Stantec

PREPARED FOR: MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM BLANCHARD RIVER ADDITIONAL HYDRAULIC IMPROVEMENTS

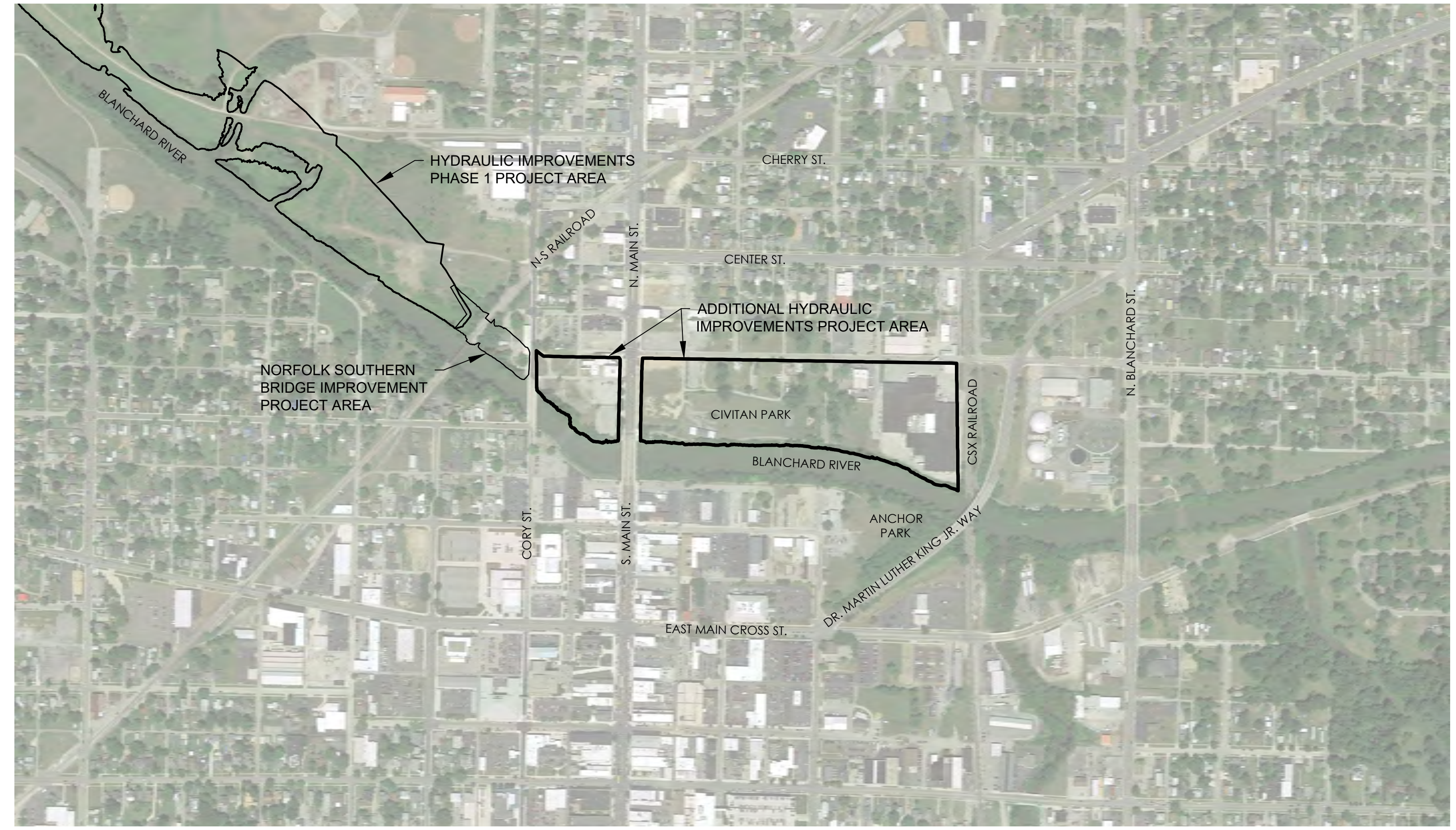
HANCOCK COUNTY, OH

30% SUBMITTAL

NOT FOR CONSTRUCTION

DECEMBER 4, 2020

Project Number: 174316204



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

BRIAN THOMAS, P.E., P.S., SERVICE DIRECTOR — DATE

INDEX OF SHEETS

SYMBOLS AND LEGEND

—— SS —— SS —— SS ——	SANITARY AND COMBINED SEWERS & STRUCTURES
—— ST —— ST —— ST ——	STORM SEWERS & STRUCTURES
—— W —— W —— W —— W ——	WATERLINES & STRUCTURES
—— OHE —— OHE —— OHE —— OHE ——	ELECTRIC OVERHEAD POWER LINES & POLES
—— UGE —— UGE ——	ELECTRIC UNDERGROUND POWER LINES
—— G —— G ——	GAS LINE
—— TEL ——	TELEPHONE/FIBER OPTIC LINES
—— TR —— TR —— TR ——	TRAFFIC SIGNAL CONTROL LINES
—— X —— X —— X —— X —— X —— X ——	FENCE
	PROPOSED LIVE BRUSH LAYERING
	RIFFLE HATCHING
	FLOOD PLAIN SEED MIX
	RIPARIAN BUFFER SEED MIX
	LOW MAINTENANCE SEED MIX
	SITE BENCH MARKS

ABBREVIATIONS

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

SURVEY INFORMATION

VERTICLE DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

COORDINATE SYSTEM: OHIO STATE PLAN, NORTH ZONE

SURVEY OBTAINED BY:

BOCKRATH & ASSOCIATES TOPOGRAPHIC SURVEY PERFORMED SUMMER OF 2020

KUCERA INTERNATIONAL AERIAL SURVEY PERFORMED SUMMER OF2017

Stantec

4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.04

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

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

Title
SHEET INDEX, SYMBOLS AND LEGEND

Permit-Seal

Project Number: 174316204

File Name: 02 sheet index symbols and legend.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0

Stantec

4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

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

Title
OVERALL SITE PLAN

Permit-Seal

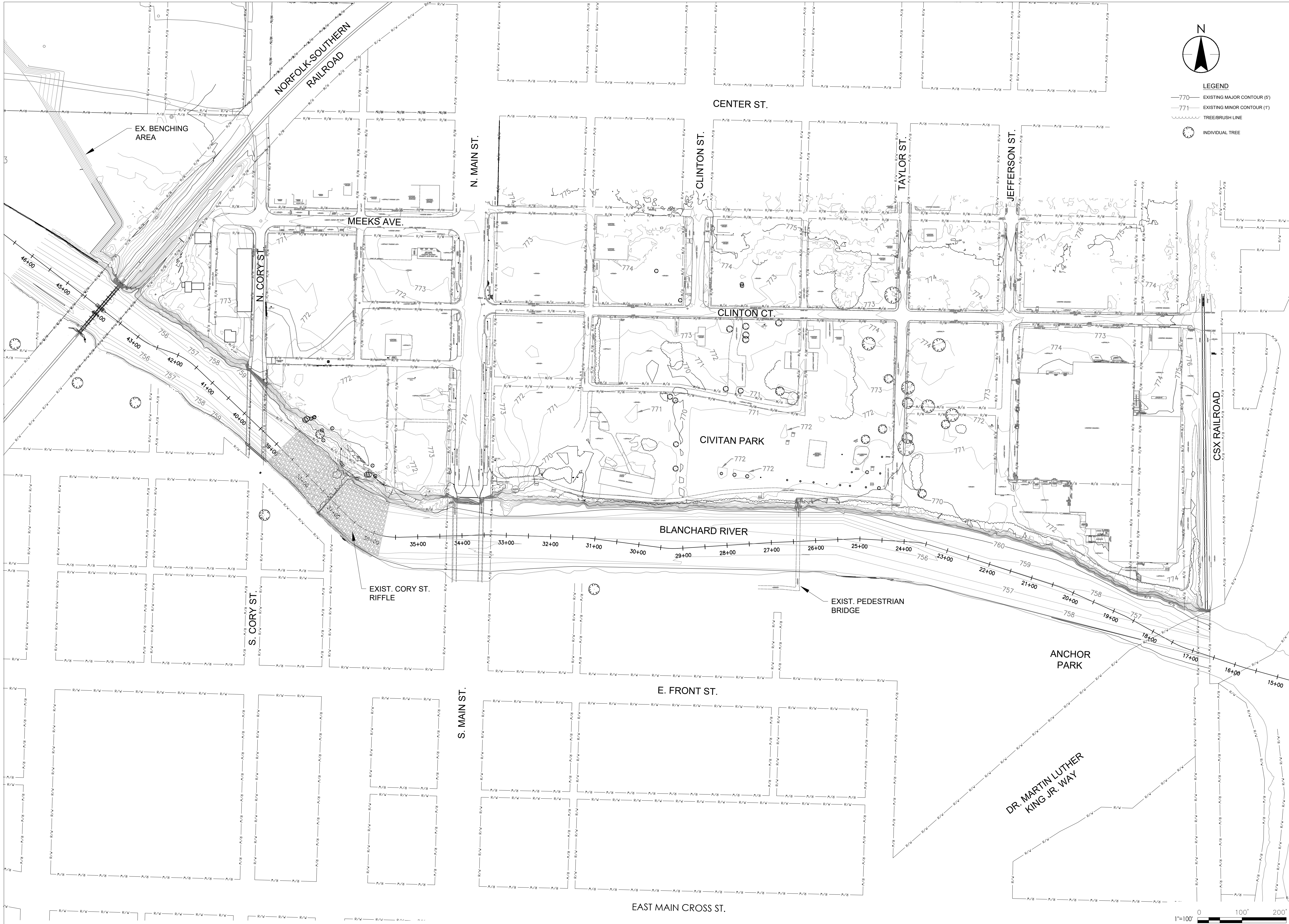
Project Number: 174316204

File Name: 03 overall site plan.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0
Sheet 03 of 18

SaveDate: 2020/12/01 12:12 Plot: Login: Gray, Shelly
u:\174316204\task_411_add_hydr_impr_preliminary_design\civil\design\drawing\sheetset\03 overall site plan.dwg



Stantec
4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision

	By	Appd.	YY.MM.DD

Issued

	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

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

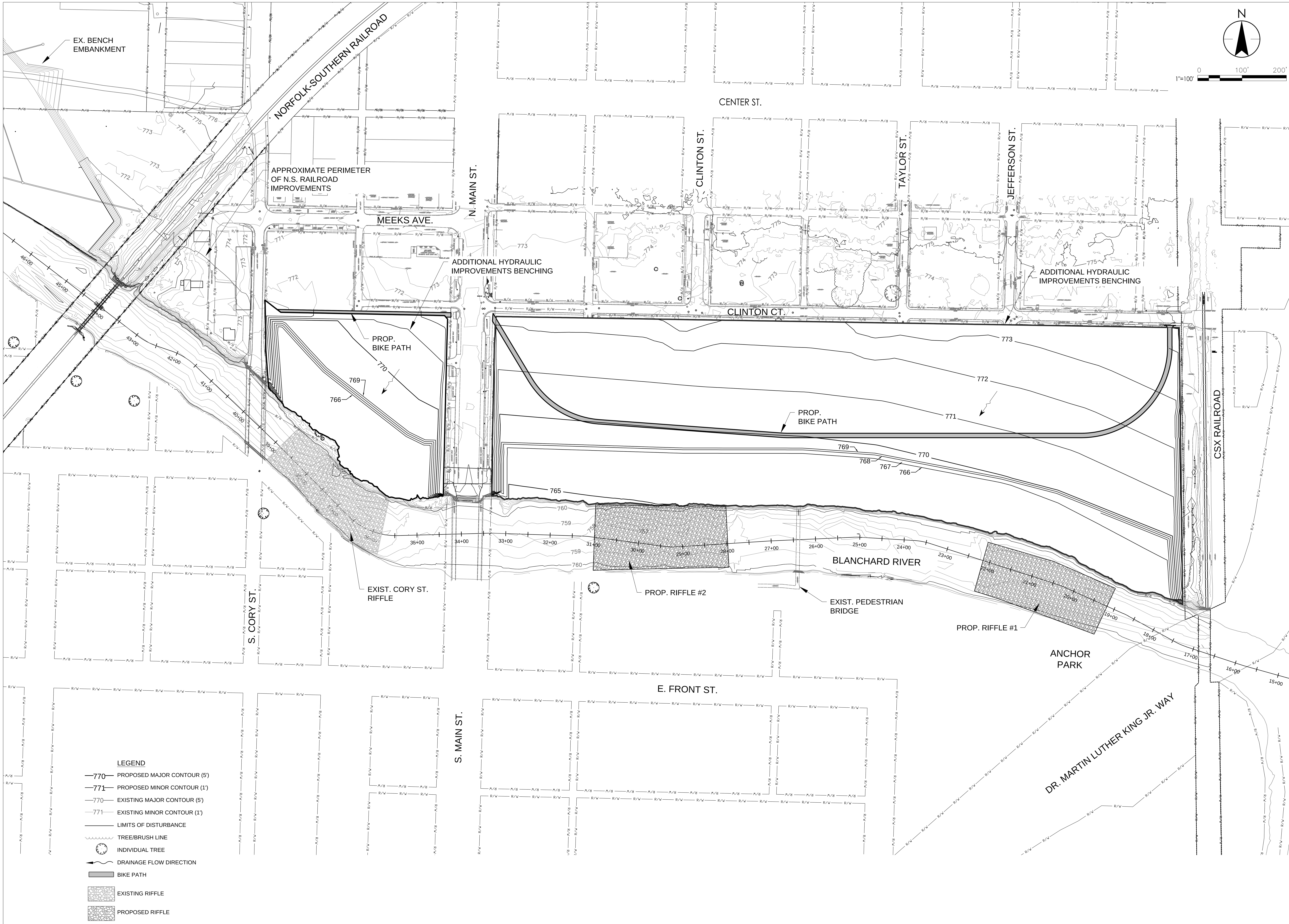
Title
EXISTING GRADING PLAN

Permit-Seal

Project Number: 174316204
File Name: 04 existing grading plan.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0
Sheet 04 of 18



Stantec

4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.04

Permit-Seal

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

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

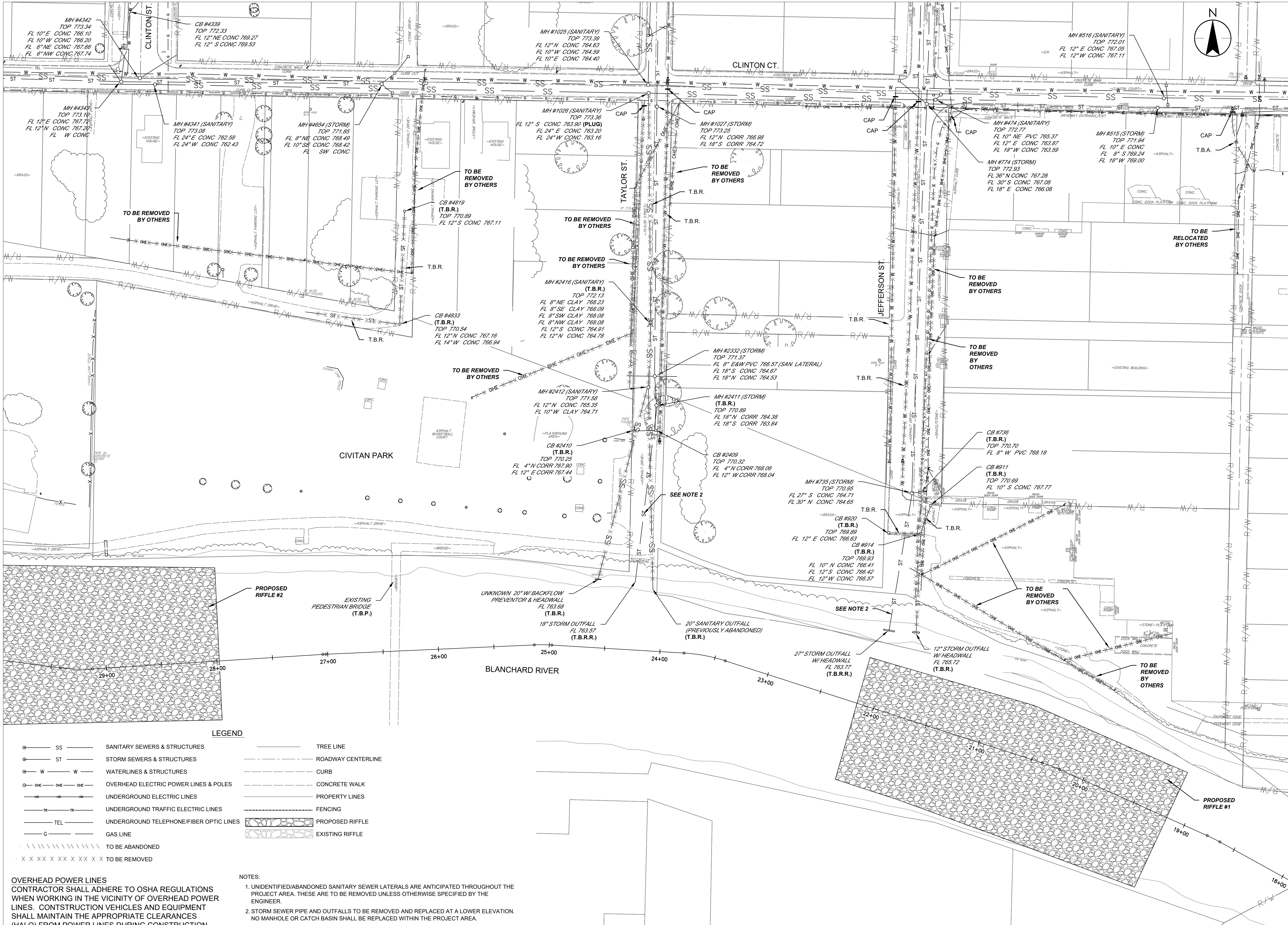
Title
PROPOSED GRADING PLAN

Project Number: 174316204

File Name: 05 proposed grading plan.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision	Sheet
0	05 of 18



LEGEND

SS	SANITARY SEWERS & STRUCTURES		TREE LINE
ST	STORM SEWERS & STRUCTURES		ROADWAY CENTERLINE
W	WATERLINES & STRUCTURES		CURB
OHE	OVERHEAD ELECTRIC POWER LINES & POLES		CONCRETE WALK
UGE	UNDERGROUND ELECTRIC LINES		PROPERTY LINES
TR	UNDERGROUND TRAFFIC ELECTRIC LINES		FENCING
TEL	UNDERGROUND TELEPHONE/FIBER OPTIC LINES		PROPOSED RIFFLE
G	GAS LINE		EXISTING RIFFLE
\\\\\\\\\\\\	TO BE ABANDONED		
X X X X X X X X X	TO BE REMOVED		

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.

NOTES:

1. UNIDENTIFIED/ABANDONED SANITARY SEWER LATERALS ARE ANTICIPATED THROUGHOUT THE PROJECT AREA. THESE ARE TO BE REMOVED UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
2. 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.

Stantec
4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

Permit-Seal

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

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

Title
UTILITY PLAN 1

1"=40' 0 40' 80'

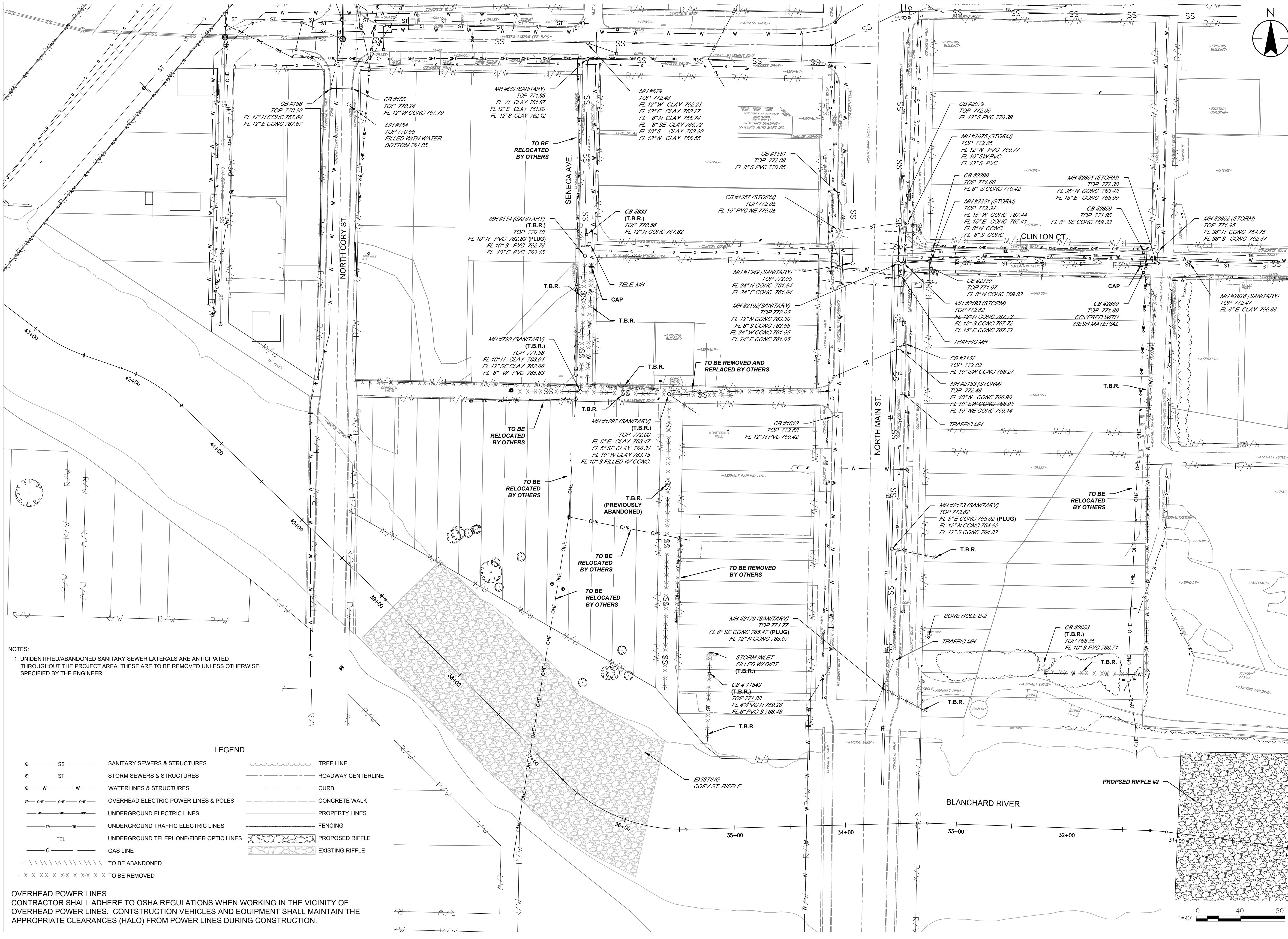
Project Number: 174316204

File Name: 06 utility plan 1.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0 Sheet 06 of 18

SaveDate: 2020/12/01 3:46 PM; Login: Gray, Shelly
u:\174316204\task_41_add_hydr_imp\preliminary_design\civil\design\drawing\sheetset\06 utility plan 1.dwg



NOTES:

1. UNIDENTIFIED/ABANDONED SANITARY SEWER LATERALS ARE ANTICIPATED THROUGHOUT THE PROJECT AREA. THESE ARE TO BE REMOVED UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.

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	UNDERGROUND TELEPHONE/FIBER OPTIC LINES
G	GAS LINE
	TO BE ABANDONED
X XX X XX X XX X X	TO BE REMOVED
	TREE LINE
	ROADWAY CENTERLINE
	CURB
	CONCRETE WALK
	PROPERTY LINES
	FENCING
	PROPOSED RIFFLE
	EXISTING RIFFLE

OVERHEAD POWER LINES

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

Stantec

4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

Permit-Seal

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

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

Title
UTILITY PLAN 2

Project Number: 174316204

File Name: 07 utility plan 2.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0

Stantec

4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ		2020.12.03

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
BLANCHARD RIVER HYDRAULIC IMPROVEMENTS - PHASE I
HANCOCK COUNTY, OHIO

Title
PROPOSED RIFFLES

Permit-Seal

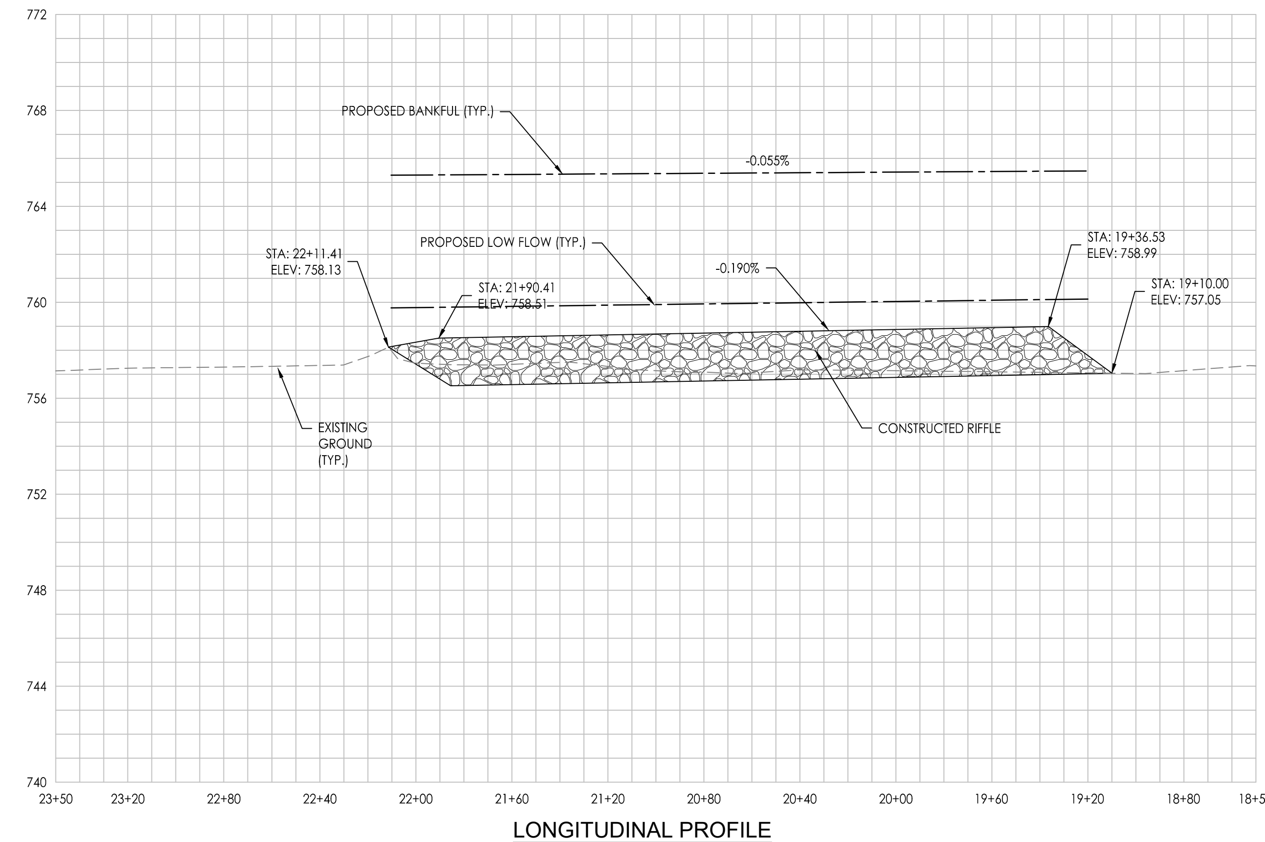
Project Number: 174316204

File Name: basemap_working.dwg

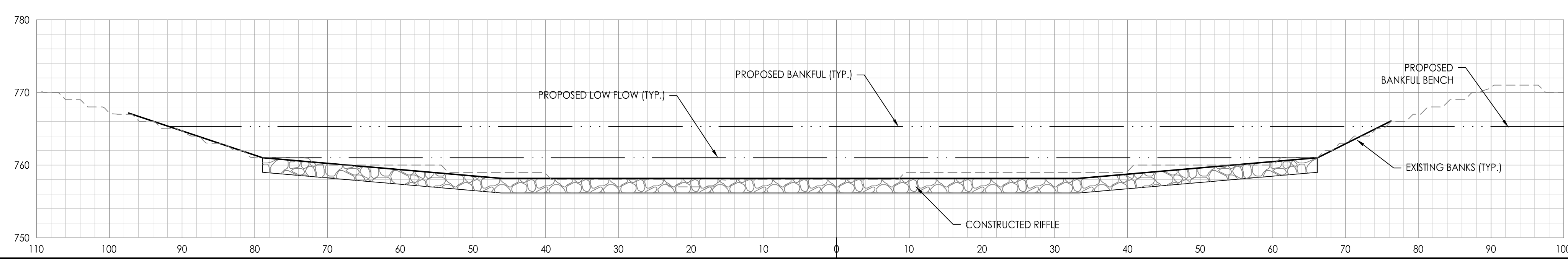
DLH	JNU	JNU
Dwn.	Chkd.	Dsgn.

Revision 0

Sheet 08 of 18



LONGITUDINAL PROFILE



PROPOSED RIFFLE #1 CROSS SECTION

Stantec

4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

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.	YY.MM.DD
1 30% SUBMITTAL	CJ		2020.12.03
Issued	By	Appd.	YY.MM.DD

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
BLANCHARD RIVER HYDRAULIC IMPROVEMENTS - PHASE I
HANCOCK COUNTY, OHIO

Title
RIFFLE 1 PLAN, PROFILE AND CROSS SECTIONS

Permit-Seal

Project Number: 174316204

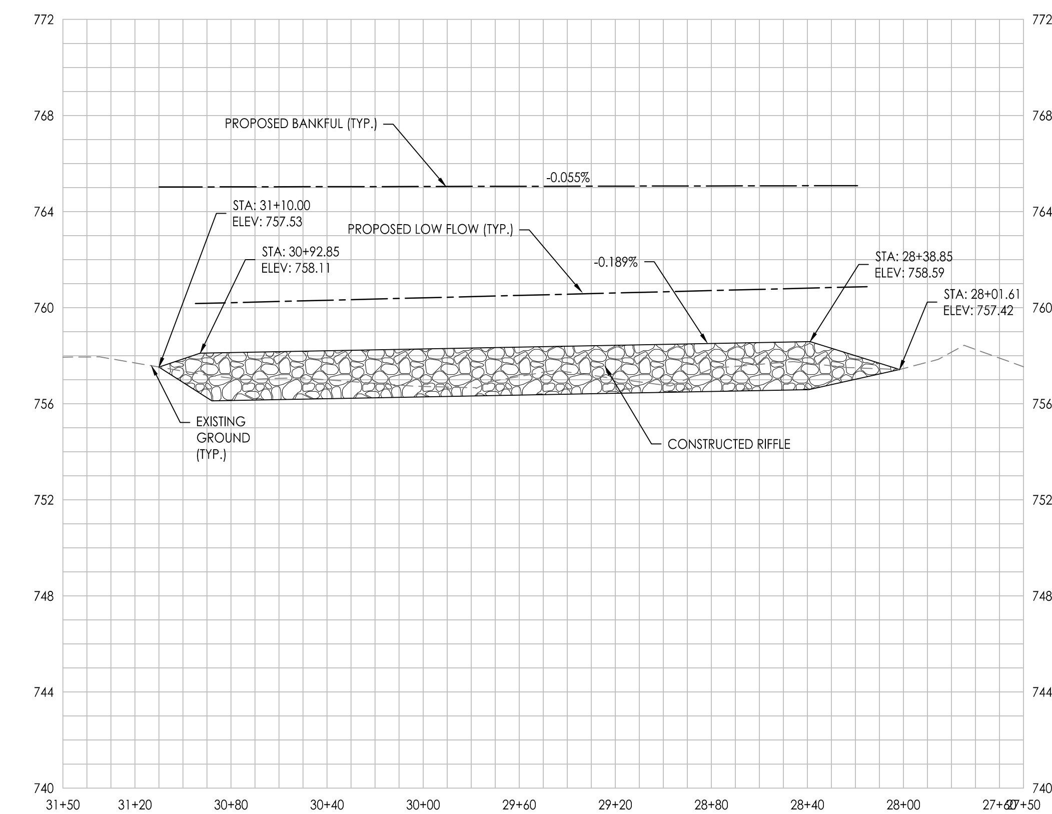
File Name: basemap_working.dwg

DLH	JNU	JNU
Dwn.	Chkd.	Dsgn.

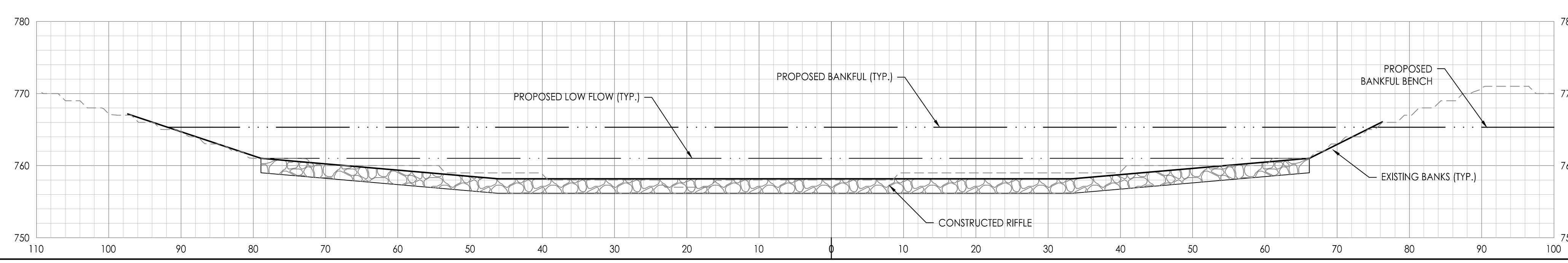
Revision 0

Sheet 09 of 18

SaveDate: 2020/12/03 4:55 PM Login: Gray, Shelly
u:\174316204\task_411_add_hydr_impr_preliminary_design\civil\design\drawing\sheets\11 riffle 2 plan, profile and cross sections.dwg



LONGITUDINAL PROFILE



PROPOSED RIFFLE #2 CROSS SECTION

SaveDate: 2020/12/03 4:55 PM Login: Gray, Shelly
u:\174316204\task_411_add_hydr_impr_preliminary_design\civil\design\drawing\sheetset\11 riffle 2 plan, profile and cross sections.dwg

Stantec

4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ		2020.12.03

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

HANCOCK COUNTY FLOOD RISK REDUCTION PROGRAM
BLANCHARD RIVER HYDRAULIC IMPROVEMENTS - PHASE I
HANCOCK COUNTY, OHIO

Title
RIFFLE 2 PLAN, PROFILE AND CROSS SECTIONS

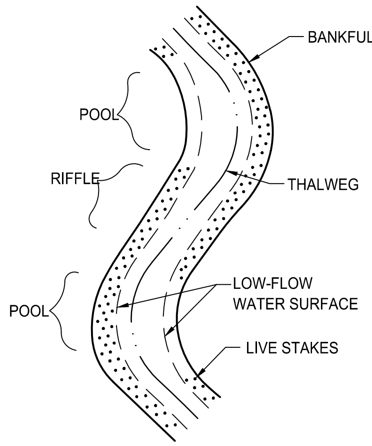
Permit-Seal

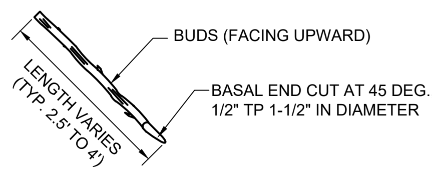
Project Number: 174316204

File Name: basemap_working.dwg

DLH	JNU	JNU
Dwn.	Chkd.	Dsgn.

Revision 0





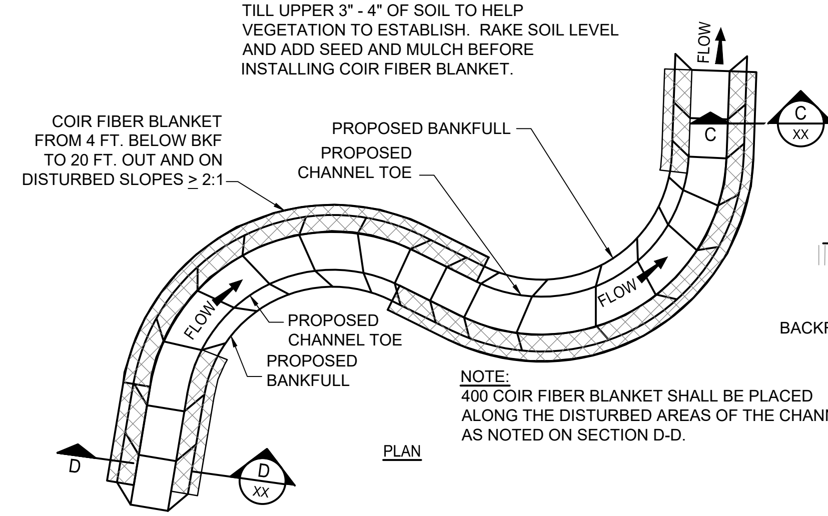
SEE PLANTING SCHEDULE (SHEET XX OF XX) FOR LIVE STAKE SPECIES.

1/11 DETAIL - DORMANT LIVE STAKE
NOT TO SCALE

NOTES:

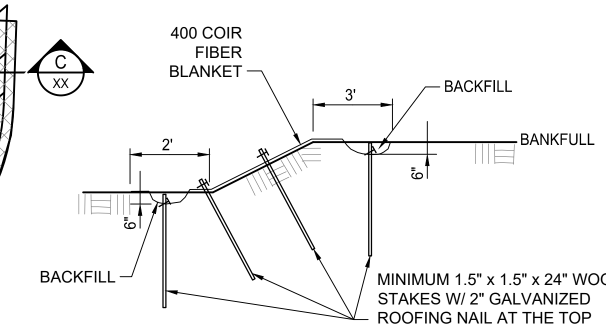
1. LIVE STAKES SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS AND DETAILS.
2. LIVE STAKES SHALL BE CUT FROM AN APPROVED SOURCE WITH A SHARP TOOL. STAKE SHALL BE FREE FROM DISEASE OR EXCESS DEAD TWIGS, 2.5 TO 4 FEET IN LENGTH WITH A BASAL END 0.5 TO 1.5 INCH IN DIAMETER. PRIOR TO INSTALLATION BASAL END SHALL BE CUT AT A 45 DEGREE ANGLE AND THE END SHALL BE CUT FLAT WITHOUT CRACKS.
3. LIVE STAKES SHALL BE INSTALLED BY GENTLY TAMPING INTO THE SOIL LEAVING 20% EXPOSED. STAKES SHALL BE PLACED IN A RANDOM PATTERN AT A RATE OF 1 LIVE STAKE PER SQUARE YARD ALONG BANKS FOR 8 FEET WIDTH (APPROXIMATELY 3 ROWS).
4. LIVE STAKES SHALL BE INSTALLED WHEN THEY ARE DORMANT, WHICH TYPICALLY OCCURS BETWEEN NOVEMBER 31 AND MARCH 31.
5. SEE SHEET XX AND XX SEEDING SCHEDULE.

* 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.

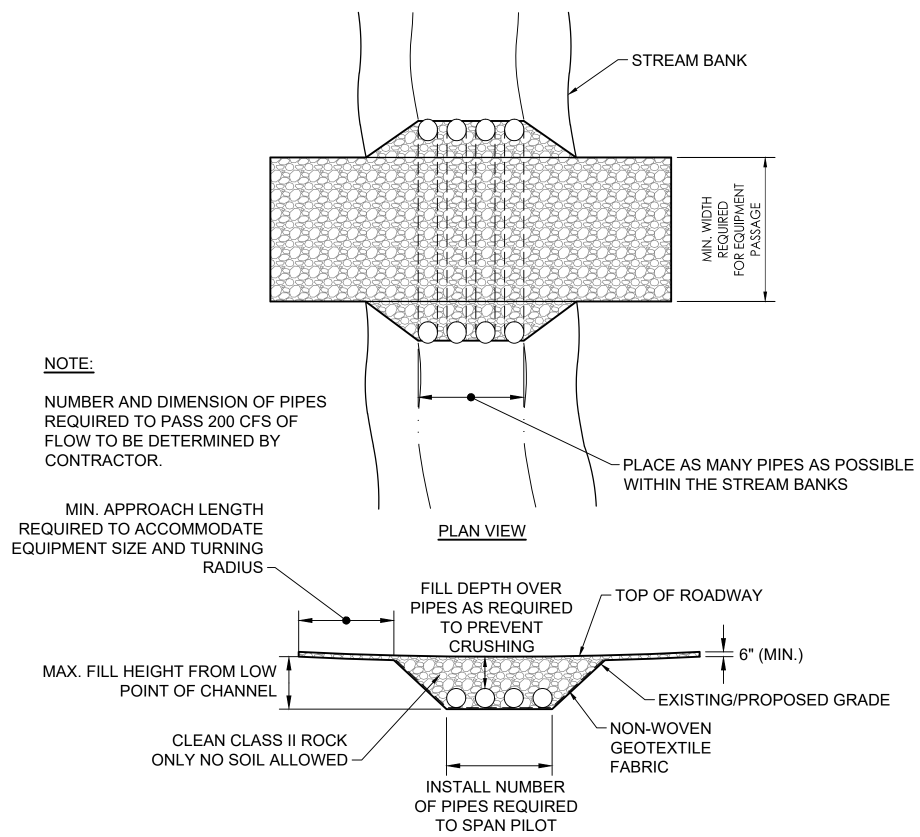


NOTE:
400 COIR FIBER BLANKET SHALL BE PLACED ALONG THE DISTURBED AREAS OF THE CHANNEL AS NOTED ON SECTION D-D.

PLAN



SECTION C-C



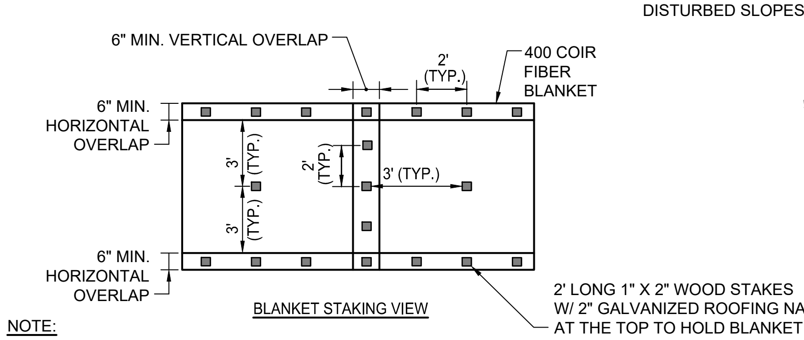
NOTE:

NUMBER AND DIMENSION OF PIPES REQUIRED TO PASS 200 CFS OF FLOW TO BE DETERMINED BY CONTRACTOR.

PLAN VIEW

ELEVATION

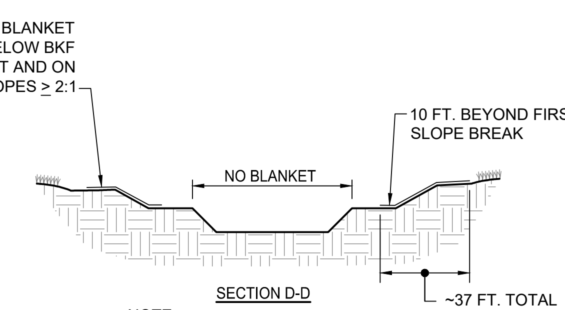
3/11 DETAIL - TEMPORARY LOW WATER CROSSING
NOT TO SCALE



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.



SECTION D-D

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

4/11 DETAIL - TYPICAL EROSION CONTROL BLANKET
NOT TO SCALE

Stantec
4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

Permit-Seal

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

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

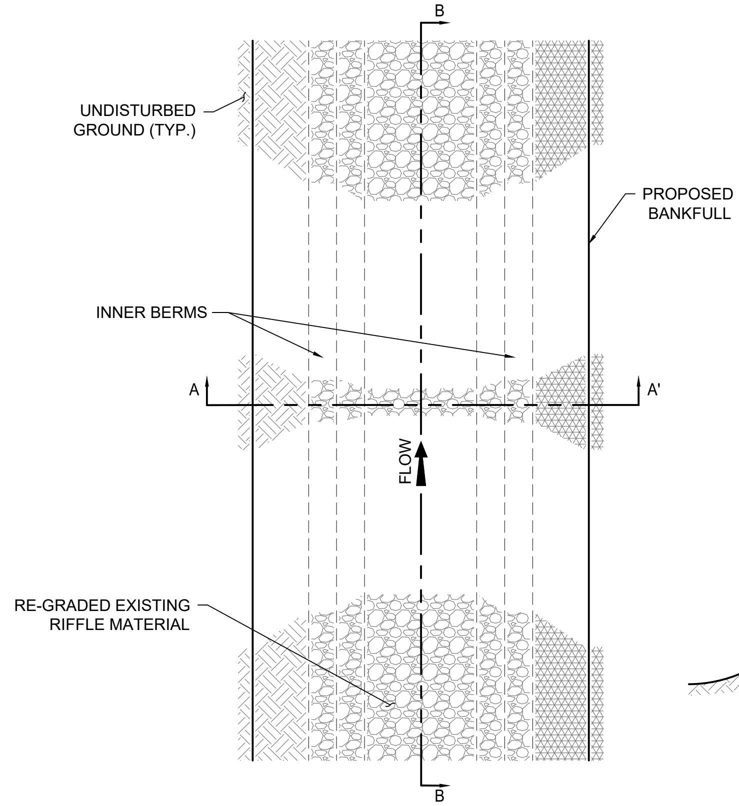
Title
MISCELLANEOUS DETAILS-1

Project Number: 174316204
File Name: 12 miscellaneous details-1.dwg

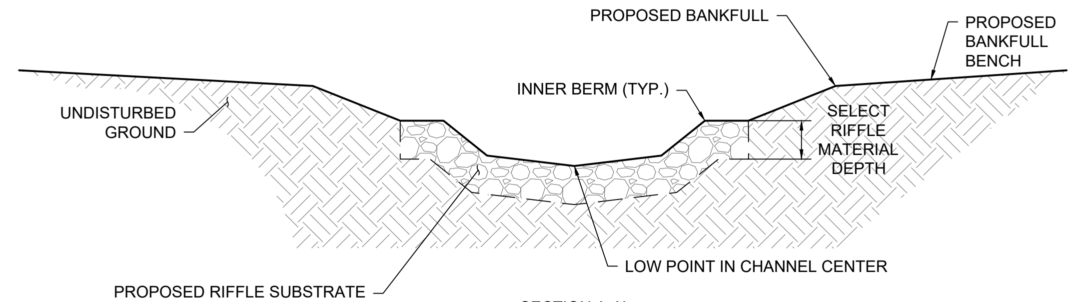
CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0
Sheet 11 of 18

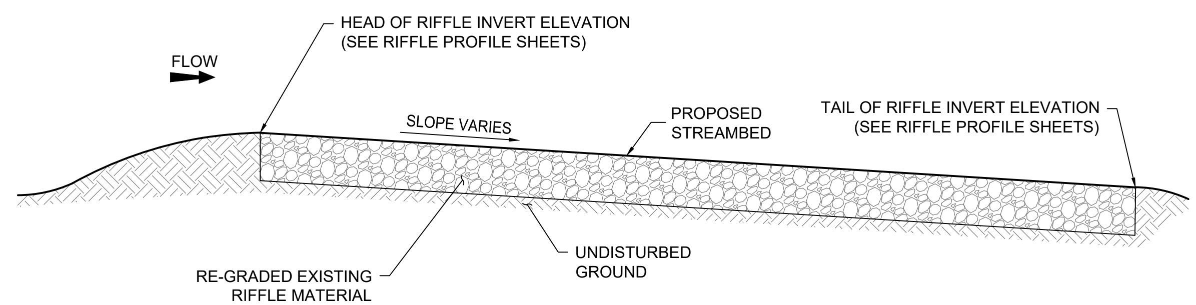
NOTE:
SEE SHEET XX FOR CONSTRUCTED RIFFLE SPECIFICATIONS.



PLAN VIEW

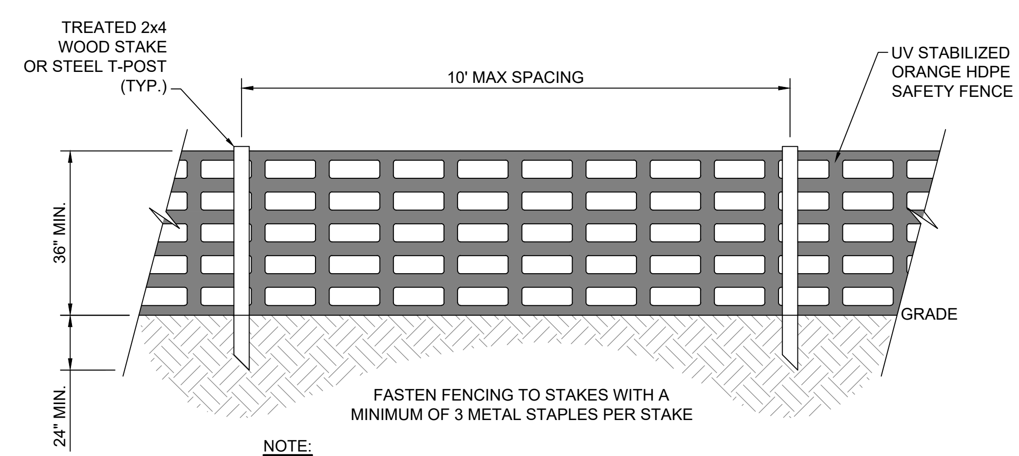


SECTION A-A'



SECTION B-B'

1/12 DETAIL - CONSTRUCTED RIFFLE
NOT TO SCALE



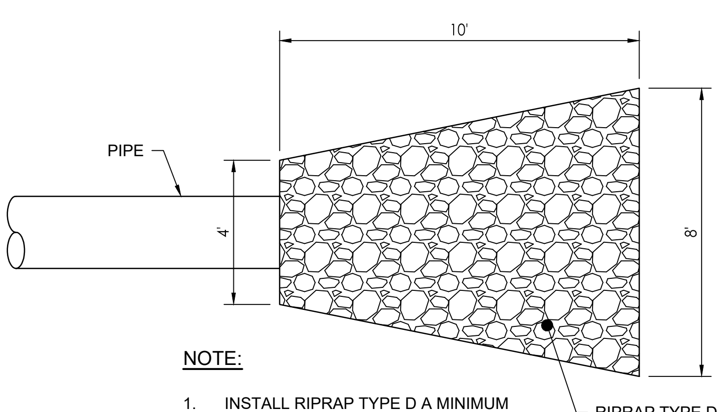
FASTEN FENCING TO STAKES WITH A MINIMUM OF 3 METAL STAPLES PER STAKE

NOTE:

FENCE ALL WETLAND BOUNDARIES ON THE PLANS TO PREVENT IMPACT DURING CONSTRUCTION. MATERIALS SHALL NOT BE STORED WITHIN THE PRESERVATION AREAS. THE PRESERVATION AREAS SHALL REMAIN UNDISTURBED THROUGHOUT CONSTRUCTION. FENCE SHALL REMAIN IN PLACE AND BE MAINTAINED AT THE EXPENSE OF THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE AT EACH PROJECT SITE.

COSTS FOR INSTALLATION, MAINTENANCE AND REMOVAL OF WETLAN PRESERVATION FENCE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE SWPPP PLAN.

2/12 DETAIL - WETLAND PRESERVATION FENCE
NOT TO SCALE



NOTE:

1. INSTALL RIPRAP TYPE D A MINIMUM OF 8 TO 10 INCHES IN DEPTH.

3/12 DETAIL - INSTALLATION OF RIPRAP
NOT TO SCALE

SaveDate: 2020/11/30 9:13 AM Login: Gray, Shelly
u:\174316204\task_411_add_hydr_impr_preliminary_design\civil\design\drawing\sheetset\13 miscellaneous details-2.dwg

Stantec
4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

Permit-Seal

Client/Project
MAUMEE WATERSHED CONSERVANCY DISTRICT

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

Title
MISCELLANEOUS DETAILS-2

Project Number: 174316204
File Name: 13 miscellaneous details-2.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0

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 for that 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.~~

~~**7. 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 outside 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 public 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 down 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 for 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.

Stantec
4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

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

Permit-Seal

Project Number: 174316204

File Name: 14 city of findlay general notes 1.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0

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 reseeding 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/seeding 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.

Stantec
4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.09.28

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

Permit-Seal

Project Number: 174316204
File Name: 15 city of findlay general notes 2.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0

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.

1. 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.
2. 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.
3. 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.

1. OUTSIDE DROP CONNECTIONS: All new manholes that include drop connections shall be constructed using an outside drop connection.
2. 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.

<u>Trenches in rock</u> 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.

A. 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.

B. 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.

C. 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.

D. 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.

Stantec

4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

Permit-Seal

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

Project Number: 174316204

File Name: 16 city of findlay sanitary sewer notes 1.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0

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 REQUIRMENTS*

1. 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.

2. 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*

1. 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.

2. 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

a. 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.

b. 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.

c. 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.

a. *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.

b. *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.

c. *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 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.

d. *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.

e. *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

EAST JORDAN IRON WORKS	NEENAH FOUNDRY
-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)
Infi-Shield	(D.A. Van Dam & Associates)
Cretex External Manhole Chimney Seal Products)	(Municipal & Contractor Sealing
Wrapid Seal	(CANUSA)

INTERNAL CHIMNEY SEAL

PRODUCT	(MANUFACTURER / DISTRIBUTOR)
Cretex Internal Manhole Chimney Seal Products)	(Municipal & Contractor Sealing
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.)

MINIMUM TIME REQUIRED FOR 1.0 PSI PRESSURE DROP FOR SIZE AND LENGTH OF PIPE

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	0.760L	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
33	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

ASTM C1244 MINIMUM TEST TIMES FOR VARIOUS MANHOLE DIAMETERS

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

Stantec

4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision | By | Appd. | YY.MM.DD

1 30% SUBMITTAL | CJ | DDD | 2020.12.03

Issued | By | Appd. | 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

Permit-Seal

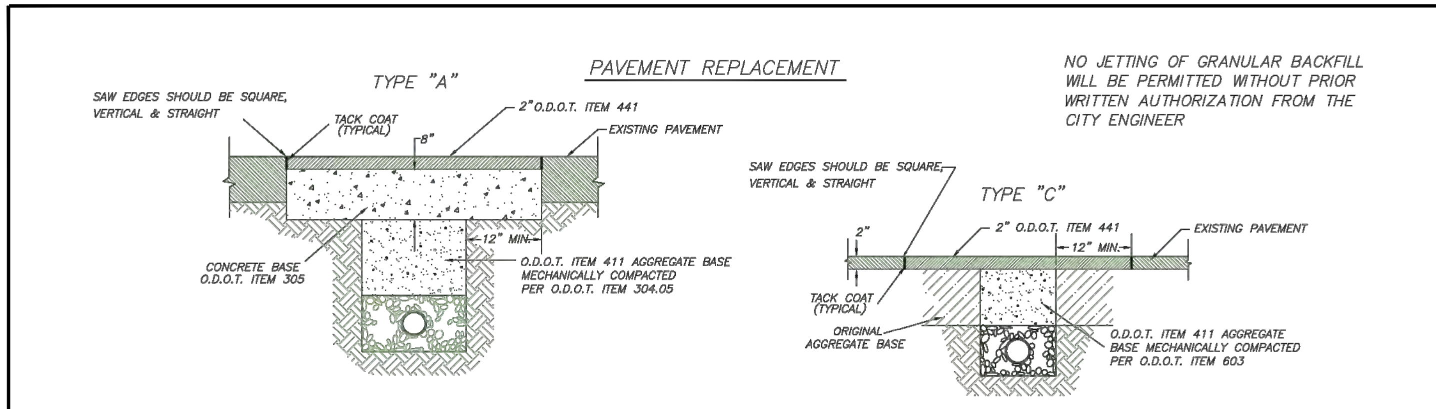
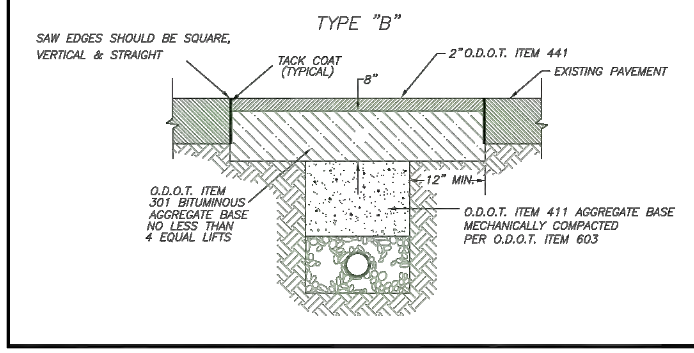
Project Number: 174316204

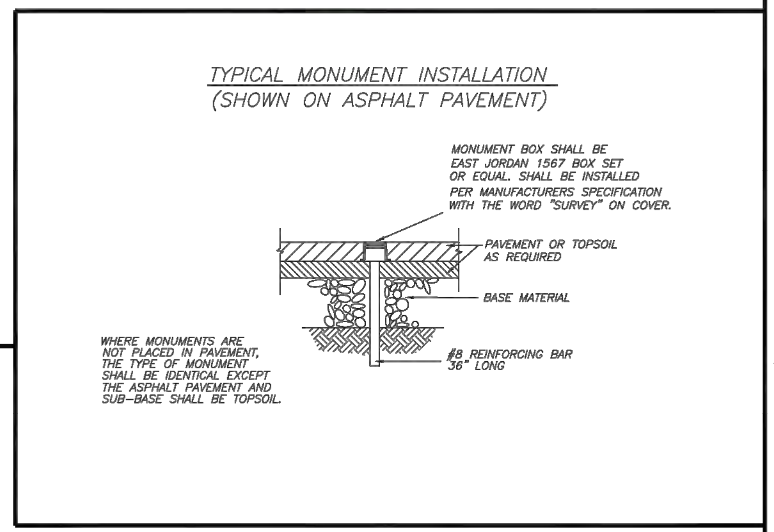
File Name: 17 city of findlay sanitary sewer notes 2.dwg

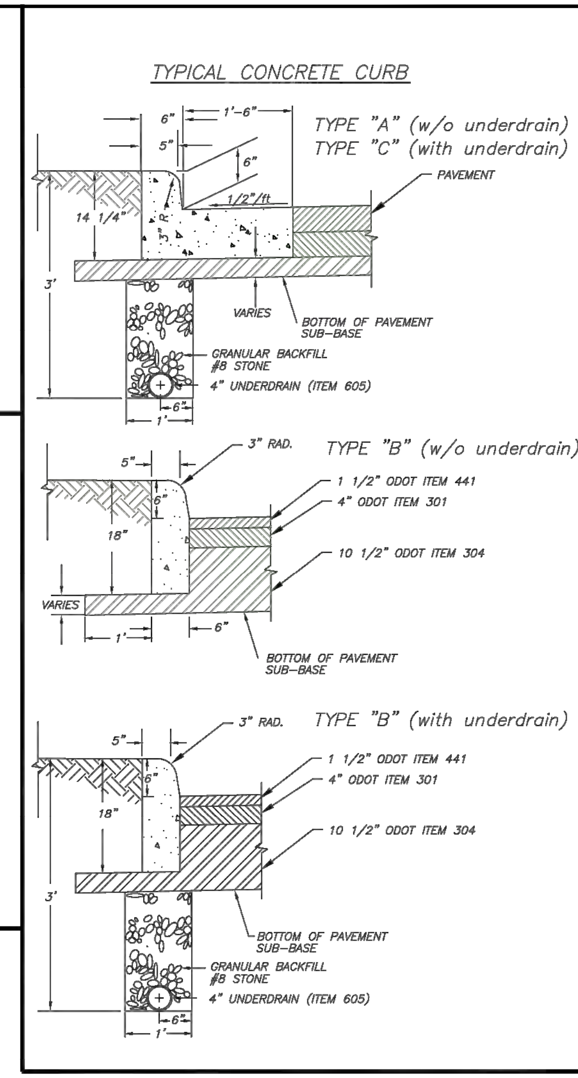
CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

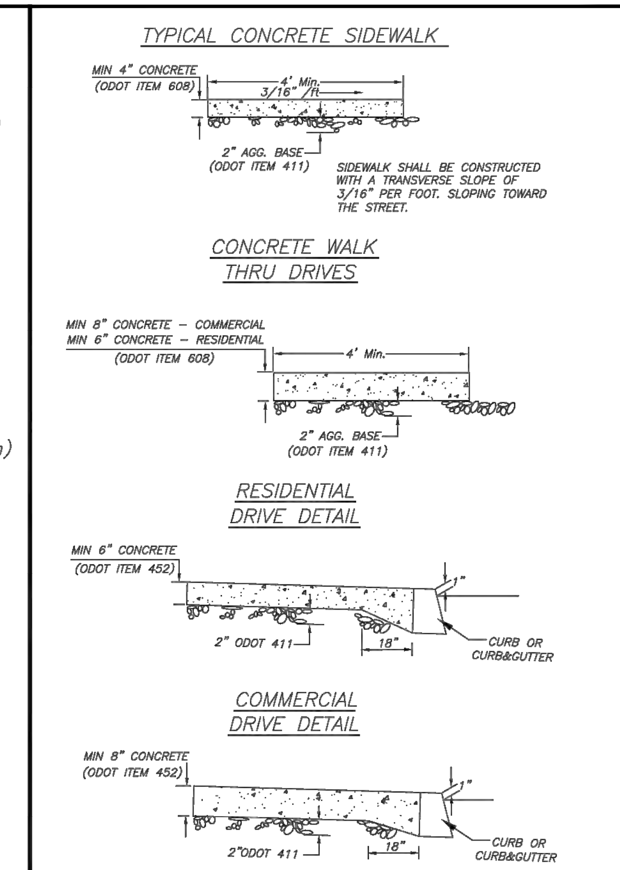
Revision 0

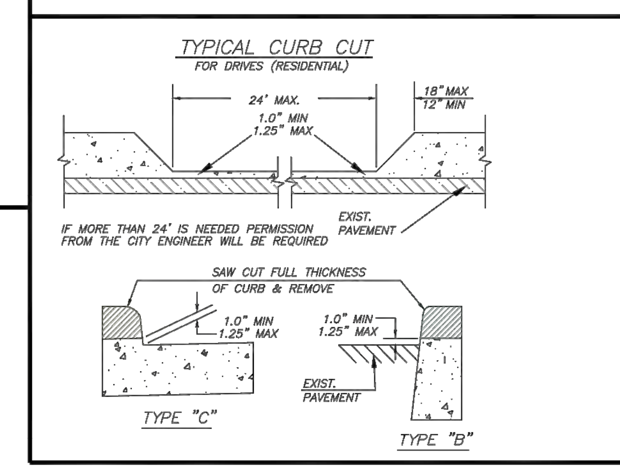
NOTE:
THIS RECORD PLAN SHALL BE USED FOR REFERENCE ONLY. THE CONTRACTOR SHALL FIELD VERIFY UTILITY LOCATIONS, SIZES, MATERIALS, AND ELEVATIONS PRIOR TO CONSTRUCTION. DIMENSIONS SHOWN ON THIS DRAWING HAVE NOT BEEN FIELD VERIFIED AND ELEVATIONS HAVE NOT BEEN ADJUSTED TO PROJECT DATUMS.









NOTES

SURFACE TEXTURE: TEXTURE SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AND SHALL BE ROUGHER THAN ADJACENT WALK.

SHALL BE PROVIDED IN THE CURB RAMP AS EXTENSIONS OF WALK JOINTS AND CONSISTENT WITH ITEM 608.03 REQUIREMENTS FOR A NEW CONCRETE WALK. A 1/2" ITEM 705.03 EXPANSION JOINT FILLER SHALL BE PROVIDED AROUND THE EDGE OF RAMPS CONTACTING EXISTING CONC. SURFACES. LINES SHOWN ON THIS DRAWING INDICATE THE RAMP EDGE AND SLOPE CHANGES AND ARE NOT NECESSARILY JOINT LINES.

TRUNCATED DOMES: INSTALL DETECTABLE WARNINGS (TRUNCATED DOMES) FOR A DISTANCE OF 24" FROM THE BACK OF THE CURB FOR THE ENTIRE WIDTH OF THE BOTTOM OF THE RAMP OPENING AS SHOWN ON DETAIL. (48") DOMES TO BE ALIGNED ON A SQUARE GRID IN THE DIRECTION OF PREDOMINANT TRAVEL.

DETECTABLE WARNING COLOR AND MATERIAL: DETECTABLE WARNING TO BE BLACK AND PROVIDE 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN IT AND THE ADJOINING SURFACE.

DETECTABLE WARNING SHALL BE PLASTICS/POLYMER COMPOSITES FROM THE ODOT TRUNCATED DOMES LIST.

DIMENSIONS, LOCATION AND TYPE: CURB RAMPS MAY BE MODIFIED AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE FOLLOWING:

THE CURB RAMP BUILT SHALL BE THE TYPE THAT BEST FITS THE LOCATION UNLESS A TYPE IS SPECIFIED IN THE PLANS.

TYPE 1 IS PREFERRED BECAUSE OF THE FLATTER SIDE SLOPES. (ANY COMBINATION OF TYPE 1 AND 2 SIDE SLOPES ON OPPOSITE SIDES OF A RAMP MAY BE USED TO BEST FIT THE SITE CONDITIONS.)

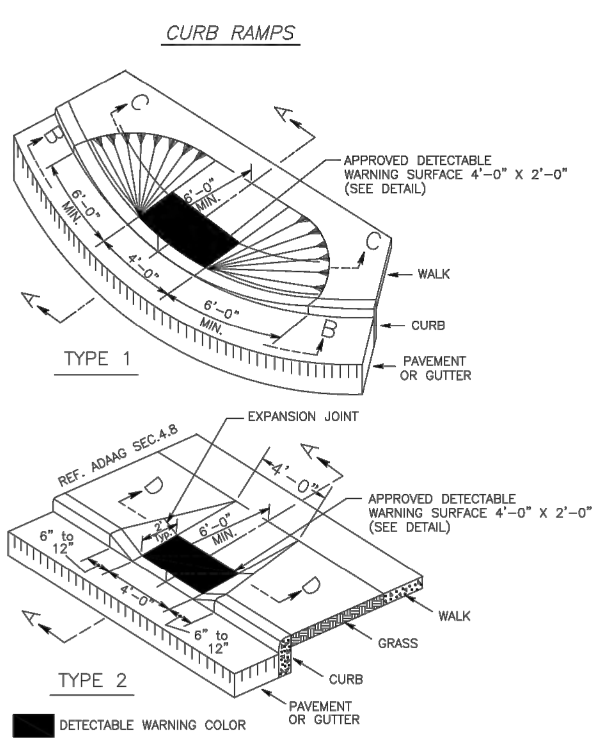
TYPE 1 CURB RAMPS (FLARED SIDES) SHOULD BE USED AT LOCATIONS WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP AT AN ANGLE.

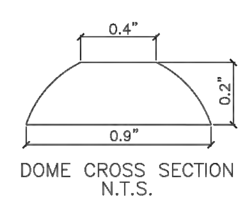
TYPE 2 CURB RAMPS (STEEP SIDES) MUST BE USED WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS OR PERPENDICULAR TO THE CENTERLINE OF THE RAMP. SIDES OF THESE RAMPS MUST BE PARALLEL TO THE PEDESTRIAN FLOW.

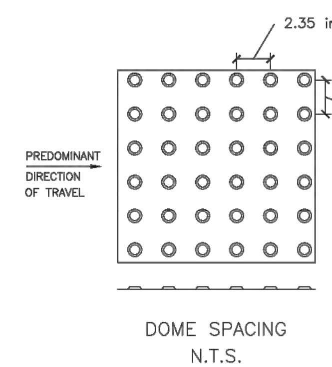
OF THE RAMP TOWARD THE CURB IS PREFERRED TO BE 1:12 OR FLATTER RELATED TO THE HORIZONTAL BUT THE MAXIMUM SLOPE SHALL BE 1:12 THE MINIMUM RAMP LENGTH IS 6'-0" FROM THE BACK OF A 6" CURB AND MAY BE INCREASED WHERE FEASIBLE TO OBTAIN A FLATTER RAMP SLOPE OR TO BETTER BLEND WITH THE WALK CONFIGURATION.

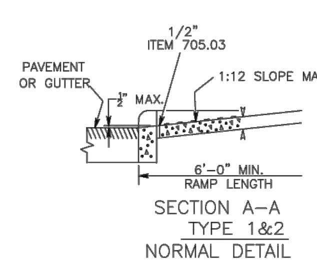
WALK THICKNESS: IN THE RAMP SLOPES SHALL BE 4" MINIMUM.

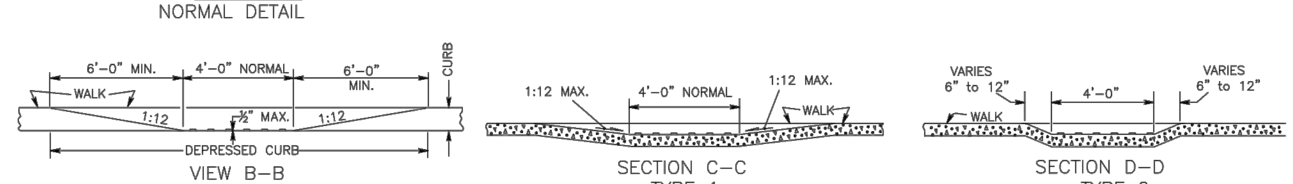
HORIZONTAL SAWCUTTING OF THE EXISTING CURB WILL NOT BE PERMITTED FOR CURB RAMPS (PEDESTRIAN)











Stantec
4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

Permit-Seal

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

Project Number: 174316204
File Name: 18 city of findlay standard details 1.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0

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

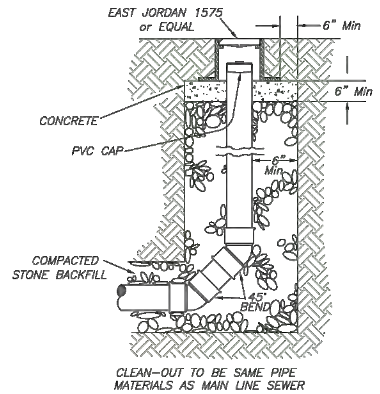
FLEXIBLE CONNECTOR TO BE USED BETWEEN KOR-N-SEAL, PRESS SEAL GASKET, NATIONAL POLLUTION CONTROL SYSTEMS, A-LOK PRODUCTS CORPORATION, OR APPROVED EQUAL

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 TRANSITIONA WHERE IT IS NOT POSSIBLE TO INSTALL AN EXTERNAL SEAL.

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

CLEAN-OUT DETAIL



CLEAN-OUT TO BE SAME PIPE MATERIALS AS MAIN LINE SEWER

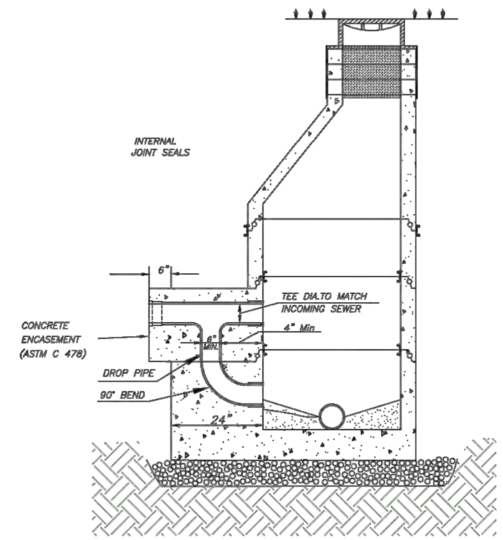
APPROVED CASTINGS		
HEIGHT	EJIW	NEENAH FOUNDRY
9"	1051-1	R-1713
7"	1022	R-1772
4"	1037	R-1647

EJIW 1050 21 IS ALSO ACCEPTABLE

TYPICAL DROP MANHOLE

TYPE "D" M.H. (4'Dia) TYPE "E" M.H. (5'Dia)

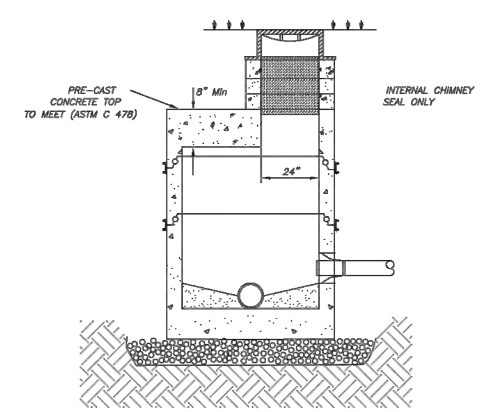
NOTE: ALL FEATURES OF THE STANDARD (TYPE A) MANHOLE APPLY UNLESS OTHERWISE NOTED.



TYPICAL FLAT-TOP MANHOLE

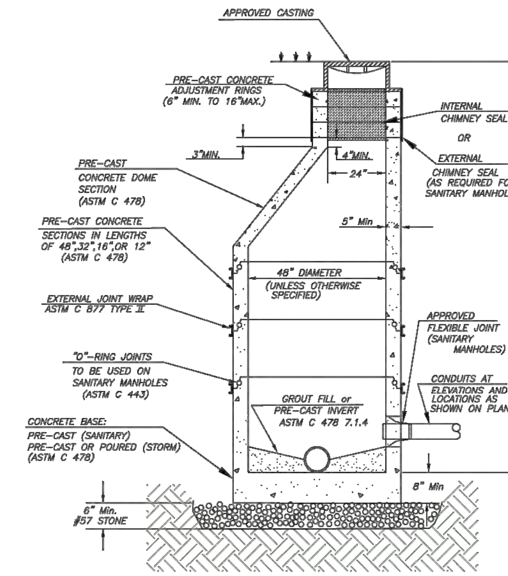
TYPE "G" M.H. (4'Dia) TYPE "H-6" M.H. (6'Dia)
TYPE "H" M.H. (5'Dia) TYPE "H-7" M.H. (7'Dia)

NOTE: ALL FEATURES OF THE STANDARD (TYPE A) MANHOLE APPLY UNLESS OTHERWISE NOTED.

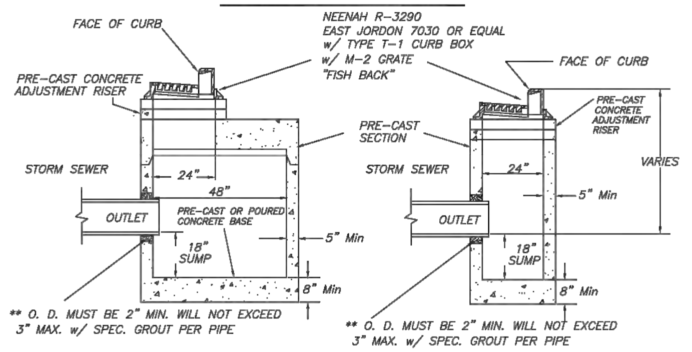


STANDARD PRE-CAST MANHOLE

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



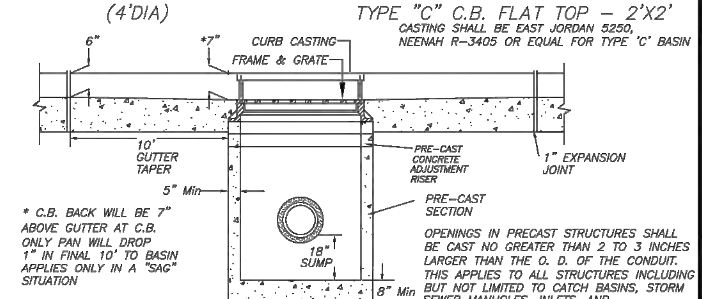
** O. D. MUST BE 2" MIN. WILL NOT EXCEED 3" MAX. w/ SPEC. GROUT PER PIPE

** O. D. MUST BE 2" MIN. WILL NOT EXCEED 3" MAX. w/ SPEC. GROUT PER PIPE

TYPE "A" C.B. (4'DIA)

TYPE "B" C.B. CURB - 3'X2'
TYPE "C" C.B. FLAT TOP - 2'X2'

CASTING SHALL BE EAST JORDAN 5250, NEENAH R-3405 OR EQUAL FOR TYPE 'C' BASIN



* C.B. BACK WILL BE 7" ABOVE GUTTER AT C.B. ONLY PAN WILL DROP 1" IN FINAL 10' TO BASIN APPLIES ONLY IN A "SAG" SITUATION

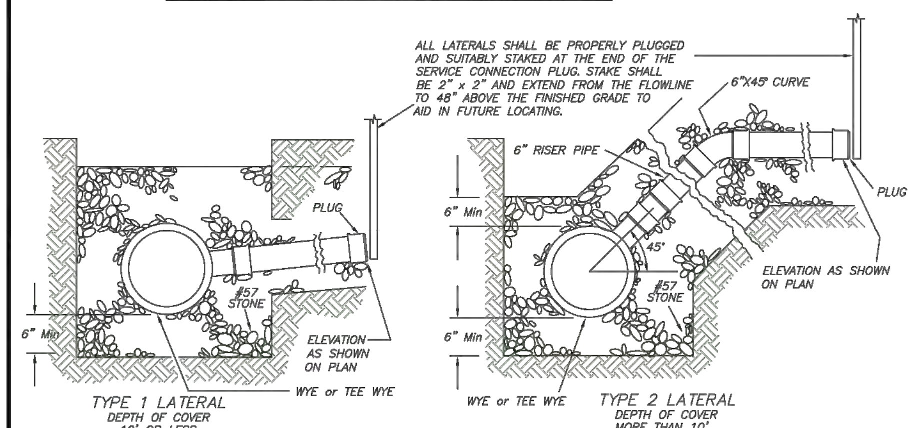
OPENINGS IN PRECAST STRUCTURES SHALL BE CAST NO GREATER THAN 2 TO 3 INCHES LARGER THAN THE O. D. OF THE CONDUIT. THIS APPLIES TO ALL STRUCTURES INCLUDING BUT NOT LIMITED TO CATCH BASINS, STORM SEWER MANHOLES, INLETS, AND JUNCTION CHAMBERS.

INLETS SHALL BE CONSTRUCTED THE SAME AS CATCH BASINS (TYPES A,B & C) EXCEPT THERE SHALL BE NO SUMP

** CONTRACTOR SHALL COORDINATE OPENING SIZE IN CATCH BASINS WITH STORM SEWER MATERIALS.

TYPICAL MAIN LINE LATERAL CONNECTIONS

ALL LATERALS SHALL BE PROPERLY PLUGGED AND SUITABLY STAKED AT THE END OF THE SERVICE CONNECTION PLUG. STAKE SHALL BE 2" x 2" AND EXTEND FROM THE FLOWLINE TO 48" ABOVE THE FINISHED GRADE TO AID IN FUTURE LOCATING.



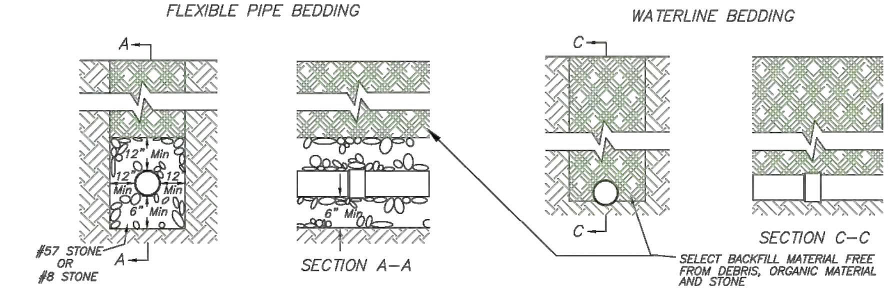
TYPE 1 LATERAL
DEPTH OF COVER 10' OR LESS

TYPE 2 LATERAL
DEPTH OF COVER MORE THAN 10'

METHODS OF BEDDING

FLEXIBLE PIPE BEDDING

WATERLINE BEDDING



TRENCH WIDTH
I.D. + 24" FOR 48" & UNDER
O.D. + 24" FOR OVER 48"

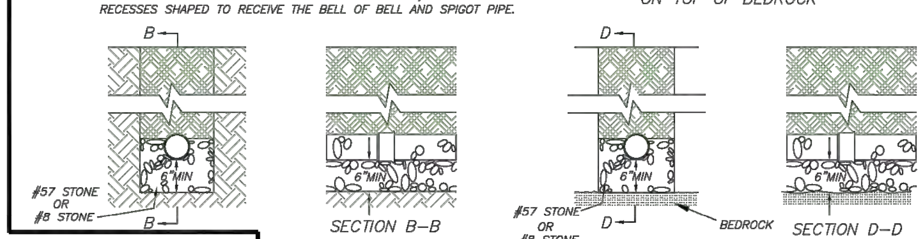
ALL BACKFILL SHALL COMPLY WITH O.D.O.T. ITEM 611.03

ALL P.V.C. AND OTHER FLEXIBLE PIPE USED FOR SANITARY AND STORM SEWERS SHALL BE TESTED FOR DEFLECTION BY THE CONTRACTOR UNDER THE SUPERVISION OF THE CITY ENGINEER. TESTS SHALL NOT BE CONDUCTED UNTIL AT LEAST 60 DAYS AFTER FINAL FULL BACKFILL HAS BEEN PLACED. MAXIMUM ALLOWABLE DEFLECTION SHALL BE 5%. IF THE TEST IS TO BE ACCOMPLISHED BY PULLING A MANDREL THROUGH THE PIPE, NO MECHANICAL EQUIPMENT SHALL BE USED TO ASSIST.

RIGID PIPE BEDDING

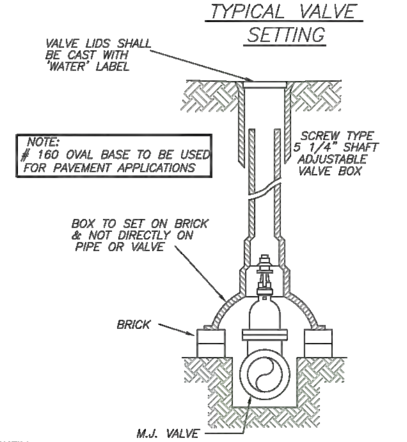
THE BEDDING SHALL EXTEND UP AROUND THE PIPE FOR A DEPTH OF NOT LESS THAN 30 PERCENT OF ITS OUTSIDE DIAMETER OR RISE; SHALL BE SHAPED TO FIT THE CONDUIT FOR AT LEAST 10 PERCENT OF THE OUTSIDE DIAMETER OR RISE OF THE CONDUIT; AND SHALL HAVE RECESSES SHAPED TO RECEIVE THE BELL OF BELL AND SPIGOT PIPE.

WATERLINE BEDDING ON TOP OF BEDROCK

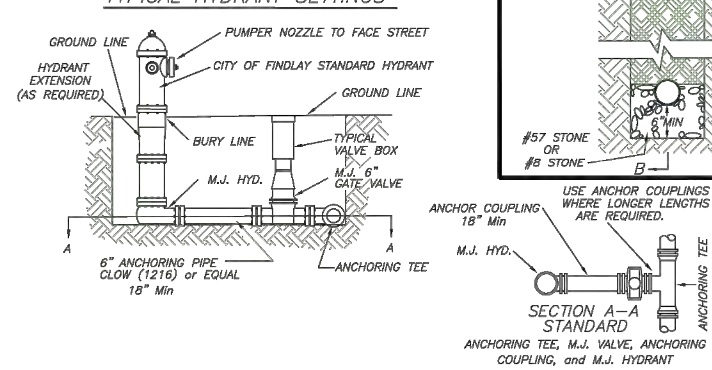


TYPICAL VALVE SETTING

NOTE: # 160 OVAL BASE TO BE USED FOR PAVEMENT APPLICATIONS



TYPICAL HYDRANT SETTINGS



SECTION A-A STANDARD
ANCHORING TEE, M.J. VALVE, ANCHORING COUPLING, and M.J. HYDRANT

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

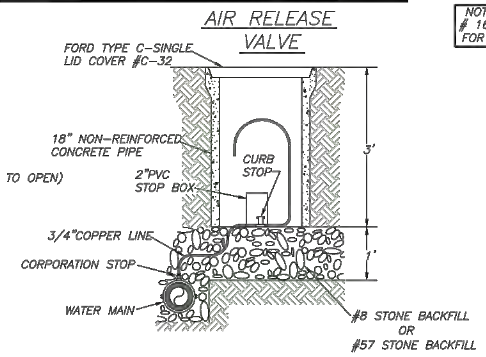
16" AND LARGER I.D. SHALL REQUIRE CLASS 350 PRESSURE PIPE OR CLASS 52 PIPE AND 4 - BRASS WEDGES AT EVERY JOINT

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



Stantec
4540 Heatherdowns Boulevard, Suite A
Toledo, Ohio 43614-3100
www.stantec.com

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
1 30% SUBMITTAL	CJ	DDD	2020.12.03

Permit-Seal

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

Project Number: 174316204
File Name: 19 city of findlay standard details 2.dwg

CJ	DDD	TC
Dwn.	Chkd.	Dsgn.

Revision 0