSITION TO CONCRETE PAVING ON BREAKWATER TO ON DREDGE MATERIAL	N 682460.58894	E 2202705.84692
42	PT EDGE OF CONCRETE PAVING / TRANSITION BETWEEN CONCRETE PAVING AND CRUSHED STONE PAVING	N 682469.86919	E 2202822.68228
43	PC EDGE OF CRUSHED STONE PAVING	N 682622.04549	E 2202895.77927
44	PT EDGE OF CRUSHED STONE PAVING	N 682643.25578	E 2202879.38760
46	EDGE OF CONCRETE PAVING ON DREDGE MATERIAL	N 682636.37225	E 2202833.58978
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49	PC EDGE OF CONCRETE PAVING ON DREDGE MATERIAL	N 682680.86224	E 2202849.52518
50	PT EDGE OF CONCRETE PAVING ON DREDGE MATERIAL	N 682687.95351	E 2202846.31473
51	EDGE OF CONCRETE PAVING ON DREDGE MATERIAL	N 682684.10706	E 2202826.68809
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58	PC EDGE OF CONCRETE PAVING ON DREDGE MATERIAL	N 682651.73901	E 2202821.65273
59	PT EDGE OF CONCRETE PAVING ON DREDGE MATERIAL	N 682641.10211	E 2202826.46841
60	EDGE OF CONCRETE PAVING ON DREDGE MATERIAL	N 682642.24884	E 2202832.35780
62	PC EDGE OF CRUSHED STONE PAVING	N 682653.07144	E 2202877.47639
63	PT EDGE OF CRUSHED STONE PAVING	N 682617.72096	E 2202904.79583
64	PC EDGE OF CRUSHED STONE PAVING	N 682529.62054	E 2202862.54109
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67	PT EDGE OF CRUSHED STONE PAVING	N 682640.07171	E 2203211.89568
68	EDGE OF CRUSHED STONE PAVING /TRANSITION BETWEEN CRUSHED STONE PAVING AND CONCRETE PAVING	N 682601.93386	E 2203241.41120
69	EDGE OF CONCRETE PAVING / EDGE OF EXISTING PAVING	N 682619.95629	E 2203264.73164
70	EDGE OF CONCRETE PAVING / EDGE OF EXISTING PAVING	N 682607.28560	E 2203263.25050
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76	EDGE OF CRUSHED STONE PAVING / TRANSITION BETWEEN CRUSHED STONE PAVING AND CONCRETE PAVING	N 682595.81700	E 2203233.49618
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150	PC EDGE OF LAWN	N 682531.60210	E 2202846.85544
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152	EDGE OF LAWN	N 682650.07541	E 2202835.92779
153	PC EDGE OF LAWN	N 682657.97928	E 2202876.52079
154	PT/PC EDGE OF LAWN	N 682629.87644	E 2202914.41672
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156	PC EDGE OF LAWN	N 682596.53077	E 2202959.10426
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159	PT EDGE OF LAWN	N 682660.65130	E 2203211.77443
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162	PC EDGE OF LAWN	N 682640.11245	E 2203221.92450
163	PT EDGE OF LAWN	N 682631.23404	E 2203225.05964
164	PC EDGE OF LAWN	N 682641.80229	E 2203114.44231
165	PT EDGE OF LAWN	N 682635.80362	E 2203108.38455
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168	PC EDGE OF LAWN	N 682519.43722	E 2202915.73740
169	PT EDGE OF LAWN	N 682518.29573	E 2202914.01471

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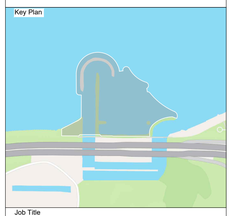
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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(216) 241-8004

Drawing Title

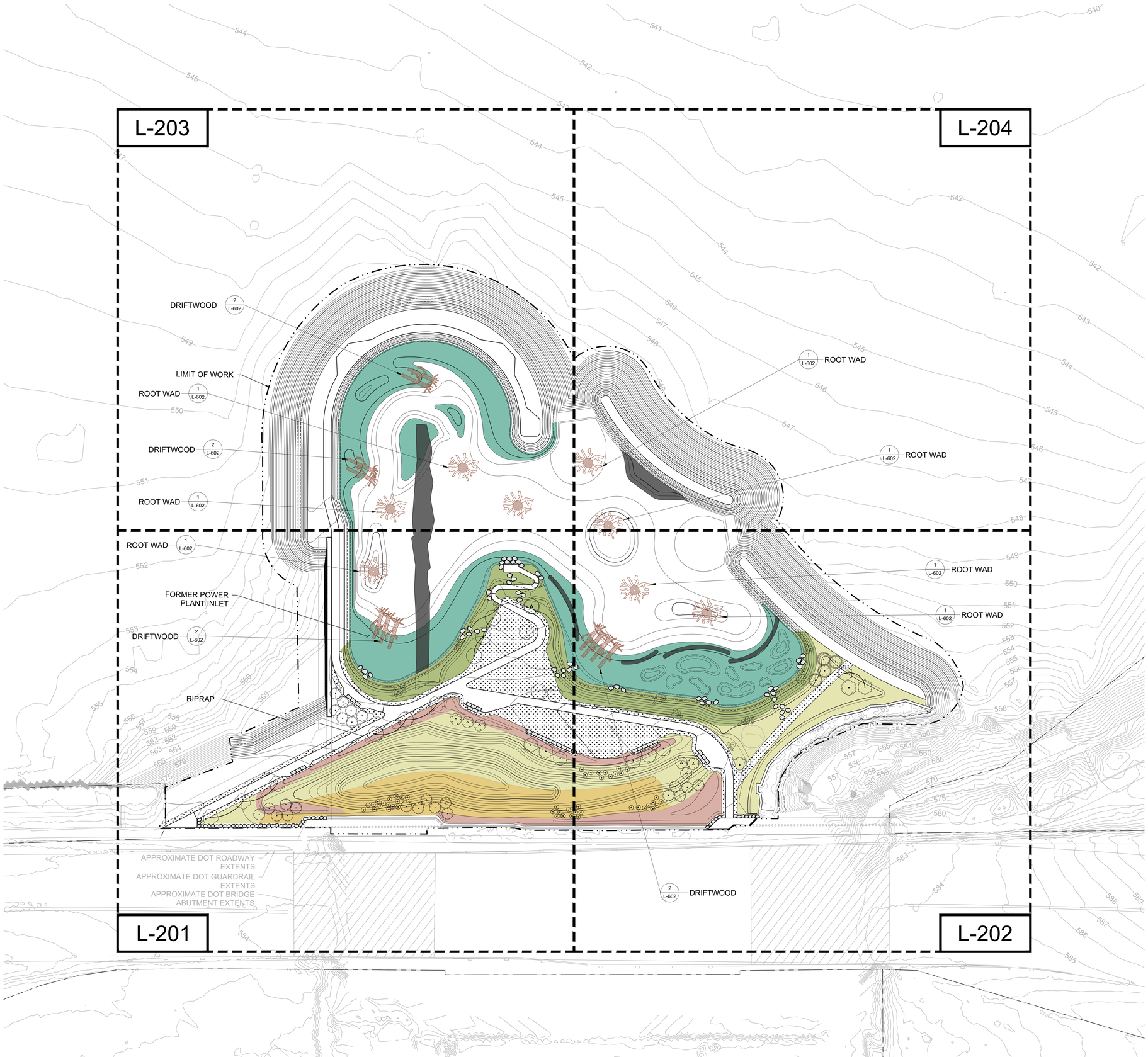
COORDINATE POINTS SCHEDULE

Job No: 292054
Status: 90% DESIGN
Drawn By: NC
Checked By: JM
Approved By: KC
Date: 1/22/2026
Scale: N.T.S.

Drawing No

L-150

CHEERS-WRT-DR-HL-L-150.DWG PLOT BY: ncohen PLOT TIME: 1/22/2026 3:19 PM



LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	HABITAT DESCRIPTION
	SUBMERGENT MARSH NO PLANTINGS
	SHALLOW EMERGENT MARSH PLUGS / LIVE STAKES / CONT.
	SHORELINE SLOPE / EMERGENT PLUGS / LIVE STAKES / CONT. SEDGE MEADOW NATIVE SEED MIX CM700 EROSION CONTROL MATTING
	UPLAND - MEADOW ZONE A MESIC TO DRY NATIVE POLLINATOR MIX W/O GRASSES
	UPLAND - MEADOW ZONE B NATIVE STEEP SLOPE MIX W/ ANNUAL RYE GRASS
	UPLAND - SWALE SEDGE PLUGS NATIVE DETENTION SEED MIX
	SUBMERGENT BOULDER FISH SHELTER
	UPLAND - LAWN SEED

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
TREES					
	BE NI	Betula nigra	River Birch Multi-Trunk	2.5" Cal.	6
	CA CO	Carya cordiformis	Bitternut Hickory	3" Cal.	3
	JU VI	Juniperus virginiana	Eastern Redcedar	6` Ht.	24
	LI TU	Liriodendron tulipifera	Tulip Poplar	3" Cal.	5
	NY SL	Nyssa sylvatica	Tupelo	3" Cal.	5
	PI ST	Pinus strobus	White Pine	8` Ht.	4
	PL OC	Platanus occidentalis	American Sycamore	3" Cal.	3
	QU BI	Quercus bicolor	Swamp White Oak	3" Cal.	3
	QU PA	Quercus palustris	Pin Oak	3" Cal.	3
	SA AM	Salix amygdaloides	Peach Leaf Willow	8` Ht.	1
SHRUBS					
	CE OC	Cephalanthus occidentalis	Buttonbush	3` Ht.	16
	CO AM	Cornus amomum	Silky Dogwood	Livestake	7
	CO SE	Cornus sericea	Red Twig Dogwood	3` Ht.	13
	RH TY	Rhus typhina	Staghorn Sumac	4` Ht.	47
	SA IN	Salix interior	Sandbar Willow	Livestake	14

HABITAT DESCRIPTION	SIZE
SUBMERGENT MARSH	2.48 AC
SHALLOW EMERGENT MARSH	1.31 AC
SHORELINE SLOPE / EMERGENT	0.47 AC
UPLAND - MEADOW ZONE A	1.14 AC
UPLAND - MEADOW ZONE B	0.45 AC
UPLAND - SWALE	0.31 AC
SUBMERGENT	0.21 AC
UPLAND - LAWN	0.6 AC

50' 0 50' 100'

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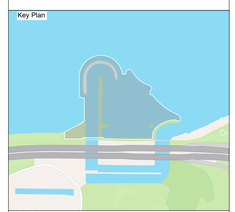
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

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(216) 241-8004

Drawing Title

OVERALL PLANTING PLAN

Job No: 292054 Scale: 1"=50'
Status: 90% DESIGN
Drawn By: CR
Checked By: TL
Approved By: KS
Date: 1/22/2026

Drawing No

L-200

CHEERS-DAVEY-DR-HL-L-200.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 5:21 PM



LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS HABITAT DESCRIPTION

- SUBMERGENT MARSH NO PLANTINGS
- SHALLOW EMERGENT MARSH PLUGS / LIVE STAKES / CONT.
- SHORELINE SLOPE / EMERGENT PLUGS / LIVE STAKES / CONT. SEDGE MEADOW NATIVE SEED MIX CM700 EROSION CONTROL MATTING
- UPLAND - MEADOW ZONE A MESIC TO DRY NATIVE POLLINATOR MIX W/O GRASSES
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- UPLAND - SWALE SEDGE PLUGS NATIVE DETENTION SEED MIX
- SUBMERGENT BOULDER FISH SHELTER
- UPLAND - LAWN SEED

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
TREES					
	BE NI	Betula nigra	River Birch Multi-Trunk	2.5" Cal.	6
	CA CO	Carya cordiformis	Bitternut Hickory	3" Cal.	3
	JU VI	Juniperus virginiana	Eastern Redcedar	6` Ht.	24
	LI TU	Liriodendron tulipifera	Tulip Poplar	3" Cal.	5
	NY SL	Nyssa sylvatica	Tupelo	3" Cal.	5
	PI ST	Pinus strobus	White Pine	8` Ht.	4
	PL OC	Platanus occidentalis	American Sycamore	3" Cal.	3
	QU BI	Quercus bicolor	Swamp White Oak	3" Cal.	3
	QU PA	Quercus palustris	Pin Oak	3" Cal.	3
	SA AM	Salix amygdaloides	Peach Leaf Willow	8` Ht.	1
SHRUBS					
	CE OC	Cephalanthus occidentalis	Buttonbush	3` Ht.	16
	CO AM	Cornus amomum	Silky Dogwood	Livestake	7
	CO SE	Cornus sericea	Red Twig Dogwood	3` Ht.	13
	RH TY	Rhus typhina	Staghorn Sumac	4` Ht.	47
	SA IN	Salix interior	Sandbar Willow	Livestake	14

HABITAT DESCRIPTION	SIZE
SUBMERGENT MARSH	2.48 AC
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SHORELINE SLOPE / EMERGENT	0.47 AC
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UPLAND - SWALE	0.31 AC
SUBMERGENT	0.21 AC
UPLAND - LAWN	0.6 AC

20' 0 20' 40'

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CHEERS-DAVEY-DR-HL-L-201.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 5:20 PM

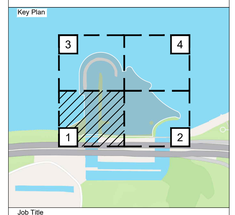
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

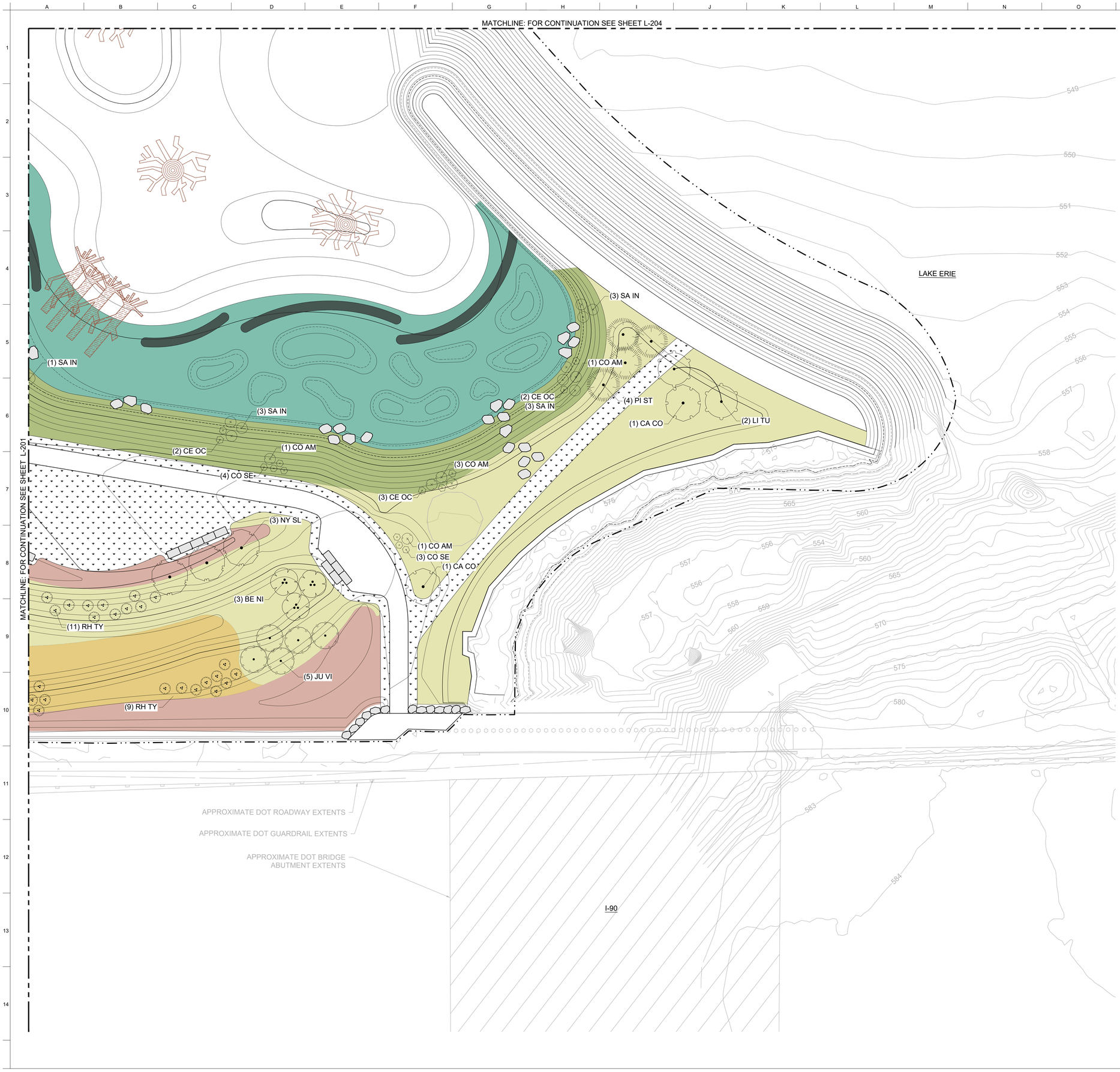
PLANTING PLAN

Job No: 292054 Scale: 1"=20'
Status: 90% DESIGN
Drawn By: CR
Checked By: TL
Approved By: KS
Date: 1/22/2026

Drawing No

L-201

Arup US, Inc.



LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

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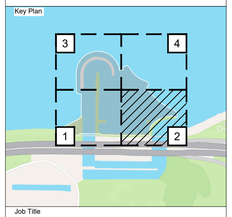
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

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Drawing Title

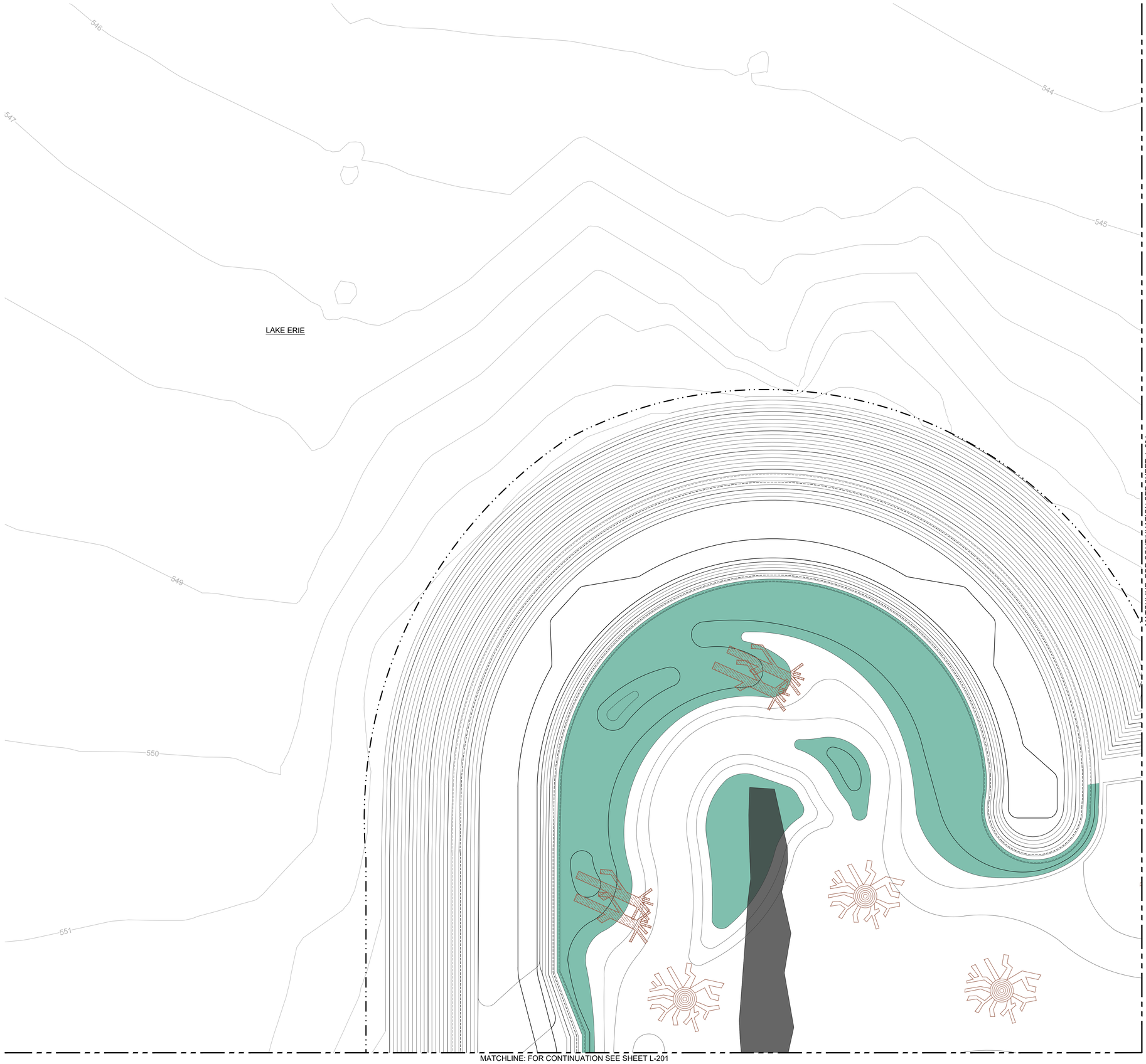
PLANTING PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: CR
Checked By: TL
Approved By: KS
Date: 1/22/2026
Scale: 1"=20'

Drawing No

L-202

CHEERS-DAVEY-DR-HL-L-202.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 5:19 PM



LEGEND

- LIMIT OF WORK
- AVERAGE WATER LEVEL (AWL, 571.3 FT - IGLD 1985)
- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

SYMBOLS	HABITAT DESCRIPTION
	SUBMERGENT MARSH NO PLANTINGS
	SHALLOW EMERGENT MARSH PLUGS / LIVE STAKES / CONT.
	SHORELINE SLOPE / EMERGENT PLUGS / LIVE STAKES / CONT. SEDGE MEADOW NATIVE SEED MIX CM700 EROSION CONTROL MATTING
	UPLAND - MEADOW ZONE A MESIC TO DRY NATIVE POLLINATOR MIX W/O GRASSES
	UPLAND - MEADOW ZONE B NATIVE STEEP SLOPE MIX W/ ANNUAL RYE GRASS
	UPLAND - SWALE SEDGE PLUGS NATIVE DETENTION SEED MIX
	SUBMERGENT BOULDER FISH SHELTER
	UPLAND - LAWN SEED

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
TREES					
	BE NI	Betula nigra	River Birch Multi-Trunk	2.5" Cal.	6
	CA CO	Carya cordiformis	Bitternut Hickory	3" Cal.	3
	JU VI	Juniperus virginiana	Eastern Redcedar	6` Ht.	24
	LI TU	Liriodendron tulipifera	Tulip Poplar	3" Cal.	5
	NY SL	Nyssa sylvatica	Tupelo	3" Cal.	5
	PI ST	Pinus strobus	White Pine	8` Ht.	4
	PL OC	Platanus occidentalis	American Sycamore	3" Cal.	3
	QU BI	Quercus bicolor	Swamp White Oak	3" Cal.	3
	QU PA	Quercus palustris	Pin Oak	3" Cal.	3
	SA AM	Salix amygdaloides	Peach Leaf Willow	8` Ht.	1
SHRUBS					
	CE OC	Cephalanthus occidentalis	Buttonbush	3` Ht.	16
	CO AM	Cornus amomum	Silky Dogwood	Livestake	7
	CO SE	Cornus sericea	Red Twig Dogwood	3` Ht.	13
	RH TY	Rhus typhina	Staghorn Sumac	4` Ht.	47
	SA IN	Salix interior	Sandbar Willow	Livestake	14

HABITAT DESCRIPTION	SIZE
SUBMERGENT MARSH	2.48 AC
SHALLOW EMERGENT MARSH	1.31 AC
SHORELINE SLOPE / EMERGENT	0.47 AC
UPLAND - MEADOW ZONE A	1.14 AC
UPLAND - MEADOW ZONE B	0.45 AC
UPLAND - SWALE	0.31 AC
SUBMERGENT	0.21 AC
UPLAND - LAWN	0.6 AC

20' 0 20' 40'

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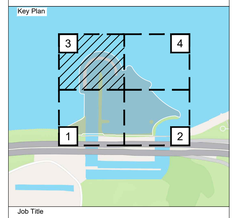
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

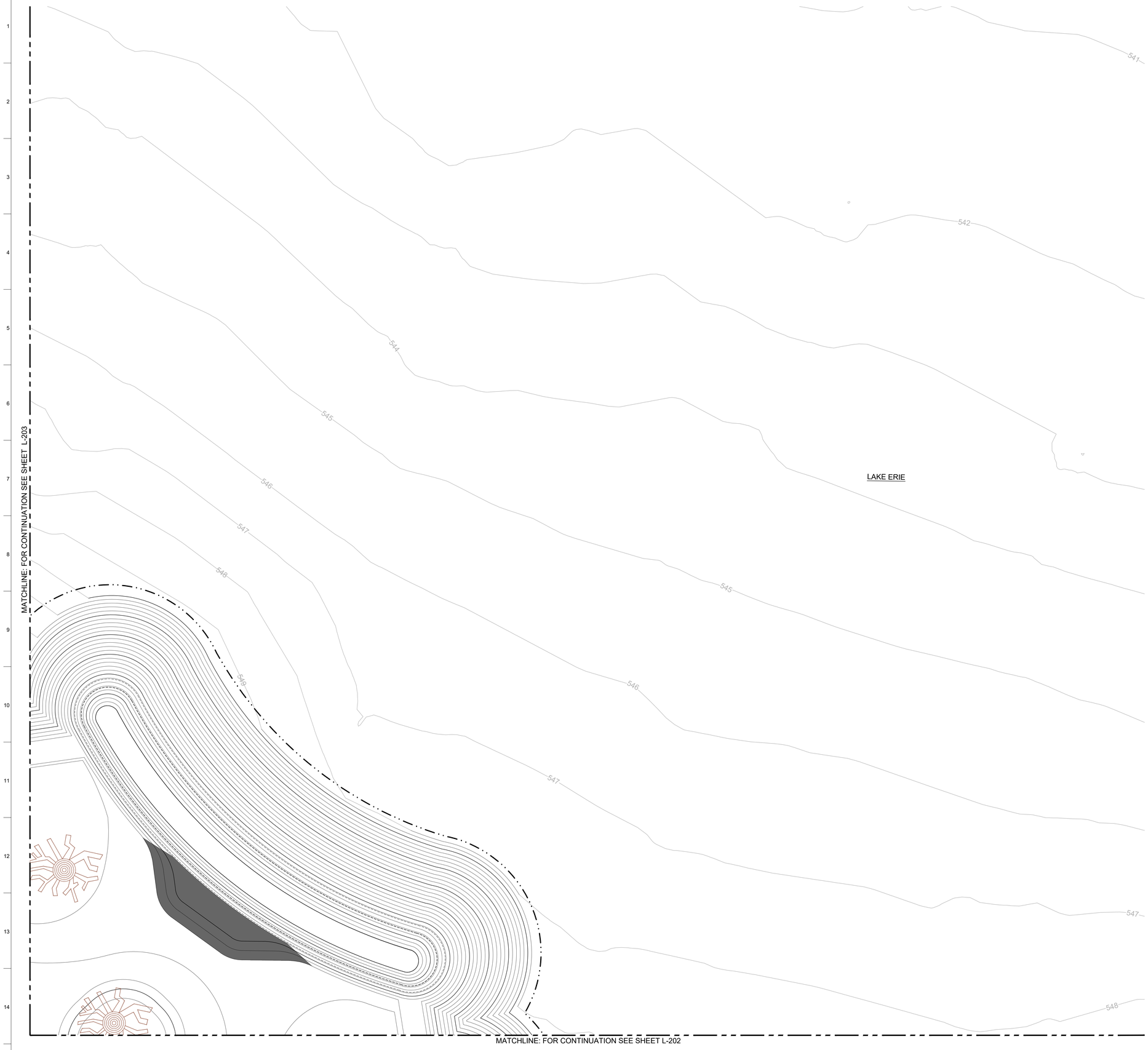
PLANTING PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: CR
Checked By: TL
Approved By: KS
Date: 1/22/2026
Scale: 1"=20'

Drawing No

L-203

CHEERS-DAVEY-DR-HL-L-203.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 5:22 PM



LEGEND

- LIMIT OF WORK
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- ORDINARY HIGH WATER (OHW, 573.4 FT- IGLD 1985)

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- SHORELINE SLOPE / EMERGENT PLUGS / LIVE STAKES / CONT. SEDGE MEADOW NATIVE SEED MIX CM700 EROSION CONTROL MATTING
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- UPLAND - LAWN SEED

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
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HABITAT DESCRIPTION	SIZE
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20' 0 20' 40'

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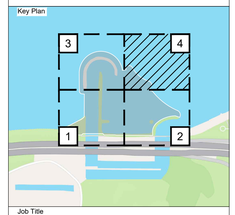
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

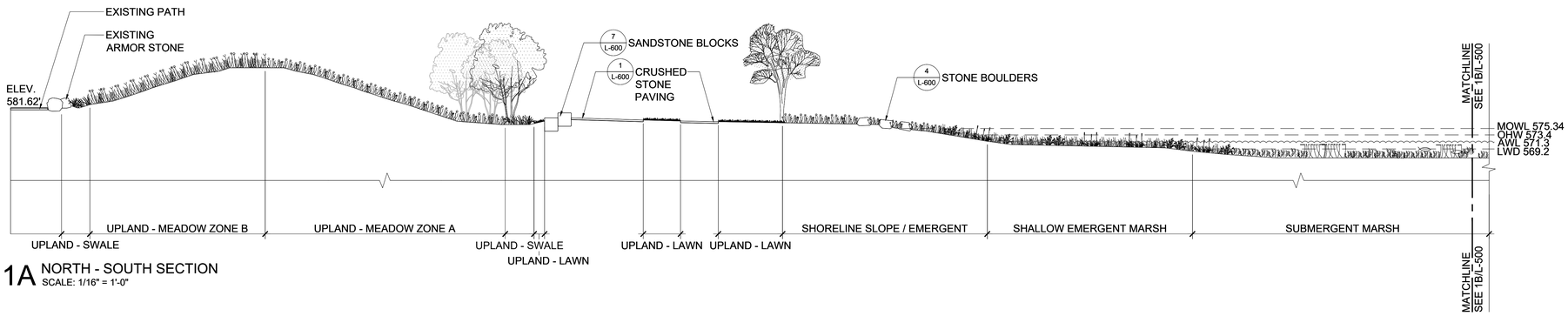
PLANTING PLAN

Job No: 292054
Status: 90% DESIGN
Drawn By: CR
Checked By: TL
Approved By: KS
Date: 1/22/2026
Scale: 1"=20'

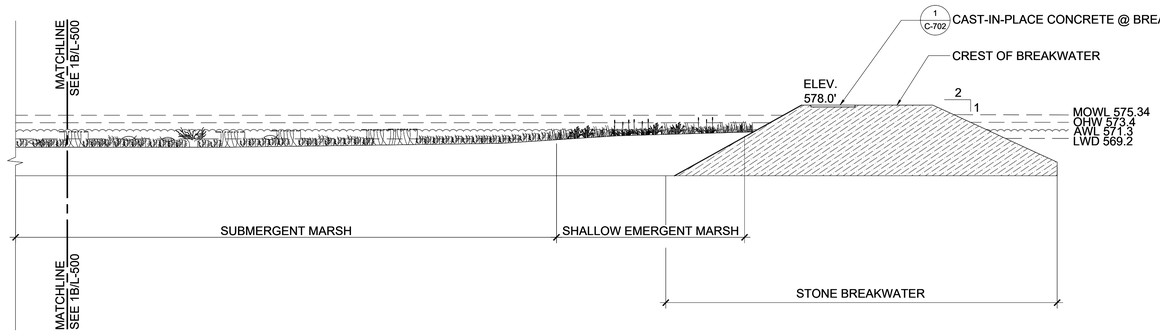
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L-204

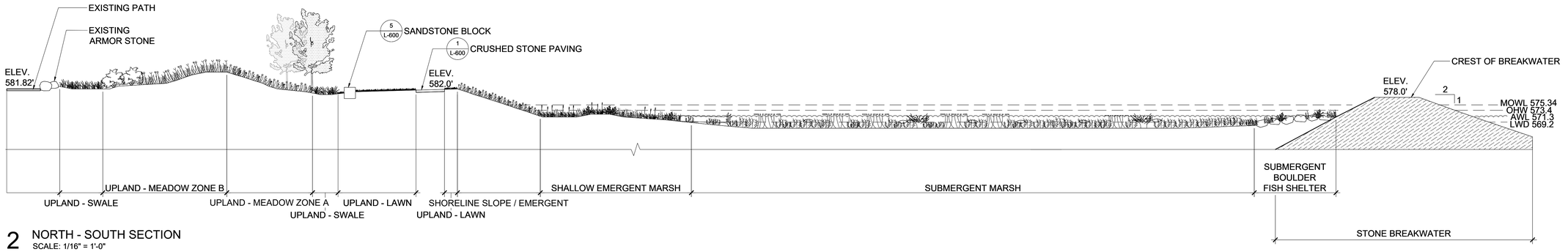
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Arup US, Inc.



1A NORTH - SOUTH SECTION
SCALE: 1/16" = 1'-0"



1B NORTH - SOUTH SECTION
SCALE: 1/16" = 1'-0"



2 NORTH - SOUTH SECTION
SCALE: 1/16" = 1'-0"

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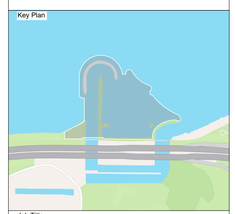
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

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Key Plan



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Drawing Title

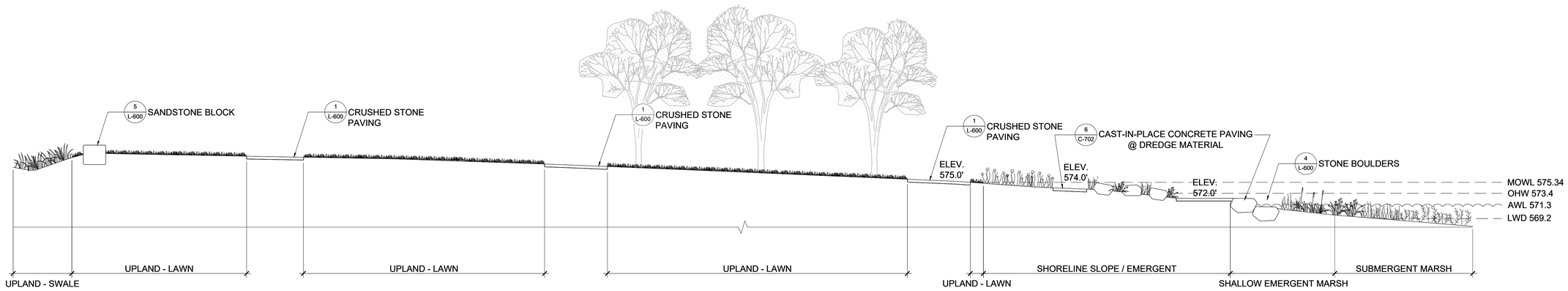
SITE SECTIONS

Job No: 292054
Status: 90% DESIGN
Drawn By: NC
Checked By: JM
Approved By: KC
Date: 1/22/2026
Scale: AS NOTED

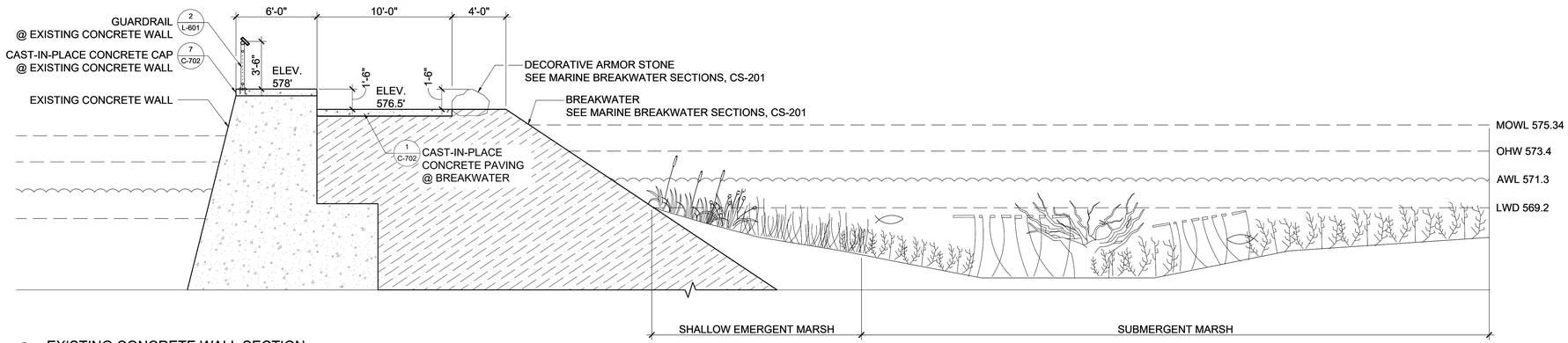
Drawing No

L-500

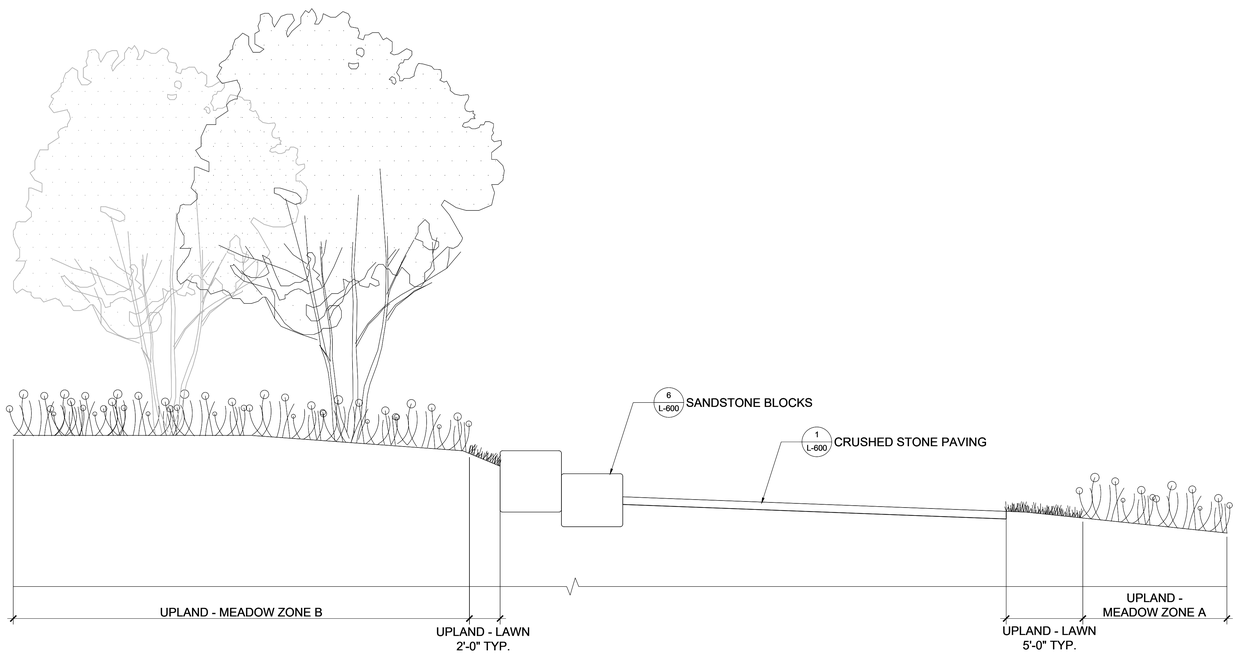
CHEERS-WRT-DR-HL-L-500.DWG PLOT BY: ncohen PLOT TIME: 1/22/2026 3:17 PM
Arup US, Inc.



1 PATH TO WATER SECTION
SCALE: 1/8" = 1'-0"



2 EXISTING CONCRETE WALL SECTION
SCALE: 1/4" = 1'-0"



3 CRUSHED STONE PAVING AREA SECTION
SCALE: 1/4" = 1'-0"

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PLOT BY: ncohen PLOT TIME: 1/22/2026 3:22 PM
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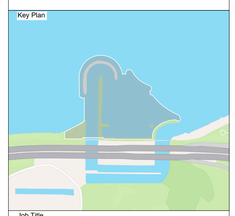
Issue	Description	Date
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Drawing Title

SITE SECTIONS

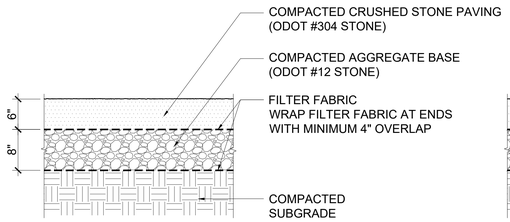
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Drawn By:	NC	
Checked By:	JM	
Approved By:	KC	
Date:	1/22/2026	

Drawing No

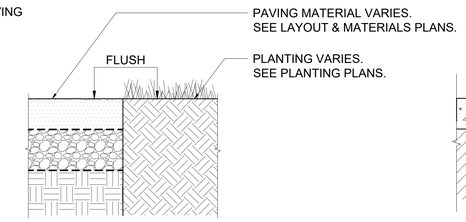
L-501

Arup US, Inc.

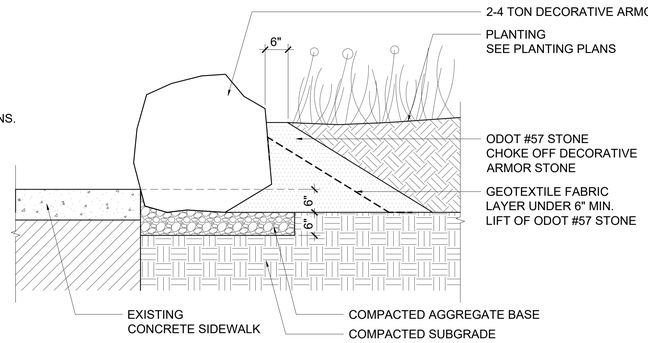
NOTES:
1. HEIGHT AND SIZE OF DECORATIVE ARMOR STONE TO MATCH EXISTING ARMOR STONE.
2. PLACEMENT OF DECORATIVE ARMOR STONE TO MINIMIZE VOID SPACE BETWEEN STONE AND EXISTING CONCRETE SIDEWALK.
3. CONTRACTOR SHALL USE ODOT #57 STONE TO INFILL SPACE BETWEEN DECORATIVE ARMOR STONE AND EXISTING CONCRETE.
4. ARCHITECT / ENGINEER TO REVIEW PLACEMENT IN FIELD.



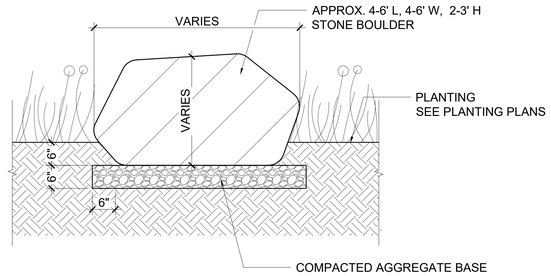
1 CRUSHED STONE PAVING
SCALE: 1" = 1'-0"



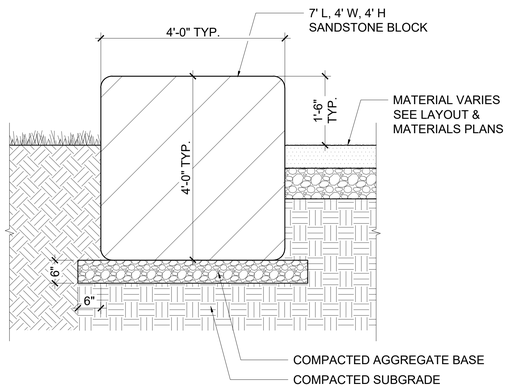
2 PAVING EDGE @ PLANTING
SCALE: 1" = 1'-0"



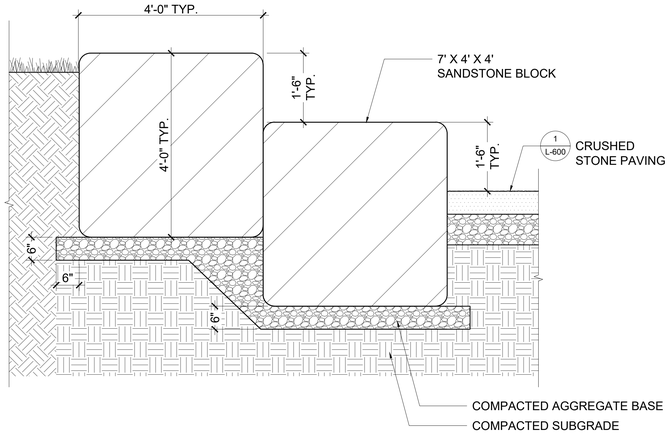
3 2-4 TON DECORATIVE ARMOR STONE
SCALE: 3/4" = 1'-0"



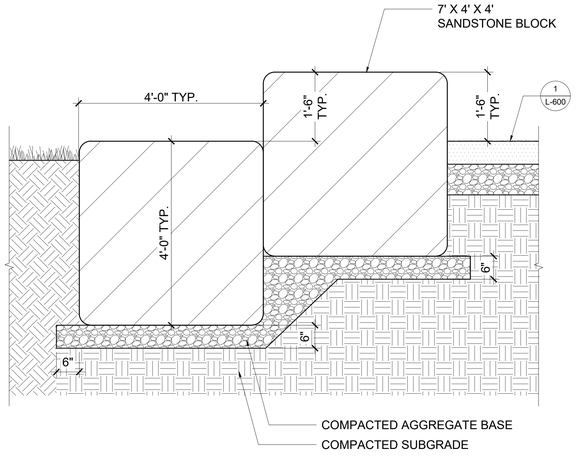
4 STONE BOULDERS
SCALE: 3/4" = 1'-0"



5 SANDSTONE BLOCKS
SCALE: 3/4" = 1'-0"



6 SANDSTONE BLOCK RETAINING WALL
SCALE: 3/4" = 1'-0"



7 SANDSTONE BLOCK RETAINING WALL
SCALE: 3/4" = 1'-0"

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PLOT BY: ncohen PLOT TIME: 1/22/2026 3:18 PM
CHEERS-WRT-DR-HL-L-600.DWG

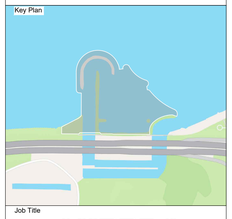
Issue	Description	Date
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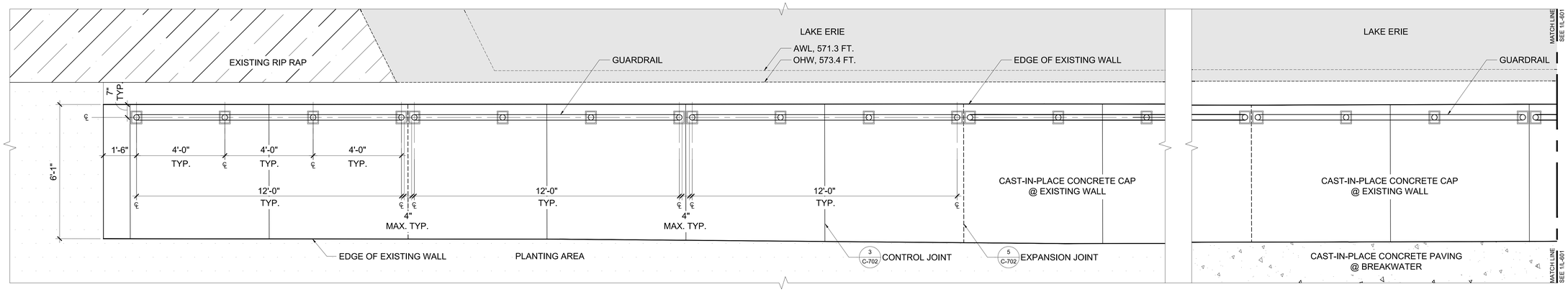
SITE DETAILS

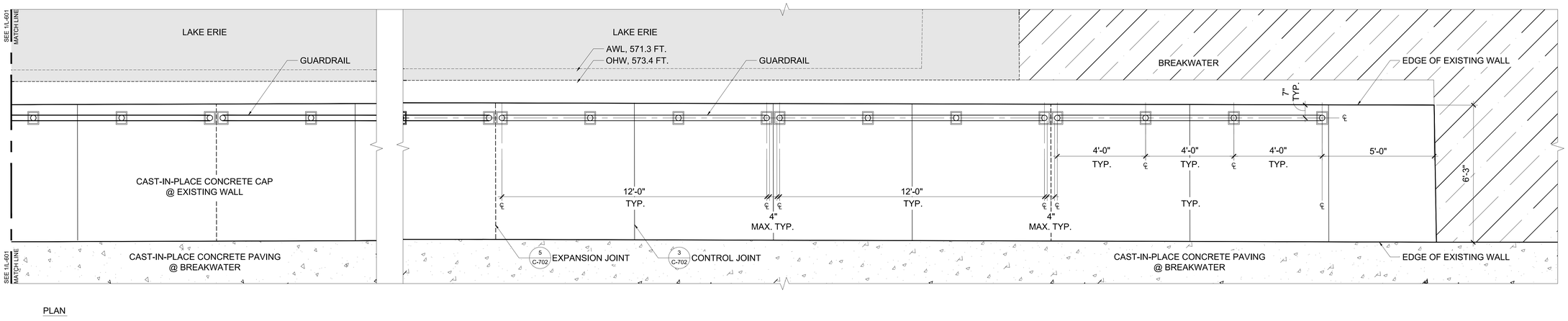
Job No: 292054
Status: 90% DESIGN
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Checked By: JM
Approved By: KC
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Scale: AS NOTED

Drawing No

L-600

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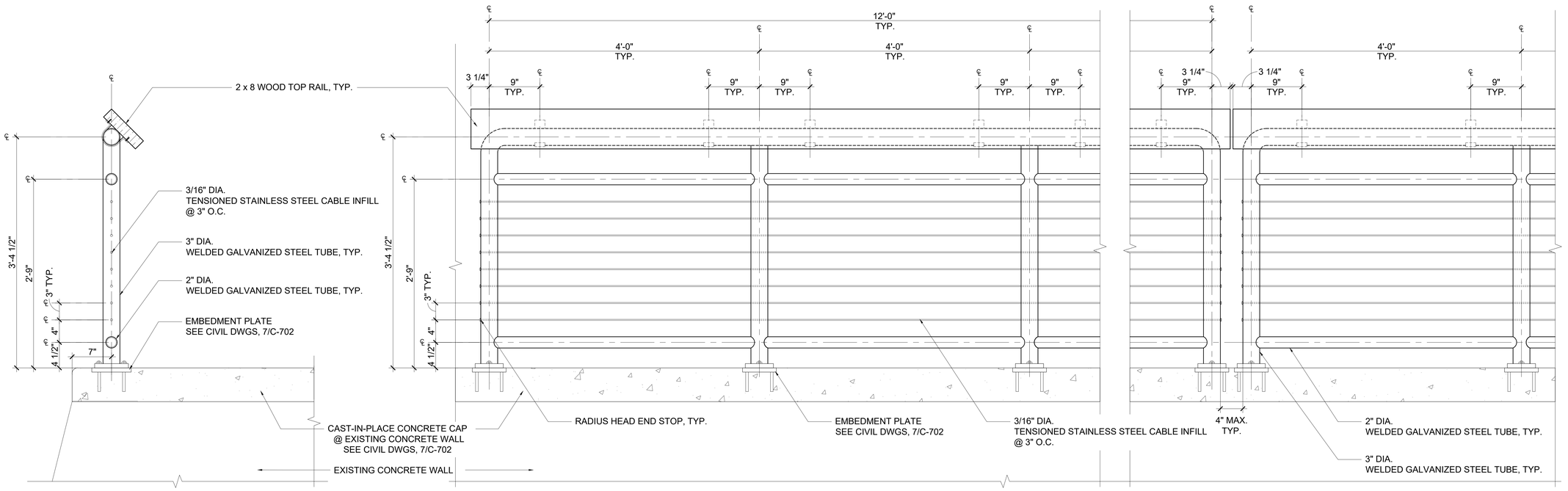




PLAN

1 GUARDRAIL @ EXISTING CONCRETE WALL

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



SECTION ELEVATION

2 GUARDRAIL @ EXISTING CONCRETE WALL

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

PROJECT MANAGEMENT
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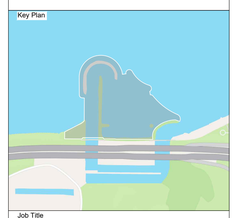
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland · Ohio Department of Natural Resources · Ohio Department of Transportation · The Port of Cleveland · Cleveland Metroparks · Black Environmental Leaders Association

KEY CLIENT CONTACT:
Cleveland Metroparks
4101 Fulton Parkway, Cleveland Oh 44144
(216) 635-3200
The Port Of Cleveland
1100 W. 9th Street - Suite 300, Cleveland, Oh 44113
(216) 241-8004

Drawing Title

SITE DETAILS

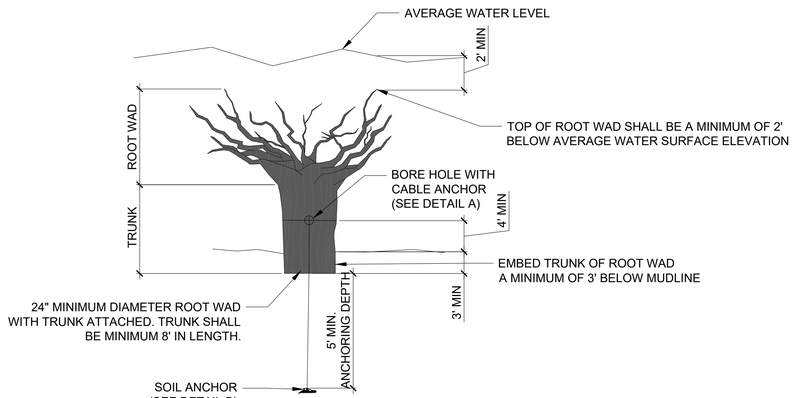
Job No: 292054 Scale: AS NOTED
Status: 90% DESIGN
Drawn By: NC
Checked By: JM
Approved By: KC
Date: 1/22/2026

Drawing No

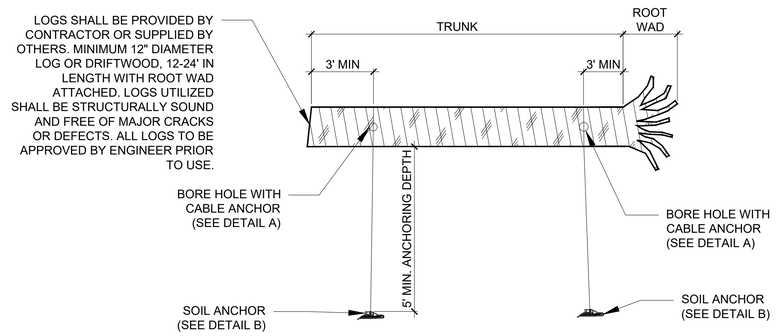
L-601

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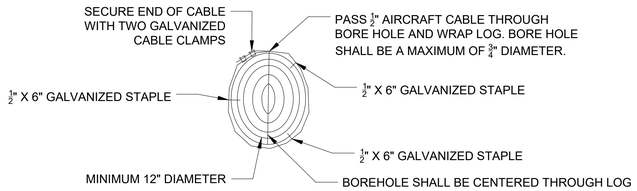
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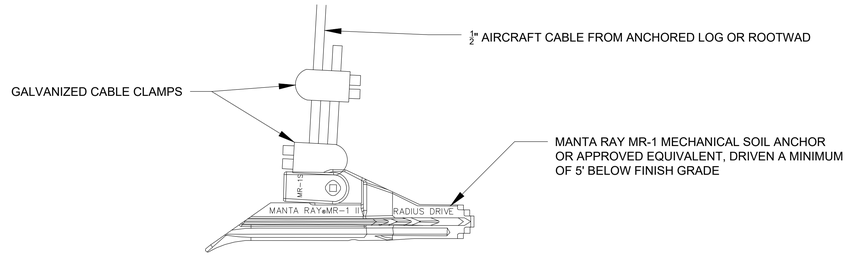
1 ROOT WAD
NOT TO SCALE



2 DRIFTWOOD
NOT TO SCALE



A LOG AND CABLE SECUREMENT FOR ROOT WADS AND DRIFTWOOD
NOT TO SCALE



B SOIL ANCHOR FOR ROOT WADS AND DRIFTWOOD
NOT TO SCALE

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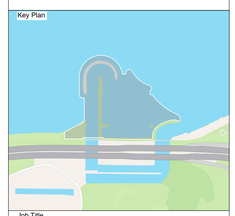
Issue	Description	Date
0	90% DESIGN	1/22/2026

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

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Drawing Title

HABITAT DETAILS

Job No: 292054
Status: 90% DESIGN
Drawn By: CR
Checked By: TL
Approved By: KS
Date: 1/22/2026
Scale: AS NOTED

Drawing No

L-602

CHEERS-DAVEY-DR-HL-602.DWG PLOT BY: Nikita.Pavin PLOT TIME: 1/22/2026 3:03 PM

Arup US, Inc.

Seed Mix Specification

CHEERS Sedge Meadow Native Seed Mix Item Code 102025-5

Recommended Seeding Rates

Hydro Seeded / Broadcast	Drilled
8.0 pounds / acre	8.0 pounds / acre
0.18 pounds / 1000 sq. ft.	
301 seeds / sq. ft.	301 seeds / sq. ft.

Category	% by Weight	% by Seed
Forb	11.37%	16.58%
Grass/Grasslike	88.63%	83.42%

Species Name	Common Name	%
Elymus virginicus	Virginia Wild Rye	35.62%
Carex vulpinoidea	Brown Fox Sedge	21.87%
Panicum (Dichanthelium) clandestin	Deer-tongue Grass	9.37%
Carex frankii	Franks Sedge	6.25%
Senna hebecarpa	Wild Senna	6.25%
Carex lurida	Shallow/Lurid Sedge	4.69%
Scirpus cyperinus	Woolgrass	2.19%
Carex hystericina	Porcupine Sedge	2.19%
Carex lupulina	Common Hop Sedge	1.56%
Juncus effusus	Common Rush	1.56%
Carex comosa	Bristly Sedge	1.56%
Asclepias incarnata	Rose Milkweed	1.25%
Hibiscus moscheutos	Crimson-eyed Rose Mallow	1.25%
Agrimonia parviflora	Swamp agrimony	0.94%
Aster novae-angliae	New England Aster	0.62%
Scirpus pendulus	Rufous bulrush	0.62%
Mimulus ringens	Monkey Flower	0.62%
Sparganium eurycarpum	Broadfruit Bur-Reed	0.62%
Carex lacustris	Common Lake Sedge	0.50%
Pycnanthemum tenuifolium	Narrow Leaved Mountain Mint	0.31%
Lobelia cardinalis	Cardinal Flower	0.12%

Moisture Wet
Light Prairie/Meadow Sun
Application Wet Meadow
Attracts Butterflies
Pollinators
Songbirds

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8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: December 17, 2025

Native Detention Area Mix - ERNMX-183

	Botanical Name	Common Name	Price/Lb
26.00 %	*Panicum clandestinum, Tioga*	Deertongue, Tioga	23.69
25.00 %	*Panicum virgatum, 'Shawnee'*	Switchgrass, 'Shawnee'	11.20
21.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	11.22
20.00 %	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype	33.80
4.00 %	*Agrostis hyemalis, Piedmont NC Ecotype*	Winter Bentgrass, Piedmont NC Ecotype	28.60
2.00 %	*Juncus effusus*	Soft Rush	52.00
1.00 %	*Juncus tenuis, PA Ecotype*	Path Rush, PA Ecotype	65.00
1.00 %	*Panicum rigidulum, PA Ecotype*	Redtop Panicgrass, PA Ecotype	78.00
100.00 %		**Mix Price/Lb Bulk:**	**$21.69**

Seeding Rate: 20 lb per acre, or 1/2 lb per 1,000 sq ft. For a cover crop: grain rye (1 Sep to 30 Apr; 30 lbs/acre), Japanese millet (1 May to 31 Aug; 10 lbs/acre).

Grasses & Grass-like Species - Herbaceous Perennial; Stormwater Management

The native grasses, sedges and rushes establish quickly in areas where mowing is not anticipated. With a high seed count per pound, it can achieve native establishment with minimum risk and tolerate low-fertility. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

Price quotes guaranteed for 30 days.
All prices are FOB Meadville, PA.
Please check our web site at www.ernstseed.com
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Date: November 10, 2025

Mesic to Dry Native Pollinator Mix w/o Grasses - ERNMX-125

	Botanical Name	Common Name	Price/Lb
22.30 %	*Echinacea purpurea*	Purple Coneflower	46.80
8.90 %	*Coreopsis lanceolata*	Lanceleaf Coreopsis	31.20
8.90 %	*Penstemon digitalis, PA Ecotype*	Tall White Beardtongue, PA Ecotype	182.00
8.90 %	*Rudbeckia hirta*	Blackeyed Susan	33.80
8.60 %	*Chamaecrista fasciculata, PA Ecotype*	Partridge Pea, PA Ecotype	13.00
7.40 %	*Verbena hastata, PA Ecotype*	Blue Vervain, PA Ecotype	41.60
4.50 %	*Heliopsis helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	36.40
3.90 %	*Zizia aurea, PA Ecotype*	Golden Alexanders, PA Ecotype	62.40
3.70 %	*Lespedeza capitata, RI Ecotype*	Roundhead Lespedeza, RI Ecotype	124.80
3.00 %	*Senna hebecarpa, VA & WV Ecotype*	Wild Senna, VA & WV Ecotype	31.20
2.10 %	*Asclepias incarnata, PA Ecotype*	Swamp Milkweed, PA Ecotype	192.40
2.10 %	*Asclepias tuberosa*	Butterfly Milkweed	468.00
1.80 %	*Aster pilosus, PA Ecotype*	Heath Aster, PA Ecotype	286.00
1.50 %	*Baptisia australis, Southern WV Ecotype*	Blue False Indigo, Southern WV Ecotype	104.00
1.50 %	*Eupatorium perfoliatum, PA Ecotype*	Boneset, PA Ecotype	208.00
1.50 %	*Gaura biennis, PA Ecotype*	Biennial Beeblossom, PA Ecotype	163.80
1.50 %	*Rudbeckia triloba, WV Ecotype*	Browneyed Susan, WV Ecotype	62.40
1.20 %	*Aster lateriflorus*	Calico Aster	364.00
1.20 %	*Pycnanthemum tenuifolium*	Narrowleaf Mountainmint	260.00
0.90 %	*Asclepias syriaca, PA Ecotype*	Common Milkweed, PA Ecotype	104.00
0.90 %	*Monarda fistulosa, Fort Indiantown Gap-PA Ecotype*	Wild Bergamot, Fort Indiantown Gap-PA Ecotype	104.00
0.90 %	*Pycnanthemum incanum*	Hoary Mountainmint	468.00
0.90 %	*Solidago nemoralis, PA Ecotype*	Gray Goldenrod, PA Ecotype	312.00
0.70 %	*Aster umbellatus, PA Ecotype*	Flat Topped White Aster, PA Ecotype	520.00
0.30 %	*Lobelia siphilitica, PA Ecotype*	Great Blue Lobelia, PA Ecotype	416.00
0.30 %	*Mimulus ringens, PA Ecotype*	Square Stemmed Monkeyflower, PA Ecotype	260.00
0.30 %	*Solidago bicolor, PA Ecotype*	White Goldenrod, PA Ecotype	312.00
0.30 %	*Solidago juncea, PA Ecotype*	Early Goldenrod, PA Ecotype	364.00
100.00 %		**Mix Price/Lb Bulk:**	**$97.41**

Seeding Rate: 5-10 lb per acre with 30 lb per acre of a cover crop (grain oats, Jan 1-Aug 1; grain rye, Aug 1-Jan 1)

Herbaceous Flowering Species - Herbaceous Perennial; Pollinator Favorites; Uplands & Meadows

Contains native forbs common in the Northeast. Excellent for wildlife food and shelter, including pollinators. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

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Date: November 10, 2025

Native Steep Slope Mix w/Annual Ryegrass - ERNMX-181

	Botanical Name	Common Name	Price/Lb
29.00 %	*Andropogon gerardii, 'Bison'*	Big Bluestem, 'Bison'	15.04
20.00 %	*Lolium multiflorum*	Annual Ryegrass	1.30
15.50 %	*Sorghastrum nutans, 'Nebraska 54'*	Indiangrass, 'Nebraska 54'	18.56
13.40 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	11.22
6.60 %	*Elymus canadensis*	Canada Wildrye	14.98
4.00 %	*Agrostis perennans, Albany Pine Bush-NY Ecotype*	Autumn Bentgrass, Albany Pine Bush-NY Ecotype	23.40
2.80 %	*Panicum clandestinum, Tioga*	Deertongue, Tioga	23.67
2.80 %	*Panicum virgatum, 'Habitat'-NJ Ecotype*	Switchgrass, 'Habitat'-NJ Ecotype	10.80
1.20 %	*Tridens flavus, Fort Indiantown Gap-PA Ecotype*	Purpletop, Fort Indiantown Gap-PA Ecotype	49.80
1.00 %	*Chamaecrista fasciculata, PA Ecotype*	Partridge Pea, PA Ecotype	13.00
1.00 %	*Rudbeckia hirta*	Blackeyed Susan	33.80
0.70 %	*Coreopsis lanceolata*	Lanceleaf Coreopsis	31.20
0.70 %	*Echinacea purpurea*	Purple Coneflower	46.80
0.60 %	*Heliopsis helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	36.40
0.30 %	*Aster pilosus, PA Ecotype*	Heath Aster, PA Ecotype	286.00
0.20 %	*Monarda fistulosa, Fort Indiantown Gap-PA Ecotype*	Wild Bergamot, Fort Indiantown Gap-PA Ecotype	104.00
0.10 %	*Apocynum cannabinum, PA Ecotype*	Indianhemp, PA Ecotype	234.00
0.10 %	*Asclepias syriaca, PA Ecotype*	Common Milkweed, PA Ecotype	104.00
100.00 %		**Mix Price/Lb Bulk:**	**$15.02**

Seeding Rate: 60 lb per acre, or 1.5 lb per 1,000 sq ft

Erosion Control & Revegetation; Grasses & Grass-like Species - Herbaceous Perennial; Herbaceous Flowering Species - Herbaceous Perennial

The native grass and forb species tolerate poor soils typically found on steep slopes in the eastern United States. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

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Oliger's

Fairlawn Lawn Seed Mixture

Seed mix contains:

- 45% Kentucky Bluegrass (2 Varieties - 1 Improved)
- 40% Perennial Ryegrass (3 Improved Varieties)
- 15% Creeping Red Fescue (Improved Variety)

There is only one Oliger's "Fairlawn Brand." It continues to be the #1 best selling mix! It is the mix homeowners need who plans to maintain their lawn with average to low fertilization. This mix features the highest quality ryegrasses, thereby offering the quick establishment of an attractive permanent turf.

Seed Mix Features:

- Quick establishment of a durable and attractive turf.
- Blends well with the majority of home lawns in our area.
- Light shade areas.

Recommended Seeding Rates:

- New seeding rate: 5 lbs. per 1,000 square feet.
- Overseeding rate: 2.5 lbs. per 1,000 square feet.

Locally blended in Akron, Ohio

Emergent Marsh Plug Planting List		
Species Name	**Common Name**	**Quantity**
Carex lacustris	Lake Sedge	300
Eleocharis obtusa	Blunt Spikerush	100
Hibiscus moscheutos	Swamp Rose Mallow	180
Iris versicolor	Northern Blueflag Iris	100
Juncus effusus	Soft Rush	100
Peltandra virginica	Arrow Arum	100
Pontederia cordata	Pickerel Weed	100
Sagittaria latifolia	Arrowhead	100
Schoenoplectus tabernaemontani	Softstem Bulrush	300
Sparganium eurycarpum	Giant Burreed	300
Total		**1680**

Shoreline Slope Plug Planting List		
Species Name	**Common Name**	**Quantity**
Asclepias incarnata	Swamp Milkweed	35
Carex lurida	Bottlebrush Sedge	35
Carex vulpinoidea	Fox Sedge	35
Elymus virginicus	Virginia Wild Rye	35
Eupatorium fistulosum	Hollow Joe-Pye Weed	35
Eupatorium maculatum	Spotted Joe-Pye Weed	35
Eupatorium perfoliatum	Common Boneset	35
Penstemon digitalis	Foxglove Beard-Tongue	35
Verbena hastata	Blue Vervain	35
Total		**315**

Shoreline Slope Live Stake Planting List		
Species Name	**Common Name**	**Quantity**
Cephalanthus occidentalis	Buttonbush	100
Cornus amomum	Silky Dogwood	100
Viburnum lentago	Nannyberry	100
Total		**300**

Meadow Zone A and B Container Planting List		
Species Name	**Common Name**	**Quantity**
Rhus typhina	Staghorn Sumac	50
Total		**50**

Meadow Zone B Plug Planting List		
Species Name	**Common Name**	**Quantity**
Asclepias tuberosa	Butterfly-Weed	20
Echinacea purpurea	Purple Coneflower	20
Eupatorium purpureum	Purple Joe-Pye Weed	20
Liatris spicata	Spiked Blazing-Star	20
Pycnanthemum tenuifolium	Narrow-Leaved Mountain-Mint	20
Ratibida pinnata	Gray-Headed Coneflower	20
Verbena hastata	Blue Vervain	20
Vernonia gigantea	Tall Ironweed	20
Eryngium yuccifolium	Rattlesnake Master	20
Monarda fistulosa	Wild Bergamot	20
Pycnanthemum virginianum	Virginia Mountain-Mint	20
Tradescantia ohiensis	Ohio Spiderwort	20
Verbena urticifolia	White Vervain	20
Total		**260**

Emergent Marsh Container Planting List		
Species Name	**Common Name**	**Quantity**
Asclepias incarnata	Swamp Milkweed	10
Carex lacustris	Lake Sedge	10
Cephalanthus occidentalis	Common Buttonbush	10
Hibiscus moscheutos	Swamp Rose Mallow	10
Iris versicolor	Northern Blueflag Iris	10
Pontederia cordata	Pickerel Weed	10
Sagittaria latifolia	Arrowhead	10
Total		**70**

Emergent Marsh Live Stake Planting List		
Species Name	**Common Name**	**Quantity**
Cephalanthus occidentalis	Common Buttonbush	150
Cornus sericea	Reddosier Dogwood	150
Salix discolor	Pussy Willow	150
Salix exiguia	Sandbar Willow	150
Total		**600**

Shoreline Slope Container Planting List		
Species Name	**Common Name**	**Quantity**
Hibiscus moscheutos	Swamp Rose-Mallow	15
Iris versicolor	Northern Blue Flag	15
Rosa palustris	Swamp Rose	15
Total		**45**

Meadow Zone A Plug Planting List		
Species Name	**Common Name**	**Quantity**
Asclepias tuberosa	Butterfly-Weed	60
Doellingeria umbellata	Flat-Topped White Aster	60
Bouteloua curtipendula	Side-Oats Grama Grass	60
Echinacea purpurea	Purple Coneflower	60
Liatris spicata	Spiked Blazing-Star	60
Monarda fistulosa	Wild Bergamot	60
Panicum virgatum	Switch Grass	60
Penstemon digitalis	Foxglove Beard-Tongue	60
Schizachyrium scoparium	Little Bluestem	60
Sporobolus heterolepis	Prairie Dropseed	60
Total		**600**

Stormwater Swale Plug Planting List		
Species Name	**Common Name**	**Quantity**
Carex emoryi	Emory's Sedge	360
Carex lacustris	Lake Sedge	360
Carex stricta	Tussock Sedge	360
Carex vulpinoidea	Fox Sedge	360
Total		**1440**

PLANTING NOTES:

1. EMERGENT MARSH PLUG PLANTINGS SHALL BE PLACED IN CLUSTERS OF 6 PLUGS OF THE SAME SPECIES. 200 CLUSTERS SHALL BE PLANTED AT A SPACING OF 15' X 15' O/C THROUGHOUT THE EMERGENT MARSH PLANTING ZONE. PELTANDRA VIRGINICA, PONTEDERIA CORDATA, SAGITTARIA LATIFOLIA, AND SPARGANIUM EURYCARPUM SHOULD BE PLANTED IN DEEPER SECTIONS OF THE SHALLOW EMERGENT MARSH ZONE AND NOT ABOVE OR NEAR THE WATER LINE.

2. EMERGENT MARSH CONTAINER PLANTINGS SHALL BE SPACED 30' X 30' ON CENTER THROUGHOUT THE EMERGENT MARSH PLANTING ZONE.

3. EMERGENT MARSH LIVE STAKES SHALL BE PLANTED IN TWO ROWS 3' O/C NEAR THE EXISTING WATER LINE OF LAKE ERIE AT THE TIME OF PLANTING.

4. THE SHORELINE SLOPE PLUG PLANTINGS SHALL BE PLANTED IN CLUSTERS OF 6 PLUGS OF A SINGLE SPECIES, SPACED 15' X 15' O/C ACROSS THE LOWER HALF OF THE SHORELINE SLOPE PLANTING ZONE. APPROXIMATELY 50 CLUSTERS WILL BE PLANTED.

5. SHORELINE SLOPE CONTAINER PLANTS SHALL BE PLANTED IN CLUSTERS OF 3-4 PLANTS PER CLUSTER SPACED 30' X 30' O/C ACROSS THE LOWER HALF OF THE SHORELINE SLOPE. APPROXIMATELY 12 CLUSTERS WILL BE PLANTED.

6. SHORELINE SLOPE LIVE STAKES WILL BE PLANTED IN 1 ROW SPACED 3' O/C AT THE TOE OF THE SHORELINE SLOPE.

7. SHORELINE SLOPE SEED MIX SHALL CONSIST OF OHIO PRAIRIE NURSERY'S SEDGE MEADOW NATIVE SEED MIX OR APPROVED EQUIVALENT.

8. THE SHORELINE SLOPE PLANTING AREA SHALL BE STABILIZED USING CM 700 EROSION CONTROL MATTING.

9. MEADOW ZONE A PLUG PLANTINGS SHALL BE SPACED 10' X 10' O/C THROUGHOUT THE LOW MEADOW PLANTING ZONE.

10. MEADOW ZONE A SEED MIX SHALL CONSIST OF ERNST SEEDS' ERNMX-125 OR APPROVED EQUIVALENT.

11. MEADOW ZONE B PLUG PLANTINGS SHALL BE SPACED 10' X 10' O/C THROUGHOUT THE TALL MEADOW PLANTING ZONE.

12. MEADOW ZONE B SEED MIX SHALL CONSIST OF ERNST SEEDS' ERNMX-181 OR APPROVED EQUIVALENT.

13. NO SUBSTITUTIONS OF PLANT SPECIES OR SEED MIXES SHALL BE MADE WITHOUT THE APPROVAL OF THE OWNER OR THE OWNER'S AUTHORIZED REPRESENTATIVE.

14. PRIOR TO SEEDING, LAWN AREA IS TO BE TOPSOILED, FINE GRADED, AND RAKED OF ALL DEBRIS LARGER THAN 1" DIAMETER.

THE LAWN SEED MIX SHALL BE OLIGER'S FAIRLAWN LAWN SEED MIX OR OWNER APPROVED EQUIVALENT.
45% KENTUCKY BLUEGRASS
40% PERENNIAL RYEGRASS
15% CREEPING RED FESCUE

LAWN SEED MIX SHALL BE MULCHED WITH HAY OR UNROTTED SMALL GRAIN STRAW AT A RATE OF 2 TONS/AC OR 90 LBS/1.0 SF.

LAWN SEEDING DATES FOR THIS MIXTURE SHALL BE AS FOLLOWS;
SPRING: APRIL 1 - JUNE 1
FALL: SEPTEMBER 1 - OCTOBER 31

GERMINATION RATES WILL VARY AS TO TIME OF YEAR FOR SOWING. CONTRACTOR TO IRRIGATE SEEDED AREA UNTIL A STAND OF COVER IS ESTABLISHED AND ACCEPTED BY THE OWNER.

15. ALL STORMWATER SWALES SHALL BE SEEDED WITH ERNST SEEDS' ERNMX-183 OR APPROVED EQUIVALENT.

16. STORMWATER SWALE PLUG PLANTINGS SHALL BE PLANTED 3' X 3' O/C THROUGHOUT THE STORMWATER SWALE PLANTING ZONE.

PROJECT MANAGEMENT
CIVIL ENGINEERING
STRUCTURAL ENGINEERING
SITE LIGHTING
ELECTRICAL ENGINEERING
ARUP
77 Water Street
New York, NY 10005
tel: +1 (212) 896-3000
www.arup.com

ECOLOGY
Davey Resource Group, Inc.
1310 Sharon Copley Rd
Sharon Center, OH 44274
www.davey.com

SURVEYING,
COASTAL ENGINEERING & PERMITTING
KS Associates
260 Burns Road, Suite 100
Elyria, OH 44035
www.ksassociates.com

LANDSCAPE ARCHITECTURE
WRT
123 S. Broad Street, Suite 1450
Philadelphia, PA 19109
www.wrtdesign.com

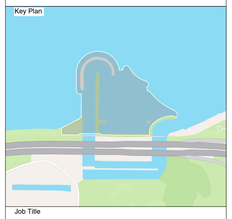
0	90% DESIGN	1/22/2026
Issue	Description	Date

Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



Job Title

CHEERS
Cleveland Harbor Eastern Embayment Resilience Strategy

Project Partners

City of Cleveland; Ohio Department of Natural Resources; Ohio Department of Transportation; The Port of Cleveland; Cleveland Metroparks; Black Environmental Leaders Association

KEY CLIENT CONTACT:
Cleveland Metroparks
4101 Fulton Parkway, Cleveland Oh 44144
(216) 635-3200
The Port Of Cleveland
1100 W. 9th Street - Suite 300, Cleveland, Oh 44113
(216) 241-8004

Drawing Title

PLANT SCHEDULES

Job No: 292054 Scale: AS NOTED
Status: 90% DESIGN
Drawn By: CR
Checked By: TL
Approved By: KS
Date: 1/22/2026

Drawing No

L-700

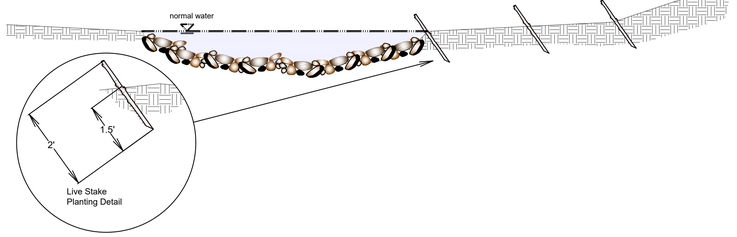
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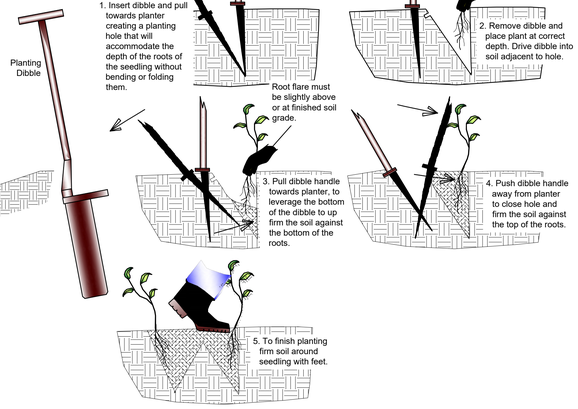
Arup US, Inc.

Live Stake Planting Detail

General Live Stake Notes:

- Install live stakes during plant dormancy prior to bud break (early December to early/mid April, when soils are unfrozen and workable).
- Live stakes should be made from cuttings of 2-3 year old growth, generally ½- to 1-inch diameter stems and range from 2-4 ft in length. Cuttings should be processed with an angular/pointed cut on the bottom and a flat/square cut on the top with the buds oriented to the top.
- Live stakes should be harvested or purchased close to the installation date and kept moist, cool and out of direct sunlight.
- The lower ⅓ of the cuttings shall be pre-soaked in water for 24 hours prior to installation, pointed side down.
- Install cuttings on 1-4 ft spacing at or near the low bankfull elevation per detail. It may be necessary to create a pilot hole prior to installing cutting.
- Push in or tap cutting to an depth of ⅔ its length using a rubber mallet to avoid damage. Water in and firm soil around live stake.
- Install at a minimum of two species at a 1:1 ratio of the quantity specified or as directed by the restoration ecologist.

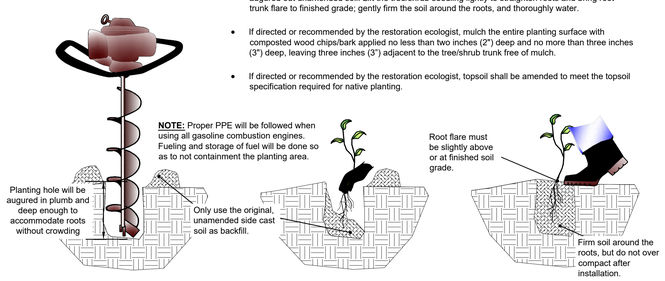




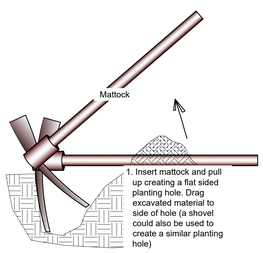
Auger Bareroot and Container Planting Detail

General Auger Bareroot and Container Planting Notes

- Using an auger, create a plumb planting hole deep enough to accommodate the rootball, especially the length of the root mass in the planting hole without crowding so that the trunk flare will be at finished grade and the tree/shrub is straight and plumb.
- Completely tease apart root system, repositioning any girdling or potentially girdling roots.
- Place the plant in the hole slightly deeper than the trunk flare and backfill planting hole with existing augured out unamended soil. Lift the tree/shrub seedling lightly to straighten roots and bring root trunk flare to finished grade; gently firm the soil around the roots, and thoroughly water.
- If directed or recommended by the restoration ecologist, mulch the entire planting surface with composted wood chips/bark applied no less than two inches (2") deep and no more than three inches (3") deep, leaving three inches (3") adjacent to the tree/shrub trunk free of mulch.
- If directed or recommended by the restoration ecologist, topsoil shall be amended to meet the topsoil specification required for native planting.

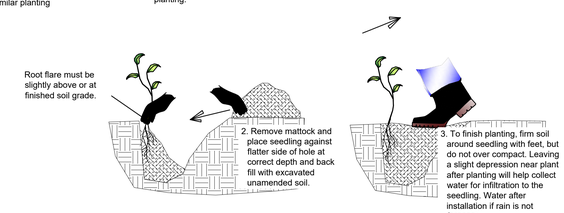


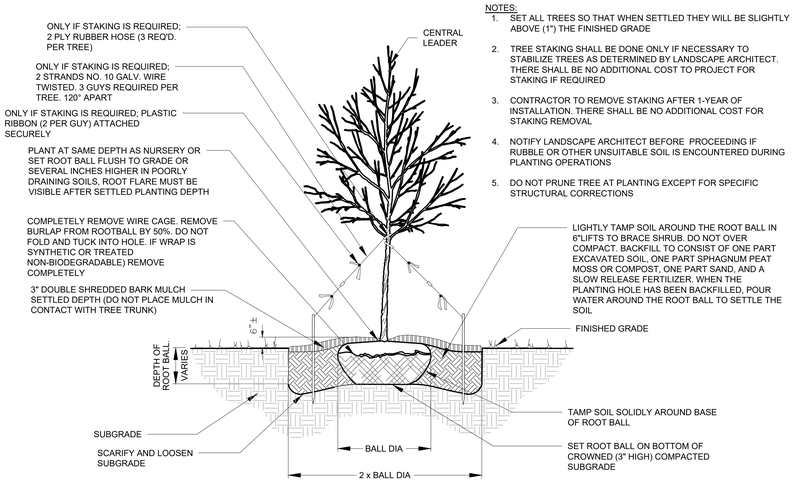
Standard Bareroot and Container Planting Detail



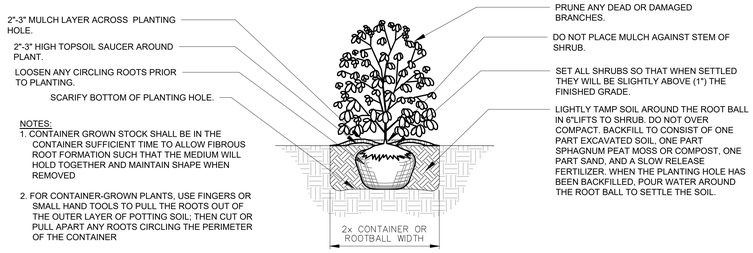
General Bareroot and Container Planting Notes

- Using a mattock or shovel, create a plumb planting hole deep enough to accommodate the rootball, especially the length of the root mass in the planting hole without crowding so that the trunk flare will be at finished grade and the tree/shrub is straight and plumb.
- Completely tease apart root system, repositioning any girdling or potentially girdling roots.
- Place the plant in the hole slightly deeper than the trunk flare and backfill planting hole with existing excavated out unamended soil. Lift the tree/shrub seedling lightly to straighten roots and bring root trunk flare to finished grade; gently firm the soil around the roots, and thoroughly water.
- If directed or recommended by the restoration ecologist, mulch the entire planting surface with composted wood chips/bark applied no less than two inches (2") deep and no more than three inches (3") deep, leaving three inches (3") adjacent to the tree/shrub trunk free of mulch.
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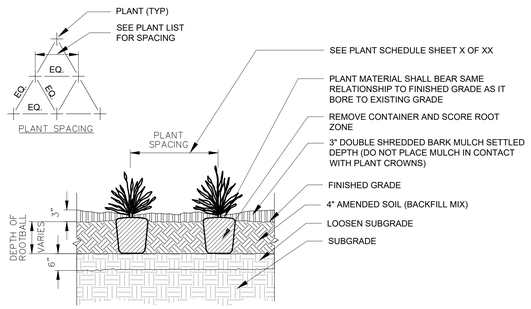




1 DECIDIOUS TREE PLANTING
NOT TO SCALE

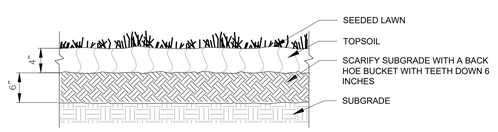


2 SHRUB PLANTING
NOT TO SCALE



3 PERENNIAL PLANTING
NOT TO SCALE

NOTES:
1. NO LOOSE STRAW MULCH TO BE USED TO COVER SEED
2. CONTRACTOR MUST USE EITHER A 1/2" LAYER OF MUSHROOM MANURE, HYDRO OR PENN MULCH OR FASTENED DOWN STRAW MATTING



4 LAWN
NOT TO SCALE

PROJECT MANAGEMENT
CIVIL ENGINEERING
STRUCTURAL ENGINEERING
SITE LIGHTING
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77 Water Street
New York, NY 10005
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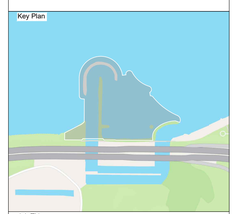
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Drawing Issue and Revision History

Seal

NOT FOR CONSTRUCTION

Key Plan



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Drawing Title

PLANT DETAILS

Job No: 292054 Scale: AS NOTED
Status: 90% DESIGN
Drawn By: CR
Checked By: TL
Approved By: KS
Date: 1/22/2026

Drawing No

L-701

CHEERS-DAVEY-DR-HL-L-701.DWG PLOT BY: tl0059 PLOT TIME: 1/22/2026 3:02 PM
Arup US, Inc.