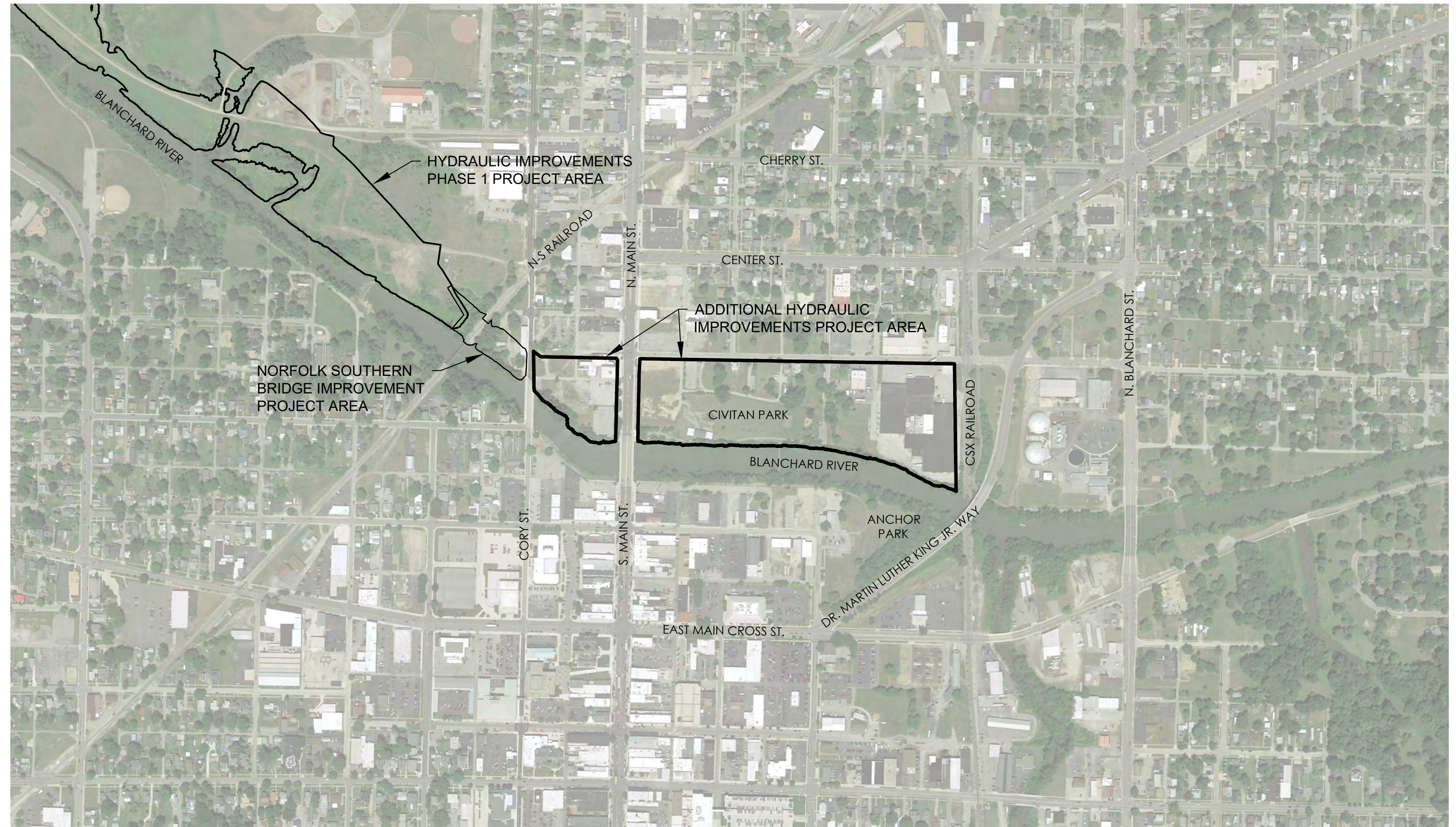




PREPARED FOR:
MAUMEE WATERSHED
CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD
RISK REDUCTION PROGRAM
BLANCHARD RIVER
ADDITIONAL HYDRAULIC
IMPROVEMENTS
HANCOCK COUNTY, OH



VICINITY MAP
NOT TO SCALE

APPROVALS:

MAUMEE WATERSHED CONSERVANCY DISTRICT

CLARK LYNN ARMY, MANAGER _____ DATE _____

STEVE WILSON, P.E., P.S., PROJECT MANAGER _____ DATE _____

CITY OF FINDLAY

JEREMY KALB, P.E., CITY ENGINEER _____ DATE _____

100% SUBMITTAL
APRIL 8, 2022
Project Number: 174316204

Save Date: 2022/04/05 2:50 PM, Login: Johns, Curtis
 U:\174316202\A\Task_411_addL_hyd_rtpc_preliminary_design\working\sheet\02 sheet index symbol and legend.dwg

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02	SHEET INDEX SYMBOLS AND LEGEND
03	GENERAL NOTES AND SEALS
04	OVERALL SITE PLAN
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57	CITY OF FINDLAY STANDARD DETAILS 2 OF 2

SYMBOLS AND LEGEND

— SS —	SANITARY AND COMBINED SEWERS & STRUCTURES		PROPOSED LIVE BRUSH LAYERING
— ST —	STORM SEWERS & STRUCTURES		EXISTING RIFFLE HATCHING
— W — W —	WATERLINES & STRUCTURES		PROPOSED RIFFLE HATCHING
— OHE — OHE —	ELECTRIC OVERHEAD POWER LINES & POLES		FLOOD PLAIN SEED MIX
— UGE —	ELECTRIC UNDERGROUND POWER LINES		RIPARIAN BUFFER SEED MIX
— G —	GAS LINE		LOW MAINTENANCE SEED MIX
— TEL —	TELEPHONE/FIBER OPTIC LINES		TREELINE
— TR —	TRAFFIC SIGNAL CONTROL LINES		TREE
— — —	FENCE		SITE BENCH MARK
— — — —	LIMITS OF DISTURBANCE		
— R/W — R/W —	RIGHT-OF-WAY		
— RR R/W —	RAILROAD RIGHT-OF-WAY		
— — —	PAVEMENT		

ABBREVIATIONS

ABAND.	ABANDON	LSM	LOW STRENGTH MORTAR	SS	SANITARY SEWER
BM	BENCHMARK	MAX.	MAXIMUM	SSMH	SANITARY SEWER MANHOLE
BMP	BEST MANAGEMENT PRACTICE	MH	MANHOLE	ST	STORM SEWER
CB	CATCH BASIN	MIN.	MINIMUM	STA.	STATION
CI	CURB INLET	N	NORTH	STMH	STORM SEWER MANHOLE
CDF	CONTROLLED DENSITY FILL	NSIP	NOT SHOWN IN PROFILE	SWPPP	STORM WATER - POLLUTION PREVENTION PLAN
CL	CENTERLINE	NW	NORTHWEST		
CMP	CORRUGATED METAL PIPE	OH	OVERHEAD	TBA	TO BE ABANDONED
CPP	CORRUGATED PLASTIC PIPE	P.C.	POINT OF CURVATURE	TBP	TO BE PROTECTED
CSO	COMBINED SEWER OVERFLOW	P.I.	POINT OF INTERSECTION	TBR	TO BE REMOVED
CONC.	CONCRETE	PL & PR	PLAN AND PROFILE	TBRBO	TO BE REMOVED BY OTHERS
C.Y.	CUBIC YARD	PP	POWER POLE	TBRR	TO BE REMOVED AND REPLACED
DIA.	DIAMETER	PROP.	PROPOSED	TEMP.	TEMPORARY
D.I.P.	DUCTILE IRON PIPE	PVMT.	PAVEMENT	T.O.P.	TOP OF PIPE
EA.	EACH	PVC	POLYVINYL CHLORIDE PIPE	TP	TELEPHONE POLE
ELEC.	ELECTRIC/ELECTRICAL	RCP	REINFORCED CONCRETE PIPE	TYP.	TYPICAL
E.	EAST	REQ'D.	REQUIRED	UG	UNDERGROUND
EL./ELEV.	ELEVATION	R.R.	RAILROAD	VSP	VITRIFIED SEWER PIPE
EX.	EXISTING	R & R	REMOVE & REPLACE	W	WEST
F.M.	FORCEMAIN	S	SOUTH	WA	WATER
HYD.	HYDRANT	SE	SOUTHEAST	W/	WITH
INV.	INVERT	S.F.	SQUARE FEET	W.L.	WATERLINE
LBL	LIVE BRANCH LAYERING	SPEC.	SPECIFICATION	WMH	WATER MANHOLE
L.F.	LINEAL FOOT/FEET	S.Y.	SQUARE YARD	WV	WATER VALVE
LP	LIGHT POLE	SAN.	SANITARY		

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3	100% DESIGN	DD	2022.04.08
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1	60% DESIGN	DD	2021.05.14
	ISSUED		Y/M/AM/DD

Client/Project MAUMEE WATERSHED CONSERVANCY DISTRICT	HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS HANCOCK COUNTY, OHIO SHEET INDEX, SYMBOLS AND LEGEND	Project Number: 174316204 File Name: 02 sheet index symbols and legend.dwg
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CJ	DDD	TC
Dwn.	Chkd.	Dign.

Revision	Sheet
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PROPOSED FLOODPLAIN BENCHING - SEQUENCE OF CONSTRUCTION

WORK TO BE COMPLETED	WORK CONSTRAINTS
1. ESTABLISH STAGING AND STOCKPILE AREAS AS SHOWN IN CONSTRUCTION DRAWINGS.	NO TREE CLEARING SHALL OCCUR BETWEEN THE DATES OF APRIL 1 AND SEPTEMBER 30 TO PREVENT POTENTIAL IMPACTS TO THREATENED/ENDANGERED BAT SPECIES.
2. INSTALL TEMPORARY SEDIMENT CONTROL AND SWPPP BMPs.	
3. CLEAR AND GRUB SITE.	
4. CONFIRM GAS AND WATER TERMINATIONS AND PLUG SANITARY SEWERS.	
5. DEMOLITION OF SURFACE FEATURES.	
6. REMOVE AND REPLACE STORM SEWERS AND OUTFALLS ON TAYLOR AND JEFFERSON STREETS.	
7. EXCAVATE FLOODPLAIN BENCH TO PROPOSED BENCH ELEVATIONS IN ACCORDANCE WITH SPECIFICATION SECTION 02800.	
8. SEE PROPOSED RIFFLES SEQUENCE OF CONSTRUCTION BELOW. WORK MAY OCCUR CONCURRENTLY WITH 7.	
9. ROUGH GRADE SITE.	
10. TEMPORARY SEEDING.	
11. CONSTRUCT PEDESTRIAN BRIDGE RAMP AND STAIRS.	
12. FINAL GRADE SITE INCLUDING TOPSOIL INSTALLATION.	
13. FINAL SEEDING AND PLANTINGS.	
14. REMOVE SEDIMENT CONTROL AFTER VEGETATION ESTABLISHMENT.	

PROPOSED RIFFLES - SEQUENCE OF CONSTRUCTION

WORK TO BE COMPLETED	WORK CONSTRAINTS
1. ESTABLISH STAGING AND STOCKPILE AREAS AS SHOWN IN CONSTRUCTION DRAWINGS.	RIFFLE CONSTRUCTION SHALL BE PERFORMED DURING LOW FLOW CONDITIONS.
2. INSTALL TEMPORARY SEDIMENT CONTROL.	MUSSEL SURVEY (BY OTHERS), RELOCATION, AND RESCUE SHALL NOT BE PERFORMED BETWEEN THE DATES OF OCTOBER 1 AND MAY 1. NO INSTREAM WORK SHALL TAKE PLACE PRIOR TO MUSSEL SURVEY (BY OTHERS) AND RELOCATION.
3. INSTALL TEMPORARY RIVER ACCESS AS INDICATED IN CONSTRUCTION DRAWINGS.	
4. EXCAVATE TO RIFFLE SUBGRADE AS SHOWN IN CONSTRUCTION DRAWINGS.	NO INSTREAM WORK SHALL TAKE PLACE BETWEEN APRIL 15 AND JUNE 30 DUE TO FISH SPAWNING REQUIREMENTS. A WRITTEN REQUEST MAY BE SUBMITTED TO THE ENGINEER FOR COORDINATION OF A WAIVER REGARDING THE ABOVE CONSTRAINT BUT IS NOT GUARANTEED. SUCH REQUEST SHALL OCCUR NO LATER THAN FEBRUARY 15 OF THE YEAR IN WHICH THE WAIVER IS REQUESTED. REQUEST DOES NOT CONSTITUTE APPROVAL AND THE ENGINEER CANNOT WARRANT THAT THE REQUEST WILL BE APPROVED.
5. STOCKPILE NATIVE COBBLE/GRAVEL MATERIAL.	
6. CONSTRUCT RIFFLES AS SHOWN IN CONSTRUCTION DRAWINGS.	
7. REMOVE TEMPORARY ACCESS AND CONSTRUCT LIVE BRUSH LAYERING AS SHOWN IN CONSTRUCTION DRAWINGS.	
8. REMOVE SEDIMENT CONTROL AFTER VEGETATION ESTABLISHMENT.	NO TREE CLEARING SHALL OCCUR BETWEEN THE DATES OF APRIL 1 AND SEPTEMBER 30 TO PREVENT POTENTIAL IMPACTS TO THREATENED/ENDANGERED BAT SPECIES.

IN ACCORDANCE WITH THE PROVISIONS OF THE OHIO REVISED CODE, SECTION 153.64 AS ENACTED IN AMENDED SUBSTITUTE HOUSE BILL NO. 538 ON MARCH 31, 1982, THE CONTRACTOR SHALL BE REQUIRED TO CONTACT THE OWNERS OF UNDERGROUND UTILITY FACILITIES SHOWN ON THE PLANS AND SPECIFICATIONS. SUCH NOTICE SHALL BE MADE AT LEAST TWO (2) WORKING DAYS (EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS) PRIOR TO COMMENCING CONSTRUCTION OPERATIONS. NAMES, ADDRESSES AND TELEPHONE NUMBERS OF THE REGISTERED UTILITY PROTECTION SERVICE AND OWNERS OF UNDERGROUND UTILITY FACILITIES WITHIN THE PROJECT AREA ARE LISTED BELOW.

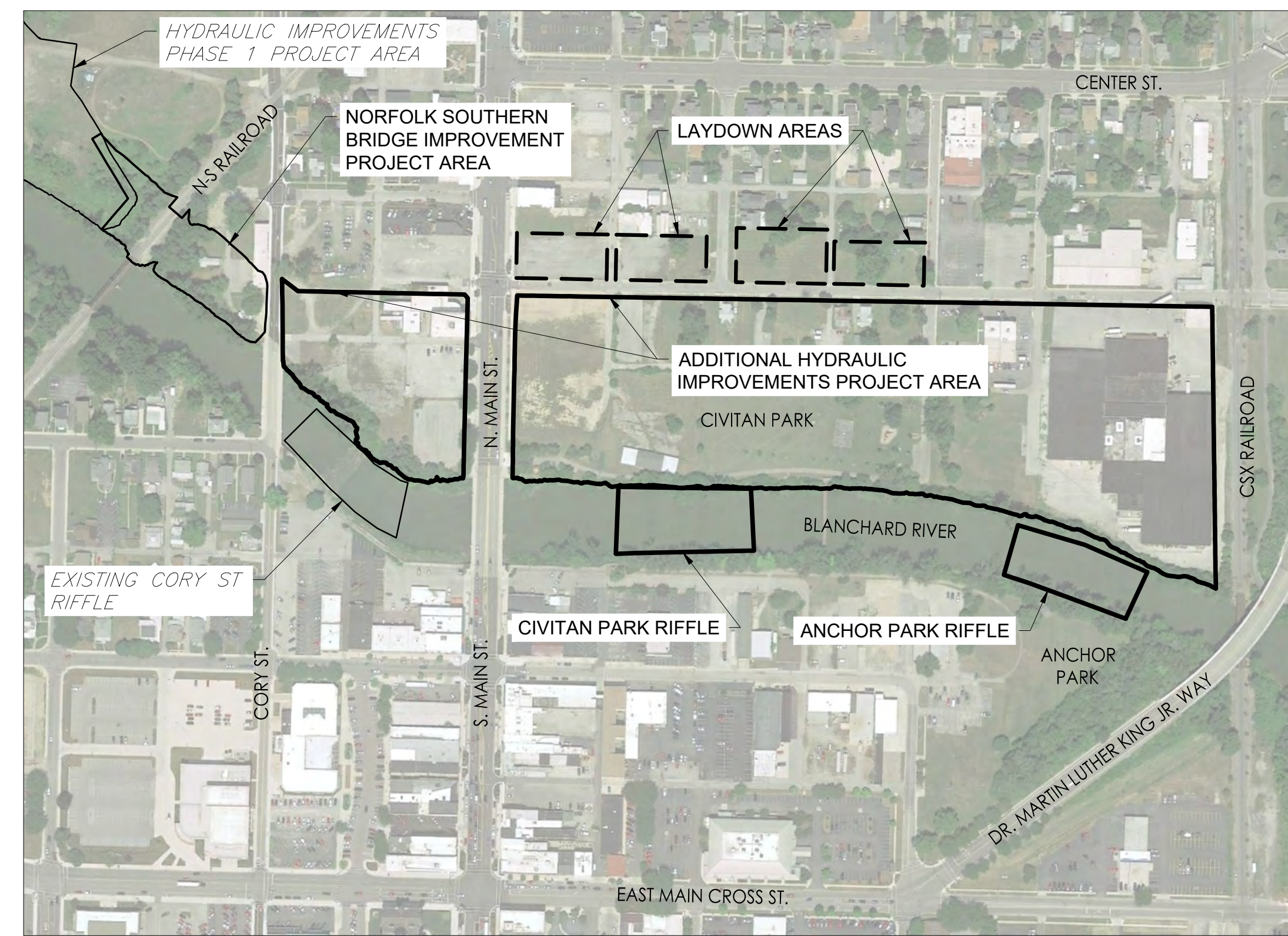
OHIO UTILITIES PROTECTION SERVICE
(REGISTERED UTILITY PROTECTION SERVICE)
4740 BELMONT AVENUE
YOUNGSTOWN, OHIO 44505-1014
1-800-362-2764

AEP
GERALD PISARSKY
GDPISARSKY@AEP.COM
419-443-4626

CITY OF FINDLAY
WATER, SANITARY SEWER & STORM SEWER
JEREMY KALB, PE
JKALB@FINDLAYOHIO.COM
419-424-7121

COLUMBIA GAS
KURT SAUM
KSAUM@NISOURCE.COM
419-429-9809

CONSTRUCTION SEQUENCING

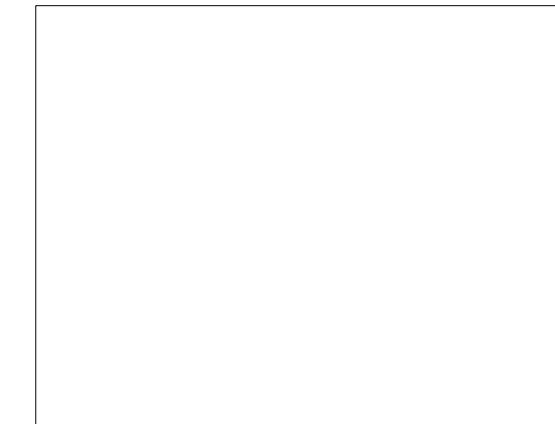


ENGINEER SEALS AND SIGNATURES

JOHN MENNINGER, P.E. DATE
RESPONSIBLE FOR SHEETS 24 THROUGH 25 AND 40 THROUGH 49



ERIC E. REEVES, P.E. DATE
RESPONSIBLE FOR SHEETS 30 THROUGH 39



DEREK D. DALTON, P.E. DATE
RESPONSIBLE FOR SHEETS 01 THROUGH 23, 26 THROUGH 29 AND 50 THROUGH 51



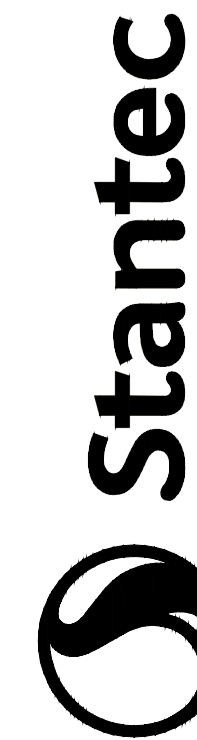
SURVEY INFORMATION

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE

SURVEY OBTAINED BY:

BOCKRATH & ASSOCIATES TOPOGRAPHIC
SURVEY PERFORMED SUMMER OF 2020

KUCERA INTERNATIONAL
AERIAL SURVEY PERFORMED WINTER OF 2016



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3	100% DESIGN	DD	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	DD	2021.05.14
ISSUED			Y1.MM.DD

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
HANCOCK COUNTY, OHIO

Title
GENERAL NOTES AND SEALS

Issue Stamp

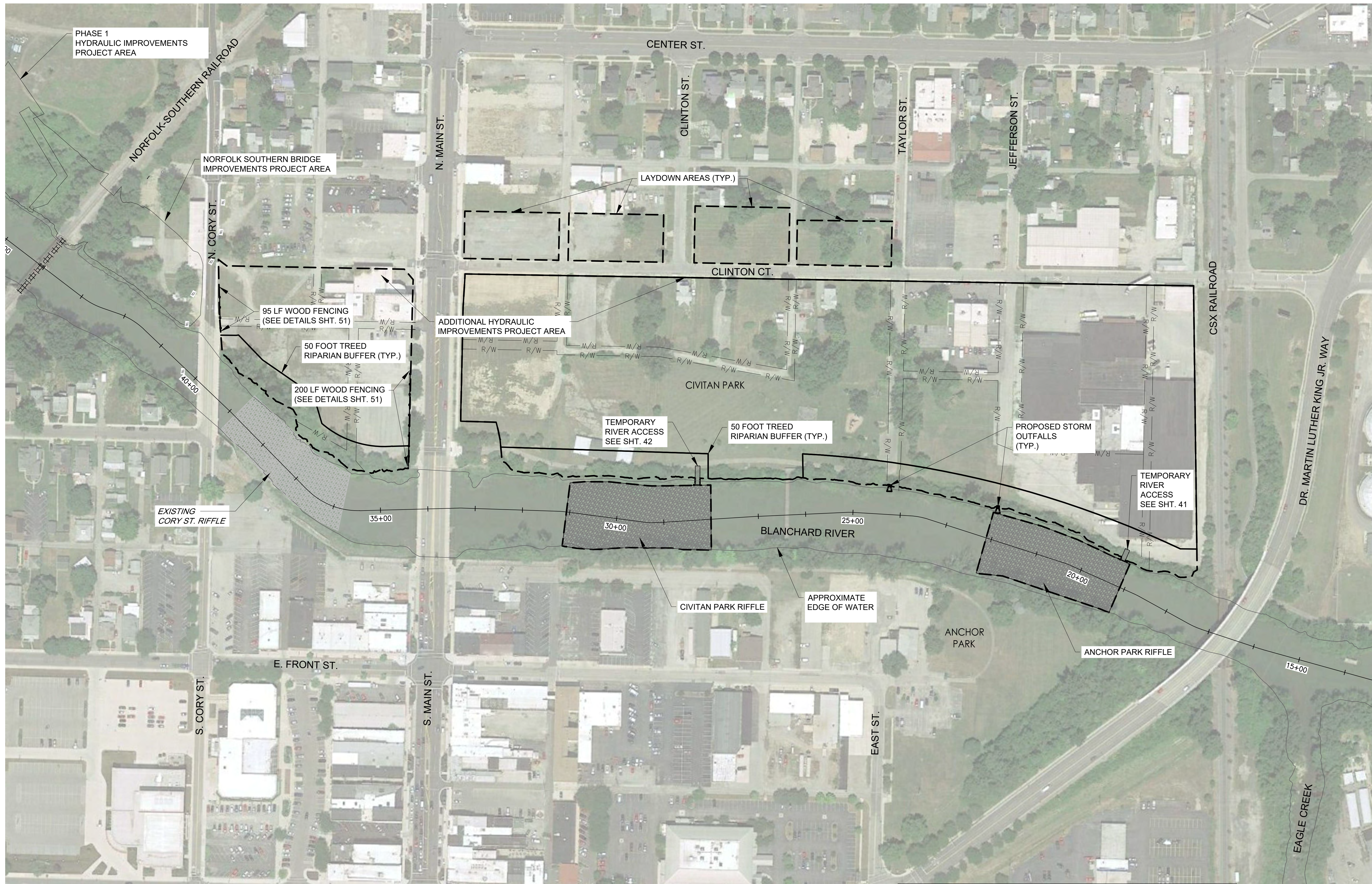
Project Number: 174316204

File Name: 03 general notes and seals.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dign.

Revision Sheet

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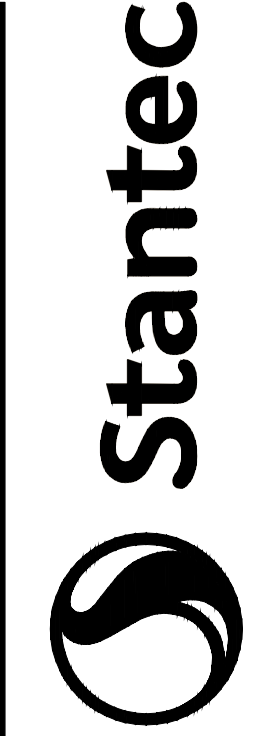
LEGEND

	LIMITS OF DISTURBANCE		EXISTING RIFFLE
	50 FOOT TREED RIPARIAN BUFFER		PROPOSED RIFFLE
	WOOD FENCING		TEMPORARY RIVER ACCESS

North Arrow pointing up with 'N' above it.

Graphic scale bar showing 0, 100', and 200'.

Text: 1"=100'



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Client/Project
 MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO

Title
 OVERALL SITE PLAN

Issue Stamp

Project Number: 174316204

File Name: 04 overall site plan.dwg

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Dwn.	Chkd.	Dign.

Revision 0 Sheet 04 of 57

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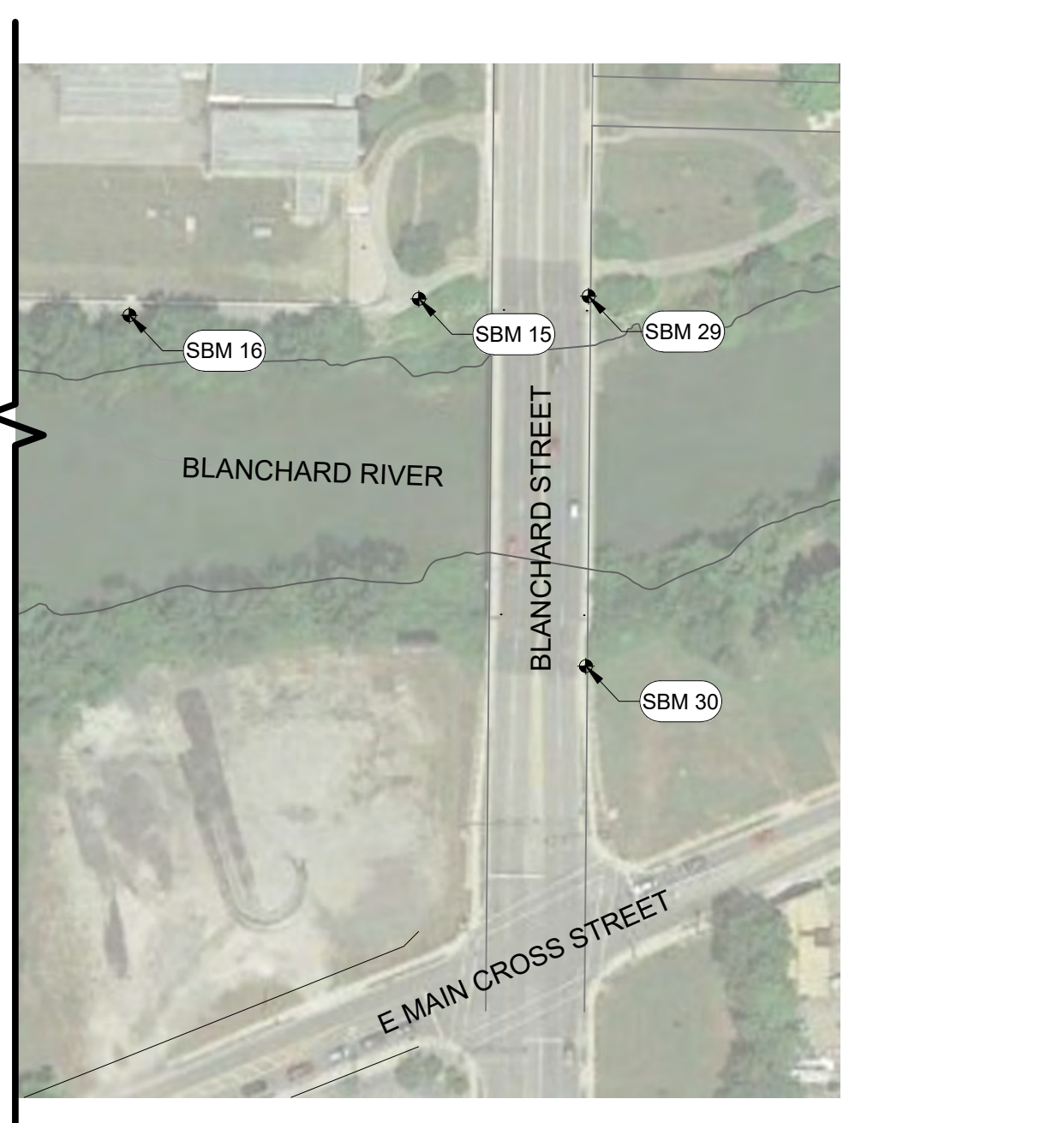
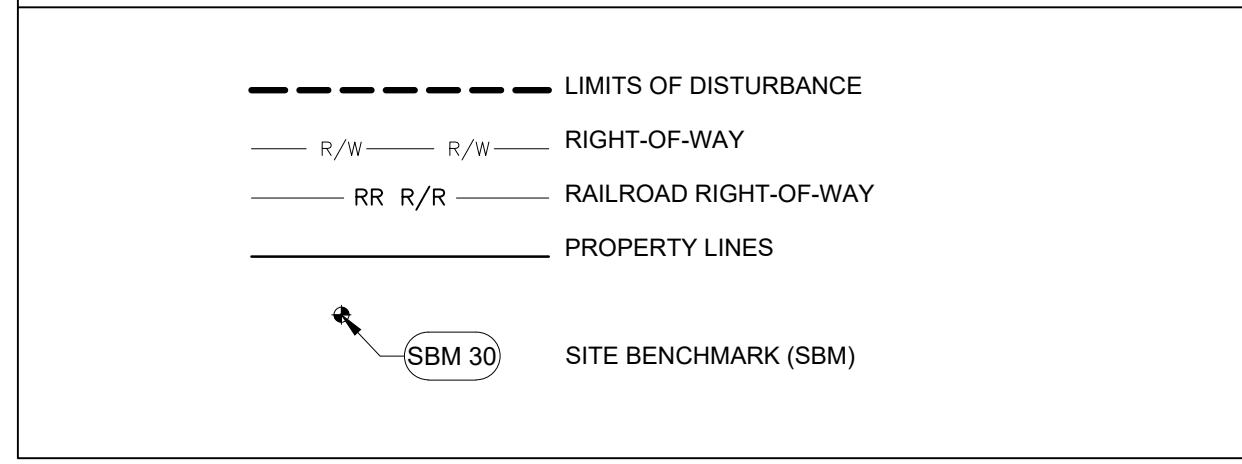
SURVEYING POSITIONAL PARAMETERS

USE THE FOLLOWING VERTICAL POSITIONING AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

VERTICAL POSITIONING
 ORTHOMETRIC HEIGHT DATUM: NAVD88
 GEOID: GEOID12AUS

HORIZONTAL POSITIONING
 REFERENCE FRAME: NAD83 (2011)
 ELLIPSOID: GRS80
 MAP PROJECTION: LAMBERT CONFORMAL CONIC
 COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE
 GROUND CALCULATED SCALE FACTOR: 1.0000924939
 SCALE POINT: 41° 02' 49.56404"N 83° 39' 26.19171"W
 UNITS ARE IN U.S. SURVEY FEET.

LEGEND

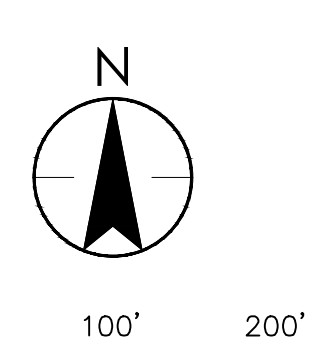


PROPERTY OWNER KEY

1 HANCOCK COUNTY COMMISSIONERS 570000200170 0 MEEKS AVE FINDLAY OH 45840	11 HANCOCK COUNTY COMMISSIONERS 570000200080 136 N MAIN ST FINDLAY OH 45840	21 HANCOCK COUNTY COMMISSIONERS 560000190500 0 N MAIN ST FINDLAY OH 45840	31 HANCOCK COUNTY COMMISSIONERS 590000280340 0 N MAIN ST FINDLAY OH 45840	41 CITY OF FINDLAY 590000280390 0 N MAIN ST FINDLAY OH 45840	51 HANCOCK COUNTY COMMISSIONERS 610000341780 0 CLINTON CT FINDLAY OH 45840	61 TELLEZ, JAMIE & YOLANDA 580000243280 201 CLINTON CT FINDLAY OH 45840	71 HANCOCK COUNTY COMMISSIONERS 610000341280 0 TAYLOR ST FINDLAY OH 45840	81 HANCOCK COUNTY COMMISSIONERS 560000191120 0 JEFFERSON ST FINDLAY OH 45840	91 HANCOCK COUNTY COMMISSIONERS 560000191120 0 JEFFERSON ST FINDLAY OH 45840
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SITE BENCHMARKS (SBM) KEY

SBM No.	NORTHING	EASTING	ELEVATION	DESCRIPTION
SBM 15	502691.15	1653621.92	770.73	SET MAG NAIL
SBM 16	502681.14	1653445.96	774.64	SET MAG NAIL
SBM 17	503289.35	1650771.49	775.49	MAG NAIL IN WALK
SBM 18	503079.81	1650764.15	775.09	MAG NAIL IN WALK
SBM 29	502692.8	1653725.02	780.91	MAG NAIL IN WALK
SBM 30	502467.91	1653723.4	778.86	MAG NAIL IN WALK



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Client/Project
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HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO

Title
 SURVEY SCHEMATIC

Issue Stamp

CJ	DD	TC
Dwn.	Chkd.	Dgn.

Project Number: 174316204
 File Name: 05_survey_schematic.dwg

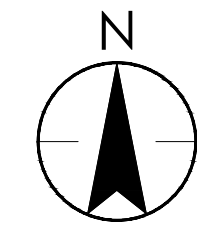
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 0 05 of 57

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GENERAL SHEET NOTES

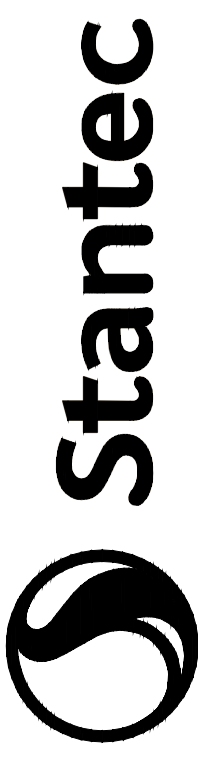
- EXISTING STRUCTURES AND DEMOLISHED STRUCTURE FOUNDATIONS ARE NOT SHOWN ON THIS DRAWING.
- IF ANY STAINED, OILY, OR ODOROUS SOILS ARE DISCOVERED DURIN EXCAVATION STOP WORK IMMEDIATELY AND NOTIFY THE OWNER AND ENGINEER. REFER TO THE FOCUSED PHASE II ENVIRONMENTAL SITE ASSESSMENT WITHIN THE SUPPLEMENTAL CONDITIONS FOR ADDITIONAL INFORMATION.

HAZARDOUS MATERIAL TO BE EXCAVATED AND DISPOSED OF OFF SITE PRIOR TO CONSTRUCTION BY OTHERS. ESTIMATED 750 CY OF MATERIAL. EXCAVATION NOT REFLECTED IN THE EXISTING GRADING PLAN. (SEE NOTE 2)



LEGEND

	770	—	EXISTING MAJOR CONTOUR (5')
	771	—	EXISTING MINOR CONTOUR (1')



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ISSUED		Appd.	Y1.AM.DD

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HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO

Title
 EXISTING GRADING PLAN

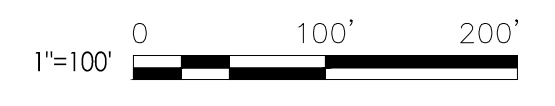
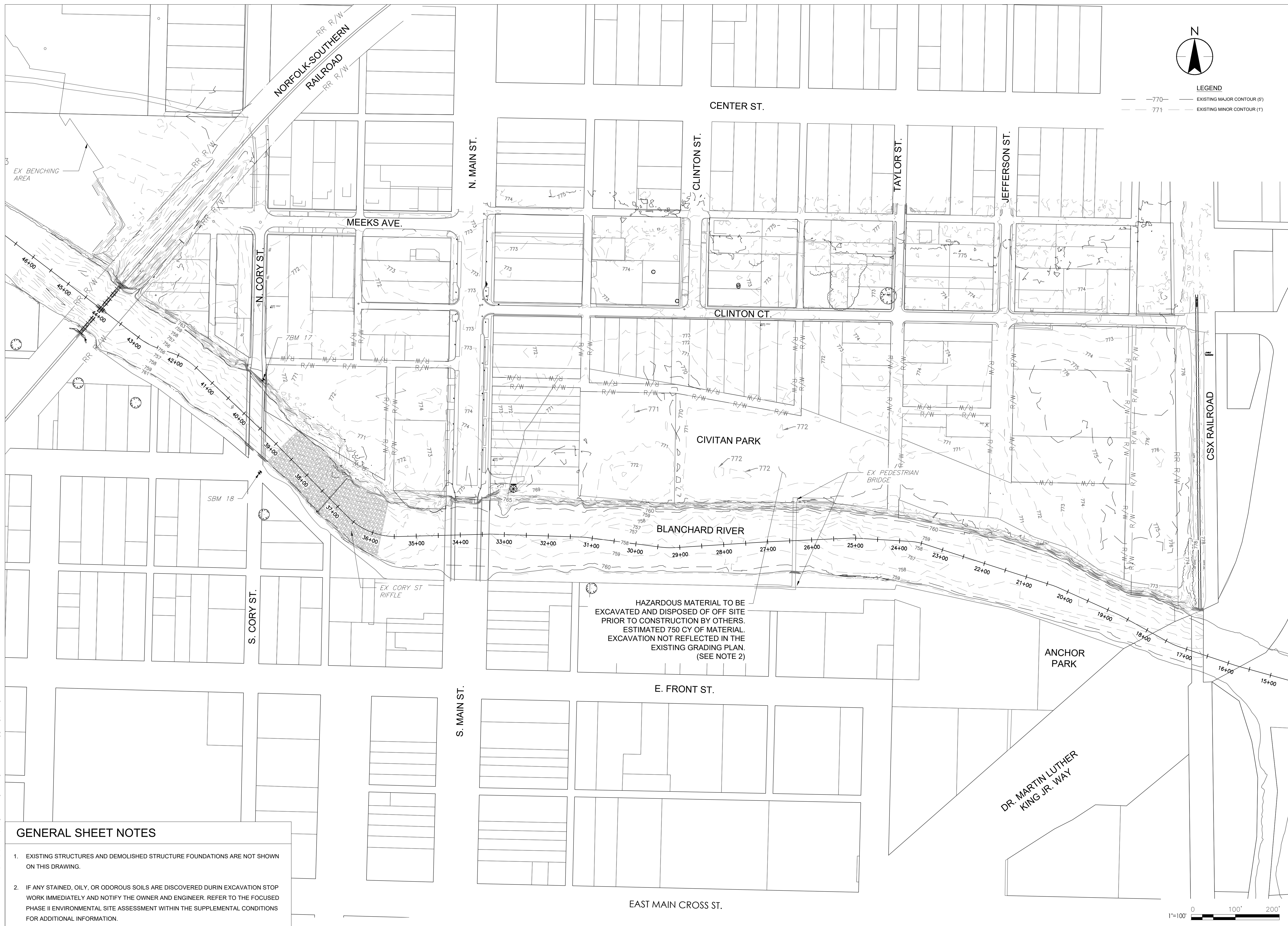
Issue Stamp

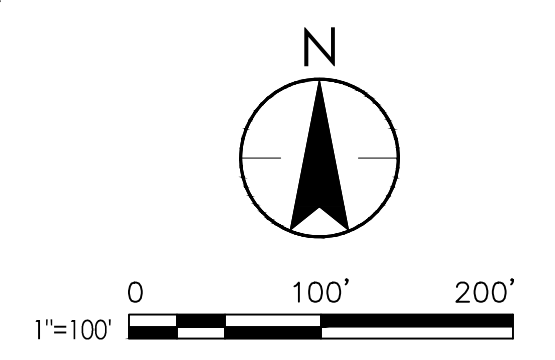
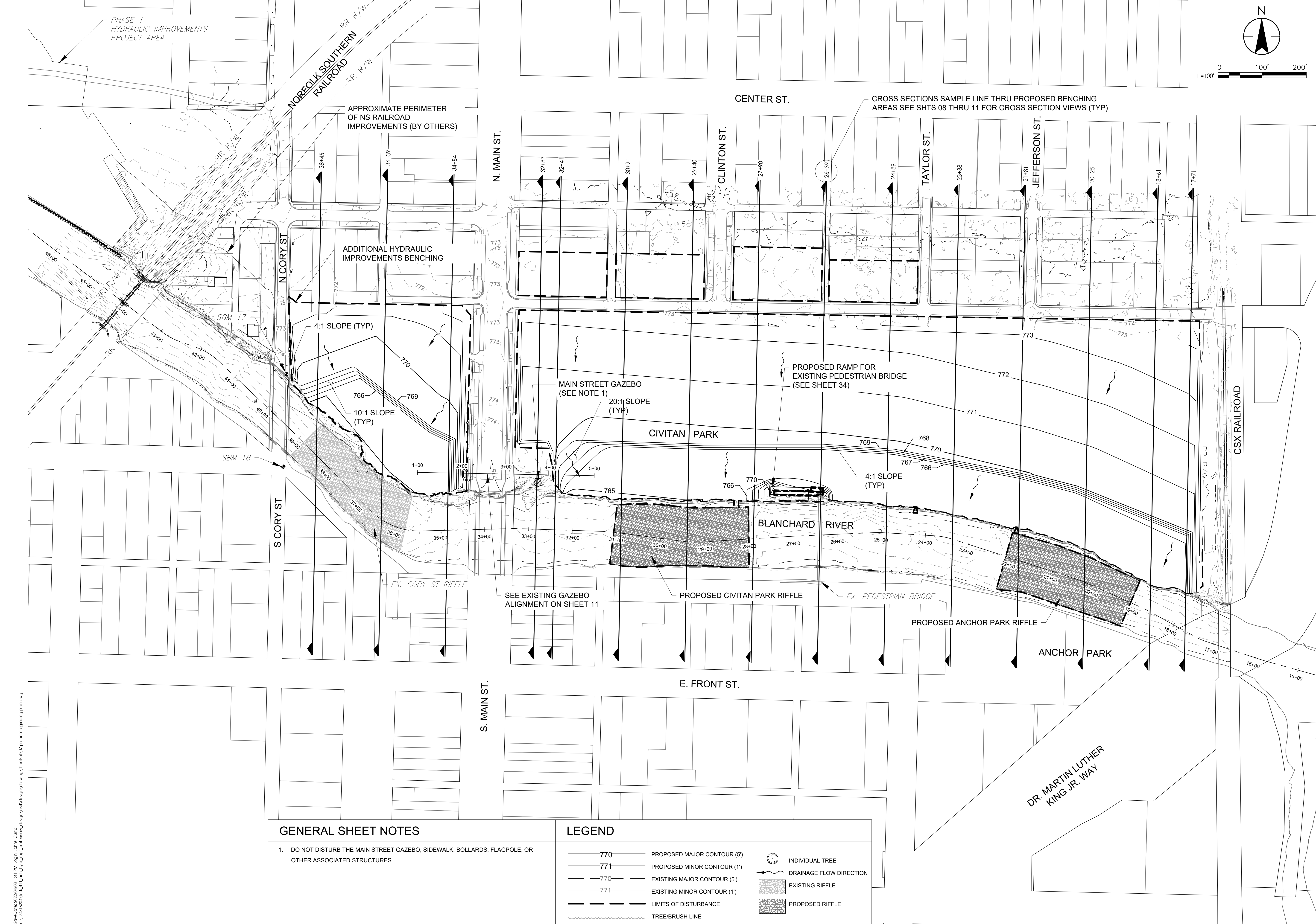
Project Number: 174316204
 File Name: 06_existing_grading_pln.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dign.

Revision Sheet

0 06 of 57





GENERAL SHEET NOTES

- DO NOT DISTURB THE MAIN STREET GAZEBO, SIDEWALK, BOLLARDS, FLAGPOLE, OR OTHER ASSOCIATED STRUCTURES.

LEGEND

	770	PROPOSED MAJOR CONTOUR (5')		INDIVIDUAL TREE
	771	PROPOSED MINOR CONTOUR (1')		DRAINAGE FLOW DIRECTION
	770	EXISTING MAJOR CONTOUR (5')		EXISTING RIFFLE
	771	EXISTING MINOR CONTOUR (1')		PROPOSED RIFFLE
		LIMITS OF DISTURBANCE		
		TREE/BRUSH LINE		

Revision	By	Appd.	Y/M/AM/DD
3	CJ	DDD	2022.04.08
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1	CJ	DDD	2021.05.14
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 HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO
 Title
 PROPOSED GRADING PLAN

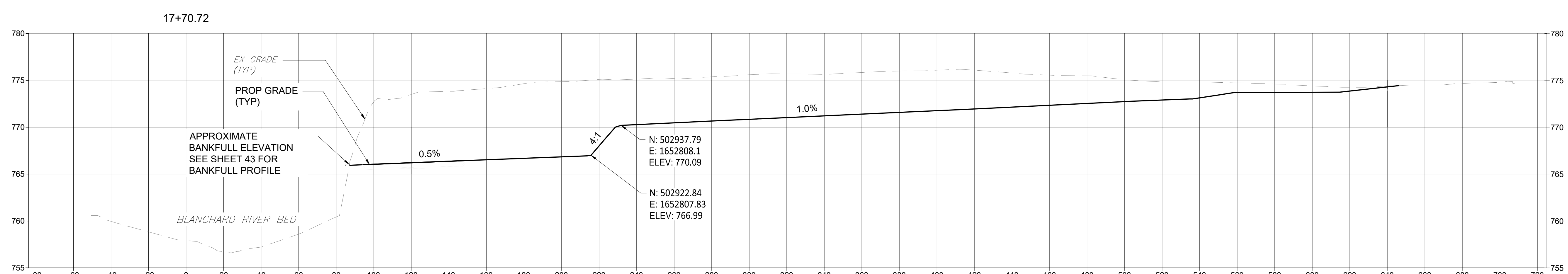
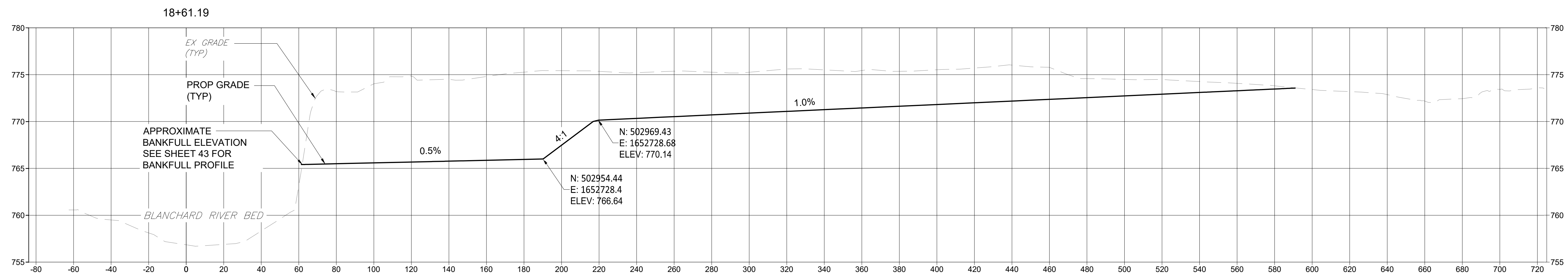
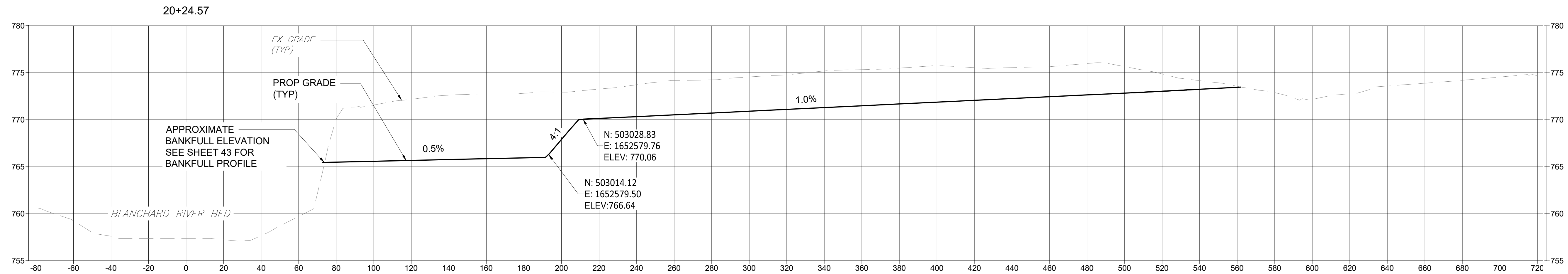
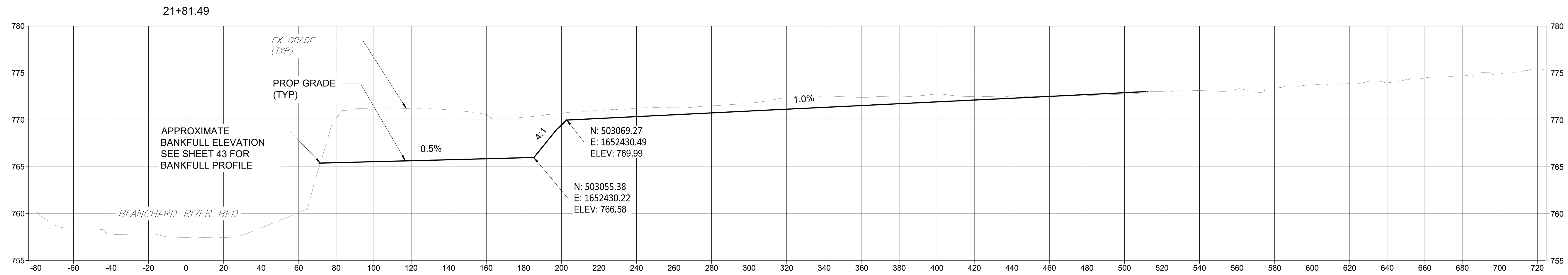
Issue Stamp

Project Number: 174316204
 File Name: 07 proposed grading plan.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dign.

Revision Sheet
 0 07 of 57

SaveDate: 2022/04/08 1:41 PM LogIn: Johns, Curt
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Client/Project		Revision	
MAUMEE WATERSHED CONSERVANCY DISTRICT		By	Appd.
3	100% DESIGN	CJ	DDD
2	90% DESIGN	MMG	DDD
1	60% DESIGN	CJ	DDD
ISSUED		By	Appd.
		Y1,MM,DD	Y1,MM,DD
		2022.04.08	2021.08.13
		2021.05.14	2021.05.14

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

Title
HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
HANCOCK COUNTY, OHIO

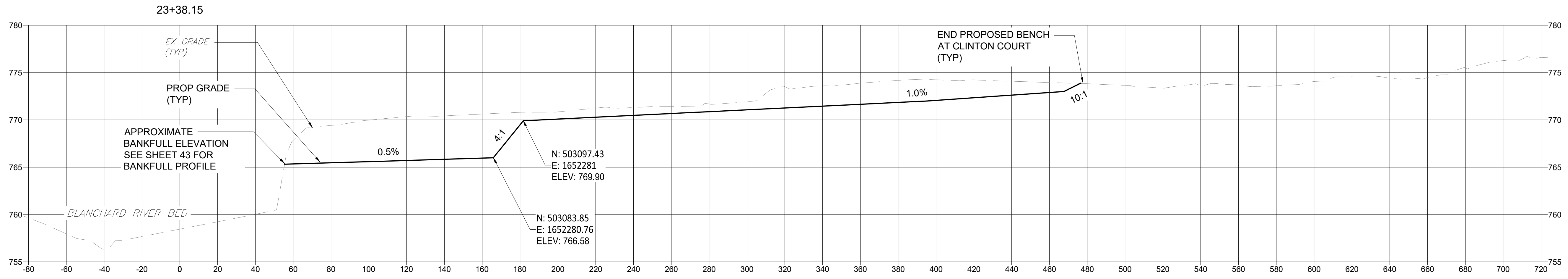
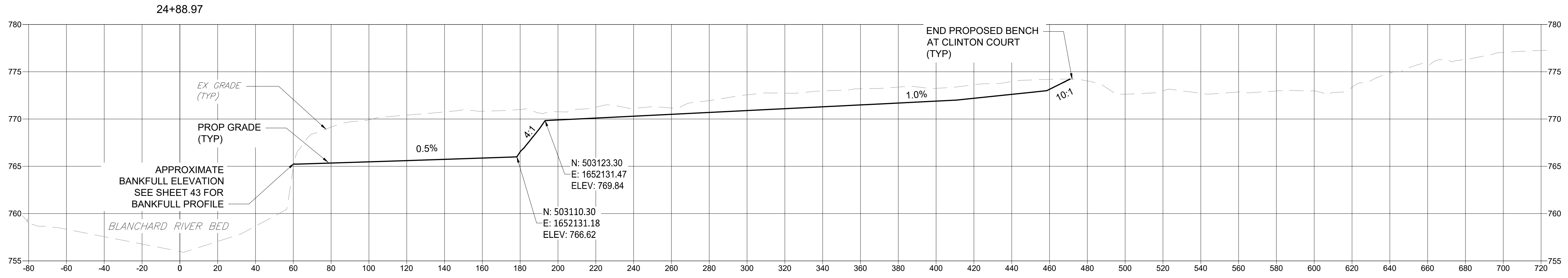
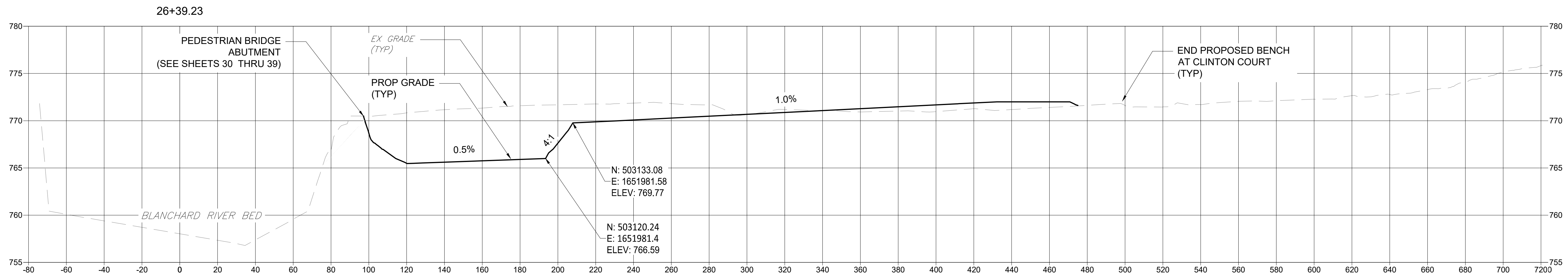
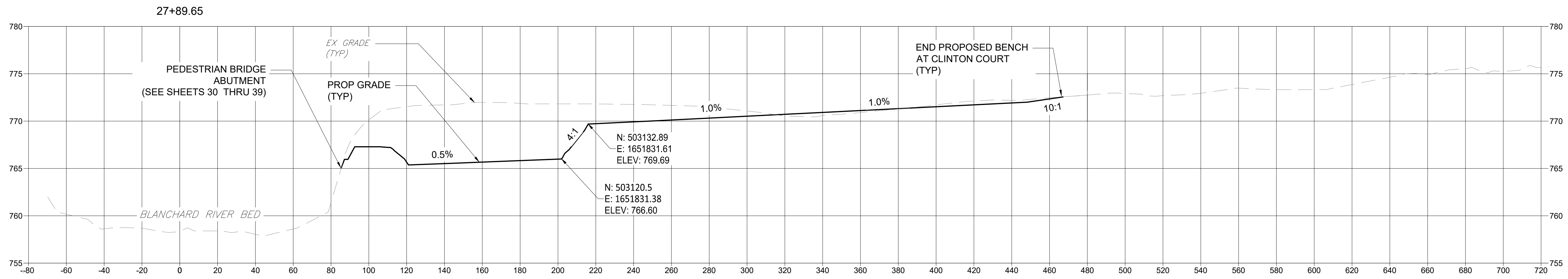
Project Number: 174316204

File Name: 08 bench cross sections 1 of 4.dwg

Issue Stamp

Revision Sheet
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Revision	By	Appd.	Date
3	MMG	Y1,MM,DD	2022.04.08
2	MMG	DD	2021.08.13
1	CJ	DD	2021.05.14
ISSUED			

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

Title
HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
HANCOCK COUNTY, OHIO

BENCH CROSS SECTIONS 2 OF 4

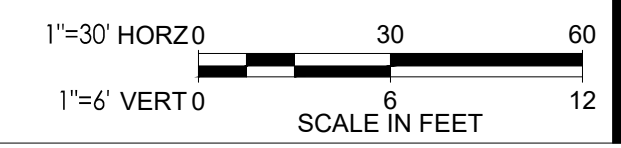
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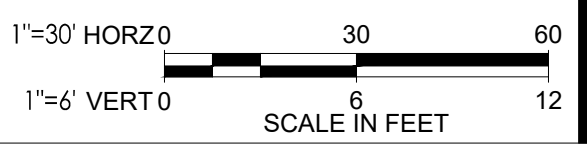
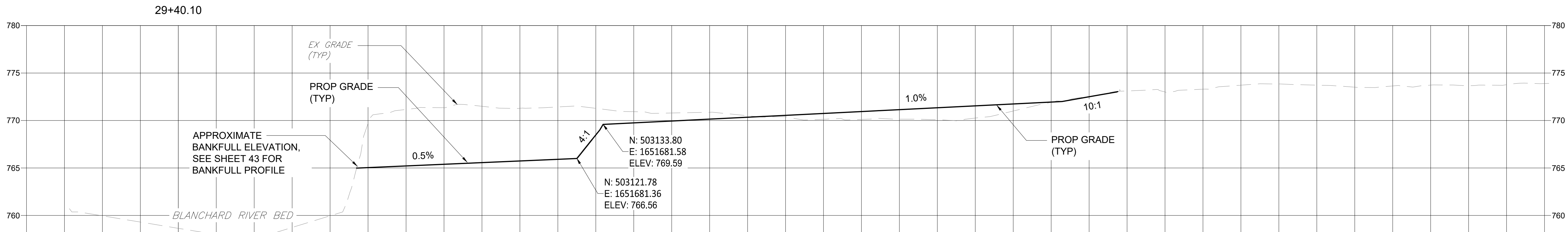
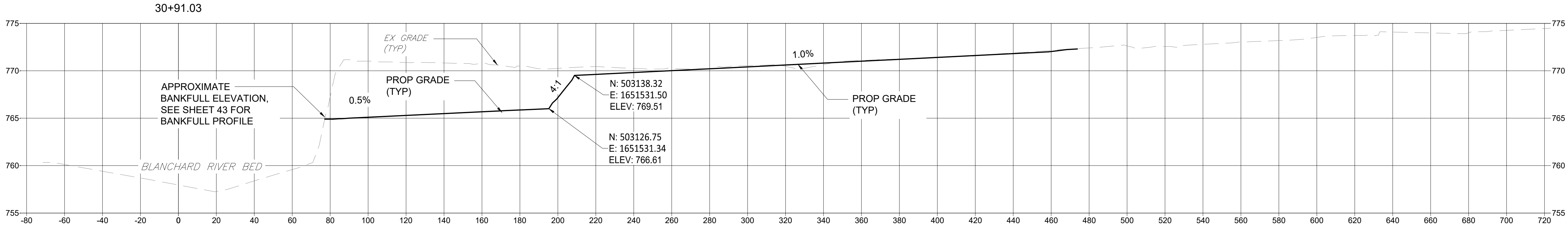
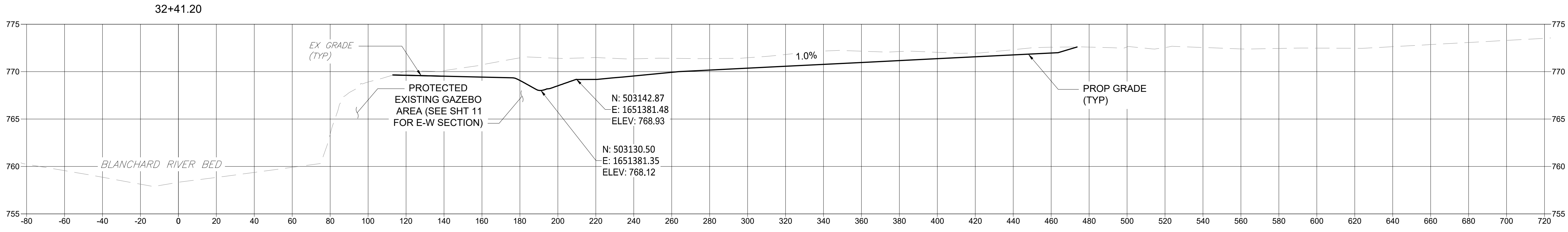
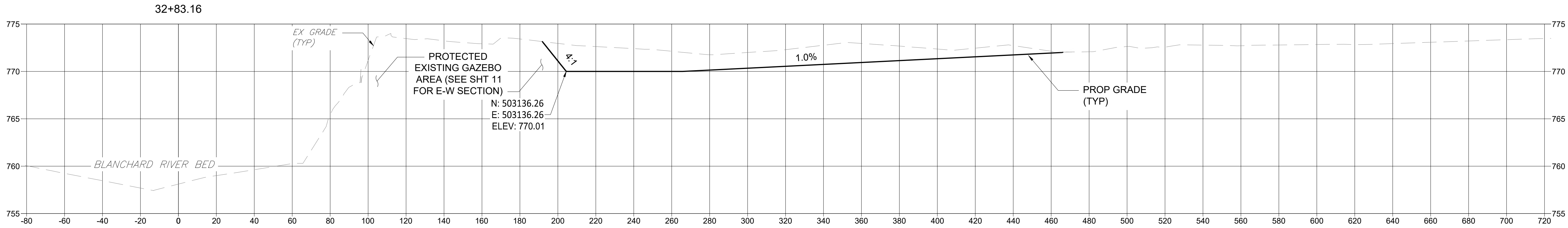
Project Number: 174316204

File Name: 09 bench cross sections 2 of 4.dwg

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Revision	By	Appd.	Y1.MM.DD
3	MMG	DDD	2022.04.08
2	MMG	DDD	2021.08.13
1	CJ	DDD	2021.05.14
ISSUED		Appd.	Y1.MM.DD

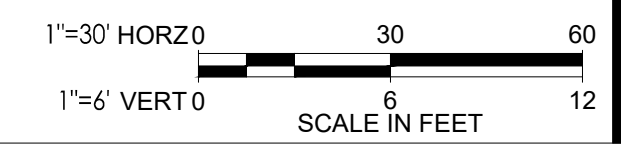
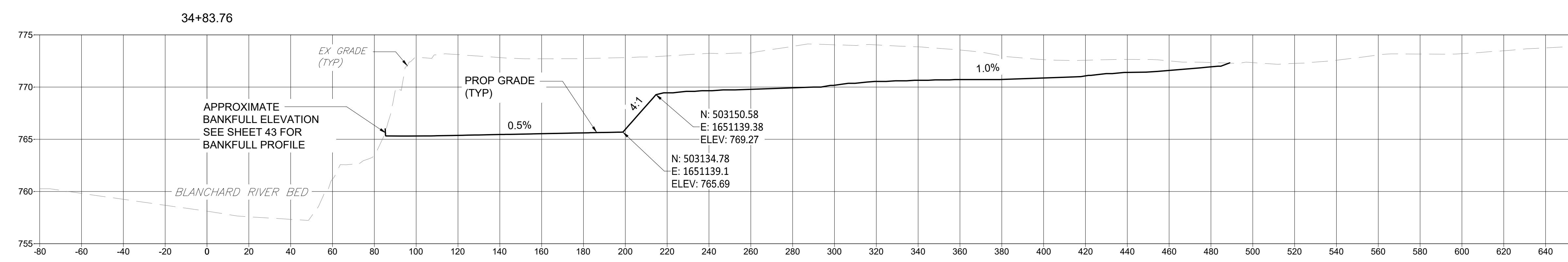
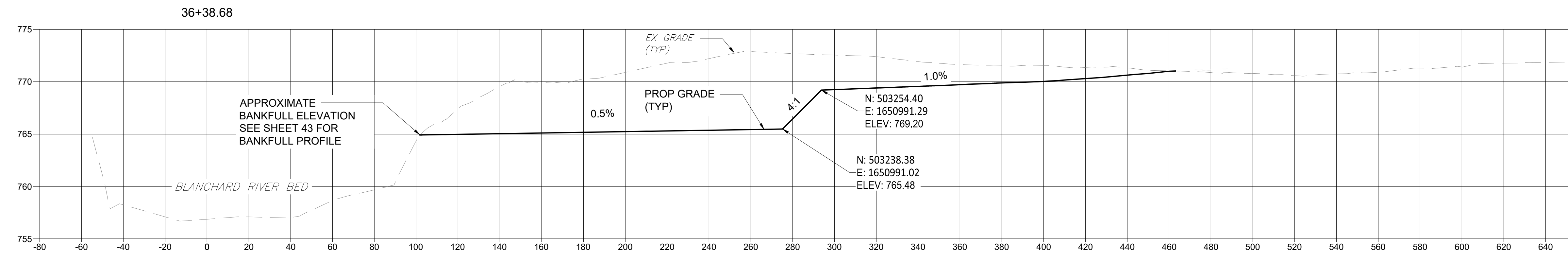
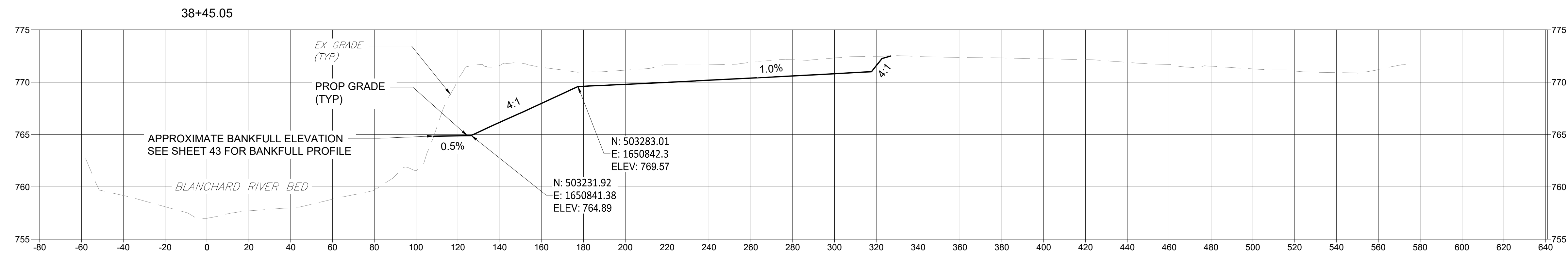
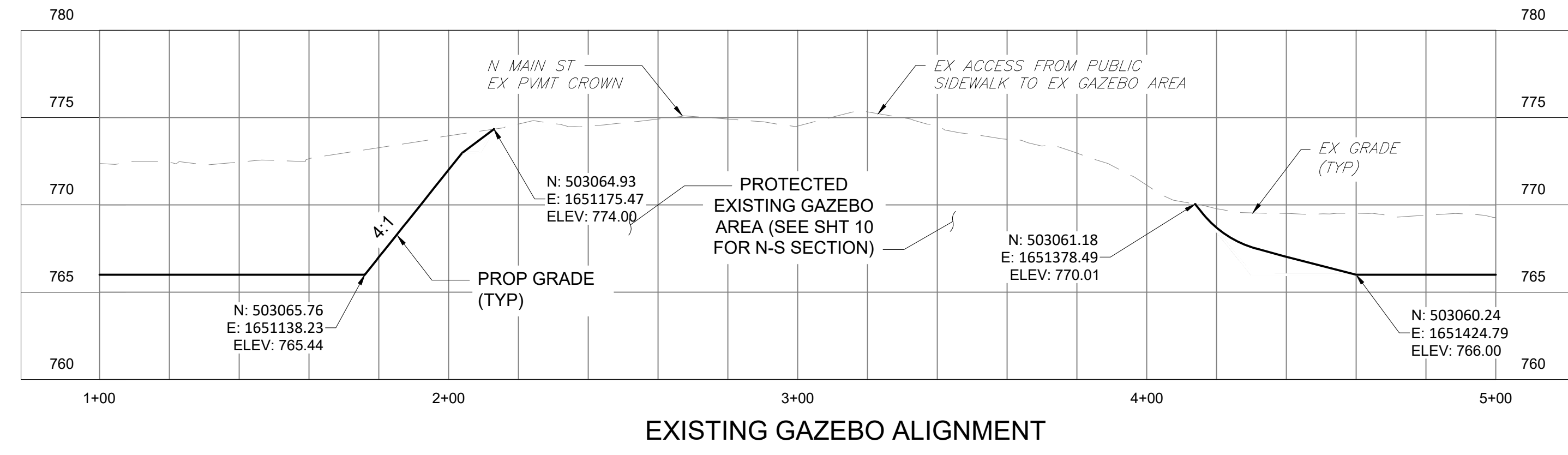
Client/Project
 MAUMEE WATERSHED CONSERVANCY DISTRICT
 HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO
 Title
 BENCH CROSS SECTIONS 3 OF 4

Project Number: 174316204
 File Name: 10 bench cross sections 3 of 4.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dign.

Revision Sheet
 0 10 of 57

Save Date: 2022/03/31 1:51 PM Logon: Johns, Curtis
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Revision	By	Appd.
3	100% DESIGN	Y1.A.M.DD
2	90% DESIGN	DD
1	60% DESIGN	DD
	ISSUED	DD

Client/Project
 MAUMEE WATERSHED CONSERVANCY DISTRICT

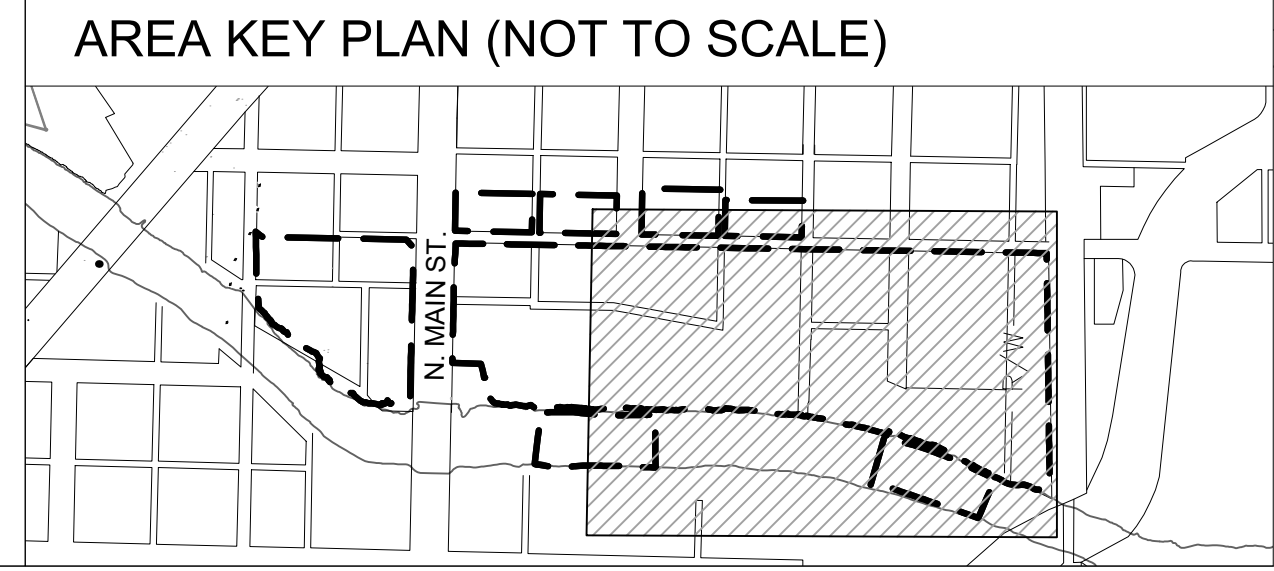
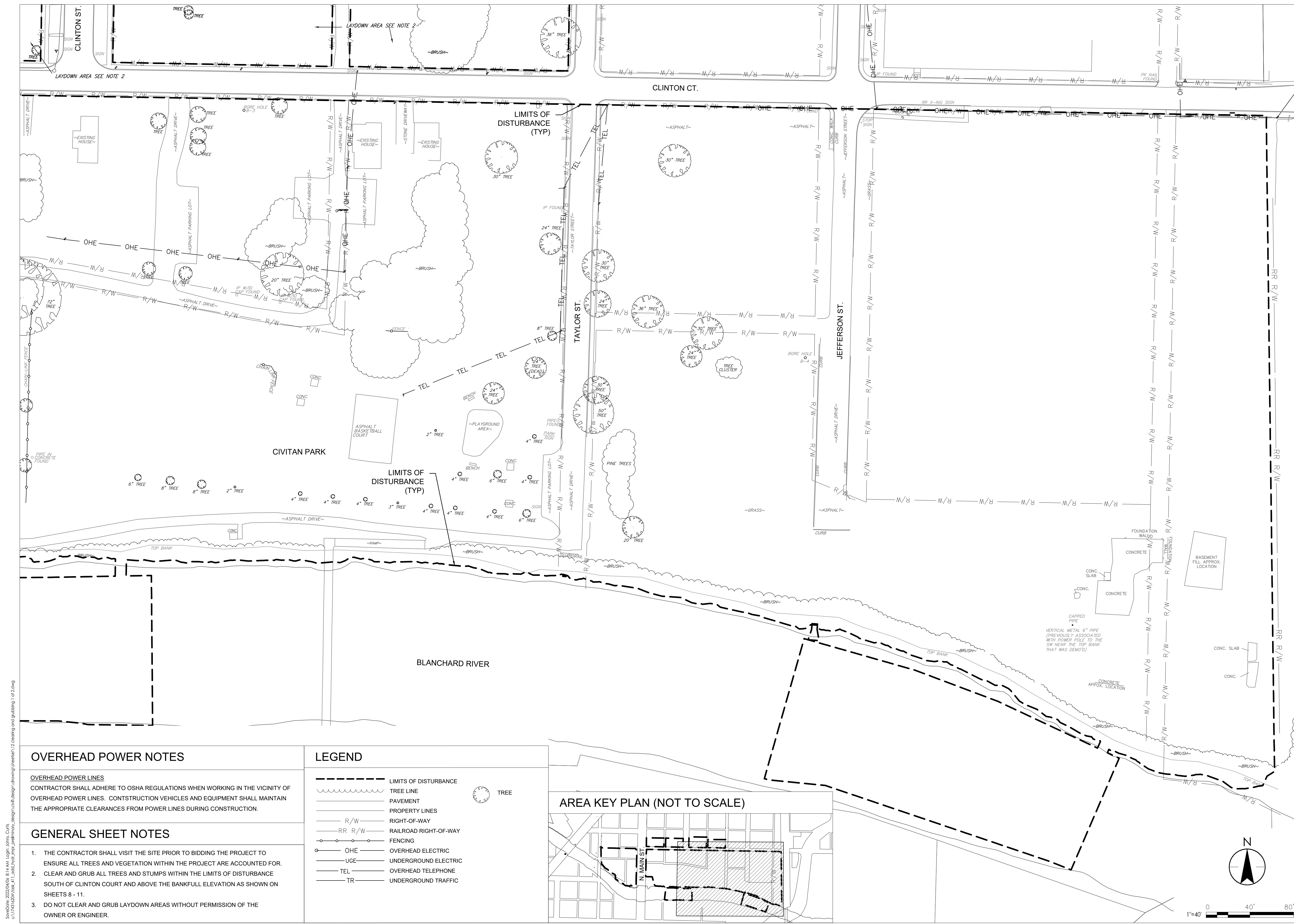
Title
 HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO

BENCH CROSS SECTIONS 4 OF 4

Project Number: 174316204
 File Name: 11 bench cross sections 4 of 4.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dign.

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OVERHEAD POWER NOTES

OVERHEAD POWER LINES
 CONTRACTOR SHALL ADHERE TO OSHA REGULATIONS WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL MAINTAIN THE APPROPRIATE CLEARANCES FROM POWER LINES DURING CONSTRUCTION.

GENERAL SHEET NOTES

- THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE PROJECT TO ENSURE ALL TREES AND VEGETATION WITHIN THE PROJECT ARE ACCOUNTED FOR.
- CLEAR AND GRUB ALL TREES AND STUMPS WITHIN THE LIMITS OF DISTURBANCE SOUTH OF CLINTON COURT AND ABOVE THE BANKFULL ELEVATION AS SHOWN ON SHEETS 8 - 11.
- DO NOT CLEAR AND GRUB LAYDOWN AREAS WITHOUT PERMISSION OF THE OWNER OR ENGINEER.

LEGEND

- LIMITS OF DISTURBANCE
- TREE LINE
- PAVEMENT
- PROPERTY LINES
- RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY
- FENCING
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- OVERHEAD TELEPHONE
- UNDERGROUND TRAFFIC
- TREE

Revision	By	Appd.	Y1.MM.DD
3	100% DESIGN	DD	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	DD	2021.05.14
ISSUED			Y1.MM.DD

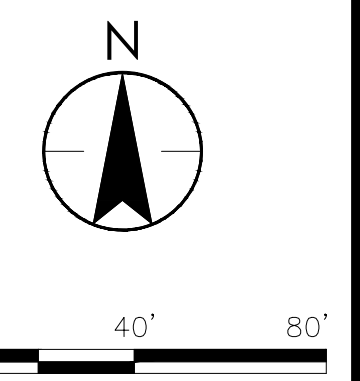
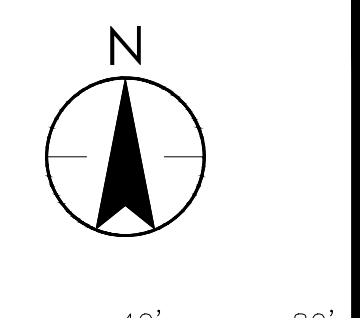
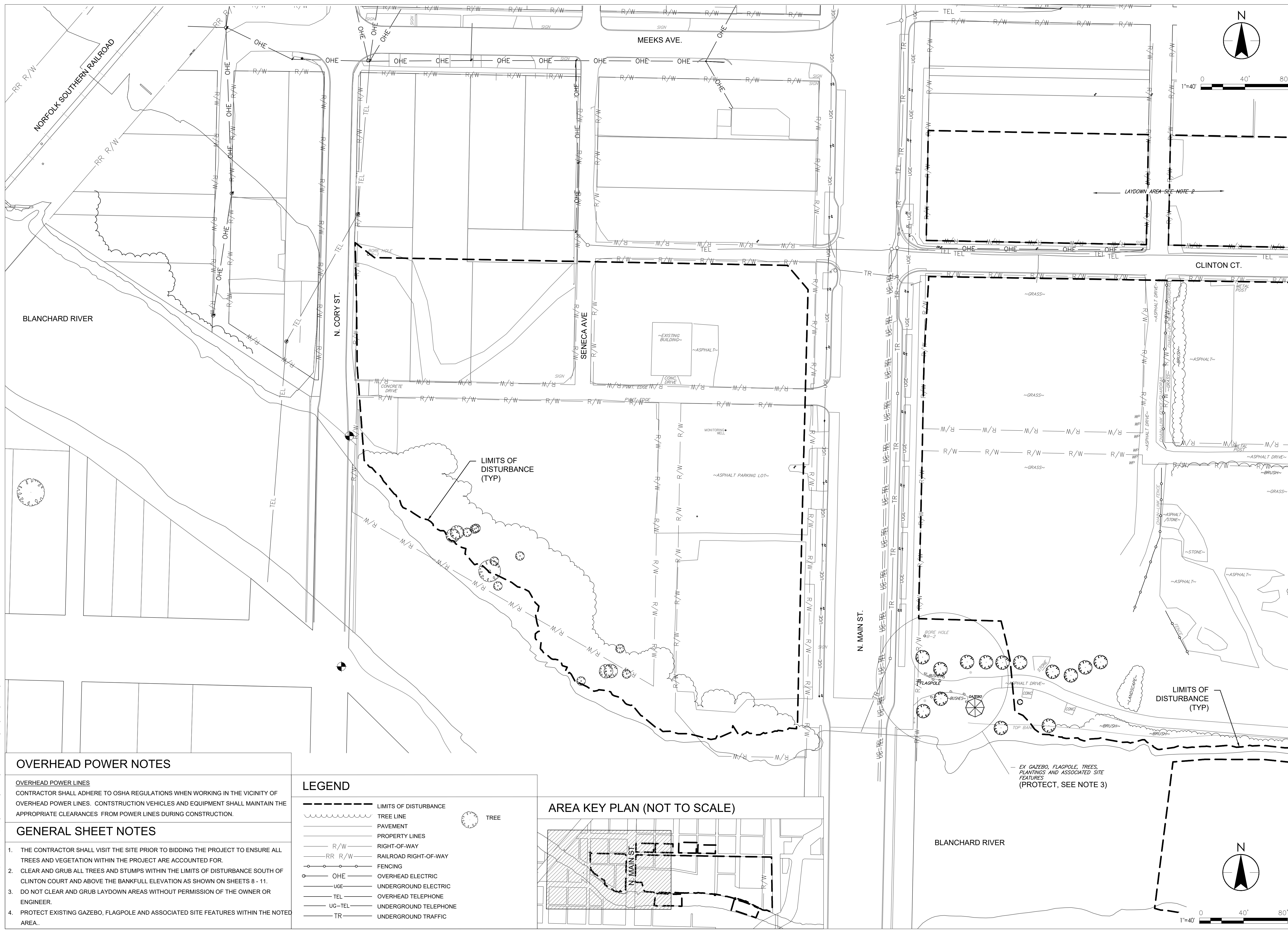
Client/Project
 MAUMEE WATERSHED CONSERVANCY DISTRICT
 HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO
 Title
 CLEARING AND GRUBBING 1 OF 2

Issue Stamp

Project Number: 174316204		
File Name: 17_clearing_and_grubbing_1_of_2.dwg		
CJ	DDD	TC
Dwn.	Chkd.	Dgn.
Revision	Sheet	
0	12 of 57	

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OVERHEAD POWER NOTES

OVERHEAD POWER LINES
 CONTRACTOR SHALL ADHERE TO OSHA REGULATIONS WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL MAINTAIN THE APPROPRIATE CLEARANCES FROM POWER LINES DURING CONSTRUCTION.

GENERAL SHEET NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE PROJECT TO ENSURE ALL TREES AND VEGETATION WITHIN THE PROJECT ARE ACCOUNTED FOR.
2. CLEAR AND GRUB ALL TREES AND STUMPS WITHIN THE LIMITS OF DISTURBANCE SOUTH OF CLINTON COURT AND ABOVE THE BANKFULL ELEVATION AS SHOWN ON SHEETS 8 - 11.
3. DO NOT CLEAR AND GRUB LAYDOWN AREAS WITHOUT PERMISSION OF THE OWNER OR ENGINEER.
4. PROTECT EXISTING GAZEBO, FLAGPOLE AND ASSOCIATED SITE FEATURES WITHIN THE NOTED AREA.

LEGEND

- LIMITS OF DISTURBANCE
- TREE LINE
- PAVEMENT
- PROPERTY LINES
- RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY
- FENCING
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- OVERHEAD TELEPHONE
- UNDERGROUND TELEPHONE
- UNDERGROUND TRAFFIC
- TREE

AREA KEY PLAN (NOT TO SCALE)



Revision	By	Appd.	Y1.MM.DD
3	MMG	DD	2022.04.08
2	MMG	DD	2021.08.13
1	MMG	DD	2021.05.14

Issued By: Y1.MM.DD

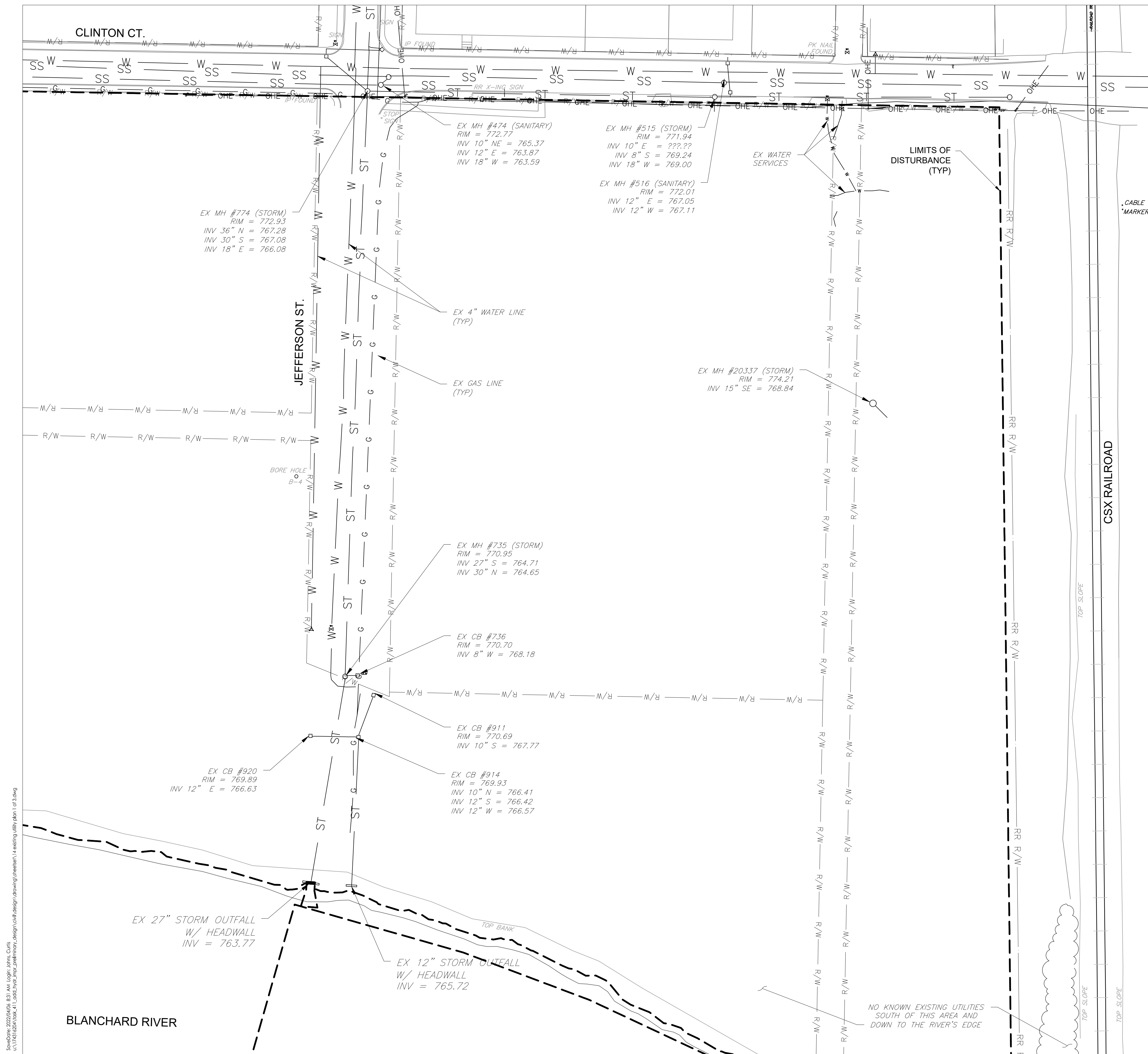
Client/Project
 MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO

Issue Stamp

CJ	DDD	TC
Dwn.	Chkd.	Dign.

Project Number: 174316204
 File Name: 13 clearing and grubbing 2 of 2.dwg
 Revision: 0 Sheet: 13 of 57



GENERAL SHEET NOTES

- UNIDENTIFIED/ABANDONED SANITARY SEWER LATERALS FROM PREVIOUSLY DEMOLISHED STRUCTURES ARE ANTICIPATED THROUGHOUT THE PROJECT AREA. CONTRACTOR SHALL REMOVE AND DISPOSE AS NECESSARY.

OVERHEAD POWER NOTES

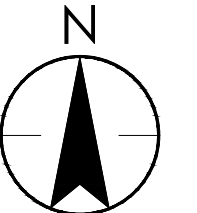
OVERHEAD POWER LINES
 CONTRACTOR SHALL ADHERE TO OSHA REGULATIONS WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL MAINTAIN THE APPROPRIATE CLEARANCES FROM POWER LINES DURING CONSTRUCTION.

LEGEND


- SS SANITARY SEWERS & STRUCTURES
- ST STORM SEWERS & STRUCTURES
- W WATERLINES & STRUCTURES
- OHE OVERHEAD ELECTRIC POWER LINES & POLES
- UGE UNDERGROUND ELECTRIC LINES
- TR UNDERGROUND TRAFFIC ELECTRIC LINES
- TEL OVERHEAD TELEPHONE/FIBER OPTIC LINES
- G GAS LINE
- TREE LINE
- LIMITS OF DISTURBANCE
- R/W RIGHT-OF-WAY
- RR R/R RAILROAD RIGHT-OF-WAY
- PAVEMENT
- PROPERTY LINES
- FENCING
- EXISTING RIFFLE

AREA KEY PLAN (NOT TO SCALE)





1"=30'



Project Number: 174316204

File Name: 14 existing utility plan 1 of 3.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dign.

Revision Sheet

0 14 of 57

Revision	By	Appd.	Y1.MM.DD
3	100% DESIGN	CJ	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	CJ	2021.05.14
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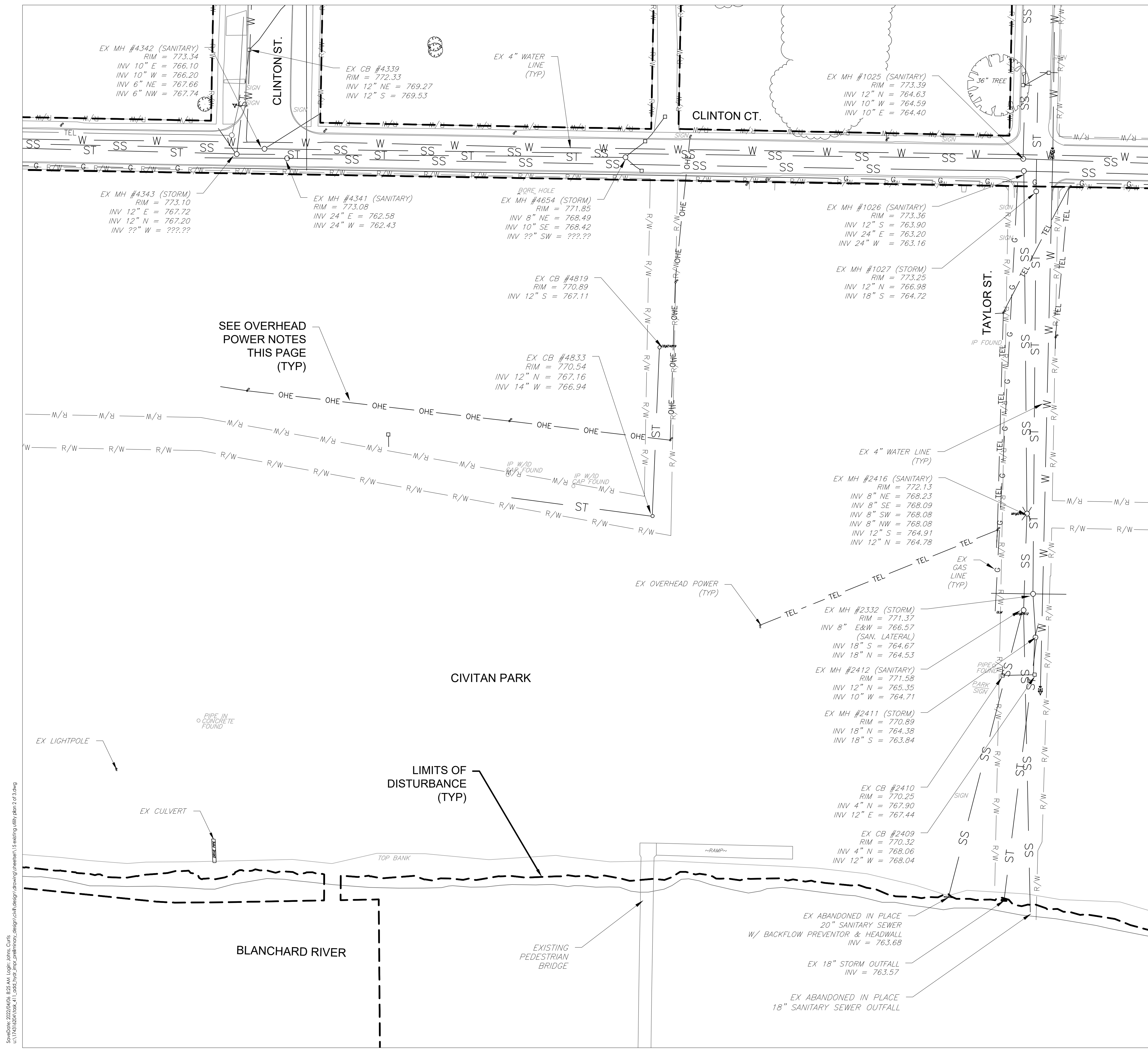
Client/Project
 MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO

Title
 EXISTING UTILITY PLAN 1 OF 3

Issue Stamp

SvnDate: 2022/04/08 8:31 AM Login: jchris_curtis
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GENERAL SHEET NOTES

- UNIDENTIFIED/ABANDONED SANITARY SEWER LATERALS FROM PREVIOUSLY DEMOLISHED STRUCTURES ARE ANTICIPATED THROUGHOUT THE PROJECT AREA. CONTRACTOR SHALL REMOVE AND DISPOSE AS NECESSARY.

OVERHEAD POWER NOTES

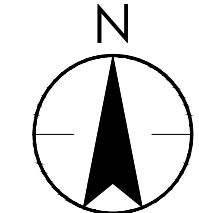
OVERHEAD POWER LINES
CONTRACTOR SHALL ADHERE TO OSHA REGULATIONS WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL MAINTAIN THE APPROPRIATE CLEARANCES (HALO) FROM POWER LINES DURING CONSTRUCTION.

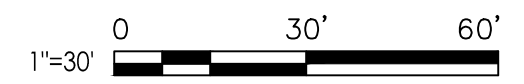
LEGEND

- SS SANITARY SEWERS & STRUCTURES
- ST STORM SEWERS & STRUCTURES
- W WATERLINES & STRUCTURES
- OHE OVERHEAD ELECTRIC POWER LINES & POLES
- UGE UNDERGROUND ELECTRIC LINES
- TR UNDERGROUND TRAFFIC LINES
- TEL OVERHEAD TELEPHONE/FIBER OPTIC LINES
- G GAS LINE
- TREE LINE
- LIMITS OF DISTURBANCE
- R/W RIGHT-OF-WAY
- RR R/R RAILROAD RIGHT-OF-WAY
- PAVEMENT
- PROPERTY LINES
- FENCING
- EXISTING RIFFLE

AREA KEY PLAN (NOT TO SCALE)







Revision	By	Appd.	Yr.	MM.	DD.
3	100% DESIGN	CJ	2022	04	08
2	90% DESIGN	MMG	2021	08	13
1	60% DESIGN	CJ	2021	05	14
	ISSUED				



Client/Project	Revision	By	Appd.	Yr.	MM.	DD.
MAUMEE WATERSHED CONSERVANCY DISTRICT						

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
HANCOCK COUNTY, OHIO

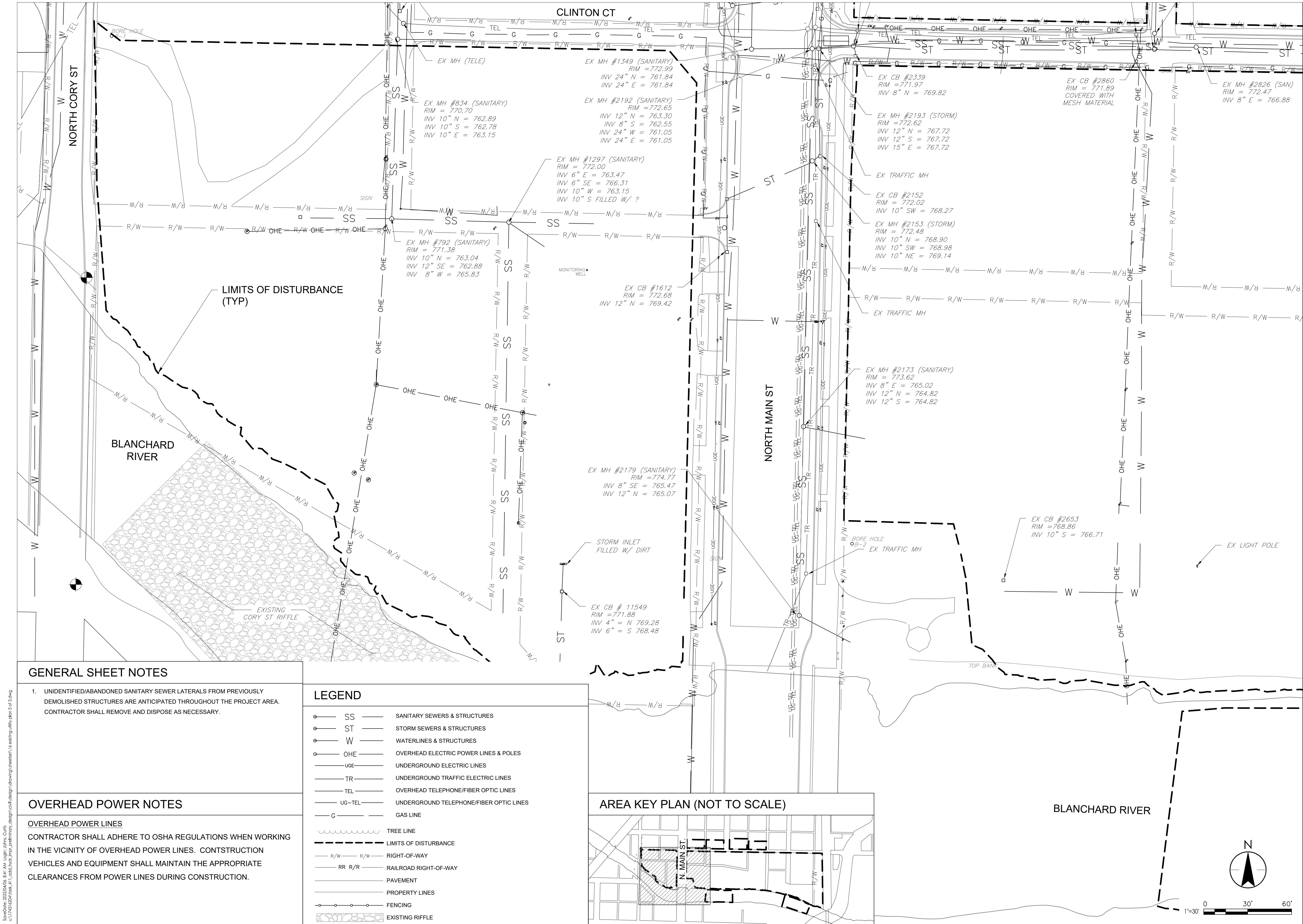
Title
EXISTING UTILITY PLAN 2 OF 3

Issue Stamp

Project Number: 174316204
File Name: 15 existing utility plan 2 of 3.dwg

Revision	Sheet
0	15 of 57

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GENERAL SHEET NOTES

1. UNIDENTIFIED/ABANDONED SANITARY SEWER LATERALS FROM PREVIOUSLY DEMOLISHED STRUCTURES ARE ANTICIPATED THROUGHOUT THE PROJECT AREA. CONTRACTOR SHALL REMOVE AND DISPOSE AS NECESSARY.

OVERHEAD POWER NOTES

OVERHEAD POWER LINES
CONTRACTOR SHALL ADHERE TO OSHA REGULATIONS WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL MAINTAIN THE APPROPRIATE CLEARANCES FROM POWER LINES DURING CONSTRUCTION.

LEGEND

- SS SANITARY SEWERS & STRUCTURES
- ST STORM SEWERS & STRUCTURES
- W WATERLINES & STRUCTURES
- OHE OVERHEAD ELECTRIC POWER LINES & POLES
- UGE UNDERGROUND ELECTRIC LINES
- TR UNDERGROUND TRAFFIC ELECTRIC LINES
- TEL OVERHEAD TELEPHONE/FIBER OPTIC LINES
- UG-TEL UNDERGROUND TELEPHONE/FIBER OPTIC LINES
- G GAS LINE
- TREE LINE
- - - LIMITS OF DISTURBANCE
- R/W RIGHT-OF-WAY
- RR R/R RAILROAD RIGHT-OF-WAY
- PAVEMENT
- PROPERTY LINES
- FENCING
- EXISTING RIFFLE

AREA KEY PLAN (NOT TO SCALE)

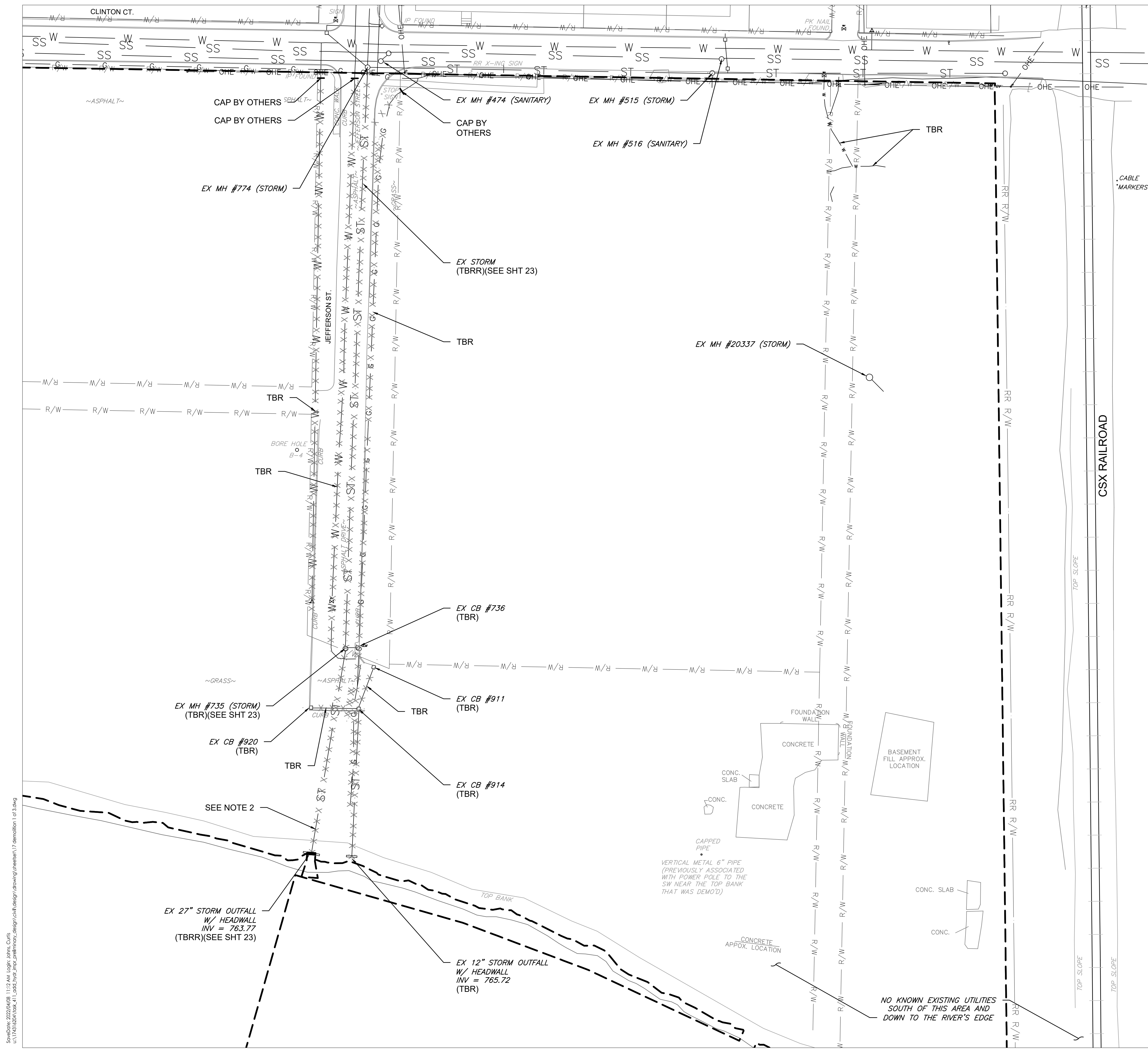


Revision	By	Appd.	Y.M.D.D
3	100% DESIGN	CJ	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	CJ	2021.05.14
ISSUED	By	Appd.	Y.M.D.D

Client/Project: MAUMEE WATERSHED CONSERVANCY DISTRICT
 HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO
 Title: EXISTING UTILITY PLAN 3 OF 3

Save Date: 2022/04/08 8:41 AM Login: jbrhs_curtis
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GENERAL SHEET NOTES

- DO NOT DISTURB CLINTON COURT.
- CONTRACTOR SHALL REMOVE ALL STRUCTURES TO A MINIMUM OF TWO FEET BELOW FINISHED GRADE AND BACKFILL ACCORDINGLY.
- DEMOLITION INCLUDES BUT IS NOT LIMITED TO BIKE PATH, ROADWAYS, ASPHALT, STRUCTURE FOUNDATIONS, FENCING, UTILITY INFRASTRUCTURE.
- ABOVE GROUND PORTIONS OF EXISTING HOUSES TO BE REMOVED BY OTHERS. CONTRACTOR SHALL REMOVE ALL STRUCTURES TO A MINIMUM OF TWO FEET BELOW FINISHED GRADE AND BACKFILL ACCORDINGLY.
- PLAYGROUND EQUIPMENT, BENCHES, AND PICNIC TABLES TO BE REMOVED BY OTHERS.
- REP TO RELOCATE OVERHEAD POWER LINES AND REMOVE ABOVE GROUND PORTIONS OF POLES PRIOR TO CONSTRUCTION. UNDERGROUND PORTIONS OF THE POLES (FOUNDATIONS, ETC.) TO BE REMOVED BY THE CONTRACTOR.
- COLUMBIA GAS TO CAP AND DECOMMISSION ALL GAS LINES SOUTH OF CLINTON COURT. FOLLOWING APPROVAL FROM THE UTILITY, CONTRACTOR SHALL REMOVE REMAINING DECOMMISSIONED GAS LINES. CONTRACTOR SHALL COORDINATE WORK WITH COLUMBIA GAS.
- CITY OF FINDLAY TO CAP AND DECOMMISSION ALL WATER LINES SOUTH OF CLINTON COURT. FOLLOWING APPROVAL FROM THE UTILITY, CONTRACTOR SHALL REMOVE REMAINING DECOMMISSIONED WATER LINES. CONTRACTOR SHALL COORDINATE WORK WITH THE CITY OF FINDLAY.
- CONTRACTOR TO PLUG SOUTHERLY SANITARY SEWER. SEE DETAIL ON SHEET 51.

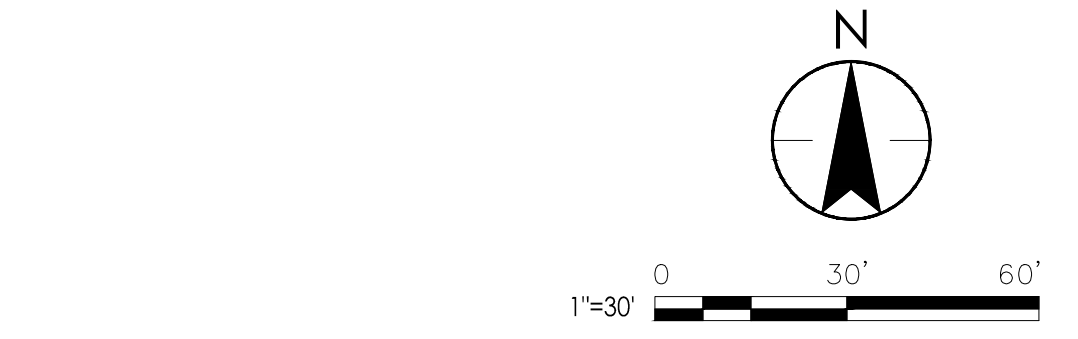
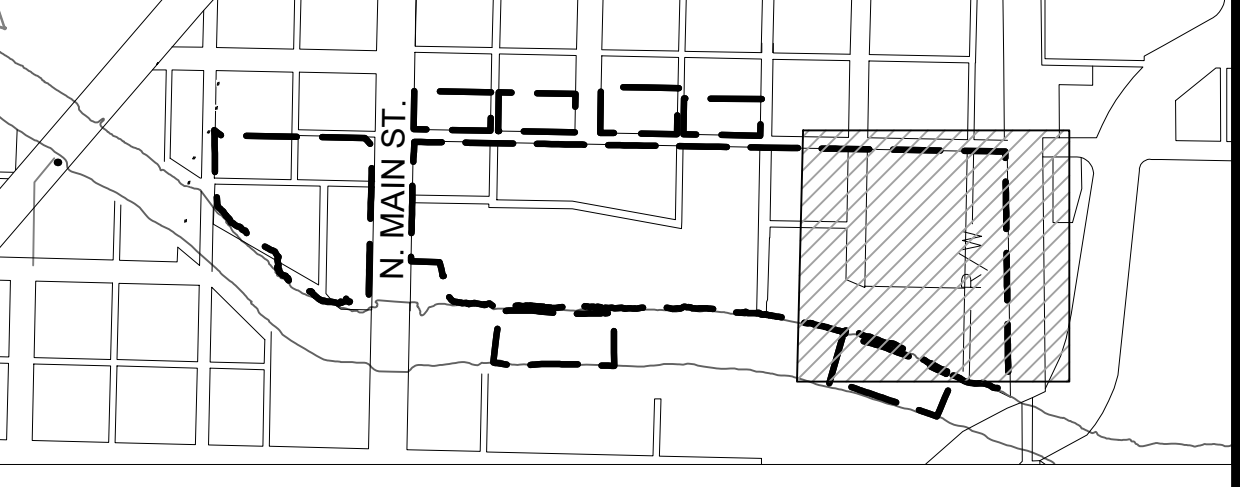
OVERHEAD POWER NOTES

OVERHEAD POWER LINES
 CONTRACTOR SHALL ADHERE TO OSHA REGULATIONS WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL MAINTAIN THE APPROPRIATE CLEARANCES FROM POWER LINES DURING CONSTRUCTION.

LEGEND

- SS SANITARY SEWERS & STRUCTURES
- ST STORM SEWERS & STRUCTURES
- W WATERLINES & STRUCTURES
- OHE OVERHEAD ELECTRIC POWER LINES & POLES
- UGE UNDERGROUND ELECTRIC LINES
- TR UNDERGROUND TRAFFIC ELECTRIC LINES
- TEL OVERHEAD TELEPHONE/FIBER OPTIC LINES
- G GAS LINE
- LIMITS OF DISTURBANCE
- ~ TREE LINE
- PAVEMENT
- PROPERTY LINES
- R/W RIGHT-OF-WAY
- RR R/W RAILROAD RIGHT-OF-WAY
- FENCING
- EXISTING RIFFLE
- PROPOSED RIFFLE
- TO BE ABANDONED
- TO BE REMOVED

AREA KEY PLAN (NOT TO SCALE)



Revision	By	Appd.	Yr./MM/DD
3	100% DESIGN	CJ	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	DD	2021.05.14
	ISSUED		Yr./MM/DD

Client/Project
 MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO

Title
 DEMOLITION 1 OF 3

Issue Stamp

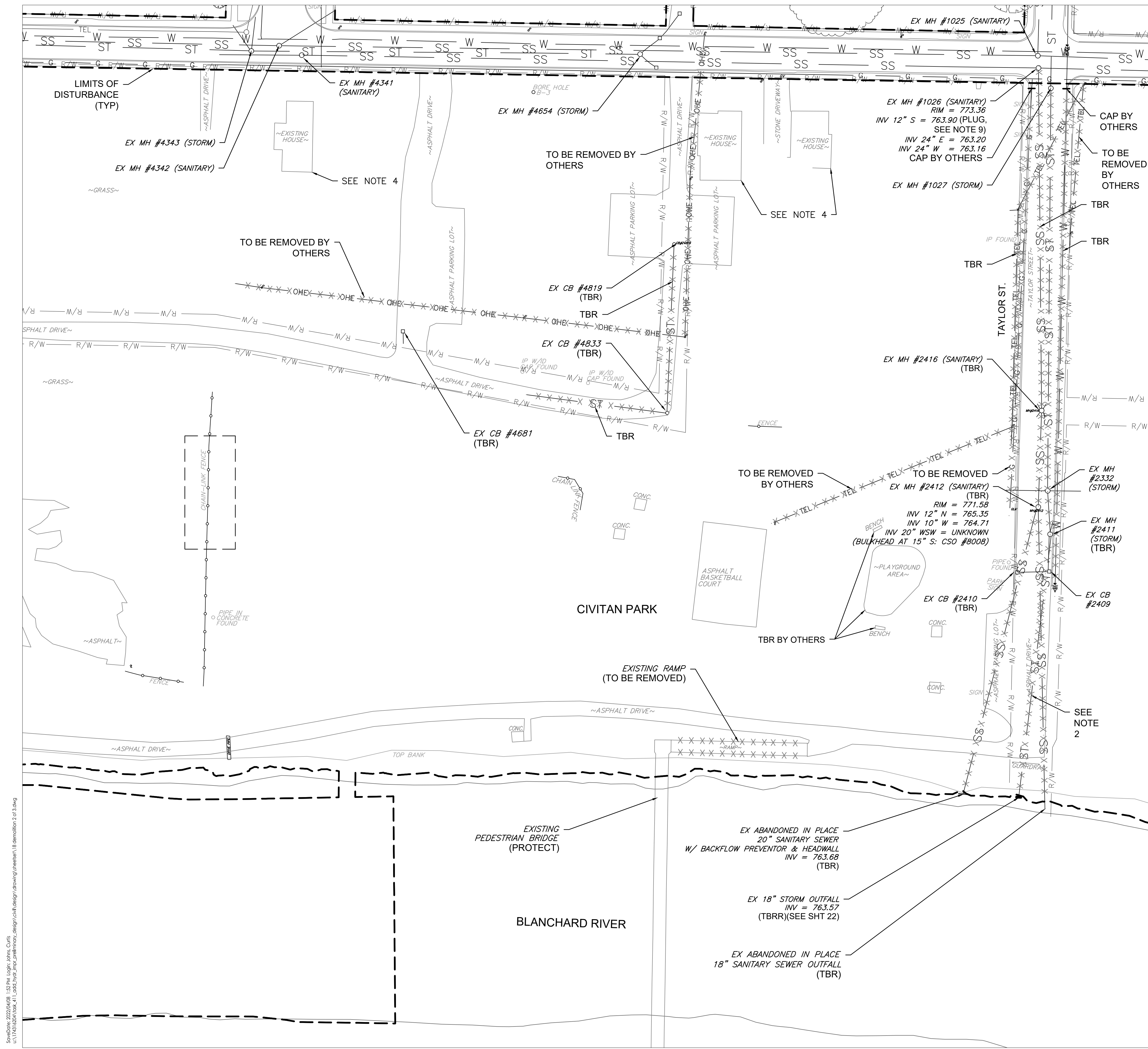
Project Number: 174316204

File Name: 17demolition1of3.dwg

CJ	DD	TC
Dwn.	Chkd.	Dign.

Revision Sheet

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GENERAL SHEET NOTES

- DO NOT DISTURB CLINTON COURT.
- CONTRACTOR SHALL REMOVE ALL STRUCTURES TO A MINIMUM OF TWO FEET BELOW FINISHED GRADE AND BACKFILL ACCORDINGLY.
- DEMOLITION INCLUDES BUT IS NOT LIMITED TO BIKE PATH, ROADWAYS, ASPHALT, STRUCTURE FOUNDATIONS, FENCING, UTILITY INFRASTRUCTURE.
- ABOVE GROUND PORTIONS OF EXISTING HOUSES TO BE REMOVED BY OTHERS. CONTRACTOR SHALL REMOVE ALL STRUCTURES TO A MINIMUM OF TWO FEET BELOW FINISHED GRADE AND BACKFILL ACCORDINGLY.
- PLAYGROUND EQUIPMENT, BENCHES, AND PICNIC TABLES TO BE REMOVED BY OTHERS.
- AEP TO RELOCATE OVERHEAD POWER LINES AND REMOVE ABOVE GROUND PORTIONS OF POLES PRIOR TO CONSTRUCTION. UNDERGROUND PORTIONS OF THE POLES (FOUNDATIONS, ETC.) TO BE REMOVED BY THE CONTRACTOR.
- COLUMBIA GAS TO CAP AND DECOMMISSION ALL GAS LINES SOUTH OF CLINTON COURT. FOLLOWING APPROVAL FROM THE UTILITY, CONTRACTOR SHALL REMOVE REMAINING DECOMMISSIONED GAS LINES. CONTRACTOR SHALL COORDINATE WORK WITH COLUMBIA GAS.
- CITY OF FINDLAY TO CAP AND DECOMMISSION ALL WATER LINES SOUTH OF CLINTON COURT. FOLLOWING APPROVAL FROM THE UTILITY, CONTRACTOR SHALL REMOVE REMAINING DECOMMISSIONED WATER LINES. CONTRACTOR SHALL COORDINATE WORK WITH THE CITY OF FINDLAY.
- CONTRACTOR TO PLUG SOUTHERLY SANITARY SEWER. SEE DETAIL ON SHEET 51.

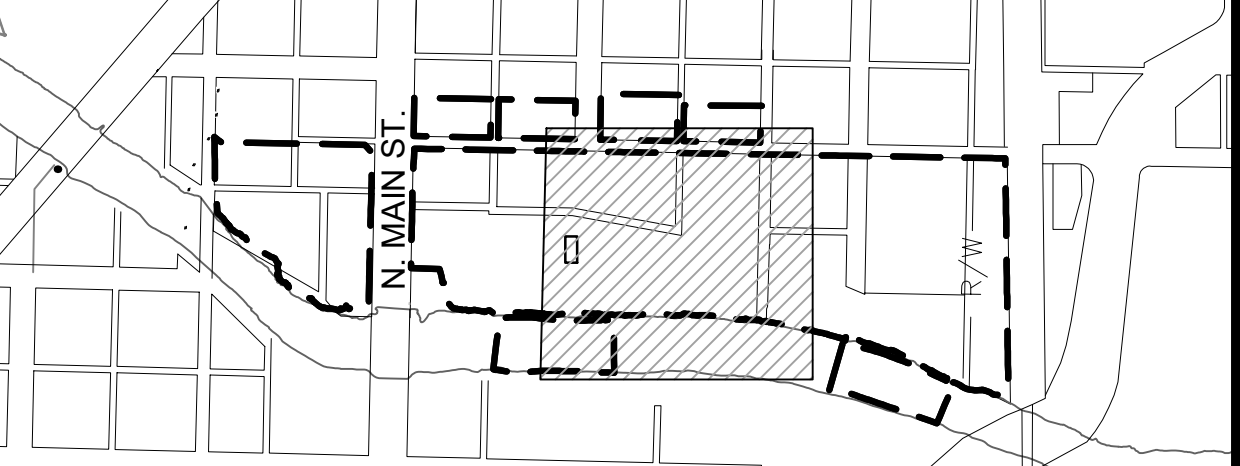
OVERHEAD POWER NOTES

OVERHEAD POWER LINES
 CONTRACTOR SHALL ADHERE TO OSHA REGULATIONS WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL MAINTAIN THE APPROPRIATE CLEARANCES FROM POWER LINES DURING CONSTRUCTION.

LEGEND

- SS SANITARY SEWERS & STRUCTURES
- ST STORM SEWERS & STRUCTURES
- W WATERLINES & STRUCTURES
- OHE OVERHEAD ELECTRIC POWER LINES & POLES
- UGE UNDERGROUND ELECTRIC LINES
- TR UNDERGROUND TRAFFIC ELECTRIC LINES
- TEL OVERHEAD TELEPHONE/FIBER OPTIC LINES
- G GAS LINE
- LIMITS OF DISTURBANCE
- ~ TREE LINE
- ~ PAVEMENT
- ~ PROPERTY LINES
- ~ RIGHT-OF-WAY
- ~ RR R/W RAILROAD RIGHT-OF-WAY
- ~ FENCING
- EXISTING RIFFLE
- PROPOSED RIFFLE
- X X X X X X X X X X TO BE ABANDONED
- X X X X X X X X X X TO BE REMOVED

AREA KEY PLAN (NOT TO SCALE)



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Revision	By	Appd.	Y1.MM.DD
3	100% DESIGN	DDD	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	DDD	2021.05.14
			Y1.MM.DD

Client/Project
 MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS
 HANCOCK COUNTY, OHIO

Title
 DEMOLITION 2 OF 3

Issue Stamp

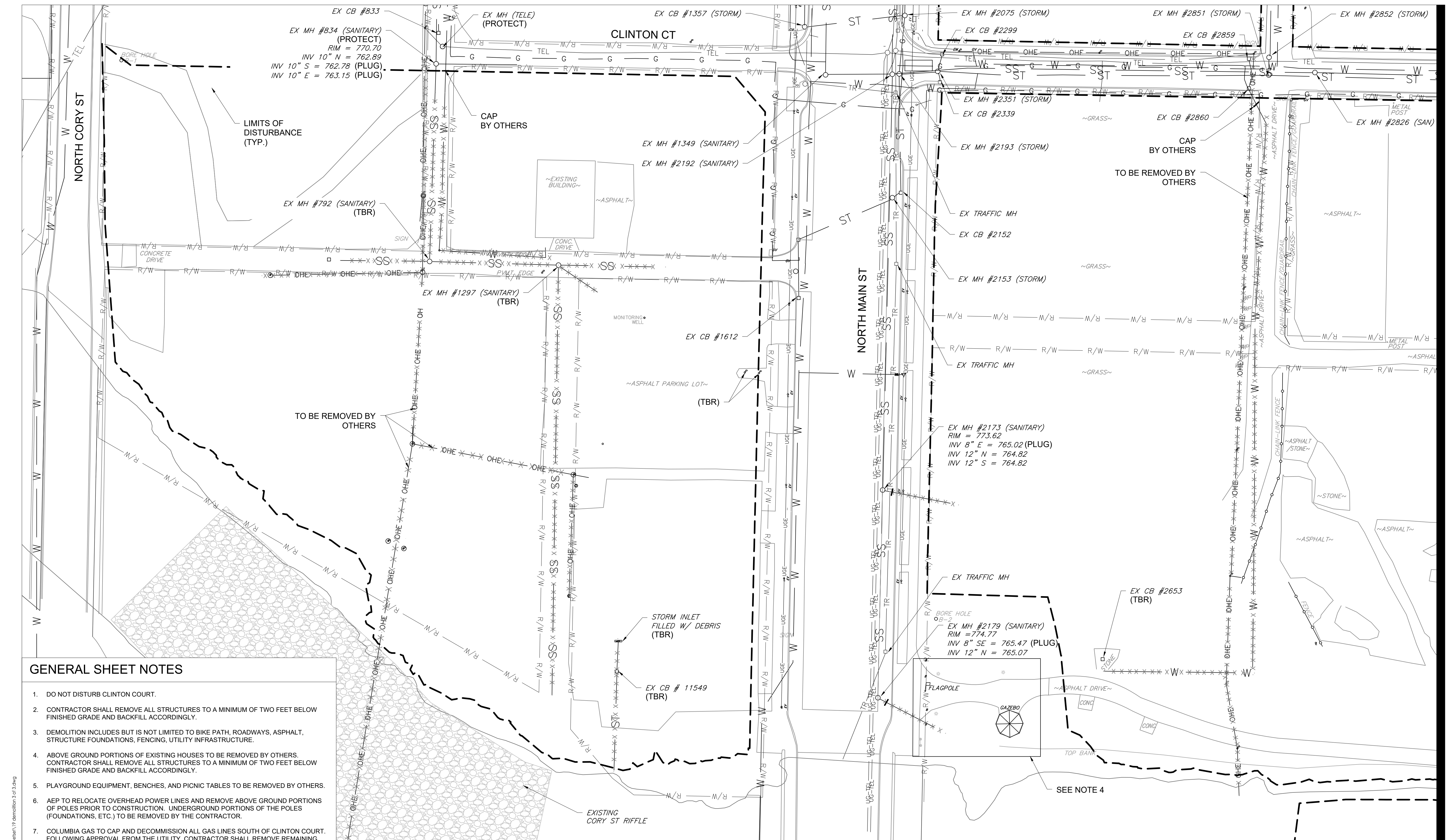
Project Number: 174316204

File Name: 18.demolition 2 of 3.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dign.

Revision Sheet

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GENERAL SHEET NOTES

1. DO NOT DISTURB CLINTON COURT.
2. CONTRACTOR SHALL REMOVE ALL STRUCTURES TO A MINIMUM OF TWO FEET BELOW FINISHED GRADE AND BACKFILL ACCORDINGLY.
3. DEMOLITION INCLUDES BUT IS NOT LIMITED TO BIKE PATH, ROADWAYS, ASPHALT, STRUCTURE FOUNDATIONS, FENCING, UTILITY INFRASTRUCTURE.
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9. CONTRACTOR TO PLUG SOUTHERLY SANITARY SEWER. SEE DETAIL ON SHEET 51.

OVERHEAD POWER NOTES

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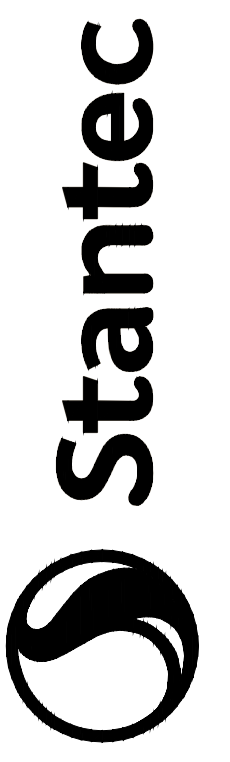
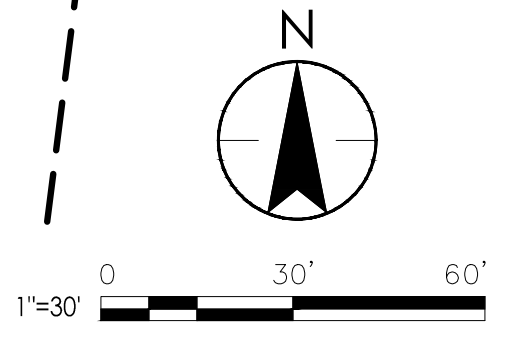
LEGEND

SS	SANITARY SEWERS & STRUCTURES	PAVEMENT	
ST	STORM SEWERS & STRUCTURES	PROPERTY LINES	
W	WATERLINES & STRUCTURES	R/W	RIGHT-OF-WAY
OHE	OVERHEAD ELECTRIC POWER LINES & POLES	RR R/W	RAILROAD RIGHT-OF-WAY
UGE	UNDERGROUND ELECTRIC LINES	FENCING	
TR	UNDERGROUND TRAFFIC ELECTRIC LINES	EXISTING RIFFLE	
TEL	OVERHEAD TELEPHONE/FIBER OPTIC LINES	PROPOSED RIFFLE	
UG-TEL	UNDERGROUND TELEPHONE LINES	TO BE ABANDONED	
G	GAS LINE	X X X X X X X X	TO BE REMOVED
- - - - -	LIMITS OF DISTURBANCE		
~~~~~	TREE LINE		

**AREA KEY PLAN (NOT TO SCALE)**



BLANCHARD RIVER



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3	100% DESIGN	CJ	2022.04.08
2	90% DESIGN	DD	2021.08.13
1	60% DESIGN	DD	2021.05.14
Issued			Yr./MM/DD

Client/Project  
 MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
 HANCOCK COUNTY, OHIO

Issue Stamp

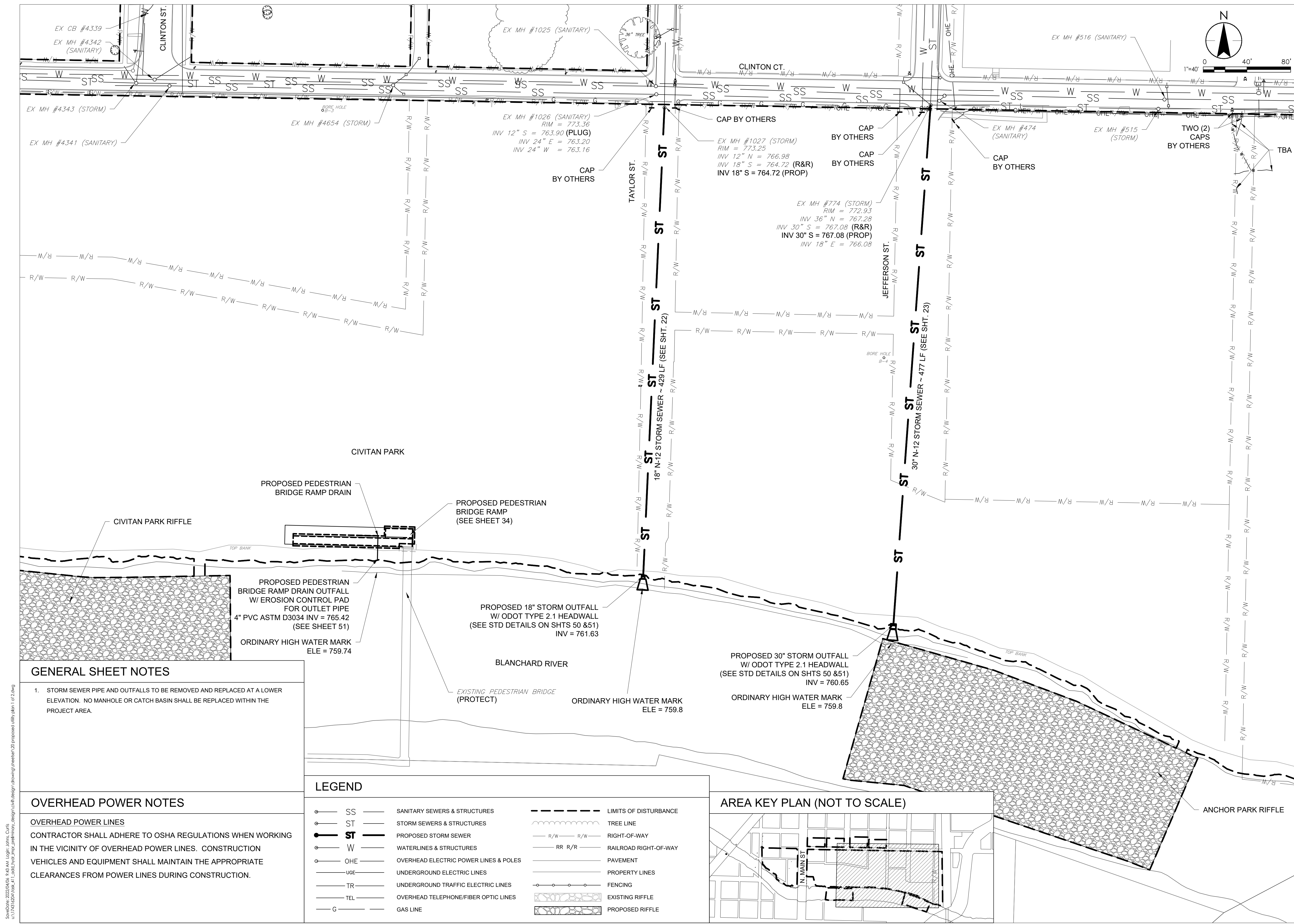
Project Number: 174316204

CJ	DD	TC
Dwn.	Chkd.	Dgn.

Revision Sheet  
 0 19 of 57

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Revision	By	Appd.	Y1.MM.DD
3	100% DESIGN	CJ	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	CJ	2021.05.14

Client/Project  
 MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
 HANCOCK COUNTY, OHIO

Title  
 PROPOSED UTILITY PLAN 1 OF 2

Issue Stamp

Project Number: 174316204
File Name: 20 proposed utility plan 1 of 2.dwg
CJ DDD TC Dwn. Chkd. Dign.
Revision Sheet 0 20 of 57

**GENERAL SHEET NOTES**

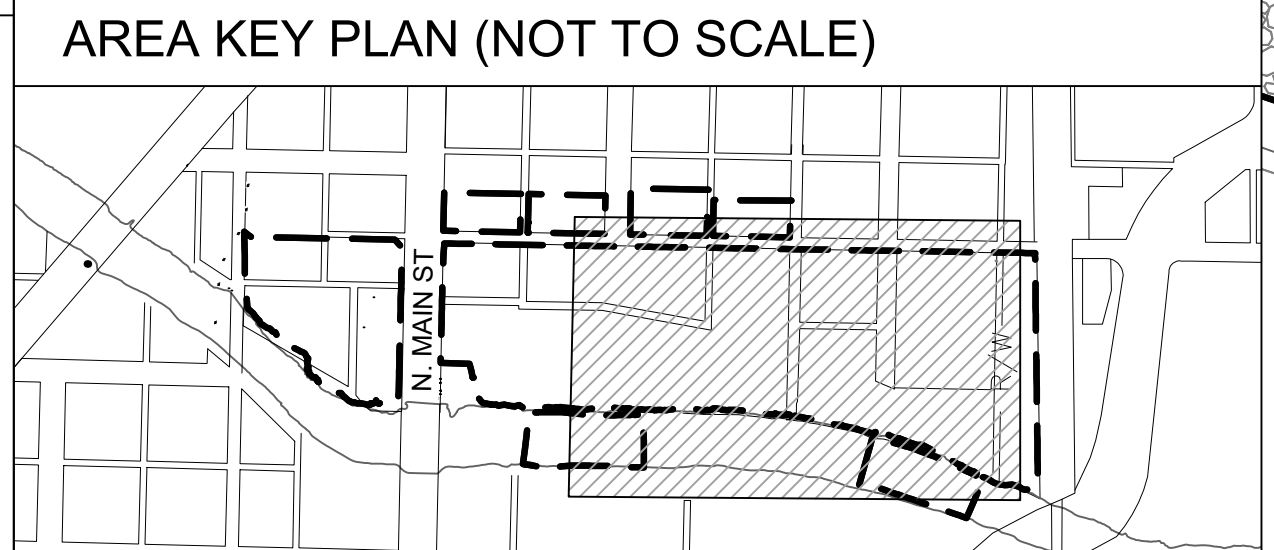
1. STORM SEWER PIPE AND OUTFALLS TO BE REMOVED AND REPLACED AT A LOWER ELEVATION. NO MANHOLE OR CATCH BASIN SHALL BE REPLACED WITHIN THE PROJECT AREA.

**OVERHEAD POWER NOTES**

OVERHEAD POWER LINES  
 CONTRACTOR SHALL ADHERE TO OSHA REGULATIONS WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL MAINTAIN THE APPROPRIATE CLEARANCES FROM POWER LINES DURING CONSTRUCTION.

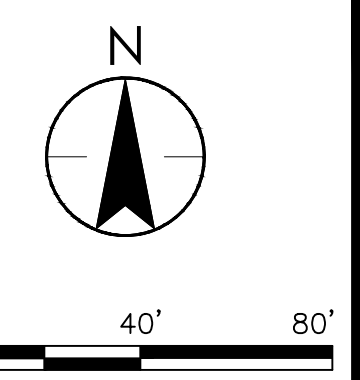
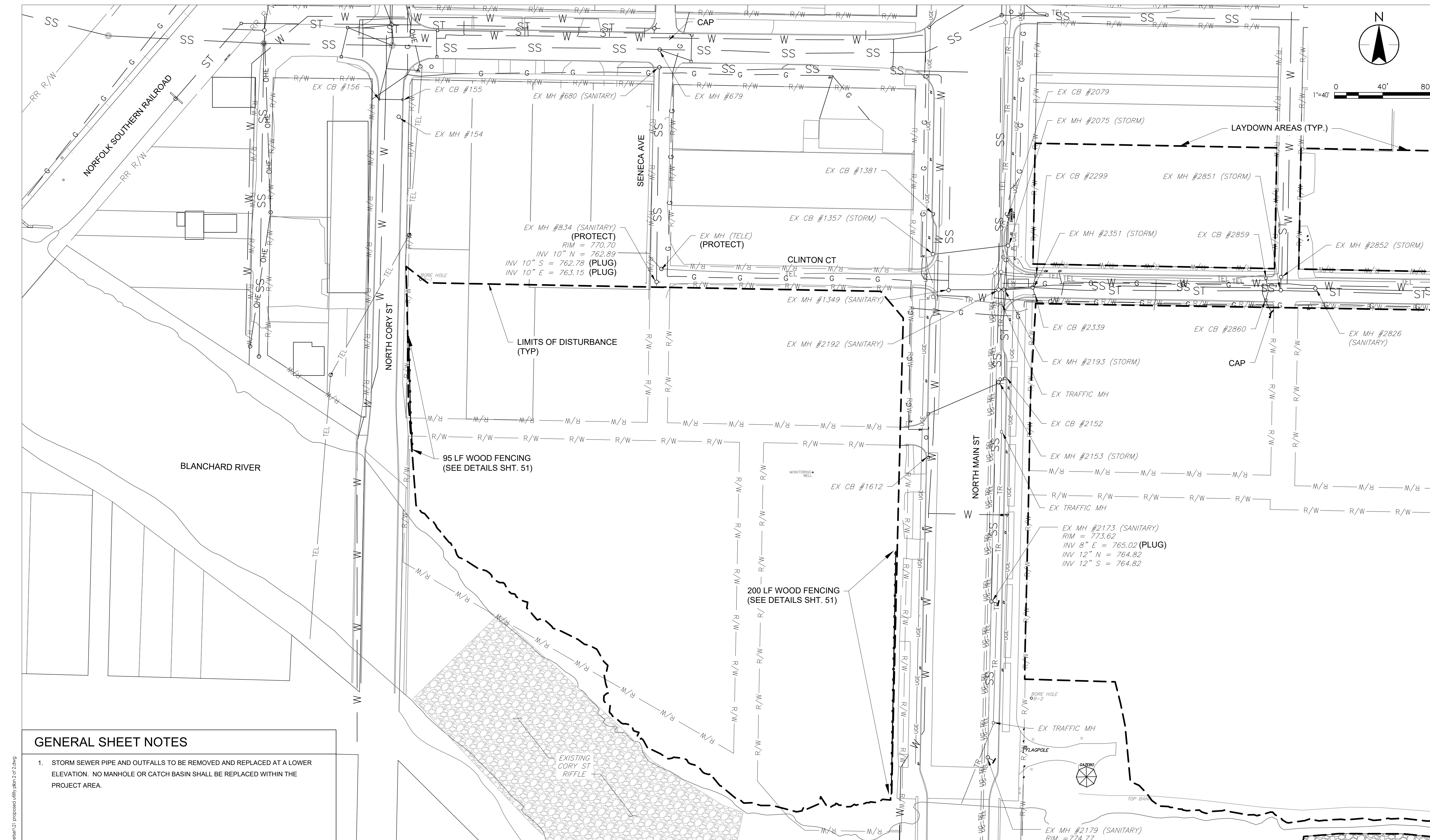
**LEGEND**

○ SS	SANITARY SEWERS & STRUCTURES	---	LIMITS OF DISTURBANCE
○ ST	STORM SEWERS & STRUCTURES	— —	TREE LINE
— —	PROPOSED STORM SEWER	— —	RIGHT-OF-WAY
○ W	WATERLINES & STRUCTURES	RR R/R	RAILROAD RIGHT-OF-WAY
○ OHE	OVERHEAD ELECTRIC POWER LINES & POLES	— —	PAVEMENT
— —	UNDERGROUND ELECTRIC LINES	— —	PROPERTY LINES
— —	UNDERGROUND TRAFFIC ELECTRIC LINES	— —	FENCING
— —	OVERHEAD TELEPHONE/FIBER OPTIC LINES	— —	EXISTING RIFFLE
— —	GAS LINE	— —	PROPOSED RIFFLE



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**GENERAL SHEET NOTES**

1. STORM SEWER PIPE AND OUTFALLS TO BE REMOVED AND REPLACED AT A LOWER ELEVATION. NO MANHOLE OR CATCH BASIN SHALL BE REPLACED WITHIN THE PROJECT AREA.

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**LEGEND**

- |        |                                       |         |                       |
|--------|---------------------------------------|---------|-----------------------|
| SS     | SANITARY SEWERS & STRUCTURES          | ---     | LIMITS OF DISTURBANCE |
| ST     | STORM SEWERS & STRUCTURES             | ~~~~~   | TREE LINE             |
| ST     | PROPOSED STORM SEWER                  | R/W R/W | RIGHT-OF-WAY          |
| W      | WATERLINES & STRUCTURES               | RR R/R  | RAILROAD RIGHT-OF-WAY |
| OHE    | OVERHEAD ELECTRIC POWER LINES & POLES | ---     | PAVEMENT              |
| UGE    | UNDERGROUND ELECTRIC LINES            | ---     | PROPERTY LINES        |
| TR     | UNDERGROUND TRAFFIC ELECTRIC LINES    | ---     | FENCING               |
| TEL    | OVERHEAD TELEPHONE/FIBER OPTIC LINES  | ---     | EXISTING RIFFLE       |
| UG-TEL | UNDERGROUND TELEPHONE                 | ---     | PROPOSED RIFFLE       |
| G      | GAS LINE                              |         |                       |

**AREA KEY PLAN (NOT TO SCALE)**



Revision	By	Appd.	Y1.MM.DD
3	100% DESIGN	DD	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	CJ	2021.05.14
	ISSUED		Y1.MM.DD

Client/Project  
 MAUMEE WATERSHED CONSERVANCY DISTRICT  
 HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
 HANCOCK COUNTY, OHIO

Title  
 PROPOSED UTILITY PLAN 2 OF 2

Issue Stamp

Project Number: 174316204
File Name: 21_proposed_utility_plan_2_of_2.dwg
CJ DDD IC
Dwn. Chkd. Dgn.
Revision Sheet
0 21 of 57

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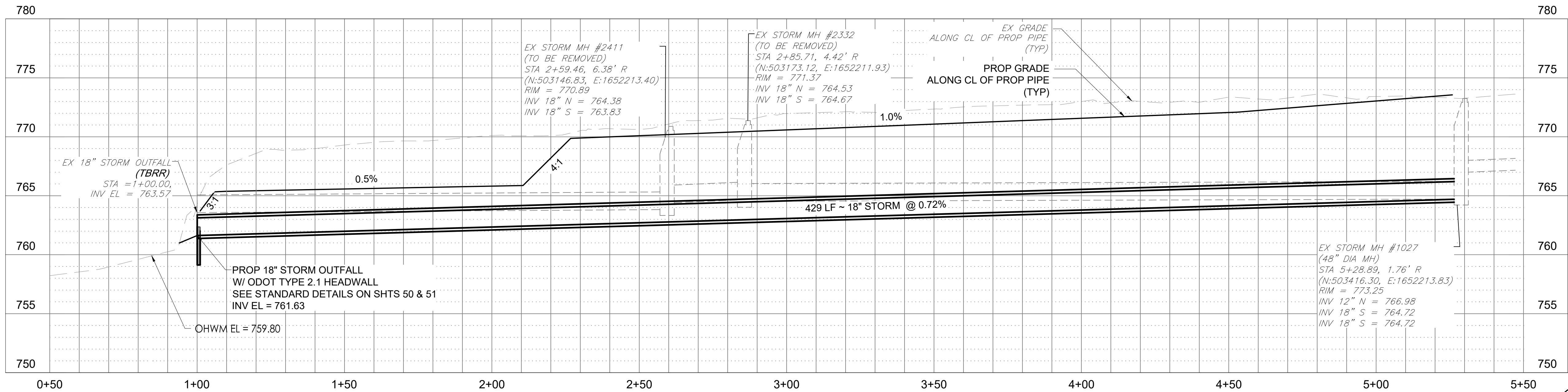
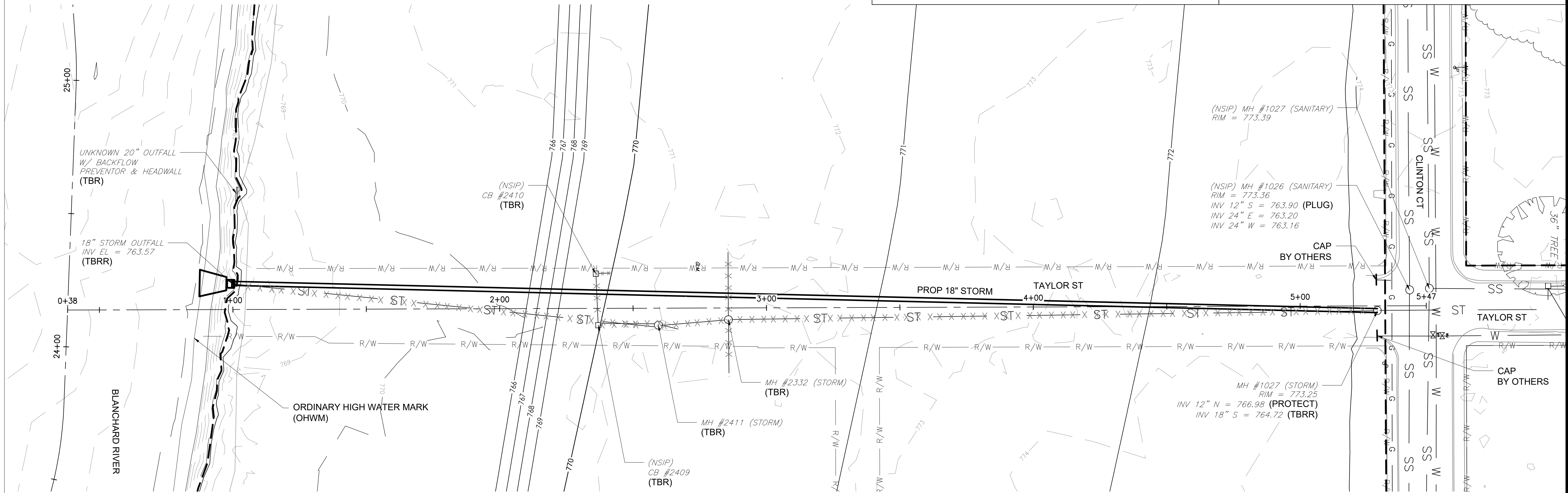


**OVERHEAD POWER NOTES**

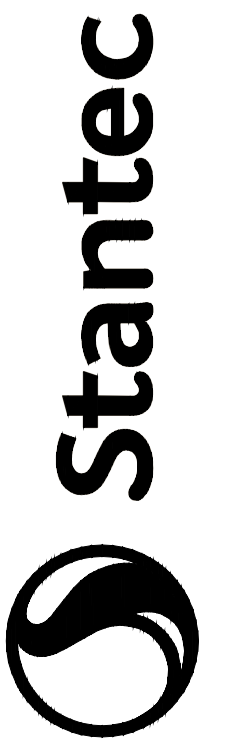
**OVERHEAD POWER LINES**  
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**GENERAL SHEET NOTES**

1. UNIDENTIFIED/ABANDONED SANITARY SEWER LATERALS FROM PREVIOUSLY DEMOLISHED STRUCTURES ARE ANTICIPATED THROUGHOUT THE PROJECT AREA. CONTRACTOR SHALL REMOVE AND DISPOSE AS NECESSARY.



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ISSUED			Y1.MM.DD

Client/Project  
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 HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
 HANCOCK COUNTY, OHIO  
 Title  
 STORM SEWER PROFILE 1 OF 2

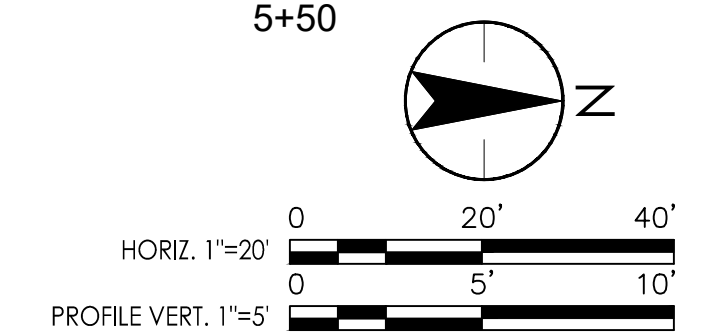
Issue Stamp

Project Number: 174316204

File Name: 22 storm sewer profile 1 of 2.dwg

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Revision Sheet





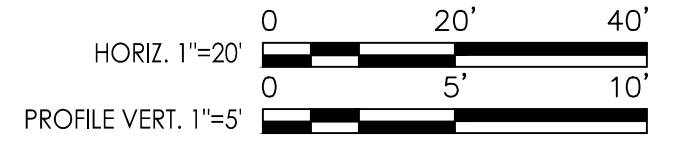
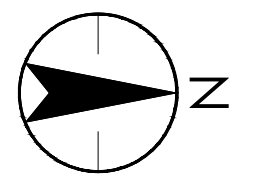
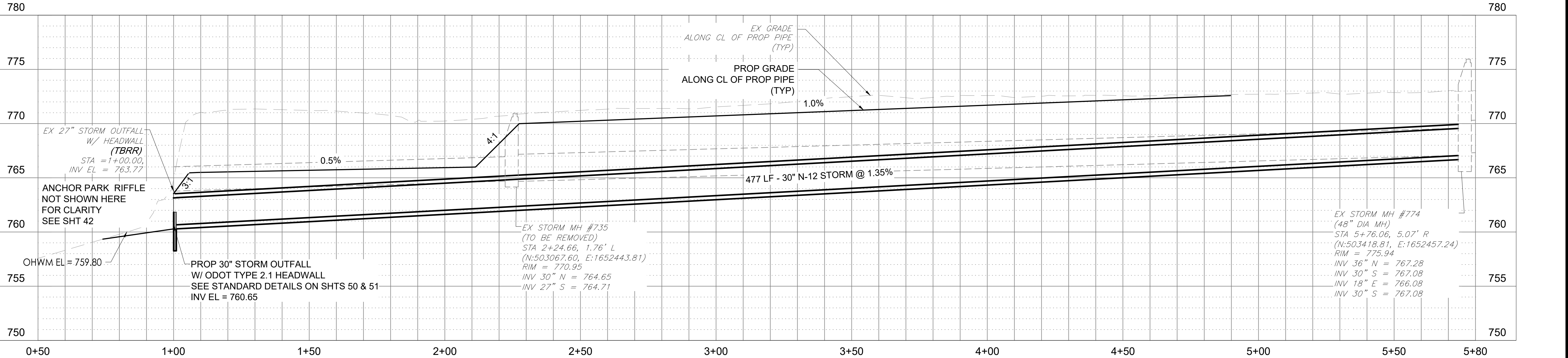
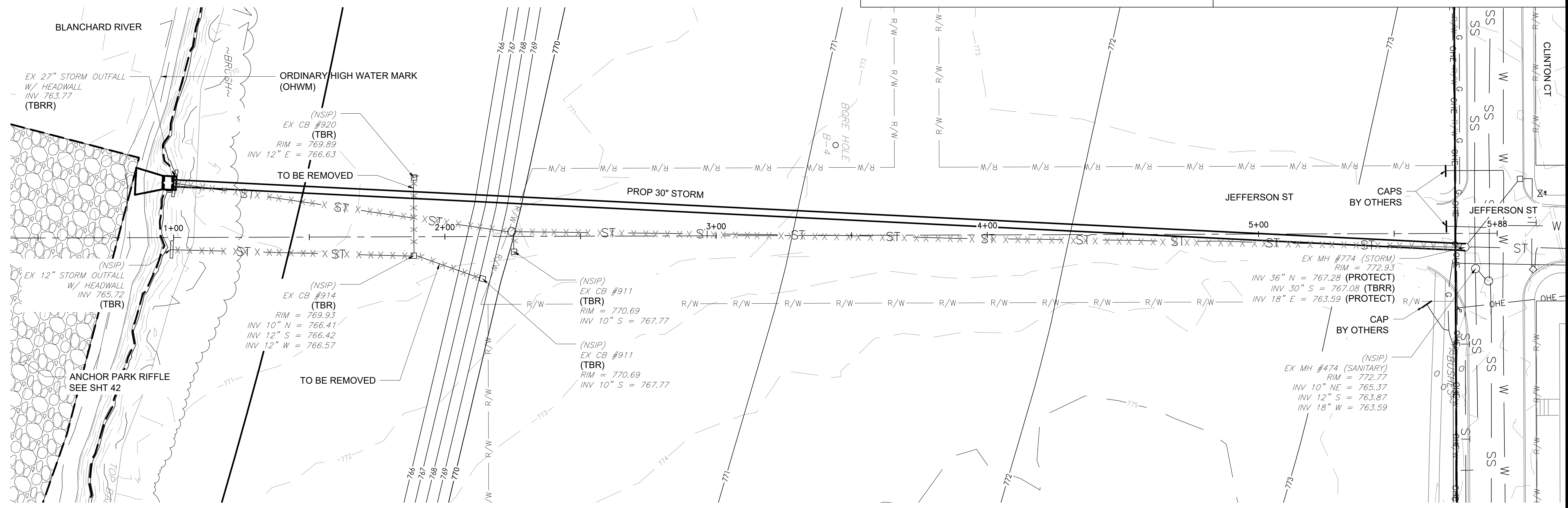
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Revision	By	Appd.	Y1.MM.DD
ISSUED			

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
STORM SEWER PROFILE 2 OF 2

Issue Stamp

Project Number: 174316204

File Name: 23 storm sewer profile 2 of 2.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dign.

Revision Sheet

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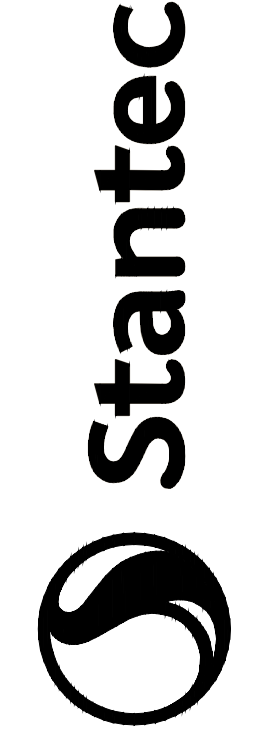
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FLOODPLAIN SEED MIXES (20 ACRES)	POUNDS / ACRE
LOW MAINTENANCE "FREEDOM LAWN I" OHIO PRARIE NURSERY ITEM #LMLM01 OR APPROVED EQUAL	200

TEMPORARY GROUND COVER (FOR AREAS WHERE FLOODPLAIN MIXES AND RIPERIAN BUFFER MIX WILL BE INSTALLED AS PERMANENT)		
SPRING ESTABLISHMENT (MAY THROUGH SEPTEMBER)		
BOTANICAL NAME	COMMON NAME	POUNDS/ACRE
<i>TRITICUM AESTIVUM</i>	COMMON WHEAT	50
<i>AVENA SATIVA</i>	OATS	50
TOTAL		100 LB/AC
FALL ESTABLISHMENT (OCTOBER THROUGH APRIL)		
BOTANICAL NAME	COMMON NAME	POUNDS/ACRE
<i>TRITICUM AESTIVUM</i>	WINTER WHEAT	40
<i>SECALE CEREALE</i>	CEREAL RYE	40
TOTAL		80 LB/AC

NOTE: TEMPORARY GROUND COVER SPECIES MAY VARY SEASONALLY. CONTRACTOR SHALL SUBMIT THE SEEDING SELECTION TO THE OWNER FOR FINAL APPROVAL PRIOR TO PURCHASING MATERIALS.

RIPARIAN BUFFER (2.5 ACRES)		
RIPARIAN BUFFER SEED MIX		
BOTANICAL NAME	COMMON NAME	POUNDS/ACRE
<i>PANICUM VIRGATUM</i>	SWITCHGRASS	5
<i>CAREX VULPINODEA</i>	FOX SEDGE	2
<i>ELYMUS RIPARIUS</i>	RIVERBANK WILD RYE	0.5
<i>ELYMUS VIRGINICUS</i>	VIRGINIA WILD RYE	0.5
<i>SCHIZACHYRIUM SCOPARIUM</i>	LITTLE BLUESTEM	0.5
<i>SORGHASTRUM NUTANS</i>	INDIANGRASS	0.5
<i>ANDROPOGON GERARDII</i>	BIG BLUESTEM	0.1
<i>ANEMOPSIS CANADENSIS</i>	THIMBLEWEED	0.1
<i>BIDENS FRONDOSA</i>	DEVIL'S BEGGARTICK	0.1
<i>ELYMUS CANADENSIS</i>	CANADA WILD RYE	0.1
<i>GLYCERIA GRANDIS</i>	AMERICAN MANNAGRASS	0.1
<i>GLYCERIA STRIATA</i>	FOWL MANNAGRASS	0.1
<i>LUDWIGIA ALTERNIFOLIA</i>	SEEDBOX	0.1
<i>LYSIMACHIA CILIATA</i>	FRINGED LOOSESTRIFE	0.1
<i>PHYL A LANCEOLATA</i>	LANCELEAF FOGFRUIT	0.1
<i>POA PALUSTRIS</i>	FOWL BLUEGRASS	0.1
<i>RANUNCULUS HISPIDUS</i>	BRISTLY BUTTERCUP	0.1
<i>SCUTELLARIA GALERICULATA</i>	MARSH SKULLCAP	0.1
<i>SPARTINA PECTINATA</i>	PRAIRIE CORDGRASS	0.1
TOTAL		10.3
NOTES:		
1. RIPARIAN BUFFER = 50' BUFFER PERPENDICULAR ALONG RIVER		
2. RIPARIAN BUFFER MIX TO BE PLANTED IN CONJUNCTION WITH THE SEASONAL TEMPORARY GROUND COVER MIX		
TREES/SHRUBS		
BOTANICAL NAME	COMMON NAME	SPACING (FT)
<i>ACER RUBRUM</i>	RED MAPLE	10'x10' GRID (1 BARE-ROOT SEEDLING PER 100 SQUARE FOOT) REQ'D WITHIN AREA NOTED ON SHEET 25.
<i>ACER SACCHARINUM</i>	SILVER MAPLE	
<i>CORNUS FOEMINA</i>	GREY DOGWOOD	
<i>ILEX VERTICILLATA</i>	WINTERBERRY	
<i>PLATANUS OCCIDENTALIS</i>	SYCAMORE	
<i>QUERCUS BICOLOR</i>	SWEETGUM	
<i>SALIX BEBBIANA</i>	BEBB WILLOW	
NOTES:		
1. SPECIES RIPARIAN BUFFER AS INDICATED ON SHEET 25.		
2. CONTRACTOR SHALL SUBMIT THE PLANTING SPECIES SELECTION TO THE OWNER FOR FINAL APPROVAL PRIOR TO PURCHASING PLANT MATERIALS.		



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Client/Project  
 MAUMEE WATERSHED CONSERVANCY DISTRICT

Title  
 HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
 HANCOCK COUNTY, OHIO

PLANTING SCHEDULE

Issue Stamp

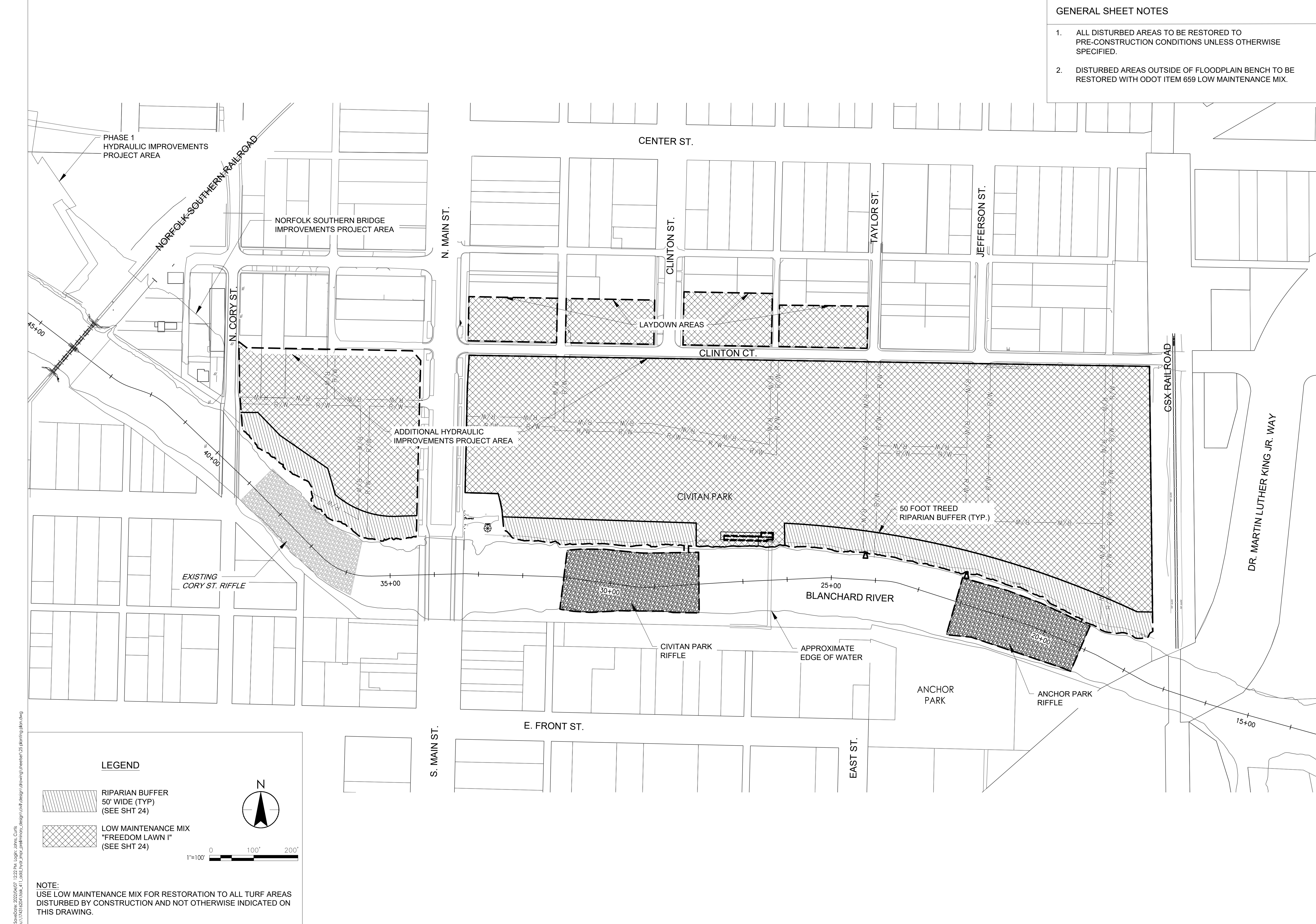
Project Number: 174316204

File Name: 24 planting schedule.dwg

CJ	DDD	NU
Dwn.	Chkd.	Dign.

Revision Sheet





- GENERAL SHEET NOTES**
1. ALL DISTURBED AREAS TO BE RESTORED TO PRE-CONSTRUCTION CONDITIONS UNLESS OTHERWISE SPECIFIED.
  2. DISTURBED AREAS OUTSIDE OF FLOODPLAIN BENCH TO BE RESTORED WITH ODOT ITEM 659 LOW MAINTENANCE MIX.

**LEGEND**

- RIPARIAN BUFFER 50' WIDE (TYP) (SEE SHT 24)
- LOW MAINTENANCE MIX "FREEDOM LAWN I" (SEE SHT 24)

NOTE:  
USE LOW MAINTENANCE MIX FOR RESTORATION TO ALL TURF AREAS DISTURBED BY CONSTRUCTION AND NOT OTHERWISE INDICATED ON THIS DRAWING.

Scale: 1"=100'

0 100' 200'

N

Revision	By	Appd.	Y1.MM.DD
3	MMG	DDD	2022.04.08
2	MMG	DDD	2021.08.13
1	CJ	DDD	2021.05.14

Issued By: Y1.MM.DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
PLANTING PLAN

Project Number: 174316204

File Name: 25 planting plan.dwg

Revision	Sheet
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PROJECT DESCRIPTION:

EXCAVATING A FLOODPLAIN BENCH ON THE NORTHERLY BANK OF THE BLANCHARD RIVER BETWEEN NORTH CORY STREET AND THE CSX RAILROAD BRIDGE ENCOMPASSING APPROXIMATELY 19.5 ACRES, CONSTRUCTING TWO (2) RIFFLE STRUCTURES UPSTREAM OF MAIN STREET, AND MODIFYING THE EXISTING PEDESTRIAN BRIDGE'S ACCESS ON THE NORTHERN BANK. THE PROJECT INCLUDES EXCAVATION, REPLACEMENT OF STORM SEWERS WITHIN THE PROJECT AREA, DEMOLITION OF BUILDING FOUNDATIONS, ROADWAYS, AND GRAVEL PARKING LOTS, AND BANK STABILIZATION.

TOTAL DISTURBED AREA FOR THE PROJECT IS APPROXIMATELY 23.3 ACRES. STORM WATER FOR PROJECT AREA DISCHARGES INTO THE BLANCHARD RIVER. SEDIMENT AND EROSION CONTROL MEASURES CONSIST OF THE PROVISION FOR COVER OVER DISTURBED SOILS USING TEMPORARY OR PERMANENT SEEDING AND MULCHING AND PROTECTION OF STORM WATER INLETS USING A COMBINATION OF FILTER FABRIC FENCE, AREA INLET PROTECTION DEVICES, AND CURB INLET PROTECTION DEVICES.

PRE AND POST CONSTRUCTION RUNOFF COEFFICIENTS:

THE PRE-CONSTRUCTION RUNOFF COEFFICIENT FOR THE PROJECT AREA IS 0.120 WITH AN IMPERVIOUS SURFACE AREA OF 2.681 ACRES. THE PRE-CONSTRUCTION IMPERVIOUSNESS OF THE SITE IS 11.51 PERCENT.

THE POST-CONSTRUCTION RUNOFF COEFFICIENT IS 0.043 WITH AN IMPERVIOUS SURFACE AREA OF 0.084 ACRES. THE POST-CONSTRUCTION IMPERVIOUSNESS OF THE SITE WILL BE 0.36 PERCENT.

SOIL INFORMATION:

Table with 7 columns: MAP UNIT, MAP UNIT NAME, EROSION K, FACTORS T, WIND ERODIBILITY GROUP, ACRES IN PROJECT SITE, PERCENT OF PROJECT SITE. Includes rows for LcA, SpA, Ur, W, and a TOTAL row.

STREAM INFORMATION:

Table with 4 columns: RESOURCE NAME, FLOW REGIME, PHWH CLASS, SIZE (LINEAR FEET). Row for STREAM 1 with PERENNIAL flow regime and CLASS II PHWH class.

CONSTRUCTION SEQUENCE:

- 1. PRE-CONSTRUCTION MEETING: ALL PROPOSED SWPPP MEASURES SHALL BE REVIEWED BASED UPON THE CONTRACTOR'S PROPOSED CONSTRUCTION SEQUENCE AND SCHEDULE.
2. PRE-CONSTRUCTION SWPPP MEASURES: TEMPORARY SEDIMENTATION AND EROSION CONTROL ITEMS SHALL BE INSTALLED ON EXISTING INLETS BEFORE EARTHWORK STARTS...

CONSTRUCTION ENTRANCE NOTES:

- A. ALL CONSTRUCTION TRAFFIC SHALL ENTER AND LEAVE BY THE DESIGNATED EXISTING ENTRANCES. IF WARRANTED, A NEW ENTRANCE SHALL BE CONSTRUCTED OF CRUSHED STONE TO HELP FREE TIRES OF SOIL WHEN LEAVING THE SITE.
B. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
C. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY...

3. CONSTRUCTION SWPPP MEASURES:

- A. THE PROJECT SITE SHALL BE CLEARED AND GRUBBED ONLY WHERE NECESSARY AND WHERE DEFINED WITHIN THE LIMITS OF DISTURBANCE.
B. STREET CLEANING SHALL BE PERFORMED AS REQUIRED OR DIRECTED.
C. INSTALL TEMPORARY OR PERMANENT SEEDING AND MULCHING, OR SODDING IN ALL AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE...

4. WHEN ENTIRE SITE IS SUFFICIENTLY STABLE (A VEGETATIVE GROWTH DENSITY OF >70% OR EQUIVALENT), THE TEMPORARY SEDIMENTATION AND EROSION CONTROL ITEMS SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.

5. REPAIR SEEDING AND MULCHING AS DIRECTED BY THE ENGINEER.

STORM WATER POLLUTION PREVENTION NOTES:

ALL WORK SPECIFIED AS AN ODOT ITEM SHALL BE GOVERNED BY THE CURRENT STATE OF OHIO DEPARTMENT OF TRANSPORTATION HANDBOOK. ALL OTHER ITEMS SHALL CONFORM TO SPECIFICATIONS CONTAINED IN THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OHIO EPA) "RAINWATER AND LAND DEVELOPMENT."

- 1. SOIL EROSION AND SEDIMENTATION BEST MANAGEMENT PRACTICE (BMP) MEASURES WILL BE INSTALLED PRIOR TO START OF ANY CONSTRUCTION AND WILL BE MAINTAINED AT ALL TIMES UNTIL CONSTRUCTION HAS BEEN COMPLETED.
2. CONTRACTOR IS TO NOTIFY THE CITY OF FINDLAY, STORM WATER MANAGEMENT DIVISION AT 419-424-7121 THREE (3) DAYS PRIOR TO STARTING CONSTRUCTION FOR THE PURPOSE OF MONITORING EROSION AND BMP MEASURES.
3. THE OWNER WILL FILE A NOTICE OF INTENT (NOI) WITH THE OHIO EPA. UPON AWARD OF THE CONTRACT, THE GENERAL CONTRACTOR SHALL FILE AS THE CO-PERMITTEE.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL SEDIMENT AND EROSION CONTROL ITEMS AT ALL TIMES.
5. TEMPORARY SEDIMENTATION AND EROSION CONTROL MEASURES MUST BE INSPECTED AND LOGGED BY THE CONTRACTOR FOR THE OHIO EPA...

DEWATERING:

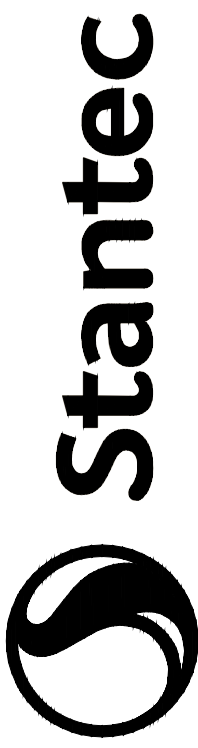
- 1. A DEWATERING PLAN SHALL BE DEVELOPED PRIOR TO THE COMMENCEMENT OF ANY PUMPING ACTIVITIES TO ENSURE THERE ARE NO SEDIMENT-LADEN DISCHARGES TO WATER RESOURCES OR WETLANDS RESULTING FROM DEWATERING ACTIVITIES.
2. THE DEWATERING PLAN SHALL INCLUDE ALL PUMPS AND RELATED EQUIPMENT NECESSARY FOR THE DEWATERING ACTIVITIES AND DESIGNATE AREAS FOR PLACEMENT OF PRACTICES.
3. PUMP INTAKES SHALL WITHDRAW WATER FROM THE TRENCH OR WORK AREA IN ORDER NOT TO WITHDRAW SOLIDS.
4. DEWATERING PRACTICES INCLUDE GROUND WATER LOWERING, VEGETATED FILTER AREAS, SEDIMENT TRAPS OR BASINS, FILTER BAGS, FLOCCULATION, PARTICULATE FILTER UNITS, AND SAND MEDIA FILTERS...

*THE OHIO DEPARTMENT OF NATURAL RESOURCES, DIVISION OF WATER REQUIRES A WATER WITHDRAW REGISTRATION FOR THE DEWATERING ACTIVITIES IN THE EVENT THE FACILITY HAS THE CAPACITY OF PUMPING IN EXCESS OF 100,000 GALLONS PER DAY. THIS REGISTRATION MUST BE SUBMITTED TO ODNR WITHIN 90 DAYS FOLLOWING THE COMPLETION OF THE PROJECT.

STORM WATER POLLUTION PREVENTION SUPPLEMENTAL NOTES:

- 1. THE CONTRACTOR SHALL INCLUDE A COVER PAGE WITH THE (NOI) IDENTIFYING THE FOLLOWING: STREET NAME & LOCATION: 120 CLINTON COURT, FINDLAY, OH 43840
CONTRACTOR NAME & CONTACT:
A. SITE OPERATOR:
B. SWPPP AUTHORIZING AGENT:
CONTRACTOR PREPARATION DATE:
CONTRACTOR START DATE:
CONTRACTOR COMPLETION DATE:
2. THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER A PROPOSED PLAN FOR HAZARDOUS MATERIAL COMMUNICATION PROCEDURES PRIOR TO COMMENCING WORK.
3. NO TOXIC OR HAZARDOUS WASTES SHALL BE DISPOSED INTO STORM DRAINS, SEPTIC TANKS, OR BY BURYING, BURNING OR MIXING THE WASTES.
4. RECYCLING OR DISPOSAL OF DEBRIS AND TRASH WILL BE MANAGED BY THE CONTRACTOR IN DUMPSTER CONTAINERS PROPOSED AT LOCATIONS DESIGNATED IN THE CONTRACTOR PLAN...

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Revision table with columns: Revision, By, Apprd, Date. Includes entries for 100% DESIGN, 90% DESIGN, and 60% DESIGN.

Client/Project MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS HANCOCK COUNTY, OHIO

Title SWPPP NOTES 1 OF 2

Issue Stamp

Project Number: 174316204

File Name: 2a_SWPPP NOTES 1 of 2.dwg

Table with 3 columns: C/J, DDD, TC; Dwn, Chkd, Dign.

Revision Sheet

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**SUPPLEMENTAL SPECIFICATION 832~  
TEMPORARY SEEDING AND MULCHING:**

PLANT ODOT SUPPLEMENTAL SPECIFICATION 832 TEMPORARY SEEDING AND MULCHING IN ALL AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE AND WHICH DO NOT REQUIRE IMMEDIATE SOIL STABILIZATION. ALL DISTURBED AND ERODED EARTH SHALL BE REGRADED AND SEEDDED WITHIN 7 DAYS WITH SEEDING, AS SHOWN ON THE TABLE BELOW, TO ESTABLISH STABILITY AND PROVIDE SEDIMENT CONTROL.

**TEMPORARY SEEDING SPECIFICATIONS:**

(FOR ALL AREAS OUTSIDE OF WHERE FLOOD PLAIN MIX AND RIPARIAN BUFFER MIX WILL BE INSTALLED AS PERMANENT)

SEEDING DATES:	SEEDING TYPE:	APPLICATION RATE POUNDS PER 1,000 SQ. FT.
MAR. 1 - AUG. 15	1. PREPARE SEEDBED 2. TEMPORARY SEEDING: OATS TALL FESCUE ANNUAL RYE GRASS OR PERENNIAL RYE GRASS 3. MULCH	3 1 1 1
AUG. 16 - NOV. 1	1. PREPARE SEEDBED 2. TEMPORARY SEEDING: RYE TALL FESCUE ANNUAL RYE GRASS OR WHEAT TALL FESCUE ANNUAL RYE GRASS OR PERENNIAL RYE GRASS TALL FESCUE ANNUAL RYE GRASS 3. MULCH	3 1 1 3 1 1 3 1 1
NOV. 2 - NOV. 20	MULCH ONLY, OR SOD, OR DORMANT SEED PREPARATIONS: 1. PREPARE SEEDBED 2. DORMANT SEEDING-NO SEED SHALL BE PLACED UNTIL AFTER NOV. 20. AFTER NOV. 20, PLACE SEED AT ABOVE APPLICATION RATES PLUS 50% 3. MULCH	
NOV. 21 - FEB. 28	MULCH ONLY, OR SOD OR DORMANT SEEDING: 1. PREPARE SEEDBED 2. SEED AT ABOVE APPLICATION RATES PLUS 50% 3. MULCH	
SEED BED PREPARATION:	SEEDBED SHALL BE PULVERIZED AND LOOSE TO ENSURE SUCCESS OF ESTABLISHING SEEDBED.	
MULCH:	WOOD CELLULOSE FIBER (46 LBS/1000 SF), OR MULCH MATTING PER MANUFACTURER RECOMMENDATIONS, OR STRAW MULCH (90 LBS/1000 SF) WITH TACKIFIER.	
TACKIFIER:	ASPHALT EMULSION (0.1 GAL/SY), OR SYNTHETIC BINDER (AGRI-TAC, DCA-70, PETROSET, TERRA TACK, OR EQUAL) AT RATE PER MANUFACTURER RECOMMENDATIONS.	

**ITEM 659~SEEDING AND MULCHING (LOW MAINTENANCE MIX)**

PLANT ODOT ITEM 659 SEEDING AND MULCHING IN ALL AREAS THAT CAN BE BROUGHT TO FINAL GRADE. APPLICATIONS OF PERMANENT SEEDING SHALL NOT BE DELAYED WHILE CONSTRUCTION OF LIMITED PORTIONS OF THE SITE IS BEING COMPLETED.

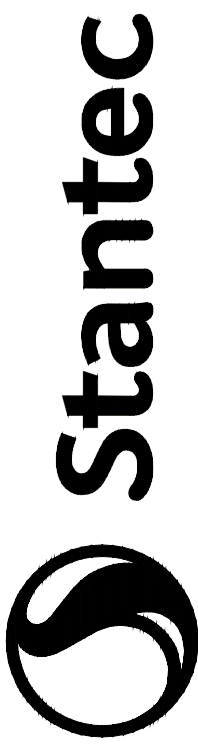
**PERMANENT SEEDING SPECIFICATIONS (LOW MAINTENANCE MIX):**

SEEDING DATES:	SEEDING TYPE:	APPLICATION RATE POUNDS PER 1,000 SQ. FT.
MAR. 1 - MAY. 31 AUG. 1 - SEPT. 30	1. PREPARE SEEDBED 2. PERMANENT SEEDING:  PARKS AND BOULEVARDS: MASTERPIECE TALL FESCUE (TURF TYPE) PICASSO TALL FESCUE (TURF TYPE) REMBRANDT TALL FESCUE (TURF TYPE) KENTUCKY BLUEGRASS TOTAL:	3 3 3 3 1 10
OCT. 1 - NOV. 20	1. PREPARE SEEDBED 2. DORMANT SEEDING-NO SEED SHALL BE PLACED UNTIL AFTER NOV. 20. AFTER NOV. 20, PLACE SEED AT ABOVE APPLICATION RATES PLUS 50%. 3. MULCH	
NOV. 21 - FEB. 28	1. PREPARE SEEDBED 2. DORMANT SEEDING-SEED AT ABOVE APPLICATION RATES PLUS 50% 3. MULCH	
SEED BED PREPARATION:	WORK LIME AND FERTILIZERS INTO SOIL TO DEPTH OF 3"	92 20
MULCH:	WOOD CELLULOSE FIBER (46 LBS/1000 SF), OR MULCH MATTING PER MANUFACTURER RECOMMENDATIONS, OR STRAW MULCH (90 LBS/1000 SF) WITH TACKIFIER.	
TACKIFIER:	ASPHALT EMULSION (0.1 GAL/SY), OR SYNTHETIC BINDER (AGRI-TAC, DCA-70, PETROSET, TERRA TACK, OR EQUAL) AT RATE PER MANUFACTURER RECOMMENDATIONS.	
IRRIGATION:	WATER AS NEEDED TO ENSURE ADEQUATE MOISTURE FOR SEED GERMINATION AND PLANT GROWTH.	

PERMANENT STABILIZATION	
AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREA THAT WILL LIE DORMANT FOR ONE YEAR OR MORE.	WITHIN SEVEN (7) DAYS OF THE MOST RECENT DISTURBANCE.
ANY AREA WITHIN 50 FEET OF A STREAM AND AT FINAL GRADE.	WITHIN 2 DAYS OF REACHING FINAL GRADE.
ANY AREA AT FINAL GRADE.	WITHIN SEVEN (7) DAYS OF REACHING FINAL GRADE WITHIN THAT AREA.

TEMPORARY STABILIZATION	
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREA WITHIN 50 FEET OF A STREAM AND NOT AT FINAL GRADE.	WITHIN 2 DAYS OF THE MOST RECENT DISTURBANCE IF THAT AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS.
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREA, INCLUDING SOIL STOCKPILES THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A STREAM.	WITHIN SEVEN (7) DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA. FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN (7) DAYS PRIOR TO TRANSFER OF NPDES PERMIT COVERAGE FOR THE INDIVIDUAL LOT.
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER.	PRIOR TO NOVEMBER 1.
NOTE: WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. THESE TECHNIQUES MAY INCLUDE MULCHING OR EROSION MATTING.	

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Revision	By	Appd.	Y1.MM.DD
3	100% DESIGN	DDD	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	DDD	2021.05.14
			Y1.MM.DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
SWPPP NOTES 2 OF 2

Issue Stamp

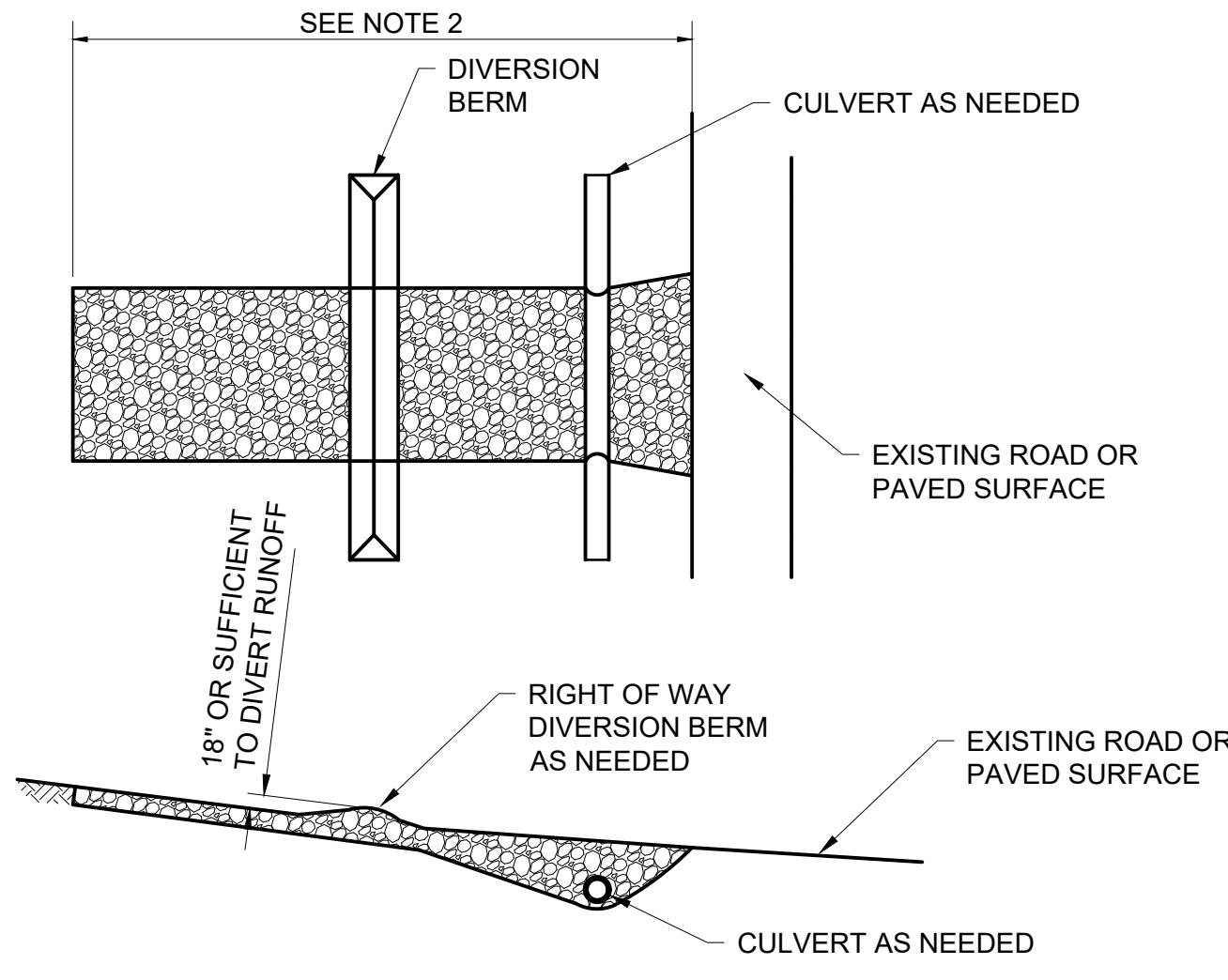
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CJ	DDD	TC

Revision Sheet



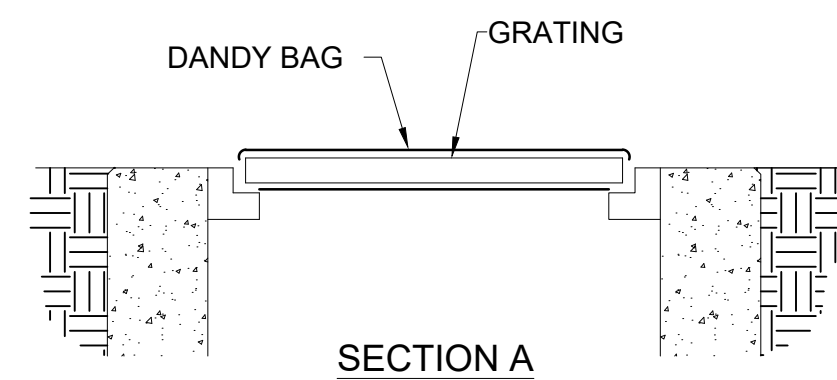
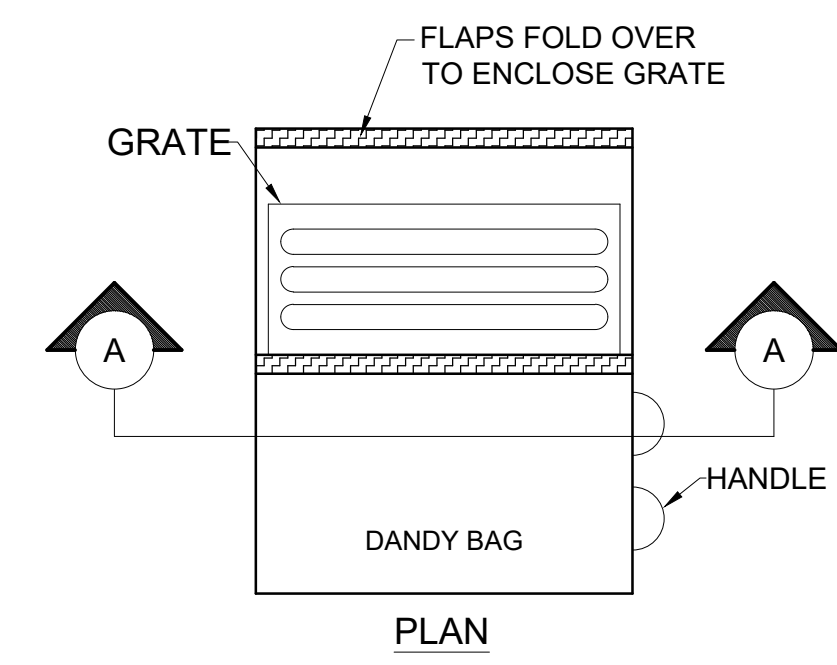


**TEMPORARY CONSTRUCTION DRIVE:**  
(NO SCALE)

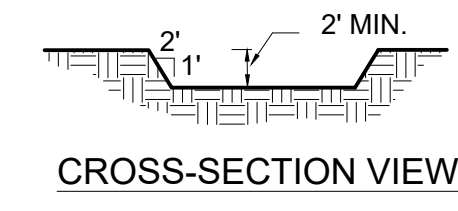
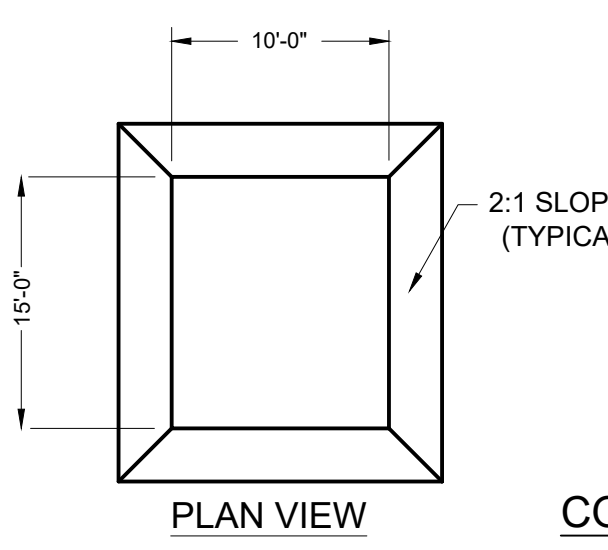
GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE	
MINIMUM TENSILE STRENGTH	200 LBS.
MINIMUM PUNCTURE STRENGTH	80 PSI.
MINIMUM TEAR STRENGTH	50 LBS.
MINIMUM BURST STRENGTH	320 PSI.
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS<0.6MM.
PERMITIVITY	1x10-3 CM/SEC.

**CONSTRUCTION ENTRANCE:**

- STONE SIZE: ODOT #2 (1.5-2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH: THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOTS.)
- THICKNESS: THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
- WIDTH: THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- GEOTEXTILE: A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE SPECIFICATIONS IN THE GEOTEXTILE TABLE.
- TIMING: THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
- CULVERT: A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
- WATER BAR: A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
- MAINTENANCE: TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
- CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
- REMOVAL: THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.
- UPON COMPLETION OF THE PROJECT, THE TEMPORARY CONSTRUCTION ENTRANCES SHALL BE REMOVED AND ALL DISTURBED AREAS RESTORED TO ORIGINAL CONDITION. IN ADDITION, BOLTON STREET SHALL BE REPAIRED AND OVERLAID WITH 2 INCHES OF ODOT 441, ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (LIGHT), PG 64-22 (448).



**DANDY BAG INLET PROTECTION**  
(NO SCALE)



**CONCRETE WASH-OUT DETAIL**  
(NO SCALE)

**MAINTENANCE:**  
TO ENSURE PROPER OPERATION REMOVE SILT, SEDIMENT, AND DEBRIS FROM THE SURFACE AND THE VICINITY OF THE UNIT WITH A SQUARE POINT SHOVEL OR STIFF BRISTLE BROOM AWAY FROM AN ENVIRONMENTALLY SENSITIVE AREAS AND WATERWAYS IN MANNER SATISFACTORY TO THE ENGINEER/INSPECTOR. REMOVE FINE MATERIAL FROM INSIDE SILT BAG AS NEEDED. DISPOSE OF SILT BAG NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.

**INLET INSPECTION:**  
TO INSPECT INLET, REMOVE SILT BAG WITH GRATE INSIDE, INSPECT CATCH BASIN AND REPLACE SILT BAG BACK INTO GRATE FRAME.

**NOTE:**  
PONDING IS LIKELY IF SEDIMENT IS NOT REMOVED REGULARLY. THE SILT BAG MUST NEVER BE USED WHERE OVERFLOW MAY ENDANGER AN EXPOSED SLOPE.

- NOTES:**
- LOCATION SHALL BE APPROVED BY THE ENGINEER.
  - DO NOT LOCATE IN SWALE OR ANY OTHER WATERCOURSE.

**SUPPLEMENTAL SPECIFICATION 832**  
**FILTER FABRIC FENCE:**

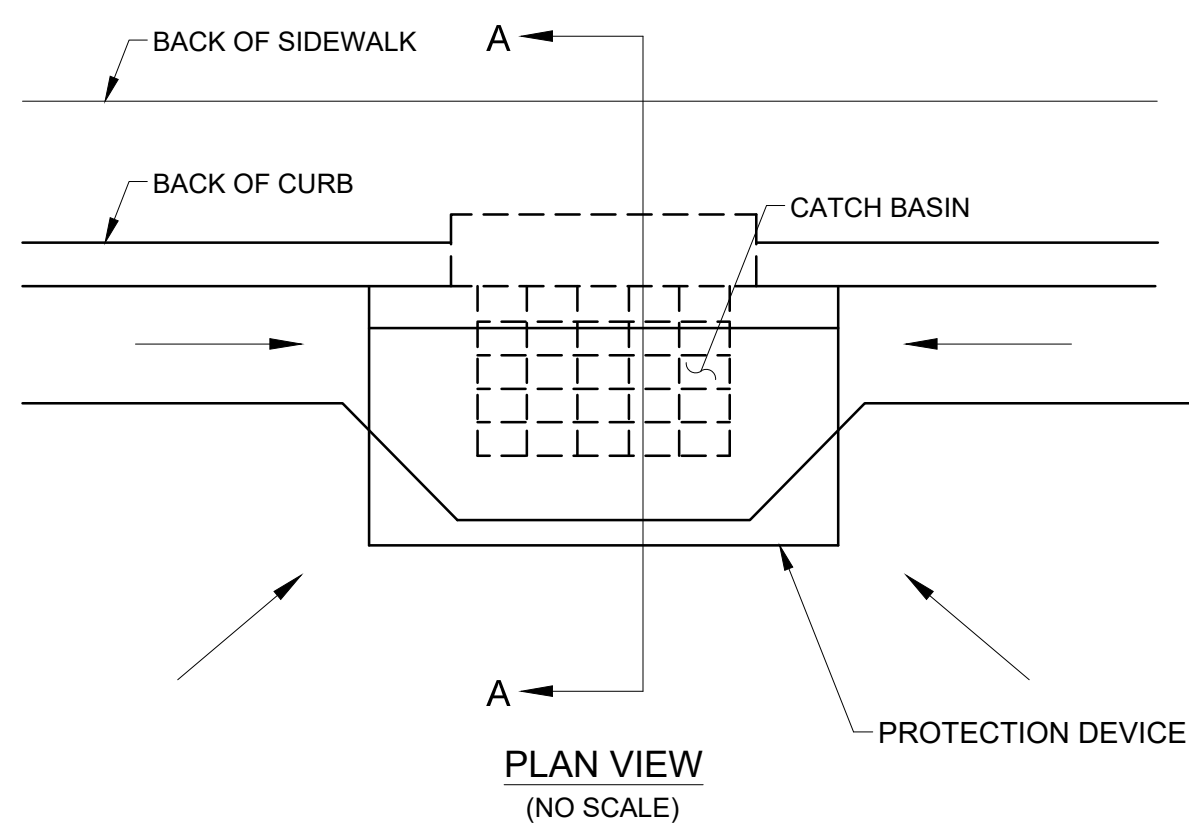
**CONSTRUCTION SPECIFICATIONS:**

FILTER FABRIC FENCE SHALL BE CONSTRUCTED BEFORE DISTURBANCE BEGINS. THE HEIGHT OF A FILTER FABRIC FENCE SHALL NOT EXCEED 36 INCHES, OR BE LESS THAN 16 INCHES. STORAGE HEIGHT SHALL NEVER EXCEED 18 INCHES, OR HALF OF THE TOTAL HEIGHT ABOVE THE ORIGINAL GROUND. THE FENCE LINE SHALL FOLLOW LEVEL CONTOURS AS CLOSELY AS POSSIBLE, THE FILTER FABRIC SHALL BE CUT FROM A CONTINUOUS ROLL TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SECURELY WRAPPED AROUND A POST. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 16 INCHES), ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE. WHEN EXTRA STRENGTH FENCE IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR ±5 FEET UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE RESTORED WITHIN 7 DAYS FROM INSTALLATION. TURN THE ENDS OF THE FENCE UPHILL APPROXIMATELY 2 FEET. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED, OR WIRED TO THE FENCE, AND 8 INCHES OF THE FABRIC SHALL EXTEND INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES. WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED, OR WIRED DIRECTLY TO THE POSTS. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE TOE OF THE FILTER FABRIC.

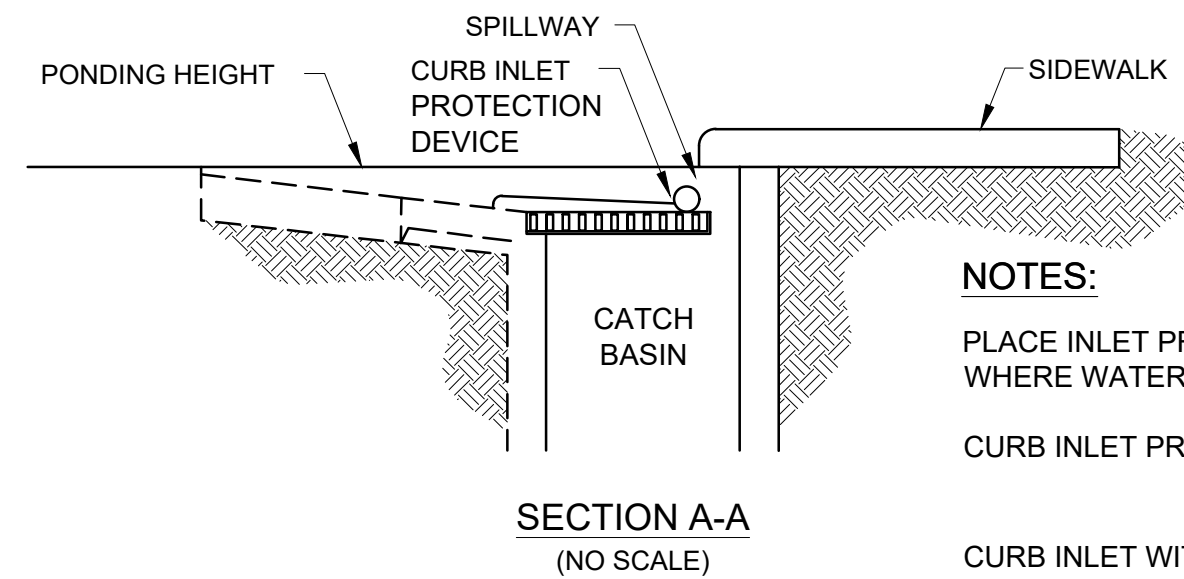
**INSPECTION AND MAINTENANCE:**

FILTER FABRIC FENCES PLACED AT THE TOE OF A SLOPE SHALL BE SET AT LEAST 10 FEET FROM THE TOE IN ORDER TO INCREASE PONDING VOLUME. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAS BEEN PERMANENTLY STABILIZED AND SEDIMENT STORED BEHIND THE FILTER FABRIC FENCE HAS BEEN REMOVED.

FILTER FABRIC FENCES AND FILTER BARRIERS SHALL BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICANT STORM (1/2" IN 24 HOURS). ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3± HEIGHT OF THE FENCE (9 INCHES MAXIMUM). FILTER FABRIC FENCES SHALL BE REPLACED WHEN THE FENCE IS NO LONGER DETAINING WATER FOR SEDIMENTATION.



**CURB INLET PROTECTION DEVICE (CI)**  
(NO SCALE)



**NOTES:**

PLACE INLET PROTECTION DEVICES ON GENTLY SLOPING STREET SEGMENTS WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF

CURB INLET PROTECTION DEVICES SHALL BE PRE-MANUFACTURED DEVICES.

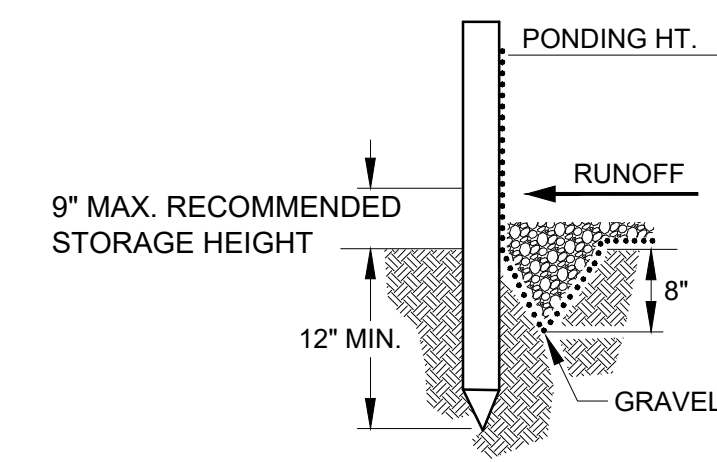
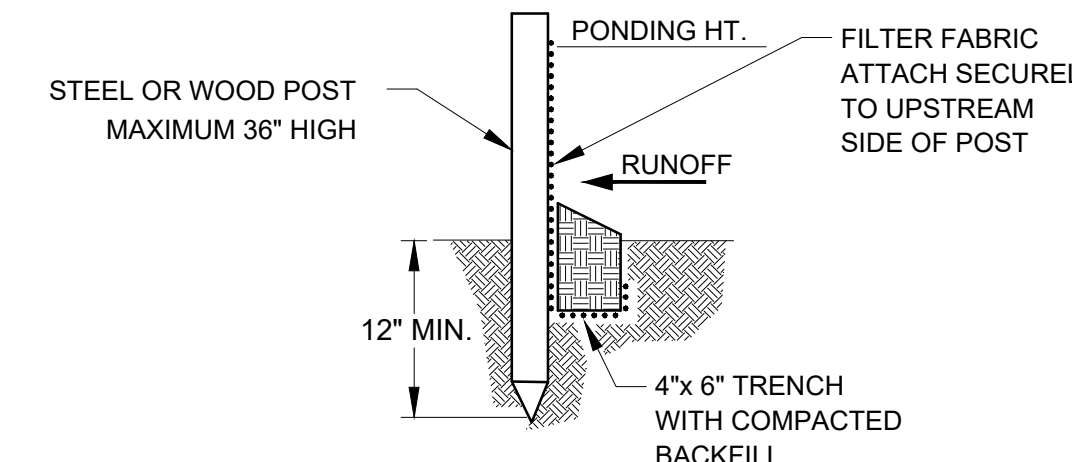
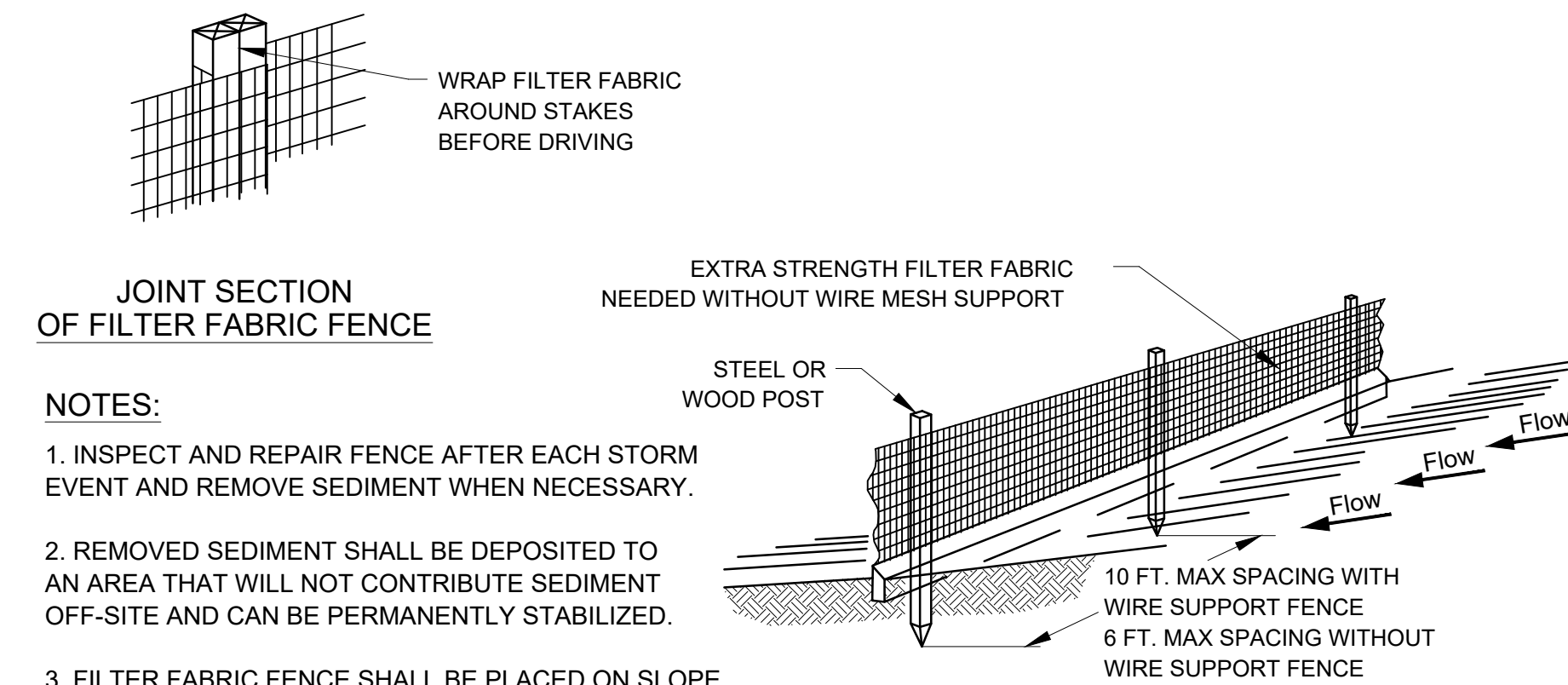
CURB INLET WITH GRATE (CI): DANDY BAG BEAVER DAM, CURB SACK, CURB BAG, OR APPROVED EQUAL.

CURB INLET WITHOUT GRATE (CI): DANDY BAG TRUE DAM, FILTEREX-FILTERSOXX, NATIONAL INLET PROTECTION INLET GUARD OR APPROVED EQUAL.

ROADSIDE GRATE INLET (RI): ULTRATECH ULTRA GRATE GUARD PLUS, FLEXSTORM-INLET FILTER, KRISTAR-FLOWGUARD PLUS, FABCO-STORMSAK, UNITED LABORATORIES-DRAIN DRAGON OR APPROVED EQUAL

**INSPECTION AND MAINTENANCE:**

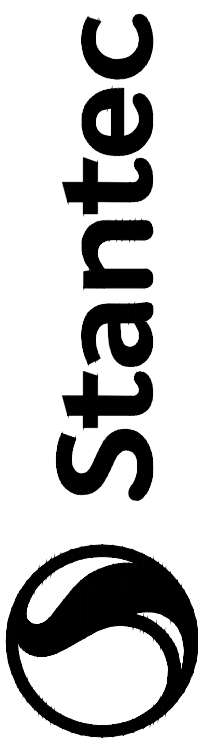
- INSPECT THE DEVICES AFTER EACH RAIN AND PROMPTLY REPLACE AS NEEDED. SEDIMENT SHALL BE REMOVED AFTER EACH SIGNIFICANT STORM (1/2" IN 24 HOURS) TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN.
- SEDIMENT SHALL BE IMMEDIATELY REMOVED FROM THE TRAVELED WAY OF ROADS. THE REMOVED SEDIMENT SHALL BE PLACED WHERE IT CANNOT ENTER A STORM DRAIN, STREAM, OR BE TRANSPORTED OFF SITE.



**INLET PROTECTION (CI OR RI):**

**CONSTRUCTION SPECIFICATIONS:**

INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS, OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL. PLACE THE PROTECTION DEVICES ON GENTLY SLOPING STREETS WHERE WATER CAN POND. THE DEVICES MUST ALLOW FOR OVERFLOW FROM A SEVERE STORM EVENT. SLOPE RUNOFF SHALL BE ALLOWED TO FLOW OVER DEVICE AND NOT BE BYPASSED OVER THE CURB.



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Revision	By	Appd.	Y1.MM.DD
3	100% DESIGN	DD	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	DD	2021.05.14
			Y1.MM.DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS

HANCOCK COUNTY, OHIO  
SWPPP DETAILS

Issue Stamp

Project Number: 174316204

File Name: 28 SWPPP DETAILS.dwg

CJ	DD	TC
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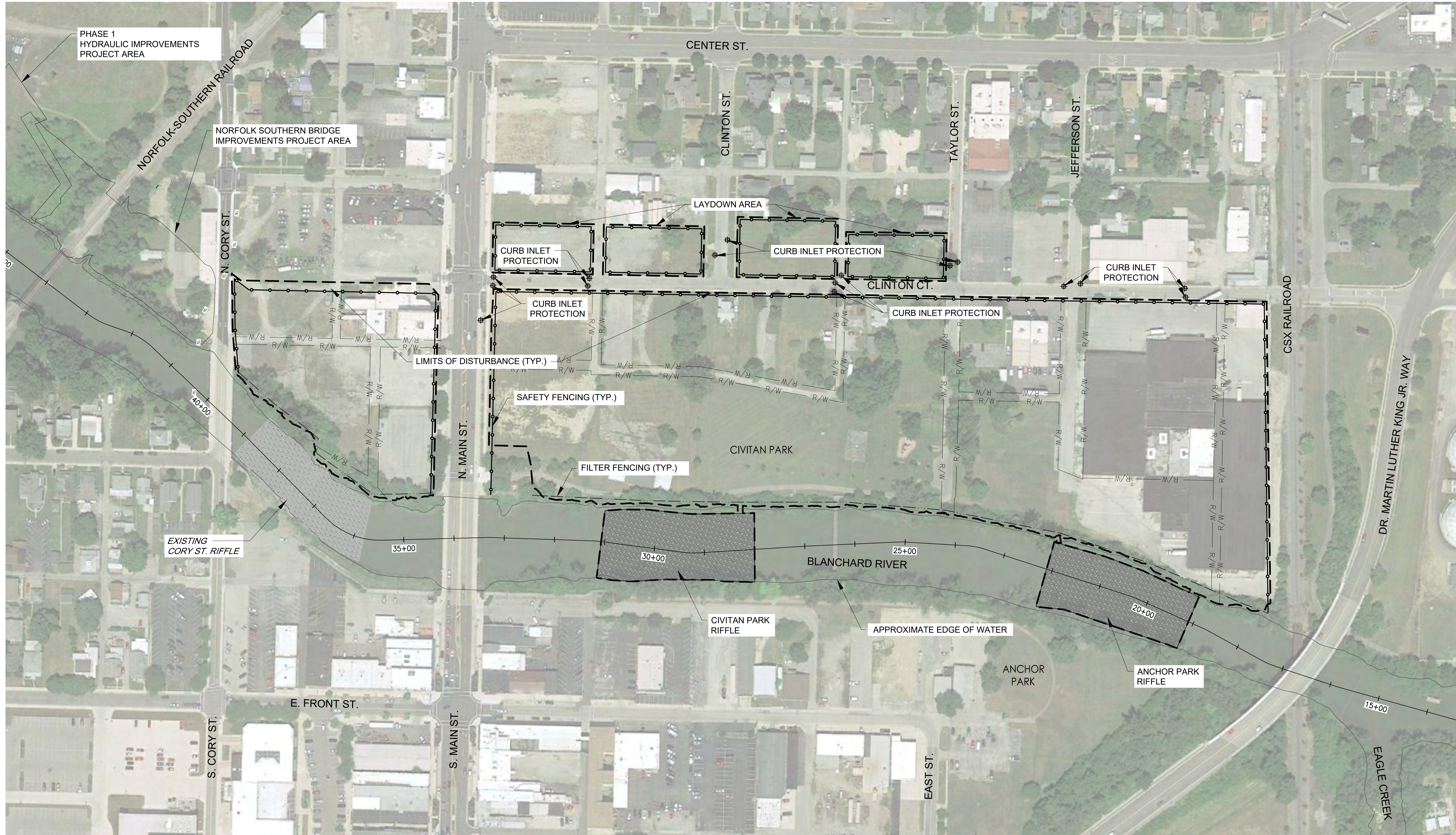
Revision Sheet

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Save Date: 2023/08/04 11:33 PM. Login: jgms, Curtis  
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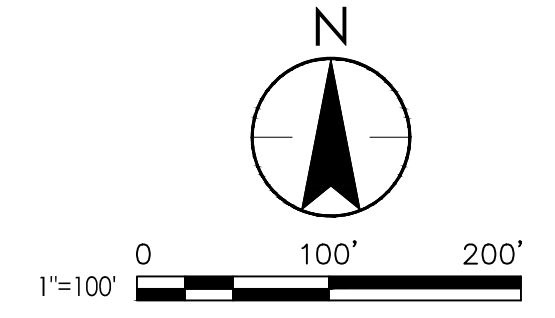


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**LEGEND**

- LIMITS OF DISTURBANCE
- - - FILTER FENCING
- SAFETY FENCING
- ⊕ CURB INLET PROTECTION DEVICE



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1	60% DESIGN	CJ	2021.05.14
ISSUED			Y1.MM.DD

Client/Project  
 MAUMEE WATERSHED CONSERVANCY DISTRICT

Title  
 SWPPP CONSTRUCTION BMP PLAN

Project Number: 174316204

File Name: 21_SWPPP_CONSTRUCTION_BMP_PLAN.dwg

Dwn. Chkd. Dgn.

Revision Sheet

0 29 of 57

Issue Stamp

Project Number: 174316204

File Name: 21_SWPPP_CONSTRUCTION_BMP_PLAN.dwg

Dwn. Chkd. Dgn.

Revision Sheet

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**GENERAL:**

- THE LEGEND, ABBREVIATIONS, AND LAP SPLICE AND EMBEDMENT TABLES ON THIS SHEET PROVIDE A COMPREHENSIVE STANDARD GUIDE FOR GENERAL USE ON ALL PROJECTS. THEREFORE NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED, AS APPROPRIATE, FOR CLARIFICATION ONLY.
- QUALITY OF CONSTRUCTION REQUIRED, PERFORMANCE LEVELS OF WORKMANSHIP, MANUFACTURING AND INDUSTRY STANDARDS, STRENGTH AND PHYSICAL REQUIREMENTS OF MATERIALS, CONFORMANCE TO CODES AND REGULATIONS, GUARANTEES AND OTHER PROJECT REQUIREMENTS ARE SPECIFIED IN THE PROJECT MANUAL.
- IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE BETTER QUALITY AND/OR GREATER QUANTITY, STRENGTH OR SIZE INDICATED, SPECIFIED, OR NOTED SHALL BE PROVIDED.
- PERFORM ALL WORK IN COORDINATION WITH ALL DRAWINGS AND INFORMATION RELATED TO STRUCTURAL WORK. ANY CHANGES TO THE EQUIPMENT REQUIRING CHANGES TO THE STRUCTURAL SYSTEMS SHALL BE REDESIGNED BY A PROFESSIONAL ENGINEER AT NO COST TO THE OWNER AND SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD. SUBMITTAL SHALL BE APPROVED IN WRITING BEFORE BEGINNING CONSTRUCTION.
- IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.
- 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 SPECIFIED 28 DAY COMPRESSIVE STRENGTH. OVERLOADING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.
- DURING CONSTRUCTION, STRUCTURES MAY BE BUOYANT WHEN EMPTY. IN THE EVENT THAT THE EXCAVATION BECOMES FLOODED OR THE SURROUNDING GROUND BECOMES SATURATED ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT FLOATATION OF THE STRUCTURE.
- ALL DIMENSIONS AND ELEVATIONS NOTED THUS (±) ON STRUCTURES SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD OR WITH THE EQUIPMENT MANUFACTURER AND SHALL CONFORM TO THOSE SHOWN ON OTHER DRAWINGS.
- STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE COORDINATED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANCHOR SIZES, TYPES, AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL ANCHORS PATTERNS SHALL BE TEMPLATED TO ENSURE ACCURACY OF PLACEMENT.
- MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED FOR PRIOR TO PLACING CONCRETE.
- ALL LOADS, UNLESS OTHERWISE NOTED, SHOWN ON THE STRUCTURAL DRAWINGS ARE SERVICE LOADS AND ARE TO BE CONSIDERED MINIMUM MEMBER DESIGN FORCES.
- ON ALL STRUCTURAL DRAWINGS THE FINISHED GRADE AROUND STRUCTURES IS SHOWN THUS, *//////* INDICATING EITHER GROUND SURFACE, TOP OF CONCRETE SLAB, OR ASPHALT CONCRETE PAVEMENT. FOR DETAILS OF FINISH SURFACES SEE CIVIL AND ARCHITECTURAL DRAWINGS.

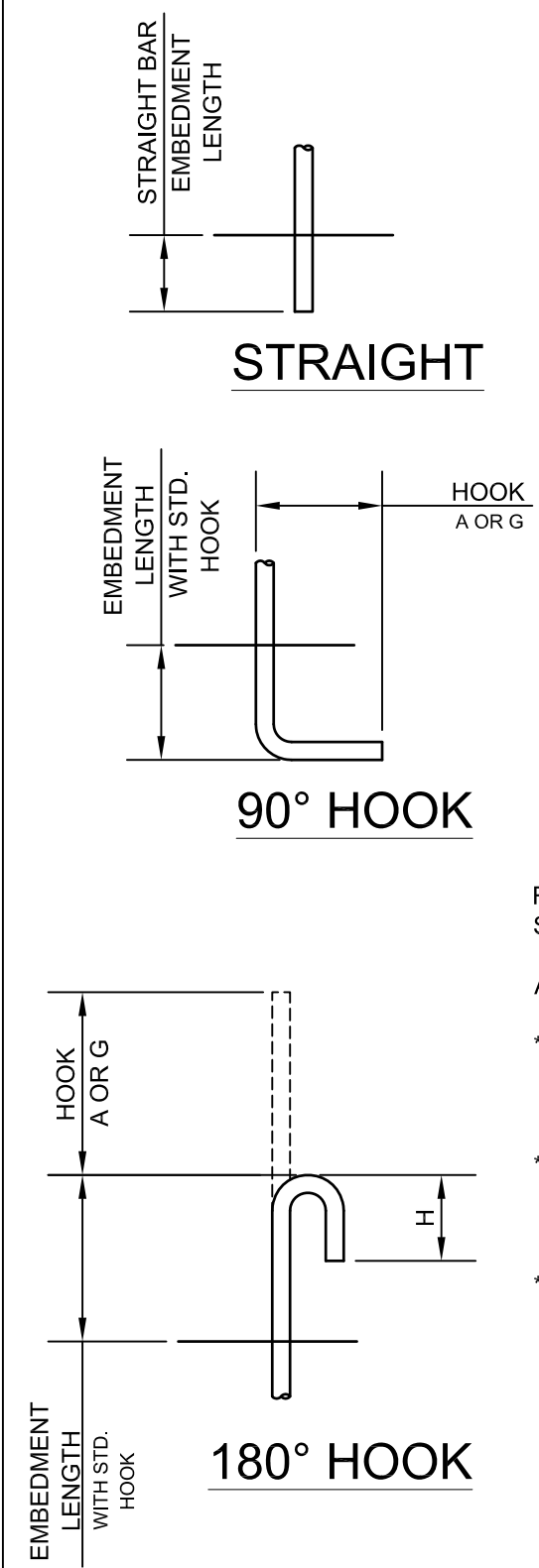
**DEFERRED SUBMITTALS:**

- DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH ARE PROVIDED BY THE CONTRACTOR AND THEREFORE WERE NOT SUBMITTED AT THE TIME OF THE PERMIT APPLICATION, AND WHICH ARE TO BE SUBMITTED TO THE PERMITTING AGENCY PRIOR TO FABRICATION OR INSTALLATION OF THAT PORTION OF THE WORK.
- NO WORK OR FABRICATION SHALL BE PERFORMED FOR DEFERRED SUBMITTAL ITEMS UNTIL THE PLANS FOR SUCH WORK HAVE BEEN REVIEWED AND FOUND ACCEPTABLE BY THE ENGINEER.
- DRAWINGS AND CALCULATIONS FOR THESE ITEMS SHALL BE SIGNED AND SEALED BY A LICENSED OHIO PROFESSIONAL ENGINEER.
- THE DEFERRED SUBMITTALS SHALL INCLUDE AS A MINIMUM, BUT NOT BE LIMITED TO THE FOLLOWING ITEMS:

SPECIFICATION SECTION	ITEM
05525	ALUMINUM HANDRAILS AND RAILING

**GENERAL DESIGN CRITERIA:**

- DESIGN IN ACCORDANCE WITH THE 2017 OHIO BUILDING CODE (2017 OBC).
- LOADING/DESIGN CRITERIA:
  - FLOOR LIVE LOADS:
    - UNIFORM LIVE LOAD (PSF): 100(UON)
    - TRAFFIC LOAD (PSF): H10
    - IMPACT LOAD (% OF TRAFFIC LOAD): 33%
  - ROOF LIVE LOADS:
    - ROOF LIVE LOADS (PSF): N/A
  - SNOW LOADS:
    - GROUND SNOW LOAD (Pg) (PSF): 20
    - FLAT-ROOF SNOW LOAD (Pf) (PSF): 20
    - SNOW EXPOSURE FACTOR (Ce): 0.9
    - SNOW LOAD IMPORTANCE FACTOR (Is): 1.0
    - THERMAL FACTOR (Ct): 1.2
  - WIND LOADS:
    - ULTIMATE WIND SPEED (Vu) (3 SEC-MPH): 115
    - NOMINAL WIND SPEED (Vasd) (3 SEC-MPH): 89
    - RISK CATEGORY: II
    - WIND EXPOSURE: C
    - INTERNAL PRESSURE COEFFICIENT: N/A
    - COMPONENTS AND CLADDING: N/A
  - SEISMIC LOADS:
    - RISK CATEGORY: II
    - SEISMIC IMPORTANCE FACTOR (Ie): 1.00
    - MAPPED SPECTRAL RESPONSE (Ss): 0.141g
    - MAPPED SPECTRAL RESPONSE (S1): 0.06g
    - SITE CLASS: D
    - DESIGN SPECTRAL RESPONSE (Sps): 0.151g
    - DESIGN SPECTRAL RESPONSE (Sp1): 0.096g
    - SEISMIC DESIGN CATEGORY: B
    - BASIC SEISMIC FORCE RESISTING SYSTEM: ALL OTHER NON-BUILDING STRUCTURES
    - DESIGN BASE DESIGN BASE DESIGN BASE
    - DESIGN BASE SHEAR: CsxW
    - SEISMIC RESPONSE COEFFICIENT (Cs): 0.12
    - RESPONSE MODIFICATION COEFFICIENT (R): 1.25
    - ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
  - SOIL DESIGN CRITERIA:
    - NET ALLOWABLE BEARING PRESSURE (PSF):
      - ALL STRUCTURES (UON): 1500
      - FROST DEPTH (INCHES): 42
      - COEFFICIENT OF FRICTION CONCRETE ON SUBGRADE MATERIAL: 0.6
      - GROUNDWATER DESIGN ELEVATION: TOP OF GRADE
    - LATERAL EARTH PRESSURE DESIGN DATA: (BASED ON EXISTING SOIL SATURATED UNIT WEIGHT)
      - SOIL UNIT WEIGHT (PCF): 115
      - AT-REST COEFFICIENT (Ka): 0.5
      - LIVE LOAD SURCHARGE (PSF): 250
  - FLOOD DESIGN CRITERIA:
    - ALL STRUCTURES LOCATED WITHIN FLOOD ZONE AE BASED ON FIRM MAP 39063C0217E, REVISED JUNE 2, 2011.
  - SPECIAL LOADS: NONE



BAR SIZE	REINFORCEMENT LAP SPLICE, EMBEDMENT LENGTH, AND STANDARD HOOKS											
	MIN. LAP LENGTHS FOR				MIN. EMBEDMENT LENGTHS				MIN. STD. HOOKS			
	BEAMS AND COLUMNS *		SLABS AND WALLS **		FOR BEAMS AND COLUMNS *		FOR SLABS AND WALLS **		WITH STD. HOOKS	90°		180°
	CLASS B	CLASS B	TOP***	OTHERS	TOP***	OTHERS	TOP***	OTHERS		A OR G	A OR G	H
#3	23	18	16	16	18	14	12	12	7	6	5	4
#4	31	24	19	16	24	18	14	12	9	8	6	4.5
#5	38	30	23	18	30	23	18	14	12	10	7	5
#6	46	35	28	21	35	27	21	17	14	12	8	6
#7	67	51	40	31	51	40	31	24	16	14	10	7
#8	76	59	46	35	59	45	35	27	18	16	11	8
#9	86	66	57	44	66	51	44	34	21	20	15	10.5
#10	96	74	70	54	74	57	54	42	23	22	17	11.75
#11	107	82	84	65	82	64	65	50	26	24	19	13

REINFORCEMENT LAP SPLICE, EMBEDMENT LENGTH AND STANDARD HOOKS TABLE IS BASED ON ACI 318-14 WITH A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 5,000 PSI AND 60,000 PSI REINFORCING (WITH NO EPOXY COATING).

ALL LAP SPLICES SHALL BE CLASS B SPLICES.

* THE MINIMUM LAP LENGTH FOR BEAMS, COLUMNS AND STRAIGHT EMBEDMENTS ARE BASED ON A 3 BAR DIAMETER MINIMUM CENTER TO CENTER BAR SPACING AND A 2 INCH BAR COVER. IF THE SPLICE AND/OR EMBEDMENT DOES NOT CONFORM TO THESE REQUIREMENTS, THEN THE CONTRACTOR SHALL APPLY APPROPRIATE FACTORS IN COMPLIANCE WITH ACI 318 WITH APPROVAL BY ENGINEER.

** THE MINIMUM LAP LENGTH FOR SLABS, WALLS, AND STRAIGHT EMBEDMENTS ARE BASED ON A 6 INCH BAR SPACING AND A 2 INCH BAR COVER. IF THE LAP CONDITION DOES NOT CONFORM TO THESE REQUIREMENTS, THEN USE BEAM LAP LENGTHS; OR COMPLY WITH LAP REQUIREMENTS OF ACI 318 WITH APPROVAL BY ENGINEER.

*** TOP BARS ARE DEFINED AS ALL HORIZONTAL BARS, EXCLUDING WALL BARS, WITH 12" OR MORE FRESH CONCRETE BENEATH.

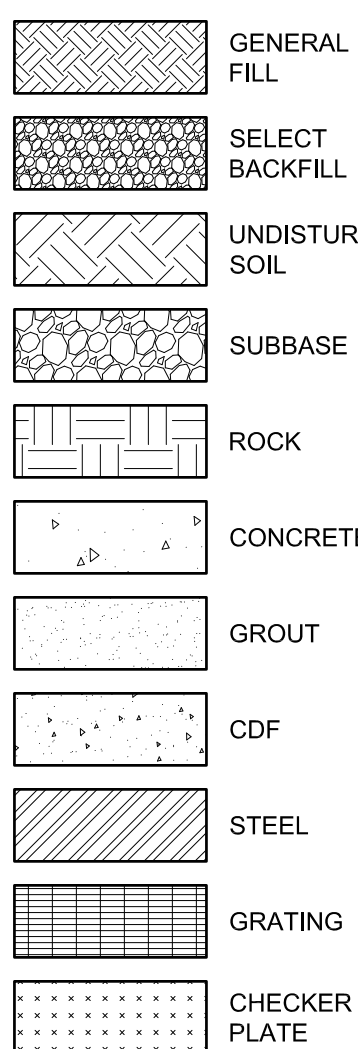
WHERE SPLICES ARE REQUIRED BETWEEN BARS OF DIFFERENT SIZES, THE LAP LENGTH SHALL BE NO LESS THAN THE EMBEDMENT LENGTH OF THE LARGER BAR OR THE LAP LENGTH OF THE SMALLER BAR, WHICHEVER IS GREATER.

IN CIRCULAR TANKS DESIGNED FOR RING TENSION, THE LOCATION OF SPLICES SHOULD BE STAGGERED. ADJACENT HOOP REINFORCING SPLICES SHOULD BE STAGGERED HORIZONTALLY (CENTER OF LAP BY NOT LESS THAN ONE LAP LENGTH NOR 3 FEET AND SHOULD NOT COINCIDE IN VERTICAL ARRAYS MORE FREQUENTLY THAN EVERY THIRD BAR.

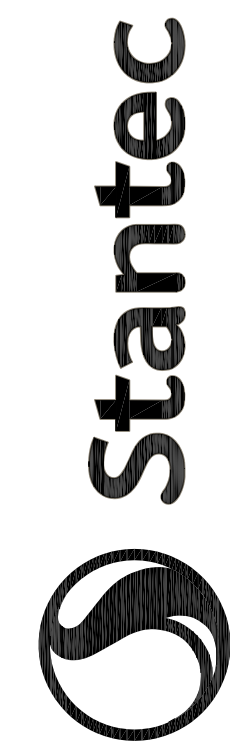
**LAP SPLICE AND EMBEDMENT LENGTH TABLE**

ACI	-	AMERICAN CONCRETE INSTITUTE	EW	-	EACH WAY	PL	-	PLATE
ADD'L	-	ADDITIONAL	EQ.	-	EQUAL	PC.	-	PRECAST
ADJ.	-	ADJUSTABLE	EXIST.	-	EXISTING	PCF	-	POUNDS PER CUBIC FOOT
ALT.	-	ALTERNATE	EXP.	-	EXPANSION	PSF	-	POUNDS PER SQUARE FOOT
ALUM.	-	ALUMINUM	FDN.	-	FOUNDATION	PEMB	-	PRE-ENGINEERED MANUFACTURED BUILDING
ANCH.	-	ANCHOR	FIN.	-	FINISH	R.	-	RADIUS
AR	-	ANCHOR ROD	FL.	-	FINISH LINE	R.	-	RISER
ARCH.	-	ARCHITECT OR ARCHITECTURAL	FLR.	-	FLOOR	REINF.	-	REINFORCING
ASTM	-	AMERICAN SOCIETY FOR TESTING MATERIALS	FF	-	FAR FACE	REQ'D	-	REQUIRED
BEW	-	BOTTOM EACH WAY	FG	-	FINISHED GRADE	RM.	-	ROOM
BITUM.	-	BITUMINOUS	FTG.	-	FOOTING	S.	-	SOUTH
B/	-	BOTTOM OF	FT.	-	FOOT	SEC.	-	SECOND
B OR	-	BOTTOM	GA.	-	GAGE	SECT.	-	SECTION
BOT.	-	BOTTOM	GALV.	-	GALVANIZED	SF	-	SQUARE FEET
BLK.	-	BLOCK	GR.	-	GRADE	SHT.	-	SHEET
BM.	-	BEAM	GRD.	-	GROUND	SIM.	-	SIMILAR
B PL	-	BASE PLATE	HEF	-	HORIZONTAL EACH FACE	SJ	-	STEEL JOIST
BRG.	-	BEARING	H OR	-	HORIZONTAL	SLBB	-	SHORT LEG BACK TO BACK
BT PL.	-	BENT PLATE	H ORZ.	-	HORIZONTAL	SLV	-	SHORT LEG VERTICAL
C/C	-	CENTER TO CENTER	HP	-	HIGH POINT	SPA.	-	SPACE OR SPACING
CDF	-	CONTROLLED DENSITY FILL	HT.	-	HEIGHT	SPRD.	-	SPREAD
CJ	-	CONSTRUCTION JOINT	HS	-	HIGH STRENGTH	ST STL	-	STAINLESS STEEL
CTJ	-	CONTRACTION JOINT	ID	-	INSIDE DIAMETER	STA.	-	STATION
C	-	CENTERLINE	IF	-	INSIDE FACE	STD.	-	STANDARD
CLR.	-	CLEAR	INT.	-	INTERIOR	STL.	-	STEEL
CMU	-	CONCRETE MASONRY UNIT	INV.	-	INVERT	STR.	-	STRUCTURAL
COL.	-	COLUMN	INSUL.	-	INSULATION	SUP.	-	SUPPORT
CTR.	-	CENTER	JT.	-	JOINT	SYM.	-	SYMMETRICAL
CONC.	-	CONCRETE	K.	-	KIP (1000 POUNDS)	T.	-	TREAD
CONSTR.	-	CONSTRUCTION	KB	-	KNEE BRACE	T/	-	TOP OF
CONT.	-	CONTINUOUS	LB.	-	POUNDS	T&B	-	TOP AND BOTTOM
CONTL.	-	CONTROL	LL	-	LIVE LOAD	TEMP.	-	TEMPORARY
DEPR.	-	DEPRESSION	LLBB	-	LONG LEG BACK TO BACK	THK.	-	THICK
DET.	-	DETAIL	LLV	-	LONG LEG VERTICAL	TOC	-	TOP OF CONCRETE
DIA.	-	DUCTILE IRON	LONG.	-	LONGITUDINAL	TOS	-	TOP OF STEEL
DIA.	-	DIAMETER	LP	-	LOW POINT	TYP.	-	TYPICAL
DIM.	-	DIMENSION	MFG.	-	MANUFACTURER	UON	-	UNLESS OTHERWISE NOTED
DL	-	DEAD LOAD	MAX.	-	MAXIMUM	VEF	-	VERTICAL EACH FACE
DP.	-	DEEP	MID.	-	MIDDLE	V OR	-	VERTICAL
DIST.	-	DISTANCE	MIN.	-	MINIMUM	VERT.	-	VERTICAL
DWG.	-	DRAWING	MPH	-	MILES PER HOUR	W.	-	WITH
DWL.	-	DOWEL	NA	-	NOT APPLICABLE	W/	-	WEST
EA.	-	EACH	N.	-	NORTH	W/O	-	WITHOUT
EE	-	EACH END	NF	-	NEAR FACE	WP	-	WORK POINT
EF	-	EACH FACE	NTS	-	NOT TO SCALE	WS.	-	WATERSTOP
EJ	-	EXPANSION JOINT	OC	-	ON CENTER	WT.	-	WEIGHT
EL.	-	ELEVATION	OD	-	OUTSIDE DIAMETER	WWR	-	WELDED WIRE REINFORCEMENT
ELEC.	-	ELECTRICAL	OH.	-	OVERHEAD		-	
E.	-	EAST	OPNG.	-	OPENING		-	
EMBED.	-	EMBEDDED	OPP.	-	OPPOSITE		-	

**LEGEND**



**STRUCTURAL ABBREVIATIONS**



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Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
STRUCTURAL NOTES, LEGEND, ABBREV., AND LAP TABLE

Issue Stamp

Project Number: 174316204

File Name:

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision Sheet

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**CAST-IN-PLACE CONCRETE:**

- CONCRETE SHALL HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS:
  - CLASS "A", 5,000 POUNDS PER SQUARE INCH (PSI) WITH ENTRAINED AIR FOR ALL CONCRETE (UON).
  - CLASS "AF", 5,000 POUNDS PER SQUARE INCH (PSI) WITH ENTRAINED AIR FOR ALL CONCETE PLACEMENTS THICKER THAN 16 INCHES.
  - CLASS "B", 3,000 POUNDS PER SQUARE INCH (PSI) WITH ENTRAINED AIR SHALL BE USED FOR CONCRETE FILL, DUCT BANKS, PIPE ENCASEMENTS, CURB AND GUTTERS, SIDEWALKS, TRUST BLOCKS OR WHERE SHOWN.
  - CLASS "D", 2,000 POUNDS PER SQUARE INCH (PSI) SHALL BE USED AS CONCRETE FILL UNDER FOUNDATION, FILLING ABANDONED PIPING, AND WHERE LEAN CONCRETE OR MUDMATS ARE REQUIRED.
- ALL CONCRETE WORK NOT COVERED UNDER ACI 350 SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" ACI 318. TOLERANCES SHALL BE IN ACCORDANCE WITH ACI 117.
- ALL REINFORCING STEEL SHALL BE NEW (NON-EXOXY COATED) DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A615 GRADE 60.
- ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS, UNLESS OTHERWISE INDICATED, SHALL BE IN ACCORDANCE WITH THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE
- CONTRACTOR SHALL REVIEW ALL DRAWINGS FOR SIZE AND LOCATION OF EMBEDDED ITEMS, SLEEVE, AND SLAB DEPRESSIONS REQUIRED, THESE ITEMS SHALL BE FURNISHED AND INSTALLED PRIOR TO PLACEMENT OF CONCRETE.
- ALL BEAMS, SPANDRELS AND SLABS SHALL BE CAST MONOLITHICALLY, EXCEPT FOR REQUIRED CONSTRUCTION JOINTS. CONTRACTOR SHALL SUBMIT, FOR APPROVAL, ANY AND ALL ALTERNATE AND ADDITIONAL CONSTRUCTION JOINT LOCATIONS AND DETAILS.
- CONSTRUCTION JOINTS REQUIRED BY THE ENGINEER ARE SHOWN ON THE DRAWINGS. ADDITIONAL CONSTRUCTION JOINTS SHALL BE PROVIDED AS OUTLINED IN SPECIFICATIONS. REINFORCEMENT SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS. SUBMIT ALL CONSTRUCTION JOINT LOCATIONS WITH REINFORCING STEEL SHOP DRAWINGS.
- CONTRACTOR SHALL PROVIDE 3/4 INCH CHAMFER USING WOOD CHAMFER STRIPS ON ALL EXPOSED CORNERS OF COLUMNS, BEAMS AND WALL, OR AS REQUIRED TO MATCH EXISTING.
- COVER FOR REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING (UON):
 

TYPICAL REINFORCING BAR COVER TABLE	
CONCRETE CAST AGAINST EARTH	3 INCH
ALL OTHER SURFACES	2 INCH
- WELDING OF REINFORCING STEEL IS NOT PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
- CALCIUM CHLORIDE SHALL NOT BE PERMITTED NOR SHALL ANY ADMXTURE CONTAINING CALCIUM CHLORIDE BE PERMITTED THAT RESULTS IN A TOTAL CONCRETE MIX IN WHICH THE PRESENCE OF CHLORIDE IONS EXCEED 0.10 PERCENT BY WEIGHT OF CEMENT.
- ALUMINUM PIPE SHALL NOT BE USED WITH CONCRETE PUMPS.
- AS A MINIMUM, PROVIDE 6x6-W2.9xW2.9 WELDED WIRE REINFORCEMENT IN ALL SLABS ON GRADE (UON).
- DOWELS, PIPE, WATERSTOPS AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE WIRED OR OTHERWISE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED. THEY SHALL NOT BE SHOVED INTO FRESHLY PLACED CONCRETE.
- ALL GROUT SHALL BE NON-SHRINK GROUT (UON).
- REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM OF 2 INCH CLEARANCE SHALL BE PROVIDED AT ALL TIMES.

**ALUMINUM:**

- ALUMINUM SURFACES SHALL BE PREVENTED FROM COMING IN DIRECT CONTACT WITH CONCRETE, MASONRY OR WITH METALS NOT COMPATIBLE WITH ALUMINUM. CONTACT SURFACE SHALL BE COATED WITH A HEAVY COAT OF ALKAL-RESISTANT BITUMINOUS PAINT OR APPROVED EQUAL.

**STAINLESS STEEL:**

- ALL WELDED STAINLESS STEEL TO BE TYPE 304L OR 316L.

**POST-INSTALLED ANCHORS:**

- POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS.
- THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER OF RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS OR DOWELS.
- THE CONTRACTOR SHALL USE AN APPROPRIATE NON-DESTRUCTIVE REINFORCING BAR LOCATOR TO DETERMINE REBAR OR ANCHOR ROD LOCATIONS PRIOR TO DRILLING FOR POST-INSTALLED ANCHOR INSTALLATION. ADJUST ANCHOR HOLE LOCATIONS WHILE MAINTAINING MINIMUM REQUIRED DISTANCES IN ORDER TO MISS EXISTING REBAR AND ANCHOR RODS.
- ALL POST-INSTALLED ANCHORS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH A ROTARY IMPACT HAMMER DRILL.
- ANCHORS SHALL ONLY BE INSTALLED IN HOLES THAT ARE CONSIDERED, DRY, AS DEFINED BY THE ANCHOR MANUFACTURER.

**INSPECTION OF SOILS**

- SPECIAL INSPECTION FOR SOIL WILL BE IN ACCORDANCE WITH IBC SECTION 1705.6 AND THE FOLLOWING TABLE.

VERIFICATION AND INSPECTION	INSPECTION	
	CONTINUOUS	PERIODIC
VERIFY MATERIALS BELOW FOOTINGS AND SHALLOW FOUNDATIONS ARE ADEQUATE USING ASTM WK27337 TO ACHIEVE THE DESIGN BEARING CAPACITY.	-	X
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-	X
PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.	-	X
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	X	-
PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	X

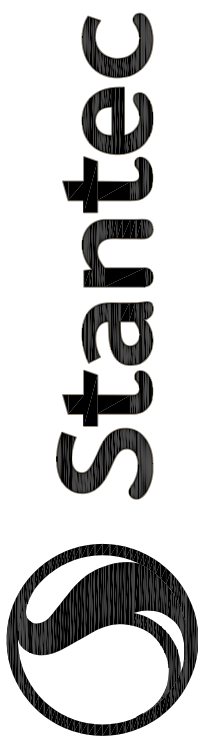
**INSPECTION OF CONCRETE CONSTRUCTION**

- SPECIAL INSPECTION FOR CONCRETE CONSTRUCTION WILL BE IN ACCORDANCE WITH 2018 IBC SECTION 1705.3 AND THE FOLLOWING TABLE.

VERIFICATION AND INSPECTION	INSPECTION		REFERENCED STANDARD (A)	IBC REFERENCE
	CONTINUOUS	PERIODIC		
INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.	-	X	ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
REINFORCING STEEL WELDING: <ol style="list-style-type: none"> <li>VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706;</li> <li>INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM $\frac{3}{16}$"; AND</li> <li>INSPECT ALL OTHER WELDS</li> </ol>	-	X	AWS D1.4 ACI 318: 26.6.4	-
INSPECTION OF ALL ANCHORS CAST IN CONCRETE.	-	X	ACI 318 - 17.8.2	-
INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS (B). <ol style="list-style-type: none"> <li>ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.</li> <li>MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED DEFINED BY PART A.</li> </ol>	X	-	ACI 318- 17.8.2.4	-
VERIFYING USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	1908.10
INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5	1908.9
ERECTION OF PRECAST CONCRETE MEMBERS	-	X	ACI 318: 26.9	-
INSPECTION OF PRESTRESSED CONCRETE: <ol style="list-style-type: none"> <li>APPLICATION OF PRESTRESSING FORCES.</li> <li>GROUTING OF BONDED PRESTRESSING TENDONS.</li> </ol>	X	-	ACI 318: 26.10	-
VERIFICATION OF IN-SITU CONCRETE STRENGTH PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 26.11.2	-
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 6.1.1, 26.11.1.2(B)	-

- (A) WHERE APPLICABLE, SEE ALSO IBC SECTION 1705.12. SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.
- (B) SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318 OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS WILL BE AS SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND WILL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO COMMENCEMENT OF THE WORK.

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3 100% DESIGN	JZ	EER	2022.04.08
2 90% DESIGN	JZ	EER	2021.08.13
1 60% DESIGN	JZ	EER	2021.05.14
Issued	By	Appd.	Y1.AM.DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
STRUCTURAL NOTES AND STATEMENT OF SPECIAL INSPECTION

Issue Stamp

Project Number: 174316204

File Name:

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision Sheet

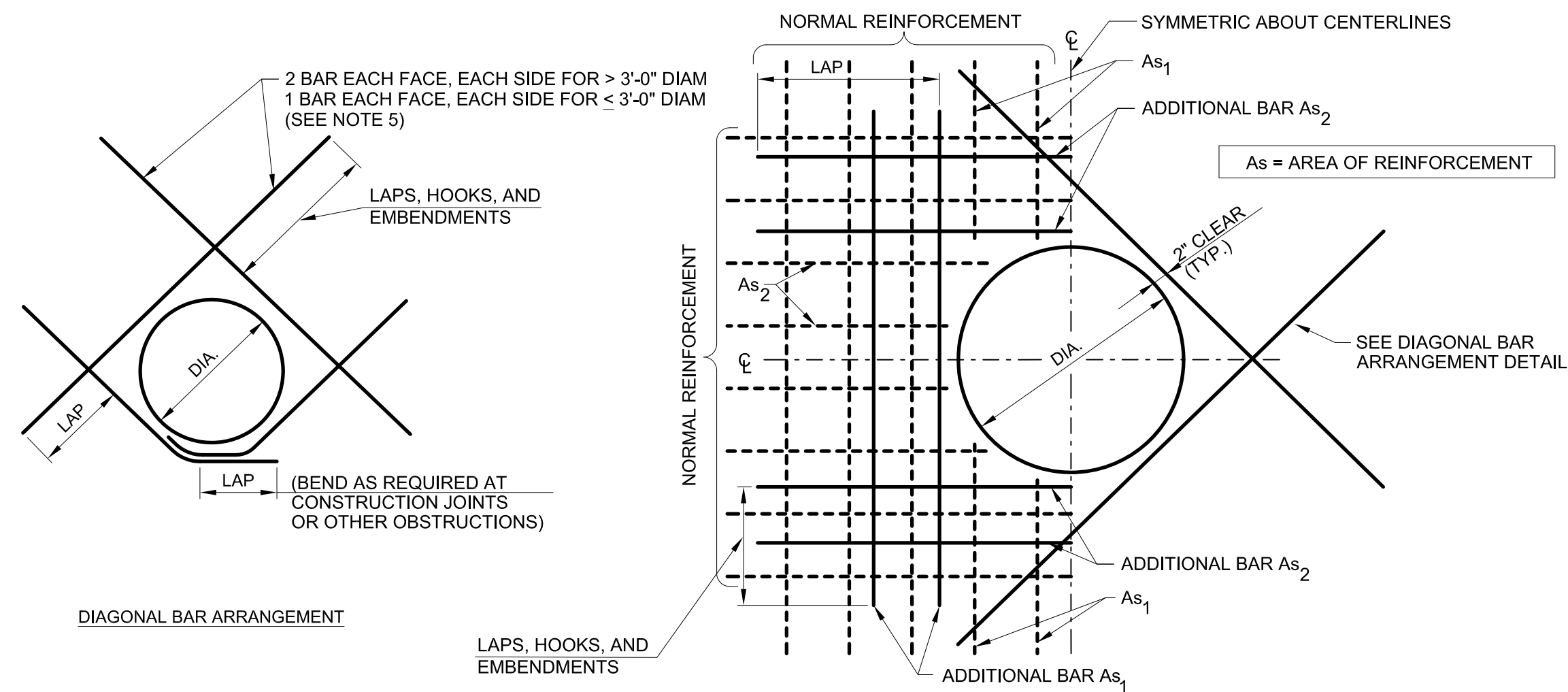
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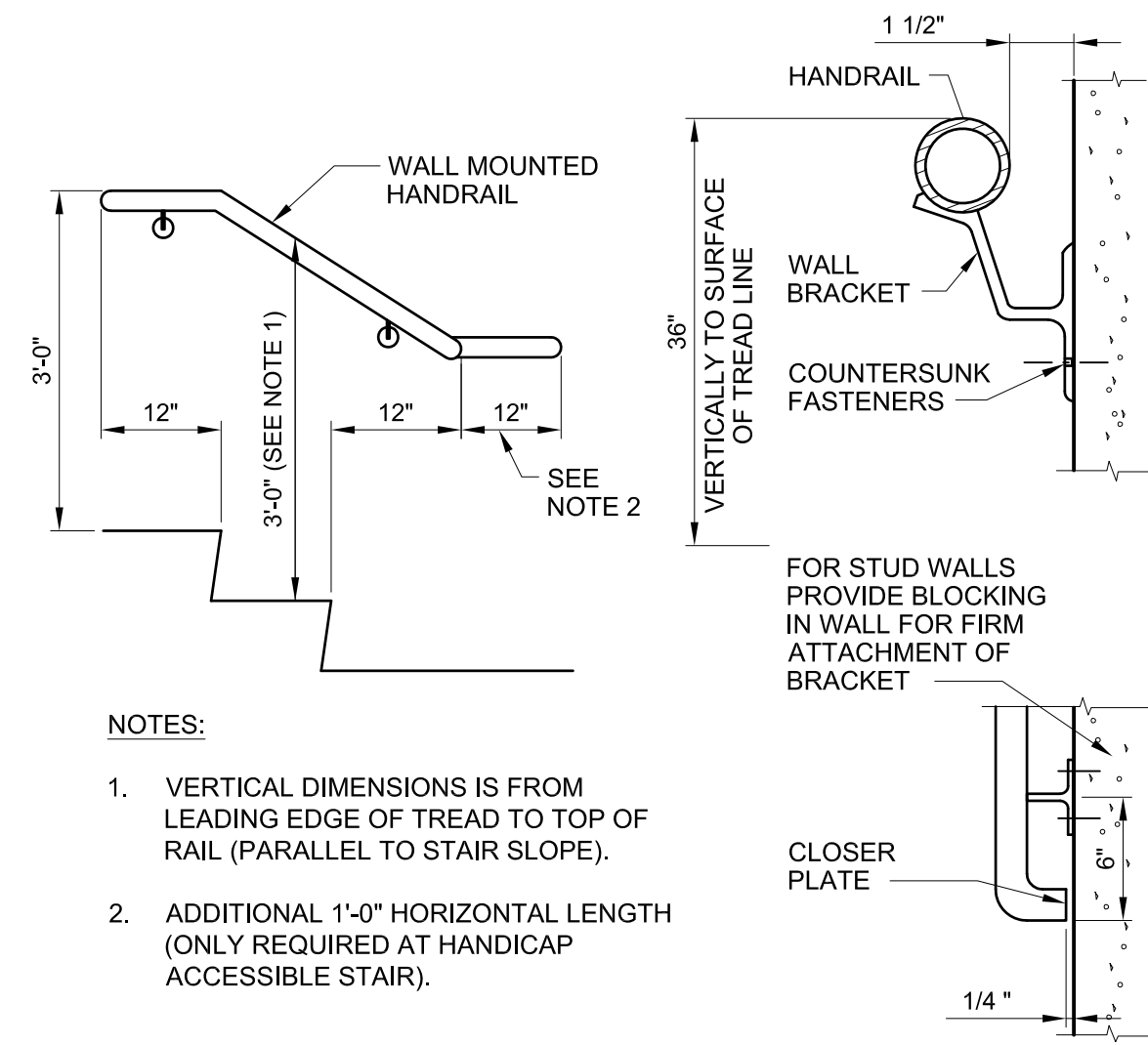




ADDITIONAL REINFORCEMENT AT CIRCULAR OPENINGS

NOTES:

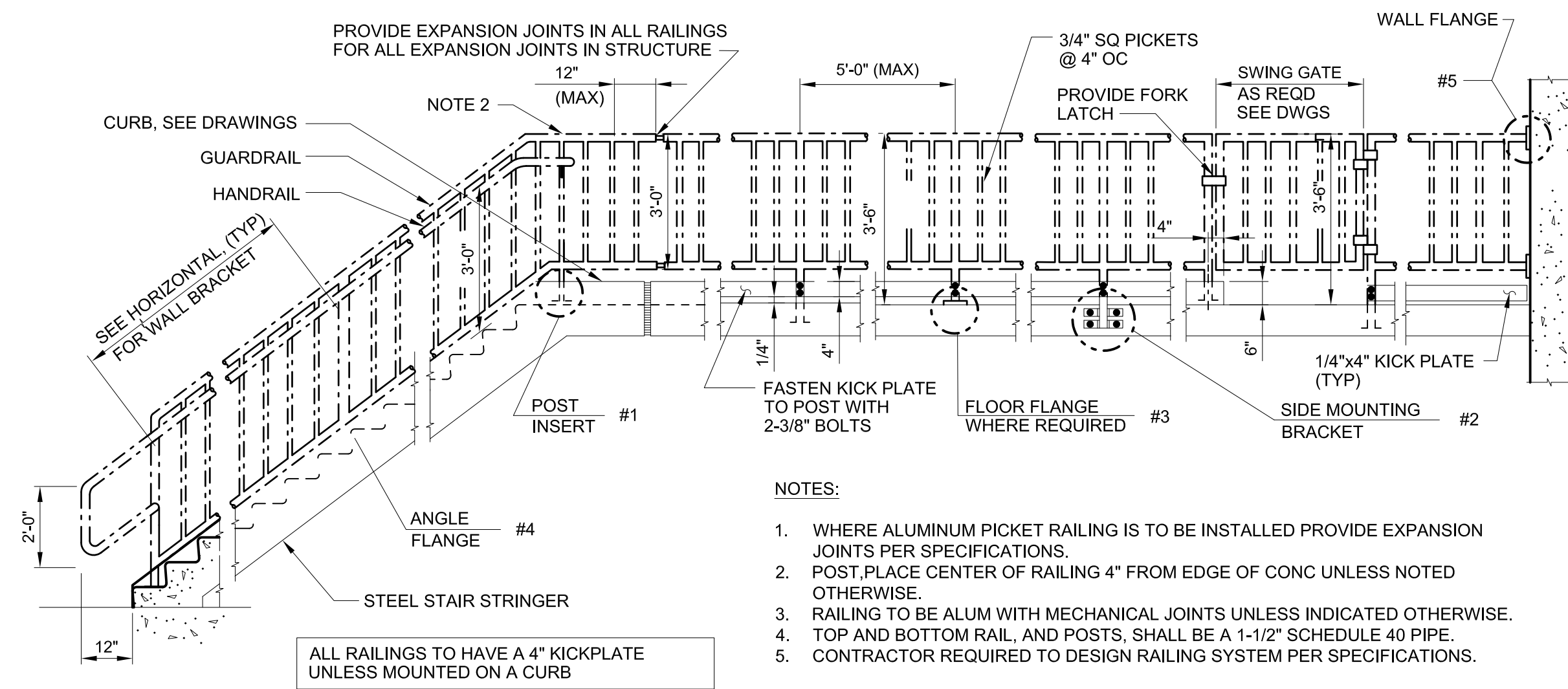
- THIS DETAIL TO BE USED AT ALL CIRCULAR OPENINGS EXCEPT WHEN OTHER DETAILING IS INDICATED ON THE DRAWINGS.
- CUT NORMAL REINFORCEMENT 2" CLEAR OF OPENING.
- CUT NORMAL REINFORCEMENT AT OPENINGS:
  - $A_{s1}$  AND  $A_{s2}$  = 1/2 AREA OF TOTAL CUT BARS TO BE ADDED ON EACH SIDE OF OPENING.
  - AT CENTERLINE OF WALLS OR SLABS WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED.
  - AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED.
- UNLESS OTHERWISE NOTED, SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINFORCING BAR CUT.
- INCREASE SIZE OF ADDITIONAL BARS AS NEEDED TO FIT WITHIN A DISTANCE OF 2X WALL/SLAB THICKNESS FROM OPENING, PROVIDE 2" MIN CLEAR BETWEEN BARS.
- WHERE A SLAB OR INTERSECTING WALL CONNECTS WITHIN ONE WALL THICKNESS OF THE OPENING, ADDITIONAL BARS ON THAT SIDE OF THE OPENING MAY BE OMITTED.
- WHEN THE LAP LENGTH OF THE ADDITIONAL BARS CANNOT BE ACHIEVED DUE TO AN ADJACENT WALL OR SLAB, ADDITIONAL CORNER BARS OR SLAB DOWELS, RESPECTIVELY, MATCHING THE CUT BARS, ARE TO BE INCLUDED IN THE ADJACENT WALL OR SLAB TO LAP WITH THE ADDITIONAL BARS.



NOTES:

- VERTICAL DIMENSIONS IS FROM LEADING EDGE OF TREAD TO TOP OF RAIL (PARALLEL TO STAIR SLOPE).
- ADDITIONAL 1'-0" HORIZONTAL LENGTH (ONLY REQUIRED AT HANDICAP ACCESSIBLE STAIR).

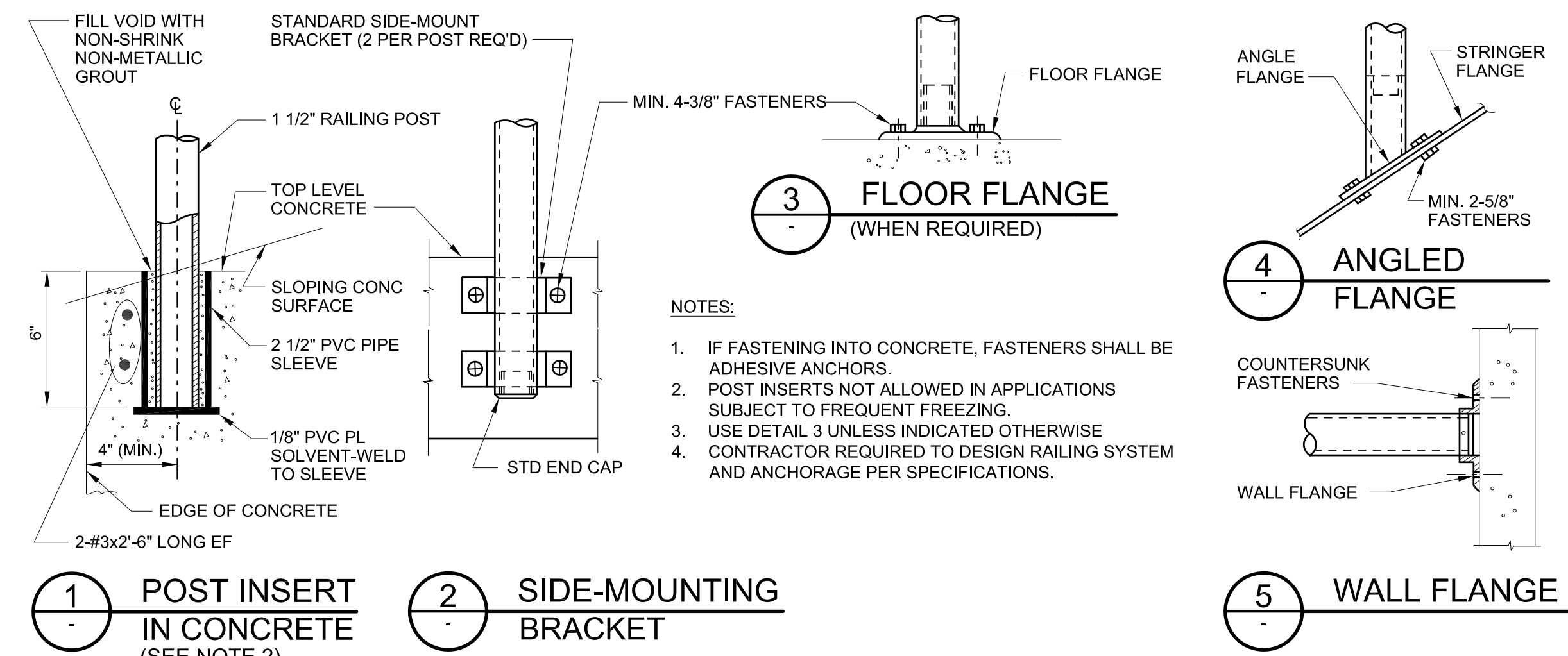
WALL MOUNTED HANDRAIL



NOTES:

- WHERE ALUMINUM PICKET RAILING IS TO BE INSTALLED PROVIDE EXPANSION JOINTS PER SPECIFICATIONS.
- POST, PLACE CENTER OF RAILING 4" FROM EDGE OF CONC UNLESS NOTED OTHERWISE.
- RAILING TO BE ALUM WITH MECHANICAL JOINTS UNLESS INDICATED OTHERWISE.
- TOP AND BOTTOM RAIL, AND POSTS, SHALL BE A 1-1/2" SCHEDULE 40 PIPE.
- CONTRACTOR REQUIRED TO DESIGN RAILING SYSTEM PER SPECIFICATIONS.

ALUMINUM PICKET RAILING



NOTES:

- IF FASTENING INTO CONCRETE, FASTENERS SHALL BE ADHESIVE ANCHORS.
- POST INSERTS NOT ALLOWED IN APPLICATIONS SUBJECT TO FREQUENT FREEZING.
- USE DETAIL 3 UNLESS INDICATED OTHERWISE.
- CONTRACTOR REQUIRED TO DESIGN RAILING SYSTEM AND ANCHORAGE PER SPECIFICATIONS.

RAILING, GUARDRAIL AND HANDRAIL SUPPORT

Revision	By	Appd.	Y/M/AM/DD
3	100% DESIGN	JZ	2022.04.08
2	90% DESIGN	JZ	2021.08.13
1	60% DESIGN	JZ	2021.05.14
			Y/M/AM/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
STRUCTURAL TYPICAL DETAILS 2 OF 2

Issue Stamp

Project Number: 174316204

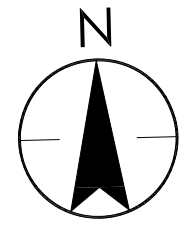
CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision Sheet

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EL. 765.51

PT. 1  
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EL. 765.44

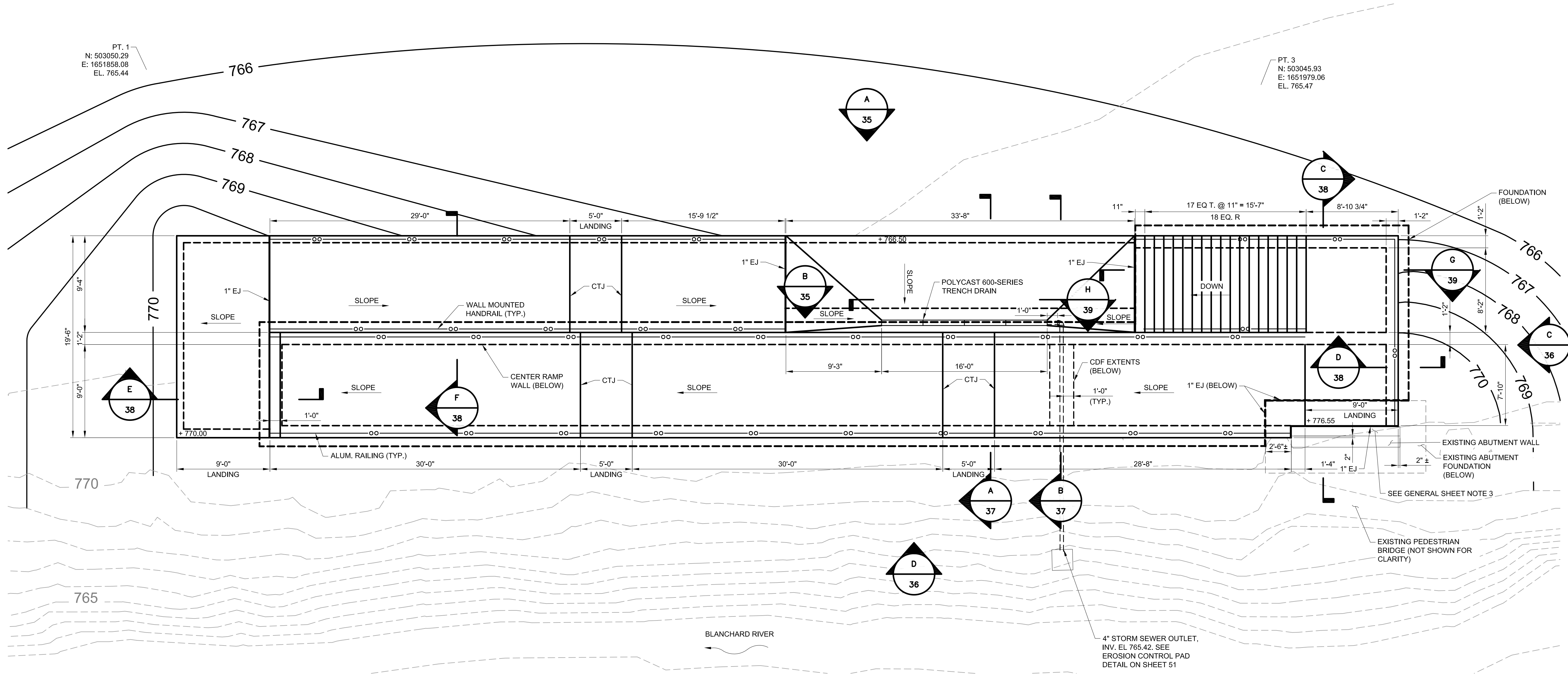
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EL. 765.47

**GENERAL SHEET NOTES**

- STRUCTURAL NOTES, STATEMENT OF SPECIAL INSPECTION AND TYPICAL DETAILS SEE SHEETS 30 THRU 33.
- ALL CONCRETE SHALL BE SLOPED TO DRAIN. MAXIMUM CROSS SLOPE SHALL BE 1:48 PER ADA REQUIREMENTS.
- REMOVE, STORE AND REINSTALL EXISTING PLATE USED TO PROVIDE SMOOTH TRANSITION FROM EXISTING PEDESTRIAN BRIDGE TO RAMP.

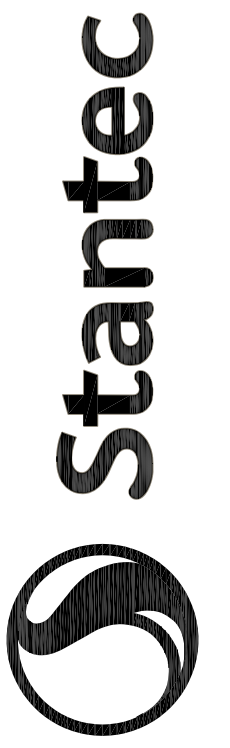
**LEGEND**

+ SPOT ELEVATION



**OVERALL SITE PLAN**

SCALE: 3/16" = 1'-0"



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3	JZ	EER	2022.04.08
2	JZ	EER	2021.08.13
1	JZ	EER	2021.05.14
			Yr./MM/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT  
HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO  
Title  
STRUCTURAL OVERALL SITE PLAN

Issue Stamp

Project Number: 174316204

File Name:

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Dwn.	Chkd.	Dsgn.

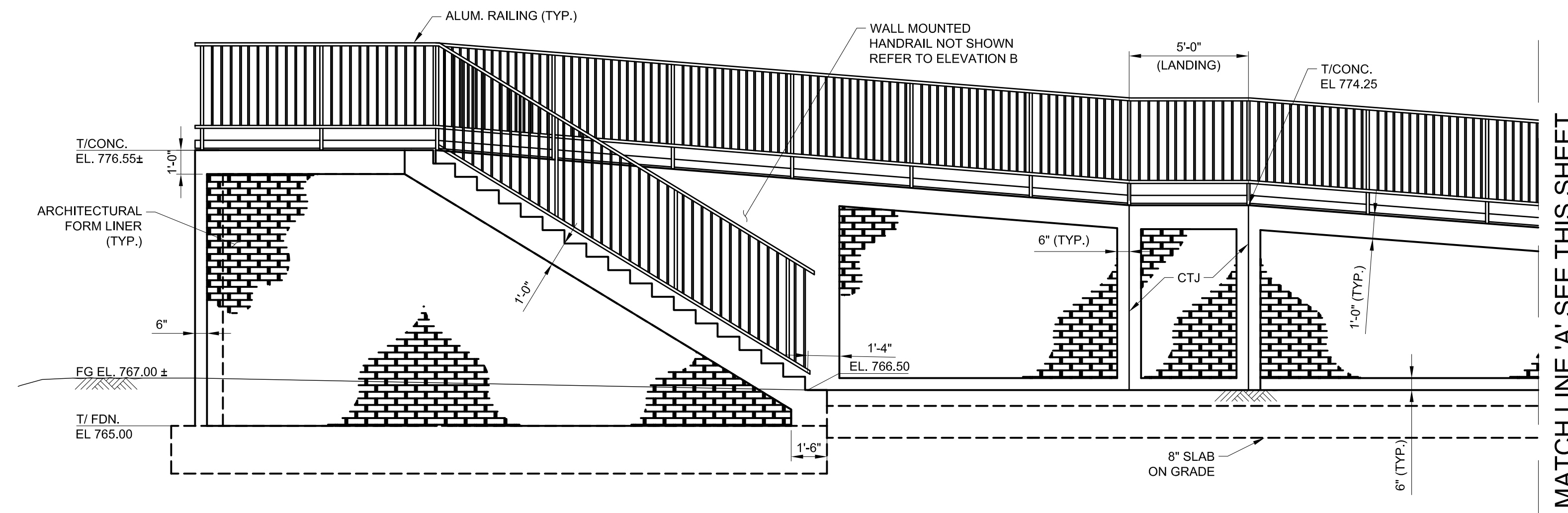
Revision Sheet

0 34 of 57

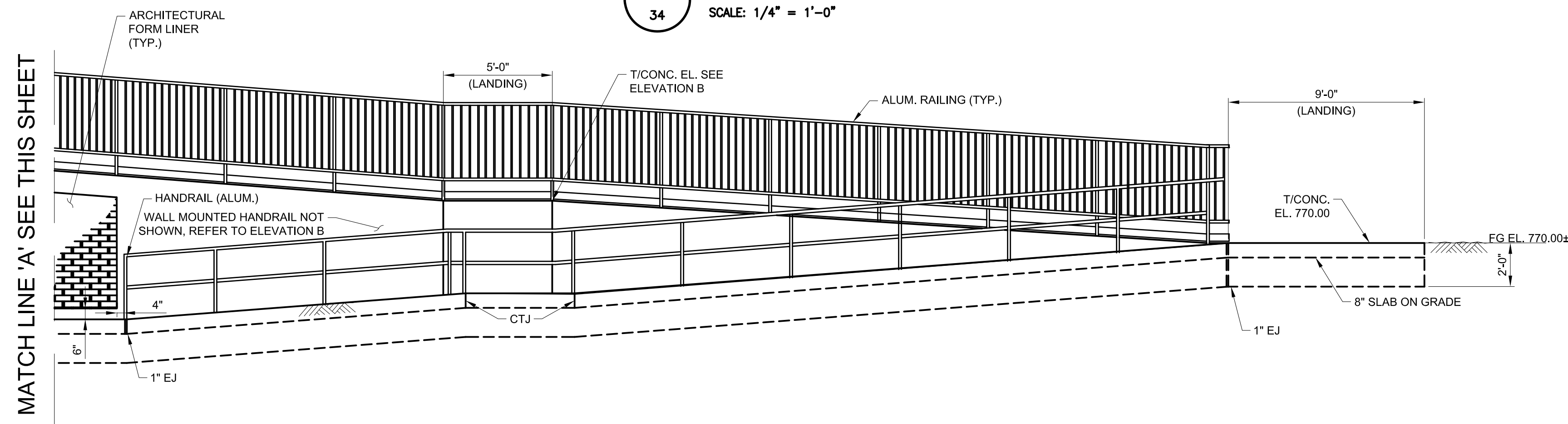


**GENERAL SHEET NOTES**

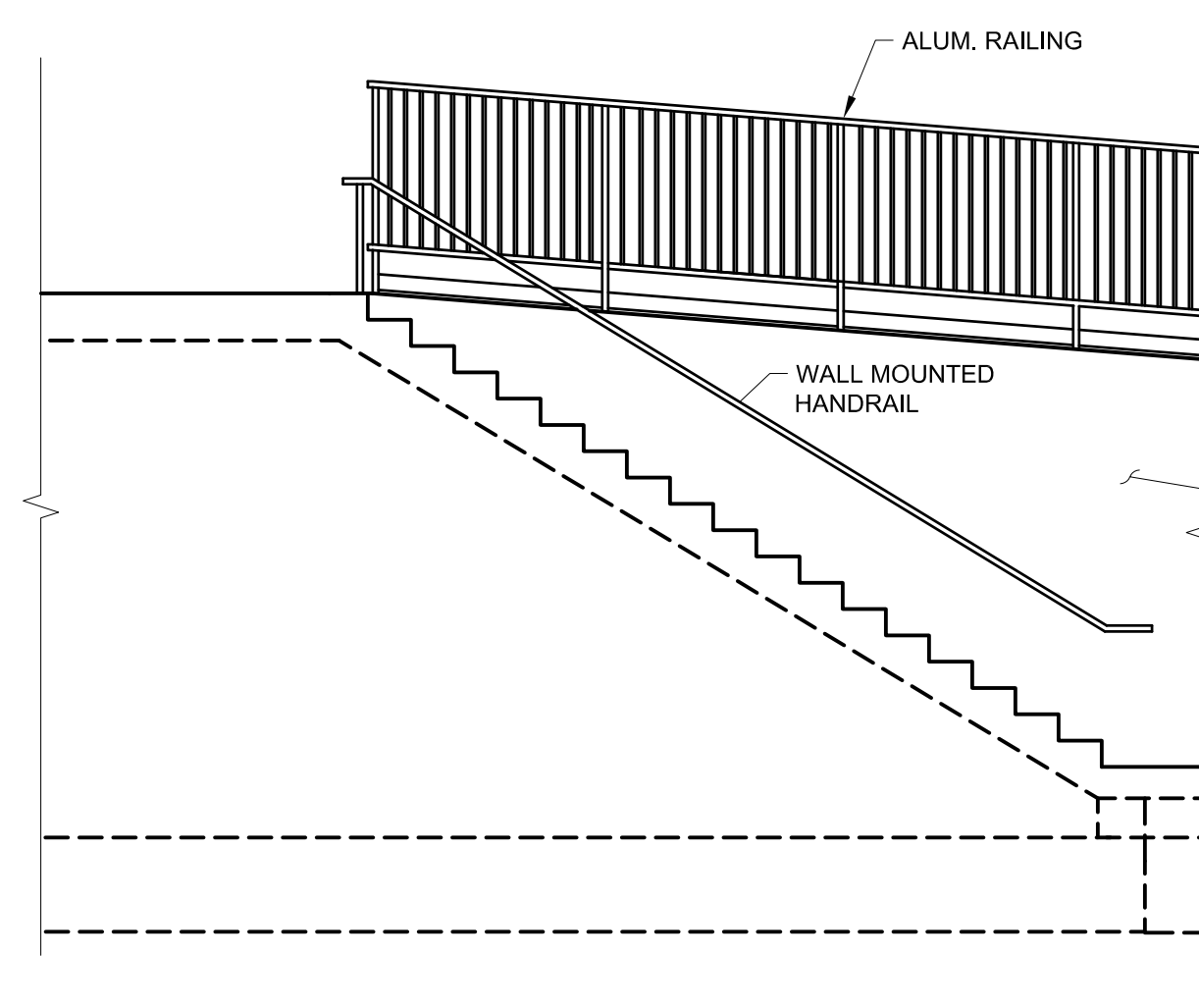
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2. TOP OF CONCRETE ELEVATIONS SHOWN ARE NOMINAL ELEVATIONS, FOR SPOT ELEVATIONS SEE PLAN VIEW.



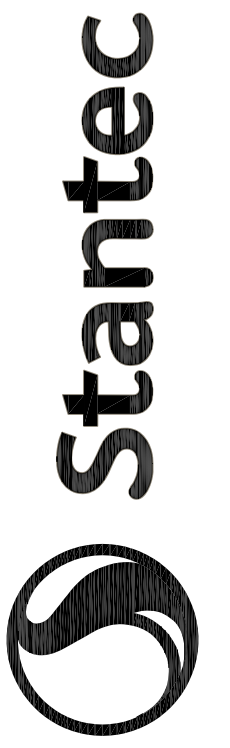
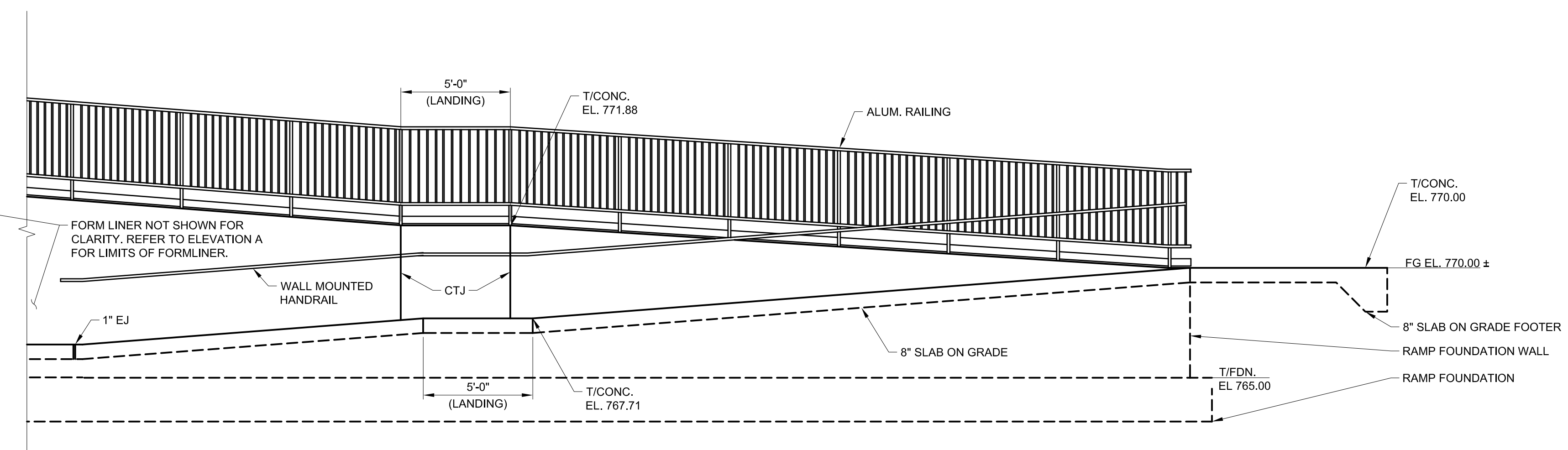
**A**  
ELEVATION  
34 SCALE: 1/4" = 1'-0"



**A**  
ELEVATION  
34 SCALE: 1/4" = 1'-0"



**B**  
PARTIAL ELEVATION  
34 SCALE: 1/4" = 1'-0"



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3	JZ	EER	2022/04/08
2	JZ	EER	2021/08/13
1	JZ	EER	2021/05/14
ISSUED	By	Appd.	Y/M/AM/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT  
HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO  
Title  
STRUCTURAL ELEVATIONS 1 OF 2

Issue Stamp

Project Number: 174316204

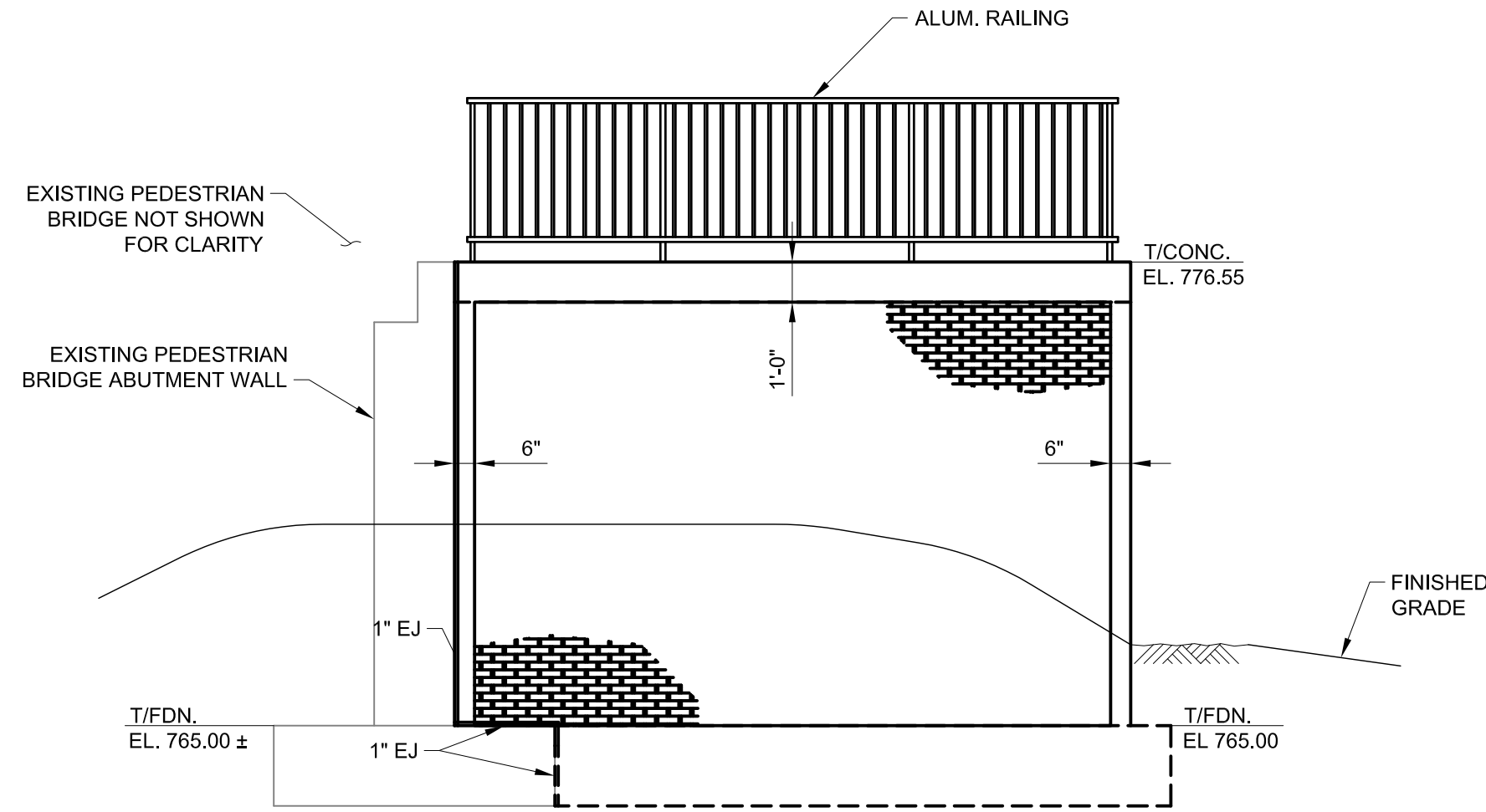
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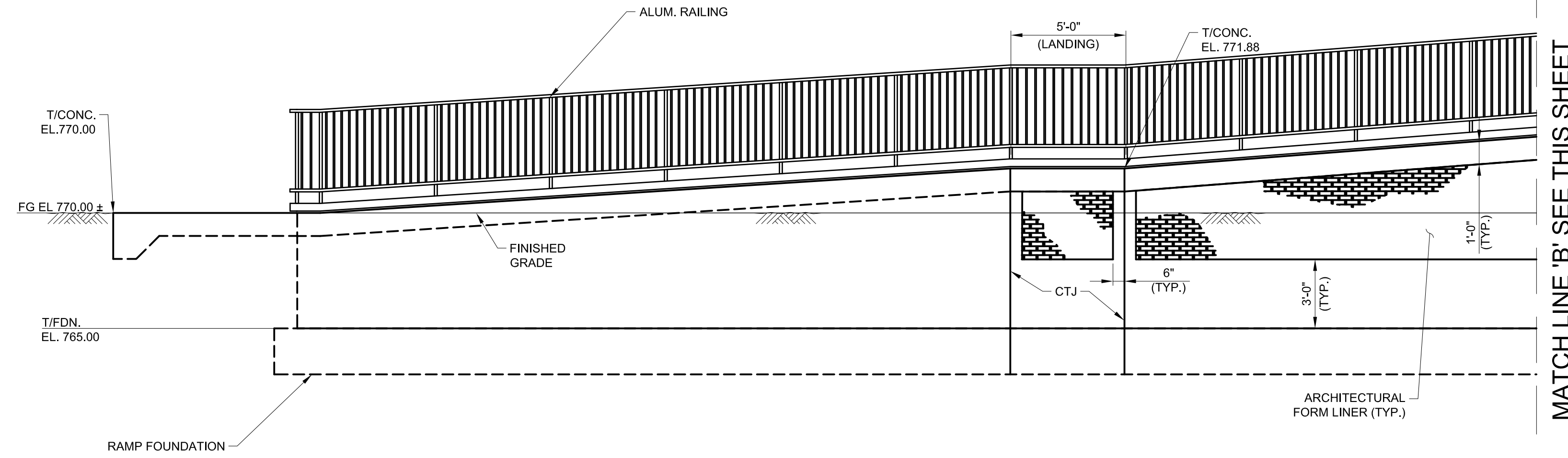


**GENERAL SHEET NOTES**

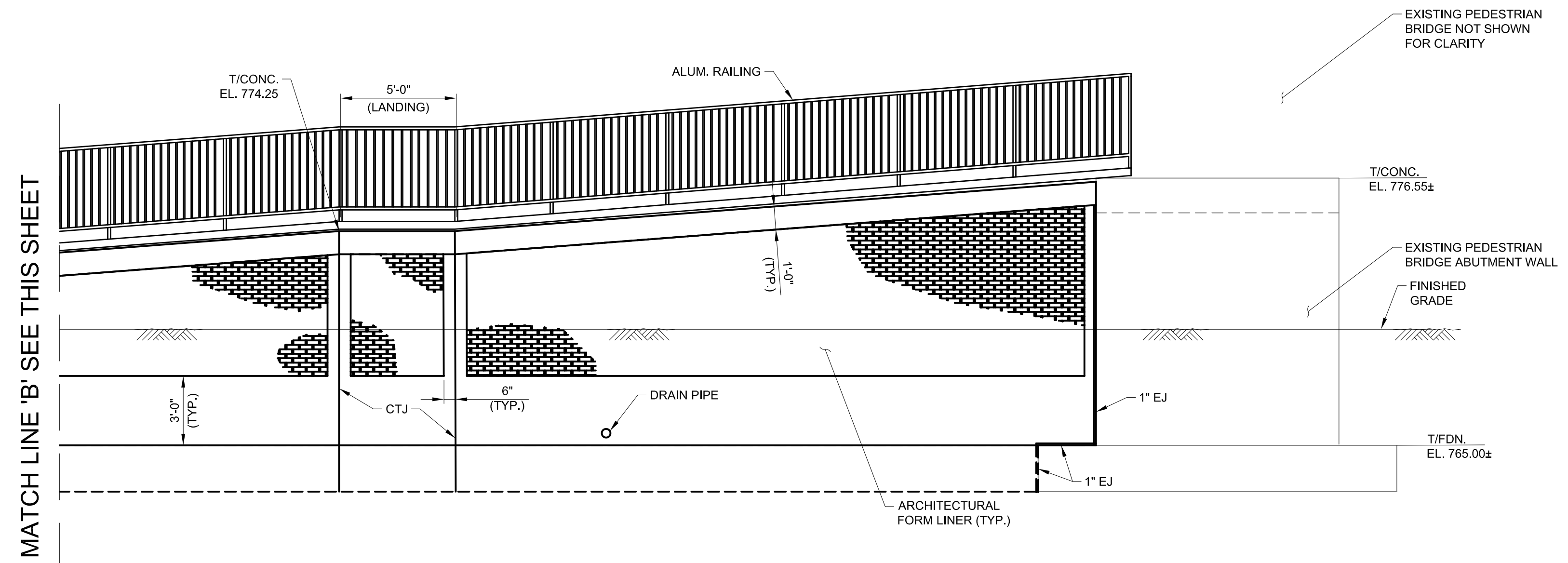
1. STRUCTURAL NOTES, STATEMENT OF SPECIAL INSPECTION AND TYPICAL DETAILS SEE SHEETS 30 THRU 33.
2. TOP OF CONCRETE ELEVATIONS SHOWN ARE NOMINAL ELEVATIONS, FOR SPOT ELEVATIONS SEE PLAN VIEW.



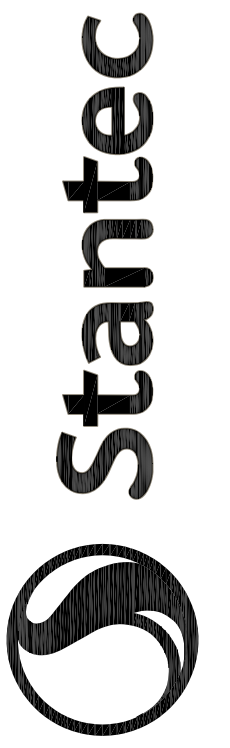
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34  
**ELEVATION**  
SCALE: 1/4" = 1'-0"



**D**  
34  
**ELEVATION**  
SCALE: 1/4" = 1'-0"



**D**  
34  
**ELEVATION**  
SCALE: 1/4" = 1'-0"



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3	JZ	EER	2022.04.08
2	JZ	EER	2021.08.13
1	JZ	EER	2021.05.14
ISSUED	By	Appd.	Y/M/AM/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
STRUCTURAL ELEVATIONS 2 OF 2

Issue Stamp

Project Number: 174316204

File Name:

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision Sheet

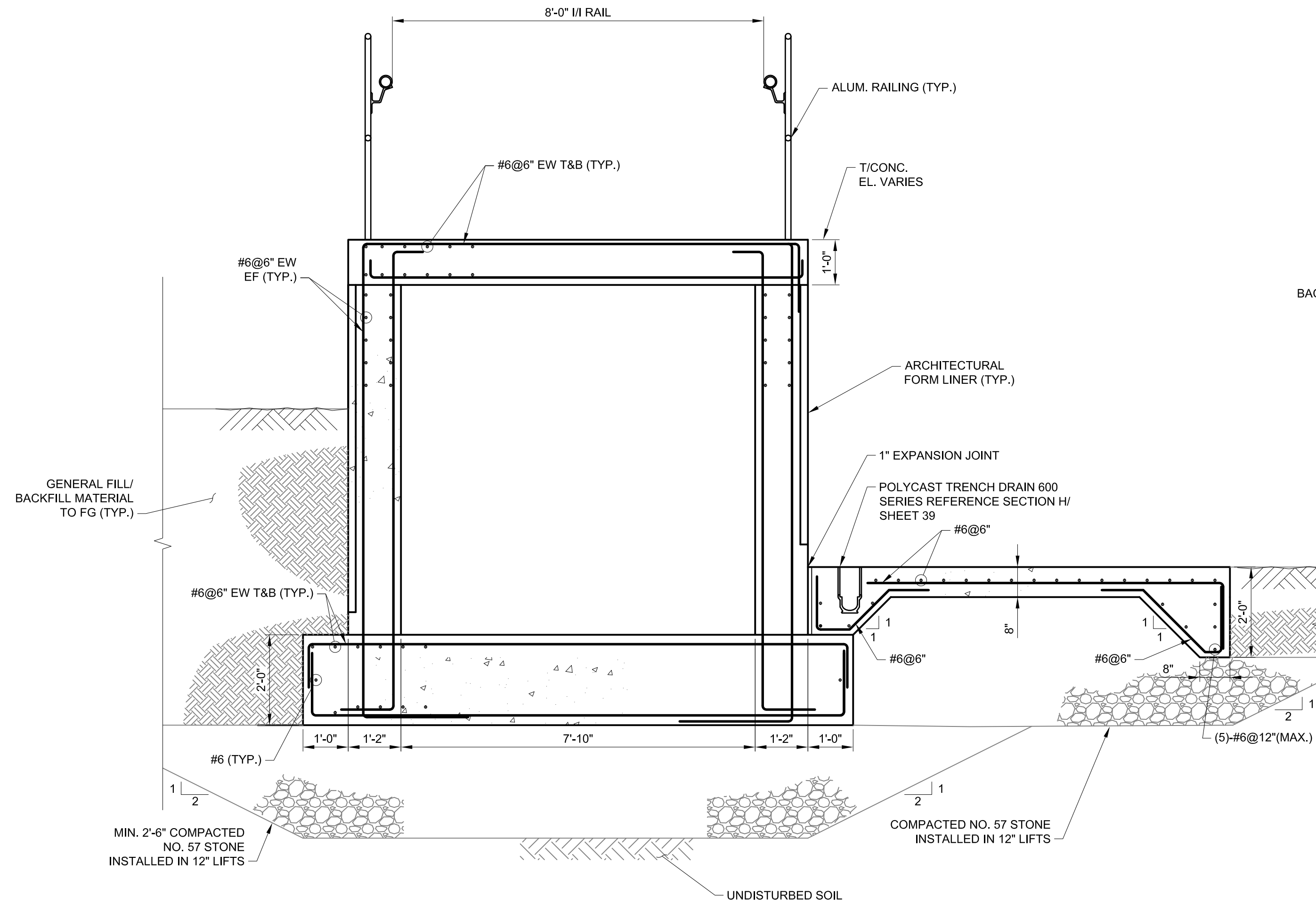
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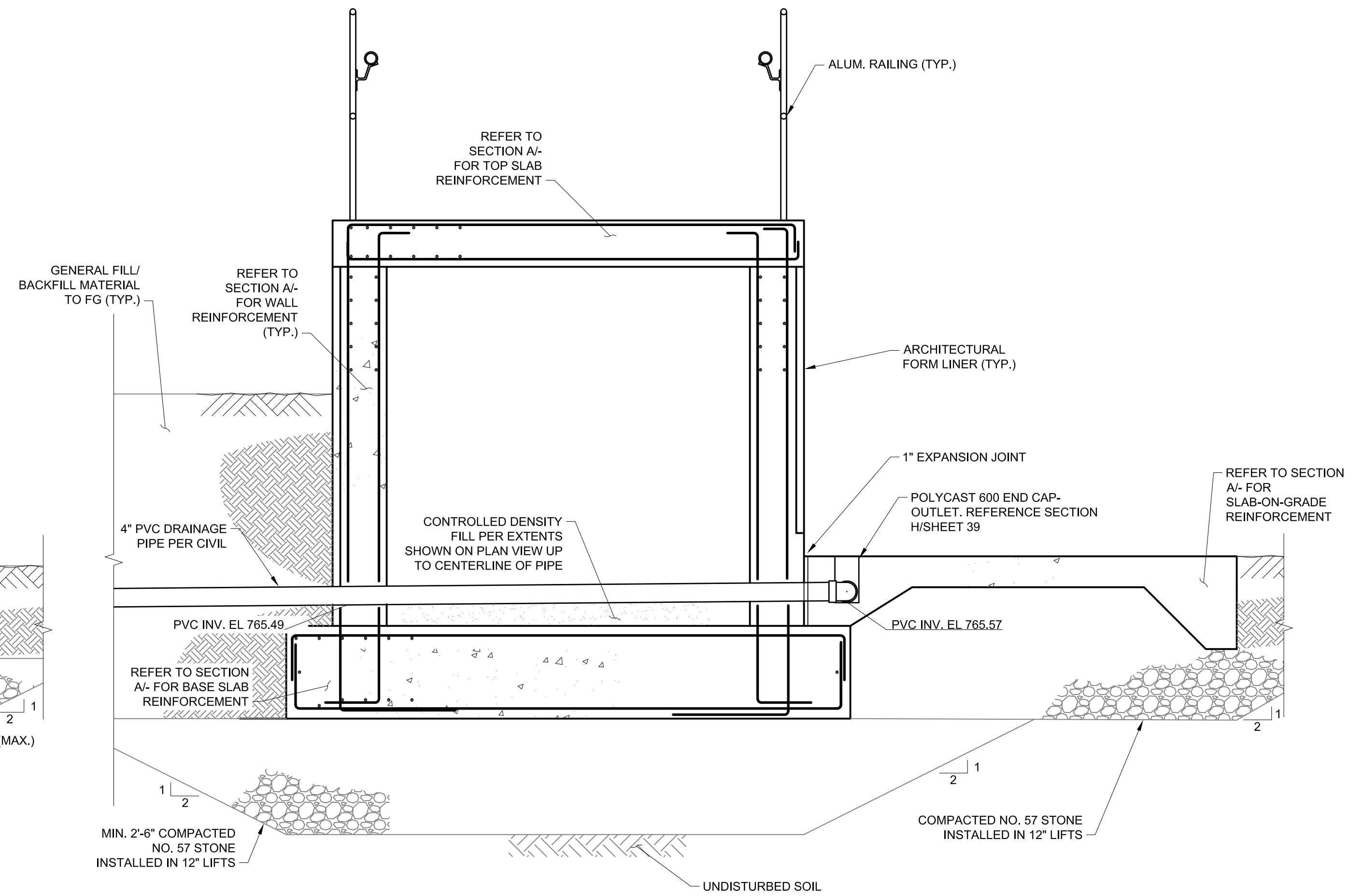


GENERAL SHEET NOTES

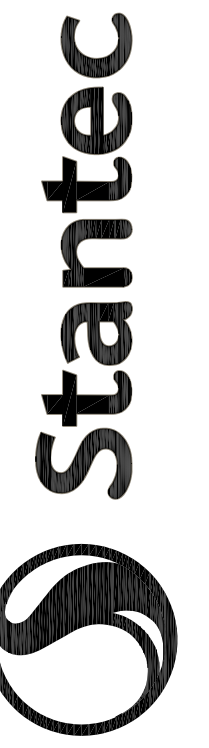
1. STRUCTURAL NOTES, STATEMENT OF SPECIAL INSPECTION AND TYPICAL DETAILS SEE SHEETS 30 THRU 33.



A SECTION  
34 SCALE: 1/2" = 1'-0"



B SECTION  
34 SCALE: 1/2" = 1'-0"



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Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS

Title  
HANCOCK COUNTY, OHIO  
STRUCTURAL SECTIONS AND DETAILS 1 OF 3

Issue Stamp

Project Number: 174316204

File Name:

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

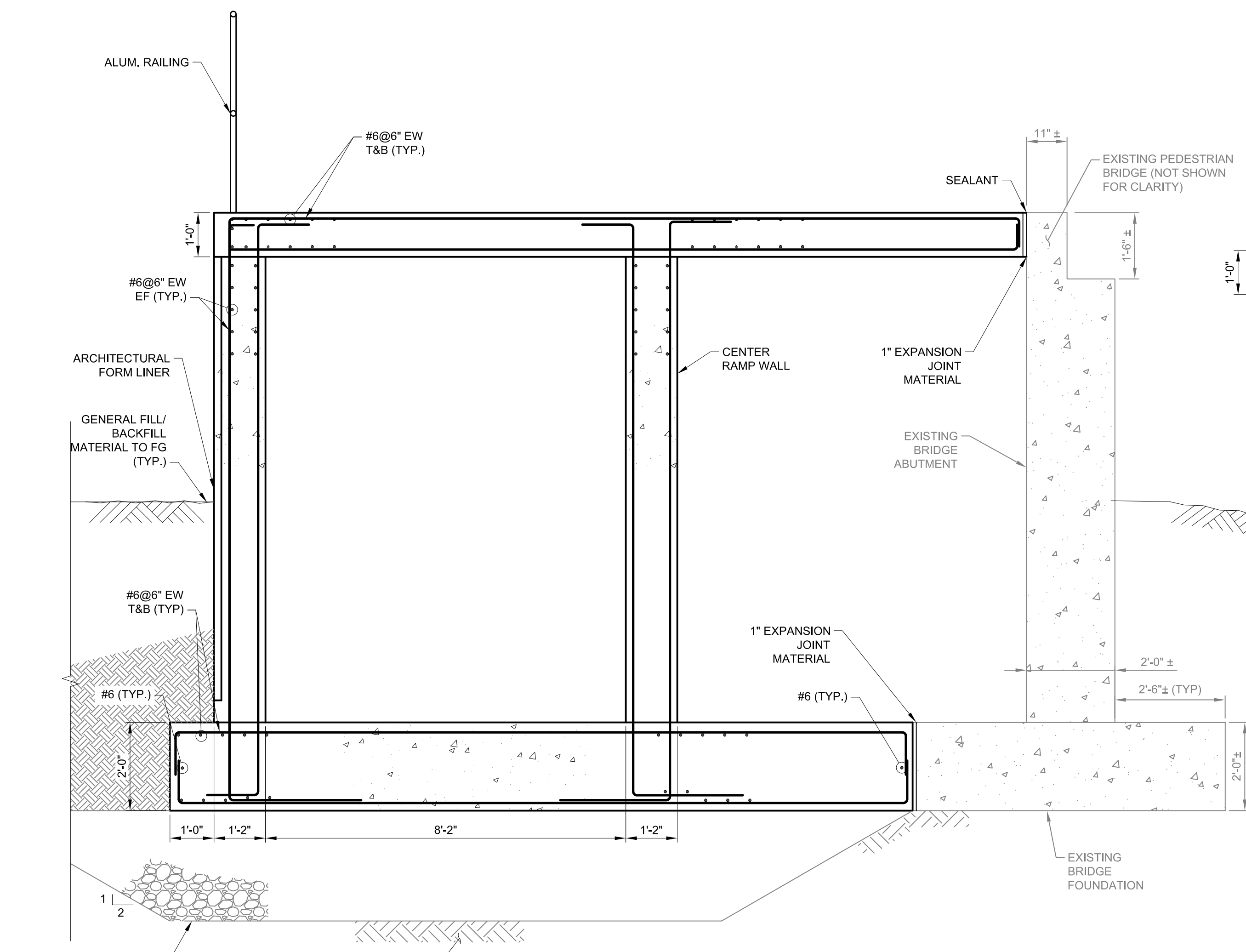
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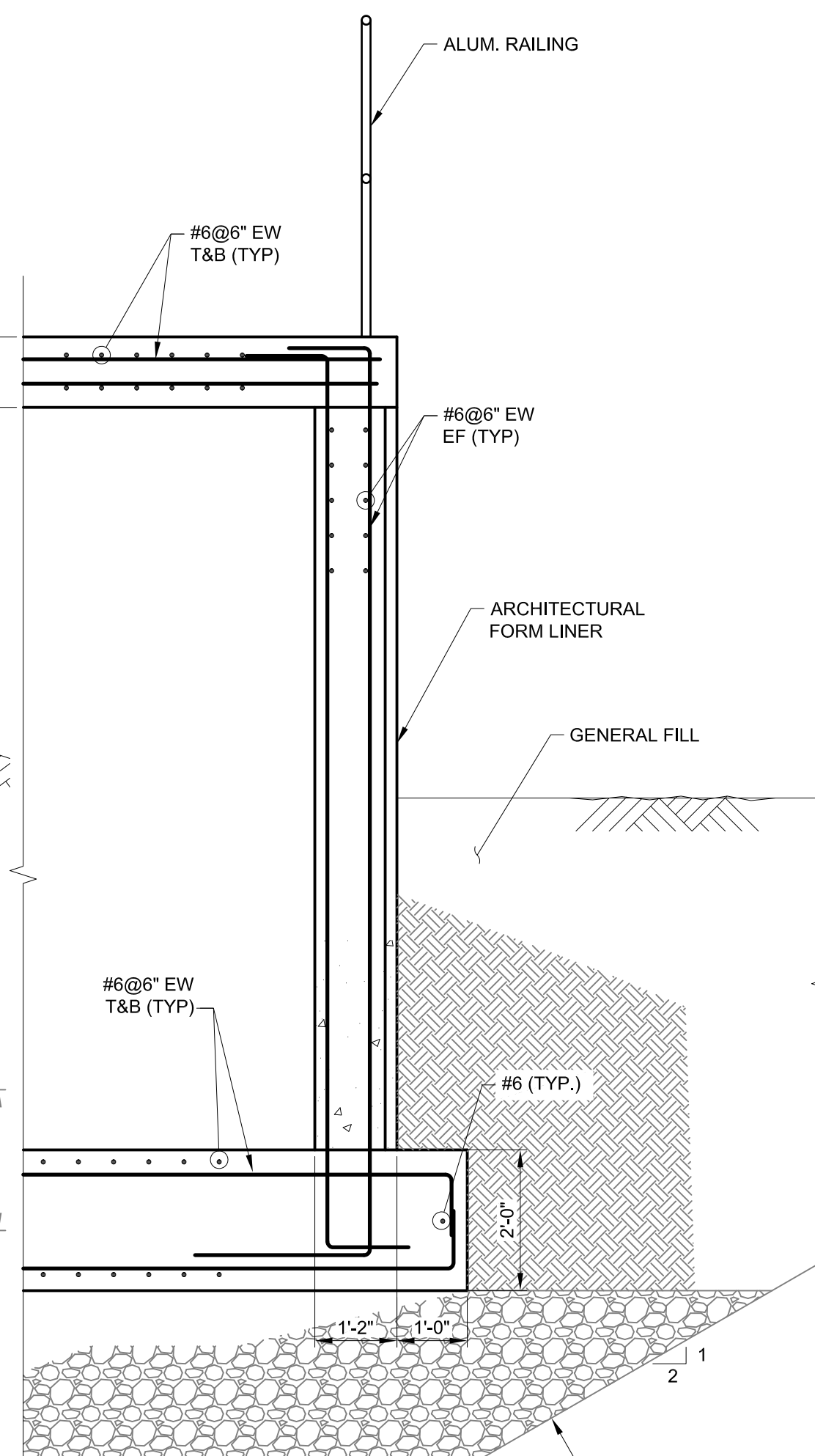
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1. STRUCTURAL NOTES, STATEMENT OF SPECIAL INSPECTION AND TYPICAL DETAILS SEE SHEETS 30 THRU 33.



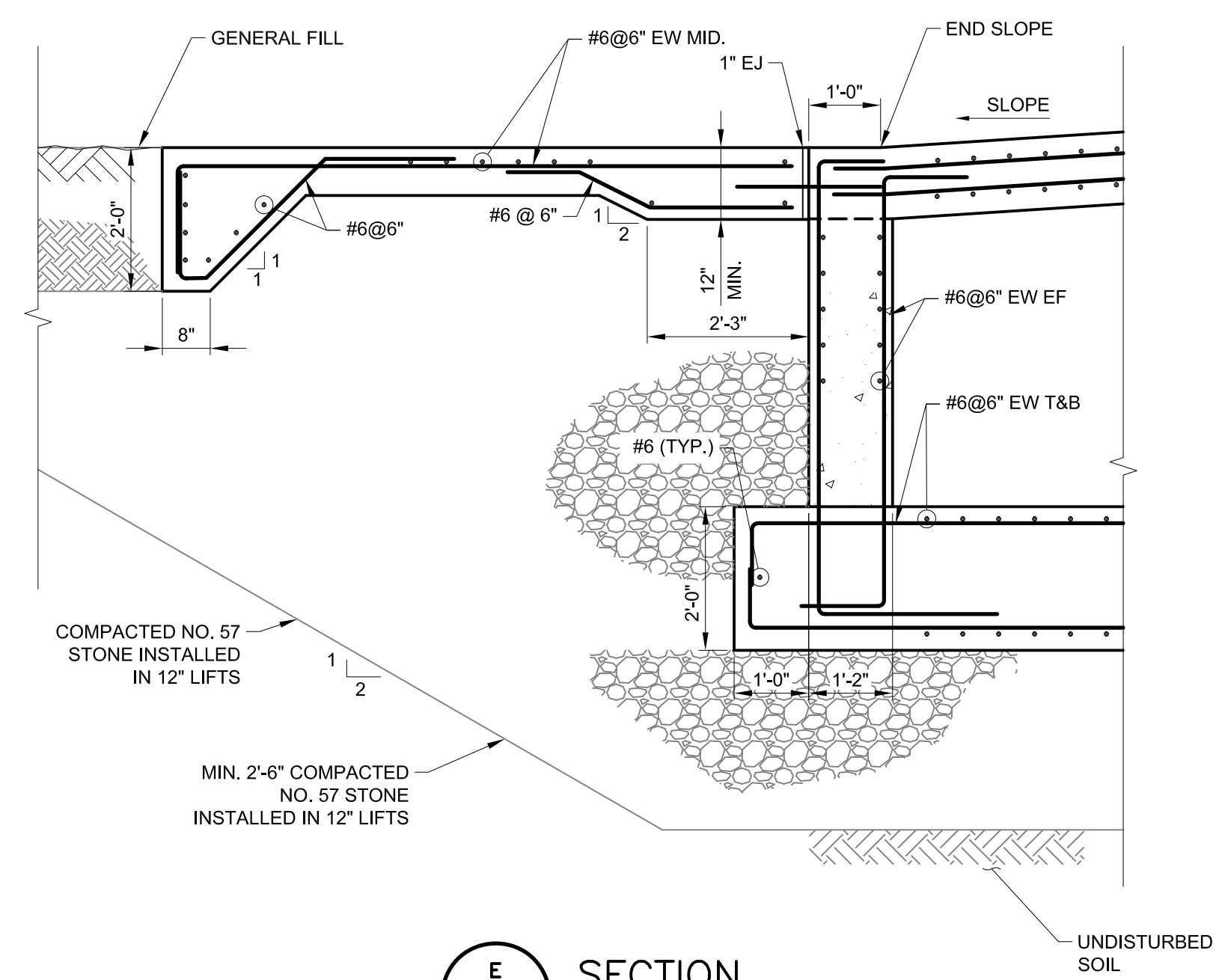
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MIN. 2'-6" COMPACTED NO. 57 STONE INSTALLED IN 12" LIFTS

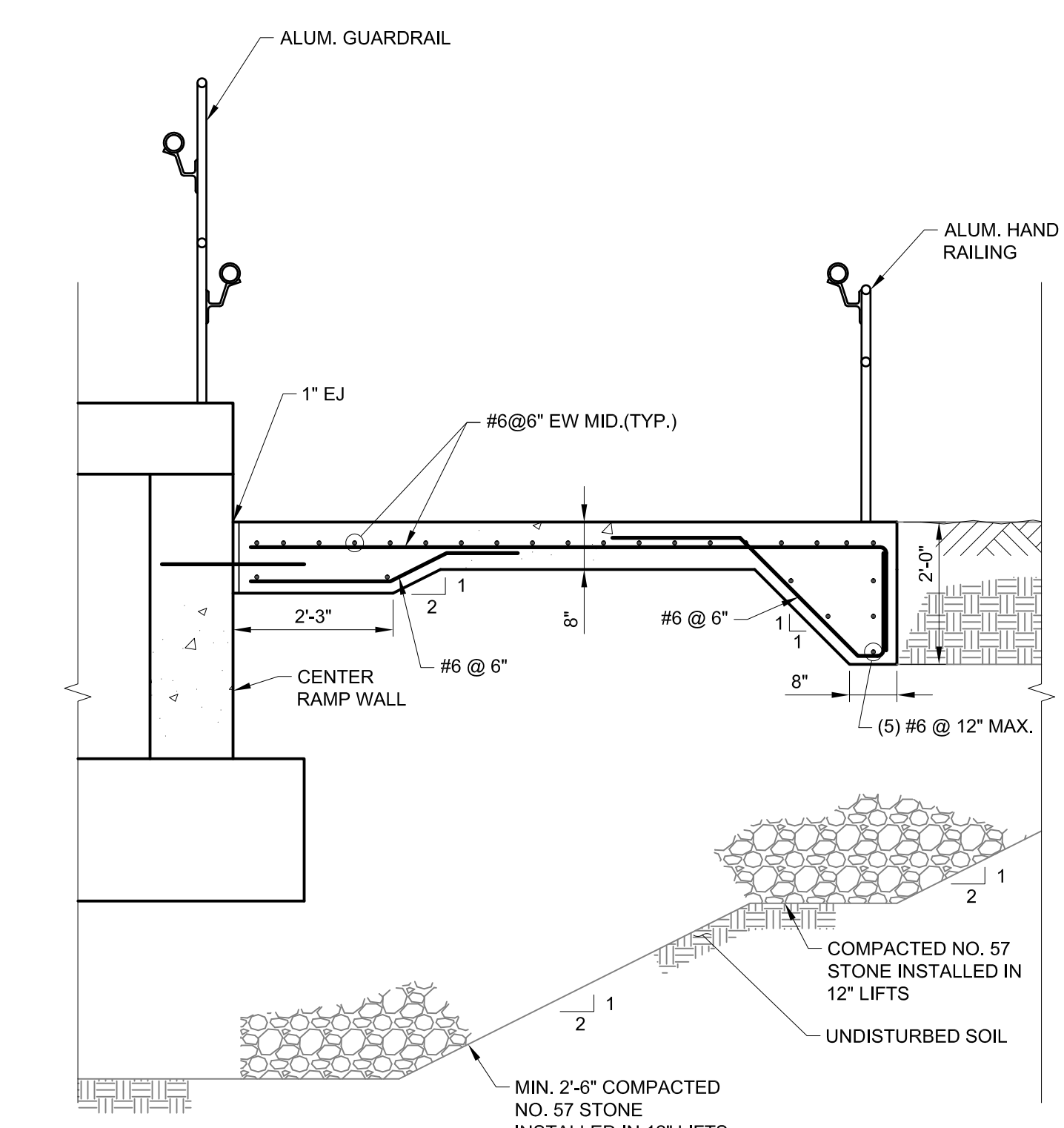


**D SECTION**  
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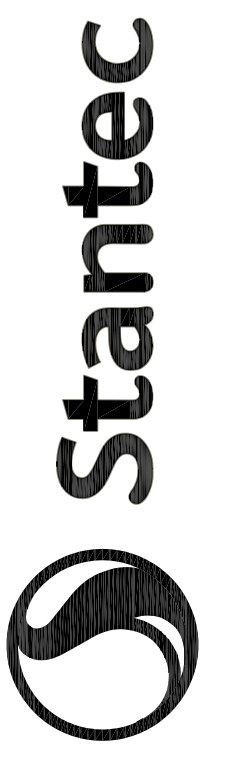
MIN. 2'-6" COMPACTED NO. 57 STONE INSTALLED IN 12" LIFTS



**E SECTION**  
SCALE: 1/2" = 1'-0"



**F SECTION**  
SCALE: 1/2" = 1'-0"



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Revision	By	Appd.	Yr.	MM.	DD.
3	JZ	EER	2022	04	08
2	JZ	EER	2021	08	13
1	JZ	EER	2021	05	14

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
STRUCTURAL SECTIONS AND DETAILS 2 OF 3

Issue Stamp

Project Number: 174316204

File Name:

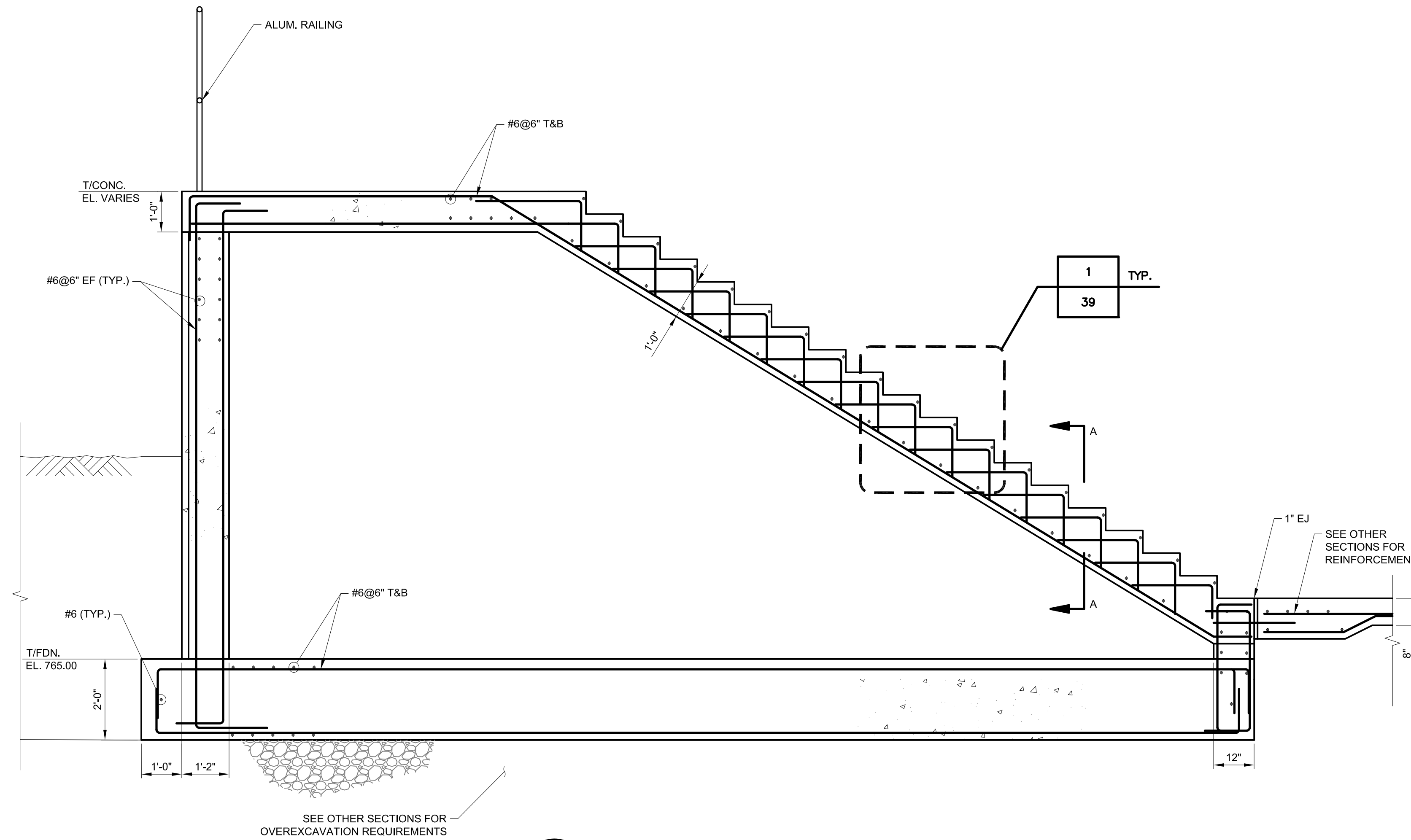
Revision	Sheet
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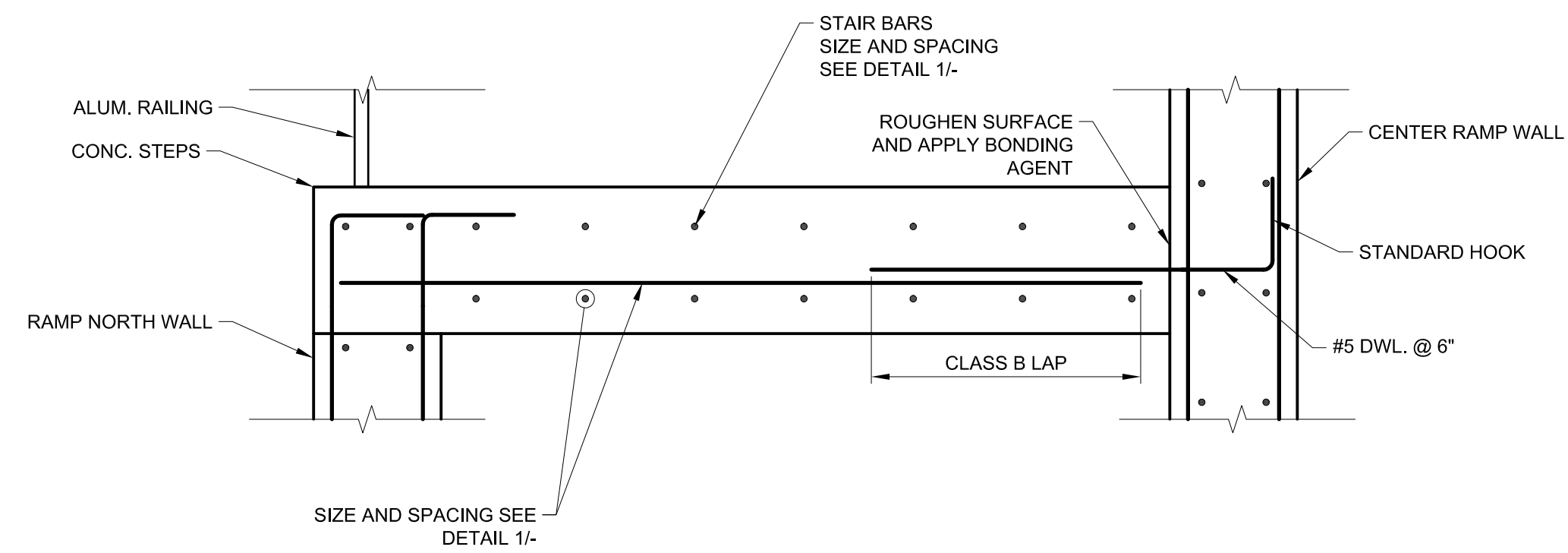


**GENERAL SHEET NOTES**

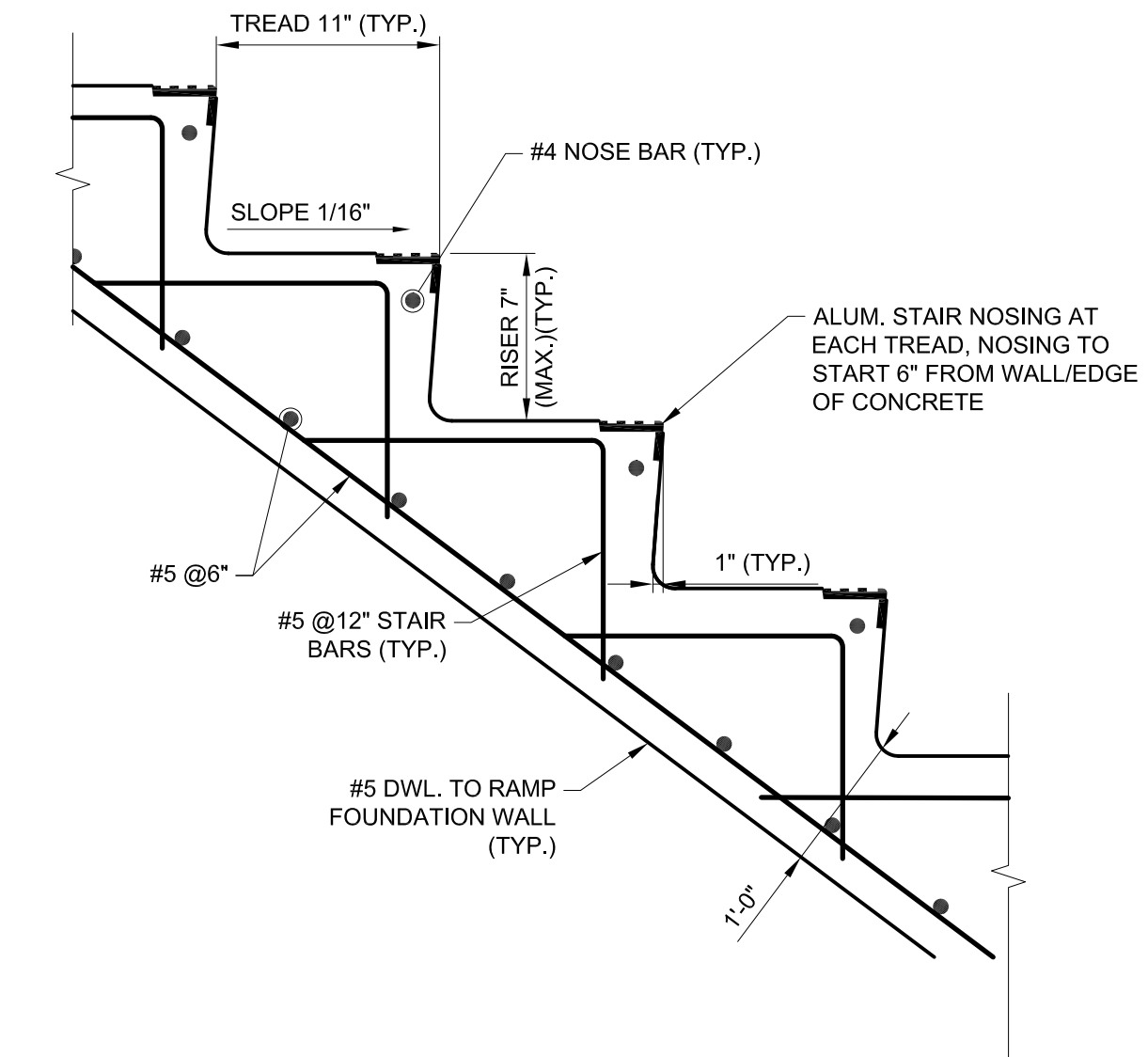
1. STRUCTURAL NOTES, STATEMENT OF SPECIAL INSPECTION AND TYPICAL DETAILS SEE SHEETS 30 THRU 33.



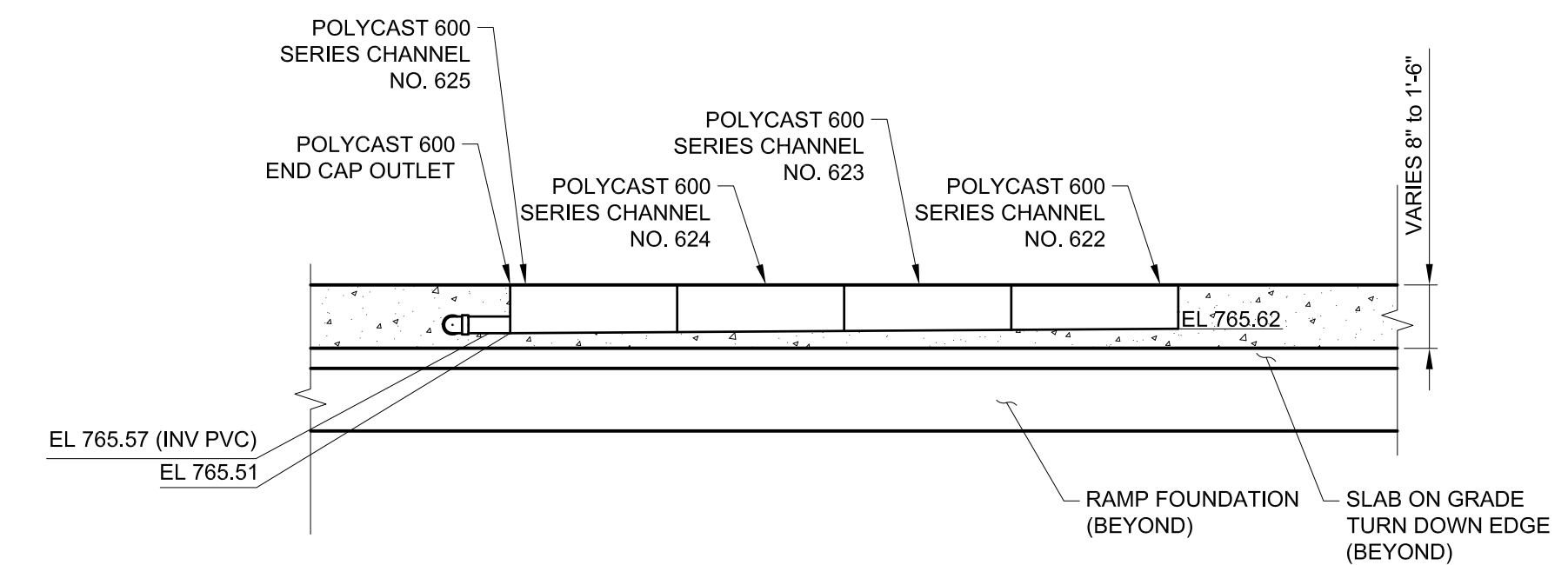
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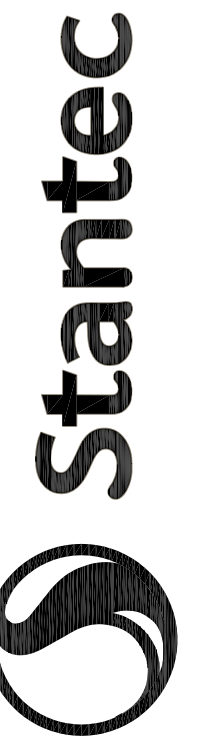
**A-A**  
SECTION  
SCALE: 3/4" = 1'-0"



**1**  
39 DETAIL  
NTS



**H**  
34 SECTION  
SCALE: 1/4" = 1'-0"



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Revision	By	Appd.	Y/M/AM/DO
3	100% DESIGN	JZ	2022.04.08
2	90% DESIGN	JZ	2021.08.13
1	60% DESIGN	JZ	2021.05.14
	ISSUED	By	Appd.

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT  
HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Issue Stamp

Project Number: 174316204

File Name:

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision Sheet

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ITEM SPECIAL - IN-RIVER CONSTRUCTION

CHANNEL EXCAVATION AND GRADING:

ALL PORTIONS OF ODOT SPECIFICATION NUMBER 203 - ROADWAY EXCAVATION AND EMBANKMENT APPLY TO THIS NOTE, PLUS THE FOLLOWING PROVISIONS:

- 1. THE WORK INVOLVES THE BULK EXCAVATION AND GRADING OF THE CHANNEL, RIVER BANKS, AND TRANSITIONS TO THE PROPOSED BANKFULL BENCH AND EXISTING GROUND AT THE GRADES AND ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS.
2. WITHOUT REGARD TO THE MATERIALS ENCOUNTERED, ALL EXCAVATION SHALL BE UNCLASSIFIED.
3. EXCAVATION SHALL BE ACCOMPLISHED BY MECHANICAL MEANS, NO BLASTING WILL BE PERMITTED. ANY PROPERTY DAMAGE CAUSED BY EXCAVATION OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXCAVATION SHALL BE SHAPED AND GRADED AS SHOWN ON THE CONSTRUCTION DRAWINGS.
4. EXCESS AND UNSUITABLE MATERIAL SHALL BE PROPERLY DISPOSED OF OFFSITE BY THE CONTRACTOR. THE CONTRACTOR SHOULD ANTICIPATE ENCOUNTERING RUBBLE AND OTHER UNCHARACTERIZED MATERIALS AND DEBRIS DURING EXCAVATION. ALL DEBRIS AND RUBBLE SHALL BE PROPERLY DISPOSED OF OFFSITE IN A MANNER ACCEPTABLE TO LOCAL GOVERNING LAWS AND REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF UNSUITABLE MATERIALS.
5. NATIVE GRAVEL/COBBLE SUBSTRATE FROM THE EXISTING CHANNEL SUITABLE FOR USE IN RIFFLES MAY BE STOCKPILED AND REUSED AS SUBSTRATE IN THE NEW RIFFLE CONSTRUCTION. SUITABLE NATIVE GRAVEL/COBBLE SUBSTRATE SHALL BE USED IN THE UPPER MOST LIFT OF RIFFLE MATERIAL AND PLACED IN ACCORDANCE WITH THE GRADATION SHOWN ON THESE PLANS.

CONSTRUCTED RIFFLE:

ALL PORTIONS OF ODOT SPECIFICATION NUMBER 601 - SLOPE AND CHANNEL PROTECTION AND ODOT SPECIFICATION 703 - AGGREGATE APPLY TO THIS NOTE PLUS THE FOLLOWING PROVISIONS.

- 1. THIS WORK CONSISTS OF INSTALLING CONSTRUCTED RIFFLES AT THE LOCATION AND ELEVATIONS SPECIFIED ON THE CONSTRUCTION DRAWINGS. CONSTRUCTION ACTIVITIES INCLUDE EXCAVATION OF CHANNEL MATERIAL, PLACEMENT OF RIFFLE SUBSTRATE, AND FINISHING OF STREAM CHANNEL BANKS AND STRUCTURE SLOPES TO PROVIDE BANK PROTECTION AND HABITAT DIVERSITY FOR THE NEWLY CONSTRUCTED CHANNEL.
2. THE CONSTRUCTED RIFFLE IS COMPRISED OF RIFFLE SUBSTRATE, CONSISTING OF 35% TYPE C RIPRAP, 35% TYPE D RIPRAP AND 30% NATIVE RIVER GRAVEL. TYPE C AND TYPE D RIPRAP SHALL CONFORM TO ODOT SPECIFICATION 703.19. THE NATIVE RIVER GRAVEL (APPROXIMATE SIZE #57 STONE) SHALL BE STOCKPILED DURING CHANNEL GRADING FOR USE IN CONSTRUCTED RIFFLE STRUCTURES. IF ADDITIONAL GRAVEL IS NEEDED, #57 STONE THAT CONFORMS TO THE ODOT SPECIFICATION 703.01 SHALL BE USED.
3. ALL STOCKPILED NATIVE GRAVEL/COBBLE SUBSTRATE SHALL BE USED IN THE RIFFLE CONSTRUCTION SUCH THAT IT IS VISIBLE IN THE UPPER MOST LAYER OF RIFFLE MATERIAL.
4. THE RIFFLE AREA SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 2 FEET BELOW FINISH GRADE. THE RIFFLE SUBSTRATE SHOULD BE PLACED IN LIFTS NO DEEPER THAN THE LARGEST ROCK SIZE. VOIDS IN EACH LIFT SHALL BE FILLED IN WITH NATIVE CHANNEL MATERIALS BEFORE THE NEXT LIFT IS PLACED. EXCAVATION SHALL NOT INCLUDE BEDROCK. ON SHEETS 41 THROUGH 47, IF THERE ARE DISCREPANCIES IN THE ELEVATIONS OF EXISTING GROUND BETWEEN THE PROFILE AND CROSS SECTIONS OF THE RIFFLES, THE EXISTING GROUND ELEVATIONS IN THE PROFILES SHALL GOVERN.
5. IF BEDROCK IS ENCOUNTERED DURING EXCAVATION, IT WILL REMAIN UNDISTURBED AND REPRESENT THE SUBGRADE. FOR BEDROCK SUBGRADES LESS THAN 0.25 FEET BELOW PROPOSED FINISH GRADE, NO RIFFLE SUBSTRATE WILL BE ADDED LEAVING THE BEDROCK AS FINISH GRADE. FOR BEDROCK SUBGRADES BETWEEN 0.25 FEET AND 0.6 FEET BELOW PROPOSED FINISH GRADE, TYPE C RIPRAP SHALL BE OMITTED FROM THE RIFFLE SUBSTRATE. THE RIFFLE SUBSTRATE AT THESE LOCATIONS SHALL CONSIST OF 70% TYPE D RIPRAP AND 30% NATIVE RIVER GRAVEL. FOR BEDROCK SUBGRADES GREATER THAN 0.6 FEET BELOW PROPOSED FINISH GRADE, THE RIFFLE SUBSTRATE DESCRIBED IN NOTE 2 SHALL BE USED.
6. REDRESSING OF THE CHANNEL AND BANKS MAY BE REQUIRED FOLLOWING CONSTRUCTION OF THE RIFFLES, AND IS CONSIDERED INCIDENTAL TO THIS ITEM.

EROSION CONTROL BLANKET:

ALL PORTIONS OF ODOT SPECIFICATION NUMBER 670 - EROSION PROTECTION APPLY TO THIS SECTION, WITH THE FOLLOWING PROVISIONS:

- 1. THIS ITEM CONSISTS OF PLACEMENT AND STAKING OF EROSION CONTROL BLANKET FOLLOWING GRADING OF THE STREAM CHANNEL AND BANKS.
2. FASTENERS SHALL BE A MINIMUM OF 1"x2"x24" WOOD STAKES OR APPROVED EQUIVALENT.
3. EROSION CONTROL BLANKET FOR THIS ITEM SHALL BE 100% NATURAL WOVEN COIR (COCONUT FIBER) EROSION CONTROL FABRICS WITH A WEIGHT OF 700 G/M2 (700 COIR FIBER BLANKET) WITH THE FOLLOWING MINIMUM PROPERTIES:

Table with 3 columns: MATERIAL, N/A, 100% SPUN COIR. Rows include COLOR, WEIGHT PER UNIT AREA (MIN.), WIDE WIDTH TENSILE - DRY (MIN.), MAXIMUM ELONGATION - DRY MD/CD (%), WIDE WIDTH TENSILE - WET (MIN.), MAXIMUM ELONGATION - WET MD/CD (%), and OPEN AREA.

- 4. EROSION CONTROL BLANKET SHALL BE USED IN LIVE BRUSH LAYERING AS SHOWN IN THE LIVE BRUSH LAYERING DETAIL IN THE CONSTRUCTION DRAWINGS.

SEEDING AND MULCHING:

ALL PORTIONS OF ODOT SPECIFICATION NUMBER 659 - SEEDING AND MULCHING APPLY TO THIS SECTION, WITH THE FOLLOWING PROVISIONS:

- 1. NEWLY CONSTRUCTED RIVER BANKS SHALL BE SEEDED WITH PERMANENT AND TEMPORARY SEED SPECIES, STRAW MULCH AND EROSION CONTROL BLANKET ALONG THE FACE OF EACH SOIL LIFT SHOWN IN THE LIVE BRUSH LAYERING DETAIL IN THE CONSTRUCTION DRAWINGS. THE REMAINING AREAS IN THE FLOODPLAIN SHALL BE SEEDED WITH PERMANENT AND TEMPORARY SEED AND STRAW MULCH AS SOON AS CONSTRUCTION ACTIVITY IN THE AREA HAS BEEN COMPLETED.
2. THE CONTRACTOR SHALL SUBMIT THE SEED VENDOR'S CERTIFICATE FOR EACH SEED MIX AND THE SHIPPING LIST TO THE ENGINEER PRIOR TO PLANTING. STREAMBANK AND FLOODPLAIN AREAS SHALL NOT BE PLANTED UNTIL CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED AND APPROVED BY THE ENGINEER.
3. TOPSOIL SHALL BE APPLIED ON ACCESS ROADS AND STAGING AREAS AND WHERE INDICATED ON THE CONSTRUCTION PLANS.
4. SEED MIXES AND RATES SPECIFIED IN THE CONSTRUCTION PLANS SHALL BE USED.
5. DO NOT PLACE SEED AND MULCH ON FROZEN GROUND.
6. MULCHING SHALL BE SMALL GRAIN STRAW FREE OF WEEDS, DISEASE, AND ROT. STRAW MULCH FROM REGULAR FARMING OPERATIONS IS NOT FREE OF WEEDS AND WILL BE REJECTED. STRAW MULCH IS APPLIED AT 90 BALE PER ACRE.

RIPARIAN LIVE STAKES:

ALL PORTIONS OF ODOT SPECIFICATION NUMBER 661 - PLANTING TREES, SHRUBS, PERENNIALS, AND VINES APPLY TO THIS SECTION WITH THE FOLLOWING PROVISIONS:

- 1. THIS WORK SHALL CONSIST OF HARVESTING, TRANSPORTING, INSTALLING, AND MAINTAINING LIVE STAKE MATERIALS AS SPECIFIED ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE ENGINEER.
2. LIVE CUTTINGS FOR LIVE STAKES SHALL BE 0.5 TO 1.5 INCHES IN DIAMETER AND 2.5 TO 4.0 FEET IN LENGTH. SIDE BRANCHES SHALL BE REMOVED AND THE BARK LEFT INTACT PRIOR TO INSTALLATION. BUDS ON THE STAKES SHALL BE ORIENTED IN AN UPWARD POSITION. THE BASAL ENDS SHALL BE CUT AT A 45-DEGREE ANGLE FOR EASY INSERTION INTO THE SOIL. THE TOP SHALL BE CUT SMOOTH AND SQUARE WITHOUT CRACKS.
3. THE SOURCE OF ALL LIVE CUTTINGS SHALL BE FROM PURCHASED STOCK OR LOCATED ON-SITE, OR WITHIN 25 MILES OF THE PROJECT SITE. THE CONTRACTOR SHALL LOCATE, FLAG, AND CODE THE LIVE CUTTING SITES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 72 HOURS PRIOR TO HARVESTING TO REVIEW AND APPROVE ALL HARVESTING SITES. UPON APPROVAL BY THE ENGINEER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR HARVESTING AND TRANSPORTING THE CUTTINGS TO THE JOB SITE.
4. IF THE CONTRACTOR IS UNABLE TO LOCATE SUFFICIENT HARVESTING SITES FOR THE LIVE STAKES, UPON APPROVAL FROM THE ENGINEER, THE CONTRACTOR MAY PURCHASE LIVE BRANCH MATERIAL FROM A NURSERY APPROVED BY THE ENGINEER. THE MATERIAL SHALL MEET ALL OF THE SPECIFICATIONS FOUND IN THIS SECTION.
5. ANY PROPOSED SPECIES SUBSTITUTIONS OR CHANGES IN PERCENT COMPOSITION OF SPECIES SHALL REQUIRE PRIOR WRITTEN APPROVAL BY THE ENGINEER. NO CULTIVATED VARIETIES (CULTIVARS) ARE ACCEPTABLE.
6. THE HARVEST AND INSTALLATION OF LIVE STAKES SHALL BE PERFORMED ONLY DURING THE DORMANT SEASON BETWEEN NOVEMBER 30 AND MARCH 31. WHEN SPECIAL CONDITIONS WARRANT A VARIANCE TO THE PLANTING OPERATIONS, PROPOSED PLANTING TIMES SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER.
7. SHRUBS AND YOUNG TREES USED IN PREPARATION OF LIVE STAKES SHALL BE CUT DIRECTLY ABOVE THE GROUND. ALL CUTS SHALL BE SMOOTH AND THE CUT SURFACE KEPT SMALL. THE USE OF LARGE PRUNING SHEARS OR POWER SAWS MAY BE REQUIRED. TREES THAT ARE MORE THAN 3 INCHES IN DIAMETER SHALL BE TOPPED. THE LIVE MATERIALS SHALL BE TRANSPORTED TO THE CONSTRUCTION SITE WITHIN 24 HOURS OF HARVESTING AND THEN CUT TO SIZE, AS SPECIFIED IN THE DETAILS OF THE CONSTRUCTION DRAWINGS.
8. LIVE MATERIALS MUST BE PROTECTED AGAINST DRYING OUT AND OVERHEATING BEFORE/DURING TRANSPORT (E.G., THEY SHALL BE COVERED, TRANSPORTED IN UNHEATED VEHICLES, MOISTENED, KEPT IN SOAK PITS) AND ON-SITE PRIOR TO INSTALLATION (E.G., BY STORING IN CONTROLLED CONDITIONS, STORING IN SHADE, COVERING WITH EVERGREEN BRANCHES OR PLASTIC, PLACING IN MOIST SOIL, OR SPRAYING WITH ANTI-TRANSPARENT CHEMICALS). LIVE MATERIALS SHALL RECEIVE CONTINUOUS SHADE. SHALL BE SHELTERED FROM THE WIND, AND SHALL BE CONTINUOUSLY PROTECTED FROM DRYING BY BEING HEELED INTO MOIST SOILS. WHERE WATER IS AVAILABLE, LIVE CUTTINGS SHALL BE SPRAYED OR IMMERSED. WARM WATER STIMULATES GROWTH AND SHOULD BE USED ONLY UPON THE APPROVAL OF THE ENGINEER. LIVE MATERIALS SHALL BE INSTALLED THE SAME DAY THAT THE CUTTINGS ARE HARVESTED. IF INSTALLATION OF LIVE MATERIALS CANNOT BE ACCOMPLISHED ON THE SAME DAY AND STORAGE IS REQUIRED, LIVE MATERIALS SHALL BE STORED FOR A PERIOD NO LONGER THAN TWO (2) DAYS. ANY STORAGE OF LIVE MATERIALS MUST BE APPROVED BY THE ENGINEER PRIOR TO STORING. ANY COSTS ASSOCIATED WITH STORAGE ARE INCIDENTAL TO THE OVERALL UNIT COSTS.
9. INSTALLATION: GENTLY DRIVE LIVE STAKES THROUGH THE EROSION CONTROL FABRIC AND INTO THE GROUND SO THAT APPROXIMATELY 80% PERCENT OF THE STAKE IS BELOW THE GROUND SURFACE. THE CONTRACTOR SHALL USE A RUBBER Mallet FOR DRIVING THE STAKE DIRECTLY INTO THE GROUND OR DRIVE A PILOT HOLE, SMALLER IN DIAMETER THAN THE LIVE STAKE, AND THEN DRIVE THE LIVE STAKE INTO THE PILOT HOLE. STAGGER THE LIVE STAKES IN A RANDOM PATTERN THROUGHOUT THE SPECIFIED PLANTING AREA AT A DENSITY OF 1 LIVE STAKE PER SQUARE FOOT, OR AS DIRECTED BY THE ENGINEER. LIVE STAKES SHALL BE INSTALLED BETWEEN THE LOW FLOW WATER SURFACE AND BANKFULL ELEVATION.
10. LIVE STAKES SPLIT DURING INSTALLATION MAY BE LEFT IN PLACE, BUT MUST BE SUPPLEMENTED WITH A NEW LIVE STAKE THAT REMAINS UN-SPLIT AFTER INSTALLATION.
11. THE CONTRACTOR SHALL MAINTAIN AN 18-MONTH, 65 PERCENT CARE AND REPLACEMENT WARRANTY FOR ALL LIVE STAKES. THE PERIOD OF CARE AND REPLACEMENT SHALL BEGIN AFTER INSPECTION AND APPROVAL OF THE INITIAL INSTALLATION OF ALL LIVE STAKES AND CONTINUE FOR 18-MONTHS, WITH ONE POTENTIAL REPLACEMENT PERIOD. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR LIVE STAKES THAT HAVE BEEN DAMAGED BY VANDALISM, FIRE, FLOODING OR OTHER ACTIVITIES BEYOND THE CONTRACTOR'S CONTROL. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO SUPPLY WATER IF THERE IS NONE AVAILABLE ON THE SITE. ANY COSTS ASSOCIATED WITH SUPPLYING WATER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCLUDED IN THE UNIT COST OF THE LIVE STAKING INSTALLATION.

BARE ROOT SEEDLINGS:

ALL PORTIONS OF ODOT SPECIFICATION NUMBER 661 - PLANTING TREES, SHRUBS, PERENNIALS, AND VINES APPLY TO THIS SECTION WITH THE FOLLOWING PROVISIONS:

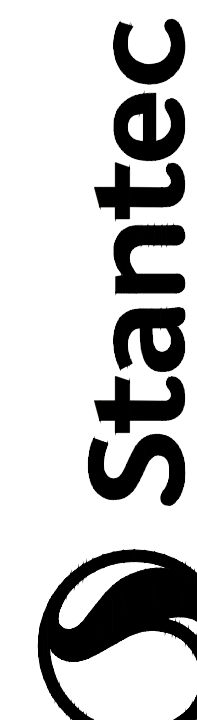
- 1. THIS SPECIFICATION COVERS FURNISHING ALL MATERIALS, EQUIPMENT, AND LABOR FOR PLANTING TREES AND SHRUBS AS REQUIRED BY THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. PLANT STOCK FOR THIS ITEM SHALL BE SEEDLINGS SPECIFIED IN THE CONSTRUCTION DRAWINGS. ALL PLANT STOCK MUST BE HEALTHY, VIGOROUS, AND FREE OF DAMAGE AND DISEASE. PLANT STOCK SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND EXHIBIT A NORMAL HABIT OF GROWTH.
3. THE PLANT SUPPLIER FOR ALL PLANT STOCK SHALL BE APPROVED BY THE ENGINEER IN WRITING. THE PLANT SUPPLIER SHALL CERTIFY THAT ALL PLANT STOCK WAS PRODUCED FROM USDA HARDINESS ZONE 6 AND WRITTEN CERTIFICATION SHALL BE PROVIDED TO THE ENGINEER UPON REQUEST. PLANT STOCK COLLECTED FROM "THE WILD" IS PROHIBITED.
4. PLANT STOCK SHALL BE LABELED WITH ATTACHED, DURABLE, WATERPROOF LABELS STATING THE CORRECT BOTANICAL PLANT NAME.
5. ALL PROPOSED SPECIES SUBSTITUTIONS OR CHANGES IN PERCENT COMPOSITION OF SPECIES OR USDA HARDINESS ZONE MUST BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO PURCHASE AND PLANTING. ONLY SPECIFIED PLANT SPECIES WILL BE ACCEPTED. CULTIVATED VARIETIES (CULTIVARS) WILL BE REJECTED.
6. BARE ROOT SEEDLINGS ON THE FLOODPLAIN SHALL BE PER THE SPACING INDICATED IN THE PLANTING PLAN. THE FLOODPLAIN IN THE PROPOSED STAGING AREA AND ACCESS ROAD SHALL NOT RECEIVE BARE ROOT SEEDLINGS.
7. PLANTING OPERATIONS SHOULD BE PERFORMED FROM MARCH 1 TO MAY 31 FOR SPRING ESTABLISHMENT, AND FROM SEPTEMBER 1 TO NOVEMBER 1 FOR FALL ESTABLISHMENT, WHEN BENEFICIAL RESULTS CAN BE OBTAINED. PLANTING OUTSIDE THESE TIMES MAY REQUIRE SPECIAL ACCOMMODATIONS TO PROMOTE PLANT SURVIVAL, SUCH AS SUPPLEMENTAL WATERING. WHEN DROUGHT, EXCESSIVE MOISTURE, FROZEN GROUND OR OTHER UNSATISFACTORY CONDITIONS PREVAIL, THE WORK SHALL BE STOPPED. WHEN SPECIAL CONDITIONS WARRANT A VARIANCE TO THE PLANTING OPERATIONS, PROPOSED PLANTING TIMES AND ESTABLISHMENT MEASURES SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER.
8. PLANT STOCK SHALL BE PROTECTED DURING DELIVERY TO PREVENT DESICCATION AND DAMAGE TO THE BRANCHES, TRUNK, OR ROOT SYSTEM. BRANCHES SHALL BE PROTECTED BY TYING-IN. EXPOSED BRANCHES SHALL BE COVERED DURING TRANSPORT.
9. PLANT STOCK SHALL BE INSPECTED UPON DELIVERY TO THE PROJECT SITE FOR CONFORMITY TO SPECIES AND QUALITY. PLANTS SHALL BE WELL SHAPED, VIGOROUS AND HEALTHY WITH A WELL BRANCHED ROOT SYSTEM, FREE FROM DISEASE, HARMFUL INSECTS AND INSECT EGGS, SUN-SCALD INJURY, DISFIGUREMENT, ABRASION, MISHANDLING OR POOR PRUNING. PLANT STOCK SHALL BE INSPECTED FOR UNAUTHORIZED SUBSTITUTION AND TO CERTIFY NURSERY GROWN STATUS. PLANT STOCK SHALL BE INSPECTED TO CERTIFY PRODUCTION IN USDA HARDNESS ZONE 6.
10. PLANTS SHOWING DESICCATION, ABRASION, SUN-SCALD INJURY, DISFIGUREMENT, OR UNAUTHORIZED SUBSTITUTION SHALL BE REJECTED.
11. BARE-ROOT PLANT STOCK THAT IS NOT DORMANT OR IS SHOWING ROOTS WHERE PULLED FROM THE GROUND SHALL BE REJECTED. PLANTS THAT HAVE EVIDENCE OF STRESS, DISEASE, DIEBACK OR MISHANDLING WILL BE REJECTED. PLANTS DAMAGED IN HANDLING OR TRANSPORTATION MAY BE REJECTED BY THE ENGINEER.
12. PLANTS NOT INSTALLED ON THE DAY OF ARRIVAL AT THE SITE SHALL BE STORED AND PROTECTED IN AREAS APPROVED BY THE ENGINEER. PLANTS SHALL NOT BE STORED LONGER THAN 30 DAYS. PLANTS SHALL BE PROTECTED FROM DIRECT EXPOSURE TO WIND AND SUN. BARE-ROOT TREES SHALL BE STORED IN BUCKETS OF WATER SO THAT THE WATER LEVEL COVERS THE ROOTS.
13. PLANTING LOCATIONS AND BED OUTLINES SHALL BE STAKED ON THE PROJECT SITE BEFORE ANY EXCAVATION IS MADE. PLANTING LOCATIONS MAY BE ADJUSTED TO MEET FIELD CONDITIONS FOLLOWING APPROVAL BY THE ENGINEER.
14. PLANTING HOLES SHALL BE EXCAVATED BY HAND USING A MATTOCK, PICK, OR IRON BAR. PLANTING HOLES SHALL BE EXCAVATED TO A DEPTH THAT ALLOWS THE FIRST LATERAL ROOT OF THE ROOT MASS TO BE FLUSH WITH THE EXISTING GRADE.
15. PLANT BARE-ROOT TREES AND SHRUBS BY SPREADING THE ROOTS IN THE HOLE AND GRADUALLY BACKFILL HOLE WITH SOIL. ENSURE THAT PLANT REMAINS STRAIGHT WHILE PLACING BACKFILL AND FIRM THE SOIL. BEING CAREFUL TO AVOID BREAKING THE ROOTS.
16. THE CONTRACTOR SHALL WATER PLANT THOROUGHLY IMMEDIATELY AFTER PLANTING. WATER SHALL BE OF A SUFFICIENT QUANTITY TO SATURATE THE BACKFILL, AND SHALL BE APPLIED SLOWLY ENOUGH TO INFILTRATE THE SOIL WITHOUT RUNOFF. THE NEED FOR ADDITIONAL WATERING SHALL BE AT THE DISCRETION OF THE ENGINEER.
17. PRUNING SHALL BE ACCOMPLISHED BY TRAINED AND EXPERIENCED PERSONNEL. THE PRUNING OF TREES AND SHRUBS SHALL BE IN ACCORDANCE WITH ANSI A300. ONLY DEAD OR BROKEN MATERIAL SHALL BE PRUNED FROM INSTALLED PLANTS. THE TYPICAL GROWTH HABIT OF INDIVIDUAL PLANT MATERIAL SHALL BE RETAINED. CLEAN CUTS SHALL BE MADE FLUSH WITH THE PARENT TRUNK. IMPROPER CUTS, STUBS, DEAD AND BROKEN BRANCHES SHALL BE REMOVED. "HEADBACK" CUTS AT RIGHT ANGLES TO THE LINE OF GROWTH WILL NOT BE PERMITTED. TREES SHALL NOT BE POLED OR THE LEADER REMOVED, NOR SHALL THE LEADER BE PRUNED OR "TOPPED OFF".
18. UPON COMPLETION OF THE LAST DAY OF THE PLANTING OPERATION, THE PLANT ESTABLISHMENT PERIOD FOR MAINTAINING INSTALLED PLANT MATERIAL IN A HEALTHY GROWING CONDITION SHALL COMMENCE AND SHALL BE IN EFFECT FOR A MINIMUM OF 12 MONTHS. A WRITTEN CALENDAR TIME PERIOD SHALL BE FURNISHED FOR THE PLANT ESTABLISHMENT PERIOD. WHEN THERE IS MORE THAN ONE PLANT ESTABLISHMENT PERIOD, THE BOUNDARIES OF THE PLANTED AREA COVERED FOR EACH PERIOD SHALL BE DESCRIBED. THE PLANT ESTABLISHMENT PERIOD SHALL BE MODIFIED FOR INCLEMENT WEATHER SHUT DOWN PERIODS, OR FOR SEPARATE COMPLETION DATES FOR AREAS.
19. MAINTENANCE OF PLANT MATERIAL SHALL INCLUDE STRAIGHTENING PLANT MATERIAL, SUPPLEMENTING MULCH; PRUNING DEAD OR BROKEN BRANCH TIPS; MAINTAINING PLANT MATERIAL LABELS; WATERING; ERADICATING WEEDS, INSECTS AND DISEASE; POST-FERTILIZATION; AND REMOVING AND REPLACING UNHEALTHY PLANTS. AT THE END OF THE 12-MONTH ESTABLISHMENT PERIOD, THE CONTRACTOR SHALL REMOVE ALL STAKES AND GUYING MATERIAL.
20. THE PLANT MATERIAL SHALL BE WATERED AS NECESSARY TO PREVENT DESICCATION AND TO MAINTAIN AN ADEQUATE SUPPLY OF MOISTURE WITHIN THE ROOT ZONE. AN ADEQUATE SUPPLY OF MOISTURE IS ESTIMATED TO BE THE EQUIVALENT OF ONE (1) INCH OF ABSORBED WATER PER WEEK, DELIVERED IN THE FORM OF RAIN OR AUGMENTED BY WATERING. RUN-OFF, PUDDLING AND WILTING SHALL BE PREVENTED. UNLESS OTHERWISE DIRECTED, WATERING TRUCKS SHALL NOT BE DRIVEN OVER TURF AREAS. WATERING OF OTHER ADJACENT AREAS OR EXISTING PLANT MATERIAL SHALL BE PREVENTED.
21. THE CONTRACTOR SHALL MAINTAIN AN 85 PERCENT CARE AND REPLACEMENT WARRANTY FOR 18 MONTHS FOR ALL PLANTED TREES. REPLACEMENT OF TREES SHALL BE CONDUCTED IN ACCORDANCE WITH THE MATERIAL AND CONSTRUCTION IN THESE SPECIFICATIONS. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR DAMAGE OR PLANT MORTALITY DUE TO VANDALISM, WILDLIFE PREDATION, OR ACT OF GOD BEYOND THE CONTRACTOR'S CONTROL AND RESPONSIBILITY (E.G., FLOODS). PLANT REPLACEMENTS SHALL BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.

LIVE BRUSH LAYERING:

ALL PORTIONS OF ODOT SPECIFICATION NUMBER 601 - SLOPE AND CHANNEL PROTECTION AND 661 - PLANTING TREES, SHRUBS, PERENNIALS, AND VINES APPLY TO THIS SECTION WITH THE FOLLOWING PROVISIONS:

- 1. LIVE BRUSH LAYERING CONSISTS OF NATURAL MATERIALS TO REINFORCE THE BANK SLOPE. THIS WORK CONSISTS OF THE HARVEST, TRANSPORT, MAINTENANCE, AND INSTALLATION OF ALL MATERIALS LISTED IN THIS DETAIL AND AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LIVE BRUSH LAYERING IS COMPOSED OF LAYERS OF SOIL WRAPPED IN COIR EROSION CONTROL BLANKET WITH RIPARIAN PLANTINGS AND LIVE STAKES. IT IS TO BE INSTALLED ON THE CHANNEL BANKS TO BANKFULL ELEVATION OR WHERE INDICATED ON THE CONSTRUCTION DRAWINGS. (SEE LIVE BRUSH LAYERING DETAIL, SHEET 48)

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Revision table with columns: Revision, Description, Date, By, Appr.

Client/Project: MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS HANCOCK COUNTY, OHIO

Issue Stamp

Project Number: 174316204

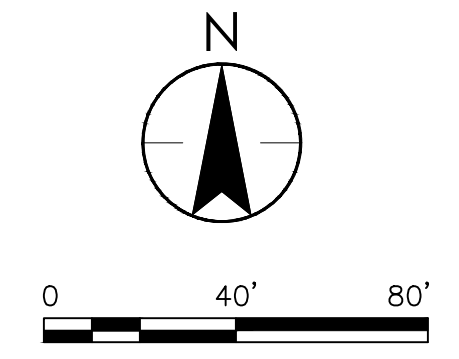
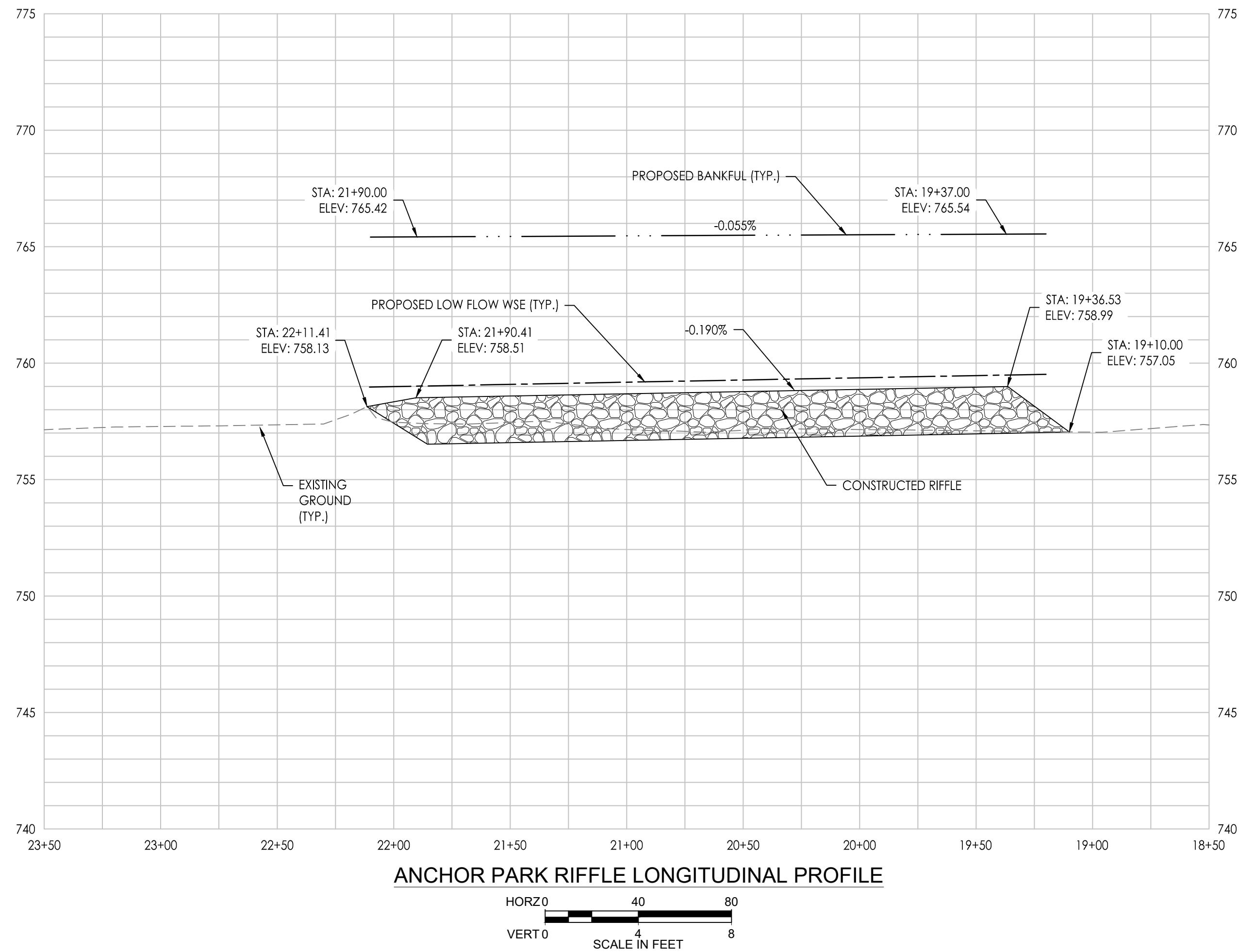
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Revision Sheet

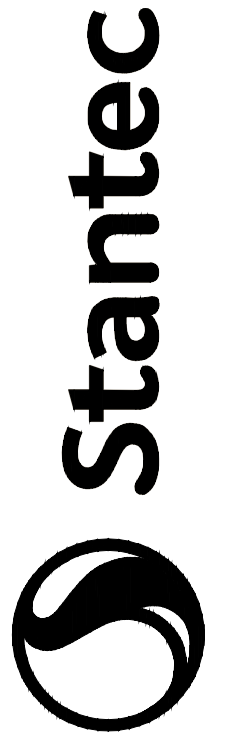


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**NOTES:**

1. ACCESS LOCATION TO BE DETERMINED WITH APPROVAL OF THE ENGINEER.
2. CONTRACTOR TO LIMIT THE EXTENT OF THE DISTURBANCE TO THE MINIMUM REQUIRED.
3. DISTURBED BANK SHALL BE REPLACED WITH LIVE BRUSH LAYERING.



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Revision	By	Appd.	TYAM/DD
2	DH	JNU	2021.06.13
1	DH	JNU	2021.05.14
ISSUED	By	Appd.	TYAM/DD

Client/Project  
 MAUMEE WATERSHED CONSERVANCY DISTRICT  
 HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
 HANCOCK COUNTY, OHIO

Title  
 ANCHOR PARK RIFFLE PLAN AND PROFILE

Permit-Seal

Project Number: 174316204

File Name: basemap_working.dwg

DLH	JFS	JNU
Dwn.	Chkd.	Dgn.

Revision 0 Sheet 41 of 57

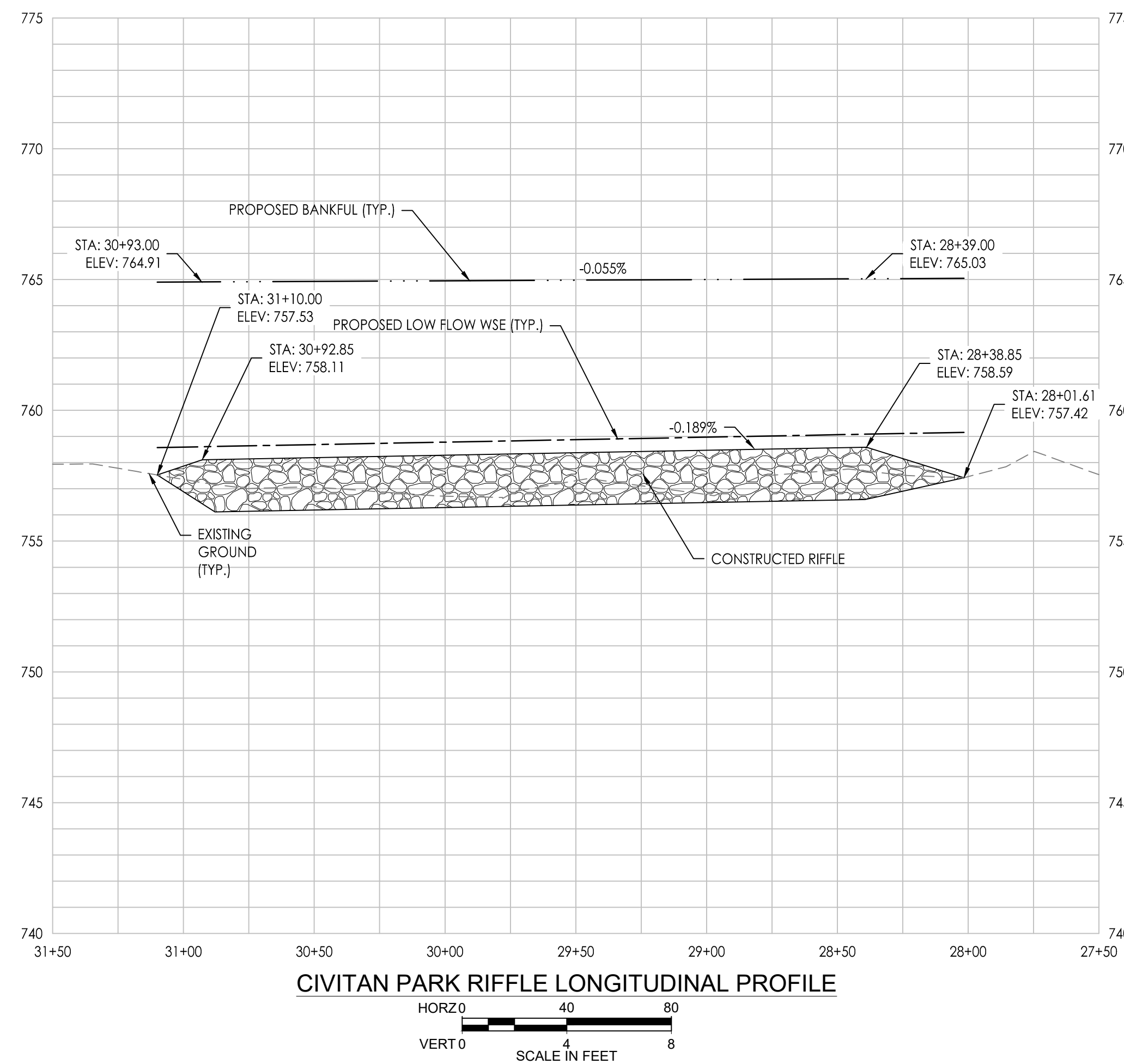
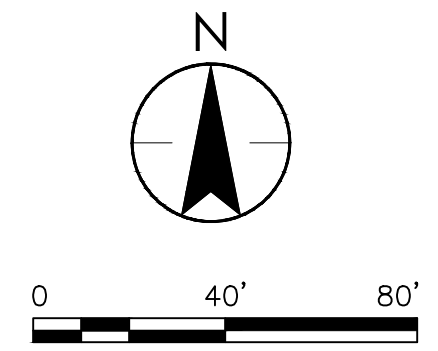


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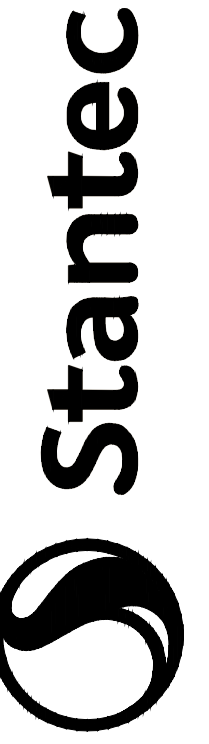


**NOTES:**

1. ACCESS LOCATION TO BE DETERMINED WITH APPROVAL OF THE ENGINEER.
2. CONTRACTOR TO LIMIT THE EXTENT OF THE DISTURBANCE TO THE MINIMUM REQUIRED.
3. DISTURBED BANK SHALL BE REPLACED WITH LIVE BRUSH LAYERING.



**CIVITAN PARK RIFFLE LONGITUDINAL PROFILE**



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Revision	By	Appd.	TYAM/DD
2	DLH	JNU	2021.06.13
1	DLH	JNU	2021.05.14
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Client/Project  
 MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
 HANCOCK COUNTY, OHIO

Title  
 CIVITAN PARK RIFFLE PLAN AND PROFILE

Permit-Seal

Project Number: 174316204

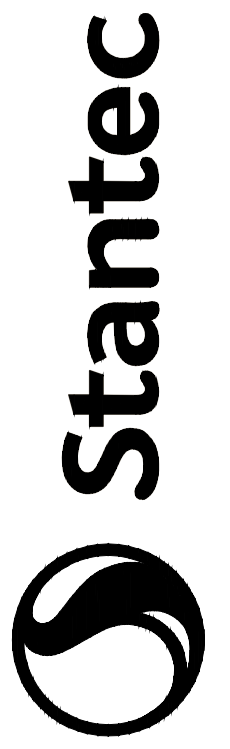
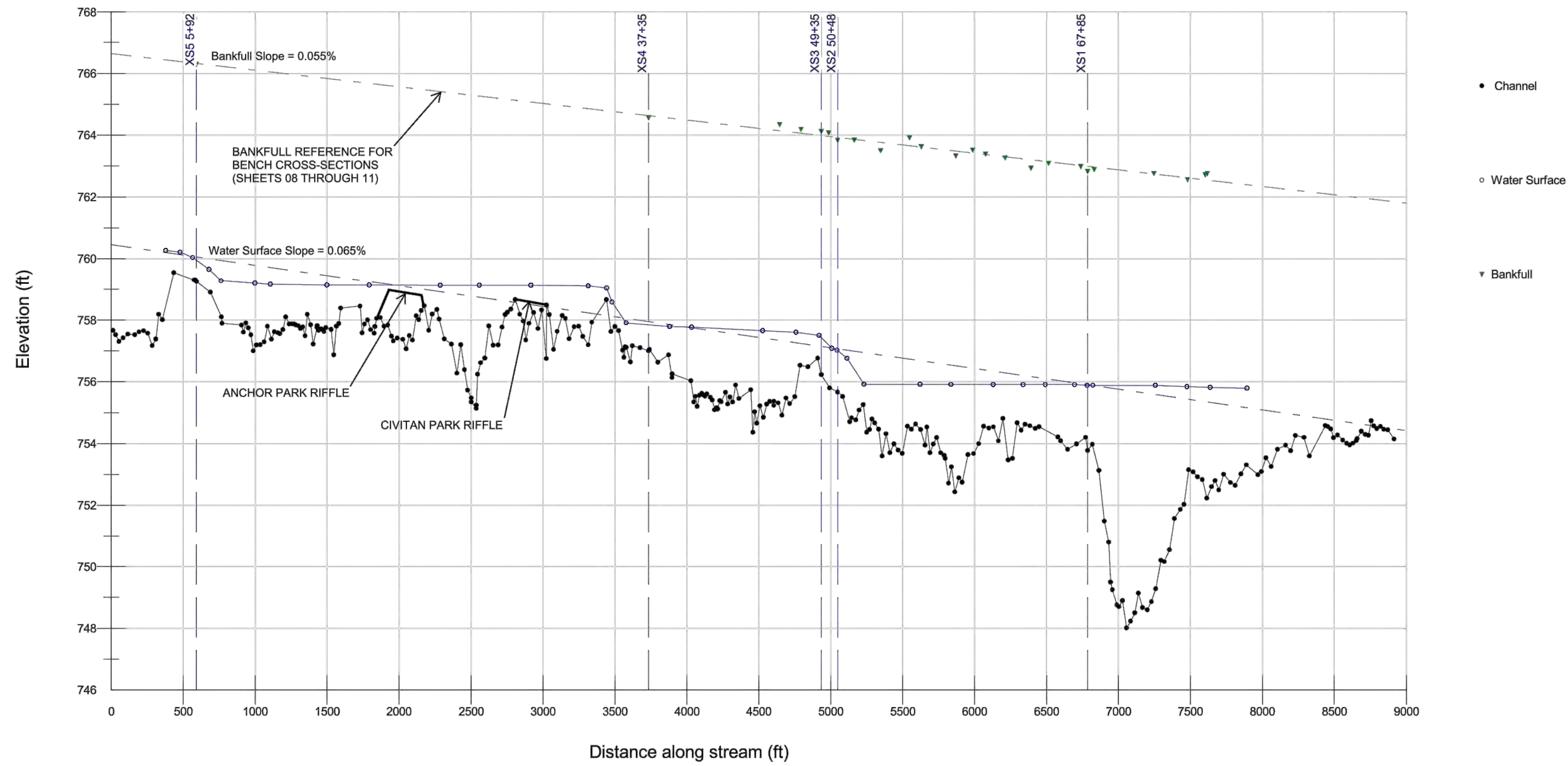
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DLH	JFS	JNU
Dwn.	Chkd.	Dign.

Revision Sheet



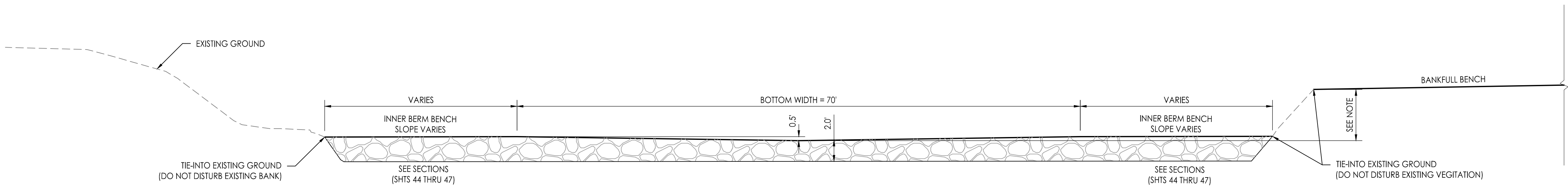
### Blanchard River Longitudinal Profile Existing Conditions



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2	DLH	JNU	2021.06.13
1	DLH	JNU	2021.05.14
ISSUED			TYAW.DD



**TYPICAL RIFFLE SECTION**  
N.T.S.

**NOTE:**  
DEPTH VARIES BETWEEN 6.4' AND 6.9'. SEE SHEETS 41 AND 42 FOR PROPOSED RIFFLE PROFILE VIEWS.

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
RIFFLE TYPICAL CROSS SECTION

Permit-Seal

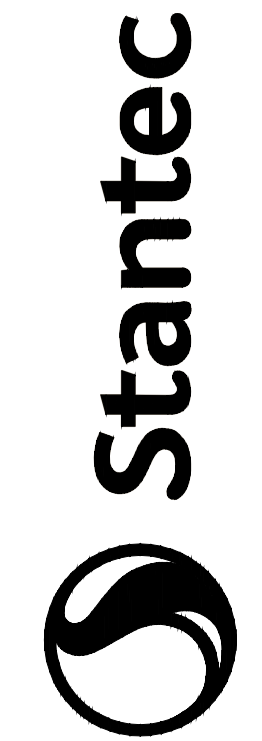
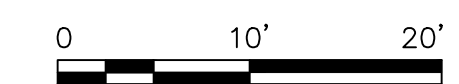
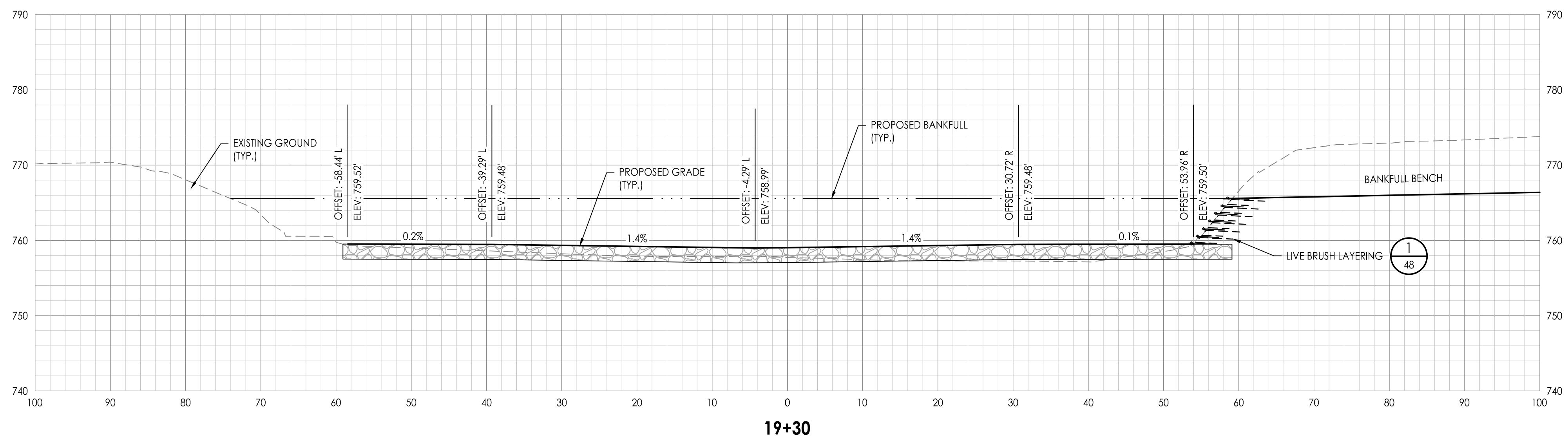
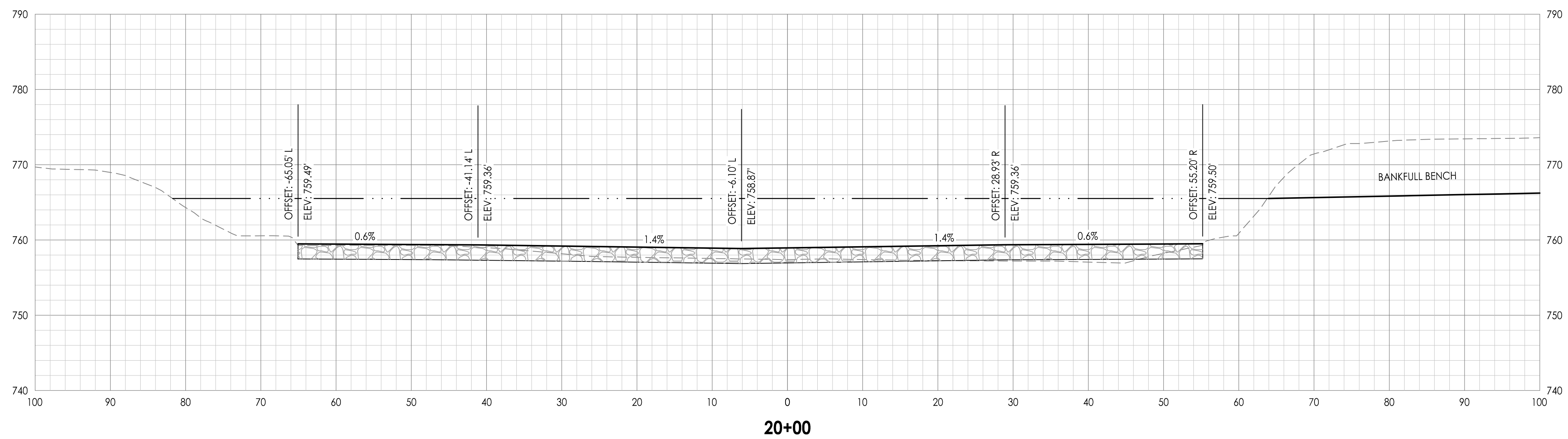
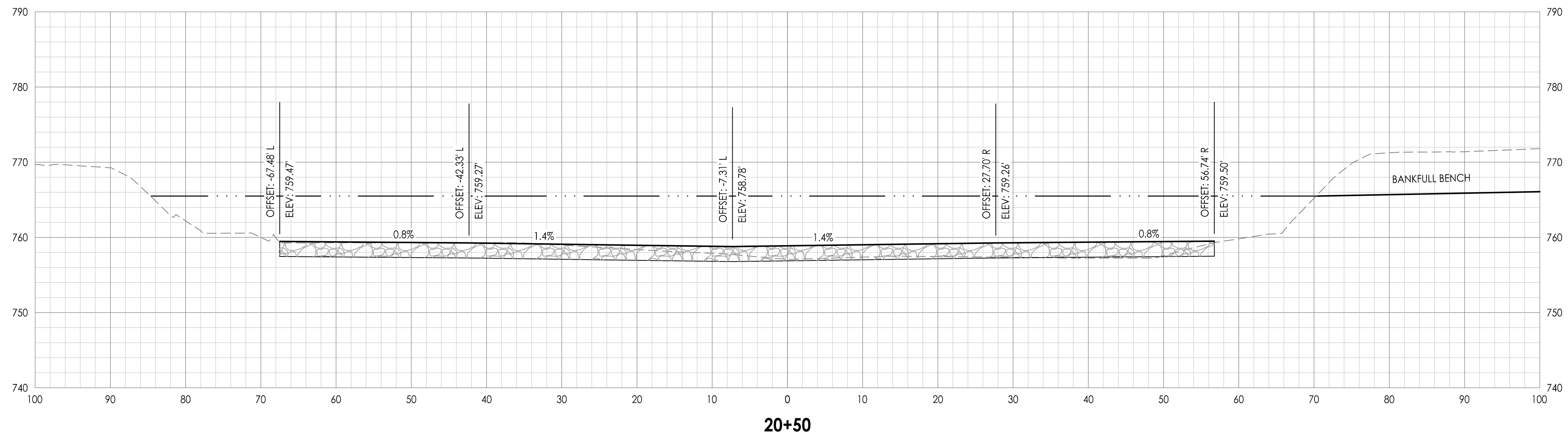
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Dwn.	Chkd.	Dign.

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	By	Appd.	TYAW/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

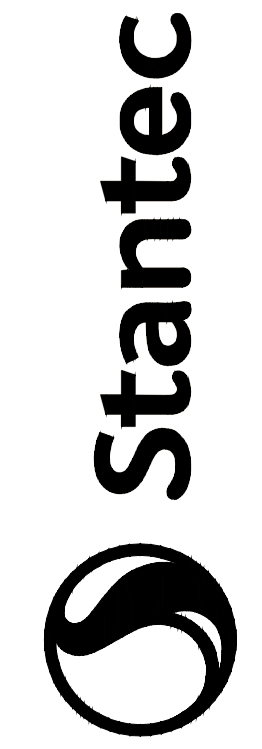
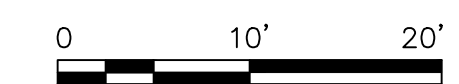
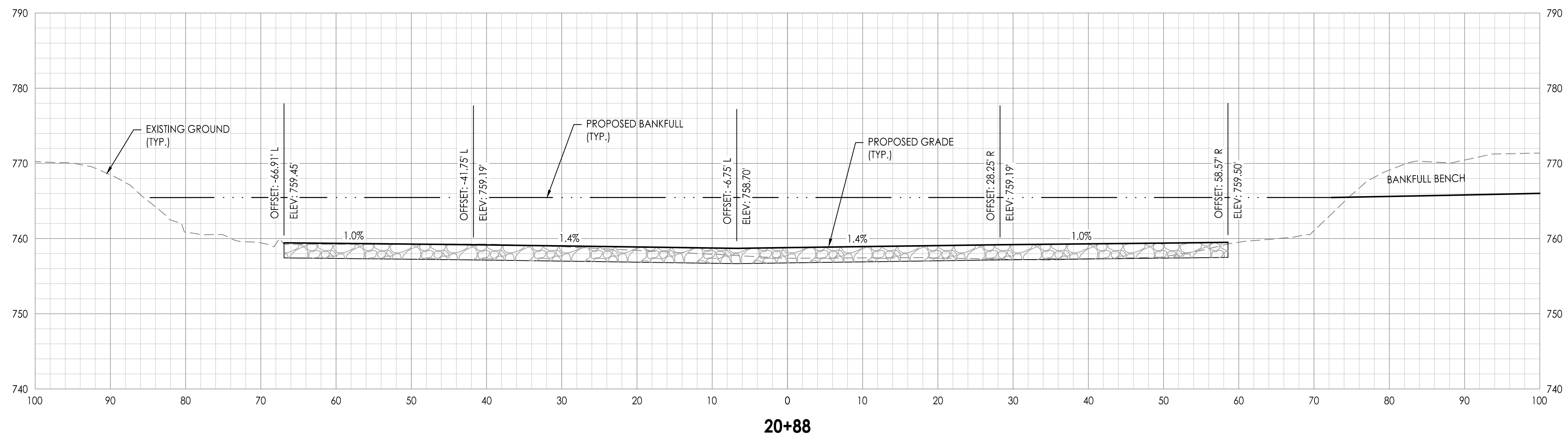
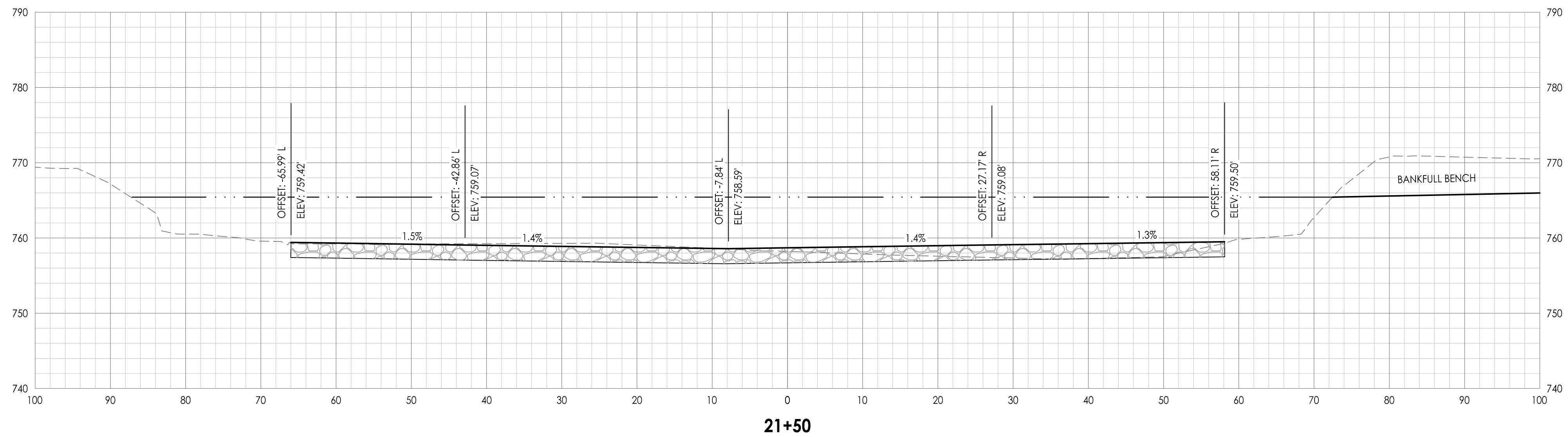
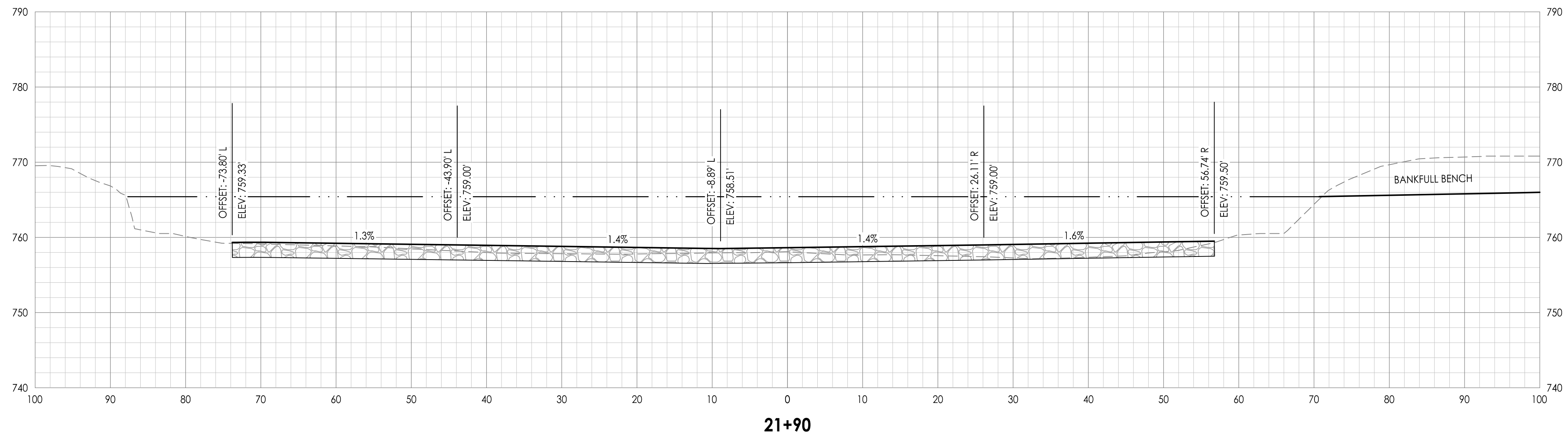
Title  
ANCHOR PARK RIFFLE PROPOSED CROSS SECTIONS 1 OF 2

Project Number: 174316204

DLH	JFS	JNU
Dwn.	Chkd.	Dign.

Revision Sheet  
0 44 of 57





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Revision	By	Appd.	TYAW,DD
2	DJH	JNU	2021.06.13
1	DJH	JNU	2021.05.14
	By	Appd.	TYAW,DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
ANCHOR PARK RIFLE PROPOSED CROSS SECTIONS 2 OF 2

Permit-Seal

Project Number: 174316204

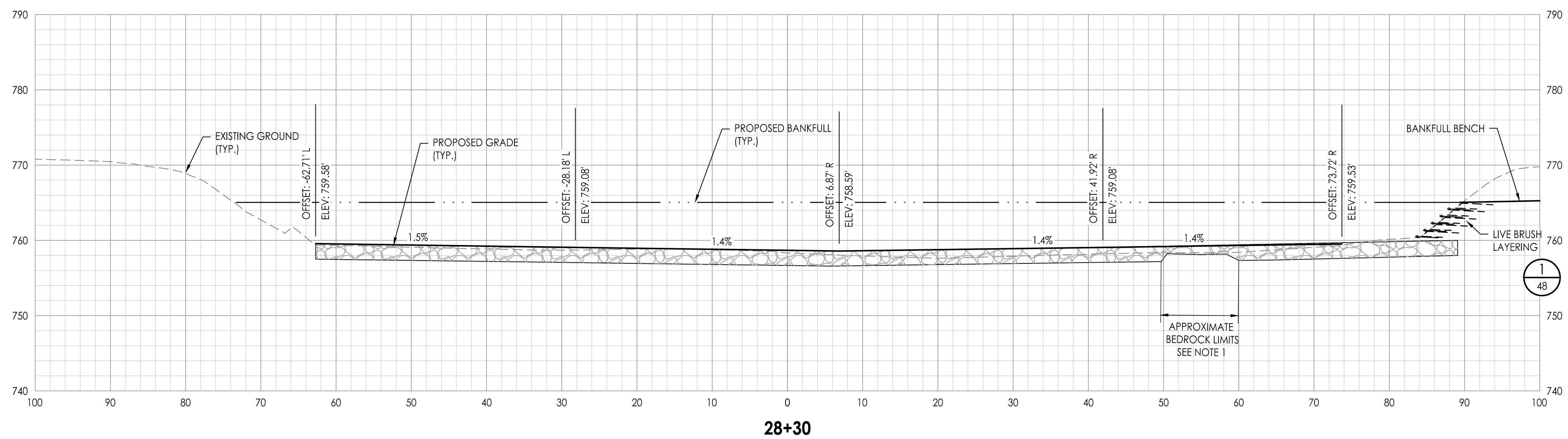
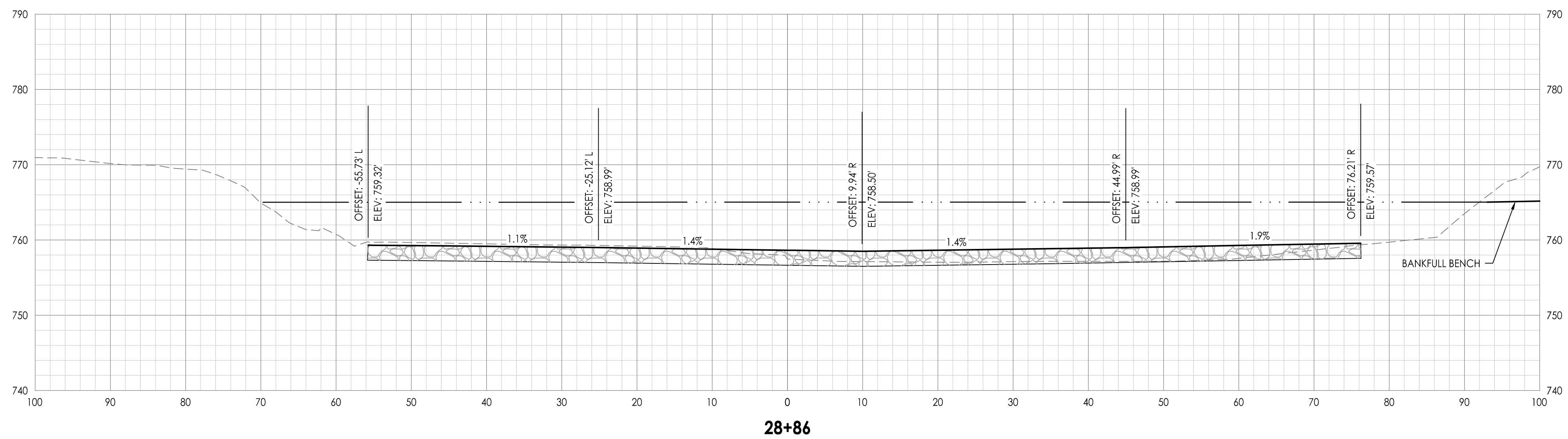
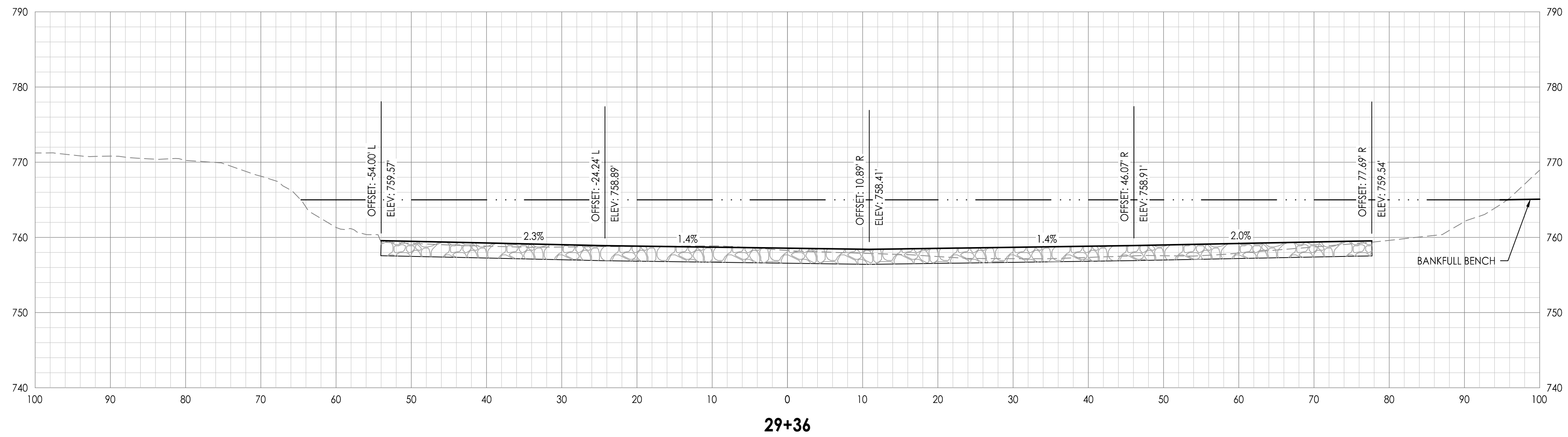
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Dwn.	Chkd.	Dgn.
DJH	JFS	JNU

Revision Sheet

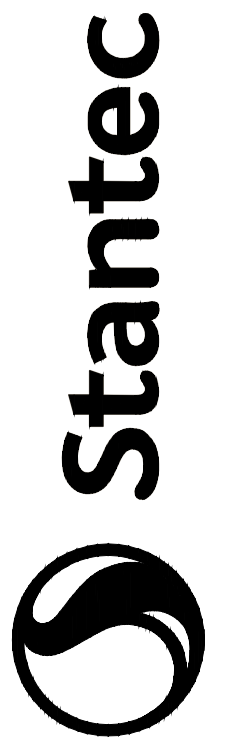
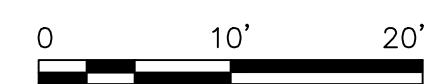
0 45 of 57





**NOTE:**

- IF BEDROCK IS ENCOUNTERED DURING EXCAVATION, IT WILL REMAIN UNDISTURBED AND REPRESENT THE SUBGRADE. FOR BEDROCK SUBGRADES LESS THAN 0.25 FEET BELOW PROPOSED FINISH GRADE, NO RIFFLE SUBSTRATE WILL BE ADDED LEAVING THE BEDROCK AS FINISHED GRADE. FOR BEDROCK SUBGRADES BETWEEN 0.25 FEET AND 0.6 FEET BELOW PROPOSED FINISH GRADE, TYPE C RIPRAP SHALL BE OMITTED FROM THE RIFFLE SUBSTRATE. THE RIFFLE SUBSTRATE AT THESE LOCATIONS SHALL CONSIST OF 70% TYPE D RIPRAP AND 30% NATIVE RIVER GRAVEL. FOR BEDROCK SUBGRADES GREATER THAN 0.6 FEET BELOW PROPOSED FINISH GRADE, THE RIFFLE SUBSTRATE DESCRIBED IN THE CONSTRUCTED RIFFLE DETAIL SHALL BE USED.



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2	DH	JNU	2021.06.13
1	DH	JNU	2021.05.14
	By	Appd.	TYAM/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
CIVITAN PARK RIFFLE PROPOSED CROSS SECTIONS 1 OF 2

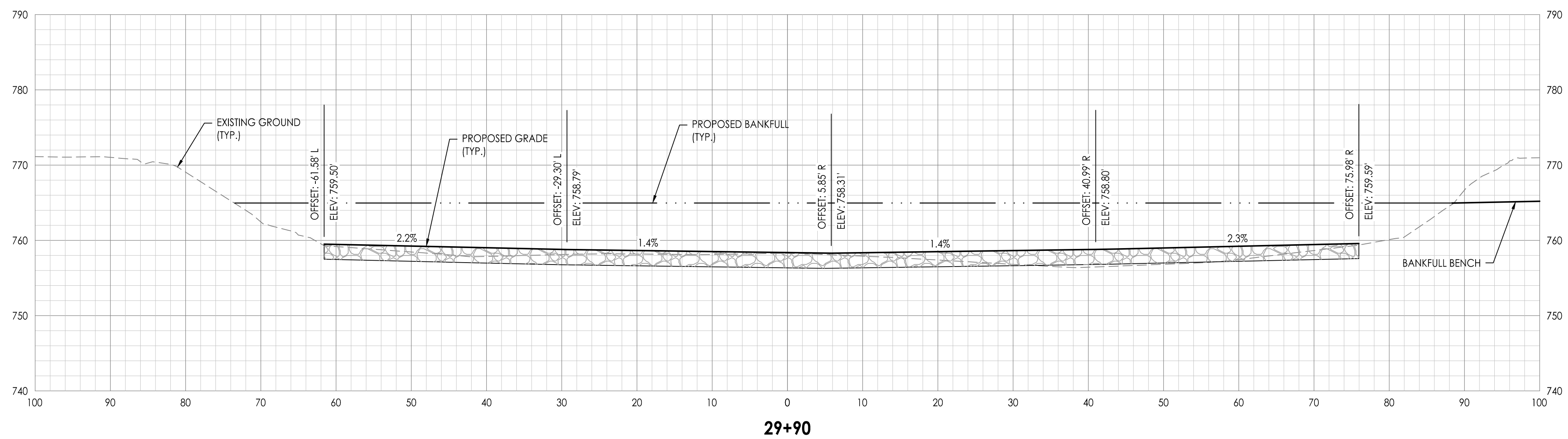
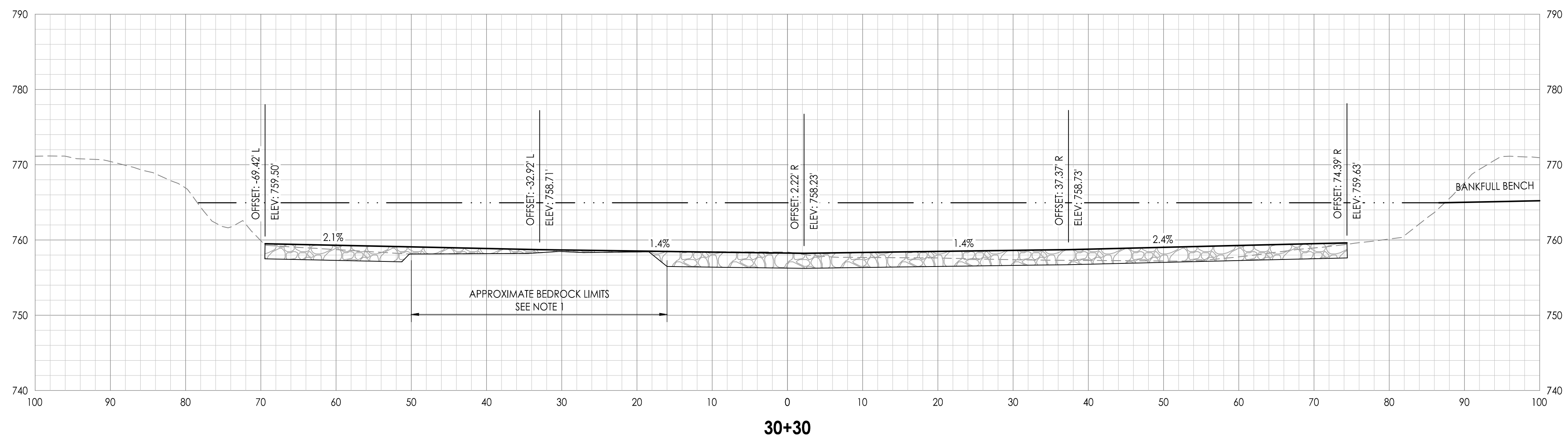
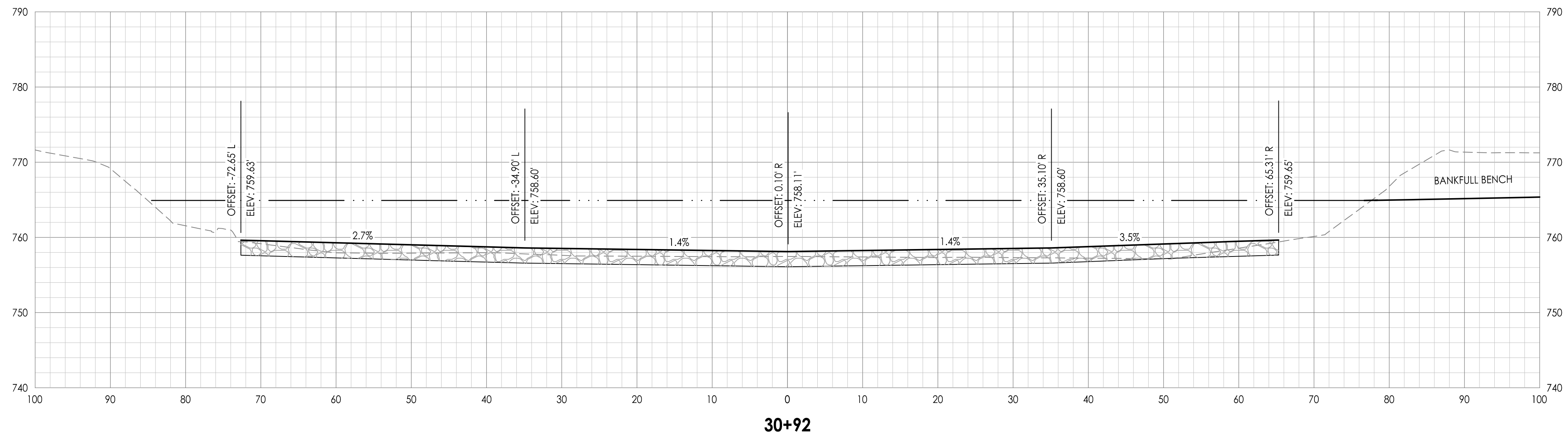
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Project Number: 174316204

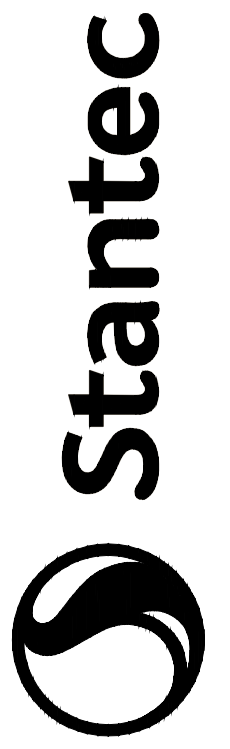
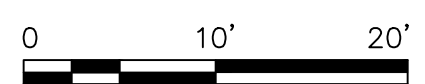
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Revision	Sheet
0	46 of 57





**NOTE:**  
 1. IF BEDROCK IS ENCOUNTERED DURING EXCAVATION, IT WILL REMAIN UNDISTURBED AND REPRESENT THE SUBGRADE. FOR BEDROCK SUBGRADES LESS THAN 0.25 FEET BELOW PROPOSED FINISH GRADE, NO RIFFLE SUBSTRATE WILL BE ADDED LEAVING THE BEDROCK AS FINISHED GRADE. FOR BEDROCK SUBGRADES BETWEEN 0.25 FEET AND 0.6 FEET BELOW PROPOSED FINISH GRADE, TYPE C RIPRAP SHALL BE OMITTED FROM THE RIFFLE SUBSTRATE. THE RIFFLE SUBSTRATE AT THESE LOCATIONS SHALL CONSIST OF 70% TYPE D RIPRAP AND 30% NATIVE RIVER GRAVEL. FOR BEDROCK SUBGRADES GREATER THAN 0.6 FEET BELOW PROPOSED FINISH GRADE, THE RIFFLE SUBSTRATE DESCRIBED IN THE CONSTRUCTED RIFFLE DETAIL SHALL BE USED.



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Revision	By	Appd.	TYAW.DD
2	DLH	JNU	2021.06.13
1	DLH	JNU	2021.05.14
	By	Appd.	TYAW.DD

Client/Project  
 MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
 BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
 HANCOCK COUNTY, OHIO

Title  
 CIVITAN PARK RIFFLE PROPOSED CROSS SECTIONS 2 OF 2

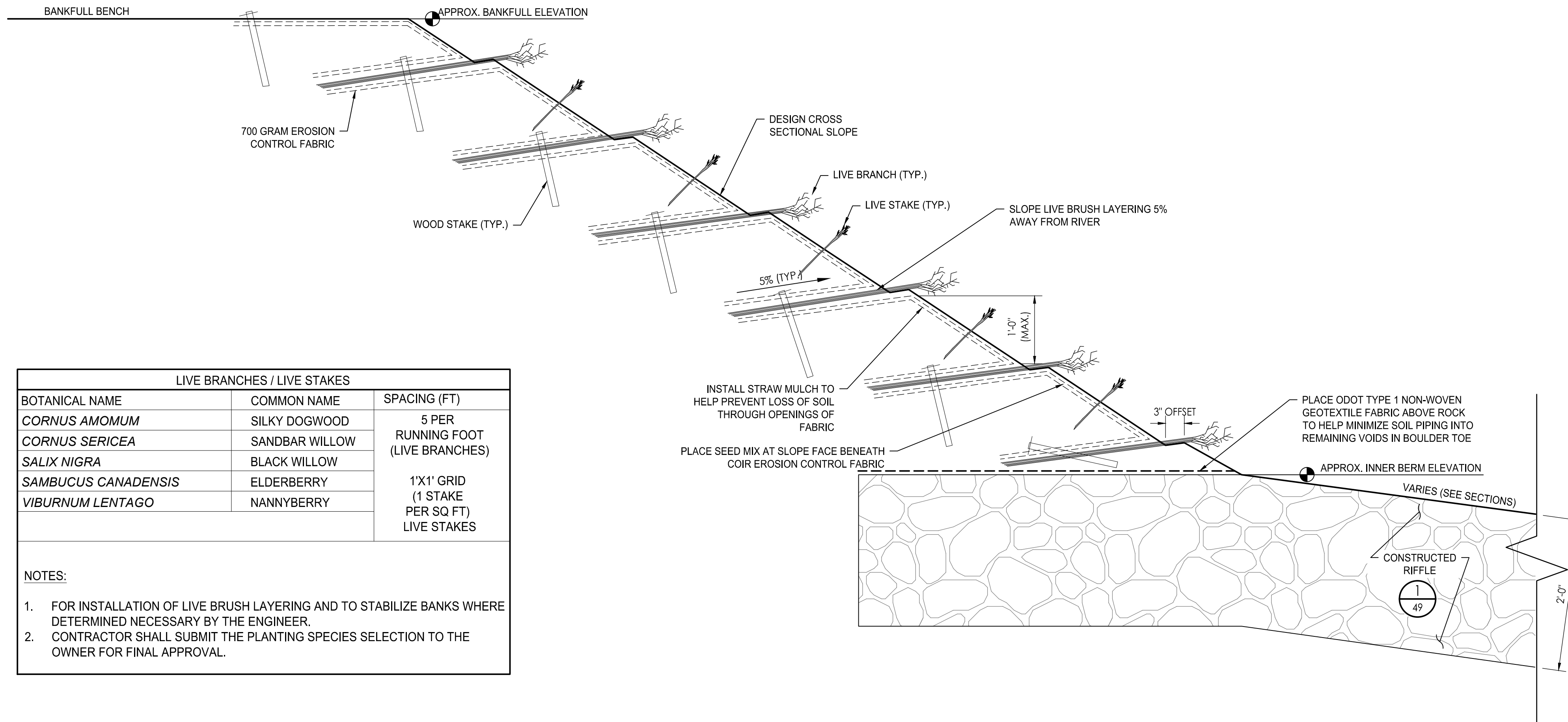
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Dwn.	Chkd.	Dign.

Revision Sheet

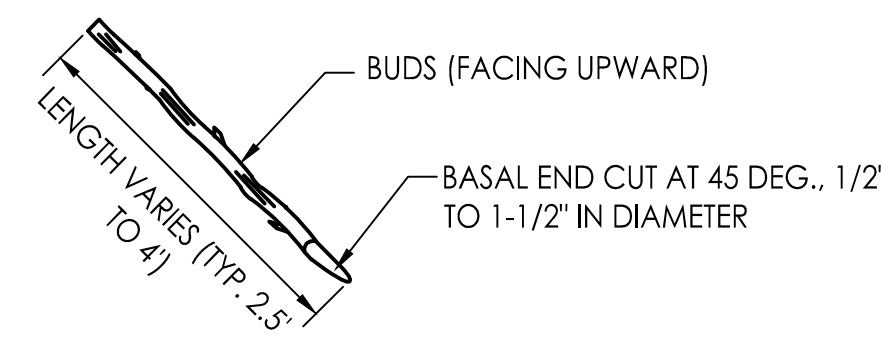




LIVE BRANCHES / LIVE STAKES		
BOTANICAL NAME	COMMON NAME	SPACING (FT)
<i>CORNUS AMOMUM</i>	SILKY DOGWOOD	5 PER RUNNING FOOT (LIVE BRANCHES)
<i>CORNUS SERICEA</i>	SANDBAR WILLOW	
<i>SALIX NIGRA</i>	BLACK WILLOW	
<i>SAMBUCUS CANADENSIS</i>	ELDERBERRY	1'X1' GRID (1 STAKE PER SQ FT) LIVE STAKES
<i>VIBURNUM LENTAGO</i>	NANNYBERRY	

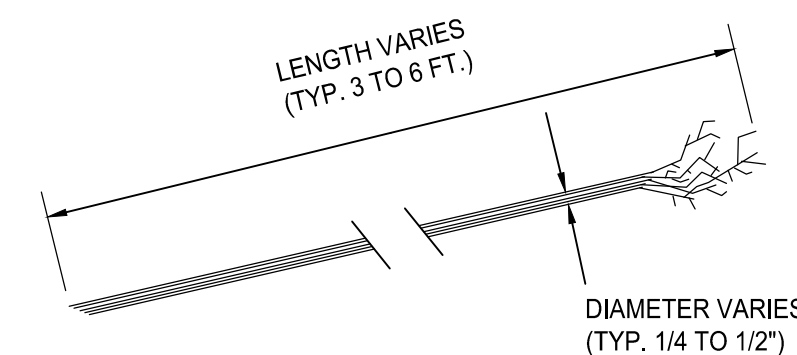
**NOTES:**

- FOR INSTALLATION OF LIVE BRUSH LAYERING AND TO STABILIZE BANKS WHERE DETERMINED NECESSARY BY THE ENGINEER.
- CONTRACTOR SHALL SUBMIT THE PLANTING SPECIES SELECTION TO THE OWNER FOR FINAL APPROVAL.



- NOTES:**
- LIVE STAKES SHALL BE INSTALLED IN LIEU OF LIVE BRANCHES IF LIVE BRUSH LAYERING IS CONSTRUCTED OUT OF THE DORMANT SEASON. STAKES SHALL BE INSTALLED AT A RATE OF 1 PER SQUARE FOOT.
  - LIVE STAKES SHALL BE CUT FROM AN APPROVED SOURCE WITH A SHARP TOOL. STAKE SHALL BE FREE FROM DISEASE OR EXCESS DEAD TWIGS, 2.5 TO 4 FEET IN LENGTH WITH A BASAL END 0.5 TO 1.5 INCH IN DIAMETER. PRIOR TO INSTALLATION BASAL END SHALL BE CUT AT A 45 DEGREE ANGLE AND THE END SHALL BE CUT FLAT WITHOUT CRACKS.
  - LIVE STAKES SHALL BE INSTALLED BY GENTLY TAMPING INTO THE SOIL LEAVING 20% EXPOSED.
  - LIVE STAKES SHALL BE INSTALLED WHEN THEY ARE DORMANT, WHICH TYPICALLY OCCURS BETWEEN NOVEMBER 31 AND MARCH 31.

**DETAIL - DORMANT LIVE STAKE**  
NOT TO SCALE

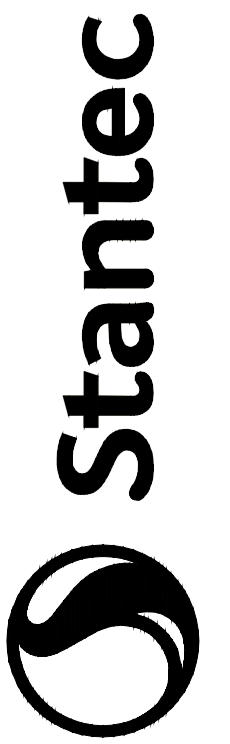


- NOTES:**
- TOPSOIL SHALL BE PLACED IMMEDIATELY ABOVE AND BELOW LIVE BRANCHES.
  - LIVE STAKES ARE ONLY REQUIRED IF PLACED IN LIEU OF LIVE BRANCHES DURING CONSTRUCTION OUT OF THE DORMANT SEASON.
  - IF SUBSTITUTED FOR LIVE BRANCHES, LIVE STAKES SHALL BE INSTALLED AT A RATE OF 1 PER SQUARE FOOT.

**LIVE BRANCH**  
NOT TO SCALE

**GENERAL SHEET NOTES**

- SEE PROPOSED PLAN, PROFILE, & CROSS SECTION SHEETS FOR EXTENTS OF LIVE BRUSH LAYERING.
- PLACE A LAYER OF NON-WOVEN GEOTEXTILE FABRIC BETWEEN THE CONSTRUCTED RIFFLE MATERIAL AND THE FIRST LAYER OF TOPSOIL AS SHOWN IN THE DETAIL.
- THE SOIL BACKFILL USED FOR LIFTS AND TOPSOIL USED FOR LAYERING WITH THE LIVE BRANCHES SHALL BE FREE OF ANY LARGE ROOTS OR WOODY DEBRIS AND SHALL GENERALLY BE FREE FROM ANY GRAVEL OR COBBLE MATERIAL.
- SOIL BACKFILL SHALL BE COMPACTED SUCH THAT FUTURE SETTLEMENT OF THE MATERIAL IS KEPT TO A MINIMUM, YET NOT SUCH THAT THE UNDERLYING BRUSH AND/OR RIPRAP ARE DISPLACED OR DAMAGED.
- SLOPE THE ENTIRE TOP OF THE BACKFILL FOR THE FIRST LIFT AT AN APPROXIMATE 5% SLOPE AWAY FROM THE STREAM.
- PLACE A LAYER OF TOPSOIL AND LIVE BRANCHES ON TOP OF EACH SOIL LIFT SUCH THAT AT LEAST TWO THIRDS OF THE LIVE BRANCH WILL BE COVERED BY THE NEXT SOIL LIFT.
- LIVE STAKES AND LIVE BRANCHES SHALL BE PLANTED DURING DORMANT SEASON BETWEEN NOVEMBER 30 AND MARCH 31. IF THE LIVE BRUSH LAYERING IS CONSTRUCTED OUTSIDE THE DORMANT SEASON, THE LIVE BRANCHES WILL BE OMITTED AND LIVE STAKES SHALL BE INSTALLED ALONG THE SOIL LIFTS DURING THE NEXT DORMANT SEASON AT A DENSITY OF 1 PER SQUARE FOOT.
- LIVE STAKES AND LIVE BRANCHES SHALL BE OF THE SPECIES SPECIFIED FOR LIVE STAKES SHOWN IN THIS DETAIL.
- PLACE A LAYER OF 6.5 FEET WIDE GEOCOIR DEKOWE 700 EROSION CONTROL FABRIC ON TOP OF THE TOPSOIL AND LIVE BRANCHES SUCH THAT 2.0 FEET OF THE FABRIC WILL BE BURIED BELOW THE NEXT SOIL LIFT. ALLOW THE REMAINING 4.5 FEET OF FABRIC TO HANG OVER THE PRECEDING SOIL LIFT OR CONSTRUCTED ROCK RIFFLE OR ROCK TOE.
- PLACE SOIL BACKFILL UP TO THE LIFT HEIGHT SPECIFIED IN THE PROPOSED CROSS SECTIONS, BEING CAREFUL NOT TO PUSH/PULL OR TEAR THE FABRIC PREVIOUSLY PLACED.
- THE TOP OF THE SOIL BACKFILL SHALL BE FLAT WITHIN THE LIFT SETBACK DISTANCE SPECIFIED IN THE DETAIL. BEYOND THE LIFT SETBACK DISTANCE, THE SOIL BACKFILL SHALL BE SLOPED AT AN APPROXIMATE 5% SLOPE AWAY FROM THE STREAM.
- TOP DRESS THE SOIL LIFT WITH TOPSOIL FROM THE FACE OF THE SOIL LIFT BACK TO THE LIFT SETBACK DISTANCE SPECIFIED IN THE DETAIL. APPLY SEED AND STRAW MULCH ATOP THE PLACED TOPSOIL.
- PERMANENT AND TEMPORARY SEED SHALL BE OF THE SPECIES SPECIFIED FOR RIPARIAN BUFFER MIX AND TEMPORARY GROUND COVER SHOWN ON SHEET 24.
- WRAP THE FACE AND TOP OF THE SOIL LIFT USING THE COIR MATTING HANGING OVER THE PREVIOUS LIFT OR CONSTRUCTED ROCK RIFFLE.
- THE EROSION CONTROL FABRIC SHALL BE PULLED AS TIGHT AS POSSIBLE WITHOUT TEARING OR EXCESSIVELY DISTORTING THE FABRIC.
- SECURE THE EROSION CONTROL FABRIC IN PLACE BY STAKING.
- BEGIN CONSTRUCTION OF THE NEXT SOIL LIFT BY REPEATING THE PREVIOUS NOTES STARTING WITH NOTE 6, OFFSETTING THE TOP OF THE PREVIOUS LIFT BY 3 INCHES.
- THE OVERALL SLOPE CREATED BY THE LIVE BRUSH LAYERING SHALL MATCH THE PROPOSED CROSS SECTION SHAPE.
- SECURE THE EROSION CONTROL FABRIC IN PLACE FOR THE LAST SOIL LIFT AT THE BANKFULL ELEVATION BY STAKING THE END OF THE EROSION CONTROL FABRIC AND THEN BACKFILL OVER THE FABRIC UP TO FINISH GRADE ELEVATION AS SHOWN IN THE DETAIL.
- IT MAY BE NECESSARY TO INSTALL AN ADDITIONAL ROLL OF EROSION CONTROL FABRIC ON THE BANKFULL BENCH TO MEET THE DISTANCE BEYOND BANKFULL REQUIREMENTS AS PER THE EROSION CONTROL FABRIC DETAIL.
- THE SURFACE OF THIS STRUCTURE SHALL BE FINISHED TO A SMOOTH AND COMPACT SURFACE IN ACCORDANCE WITH THE LINES, GRADES, AND CROSS-SECTIONS OR ELEVATIONS SHOWN ON THE DRAWINGS. THE DEGREE OF FINISH FOR ELEVATIONS SHALL BE WITHIN 0.1 FT OF THE GRADES AND ELEVATIONS INDICATED.
- RE-DRESSING OF CHANNEL AND BANKFULL BENCH/FLOODPLAIN WILL LIKELY BE REQUIRED FOLLOWING INSTALLATION OF INSTREAM STRUCTURES AND SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
- STRUCTURE MAY BE MODIFIED IN FIELD BY ENGINEER.



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Revision	By	Appd.	Y1.MM.DD
3	100% DESIGN	CJ	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	CJ	2021.05.14
	ISSUED		Y1.MM.DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS

HANCOCK COUNTY, OHIO  
Title  
LIVE BRUSH LAYERING DETAILS

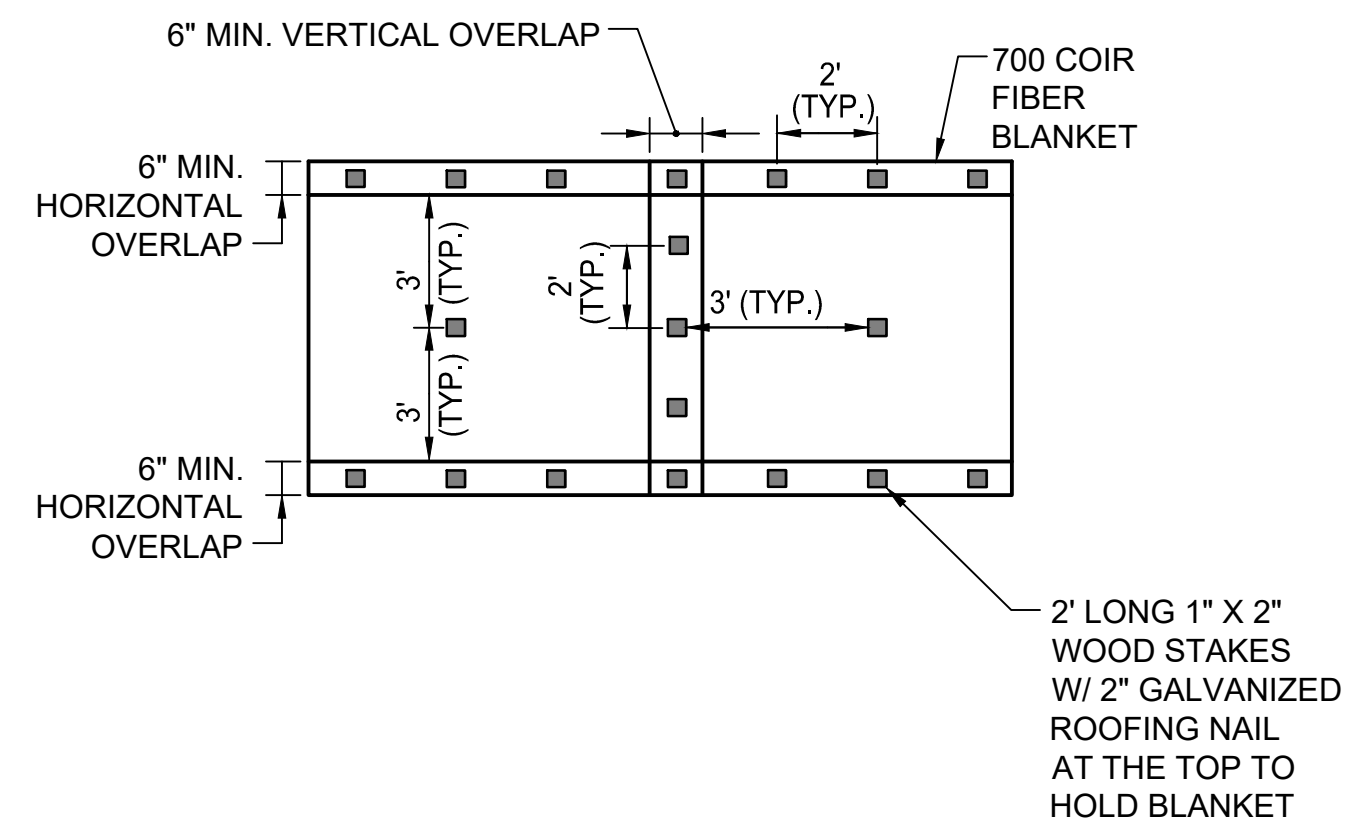
Issue Stamp

Project Number: 174316204  
File Name: 48 live brush layering details.dwg

Dwn.	Chkd.	Dgn.
CJ	DDD	TC

Revision Sheet





**BLANKET STAKING VIEW**

**NOTE:**

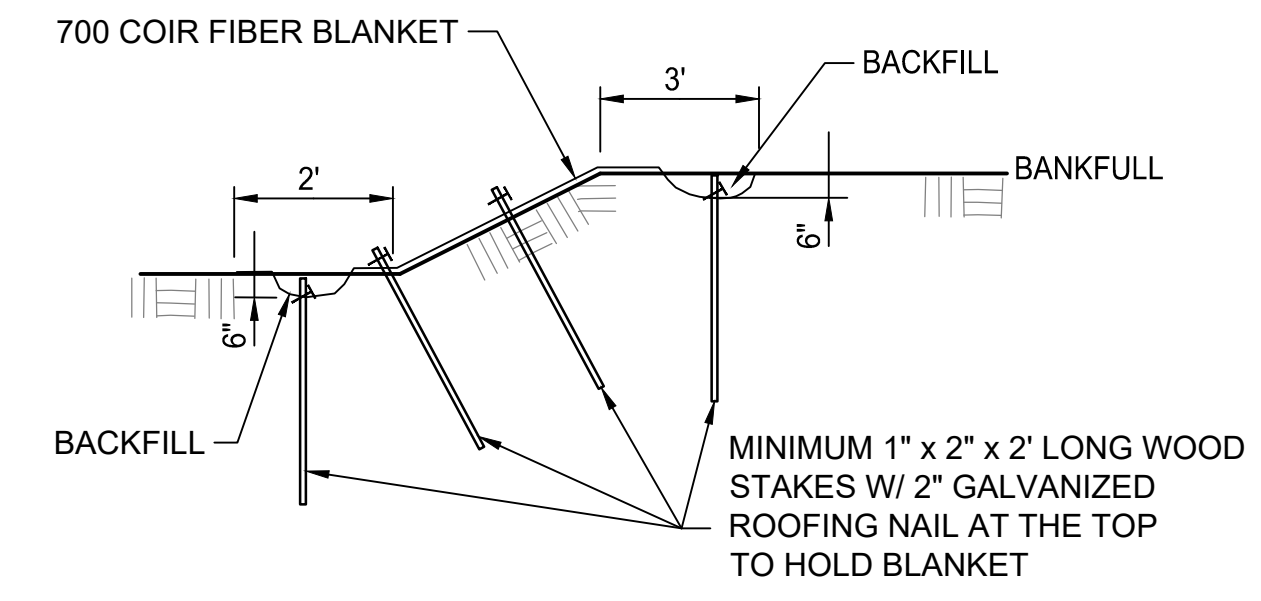
ADDITIONAL STAKING SHALL BE APPLIED IF THE EROSION CONTROL BLANKET SEPARATES FROM THE SOIL MORE THAN 1-INCH UNDER A REASONABLE PULL.

**DETAILS - TYPICAL EROSION CONTROL BLANKET**

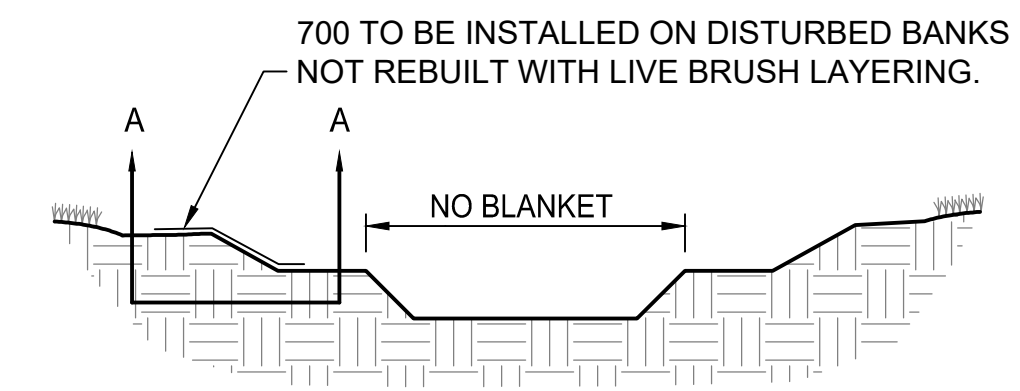
NOT TO SCALE

**NOTE:**

- BEFORE INSTALLING COIR FIBER BLANKET, TILL UPPER 3" - 4" OF SOIL TO HELP VEGETATION TO ESTABLISH. RAKE SOIL LEVEL AND ADD SEED AND MULCH BEFORE INSTALLING COIR FIBER BLANKET.
- COIR FIBER BLANKET FROM 4 FT. BELOW BKF TO 20 FT. OUT AND ON DISTURBED SLOPES > 2:1



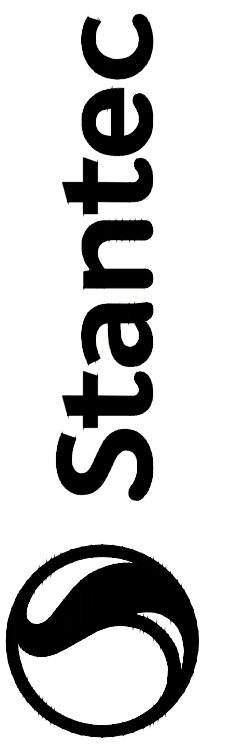
**SECTION A-A**



**CHANNEL SECTION**

**NOTE:**

ALL MATERIALS ARE TO BE APPROVED BY ENGINEER OR ENGINEER'S ONSITE CONSTRUCTION MANAGER.



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The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.

Revision	By	Appd.	Y1.M.M.DD
3	CJ	DDD	2022.04.08
2	MWG	DDD	2021.08.13
1	CJ	DDD	2021.05.14
	By	Appd.	Y1.M.M.DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
MISCELLANEOUS RIFFLE DETAILS

Issue Stamp

Project Number: 174316204

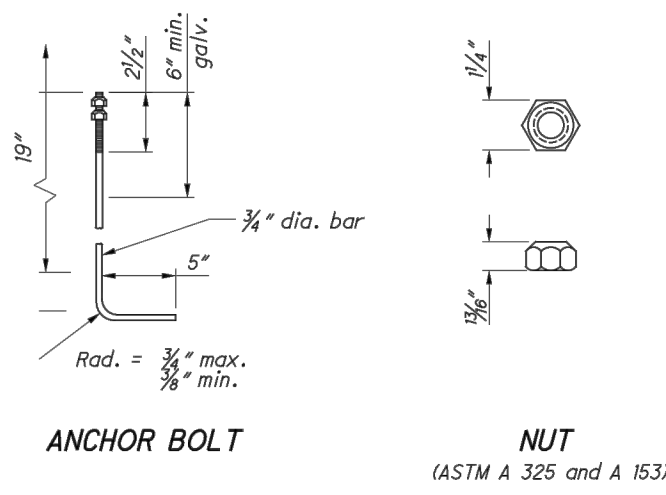
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Dwn.	Chkd.	Dign.

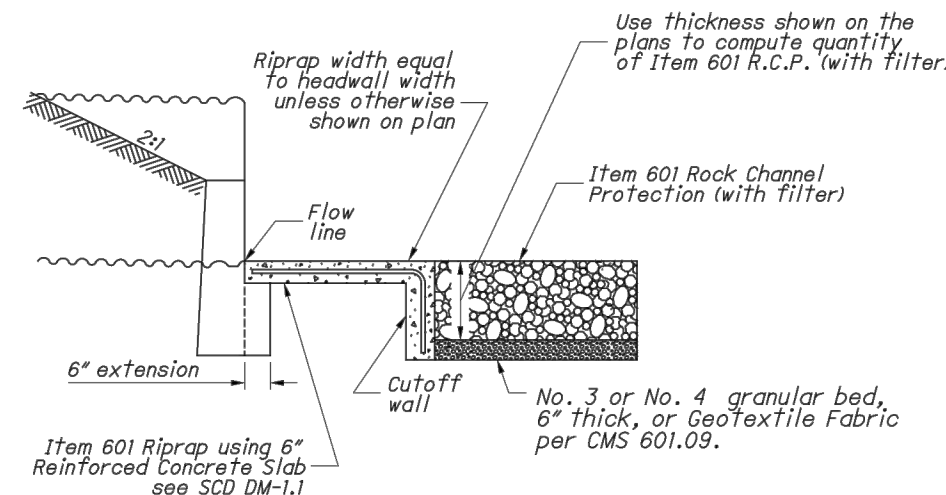
Revision Sheet

0 49 of 57

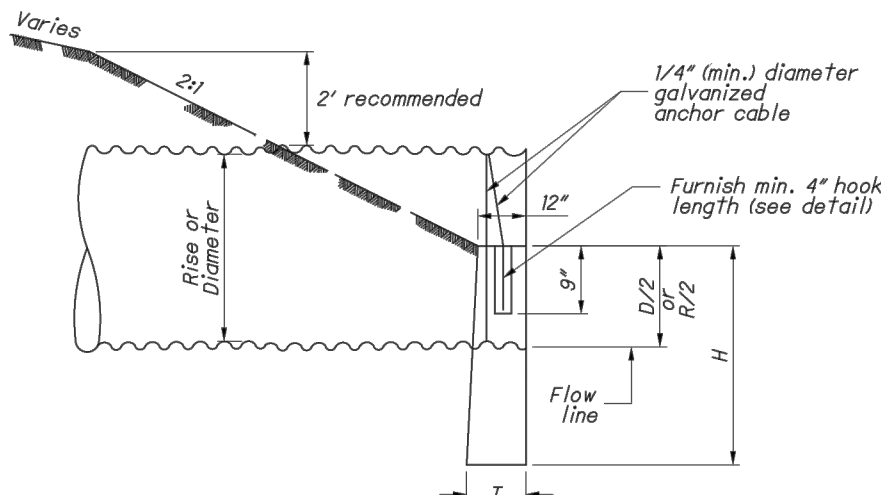




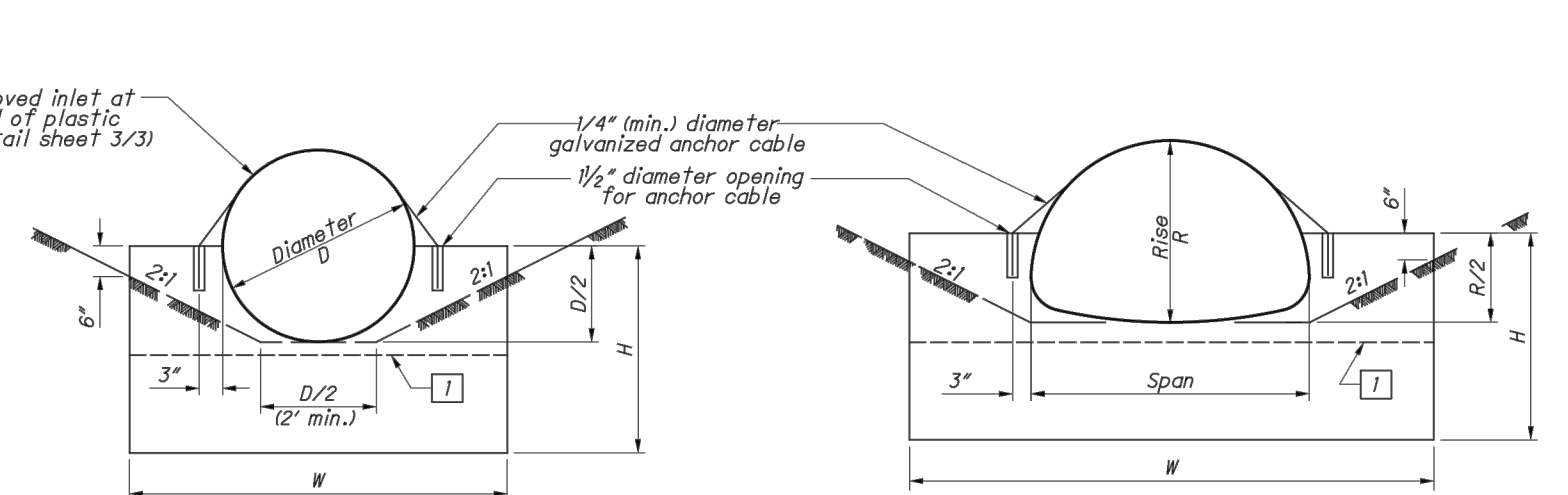
**ANCHOR BOLT**  
NUT  
(ASTM A 325 and A 153)



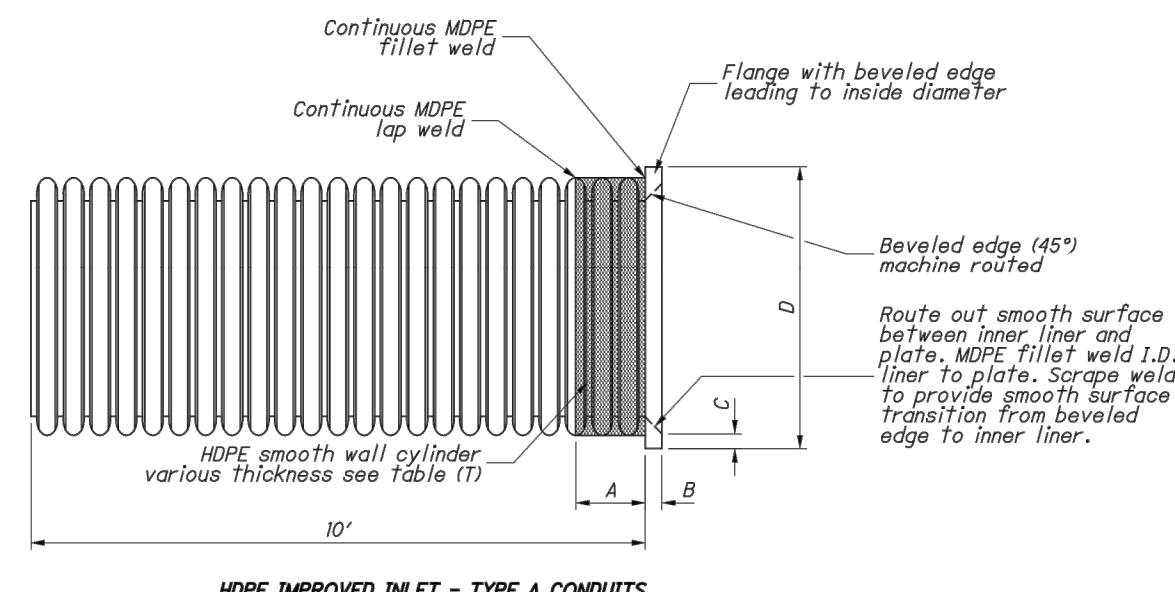
**OUTLET CHANNEL PROTECTION DETAIL**



**PLASTIC & METAL PIPE PROFILE W/ ANCHOR CABLE OPTION**



**PLASTIC & METAL PIPE END TREATMENT "A" W/ ANCHOR CABLE OPTION**



**HDPE IMPROVED INLET - TYPE A CONDUITS**

PIPE SIZE	A	B	C	D	T
12 in.	6.00 in.	0.60 in.	1.00 in.	16.19 in.	0.13 in.
15 in.	6.00 in.	0.63 in.	1.05 in.	18.72 in.	0.10 in.
18 in.	6.00 in.	0.75 in.	1.50 in.	22.57 in.	0.25 in.
24 in.	8.00 in.	1.00 in.	2.00 in.	30.08 in.	0.25 in.
30 in.	8.00 in.	1.25 in.	2.50 in.	37.50 in.	0.38 in.
36 in.	10.00 in.	1.50 in.	3.00 in.	45.00 in.	0.38 in.
42 in.	10.00 in.	1.75 in.	3.50 in.	51.00 in.	0.38 in.
48 in.	10.00 in.	2.00 in.	4.00 in.	56.60 in.	0.38 in.
60 in.	12.00 in.	3.00 in.	6.00 in.	74.60 in.	0.38 in.

**NOTES**

**GENERAL:** Provide a riprap reinforced concrete slab according to SCD DM-1.1 if the pipe is depressed or it is specified in the plan. Payment for the slab is made per square yard of **Item 601 Riprap Using 6" Reinforced Concrete Slab** and includes the cost of the cutoff wall.

This drawing is for cast-in-place half-height concrete headwalls. Precast half-height headwalls are only approved for round conduits with a maximum conduit diameter of 78". When precast headwalls are furnished, provide openings for the anchor cable as shown and fill with grout after placement of the anchor cable. If anchor bolts are to be used with a precast headwall, fill the anchor cable openings with grout.

**CONCRETE:** Use 4000 psi compressive strength concrete for headwall. Concrete quantities are based on headwalls without the 6" extension under the channel protection.

**ANCHOR BOLTS:** Furnish bolts (see detail sheet 2/3) that meet ASTM A 307 for anchoring both ends of metal pipe. The top 6" min. of the bolt must be galvanized according to ASTM A 153. Cost of anchors is included in the price bid per foot of Item 611.

Headwall dimensions are based on end treatment "A" for pipe sizes up to and including 120", 114"x17", and 66"x51", and an end treatment "B" for sizes over and including 132", 13'-3"x9'-4", and 7'-3"x5'-3".

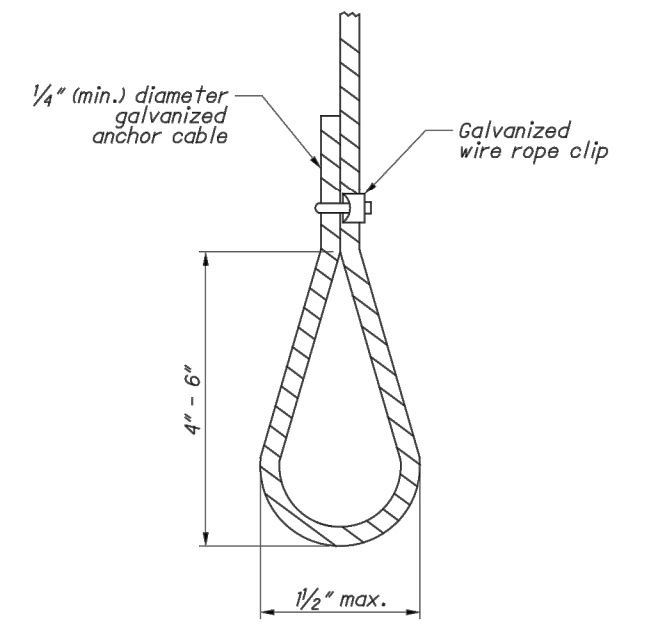
**PLASTIC PIPE:** Plastic pipe may not be available in all the sizes specified on this drawing.

**ANCHOR CABLE:** Furnish galvanized anchor cable (see detail sheet 2/4 & 3/4) that meets ASTM A 1023 for anchoring both ends of plastic or metal pipe. Wire rope clip must be galvanized according to ASTM A 153. Cost of anchor cable and wire rope clip is included in the unit price bid per foot of Item 611.

**EYEBOLTS:** Furnish eyebolts (see detail sheet 3/4) that meet ASTM A 489 for anchoring both ends of metal or plastic pipe. The eyebolts must be galvanized according to ASTM A 153. Furnish eyebolts with a min. I.D. eye of 1/2" and a min. shank length of 3". Cost of eyebolts is included in the price bid per foot of Item 611.

**IMPROVED INLET FOR HDPE PIPE:** Furnish improved inlet at upstream end of culverts and open-ended storm sewers using plastic pipe when specified in the plans.

Use HDPE smooth cap and flange materials according to ASTM D 3350 345464C.



**ANCHOR CABLE DETAIL**

**NOTES**

Tightly wrap galvanized anchor cable one time completely around the circumference of the conduit. Furnish hook at least 4" long at the ends of the anchor cable as shown above.

Cut galvanized anchor cable to length required.

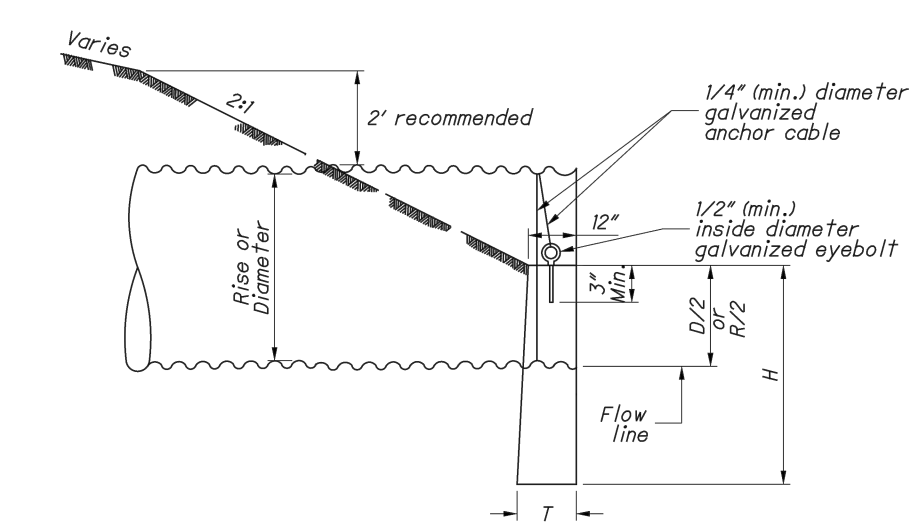
Form or drill 1/2" diameter openings for anchor cable at locations shown. Alternatively, place anchor cable in wet concrete at the dimensions shown above to secure conduit to headwall.

Fill any openings made for anchor cables with grout after the cables are placed to a tight fit.

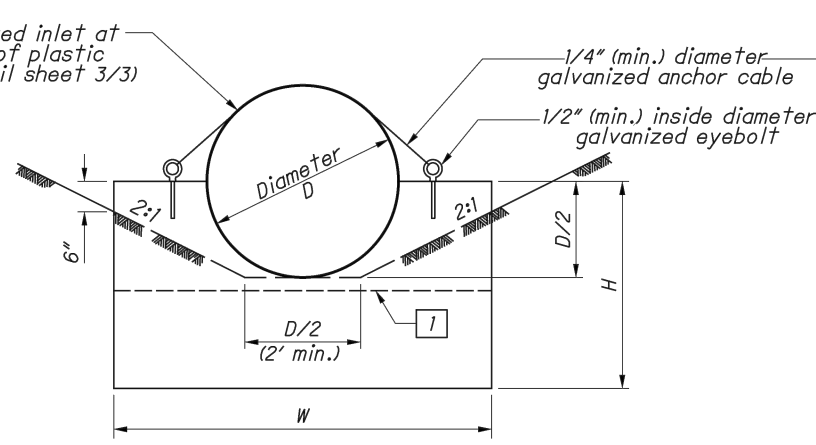
Secure cables such that they are taut after the grout or concrete has cured.

**CAST-IN-PLACE HW FOR PLASTIC PIPE**

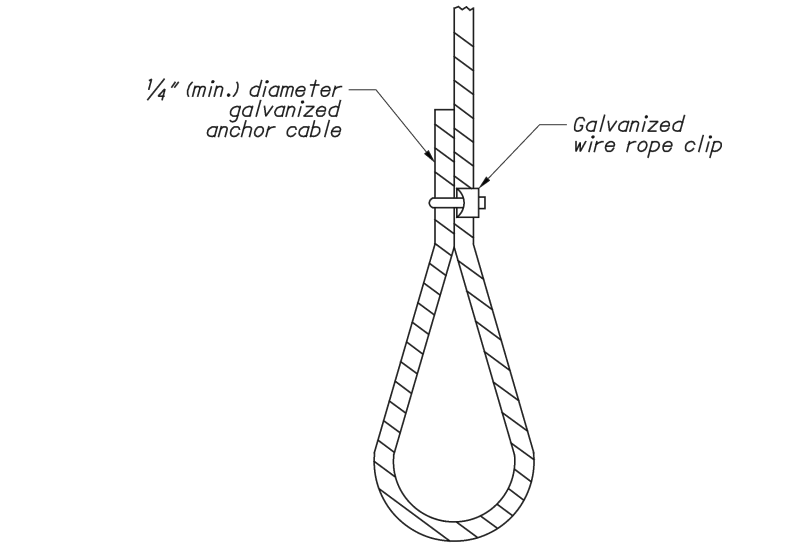
D	CIRCULAR		CONC. cu. yds.
	Top surface of 6" inlet	Headwall extension	
18"	3'-0"	3'-3"	0.33
30"	5'-0"	5'-3"	0.60



**PLASTIC & METAL PIPE PROFILE W/ ANCHOR CABLE EYE BOLT OPTION**



**PLASTIC & METAL PIPE END TREATMENT "A" W/ ANCHOR CABLE EYE BOLT OPTION**



**ANCHOR CABLE DETAIL FOR EYEBOLT OPTION**

**NOTES**

Drill openings a min. of 3" deep for eyebolts at the locations shown. Insert entire length of bolt shank into opening. Fill openings with grout and allow to harden before securing anchor cable. Alternatively, place eyebolts in wet concrete at the locations shown above.

Tightly wrap galvanized anchor cable one time completely around the circumference of the conduit.

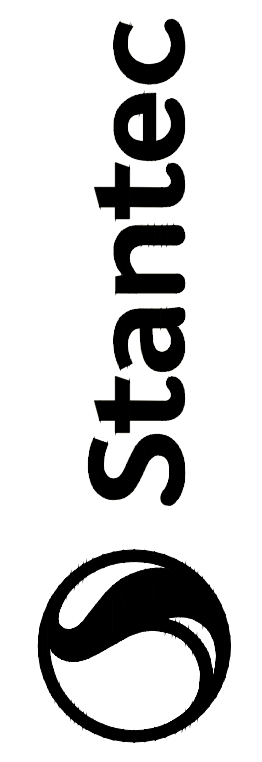
Cut galvanized anchor cable to length required.

Place cable through eyebolt and form a loop as shown in the above detail. Ensure the cable is pulled to a tight fit and secured with a galvanized wire rope clip.

1 Top surface of 6" inlet headwall extension

**ODOT HEADWALL TYPE 2.1**

NOT TO SCALE



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Revision	By	Appd.	Y/M/AM/DD
3	100% DESIGN	DDD	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	DDD	2021.05.14
			Y/M/AM/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
MISCELLANEOUS DETAILS 1 OF 2

Issue Stamp

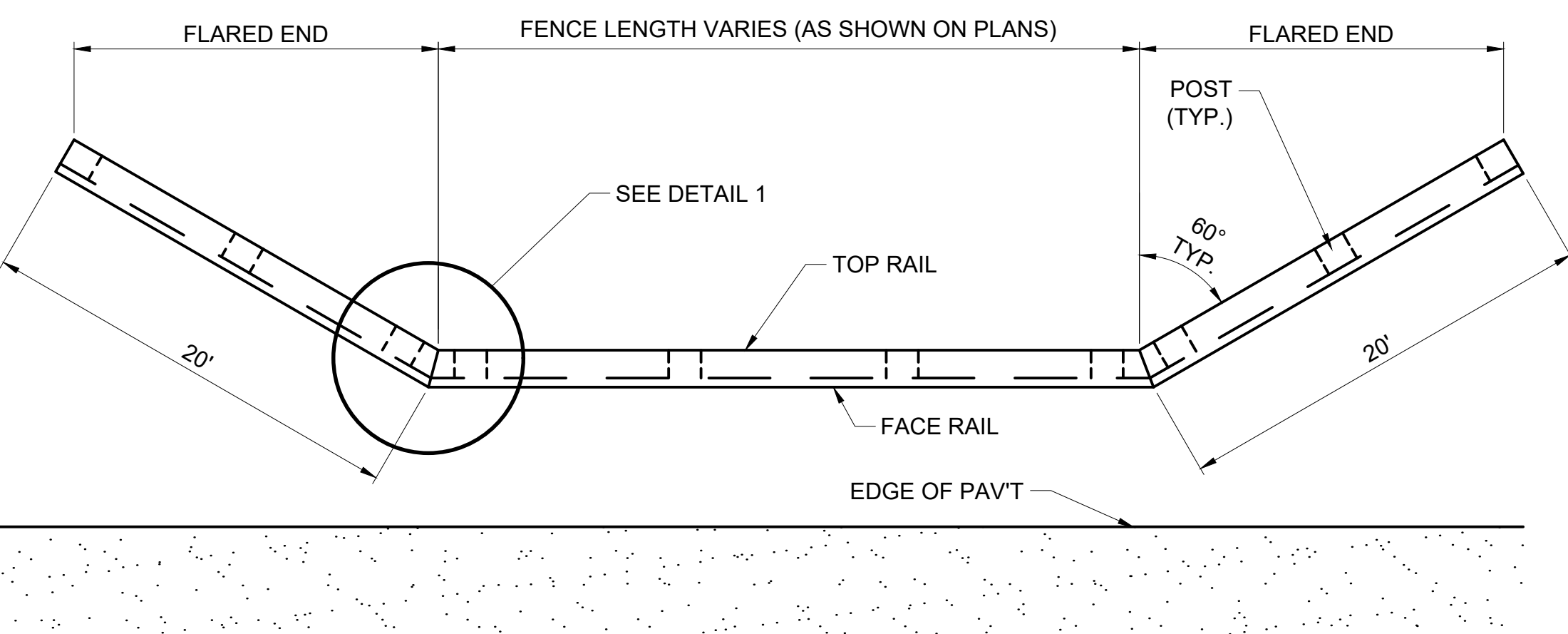
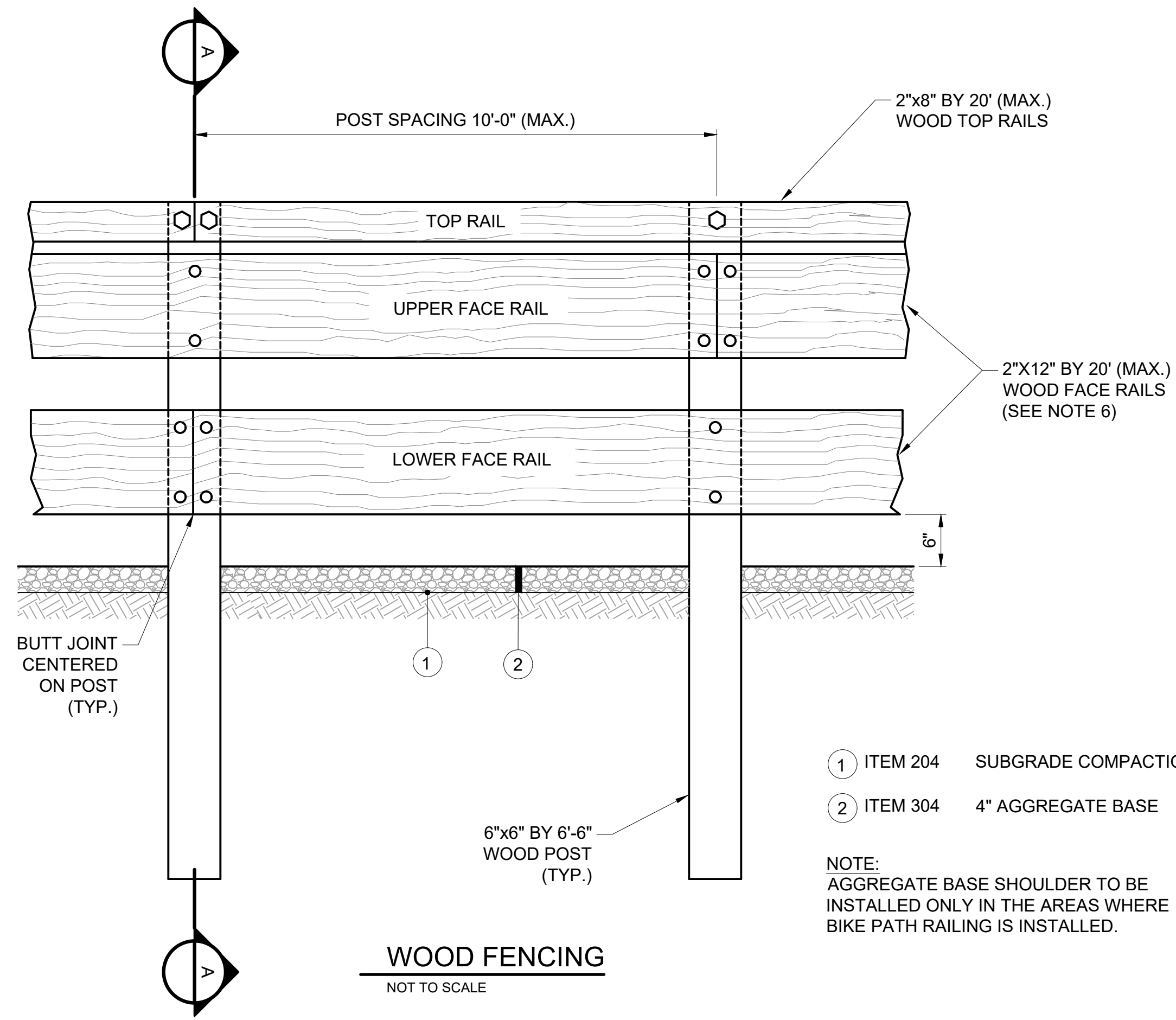
Project Number: 174316204  
File Name: S0 MISCELLANEOUS DETAILS 1 OF 2.dwg

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Dwn.	Chkd.	Dign.

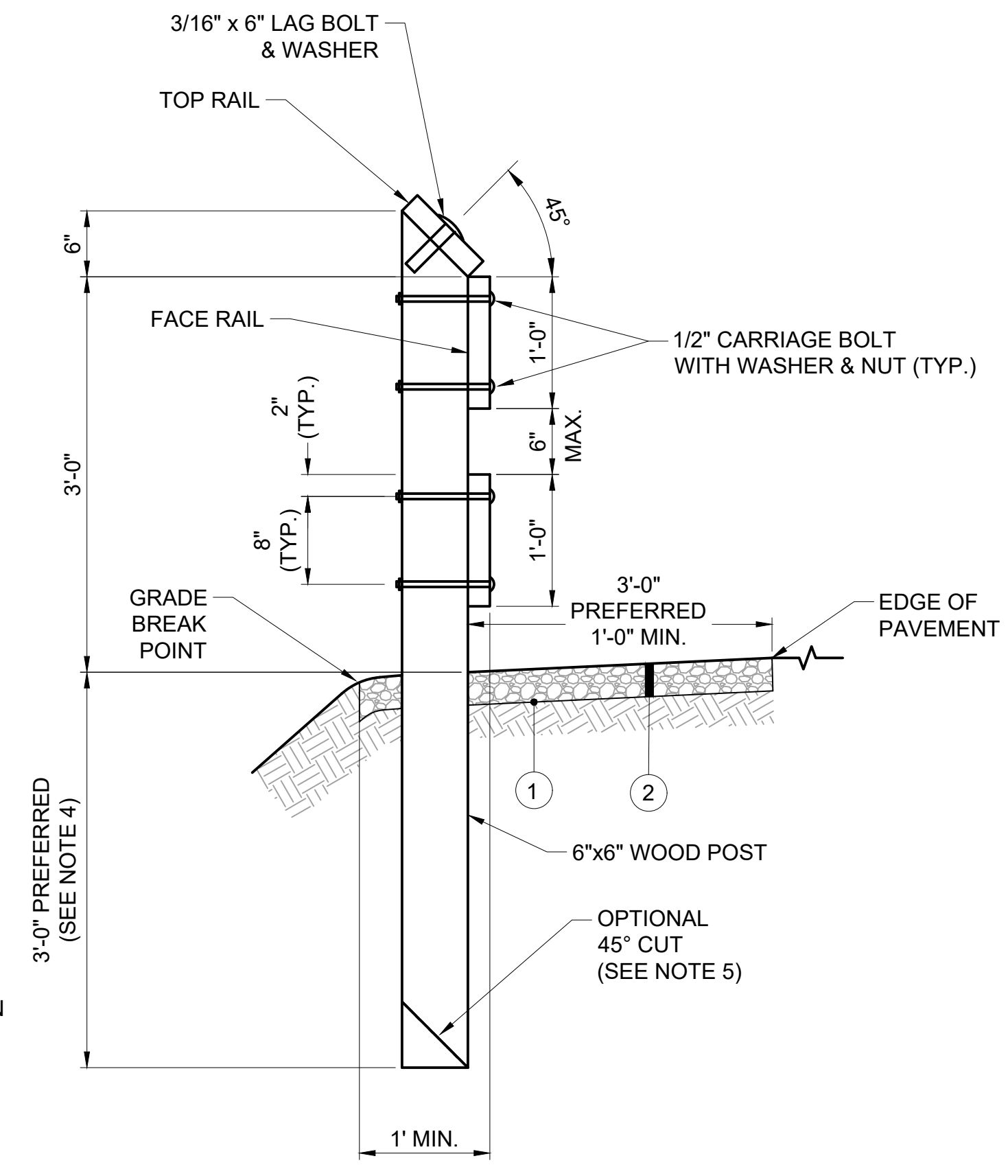
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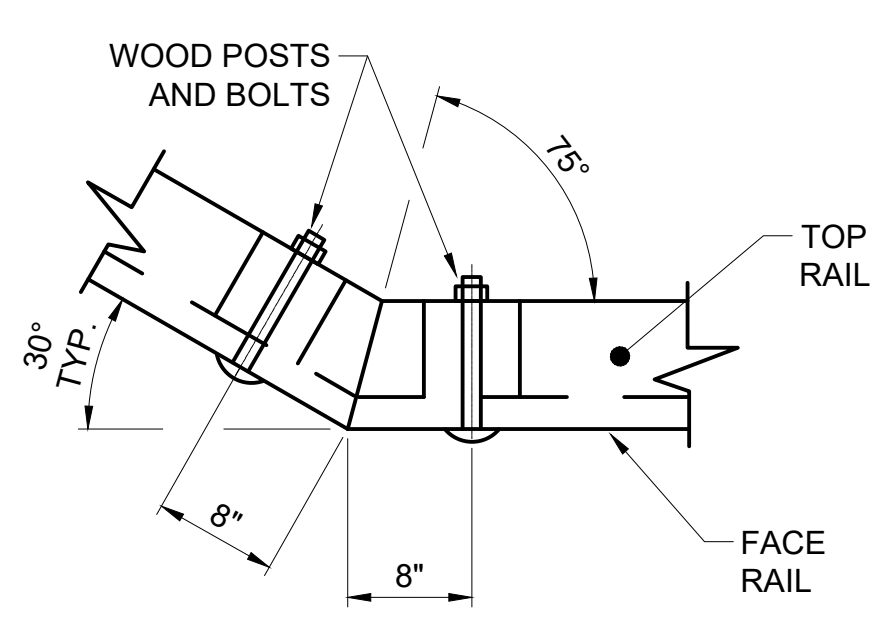




- NOTES
- CCA TREAT ALL WOOD MEMBERS AS SPECIFIED IN ODOT CMS 712.06.
  - GALVANIZE ALL BOLTS, WASHERS, AND NUTS AS SPECIFIED IN ODOT CMS 711.02 AND 711.10. COUNTERBORE FACE OF RAILS TO PROVIDE FLUSH BOLT HEADS.
  - PROVIDE A WOOD RAILING THAT IS SMOOTH AND SPLINTER FREE.
  - WHERE LESS THAN 1'-0" OF GRADED SHOULDER WIDTH (10:1 OR FLATTER) EXTENDS BEYOND THE EDGE OF THE FACE RAIL, USE LONGER POSTS SO THAT A MINIMUM 5'-0" EMBEDMENT DEPTH IS PROVIDED.
  - THE BOTTOM END OF THE 6"x6" POSTS MAY BE CUT TO A 45° POINT.
  - STAGGER BUTT ENDS OF THE TOP RAIL AND THE LOWER FACE RAIL (ON ALTERNATE POSTS). CENTER ALL BUTT END JOINTS ON THE POSTS.



WOOD FENCING SECTION VIEW A  
NOT TO SCALE

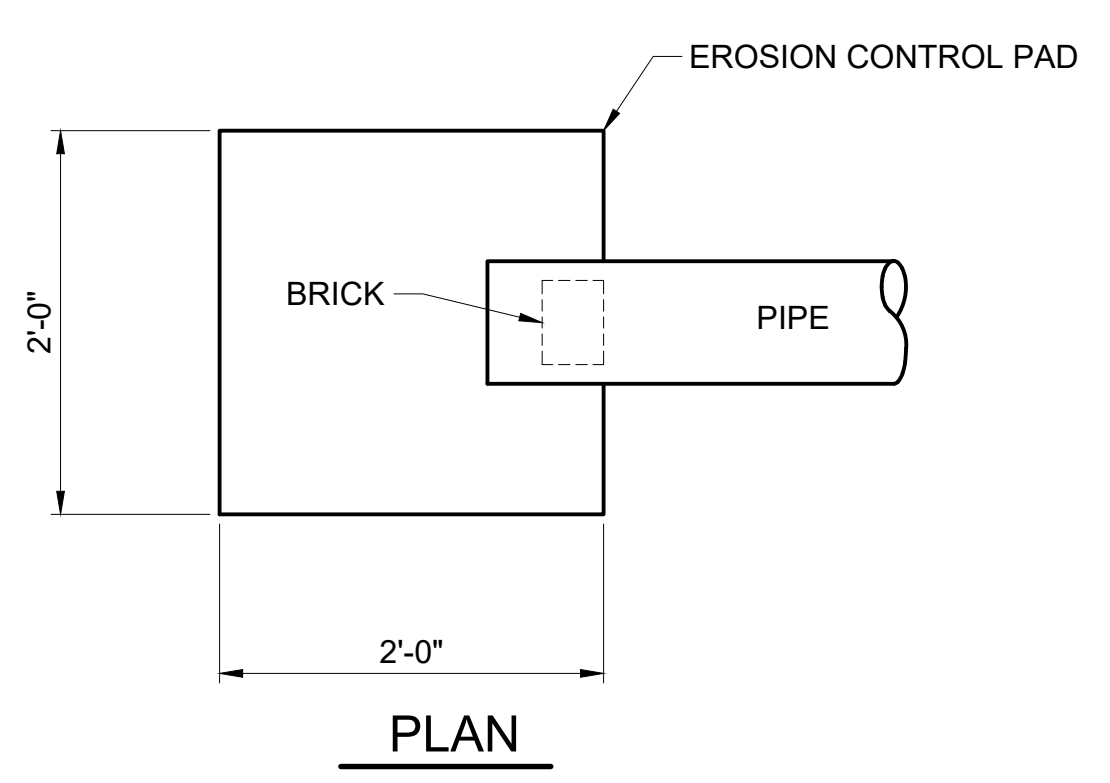
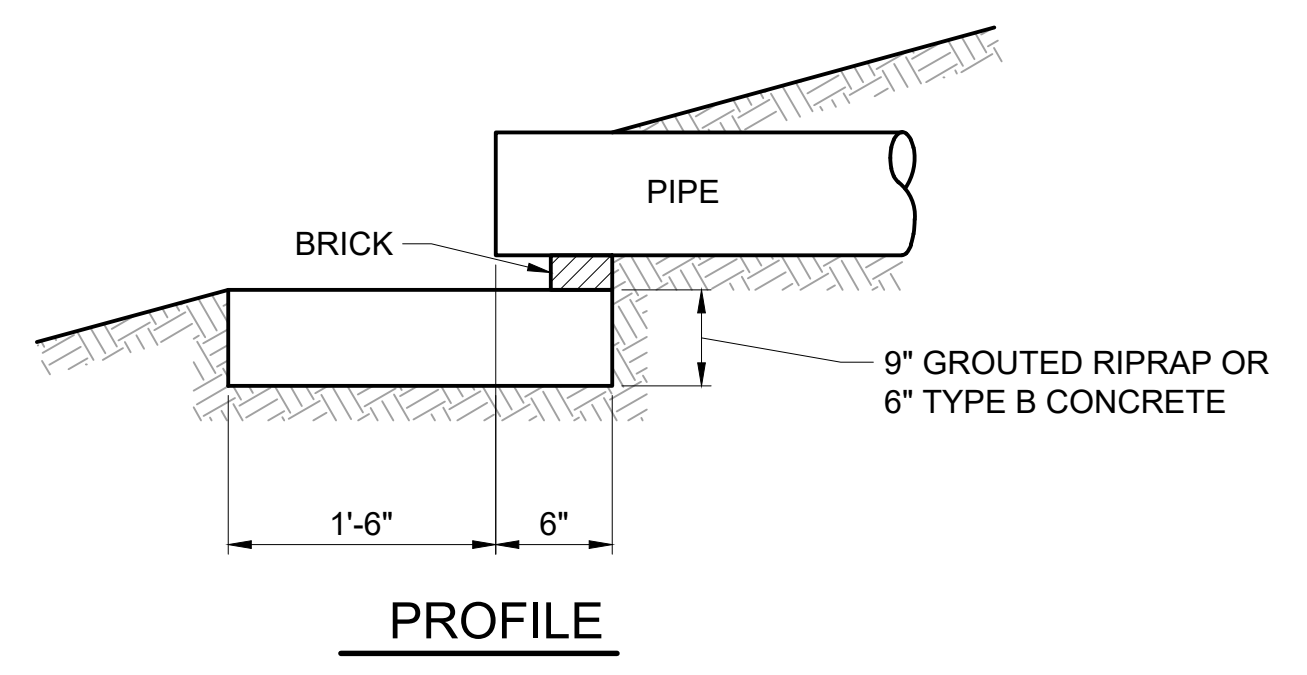


LAG BOLTS IN TOP RAIL ARE NOT SHOWN FOR CLARITY.

WOOD FENCE DETAIL #1  
NOT TO SCALE

TO BE ADDED

SANITARY SEWER PLUG DETAIL - TBD  
NOT TO SCALE



EROSION CONTROL PAD FOR OUTLET PIPE  
NOT TO SCALE

Revision	By	Appd.	Y1.MM.DD
3	100% DESIGN	DDD	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	DDD	2021.05.14
			Y1.MM.DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
MISCELLANEOUS DETAILS 2 OF 2

Issue Stamp

Project Number: 174316204  
File Name: S1 MISCELLANEOUS DETAILS 2 OF 2.dwg

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Dwn.	Chkd.	Dign.

Revision Sheet

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51 of 57

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## GENERAL NOTES

### 1. REGULATIONS

All work must comply with applicable Federal, State, and local regulations in all respects.

All material and construction shall be in accordance with the latest revision of the City of Findlay Ohio Department of Transportation Standards and Specifications.

The CONTRACTOR shall be required to obtain all City of Findlay licenses and permits applicable to his work. Contact the City of Findlay Engineering Department at 419.424.7121 for license and permit requirements.

OSHA (Occupational Safety and Health Act) – The CONTRACTOR is solely responsible for following and enforcing OSHA requirements within the work limits of the project. The City takes no responsibility for the CONTRACTOR's actions or lack thereof.

### ~~2. ENGINEER~~

~~All references to the City, the State, the Director, the Engineer or the Inspector in the "State of Ohio, Department of Transportation Construction and Material Specifications" (ODOT-CMS) manual or City of Findlay Specifications shall be considered references to the ENGINEER or his duly authorized representative.~~

### 3. PRECONSTRUCTION MEETING

Before any construction may begin, the CONTRACTOR is required to schedule and attend a preconstruction meeting with the City of Findlay Engineering Department. The CONTRACTOR must include the project superintendent and the project foreman. The meeting can be arranged by telephoning 419.424.7121. The pre-construction meeting shall be scheduled to occur at a minimum of 1 week prior to the start of any part of the work. The CONTRACTOR shall notify the ENGINEER of the intended schedule of work at least 48 hours in advance.

### 4. NOTIFICATIONS AND COMMUNICATIONS

The CONTRACTOR shall notify the ENGINEER of the intended schedule of work at least 2 full working days in advance. The CONTRACTOR and ENGINEER shall work together to notify residents and businesses at the work sites. It will ultimately be the responsibility of the CONTRACTOR to notify area business and residents on each respective street before work takes place. Residents must be notified two full working days prior to closing off any part of their drive approach. Advance notification is essential for the removal of parked cars and publication in the local newspaper. Two full working days are needed to establish temporary "No Parking" zones. All communications to the public and local safety forces shall be made through the Findlay Engineering Department. No work shall commence until proper notice is given to the area businesses, residents, and the City.

### 5. ESTIMATED QUANTITIES

The estimated plan quantities are for the purpose of competitive bidding and are not necessarily the final pay quantities. Final field measurements and calculations will determine the final quantity to be paid, unless otherwise specified in these General Notes.

### ~~6. PAY ESTIMATES~~

~~The CONTRACTOR and the City Inspector shall meet at the end of each working day to verify construction quantities that were installed on the day. If there is a discrepancy, the ENGINEER shall be notified immediately. All quantity disputes shall be resolved by the ENGINEER as soon as possible. Quantity disputes or changes shall not be accepted after work is complete on a particular item.~~

### ~~CONSTRUCTION WORK LIMITS~~

~~The proposed work area is defined by the right-of-way limits or private access agreements secured by the City. All work inside the right-of-way shall be considered part of the project, and shall be considered incidental to the project, even if not specifically referenced in the quantities. The CONTRACTOR may find that work must be done inside the work limits in order to complete the intent of the scope as shown. Said work shall also be considered incidental to the project and be paid for at the CONTRACTOR'S expense. Any disputes between a resident regarding work or damage on private property will be between the property owner and the CONTRACTOR. STAY OFF OF PRIVATE PROPERTY AT ALL TIMES during the project. In a separate bid item, the private right-of-way shall be staked to establish and clearly mark the boundaries of the project.~~

### 8. MATERIAL STORAGE

Prior to construction, the CONTRACTOR shall make arrangements for the storage of project materials and equipment. The material storage site location will be requested at the pre-construction meeting. Equipment and materials shall not be stored within the public right-of-way on any local streets. Equipment and materials on a public right-of-way shall be limited to those in use and stored within the construction zone for use on a particular day. If private property is to be used for storage, the CONTRACTOR is responsible for obtaining a Property Use Agreement from the property owner.

### 9. PROJECT AREA MAINTENANCE

The entire project area, including material storage areas shall be maintained in a safe, neat, and orderly manner at all times. At times when the CONTRACTOR is not on site, the ENGINEER shall notify the CONTRACTOR of any deficiency and said deficiency shall be remedied within a time period specified. The Findlay Street Department shall correct deficiencies not remedied in an acceptable time, and all time and materials will be billed to the CONTRACTOR. Particular attention shall be given to dust and dirt control in the streets, sidewalks, drives within the project limits, and on any haul roads leading to and away from the project that are used by the CONTRACTOR, subcontractors, and material suppliers. The CONTRACTOR shall provide the ENGINEER with "after hours" telephone contact numbers of an individual responsible for maintaining a safe, clean work area and for making emergency repairs.

The following methods of area maintenance shall be used:

- 1) An automatic self-contained mechanical sweeper with integral water spray and vacuum equipment or approved equivalent shall sweep the streets and haul roads at the ENGINEER'S discretion.
- 2) Excessive dirt on the pavement shall be removed by the means of hand shoveling or appropriate mechanical equipment and the area swept as in method (1) above.
- 3) Sidewalks and driveways shall be cleaned by means of shovels and hand brooms or approved mechanical equipment.
- 4) Reflective surfaces on construction equipment, barrels, cones, signs, or other devices shall be kept free of dirt, mud, and other obstructions.
- 5) Buildings and/or structures in the construction area shall be cleaned as directed by the ENGINEER.
- 6) All obstructions protruding from milled surfaced must be clearly marked out. This include, but not limited to, manhole castings, catch basins, water valves, etc.

The CONTRACTOR shall comply with these requirements on a daily basis. If the CONTRACTOR fails to perform the above work in a satisfactory manner, all work, except cleanup operations will be stopped immediately until the CONTRACTOR has complied with the above requirements to the ENGINEER'S satisfaction.

### 10. INCIDENTAL ITEMS

Items that are necessary to complete the intended use of this project and are not specifically referenced or detailed are intended to be a part of these specifications. No separate payment will be made for these items. Limited examples of such incidental items may include saw-cutting, excavation, pipe removal, trench backfill, Fernco type couplers, insert-a-tees, testing, bends for service laterals, 3-inch blow-off assemblies, trench shoring, service taps/connections, solid sleeves, grading, verifying existing utilities depth/location, and other items required to facilitate construction.

### 11. MOBILIZATION

Unless it is specified, there will be no direct compensation for mobilization of equipment, plant, or personnel. These costs shall be included in the unit price bids.

### 12. MAINTAINING TRAFFIC

The CONTRACTOR shall maintain traffic per ODOT Item 614 and to the satisfaction of the ENGINEER. All work zone traffic control shall conform to the requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD). The design and operation of all work zone traffic control shall be the responsibility of the CONTRACTOR. All plans for road closures, lane restrictions or reductions shall be submitted a minimum of 2 weeks ahead of the expected work for review by the ENGINEER. It shall be the CONTRACTOR'S responsibility to determine if more than 2 weeks are needed for the ENGINEER'S review. A minimum of one-way traffic shall be maintained at all times, unless noted otherwise. Payment for Maintenance of Traffic shall be included in ODOT Item 614.

### 13. DRAWINGS AND SPECIFICATIONS

The intent of the Drawings and Specifications is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental work necessary to complete the Project in an acceptable manner, ready for use, occupancy or operation by the ENGINEER.

In case of conflict between the Drawings and Specifications, the Specifications shall govern. Figure dimensions on Drawings shall govern over scale dimensions, and detailed Drawings shall govern over general Drawings.

Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawing or Specifications shall be immediately reported to the Engineer, in writing, who shall promptly correct such inconsistencies or

~~ambiguities in writing. Work done by the contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.~~

### 14. INSPECTION AND TESTING

All materials and equipment used in construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents.

The ENGINEER shall provide all inspection and testing services not required by the Contract Documents.

The CONTRACTOR shall provide at his expense the testing and inspection services required by the Contract Documents.

If the contract Documents, laws ordinances, rules, regulations, or orders of any public authority having jurisdiction require any Work to specifically be inspected, tested or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the ENGINEER the required certificates of inspection, testing or approval.

Inspections, tests or approvals by the ENGINEER or others shall not relieve the CONTRACTOR of his obligations to perform the Work in accordance with the requirements of the Contract Documents.

The ENGINEER and his representatives will at all times have access to the work. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the Work and also for any inspection, or testing thereof.

If any work is covered contrary to the instructions of the ENGINEER, it must, be uncovered for his observation and replaced at the CONTRACTOR'S expense.

If the ENGINEER considers it necessary or advisable that covered work be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, materials, tools and equipment. If it is found that such work is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such work is not found to be defective, the CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

On any project the ENGINEER may require the internal television inspection of existing sewer lines prior to construction and after construction is completed. Any damage caused by said construction shall be corrected by the contractor responsible for the damage, providing the damage is determined by the ENGINEER to have been caused by irresponsibility on the part of the CONTRACTOR.

### ~~15. SHOP DRAWINGS~~

~~The CONTRACTOR shall, at a minimum of 10 days prior to the commencement of construction, submit electronic copies to the ENGINEER of all shop drawings and submittals showing all material and equipment that is proposed to be provided.~~

~~The submitted shop drawings shall be drawn to scale and include all field measures, material and equipment specifications as well as any other information necessary for the ENGINEER'S review. An approved shop drawing does not relieve the CONTRACTOR from providing a complete working system as described in the Contract Documents. The CONTRACTOR shall not be permitted to install any material or equipment without an approved shop drawing for that particular material or equipment. Material or equipment installed without an approved shop drawing is done so at the CONTRACTOR'S sole risk and shall be subject to removal at no additional cost to the OWNER, if the ENGINEER determines the material or equipment is unacceptable or improperly installed.~~

### 16. AS-BUILT DRAWINGS

The CONTRACTOR shall be responsible for maintaining a complete set of construction drawings clearly marked to show all deviations from the approved plans. At completion of construction, the CONTRACTOR will provide the ENGINEER with a set of marked up "as-built" drawings. The CONTRACTOR for the project shall supply the ENGINEER a PDF with the completed "as-built" drawings, contact the City of Findlay Engineering Department for further details. Retainage will not be completely released until the ENGINEER has an approved set of As-Built Drawings.

### 17. VIDEO RECORD OF EXISTING CONDITIONS

Prior to the commencement of construction the CONTRACTOR shall provide the ENGINEER with a digitally recorded video record of the site conditions of the construction

area. The preconstruction video record shall be of sufficient detail to describe all existing site features and conditions including, but not limited to; roadway, sidewalk and driveway pavement, curbs, gutters, ditches, bridges, culverts, headwalls, landscaping, trees, signs, utility poles, mailboxes, street lights, catch basins, manholes, valve boxes, fire hydrants, fences and any other feature that may be affected by the work. Buildings shall be located by street address. The CONTRACTOR shall provide two (2) copies of the video record in DVD format to the ENGINEER a minimum of five (5) days prior to the commencement of construction. The DVD copies shall be provided in a non-proprietary format that can be read by current standard DVD players. All discs and cases provided to the ENGINEER shall bear the following information; NAME OF PROJECT, PROJECT NO, NAME OF CONTRACTOR, NAME OF VIDEO RECORDING SERVICE, and DATE OF RECORDING.

A continuously running time digital stamp shall be provided on the video record to prevent tampering. The digital stamp shall indicate the date, time (hh:mm:ss), direction of travel and stationing (xx+xx) of the recording. The digital stamp shall be recorded simultaneously with the video and audio tracks of the video record. The video record shall consist of one (1) video track and two (2) audio tracks. One audio track shall be recorded by the camera operator describing the features being recorded. The other audio track shall describe features not readily visible to the camera operator such as the relative elevation of objects being recorded.

The CONTRACTOR shall utilize a professional video recording service specializing in the preparation of municipal project preconstruction video records at the CONTRACTOR'S expense. When filming from a wheeled vehicle, the distance from the lens to the surface shall not be less than 12 feet to insure adequate perspective.

### 18. UNDERGROUND UTILITIES

The locations of the underground utilities shown on the plans are obtained from the owners of the utility. No guarantee of accuracy of these utilities is made.

18.1 Existing Site Conditions – It is the CONTRACTOR'S responsibility and obligation to become familiar with the existing soil and pavement conditions beyond the information provided. Bidders may access records of the Findlay Engineering Department, Water Distribution Department, Sewer Maintenance Department, or any other sources that may be of value. The City and/or any of its employees cannot be held liable for information shared with prospective bidders. No compensation will be made for claims due to the existing conditions.

18.2 Existing Utilities –Existing underground and aboveground utility information is a representation of the best available information at the time of plan preparation. This information was gathered from record drawings as well as actual field survey locations. The City makes no guarantees as to its completeness or accuracy. The CONTRACTOR shall field verify utility locations prior to starting construction. Utilities crossing any part of the project area shall be exposed prior to beginning construction in order to identify size, location, and depth and to ensure that the proposed construction will not conflict with existing utilities. Use of pipe fittings to avoid existing utilities will not be permitted for gravity sewers. If relocation of utilities is required to complete the proposed work, coordination of utility relocation shall be the responsibility of the CONTRACTOR. Construction delays, extra materials, or work resulting from the CONTRACTOR'S failure to pre-identify utility conflicts shall not result in additional cost to the City. Under no circumstances shall relocation of gravity sanitary sewers, storm sewers, or waterlines be considered an acceptable option without prior written consent from the City. A set of construction plans will be sent to the respective utility companies for their review and comment prior to the pre-construction meeting.

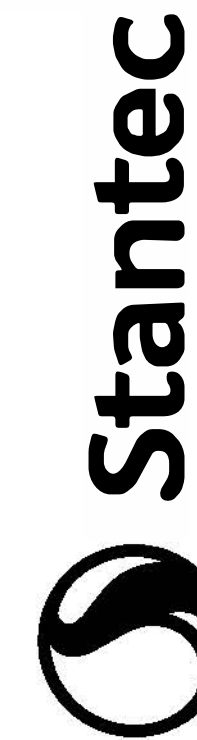
### 19. UTILITIES NOTIFICATION

At least three (3) working days prior to commencing construction operations the CONTRACTOR shall notify the ENGINEER, the Ohio Utilities Protection Service (1-800-362-2764), and the owners of each underground utility facility shown in the plans.

The owner of the underground utility facility shall, within seventy-two (72) hours, excluding Saturdays, Sundays, and legal holidays after notice is received, stake, mark or otherwise designate the location of the underground utility facilities in the construction area in such a manner as to indicate their course together with the approximate depth at which they were installed. The marking or locating shall be coordinated to stay approximately two (2) days ahead of the planned construction.

### 20. PROTECTION OF EXISTING UTILITIES

All utilities encountered shall be properly supported, shored or otherwise protected whenever exposed in an excavation as approved by the ENGINEER. Such supports, shoring or other measures shall be provided by the CONTRACTOR at no additional cost to the OWNER. The ENGINEER reserves the right to require signed and sealed engineering design calculations for the supports, shoring or other measures provided by the CONTRACTOR.



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Revision	By	Appd.	YY/MM/DD
3	MMG	DD	2022/04/08
2	MMG	DD	2021/08/13
1	MMG	DD	2021/08/14
			YY/MM/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS

HANCOCK COUNTY, OHIO

Title  
CITY OF FINDLAY GENERAL NOTES 1 OF 2

Issue Stamp

Project Number: 174316204  
42-city-of-findlay-general-notes-1-of-2.dwg

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**21. RESTORATION OF EXISTING UTILITIES**

Wherever existing power, telephone, gas or other utilities require relocation, the work shall be done by others. The CONTRACTOR shall be responsible for repairing any utilities damaged during construction.

**22. EMBANKMENT CONSTRUCTION**

Where necessary to construct pavement subgrade in fill, the CONTRACTOR shall remove all topsoil beneath the proposed pavement and include the cost of removal in the lump sum bid for Item 201, Clearing and Grubbing.

**23. TRENCH BACKFILL**

Trench backfill may be compaction tested. Trench backfill beneath pavements shall be mechanically compacted in 6-inch lifts to obtain 98% of the maximum dry density as determined by the Modified Proctor Test (ASTM D698). In order to achieve desired compaction, backfill materials shall be within 2% of the optimum moisture content. Backfill material shall not be frozen or placed on a frozen base. Backfill pushed or end-dumped into the trench several feet at a time will not be accepted. Backfill not meeting these requirements shall be removed and replaced at the CONTRACTOR's expense.

**24. TRENCH MAINTENANCE**

At all times during the progress of the work, and until the release from his guarantee by the CITY, the CONTRACTOR shall maintain all backfilled trenches. Any settlement that occurs during such time shall be filled immediately. All trenches in paved areas that are to be subsequently repaved shall be temporarily filled with cold patch materials; if said trenches will not be repaved within 7 calendar days of backfilling the trench.

**25. EXISTING STORM SEWERS**

All existing storm sewers and subsurface drainage or field tile damaged or interfered with during construction shall be replaced with new pipe matching the existing sewer or of a material approved by the ENGINEER. Removed pipe shall not be reused unless approved by the ENGINEER. The replaced pipe shall be installed with proper bedding and backfill and shall be installed to match the grade and size of the existing sewer. Fernco adapters shall be used at all joints connecting new sewer pipe to the existing sewer pipe. The CONTRACTOR is cautioned to use the greatest care when working around existing sewer lines of any type which are exposed in trenching for a proposed utility. Payment for this work shall be included in the appropriate item that interferes with the storm sewer.

**26. MAINTENANCE OF FLOW**

Where existing sewers are encountered and are interfered with, flow shall be maintained. Sewage or other liquid must be handled by the CONTRACTOR either by connection into other sewers (with the approval of the ENGINEER) or by temporary pumping to a satisfactory outlet. Sewage or other liquid shall not be pumped, bailed, or flumed over the street or onto any surface.

**27. WATER SUPPLY**

Refer to the City of Findlay water rates and information if needed for this project. Any water needed by use of an existing fire hydrant must be approved by the ENGINEER in advance. If approved, a temporary meter/back flow preventer MUST be coordinated and installed by the Findlay Water Distribution Department. No hydrants shall be accessed without prior approval by the ENGINEER.

**28. EXCAVATION DEWATERING**

The CONTRACTOR shall provide, at their expense, adequate facilities for prompt and continuous removal of water from all excavations where necessary. The CONTRACTOR shall provide ample means and devices (including spare units ready for immediate use in case of breakdowns) with which to remove promptly and dispose properly of all water entering trenches and other excavations. Such excavations shall be kept dry until structures, pipes, and appurtenances to be constructed therein have been completed to such an extent that they will not be floated or otherwise damaged. All water pumped from the excavation shall be disposed of in a suitable manner (not into the sanitary or combined sewer system) without interference to other work, damage to pavements, other surfaces, or property.

**29. LOAD TICKETS**

All aggregate and asphalt delivery ticket copies shall be given to the on-site ENGINEER at the time of delivery. All tickets shall be referenced (#'s to be determined) and tracked under the appropriate item description. All asphalt tickets shall include the approved JMF#. No unapproved materials shall be used on this project.

**30. HAUL ROUTES**

CONTRACTOR shall obtain approval from the ENGINEER for the use of local streets and roads as haul routes. All hauling must comply with established legal load limits and all State

and local traffic and vehicular laws. State and federal routes shall be used wherever possible.

**31. DISPOSAL OF EXCAVATED MATERIALS**

The CONTRACTOR shall not dispose of any excavated material on the project site or anywhere within the 100-year flood zone. At the time of the pre-construction meeting or prior to beginning construction, the CONTRACTOR shall disclose to the ENGINEER, in writing, the location of the proposed excavated materials disposal site. If it is determined that the CONTRACTOR is not in compliance with this specification, a Stop Work Order shall be issued by the ENGINEER. The CONTRACTOR shall not be permitted to complete any additional work until the situation has been rectified. In addition, the CONTRACTOR shall pay liquidated damages in the amount of \$1,000 per day during which time the CONTRACTOR is not in compliance with this specification. Liquidated damages shall begin on the day the Stop Work Order is issued and shall not be pro-rated.

**32. EXISTING SURVEY POINTS**

Any monument, bench mark, control point, property corner stake, pin, or marker damaged or disturbed by construction shall be replaced by a registered land surveyor at the expense of the CONTRACTOR. Should the CONTRACTOR fail to properly restore these points after 21 days, the OWNER will restore them at the CONTRACTOR'S expense.

**33. SITE RESTORATION**

All areas shall be returned to the grade and condition existing prior to the commencement of work within 30 days of disturbance of the area unless approved otherwise by the ENGINEER. This includes pavement replacement.

**34. REPLACEMENTS**

Where any pavements, driveways, parking areas, curbs, gutters, berm stone, sidewalks, water lines, gas lines, sewers, manholes, catch basins, drains, field tile, conduit pipes, cables, poles, or other existing facilities are removed or otherwise disturbed in completing this Contract shall be replaced in as good a condition or better than prior to construction, whether shown on the plans or not, at the expense of the CONTRACTOR and to the approval of the utility owner. Any material broken or disturbed to such an extent as to require replacement shall be replaced with new material at the expense of the CONTRACTOR.

**35. TREES, BUSHES AND SHRUBS**

Trees and bushes which are in the immediate vicinity of the construction route and the complete destruction of which cannot be prevented, despite extreme care on the part of the CONTRACTOR, shall be removed and disposed of by the CONTRACTOR with prior approval from the Findlay Engineering Department. The Findlay Engineering Department shall be consulted and permission obtained prior to the removal of any tree or bush not specifically called out on the plans. The CONTRACTOR shall consult the ENGINEER well in advance of pipe laying concerning such removals. Removal shall include stumps and roots to a minimum of 12 inches below finished grade. After stump removal, loose wood chips shall be excavated and hauled from the site and the remaining void shall be filled with topsoil.

Trees, tree limbs, and bushes located such that equipment of the CONTRACTOR may cause damage during construction shall be carefully trimmed and shaped by a contractor that derives a majority of its annual income from arboricultural and/or nursery work and whose employees are highly trained and skilled in tree work. Trees and bushes, other than those whose removal is approved by the ENGINEER, which are destroyed or damaged to the extent that their continued life is impaired, shall be replaced by the CONTRACTOR at their expense and to the satisfaction of the ENGINEER and adjacent property owner(s).

**36. SEEDING, MULCHING AND TOPSOIL**

All areas disturbed by construction and not paved with some other material shall be seeded, mulched, and fertilized according to Item 659 of the ODOT Construction and Material Specifications, latest edition or as modified by these specifications. All areas disturbed by construction between March 15 and October 15 shall be permanently seeded within thirty (30) days, but no later than October 15 unless otherwise approved by the ENGINEER and OWNER. All areas disturbed by construction between September 16 and March 14 shall be stabilized in accordance with Item 207 of ODOT Construction and Materials Specifications and permanently seeded after March 15 as soon as weather permits.

All seeded areas shall have a minimum of 4" of topsoil as specified and prepared in accordance with ODOT Item 653. Topsoil shall be placed and tested per ODOT Item 659 of the ODOT Construction and Material Specifications, latest edition and shall be raked free of rocks and clods.

In no case shall the restored seed bed topsoil be of less depth than was present prior to construction. All topsoil and seed must be approved by the OWNER prior to placement.

The CONTRACTOR shall be responsible for backfilling, reseeding and re-fertilizing any trench areas that may settle after the permanent seeding is completed for the warranty time period specified in the general conditions of the contract documents.

All open areas between any edge of pavement and the right-of-way shall be seeded in grass regardless of its existing material (unless noted by the ENGINEER). If stone, asphalt, or other non-vegetated areas exist after re-grading, it shall be removed and replaced with suitable topsoil and seeded. This activity shall be included in this bid item.

~~After the topsoil has been applied and leveled as Item 652/653 specifies, all areas to be seeded shall be given an application of an approved commercial fertilizer applied at a rate of no less than 20 pounds per 1000 square feet. The fertilizer shall be obtained from a dealer or manufacturer whose brands and grades are registered or licensed by the Ohio Department of Agriculture. Immediately prior to seeding, the area shall be raked sufficiently to thoroughly mix the fertilizer with the topsoil.~~

~~Seed used in grass areas shall have the following mixture ODOT Residential "Lawn" Seed Mixture:~~

Pure Seed Type	Percent by Weight
Kentucky Bluegrass	30 80% Germination
Creeping Red Fescue	30 90% Germination
Perennial Ryegrass	20 85% Germination
Annual Ryegrass	20 90% Germination

If the disturbed lawn area is of better quality than the specified seed will produce, as determined by the ENGINEER, the CONTRACTOR shall furnish seed for these specific lawns that will produce a lawn of equal quality. The extra cost for the better quality seed shall be the actual invoice price differential between the seeds. Only unmixed seeds shall be purchased unless certified as to quality and mixture. All mixing shall be done at the project site from original packages.

For all seeded areas, any spots that do not show a prompt germination shall be reseeded at intervals of 21 days, which shall continue until a good growth is established over the entire seeded area. The methods pursued in the renewal or replacement of lawn areas shall be as herein specified. It shall be the CONTRACTOR's responsibility to provide a good stand of grass. Necessary reseedings as specified above shall be at the CONTRACTOR's expense.

It shall be the CONTRACTOR'S responsibility to prevent and or remove any weed growth that occurs prior to seeding or before full grass growth as required by the ENGINEER.

The CONTRACTOR shall expect that the ENGINEER will withhold payment for this item until grass growth is satisfactory as specified herein. Payment will be per SY and only be limited to the right-of-way limits as shown on the plans. Any areas on private property that need grading/seedings as a result of this project shall be done at the CONTRACTOR'S expense, unless it was completely unavoidable due to construction, thus it will need prior approval from the ENGINEER in that specific area for payment.

**37. CONNECTING TO/OR CROSSING EXISTING UTILITIES**

Where the plans provide for proposed conduit to be connected to, or to cross over or under an existing utility; it shall be the responsibility of the CONTRACTOR to locate the existing utility to verify line, grade, and material before ordering materials necessary to complete the work and laying the proposed conduit. [When connecting to an existing manhole, all pipe penetrations shall be shock absorbent and shear resistant, designed to prevent any direct contact between the pipe and manhole and shall provide a watertight seal connection between the pipe barrel and manhole structure with the pipe deflected up to 12-degrees in any direction. The flexible joints shall be A-Lok, Kor-N-Seal, Press Wedge II or Approved equal.]

**38. CHANGES IN THE WORK**

The ENGINEER may at any time, as the need arises, order changes within the scope of the Work without invalidating the Agreement. If such changes increase or decrease the amount due under the Contract Documents, or in the time required for performance of the Work, an equitable adjustment shall be authorized by Change Order.

The ENGINEER may also, at any time, by issuing a Field Order, make changes in the details of the Work. The Contractor shall proceed with the performance of any changes in the Work so ordered by the ENGINEER unless the CONTRACTOR believes that such Field Order entitles him to a change in Contract Price or Time, or both, in which event he shall give the ENGINEER Written Notice thereof within ten (10) consecutive days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis for the change in Contract Price or Time within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed Change Order or further instruction from the ENGINEER.

**39. CONTRACT CHANGE ORDER**

All changes which affect the cost of the construction of the project must be authorized by means of a Contract Change Order. The contract Change Order will include extra work, work for which quantities have been altered from those shown in the bidding schedule, as well as decreases or increases in the quantities of installed units which are different than those shown in the bidding schedule because of final measurements. All changes should be

recorded on a Contract Change Order as they occur so that they may be included in a partial payment estimate.

The value of any Work covered by a Change Order of any claim for increase or decrease in the Contract Price shall be determined by one or more of the following methods in order of procedure listed below:

- (a) Unit prices previously approved
- (b) An agreed lump sum

**40. CONFLICT RESOLUTION**

Claims or disputes that may arise between the CONTRACTOR and the ENGINEER shall be resolved according to the following:

Good faith negotiation. The Parties agree that, before resorting to any formal dispute resolution process, they will first attempt to engage in good faith negotiations in an effort to find a solution that serves their respective and mutual interests, including their continuing business/professional relationship. Party-principals agree to participate directly in the negotiations. Unless otherwise agreed in writing, the Parties shall have five (5) business days from the date the questioning party gives Notice (as described below) of the particular issue to begin these negotiations and fifteen (15) days from the Notice to complete these negotiations concerning the dispute.

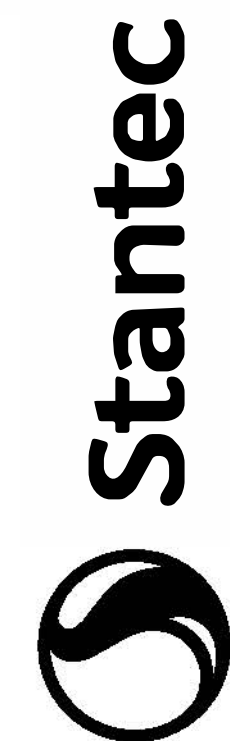
Mediation. If the negotiations do not take place within the time provided in above, or if the negotiations do not conclude with a mutually agreed upon solution within that timeframe, or an agreed-upon extension, the Parties agree to mediate the dispute. If the Parties cannot agree upon a mediator, each shall select one name from a list of mediators maintained by any bona fide dispute resolution provider or other private mediator; the two selected shall then choose a third person who will serve as mediator. The Parties agree to have the principals participate in the mediation process, including being present throughout the mediation session(s). The Parties shall have forty-five (45) calendar days within which to commence the first mediation session following the conclusion of their good faith negotiations or expiration of the time within which to negotiate (as stated above). The Parties agree that any mediated settlement agreement may be converted to an arbitration award of judgment (or both) and enforced according to the governing rules of civil procedure. The Parties further confirm their motivating purpose in selecting mediation is to find a solution that serves their respective and mutual interests, including their continuing business/professional relationship.

Arbitration. If the mediation provided for above does not conclude with an agreement between the Parties, the Parties agree to submit the dispute to binding arbitration. If the Parties cannot agree on an arbitrator, the person who served as mediator above shall select the person to serve as arbitrator from a list compiled by the Parties or, where the Parties do not compile a list, from a list maintained by a bona fide dispute resolution service provider or private arbitrator. The arbitrator's award prepared by the arbitrator shall be final, binding and may be converted to a judgment by a court of competent jurisdiction upon application by either party. The arbitrator's award shall be a written, reasoned opinion (unless the reasoned opinion is waived by the Parties). The Parties shall have ten (10) business days from the termination of the mediation to appoint the arbitrator and shall complete the arbitration hearing within six (6) months from the termination of the mediation. The arbitrator shall have the authority to control and limit discovery sought by either party. The arbitrator shall have the same authority as a court of competent jurisdiction to grant equitable relief, and to issue interim measures of protection, including granting an injunction, upon the written request with notice to the other party and after opposition and opportunity to be heard. The arbitrator shall take into consideration the Parties' intent to limit the cost of and the time it takes to complete dispute resolution processes by agreeing to arbitrate the dispute.

Costs. The Parties agree to share the mediator's and arbitrator's fees equally. If the dispute is arbitrated, the arbitrator may include in any award the right to recover mediator and arbitrator fees, along with any other recoverable costs.

Attorney's Fees. The prevailing party in any arbitration may, in the arbitrator's discretion, be entitled to an award of attorney's fees incurred in arbitrating the dispute.

Notice of Dispute. The Notice required under above shall be in writing. It shall provide sufficient details of the dispute to apprise the other party of the basis of the disputant's claims. The Notice should include the invitation to begin negotiation, and where unsuccessful, mediation. The date of delivery of the Notice shall be the triggering date upon which the time deadlines are calculated.



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Revision	By	Appd.	Y1,MM,DD
3	MMG	DD	2022.04.08
2	MMG	DD	2021.08.13
1	CJ	DD	2020.08.28
			Y1,MM,DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
CITY OF FINDLAY GENERAL NOTES 2 OF 2

Issue Stamp

Project Number: 174316204  
City of Findlay general notes 2 of 2  
Filename: 2.dwg

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Revision Sheet

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# GRAVITY SEWER GENERAL NOTES

## 1. GENERAL STANDARDS

All material and construction shall be in accordance with the current American Water Works Association (AWWA) Standards and Specifications, the current Ohio Department of Transportation (ODOT) Standards and Specifications, the current Ohio Environmental Protection Agency (OEPA) Standards and Specifications, Recommended Standards for Wastewater Facilities (10 State Standards), and American Society of Testing Materials (ASTM).

A minimum of 10 feet horizontally and 18 inches vertically shall be maintained from any sanitary sewer. In the event that specified clearances cannot be maintained between the sanitary sewer and an existing water main, the sanitary sewer pipe shall be installed in accordance with the requirements of 10 States Standards.

Reference to the "ENGINEER" in these specifications shall mean the City of Findlay or the designated representative.

## 2. CLEAN WATER CONNECTIONS

Roof drains, foundation drains, and other clean water connections to the disposal system are prohibited.

## 3. INSPECTION AND REJECTION

All pipe sections, fittings and appurtenances shall be appropriately marked for purposes of identification. Notify the ENGINEER for a visual inspection when the pipe delivery is onsite. The materials and methods of manufacture and the completed pipe, fittings and appurtenances shall be subject to inspection by the ENGINEER at all times. Unsatisfactory items will be rejected and shall not be used in construction.

## 4. MANUFACTURER'S AFFIDAVIT

The manufacturer shall furnish an affidavit indicating that all pipe, fittings and appurtenances have been manufactured and tested in accordance with all requirements of the applicable referenced specifications. A copy of the affidavit, indicating the project on which the material is to be used, shall be forwarded to the ENGINEER prior to construction.

## 5. MAINTENANCE OF EXISTING FLOWS

The CONTRACTOR shall maintain flow in all pipelines encountered during the work. Sewage or other liquid must be handled by the CONTRACTOR either by connection into an existing sewer or by temporary pumping to a satisfactory outlet as approved by the ENGINEER. Sanitary sewage and storm drainage shall not be drained to the same outlet.

The CONTRACTOR shall be prepared to perform the work on weekends and or evenings so as to minimize disruptions to the public

## 6. SANITARY SEWERS, FITTINGS, AND MATERIAL

### a. SANITARY SEWER PIPE MATERIAL

Sanitary Sewers that are 15-inches or smaller shall be solid wall premium joint SDR35 PVC sewer pipe conforming to ASTM D3034, and shall have minimum pipe stiffness of 46 psi at 5% deflection when tested in accordance with ASTM D2412. Sanitary sewers that are 18-inch or larger shall be solid wall premium joint PVC sewer pipe in accordance with ASTM F670.

The pipe shall be of the elastomeric gasket joint (integral bell) type. Joints shall provide a watertight seal and shall be made in accordance with the pipe manufacturer's instructions. Joints shall be of the push-on type meeting the requirements of ASTM D3212 and, in addition, the bell shall be designed to retain the gasket to prevent pull-out during the making of the joint.

The pipe shall be installed in accordance with ASTM D2321, and with the requirements of these specifications. Any requirements in these specifications which may be in conflict or inconsistent with the requirements of ASTM D2321 shall be void to the extent of such conflict or inconsistency, except in all cases material for pipe embedment shall be as subsequently specified.

### b. SANITARY SEWER FITTINGS

PVC Pipe Fittings shall have a minimum cell classification of 12454-B as defined in ASTM D1784. The SDR ratio for fittings shall be equal to or greater than the SDR ratio of the pipe used for the construction of the gravity sewer main.

PVC pipe sanitary sewer fittings installed greater than 20-feet below grade shall be ASTM D3034 SDR26 deep socket style fittings.

## 7. STORM SEWERS, FITTINGS, AND MATERIAL

### a. STORM SEWER PIPE MATERIAL

All Pipe shall meet the requirements of ODOT Item 611 Storm Sewer material used for Type B or Type C conduit may consist of any of the following materials.

- Reinforced Concrete Pipe (RCP): Shall not be less than Class III and shall conform to ASTM C76. All sizes of concrete pipe are acceptable for storm applications. Joints shall be bell and spigot type, with compressive type joints, conforming to ASTM specifications C361. The integral concrete spigot end shall have factory formed, gasket retaining groove to hold in place a confined O-ring type seal.
- Polyvinyl Chloride (PVC): Meeting ASTM 3034 SDR35, for sizes up to and including 15 inch, having a minimum stiffness of 46 PSI, D2241 SDR26 for all sizes, or ASTM F679 for sizes 18 inch and up.
- High Density Polyethylene (HDPE or N12): Shall be corrugated smooth lined pipe and shall conform to AASHTO M252 or AASHTO M294, Type S, SP or D, with modifications to AASHTO M294 as listed in ODOT CMS 707.33.

### b. STORM SEWER FITTINGS

All storm sewer fittings, included but not limited to reducers, tees, wyes, saddle taps, plugs, etc. shall be manufactures in the same manner as the conduit that is being used in the storm application. No "field-made" or injected molded fittings will be acceptable.

### c. STORM SEWER CATCH BASINS, TYPE B and TYPE C

Shop drawings shall be submitted for approval prior to the fabrication of any portion of the catch basins. Included in this bid item shall be any necessary adjusting rings, castings, etc.

Catch basin details shall be as shown on the City of Findlay Standard Detail Sheet. Adjustment of catch basin or inlet frames shall be accomplished using rectangular HDPE grade rings or precast concrete grade rings. Catch basin adjustment shall be considered an incidental item.

## 8. MANHOLE GENERAL

a. Bases shall be of precast reinforced concrete unless otherwise specified. Standard manhole bases shall be 48 inches inside diameter, with a minimum base thickness of 8 inches and a wall thickness of 5 inches, unless otherwise specified. Manhole bases shall also be constructed monolithically with bottom reinforcement tied to side reinforcement to form an integral structure. If not integrally cast with the base, the contractor shall provide an ODOT Class C concrete invert after installation of the pipes in the manhole. The provided invert shall meet the qualifications of ASTM C478 7.1.4. All concrete shall be troweled smooth. Bases shall be set plumb and at the proper elevation on a bed consisting of a minimum of 6 inches of granular material meeting the ODOT Material Specification No. 57 stone.

b. Walls shall be vertical concrete risers having an inside diameter of 48 inches unless specified otherwise. The top section shall narrow down eccentrically to the proper diameter to receive the frame and cover, or shall be of the flat slab type as required by the depth of the manhole. The top of all precast dome sections shall have a minimum 4-inch vertical surface inside and minimum 3-inch vertical surface outside to provide a chimney seal bearing surface. Concrete manhole sections shall be reinforced with steel wire mesh and shall meet the requirements of ASTM C478, except the walls shall not be less than 5 inches thick. Manhole walls shall NOT be equipped with steps. Adjoining sections shall be firmly keyed together by means of tongue and groove joints with rubber "O" ring gaskets meeting the requirements of ASTM C443. Each manhole frame shall be set at the proper elevation by use of precast concrete adjusting rings. Brick, wood, block, etc. are not acceptable materials for adjusting new or existing manholes to grade. Adjusting rings shall be held in place with mortar composed of one (1) part, by volume, Portland cement and two (2) parts clean, hard sand. A minimum riser height of six (6) inches shall be incorporated for the purpose of future adjustments. The total height of all adjusting rings shall not exceed sixteen (16) inches.

c. All manhole frames and covers shall be gray iron castings conforming to ASTM A48. Frames and covers shall be per City of Findlay Approved Construction Materials List (Manhole section) with solid cover. Both the underside of the cover and the upper surface of the ledge upon which it rests shall be machined so as to prevent rocking of its supporting surface. Sanitary manhole covers shall be supplied with concealed or closed pick holes which allow no water to enter. Manhole covers shall have the words "SANITARY" or "STORM" as appropriate, cast into the top. The manhole frames shall be firmly set on top of the adjusting rings with a full leveling bed of one to one (1:1) cement mortar. Where manholes are located in paved areas, the surface of the cover shall be made 1/4 inch below the pavement surface. In unpaved streets and alley areas, the cover shall be set not to exceed 1 inch above the ground surface. On right-of-way and in ditches, cover elevation shall be as approved by the ENGINEER. Where covers and frames must be angled for placement within sloped pavement such as driveway aprons, the top manhole adjustment ring must be cast in place concrete to achieve the correct finished surface angle. After installation, the tops of the frames and covers may be painted with one coat of asphalt paint if deemed necessary by the engineer.

d. The contractor shall install identification posts for manholes as specified. The identification posts shall be plastic, approximately 4 inches wide and 8 feet long, with the appropriate decals in place. The City of Findlay will provide the posts and decals. The ENGINEER reserves the right to change the shape and/or material of the identification posts at any time.

e. Expanding spray foam shall not be used as an alternative to grouting around pipe connections, unless approved by the ENGINEER.

## 9. SANITARY MANHOLES

a. All sanitary sewer manholes shall be precast concrete sections provided in accordance with ASTM C478. Pipe connections shall be a minimum of 6-inches from any joints in the structure. Doghouse type manholes constructed over the existing sewer shall not be permitted. New manholes installed on existing sewers shall be constructed in accordance with the details shown on the plans.

b. CASTINGS: Standard cast iron manhole frame and covers shall be East Jordan Iron Works 1022, Neenah 1772, or approved equal with the words SANITARY cast on cover.

c. RUBBER GASKET JOINTS: An O-ring type gasket shall be provided at all manhole joints in accordance with ASTM C443.

d. JOINT SEALANT- Manhole joint sealants shall meet the Requirements of ASTM C990, Federal Specification SS-S-210A or AASHTO M198B.

e. CHIMNEY SEALS- All manhole adjustment rings and castings shall be sealed with an internal or external seal. Internal seals shall be Flex-Seal, Cretex Internal Manhole Chimney Seal, or approved equal. External seals shall be Wrapid Seal, Infi-Shield, Cretex External Manhole Chimney Seal, or approved equal.

f. STUBS OUT OF MANHOLES - The stubs shall be the same type of pipe as being provided on the Project for the respective sizes of pipe and shall extend a minimum of 24 inches and a maximum of 36 inches beyond the outside wall of the manhole. The end of each stub shall be provided with a pipe plug specifically designed for use with the pipe. Plugs shall be for permanent or temporary use, shall be watertight, and shall be removable without damaging the pipe.

g. PIPE CONNECTIONS: New piped connections to existing or new manhole structures shall be a resilient type connection in accordance with the requirements of ASTM C-923. Resilient type pipe connections shall be Kor-N-Seal boots, Press-Seal Gasket or approved equal. No other utilities shall be installed inside a sanitary sewer manhole.

h. DROP CONNECTIONS: A drop pipe shall be required for all pipes entering the manhole at an elevation of 24-inches or more above the flow line of the manhole. The minimum drop pipe diameter for sanitary sewer manholes shall be 6-inches.

- OUTSIDE DROP CONNECTIONS: All new manholes that include drop connections shall be constructed using an outside drop connection.
- INSIDE DROP CONNECTIONS: Inside drop connections are not permitted in new manholes or when connecting to an existing manhole.

## 10. PIPE LAYING

Pipes shall be laid with their full lengths true to line and grade with the aid of batter boards, grade pole and grade string, laser beam or other method approved by the ENGINEER and shall rest on the bedding material provided.

When batter boards are used, not less than three, set at 25 foot intervals, shall be installed and maintained in proper position at all times as a check on the accuracy of the grade line.

When laser beam equipment is used, it shall be checked a minimum of twice daily, once in the A.M. and once in the P.M., in the presence of the ENGINEER to verify that the equipment is maintaining the established line and grade.

Regardless of the method used, the ENGINEER shall be immediately notified of any misalignment of the pipe when laid in accordance with established cuts or elevations.

Pipes shall be laid at a minimum 10 foot horizontal distance from water mains and at a minimum 18 inches vertical distance from water mains at their crossing, both as measured, between the outside of the pipe walls. At crossings, one full length of pipe shall be installed so both joints will be as far from the main as possible.

## 11. BEDDING

The gravity sewer shall be laid on a properly shaped and firm bedding meeting the requirements for a Type B or Type C trench as shown on the City of Findlay Standard Detail plan sheets. The materials shall be placed in lifts not exceeding 6 inches in thickness and securely compacted by hand or mechanical tamping to secure a good compaction.

Pipe bedding material for gravity sewers shall consist of a bed of granular stone with a thickness of six (6) inches below the bottom of the pipe to provide proper support, twelve (12) extending to a plane twelve (12) inches to the left and right of the outside of the pipe, and extending to a plane twelve (12) inches above the crown of the pipe. Granular bedding material shall be No. 57 aggregate stone, meeting current ODOT Specification requirements.

If directed by the ENGINEER, the CONTRACTOR shall excavate unstable material below the bottom of the pipe bedding and shall be replaced with approved granular material. The cost of the pipe embedment shall be included in the cost of the pipe.

Trenches in rock shall, at a minimum, be bedded 6 inches below the pipe and up to twelve (12) inches above the top of pipe (even if the trench is classified as Type C), and the trench width in rock shall be no less than 24 inches greater than the outside diameter of the pipe. Payment limits for rock excavation shall be limited to these dimensions. Any excavation beyond the payment limits will not be directly compensated for if a specific pay item is present for "Rock Excavation - Gravity Sewer" (paid per CY).

## 12. BACKFILL

Backfill shall be to the limits shown on the drawings and include the materials placed above the pipe embedment. Backfill material shall be placed and compacted, according to the requirements of this section, for the entire length, width, and height of the trench or excavation. See City of Findlay Standard Detail plan sheets for more detailed information. Backfill shall consist of finely divided soil free from stones, large lumps or other harmful debris.

Trenches shall be backfilled immediately after the pipe is placed and bedded. Backfill material shall be placed in the presence of the ENGINEER. The backfill material shall not contain stones, rock, pieces of masonry, organic material, frozen earth, debris, and earth with a high void content or other material considered unsatisfactory by the ENGINEER.

- TYPE C TRENCHES, NON-STRUCTURES: Backfill not under structures or outside the pavement influence area shall be compacted in 12-inch layers as directed by the ENGINEER for the entire width, length, and vertical height of the trench.
- TYPE B TRENCHES, STRUCTURES: Backfill under structures or adjacent to pavement shall be ODOT Type 304 or 411 and compacted in 12-inch lifts to 95% compaction based on standard or modified proctor. Structures include manholes, pump stations, grinder pumps, roads, drives, sidewalks, and any other miscellaneous items called out on the drawings.
- PAVEMENT INFLUENCE AREA: Excavations below a line extended from the edge of pavement (or back of curb) at a 45 degree angle downward from the surface shall be backfilled as specified for structures. Areas of the excavation above the 45 degree projection may be backfilled as listed for non-structures.
- Water may be used to attain the proper moisture content in achieving compaction requirements. Prior to the placement of soil over the granular material all free water shall be drained from the excavation. Flooding of the trench to achieve compaction shall be prohibited.

The ENGINEER may check compaction of the backfill at any time.

The CONTRACTOR shall be required to regrade and reshape all road shoulders and all ditches or swales from existing high points to existing drainage structures or other outlets along the proposed improvement. The CONTRACTOR and the ENGINEER shall mutually agree and establish all ditch grades to be restored prior to construction. Ditches which are reshaped shall have reasonable side slopes. Vertical or steep slopes will not be permitted.



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Revision	By	Appd.	Y/M/AM/DD
3 100% DESIGN	CJ	DD	2022/04/08
2 90% DESIGN	MMG	DD	2021/08/13
1 60% DESIGN	CJ	DD	2021/08/14
ISSUED		Appd.	Y/M/AM/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
CITY OF FINDLAY SANITARY SEWER NOTES 1 OF 2

Issue Stamp

Project Number: 174316204

File Name: S4 city of findlay sanitary sewer notes 1 of 2.dwg

CJ	DD	TC
Dwn.	Chkd.	Dtgn.

Revision Sheet

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**13. CONNECTIONS TO STRUCTURES OR PIPES**

When required, the new sewers shall be connected to structures and pipes through stubs, wall castings, wall sleeves, etc. provided for same or an opening shall be made at the proper elevation in the wall of the structure or pipe. The pipe inserted and the opening around the pipe shall be neatly and permanently closed with a Kor-N-Boot for sanitary applications and non-shrinking and no corrosive grout for storm applications. For approved sanitary sewer connection material, please see section 18 of these notes. Grout shall be Five Star as manufactured by the U.S. Grout Corporation; Sealtight 588 Grout as manufactured by W.R. Meadows, Inc.; or equal. All connections shall be watertight. Where necessary, the bottoms of existing structures shall be filled and reshaped to give a smooth flow in all directions.

Connections to unlike types and sizes of pipe shall be accomplished using the proper adaptor as manufactured by Fernco, Inc; Joints, Inc.; or equal. Connections to structures and pipes shall be at the expense of the CONTRACTOR.

**14. SANITARY SEWER TESTING REQUIREMENTS**

**a. TESTING REQUIREMENTS**

- The CONTRACTOR shall furnish the necessary pumping equipment, pipe connections, taps, gauges, auxiliary water containers, bulkheads, plugs, and any other equipment required to perform pressure and leakage tests.
- Leakage testing on gravity sanitary sewers shall not be performed until deflection testing has been successfully completed. If air testing is performed prior to deflection testing, the CONTRACTOR will be required to repeat the leakage testing of the sewer following deflection testing.

**b. GRAVITY SEWER DEFLECTION TESTING**

- All sewers of PVC plastic pipe shall be tested for a maximum deflection of 5% of the pipe average inside diameter not less than 60 days after final full backfill, including jetting, has been placed, as determined by the ENGINEER.
- Deflection testing shall be performed by pulling an approved mandrel, having a diameter not less than 95% of the internal diameter of the pipe being tested. The CONTRACTOR shall provide all testing equipment and material needed to properly perform deflection testing. The CONTRACTOR shall pay all costs associated with the test.

**15. MANHOLE LEAKAGE TESTING**

- Manhole leakage testing shall be performed by drawing a vacuum of 10-inches of mercury into the manhole using equipment approved to conduct such testing in accordance with ASTM C1244. With the vacuum pump turned off and all valves closed, the time for the vacuum to drop from 10-inches to 9 inches shall be recorded. The vacuum test shall be considered acceptable if the elapsed time is equal to or greater than that specified in the chart shown in these Specifications. The test pressure may be adjusted to account for the depth of groundwater above the invert of the manhole as shown in the chart.
- The CONTRACTOR shall plug and brace all pipes entering the manhole and seal any cracks, or holes with a non-shrink grout to prevent air being drawing into the manhole.
- The use of detergents, soaps, or other similar agents will not be permitted to be applied to any of the internal joints of the manhole before testing of the manhole. The contractor will be permitted to apply soap, detergent, or a similar agent to the joints after a failed test to determine the location of the leak.

**16. REPAIRS**

Any section of sewer failing to meet the testing requirements outlined in this section shall be remedied by presenting a plan for review by the ENGINEER.

Mainline and lateral repairs are to be made using solid pipe couplers. The use of Fernco type flexible couplings for repair sections shall not be acceptable.

**17. SANITARY SEWER CLEANING AND TELEVISION INSPECTION**

The CONTRACTOR shall clean and televise all sections of the new gravity sewers to the satisfaction of the ENGINEER. Cleaning and television inspection shall be performed after successful deflection and air testing.

- CLEANING** - Prior to televising sanitary sewer facilities, the CONTRACTOR shall utilize high velocity water jet equipment to remove all debris from the sanitary sewer facilities. The CONTRACTOR shall properly dispose of any debris removed from the sanitary sewer. If additional cleaning is required following the television inspection, water required for additional cleaning shall be at the CONTRACTOR's cost.
- TELEVISION INSPECTION** - The CONTRACTOR shall utilize CCTV equipment to visually inspect the condition of the sanitary sewers with a picture quality acceptable to the ENGINEER. The CONTRACTOR shall re-inspect the sanitary sewer if the inspection is determined to be unsatisfactory. Lighting for

television inspection shall be provided by a camera mounted lamp capable of lighting the entire inside circumference of the sanitary sewer pipe. The camera shall be moved through the line in either direction at a uniform rate not to exceed three feet per second and stopping when necessary to insure proper documentation of the sewer's condition and lateral sewer locations.

- CAMERA** - The television camera shall be specifically designed and constructed for sanitary sewer television inspection. The camera shall be of viewing the entire inside circumference of the sanitary sewer pipe. The camera shall be self-propelled or mounted on adjustable skids. The camera view shall be transmitted to an above grade monitor.
- INSPECTION LOGS** - The CONTRACTOR shall submit a typed inspection log clearly indicating date, time, street, sanitary sewer number as well as the location of any significant features such as: damaged pipe, pipe bellies, infiltration points, lateral locations or any other unusual conditions.
- VIDEO RECORD** - The CONTRACTOR shall submit 2 copies of the video record in DVD format to the ENGINEER for review. The video record shall have both audio and video tracks describing and depicting appropriate features viewed during the inspection. The video track shall include the following: street, sanitary sewer section, date and current distance along reach complete with descriptive printed labels on each DVD case.

**18. CITY OF FINDLAY ACCEPTABLE MANHOLE MATERIAL**

**IRON COVER AND FRAME**

	<u>EAST JORDAN IRON WORKS</u>	<u>NEENAH FOUNDRY</u>
-1051-1 or 1050Z1 (9")		-R-1713 (9")
-1022 (7")		-R-1772 (7")
-1037 (4")		-R-1647 (4")

For bolt-down or waterproof applications where specified: East Jordan Iron Works 1051-1 WT, Neenah Foundry R-1916-C

**EXTERNAL CHIMNEY SEAL**

PRODUCT	(MANUFACTURER / DISTRIBUTOR)
Infli-Shield	(D.A. Van Dam & Associates)
Cretex External Manhole Chimney Seal Products)	(Municipal & Contractor Sealing Products)
Wrapid Seal	(CANUSA)

**INTERNAL CHIMNEY SEAL**

PRODUCT	(MANUFACTURER / DISTRIBUTOR)
Cretex Internal Manhole Chimney Seal Products)	(Municipal & Contractor Sealing Products)
Flex-Seal Utility Sealant	(D.A. Van Dam & Associates)
NPC Internal Chimney Seal	(NPC, Inc.)

**FLEXIBLE PIPE CONNECTIONS**

PRODUCT	(MANUFACTURER / DISTRIBUTOR)
Premium Joint A-Lok	(NPC, Inc.)
Press-Seal Gasket Products	(Press-Seal Gasket Corporation)
Kor-N-Seal	(NPC, Inc.)

Pipe Diameter (in.)	Minimum Time (min:sec)	Length for Minimum (ft.)	Time for Longer Length (sec)	Specification Time (min:sec) for Length (L) Shown							
				100 ft.	150 ft.	200 ft.	250 ft.	300 ft.	350 ft.	400 ft.	450 ft.
6	5:40	398	0.427L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	8:24
8	7:34	298	0.740L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	1.187L	9:26	9:26	9:26	9:26	11:52	13:51	15:49	17:48
12	11:20	199	1.709L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	2.671L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	3.836L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
24	22:40	99	6.837L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33
30	23:30	80	10.683L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15
36	31:00	72	12.926L	43:05	64:38	86:10	107:43	129:19	150:43	172:21	193:53
36	34:00	66	15.384L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46

Depth (ft.)	Diameter (in)			
	48	60	72	≥84
	Time (sec)			
≤8	20	26	33	A
10	25	33	41	S
12	30	39	49	
14	35	46	57	S
16	40	52	67	P
18	45	59	73	E
20	50	65	81	C
22	55	72	89	I
24	59	78	97	F
26	64	85	105	I
28	69	91	113	E
>30	74	98	121	D



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3 100% DESIGN	CJ	DDD	2022/04/08
2 90% DESIGN	MMG	DDD	2021/08/13
1 60% DESIGN	CJ	DDD	2021/08/14
ISSUED			YY/MM/DD

Client/Project  
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM  
BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS  
HANCOCK COUNTY, OHIO

Title  
CITY OF FINDLAY SANITARY SEWER NOTES 2 OF 2

Issue Stamp

Project Number: 174316204

File Name: SS city of findlay sanitary sewer notes 2 OF 2.dwg

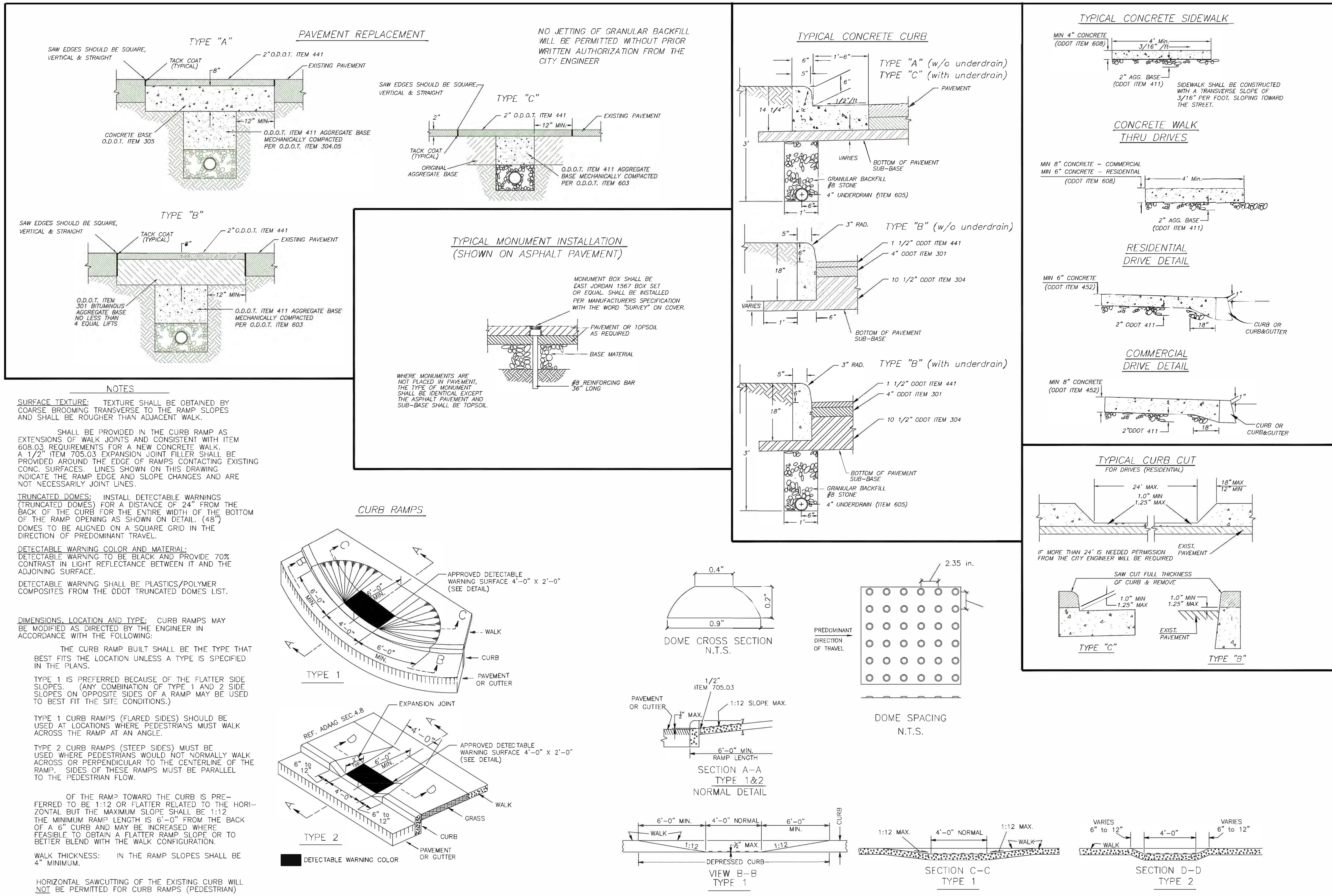
CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision Sheet

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Revision	By	Appd.	Y/M/AM/DO
3	MMG	DD	2022.04.08
2	MMG	DD	2021.08.13
1	CJ	DD	2021.08.14

Client/Project  
**MAUMEE WATERSHED CONSERVANCY DISTRICT**

**HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM**  
**BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS**  
 HANCOCK COUNTY, OHIO

Title  
**CITY OF FINDLAY STANDARD DETAILS 1 OF 2**

Issue Stamp

Project Number: 174316204

File Name: 56 city of findlay standard details 1 OF 2.dwg

Revision	Sheet
0	56 of 57



**MANHOLE CONSTRUCTION & MATERIALS NOTES**

MANHOLE LIDS SHALL BE CAST WITH APPROPRIATE LABEL FOR SEWER TYPE 'SANITARY' FOR SANITARY SEWERS & 'STORM' FOR STORM SEWERS

NO STEPS SHALL BE INSTALLED

SANITARY APPLICATIONS SHALL CONSIST OF A ONE PIECE PRE-CAST BASE & RISER

SANITARY MANHOLE SECTIONS SHALL CONFORM TO ASTM DESIGNATION C-478 AND JOINTS BETWEEN THE SECTIONS SHALL CONFORM TO ASTM DESIGNATION C-443

FLEXIBLE CONNECTOR TO BE USED BETWEEN ROP-N-SEAL, PRESS SEAL GASKET, NATIONAL POLLUTION CONTROL SYSTEMS, A-LOK PRODUCTS CORPORATION, OR APPROVED EQUAL

MANHOLES SHALL BE VACUUM TESTED AT NO LESS THAN 10 INCHES OF MERCURY

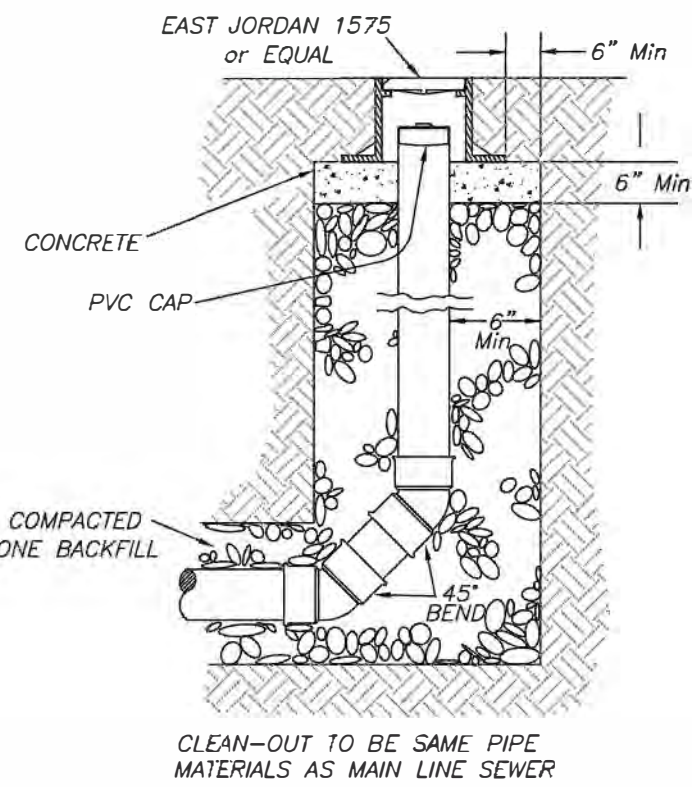
INTERNAL JOINT SEALS SHALL BE INSTALLED AS SHOWN ON ALL DROP MANHOLES. THIS SHALL ALSO APPLY TO ALL MANHOLE SIZE TRANSITION WHERE IT IS NOT POSSIBLE TO INSTALL AN EXTERNAL SEAL.

PIPE LARGER THAN 21" DIA WILL REQUIRE A MANHOLE DIA. > 4"

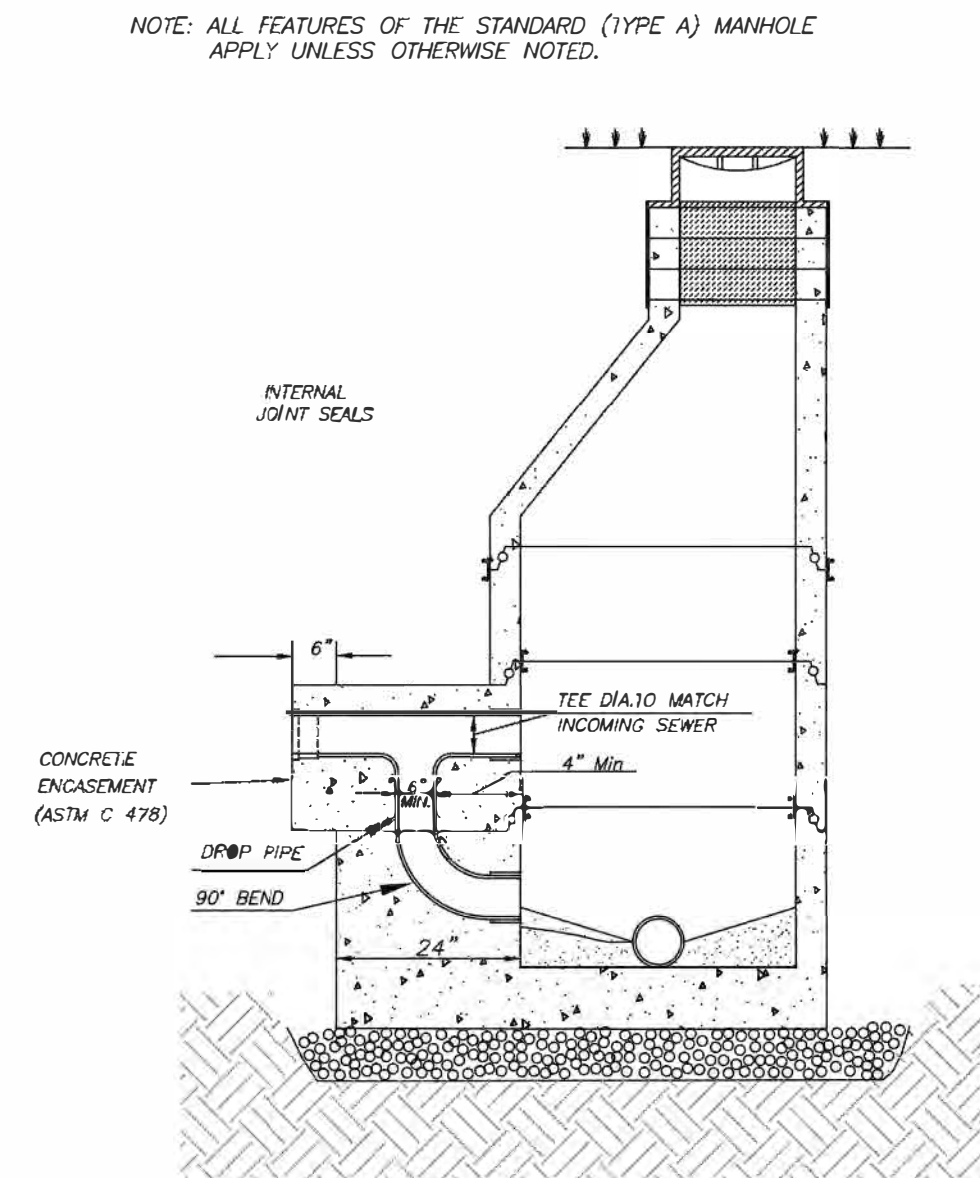
APPROVED CASTINGS			
HEIGHT	EJW	NEENAH FOUNDRY	
9"	1051-T	R-1713	
7"	1022	R-1772	
4"	1037	R-1647	

EJW 1050 21 IS ALSO ACCEPTABLE

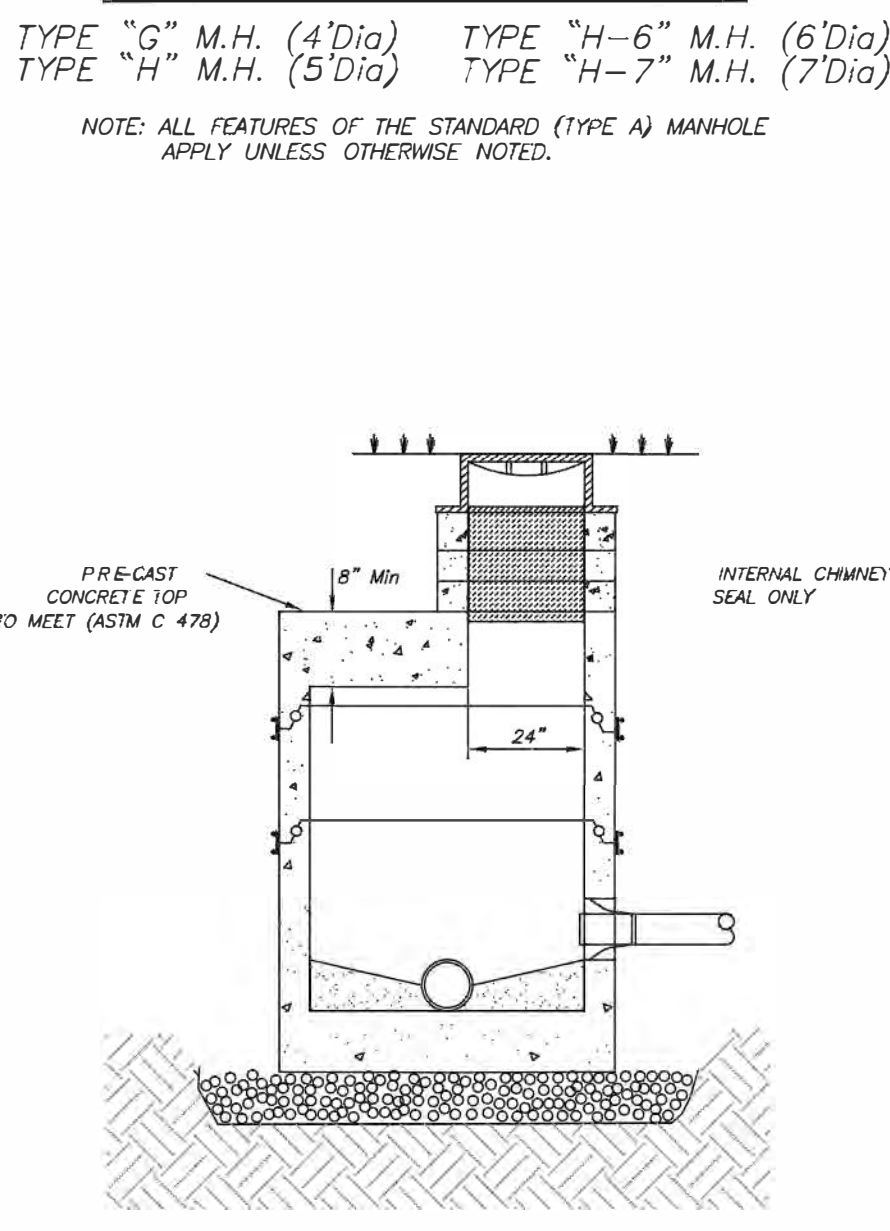
**CLEAN-OUT DETAIL**



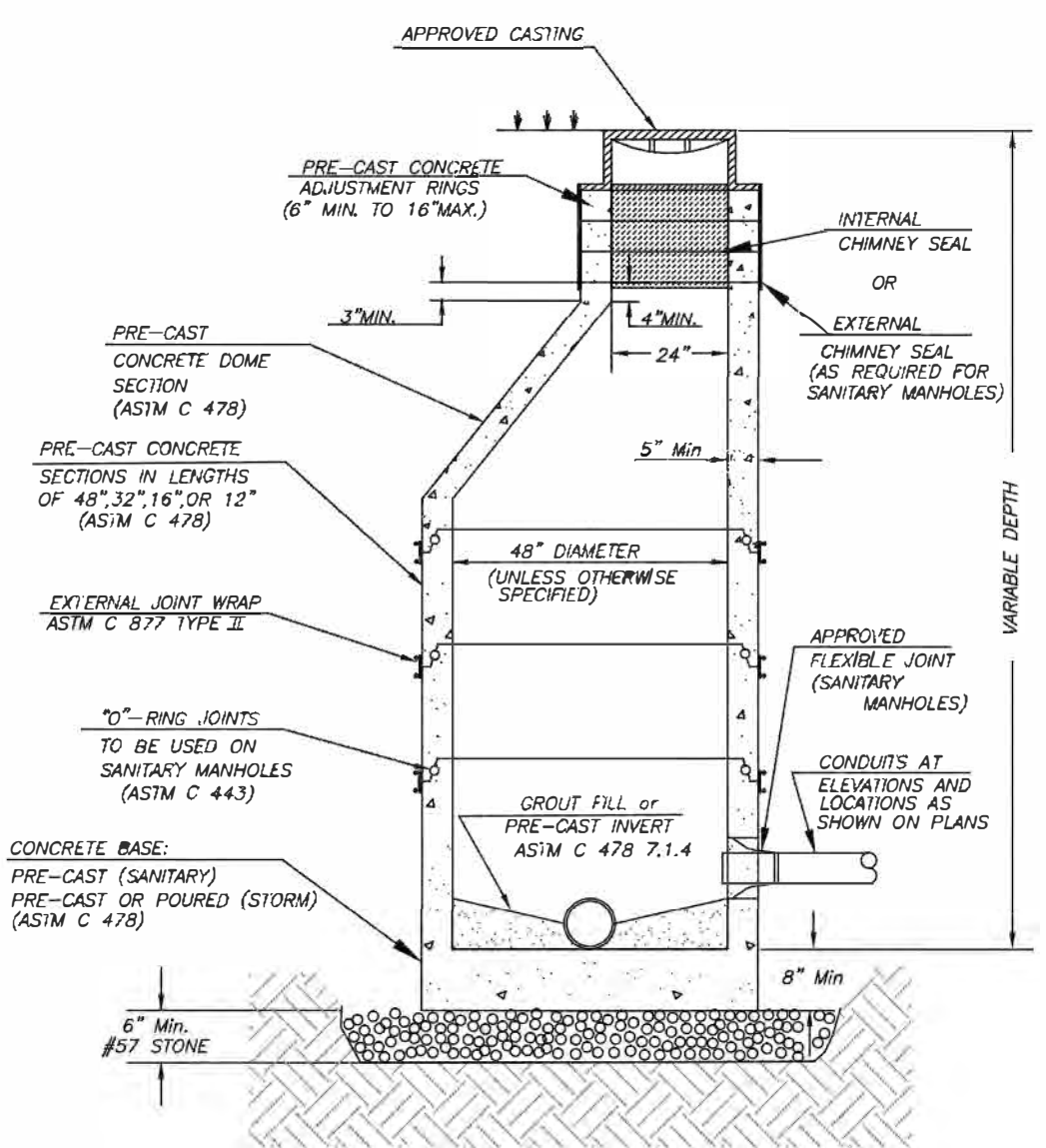
**TYPICAL DROP MANHOLE**  
TYPE "D" M.H. (4'Dia) TYPE "E" M.H. (5'Dia)



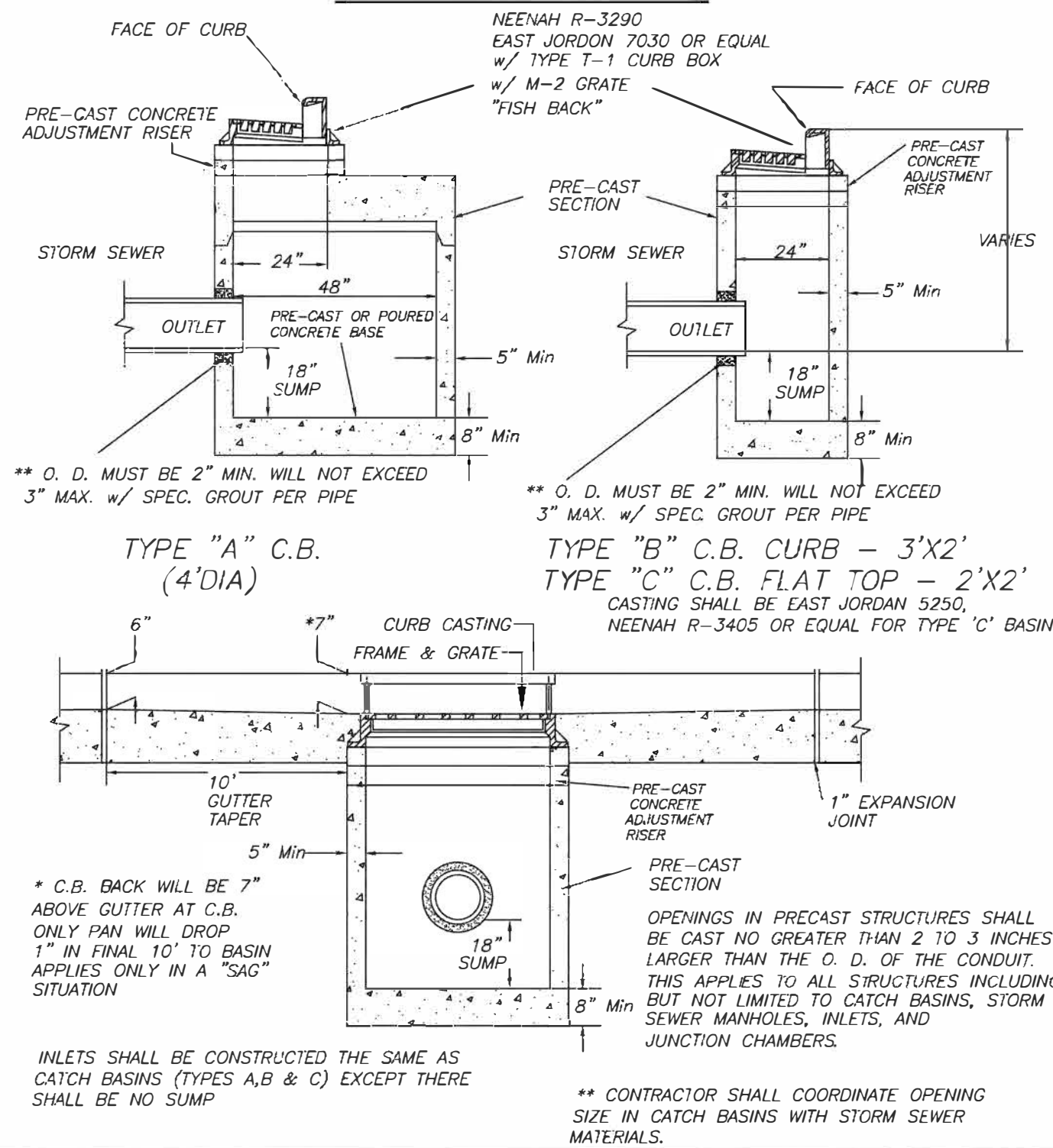
**TYPICAL FLAT-TOP MANHOLE**  
TYPE "G" M.H. (4'Dia) TYPE "H-6" M.H. (6'Dia)  
TYPE "H" M.H. (5'Dia) TYPE "H-7" M.H. (7'Dia)



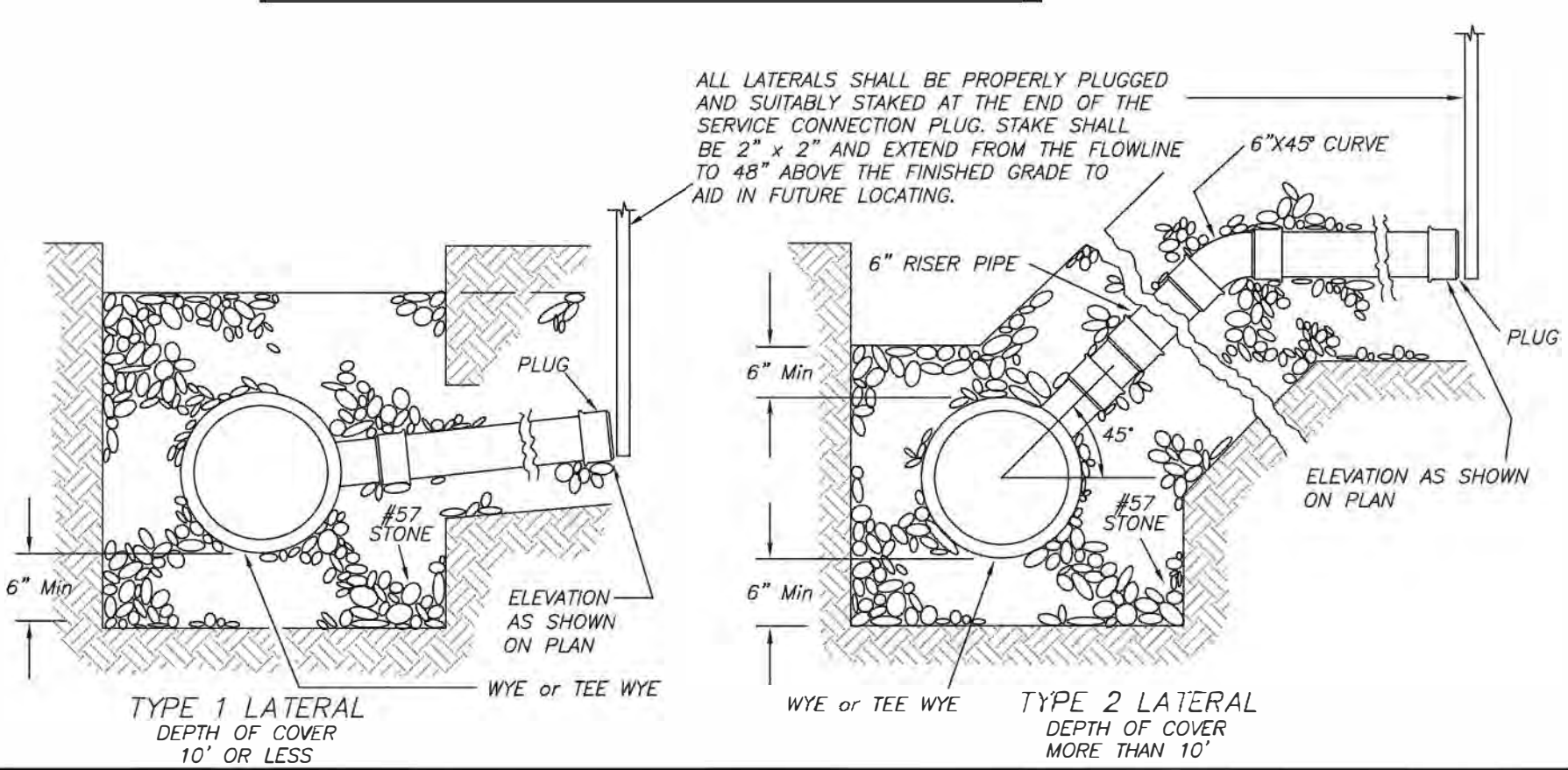
**STANDARD PRE-CAST MANHOLE**  
TYPE "A" M.H. (4'Dia) TYPE "B-6" M.H. (6'Dia)  
TYPE "B" M.H. (5'Dia) TYPE "B-7" M.H. (7'Dia)



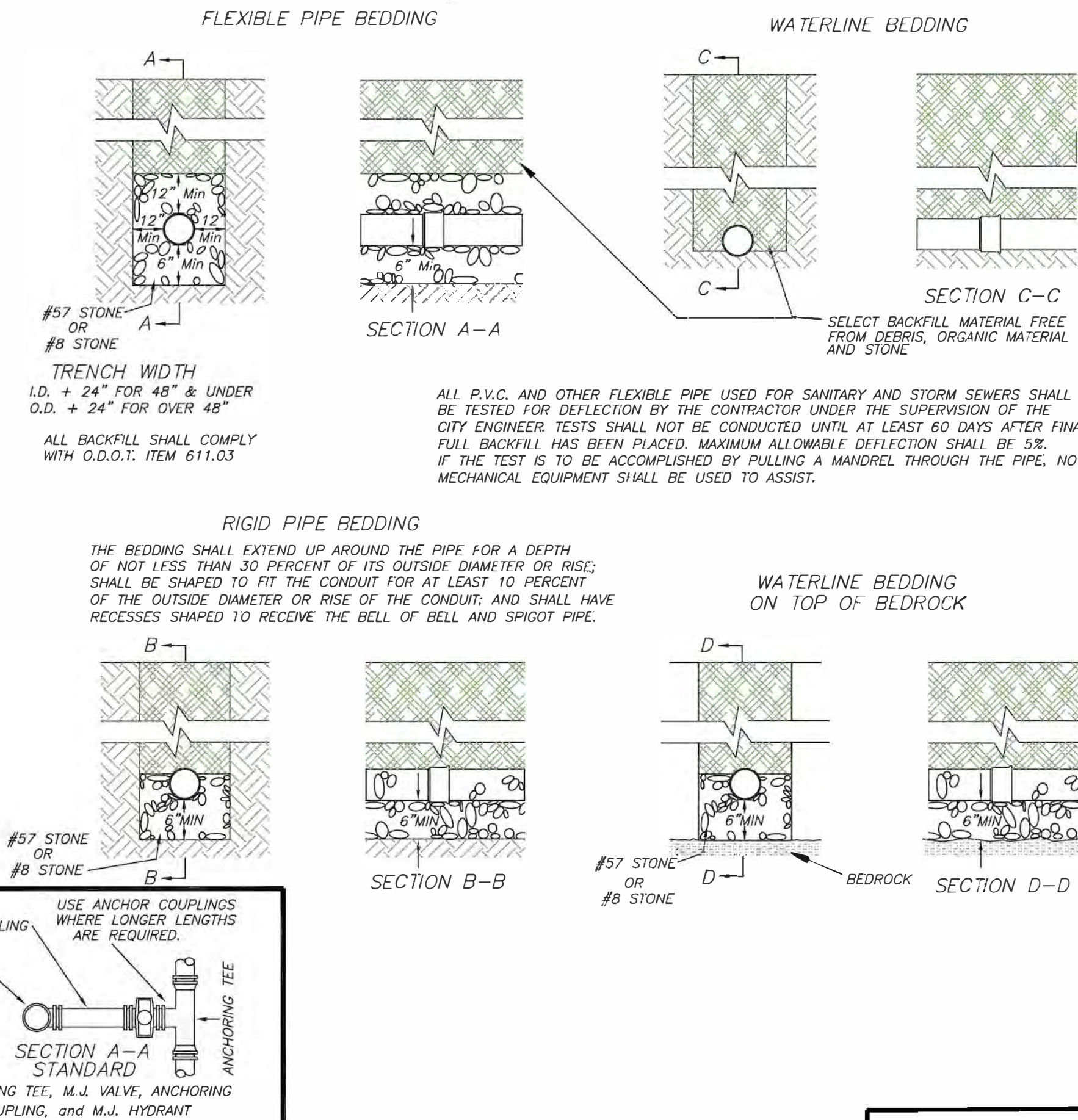
**TYPICAL CATCH BASINS**



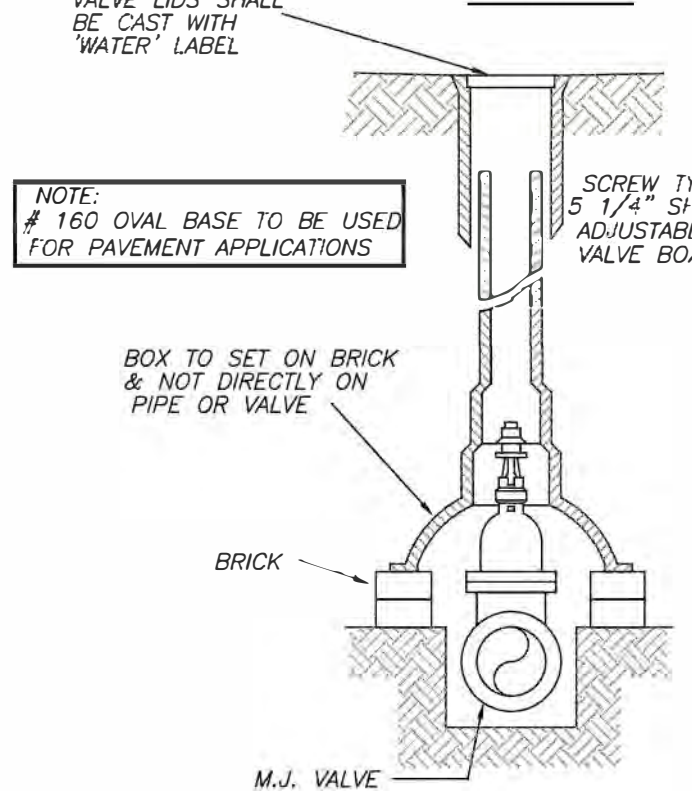
**TYPICAL MAIN LINE LATERAL CONNECTIONS**



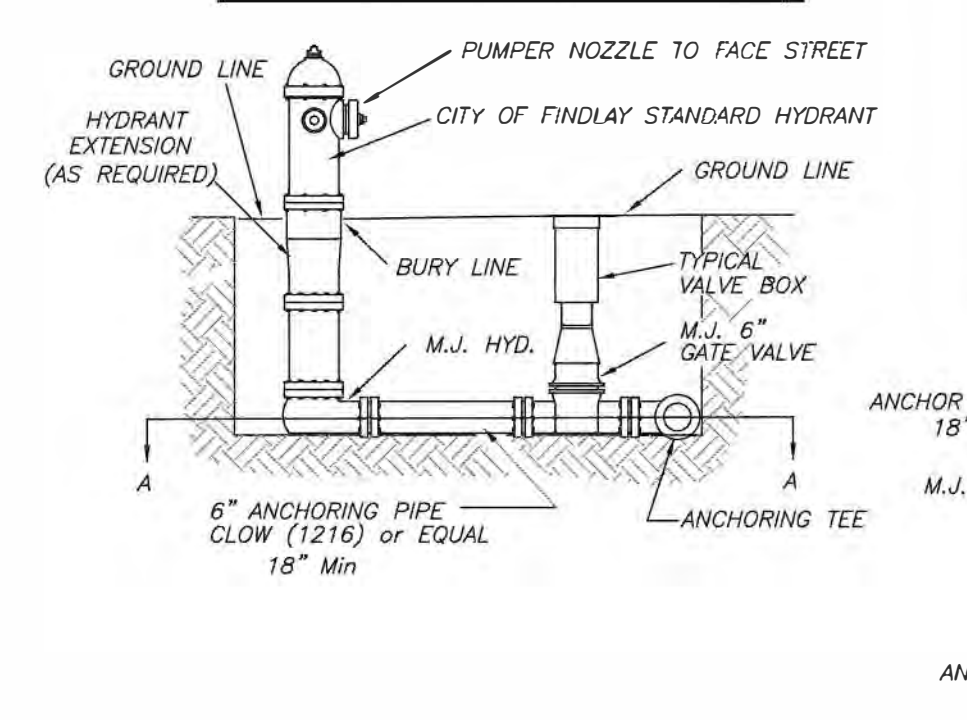
**METHODS OF BEDDING**



**TYPICAL VALVE SETTING**



**TYPICAL HYDRANT SETTINGS**



**WATERLINE CONSTRUCTION & MATERIALS NOTES**

6" UP TO 16" I.D. SHALL REQUIRE CLASS 52 PUSH-ON JOINT PIPE AND 2 - BRASS WEDGES AT EVERY JOINT

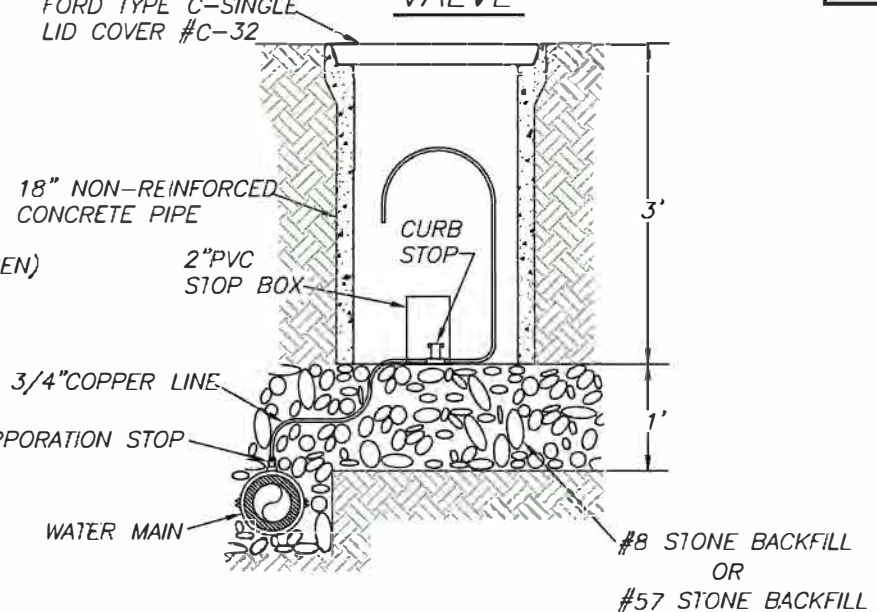
16" AND LARGER I.D. SHALL REQUIRE CLASS 350 PRESSURE PIPE OR CLASS 52 PIPE AND 4 - BRASS WEDGES AT EVERY JOINT

ALL VALVES SHALL BE 'RED' NUT (CLOCKWISE TO OPEN)

ALL GATE VALVES SHALL MEET ANSI/AWWA C-509-94 STANDARDS, OR LATEST REVISION

ALL BUTTERFLY VALVES SHALL MEET AWWA C-504 STANDARDS OR LATEST REVISION AND SHALL BE MANUFACTURED BY MUELLER, DE ZURIK, AMERICAN-DARLING OR EQUAL

**AIR RELEASE VALVE**



Revision	By	Appd.	Y1.AM.LDD
3	100% DESIGN	CJ	2022.04.08
2	90% DESIGN	MMG	2021.08.13
1	60% DESIGN	CJ	2021.08.14

Client/Project  
**MAUMEE WATERSHED CONSERVANCY DISTRICT**

**HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM**  
**BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS**  
HANCOCK COUNTY, OHIO

Title  
**CITY OF FINDLAY STANDARD DETAILS 2 OF 2**

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