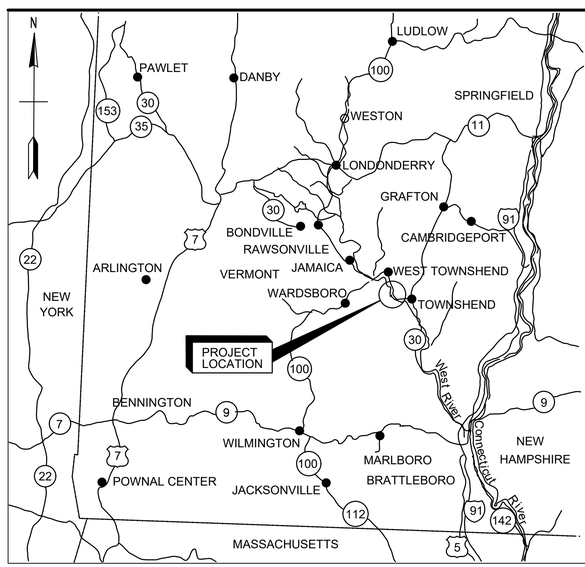
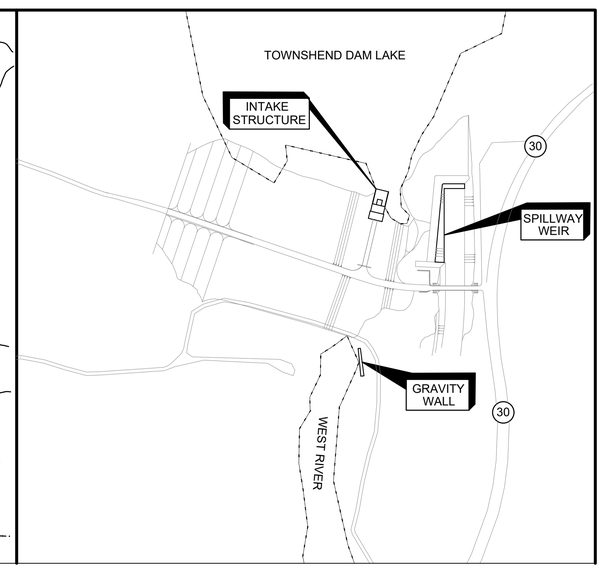
US Army Corps of Engineers®
New England District

GATEHOUSE EXTERIOR STAIR REPAIR
TOWNSHEND LAKE
TOWNSHEND, VERMONT



D1 LOCATION MAP
SCALE: NTS



D6 VICINITY MAP
SCALE: NTS

SOLICITATION NO.:
CONTRACT NO.:
ISSUE DATE:

INDEX TO DRAWINGS

SHEET NO.		DESIGN FILE	SHEET TITLE
1	G-001	CON-TO-516_G-001.DWG	COVER SHEET AND INDEX
2	G-101	CON-TO-516_G-101.DWG	GENERAL SITE PLAN
3	S-101	CON-TO-516_S-101.DWG	EXTERIOR STAIR ELEVATIONS AND SECTIONS
4	S-501	CON-TO-516_S-501.DWG	CONCRETE REPAIR DETAILS
5	S-901	CON-TO-516_S-901.DWG	PHOTOGRAPHS OF EXISTING CONDITIONS I

INDEX TO FOR INFORMATION DRAWINGS

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1	CT-1-5314	23	INTAKE STRUCTURE - CONCRETE ELEVATIONS
2	CT-1-5317	26	INTAKE STRUCTURE - CONCRETE EXTERIOR STAIRWAY & MISCELLANEOUS DETAILS
3	CT-1-5327	36	INTAKE STRUCTURE - REINFORCEMENT - EXTERIOR STAIRWAY - PLAN & SECTIONS
4	CT-1-5328	37	INTAKE STRUCTURE - SUPERSTRUCTURE - ENTRANCE DETAILS
5	CT-1-5335	44	MISCELLANEOUS METAL - EXTERIOR HANDRAILS DETAILS
6	CT-1-5336	45	MISCELLANEOUS METAL - HANDRAILS DETAILS

SIGNATURES AFFIXED BELOW INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF ALL DRAWINGS IN THIS SET AS INDEXED ON THIS SHEET

APPROVED FOR TECHNICAL ADEQUACY BY:
TECHNICAL LEAD ENGINEER — DATE

REVIEWED BY:
CHIEF, GEOTECHNICAL/WATER RESOURCES BRANCH — DATE

REVIEWED BY:
CHIEF, GEO-ENVIRONMENTAL ENGINEERING BRANCH — DATE

APPROVAL RECOMMENDED BY:
CHIEF, DESIGN BRANCH — DATE

APPROVED BY:
CHIEF, ENGINEERING DIVISION — DATE

This project was designed by the U.S. Army Corps of Engineers. The initials or signatures and registration designations of individuals appear on these project documents, within the scope of their employment as required by ER 1110-1-8152.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: E. MAHONEY
DRAWN BY: E. MAHONEY
CHECKED BY: E. MAHONEY
SUBMITTED BY: B. LIE
ISSUE DATE:
SOLICITATION NO.:
CONTRACT NO.:
DRAWING CODE: CON-TO-516
SIZE: ANSI D
SCALE: N.T.S.
SHEET 1 OF 5

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

GATEHOUSE EXTERIOR STAIR REPAIR
TOWNSHEND LAKE
TOWNSHEND, VERMONT

COVER SHEET AND INDEX

SHEET ID
G-001

B1 GENERAL SITE PLAN

SCALE: 1" = 100'

0 300' 600'

NOTE:
1. INFORMATION ON THIS SHEET PROVIDED FOR INFORMATION ONLY.

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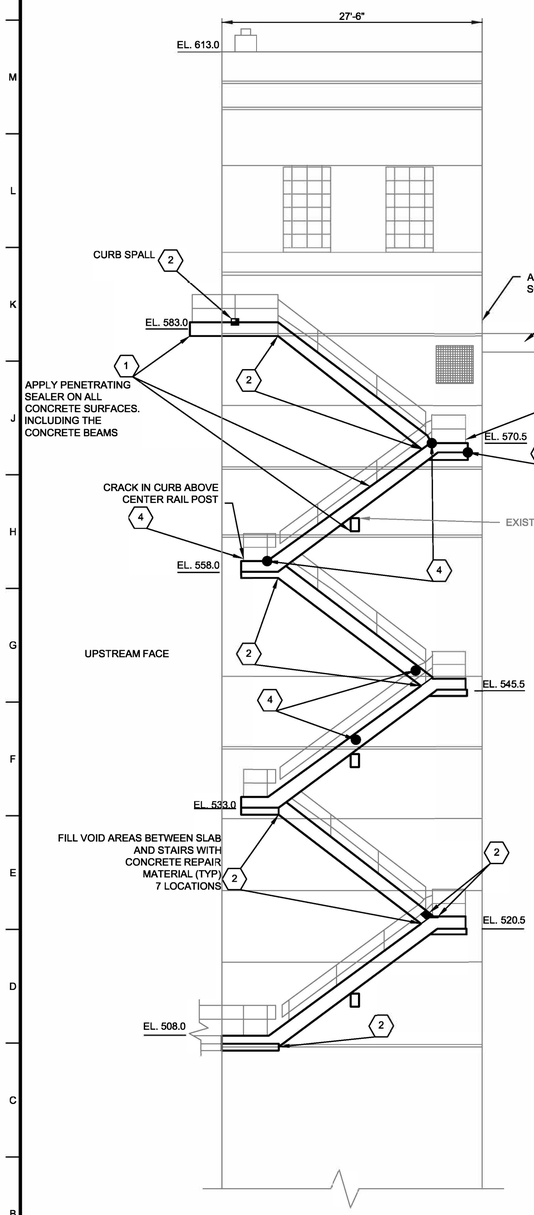
SIZE: ANSI D
SCALE: 1" = 300'
ISSUE DATE:
SOLICITATION NO.:
CONTRACT NO.:
DRAWING CODE: CONCT-S-16
SHEET 2 OF 5

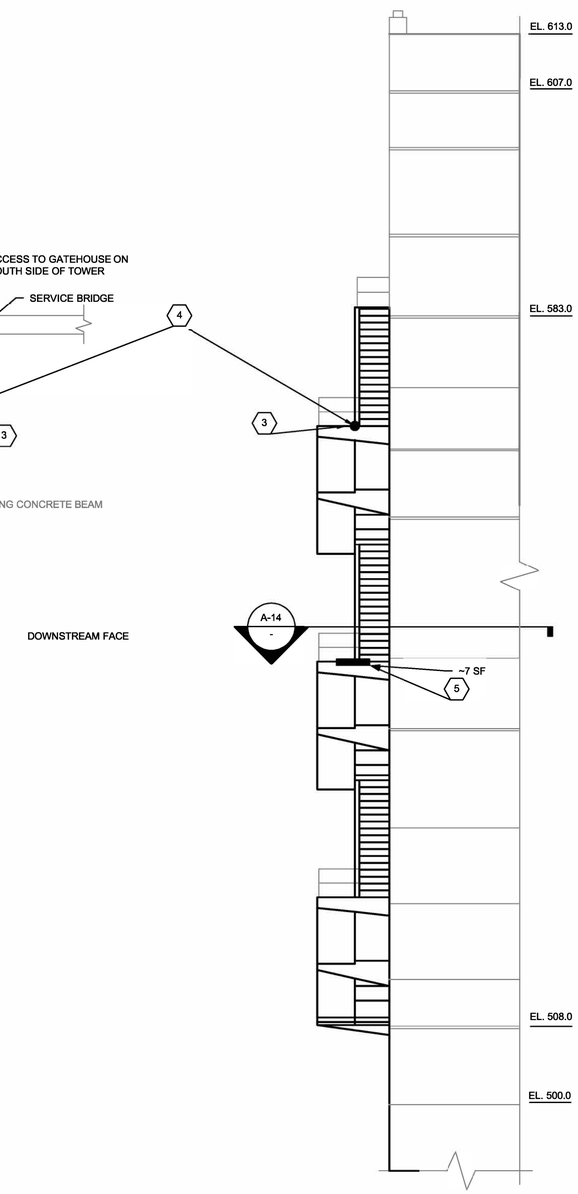
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

GATEHOUSE EXTERIOR STAIR REPAIR
TOWNSHEND LAKE
TOWNSHEND, VERMONT

GENERAL SITE PLAN

SHEET ID
G-101





NOTES:

1. SEE DETAIL D1 ON SHEET S-501 FOR ALL CONCRETE REPAIRS
2. SOUND CONCRETE TO 2" EITHER SIDE OF EXISTING PATCH OR DETERIORATED AREA.
3. AGGREGATE ALL ADJACENT UNSOUND CONCRETE AREAS TO CREATE A SINGLE NEAT RECTANGULAR SHAPE REPAIR OUTLINE. PRESENT TO COR FOR CONCURRENCE PRIOR TO PROCEEDING WITH REPAIR WORK.

A1 INTAKE TOWER - WEST ELEVATION
1/8" = 1' - 0"

A7 INTAKE TOWER - PARTIAL DOWNSTREAM ELEVATION
1/8" = 1' - 0"

GENERAL NOTES:

1. FIELD VERIFY ALL EXISTING CONDITIONS. COORDINATE AND FIELD ADJUST DIMENSIONS AND DETAILS SHOWN ON CONSTRUCTION DRAWINGS WITH ACTUAL FIELD CONDITIONS. NOTIFY TECHNICAL POINT OF CONTACT FOR SIGNIFICANT DEVIATION CAUSING CONFLICT WITH DESIGN DRAWINGS.
2. PROTECT ALL EXISTING STRUCTURES FROM DAMAGE DURING CONSTRUCTION. COORDINATE WITH COR SHOULD CONSTRUCTION REQUIRE TEMPORARY RELOCATION OR REMOVAL OF EXISTING STRUCTURES.
3. DISPOSAL OF ANY OTHER CONSTRUCTION WASTE INTO THE STREAM OR WITHIN THE GOVERNMENT PROPERTY WILL NOT BE PERMITTED. ALL WASTE SHALL BE TRUCKED OFFSITE FOR DISPOSAL. APPROPRIATE PROTECTIVE MEASURES SHALL BE PROVIDED BY THE CONTRACTOR.
4. DEMOLISHED CONCRETE SHALL BE RECYCLED TO THE GREATEST EXTENT POSSIBLE.
5. LIMIT OF REPAIRS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL WORK WITH COR TO JOINTLY ESTABLISH LIMITS OF REPAIRS FOLLOWING SURFACE SOUNDING.
6. CONTRACTOR MUST REMOVE ANY DEBRIS AS NECESSARY AT THE COMMENCEMENT OF WORK.
7. PROTECT AND MASK ALL NON-CONCRETE SURFACES DURING REPAIRS.
8. DETERMINE ACTUAL LOCATIONS AND LIMITS OF DETERIORATED CONCRETE BY VISUAL INSPECTION AND BY TAPPING WITH A HAMMER OR STEEL ROD AND LISTENING FOR DULL OR HOLLOW SOUNDS. CONCRETE SURFACES SHALL BE SOUNDED A MINIMUM OF 2 INCHES BEYOND ALL EDGES OF VISUALLY INSPECTED DETERIORATED AREAS. LIMIT OF REPAIRS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL WORK WITH COR TO JOINTLY ESTABLISH LIMITS OF REPAIRS FOLLOWING SURFACE SOUNDING.
9. CONTRACTOR SHALL SUBMIT A REPORT DETAILING REPAIR AREA LOCATIONS, DEPTHS, AND QUANTITIES FOR APPROVAL BEFORE BEGINNING ANY REPAIR. GOVERNMENT WILL BE GIVEN TIME TO REVIEW THE PROPOSED WORK AND WILL HAVE THE RIGHT TO REJECT OR REQUEST CHANGES TO THE WORK BEING PROPOSED. CONTRACTOR SHALL REFER TO SPEC SECTION 03 01 00, SUBPART 3.3.1.1 IDENTIFICATION OF EXTENT OF CONCRETE REMOVAL.

DEFINITIONS:

STA.: HORIZONTAL STATIONING OF THE SPILLWAY

EL: VERTICAL ELEVATION FROM MEAN SEA LEVEL USING NGVD27 FROM ORIGINAL PLANS

C.J. CONTROL JOINT

SF SQUARE FOOT

O.C. ON CENTER

N.T.S NOT TO SCALE

STRUCTURAL NOTES:

1. CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)" AND PROJECT SPECIFICATIONS.
2. SURFACE PREPARATION AND APPLICATION OF REPAIR MATERIALS SHALL STRICTLY ADHERE TO THE APPROVED PATCHING MATERIALS MANUFACTURER'S PRINTED INSTRUCTIONS/DATA SHEETS. CONCRETE SURFACE SHALL BE CLEANED AND HAVE A MINIMUM CONCRETE SURFACE PROFILE OF 5 PER INTERNATIONAL CONCRETE REPAIR INSTITUTE FOR PATCHING, UNLESS NOTED OTHERWISE.
3. SEE SPECIFICATIONS FOR REQUIREMENTS FOR ATTENDANCE OF QUALIFIED MANUFACTURER TECHNICAL REPRESENTATIVE TO THE PROJECT SITE.
4. PERFORM SOUNDING AND REPAIRS OF THE CONCRETE IN ACCORDANCE WITH SPECIFICATION SECTION 03 01 00 AND THE CONCRETE REPAIR DETAILS SHOWN ON D1/S-501.
5. CONCRETE REPAIRS ACROSS CONSTRUCTION JOINTS SHALL INCLUDE SHAPING CONSTRUCTION JOINTS IN THE SAME LOCATIONS AS THE PREVIOUS CONSTRUCTION JOINTS.
6. APPLY CONCRETE PENETRATING SEALER TO THE ENTIRE STAIRWAY SURFACE. LIMITS ARE SHOWN ON ELEVATIONS A1 & A7 ON THIS SHEET. PREPARE CONCRETE AND APPLY SEALER ACCORDING TO CONCRETE SEALER MANUFACTURER'S REQUIREMENTS. SEALER SHALL ONLY BE APPLIED TO CURED CONCRETE WITH A MOISTURE CONTENT AS SPECIFIED
7. APPLY CORROSION INHIBITOR/BONDING AGENT TO ALL EXPOSED REBAR PER SPECIFICATION 03 01 00 REHABILITATION OF CONCRETE PART 2 SUBSECTION 2.6 CORROSION INHIBITOR/BONDING AGENT.

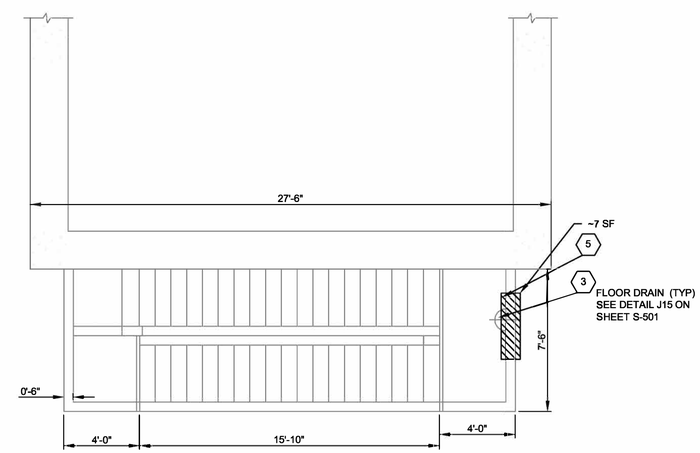
LEGEND:

EXISTING CONDITIONS:

NEW WORK:

KEY NOTES:

1. **INTAKE TOWER - EXTERIOR STAIRS - PENETRATING SEALER (~3100 SF):**
   CLEAN ALL CONCRETE SURFACES AND APPLY PENETRATING SEALER TO LIMIT SHOWN.
   SEE ELEVATION A1 & A7 ON THIS SHEET FOR LIMITS OF REPAIR
2. **INTAKE TOWER - EXTERIOR STAIRS - CONCRETE REPAIRS (~17 SF):**
   SEE DETAIL D1 & D13 ON SHEET S-501.
   CONCRETE REPAIR DEPTH OF 3"
3. **INTAKE TOWER - EXTERIOR STAIRS - FLOOR DRAIN PIPE AT EL. 570.5 EXTENSION:**
   SEE DETAIL J13 ON SHEET S-501.
4. **INTAKE TOWER - EXTERIOR STAIRS - CRACK REPAIRS (76 LF):**
   FINGER SEAL WITH SILICONE SEALANT.
   SEE ELEVATION A1 & A7 ON THIS SHEET FOR REPAIR LOCATIONS.
5. **INTAKE TOWER - EXTERIOR STAIRS - CURB RECONSTRUCTION (~7 SF):**
   SEE DETAIL J1 ON SHEET S-501.
   CONCRETE REPAIR DEPTH OF 6"



A14 SECTION A-A - EXTERIOR STAIRS @ EL. 545.5
1/4" = 1' - 0"

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MARK	DESCRIPTION	DATE

ISSUE DATE:
SOLICITATION NO.:
CONTRACT NO.:
DRAWING CODE: CONC-TO-516
SHEET 3 OF 5

DESIGNED BY: E.MAHONEY
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CHECKED BY:
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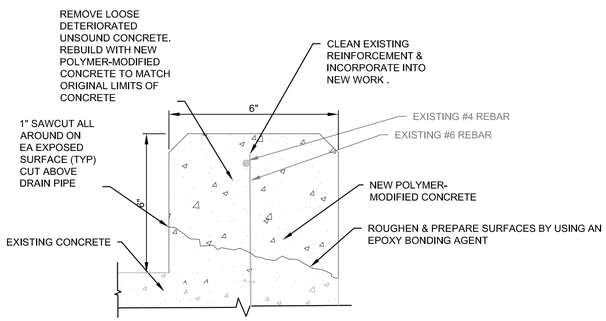
SIZE: ANSI D
SCALE: 1" = 20'

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

GATEHOUSE EXTERIOR STAIR REPAIR
TOWNSHEND LAKE
TOWNSHEND, VERMONT

EXTERIOR STAIR- ELEVATIONS AND SECTIONS

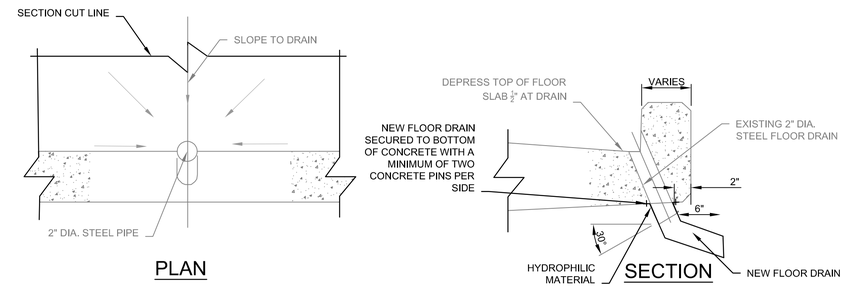
SHEET ID
S-101



NOTE:
1. SEE NOTES ON D1 FOR REPAIR APPROACH.
2. CARE MUST BE TAKEN TO ENSURE NO DAMAGE WILL OCCUR TO THE DRAIN PIPE.

J1 CURB RECONSTRUCTION (5)

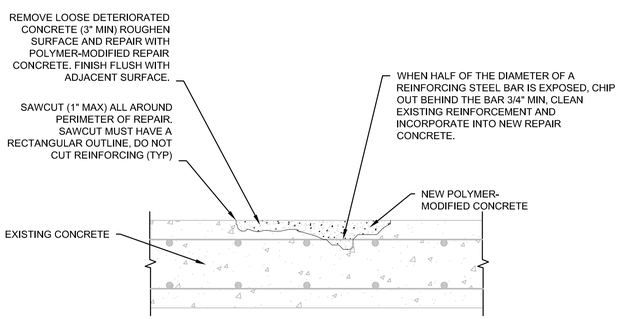
SCALE: N.T.S.



1. APPLY 2 STRIPS OF HYDROPHILIC WATERSTOP PASTE AROUND THE EXTERIOR PERIMETER OF EXISTING FLOOR DRAIN.
2. FIT NEW DRAIN PIPE OVER EXISTING DRAIN PIPE.
3. NEW PIPE SHALL BE ELBOWED AND EXTENDS A MINIMUM OF 6" FROM END OF EXISTING DRAIN PIPE.
4. NEW PIPE TO BE HOT DIPPED GALVANIZED WITH INSIDE DIAMETER SNUG TIGHT OVER EXISTING PIPE AND WATERSTOP.

J13 FLOOR DRAIN REPAIR DETAIL (3)

SCALE: N.T.S.

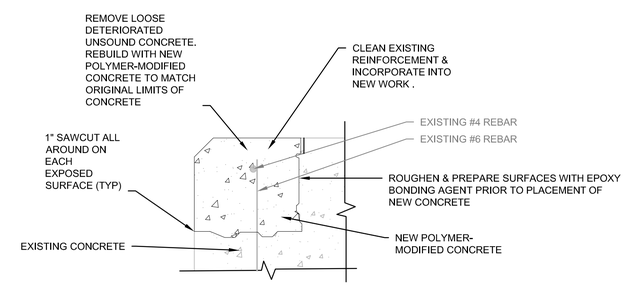


TYPICAL CONCRETE REPAIR PATCH

1. SAWCUT PERIMETER OF REPAIR A MINIMUM OF 1 INCH DEEP.
2. REMOVE ALL DETERIORATED CONCRETE TO A DEPTH OF 3 INCHES.
3. FOR ALL REINFORCING STEEL THAT IS EXPOSED GREATER THAN 50% OF ITS CIRCUMFERENCE, THE CONCRETE SHALL BE UNDERCUT BY A MINIMUM OF 3/4 INCH.
4. REPLACE REINFORCING STEEL IF LESS THAN 75% OF THE ORIGINAL REBAR SECTION REMAINS AT ANY POINT ALONG THE EXPOSED REBAR. PROVIDE A NEW BAR HAVING SECTION GREATER THAN THE MAXIMUM SECTION AREA LOSS (#3 MINIMUM).
5. ROUGHEN CONCRETE SURFACE TO REMOVE ALL LOOSE CONCRETE AND LEACHATES.
6. ENSURE REPAIR AREA IS SATURATED SURFACE DRY.
7. APPLY CORROSION INHIBITOR/BONDING AGENT TO EXPOSED, EXISTING REINFORCEMENT, AND CONCRETE SUBSTRATE.
8. PLACE POLYMER-MODIFIED CONCRETE.

D1 CONCRETE REPAIR DETAILS (2)

SCALE: N.T.S.



NOTE:
1. SIMILAR REPAIR APPROACH FOR ALL CORNER REPAIR AREAS.

D13 TYPICAL CORNER REPAIR PATCH (2)

SCALE: N.T.S.

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SHEET 4 OF 5

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

GATEHOUSE EXTERIOR STAIR REPAIR
TOWNSHEND LAKE
TOWNSHEND, VERMONT

CONCRETE REPAIR DETAILS

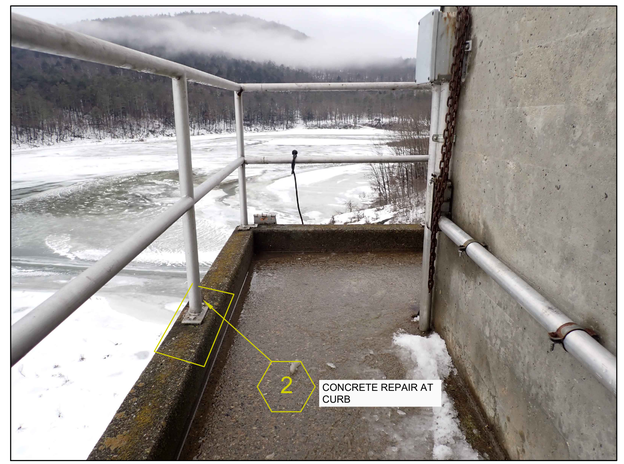
SHEET ID
S-501

OVERVIEW OF EXTERIOR STAIRS - WEST FACE OF INTAKE TOWER

INTAKE TOWER ACCESS BRIDGE

TYPICAL CRACK IN RAIL CURB ABOVE RAIL POST

OVERVIEW OF TOP OF STAIRS



TYPICAL RAILING SYSTEM

OVERVIEW OF THE UNDERSIDE OF THE STAIRS

TYPICAL VOID AT INTERFACE OF STAIRS AND LANDING

LARGE SPALL AT RAIL POST AT EL. 545.5

EXPOSED REBAR ON UNDERSIDE OF STAIRS AT EL.570.5

US Army Corps of Engineers®

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CHECKED BY:
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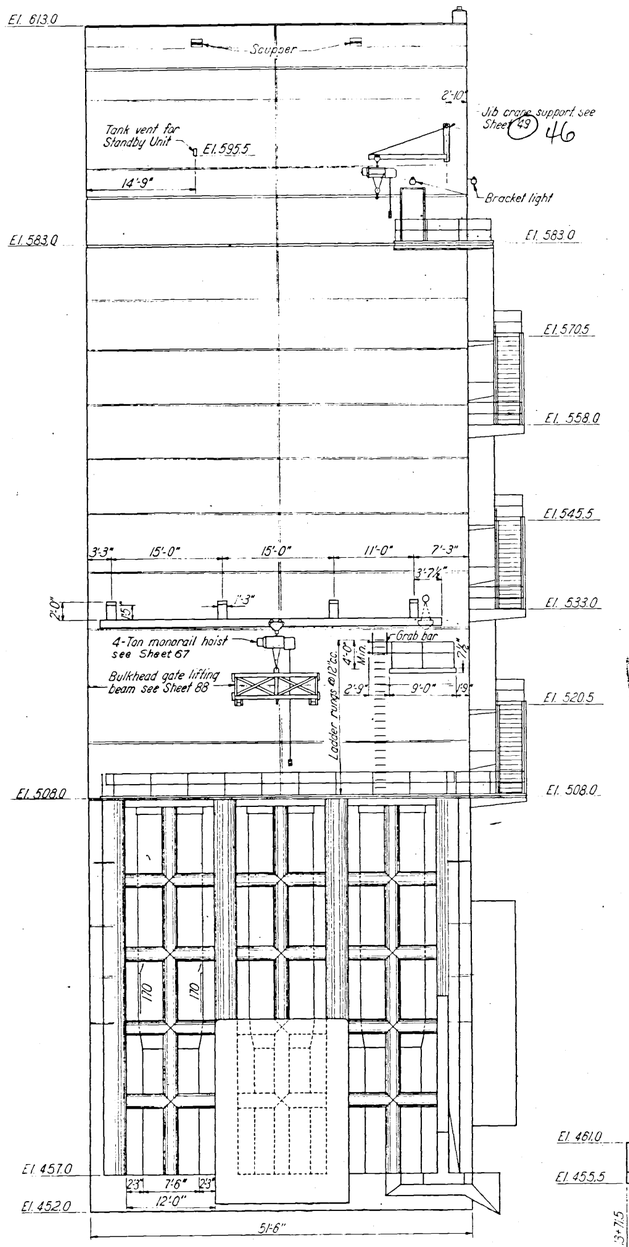
ISSUE DATE:
SOLICITATION NO.:
CONTRACT NO.:
DRAWING CODE: CONCTD-S16
SHEET 5 OF 5

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

GATEHOUSE EXTERIOR STAIR REPAIR
TOWNSHEND LAKE
TOWNSHEND, VERMONT

PHOTOGRAPHS OF EXISTING CONIDTIONS I

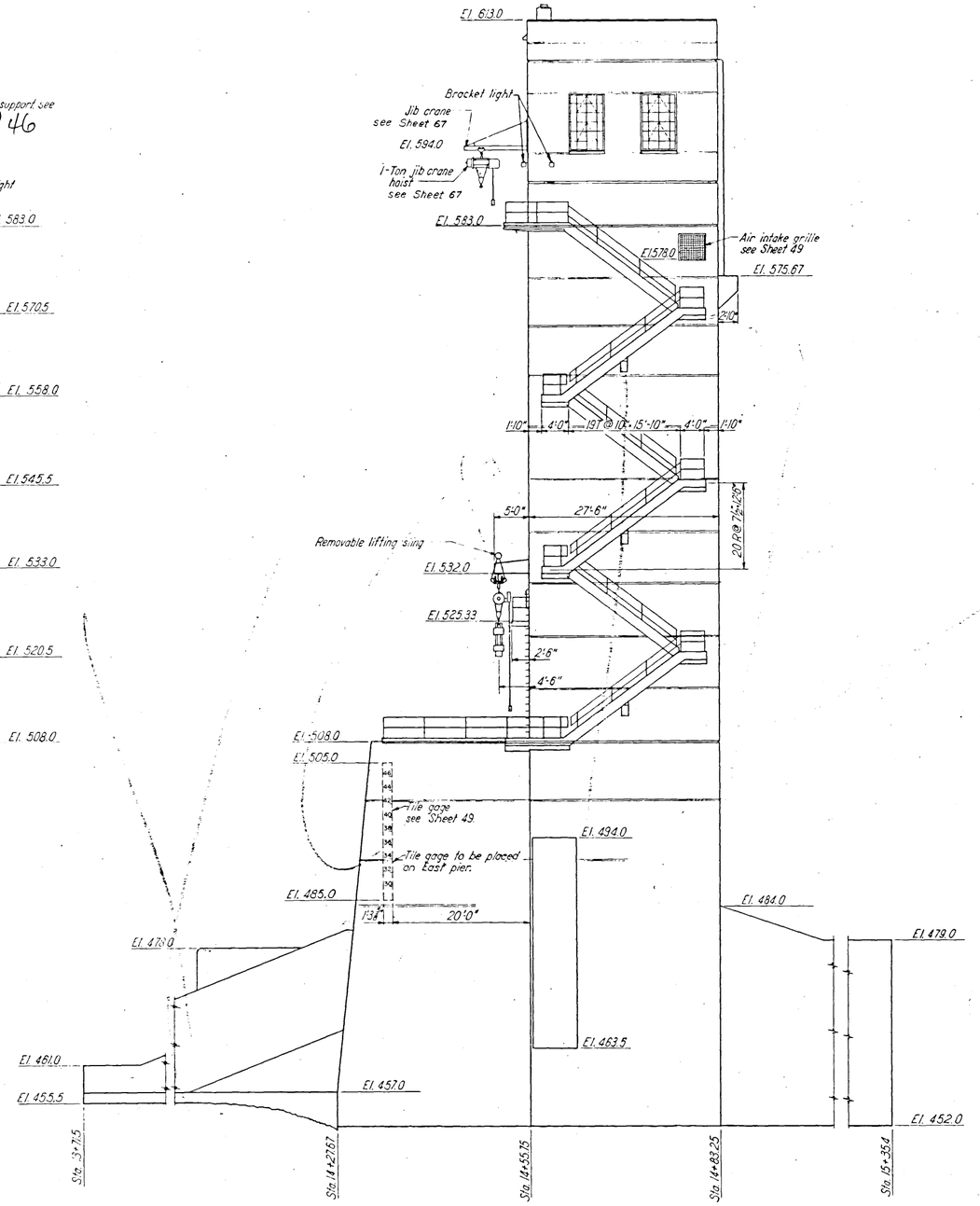
SHEET ID
S-901



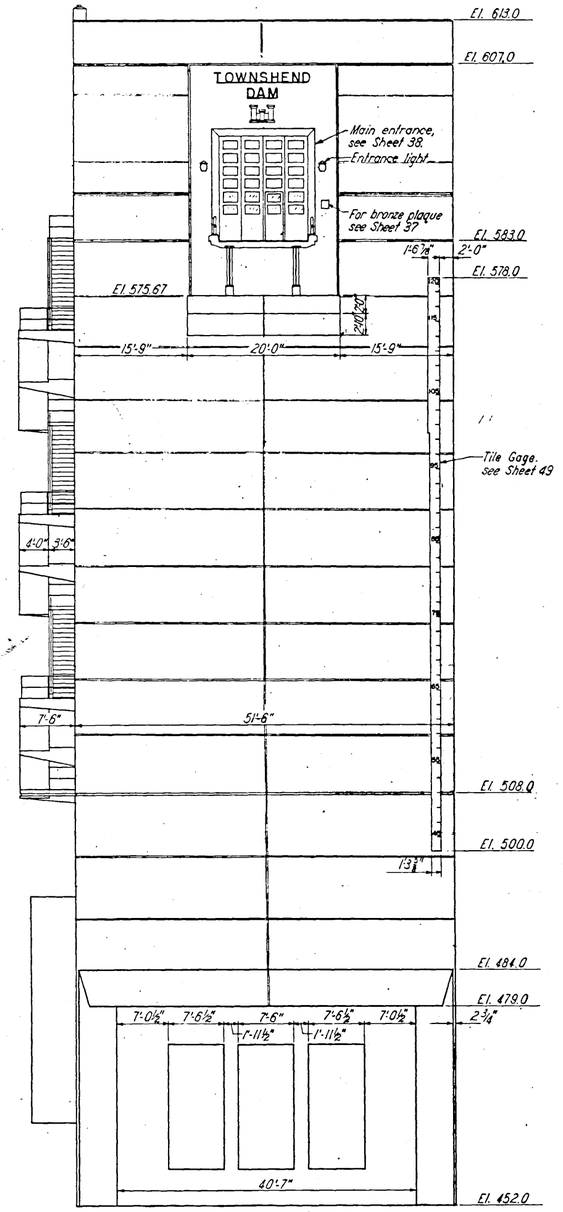
UPSTREAM ELEVATION ⚠

SCALE 1/8" = 1'-0"

4' 0 4' 8' 12' 16' 20'



WEST ELEVATION ⚠



DOWNSTREAM ELEVATION ⚠

REVISION	DATE	DESCRIPTION	BY
1	8/20/58	Construction joint treatment modified	

U. S. ARMY ENGINEER DISTRICT, GARRISON
CORPS OF ENGINEERS
RIVERDALE, N. D.

DES BY M.J.N. | DR. BY R.J.J. B.S. | CK. BY M.J.T.

INSPECTED H. K. Hessing

SUPERVISED

SUBMITTED BY: CHIEF, DESIGN BRANCH

APPROVED: CHIEF, ENGINEERING DIV.

APPROVED: COL. C. OF E. DISTRICT ENGINEER

CONNECTICUT RIVER FLOOD CONTROL

TOWNSHEND DAM

INTAKE STRUCTURE
CONCRETE
ELEVATIONS

WEST RIVER, VERMONT

DATE JULY, 1958

SCALE: 1/8" = 1'-0" | SPEC. NO. CIV. ENG. 19-016-59-7

DRAWING NUMBER CT-1-5314

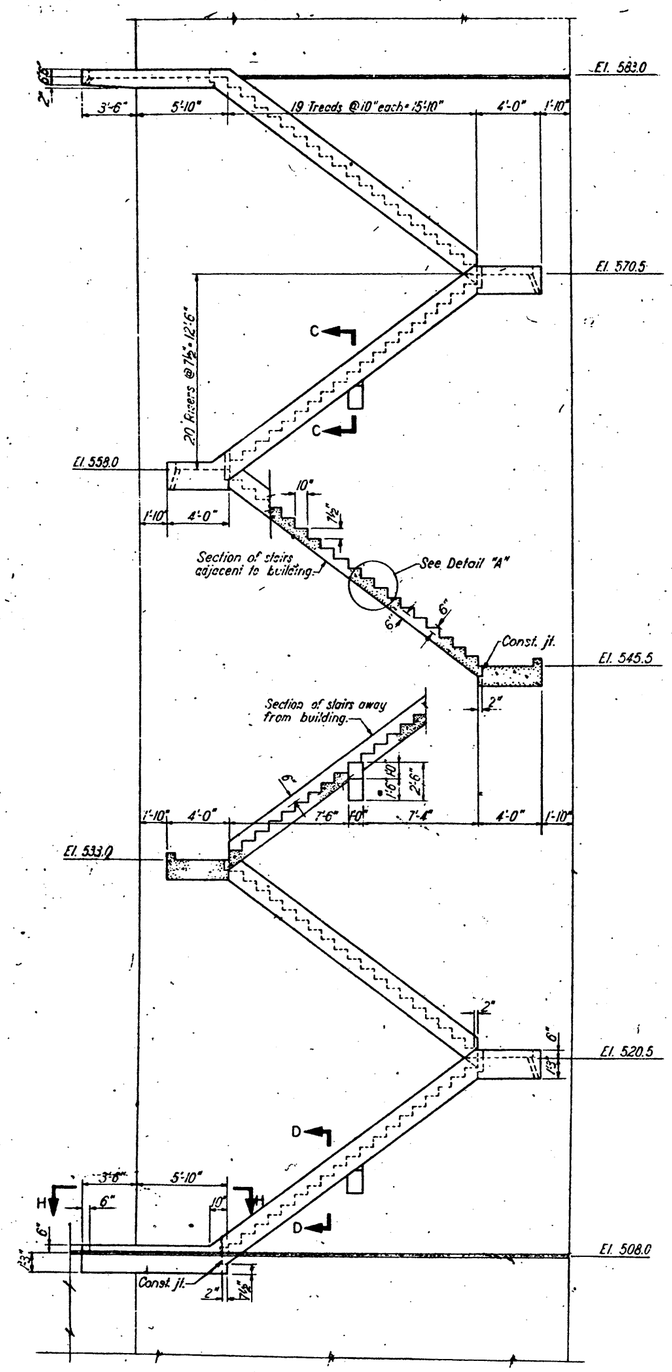
SHEET 23 OF 110

NOTES:
For general notes applying to this sheet see Sheet 25.

REINSTATED - O.K.

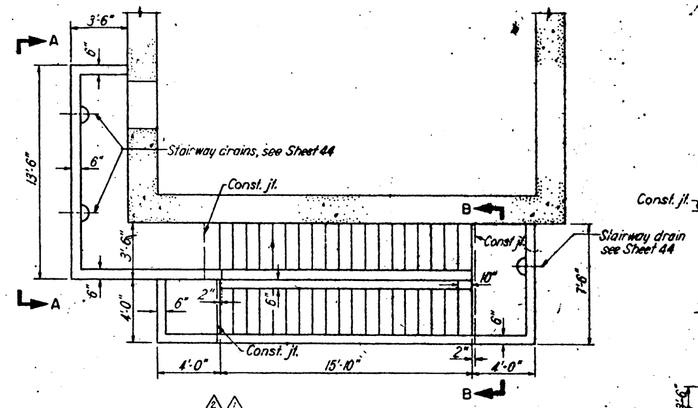
PREPARED BY THE GARRISON DISTRICT FOR THE U.S. ARMY ENGINEER DIVISION, NEW ENGLAND

Sheet OK 3-8-60 EPM



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

SECTION H-H



PLAN-EL. 584.0
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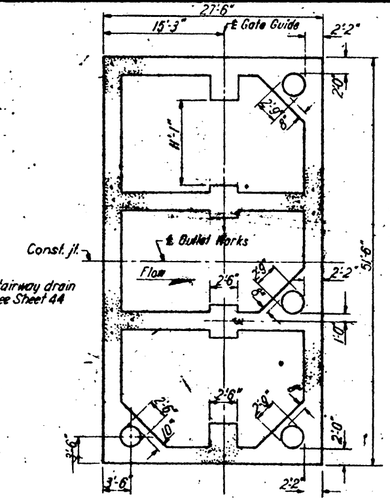

SECTIONAL PLAN-EL. 548.75
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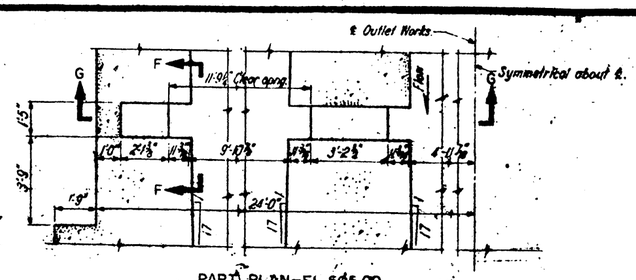
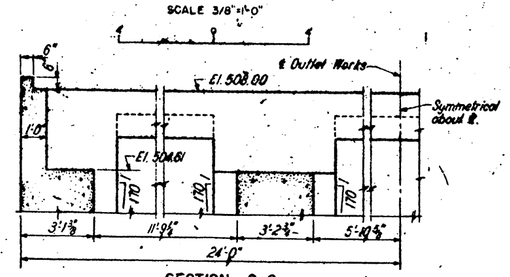
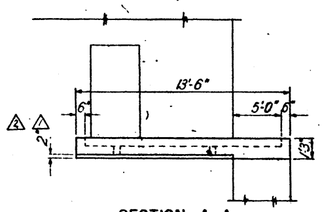


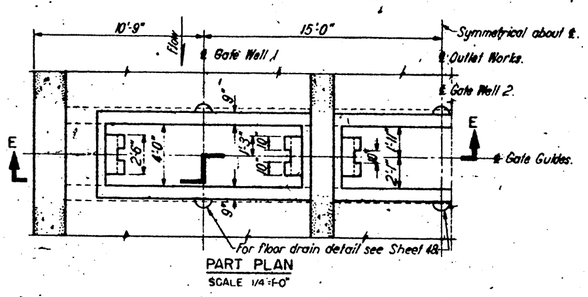
PART PLAN-EL. 505.00
SCALE 3/8" = 1'-0"



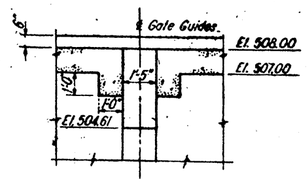
SECTION G-G
SCALE 3/8" = 1'-0"



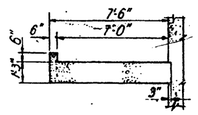
SECTION A-A
SCALE 1/4" = 1'-0"



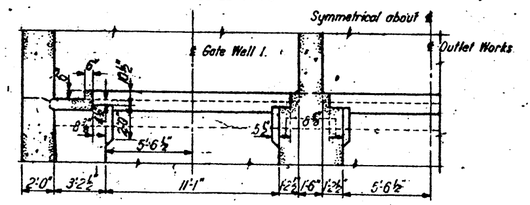
PART PLAN
SCALE 1/4" = 1'-0"



SECTION F-F
SCALE 3/8" = 1'-0"



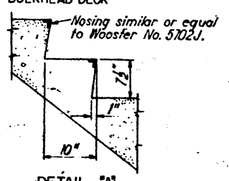
SECTION B-B
SCALE 1/4" = 1'-0"



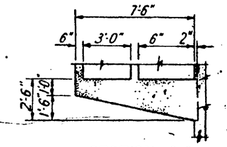
SECTION E-E
SCALE 1/4" = 1'-0"

GATE WELL
INSPECTION FLOOR

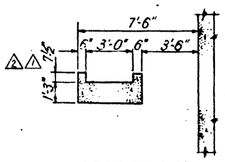
GATE WELL
BULKHEAD DECK



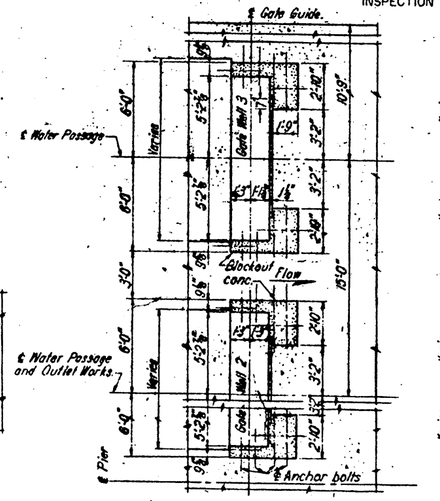
DETAIL "A"
SCALE 1" = 1'-0"



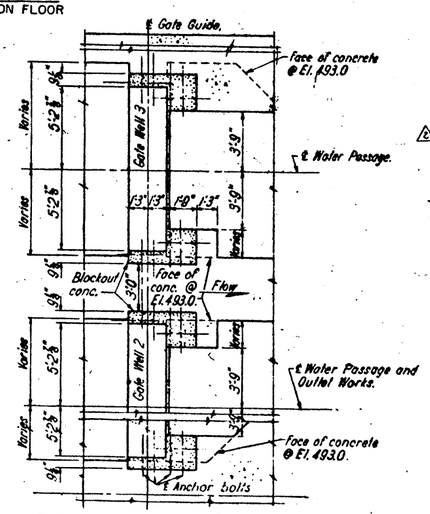
SECTION C-C
SCALE 1/4" = 1'-0"



SECTION D-D
SCALE 1/4" = 1'-0"



TYPICAL-EL. 474.0 TO EL. 491.0
SCALE 1/4" = 1'-0"



TYPICAL-EL. 491.0 TO EL. 493.0
SCALE 1/4" = 1'-0"

SECTIONAL PART PLAN-GATE GUIDE AND TRACK EXTENSION BLOCKOUTS
(GATE WELL 1 OPPOSITE HAND GATE WELL 3)

EXTERIOR STAIRWAY
(HANDRAIL NOT SHOWN, SEE SHEET 44)

NOTES

For general notes applying to this sheet see Sheet 25.
All concrete shown on this sheet above El. 491 will be paid for under item No. 27 and 35.
All concrete shown on this sheet below El. 491 will be paid for under item No. 26 and 35.
For anchor bolts at gate guide and track extension see Sheets 12, 13, and 14.
The exterior stairways, landings, and bulkhead deck shall have a non-slip finish.

Record Drawing
Contract No. DA-19-016-CIV ENG 59-103

REVISION	DATE	DESCRIPTION	BY
2	2-9-60	Exterior Stairway - changed to Concrete	VV
1	4-3-59	Exterior Stairway - changed to steel.	JJC

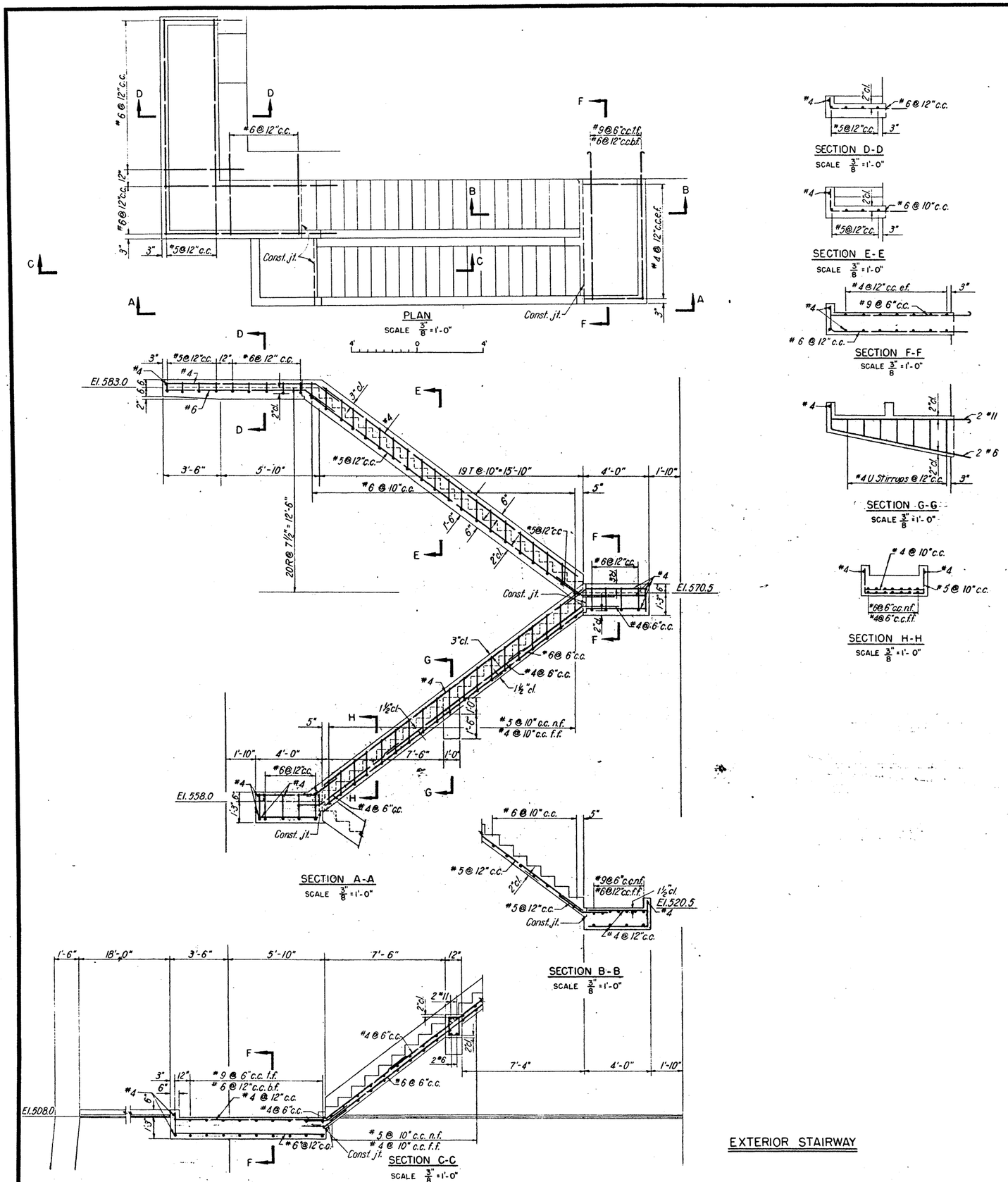
U. S. ARMY ENGINEER DISTRICT, GARRISON
CORPS OF ENGINEERS
RIVERDALE, N. D.

DES. BY M.J.T. | DR. BY B.S. | CK. BY WJW
INSPECTED
SUPERVISED H. K. Dewey
SUBMITTED BY
CHIEF, ENGINEERING DIV.
APPROVED
CHIEF, ENGINEERING DIV.

CONNECTICUT RIVER FLOOD CONTROL
TOWNSHEND DAM
INTAKE STRUCTURE
CONCRETE
EXTERIOR STAIRWAY & MISCELLANEOUS DETAILS
WEST RIVER. VERMONT

APPROVED
DIST. ENGINEER
DATE JULY 1958
SCALE: AS SHOWN
SPEC. NO. CIV. ENG. 19-016-59-7
DRAWING NUMBER CT-1-5317
SHEET 26 OF 111

PREPARED BY THE GARRISON DISTRICT FOR THE U.S. ARMY ENGINEER DIVISION, NEW ENGLAND



EXTERIOR STAIRWAY

NOTES

For general notes applying to this sheet, see Sheet 27.
For concrete details see Sheet 26.
Minimum cover for reinforcement steel will be 2" unless otherwise noted.
All reinforcement steel shown on this sheet will be paid for under Item No. 36

Record Drawing
Contract No. DA-19-016-CIV ENG. 59-103

REVISION	DATE	DESCRIPTION	BY

U. S. ARMY ENGINEER DISTRICT, GARRISON
CORPS OF ENGINEERS
RIVERDALE, N. D.

DES. BY	DR. BY	CK. BY
MJT	J.P.B.	VJW

INSPECTED
SUPERVISED BY: H. K. Beaney
SUBMITTED BY: F. L. Williams
CHIEF, DESIGN BRANCH
APPROVED: H. D. Fruichel
CHIEF, ENGINEERING DIV.

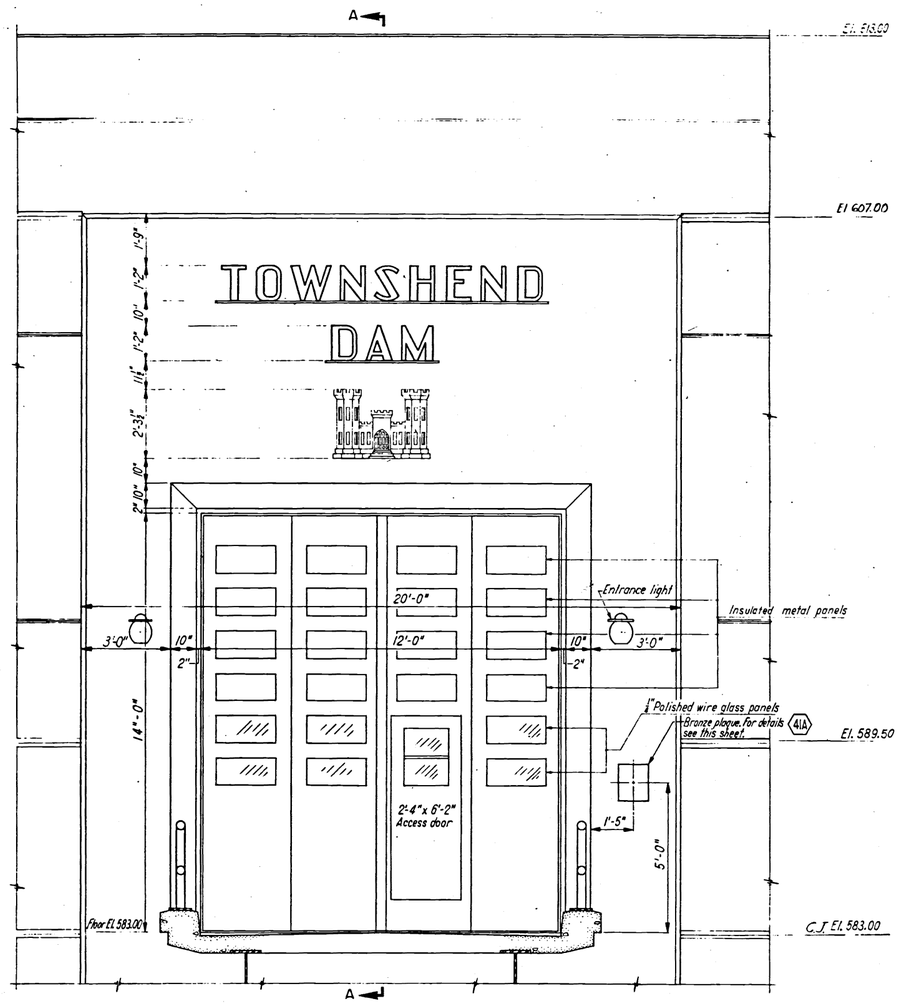
CONNECTICUT RIVER FLOOD CONTROL
TOWNSHEND DAM
INTAKE STRUCTURE
REINFORCEMENT
EXTERIOR STAIRWAY—PLAN & SECTIONS
WEST RIVER, VERMONT

APPROVED: Brian W. Pope
COL. C. OF E. DISTRICT ENGINEER

DATE JULY 1958

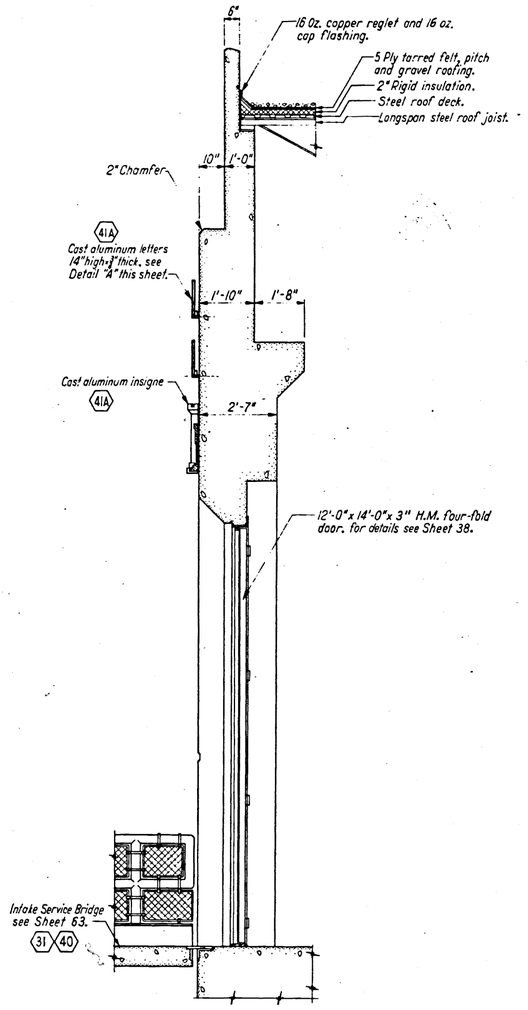
SCALE: AS SHOWN
SPEC. NO. CIV. ENG. 19-016-59-7
DRAWING NUMBER
CT-1-5327
SHEET 36 OF 111

PREPARED BY THE GARRISON DISTRICT FOR THE U.S. ARMY ENGINEER DIVISION, NEW ENGLAND



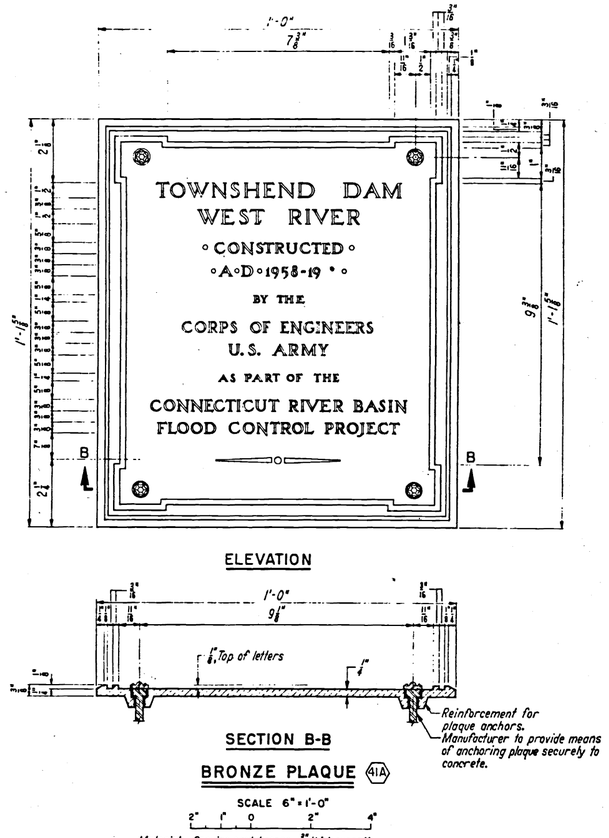
ELEVATION OF MAIN ENTRANCE

SCALE 1/2" = 1'-0"



SECTION A-A

SCALE 1/2" = 1'-0"



ELEVATION

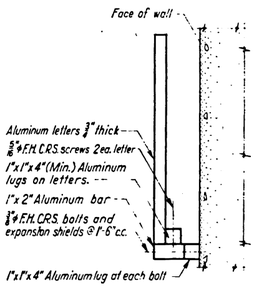
SECTION B-B

BRONZE PLAQUE 41A

SCALE 6" = 1'-0"

2" 1' 0 2" 4"

Material – Genuine cast bronze - 1/4" thick overall.
Border – Raised and polished to a bright finish with beveled edge.
Background - Sunken, matted surface with statuary bronze finish.
Letters – Roman style, raised to a minimum of 1/4", hand tooled, flat faced and polished to a bright finish. Standard letter patterns may be used subject to the approval of the Contracting Officer.
* – Last two numerals of this line to be furnished by Contracting Officer prior to casting of plaque.



DETAIL "A"

SCALE 3" = 1'-0"

3" 0 3" 6" 9"

NOTES

Figures in hexagons indicate items under which payment will be made.

All work shown on this sheet will be paid for under Item No. 43, unless otherwise indicated.

For details of aluminum insigne see Sheet 50.

All title lettering shall be of cast aluminum, anodized with all face surfaces polished and all other surfaces natural sand finish. Casting alloy shall be similar and approved equal to Alcoa No. 43. Bar supports shall be "as fabricated" mill finish - not anodized.

All bolts shall be corrosion resistant steel.

Provide neoprene gasket between aluminum surfaces and concrete.

All expansion shields shall be similar and approved equal to 2 stage minimum cinch anchors with ferrous parts galvanized.

Shop drawings and photographs or rubbing of patterns shall be submitted for approval.

REVISION	DATE	DESCRIPTION	BY
1	Aug 26-58	Revised Joint treatment	

U. S. ARMY ENGINEER DISTRICT, GARRISON
CORPS OF ENGINEERS
RIVERDALE, N. D.

DES. BY	DR. BY	CK. BY
HJH	RFJ	HJH

INSPECTED
SUPERVISED
SUBMITTED BY:
CHIEF, DESIGN BRANCH
APPROVED:
CHIEF, ENGINEERING DIV.

CONNECTICUT RIVER FLOOD CONTROL

TOWNSHEND DAM
INTAKE STRUCTURE
SUPERSTRUCTURE
ENTRANCE DETAILS

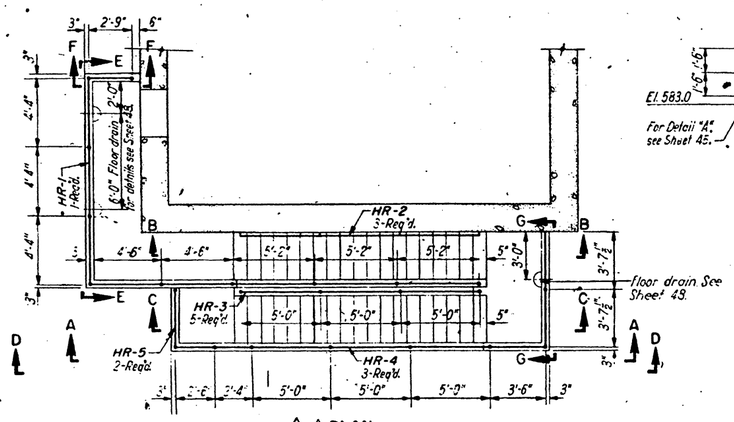
WEST RIVER, VERMONT

APPROVED
COL. C. OF E. DISTRICT ENGINEER

DATE JULY 1958

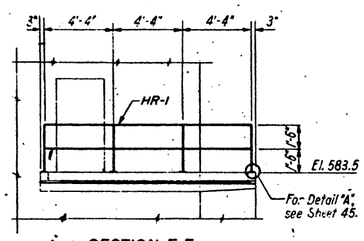
SCALE: AS SHOWN
SPEC. NO. CIV-ENG-19-016-59-7
DRAWING NUMBER
CT-1-5328
SHEET 37 OF 110

PREPARED BY THE GARRISON DISTRICT FOR THE U. S. ARMY ENGINEER DIVISION, NEW ENGLAND



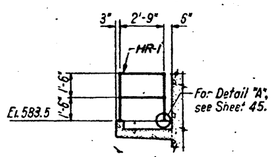
△2 △1 PLAN

SCALE 1/4" = 1'-0"



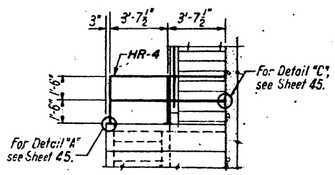
△2 △1 SECTION E-E

SCALE 1/4" = 1'-0"



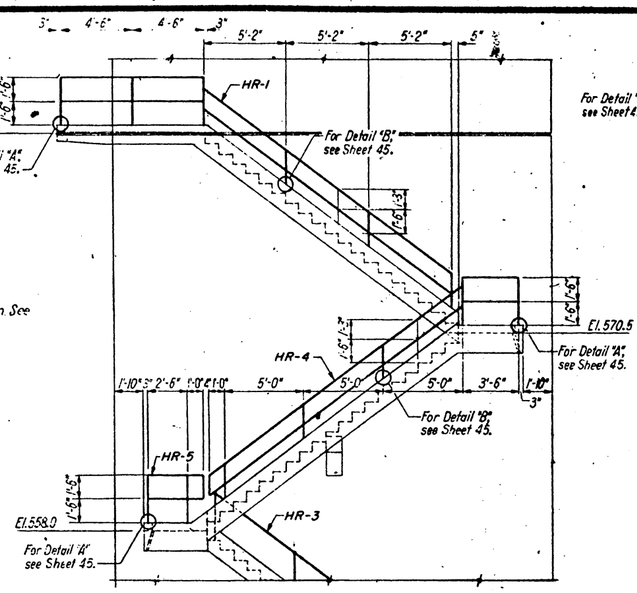
△2 △1 SECTION F-F

SCALE 1/4" = 1' 0"



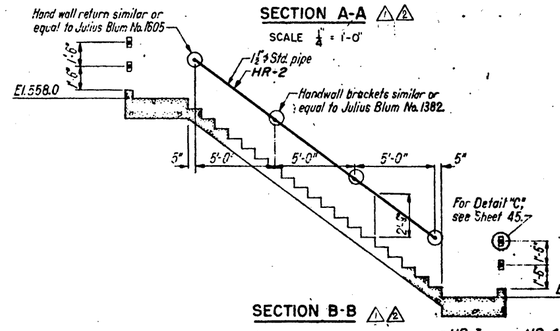
△2 △1 SECTION G-G

SCALE 1/4" = 1'-0"

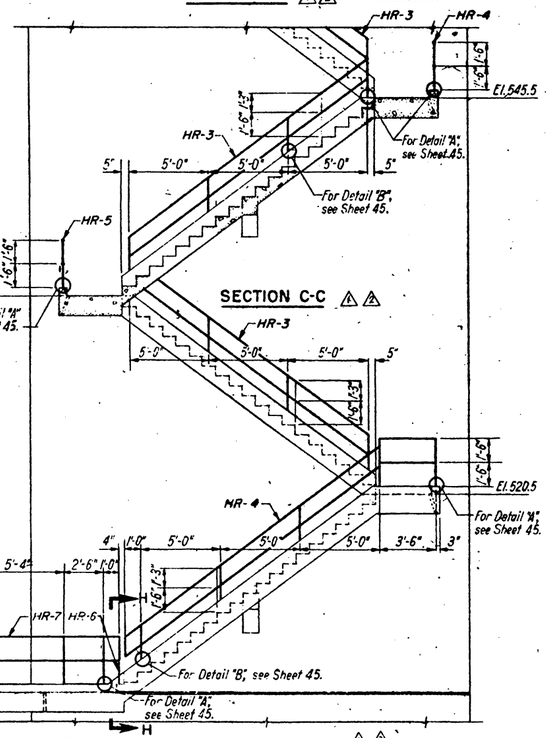


SECTION A-A △2 △1

SCALE 1/4" = 1'-0"



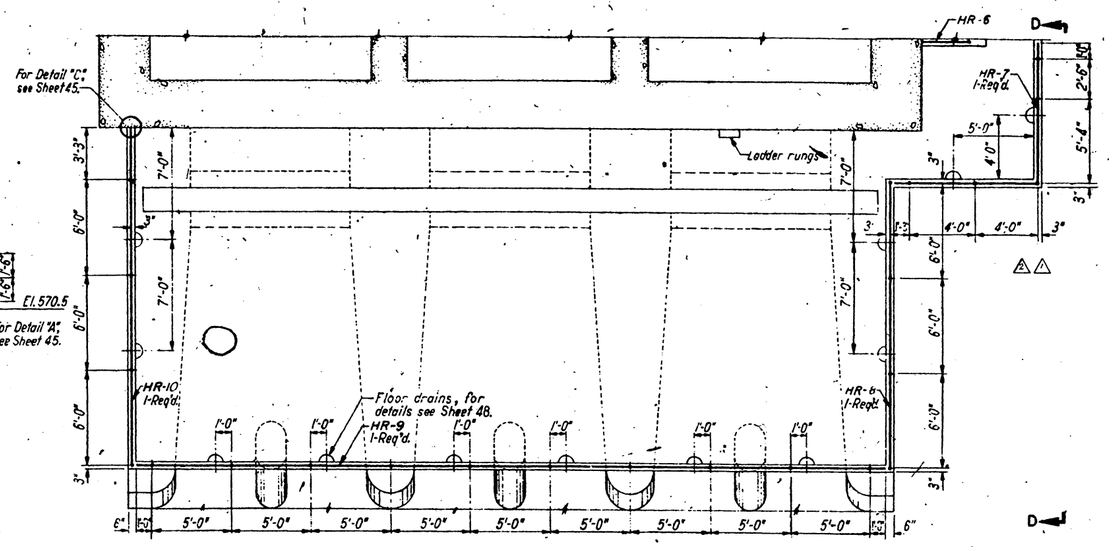
SECTION B-B △2 △1



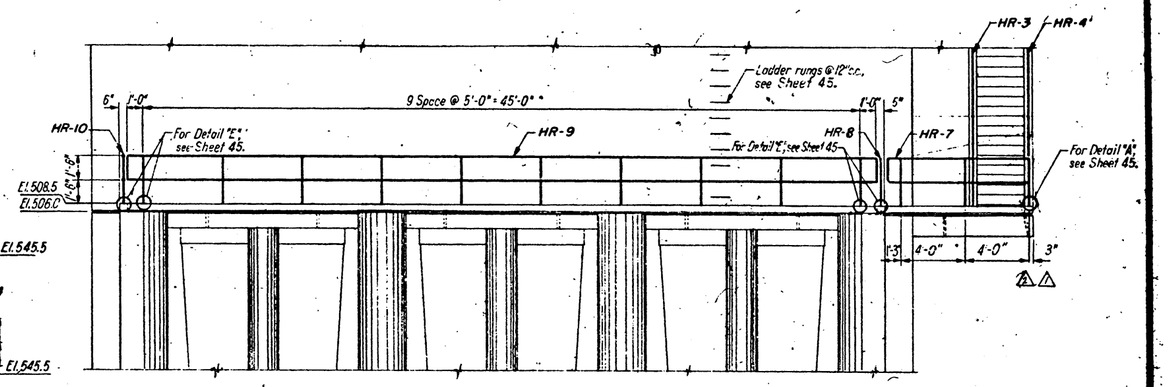
SECTION C-C △2 △1

SECTION D-D

SCALE 1/4" = 1'-0"



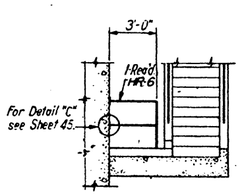
PLAN EL. 508.0



FRONT ELEVATION

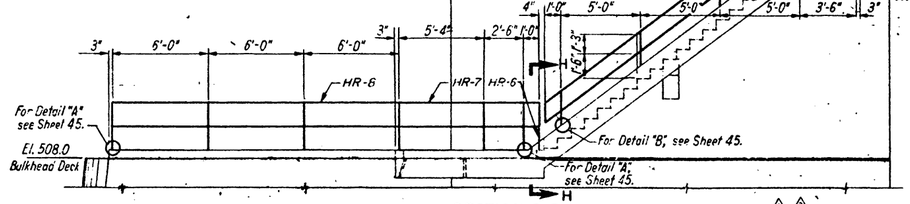
BULKHEAD DECK

SCALE 1/4" = 1'-0"



△2 △1 SECTION H-H

SCALE 1/4" = 1'-0"



△2 △1 EXTERIOR STAIRWAY

NOTES

All handrails to be 1½" standard strength pipe. All handrail posts to be 1½" extra strong pipe.

All railings to be welded to post connections and ground smooth.

For typical pipe railing splices, curb, end wall details, see Sheet 45.

All work shown on this sheet to be paid for under Item No. 41.

△2 △1

Record Drawing

Contract No. DA-19-016-CIV ENG 59-103

REVISION	DATE	DESCRIPTION		
△2	3-9-60	Exterior stairway changed to concrete		
△1	4-3-59	Exterior stairway changed to steel		

U. S. ARMY ENGINEER DISTRICT, GARRISON
CORPS OF ENGINEERS
RIVERDALE, N. D.

DES. BY	DR. BY	CK. BY
MJT	RFJ	MJT

INSPECTED
SUPERVISED
SUBMITTED BY: CHIEF, DESIGN BRANCH
APPROVED: CHIEF, ENGINEERING DIV.
APPROVED: COL. C. OF E. DISTRICT ENGINEER

CONNECTICUT RIVER FLOOD CONTROL

TOWNSHEND DAM

MISCELLANEOUS METAL
EXTERIOR HANDRAILS
DETAILS

WEST RIVER, VERMONT

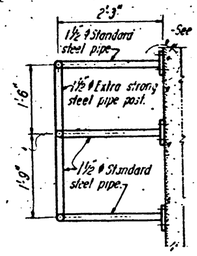
DATE JULY 1958

SCALE: 1/4" = 1'-0" SPEC. NO. CIV-ENG-19-016-59-7

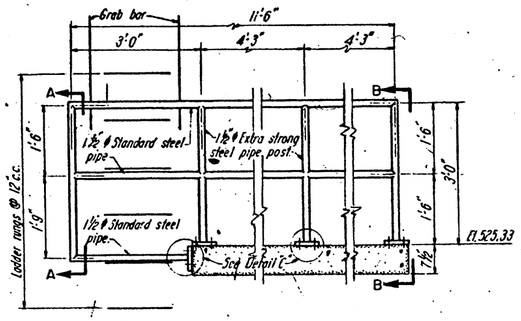
DRAWING NUMBER CT-1-5335

SHEET 44 OF 111

PREPARED BY THE GARRISON DISTRICT FOR THE U.S. ARMY ENGINEER DIVISION, NEW ENGLAND

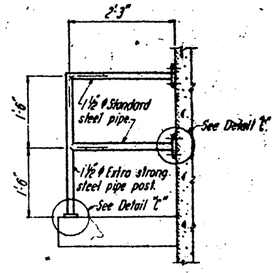


SECTION A-A
SCALE ¾" = 1'-0"

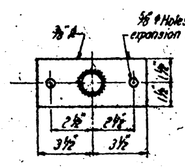


FRONT ELEVATION
SCALE ¾" = 1'-0"

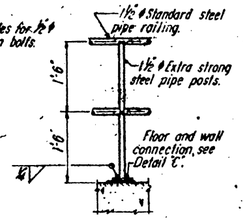
RAILINGS EXTERIOR MONORAIL PLATFORM
SCALE ¾" = 1'-0"



SECTION B-B
SCALE ¾" = 1'-0"

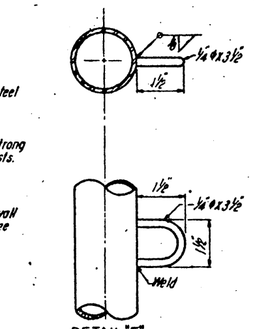


DETAIL "C"
SCALE 3" = 1'-0"

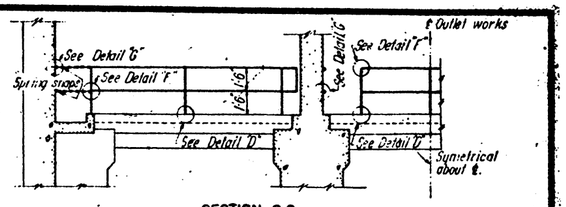


DETAIL "A"
SCALE ¾" = 1'-0"

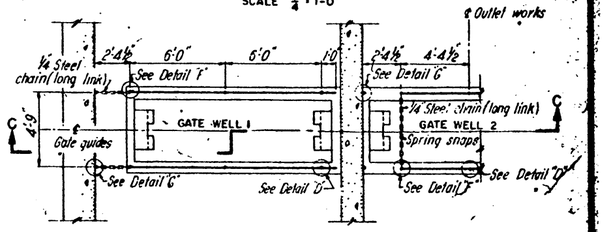
△△ FIXED RAILING



DETAIL "F"
SCALE 6" = 1'-0"

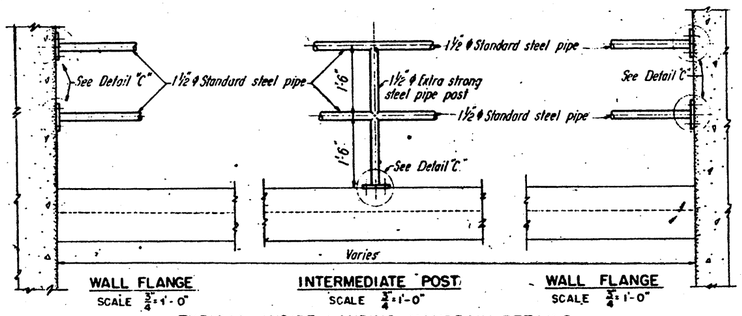


SECTION C-C
SCALE ¼" = 1'-0"



HALF PLAN
SCALE ¼" = 1'-0"

INSPECTION FLOOR

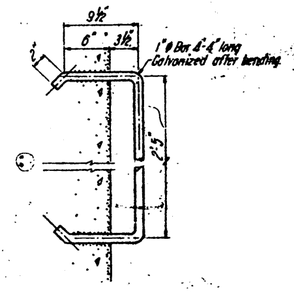


WALL FLANGE
SCALE ¾" = 1'-0"

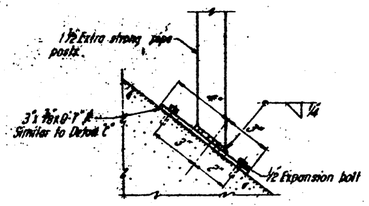
INTERMEDIATE POST
SCALE ¾" = 1'-0"

WALL FLANGE
SCALE ¾" = 1'-0"

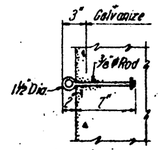
TYPICAL INSIDE LANDING HANDRAIL DETAILS



GRAB BAR DETAIL
44 REQ'D
SCALE ½" = 1'-0"



△△ DETAIL "B"
SCALE 3" = 1'-0"

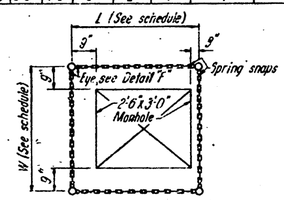


DETAIL "G"
△△ SCALE 1½" = 1'-0"
CHAIN GUARD EYE

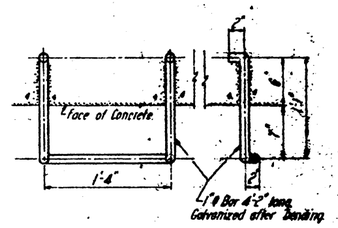
△△

MANHOLE GUARD SCHEDULE										
LOCATION	ITEM	W	L	C-1 REQ'D	C-2 REQ'D	POST REQ'D	EYE BOLT POST	EYE BOLT WALL	PIPE SOCKETS	SPRING SNAPS
OPERATING FLOOR	Gate well #1	4'-6"	5'-6"	4	2	2	8	4	2	12
	Gate well #2	4'-0"	4'-0"	4	4	4	16	0	4	16
	Gate well #3	4'-6"	3'-6"	4	2	2	8	4	2	12
INSPECTION FLOOR	Gate well #1	3'-6"	4'-0"	2	2	1	4	4	1	8
	Gate well #2	3'-6"	4'-0"	2	2	1	4	4	1	8
	Gate well #3	3'-6"	4'-0"	2	2	1	4	4	1	8

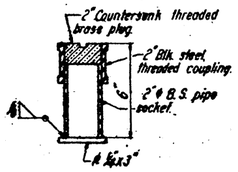
NOTE:
Dimension "L" measured parallel to width of building.



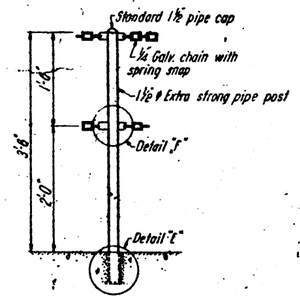
PLAN OPERATING FLOOR
GATE WELL 2
SCALE ½" = 1'-0"



TYPICAL LADDER RUNG DETAIL
431 REQ'D
SCALE 1½" = 1'-0"



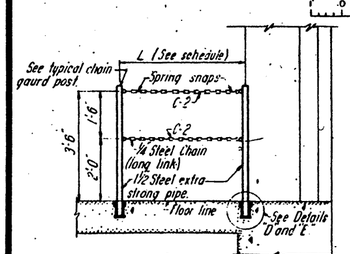
DETAIL "D"
SCALE 3" = 1'-0"



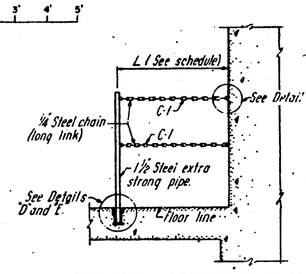
TYPICAL CHAIN GUARD POST
SCALE 1" = 1'-0"

NOTES:

All work and materials shown on this sheet will be paid for under Item No. 41 "Miscellaneous Metalwork."
All ¼ chain to be galvanized and have galvanized spring snaps at both ends.
All handrail and chain guard posts to be 1½" Extra Strong Pipe, all railings to be 1½" Standard Strength Pipe.

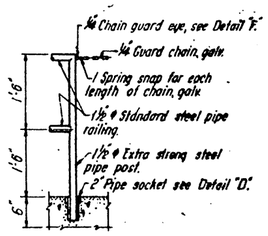


ELEVATION OPERATING FLOOR
GATE WELL 2
SCALE ½" = 1'-0"

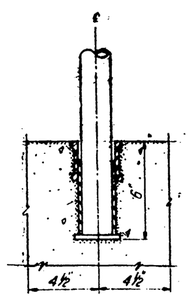


ELEVATION OPERATING FLOOR
GATE WELL 1 AND 3
SCALE ½" = 1'-0"

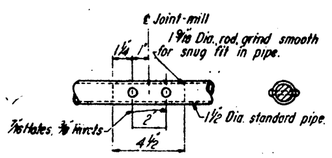
REMOVEABLE MANHOLE GUARDS



REMOVABLE RAILING
SCALE ¾" = 1'-0"



DETAIL "E"
REMOVABLE POST SLEEVE
SCALE 3" = 1'-0"



TYPICAL PIPE RAILING SPLICE
SCALE 3" = 1'-0"

TYPICAL RAILING DETAILS

PREPARED BY THE GARRISON DISTRICT FOR THE U. S. ARMY ENGINEER DIVISION, NEW ENGLAND

Record Drawing
Contract No. DA-19-016-CIV ENG 59-103

REVISION	DATE	DESCRIPTION	
△	3-9-60	Exterior stairway changed to concrete	
△	4-3-59	Exterior stairway changed to steel.	

U. S. ARMY ENGINEER DISTRICT, GARRISON
CORPS OF ENGINEERS
RIVERDALE, N. D.

DES. BY MJT | DR. BY L.L.M. | CK. BY MJT
INSPECTED
SUPERVISED
SUBMITTED BY
CHIEF, DESIGN BRANCH
APPROVED
CHIEF, ENGINEERING DIV.
APPROVED
DIST. ENGINEER

CONNECTICUT RIVER FLOOD CONTROL
TOWNSHEND DAM
MISCELLANEOUS METAL
HANDRAILS
DETAILS
WEST RIVER, VERMONT

DATE JULY 1958
SCALE: AS SHOWN | SPEC. NO. CIV-ENG-19-016-59-103
DRAWING NUMBER CT-1-5336
SHEET 45 OF 111

△△