



# Indiana Department of Environmental Management Office of Water Quality Wetlands Section

**Publication Date:**  
October 29, 2024

**Closing Date:**  
November 19, 2024

**IDEM ID Number:**  
2024-877-64-MTM-WQC

**Corps of Engineers ID Number:**  
LRC-2024-563

## PUBLIC NOTICE

### To all interested parties:

This letter shall serve as a formal notice of the receipt of an application for **Section 401 Water Quality Certification** by the Indiana Department of Environmental Management (IDEM). The purpose of the notice is to inform the public of active applications submitted for water quality certification under Section 401 of the Clean Water Act (33 U.S.C. § 1341) and to solicit comments and information on any impacts to water quality related to the proposed project. IDEM will evaluate whether the project complies with Indiana's water quality standards as set forth at 327 IAC 2.

**1. Applicant:** City of Valparaiso  
166 Lincolnway  
Valparaiso, IN 46383

**2. Agent:** SWCA  
18853 US-12  
New Buffalo, MI 49117

**3. Project location:** Porter County  
Latitude: 41.492034, Longitude: -87.082556  
Approximately 250 feet west of the intersection of Manchester Drive and Hampstead Court in Valparaiso.

**4. Affected waterbody:** Candlewood Branch of Beauty Creek.

**5. Project Description:** The applicant proposes to pattern and profile along approximately 550 LF of unstable and eroded Candlewood Branch. Restoration includes bank grading, floodplain creation, constructed riffles, stone toes, and a culvert plunge pool. All disturbed areas will be permanently vegetated with native vegetation established throughout the stream corridor. 8 mature trees (>10" dbh) are to be removed. All potential bat roost trees to be removed between November 1 and March 31. Additionally, invasive species including bush honeysuckle will be treated within the drainage easement. The purpose of the project is to restore ecologic function of the stream, improve channel bed and bank stability.

**Comment period:** Any person or entity who wishes to submit comments or information relevant to the aforementioned project may do so by the closing date noted above. Only comments or information related to water quality or potential impacts of the project on water quality can be considered by IDEM in the water quality certification review process.

**Public Hearing:** Any person may submit a written request that a public hearing be held to consider issues related to water quality in connection with the project detailed in this notice. The request for a hearing should be submitted within the comment period to be considered timely. The request should also state the reason for the public hearing as specifically as possible to assist IDEM in determining whether a public hearing is warranted.

**Questions?**

Additional information may be obtained from Marty Maupin, Project Manager, by phone at 317-233-2471 or by e-mail at [mmaupin@idem.in.gov](mailto:mmaupin@idem.in.gov). Please address all correspondence to the project manager and reference the IDEM project identification number listed on this notice. Indicate if you wish to receive a copy of IDEM's final decision.

Written comments and inquiries may be forwarded to -

Indiana Department of Environmental Management  
100 North Senate Avenue  
MC65-42 WQS IGCN 1255  
Indianapolis, Indiana 46204-2251 FAX: 317/232-8406



**APPLICATION FOR AUTHORIZATION TO DISCHARGE DREDGED  
OR FILL MATERIAL TO ISOLATED WETLANDS AND/OR  
WATERS OF THE STATE**

State Form 51821 (R2 / 11-15)

Indiana Department of Environmental Management

- INSTRUCTIONS:** 1. Read the instruction sheet before filling out this form.  
2. You must complete all applicable sections of this form

1. Applicant Information		2. Agent Information	
Name of Applicant City of Valparaiso		Name of Agent SWCA	
Mailing address (Street/ PO Box/ Rural Route, City, State, ZIP Code) 166 Lincolnway, Valparaiso, IN 46383		Mailing address (Street/ PO Box/ Rural Route, City, State, ZIP Code) 18853 US-12, Suite 2, New Buffalo, MI 49117	
Daytime Telephone Number 219-462-1161		Daytime Telephone Number 260-579-0337	
Fax Number		Fax Number	
E-mail address (optional) mrehlander@valpo.us		E-mail address (optional) ross.stclair@swca.com	
Contact person (required) Max Rehlander		Contact person Ross St. Clair	
3. Project / Tract Location			
County Porter		Nearest city or town Valparaiso	
U.S.G.S. Quadrangle map name (Topographic map) Valparaiso		Project street address (if applicable) 1753 Hampstead Ct, Valparaiso, Indiana. 41.492040, -87.083610	
Quarter NW	Section 14	Township 35N	Range 6W
Type of aquatic resource(s) to be impacted (Attach Worksheet One.) Candlewood Branch (ephemeral stream)		Project name or title (if applicable) Candlewood Branch Restoration	
Other location descriptions or driving directions Starting at the intersection of N. Campbell Street and Harrison Blvd., head west on Harrison Blvd. for 1.1 miles, turn right onto Williams Drive and head north/northeast for 0.3 miles, turn left on Manchester Dr., and arrive at Candlewood Branch after 0.2 miles.			
4. Project Purpose and Description (Use additional sheet(s) if required.)			
Has any construction been started? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Anticipated start date (month, day, year) Summer/Fall 2025	
If yes, how much work is completed?			
Purpose of project and overview of activities The purpose of the project is to restore ecologic function of the stream, to improve channel bed and bank stability, and decrease maintenance. The severity of the erosion has resulted in tree and yard loss for numerous adjacent landowners, and with the current unstable channel pattern these issues are likely to continue to advance.  The project will restore reference pattern and profile along approximately 550 LF of unstable and eroded Candlewood Branch. Restoration includes bank grading, floodplain creation, constructed riffles, stone toes, and a culvert plunge pool. All disturbed areas will be permanently vegetated with native vegetation established throughout the stream corridor. 8 mature trees (>10" dbh) are to be removed. All potential bat roost trees to be removed between November 1 and March 31. Additionally, invasive species including bush honeysuckle will be treated within the drainage easement.			

**5. Avoidance, Minimization, and Mitigation Information: Applicants must answer all of the following questions**  
(Use additional sheet(s) if necessary - provide a detailed response to all applicable questions.)

**A. For projects with Class II isolated wetlands –**

1. Is there a reasonable alternative to the proposed activity?

NA

2. Is the proposed activity reasonably necessary or appropriate?

**B. For projects with Class III wetlands, adjacent wetlands, and/or streams, rivers, lakes or other water bodies –**

1. Is there a practicable alternative to the proposed activity?

NA

2. Have practicable and appropriate steps to minimize impacts to water resources been taken?

Describe all compensatory mitigation required for unavoidable impacts.

All disturbed areas along the stream will be restored with native vegetation and invasive species will be treated and/or removed. Removing invasive species and reseeded with native vegetation will improve the ecological function of the stream corridor. Erosion control blankets will be used to decrease sediment loading while waiting for native vegetation to establish. The ephemeral status of the stream will allow for in-channel work to be completed in dry conditions.

**6. Drawing / Plan Requirements (Applicants must provide the following.)**

- a. Top/aerial/overhead views of the project site showing existing conditions and proposed construction.
- b. Cross sectional view of areas of fill or alterations to streams and other waters.
- c. North arrow, scale, property boundaries.
- d. Include wetland delineation boundary (if applicable). Label all wetlands (jurisdictional, isolated and exempt) as I-1, I-2, I-3, etc. and the mitigation areas as M-1, M-2, etc.
- e. Location of all surface waters, including wetlands, erosion control measures, existing and proposed structures, fill and excavation locations, disposal area for excavated material, including quantities, and wetland mitigation site (if applicable).
- f. Approximate water depths and bottom configurations (if applicable).

**7. Supplemental Application Materials (Applicants must provide the following.)**

- a. A wetland delineation of all wetlands on the project site (for projects with wetland impacts).
- b. At least three photographs of the project site. Indicate the photo locations on the project plans.
- c. If isolated wetlands are present, a letter from the Corps of Engineers verifying this statement.
- d. Wetland mitigation plan and monitoring report.
- e. Classification of all isolated wetlands on the tract (if isolated wetlands are present onsite).
- f. Copies of all applicable local permits and/or resolutions pertaining to the project or tract.
- g. Tract history (see instructions).

**8. Additional information that MAY be required (IDEM will notify you if needed.)**

- a. Erosion control and/or storm water management plans.
- b. Sediment analysis.
- c. Species surveys for fish, mussels, plants and threatened or endangered species.
- d. Stream habitat assessment.
- e. Any other information IDEM deems necessary to review the proposed project.



### 11. Signature - Statement of Affirmation

I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true and accurate. I certify that I have the authority to undertake and will undertake the activities as described in this application. I am aware that there are penalties for submitting false information. I understand that any changes in project design subsequent to IDEM's granting of authorization to discharge to a water of the state are not authorized and I may be subject to civil and criminal penalties for proceeding without proper authorization. I agree to allow representatives of the IDEM to enter and inspect the project site. I understand that the granting of other permits by local, state, or federal agencies does not release me from the requirement of obtaining the authorization requested herein before commencing the project.

Applicant's Signature: 

Date: 09/25/2024  
(mm/dd/yyyy)

Print Name: Max Rehlander

Title: CITY ENGINEER

**Worksheet – Summary of Onsite Water Resources and Project Impacts**

A. Jurisdictional Wetlands (Existing Conditions)		Jurisdictional Wetlands (Proposed Impacts)			
Wetland Type	Size of wetland (acreage)	To be Impacted?	Acreage	Fill quantity (cys)	ATF
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
Describe the type and composition of fill material to be placed in wetlands on the project site: NA					
Describe the type and composition and quantity (cubic yards) of material proposed to be dredged or excavated from wetlands on the project site:					

B. Isolated Wetlands (Existing Conditions)		Isolated Wetlands (Proposed Impacts)				
Wetland Class	Type	Size of wetland (acreage)	To be Impacted?	Acreage	Fill quantity (cys)	ATF
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
Describe the type and composition of fill material to be placed in isolated wetlands on the project site: NA						
Describe the type and composition and quantity (cubic yards) of material proposed to be dredged or excavated from isolated wetlands on the project site:						

C. Bridges and Stream Crossings - provide the following information for EACH structure (Use additional sheet(s) if required.)	
Stream name	
Description of Impacts NA	
Length of upstream bank impacts:	
Left side: _____ Right side: _____	
Length of downstream bank impacts:	
Left side: _____ Right side: _____	
Bank protection fill placed below the Ordinary High Water Mark:	
Volume per running foot: _____	
Bank protection fill placed below the Ordinary High Water Mark:	
Area of coverage: _____	

**D. Bank Stabilization – provide the following information for EACH segment (Use additional sheet(s) if required.)**

Water body name Candlewood Branch (ephemeral)
Description of impacts 550 LF of channel and bank restoration (note, much of the bank grading occurs on both banks so approximately 550 LF of stream length). Restoration includes bank grading, floodplain creation, constructed riffles, stone toe, and culvert plunge pool.
Length of shoreline or bank protection 1,100 LF bank grading (550 LF both banks), 335 LF stone toe, 240 LF constructed riffle, 25 LF plunge pool
Volume ( <i>cubic yards</i> ) of bank protection fill placed below the Ordinary High Water Mark per running foot 0 CY/LF bank grading, 0.2 CY/LF stone toe, 0.35 CY/LF constructed riffle, 2 CY/LF plunge pool
Area ( <i>square feet</i> ) of bank protection fill placed below the Ordinary High Water Mark 0 ft <sup>2</sup> bank grading, 515 ft <sup>2</sup> stone toe, 1,600 ft <sup>2</sup> constructed riffle, 650 ft <sup>2</sup> plunge pool

**E. Stream Relocation**

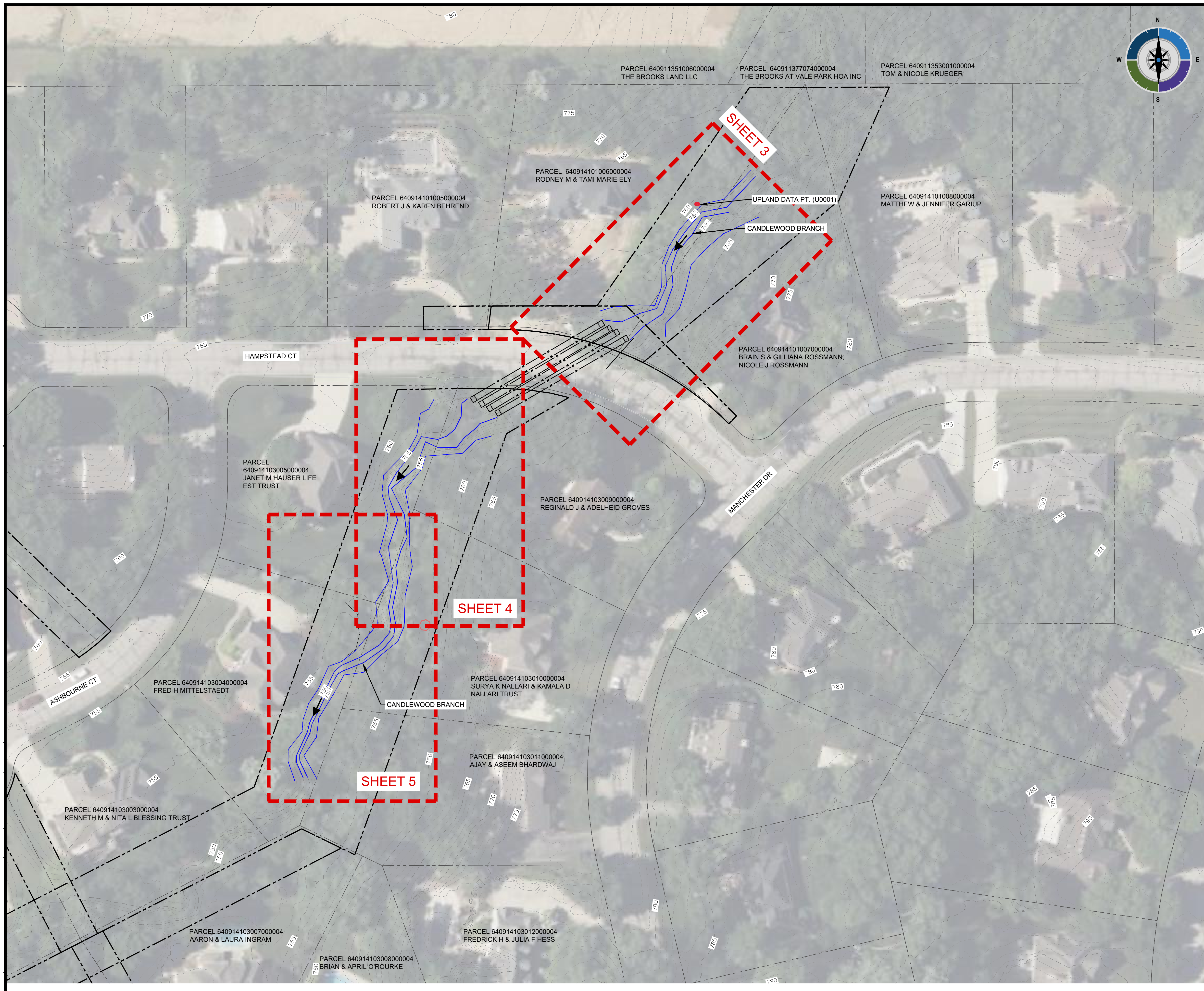
Water body name	
Description of impacts NA	
Length of existing channel to be relocated ( <i>linear feet</i> )	
Length of new channel to be constructed ( <i>linear feet</i> )	
Existing channel to be backfilled? <input type="checkbox"/> Yes <input type="checkbox"/> No	Type of relocation <input type="checkbox"/> Piping <input type="checkbox"/> Open <input type="checkbox"/> Channel <input type="checkbox"/> Other: _____
Type of fill and volume ( <i>cubic yards</i> )	

**F. Open Water Fill**

Water body name
Description of impacts NA
Area of water body to be filled ( <i>acres</i> )
Type of fill and volume ( <i>cubic yards</i> )







**LEGEND**

- EXISTING MAJOR CONTOUR (5')
- EXISTING MINOR CONTOUR (1')
- - - PROPERTY BOUNDARY
- - - DRAINAGE EASEMENT
- - - EXISTING TOP OF BANK
- - - EXISTING TOE OF SLOPE

PREPARED BY:  
**SWCA**  
 ENVIRONMENTAL CONSULTANTS  
 18853 US-12, SUITE 2  
 NEW BUFFALO, MI 49117  
 630-705-1762  
 www.swca.com

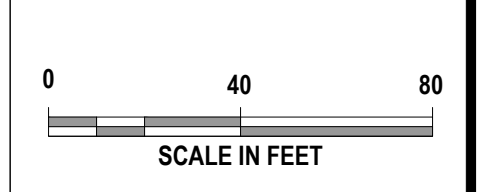
PREPARED FOR:  
 CITY OF  
 VALPARAISO

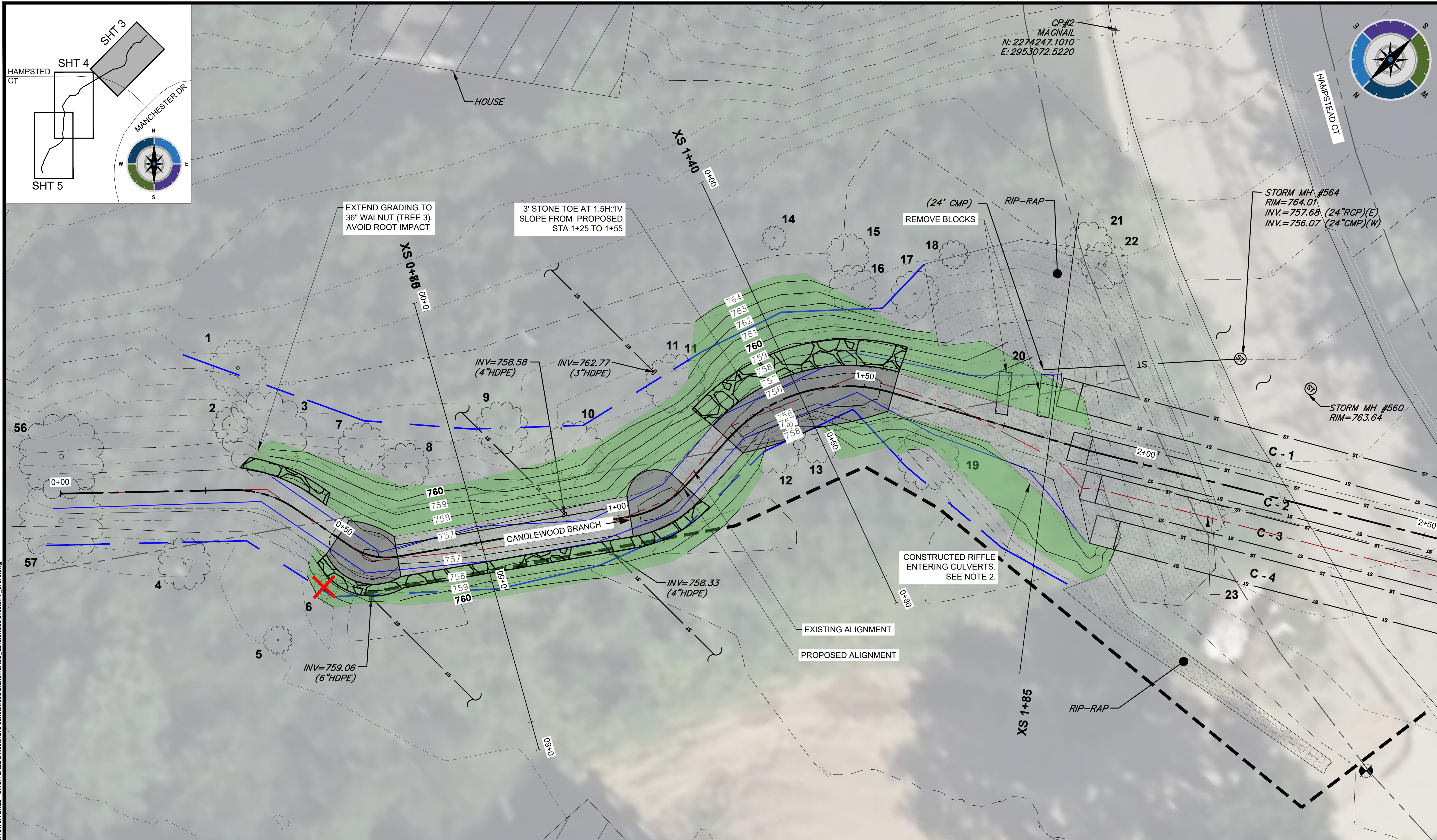
SURVEY/ BASE MAP PREPARED BY:  
 TERRITORIAL  
 ENGINEERING,  
 LLC

**CANDLEWOOD BRANCH RESTORATION**  
 CITY OF VALPARAISO  
 EXISTING OVERVIEW

CHECKED BY:	REV	DATE	RAS	DESIGNED BY:	RAS	DESCRIPTION	DRAWN BY:	JLM	APPRV

DATE: 09/25/2024  
 PROJECT #: 87278





- LEGEND**
- 750 --- EXISTING MAJOR CONTOUR (5')
  - 752 --- EXISTING MINOR CONTOUR (1')
  - - - - - PROPERTY BOUNDARY
  - - - - - DRAINAGE EASEMENT
  - EXISTING TOP OF BANK
  - EXISTING TOE OF SLOPE
  - ST --- STORM WATER LINE
  - [Pattern] EXISTING RIPRAP
  - [Symbol] EXISTING TREE
  - [Symbol] 2'x2'x7' CONCRETE BLOCK
  - 750 --- PROPOSED MAJOR CONTOUR (5')
  - 752 --- PROPOSED MINOR CONTOUR (1')
  - EXISTING ALIGNMENT
  - - - - - PROPOSED ALIGNMENT
  - [Color] GRADING
  - [Symbol] STONE TOE
  - [Pattern] PROPOSED CONSTRUCTED RIFFLE
  - [Pattern] PROPOSED POOL
  - [Pattern] RIPRAP APRON
  - [Symbol] TREE REMOVAL

**NOTES:**

- REMOVE AND TREAT REMAINING STUMPS OF BUSH HONEYSUCKLE WITHIN THE CITY DRAINAGE EASEMENT.
- CONSTRUCTED RIFFLE TO BE SHAPED TO DIRECT LOW FLOW TO CULVERT C-2, BANKFULL (1-2 YR FLOW) INTO CULVERT C-3 AND HIGH FLOW TO CULVERTS C-1 AND C-4.
- ALL DISTURBED AREAS TO BE REVEGETATED POST-CONSTRUCTION.
- STONE TOE AT STA 1+25 TO 1+55 EXTEND TO 3 FT HEIGHT.

**CULVERT**

Culvert #	US Invert	DS Invert
1	756.32	755.12
2	755.98	755.03
3	755.84	755
4	755.96	755.3

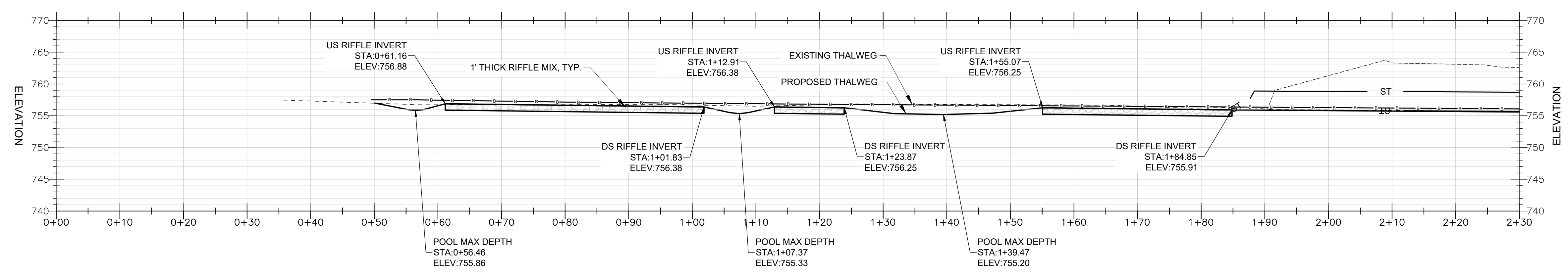
All culverts are 60"x 36" pipe arch CMP

**TREE TABLE**

Tree #	DBH (in)	Species	To be Removed (=X)	Bat Tree (=B)
1	24	Black Cherry		
2	15	Walnut		
3	36	Walnut		X
4	22	Walnut		
5	12	Black Cherry		
6	30	Walnut, Stump	X	
7	20	Walnut		
8	20	Walnut		
9	22	Walnut		
10	25	Walnut		
11	25	Black Cherry		
12	28	Walnut		
13	20	Walnut		
14	10	Walnut		
15	18	Hackberry		
16	20	Black Cherry		
17	12	Walnut		
18	12	Elm		
19	25	Walnut		
20	12	Elm		
21	20	Walnut		
22	20	Walnut		
23	15	Walnut		
56	36	Walnut		
57	36	Walnut		

- LEGEND**
- EXISTING THALWEG
  - PROPOSED THALWEG
  - BANKFULL / OHWM

EXISTING/PROPOSED STREAMBED INVERT



PREPARED BY:  
**SWCA**  
 ENVIRONMENTAL CONSULTANTS  
 1855 US-12, SUITE 2  
 NEW BUFFALO, MI 49117 630-705-1762  
 www.swca.com

PREPARED FOR:  
 CITY OF VALPARAISO

SURVEY/ BASE MAP PREPARED BY:  
 TERRITORIAL ENGINEERING, LLC

**CANDLEWOOD BRANCH RESTORATION**  
 CITY OF VALPARAISO  
 PROPOSED CONDITIONS

CHECKED BY:	JLM
DESIGNED BY:	RAS
DATE:	09/25/2024
PROJECT #:	87278
SCALE IN FEET	0 10 20
SHEET	3

**CANDLEWOOD BRANCH RESTORATION**  
 CITY OF VALPARAISO  
 PROPOSED CONDITIONS

CHECKED BY:	JLM	DATE:	09/25/2024
DESIGNED BY:	RAS	PROJECT #:	87278
DRAWN BY:	JLM	SCALE IN FEET	0 10 20
APPROV		SHEET	4

- LEGEND**
- 750 --- EXISTING MAJOR CONTOUR (5')
  - 752 --- EXISTING MINOR CONTOUR (1')
  - --- PROPERTY BOUNDARY
  - --- DRAINAGE EASEMENT
  - --- EXISTING TOP OF BANK
  - --- EXISTING TOE OF SLOPE
  - ST --- STORM WATER LINE
  - --- EXISTING RIPRAP
  - --- EXISTING TREE
  - --- 2'x2'x7" CONCRETE BLOCK
  - 750 --- PROPOSED MAJOR CONTOUR (5')
  - 752 --- PROPOSED MINOR CONTOUR (1')
  - --- EXISTING ALIGNMENT
  - --- PROPOSED ALIGNMENT
  - --- GRADING
  - --- STONE TOE
  - --- PROPOSED CONSTRUCTED RIFFLE
  - --- PROPOSED POOL
  - --- RIPRAP APRON
  - --- TREE REMOVAL

- NOTES:**
- REMOVE AND TREAT REMAINING STUMPS OF BUSH HONEYSUCKLE WITHIN THE CITY DRAINAGE EASEMENT.
  - ALL DISTURBED AREAS TO BE REVEGETATED POST-CONSTRUCTION
  - STONE TOE AT STA. 3+75 TO 4+30 EXTEND TO 3 FT HEIGHT.

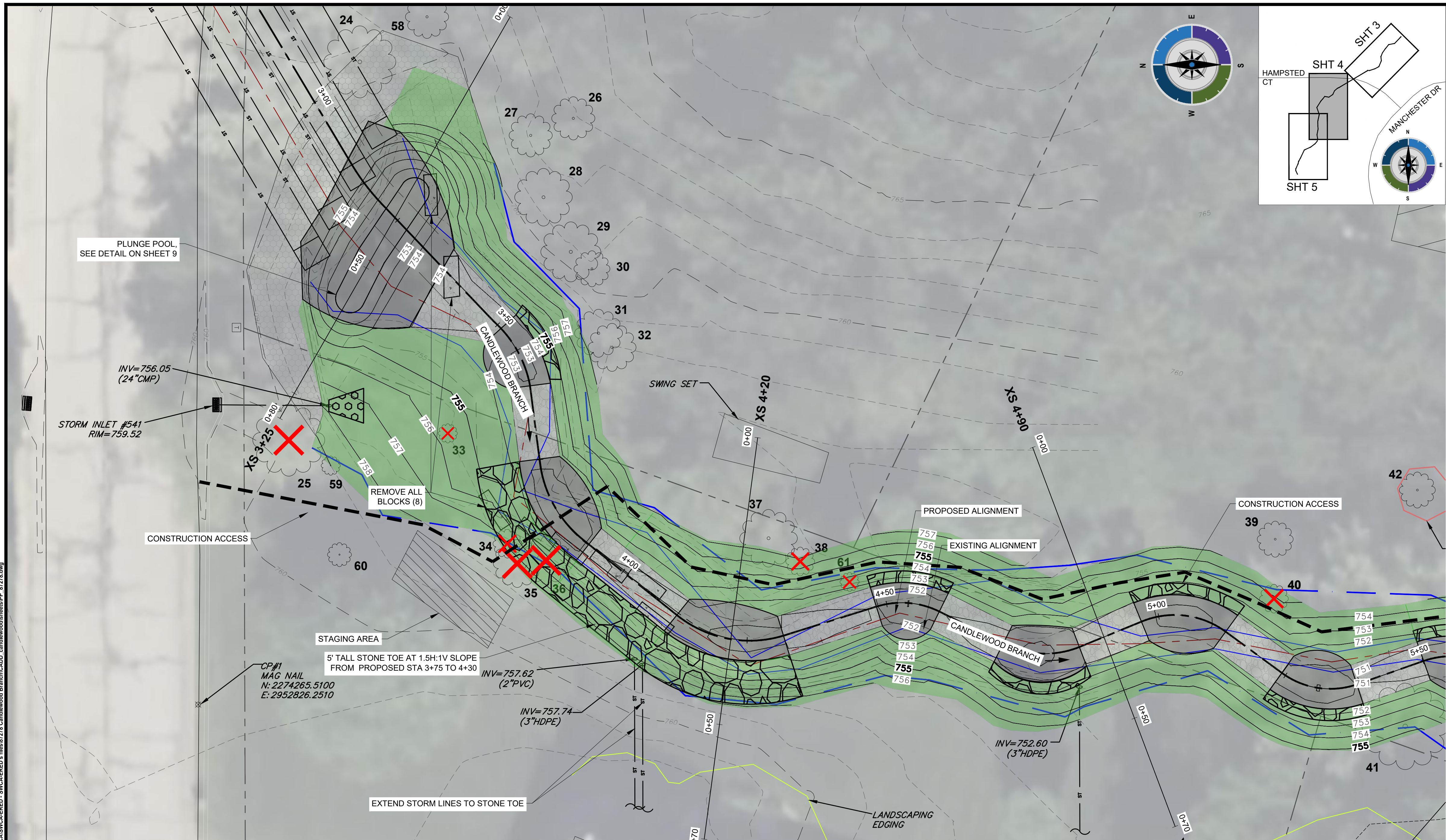
**TREE TABLE**

Tree #	DBH (in)	Species	To be Removed (=X)	Bat Tree (=B)
24	30	Maple		
25	8, 8, 8	Basswood, Stump		
26	18	Black Cherry		
27	18	Black Cherry		
28	24	Walnut		
29	25	Black Cherry		
30	15	Black Cherry		
31	20	Black Cherry		
32	20	Black Cherry		
33	8	Hackberry	X	
34	12	Walnut	X	
35	20	Walnut	X	
36	20	Walnut	X	
37	24	Walnut		
38	12	Dead	X	X
39	15	Black Cherry		
40	12	Ash, Dead	X	X
41	36	Maple		
42	15	Black Cherry		
43	18	Black Cherry		
44	12	Walnut		
45	18	Walnut		
46	15	Black Cherry		
58	15	Maple		
59	1	White Pine		
60	10	Honey Locust		
61	6	Ash, Dead	X	X

**CULVERT**

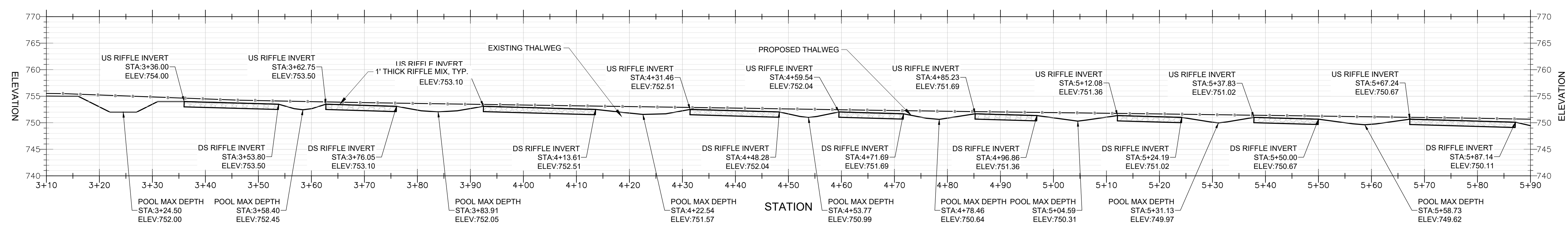
Culvert #	US Invert	DS Invert
1	756.32	755.12
2	755.98	755.03
3	755.84	755
4	755.96	755.3

All culverts are 60"x 36" pipe arch CMP

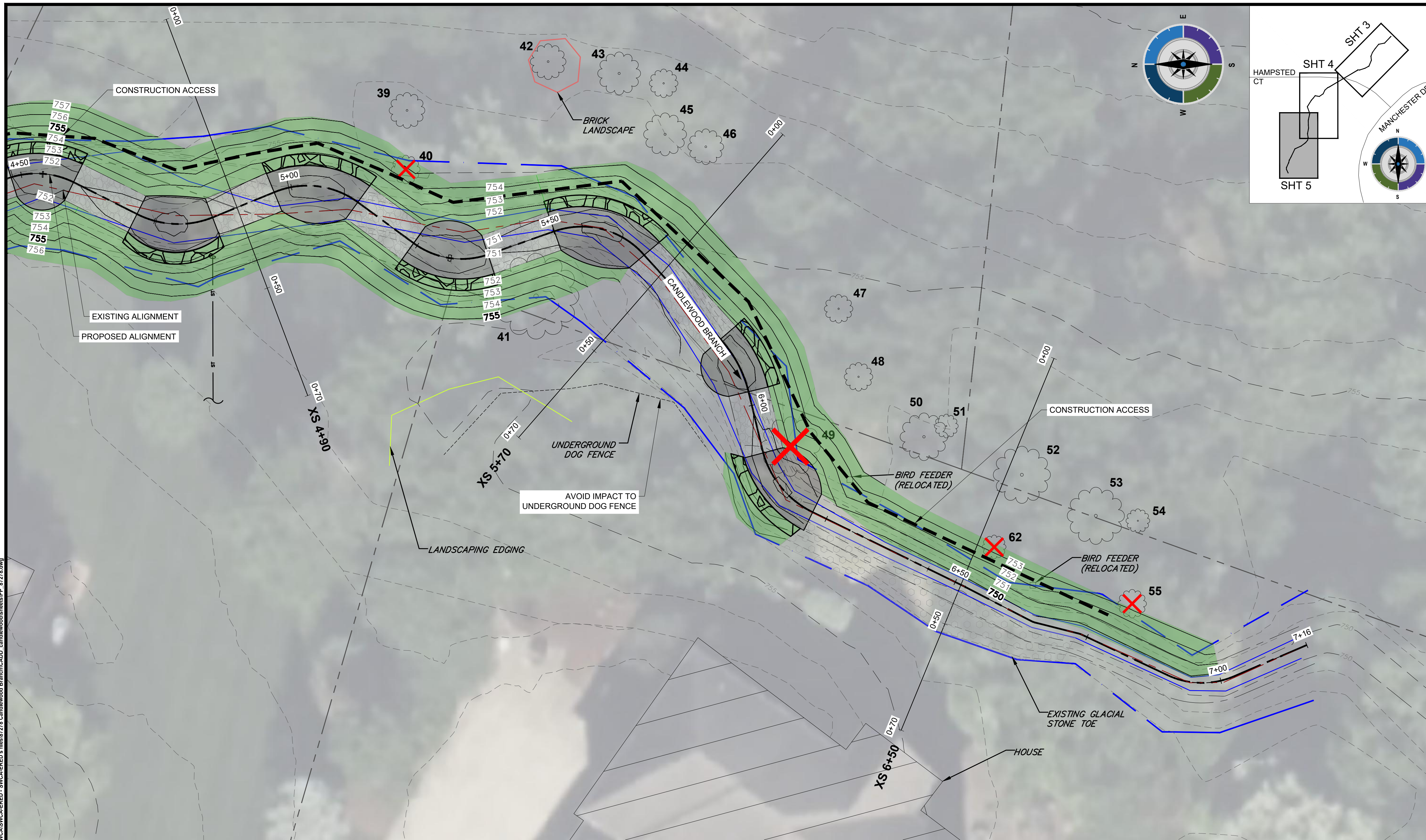


- LEGEND**
- --- EXISTING THALWEG
  - --- PROPOSED THALWEG
  - --- BANKFULL /OHWM

EXISTING/PROPOSED STREAMBED INVERT



**CANDLEWOOD BRANCH RESTORATION**  
 CITY OF VALPARAISO  
 PROPOSED CONDITIONS



- LEGEND**
- 750 --- EXISTING MAJOR CONTOUR (5')
  - 752 --- EXISTING MINOR CONTOUR (1')
  - - - - - PROPERTY BOUNDARY
  - - - - - DRAINAGE EASEMENT
  - 5' --- EXISTING TOP OF BANK
  - 5' --- EXISTING TOE OF SLOPE
  - ST --- STORM WATER LINE
  - [Pattern] EXISTING RIPRAP
  - [Symbol] EXISTING TREE
  - [Symbol] 2'x2'x7' CONCRETE BLOCK
  - 750 --- PROPOSED MAJOR CONTOUR (5')
  - 752 --- PROPOSED MINOR CONTOUR (1')
  - - - - - EXISTING ALIGNMENT
  - - - - - PROPOSED ALIGNMENT
  - [Color] GRADING
  - [Symbol] STONE TOE
  - [Pattern] PROPOSED CONSTRUCTED RIFFLE
  - [Symbol] PROPOSED POOL
  - [Pattern] RIPRAP APRON
  - [Symbol] TREE REMOVAL

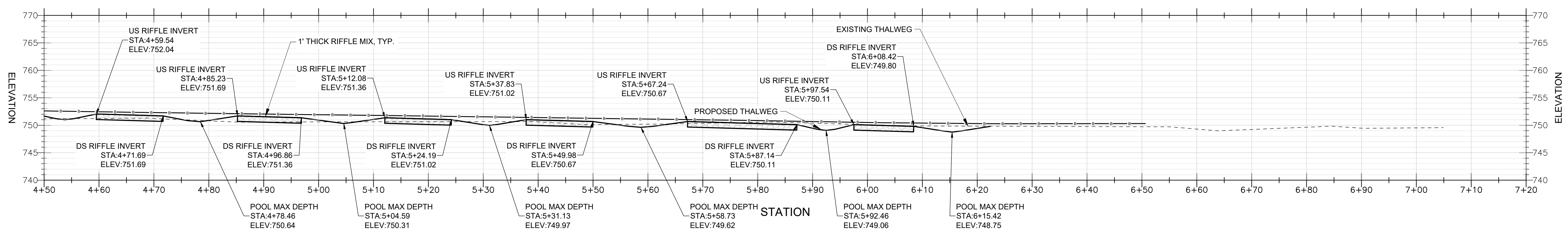
NOTES:  
 1. REMOVE AND TREAT REMAINING STUMPS OF BUSH HONEYSUCKLE WITHIN THE CITY DRAINAGE EASEMENT.  
 2. ALL DISTURBED AREAS TO BE REVEGETATED POST-CONSTRUCTION.

**TREE TABLE**

Tree #	DBH (in)	Species	To be Removed (=X)	Bat Tree (=B)
39	15	Black Cherry		
40	12	Ash, Dead	X	X
41	36	Maple		
42	15	Black Cherry		
43	18	Black Cherry		
44	12	Walnut		
45	18	Walnut		
46	15	Black Cherry		
47	12	Black Cherry		
48	12	Black Cherry		
49	25	Walnut	X	
50	20	Cherry		
51	10	Cherry		
52	24	Walnut		
53	24	Walnut		
54	10	Hickory		
55	12	Walnut	X	
62	4	Hawthorn	X	

- LEGEND**
- EXISTING THALWEG
  - PROPOSED THALWEG
  - BANKFULL /OHWM

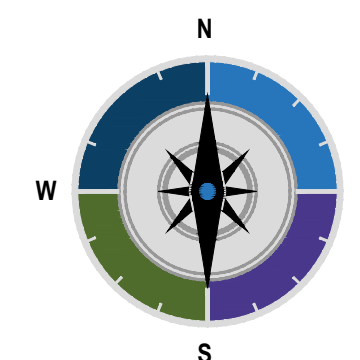
EXISTING/PROPOSED STREAMBED INVERT



CHECKED BY: RAS  
 DESIGNED BY: RAS  
 DRAWN BY: JLM  
 DATE: 09/25/2024  
 PROJECT #: 87278  
 SCALE IN FEET: 0, 10, 20  
 SHEET: 5

**LEGEND**

- EXISTING GRADE
- PROPOSED GRADE
- ▨ CONSTRUCTED RIFFLE
- ▨ STONE TOE
- BANKFULL/OHWM

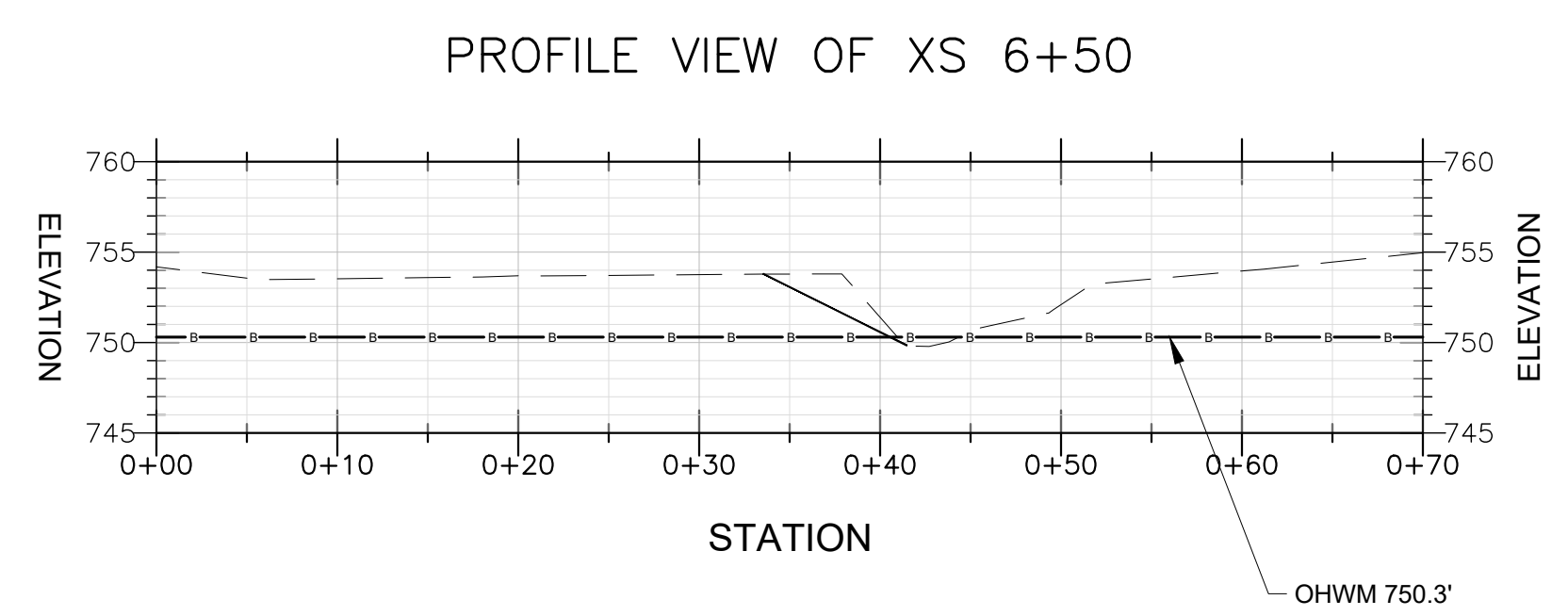
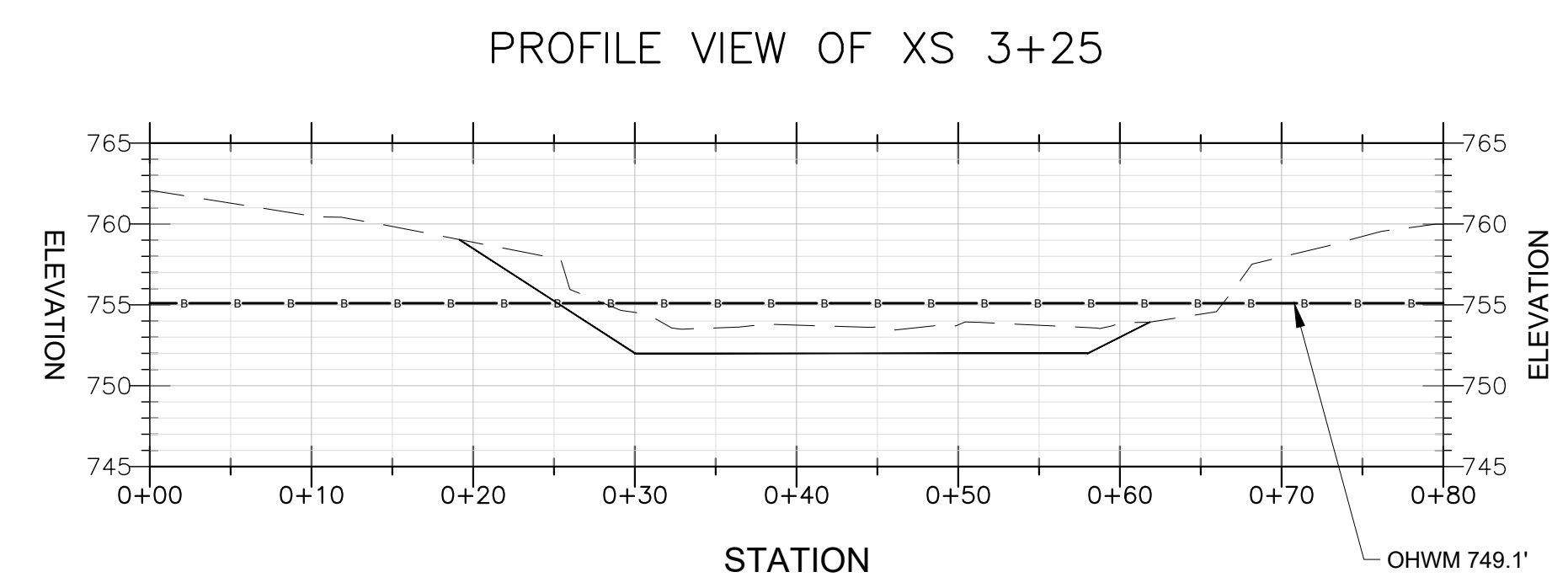
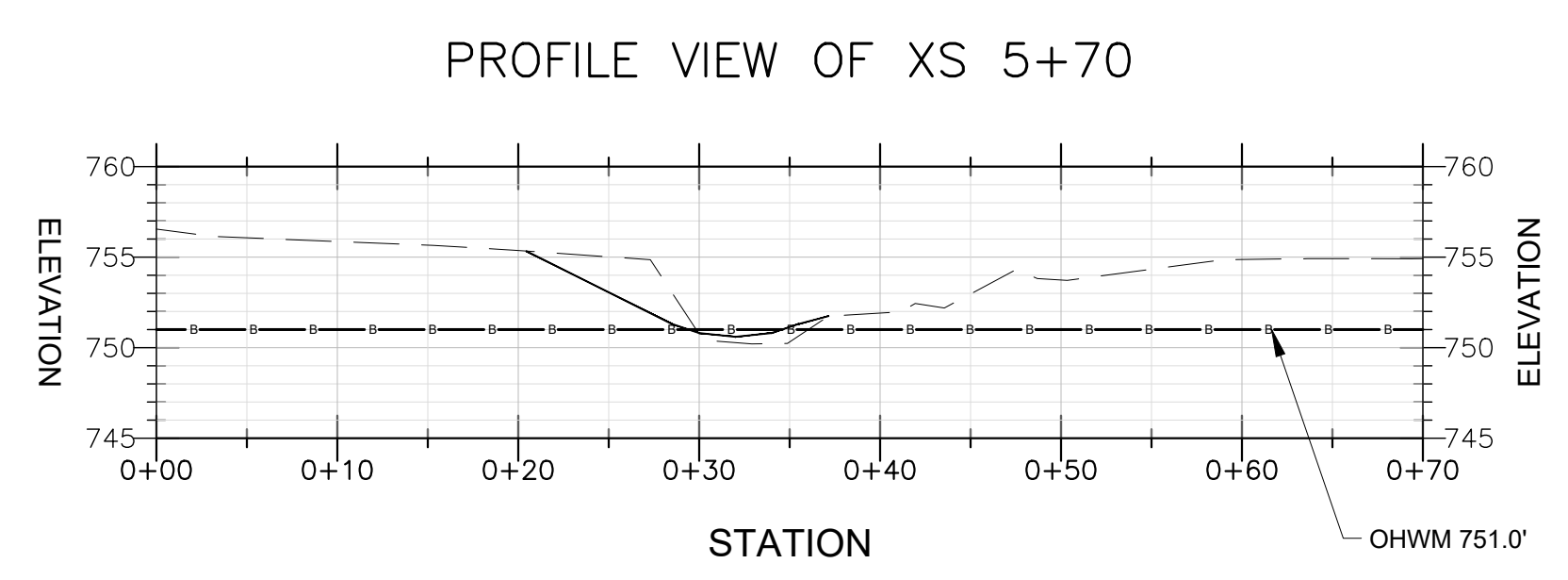
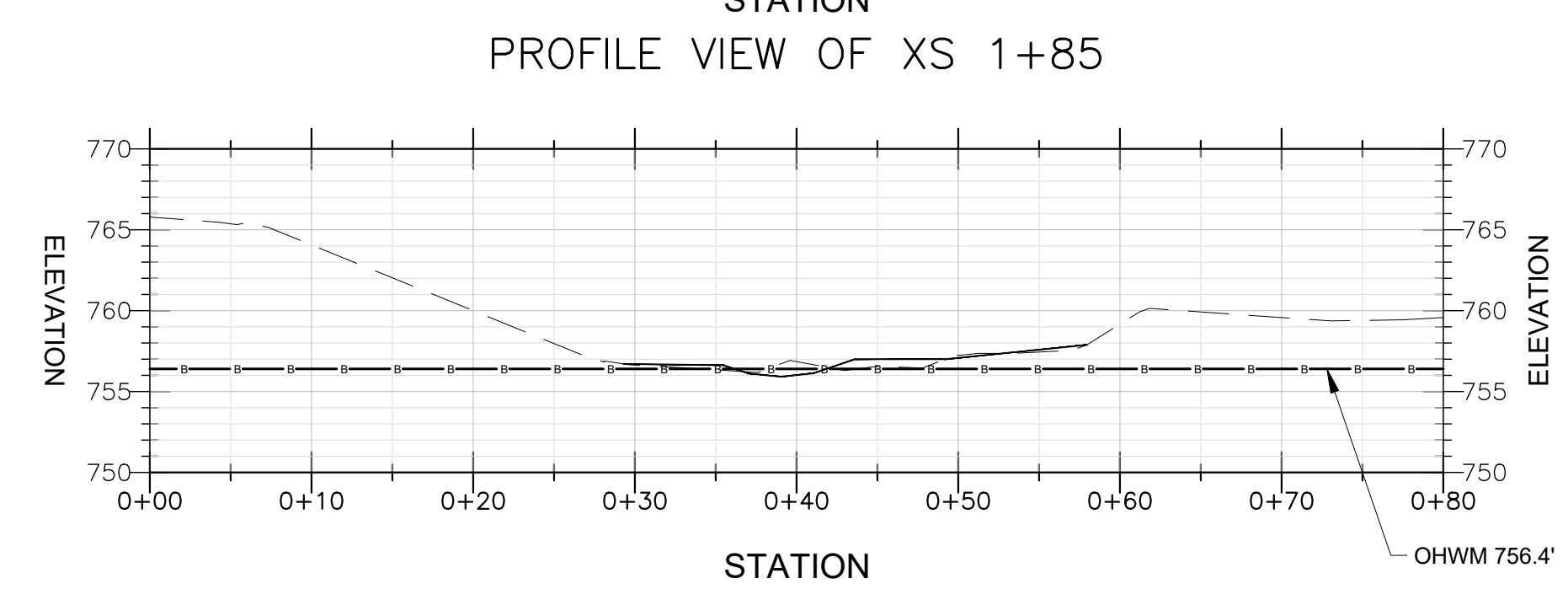
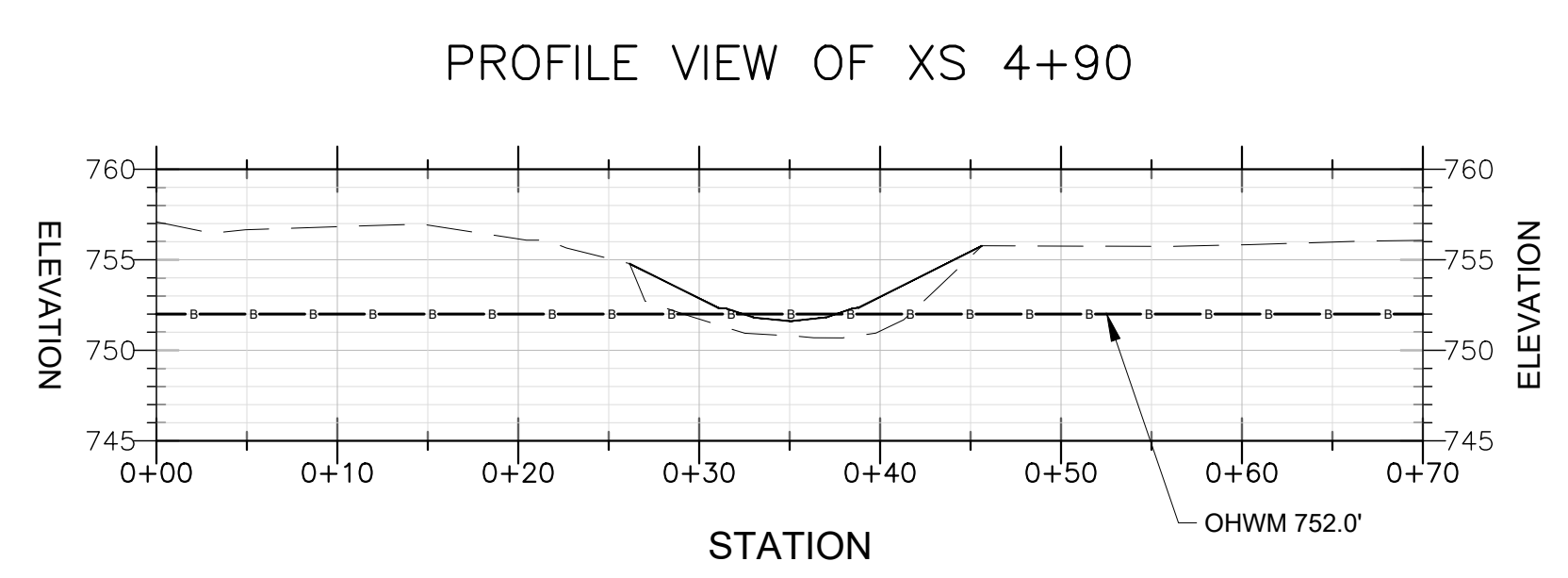
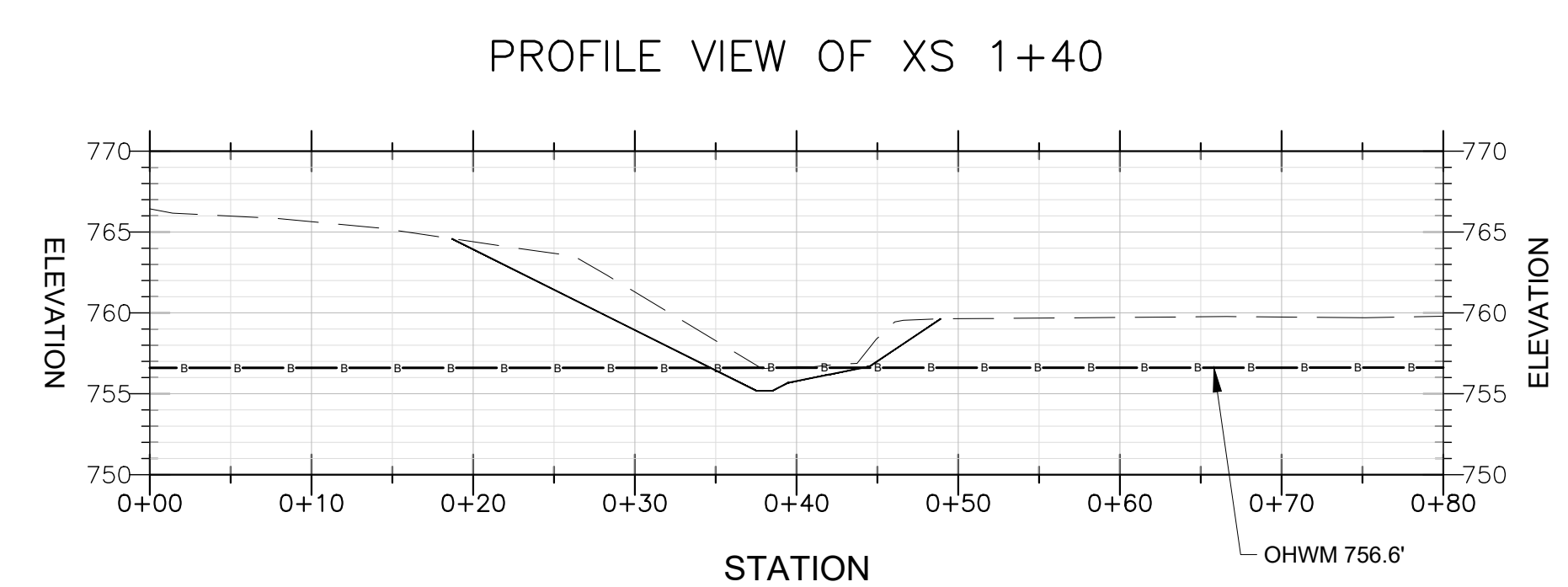
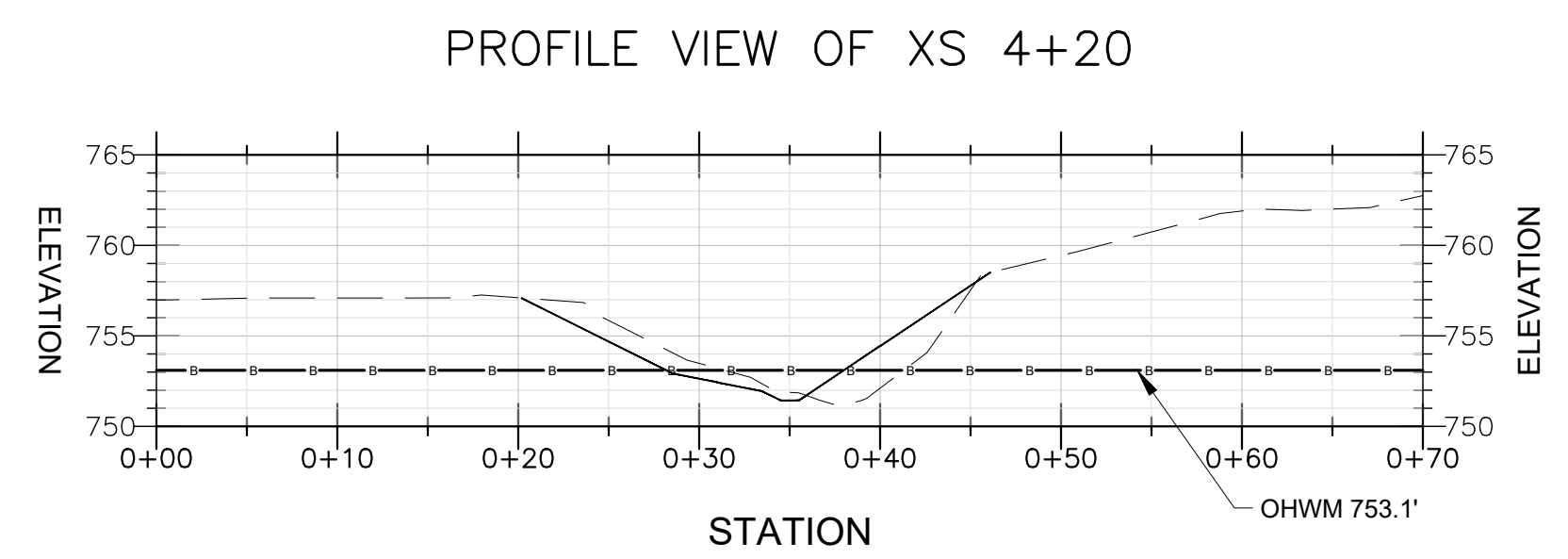
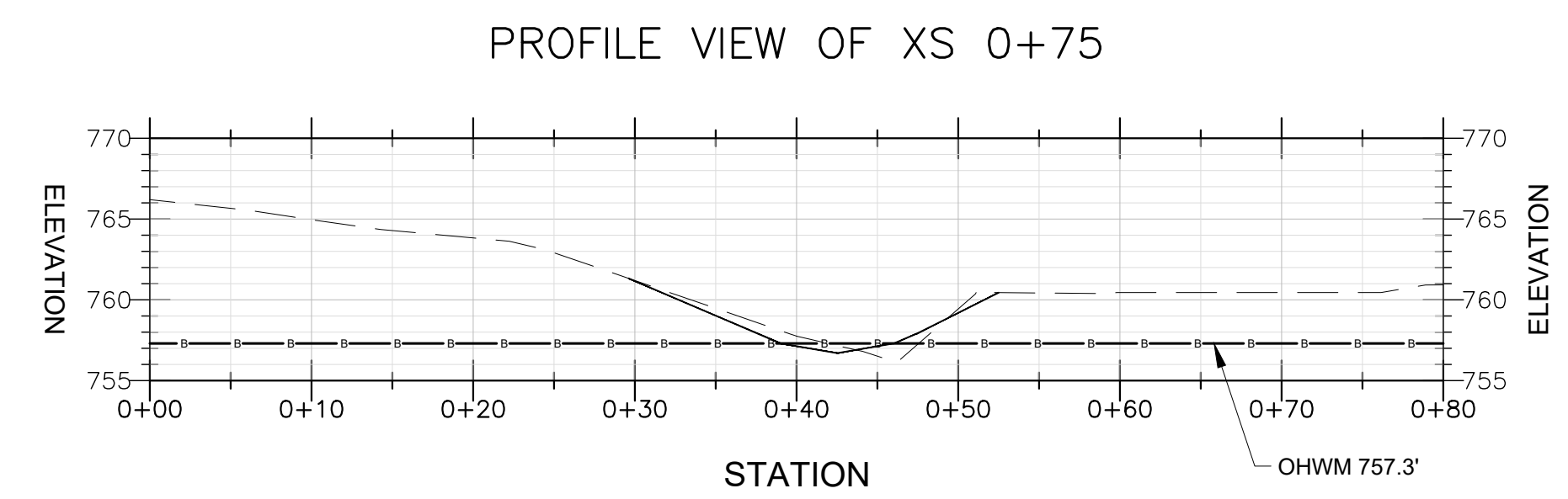


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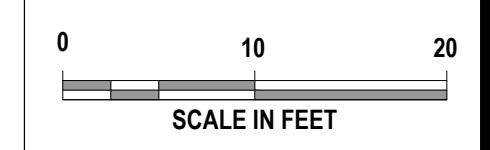
SURVEY/ BASE MAP PREPARED BY:  
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**CANDLEWOOD BRANCH RESTORATION**  
 CITY OF VALPARAISO  
**CROSS-SECTIONS**



CHECKED BY:	RAS	DATE	
DESIGNED BY:	RAS	DESCRIPTION	
DRAWN BY:	JLM	APPROV	

DATE: 09/25/2024  
 PROJECT #: 87278



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 CHECKED BY: RAS  
 DATE: 09/25/2024  
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