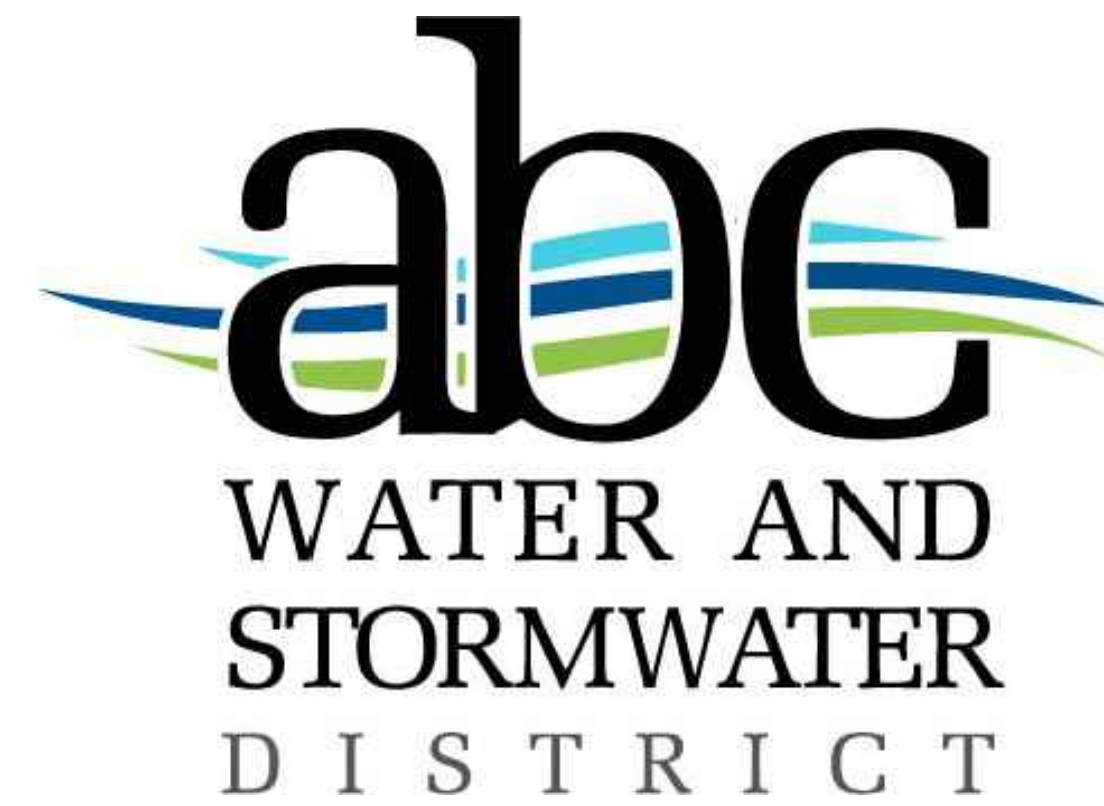


ABC WATER & STORMWATER DISTRICT

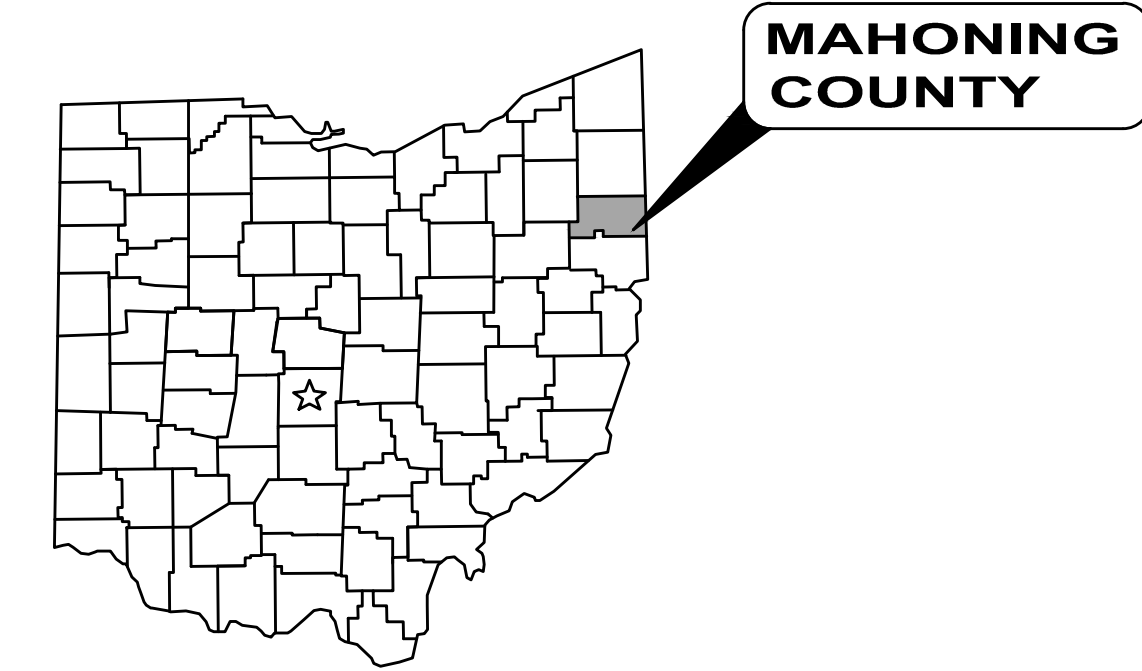
FOREST LAWN STORMWATER PARK

PART A - SANITARY SEWER RELOCATION & CIPP LINING
 PART B - STREAM RESTORATION & STORMWATER PARK



BOARDMAN TOWNSHIP
 MAHONING COUNTY, OHIO

MAY 2024



ABC WATER & STORMWATER DISTRICT BOARD:

JASON LOREE	BOARD MEMBER
KEITH ROGERS	BOARD MEMBER
ROBERT SANTOS	BOARD MEMBER
STEPHANIE LANDERS	ADMINISTRATIVE ASSISTANT



OHIO 811 DESIGN SERIAL NUMBER & UTILITY LIST:

STORM SEWER AND ROADWAY
 MARILYN SFERRA KENNER, PE
 BOARDMAN TOWNSHIP ROAD DEPARTMENT
 8299 MARKET STREET
 BOARDMAN, OHIO 44512
 330-726-4190

DOMINION EAST OHIO (GAS)
 RYAN A. BOND
 320 SPRINGSIDE DR. SUITE 320
 AKRON, OHIO 44333
 (330) 664-2642
 RYAN.A.BOND@DOMINIONENERGY.COM

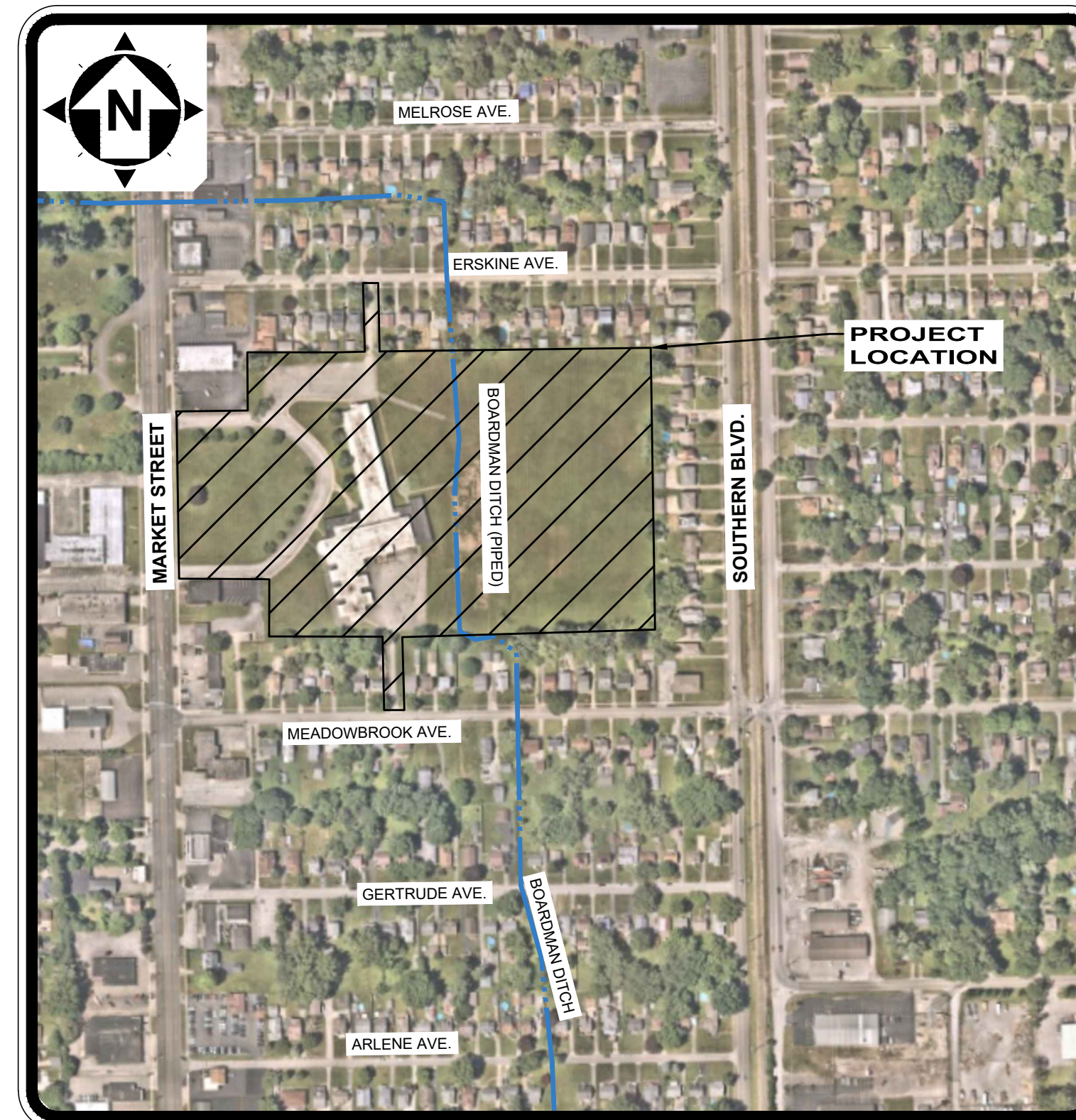
ARMSTRONG CABLE
 (COMMUNICATIONS)
 GENO SHONCE
 9328 WOODWORTH RD
 NORTH LIMA, OH. 44452
 330-726-0115 EXT. 224
 GSHONCE@AGOC.COM

THE CITY OF YOUNGSTOWN
 WATER DEPARTMENT
 LOU ZORELLA
 160 NORTH WEST AVENUE
 YOUNGSTOWN, OHIO 44502
 330-742-8751

MAHONING COUNTY
 SANITARY ENGINEERS
 PATRICK GINETTI, PE, PS
 761 INDUSTRIAL ROAD
 YOUNGSTOWN, OHIO 44509
 330-793-5514

FIRST ENERGY (ELECTRIC)
 MICHAEL BECK
 730 SOUTH AVENUE
 YOUNGSTOWN, OHIO 44502
 330-740-7704
 BECKM@FIRSTENERGYCORP.COM

AT&T (COMMUNICATIONS)
 TORRES ROBINSON
 50 WEST BOWERY STREET
 AKRON, OHIO 44308
 330-734-5117
 TR3463@ATT.COM



LOCATION MAP
 NOT TO SCALE

SANITARY SEWER:

APPROVED BY:

THE MAHONING COUNTY SANITARY ENGINEER THIS 29TH DAY OF JANUARY, 2024

SIGNED PATRICK T. GINETTI, P.E., P.S.

CITY OF YOUNGSTOWN

APPROVED BY:

THE CITY OF YOUNGSTOWN DEPUTY DIRECTOR OF PUBLIC WORKS THIS 9TH DAY OF APRIL, 2024

SIGNED CHUCK SHASHO

OWNER:

JASON LOREE ABC DISTRICT BOARD MEMBER

OFFICE:

ABC WATER AND STORMWATER DISTRICT
 P.O. BOX 3554
 YOUNGSTOWN, OHIO 44512
 (330) 729-2080 PHONE
 (330) 729-2054 FAX

DEPARTMENTS:

BOARDMAN TOWNSHIP ROAD DEPARTMENT
 (330) 726-4177 PHONE
 (330) 726-4175 FAX
 ROAD SUPERINTENDENT
 MARILYN SFERRA KENNER, P.E.

ENGINEER:

CT CONSULTANTS, INC.
 908-2 SAHARA TRAIL
 YOUNGSTOWN, OH 44514
 (330) 746 1200 PHONE

MARK R. DELISIO, P.E.

PROJECT SITE:

LOCATED AT 5555 MARKET STREET
 BOARDMAN, OHIO 44512. PROJECT
 INCLUDES THE RELOCATION OF A COUNTY
 SANITARY SEWER, STREAM RESTORATION,
 AND CONSTRUCTION OF A PASSIVE PARK.

PATRICK A. BLAKE, P.E.

5/1/2024
 DATE

5/1/2024
 DATE

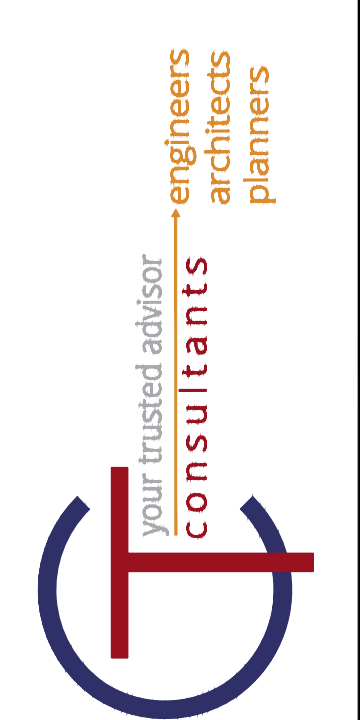
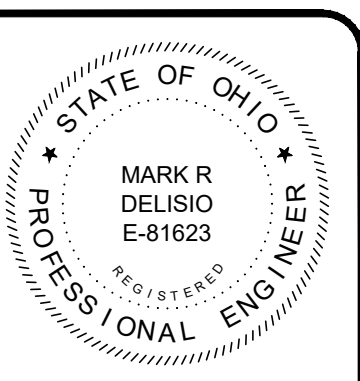
PE NO. 81623

PE NO. 88436



ENGINEER'S PROJECT No. 231566

- UNDERGROUND BUILDING SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE TO BUILDINGS.
- THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE AT 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.



DATE	REVISION	NO	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
			10/23/2023	AS SHOWN		PAB/RW	AM/CZ/PAB	MRD

ABC WATER & STORMWATER DISTRICT
 FOREST LAWN STORMWATER PARK
 MAHONING COUNTY
 BOARDMAN, OH
 COVER SHEET

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	G-01
SHEET	1
OF	43

IDENTIFIER:	DISCIPLINE:
G	GENERAL
C	CIVIL
L	LANDSCAPING
S	STRUCTURAL
SWP	STORM WATER POLLUTION PREVENTION PLAN

INDEX EXPLANATION:

INDEX OF SHEETS		
Sheet Number	Sheet Title	SheetName
1	TITLE	G-01
2	SHEET INDEX	G-02
3	GENERAL NOTES	G-03



GENERAL SYMBOLOGY NOTES:

- THIS IS A STANDARD SHEET SHOWING COMMONLY USED SYMBOLOGY.
- ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE NEW IMPROVEMENTS SO AS TO HIGHLIGHT SPECIFIC TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
- SYMBOLOGY OR DIAGRAMMATICAL LEGENDS MAY BE SHOWN ON INDIVIDUAL SHEETS FOR SCHEDULES, DIAGRAMS, DETAILS, SCHEMATICS OR EQUIPMENT.

DRAWING CODED NOTE TYPES:

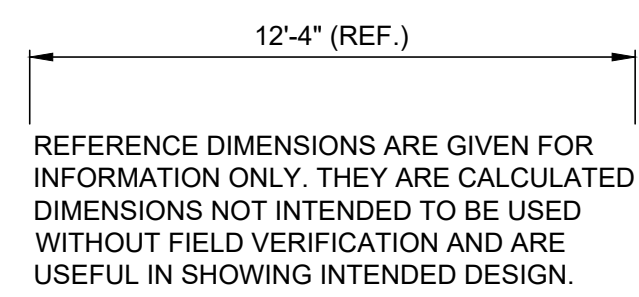
- CT CONTRACTUAL NOTES ARE DEPICTED WITH A HEXAGON, SQUARE, CIRCLE OR TRIANGLE. ALL OTHER EXISTING WRITTEN CALLOUTS SHOWN ON THE REUSED SCANNED PLANS, SECTIONS & DETAILS ARE FOR EXISTING CONDITIONS AND REFERENCE ONLY, MANY OF THOSE NOTES FROM THE SCANNED DRAWINGS PERTAIN TO PREVIOUS WORK DONE.

PLAN REVISIONS:

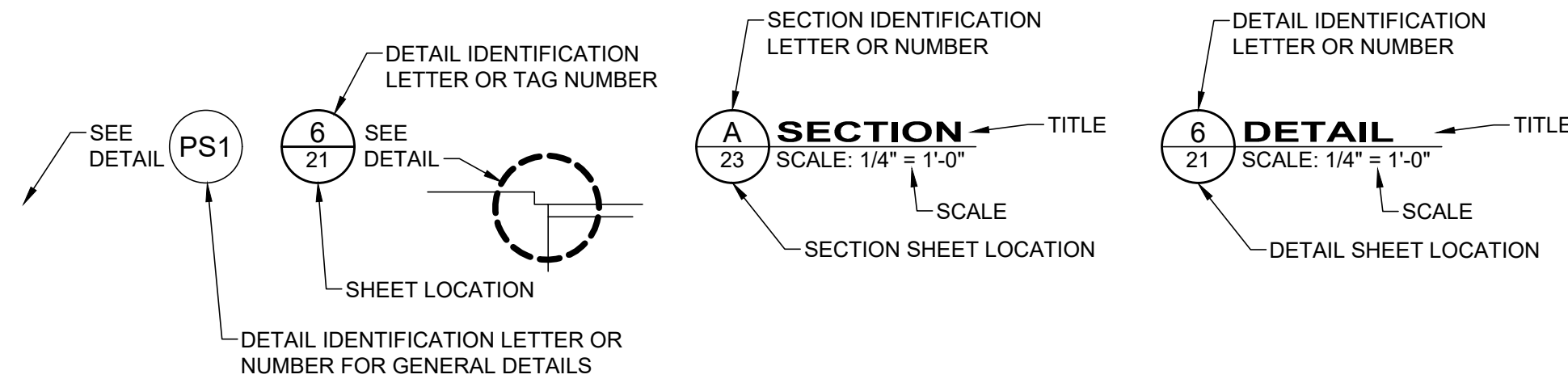
REVISION DESCRIPTION	1	DEMOLITION DESCRIPTION
REVISION DESCRIPTION	2	DEMOLITION DESCRIPTION

DEMOLITION CODED NOTES:

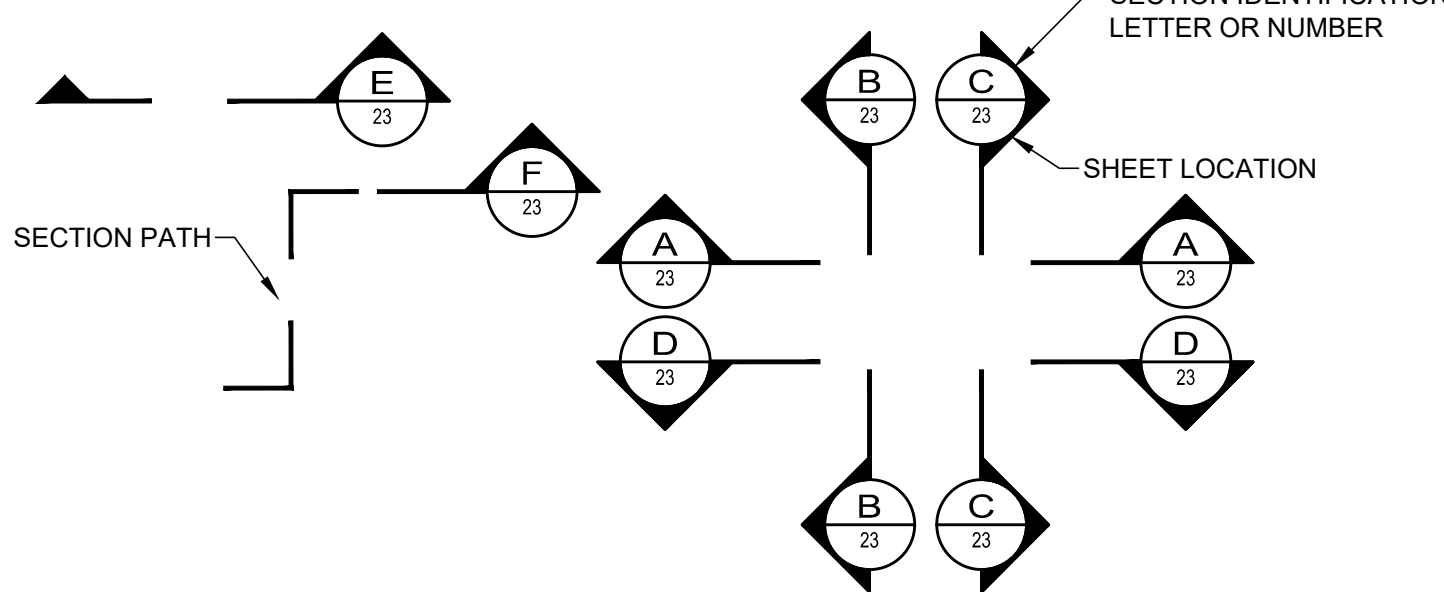
REFERENCE DIMENSION:



DETAIL REFERENCES:



MAJOR SECTION CUT CONVENTIONS:



AR	AIR RELEASE VALVE	FRP	FIBERGLASS REINFORCED PLASTIC	PT	PRESSURE TEMPERATURE RELIEF
AV	AIR & VACUUM VALVE	FTG	FITTING	PV	PLUG VALVE
BA	BALL VALVE	GL	GLOBE VALVE	PVC	POLYVINYL CHLORIDE PIPE
BFV	BUTTERFLY VALVE	GS	GALVANIZED STEEL	R/W	RIGHT OF WAY
BK	BACKPRESSURE VALVE	GV	GATE VALVE	RJ	RESTRAINED JOINT
BM	BENCH MARK	HDPE	HIGH-DENSITY POLYETHYLENE PIPE	SAN	SANITARY
BP	BACKFLOW PREVENTER	KG	KNIFE GATE VALVE	SCH	SCHEDULE
CB	CATCH BASIN	KN	KNIFE VALVE	SB	SOIL BORING
CL	CENTER LINE	MH	MANHOLE	SDR	STANDARD DIAMETER RATIO
CO	CONE VALVE	MIN	MINIMUM	SS	STAINLESS STEEL
CPP	CORRUGATED PLASTIC PIPE	MJ	MECHANICAL JOINT	STA	STATION
CV	CHECK VALVE	MV	MUD VALVE	STL	STEEL PIPE
DIP	DUCTILE IRON PIPE	N	NORTHING	STM	STORM
E	EASTING	OH	OVERHEAD	SU	SURGE VALVE
EG	EXISTING GRADE	PD	PLUG DRAIN VALVE	SV	SOLENOID VALVE
EL	ELEVATION	PF	PRESSURE RELIEF	TYP	TYPICAL
EX	EXISTING	PG	PRESSURE REGULATOR	UG	UNDERGROUND
FG	FINISHED GRADE	PJ	PINCH VALVE	VB	VALVE BOX
FH	FIRE HYDRANT	PR	PROPOSED	WAT	WATER
FL	FLANGED	PRV	PRESSURE REDUCING VALVE	WV	WATER VALVE

SITE SYMBOL LEGEND:

EX:	PR:	
MB	MB	POST, MAILBOX
		POST, SIGN
		POST, SIGN - DOUBLE
		POST, SIGN - DUAL
		GEOTECH - SOIL BORING
		BUSH
		TREE, DECIDUOUS
		TREE, EVERGREEN
		TREE, STUMP
		NAIL - MAG
		PIN - IRON
		PIPE - IRON
		SPIKE
		GAS METER
		GAS VALVE
		GAS VENT
		POLE - ELECTRIC (POWER)
		POLE - GENERAL
		POLE - GUY
		POLE - GUY ANCHOR
		POLE - LIGHT
		SANITARY CLEAN-OUT
		SANITARY MANHOLE - 48"
		SANITARY VENT
		CATCH BASIN - 2X2
		CURB INLET - 2X3
		STORM CLEAN-OUT
		STORM DRAIN
		STORM MANHOLE - 48"
		WATER HYDRANT, FDC
		WATER HYDRANT, FIRE
		WATER VALVE W/TEXT
		WATER METER
		WATER METER PIT

SITE LINE LEGEND:

EX:	PR:	
		RIGHT-OF-WAY (APPROXIMATE NOT SURVEYED)
		PROPERTY LINE (APPROXIMATE NOT SURVEYED)
		BUILDING OUTLINES
		CONTOURS - MAJOR
		CONTOURS - MINOR
		DITCH CENTERLINE
		SLOPE LINE
		SLOPE - BREAKLINE
		SLOPE - TOP
		SLOPE - TOE
		WATER CENTERLINE
		WATER EDGE
		EDGE OF ROAD
		FENCE - GENERAL
		FENCE - CHAIN LINK
		GUIDE RAIL
		TREE LINE
		ELECTRIC LINE
		ELECTRIC LINE - OH
		ELECTRIC LINE - UG
		GAS LINE
		GAS SERVICE
		SANITARY LINE
		STORM LINE
		WATER LINE
		WATER SERVICE
		CENTERLINE
		DRIVE CENTERLINE
		PAVEMENT SAWCUT
		GUIDE RAIL
		DITCH CENTERLINE
		STORM CULVERT LINE
		EDGE OF PAVEMENT
		CENTERLINE
		PERMANENT CONSTRUCTION EASEMENT LINE
		TEMPORARY CONSTRUCTION EASEMENT LINE
		WORK LIMITS
		DEMO - HASH
		DEMO - "X"

SHEET LIST TABLE		
SHEET NUMBER	SHEET TITLE	SHEET ID
1	COVER SHEET	G-01
2	LEGENDS, SYMBOLOGY, & SHEET INDEX	G-02
3	CONSTRUCTION NOTES	G-03
4	CONSTRUCTION DETAILS (1 OF 3)	G-04
5	CONSTRUCTION DETAILS (2 OF 3)	G-05
6	CONSTRUCTION DETAILS (3 OF 3)	
7	SURVEY CONTROL SHEET	SV-01
8	EXISTING CONDITIONS	C-01
9	OVERALL DEMOLITION PLAN	C-02
10	DEMOLITION DETAIL PLAN (1 OF 2)	C-03
11	DEMOLITION DETAIL PLAN (2 OF 2)	C-04
12	OVERALL IMPROVEMENT PLAN	C-05
13	OVERALL IMPROVEMENT PLAN KEY	C-06
14	IMPROVEMENTS PLAN (1 OF 6)	C-06
15	IMPROVEMENTS PLAN (2 OF 6)	C-07
16	IMPROVEMENTS PLAN (3 OF 6)	C-08
17	IMPROVEMENTS PLAN (4 OF 6)	C-09
18	IMPROVEMENTS PLAN (5 OF 6)	C-10
19	IMPROVEMENTS PLAN (6 OF 6)	C-11
20	STREAM CROSS SECTION & ALIGNMENT REFERENCE MAP	C-12
21	STREAM CENTERLINE PROFILE	C-13
22	PROPOSED STREAM CROSS SECTIONS (1 OF 2)	C-14
23	PROPOSED STREAM CROSS SECTIONS (2 OF 2)	C-15
24	STREAM HEADWALL DETAILS	C-16
25	STREAM BED & BANK DETAILS (1 OF 4)	C-17
26	STREAM BED & BANK DETAILS (2 OF 4)	C-18
27	STREAM BED & BANK DETAILS (3 OF 4)	C-19
28	STREAM BED & BANK DETAILS (4 OF 4)	C-20
29	MCSE SANITARY NOTES	MCSE-01
30	MCSE SANITARY DETAILS	MCSE-02
31	MCSE SANITARY SEWER RELOCATION PLAN & PROFILE (1 OF 2)	MCSE-03
32	MCSE SANITARY SEWER RELOCATION PLAN & PROFILE (2 OF 2)	MCSE-04
33	MCSE SANITARY SEWER LINING PLAN	MCSE-05
34	EXISTING CONDITIONS & DEMO - PAVILION	PAV-01
35	ROUGH GRADING - PAVILION	PAV-02
36	LANDSCAPE PLAN	L-01
37	LANDSCAPE SEEDING PLAN	L-02
38	LANDSCAPE DETAILS (1 OF 2)	L-03
39	LANDSCAPE DETAILS (2 OF 2)	L-04
40	SWPPP NOTES (1 OF 2)	SWP-01
41	SWPPP NOTES (2 OF 2)	SWP-02
42	SWPPP DETAILS (1 OF 2)	SWP-03
43	SWPPP DETAILS (2 OF 2)	SWP-04



DATE	REVISION	NO	REVIEW	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
					10/23/2023	AS SHOWN	PAB/RW	AMV/CZ/PAB	MKD

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
BOARDMAN, OH
MAHONING COUNTY
LEGENDS, SYMBOLOGY, & SHEET INDEX

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	G-02
SHEET	2
OF	43

GENERAL:

1. ANY REVISIONS TO THE ACCEPTED CONSTRUCTION PLANS SHALL BE REVIEWED AND APPROVED BY THE OWNER PRIOR TO IMPLEMENTATION IN THE FIELD.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH OSHA SAFETY REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL VISITORS, EMPLOYEES AND WORKERS ON THE CONSTRUCTION SITE.
3. THE CONTRACTOR SHALL CONSTRUCT THIS PROJECT IN COMPLIANCE WITH FEDERAL, STATE AND LOCAL BUILDING CODES.
4. ALL EXCAVATIONS ARE TO BE SECURED AND PROTECTED AT ALL TIMES.
5. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS CAUSED FROM CONSTRUCTION TO PRE-CONSTRUCTION CONDITIONS OR BETTER; INCLUDING PAVEMENT, LAWN, LANDSCAPING, STRUCTURES, YARD APPURTENANCES, OR ANY OTHER AREAS DISTURBED BY CONSTRUCTION.
6. ALL GRASS AREAS ARE TO BE RESTORED UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS.
7. ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND LEGALLY DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORM OR SURFACE WATERS. POLLUTANTS OF CONCERN INCLUDE, BUT ARE NOT LIMITED TO, FUELS, LUBRICANTS, SOLVENTS, CONCRETE BI-PRODUCTS AND CONSTRUCTION MATERIALS.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SECURITY OF ALL STORED MATERIALS.
9. CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL EXISTING BARNs, SHEDS, STRUCTURES, FENCES, RETAINING WALLS, STEPS, UTILITY POLES, MONUMENTS, UTILITY APPURTENANCES, SIGNAGE AND LANDSCAPE BEDS. IF DAMAGED, THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OF THESE ITEMS AT NO ADDITIONAL COST TO THE OWNER.
10. TREE CLEARING AS A PART OF CONSTRUCTION SHALL BE RESTRICTED TO THE PERIOD IN BETWEEN OCTOBER 1ST TO MARCH 31ST FOR THE PROTECTION OF OHIO'S STATE AND FEDERALLY LISTED ENDANGERED AND THREATENED BAT SPECIES. NO TREE CLEARING SHALL HAPPEN BETWEEN APRIL 1ST AND SEPTEMBER 30TH.

UTILITIES:

1. THE LOCATIONS OF THE UNDERGROUND UTILITIES ARE PLOTTED ACCORDING TO THE INFORMATION FURNISHED BY THE UTILITIES CONCERNED AND THE OWNER DOES NOT GUARANTEE THE ACCURACY THEREOF. CONTRACTOR TO CALL OHIO811 (1-800-362-2764) "48 HOURS BEFORE YOU DIG" AND CALL OIL & GAS PRODUCERS PROTECTIVE (1-800-925-0988). CONTRACTOR ALSO TO COORDINATE HIS WORK WITH THE UTILITIES LISTED IN THESE DRAWINGS.
2. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL PUBLIC AND PRIVATE UTILITIES WHICH MAY BE AFFECTED BY THE CONSTRUCTION. THE LOCATION OF UTILITIES AND STRUCTURES, BOTH SURFACE AND SUBSURFACE, ARE SHOWN ON THE DRAWINGS FROM DATA AVAILABLE AT THE TIMES OF SURVEY AND ARE NOT NECESSARILY COMPLETE OR CORRECT. THE EXACT LOCATION AND PROTECTION OF UTILITIES AND STRUCTURES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AT LEAST THREE WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, PRIOR TO CONSTRUCTION TO HAVE UTILITIES STAKED, MARKED OR OTHERWISE DESIGNATED IN THE CONSTRUCTION AREA IN SUCH A MANNER AND LOCATING SHALL BE COORDINATED TO STAY 48 HOURS AHEAD OF THE PLANNED CONSTRUCTION.
4. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL LOCATION OF THE UTILITY OR STRUCTURE AND ITS EFFECT ON THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE UTILITY OWNER AND PROPERTY OWNER.
5. OSHA STANDARDS PROHIBIT CRANE OR BACKHOE OPERATIONS WITHIN TEN (10) FEET OF ENERGIZED PRIMARY CONDUCTORS. TEMPORARY RELOCATION OF ELECTRICAL UTILITIES, INCLUDING RESTRAINT POLES, RELOCATION OF POLES AND RUBBER COVERING OF ENERGIZED CONDUCTORS MAY BE REQUIRED. THE COORDINATION AND COST OF THESE SERVICES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MAY RESTRAIN POLES IF THE METHOD OF SUPPORT HAS BEEN SUBMITTED TO AND APPROVED BY THE UTILITY OWNER.
6. IN THE EVENT OF DAMAGE TO EXISTING PUBLIC AND/OR PRIVATE UTILITIES, THE AGENCY CONCERNED SHALL BE NOTIFIED IMMEDIATELY AND ALL REPAIR WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE AGENCY AT NO ADDITIONAL EXPENSE TO THE OWNER INCLUDING ANY INSPECTION FEES OR MAINTENANCE CREWS. CABLE RELOCATION AND SUPPORT COST SHALL BE INCLUDED IN OTHER BID ITEMS.
7. WHERE EXISTING POWER OR TELEPHONE POLES ARE IN CLOSE PROXIMITY TO WORK, THE CONTRACTOR SHALL COORDINATE HIS WORK EFFORTS WITH THOSE OF THE UTILITY COMPANIES SUCH THAT THEIR EXISTING FACILITIES CAN BE MAINTAINED AND PROTECTED DURING THE TIME WORK IS GOING ON ADJACENT TO THE POLE. THE COST FOR ANY REQUIRED PROTECTION OR RELOCATION OF EXISTING POWER OR TELEPHONE POLES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NOT BE THE RESPONSIBILITY OF THE OWNER.
8. SHOULD IT BECOME NECESSARY TO CHANGE THE POSITION OR TEMPORARILY REMOVE ANY STORM DRAIN, SANITARY SEWER, ELECTRIC CONDUITS, WATER PIPES, GAS PIPES, PROCESS OR OTHER PIPES OR WIRES IN ORDER TO PERMIT THE CONTRACTOR TO USE A PARTICULAR METHOD OF CONSTRUCTION OR IN ORDER TO CLEAR THE STRUCTURES BEING BUILT, THE CONTRACTOR SHALL NOTIFY THE OWNER OF THE LOCATION AND CIRCUMSTANCES AND SHALL CEASE WORK, IF NECESSARY, UNTIL SATISFACTORY ARRANGEMENTS HAVE BEEN MADE BY THE OWNERS OF SAID PIPES OR WIRES TO PROPERLY CARE FOR THE SAME. NO CLAIMS FOR DAMAGES WILL BE ALLOWED ON ACCOUNT OF ANY DELAY OCCASIONED THEREBY. THE ENTIRE COST OF THE CHANGES OR TEMPORARY REMOVAL MUST BE INCLUDED IN THE PRICES STIPULATED FOR THE VARIOUS ITEMS OF WORK TO BE DONE UNDER THIS CONTRACT.

STREAM RESTORATION NOTES:

1. ROCK MATERIAL TO BE USED IN RIFFLE SHALL BE OF NATURAL ORIGIN. NO COMPOSITE STONE OR CONCRETE SHALL BE USED.
2. INSTREAM STRUCTURES SHALL BE INSTALLED AS THE CHANNEL IS BEING CONSTRUCTED, NOT POST CONSTRUCTION. FILTER FABRIC INSTALLED AS PART OF THE INSTREAM STRUCTURE SHALL BE A BIODEGRADABLE NONWOVEN GEOTEXTILE.
3. TREES AND SHRUBS SHALL BE INSTALLED TOWARDS THE END OF THE DORMANT PERIOD, LATE WINTER OR EARLY SPRING.
4. ALL COCONUT FIBER MATTING WILL BE INSTALLED FROM DOWNSTREAM TO UPSTREAM WITH THE UPSTREAM PORTIONS OVERLAPPING THE DOWNSTREAM. ALL STAKES USED SHOULD BE WOOD OR OTHER BIODEGRADABLE MATERIALS.

EROSION CONTROL:

1. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY AFTER THE COMPLETION OF THE GRADING ACTIVITIES. AREAS REQUIRING COCONUT FIBER MATTING SHALL BE SEEDED AND MULCHED FOR STABILIZATION PRIOR TO MATTING INSTALLATION.
2. ALL SEDIMENT AND EROSION CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
3. 6.ANY DISTURBED AREAS WHICH ARE NOT SCHEDULED FOR CONSTRUCTION ACTIVITIES WITHIN FOURTEEN (14) DAYS OF DISTURBANCE SHALL BE TEMPORARILY STABILIZED.
4. PERMANENT SEEDING FOR CHANNEL SLOPES SHALL BE A WETLAND MIX WITH BOTH NATIVE GRASSES AND FLOWERING FORBS.
5. OVERLAPPING OF THE MATTING EDGES SHOULD BE DONE SO THAT THE MATTING ON TOP IS ON THE UPSTREAM SIDE. OVERLAP EDGES APPROXIMATELY 1 FT.
6. TWO ROWS OF MATTING SHALL BE INSTALLED ON EACH STREAM BANK FOR A TOTAL OF FOUR ROWS OF MATTING COMMITTED TO THE CHANNEL.

MATERIAL DISPOSAL AND TEMPORARY SURFACES:

1. THE REMOVAL AND DISPOSAL OF ALL SURPLUS EXCAVATED MATERIAL AND CONSTRUCTION DEBRIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR ULTIMATE DISPOSAL. THE DISPOSAL OF ALL CONSTRUCTION DEBRIS SHALL BE AT A LOCATION APPROVED BY THE OWNER. THE DISPOSAL OF ALL "CLEAN" WASTE MATERIAL SHALL BE AT APPROVED LANDFILLS, AND/OR OTHER SITES APPROVED BY THE OWNER. THE DISPOSAL OF EXISTING PIPELINE AND TANK SEDIMENTS AND WASTEWATER SLUDGE SHALL BE AT AN APPROVED LOCATION. THE CONTRACTOR SHALL OBTAIN ALL APPROVALS, PERMITS, LICENSES, ETC. FROM LOCAL, STATE AND FEDERAL AGENCIES AND/OR PRIVATE LANDOWNERS. THE CONTRACTOR SHALL FURNISH THE OWNER A COPY OF ALL APPROVALS OR WRITTEN PERMISSION PRIOR TO DISPOSING OF ANY WASTE AT SAID SITE.
2. TEMPORARY SURFACES WHERE EXCAVATION ARE LOCATED IN STREETS, DRIVES AND PARKING AREAS SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR AND SHALL BE FULLY MAINTAINED TO MINIMIZE INCONVENIENCE TO THE PUBLIC AT NO ADDITIONAL COST TO THE OWNER.
3. THE ABOVE DESCRIBED WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF ALL WORK AND INCLUDED IN THE RESPECTIVE PAY ITEMS AND SHALL NOT BE A SEPARATE PAY ITEM.

PROHIBITED CONSTRUCTION ACTIVITIES:

1. THE USE OF EXPLOSIVES WITHIN MUNICIPAL LIMITS, UNLESS A PERMIT IS ISSUED BY THE OWNER.
2. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, STREAM CORRIDORS, OR STORM SEWERS; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE.
3. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE, OR ANY OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO.
4. NO SURFACE, GROUND OR TRENCH WATER SHALL BE ALLOWED TO FLOW INTO EXISTING SANITARY SEWERS.
5. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT.
6. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED ON THE PLANS BY THE ENGINEER FOR SUCH PURPOSES.
7. RUNNING WELL POINT OR PUMP DISCHARGE LINES THROUGH PRIVATE OR PUBLIC PROPERTY AND RIGHTS-OF-WAY WITHOUT PERMISSION OF THE PROPERTY OWNER AND THE CONSENT OF OWNER.
8. OPERATION ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE THE HOURS OF 8:00 AM TO 5:00 PM OR OUTSIDE THE HOURS ALLOWED BY LOCAL ORDINANCES OR REGULATIONS.
9. CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE OR BOULEVARD WITHOUT THE PRIOR CONSENT OF MUNICIPAL OFFICIALS AND THE OWNER AND CLOSING CLEAR ACCESS:
 - 9.1. BY FIRE PROTECTION EQUIPMENT AND EMERGENCY VEHICLES;
 - 9.2. BY THE PUBLIC TO ANY COMMERCIAL OR PROFESSIONAL PLACE OF BUSINESS, QUASI-PUBLIC OR PUBLIC ESTABLISHMENT, OR PLACE OF RESIDENCE; OR
 - 9.3. BY VEHICLES TO DRIVEWAYS WITHOUT THE PROVISION OF ALTERNATIVE MEANS OF BUILDING INGRESS AND EGRESS.

STORM SEWER SYSTEM NOTES:

1. CONTRACTOR SHALL FILL ALL VOIDS AT PIPE CONNECTIONS TO EXISTING & NEW CATCH BASINS INSIDE & OUTSIDE WITH NON-SHRINK GROUT. GROUT WATER-TIGHT AND FLUSH TO ALL INTERIOR WALLS.
2. CONTRACTOR SHALL RE-CONNECT ALL ENCOUNTERED DOWN SPOUT DRAINS AND OTHER STORM SEWER DRAIN LINES UNLESS DIRECTED OTHERWISE WITHIN.
3. WHEN CONNECTING EXISTING STORM SEWER OR STORM DRAIN LINES TO A NEW STORM SEWER STRUCTURE, CONTRACTOR SHALL MAKE CONNECTION BY INSTALLING A MIN 5'-0" PVC NEW STORM SEWER DRAIN LINE (MATCH EXISTING DIAMETER) & A SILT TIGHT COUPLING (FERNCO OR EQUIVALENT) UNLESS OTHERWISE SHOWN.
4. CATCH BASIN CURB INLETS SHALL BE OF THE ODOT TYPE AS NOTED IN THESE PLANS AND CONSTRUCTED IN ACCORDANCE WITH THE ODOT 2019 CONSTRUCTION AND MATERIAL SPECIFICATIONS (OR MOST CURRENT VERSION) UNLESS STATED OTHERWISE IN THE CONTRACT DOCUMENTS.
5. ALL GRATES SHALL BE BICYCLE SAFE, UNLESS OTHERWISE NOTED.
6. NO PIPES SHALL ENTER ANY INLET BOX AT THE CORNERS.

EARTHWORK NOTES:

1. THE ENGINEER MAKES NO REPRESENTATION AS TO A BALANCED EARTHWORK SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE FINAL SITE GRADES AS INDICATED ON THE GRADING PLAN, INCLUDING THE IMPORT OR EXPORT OF MATERIAL IF REQUIRED TO ACHIEVE THE PROPOSED GRADES. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER REMOVAL AND DISPOSAL OF ALL SURPLUS EARTHWORK, DEBRIS OR WASTE FROM THE SITE. ALL COST FOR THE ABOVE SHALL BE INCLUDED IN THE CONTRACTORS BID PRICE FOR EXCAVATION AND/OR EMBANKMENT.

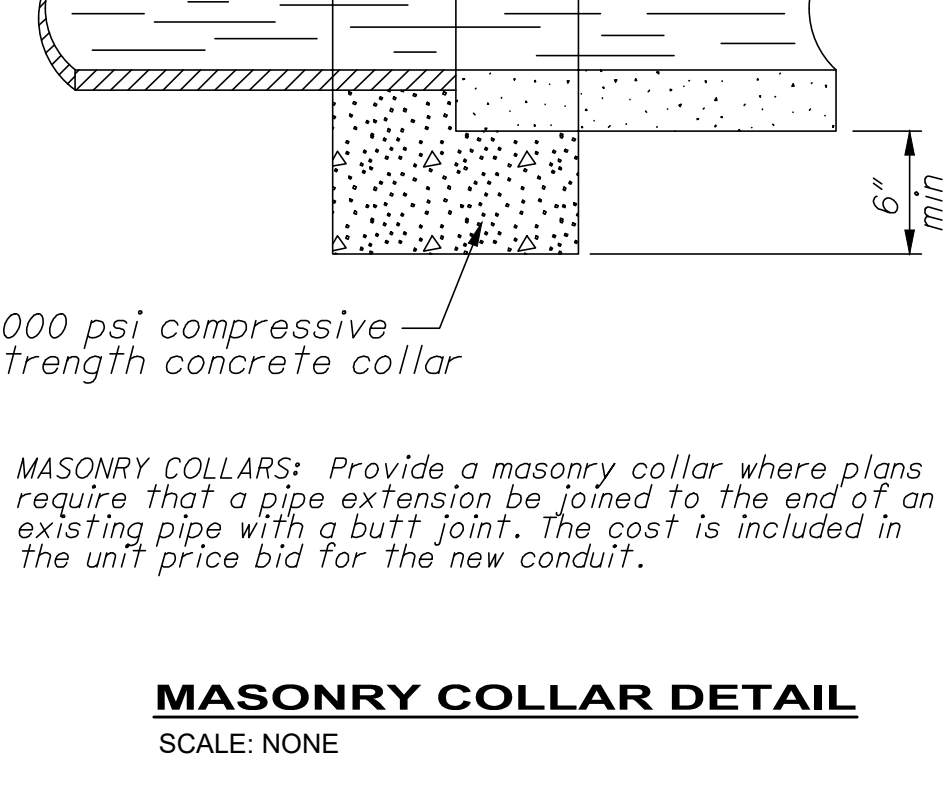
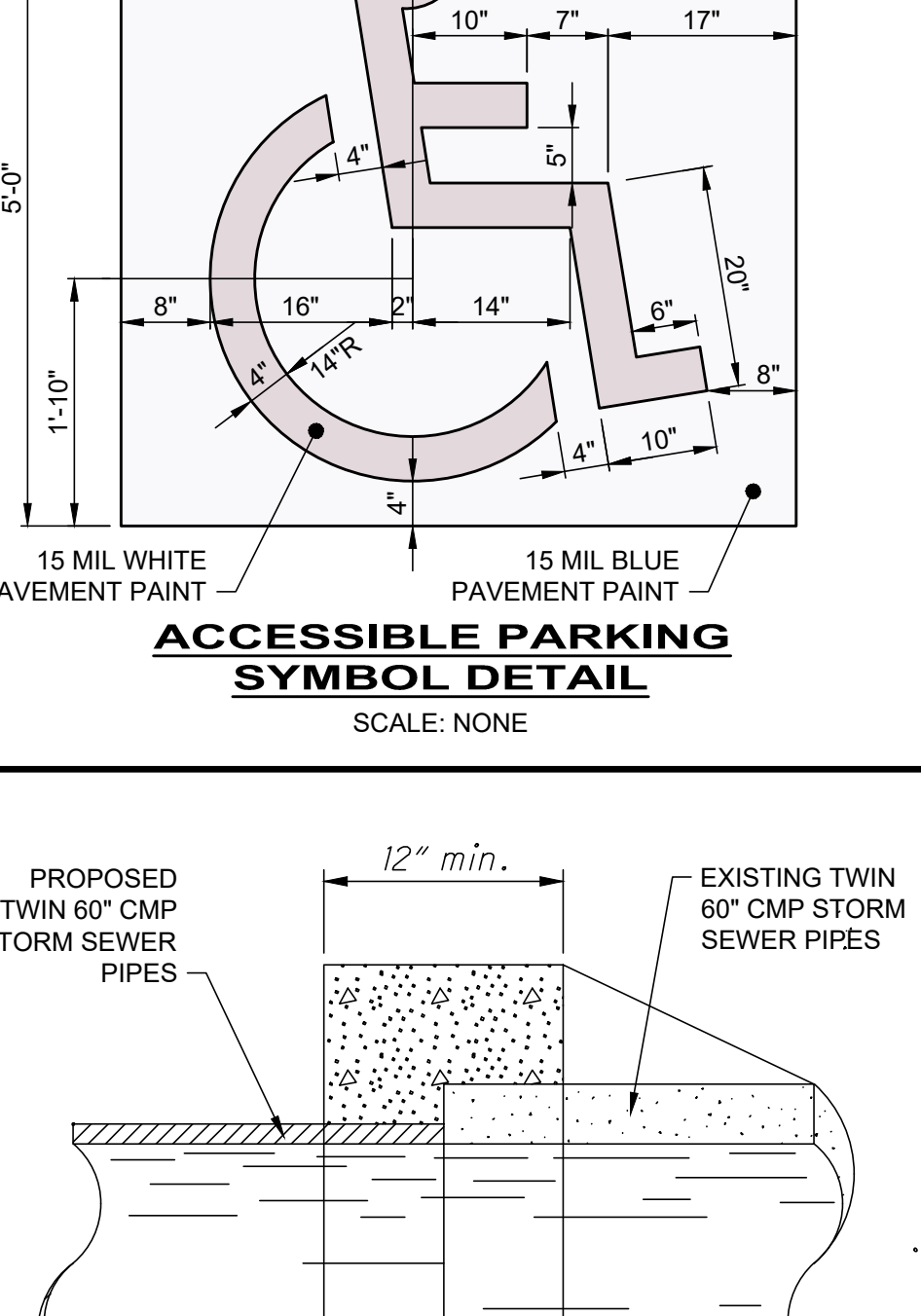
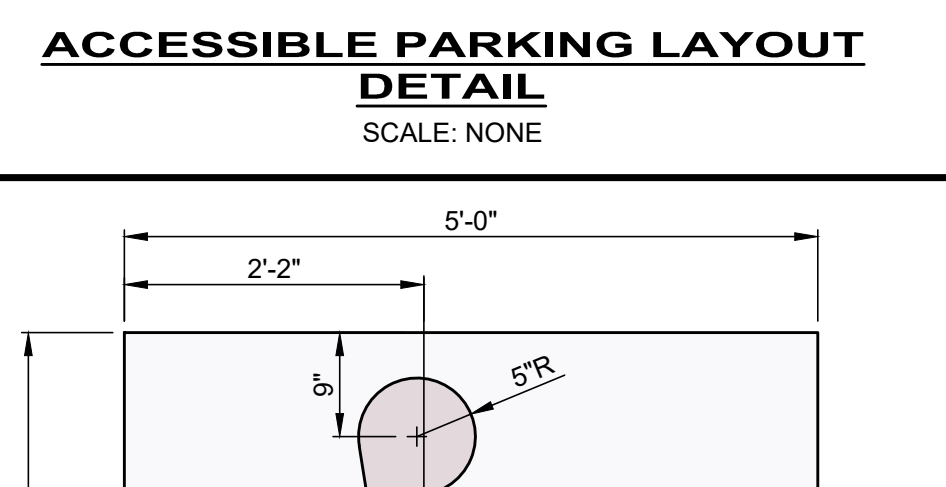
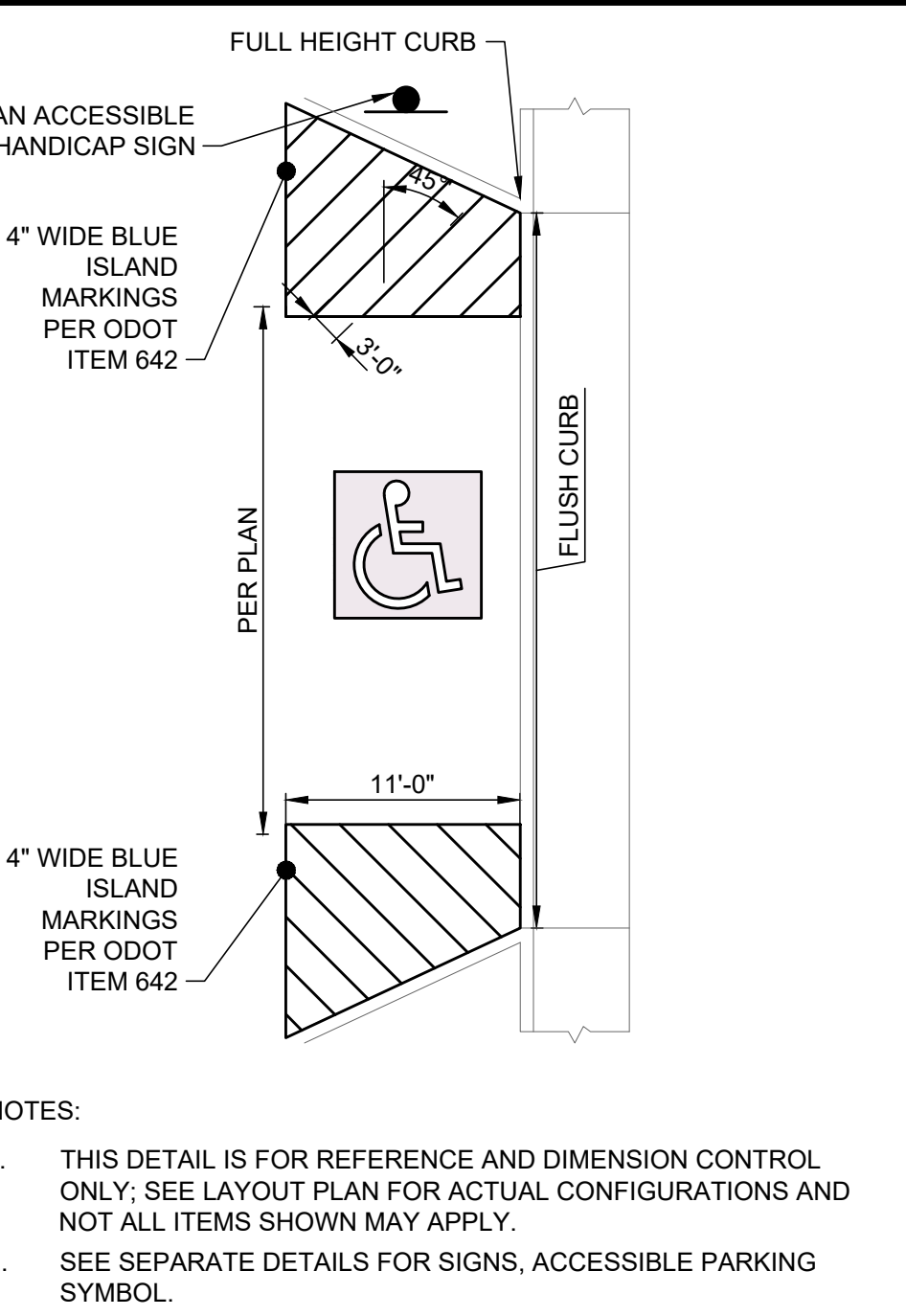
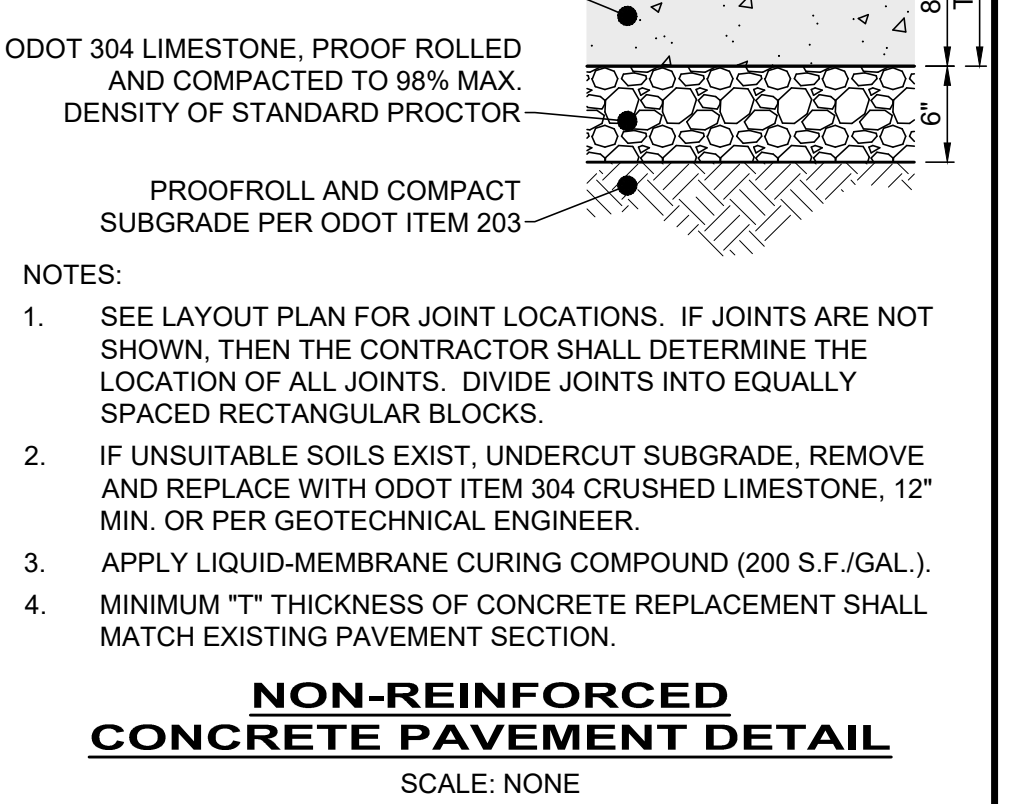
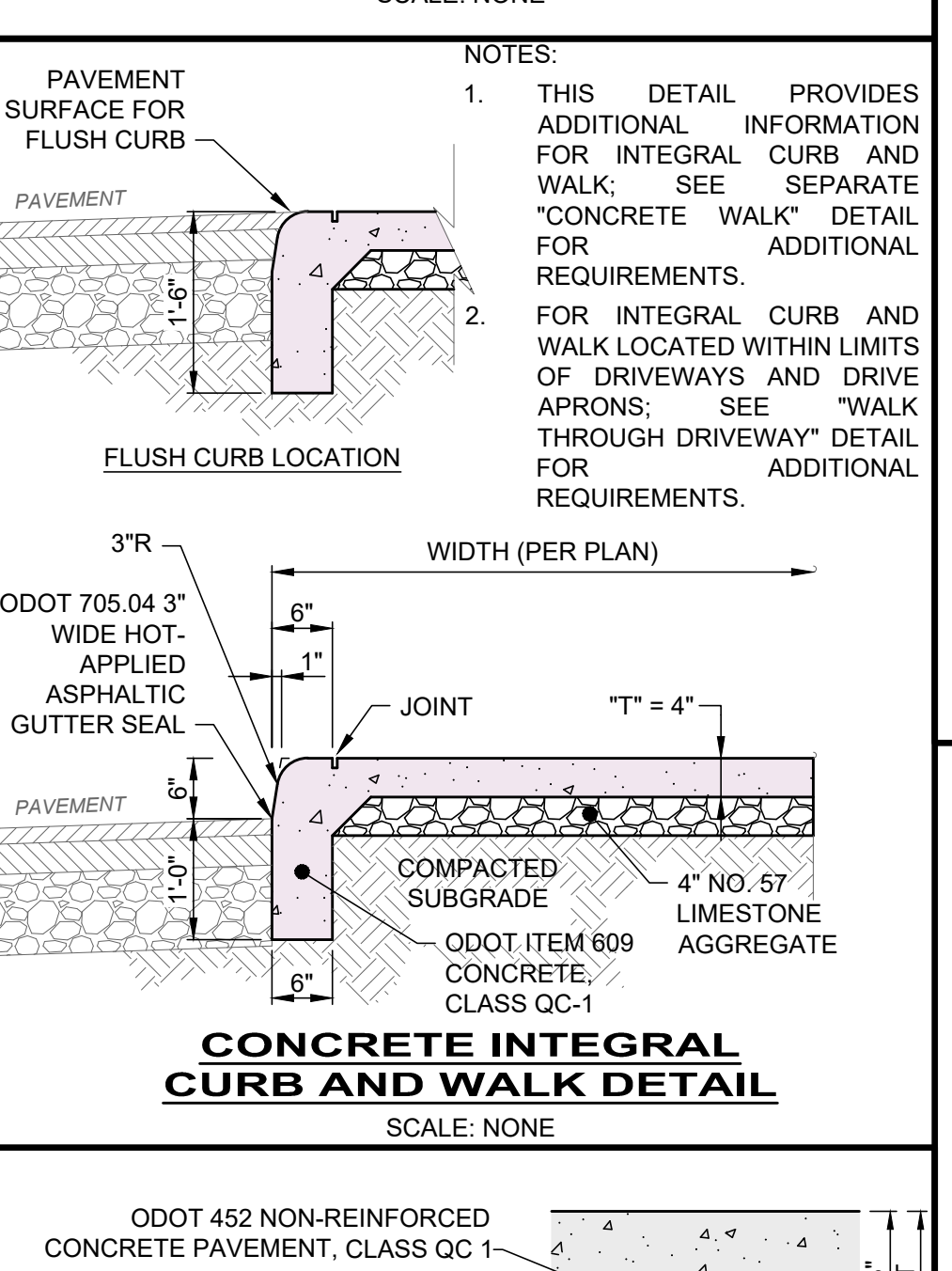
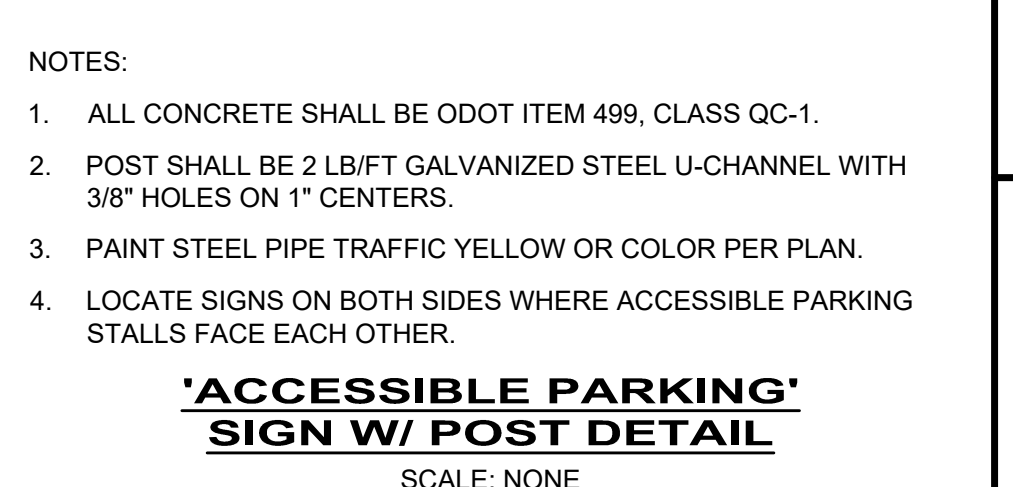
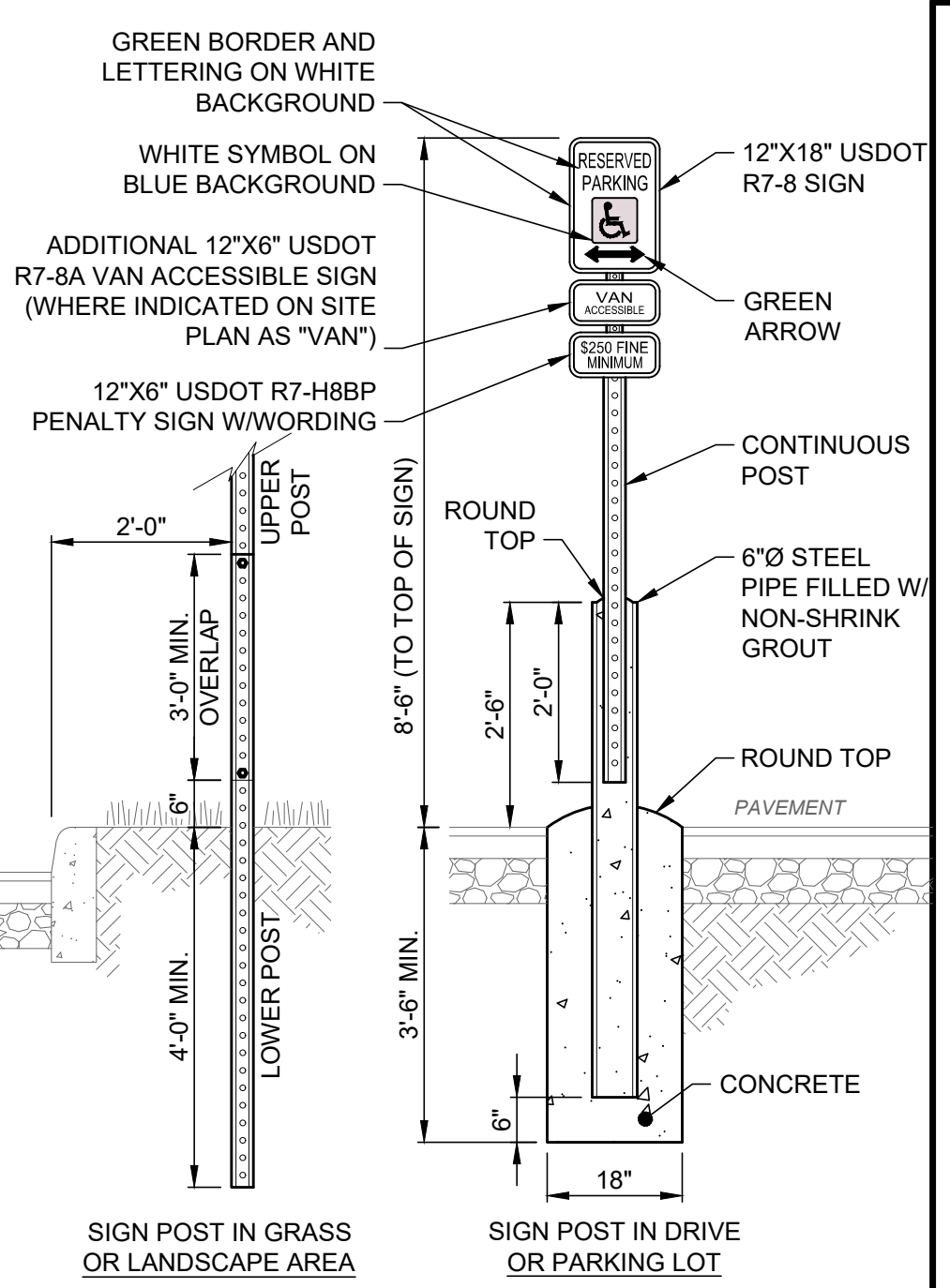
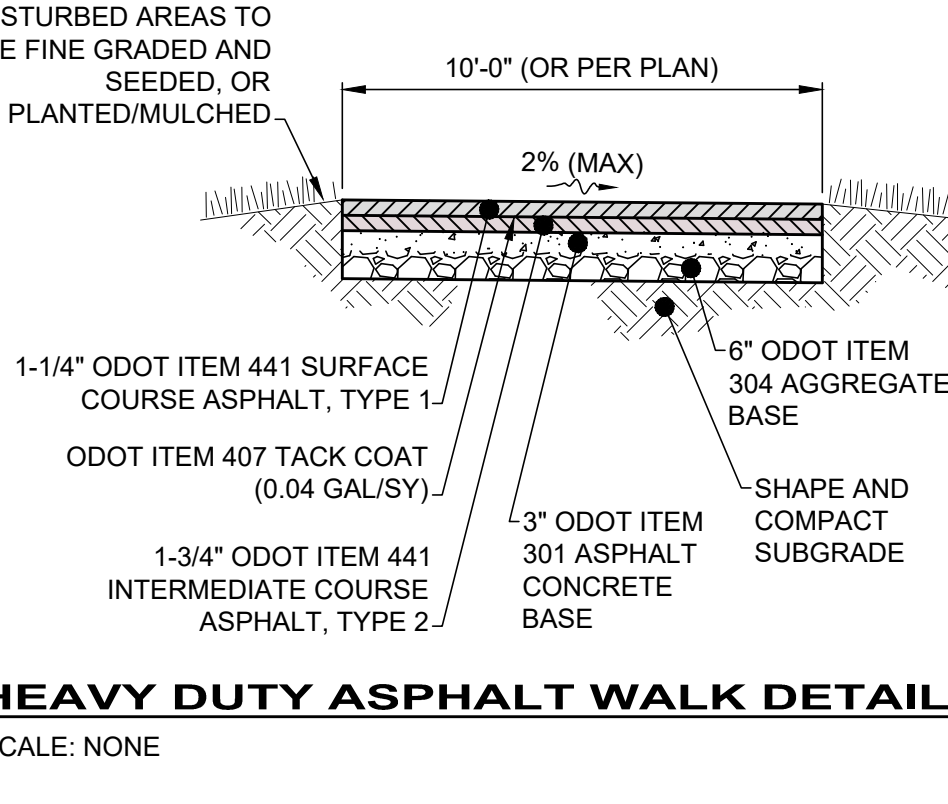
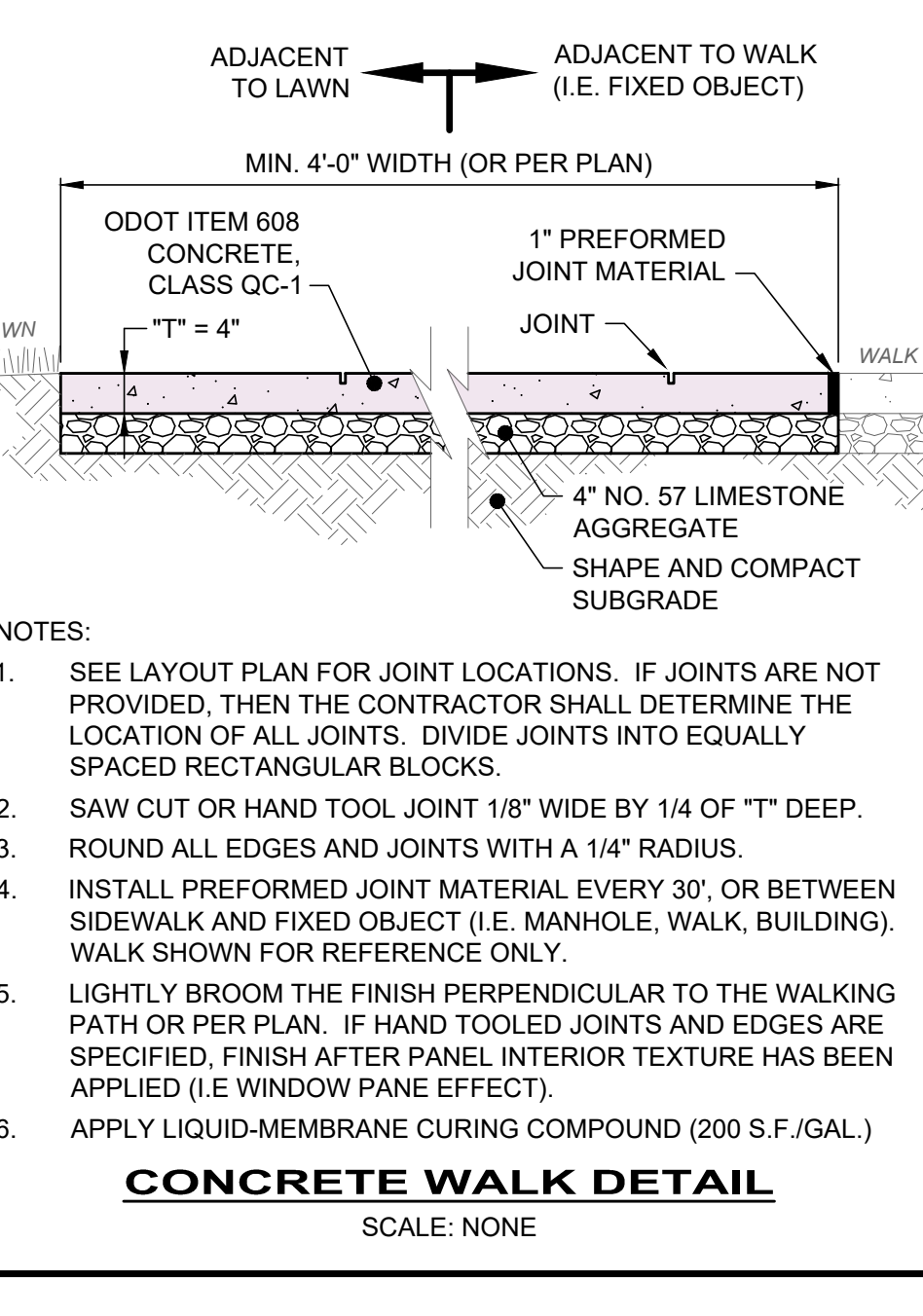
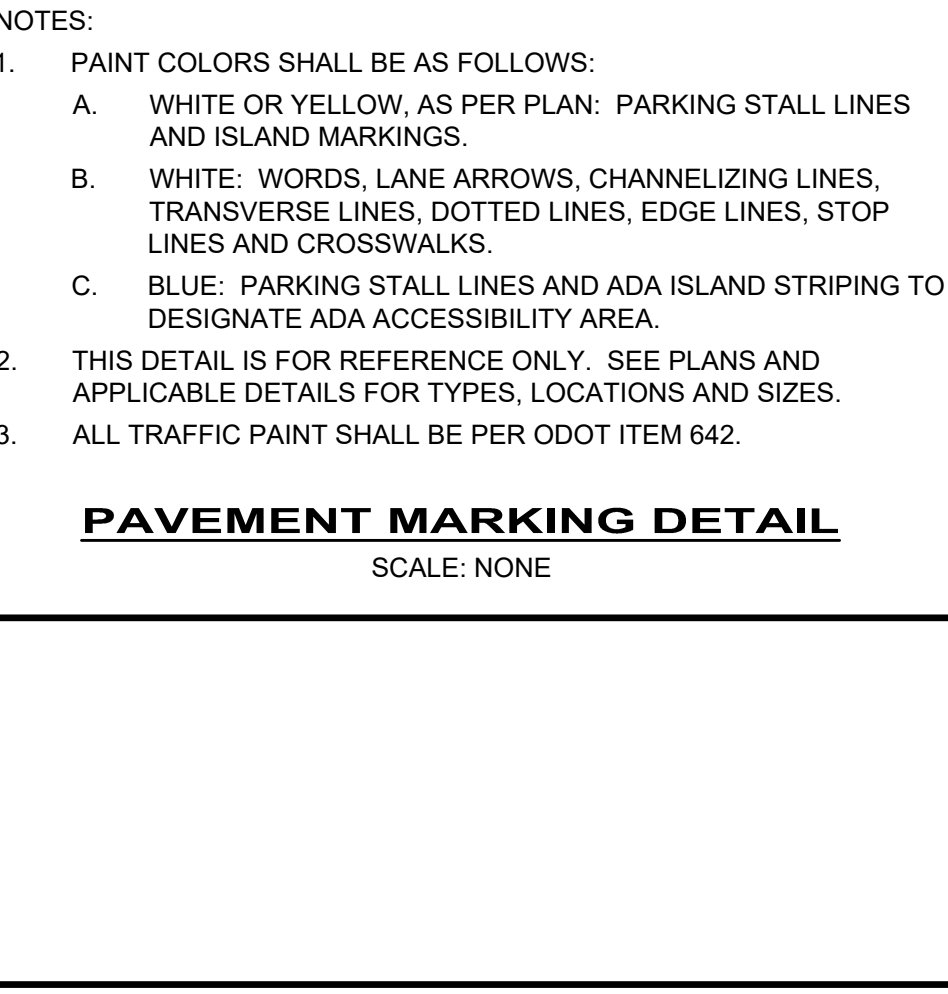
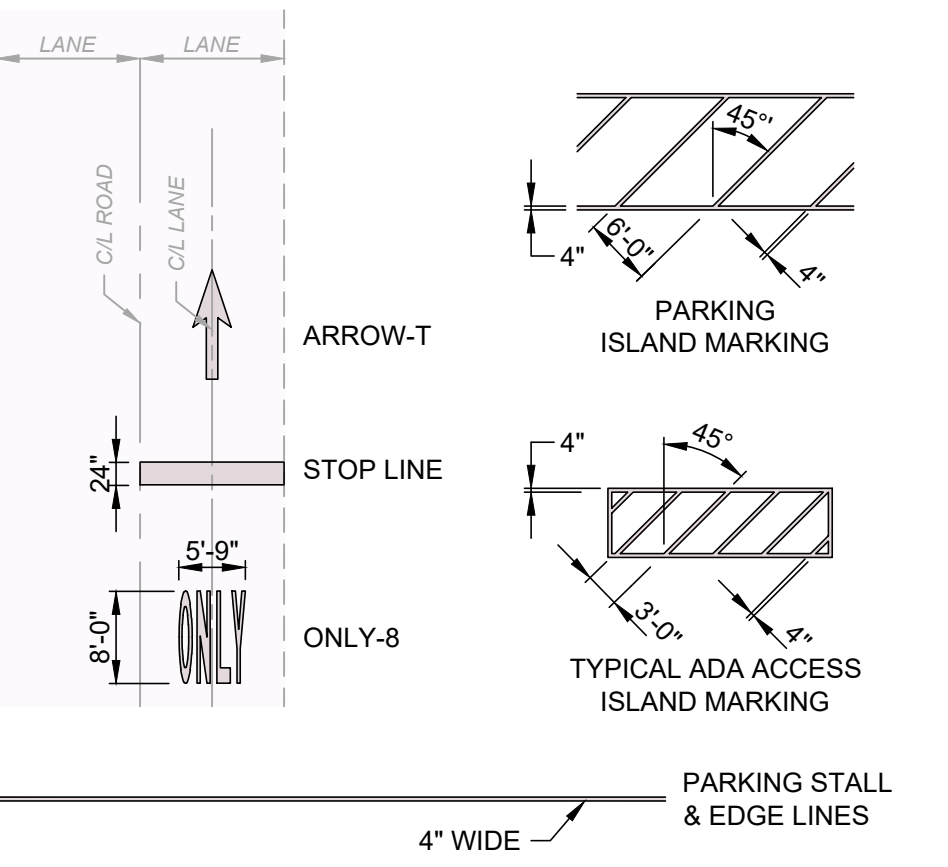
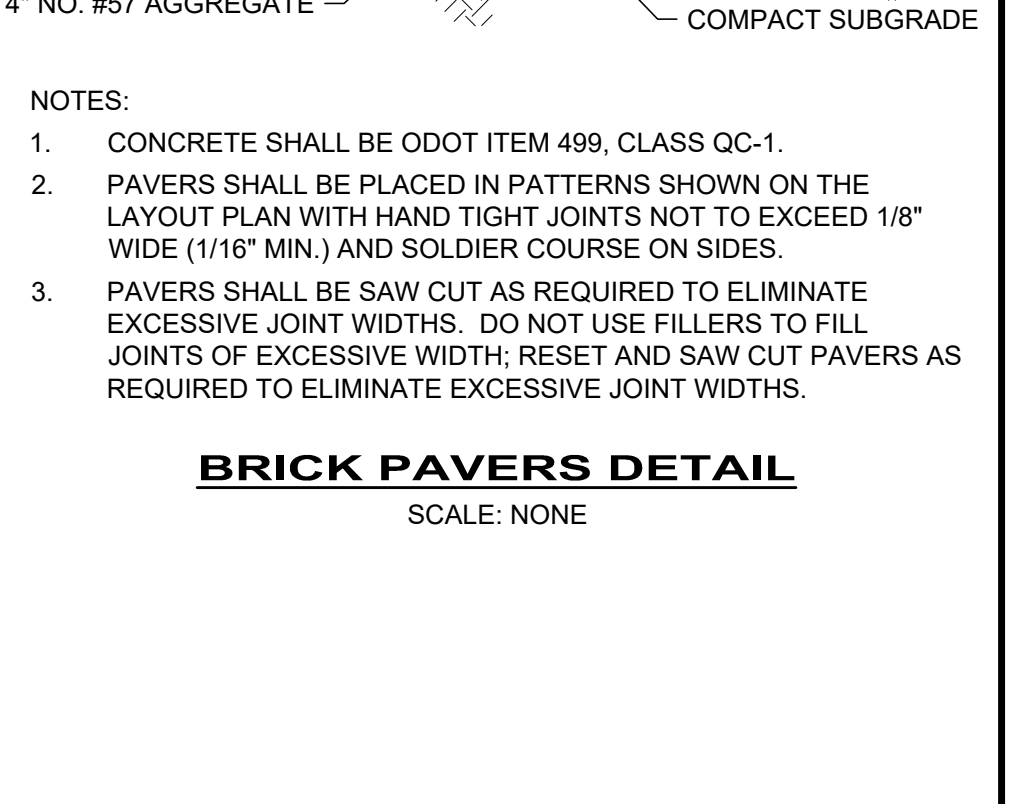
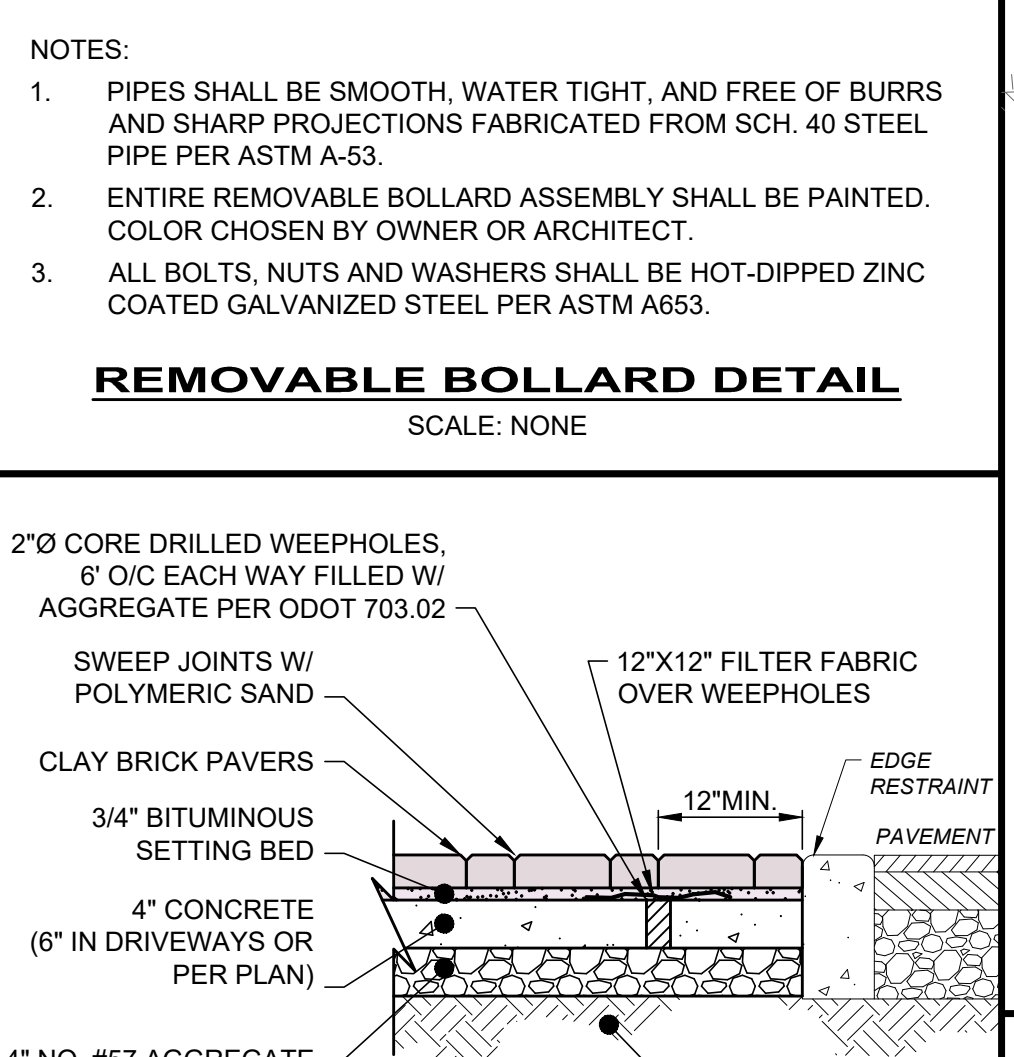
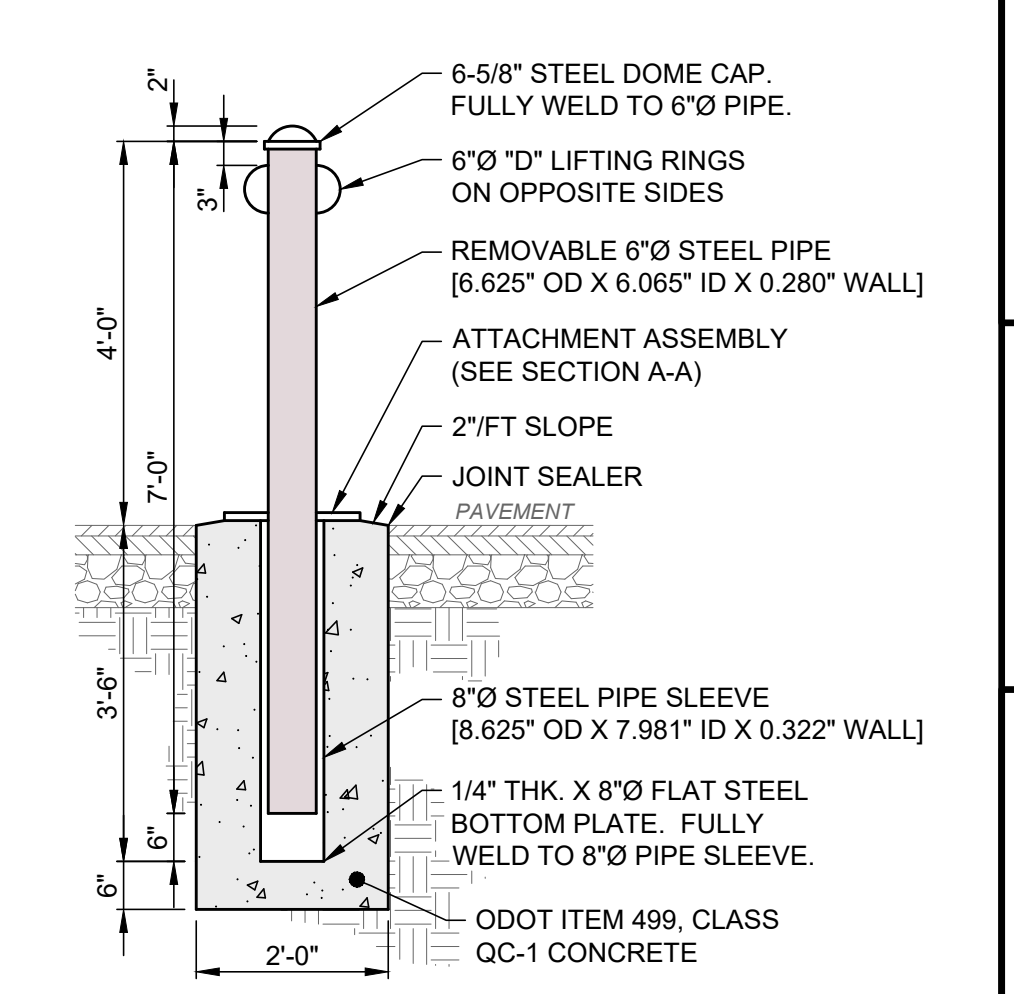
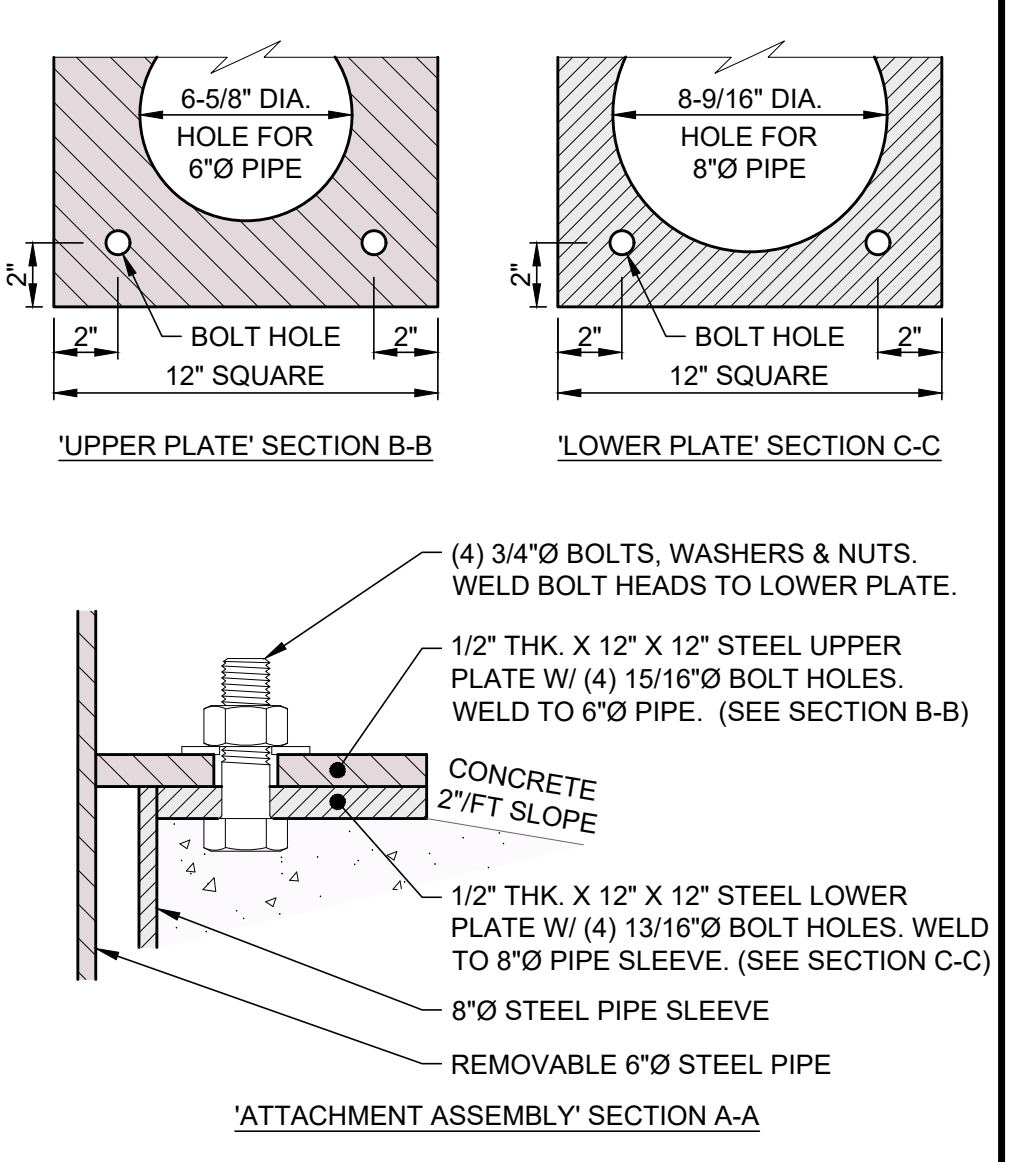
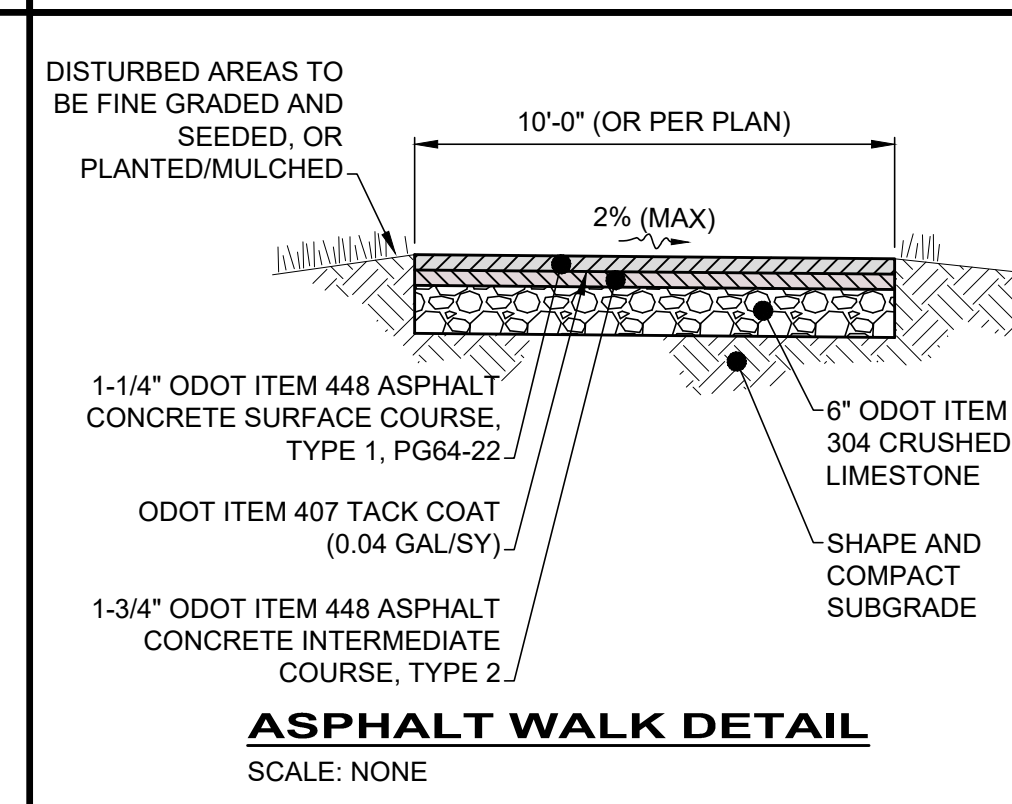
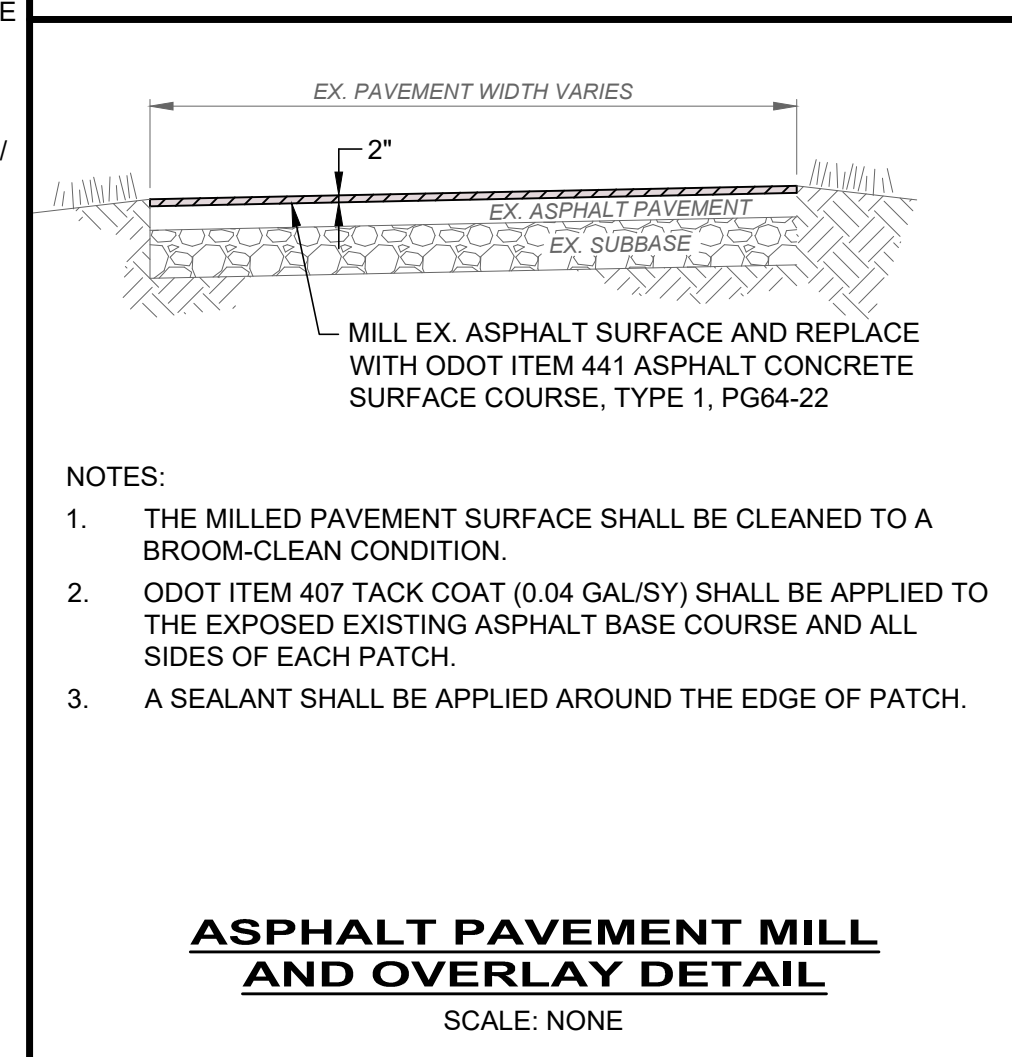
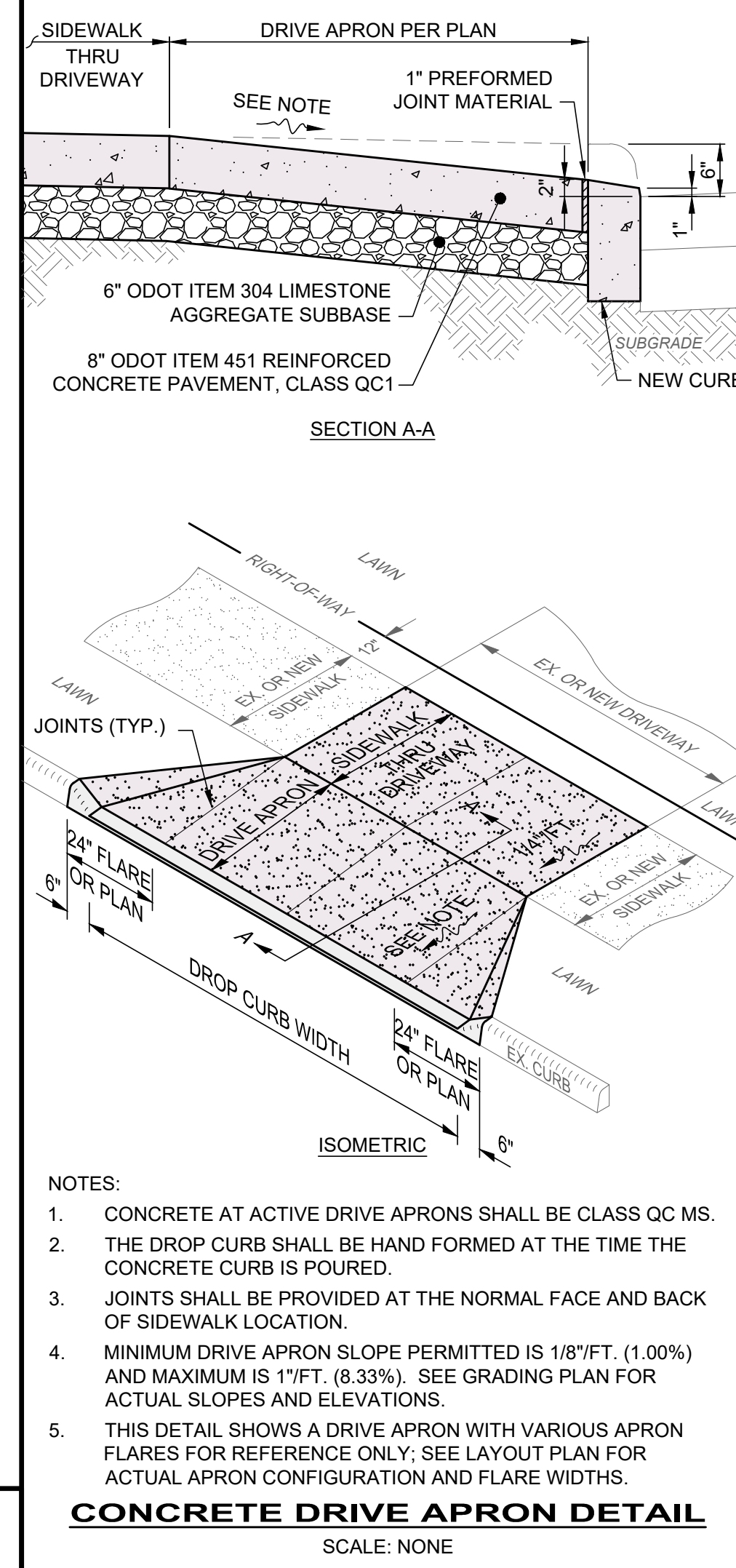


ISSUED FOR:	REVIEW	NO	REVISION	DATE
10/23/2023	AS SHOWN			
SCALE:	PAB/RW			
DESIGNED BY:	AM/CZ/PAB			
DRAWN BY:				
CHECKED BY:	MRD			

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
BOARDMAN, OH
MAHONING COUNTY

CONSTRUCTION NOTES

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	G-03
SHEET	3
OF	43



STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER
MARK R DELISIO
E-81623

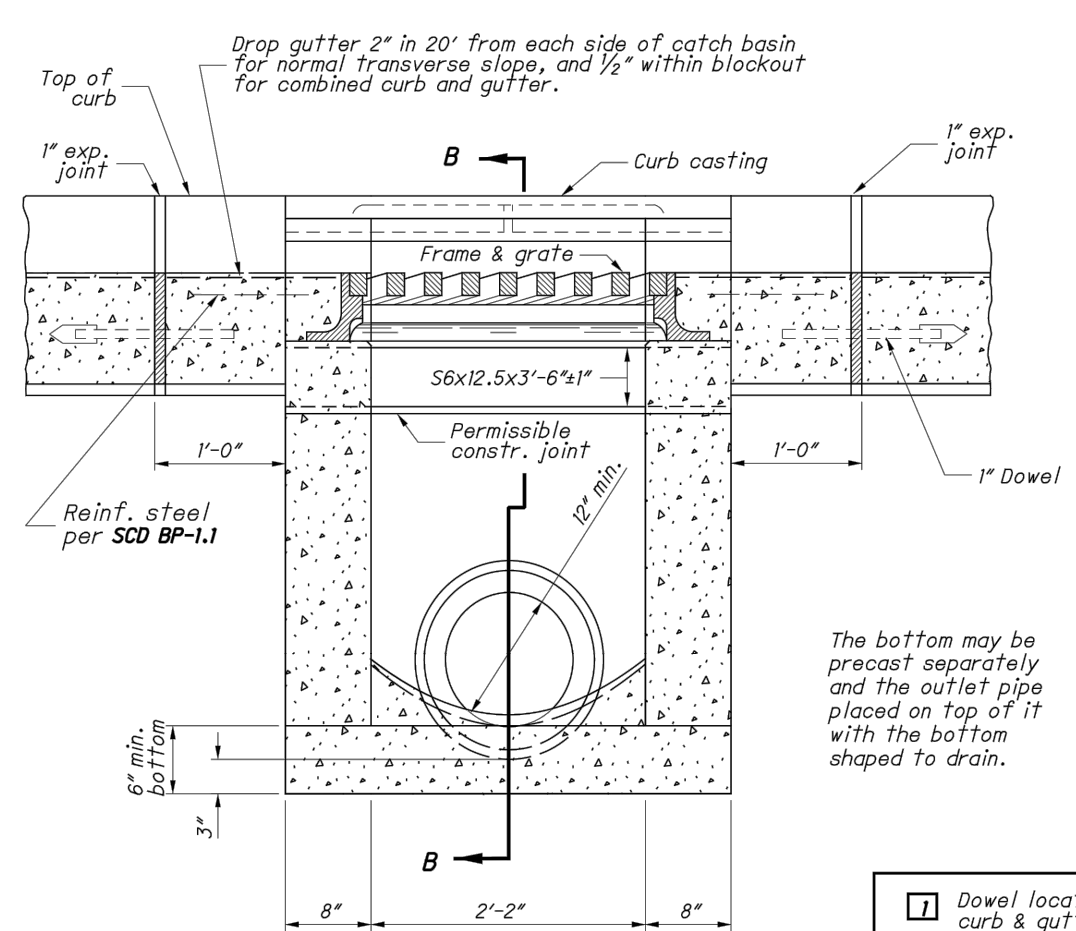
your trusted advisor
engineers
architects
planners
consultants

DATE	REVISION	NO	ISSUED FOR:	REVIEW	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
			10/23/2023	AS SHOWN				

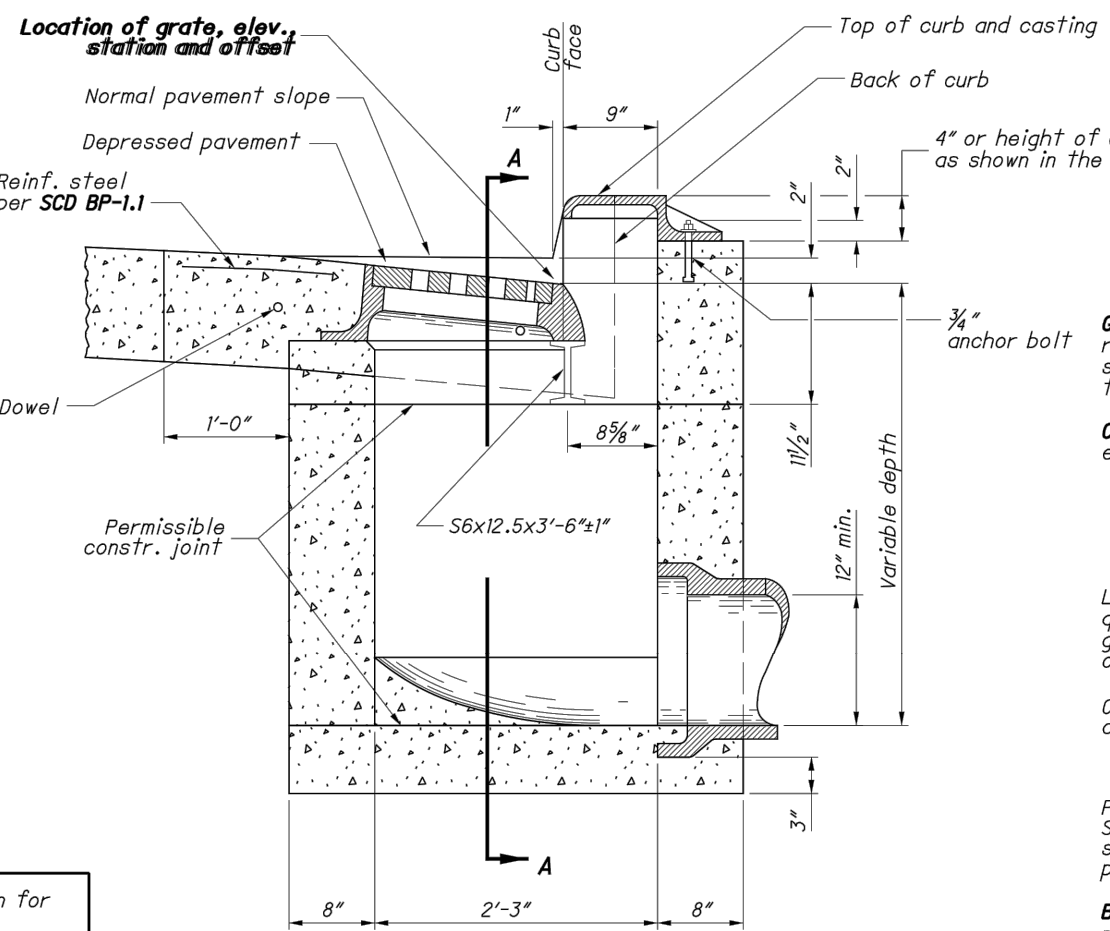
ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK BOARDMAN, OH
MAHONING COUNTY

CONSTRUCTION DETAILS (1 OF 3)

PROJECT NO. 231566
DISCIPLINE CIVIL
SHEET NAME G-04
SHEET 4 OF 43



SECTION A-A



SECTION B-B WITH CURB (2\"/>

NOTES

GRATES: Provide Grate "V" unless the plans specifically require the diagonal grate. If the diagonal grate is specified, place it so that the diagonal bars direct the drainage toward the curb.

CASTINGS: Provide a design essentially the same and equally as strong as the one shown. Minimum weight:

Curb Casting 170 lbs.
Standard Grate 121 lbs.
Frame 320 lbs.
Grate "V" 105 lbs.

Lighter weight frames and grates that meet the requirements of CMS 711.14 may also be provided. Provide grate openings and dimensions as shown here unless otherwise shown in the plans.

Cast the following text into the top of the curb casting:

"DUMP NO WASTE" and "DRAINS TO WATERWAY"

Print text in bold, capital letters at least 3/4" high. See example on Plan & Section, "WATERWAY" may be substituted with "STREET", "RIVER", "LAKE", etc. actual placement and logo may vary per manufacturer.

BEARING AREAS: Fit and finish the frame and grate to provide a firm and even seat. No projections are permitted on bearing areas, and the grate must seat in its frame without rocking.

WALLS: When used in place of concrete, construct brick side walls with 8" nominal thickness.

PRECAST CONSTRUCTION: Permitted, except for the apron. Meet CMS 106.13 concrete requirements. Provide precast walls at least 6" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the outside.

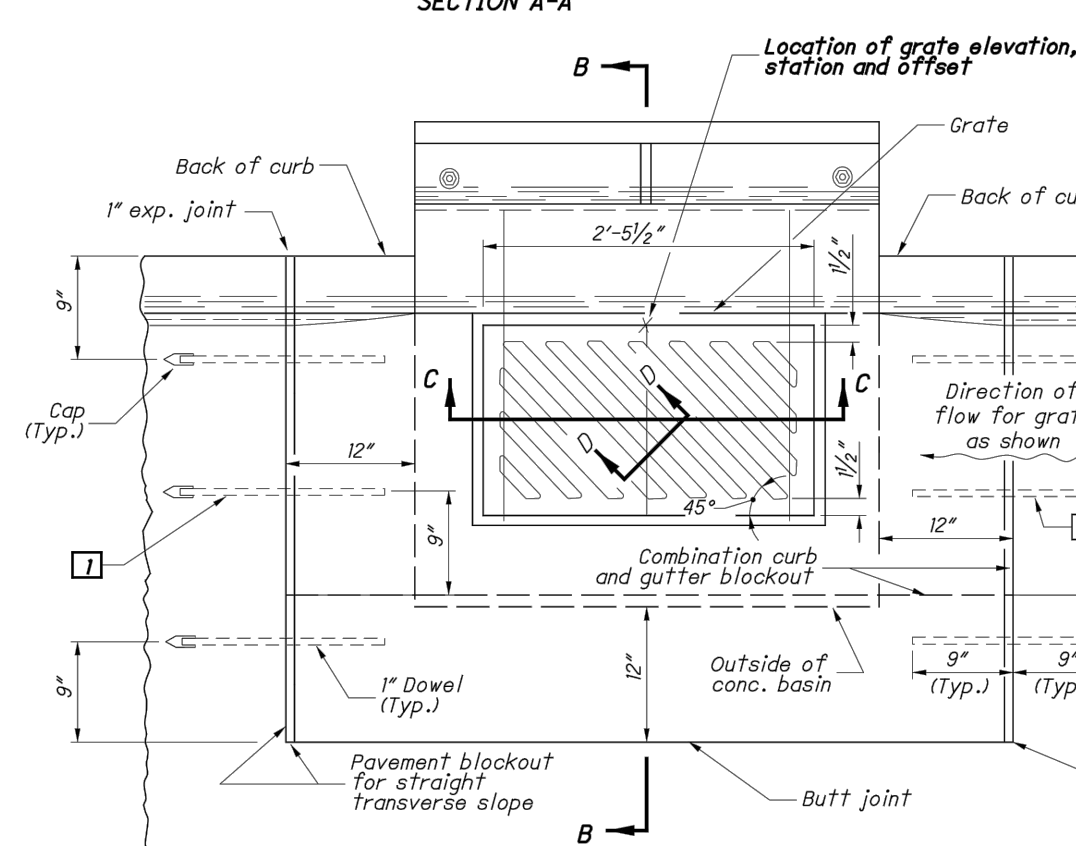
MINIMUM DEPTH: The minimum depth is per the cover requirements for that pipe type.

OPENINGS: Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 611.

DOWELS: Furnish four 1"x18" dowels for concrete pavement or gutter blackout. See SCD BP-2.2 for dowel details.

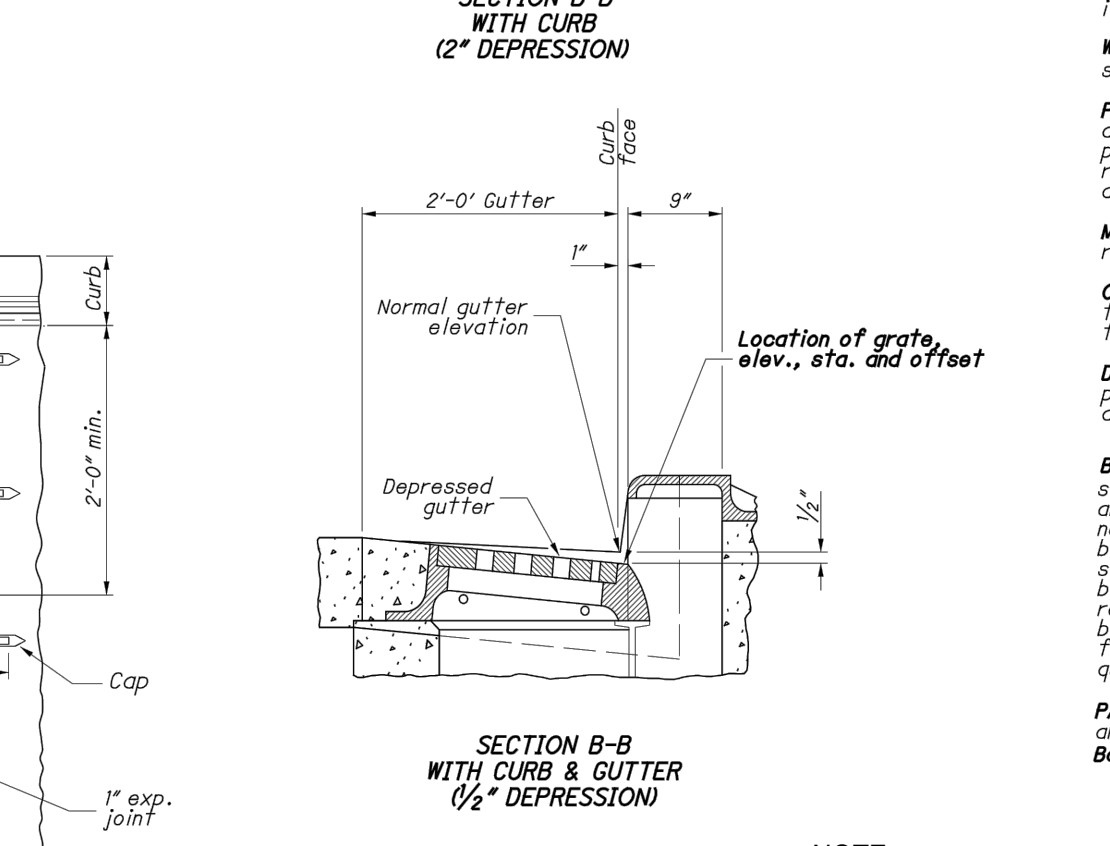
BLOCKOUT: Pave blockouts with 4000 psi compressive strength concrete in PCC pavement or gutter. Blockouts are paid for as part of the pavement or gutter with no deduction in pavement, curb or gutter quantities because of the castings. Cast a 4000 psi compressive strength concrete apron. The size of the 2'-0" gutter blackout, in place in asphalt pavement (no dowels required with the cost included in the catch basin bid price. Provide the 1" expansion joint in the curb for all curb types with no deduction made in curb quantities.

PAYMENT: All materials and labor, including excavation and backfilling, are paid for under Item 611 - Catch Basin, No. 3A.



PLAN OF CATCH BASIN AND PAVEMENT JOINTS
(For SECTIONS C-C and D-D, see Sht. 2/2)

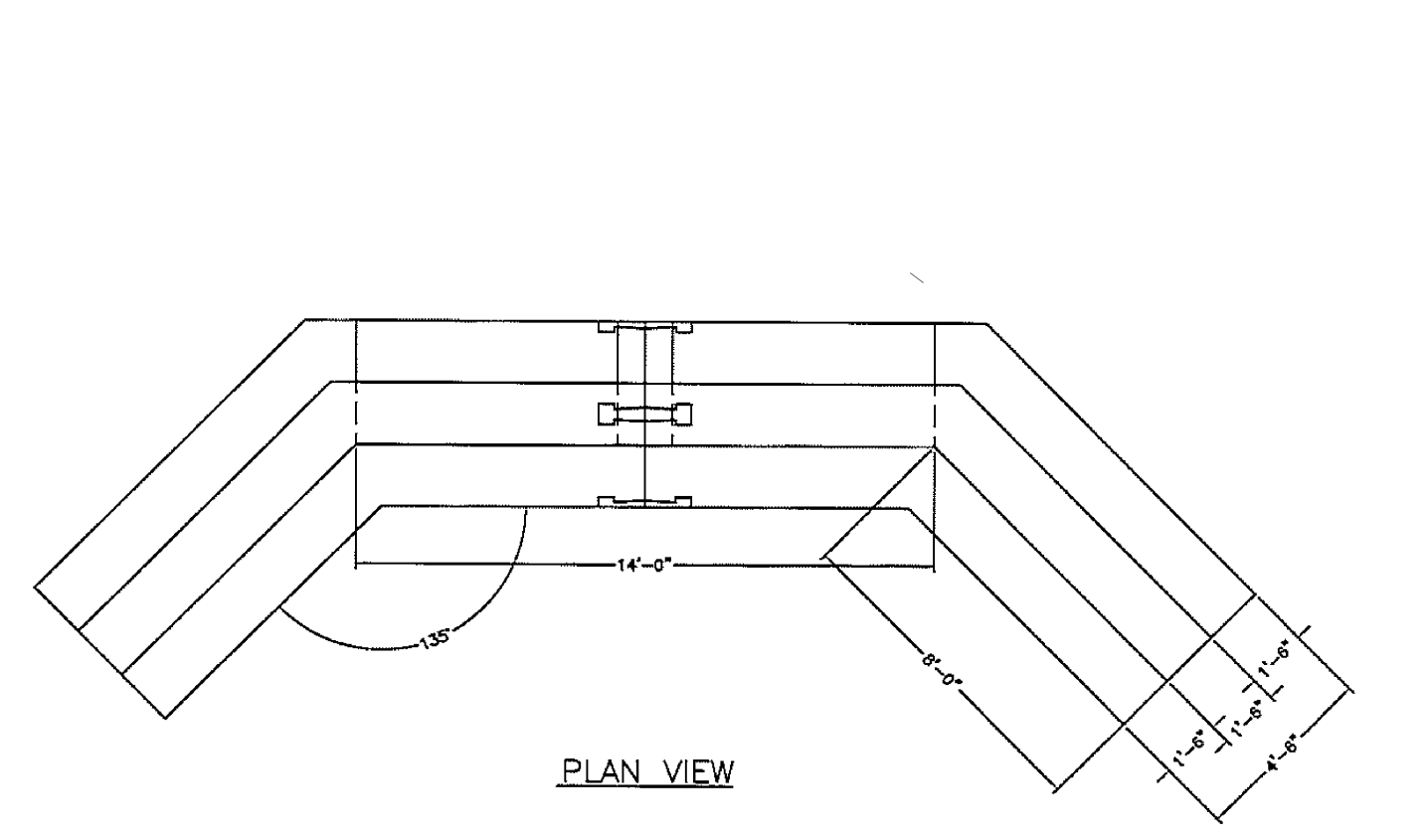
ODOT CATCH BASIN NO. 3A
SCALE: NONE



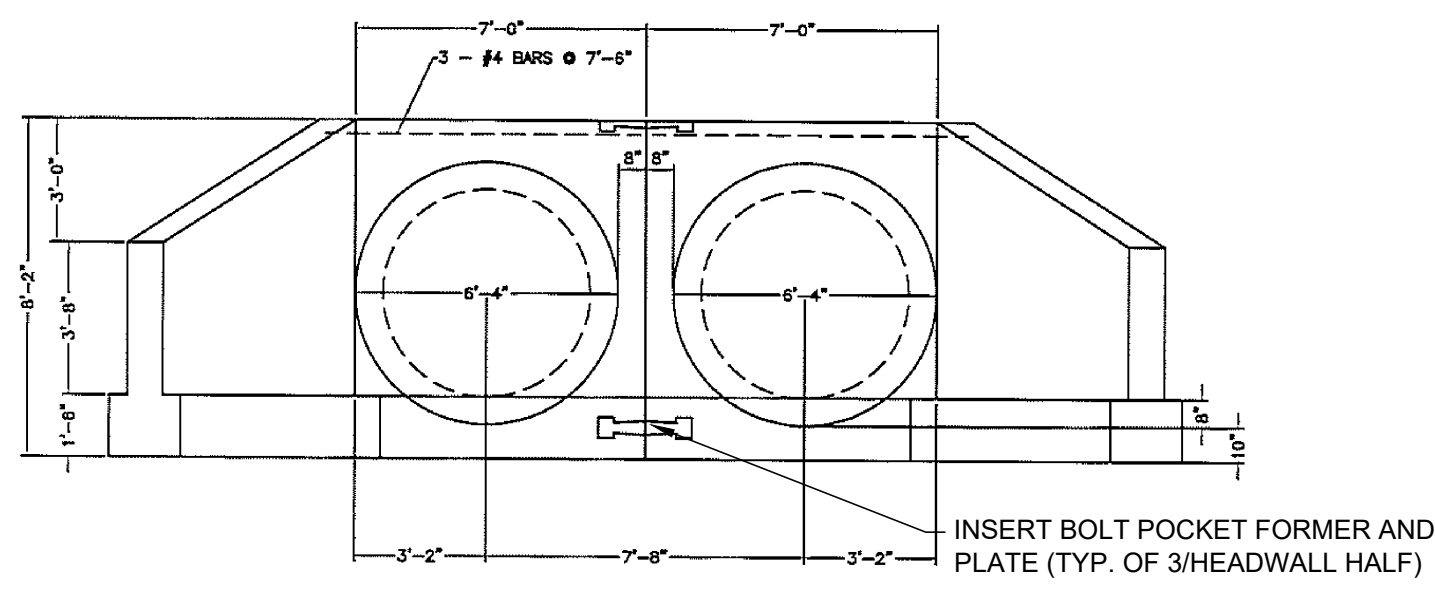
SECTION B-B WITH CURB (1/2\"/>

NOTE:

1. THIS DETAIL IS SHOWN FOR REFERENCE AND IS FROM ODOT AVAILABLE STANDARD CONSTRUCTION DRAWINGS. FOR ADDITIONAL STRUCTURE DETAILS, PLEASE REFER TO ODOT STANDARD CONSTRUCTION DRAWINGS AT: [HTTPS://WWW.DOT.STATE.OH.US/SCDS/PAGES/HYDRAULIC.ASPX](https://www.dot.state.oh.us/SCDS/PAGES/HYDRAULIC.ASPX).



PLAN VIEW



76" HOLES SET 8" INTO BASE

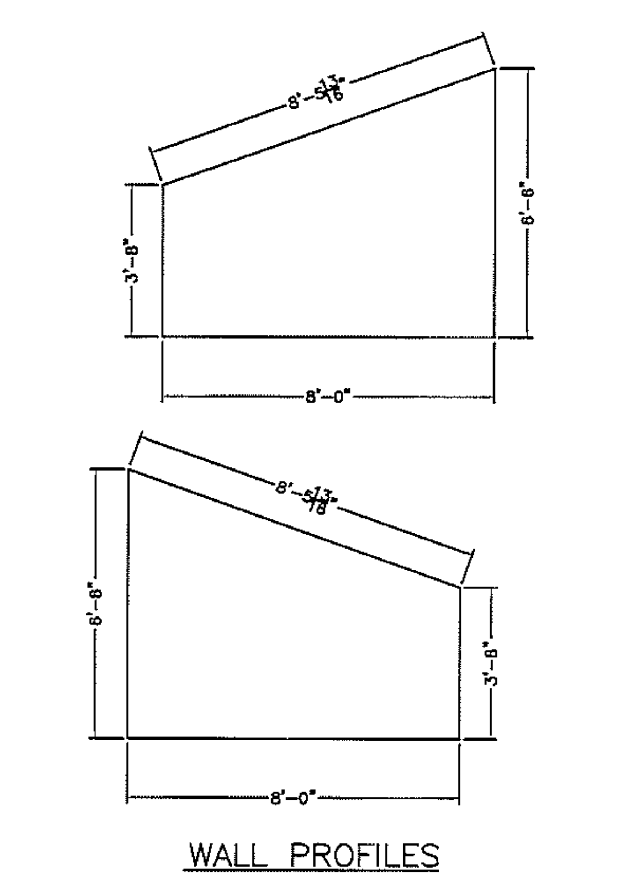
FRONT VIEW

TWIN 60" DIAMETER BARREL HEADWALL
SCALE: NONE

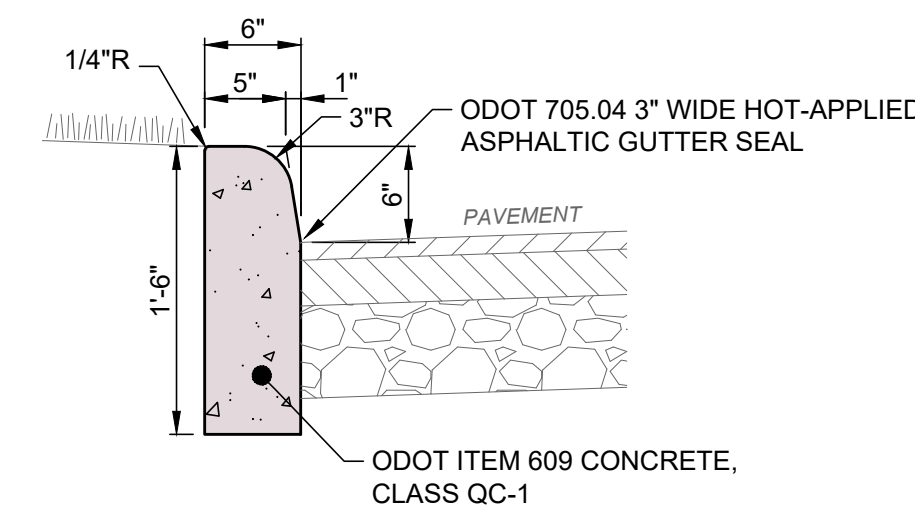
3.91 CU YDS EA. FOOTER SECTION
3.26 CU YDS EA. WALL SECTION
7.17 CU YDS EA. SECTION
APPROX. 29,250 LBS EA.

APPROX. 7.82 CU YDS TOTAL FOR FOOTER
APPROX. 6.52 CU YDS TOTAL FOR WALLS
APPROX. 14.34 CU YDS TOTAL
APPROX. 58,500 LBS TOTAL

INSERT BOLT POCKET FORMER AND PLATE (TYP. OF 3/HEADWALL HALF)



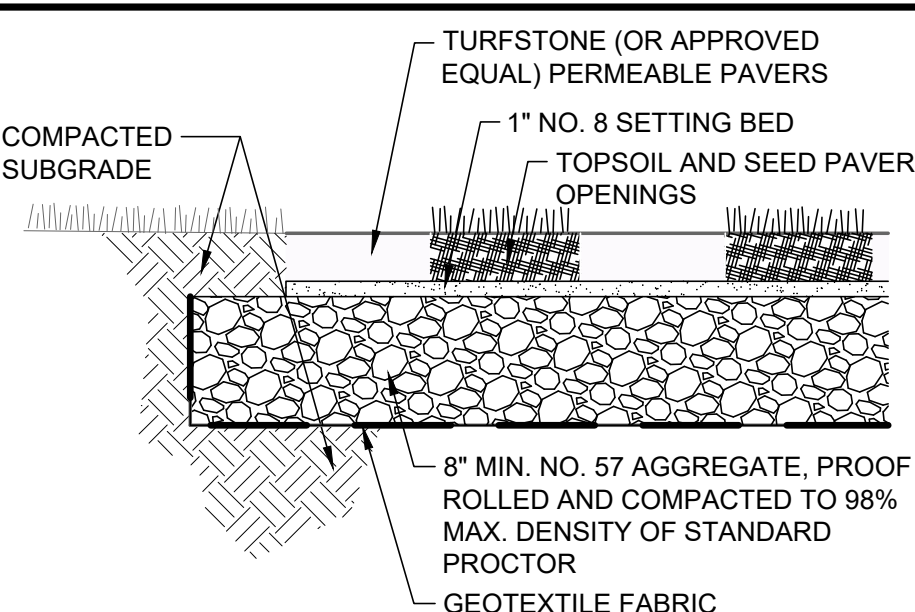
WALL PROFILES



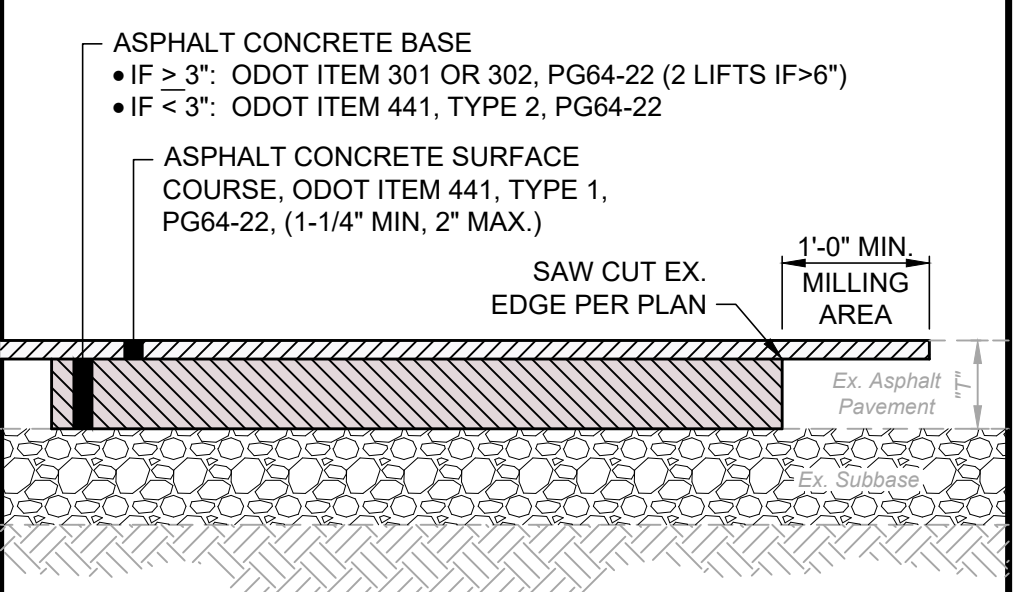
NOTES:

- INSTALL 1/2" PREFORMED JOINT MATERIAL AND USE DOWELS INTO COLD JOINTS TOP AND BOTTOM WHERE NEW CURB MEETS EXISTING CURB.
- PROVIDE CONTRACTION JOINTS AT 10' O.C.
- APPLY LIQUID-MEMBRANE CURING COMPOUND.

(ODOT TYPE 6) 6" VERTICAL CURB DETAIL
SCALE: NONE



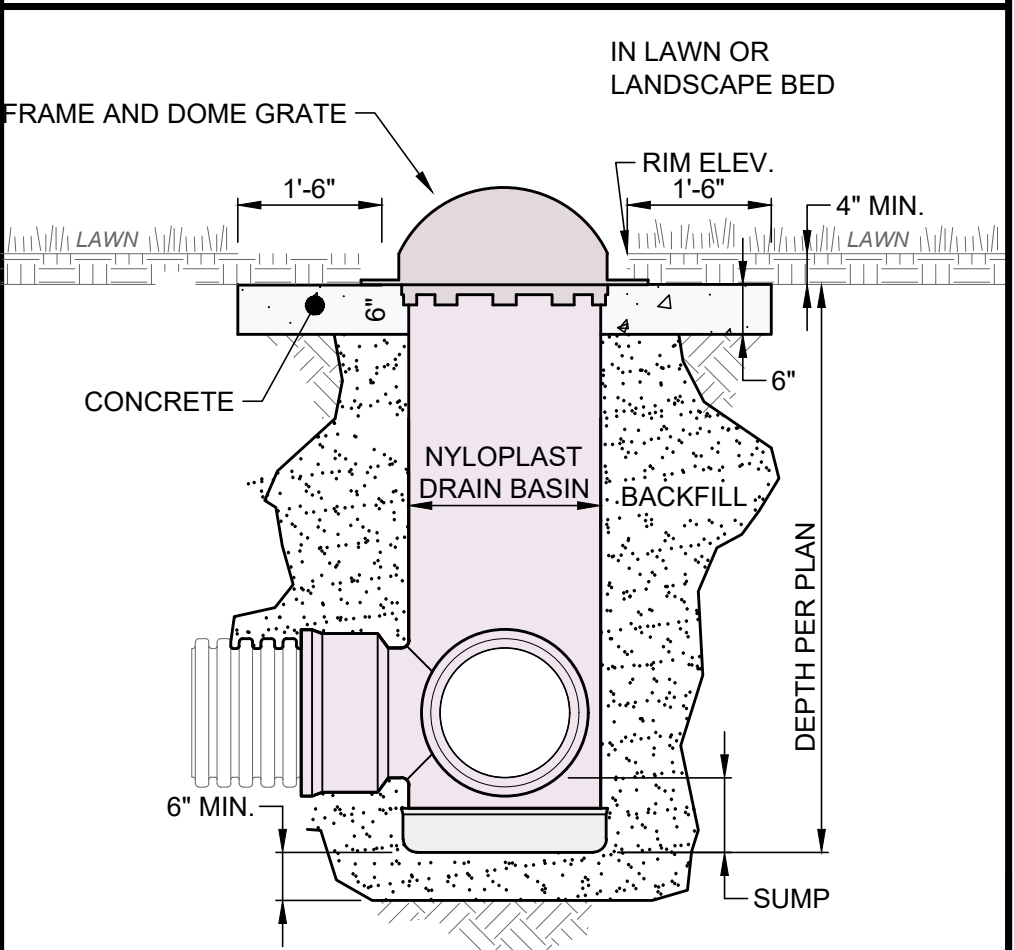
MAINTENANCE VEHICLE TURNAROUND GRASS PAVEMENT DETAIL
SCALE: NONE



NOTES:

- ASPHALT PAVEMENT TO BE REMOVED SHALL BE SAW CUT IN A NEAT AND STRAIGHT LINE AT THE LIMITS SHOWN ON THE PLANS OR FIELD MARKED BY THE ENGINEER. ADDITIONAL SAW CUTS MAY BE DESIRED TO FACILITATE REMOVAL, BUT THERE WILL BE NO EXTRA PAYMENT.
- PAVEMENT SHALL BE REMOVED WITHOUT DAMAGING OR UNDERMINING THE PAVEMENT TO REMAIN. IF ADJACENT PAVEMENT IS DAMAGED, THE CONTRACTOR SHALL MAKE ADDITIONAL SAW CUTS, REMOVE THE DAMAGED AREAS AND REPAIR AS NECESSARY WITH NO ADDITIONAL COMPENSATION.
- TACK COAT SHALL BE APPLIED TO THE EXPOSED EX. ASPHALT BASE COURSE AND ALL SIDES OF PATCH.
- A SEALANT SHALL BE APPLIED AROUND THE EDGE OF PATCH.

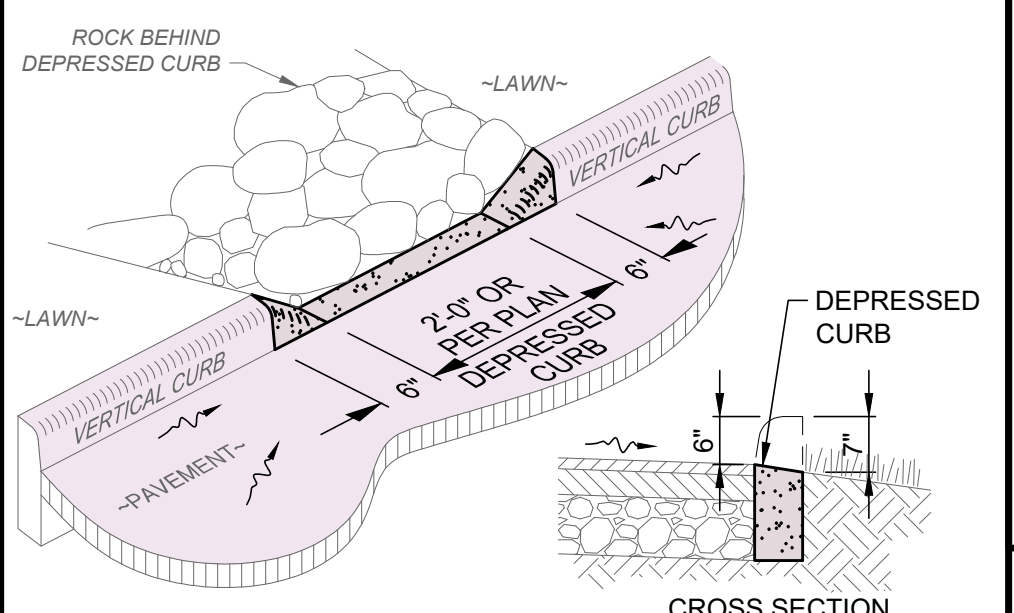
TYPE C FLEXIBLE PAVEMENT REPLACEMENT DETAIL
SCALE: NONE



NOTES:

- CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-1.
- STRUCTURE SHALL MEET H-20 LOADING.
- FRAME AND GRATE ASSEMBLY SHALL BE 12" DOME GRATE ASSEMBLY OF APPROVED EQUAL.
- SUMP DEPTH SHALL BE 6" MIN. FOR 8" THRU 24" DIA. BASIN, 10" MIN. FOR 30" DIA. BASIN, OR PER PLAN.
- USE APPROPRIATE ADAPTER FOR TYPE OF PIPE MATERIAL USED FOR WATERTIGHT JOINT CONNECTION.

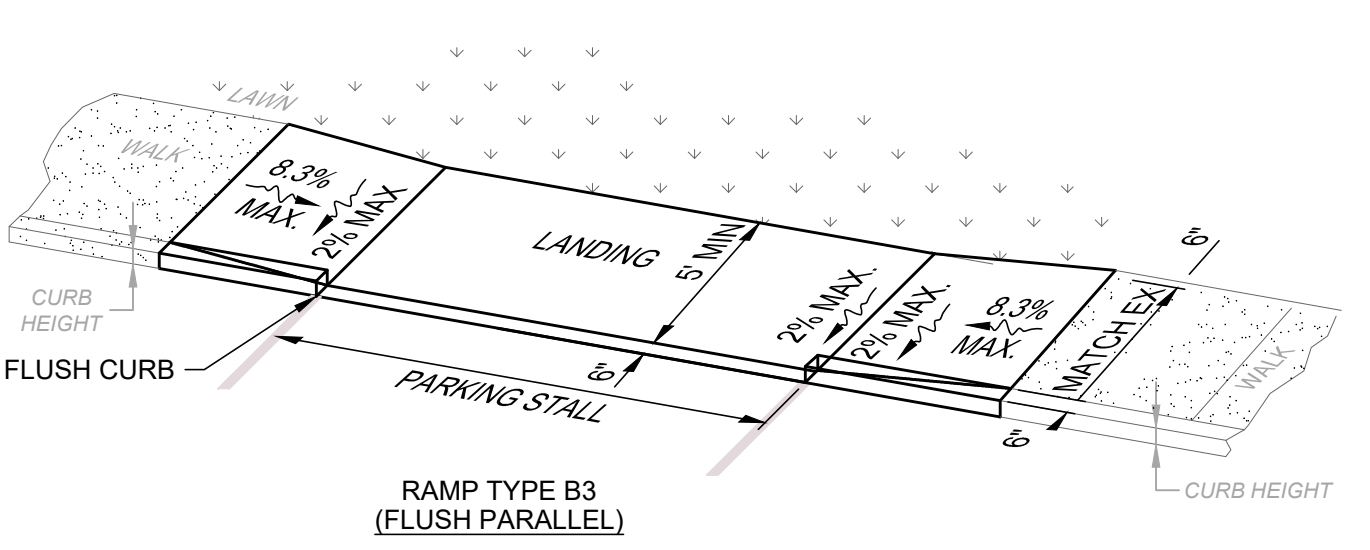
(NYLOPLAST) INLET BASIN DETAIL
SCALE: NONE



NOTES:

- DEPRESSED CURB EDGE SHALL BE FLUSH WITH PAVEMENT AND SLOPED TOWARDS LOW POINT WITHIN THE CURB ISLAND.
- THIS DETAIL SHOWS A VERTICAL CURB FOR REFERENCE ONLY. SEE SITE PLAN FOR ACTUAL TYPE OF CURB.

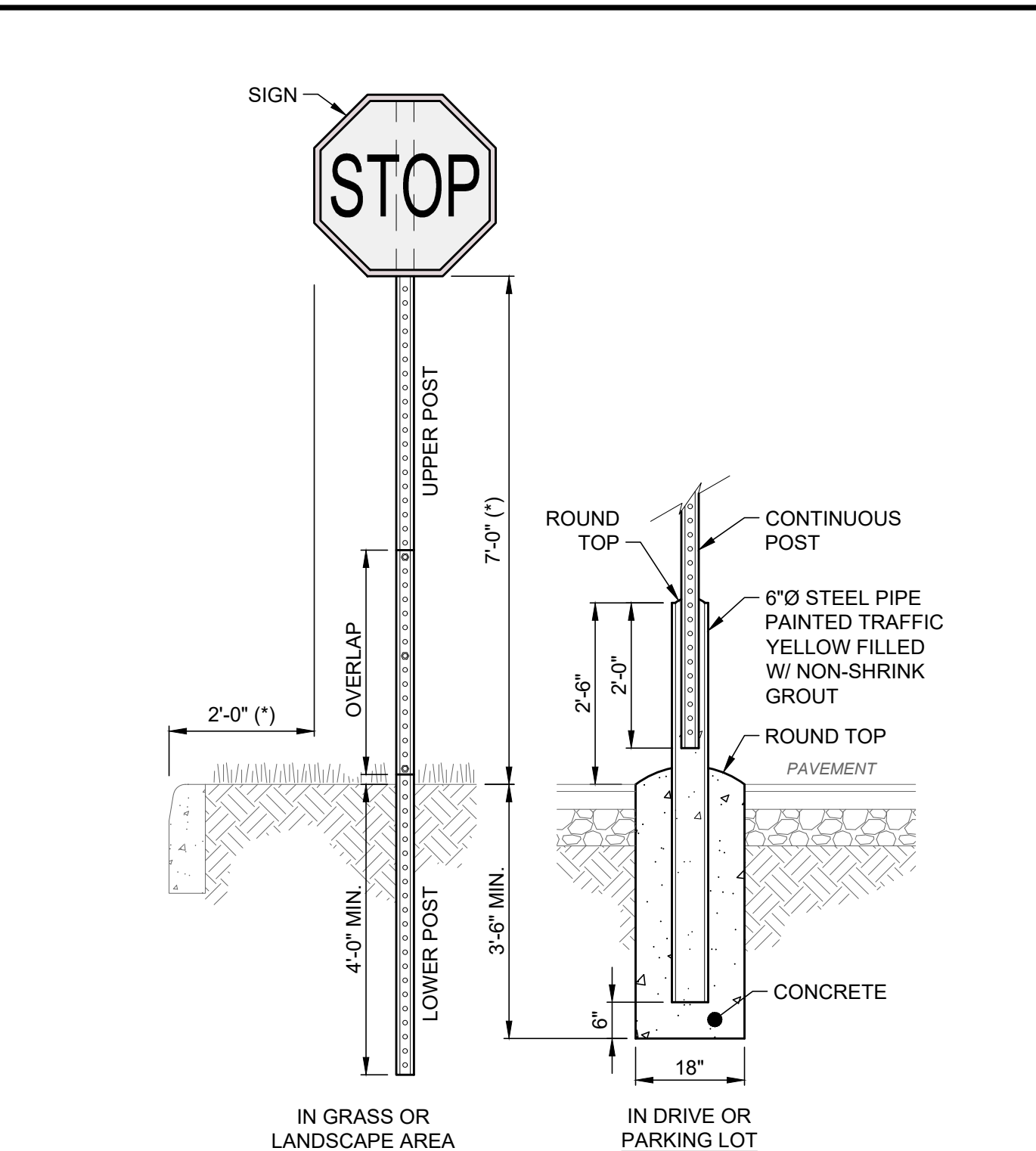
CURB CUT DETAIL
SCALE: NONE



NOTES:

- THIS DETAIL IS FOR REFERENCE ONLY; NOT ALL ITEMS MAY APPLY OR DIFFERENT CONFIGURATIONS MAY BE REQUIRED. SEE LAYOUT PLAN FOR RAMP TYPE, CONFIGURATION, DIMENSIONS AND DEPRESSED CURB LOCATION, GRADING PLAN FOR ELEVATIONS AND SLOPES; AND DETAIL SHEETS FOR APPLICABLE WALK AND CURB DETAILS.
- LINES SHOWN IN THIS DETAIL INDICATE RAMP EDGES AND CHANGES IN SLOPE, AND NOT NECESSARILY JOINT LINES.
- TEXTURE CONCRETE SURFACE BY COARSE BROOMING TRANSVERSE TO RAMP SLOPE.
- ALL RAMPS SHALL BE POURED INTEGRAL WITH NEW CURBS WITH CURB EDGE FLUSH TO PAVEMENT.

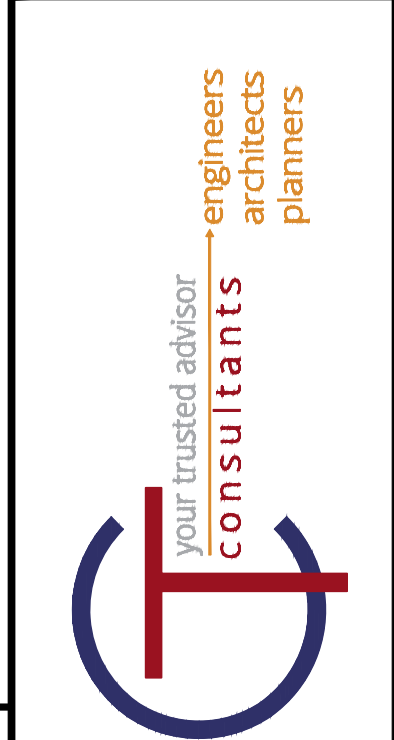
ACCESSIBLE CURB RAMPS DETAIL
SCALE: NONE



NOTES:

- POSTS SHALL BE 2 LB/FT GALVANIZED STEEL U-CHANNEL WITH 3/8" HOLES ON 1" CENTERS.
- ALL SIGNS SHALL BE PLACED 90° TO THE ROADWAY TRAVEL DIRECTION.
- "STOP" SIGN SHOWN FOR REFERENCE. SEE LAYOUT PLAN FOR SPECIFIC TYPE OF SIGN(S) TO BE USED.
- (*) IN RURAL AREAS:
 - THE MINIMUM HEIGHT FROM BOTTOM OF SIGN TO PAVEMENT SHALL BE 5'-0". THE HEIGHT TO THE BOTTOM OF A SECONDARY SIGN MOUNTED BELOW ANOTHER SIGN SHALL BE 4'-0".
 - THE MINIMUM SETBACK FROM EDGE OF SIGN TO EDGE OF PAVEMENT SHALL BE 12'-0".

SIGN POST DETAIL
SCALE: NONE



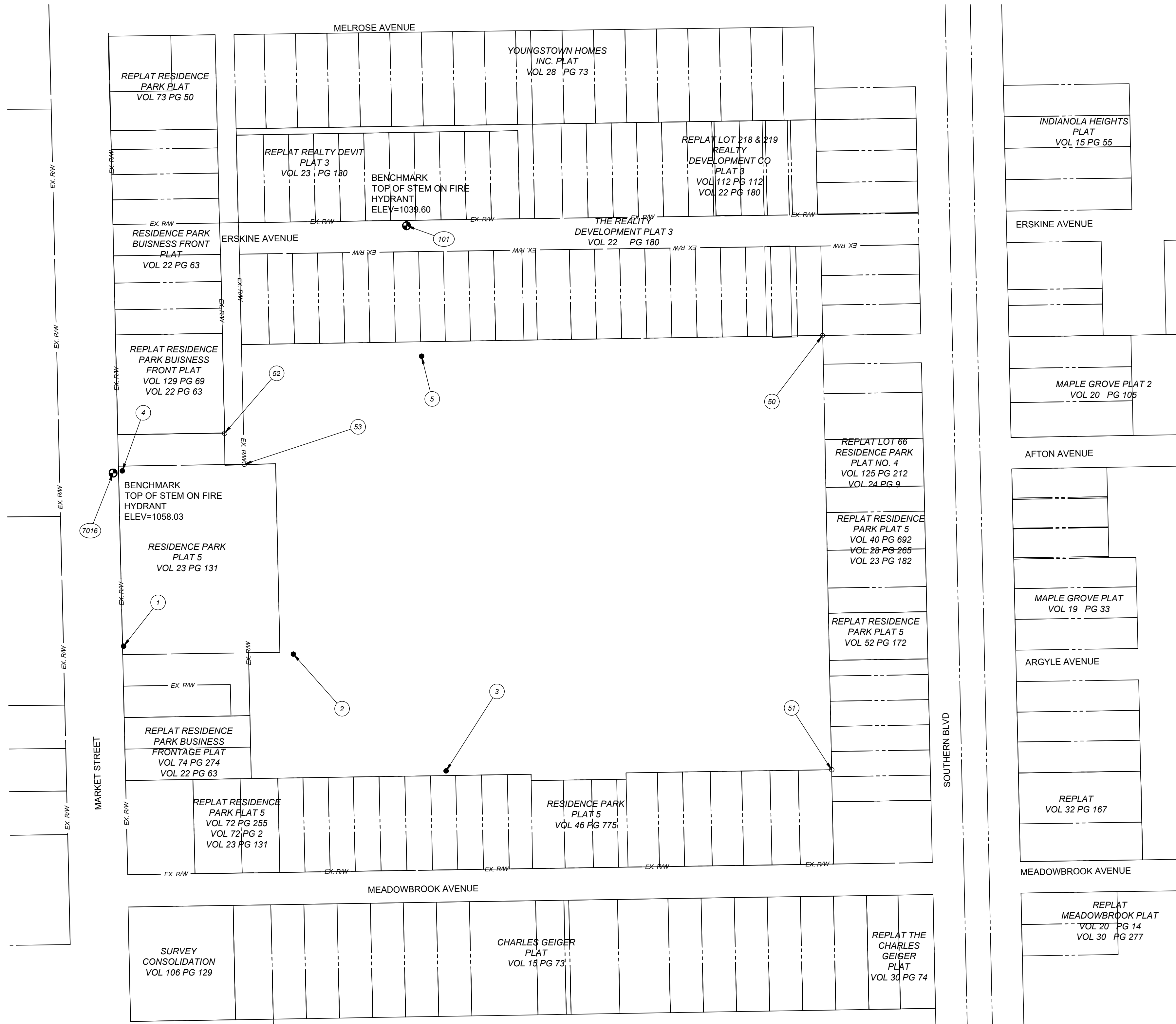
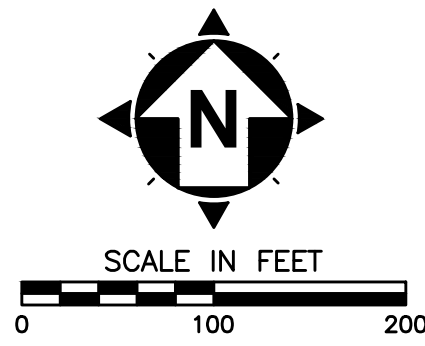
ISSUED FOR:	REVISION	NO	DATE
10/23/2023 <td></td> <td></td> <td></td>			

DESIGNED BY:	DRAWN BY:	CHECKED BY:
AM/CZ/PAB		MRD

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK BOARDMAN, OH
MAHONING COUNTY

CONSTRUCTION DETAILS (2 OF 3)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	G-05
SHEET	OF
5	43



- NOTES:**
- THIS PLAN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND MAY BE SUBJECT TO EASEMENTS AND OTHER RESTRICTIONS, EITHER RECORDED OR UNRECORDED. THE SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS, RECORD ENCUMBRANCES, RESTRICTIVE COVENANTS OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
 - THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.
 - THE PROJECT CONTROL COORDINATE SYSTEM IS BASED UPON THE FOLLOWING:
 - HORIZONTAL DATUM - PROJECT CONTROL COORDINATES FOR THIS PROJECT HAVE BEEN ESTABLISHED BY GPS/RTK OBSERVATIONS UTILIZING THE OHIO COORDINATE SYSTEM OF 1983 (ZONE 3401-OHIO NORTH). OHIO STATE PLANE GRID COORDINATE VALUES ARE EXPRESSED IN UNITS OF U.S. SURVEY FEET.
 - VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - THE SURVEY AND STREET ALIGNMENTS SHOWN HEREON WERE OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR OTHER PURPOSES. THE PROPERTY LINES SHOWN HEREON OUR SUBJECT TO AN ACCURATE BOUNDARY SURVEY AND ARE BASED ON FOUND MONUMENTS LOCATED IN THE FIELD AND BEST FIT TO THE RECORDS.
 - AN ALTA/ NSPS LAND TITLE SURVEY WAS NOT PERFORMED.
 - EASEMENTS, RECORD RESTRICTIONS AND SETBACKS WERE NOT ADDRESSED DURING THIS SURVEY.
 - ALL DIMENSIONS GIVEN ARE EXPRESSED IN US SURVEY FEET.
 - THE BENCHMARK ELEVATIONS SHOWN IN THE PROJECT CONTROL TABLE ARE AT THE TOP OF THE RED CAP OF THE IRON PIN SET.
 - IRON PINS SET ARE 5/8" IRON PINS SET WITH A RED CAP INSCRIBED WITH "CT REF"

BASIS OF BEARINGS
 THE BEARINGS SHOWN HEREON ARE BASED ON GRID NORTH (N.0°00'00" E.) FROM GPS OBSERVATIONS UTILIZING THE OHIO STATE PLANE NORTH AMERICAN DATUM 1983 (NORTH ZONE, 2011 ADJ.) COORDINATE SYSTEM

LEGEND:
 ● BENCHMARK
 ● I.PIN SET
 ○ I.PIN FOUND

— SUBDIVISION
 — LIMITS OF PUBLIC R/W
 - - - CENTERLINE PUBLIC R/W
 - - - PARCEL LINES

POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	506342.1757	2475297.0044	1059.22	IRON PIN (SET)
2	506329.5322	2475566.9891	1047.88	IRON PIN (SET)
3	506143.7324	2475809.9200	1045.24	IRON PIN (SET)
4	506620.9544	2475294.9736	1054.26	IRON PIN (SET)
5	506803.4429	2475770.8819	1041.86	IRON PIN (SET)
50	506835.9253	2476408.3472	0.000	IRON PIN (FND)
51	506145.6676	2476423.0849	0.000	IRON PIN (FND)
52	506680.7389	2475457.5354	0.000	IRON PIN (FND)
53	506631.5601	2475488.8148	0.000	IRON PIN (FND)
101	507010.9324	2475747.1397	1039.60	BENCHMARK (SET) TOP STEM OF FH
7016	506617.5652	2475280.3343	1058.03	BENCHMARK (SET) TOP STEM FH

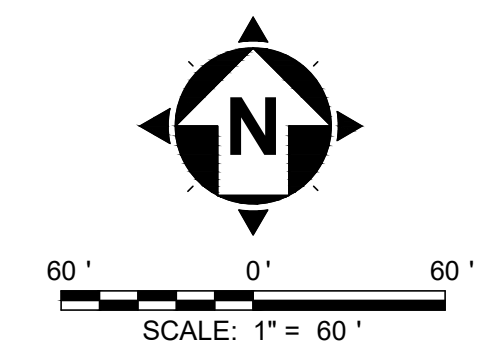
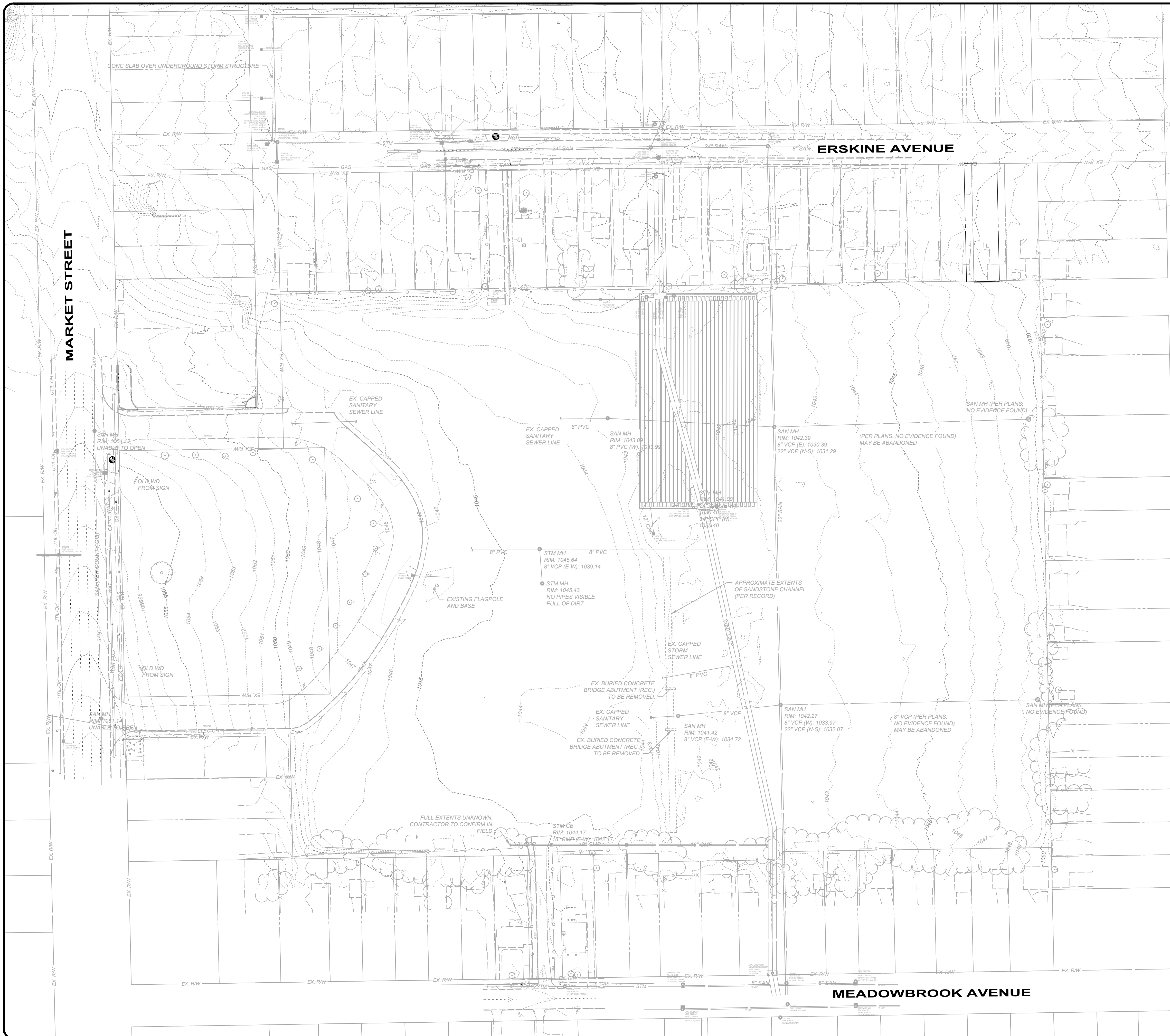
your trusted advisor
 engineers
 architects
 planners
 consultants

ISSUED FOR:	REVIEW	NO	REVISION	DATE
8/25/2023 <td>AS SHOWN <td></td> <td></td> <td></td> </td>	AS SHOWN <td></td> <td></td> <td></td>			
SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY

PROJECT NO.
231566
 DISCIPLINE
CIVIL
 SHEET NAME
SV-01
 SHEET **7** OF **43**

SURVEY CONTROL SHEET



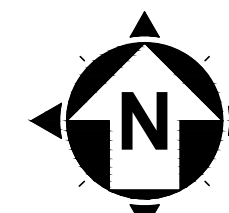
- GENERAL NOTES:**
1. THE EXISTING UNDERGROUND UTILITIES WERE OBTAINED FROM VARIOUS SOURCES INCLUDING, BUT NOT LIMITED TO, FIELD OBSERVATIONS (E.G. ABOVE GROUND FEATURES, FLAGGED OR PAINTED MARKED UNDERGROUND UTILITIES) AND RECORDS MADE AVAILABLE (E.G. ORIGINAL CONSTRUCTION PLANS, AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICE MAPS, GIS DATABASES) TO CREATE A COMPOSITE DRAWING OF EXISTING CONDITIONS. ALTHOUGH GRAPHICALLY SHOWN AS ACCURATELY AS POSSIBLE FROM THE INFORMATION MADE AVAILABLE, THERE IS NO GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED, OF THE COMPLETENESS, CORRECTNESS OR ACCURACY OF SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE CONTRACTOR SHALL PERFORM A FIELD INVESTIGATION TO CONFIRM LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND STRUCTURES IN THE WORK AREA. IN THE EVENT UTILITY LOCATIONS OR DEPTHS DIFFER IN FILED FROM PLAN, CONTRACTOR SHALL NOTIFY THE ENGINEER.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE AS WELL AS THE ACTUAL LOCATION, ALIGNMENT, AND ELEVATIONS OF ALL EXISTING UTILITIES WITHIN AND ADJACENT TO THE GENERAL LIMITS OF THESE IMPROVEMENTS INCLUDING WATERLINES, SANITARY AND STORM SEWERS, GAS LINES, COMMUNICATION LINES/BANKS, ELECTRIC LINES, ETC. THIS MAY REQUIRE EXPLORATORY EXCAVATIONS TO BE PERFORMED BY THE CONTRACTOR FOR WHICH HE WILL NOT BE REIMBURSED. THE CONTRACTOR SHALL NOT ASSUME EXISTING UTILITIES WERE INSTALLED AT TYPICAL OR STANDARD DEPTHS OR AT UNIFORM SLOPES, GRADES OR DEPTHS BETWEEN ACCESS POINTS (CATCH BASINS, MANHOLES, JUNCTION CHAMBERS, ETC.)
 3. THE CONTRACTOR SHALL CONFIRM OR LOCATE ALL UNDERGROUND UTILITIES WITHIN EXCAVATION LIMITS WHETHER OR NOT SHOWN ON THE CONSTRUCTIONS PLANS OR FIELD MARKED BY OUPS, OGPUPS, OR OTHER UTILITY MARKING SERVICE. THE CONTRACTOR SHALL DOCUMENT ANY UTILITY NOT SHOWN OR DIFFERING FROM THE CONSTRUCTION PLANS, AND PROVIDE THE INFORMATION TO THE OWNER SHOWING LOCATIONS WITH MEASUREMENTS TO REFERENCE POINTS. ANY RESULTING UTILITY CONFLICTS WITH PROPOSED IMPROVEMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER AND DESIGN ENGINEER.

ISSUED FOR:	REVIEW	NO	REVISION	DATE
10/23/2023	AS SHOWN			
SCALE:	PAB/RW			
DESIGNED BY:	AM/CZ/PAB			
DRAWN BY:	M/RD			
CHECKED BY:				

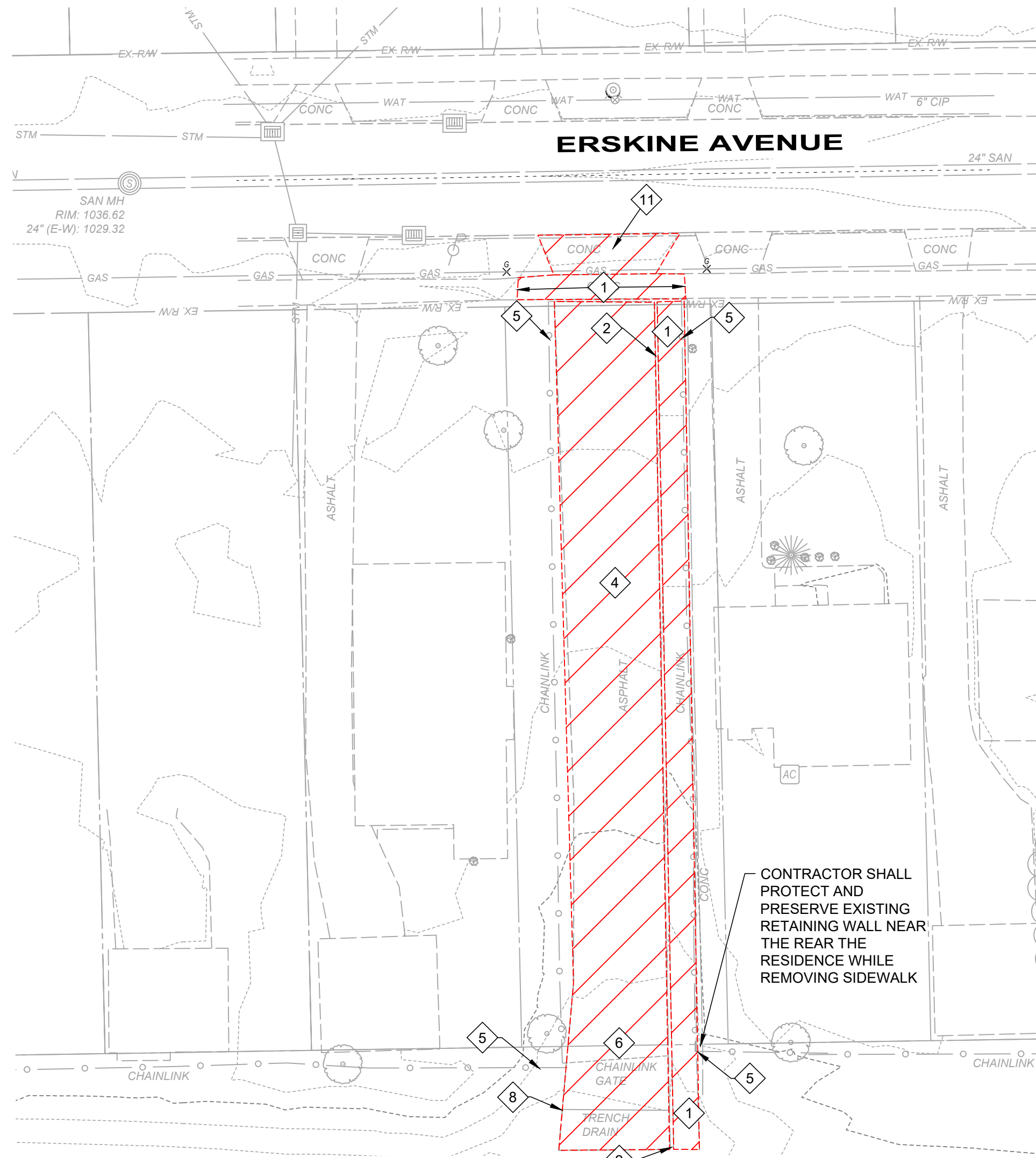
ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK BOARDMAN, OH
MAHONING COUNTY

EXISTING CONDITIONS

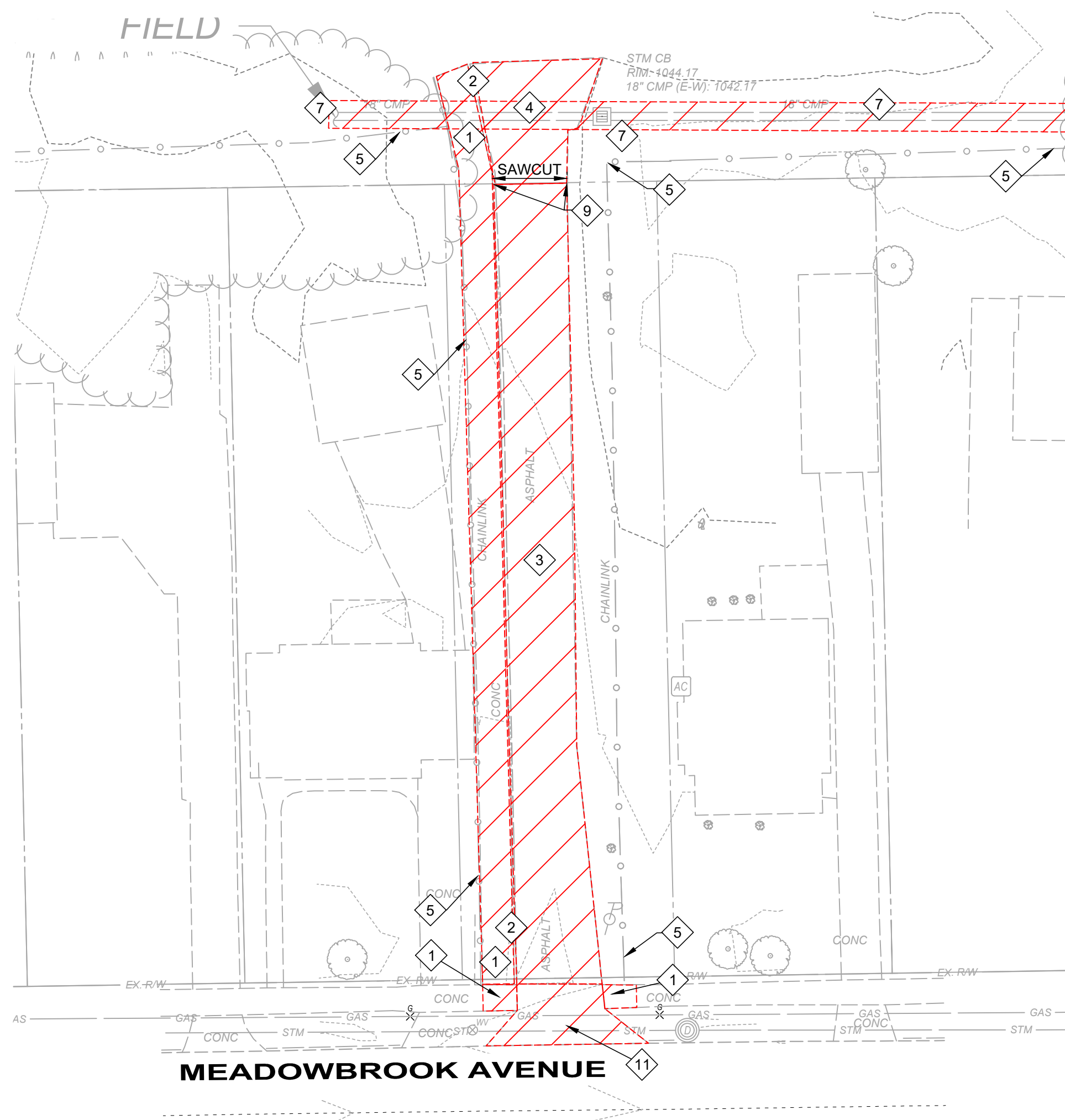
PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-01
SHEET	8
OF	43



20' 0' 20'
SCALE: 1" = 20'



DEMOLITION DETAIL #1
20' 0' 20'
SCALE: 1" = 20'



DEMOLITION DETAIL #2
20' 0' 20'
SCALE: 1" = 20'

GENERAL NOTES:

1. THE EXISTING UNDERGROUND UTILITIES WERE OBTAINED FROM VARIOUS SOURCES INCLUDING, BUT NOT LIMITED TO, FIELD OBSERVATIONS (E.G. ABOVE GROUND FEATURES, FLAGGED OR PAINTED MARKED UNDERGROUND UTILITIES) AND RECORDS MADE AVAILABLE (E.G. ORIGINAL CONSTRUCTION PLANS, AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICE MAPS, GIS DATABASES) TO CREATE A COMPOSITE DRAWING OF EXISTING CONDITIONS. ALTHOUGH GRAPHICALLY SHOWN AS ACCURATELY AS POSSIBLE FROM THE INFORMATION MADE AVAILABLE, THERE IS NO GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED, OF THE COMPLETENESS, CORRECTNESS OR ACCURACY OF SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE CONTRACTOR SHALL PERFORM A FIELD INVESTIGATION TO CONFIRM LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND STRUCTURES IN THE WORK AREA. IN THE EVENT UTILITY LOCATIONS OR DEPTHS DIFFER IN FILED FROM PLAN, CONTRACTOR SHALL NOTIFY THE ENGINEER.

CODED NOTES:

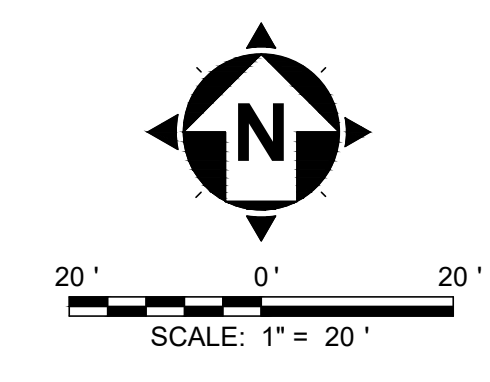
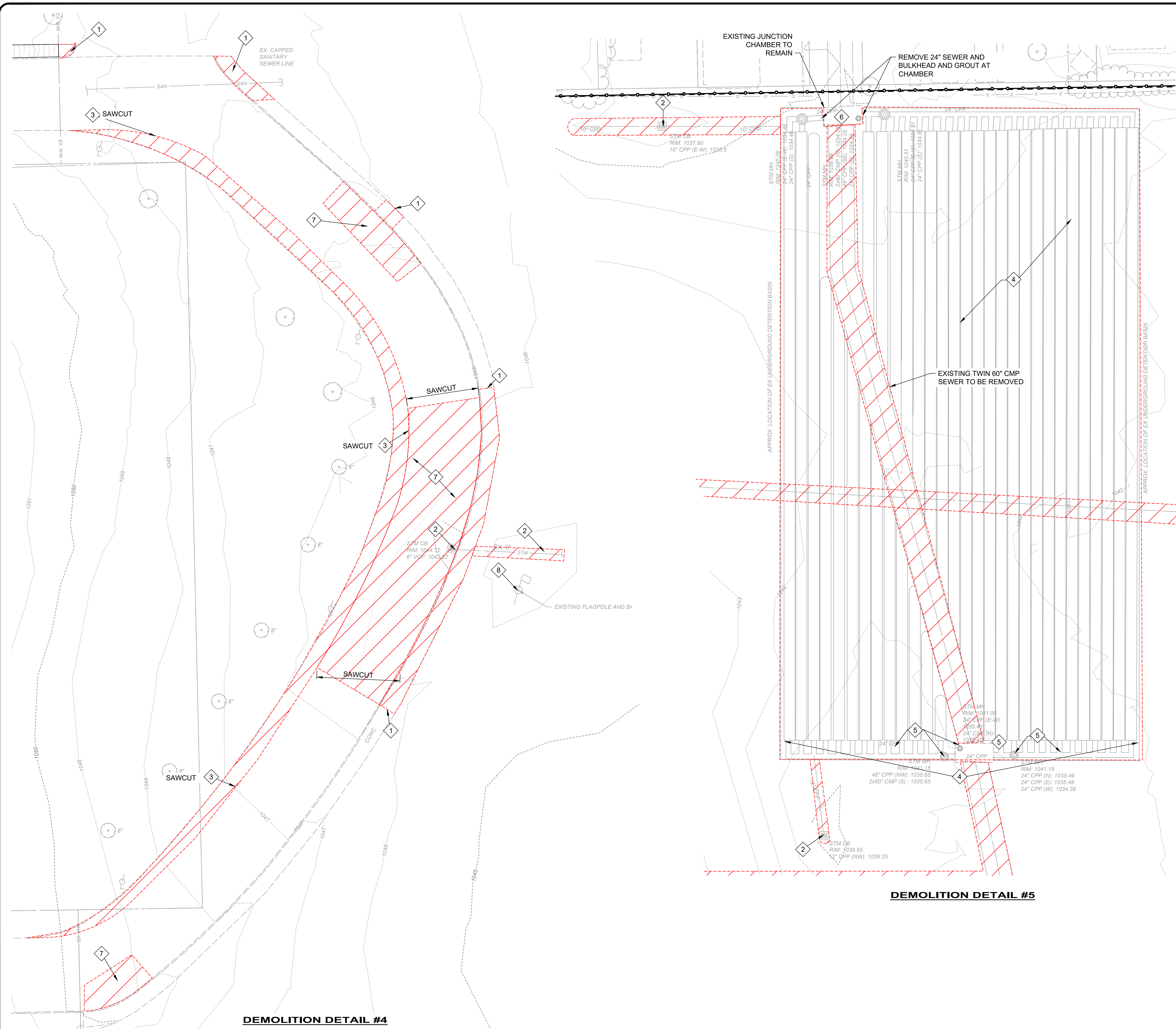
- 1 CONTRACTOR SHALL REMOVE EXISTING CONCRETE SIDEWALK.
- 2 CONTRACTOR SHALL REMOVE EXISTING CONCRETE CURBING.
- 3 CONTRACTOR SHALL MILL 2" OF ASPHALT AND REPLACE PER DETAIL.
- 4 CONTRACTOR SHALL REMOVE EXISTING ASPHALT DRIVEWAY
- 5 CONTRACTOR SHALL REMOVE EXISTING CHAIN LINK FENCE WITHIN THE PROPERTY LINES. CONTRACTOR SHALL CUT FENCE AT THE PROPERTY LINE AND COORDINATE WITH THE HOMEOWNERS FOR FINISHING OF REPLACEMENT FENCE.
- 6 CONTRACTOR SHALL REMOVE EXISTING CHAIN LINK DRIVE GATE.
- 7 CONTRACTOR SHALL REMOVE EXISTING STORM SEWER AND CATCH BASIN STRUCTURES.
- 8 CONTRACTOR SHALL REMOVE EXISTING TRENCH DRAIN ASSOCIATED WITH DRIVEWAY DEMOLITION.
- 9 CONTRACTOR SHALL SAW CUT EXISTING ASPHALT.
- 10 CONTRACTOR SHALL REMOVE EXISTING CONCRETE APRON.
- 11 CONTRACTOR SHALL REMOVE EXISTING ASPHALT DRIVE APRON FROM MEADOWBROOK AVENUE TO EXISTING RIGHT OF WAY LINE FOR REPLACEMENT.

ISSUED FOR:	REVIEW	NO	REVISION	DATE
ISSUE DATE: 10/23/2023	AS SHOWN			
SCALE: AS SHOWN	PAB/RW			
DESIGNED BY: AMV/CZ/PAB				
DRAWN BY: AMV/CZ/PAB				
CHECKED BY: MFD				

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 MAHONING COUNTY BOARDMAN, OH

DEMOLITION DETAIL PLAN (1 OF 2)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-03
SHEET	10
OF	43

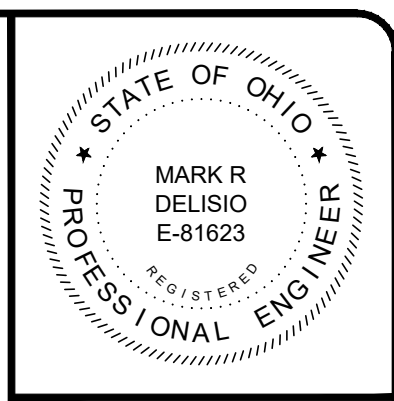


- GENERAL NOTES:**
1. THE EXISTING UNDERGROUND UTILITIES WERE OBTAINED FROM VARIOUS SOURCES INCLUDING, BUT NOT LIMITED TO, FIELD OBSERVATIONS (E.G. ABOVE GROUND FEATURES, FLAGGED OR PAINTED MARKED UNDERGROUND UTILITIES) AND RECORDS MADE AVAILABLE (E.G. ORIGINAL CONSTRUCTION PLANS, AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICE MAPS, GIS DATABASES) TO CREATE A COMPOSITE DRAWING OF EXISTING CONDITIONS. ALTHOUGH GRAPHICALLY SHOWN AS ACCURATELY AS POSSIBLE FROM THE INFORMATION MADE AVAILABLE, THERE IS NO GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED, OF THE COMPLETENESS, CORRECTNESS OR ACCURACY OF SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE CONTRACTOR SHALL PERFORM A FIELD INVESTIGATION TO CONFIRM LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND STRUCTURES IN THE WORK AREA. IN THE EVENT UTILITY LOCATIONS OR DEPTHS DIFFER IN FIELD FROM PLAN, CONTRACTOR SHALL NOTIFY THE ENGINEER.
 2. EXISTING UNDERGROUND DETENTION SYSTEM IS DEPICTED BASED ON A COMBINATION OF TOPOGRAPHICAL SURVEY LOCATIONS OF ABOVE GRADE STRUCTURE CASTINGS AND RECORD CONSTRUCTION DRAWINGS DATED 2007. LOCATION AND FOOTPRINT OF THE BURIED SYSTEM IS APPROXIMATE AND SHOWN FOR GENERAL INTENT. CONTRACTOR SHALL CONFIRM LOCATIONS AND EXTENTS REQUIRED TO REMOVE UNDERGROUND CHAMBERS, ISOLATOR ROWS, BEDDING, STONE, STRUCTURES AND SOUTHERN PRECAST CHAMBER AS INDICATED IN PLAN.

- CODED NOTES:**
- 1 CONTRACTOR SHALL REMOVE EXISTING CONCRETE SIDEWALK AND INTEGRAL CURB.
 - 2 CONTRACTOR SHALL REMOVE EXISTING STORM SEWER AND CATCH BASIN STRUCTURES.
 - 3 CONTRACTOR SHALL SAW CUT EXISTING EDGE OF PAVEMENT AND REMOVE ASPHALT PAVEMENT.
 - 4 CONTRACTOR SHALL REMOVE EXISTING UNDERGROUND STORMWATER DETENTION ARCH CHAMBERS AND SURROUNDING STONE BEDDING AND DISPOSE OF MATERIALS OFFSITE.
 - 5 CONTRACTOR SHALL REMOVE EXISTING SOUTHERN 15" X 6" CONCRETE CHAMBER AND CONNECTED ISOLATOR ROW PIPING INLINE STRUCTURES. DISPOSE OFF SITE.
 - 6 CONTRACTOR SHALL PRESERVE EXISTING NORTH 15' X 6' CHAMBER IN PLACE. REMOVE EXISTING 24" PIPING TO THE WEST AND EAST OF THE CHAMBER. GROUT 24" OPENINGS IN STRUCTURE.
 - 7 CONTRACTOR SHALL REMOVE EXISTING ASPHALT PAVEMENT FOR NEW SITE IMPROVEMENTS. REPAIR AND REPLACE ASPHALT SURROUNDING NEW IMPROVEMENTS PER DETAILS AND IMPROVEMENT PLANS.
 - 8 CONTRACTOR SHALL REMOVE EXISTING FLAGPOLE, BASE, AND FOUNDATION TO PREPARE FOR INSTALLATION OF NEW FLAGPOLE. REFER TO FLAGPOLE DETAIL AND IMPROVEMENT PLANS FOR DETAILS.



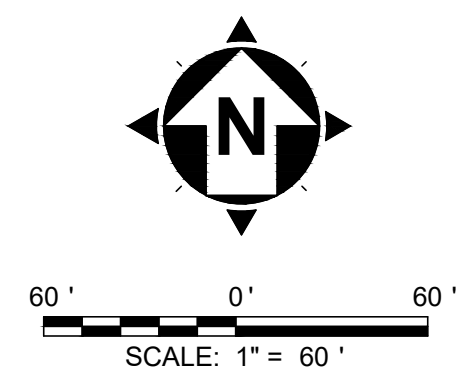
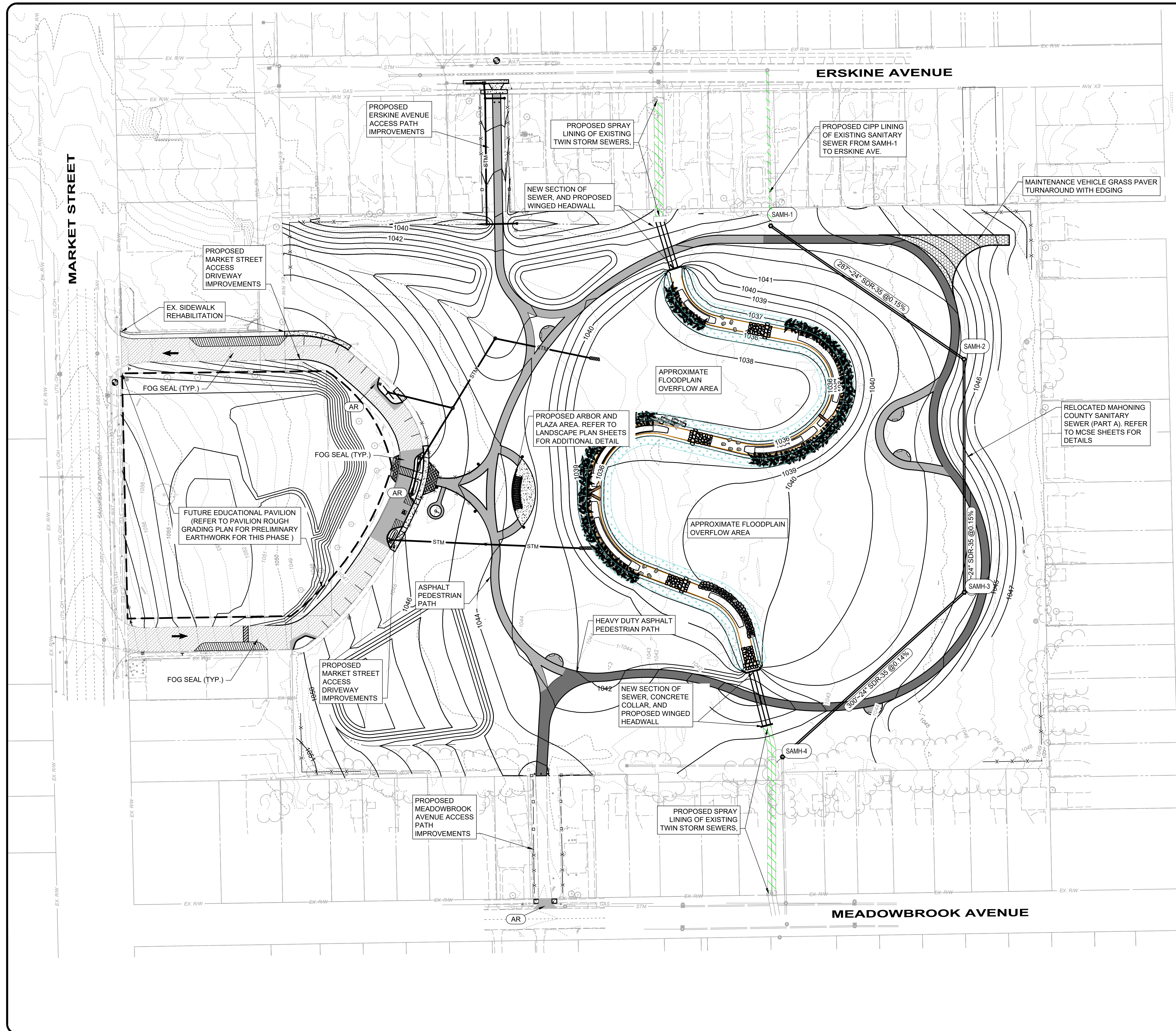
EXISTING FLAGPOLE BASE



ISSUED FOR:	REVIEW	NO	REVISION	DATE
ISSUE DATE: 10/23/2023	AS SHOWN			
SCALE:	PAB/RW			
DESIGNED BY:	AMV/CZ/PAB			
DRAWN BY:	MKD			
CHECKED BY:				

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
BOARDMAN, OH
MAHONING COUNTY
DEMOLITION DETAIL PLAN (2 OF 2)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-04
SHEET	11
OF	43

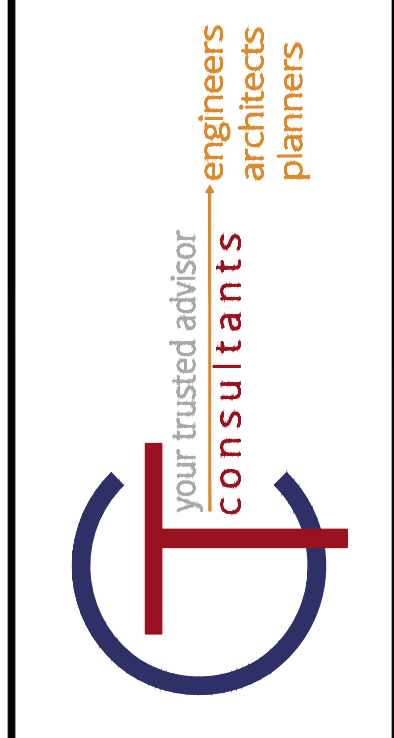


LEGEND:

- PROPOSED ASPHALT PEDESTRIAN PATH
- PROPOSED ASPHALT REPLACEMENT
- HEAVY DUTY ASPHALT PEDESTRIAN TRAIL (FOR MAINTENANCE ACCESS)
- PROPOSED BRICK PAVERS
- GRASS PAVERS MAINTENANCE TURNAROUND
- PROPOSED SIDEWALK
- ASPHALT PAVEMENT CHIP SEAL PERFORM WITHIN AREAS OF EXISTING ASPHALT PAVEMENT TO REMAIN WITHIN THE U-SHAPED DRIVE AREA TO THE EXISTING RIGHT OF WAY LINE AT MARKET STREET. FOG SEAL ENTIRETY OF PAVEMENT/NEW AND OLD WITHIN THE U-SHAPED DRIVEWAY
- PROPOSED PAVEMENT MARKINGS PER DETAILS
- PROPOSED SEWER REHABILITATION
- EXISTING SIDEWALK REHABILITATION (INCLUDES WEED TREATMENT, POWERWASHING, AND SEALING) NOTE: DUE TO SCALE - REFER TO PAVILION ROUGH GRADING PLAN FOR ENHANCED VIEW OF THE REHABILITATION AREA.

GENERAL NOTES:

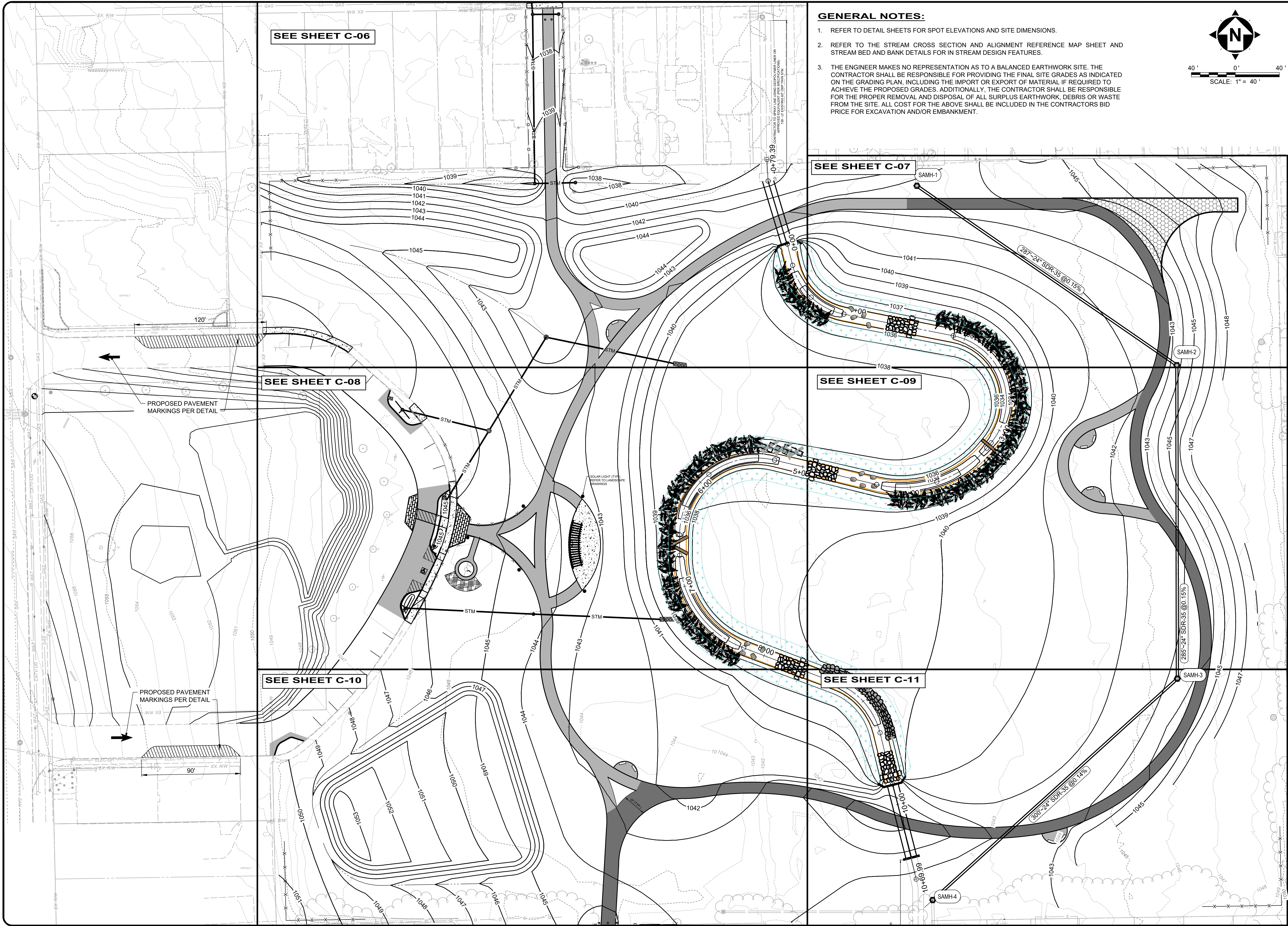
1. OVERALL IMPROVEMENT PLAN IS SHOWN TO PROVIDE A SCHEMATIC OVERVIEW OF PROJECT AND HIGHLIGHT DIFFERENT DESIGN COMPONENTS. ALL LANDSCAPING AND SITE FURNISHINGS ARE NOT DEPICTED IN THIS VIEW. REFER TO RESPECTIVE SHEETS WITHIN THE PLAN FOR ADDITIONAL DETAILS.



ISSUED FOR:	REVIEW NO.	DATE
ABC WATER & STORMWATER DISTRICT		
FOREST LAWN STORMWATER PARK BOARDMAN, OH		
MAHONING COUNTY		
DESIGNED BY: PAB/RW	CHECKED BY: MTD	
DRAWN BY: AM/CZ/PAB		
SCALE: AS SHOWN		
ISSUE DATE: 10/23/2023		

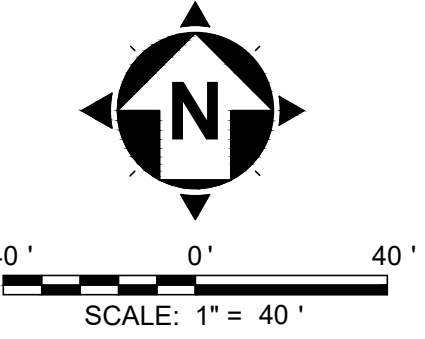
OVERALL IMPROVEMENT PLAN

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-05
SHEET	OF
12	43



GENERAL NOTES:

1. REFER TO DETAIL SHEETS FOR SPOT ELEVATIONS AND SITE DIMENSIONS.
2. REFER TO THE STREAM CROSS SECTION AND ALIGNMENT REFERENCE MAP SHEET AND STREAM BED AND BANK DETAILS FOR IN STREAM DESIGN FEATURES.
3. THE ENGINEER MAKES NO REPRESENTATION AS TO A BALANCED EARTHWORK SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE FINAL SITE GRADES AS INDICATED ON THE GRADING PLAN, INCLUDING THE IMPORT OR EXPORT OF MATERIAL IF REQUIRED TO ACHIEVE THE PROPOSED GRADES. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER REMOVAL AND DISPOSAL OF ALL SURPLUS EARTHWORK, DEBRIS OR WASTE FROM THE SITE. ALL COST FOR THE ABOVE SHALL BE INCLUDED IN THE CONTRACTORS BID PRICE FOR EXCAVATION AND/OR EMBANKMENT.

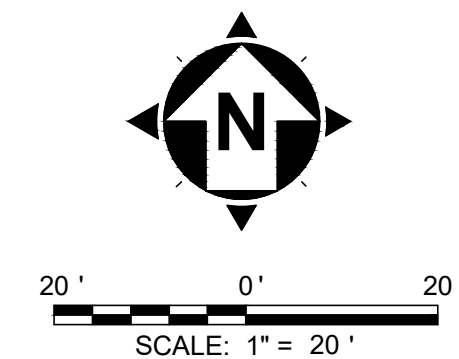


ISSUED FOR:	REVIEW	NO	REVISION	DATE
102232023	AS SHOWN			
SCALE:	PAB/RW			
DESIGNED BY:	AM/CZ/PAB			
DRAWN BY:	MFD			
CHECKED BY:				

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY

OVERALL IMPROVEMENT PLAN KEY

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-06
SHEET	13
OF	43



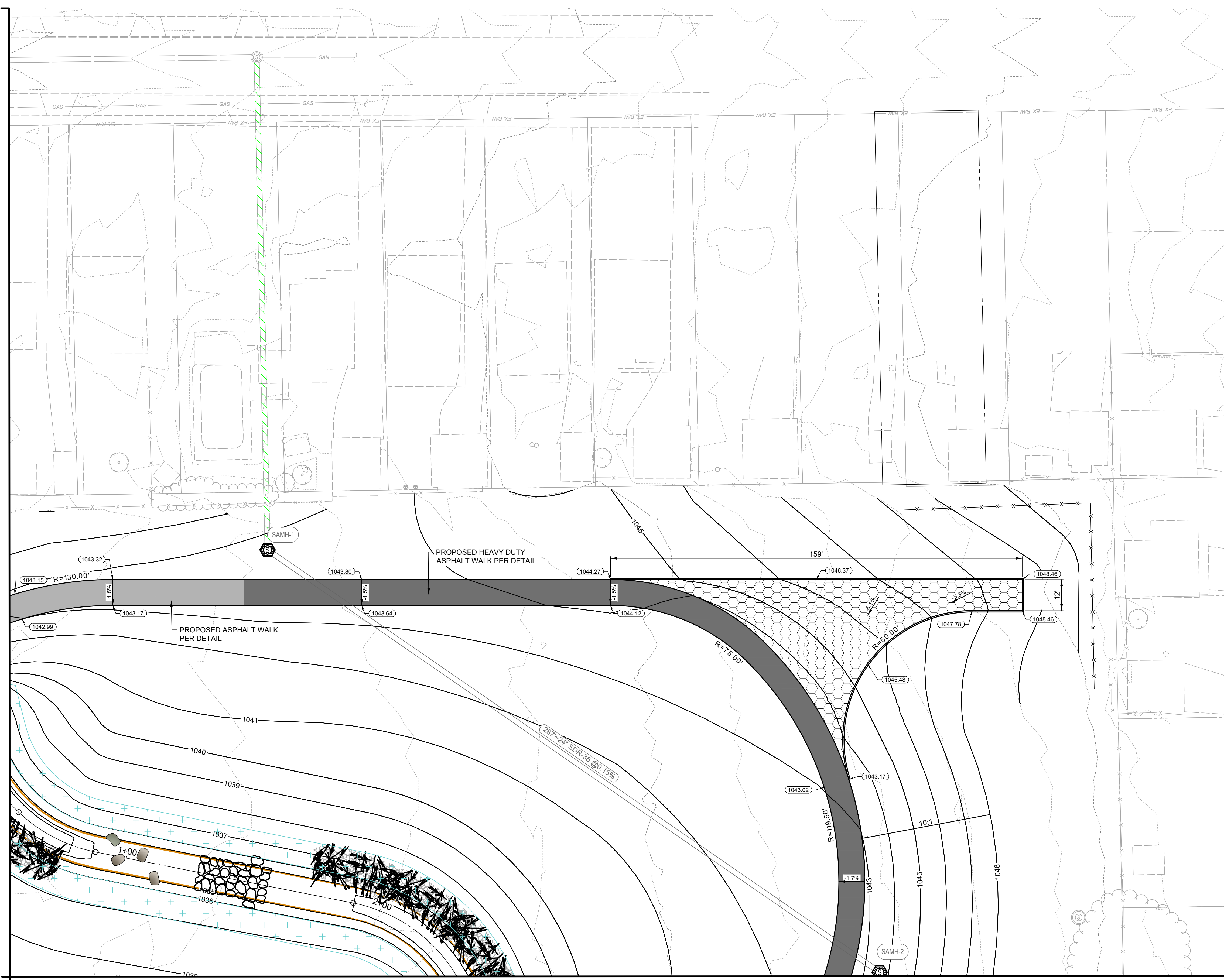
LEGEND:

- PROPOSED SPOT ELEVATION ABBREVIATIONS AS FOLLOWS:
 - TAGLESS - PROPOSED GRADE
 - SWL - SWALE
 - BC - BOTTOM OF CURB AT PAVEMENT
 - TC - TOP OF CURB
 - TC/BC - FLUSH CURB
 - RIM - RIM ELEVATION OF STRUCTURE
- EXISTING SPOT ELEVATION/MEET EXISTING GRADE
- PROPOSED SWALE
- SLOPE INDICATOR
- PROPOSED SEWER REHABILITATION
- PROPOSED BENCH. REFER TO LANDSCAPE DETAILS FOR MORE INFORMATION ON MAKE AND MODEL
- PROPOSED GRASS PAVER MAINTENANCE VEHICLE TURNAROUND
- VEGETATED RIP RAP
- NEWBURY RIFFLE
- BOULDER RIFFLE

GENERAL NOTES:

1. SPOT ELEVATIONS SHOWN ALONG THE WALKING PATH ARE BASED ON PROVIDING POSITIVE DRAINAGE TOWARDS THE STREAM AT THE CENTER OF THE SITE AND WORK WITH THE PROPOSED TOPOGRAPHY. THE FOLLOWING CONDITIONS SHALL BE MET:
 - 1.1. THE PROPOSED RUNNING SLOPE OF PATHS IN THE DIRECTION OF TRAVEL IS NOT TO EXCEED 5%.
 - 1.2. THE CROSS SLOPE OF THE WALK SHALL NOT EXCEED 2% AND MUST MAINTAIN POSITIVE DRAINAGE TOWARDS THE STREAM.

MATCHLINE - SEE SHEET C-06



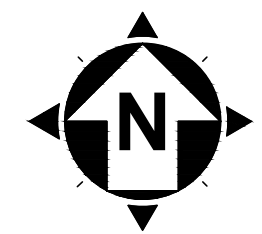
MATCHLINE - SEE SHEET C-09

NO	REVISION	DATE

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK BOARDMAN, OH
 MAHONING COUNTY

IMPROVEMENTS PLAN (2 OF 6)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-07
SHEET	15
OF	43



20' 0' 20'
SCALE: 1" = 20'



ISSUED FOR:	REVIEW	NO	REVISION	DATE
10/23/2023	AS SHOWN			
SCALE:	PAB/RW			
DESIGNED BY:	AM/CZ/PAB			
DRAWN BY:	MRD			
CHECKED BY:				

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY

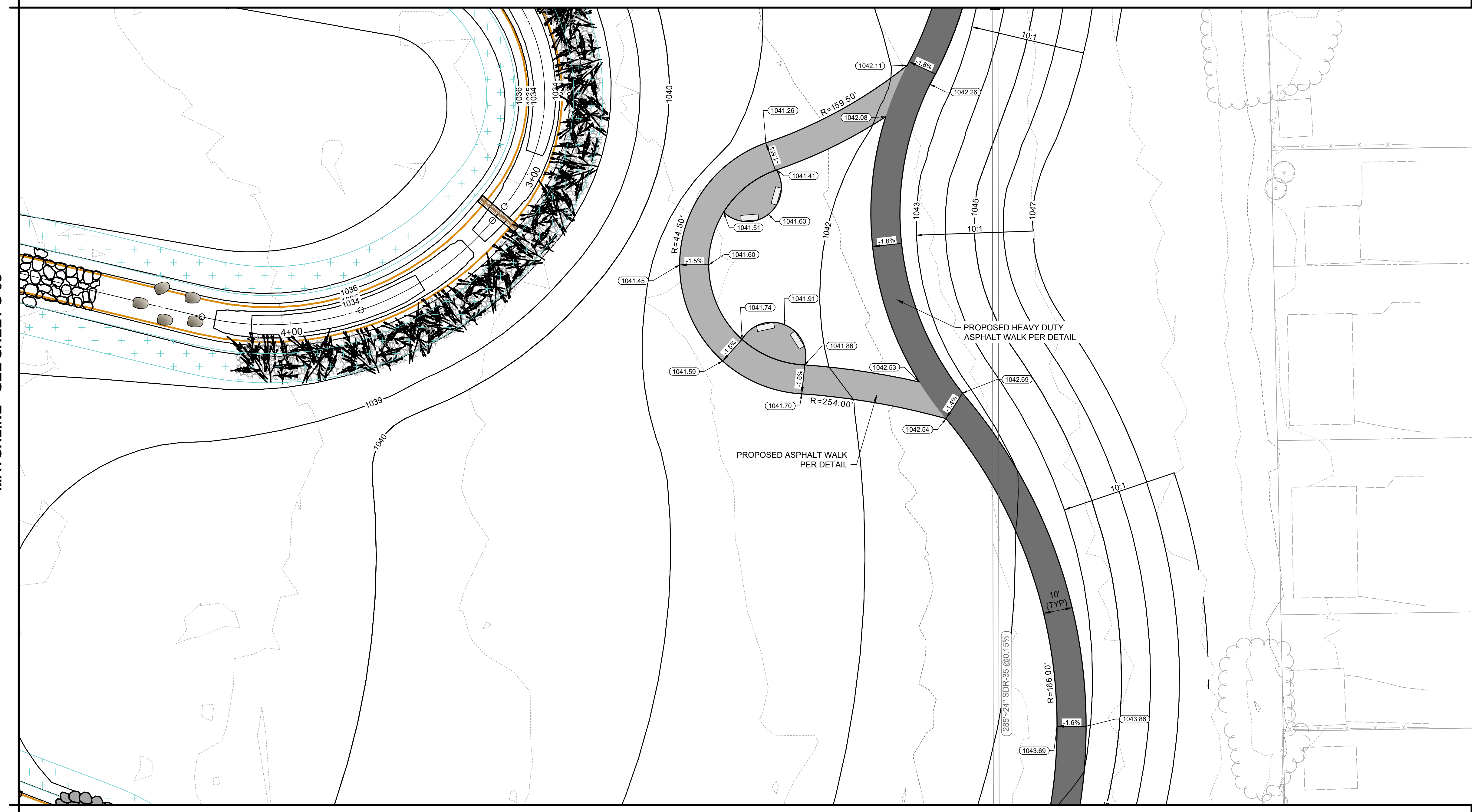
IMPROVEMENTS PLAN (4 OF 6)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-09
SHEET	17
OF	43

MATCHLINE - SEE SHEET C-07

MATCHLINE - SEE SHEET C-11

MATCHLINE - SEE SHEET C-08



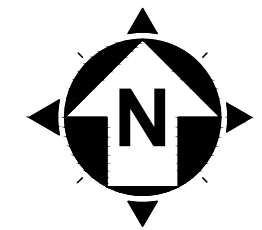
LEGEND:

- XXXXXX PROPOSED SPOT ELEVATION ABBREVIATIONS AS FOLLOWS:
 - TAGLESS - PROPOSED GRADE
 - CC - CURB CUT
 - BC - BOTTOM OF CURB AT PAVEMENT
 - TC - TOP OF CURB
 - TC/BC - FLUSH CURB
 - RIM - RIM ELEVATION OF STRUCTURE
- XXX.X±EX EXISTING SPOT ELEVATION/MEET EXISTING GRADE
- PROPOSED SWALE
- X:1/-2.9% SLOPE INDICATOR
- PROPOSED BENCH, REFER TO LANDSCAPE DETAILS FOR MORE INFORMATION ON MAKE AND MODEL
- LOG SILL STRUCTURE
- VEGETATED RIP RAP
- NEWBURY RIFFLE
- BOULDER RIFFLE

GENERAL NOTES:

1. SPOT ELEVATIONS SHOWN ALONG THE WALKING PATH ARE BASED ON PROVIDING POSITIVE DRAINAGE TOWARDS THE STREAM AT THE CENTER OF THE SITE AND WORK WITH THE PROPOSED TOPOGRAPHY. THE FOLLOWING CONDITIONS SHALL BE MET:
 - 1.1. THE PROPOSED RUNNING SLOPE OF PATHS IN THE DIRECTION OF TRAVEL IS NOT TO EXCEED 5%.
 - 1.2. THE CROSS SLOPE OF THE WALK SHALL NOT EXCEED 2% AND MUST MAINTAIN POSITIVE DRAINAGE TOWARDS THE STREAM.

MATCHLINE - SEE SHEET C-09



20' 0' 20'
SCALE: 1" = 20'



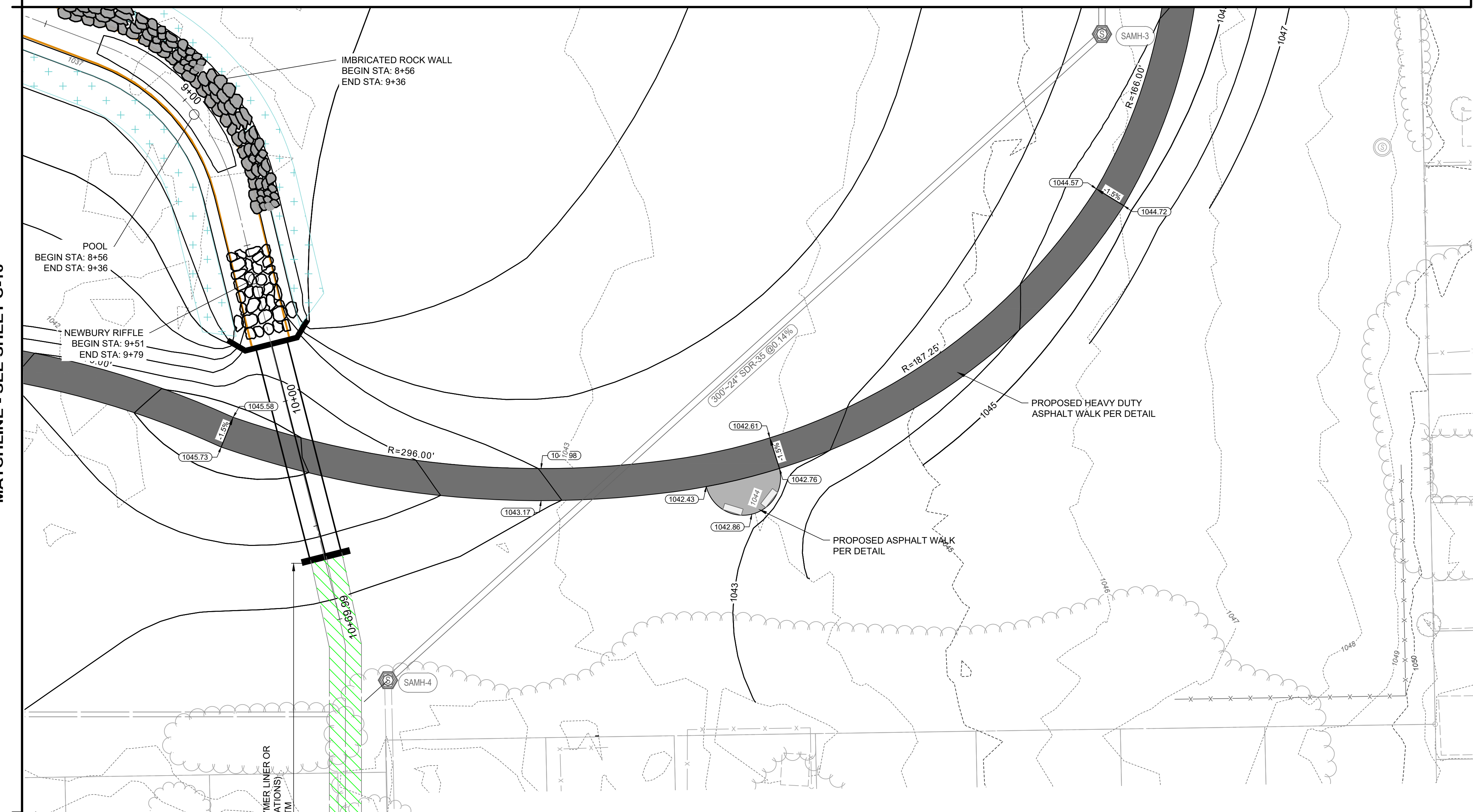
LEGEND:

- XXXXXX PROPOSED SPOT ELEVATION ABBREVIATIONS AS FOLLOWS:
 - TAGLESS - PROPOSED GRADE
 - CC - CURB CUT
 - BC - BOTTOM OF CURB AT PAVEMENT
 - TC - TOP OF CURB
 - TC/BC - FLUSH CURB
 - RIM - RIM ELEVATION OF STRUCTURE
- XXXXXEX EXISTING SPOT ELEVATION/MEET EXISTING GRADE
- PROPOSED SWALE
- X:1/-2.5% SLOPE INDICATOR
- PROPOSED SEWER REHABILITATION
- PROPOSED BENCH, REFER TO LANDSCAPE DETAILS FOR MORE INFORMATION ON MAKE AND MODEL
- NEWBURY RIFFLE
- IMBRICATED ROCK WALL

GENERAL NOTES:

1. SPOT ELEVATIONS SHOWN ALONG THE WALKING PATH ARE BASED ON PROVIDING POSITIVE DRAINAGE TOWARDS THE STREAM AT THE CENTER OF THE SITE AND WORK WITH THE PROPOSED TOPOGRAPHY. THE FOLLOWING CONDITIONS SHALL BE MET:
 - 1.1. THE PROPOSED RUNNING SLOPE OF PATHS IN THE DIRECTION OF TRAVEL IS NOT TO EXCEED 5%.
 - 1.2. THE CROSS SLOPE OF THE WALK SHALL NOT EXCEED 2% AND MUST MAINTAIN POSITIVE DRAINAGE TOWARDS THE STREAM.

MATCHLINE - SEE SHEET C-10



PROPOSED STORM SEWER REHABILITATION			
EAST		WEST	
DISTANCE (FT)	REPAIR NEEDED	DISTANCE (FT)	REPAIR NEEDED
32.6	PROTRUDING TAP-IN CONNECTION REMOVED	36.2	PROTRUDING TAP-IN CONNECTION REMOVED
67.2	PROTRUDING TAP-IN CONNECTION REMOVED	60.2	PROTRUDING TAP-IN CONNECTION REMOVED
68.1	JOINT REPAIR	160.3	PROTRUDING TAP-IN CONNECTION REMOVED
88.9	JOINT REPAIR		
147.8	PROTRUDING TAP-IN CONNECTION REMOVED		

REHABILITATION NOTES:

1. DISTANCE IS MEASURED FROM EX_STM-02 MOVING DOWNSTREAM.
2. EAST AND WEST PIPE DIRECTIONS ARE RELATIVE TO NORTH ON PLAN
3. CONTRACTOR SHALL LOCATE AND CUT BACK PROTRUDING SEGMENT OF CONNECTION TO BE FLUSH WITH PROPOSED SPRAY LINED WALL OF THE MAIN SEWER.

EX_STM-02
JUN 11 11:00 AM HAMBER
RIM: 1045.12
BOT: 1037.32
2x 60" CMP

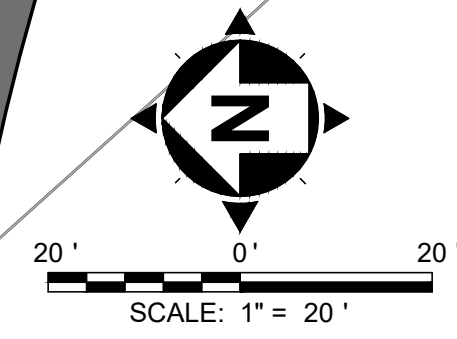
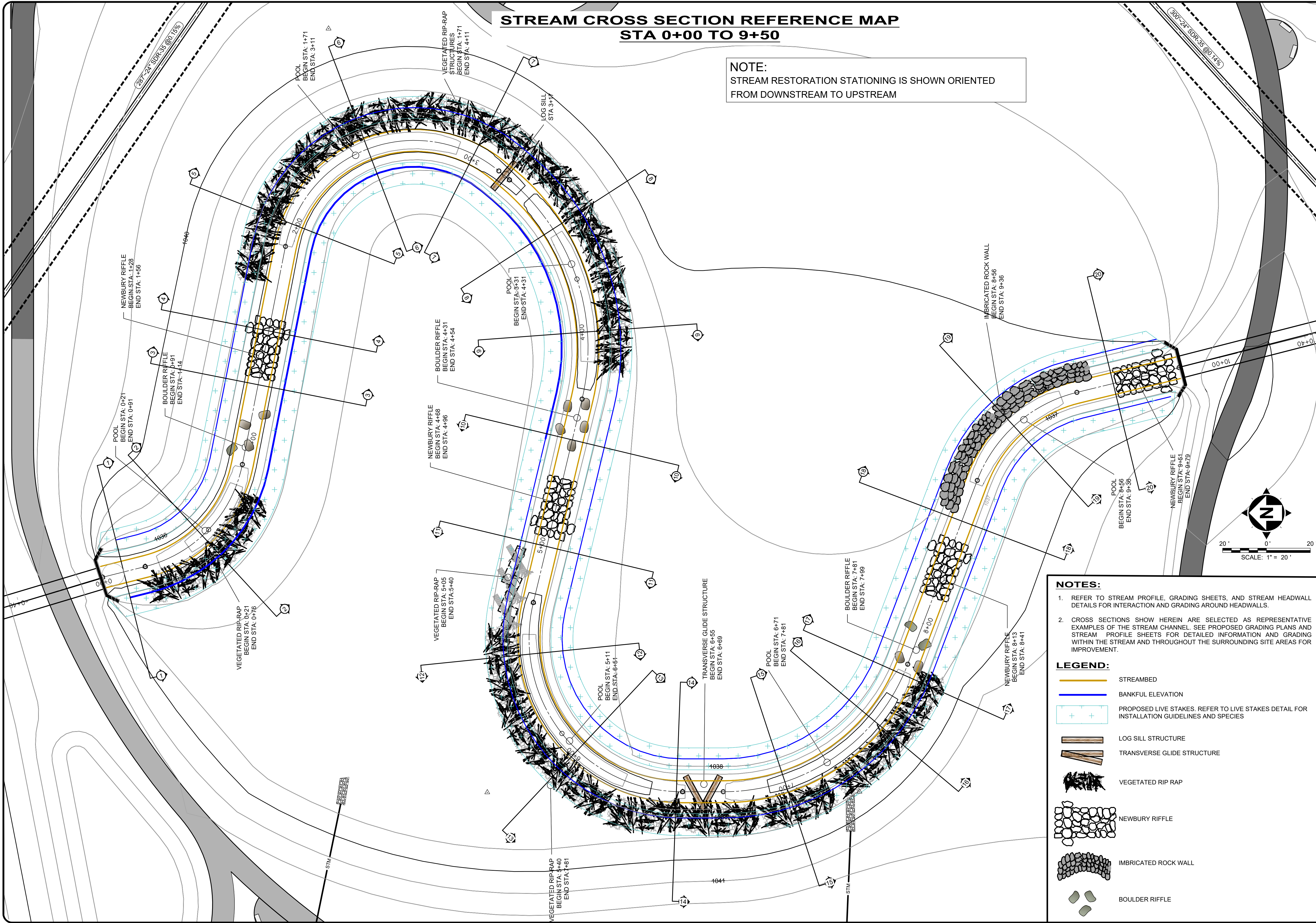
ISSUED FOR:	REVIEW	NO	DATE
	10/23/2023		
ISSUE DATE:	AS SHOWN		
SCALE:	PAB/RW		
DESIGNED BY:	AM/CZ/PAB		
DRAWN BY:	MFD		
CHECKED BY:			

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY
IMPROVEMENTS PLAN (6 OF 6)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-11
SHEET	OF
19	43

STREAM CROSS SECTION REFERENCE MAP STA 0+00 TO 9+50

NOTE:
STREAM RESTORATION STATIONING IS SHOWN ORIENTED FROM DOWNSTREAM TO UPSTREAM



NOTES:

- REFER TO STREAM PROFILE, GRADING SHEETS, AND STREAM HEADWALL DETAILS FOR INTERACTION AND GRADING AROUND HEADWALLS.
- CROSS SECTIONS SHOW HEREIN ARE SELECTED AS REPRESENTATIVE EXAMPLES OF THE STREAM CHANNEL. SEE PROPOSED GRADING PLANS AND STREAM PROFILE SHEETS FOR DETAILED INFORMATION AND GRADING WITHIN THE STREAM AND THROUGHOUT THE SURROUNDING SITE AREAS FOR IMPROVEMENT.

LEGEND:

- STREAMBED
- BANKFUL ELEVATION
- PROPOSED LIVE STAKES. REFER TO LIVE STAKES DETAIL FOR INSTALLATION GUIDELINES AND SPECIES
- LOG SILL STRUCTURE
- TRANSVERSE GLIDE STRUCTURE
- VEGETATED RIP RAP
- NEWBURY RIFFLE
- IMBRICATED ROCK WALL
- BOULDER RIFFLE

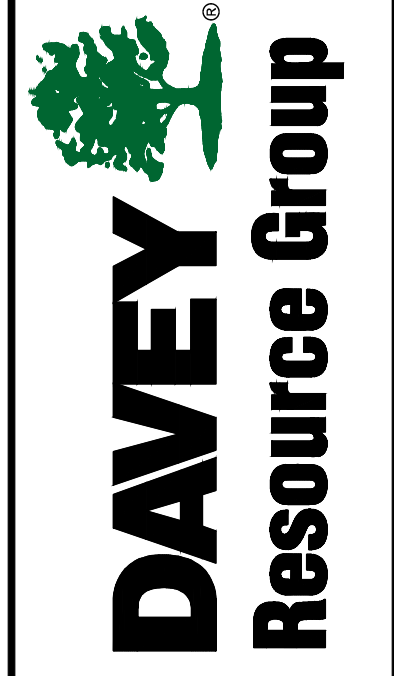


ISSUED FOR:	REVIEW	NO	REVISION	DATE
10/23/2023	AS SHOWN			
SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	
	PAB/RW	AM/CZ/PAB	M/RD	

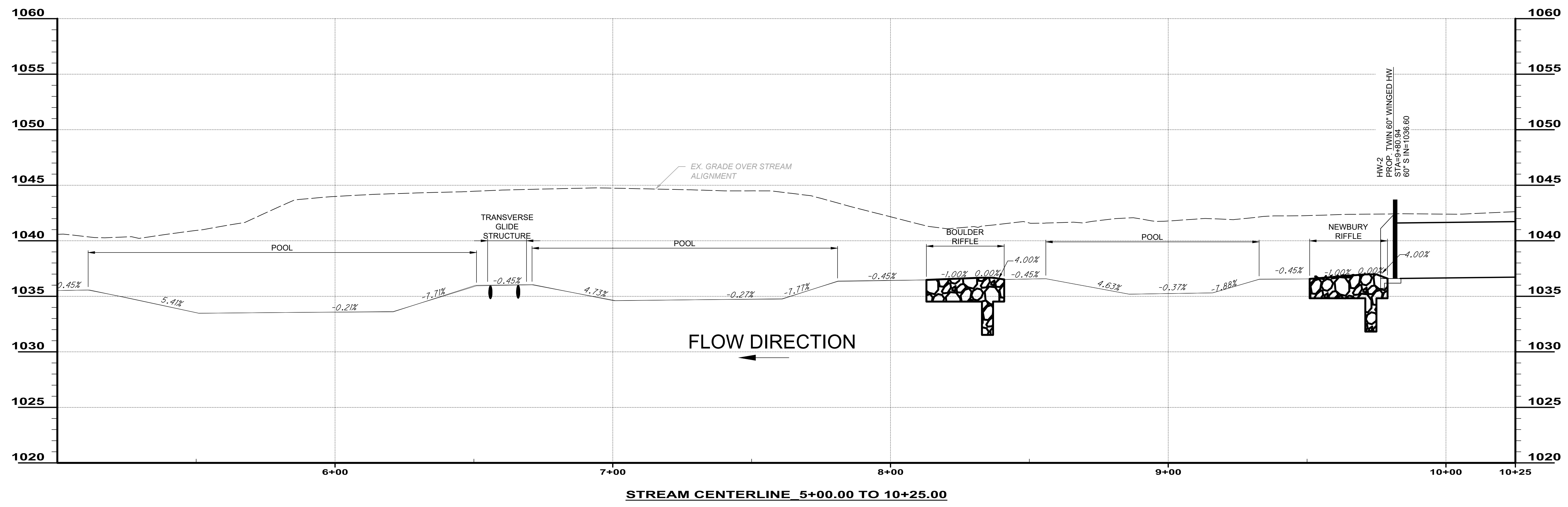
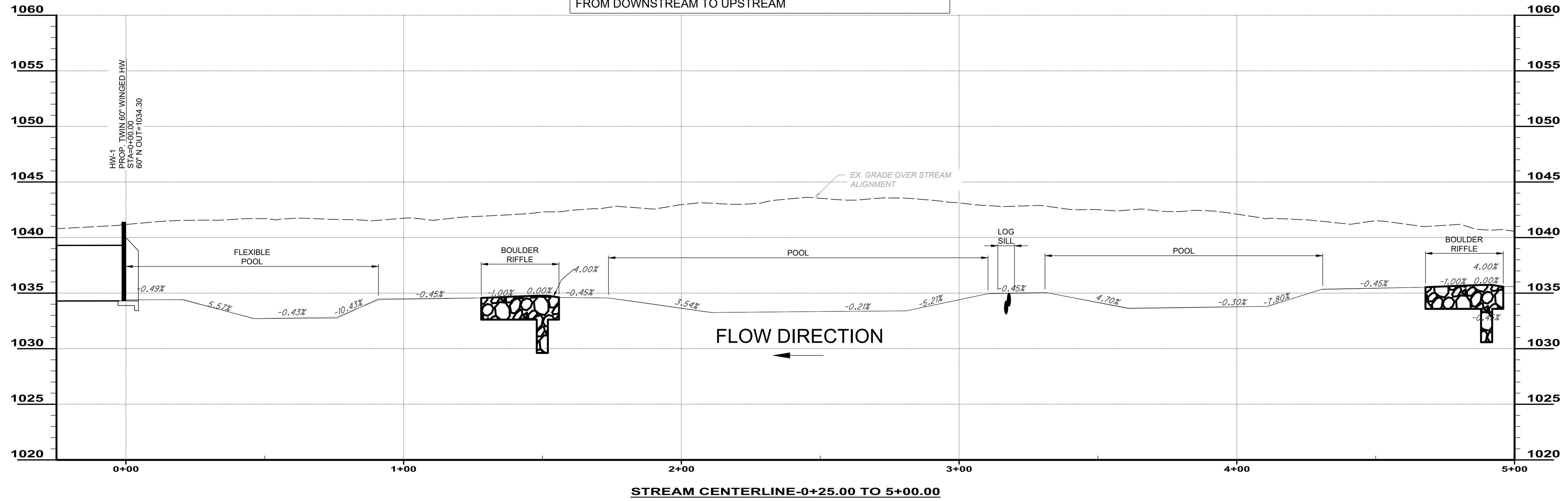
ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 MAHONING COUNTY BOARDMAN, OH

PROJECT NO. 231566
 DISCIPLINE **CIVIL**
 SHEET NAME **C-12**
 SHEET **20** OF **43**

STREAM CROSS SECTION & ALIGNMENT REFERENCE MAP



NOTE:
 STREAM RESTORATION STATIONING IS SHOWN ORIENTED
 FROM DOWNSTREAM TO UPSTREAM



NO.	REVISION	DATE

ISSUED FOR:	REVIEW	NO.
ABC WATER & STORMWATER DISTRICT		
FOREST LAWN STORMWATER PARK		
MAHONING COUNTY BOARDMAN, OH		

ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
10/23/2023	AS SHOWN	PAB/RW	AM/CZ/PAB	MRD

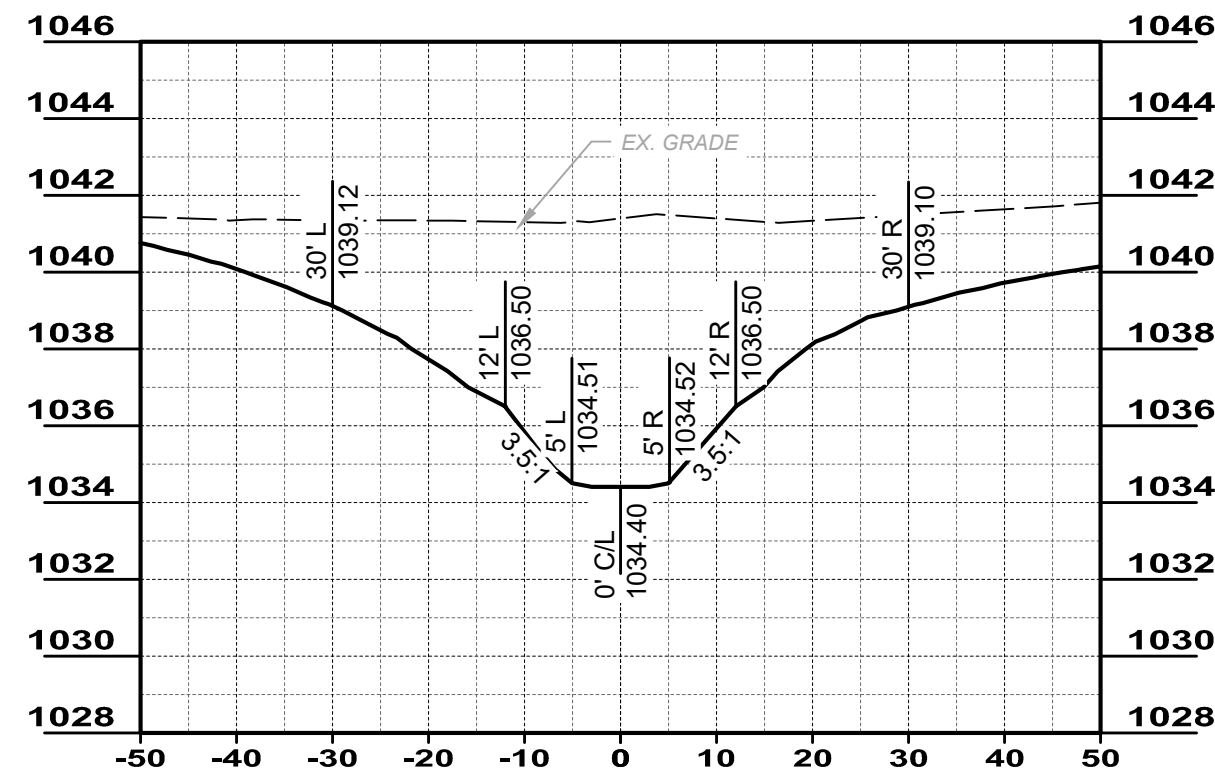
ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
MAHONING COUNTY BOARDMAN, OH

STREAM CENTERLINE PROFILE

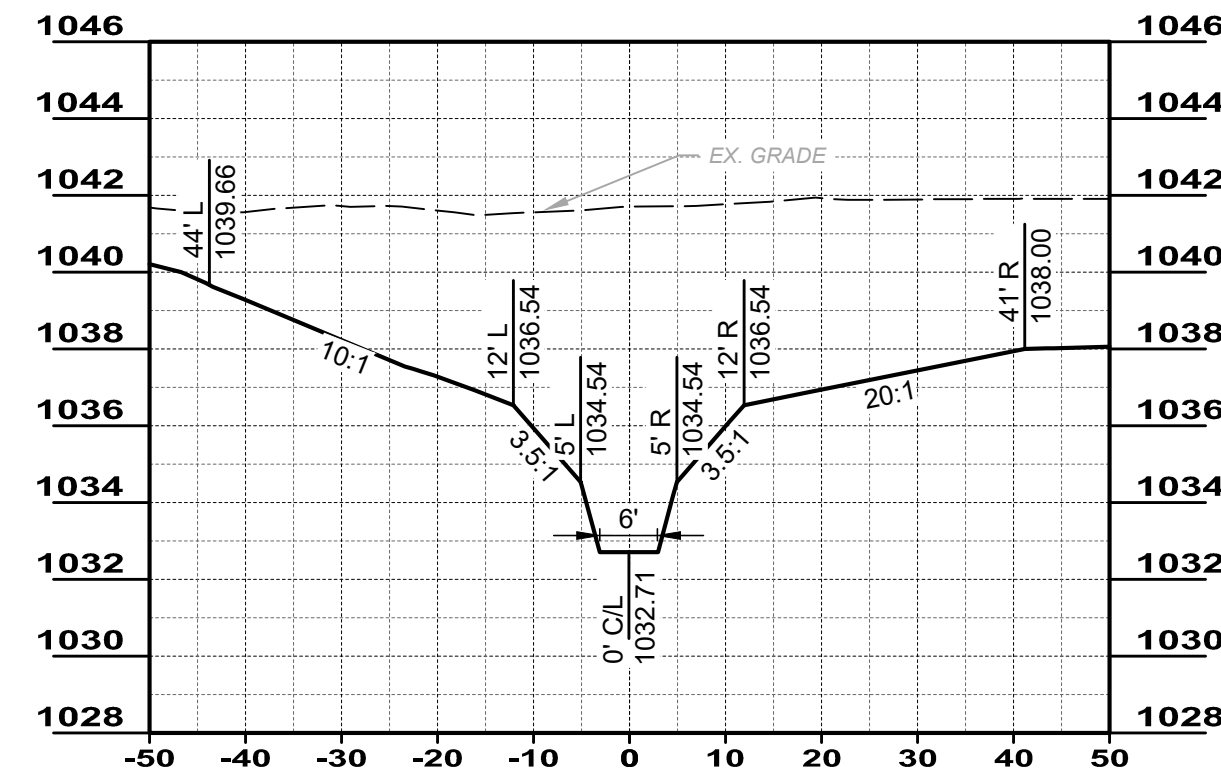
PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-13
SHEET	21
OF	43



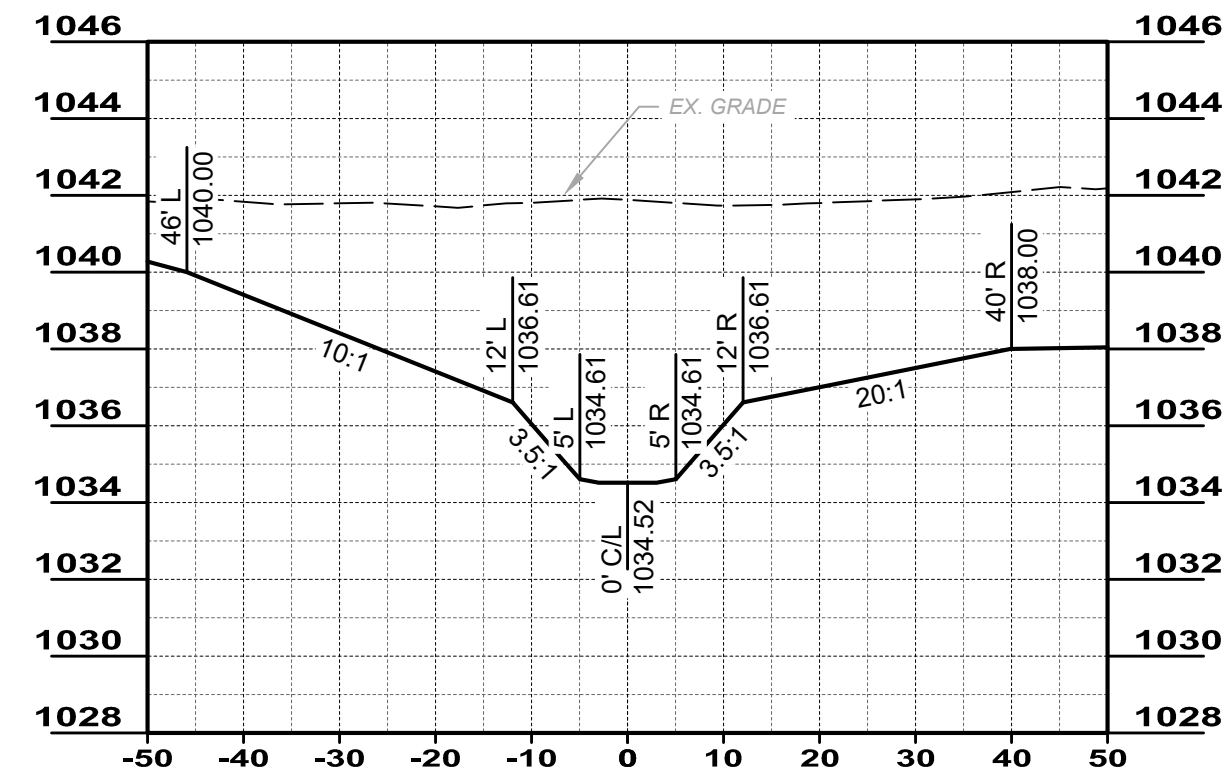
NOTE:
 STREAM RESTORATION STATIONING IS SHOWN ORIENTED FROM DOWNSTREAM TO UPSTREAM. CROSS SECTIONS ARE TO BE VIEWED LOOKING UPSTREAM



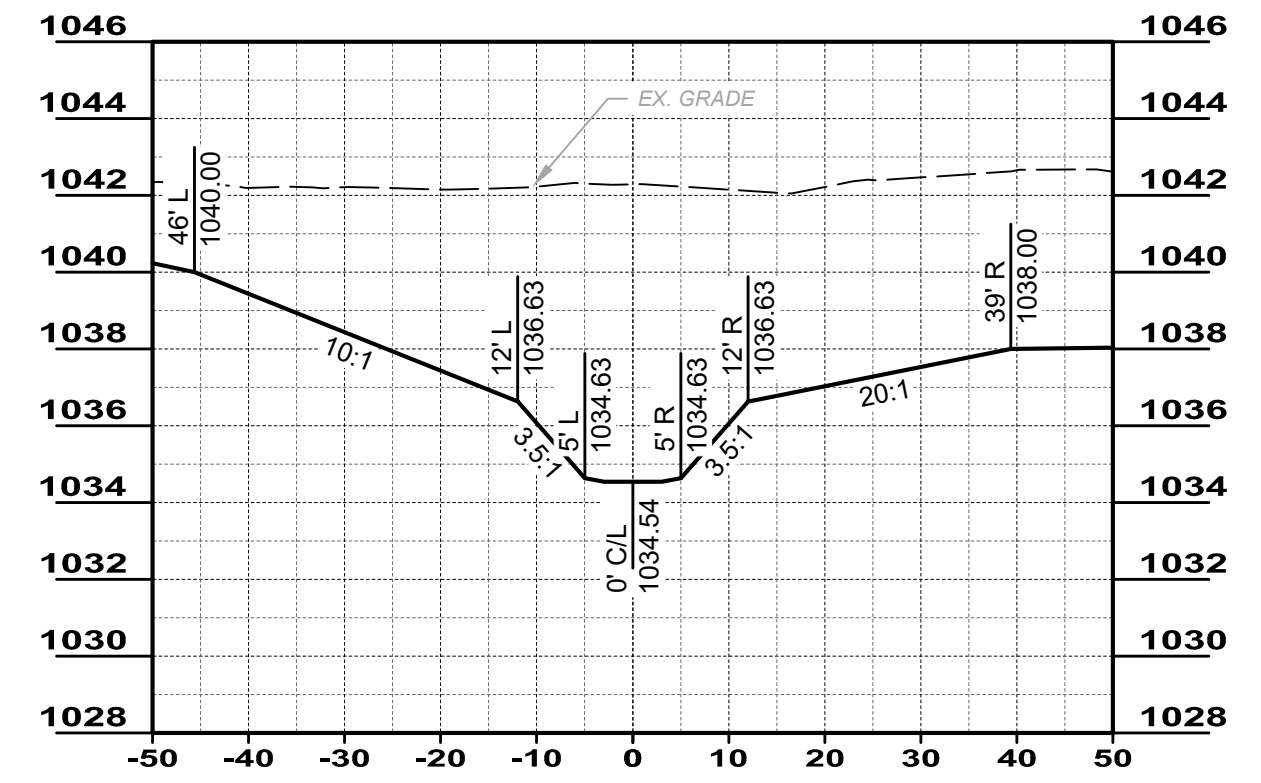
SECTION 1 : 0+10.00



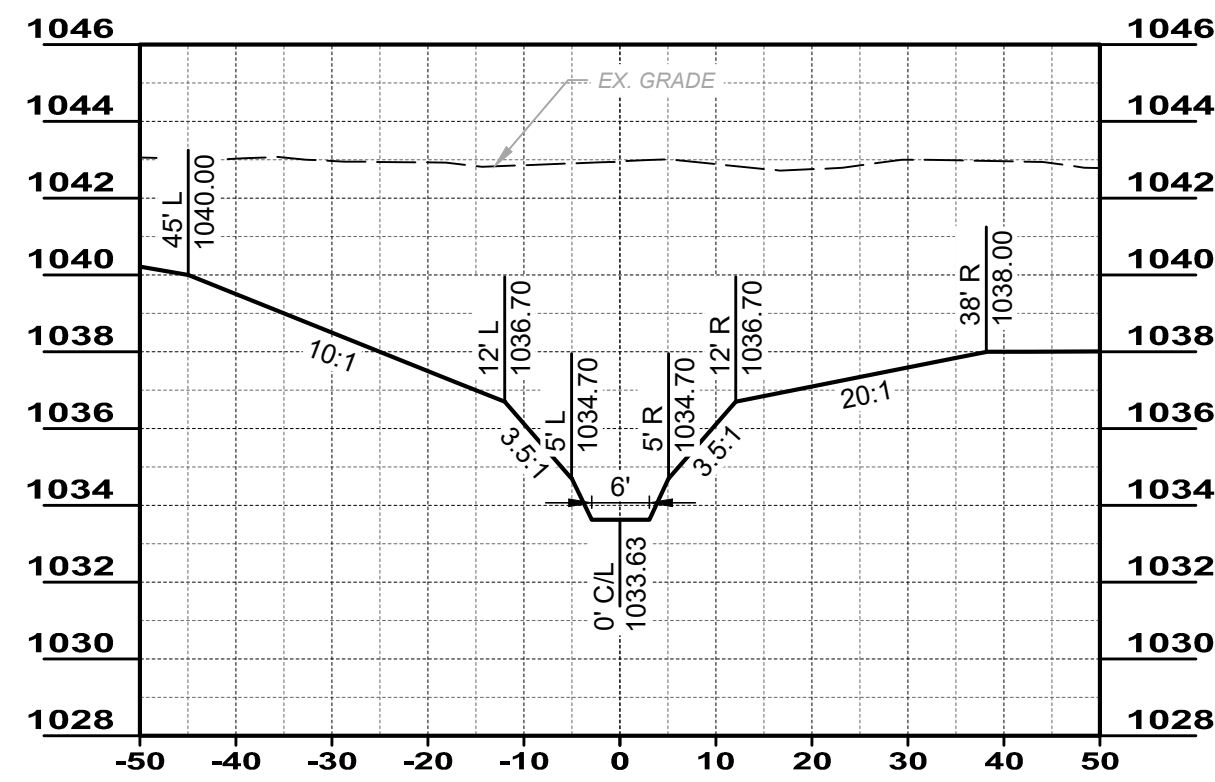
SECTION 2 : 0+50.00



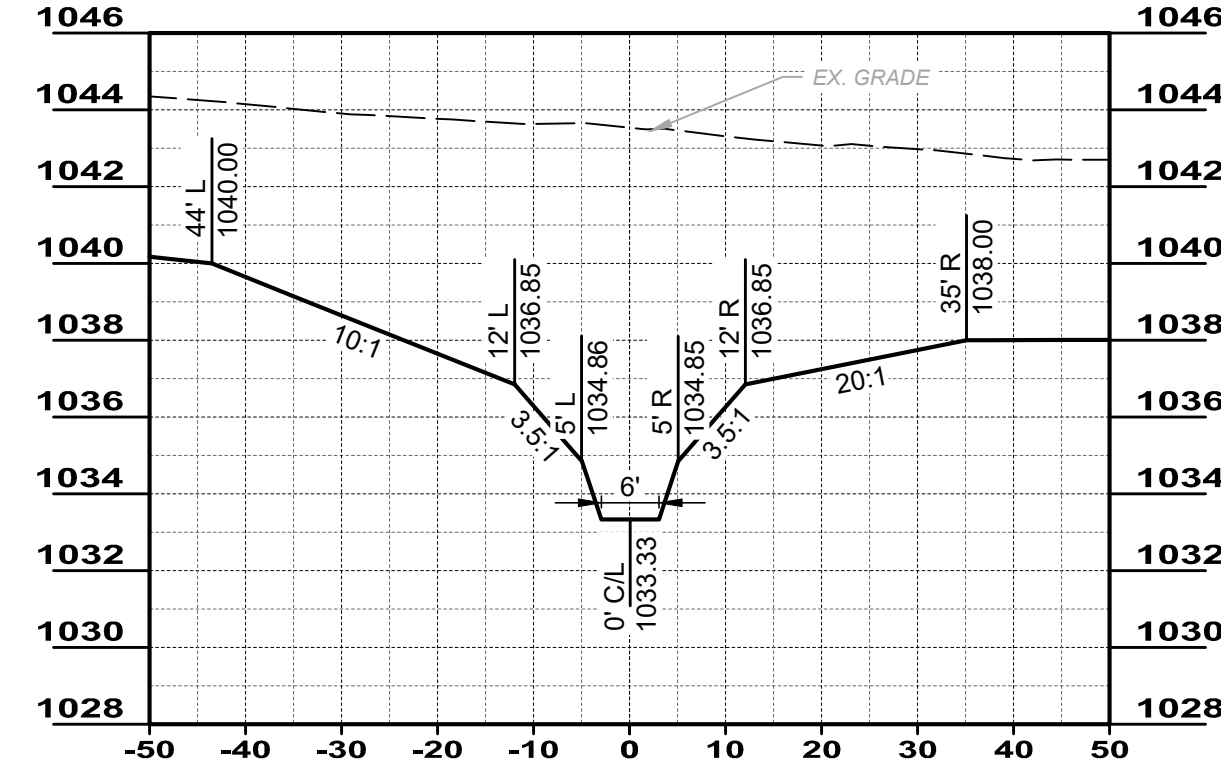
SECTION 3 : 1+25.00



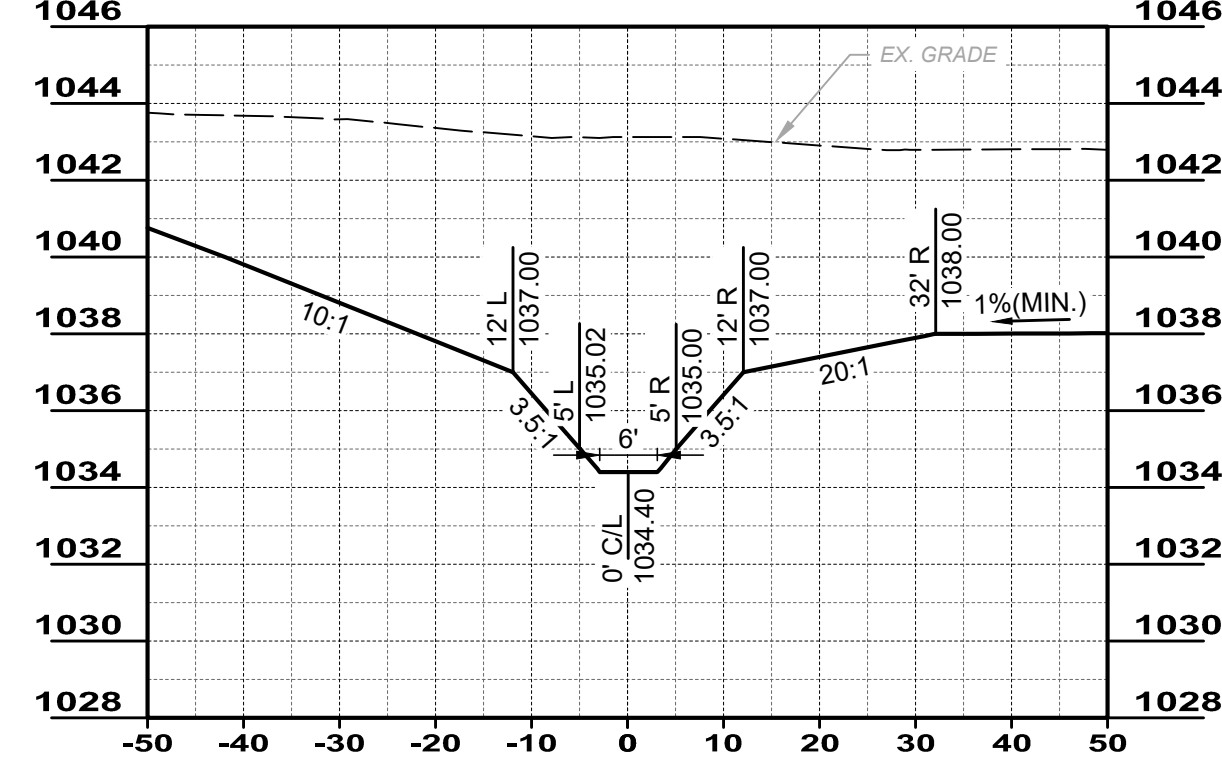
SECTION 4 : 1+50.00



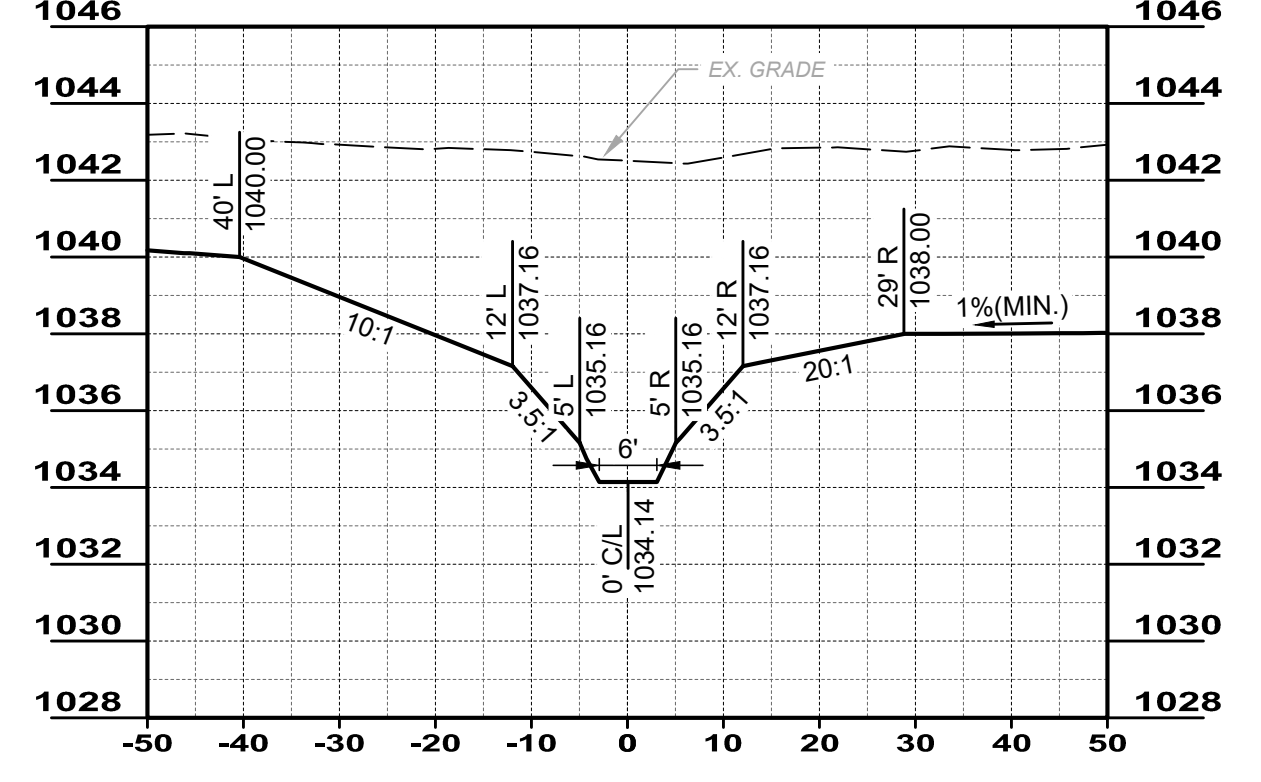
SECTION 5 : 2+00.00



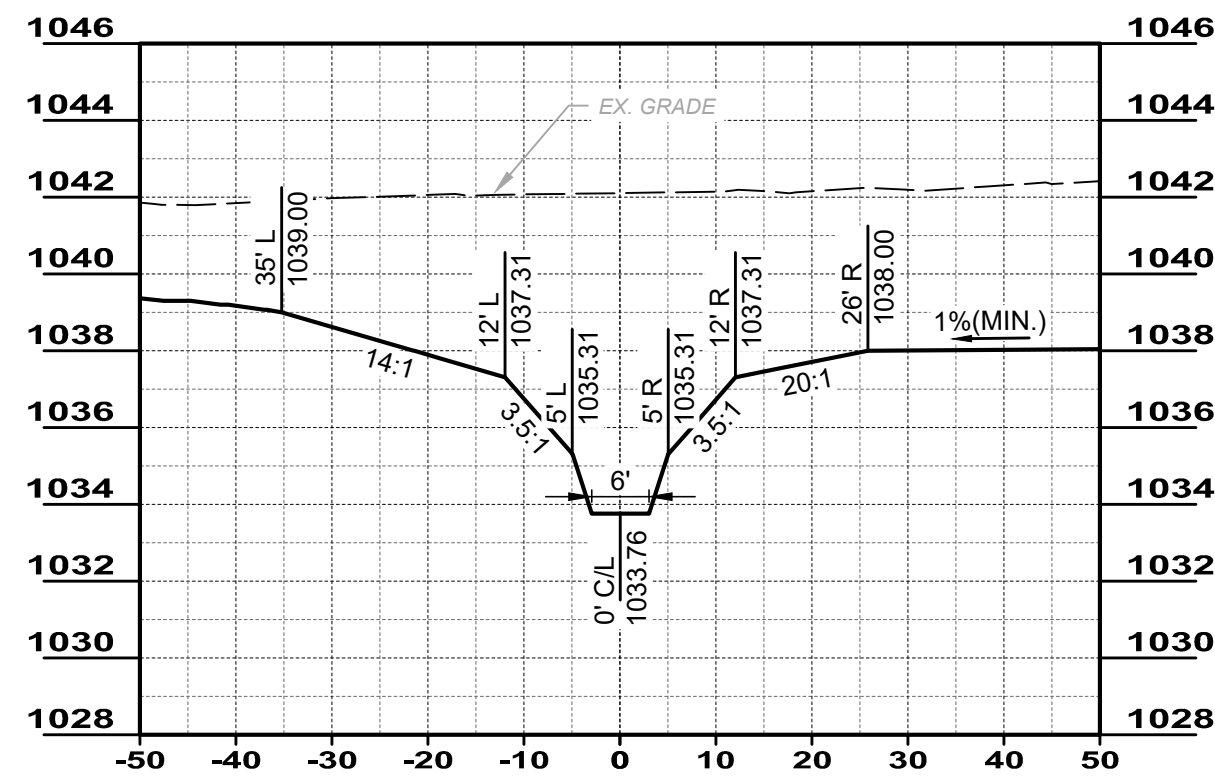
SECTION 6 : 2+50.00



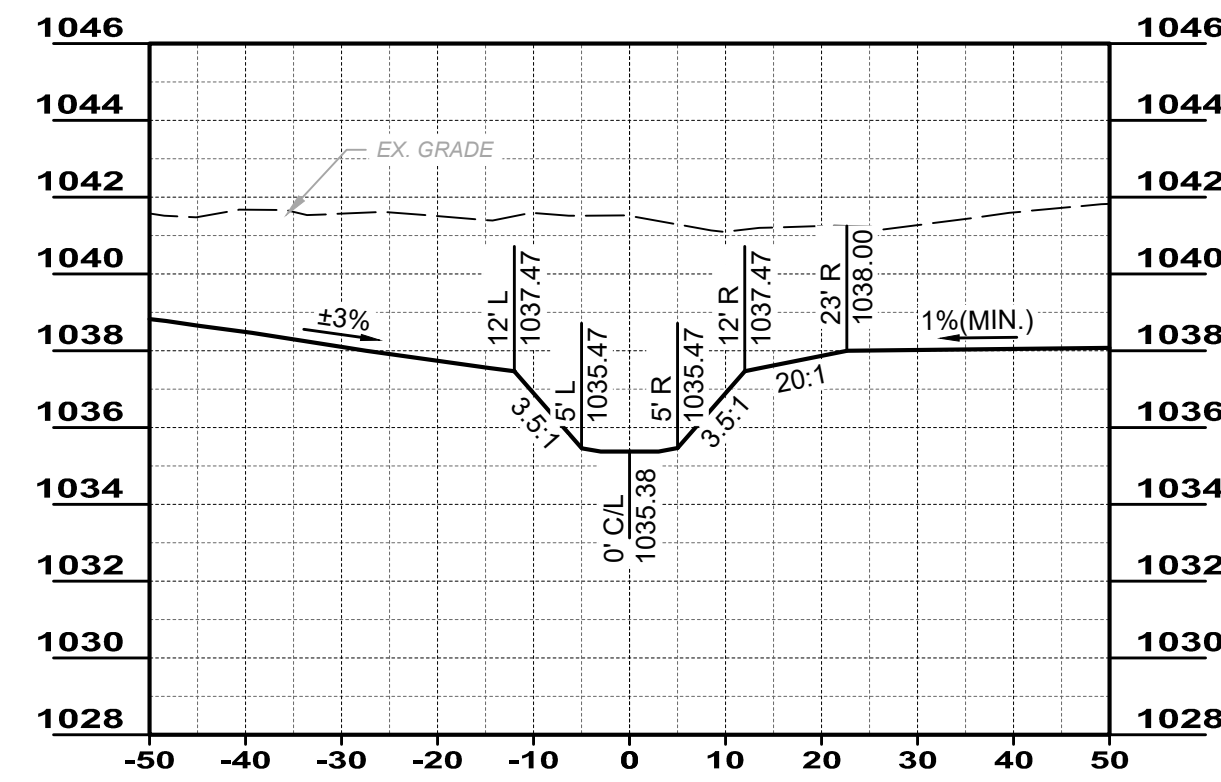
SECTION 7 : 3+00.00



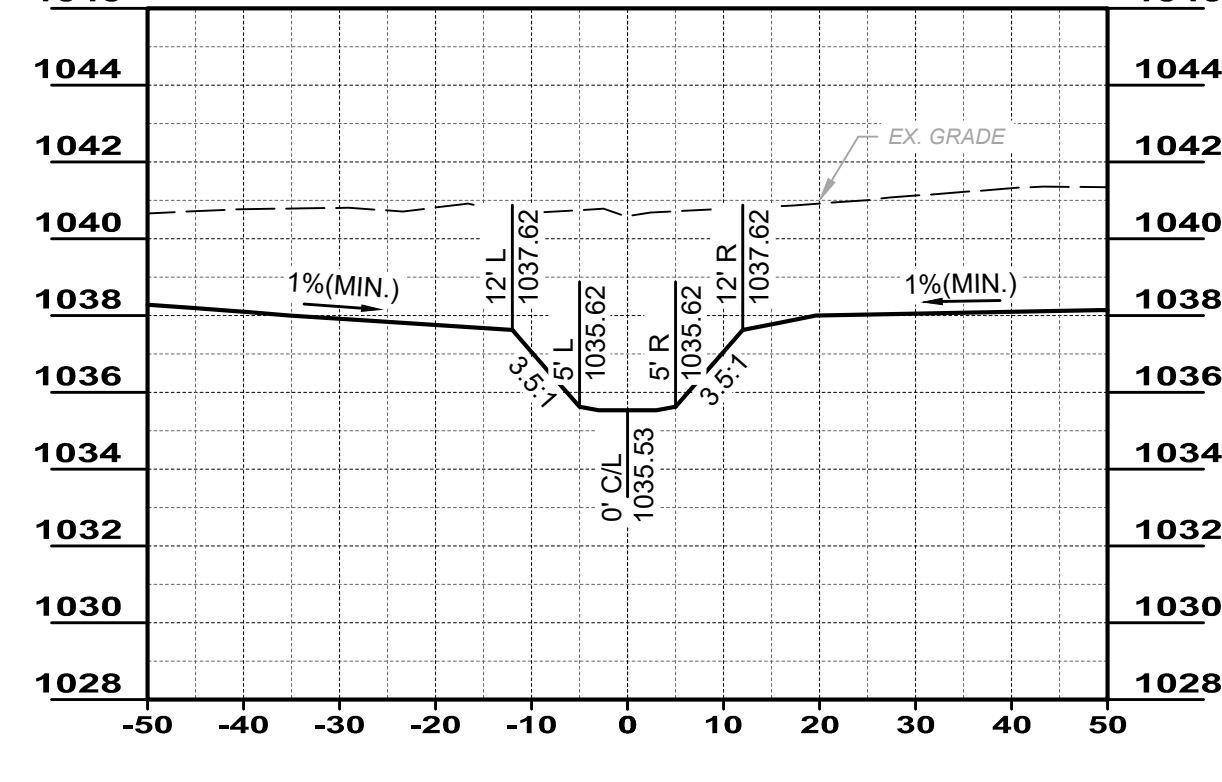
SECTION 8 : 3+50.00



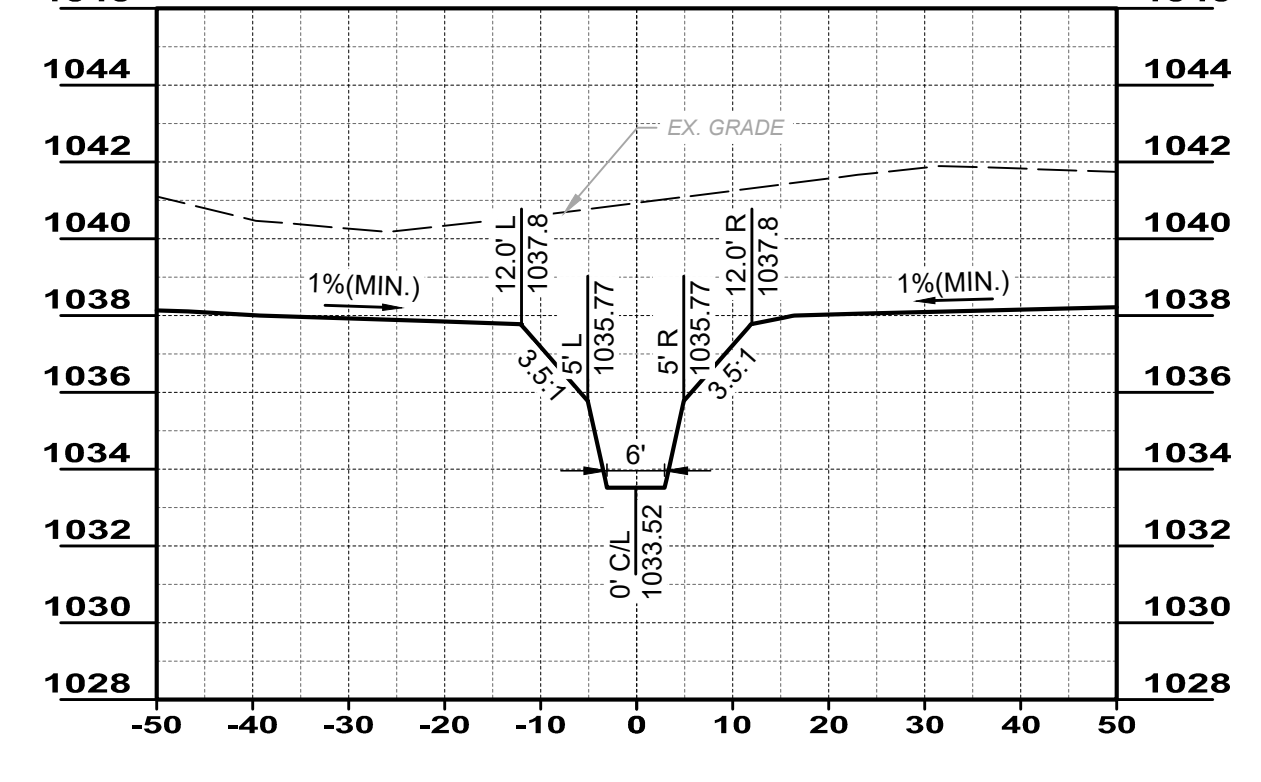
SECTION 9 : 4+00.00



SECTION 10 : 4+50.00



SECTION 11 : 5+00.00



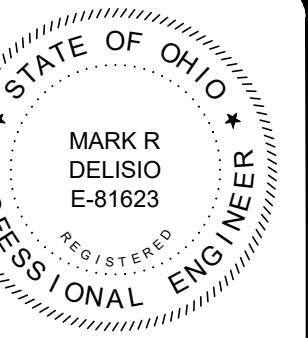
SECTION 12 : 5+50.00

**STREAM CROSS SECTIONS
 STA 0+00 TO 5+50**

SCALE: 1" = 20' (H) / 1" = 5' (V)

NOTES:

- REFER TO PROPOSED IMPROVEMENT PLANS, STREAM PROFILE, AND HEADWALL DETAILS FOR INTERACTION BETWEEN PROPOSED HEADWALLS AND THE PROPOSED STREAM SLOPES.
- REFER TO THE PROPOSED GRADING PLAN FOR DETAILED GRADING OUTSIDE OF THE STREAM CHANNEL
- CROSS SECTIONS SHOW HEREIN ARE SELECTED AS REPRESENTATIVE EXAMPLES OF THE STREAM CHANNEL.



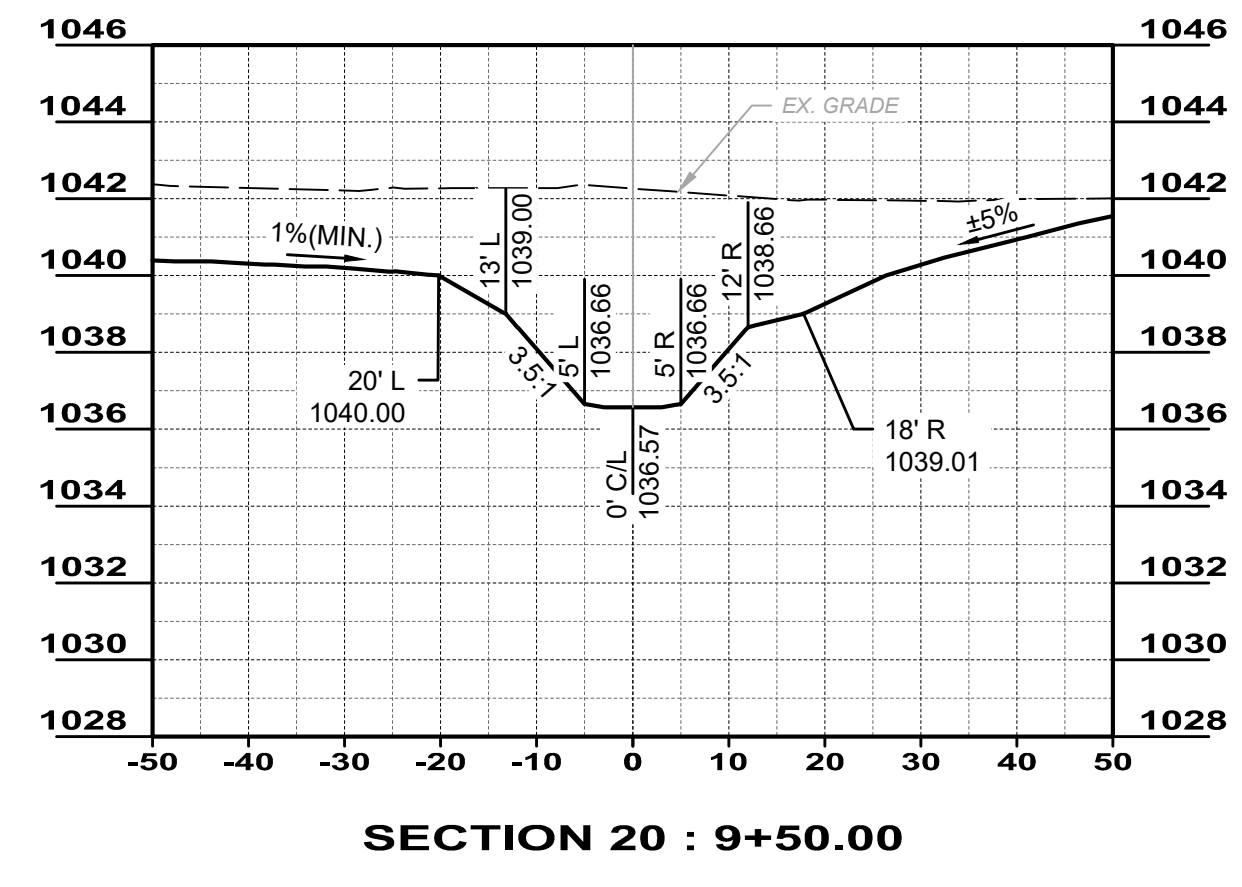
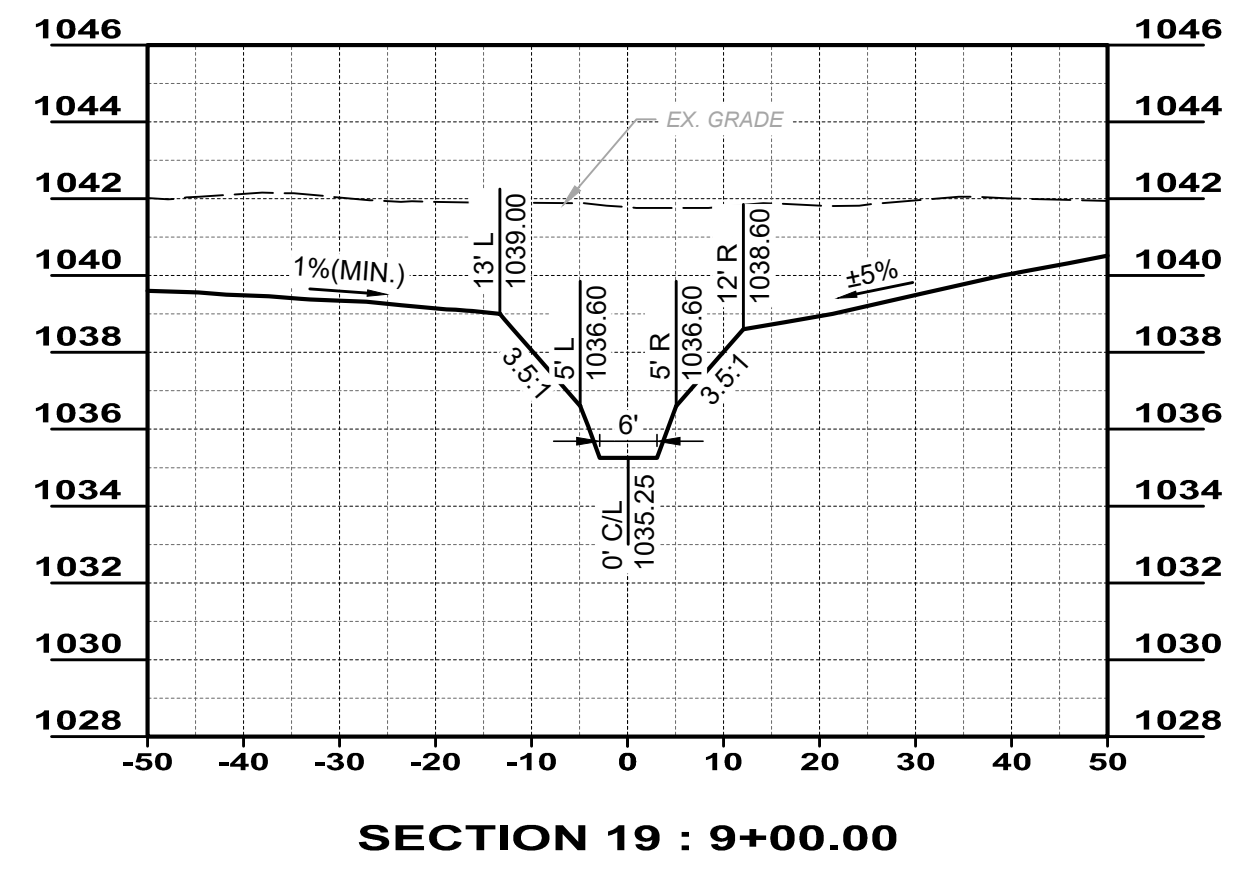
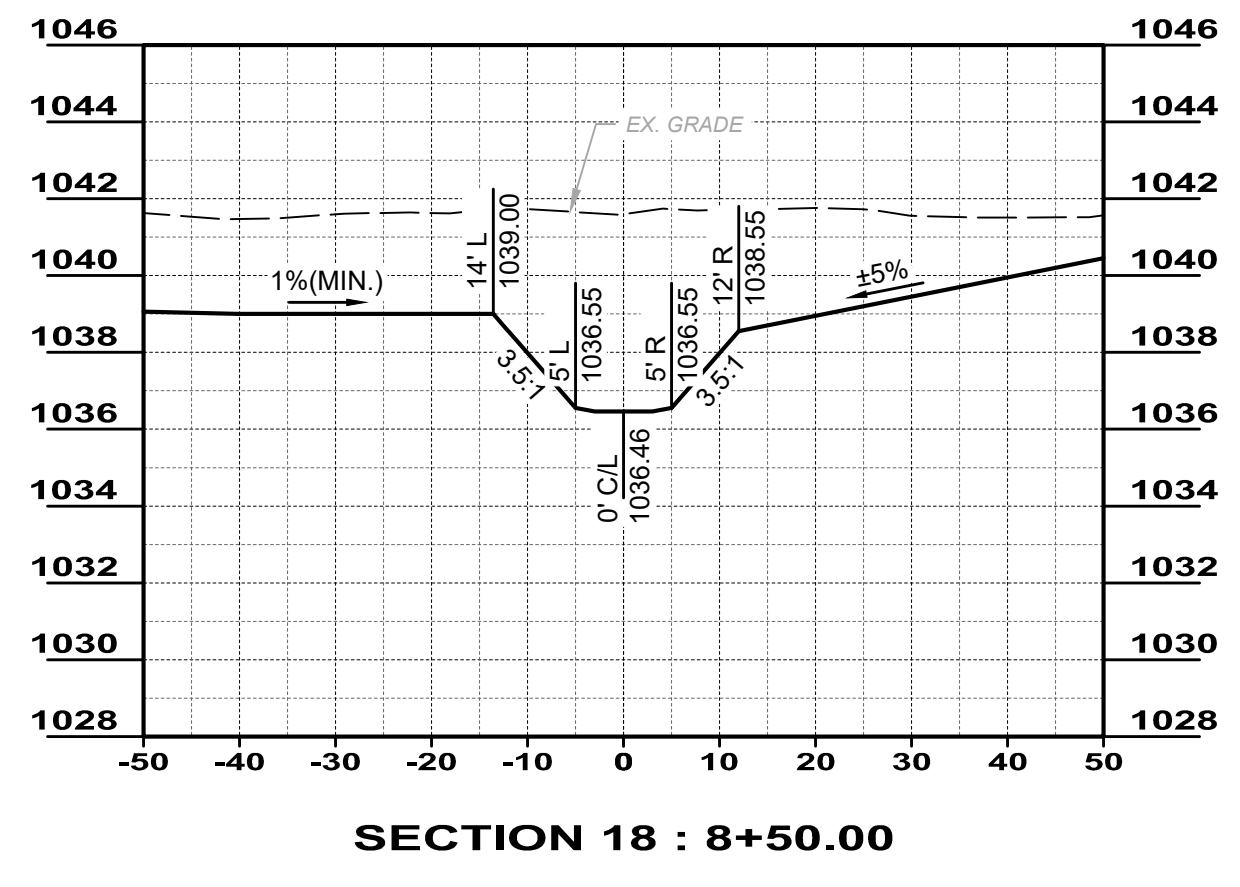
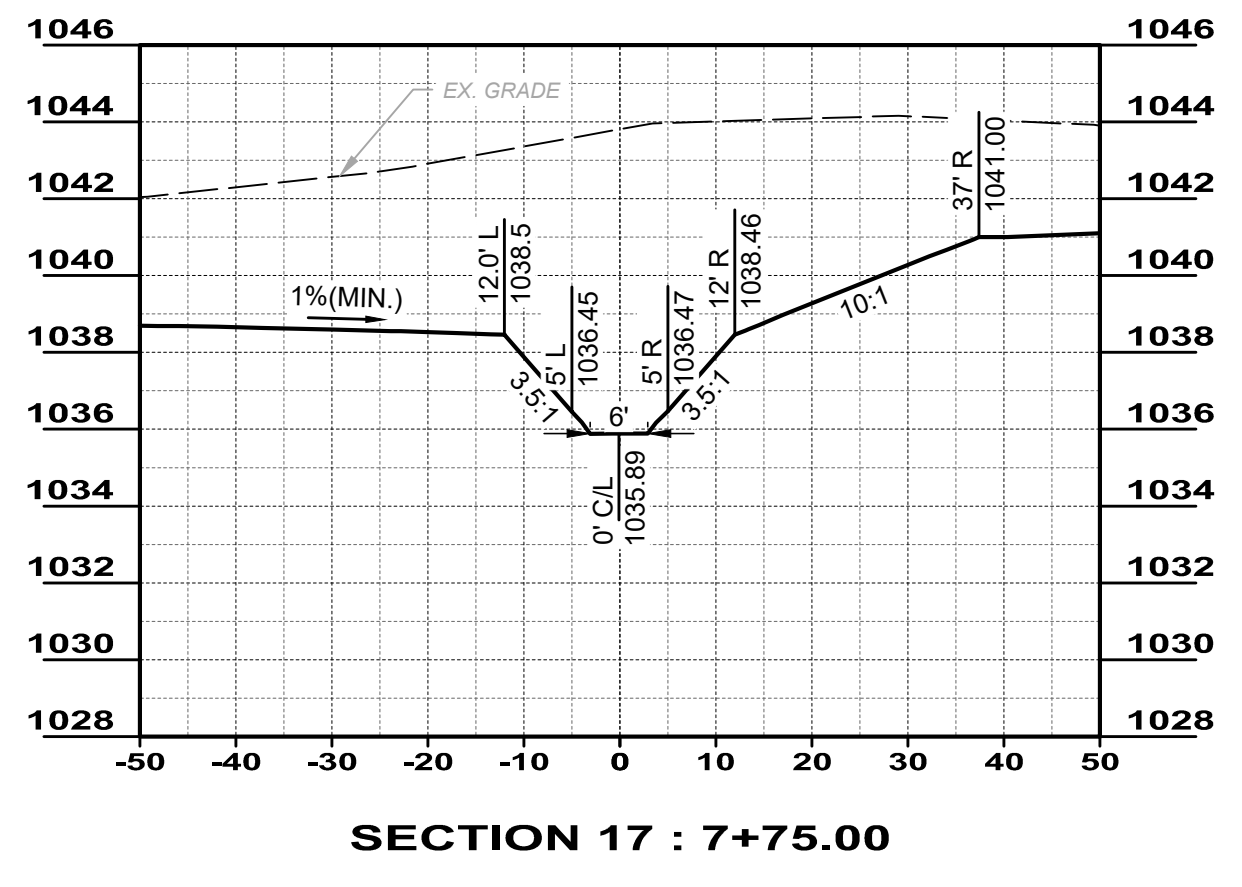
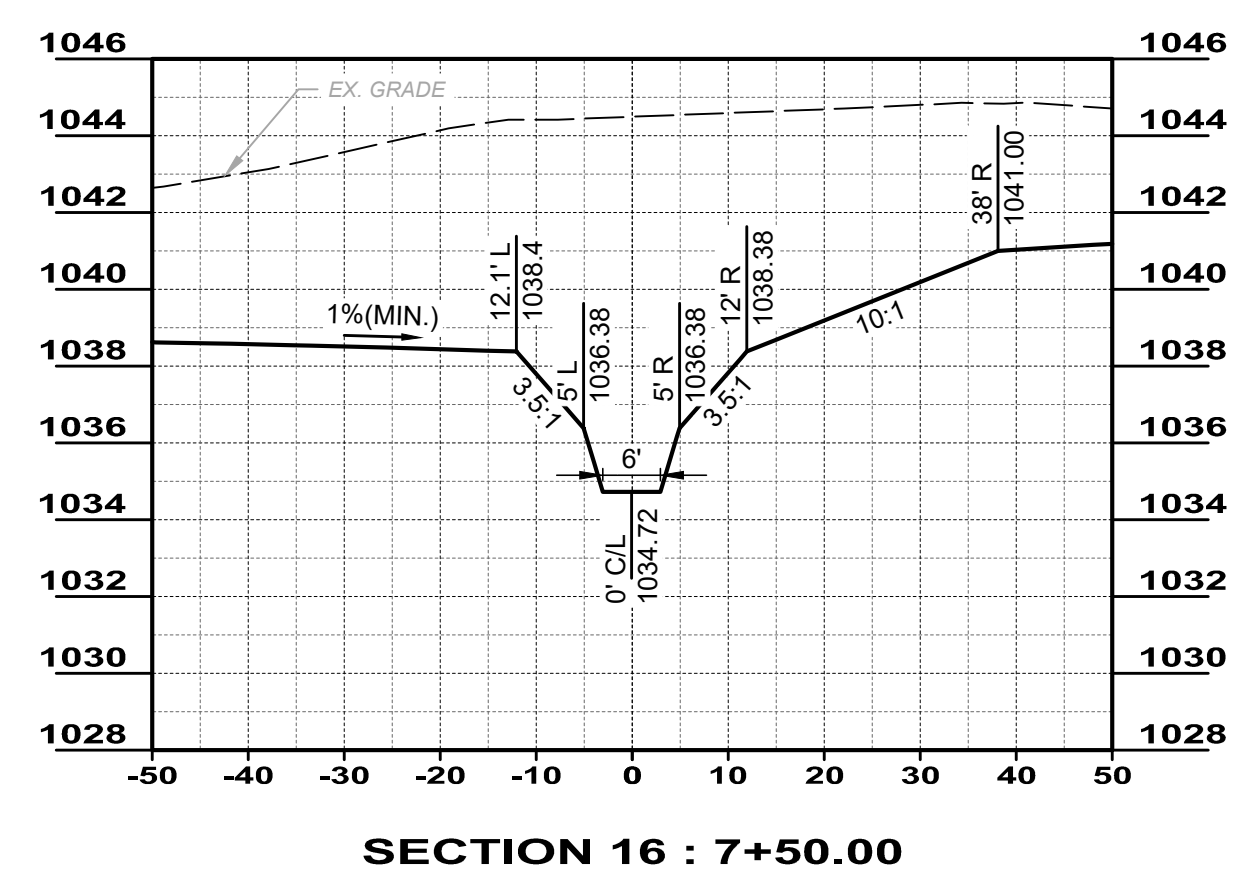
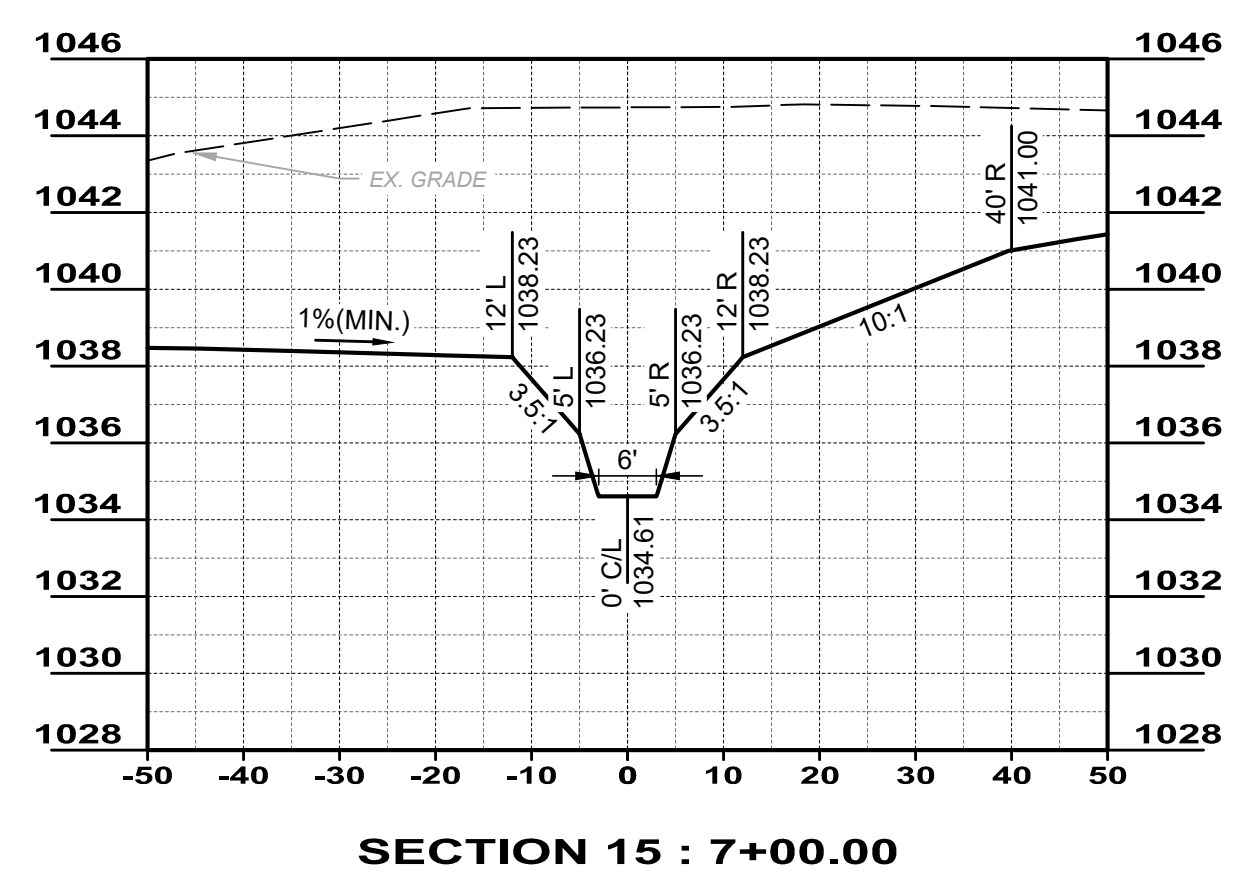
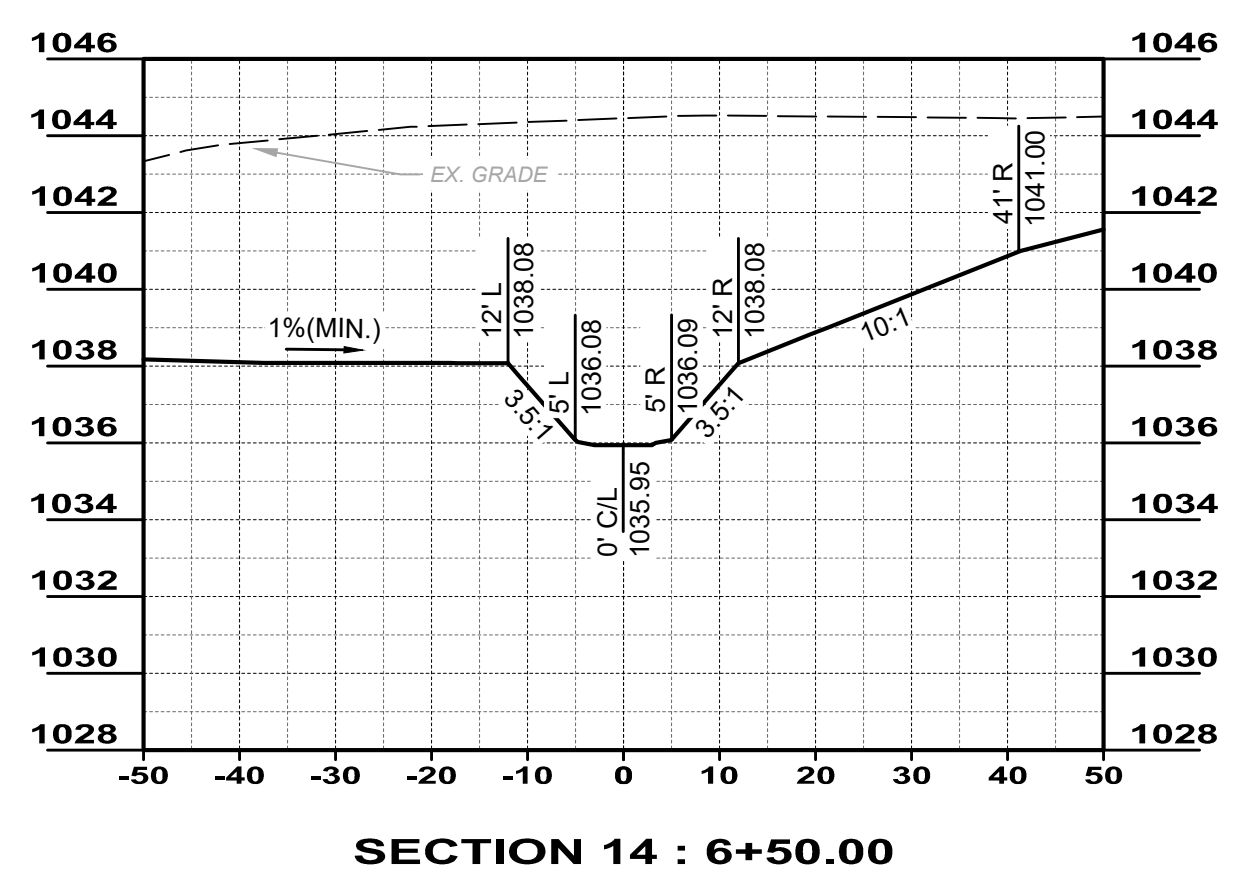
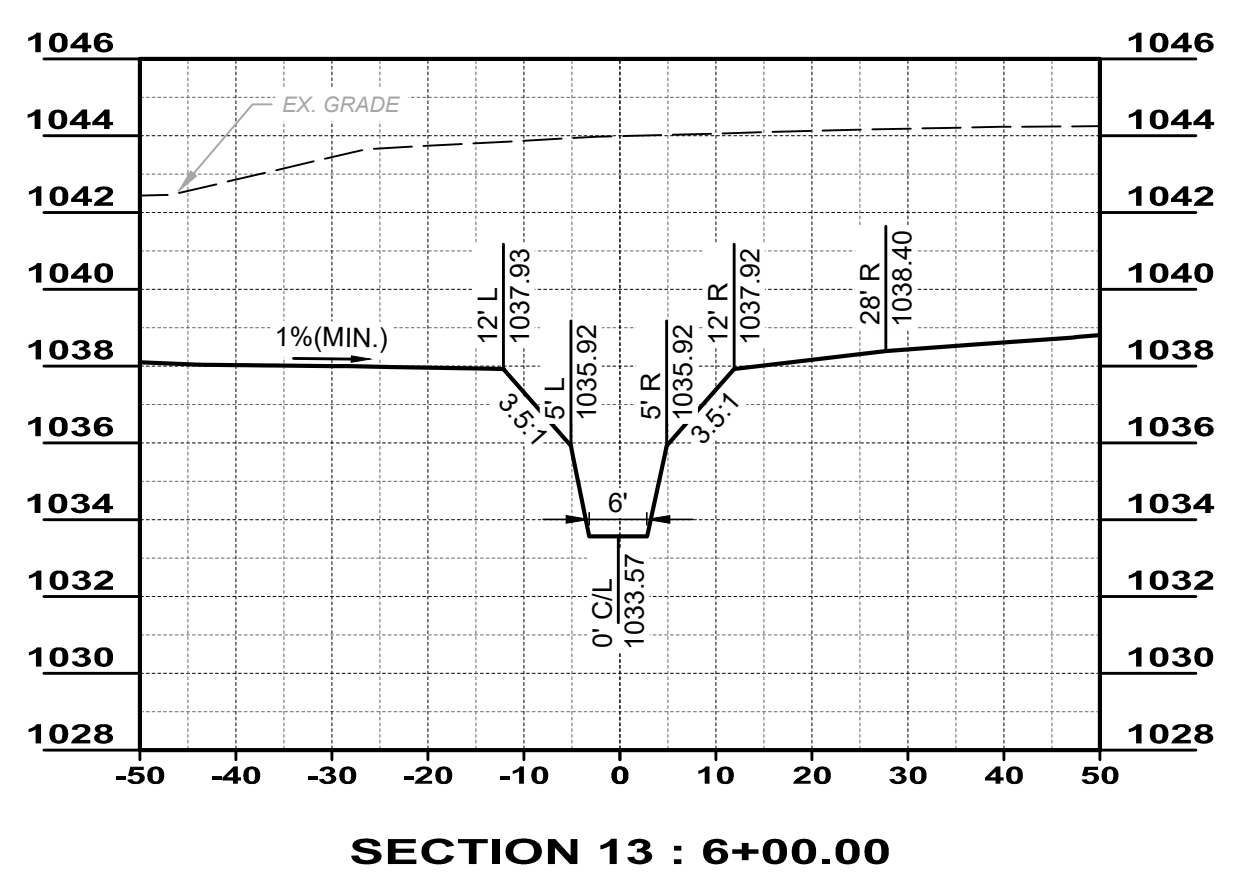
ISSUED FOR:	REVIEW	NO	REVISION	DATE
ABC WATER & STORMWATER DISTRICT	10/23/2023			
FOREST LAWN STORMWATER PARK	AS SHOWN			
MAHONING COUNTY	PAB/RW			
	AM/CZ/PAB			
	M/RD			

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
MAHONING COUNTY
BOARDMAN, OH
PROPOSED STREAM CROSS SECTIONS (1 OF 2)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-14
SHEET	22
OF	43



NOTE:
 STREAM RESTORATION STATIONING IS SHOWN ORIENTED FROM DOWNSTREAM TO UPSTREAM. CROSS SECTIONS ARE TO BE VIEWED LOOKING UPSTREAM



**STREAM CROSS SECTIONS
 STA 6+00 TO 9+50**
 SCALE: 1" = 20' (H) / 1" = 5' (V)

NOTES:

- REFER TO PROPOSED IMPROVEMENT PLANS, STREAM PROFILE, AND HEADWALL DETAILS FOR INTERACTION BETWEEN PROPOSED HEADWALLS AND THE PROPOSED STREAM SLOPES.
- REFER TO THE PROPOSED GRADING PLAN FOR DETAILED GRADING OUTSIDE OF THE STREAM CHANNEL.
- CROSS SECTIONS SHOW HEREIN ARE SELECTED AS REPRESENTATIVE EXAMPLES OF THE STREAM CHANNEL.

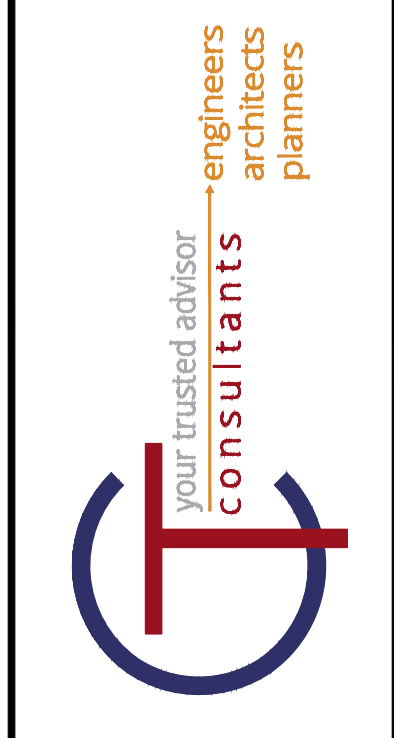
NO	REVISION	DATE

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 MAHONING COUNTY BOARDMAN, OH

PROPOSED STREAM CROSS SECTIONS (2 OF 2)

ISSUED FOR: PROJECT NO. 231566
 ISSUE DATE: 10/23/2023
 SCALE: AS SHOWN
 DESIGNED BY: PAB/RW
 DRAWN BY: AM/CZ/PAB
 CHECKED BY: MFD

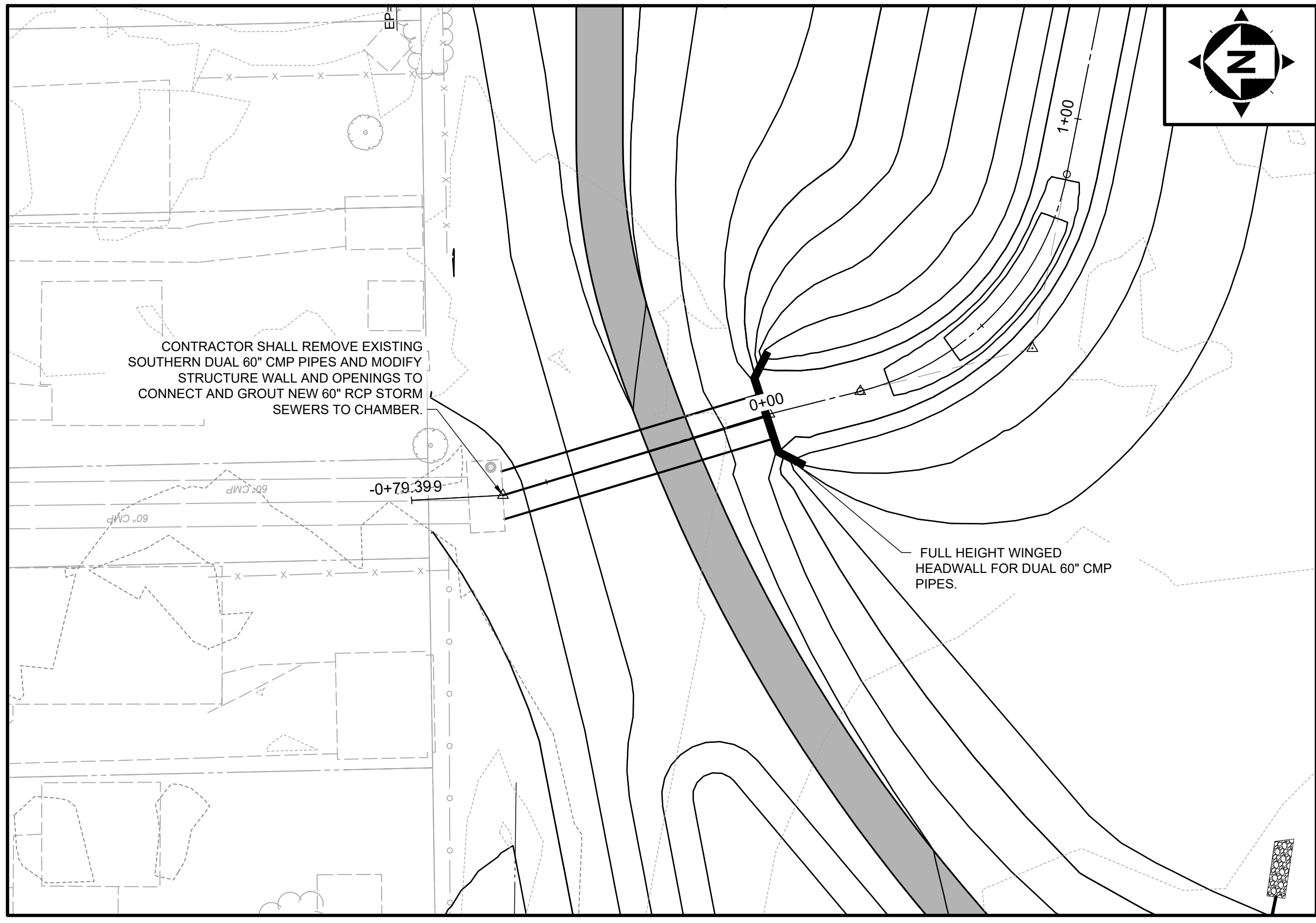
PROJECT NO. 231566
 DISCIPLINE CIVIL
 SHEET NAME C-15
 SHEET 23 OF 43



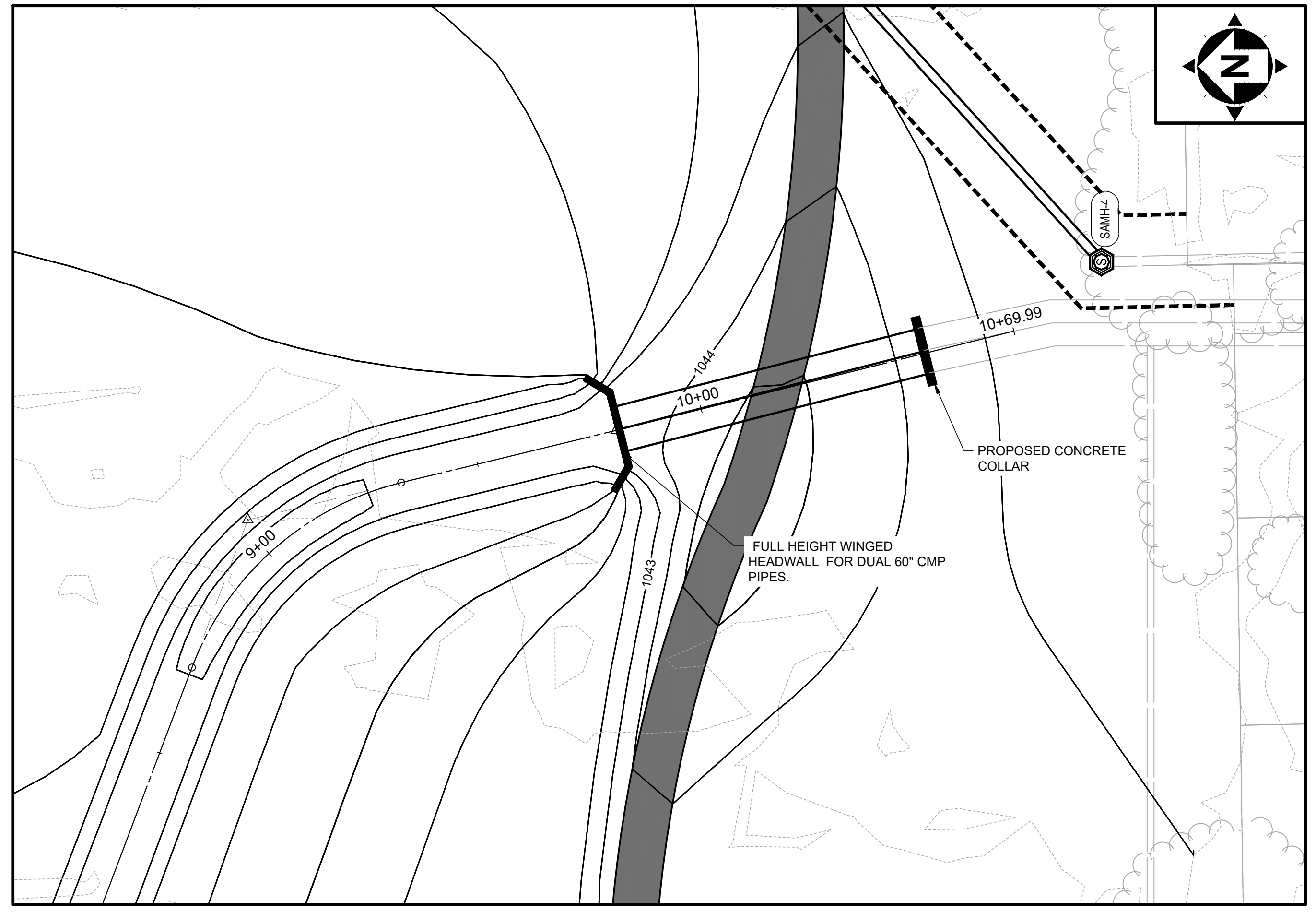
ISSUED FOR:	REVIEW	NO	REVISION	DATE
AS SHOWN	10/23/2023			
DESIGNED BY:	PAB/RW			
DRAWN BY:	AMV/CZ/PAB			
CHECKED BY:	MRD			

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY
STREAM HEADWALL DETAILS

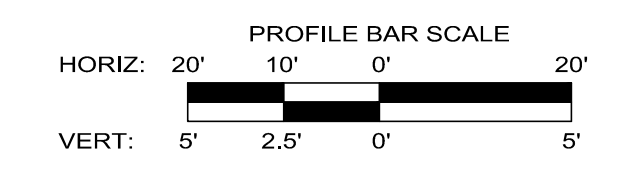
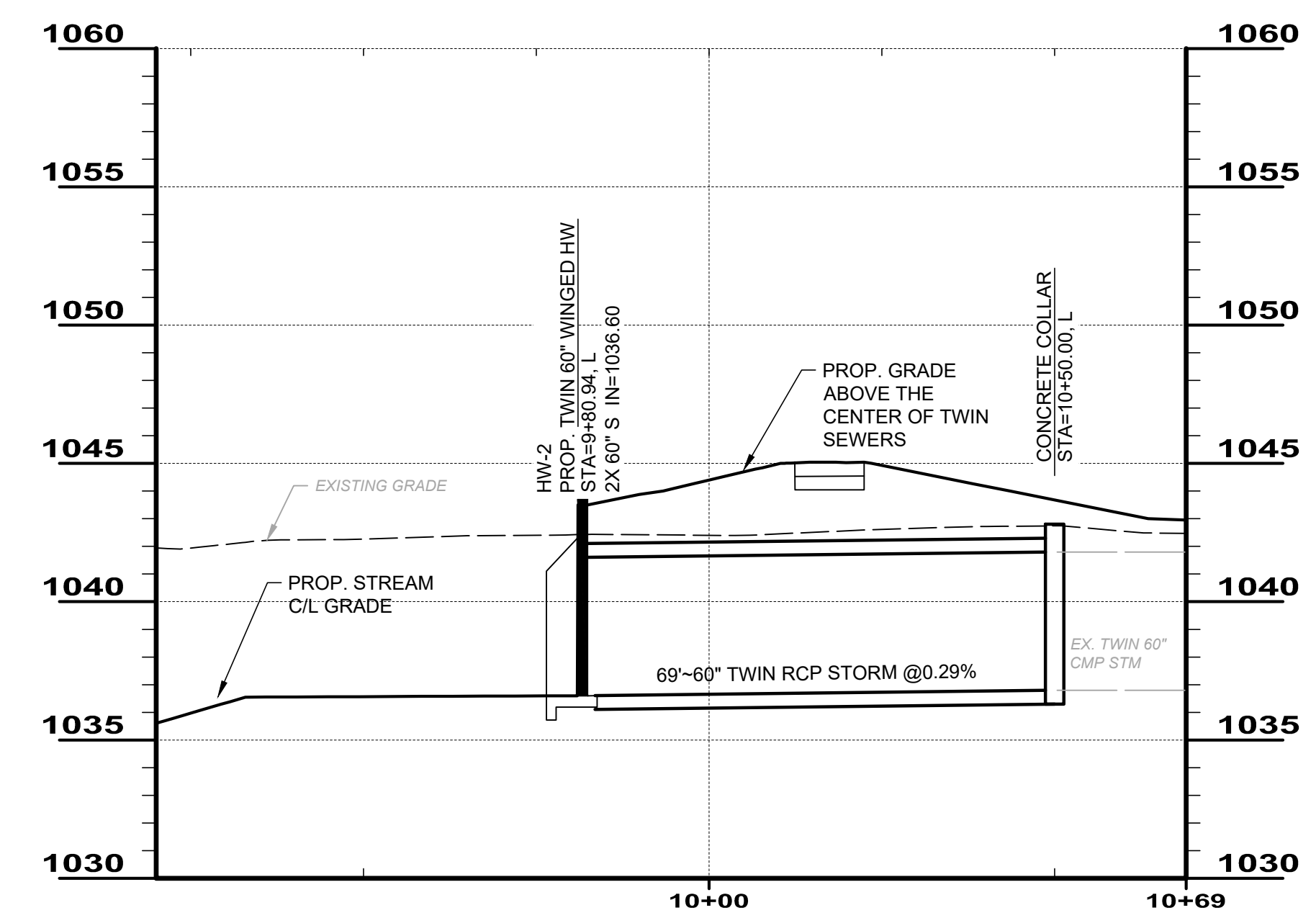
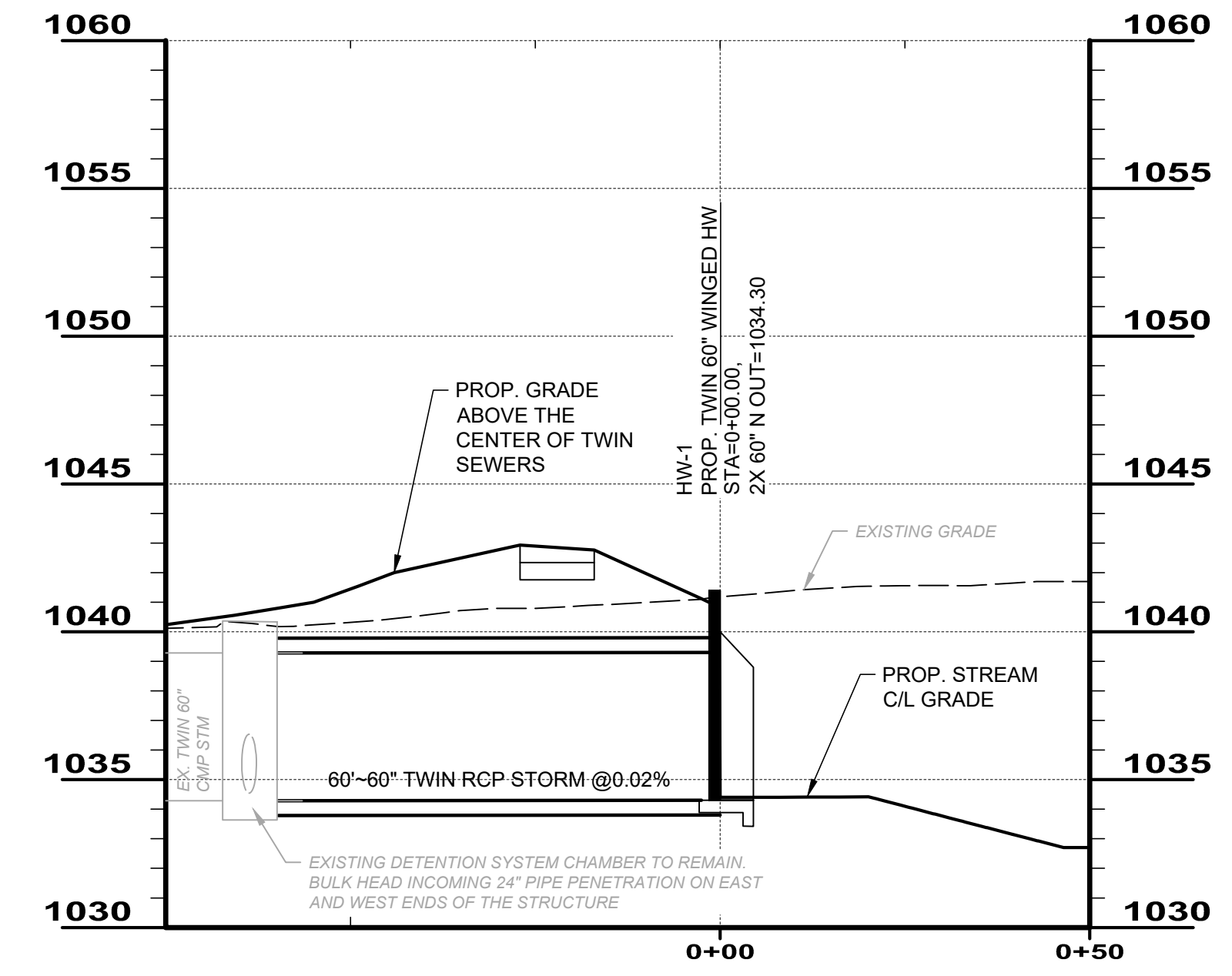
PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-16
SHEET	24
OF	43



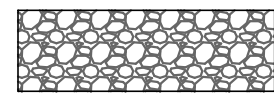
NORTHERN STREAM HEADWALL DETAIL
 SCALE: 1" = 20'



SOUTHERN STREAM HEADWALL DETAIL
 SCALE: 1" = 20'



"REINFORCED BED"¹ MIXTURE SPECIFICATIONS



THE REINFORCED BED MIXTURE SPECIFIED BELOW MUST BE APPROVED BY THE C.O.R. PRIOR TO BEING PLACED IN THE STREAM CHANNEL.

MATERIAL	SIZE	PORTION	PERCENT (%)
BANK RUN ² GRAVEL	1.00 - 3.00 in (25.40 - 76.20 mm) (D ₅₀ = 2.00 in)	N/A	100%

¹ THE REINFORCED BED SHALL BE A MINIMUM OF 6" IN DEPTH.

² BANK RUN GRAVEL MAY INCLUDE UP TO 5% CLAY, SILT, AND/OR SAND, AND UP TO 25% COBBLE (D₅₀ = 3" TO 6"). GRAVEL MUST HAVE NATURAL COLOR (TAN, YELLOW, OR BROWN), INCORPORATE ANY OTHER USABLE STREAMBED MATERIAL ON SITE. CONTRACTOR REQUIRED TO PROVIDE ENGINEER A MATERIAL SAMPLE PRIOR TO ORDERING AND PLACEMENT.

GENERAL STRUCTURE NOTES

- SEE PROFILE AND CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION INCLUDING ELEVATIONS AND SPECIFICS REGARDING POOL ARMORING AND BED MATERIAL THICKNESS. (ANY PORTIONS OF THE CHANNEL WITH SLOPES GREATER THAN 2.0% SHALL HAVE A MINIMUM REINFORCED BED MATERIAL THICKNESS OF 1.5x THE BED MATERIAL ROCK FRACTION D₅₀, UNLESS OTHERWISE SPECIFIED IN THE PROFILE.)
- REFER TO THE TYPICAL RIFFLE CROSS-SECTION FOR PLACEMENT OF BIODEGRADABLE COCONUT FIBER FABRIC ALONG THE STREAM.
- STRUCTURES SHALL BE UNDERLAIN WITH WOVEN OR NON-WOVEN POLYPROPYLENE GEOTEXTILE AS NOTED IN THE CONSTRUCTION DETAILS.
- ALL STRUCTURES SHALL BE KEYED INTO THE BANK, VIA SILL OR STRUCTURE ROCK PLACEMENT. A MINIMUM OF 3 FT BEYOND BANKFULL AND COMPLETELY ACROSS ANY PLACED FILL (SEE PLAN VIEW FOR DETAILS).

Table 8. Multiple-regression equations for estimating bankfull characteristics of rural, unregulated streams in Ohio with map-based explanatory variables.

[WBF, bankfull width, in feet; DBF, bankfull mean depth, in feet; ABF, bankfull cross-sectional area, in square feet; QBF, bankfull discharge, in cubic feet per second; DA, drainage area, in square miles; MCSL, main-channel slope, in feet per mile; ELEV, main-channel elevation index, in feet]

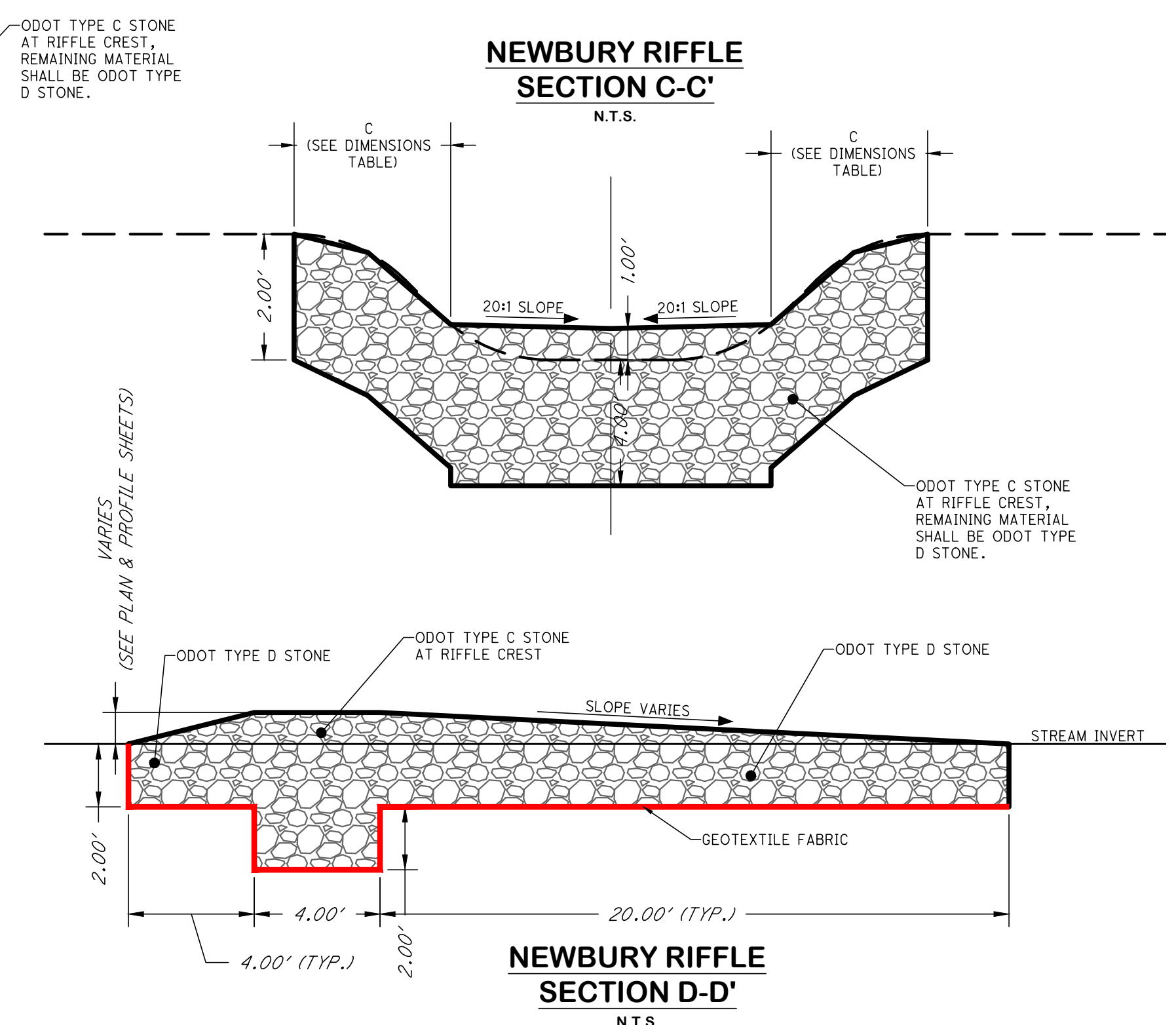
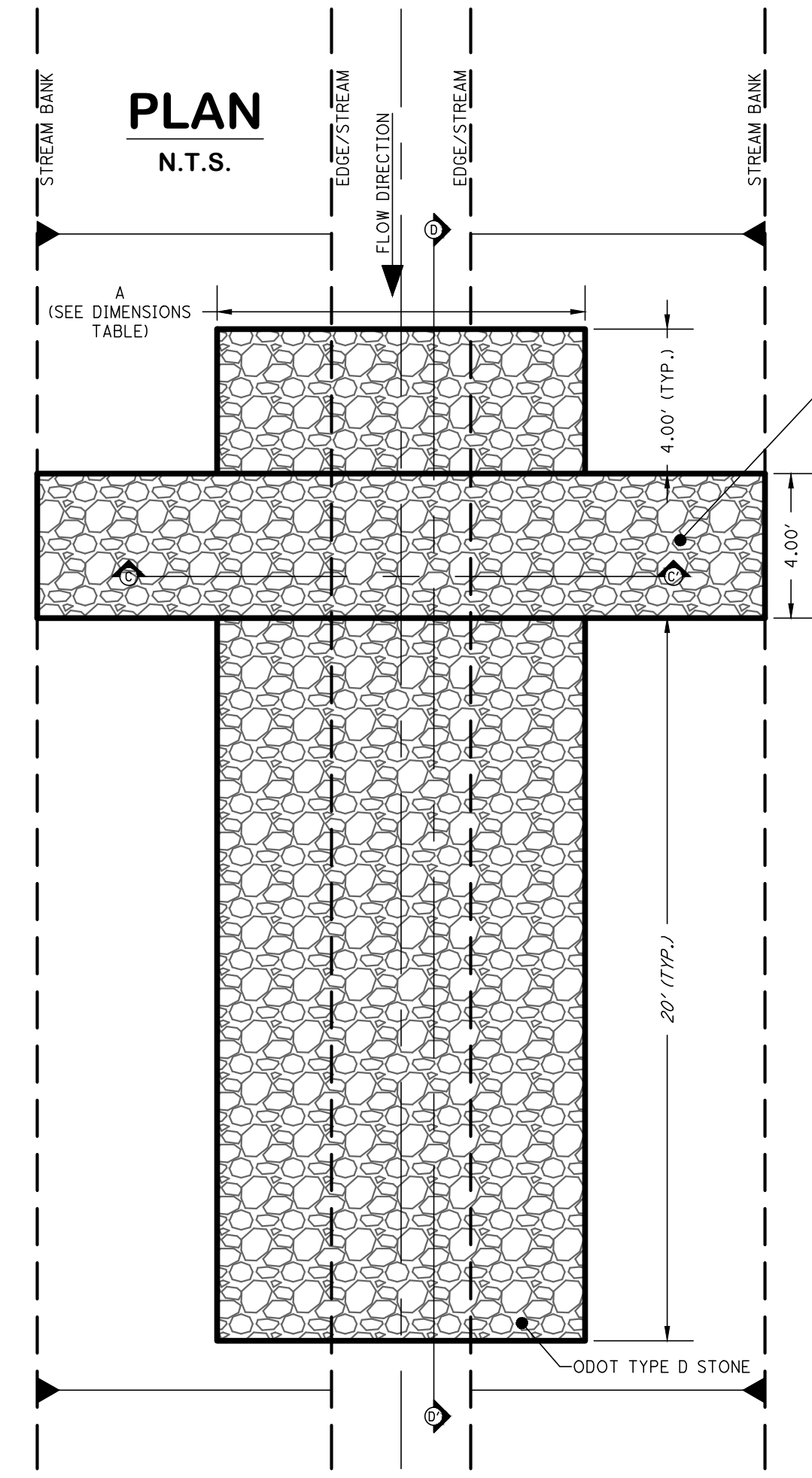
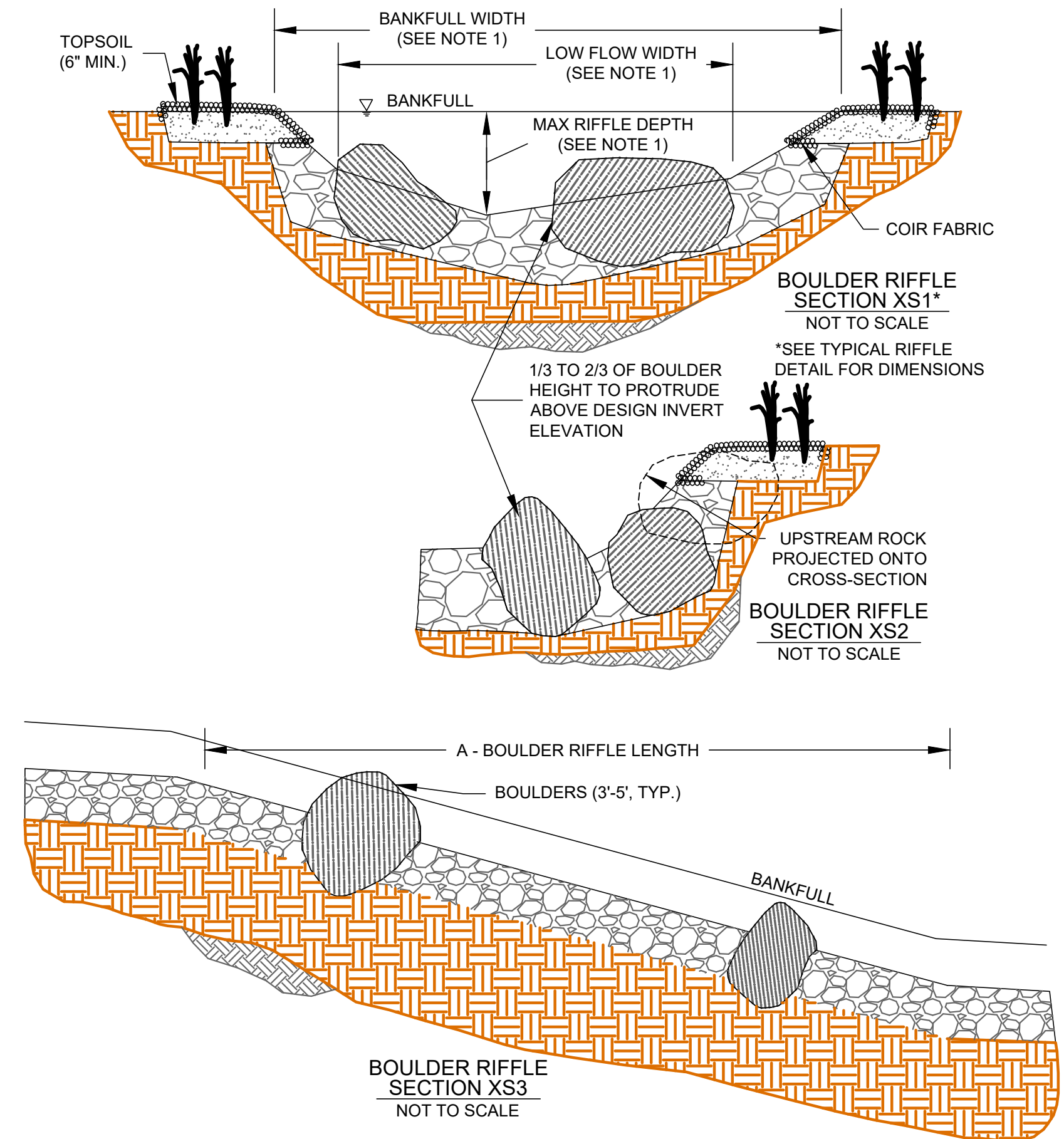
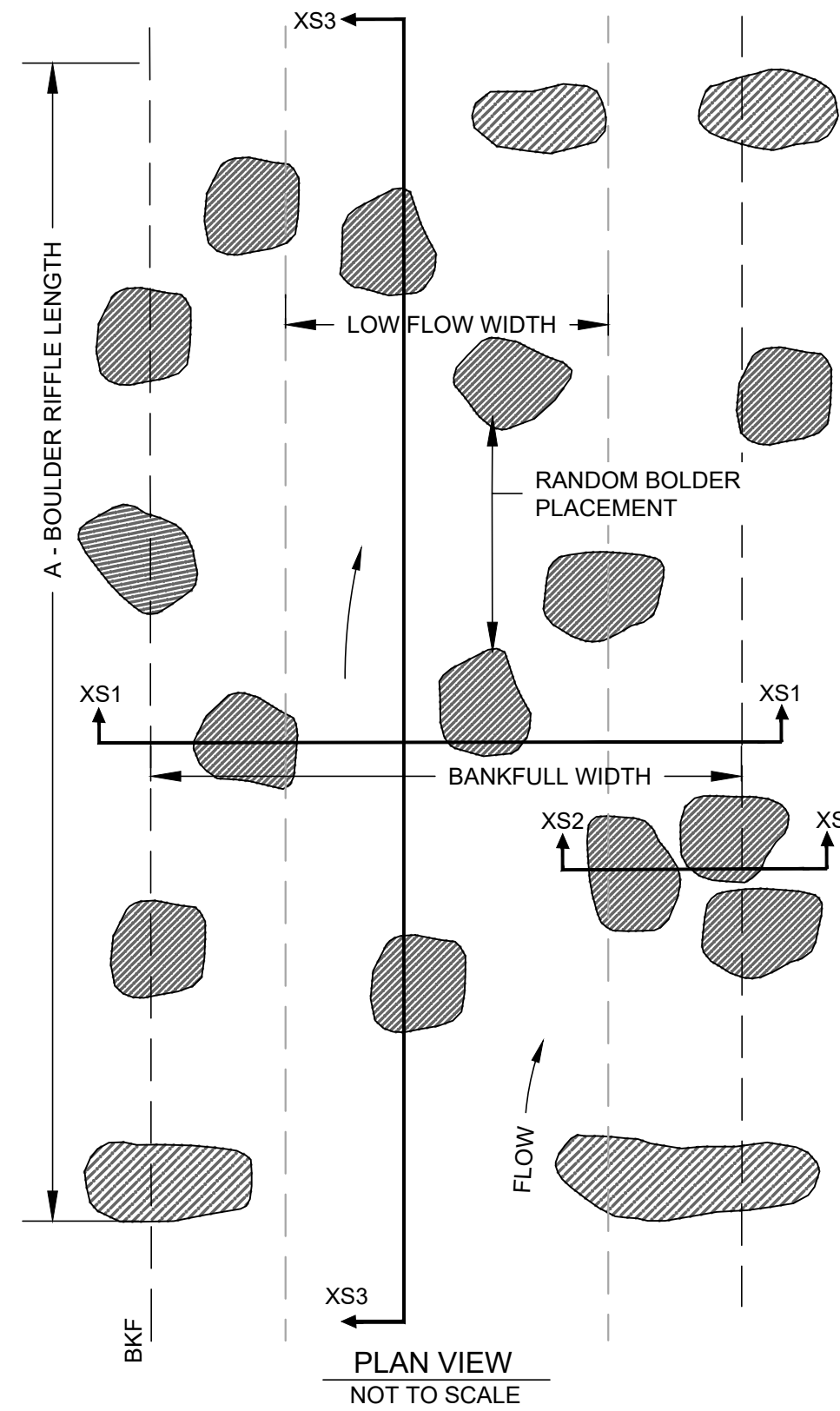
Equation number	Equation	Average standard error of prediction (percent)	Coefficient of determination (adjusted r-square)
Region A			
9	$WBF_A = 9.6 DA^{0.424} MCSL^{0.147}$	23.5	0.921
10	$DBF_A = 51.8 DA^{0.263} ELEV^{-0.516}$	18.8	0.903
11	$ABF_A = 427 DA^{0.718} MCSL^{0.213} ELEV^{-0.537}$	27.4	0.963

NOTE:
BANKFUL CHANNEL DESIGN IS REPRESENTATIVE OF RIFFLE SECTIONS IN THE CHANNEL. VALUES SHOWN IN TABLE ARE FOR PLANNING PURPOSES AND IN SOME CASES REPRESENT MINIMUM VALUES TO MEET.

Stream Channel Design Parameters			
	Input Values		
	Value	Unit	ABBREVIATION
Drainage Area	1.1	SQ MI	DA
Main Channel Slope	16.1	FT/MI	MCSL
Main-Channel Elevation Index	980	FT	ELEV
Water Level @ Max Depth	0	FT	
Design Stream Length	980	FT	
Design Valley Length	500	FT	

Rosgen Design Parameters			
	Value	Unit	ABBREVIATION
Design Stream Type	C		
Entrenchment Ratio	>2.2		
Channel Width/Depth Ratio	<12	13	
Channel Sinuosity	>1.2	2.0	

Calculated Values			
	Value	Unit	ABBREVIATION
Bankfull Width	20	FT	WBF
Bankfull Depth	1.5	FT	DBF
Min. Bkfl Cross-Sectional Area	20	SF	ABF
Bankfull Discharge	33	CFS	QBF
Design Flood-Prone Width	32	FT	
Entrenchment Ratio	1.6		
Channel Width/Depth Ratio	13		
Channel Sinuosity	2.0		

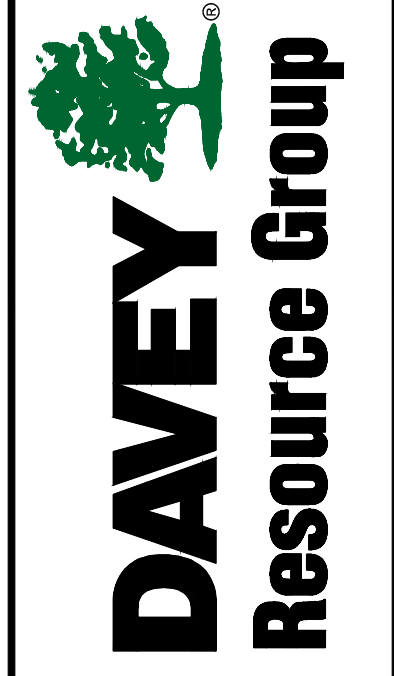


BOULDER RIFFLE NOTES:

- BOULDER RIFFLE SHALL BE CONSTRUCTED BETWEEN STATIONS IDENTIFIED ON THE PLAN.
- THE GENERAL CHANNEL SHAPE WILL STILL CONFORM TO THE TYPICAL RIFFLE CROSS-SECTION OF THE REACH. BED MATERIAL SHALL BE PLACED (SIZE AND DEPTH) ACCORDING TO SPECIFICATIONS ON THE PROFILE. REFER TO REINFORCED BED MIX DETAIL FOR MATERIAL SPECIFICATIONS. PROTRUDING BOULDER ROCKS WILL BE ADDED TO REDIRECT FLOW TO DISSIPATE ENERGY IN ACCORDANCE WITH THIS DETAIL.
- BOULDERS SHALL BE INSTALLED AT A SPACING THAT MEETS THE FOLLOWING RANGE DEPENDING ON THE STREAM SIZE:
 - FOR STREAMS WITH BANKFULL WIDTH EQUAL TO OR LESS THAN 10 FEET WIDE, PLACE 1 BOULDER FOR EVERY 25-50 SF OF BED AREA (TOE OF BANK SLOPE TO TOE OF BANK SLOPE)
 - FOR STREAMS WITH BANKFULL WIDTH GREATER THAN 10 FEET WIDE, PLACE 1 BOULDER FOR EVERY 50-100 SF OF BED AREA (TOE OF BANK SLOPE TO TOE OF BANK SLOPE)
- WHILE CONFORMING TO THE SPACING REQUIREMENTS ABOVE, PLACEMENT OF BOULDERS WITHIN THE LIMITS OF THE BOULDER RIFFLE SHALL BE RANDOM TO CREATE VARYING FLOW PATTERN AND A MORE NATURAL APPEARANCE. CONTRACTOR SHALL AVOID PLACING BOULDERS DIRECTLY IN LINE WITH EACH OTHER EITHER PERPENDICULAR OR PARALLEL WITH ALIGNMENT.
- BOULDERS SHALL BE PLACED PRIOR TO INSTALLING BED MATERIAL. APPROPRIATE BED MATERIAL SHALL BE INSTALLED AND BACKFILLED AROUND BOULDERS TO MEET SPECIFIED GRADE OF RIFFLE AND SPECIFICATIONS OF BOULDER PROTRUSION HEIGHT AND EMBEDDED DEPTH SPECIFIED BELOW.
- BOULDERS SHALL BE ODOT TYPE A SIZED STONE.
- BOULDERS SHALL PROTRUDE ABOVE THE TYPICAL BED INVERT SUCH THAT PROTRUSION HEIGHT FALLS BETWEEN 0.25 - 0.75 BANKFULL HEIGHT.
- BOULDERS SHALL BE EMBEDDED BELOW STREAM INVERT AT LEAST 1/3 THE HEIGHT (Z-AXIS) OF THE ROCK USED. ROCK Z-AXIS DIMENSION MUST CONFORM TO RANGE SPECIFIED IN THE STRUCTURE ROCK SIZE TABLE.
- CONTRACTOR SHALL AVOID PLACING A BOULDER WITHIN 2 FEET FROM THE TOE OF BANK SLOPE THAT WOULD DIRECT OR DEFLECT FLOW INTO THE BANK. BOULDER PLACEMENT WITHIN 2 FEET FROM THE TOE OF SLOPE SHALL BE INSPECTED BY ENGINEER FOR APPROVAL PRIOR TO ACCEPTANCE.

BOULDER RIFFLE
NOT TO SCALE

NEWBURY RIFFLE DETAIL
NOT TO SCALE



NO.	REVISION	DATE

ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY
STREAM BED & BANK DETAILS
 (1 OF 4)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-17
SHEET	25
OF	43

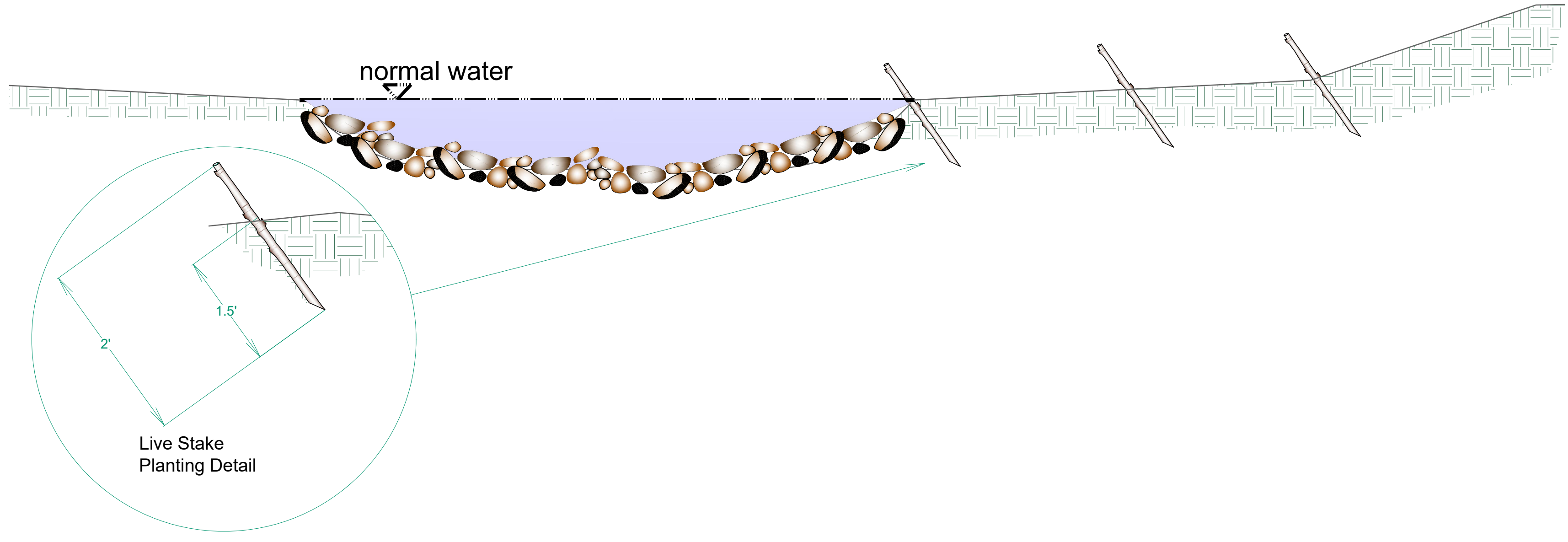


Live Stake Planting Detail

General Live Stake Notes:

- Install live stakes during plant dormancy prior to bud break (early December to early/mid April, when soils are unfrozen and workable).
- Live stakes should be made from cuttings of 2-3 year old growth, generally 1/2- to 1-inch diameter stems and range from 2-4 ft in length. Cuttings should be processed with an angular/pointed cut on the bottom and a flat/square cut on the top with the buds oriented to the top.
- Live stakes should be harvested or purchased close to the installation date and kept moist, cool and out of direct sunlight.
- The lower 1/2 of the cuttings shall be pre-soaked in water for 24 hours prior to installation, pointed side down.
- Install cuttings on 3-5 ft spacing at or near the low bankfull elevation per detail. It may be necessary to create a pilot hole prior to installing cutting.
- Push in or tap cutting to an depth of 2/3 its length using a rubber mallet to avoid damage. Water in and firm soil around live stake.
- Install at a minimum of two species at a 1:1 ratio of the quantity specified or as directed by the restoration ecologist.

LIVE STAKE SPECIES TABLE		
BOTANICAL NAME	COMMON NAME	QUANTITY
Cephalanthus occidentalis	Buttonbush	200
Cornus amomum	Silky Dogwood	200
Cornus sericea	Red Osier Dogwood	200
Salix discolor	Pussy Willow	200
Salix lucida	Shining Willow	200



ISSUED FOR:	REVIEW	NO	REVISION	DATE
ISSUE DATE: 10/23/2023	AS SHOWN			
SCALE:	PAB/RW			
DESIGNED BY:	AMV/CZ/PAB			
DRAWN BY:	MRD			
CHECKED BY:				

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
MAHONING COUNTY BOARDMAN, OH
STREAM BED & BANK DETAILS
(3 OF 4)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	C-19
SHEET	27
OF	43

SANITARY SEWER NOTES:

1. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO THAT THE FLOW OF ALL EXISTING SEWERS AND LATERALS WILL BE MAINTAINED AT ALL TIMES.
2. THE CONTRACTOR OR DEVELOPERS ENGINEER SHALL PROVIDE THE SANITARY ENGINEER'S OFFICE A SET OF MYLAR AS-BUILT RECORD DRAWINGS WITH THE LOCATIONS AND ELEVATIONS OF ALL SANITARY SEWER, GAS SERVICES, STORM SEWERS/DRAINS, WATER SERVICES AND ALL OTHER UNDERGROUND UTILITIES ENCOUNTERED FOR THE ENTIRE PROJECT. RECORD DRAWING INFORMATION ALSO INCLUDES ALL WRITTEN LOGS, INFILTRATION/EXFILTRATION TEST RESULTS AND MANDREL TEST RESULTS (FOR ALL FLEXIBLE CONDUITS - EXCLUDING LATERALS) FOR ALL CONNECTION AND INTERCEPTOR LINES (SANITARY SEWER LINES); HYDROSTATIC AND PRESSURE TEST RESULTS FOR FORCEMAINS AND PRESSURE SEWERS SUBMITTED TO THE ENGINEER PRIOR TO THE SUBMISSION OF FINAL PAYMENT APPLICATION AND REQUEST TO INITIATE OPERATION OF THE SYSTEM.
3. WHERE THE PLANS PROVIDE FOR THE PROPOSED SEWER TO BE CONNECTED TO OR CROSS EITHER OVER OR UNDER AN EXISTING UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING UTILITY, BOTH LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT. THERE WILL BE NO EXTRA PAYMENT FOR THE ABOVE WORK. COORDINATE FIELD ADJUSTMENTS WITH THE SANITARY ENGINEER'S OFFICE FIELD REPRESENTATIVE.
4. ALL SANITARY SEWER MATERIALS AND CONSTRUCTION ITEMS (MANHOLES, MAINLINES, JOINTS AND LATERALS) SHALL BE NEW AND IN ACCORDANCE WITH THE STATE OF OHIO EPA REGULATIONS AND THE MAHONING COUNTY SANITARY ENGINEER'S STANDARDS.
5. SHOP DRAWINGS OF ALL MATERIALS SHALL BE SUBMITTED TO THE SANITARY ENGINEER'S OFFICE FOR APPROVAL, PRIOR TO PURCHASE.
6. NOTIFY THE MAHONING COUNTY SANITARY ENGINEER'S OFFICE AND LOCAL OFFICIALS SEVENTY TWO (72) HOURS PRIOR TO STARTING CONSTRUCTION.
7. NO CONSTRUCTION IS PERMITTED UNTIL WRITTEN AUTHORIZATION HAS BEEN RECEIVED FROM THE E.P.A.
8. THE CONTRACTOR SHALL SCHEDULE INSPECTION WITH REGULATORY AGENCIES SUCH THAT WORK PROGRESS IS NOT AFFECTED BY INSPECTION REQUIREMENTS.
9. EXCAVATION OUTSIDE NORMAL WORK LIMITS SHALL NOT BE COMMENCED WITHOUT APPROVAL OF THE SANITARY ENGINEER'S OFFICE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO THE EXISTING SEWAGE SYSTEM.
11. ROOF DRAINS, FOUNDATION DRAINS, AND ANY OTHER CLEAR-WATER DRAINS SHALL NOT BE CONNECTED TO THE SANITARY SEWER SYSTEM.
12. PVC GRAVITY SANITARY SEWER SHALL BE SDR 35 (LESS THAN 15' BURY) AND SDR 26 (GREATER THAN 15' BURY). PVC PIPE AND FITTINGS SHALL COMPLY WITH ASTM F679 WITH ASTM D3212 JOINTS. PVC SANITARY SEWER SHALL BE INSTALLED WITH BEDDING CLASS 1 PER ASTM D-2321.
13. ALL FLEXIBLE PIPE GRAVITY SEWERS SHALL BE SUBJECTED TO A PIPE DEFLECTION TEST. THE TEST SHALL BE WITNESSED BY A REPRESENTATIVE OF THE SANITARY ENGINEER'S OFFICE AND SHALL NOT OCCUR UNTIL AT LEAST 30 DAYS AFTER THE SOIL/PIPE SYSTEM HAS BEEN INSTALLED. THE TEST SHALL CONSIST OF HAND PULLING A MANDREL DEVICE THROUGH THE SEWER. THE MANDREL SHALL BE EITHER A FULL CIRCLE OR 9-ARM TYPE WHICH HAS OUTSIDE DIMENSIONS WHICH ARE 95% OF THE I.D. OF THE PIPE BEING TESTED. PIPE FAILING THE MANDREL TEST SHALL BE REPLACED AT NO COST TO THE OWNER OF SANITARY ENGINEER'S OFFICE (INCLUDING EXCAVATION, SITE RESTORATION, RE-TESTING ETC). TESTS SHALL BE IN ACCORDANCE WITH GLUMRB 33.85. TESTING SHALL ALSO BE IN ACCORDANCE WITH SECTION 2000 OF THE MAHONING COUNTY CONSTRUCTION AND MATERIAL SPECIFICATIONS.
14. BUILDERS AND CONTRACTORS MUST HOLD TO THE GRADES AND ELEVATIONS ESTABLISHED BY THE ENGINEER.
15. SANITARY SEWER MUST BE 10 FEET HORIZONTALLY (MEASURED EDGE TO EDGE) FROM WATER LINES, AND MUST MAINTAIN A MINIMUM 18 INCH VERTICAL CLEARANCE AT ANY WATERLINE CROSSING.
16. SANITARY SEWER MUST BE 4 FEET HORIZONTALLY FROM STORM SEWERS AND MUST MAINTAIN A MINIMUM 1' VERTICAL CLEARANCE AT ANY STORM SEWER CROSSINGS.
17. CONTRACTORS MUST CONDUCT INFILTRATION OR EXFILTRATION TESTS IN ACCORDANCE WITH OHIO EPA REGULATIONS AND IN THE PRESENCE OF A DESIGNATED REPRESENTATIVE OF THE MAHONING COUNTY SANITARY ENGINEER. CONTRACTOR IS TO CHOOSE THE METHOD OF CONDUCTING THE LEAKAGE TESTS AND MUST RECEIVE APPROVAL PRIOR TO STARTING CONSTRUCTION. EXFILTRATION OR INFILTRATION SHALL NOT EXCEED THE OHIO EPA LIMIT OF 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE OF SEWER PER DAY. TESTING SHALL ALSO BE IN ACCORDANCE WITH SECTION 2000 OF MAHONING CONSTRUCTION AND MATERIAL SPECIFICATIONS.
18. IF APPROVED BY THE COUNTY, AIR TESTING MAY BE PERFORMED ON SANITARY PIPE (INSTEAD OF EXFILTRATION/INFILTRATION TESTING). AIR TESTING SHALL COMPLY WITH ASTM F1417 FOR PLASTIC PIPE AND ASTM C828 FOR CLAY PIPE. CONCRETE PIPE SHALL NOT BE SUBJECTED TO AIR TESTING. TESTING SHALL ALSO BE IN ACCORDANCE WITH SECTION 2000 OF MAHONING CONSTRUCTION AND MATERIAL SPECIFICATIONS.
19. BACKFILL MATERIAL EXTENDING MORE THAN SIX (6) INCHES ABOVE THE LEVEL OF THE SIDES OF THE TRENCH, MUST BE REMOVED FROM THE JOB SITE. ANY PAVEMENT CUT, DAMAGED OR UNDERMINED BY EXCAVATION, SHALL BE REMOVED AND REPLACED. TEMPORARY PAVEMENT REPLACEMENTS SHALL BE MAINTAINED IN GOOD CONDITION BY THE CONTRACTOR. PERMANENT REPLACEMENT MUST BE COMPLETED AS SOON AS PRACTICAL.
20. TOP ELEVATIONS OF MANHOLES, AS INDICATED ON THE PLAN AND PROFILE ARE APPROXIMATE AND SHOULD BE USED FOR BIDDING PURPOSES ONLY. ACTUAL TOP ELEVATIONS SHALL BE MEASURED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHOULD NOTE THAT NO EXTRAS WILL BE AWARDED NOR SHALL ANY DEDUCTION BE MADE FOR MANHOLES WHOSE AS-BUILT DEPTHS MAY VARY FROM THOSE SHOWN ON PLANS. ADJUSTMENT OF THE CASTING HEIGHT MAY BE MADE WITH CONCRETE GRADE RINGS AND A MAXIMUM OF TWO COURSES OF ASTM C-32 BRICK. MAXIMUM ADJUSTMENT IS 9". NO CHANGE IN PAYMENT WILL OCCUR DUE TO AS-BUILT DEPTHS VARYING FROM PLAN DEPTHS. MANHOLE LIDS SHALL BE 0.5" ABOVE PAVED SURFACES AND TWO (2) INCHES ABOVE UNPAVED GROUND (UNLESS OTHERWISE NOTED IN THE PLANS). NO EXTRAS WILL BE PROVIDED FOR FIELD ADJUSTMENT OF MANHOLES.
21. MANHOLES SHALL BE CONSTRUCTED WITH PERMANENT GRADE ADJUSTMENTS BY USE OF CAST-IN-PLACE OR PRECAST ADJUSTING COLLARS.
22. MANHOLE JOINTS SHALL BE WATERTIGHT AND COMPLY WITH ASTM C-443.
23. ALL SANITARY MANHOLES WITH ELEVATION DROPS OF 24 INCHES OR MORE SHALL BE CONSIDERED DROP MANHOLES AND LABELED AS SUCH ON PLAN WITH CORRESPONDING DETAIL. IN ACCORDANCE WITH GLUMRB 34.2. (TEN STATE STANDARDS)
24. ALL MANHOLE SECTIONS SHALL BE VISUALLY EXAMINED FOR CRACKS OR DAMAGE THAT WOULD COMPROMISE THE WATER TIGHTNESS OF THAT SECTION. ANY DAMAGED SECTION SHOULD BE RETURNED TO THE MANUFACTURER MANHOLE. TESTING SHALL CONFORM TO 10 STATES STANDARDS SECTION 34.7 AND ASTM C-1244.
25. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A FLEXIBLE, WATERTIGHT GASKET, OR ANY WATERTIGHT CONNECTION ARRANGEMENT THAT COMPLIES WITH ASTM C-923 AND ALLOWS FOR DIFFERENTIAL SETTLEMENT TO TAKE PLACE BETWEEN THE PIPE AND THE MANHOLE WALL.

MANHOLE NOTES:

1. ALL PRECAST CONCRETE SHALL BE REINFORCED IN ACCORDANCE WITH THE LATEST REVISIONS OF A.S.T.M. DESIGNATION C478.
2. ALL PRECAST CONCRETE SECTIONS SHALL BE MANUFACTURED AND FURNISHED AS SOLID SECTION WITHOUT LIFT HOLES OF ANY KIND.
3. INTERIOR - THOROSEAL INSIDE OF SANITARY MANHOLES, FULL DEPTH (ANY COLOR BUT GRAY). ALL JOINTS AND CONNECTIONS TO BE WATER PLUGGED.
4. ALL PRECAST CONCRETE SANITARY SEWER STRUCTURES, OTHER THAN STORM SEWER CATCH BASIN STRUCTURES, SHALL BE PRECAST USING A CONCRETE ADMIXTURE SUCH AS XYPEX CRYSTALLINE ADMIXTURE OR AN APPROVED EQUAL WHICH WILL ACT AS A WATERPROOF AGENT AND HYDROGEN SULFIDE INHIBITOR.
5. ALL EXPOSED PIPING, VALVES AND FITTINGS INSIDE EACH MH SHALL BE PAINTED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.
6. FRAME AND COVER SHALL BE OF HEAVY DESIGN (475 LBS MIN. TOTAL WEIGHT) WHEN THE MANHOLE IS PLACED WITHIN THE LIMITS OF THE PAVEMENT OR SHOULDER, OTHERWISE THE LIGHT DESIGN (275 LBS MIN.) MAY BE USED. BEARING AREAS SHALL BE FINISHED SMOOTH AND FITTED SO AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE COVER IN THE FRAME. EACH COVER SHALL SEAT IN THE FRAME WITHOUT ROCKING AND SHALL BE MARKED AS A MATCHED FRAME AND COVER BEFORE DELIVERY TO THE PROJECT. THE FRAME SHALL BE SET ON CON SEAL AND ANCHORED WITH $\frac{3}{8}$ " BOLTS WITH THUNDERSTUDS (SEE SHEET 28) AND ADJUSTED TO CONFORM TO THE FINISHED PAVEMENT OR SHOULDER ELEVATION AND SLOPE. CASTINGS MEET IN ITEM 604 REQUIREMENTS AND DESIGNED ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN HEREON SHALL BE PROVIDED.
7. STEPS SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF SPECIFICATION 604. ALL STEPS SHALL HAVE A DEPRESSED THREAD OF A 1/2"
8. MIN. CLEAT HEIGHT AT THE ENDS. STEPS INSTALLED IN FRESH CONCRETE SHALL BE EMBEDDED TO MINIMUM DEPTH OF 4". STEPS INSTALLED IN MORTAR JOINTS SHALL BE EMBEDDED TO A MINIMUM DEPTH OF 7". FRICTION-FIT STEPS MEETING TO REQUIREMENTS OF 711.31 WITH A 1/2" DIAMETER REBAR MAY BE USED IN PRECAST MANHOLES. THE RECEIVING HOLES FOR FRICTION-FIT STEPS SHALL NOT PENETRATE THE MANHOLE WALL. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO TEST LOAD MAXIMUM OF ONE STEP PER MANHOLE TO A PROOF LOAD OF 400 LBS. IN DIRECT PULL. THE EQUIPMENT AND METHOD USED SHALL MEET THE APPROVAL OF THE ENGINEER. IF THE SELECTED STEP FAILS THE PULLOUT TEST, THE REMAINING STEPS IN THAT MANHOLE SHALL ALSO BE TESTED. ALL STEPS NOT PASSING THE PULLOUT TEST SHALL BE REMOVED AND A NEW STEP INSTALLED AND TESTED TO THE SATISFACTION OF THE ENGINEER. COST OF TESTING SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE MANHOLE.
9. DROP PIPE, WHEN SPECIFIED ON THE PLANS, SHALL BE CONSTRUCTED AS SHOWN.
10. SANITARY SEWER COVERS SHALL BE WITHOUT THE PICK AND VENT HOLES SHOWN HEREON AND SHALL INCLUDE A SEALING GASKET AFFIXED TO THE BEARING SURFACE. BOLT-DOWN COVERS SHALL NOT BE USED UNLESS SPECIFIED IN THE PLANS.

RESTORATION NOTES:

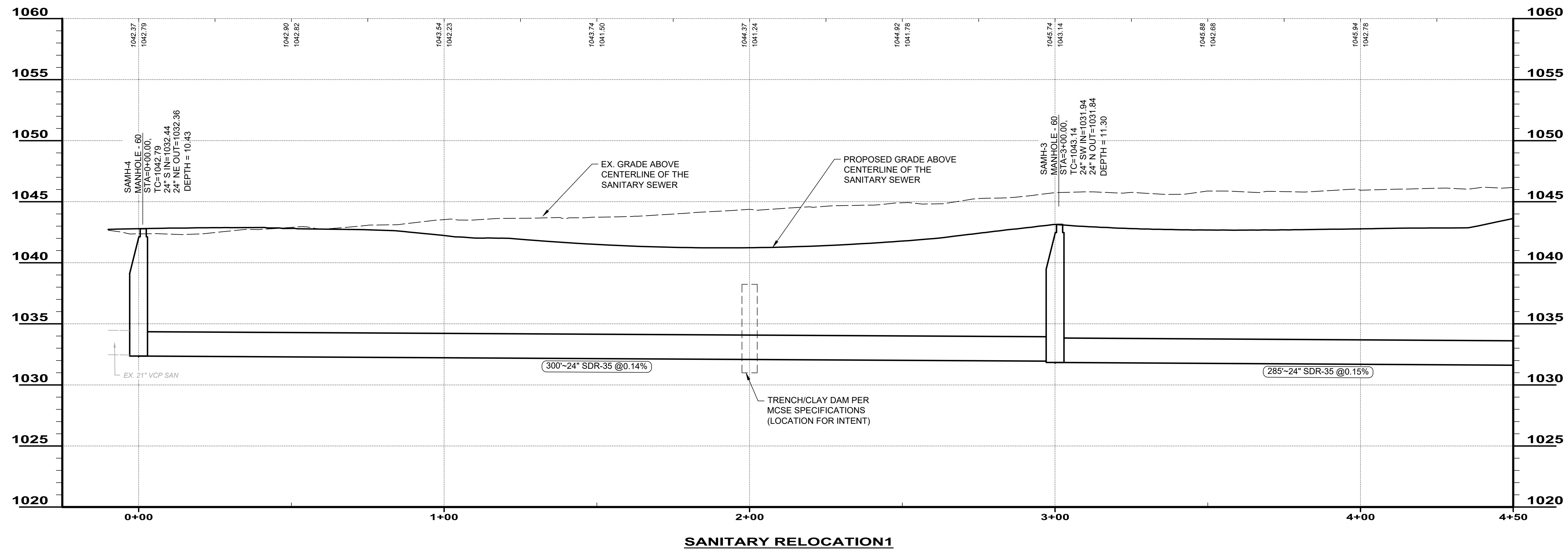
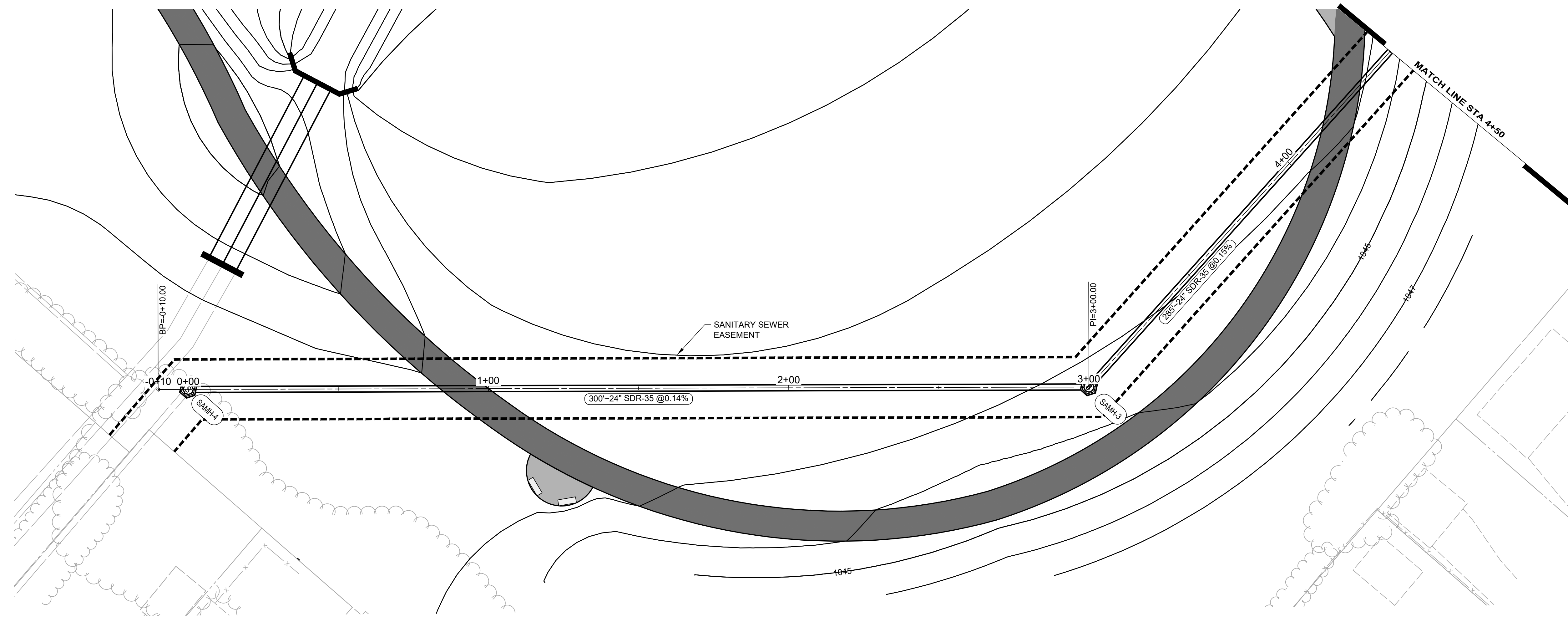
1. ALL MATERIALS DISPOSED OF OFF-SITE MUST BE DISPOSED OF IN AN ENVIRONMENTALLY SOUND FASHION. DISPOSING OF DEBRIS ON PRIVATE PROPERTY AND/OR ON AN UNAPPROVED LANDFILL IS NOT ACCEPTABLE.
2. PROVIDE SOIL EROSION BARRIERS AS REQUIRED FOR CONSTRUCTION, AS SPECIFIED AND AS DETAILED IN THESE PLANS.
3. ALL DEWATERING FLOWS ARE TO BE KEPT FREE OF SILT, SEDIMENT, DEBRIS AND OTHER POLLUTANTS THROUGH APPROPRIATE MEANS (SETTLING BASINS, FILTERS, ETC.).
4. ONLY WATER WILL BE USED FOR DUST CONTROL. NO SEPARATE PAYMENT WILL BE MADE.



ISSUED FOR:	REVIEW	NO	REVISION	DATE
ISSUE DATE: 10/23/2023	AS SHOWN			
SCALE:	PAB/RW			
DESIGNED BY:	AM/CZ/PAB			
DRAWN BY:	MFD			
CHECKED BY:				

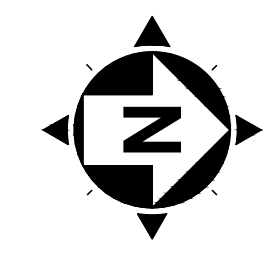
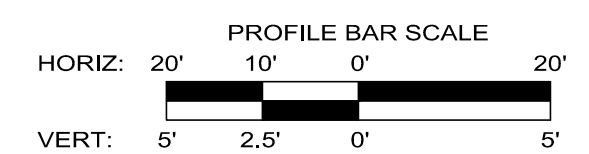
ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
BOARDMAN, OH
MAHONING COUNTY
MCSE SANITARY NOTES

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	MCSE-01
SHEET	OF
29	43



SANITARY RELOCATION1

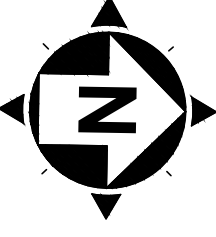
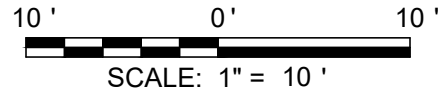
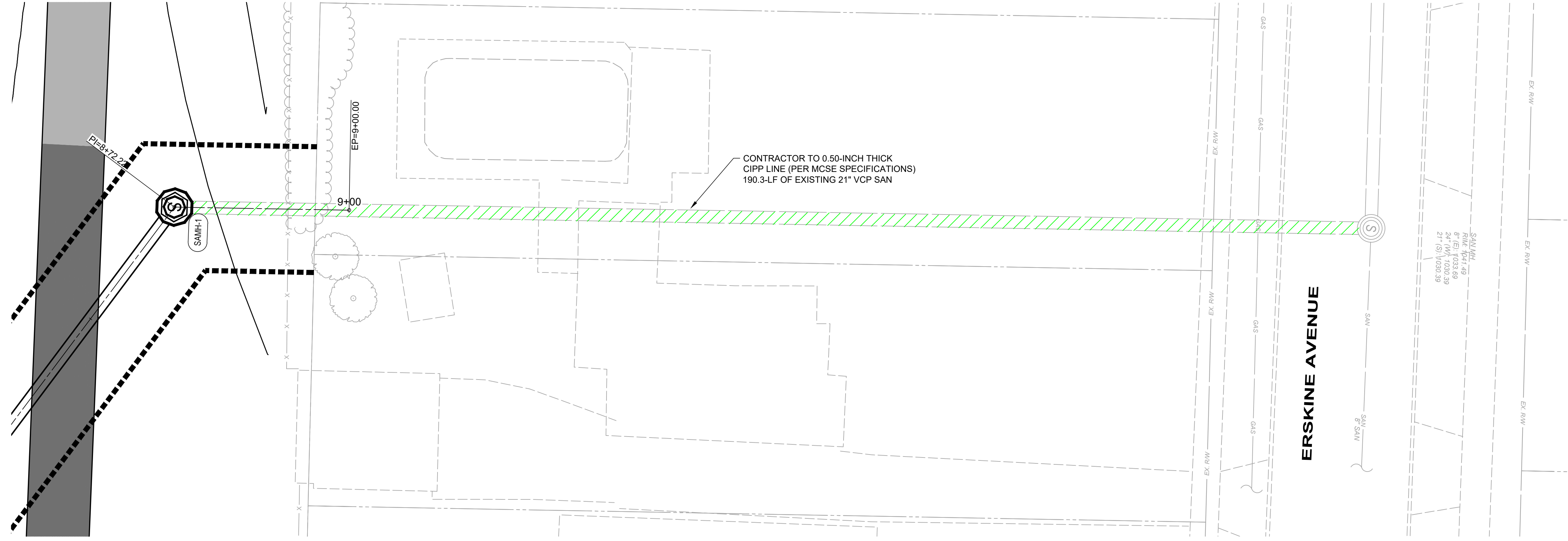
NOTE: SIGNED SANITARY EASEMENTS MUST BE RECEIVED BY MCSE PRIOR TO CONSTRUCTION. SANITARY SEWER EASEMENTS ARE EXCLUSIVE.



ISSUED FOR:	REVIEW	NO	REVISION	DATE
10/23/2023	AS SHOWN			
SCALE:	PAB/RW			
DESIGNED BY:	AMV/CZ/PAB			
DRAWN BY:	MRD			
CHECKED BY:				

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY
MCSE SANITARY SEWER RELOCATION
PLAN & PROFILE (1 OF 2)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	MCSE-03
SHEET	31
OF	43

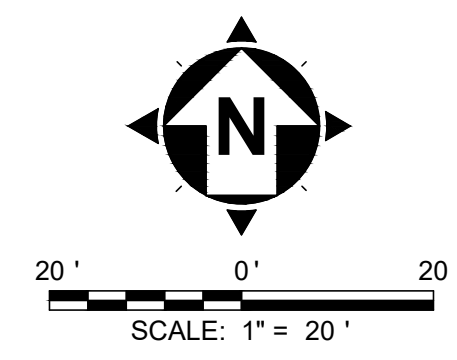


ISSUED FOR:	REVIEW	NO	REVISION	DATE
10/23/2023	AS SHOWN			
	PAB/RW			
	AM/CZ/PAB			
	MRD			

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
BOARDMAN, OH
MAHONING COUNTY

MCSE SANITARY SEWER LINING PLAN

PROJECT NO.		231566
DISCIPLINE		CIVIL
SHEET NAME		MCSE-05
SHEET	OF	
33	43	



EXISTING CONDITION REFERENCE

1. A FIELD SURVEY WAS CONDUCTED BY CT CONSULTANTS ON JULY 2023.
2. THE EXISTING UNDERGROUND UTILITIES WERE OBTAINED FROM VARIOUS SOURCES INCLUDING, BUT NOT LIMITED TO, FIELD OBSERVATIONS (E.G. ABOVE GROUND FEATURES, FLAGGED OR PAINTED MARKED UNDERGROUND UTILITIES) AND RECORDS MADE AVAILABLE (E.G. ORIGINAL CONSTRUCTION PLANS, AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICE MAPS, GIS DATABASES) TO CREATE A COMPOSITE DRAWING OF EXISTING CONDITIONS. ALTHOUGH GRAPHICALLY SHOWN AS ACCURATELY AS POSSIBLE FROM THE INFORMATION MADE AVAILABLE, THERE IS NO GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED, OF THE COMPLETENESS, CORRECTNESS OR ACCURACY OF SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE CONTRACTOR SHALL PERFORM A FIELD INVESTIGATION TO CONFIRM LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND STRUCTURES IN THE WORK AREA. IN THE EVENT UTILITY LOCATIONS OR DEPTHS DIFFER IN FILED FROM PLAN, CONTRACTOR SHALL NOTIFY THE ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE AS WELL AS THE ACTUAL LOCATION, ALIGNMENT, AND ELEVATIONS OF ALL EXISTING UTILITIES WITHIN AND ADJACENT TO THE GENERAL LIMITS OF THESE IMPROVEMENTS INCLUDING WATERLINES, SANITARY AND STORM SEWERS, GAS LINES, COMMUNICATION LINES/BANKS, ELECTRIC LINES, ETC. THIS MAY REQUIRE EXPLORATORY EXCAVATIONS TO BE PERFORMED BY THE CONTRACTOR FOR WHICH HE WILL NOT BE REIMBURSED. THE CONTRACTOR SHALL NOT ASSUME EXISTING UTILITIES WERE INSTALLED AT TYPICAL OR STANDARD DEPTHS OR AT UNIFORM SLOPES, GRADES OR DEPTHS BETWEEN ACCESS POINTS (CATCH BASINS, MANHOLES, JUNCTION CHAMBERS, ETC.)
4. THE CONTRACTOR SHALL CONFIRM OR LOCATE ALL UNDERGROUND UTILITIES WITHIN EXCAVATION LIMITS WHETHER OR NOT SHOWN ON THE CONSTRUCTIONS PLANS OR FIELD MARKED BY OUPS, OGPUPS, OR OTHER UTILITY MARKING SERVICE. THE CONTRACTOR SHALL DOCUMENT ANY UTILITY NOT SHOWN OR DIFFERING FROM THE CONSTRUCTION PLANS, AND PROVIDE THE INFORMATION TO THE OWNER SHOWING LOCATIONS WITH MEASUREMENTS TO REFERENCE POINTS. ANY RESULTING UTILITY CONFLICTS WITH PROPOSED IMPROVEMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER AND DESIGN ENGINEER.

ISSUED FOR:	REVIEW	NO	REVISION	DATE
ISSUE DATE: 10/23/2023	AS SHOWN			
SCALE:	PAB/RW			
DESIGNED BY:	AM/CZ/PAB			
DRAWN BY:				
CHECKED BY:	MKD			

CODED NOTES:

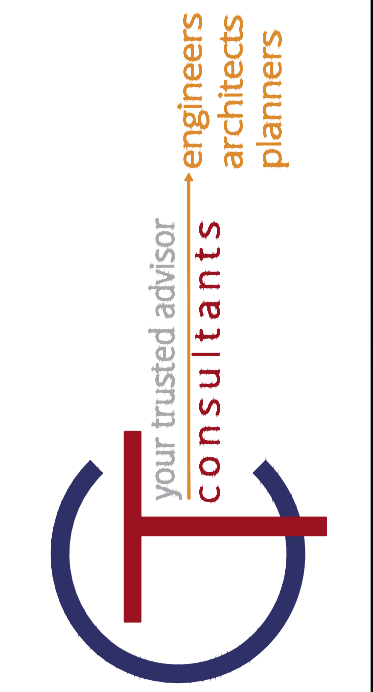
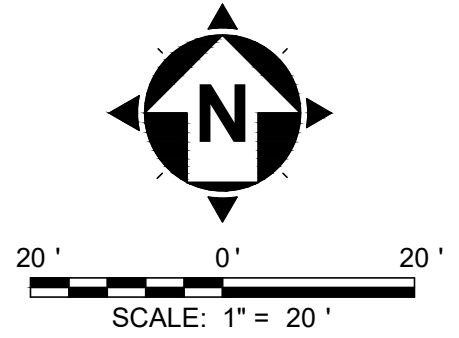
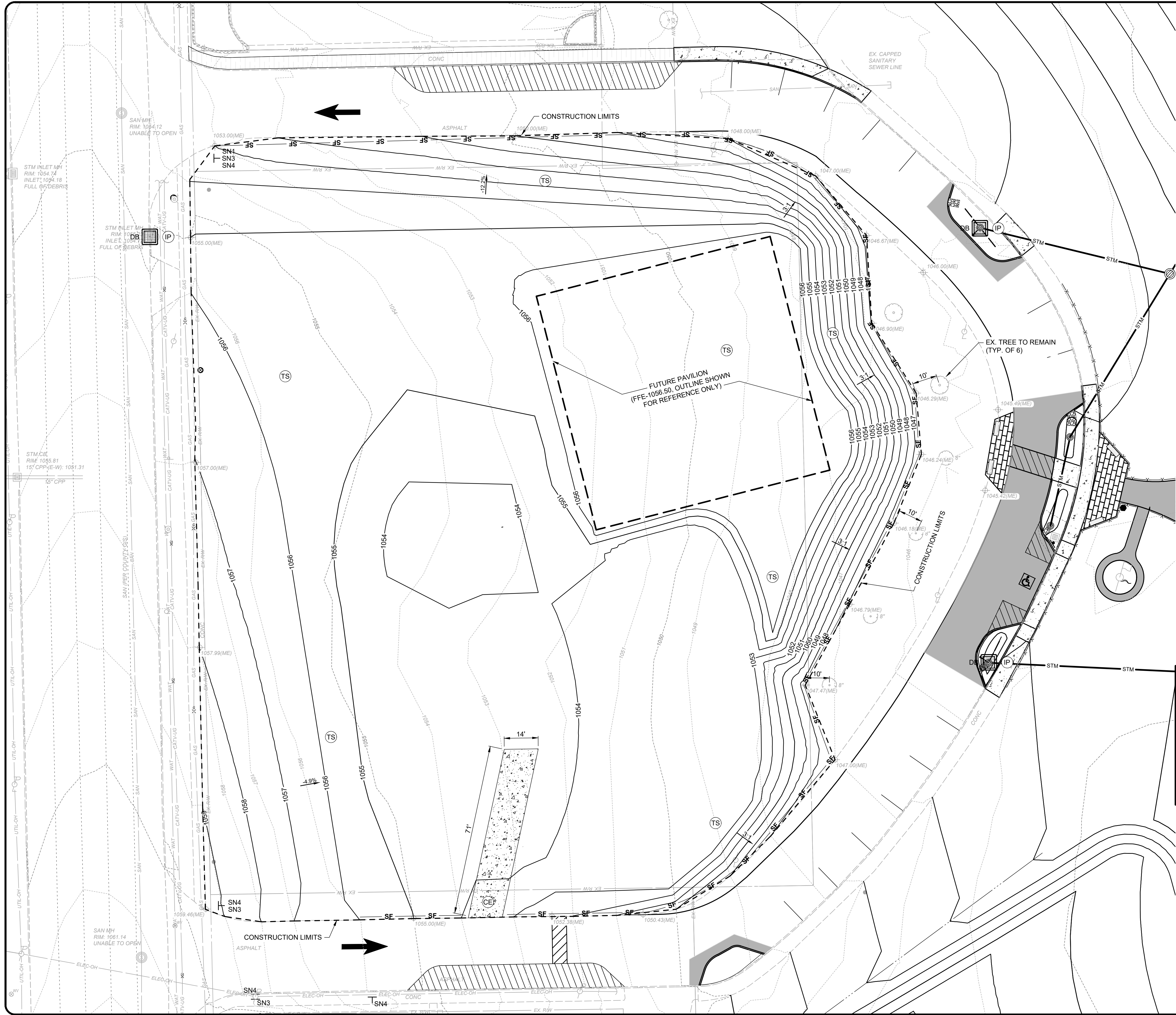
- 1 EXISTING LIGHT POLE AND FOUNDATION TO BE REMOVED.

SHEET LEGEND

- REMOVE EX. TREE/STUMP

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 MAHONING COUNTY BOARDMAN, OH
EXISTING CONDITIONS AND DEMOLITION PLAN - PAVILION - PHASE 1

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	PAV-01
SHEET	OF
34	43



EXISTING CONDITION REFERENCE

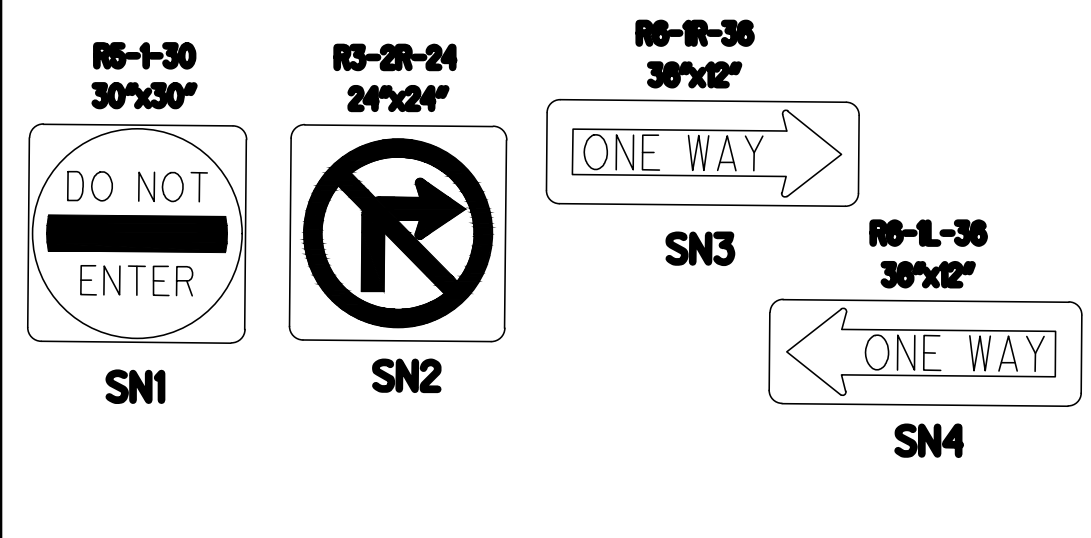
1. A FIELD SURVEY WAS CONDUCTED BY CT CONSULTANTS ON JULY 2023.
2. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES WHETHER SHOWN ON THIS PLAN OR NOT.

SHEET LEGEND

- SF — SILT FENCE
- (TS) TEMP. SEEDING
- 850.00(ME) MATCH EXISTING ELEVATION
- 1.0% PROPOSED SLOPE
- 650 CONTOUR - MAJOR
- 649 CONTOUR - MINOR
- 650 CONTOUR - MAJOR
- 649 CONTOUR - MINOR
- DB (IP) STORM INLET PROTECTION; DANDY BAG
- (CE) CONSTRUCTION ENTRANCE (USE EX. DRIVE)
- EXISTING SIDEWALK REHABILITATION (INCLUDES WEED TREATMENT, POWERWASHING, AND SEALING)

GRADING NOTES

1. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS AND MATERIALS OF CONSTRUCTION. THE DESIGN ENGINEER SHALL NOT BE RESPONSIBLE FOR THE SUITABILITY OF MATERIAL UNDERLYING THE PROJECT SITE. THIS COULD INCLUDE, BUT NOT BE LIMITED TO, UNSUITABLE OR UNSTABLE SOIL/SUBSURFACE CONDITIONS, ROCK, WATER (PERCHED OR FREE), SPRINGS, OBSTRUCTIONS, ETC.
2. THE CONTRACTOR SHALL PROVIDE ROUGH GRADING TO WITHIN 1" OF GRADES SHOWN ON THE GRADING PLANS.
3. THE CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, PAVEMENTS AND WALKS TO REMAIN FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING OR WASHOUT CREATED BY EARTH MOVING OPERATIONS.
4. TOPSOIL SHALL BE STRIPPED AND STOCKPILED TO WHATEVER DEPTH ENCOUNTERED, AND IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL.
5. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDATIONS IN THE GEOTECHNICAL ENGINEERING EXPLORATION REPORT.



NO.	REVISION	DATE

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK BOARDMAN, OH
MAHONING COUNTY
ROUGH GRADING PLAN - PAVILION - PHASE 1

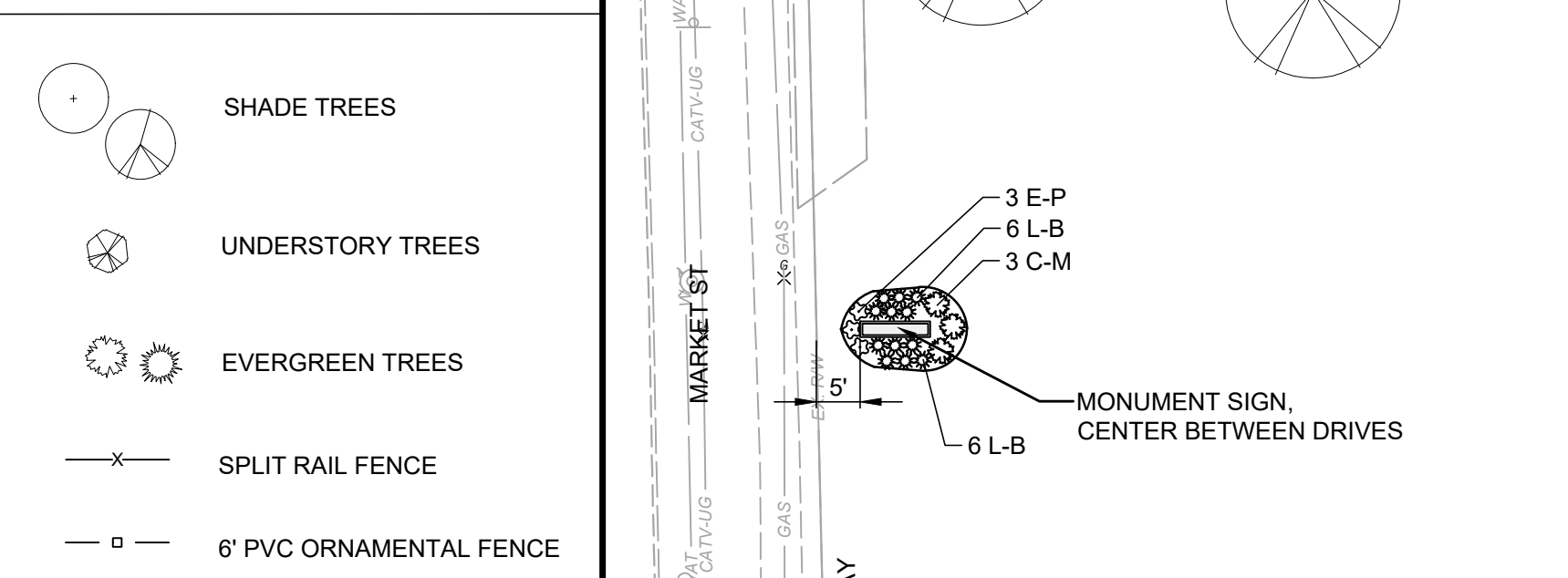
PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	PAV-02
SHEET	35
OF	43

H:\023231566\DWG\ESTP\PAVILION\DWG\0231566_ROUGH GRADING - PAVILION.DWG - ROUGH GRADING - PAVILION - 3/13/2024 1:54:30 PM - PATRICK BLAKE

PLANT MATERIAL LIST

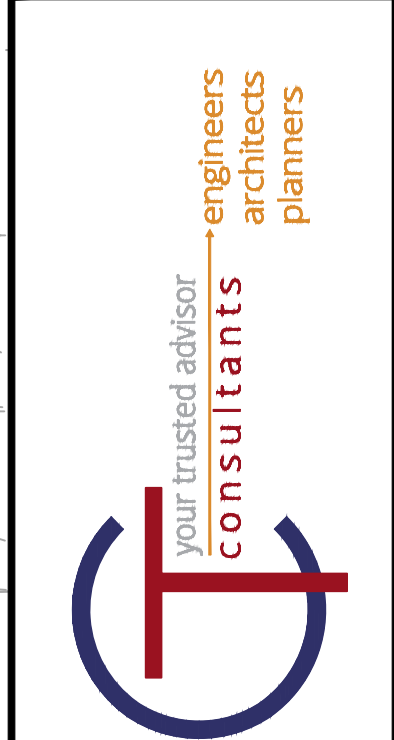
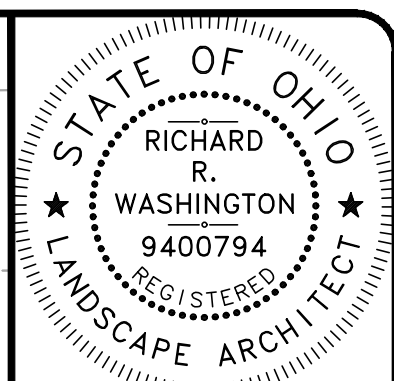
QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
DECIDUOUS SHADE TREES					
9	A-A	AESCULUS X 'AUTUMN SPLENDOR'	AUTUMN SPLENDOR BUCKEYE	2" CAL.	B&B
1	C-C	CARYA CORDIFORMIS	BITTERNUT HICKORY	1-1/4" CAL.	B&B
4	D-V	DIOSPYROS VIRGINIANA	COMMON PERSIMMON	1-1/4" CAL.	B&B
2	G-D	GYMNOCLADUS DIOICUS	KENTUCKY COFFEETREE	1-1/4" CAL.	B&B
7	L-S	LIQUIDAMBAR STYRACIFLUA	SWEETGUM	1-1/4" CAL.	B&B
7	L-T	LIRIODENDRON TULIIFERA	TULIPTREE	2" CAL.	B&B
6	M-A	MAGNOLIA ACUMINATA	CUCUMBERTREE MAGNOLIA	1-1/4" CAL.	B&B
4	M-M	METASSEQUIOIA GLYPTOSTROBODES	DAWN REDWOOD	2" CAL.	B&B
2	N-S	NYSSA SYLVATICA	BLACK OR SOUR GUM	2" CAL.	B&B
6	P-O	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	2" CAL.	B&B
6	Q-B	QUERCUS BICOLOR	SWAMP WHITE OAK	2" CAL.	B&B
4	Q-M	QUERCUS MACROCARPA	BUR OAK	2" CAL.	B&B
10	Q-S	QUERCUS MICHAUXII	SWAMP CHESTNUT OAK	1-1/4" CAL.	B&B
5	S-N	SALIX NIGRA	BLACK WILLOW	1-1/4" CAL.	B&B
12	S-S	SASSAFRAS ALBIDUM	SASSAFRAS	2" CAL.	B&B
4	T-A	TILIA A. AMERICAN SENTRY	AMERICAN SENTRY LINDEN	2" CAL.	B&B
8	U-R	ULMUS RUBRA	SLIPPERY ELM	1-1/4" CAL.	B&B
DECIDUOUS ORNAMENTAL TREES					
17	A-G	AMELANCHIER X G. 'A BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	6'	#5 CONT.
7	A-R	ALNUS INCANA SBSP. RUGOSA	SPECKLED ALDER	6'	#5 CONT.
9	C-F	CERCIS 'FOREST PANSY'	FOREST PANSY REDBUD	6'	#5 CONT.
16	C-H	CORYLUS CORNUTA	BEAKED HAZELNUT	6'	#5 CONT.
EVERGREEN TREES					
6	A-C	ABIES BALSAMEA 'CANAAH'	CANAAH FIR	6'	B&B
9	J-V	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	6'	B&B
4	P-G	PICEA GLAUCA	WHITE SPRUCE	6'	B&B
5	P-P	PINUS RIGIDA	PITCH PINE	4'	#5 CONT.
4	P-R	PINUS RESINOSA	RED PINE	4'	#5 CONT.
2	P-V	PINUS VIRGINIANA	VIRGINIA PINE	4'	#5 CONT.
DECIDUOUS SHRUBS					
44	A-M	ARONIA M. 'GROUND HUG'	GROUND HUG CHOKEBERRY	15"	#3 CONT.
3	C-A	CEANOTHUS AMERICANUS	NEW JERSEY TEA	18"	#3 CONT.
6	C-M	CEPHALANTHUS O. MAGICAL M	MAGICAL MOONLIGHT BUTTONBUSH	18"	#3 CONT.
6	C-S	CORNUS STOLONIFERA 'ARCTIC FIRE'	ARCTIC FIRE DOGWOOD	24"	#3 CONT.
2	H-M	HYDRANGEA Q. 'MUNCHKIN'	MUNCHKIN OAKLEAF HYDRANGEA	18"	#3 CONT.
3	H-F	HYPERICUM FRONDOSUM 'SMS'	SUNBURST ST. JOHNSWORT	12"	#2 CONT.
35	I-V	ILEX V. 'RED SPRITE'	RED SPRITE WINTERBERRY	24"	#3 CONT.
5	R-A	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	18"	#3 CONT.
PERENNIALS					
9	B-A	BAPTISIA AUSTRALIS	BLUE FALSE INDIGO	CLUMP	#2 CONT.
13	E-P	ECHINACEA PURPUREA	PURPLE CONEFLOWER	CLUMP	#2 CONT.
21	L-B	LIATRIS SPICATA	BLAZING STAR	CLUMP	#2 CONT.
6	P-S	PANICUM V. 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	CLUMP	#2 CONT.
6	P-D	PHLOX DIVARICATA 'BLUE MOON'	BLUE MOON PHLOX	CLUMP	#2 CONT.
5	P-V	PHYSOSTEGIA VIRGINIANA 'M.M.'	MISS MANNERS OBEDIENT PLANT	CLUMP	#2 CONT.
5	R-G	RUDBECKIA F. GOLDSTURM	GOLDSTURM BLACK EYED SUSAN	CLUMP	#2 CONT.
9	T-C	TIARELLA CORDIFOLIA	FOAM FLOWER	CLUMP	#2 CONT.

LEGEND



CODED NOTES

- ① INFORMATION KIOSK
- ② TRAIL SIGN
- ③ WASTE RECEPTACLE
- ④ DOG WASTE STATION
- ⑤ BAT BOX
- ⑥ LIGHT POLE
- ⑦ BENCH

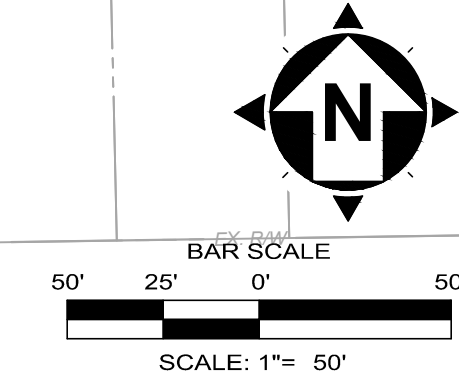


NO.	REVISION	DATE

ISSUED FOR:	REVIEW:	DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
ABC WATER & STORMWATER DISTRICT	10/23/2023	AS SHOWN	PAB/RW	AM/CZ/PAB	MJD	

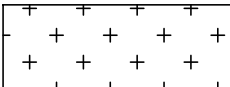
ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY
LANDSCAPE PLAN

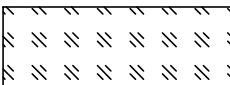
PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	L-01
SHEET	OF
36	43

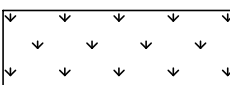


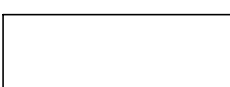
H:\020231566\DWG\EST\231566_LANDSCAPE PLAN.DWG - L-01 - 4/29/2024 4:02:36 PM - PATRICK BLAKE

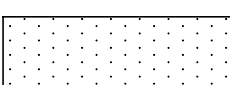
LEGEND


- 


 HUMMINGBIRD BUTTERFLY SEED MIX 7450 SY
- 

 NATIVE SHORT GRASS AND WILDFLOWER SEED MIX 5,000 SY
- 

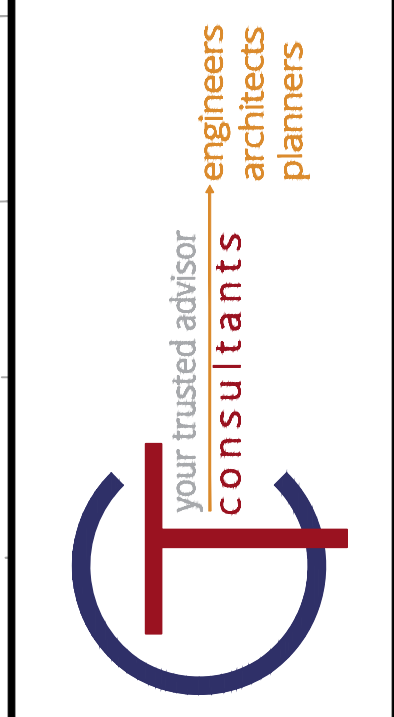
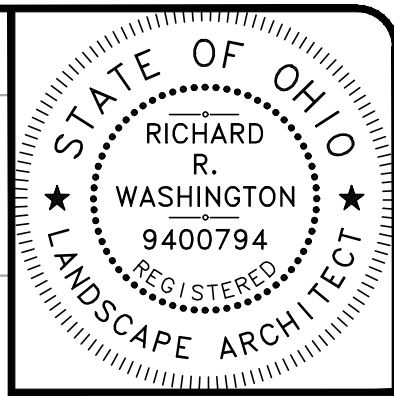
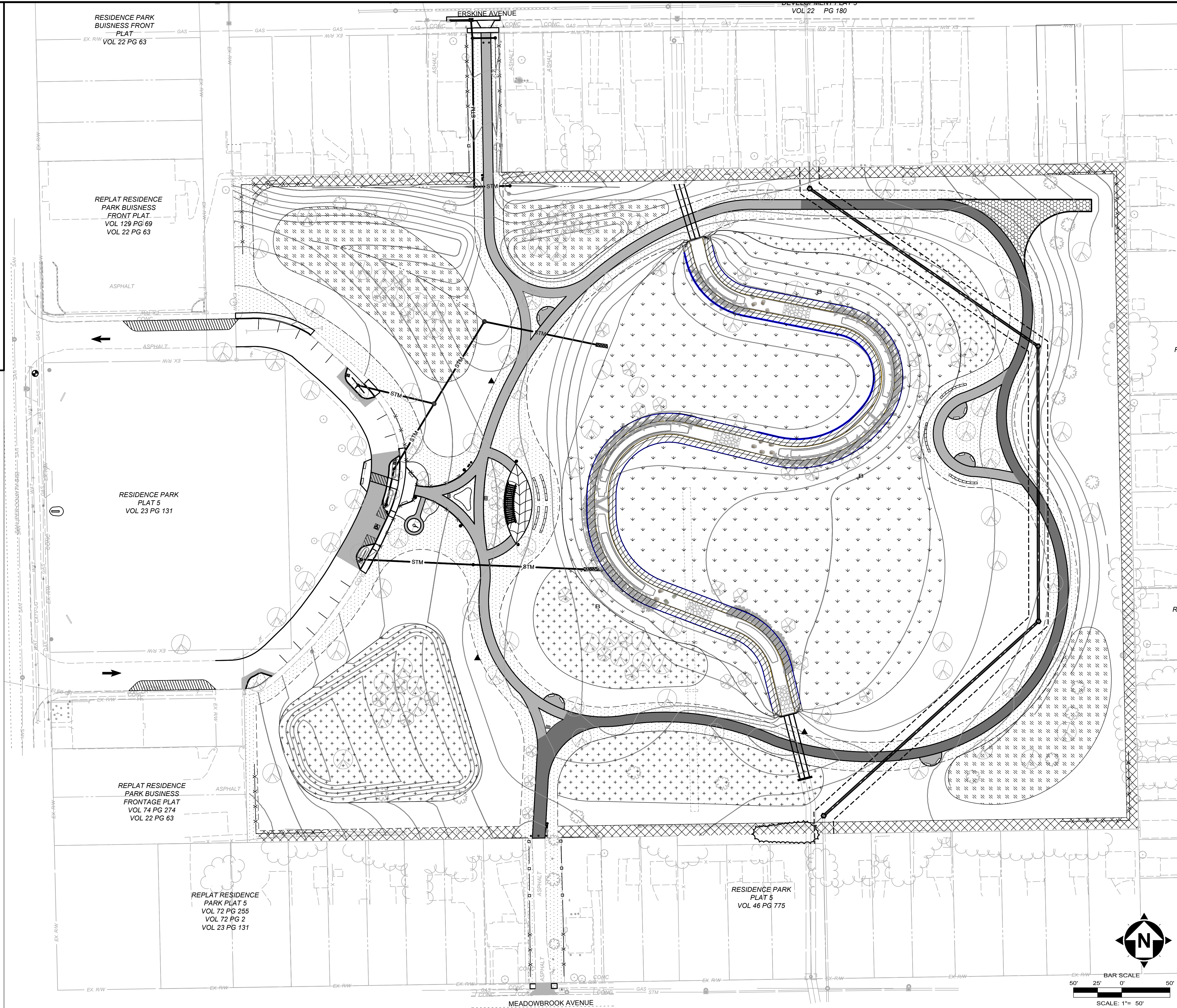
 FLOODPLAIN SEED MIX 14,000 SY
- 

 MESIC SHORT GRASS 25,900 SY
- 

 MAINTAINED LAWN SEED MIX 9,130 SY
- 

 CLOVER LAWN SEED MIX 3,040 SY
- 

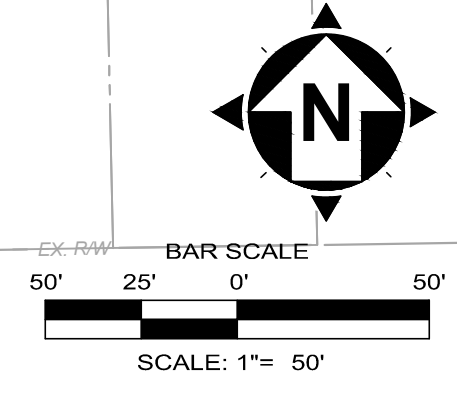
 FLOODPLAIN MIX - STREAM BANK
 (refer to stream plans for seed mix) 1,770 SY
- LIMITS OF MOWING

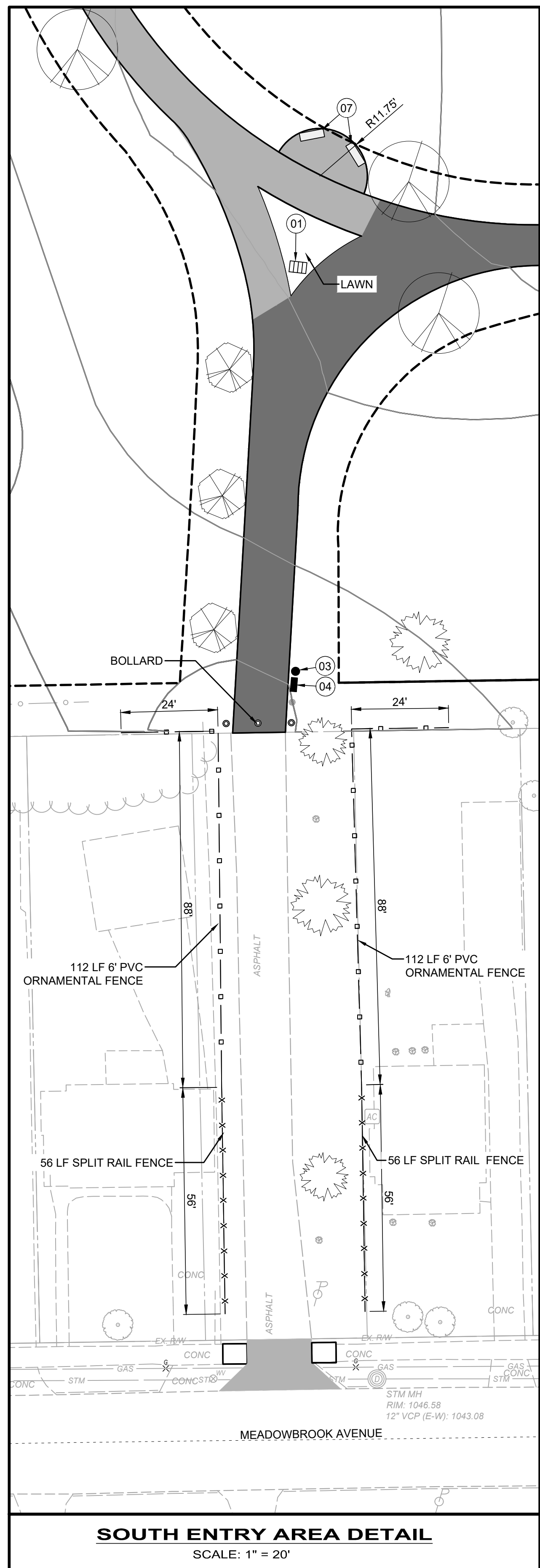


ISSUED FOR:	REVIEW NO.	REVISION	DATE
ISSUE DATE: 10/23/2023	AS SHOWN		
SCALE: AS SHOWN	PAB/RW		
DESIGNED BY: AM/CZ/PAB			
DRAWN BY: AM/CZ/PAB			
CHECKED BY: MTD			

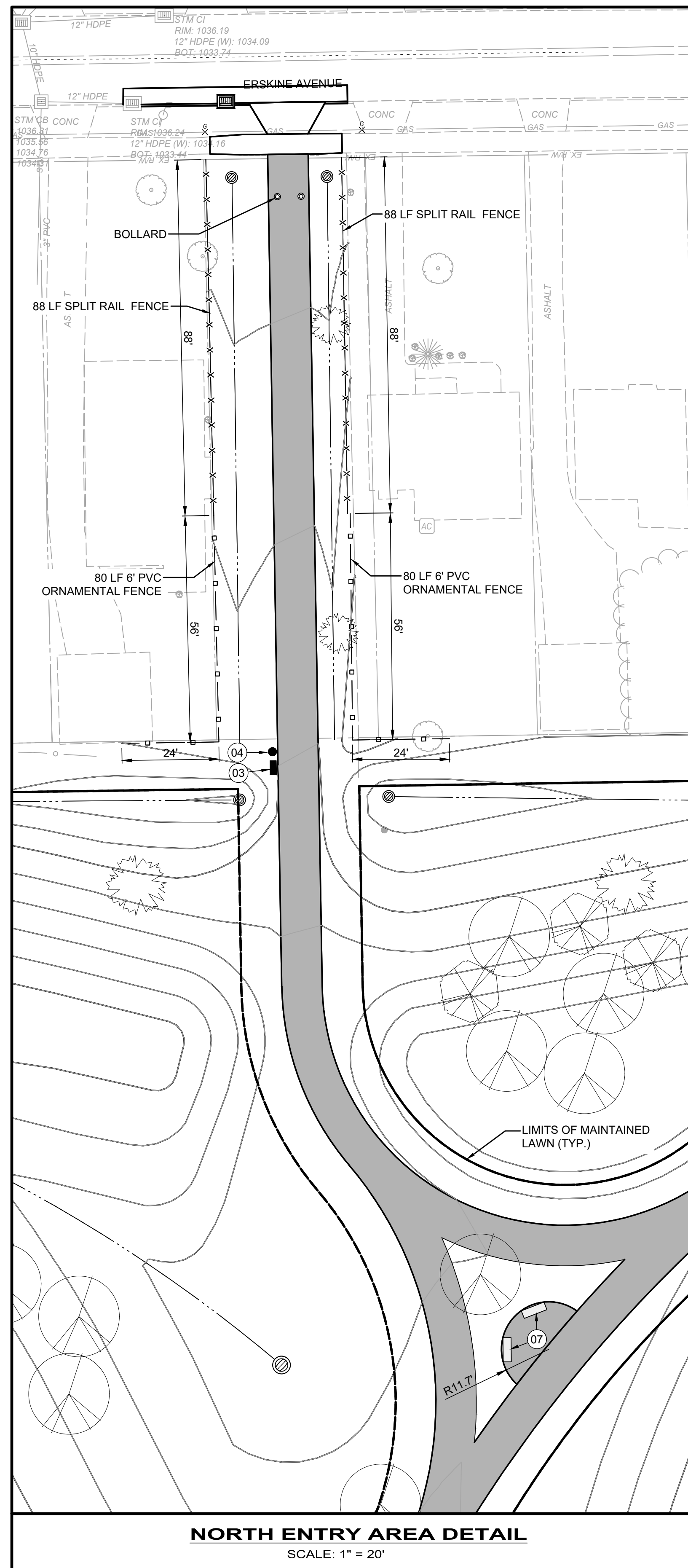
ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY
LANDSCAPE SEEDING PLAN

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	L-02
SHEET	37
OF	43

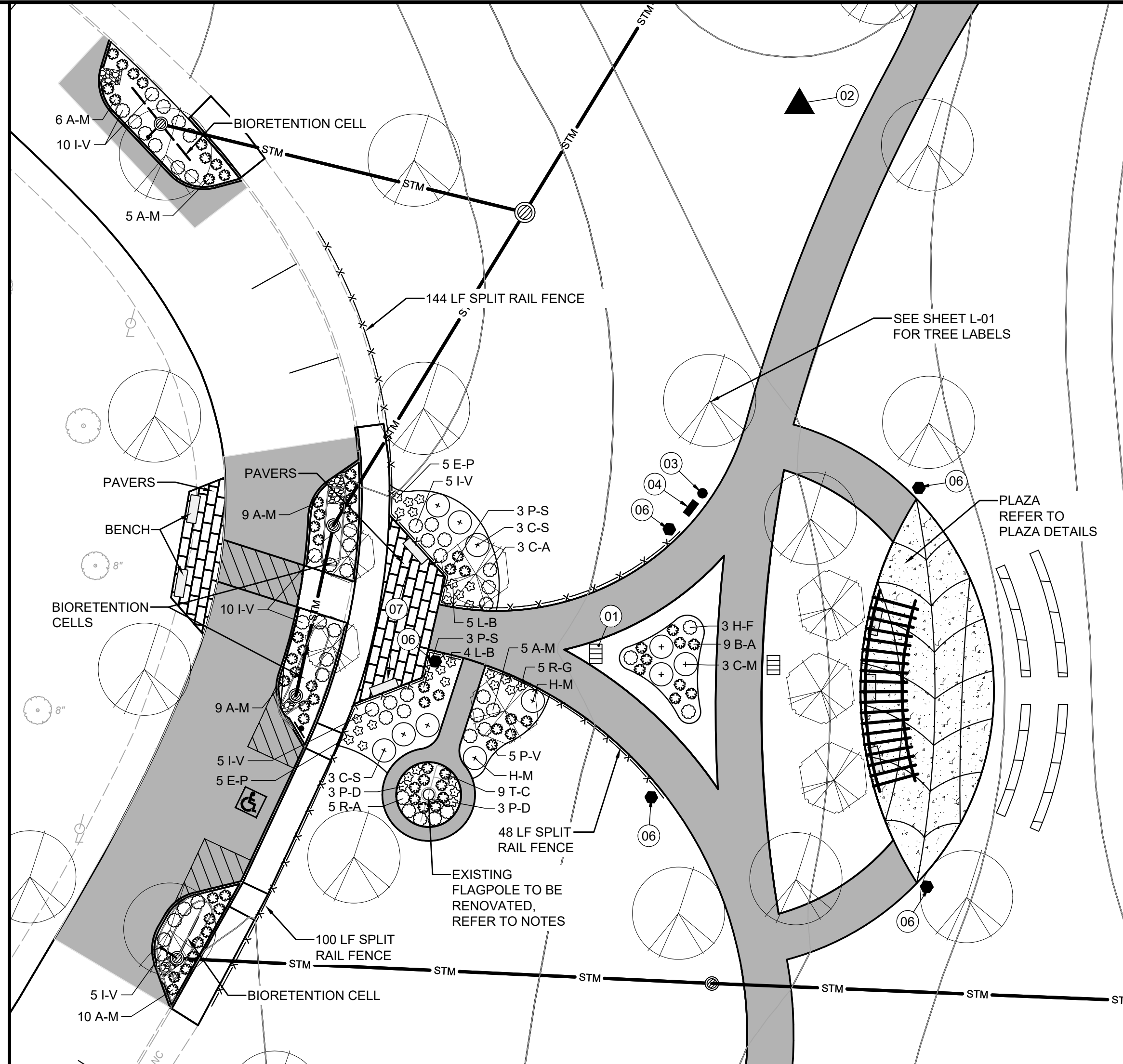




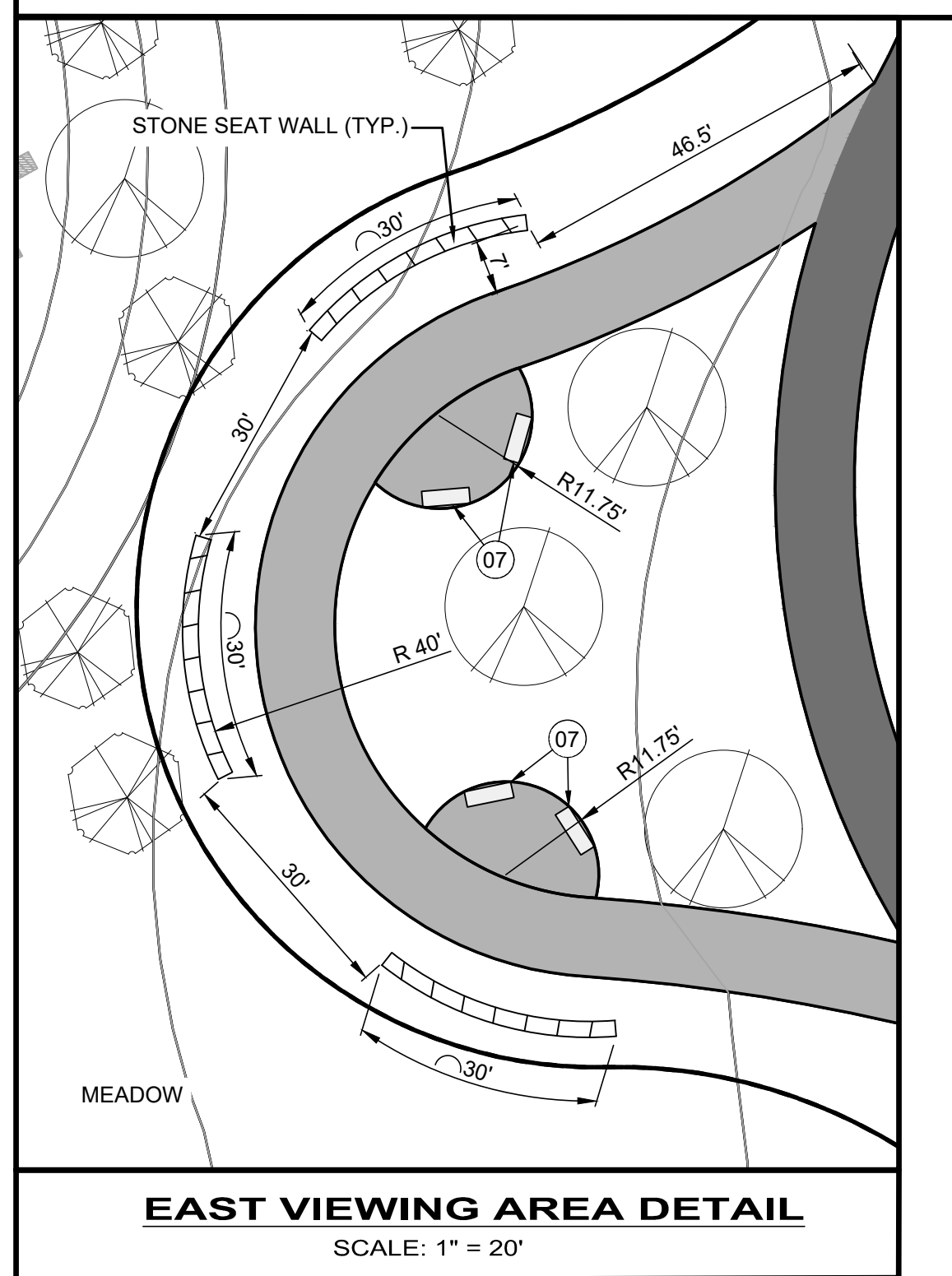
SOUTH ENTRY AREA DETAIL
SCALE: 1" = 20'



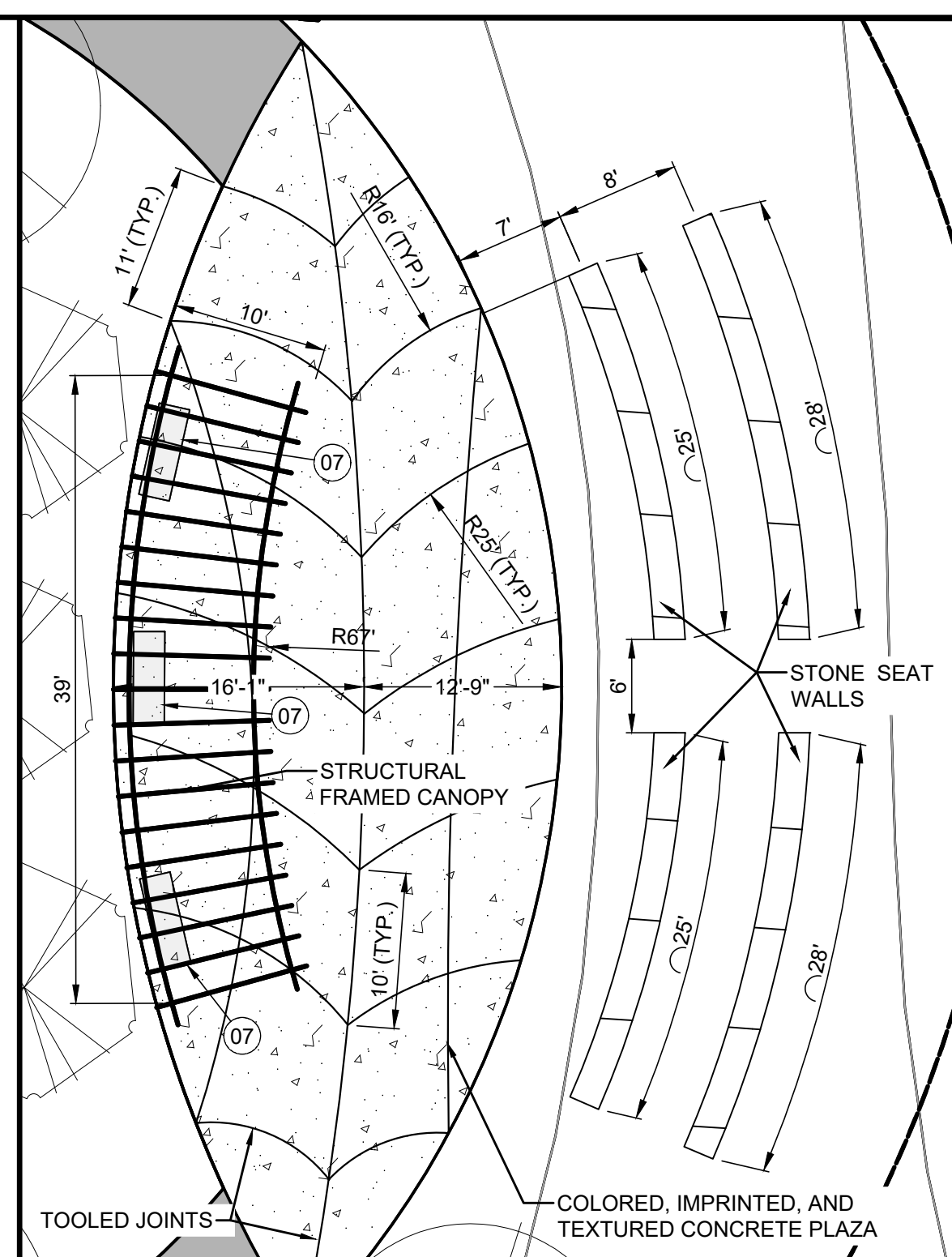
NORTH ENTRY AREA DETAIL
SCALE: 1" = 20'



MAIN ENTRY AREA DETAIL
SCALE: 1" = 20'



EAST VIEWING AREA DETAIL
SCALE: 1" = 20'



PLAZA DETAIL
SCALE: 1" = 10'

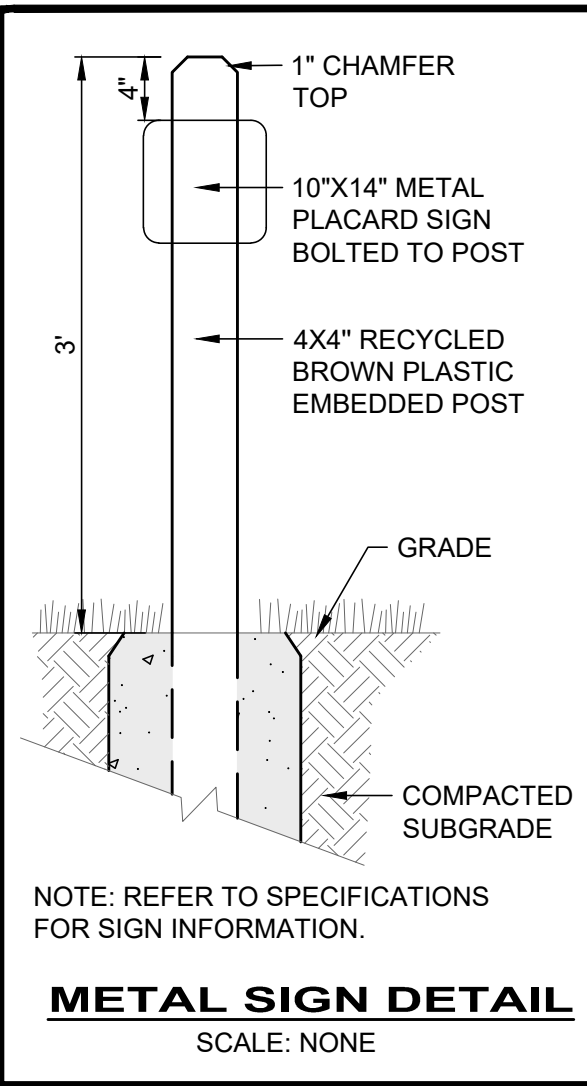


ISSUED FOR:	REVIEW	NO	REVISION	DATE
10/23/2023	AS SHOWN			
SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	
	PAB/RW	AM/CZ/PAB	MRD	

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
 BOARDMAN, OH
 MAHONING COUNTY

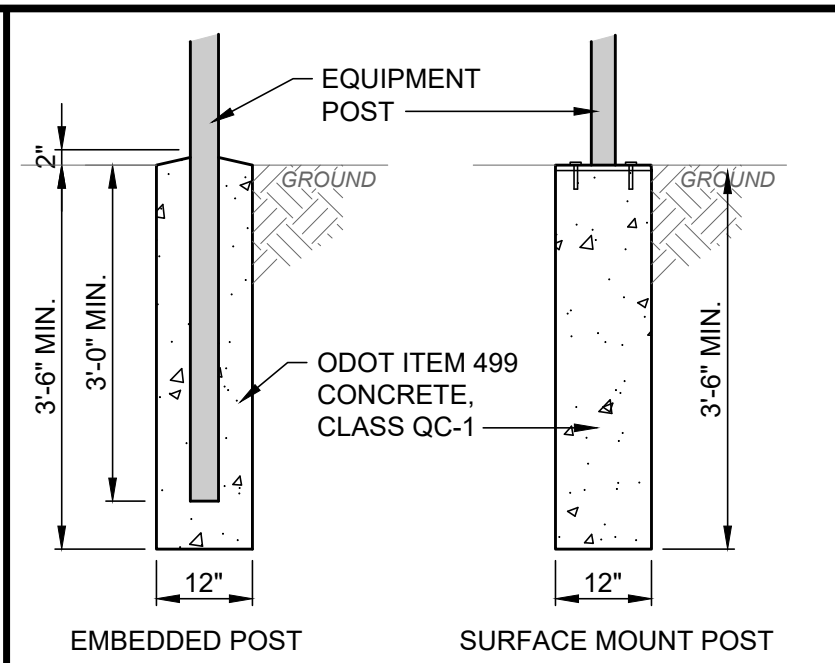
LANDSCAPE DETAILS (1 OF 2)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	L-03
SHEET	OF
38	43



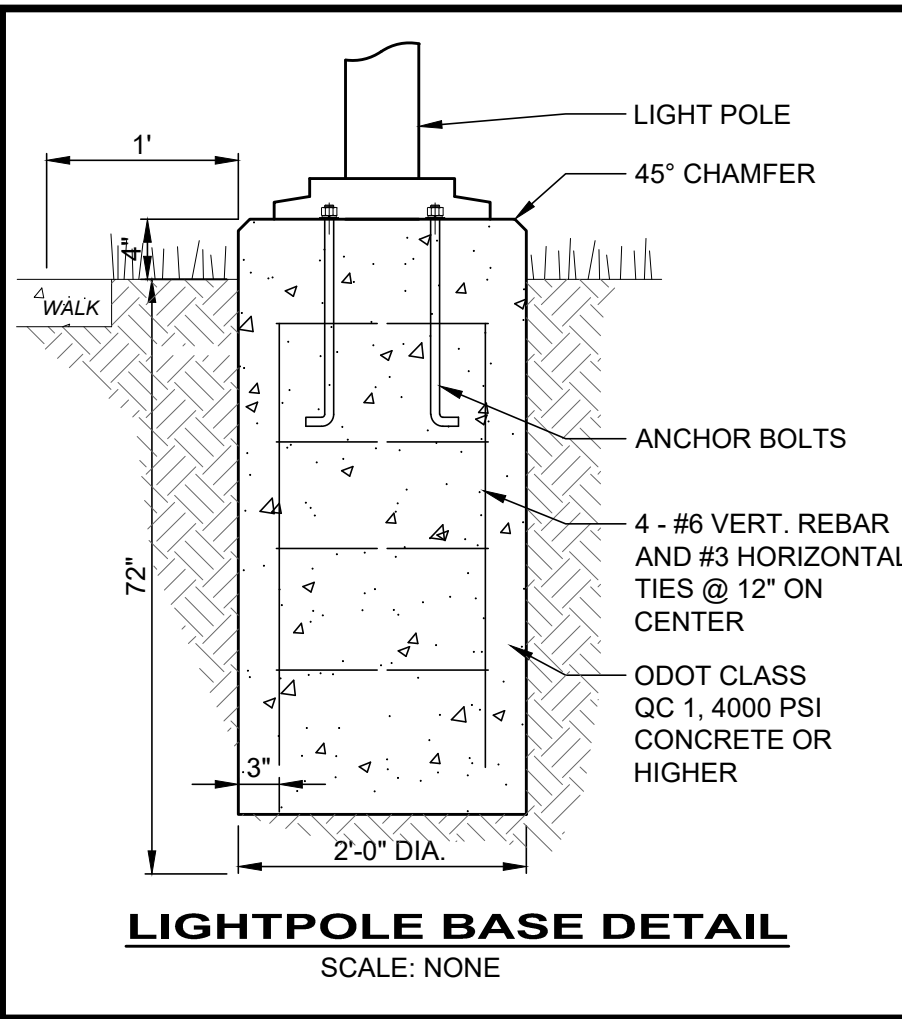
NOTE: REFER TO SPECIFICATIONS FOR SIGN INFORMATION.

METAL SIGN DETAIL
SCALE: NONE

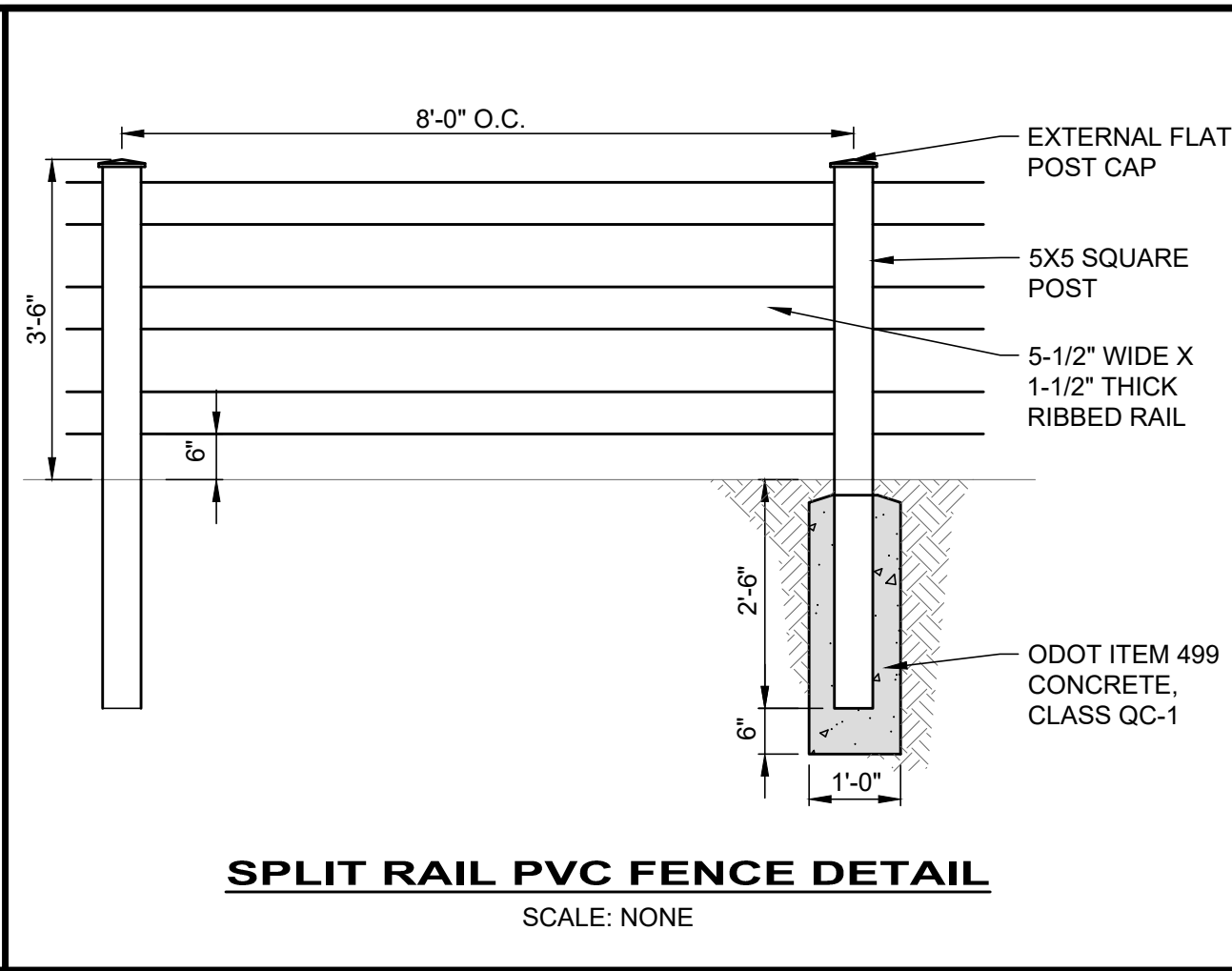


- NOTES:
- POSTS SHALL BE SMOOTH, WATER TIGHT, AND FREE OF BURRS AND SHARP PROJECTIONS FABRICATED FROM SCH. 40 STEEL PIPE PER ASTM A-53.
 - GALVANIZE ALL PIPES AFTER FABRICATION PER ASTM A-123. RE-GALVANIZE AREAS WHERE COATING IS DAMAGED.
 - ALL HARDWARE, CONNECTORS, BOLTS, NUTS, WASHERS, ETC. SHALL BE HOT-DIPPED ZINC COATED GALVANIZED STEEL PER ASTM A653.
 - THIS DETAIL IS FOR REFERENCE AND GENERAL DIMENSION CONTROL ONLY; SEE MANUFACTURER'S SPECIFICATIONS FOR ACTUAL DIMENSIONS, FASTENERS, MATERIALS, CONFIGURATION, PARTS LIST, ETC.

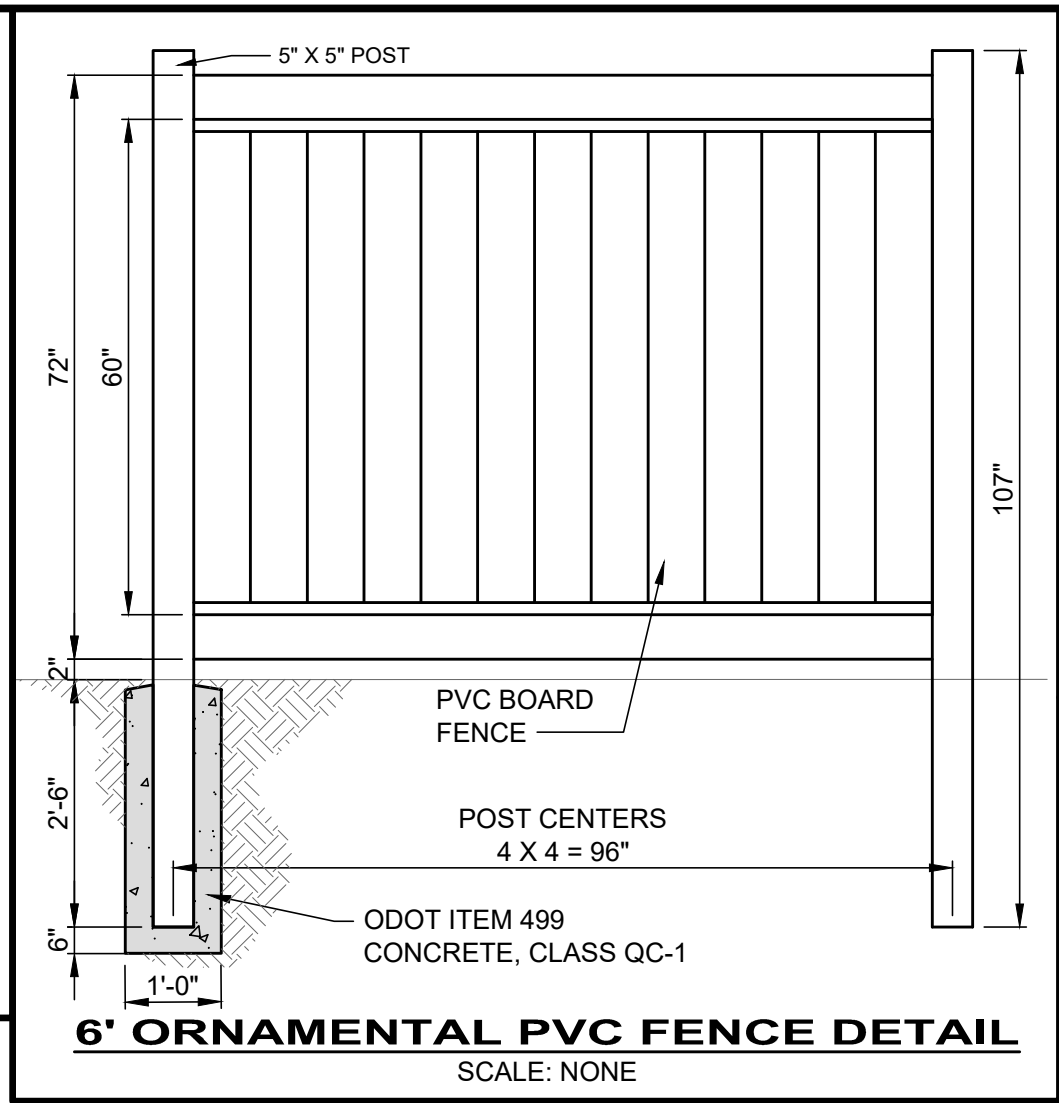
FURNISHING FOOTER DETAIL
SCALE: NONE



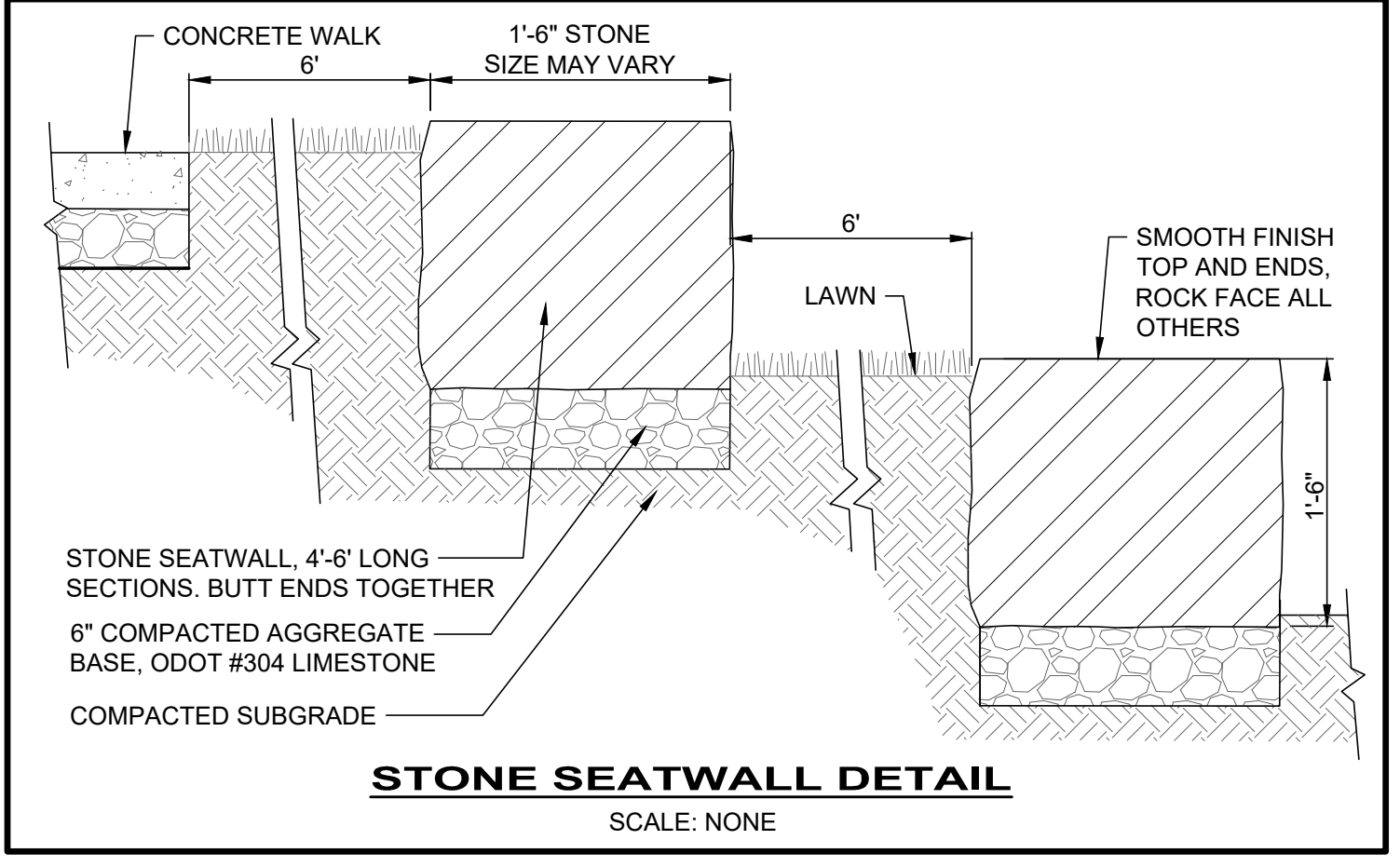
LIGHTPOLE BASE DETAIL
SCALE: NONE



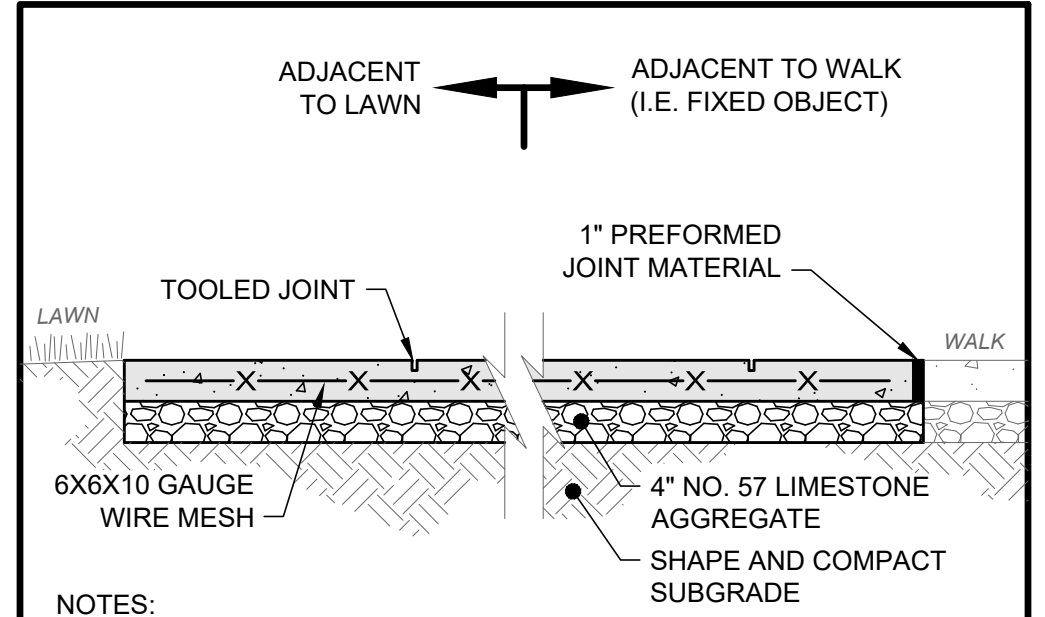
SPLIT RAIL PVC FENCE DETAIL
SCALE: NONE



6' ORNAMENTAL PVC FENCE DETAIL
SCALE: NONE

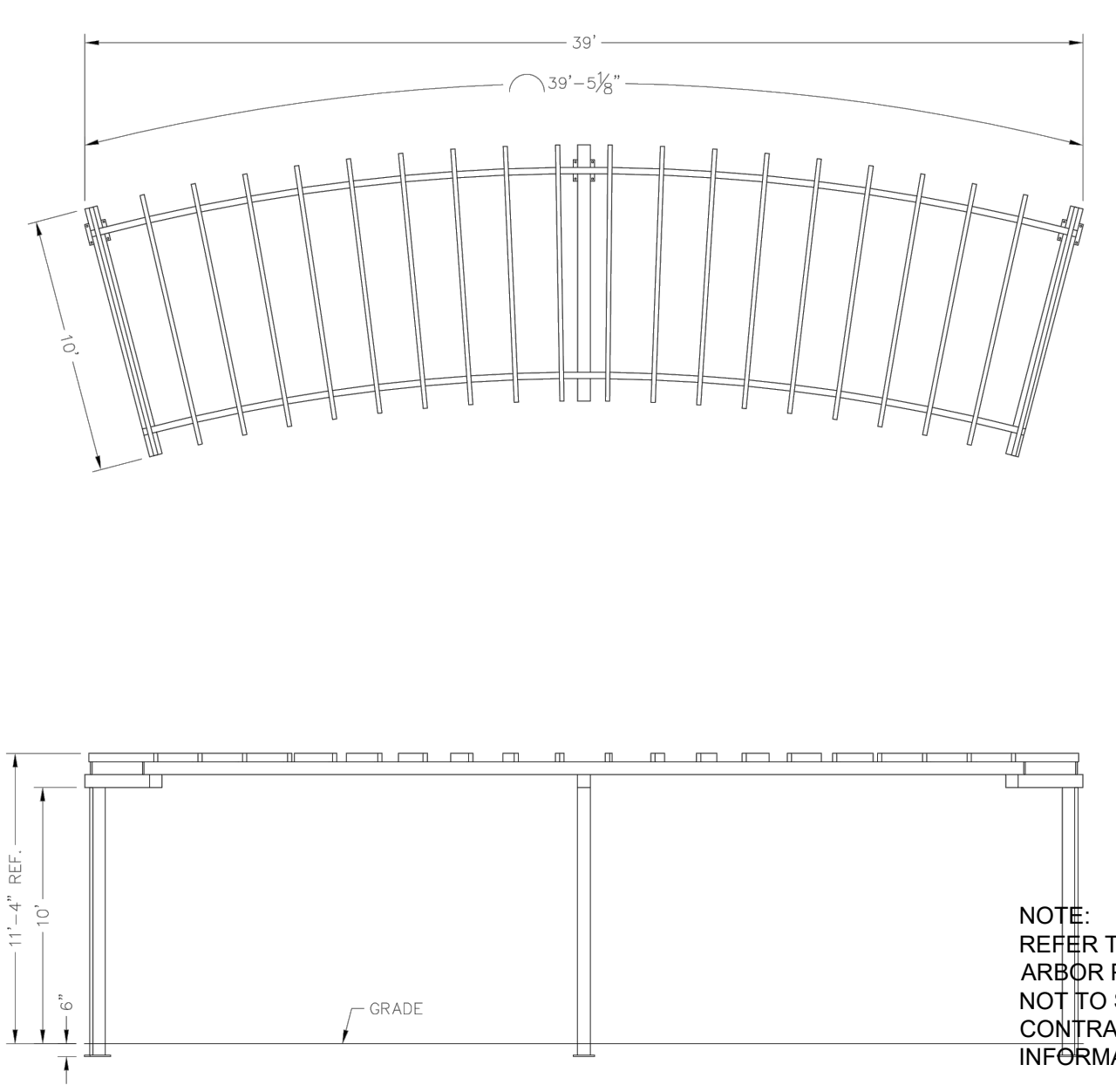


STONE SEATWALL DETAIL
SCALE: NONE



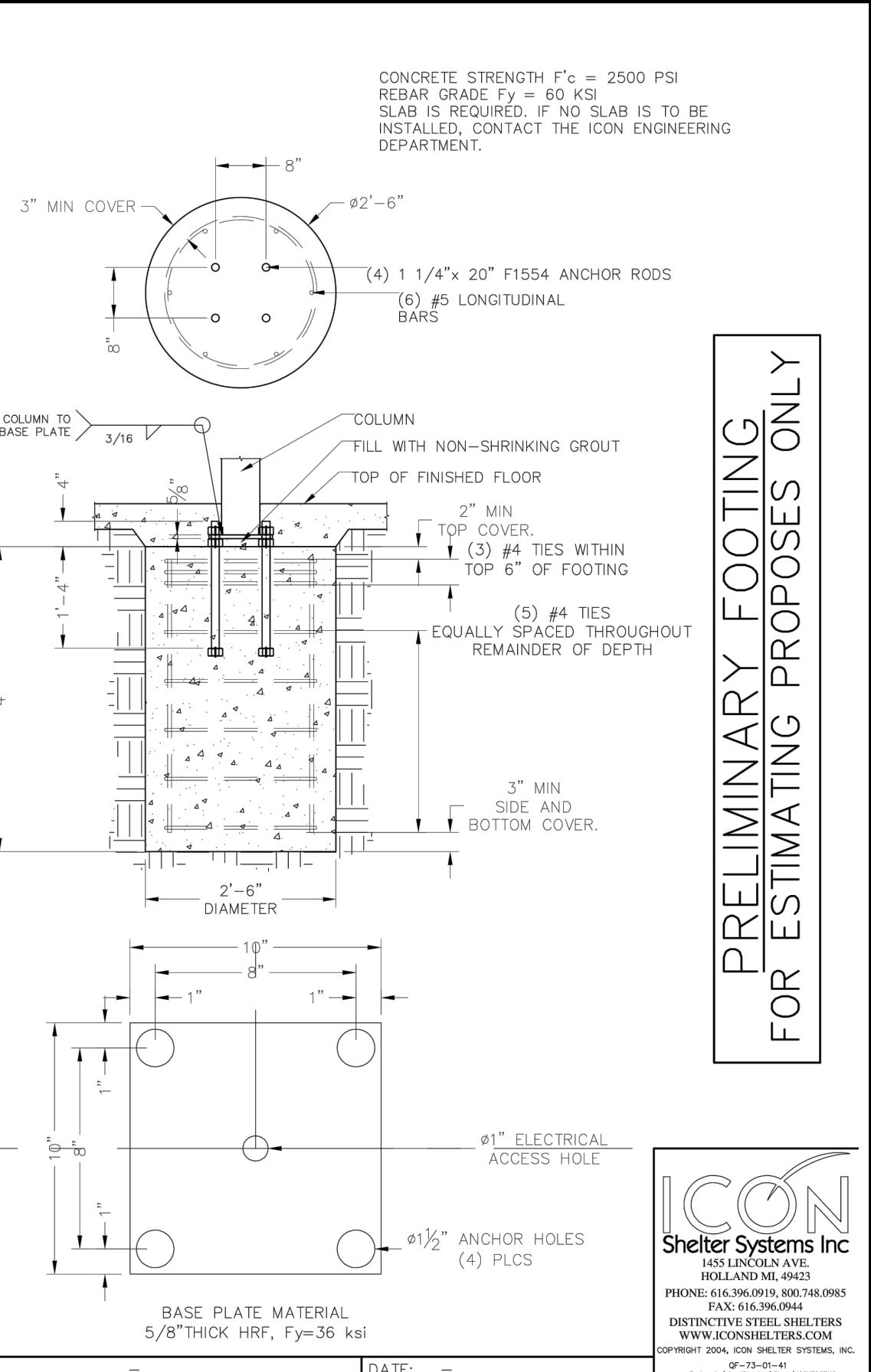
- NOTES:
- SEE LAYOUT PLAN FOR JOINT LOCATIONS.
 - HAND TOOL JOINT 1/8" WIDE BY 1/4 OF "T" DEEP.
 - ROUND ALL EDGES AND JOINTS WITH A 1/4" RADIUS.
 - INSTALL PREFORMED JOINT MATERIAL EVERY 30', OR BETWEEN SIDEWALK AND FIXED OBJECT (I.E. MANHOLE, WALK, BUILDING). WALK SHOWN FOR REFERENCE ONLY.
 - DECORATIVE EXPOSED AGGREGATE MIX. CEMENT MIX, 600 LBS, TYPE 1; 1,800 LBS #8 WASHED BANK RUN GRAVEL; 1,220 LBS SAND.
 - APPLY CLEAN CURE AND SEAL COMPOUND.
 - COLOR CONCRETE MIX SHALL BE SCOFIELD INTEGRAL SG. COLOR TO BE HORIZON BEIGE AS APPROVED BY OWNER.
 - PROVIDE MOCKUP EXAMPLE FOR APPROVAL.

COLORED, IMPRINTED, AND TEXTURED PLAZA DETAIL
SCALE: NONE

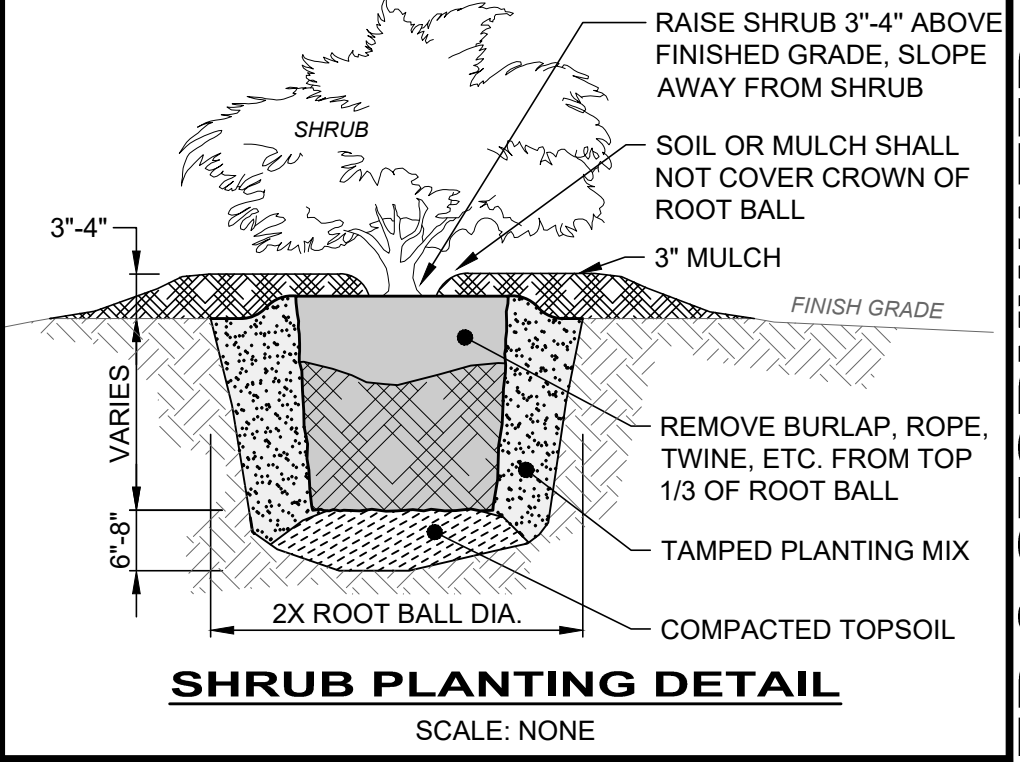


NOTE: REFER TO SPECIFICATIONS FOR ARBOR INFORMATION. ARBOR PLANS AND DETAILS FROM THE SUPPLIER ARE NOT TO SCALE AND FOR REFERENCE ONLY. THE CONTRACTOR IS RESPONSIBLE TO VERIFY INFORMATION FROM THE ARBOR MANUFACTURER.

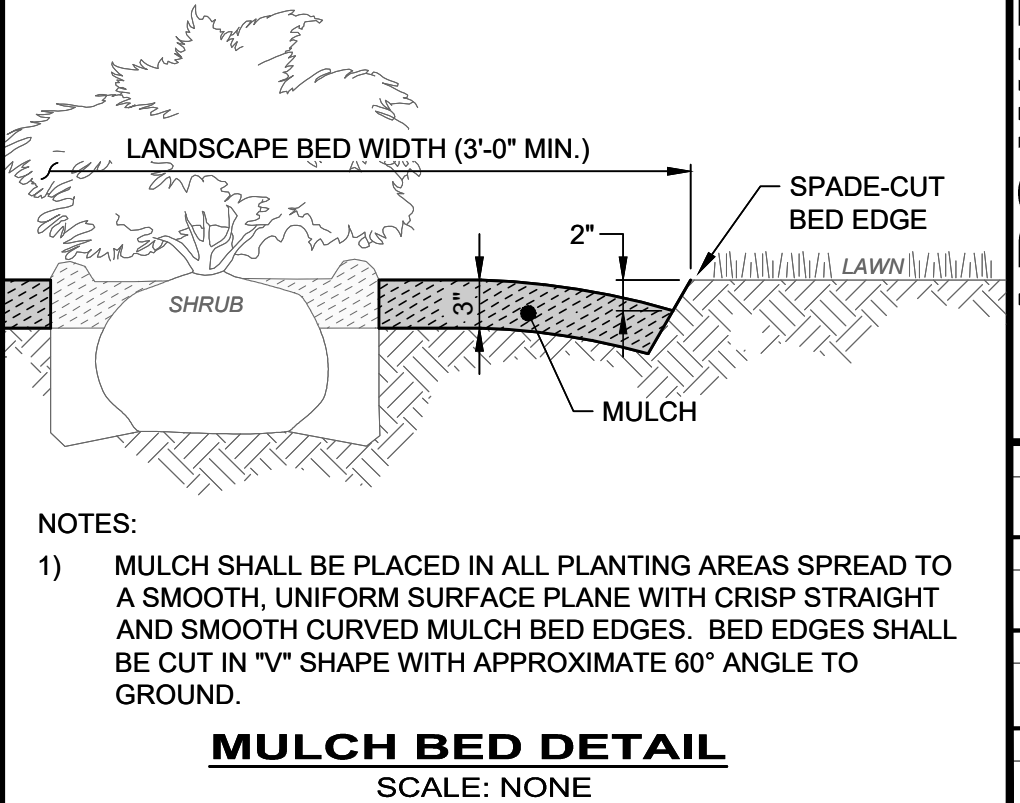
10' X 39' STRUCTURAL FRAMED CANOPY AND FOOTER DETAIL
SCALE: NONE



PRELIMINARY FOOTING FOR ESTIMATING PROPOSES ONLY



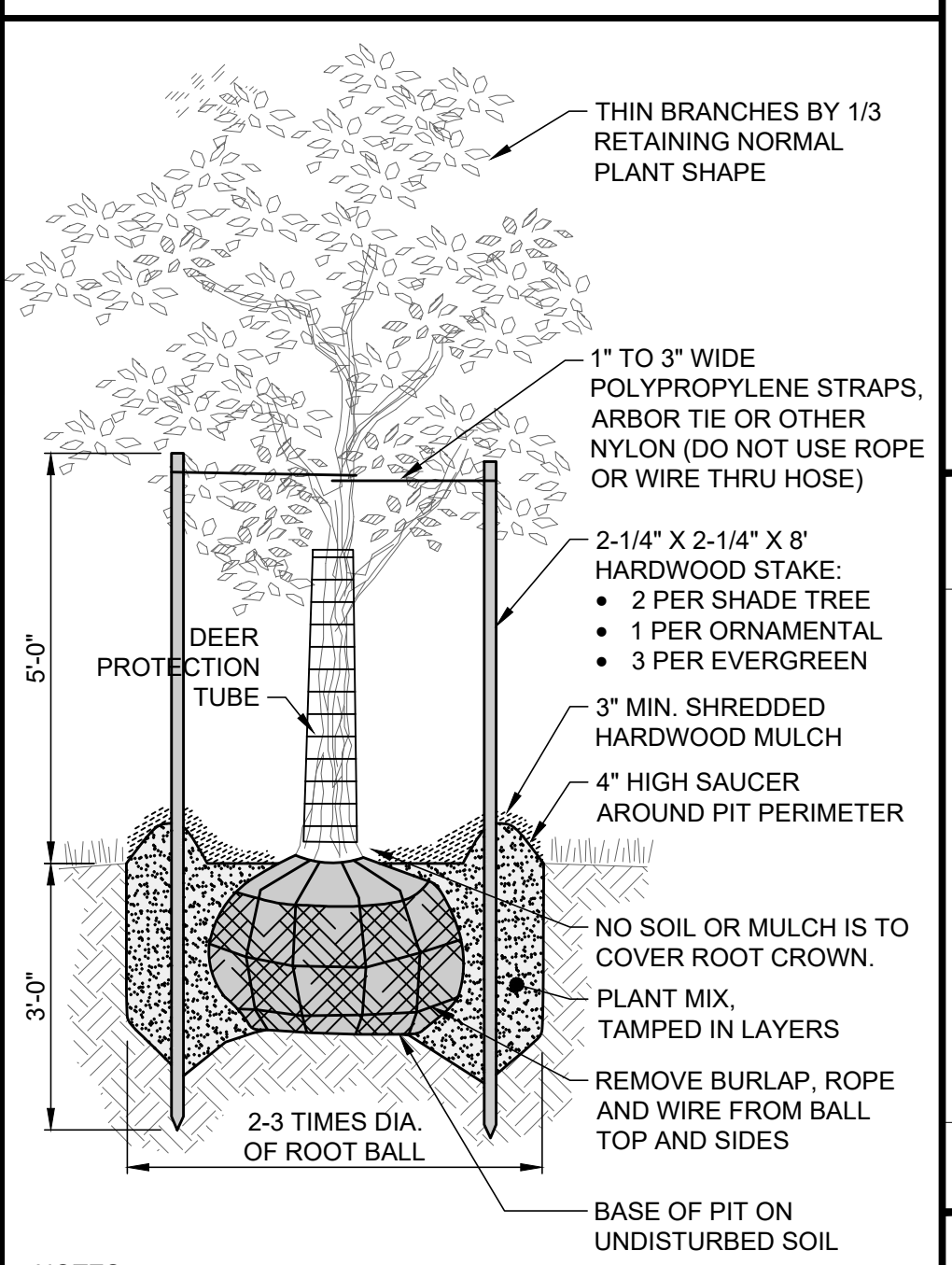
SHRUB PLANTING DETAIL
SCALE: NONE



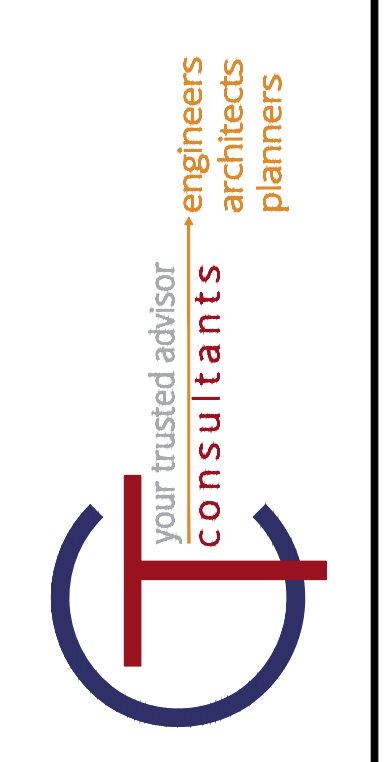
MULCH BED DETAIL
SCALE: NONE

- NOTES:
- CROWN OF ROOT BALL TO BEAR THE SAME RELATION TO FINISH GRADE WHICH IT WAS GROWN AT THE NURSERY.
 - DO NOT DAMAGE ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKES.
 - REMOVE TREE RINGS, TREE WRAP AND STAKES 1 YEAR AFTER INSTALLATION. NOTIFY OWNER PRIOR TO REMOVAL.

TREE PLANTING DETAIL
SCALE: NONE



ANNUAL AND PERENNIAL PLANTING DETAIL
SCALE: NONE



ISSUED FOR:	REVIEW	NO.	DATE
AS SHOWN	AS SHOWN		10/23/2023
DESIGNED BY:	PAIR/W		
DRAWN BY:	AM/CZ/PAB		
CHECKED BY:	M/RD		

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK BOARDMAN, OH
MAHONING COUNTY
LANDSCAPE DETAILS (2 OF 2)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	L-04
SHEET	39
OF	43

SITE INFORMATION

PROJECT INFORMATION:
5555 MARKET STREET
CITY OF BOARDMAN, MAHONING COUNTY, OHIO 44512
LATITUDE: 41.04185 LONGITUDE: 80.66062

OWNER INFORMATION:
ABC WATER AND STORMWATER DISTRICT
8299 MARKET STREET, BOARDMAN, OHIO 44512
CONTACT: JASON LOREE
PHONE: 330-729-2080

ENGINEER INFORMATION:
CT CONSULTANTS, INC.
8150 STERLING COURT
MENTOR, OHIO 44060
CONTACT: MARK DELISIO, PE
PHONE: 440-951-9000
EMAIL: MEDLISIO@CTCONSULTANTS.COM

TYPE OF CONSTRUCTION:
DEMOLITION AND NEW STREAM DEVELOPMENT

TYPE OF PROJECT:
() RETAIL (X) COMMUNITY () MIXED USE
() OFFICE () RECREATION () RESIDENTIAL
() MEDICAL () PUBLIC SAFETY () RESTAURANT
() UTILITY () EDUCATION () APARTMENT
() ROAD () INDUSTRIAL () MANUFACTURING

DESCRIPTION OF PROJECT:
DEMOLISH EXISTING TWIN STORM SEWER AND REPLACE WITH STREAM DAYLIGHTING. INSTALL PROPOSED PEDESTRIAN TRAIL, SEATING AREAS, AND ARBOR. SEED AND MULCH DISTURBED AREAS.

SOIL DISTURBING ACTIVITIES INCLUDE:
EROSION AND SEDIMENT CONTROL INSTALLATION; REMOVAL OF TREES, VEGETATION, TOPSOIL, BUILDING FOUNDATIONS, UTILITIES AND SOIL BENEATH PAVEMENT SUBBASE; EARTHWORK GRADING; AND INSTALLATION OF NEW STREAM DAYLIGHTING, ARBOR, PEDESTRIAN TRAIL, SEATING AREAS, UTILITIES AND NEW PAVEMENT, AND SEED AND MULCH DISTURBED AREAS.

DESCRIPTION OF PRIOR LAND USE:
BUILDING WITH DRIVEWAYS, PARKING AREAS AND UTILITIES.

SITE AREA INFORMATION:
TOTAL PROPERTY AREA: 16.33 AC.
PROJECT LIMIT/CONSTRUCTION AREA: 14.71 AC.
AREA OF SOIL DISTURBANCE: 14.71 AC.
EXISTING IMPERVIOUS AREA: 3.1 AC.
PROPOSED IMPERVIOUS AREA: 1.87 AC.
INCREASE/DECREASE OF IMPERVIOUS AREA: -60 %
PRE-CONSTRUCTION RUNOFF COEFFICIENT: 83.8
POST-CONSTRUCTION RUNOFF COEFFICIENT: 81.6

NAME OF RECEIVING STREAM, SURFACE WATER OR MS4:
CRANBERRY RUN TO MILL CREEK

QUALITY OF STORM WATER DISCHARGE FROM SITE:
UNKNOWN

ESTIMATED CONSTRUCTION START DATE: 6/1/2024
ESTIMATED CONSTRUCTION COMPLETION DATE: 10/31/2024

EROSION CONTROL TIMETABLE

Table with columns: DESCRIPTION, CALENDAR YEAR (J, F, M, A, M, J, J, A, S, O, N, D). Rows include STABILIZATION TYPE, TEMPORARY SEEDING, PERMANENT SEEDING, SODDING, MULCHING, PAVING.

☉ IRRIGATION NEEDED

SOIL TYPES

Table with columns: NAME, DESCRIPTION. Rows include JwB (JIMTOWN-URBAN LAND COMPLEX), RuB (RITTMAN-URBAN LAND COMPLEX, 2 TO 6 PERCENT SLOPE), Sg (SEBRING-URBAN LAND COMPLEX, 0 TO 2 PERCENT SLOPES).

GENERAL NOTES

- 1. THE CONTRACTOR SHALL REVIEW AND FOLLOW THE PRACTICES AND REQUIREMENTS PROVIDED IN THE CURRENT, ACTIVE OHIO EPA NPDES PERMIT NO. 3IN00000*HD.
2. THIS SWP3 HAS BEEN PREPARED SHOWING THE ITEMS LISTED BELOW, BUT THE CONTRACTOR MAY NEED TO MOVE OR ADD ITEMS AS CONSTRUCTION PROGRESSES OR DURING THE VARIOUS STAGES OF CONSTRUCTION.
3. LIMITS OF EARTH DISTURBING ACTIVITY
4. CONSTRUCTION ENTRANCE(S)
5. EROSION AND SEDIMENT CONTROL MEASURES
6. INLET PROTECTIONS
7. EQUIPMENT STAGING
8. FUEL STORAGE AND VEHICLE FUELING AREA
9. CONSTRUCTION TRAILER(S)
10. SANITATION FACILITY
11. MATERIAL STOCKPILE LOCATION(S)
12. CHEMICAL COMPOUND MIXING AND STORAGE AREA
13. ANY OTHER EROSION CONTROL REQUIRED
14. ALL WORK REQUIRED TO IMPLEMENT THE SW3P INCLUDING INSPECTION FEES, MAINTENANCE AND REPAIRS SHALL BE DONE BY AND AT THE EXPENSE OF THE CONTRACTOR.
15. THE CONTRACTOR SHALL AMEND THE SW3P WHEN THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE THAT REQUIRES INSTALLATION OF BMPS OR MODIFICATION TO EXISTING BMPS.
16. ADDITIONAL OR DIFFERENT BMPS MAY BE NEEDED AS CONSTRUCTION PROGRESSES OR AS REQUIRED BY THE OWNER, SWCD OR OHIO EPA.
17. PHASE CONSTRUCTION ACTIVITIES TO MINIMIZE LAND DISTURBED AT ANY ONE TIME AND LEAVE EXISTING VEGETATION IN PLACE AS LONG AS POSSIBLE.

ADMINISTRATIVE NOTES

- 1. AN OHIO EPA NPDES PERMIT IS REQUIRED WHERE CONSTRUCTION ACTIVITIES DISTURB 1 OR MORE ACRES OF LAND, OR SMALLER SITES LESS THAN 1 ACRE THAT ARE PART OF A LARGER COMMON DEVELOPMENT. DISTURBED LAND IS LAND IN WHICH VEGETATION HAS BEEN CLEARED AND SOILS ARE EXPOSED TO STORM WATER. A NOI IS REQUIRED FOR THIS PROJECT AND MUST BE FILED WITH THE OHIO EPA AT LEAST 21 DAYS PRIOR TO THE START OF CONSTRUCTION BECAUSE THE TOTAL LAND DISTURBANCE IS GREATER THAN 1 ACRE.
2. THE CONTRACTOR SHALL FOLLOW THE PRACTICES AND REQUIREMENTS PROVIDED IN THE OHIO EPA NPDES CONSTRUCTION SITE STORMWATER GENERAL PERMIT OHCD000006 AND THE ODNR RAINWATER AND LAND DEVELOPMENT MANUAL, AND BE RESPONSIBLE FOR ALL NPDES TERMS AND CONDITIONS UNTIL A NOT IS FILED.
3. NO CONSTRUCTION ACTIVITIES MAY BEGIN UNTIL ALL OF THE FOLLOWING OCCUR:
- OHIO EPA NPDES AUTHORIZATION LETTER RECEIVED
- THE CONTRACTOR FILES A CO-PERMITTEE APPLICATION TO THE OHIO EPA
- THE CONTRACTOR ATTENDS A PRE-CONSTRUCTION MEETING WITH THE SWCD TO DISCUSS OHIO EPA NPDES PERMIT REQUIREMENTS
4. OHIO EPA APPLICATION FORMS (I.E. NOI, NOT, CO-PERMITTEE NOI/NOT, INDIVIDUAL LOT NOI/NOT AND PERMIT TRANSFER) ARE ONLY ACCESSIBLE ELECTRONICALLY VIA THE OHIO EPA STREAMS APPLICATION SUBMITTAL SYSTEM USING AN INDIVIDUAL EBUSINESS CENTER ACCOUNT. VISIT THE OHIO EPA'S ELECTRONIC BUSINESS SERVICES WEBSITE FOR MORE INFORMATION, GUIDANCE AND REPORTING QUESTIONS.
5. THE CONTRACTOR SHALL SELECT INDIVIDUALS TO BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND COMPLETING INSPECTION AND MAINTENANCE REPORTS. THE CONTRACTOR SHALL COMPLETE A "DELEGATION OF AUTHORITY FOR STORMWATER POLLUTION PREVENTION PLAN" AND PROVIDE A COPY TO THE OWNER AND SWCD.
6. ALL PROCEDURES AND REQUIREMENTS CONTAINED IN THIS SW3P APPLY TO ALL GENERAL AND SUBCONTRACTORS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, INFORM, REQUIRE AND ENFORCE ALL ASPECTS AND PROCEDURES OF THE SW3P. THE CONTRACTOR SHALL HAVE ALL SUBCONTRACTORS THAT ARE OR MAY BE ENGAGED IN ACTIVITIES THAT COULD IMPACT STORMWATER COMPLETE A "SUBCONTRACTOR AGREEMENT FOR EROSION AND SEDIMENT CONTROL", AND PROVIDE A COPY TO THE OWNER AND SWCD. EACH CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ALL FINES, DAMAGES AND LIABILITY RESULTING FROM FAILURE TO PROVIDE THE REQUIRED POLLUTION CONTROL.
7. THE CONTRACTOR SHALL KEEP ON-SITE COPIES OF THE NOI, NPDES, SW3P AND INSPECTION LOGS/REPORTS.
8. ALL EROSION AND SEDIMENT CONTROL WORK SHALL BE SUBJECT TO INSPECTION BY THE SWCD AND OHIO EPA.

PERMIT CLOSURE REQUIREMENTS

- 1. FINAL STABILIZATION REQUIRES THE CONTRACTOR TO REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROLS FROM THE SITE AND ALL SEDIMENT TRAPPED BY THOSE CONTROLS BE PERMANENTLY STABILIZED.
2. THE CONTRACTOR SHALL COMPLETE A "FINAL CERTIFICATION AND NOTIFICATION FOR EROSION AND SEDIMENT CONTROL" UPON PROJECT COMPLETION AND PROVIDE A COPY TO THE OWNER AND SWCD.
3. ONCE CONSTRUCTION ACTIVITIES HAVE CEASED AND THE SITE REACHES FINAL STABILIZATION, THE CONTRACTOR MUST TERMINATE THE NPDES PERMIT COVERAGE BY FILING A NOT WITH THE OHIO EPA WITHIN 45 DAYS OF FINAL STABILIZATION. FINAL STABILIZATION IS DEFINED AS AN ESTABLISHED VEGETATIVE GROUND COVER OF AT LEAST 70% GROWTH DENSITY, OR OTHER MEANS OF PERMANENT STABILIZATION, OVER ALL AREAS DISTURBED DURING CONSTRUCTION.
4. THE CONTRACTOR MUST MAINTAIN ALL REPORTS FOR 3 YEARS AFTER THE NOT IS FILED, AND PROVIDE DIGITAL COPIES TO THE OWNER AND SWCD.

EROSION CONTROL NOTES

- 1. SPECIAL MEASURES SHALL BE TAKEN TO STABILIZE DRAINAGE CHANNELS AND STORM WATER OUTFALLS.
2. DIVERT SURFACE RUNOFF AWAY FROM DISTURBED AREAS AND STEEP SLOPES WHEREVER PRACTICABLE.
3. STABILIZATION OF DISTURBED AREAS SHALL BE INITIATED WITHIN THE TIME FRAMES IN THE FOLLOWING TABLES:

Table with columns: AREA REQUIRING PERMANENT STABILIZATION, TIME FRAME TO APPLY CONTROLS. Rows include ANY AREAS TO LIE DORMANT FOR 1 YEAR OR MORE, ANY AREAS WITHIN 50 FEET OF A SURFACE WATER AND AT FINAL GRADE, ANY OTHER AREAS AT FINAL GRADE.

Table with columns: AREA REQUIRING TEMPORARY STABILIZATION, TIME FRAME TO APPLY CONTROLS. Rows include ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER AND NOT AT FINAL GRADE, ANY DISTURBED AREAS TO BE DORMANT MORE THAN 14 DAYS, BUT LESS THAN 1 YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER, DISTURBED AREAS TO REMAIN IDLE OVER WINTER.

EROSION CONTROL NOTES

- 1. SPECIAL MEASURES SHALL BE TAKEN TO STABILIZE DRAINAGE CHANNELS AND STORM WATER OUTFALLS.
2. DIVERT SURFACE RUNOFF AWAY FROM DISTURBED AREAS AND STEEP SLOPES WHEREVER PRACTICABLE.
3. STABILIZATION OF DISTURBED AREAS SHALL BE INITIATED WITHIN THE TIME FRAMES IN THE FOLLOWING TABLES:

Table with columns: AREA REQUIRING PERMANENT STABILIZATION, TIME FRAME TO APPLY CONTROLS. Rows include ANY AREAS TO LIE DORMANT FOR 1 YEAR OR MORE, ANY AREAS WITHIN 50 FEET OF A SURFACE WATER AND AT FINAL GRADE, ANY OTHER AREAS AT FINAL GRADE.

Table with columns: AREA REQUIRING TEMPORARY STABILIZATION, TIME FRAME TO APPLY CONTROLS. Rows include ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER AND NOT AT FINAL GRADE, ANY DISTURBED AREAS TO BE DORMANT MORE THAN 14 DAYS, BUT LESS THAN 1 YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER, DISTURBED AREAS TO REMAIN IDLE OVER WINTER.

SEDIMENT CONTROL NOTES

- 1. INLET PROTECTION AND SEDIMENT BARRIERS MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING.
2. PERIMETER SEDIMENT BARRIERS MUST BE INSTALLED AS THE FIRST STEP OF GRADING AND WITHIN 7 DAYS FROM THE START OF CLEARING AND GRUBBING, AND CONTINUE TO FUNCTION UNTIL ALL DISTURBED UPLAND AREAS ARE STABILIZED.
3. SEDIMENT CONTROLS MUST POND RUNOFF TO BE CONSIDERED FUNCTIONAL.
4. SEDIMENT-LADEN TRENCH OR GROUND WATER MUST PASS THROUGH A SEDIMENT-SETTLING POND OR BE DEWATERED IN-PLACE USING A SUMP PIT, FILTER BAG OR OTHER COMPARABLE METHOD, PRIOR TO DISCHARGE FROM THE SITE.
5. TRENCH AND GROUND WATER FREE FROM SEDIMENT OR OTHER POLLUTANTS MAY BE DISCHARGED WITHOUT TREATMENT, PROVIDED THIS WATER DOES NOT BECOME POLLUTANT-LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES.
6. SETTLED MATERIAL SHALL BE DISPOSED OF IN A STABILIZED LOCATION WHERE IT WILL NOT BE CARRIED OFF-SITE OR INTO A STORM SEWER BY RAINFALL.

OTHER WASTE CONTROL NOTES

- 1. SOIL STOCKPILES SHALL BE RINGED WITH SILT FENCE ALONG THE BOTTOM FOOTPRINT. IF THE STOCKPILE WILL BE INACTIVE FOR 14 DAYS OR MORE, THE SURFACE SHALL BE SEEDED OR STABILIZED WITHIN 7 DAYS OF LAST DISTURBANCE.
2. CONCRETE TRUCKS ARE NOT PERMITTED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS. ALL EXCESS CONCRETE AND CONCRETE WASHOUT, INCLUDING FROM HAND MIXERS AND LIGHT EQUIPMENT, MUST BE DISPOSED OF IN A CONCRETE WASHOUT AREA TO COLLECT AND HARDEN.
3. OFF-SITE TRACKING OF SEDIMENT BY CONSTRUCTION VEHICLES MUST BE MINIMIZED. THE CONTRACTOR SHALL SWEEP ALL ADJACENT ROADS TO REMOVE MUD, DIRT OR ROCK TRACKED FROM THE SITE AT THE END OF EACH WORK DAY OR AS REQUIRED DURING THE DAY. DUMP TRUCKS HAULING MATERIAL FROM THE SITE SHALL BE COVERED WITH A TARPULIN.
4. IT IS PROHIBITED TO BURN, BURY OR POUR ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS SOLID OR LIQUID WASTE INCLUDING TRASH, CONSTRUCTION DEBRIS, SOLVENTS, PAINT, DIESEL FUEL, GASOLINE, MOTOR OIL, HYDRAULIC FLUID, CEMENT CURING COMPOUND, ANTIFREEZE OR OTHER TOXIC OR HAZARDOUS WASTE. WASTE MATERIALS SHALL BE COLLECTED IN A SECURELY LIDDED DUMPSTER, DISPOSED OF IN AN APPROVED LANDFILL AND EMPTIED AS NECESSARY.
5. FUEL TANKS, DRUMS AND OTHER CONTAINERS HOLDING CHEMICALS MUST BE STORED WITHIN A DIKED AREA WITH A VOLUME OF AT LEAST 110% OF THE LARGEST TANK. A DIKED AREA IS NOT NECESSARY IF A SELF-CONTAINED SPILL PROOF TANK IS USED.
6. THE CONTRACTOR SHALL PROVIDE TEMPORARY SANITARY FACILITIES AT THE SITE. SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS 1 TIME PER WEEK, OR MORE OFTEN IF NECESSARY.
7. ANY TOXIC OR HAZARDOUS MATERIAL SPILL, REGARDLESS OF SIZE, MUST BE REPORTED WITHIN 30 MINUTES TO THE LOCAL FIRE DEPARTMENT AND OHIO EPA.
8. CONTAMINATED SOIL, SOIL WHERE CONSTRUCTION CHEMICALS HAVE BEEN SPILLED OR HAZARDOUS WASTE MATERIALS MUST BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.
9. STORMWATER THAT COMES IN CONTACT WITH CONTAMINATED SOIL OR HAS A VISIBLE SHEEN MUST BE COLLECTED BY A VACUUM TRUCK AND DISPOSED OF AS A WASTE WATER.

BMPS SELECTED

- 1. THE FOLLOWING BMPS ARE SELECTED TO ADDRESS APPLICABLE TMDLS FOR THE PROJECT:
A. CONSTRUCTION SITE:
(X) DEMARCATÉ PROTECTED AREA BEFORE CONSTRUCTION
(X) MAINTAIN PORTABLE TOILET AND EMPTY W/OUT SPILL
(X) PROPER STORAGE OF LANDSCAPE FERTILIZER
(X) MS4 MONTHLY INSPECTIONS DURING CONSTRUCTION
(X) RESOLVE NON-COMPLIANCE SW3P INSPECTION ITEMS
(X) FINAL INSPECTION TO ENSURE BMP IMPLEMENTATION
B. TEMPORARY EROSION CONTROL:
(X) CHECK DAMS (X) TEMPORARY DIVERSION
(X) SLOPE DRAIN (X) STREAM UTILITY CROSSING
(X) DEWATERING
C. TEMPORARY SEDIMENT CONTROL:
(X) SEDIMENT BASIN (X) SEDIMENT TRAP
(X) SILT FENCE (X) INLET PROTECTION
(X) FILTER SOCK (X) FILTER BERM
D. SOIL STABILIZATION:
(X) DUST CONTROL (X) PHASED DISTURBANCE
(X) MULCHING (X) CLEARING AND GRUBBING
(X) SODDING (X) TEMPORARY SEEDING
(X) TOPSOILING (X) PERMANENT SEEDING
(X) GRADE TREATMENT (X) CONSTRUCTION ENTRANCE
(X) TEMPORARY ROLLED EROSION CONTROL PRODUCTS
(X) TREE AND NATURAL AREA PRESERVATION
E. PERMANENT EROSION CONTROL:
() GRASSSED SWALE () ROCK LINED CHANNEL
() ROCK OUTLET PROTECTION
F. POLLUTION PREVENTION AND GOOD HOUSEKEEPING:
(X) ROUTINE FACILITY INSPECTIONS
(X) VISUAL ASSESSMENT OF STORM WATER DISCHARGE
(X) ANNUAL COMPREHENSIVE SITE INSPECTION
(X) SWEEP PARKING LOT AND DRIVE LANES
(X) CLEAN CATCH BASINS
G. POST-CONSTRUCTION:
(X) WETLAND SETBACK (X) PERMEABLE PAVEMENT
(X) LTMA (X) BIORETENTION AREA
(X) OPEN CHANNEL SWALES
(X) SUBMIT LTMA ANNUAL MAINTENANCE REPORT TO MS4
(X) VEGETATE MAINTENANCE/STORAGE YARD OPEN AREAS
(X) IMPLEMENT LOW-MOW OR NO-MOW PRACTICES
(X) PEST MANAGEMENT PROGRAM

MAINTENANCE REQUIREMENTS

- 1. BMPS SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL UPSLOPE AREAS THEY CONTROL ARE STABILIZED.
2. THE CONTRACTOR SHALL PROVIDE A QUALIFIED PERSON KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROLS, POSSESS THE TECHNICAL SKILLS TO ASSESS SITE CONDITIONS THAT COULD IMPACT STORM WATER QUALITY, AND CAN ASSESS THE EFFECTIVENESS OF ANY BMP SELECTED.
3. A QUALIFIED PERSON MUST INSPECT BMPS AT LEAST ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL IN A 24-HOUR PERIOD TO DETERMINE IF THE SWP3 WAS PROPERLY IMPLEMENTED.
4. THE QUALIFIED PERSON MUST PREPARE A WRITTEN REPORT AFTER EACH INSPECTION SUMMARIZING INSPECTION RESULTS INCLUDING THE FOLLOWING:
- DATE OF INSPECTION
- NAME AND QUALIFICATION OF THE INSPECTOR
- WEATHER CONDITIONS
- LOCATIONS WHERE IN-STREAM OR OFF-SITE SEDIMENTATION OR OTHER POLLUTANTS WERE OBSERVED.
- LOCATIONS OF BMPS NEEDING MAINTENANCE.
- LOCATIONS OF BMPS FAILING TO OPERATE CORRECTLY OR PROVIDE ADEQUATE PROTECTION.
- LOCATION OF AREAS IN NEED OF ADDITIONAL BMPS NOT IN PLACE AT THE TIME OF INSPECTION.
- CORRECTIVE ACTIONS REQUIRED, CHANGES TO THE SW3P AND IMPLEMENTATION DATES.
- GRADING AND STABILIZATION ACTIVITY LOG
- EROSION AND SEDIMENT CONTROL AMENDMENT LOG
5. ALL INCIDENCES OF NON-COMPLIANCE MUST BE IDENTIFIED IN THE REPORT. IF A REPORT DOES NOT IDENTIFY INCIDENCES OF NON-COMPLIANCE, IT MUST CONTAIN A CERTIFICATION THE SITE IS IN COMPLIANCE AT THE TIME OF INSPECTION.
6. BMP MAINTENANCE OR REPAIR MUST BE COMPLETED WITHIN 3 DAYS, AND SEDIMENT POND MAINTENANCE OR REPAIR WITHIN 10 DAYS, OF THE INSPECTION THAT REVEALED A DEFICIENCY.
7. WHEN AN INSPECTION REVEALS A BMP IS NOT EFFECTIVE AND A MORE APPROPRIATE BMP IS REQUIRED, THE SW3P SHALL BE AMENDED, THE NEW BMP INSTALLED WITHIN 10 DAYS OF THE INSPECTION THAT REVEALED THE DEFICIENCY, AND THE "STORMWATER POLLUTION PREVENTION PLAN AMENDMENT LOG" FORM COMPLETED.
8. WHEN AN INSPECTION REVEALS A BMP HAS NOT BEEN INSTALLED, BUT IS REQUIRED TO PROVIDE ADEQUATE CONTROL, IT MUST BE INSTALLED PRIOR TO THE NEXT STORM EVENT WHICH PRODUCES RUNOFF, BUT IN NO CASE LATER THAN 10 DAYS FROM THE INSPECTION THAT REVEALED THE DEFICIENCY.
9. THE INSPECTION FREQUENCY MAY BE REDUCED TO 1 TIME PER MONTH IF THE ENTIRE SITE IS TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER WEATHER (I.E. SUSTAINED SNOW COVER OR FROZEN GROUND CONDITIONS). A WAIVER OF INSPECTION REQUIREMENTS IS AVAILABLE UNTIL 1 MONTH BEFORE THAWING CONDITIONS ARE EXPECTED IF ALL THE FOLLOWING CONDITIONS ARE MET:
A. FROZEN CONDITIONS ARE ANTICIPATED TO CONTINUE FOR EXTENDED PERIODS OF TIME (I.E. MORE THAN 1 MONTH).
B. SOIL DISTURBANCE ACTIVITIES HAVE BEEN SUSPENDED.
C. THE BEGINNING AND ENDING DATES OF THE WAIVER PERIOD ARE DOCUMENTED IN THE SW3P.
10. ONCE A DEFINABLE AREA HAS BEEN FULLY STABILIZED, IT MAY BE MARKED ON THE SWP3 AND NO FURTHER INSPECTION REQUIREMENTS ARE REQUIRED FOR THAT AREA OF THE SITE.
11. INSPECTIONS SHALL BE PERFORMED UNTIL A NOT IS FILED WITH THE OHIO EPA.

SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES

- 1. HOLD A PRE-CONSTRUCTION MEETING TO DISCUSS OHIO EPA NPDES PERMIT REQUIREMENTS.
2. CONTRACTOR SUBMITS CONSTRUCTION SCHEDULE FOR CONSTRUCTION ACTIVITIES.
3. BEGIN INSPECTION, MAINTENANCE, RECORD KEEPING AND SITE POSTING OF BMPS.
4. ESTABLISH STAGING AREA AND NON-SEDIMENT BMPS.
5. INSTALL SILT FENCE, INLET PROTECTION AND CONSTRUCTION ENTRANCE.
6. INSTALL OTHER TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS AS SOON AS POSSIBLE, BUT NO LATER THAN 7 DAYS AFTER FIRST SOIL DISTURBANCE. INSPECT AND MAINTAIN BMPS FOR THE PROJECT DURATION UNTIL UPSLOPE AREAS ARE PERMANENTLY STABILIZED.
7. BEGIN SITE DEMOLITION AND CONSTRUCTION.
8. INSTALL DEWATERING MEASURES.
9. BEGIN EARTHWORK OPERATIONS.
10. APPLY TEMPORARY SEED.
11. INSTALL STORM SEWERS AND INLETS.
12. CONSTRUCT REMAINING UTILITIES INCLUDING SANITARY, WATER, ELECTRIC, GAS AND PHONE.
13. INSTALL PAVING.
14. INSPECT AND CLEAN EXISTING AND NEW STORM SEWERS AND INLETS.
15. APPLY PERMANENT SEED.
16. INSTALL LANDSCAPING.
17. CONTINUE INSPECTIONS, MAINTENANCE, RECORD KEEPING, AND SITE POSTING UNTIL FINAL STABILIZATION ACHIEVED.
18. REMOVE TEMPORARY BMPS FROM STORM SEWER AND INLETS, AND OPEN GUTTERS AND DITCHES TO OBTAIN FREE DRAINAGE.
19. DISPOSE OF ALL DEBRIS AND WASTE MATERIAL.



Table with columns: DATE, REVISION, NO, REVIEW, ISSUE DATE, SCALE, DESIGNED BY, DRAWN BY, CHECKED BY.

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
BOARDMAN, OH
MAHONING COUNTY
SWPPP NOTES (1 OF 2)

Table with project details: PROJECT NO. 231566, DISCIPLINE CIVIL, SHEET NAME SWP-01, SHEET 43 OF 43.

**DELEGATION OF AUTHORITY FOR
EROSION AND SEDIMENT CONTROL**

PROJECT NAME: _____
PROJECT ADDRESS: _____

I, _____, HEREBY DESIGNATE THE PERSON OR DESCRIBED POSITION BELOW TO BE A DULY AUTHORIZED REPRESENTATIVE FOR THE PURPOSE OF OVERSEEING COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS, INCLUDING THE OHIO EPA NPDES CONSTRUCTION GENERAL PERMIT, AT THE DESIGNATED PROJECT. THE DESIGNEE IS AUTHORIZED TO SIGN REPORTS, STORM WATER POLLUTION PREVENTION PLANS (SWP3) AND OTHER DOCUMENTS AS REQUIRED BY THE NPDES PERMIT.

NAME OF QUALIFIED PERSON AND/OR POSITION _____
COMPANY NAME _____ PHONE NO. _____
STREET ADDRESS _____

BY SIGNING THIS AUTHORIZATION, I CERTIFY UNDER THE PENALTY OF LAW THAT ALL REQUIRED DOCUMENTS WILL BE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON(S) WHO MANAGES THE SYSTEM OR IS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION TO BE SUBMITTED WILL BE, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THERE ARE SUBSTANTIAL PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

COMPANY NAME _____ PHONE NO. _____
STREET ADDRESS _____
PRINT NAME AND TITLE _____
SIGNATURE _____ DATE _____

**SUBCONTRACTOR AGREEMENT FOR
EROSION AND SEDIMENT CONTROL**

PROJECT NAME: _____
PROJECT ADDRESS: _____

BY SIGNING THIS AGREEMENT, I CERTIFY UNDER THE PENALTY OF LAW THAT I HAVE READ AND UNDERSTAND THE TERMS AND CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN (SWP3) FOR THE DESIGNATED PROJECT AND AGREE TO FOLLOW THE PRACTICES DESCRIBED. AS A SUBCONTRACTOR, I AM REQUIRED TO COMPLY WITH THE SWP3 FOR ANY WORK I PERFORM AT THE PROJECT. IT IS MY RESPONSIBILITY TO OBTAIN A COPY OF THE SWP3 FROM THE CONTRACTOR AND TO ADVISE MY EMPLOYEES WORKING ON THIS PROJECT OF THE REQUIREMENTS. I AM AWARE THERE ARE SUBSTANTIAL PENALTIES OR LOSS OF CONTRACT FOR VIOLATING ANY CONDITION OF THE SWP3, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

COMPANY NAME _____ PHONE NO. _____
STREET ADDRESS _____
PRINT NAME AND TITLE _____

SIGNATURE _____ DATE _____

DESCRIPTION OF CONSTRUCTION SERVICE(S) I AM TO PROVIDE:

**FINAL CERTIFICATION AND NOTIFICATION
FOR EROSION AND SEDIMENT CONTROL**

PROJECT NAME: _____
PROJECT ADDRESS: _____

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED FOR THE DESIGNATED PROJECT. BASED ON MY INQUIRY OF THE PERSON(S) WHO MANAGED THE SYSTEM OR DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THERE ARE SUBSTANTIAL PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

COMPANY NAME _____ PHONE NO. _____
STREET ADDRESS _____
PRINT NAME AND TITLE _____

SIGNATURE _____ DATE _____

GRADING AND STABILIZATION ACTIVITY LOG

PROJECT NAME: _____ SHEET NO.: _____
PROJECT ADDRESS: _____

DATE GRADING ACTIVITY INITIATED	DESCRIPTION OF GRADING ACTIVITY	DATE GRADING ACTIVITY CEASED	STABILIZATION MEASURE INITIATED		DESCRIPTION OF STABILIZATION MEASURE AND LOCATION (ATTACH SKETCH IF NECESSARY)
			DATE	TYPE	
				<input type="checkbox"/> TEMP. <input type="checkbox"/> PERM.	
				<input type="checkbox"/> TEMP. <input type="checkbox"/> PERM.	
				<input type="checkbox"/> TEMP. <input type="checkbox"/> PERM.	
				<input type="checkbox"/> TEMP. <input type="checkbox"/> PERM.	
				<input type="checkbox"/> TEMP. <input type="checkbox"/> PERM.	
				<input type="checkbox"/> TEMP. <input type="checkbox"/> PERM.	
				<input type="checkbox"/> TEMP. <input type="checkbox"/> PERM.	
				<input type="checkbox"/> TEMP. <input type="checkbox"/> PERM.	

EROSION AND SEDIMENT CONTROL AMENDMENT LOG

PROJECT NAME: _____ SHEET NO.: _____
PROJECT ADDRESS: _____

AMENDMENT NO.	DATE OF AMENDMENT	DESCRIPTION OF AMENDMENT	DESCRIPTION OF STABILIZATION MEASURE AND LOCATION (ATTACH SKETCH IF NECESSARY)



ISSUED FOR:	REVIEW	NO	REVISION	DATE
10/23/2023	AS SHOWN			
	PAB/RW			
	AM/CZ/PAB			
	MRD			

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK BOARDMAN, OH
MAHONING COUNTY

SWPPP NOTES (2 OF 2)

PROJECT NO. **231566**
DISCIPLINE **CIVIL**
SHEET NAME **SWP-04**
SHEET **41** OF **43**

NOTES:

- SUBSOILING SHALL OCCUR WHEN SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING IS NOT PERMITTED ON SLIP-PRONE AREAS.
- THE SEED BED SHALL BE PREPARED BY APPLYING AGRICULTURAL GROUND LIMESTONE OR FERTILIZER AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS. LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO A DEPTH OF 3".
- APPLY SEED UNIFORMLY ON FIRM, MOIST SEED BED BETWEEN MARCH 1 AND MAY 31 OR AUGUST 1 AND SEPTEMBER 30. TILLAGE FOR SEEDBED PREPARATION SHALL OCCUR WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. SEEDING SHOULD NOT BE APPLIED BETWEEN OCTOBER 1 AND NOVEMBER 20 BECAUSE SEEDS MAY GERMINATE, BUT WILL NOT SURVIVE THE WINTER. IF SEEDING MUST OCCUR, INCREASE THE SEEDING RATE BY 50% AND ANCHOR. APPLY ADDITIONAL MULCH AND IRRIGATION AS REQUIRED TO ENSURE GERMINATION.
- MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
- SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY OR HOT WEATHER OR ON ADVERSE SITE CONDITIONS.
- SEEDING SHALL NOT BE CONSIDERED ESTABLISHED FOR AT LEAST 1 FULL YEAR FROM THE TIME OF SEEDING. DURING THIS PERIOD INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.
- ADEQUATE PERMANENT VEGETATION SHALL BE GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE BASED ON VISUAL INSPECTION.

PERMANENT SEEDING FERTILIZATION AND MOWING CHART				
MIXTURE	FORMULA	LB/AC.	TIME	MOW
CREeping RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	10-10-10	500	FALL, YEARLY, OR AS NEEDED	≥3"
TALL FESCUE	10-10-10	500		≥4"
TURF-TYPE FESCUE	10-10-10	500		
CROWN VETCH FESCUE	0-20-20	400	SPRING, AND YEARLY AFTER ESTABLISHED	DO NOT MOW
FLAT PEA FESCUE	0-20-20	400		

PERMANENT SEEDING SPECIES SELECTION		
SEED MIX	SEED RATE LB/AC.	NOTES:
GENERAL USE		
CREeping RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	20 - 40 10 - 20 20 - 40	FOR CLOSE MOWING AND WATERWAYS WITH ≤2.0 FT./SEC. VELOCITY
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE	90	
STEEP BANKS OR CUT SLOPES		
TALL FESCUE	40 - 50	
CROWN VETCH TALL FESCUE	10 - 20 20 - 30	DO NOT SEED LATER THAN AUGUST
FLAT PEA TALL FESCUE	20 - 25 20 - 30	DO NOT SEED LATER THAN AUGUST
ROAD DITCHES AND SWALES		
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE KENTUCKY BLUEGRASS	90 5	
LAWN		
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	100 - 120 100 - 120	
KENTUCKY BLUEGRASS CREeping RED FESCUE	100 - 120 100 - 120	FOR SHADED AREAS

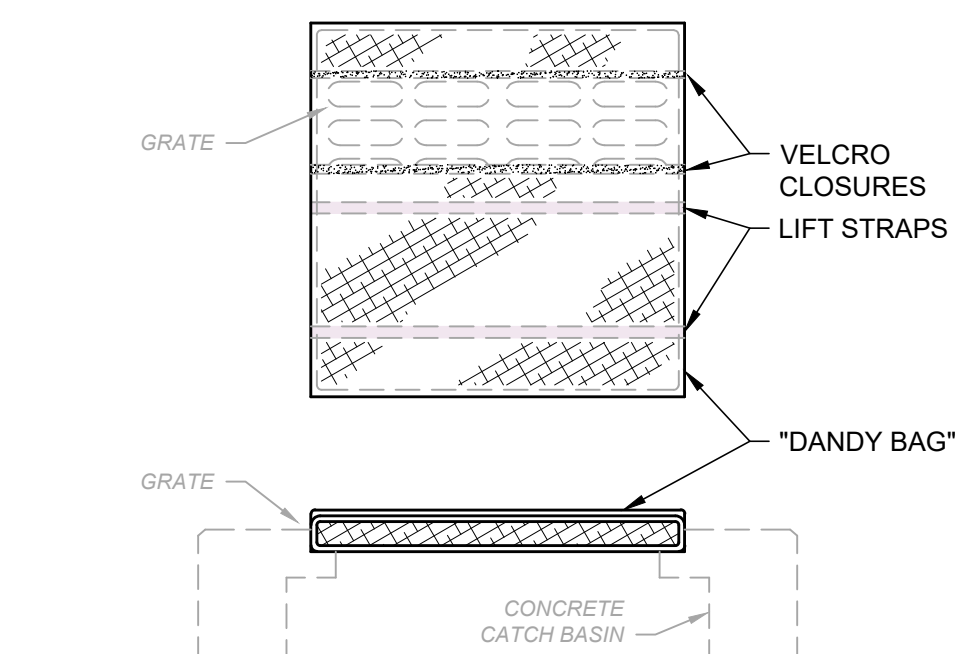
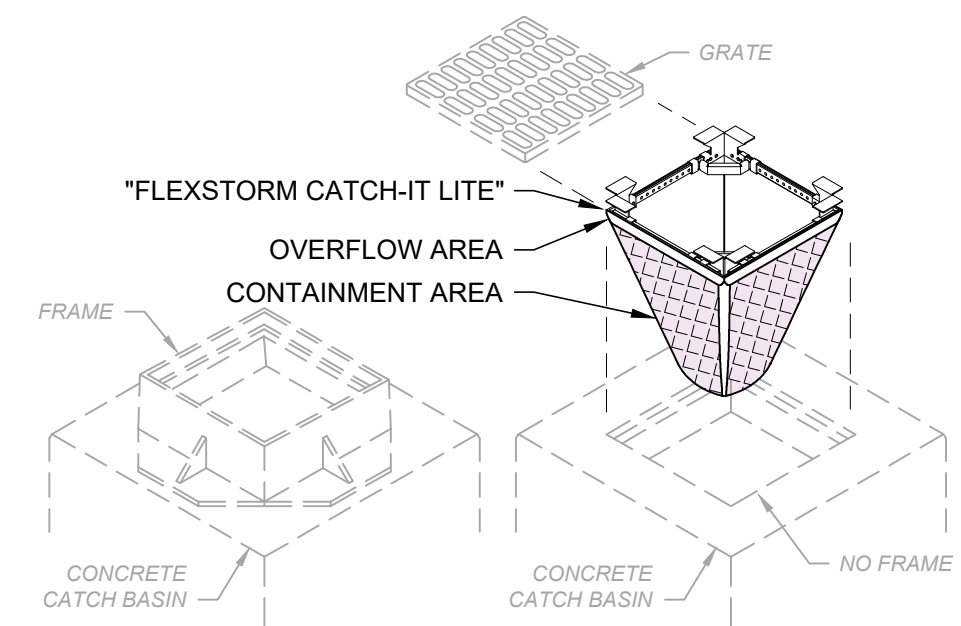
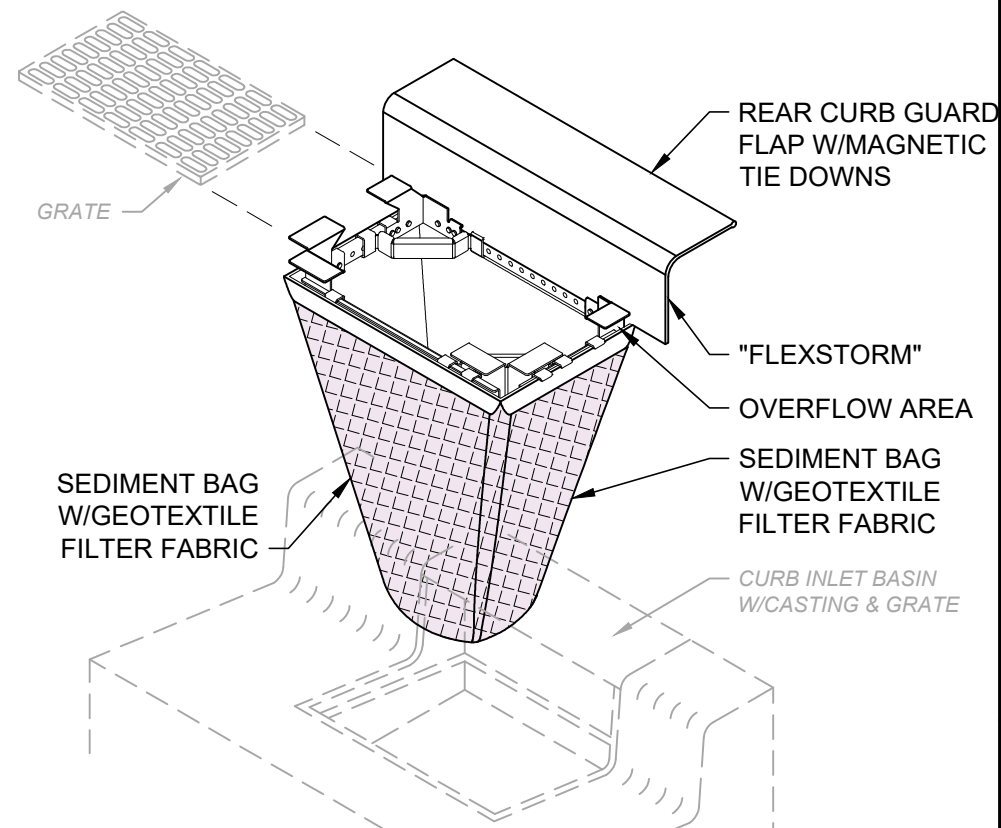
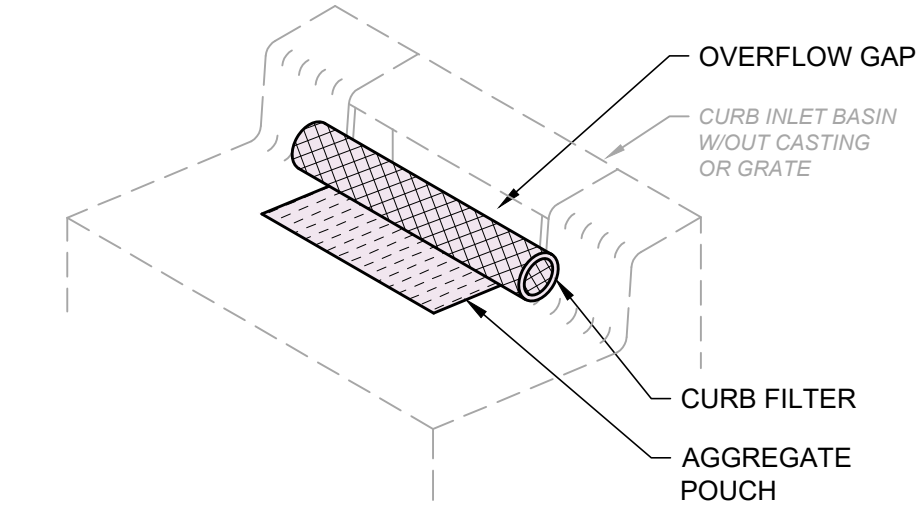
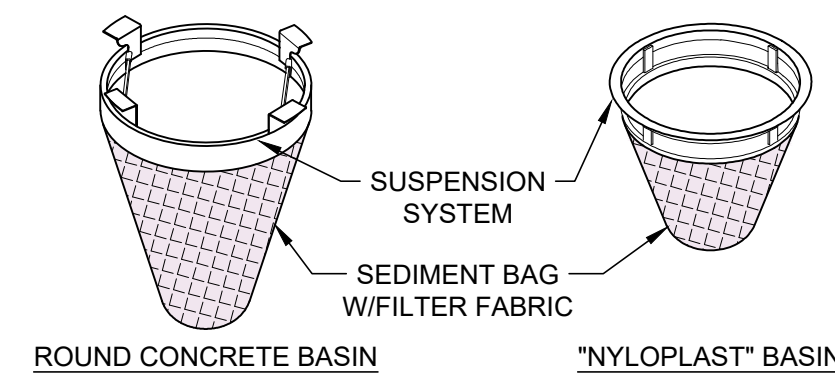
PERMANENT SEEDING DETAIL

NOTES:

- THE SEED BED SHALL BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION.
- SOIL AMENDMENTS MAY BE REQUIRED TO ESTABLISH VEGETATION. PERFORM SOIL TESTS TO PREDICT THE NEED FOR LIME OR FERTILIZER. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS
- APPLY SEED UNIFORMLY. COVER BROADCASTED SEED BY RAKING OR DRAGGING, AND LIGHTLY TAMPING INTO PLACE.
- MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
- INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.

TEMPORARY SEEDING SPECIES SELECTION			
DATES	SPECIES	LB/1,000 SF	LB/AC.
MARCH 1 - AUGUST 15	OATS	3	128
	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
AUGUST 16 - OCTOBER 31	PERENNIAL RYEGRASS	2	40
	TALL FESCUE	1	40
	RYE	3	112
NOVEMBER 1 - FEBRUARY 28	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	2	40
	TALL FESCUE	1	40
	ONLY MULCH OR DORMANT SEEDING.		

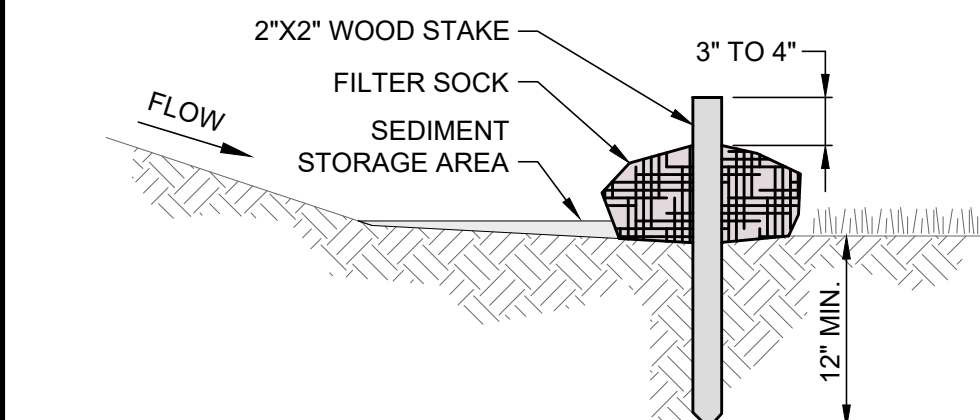
TEMPORARY SEEDING DETAIL



- NOTES:**
- ALL NEW AND EXISTING STORM INLET BASINS WITHIN THE WORK LIMITS SHALL HAVE INLET PROTECTION INSTALLED.
 - INLET PROTECTION SHALL BE INSTALLED AS EACH STORM INLET IS CONSTRUCTED.
 - NOT ALL ITEMS SHOWN MAY APPLY OR DIFFERENT TYPES OR CONFIGURATIONS MAY BE REQUIRED. THE CONTRACTOR SHALL MEASURE EACH INLET TO CONFIGURE AND ASSEMBLE CUSTOMIZED INLET FILTERS.

INLET PROTECTION DETAIL

SCALE: NONE



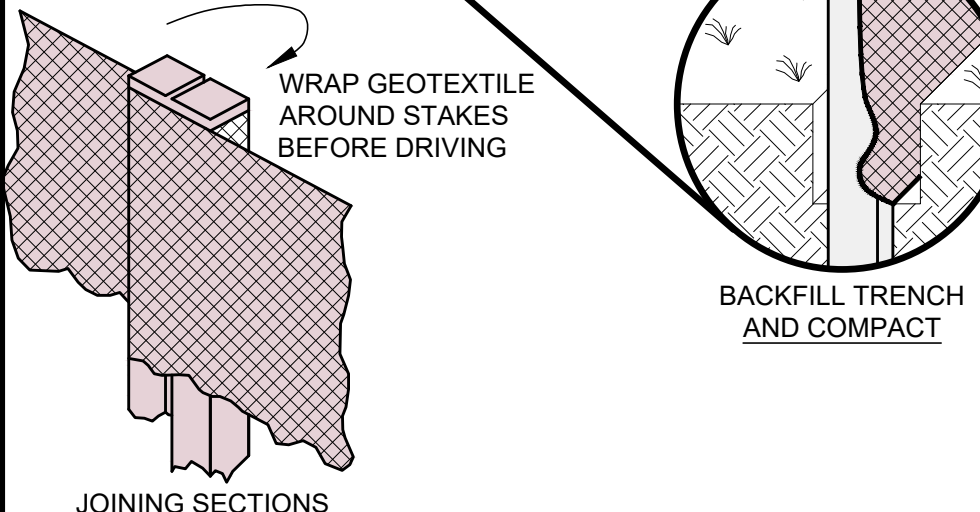
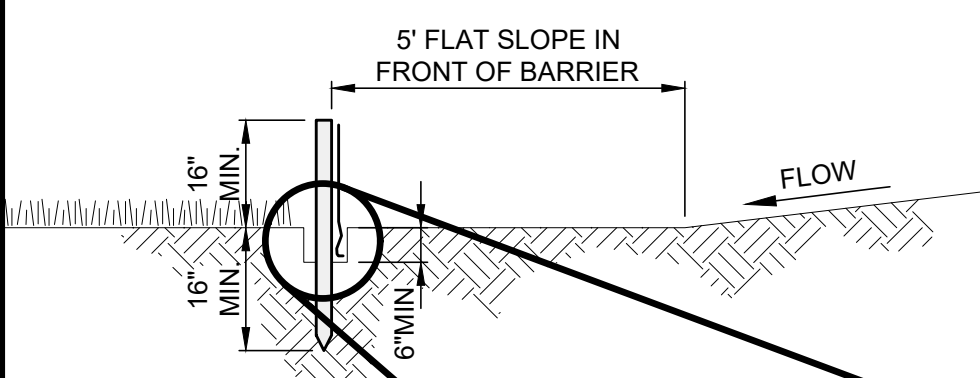
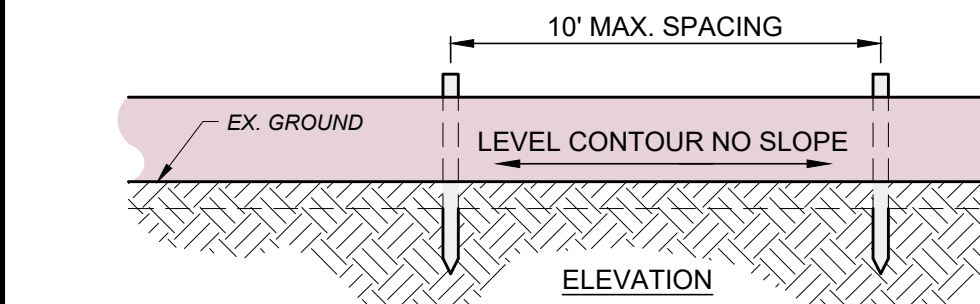
NOTES:

- FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST.
- COMPOST SHALL BE WEED, PATHOGEN AND INSECT FREE, FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH, BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, AND CONSIST OF PARTICLES RANGING FROM 3/8" TO 2".
- FILTER SOCKS SHALL BE PLACED ON A LEVEL LINE ACROSS SLOPES PARALLEL TO THE BASE OF THE SLOPE. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND MID-SLOPE.
- FILTER SOCKS SHALL BE PLACED AT LEAST 5' FROM THE TOE OF SLOPE FOR SEDIMENT DEPOSIT.
- BUILT UP SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED 1/3 THE FILTER SOCK HEIGHT.
- WHEN A FILTER SOCK IS NO LONGER REQUIRED, IT SHALL BE DISPERSED ON-SITE.
- THE MAXIMUM DRAINAGE AREA PER 100 FEET OF FILTER SOCK IS 1/2 ACRE AND IS DEPENDENT ON THE SLOPE FOLLOWING THE GUIDANCE CHART BELOW:

MAX. SLOPE LENGTH ABOVE FILTER SOCK					
SLOPE	RATIO (H:V)	8'	12'	18'	24'
0% - 2%	0 - 50:1	125'	250'	300'	350'
2% - 10%	50:1 - 10:1	100'	125'	200'	250'
10% - 20%	10:1 - 5:1	75'	100'	150'	200'
20% - 50%	5:1 - 2:1	N/A	50'	75'	100'
≥ 50%	≥ 2:1	N/A	25'	50'	75'

FILTER SOCK DETAIL

SCALE: NONE

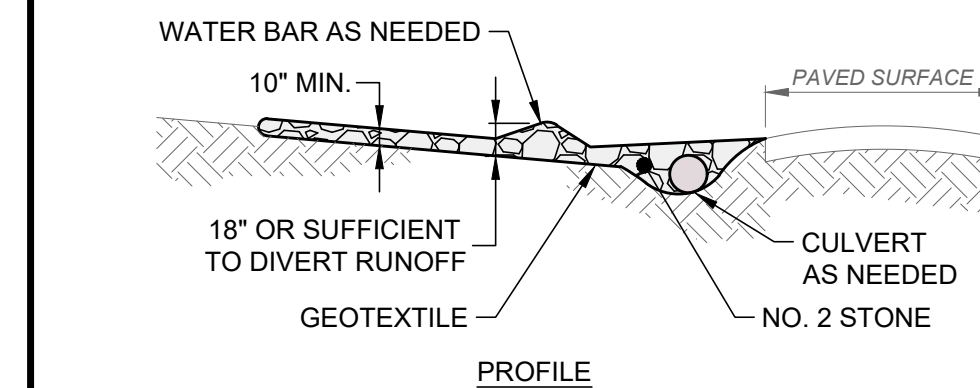
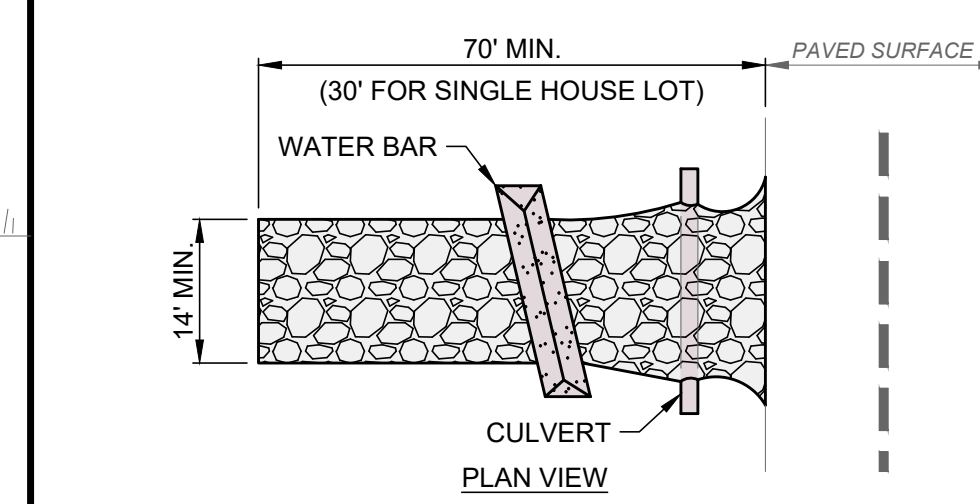


NOTES:

- PRESERVE VEGETATION FOR 5 FEET OR AS MUCH AS POSSIBLE UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE RE-ESTABLISHED WITHIN 7 DAYS FROM SILT FENCE INSTALLATION.
- THE MAXIMUM DRAINAGE AREA PER 100 FEET OF SILT FENCE IS DEPENDENT ON THE SLOPE, BUT NO MORE THAN 1/2 ACRE. SILT FENCE CANNOT BE USED FOR DRAINAGE AREAS WITH SLOPES GREATER THAN 50%.
- SILT FENCE MAY ONLY PASS RUNOFF AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, THEN CHANGE THE LAYOUT OF THE SILT FENCE, REMOVE ACCUMULATED SEDIMENT OR INSTALL OTHER PRACTICES.
- SILT FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, VERIFICATION FABRIC IS SECURELY ATTACHED TO FENCE POSTS, AND VERIFICATION FENCE POSTS ARE FIRMLY IN THE GROUND. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED 1/3 THE FENCE HEIGHT.

SILT FENCE DETAIL

SCALE: NONE



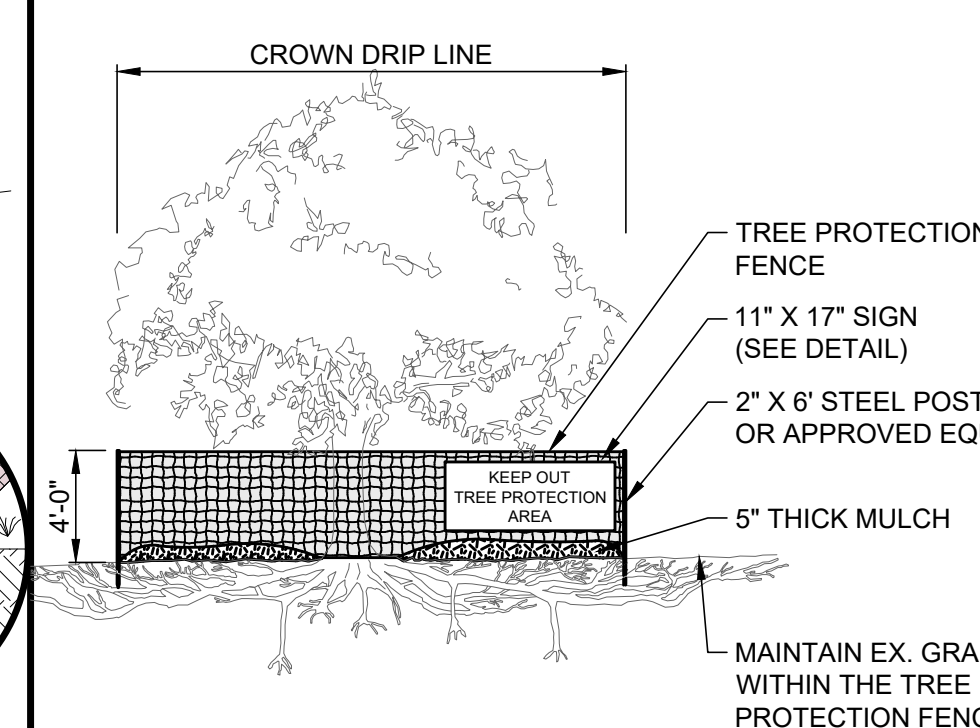
NOTES:

- GEOTEXTILE SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS MEETING THE FOLLOWING:

TENSILE STRENGTH	200 LB
PUNCTURE STRENGTH	80 PSI
TEAR STRENGTH	50 LB
BURST STRENGTH	320 PSI
ELONGATION	20%
EQUIVALENT OPENING SIZE	< 0.6 MM
PERMITTIVITY	0.001 CM/SEC.
- INSTALL WATER BAR, AS NEEDED, TO PREVENT SURFACE RUNOFF FROM FLOWING OUT ONTO PAVEMENT.
- APPLY ADDITIONAL STONE AS CONDITIONS DEMAND, REPLENISH STONE WHEN THE DEPTH IS LESS THAN 6", AND REPLACE IF STONES BECOMES MUD-LADEN.
- IMMEDIATELY REMOVE MUD DROPPED, WASHED OR TRACKED ON TO ROADS OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS BY SCRAPING OR SWEEPING.
- CONSTRUCTION ENTRANCE SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES OR PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
- CONSTRUCTION ENTRANCE SHALL REMAIN UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY.

CONSTRUCTION ENTRANCE DETAIL

SCALE: NONE

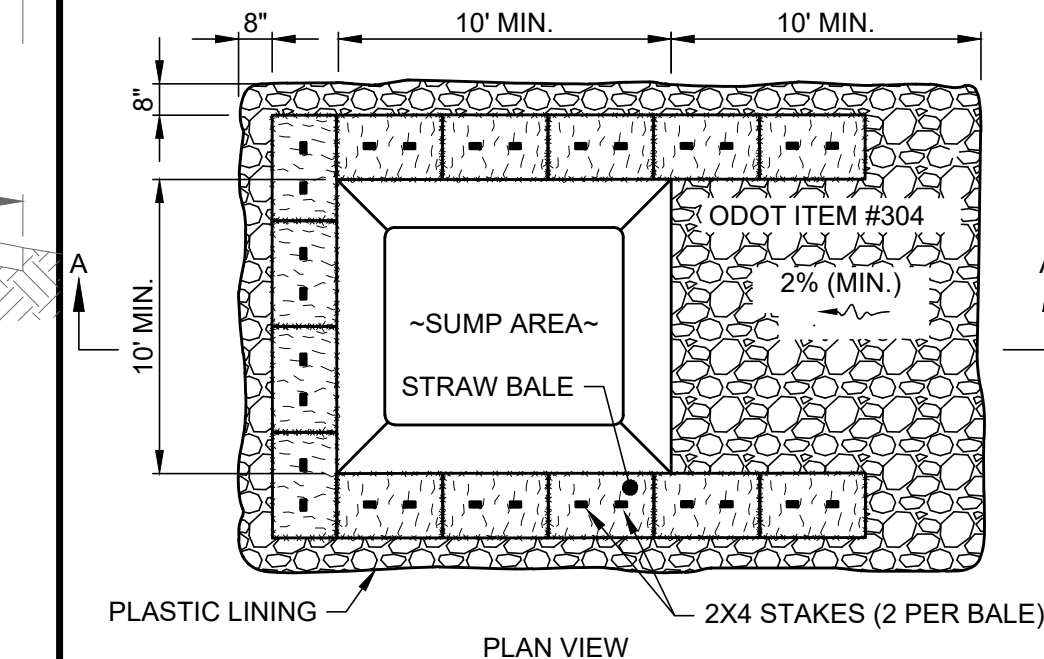
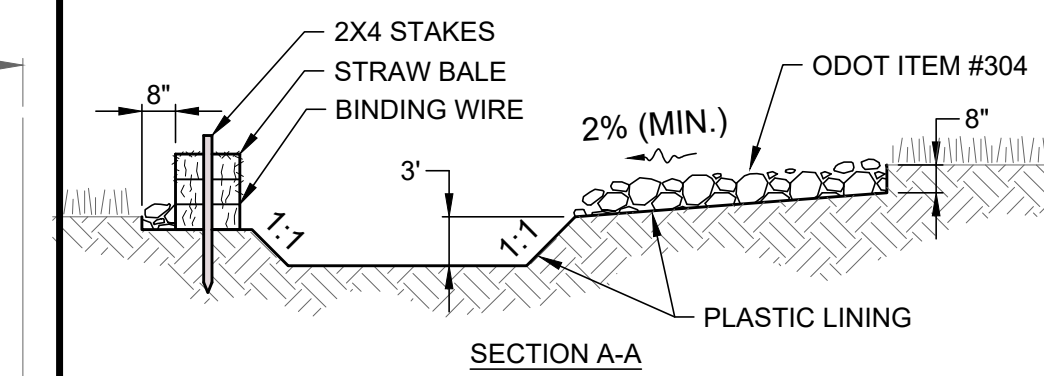


NOTES:

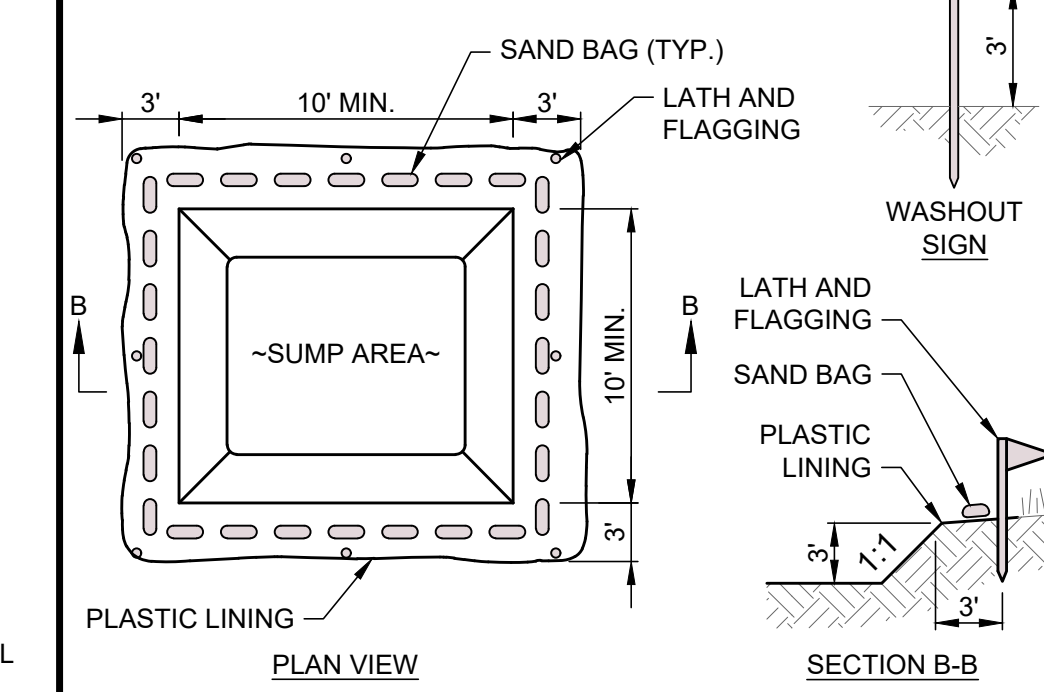
- TREE PROTECTION FENCE MUST BE INSTALLED PRIOR TO BEGINNING CLEARING OPERATIONS AND REMAIN UNTIL FINAL GRADING HAS BEEN COMPLETED.
- FENCE MUST BE PLACED BEYOND THE DRIP LINE OR CANOPY OF TREES (SEE PLANS FOR GENERAL FENCE ALIGNMENT).
- FENCE SHALL BE ORANGE COLOR, HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS.
- STEEL POSTS SHALL BE INSTALLED AT 8' O.C. MIN.
- SIGN SHALL BE LAMINATED IN PLASTIC AND SPACED EVERY 50' ALONG THE FENCE.
- NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING, INCLUDING FENCE INSTALLATION AND REMOVAL.

TREE PROTECTION DETAIL

SCALE: NONE



SINGLE LOCATION FOR SMALL PROJECT

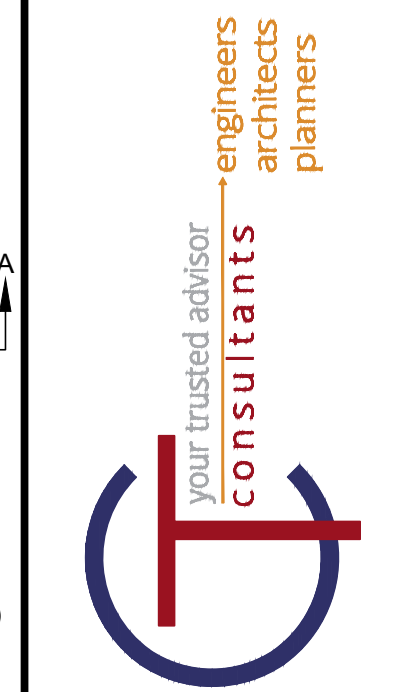


TEMPORARY LOCATION FOR MULTIPLE PHASE OR LARGE PROJECT

- NOTES:**
- CONCRETE WASHOUT AREA SHALL BE LOCATED A MINIMUM OF 100' FROM STORM SEWER INLETS, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS.
 - IF CONCRETE WASHOUT AREA IS LOCATED AWAY FROM A PAVED SURFACE, CONSTRUCT A GRAVEL ACCESS ROUTE EQUAL IN COMPOSITION TO A CONSTRUCTION ENTRANCE.
 - CONCRETE WASHOUT AREA SHALL BE SUFFICIENT SIZE TO CONTAIN CONCRETE WASTE GENERATED. LARGE SITES MAY REQUIRE MULTIPLE CONCRETE WASHOUT AREAS.
 - PLASTIC LINING SHALL BE DOUBLE-LINED, CONTINUOUS 10-MIL POLYETHYLENE SHEETING FREE OF HOLES, TEARS OR OTHER DEFECTS INSTALLED ON A SMOOTH, LEVEL SURFACE, FREE OF LARGE ROCKS AND DEBRIS.
 - CONCRETE WASHOUT SIGNAGE SHALL BE CLEARLY VISIBLE AND LOCATED WITHIN 30 FEET OF EACH WASHOUT AREA.
 - CONCRETE WASHOUT AREA SHALL BE COVERED DURING INCLEMENT WEATHER TO PREVENT OVERFLOW.
 - PREFABRICATED, PORTABLE AND RE-USABLE CONCRETE WASHOUT CONTAINERS ARE ACCEPTABLE.
 - CONCRETE WASHOUT AREA SHALL BE INSPECTED DAILY TO CHECK FOR DAMAGE AND DETERMINE IF IT NEEDS CLEANED OR REPLACED. ANY DAMAGE TO THE SIDEWALLS OR PLASTIC LINING SHALL BE REPAIRED IMMEDIATELY. REPLACE THE ENTIRE CONCRETE WASHOUT AREA WHEN IT IS 75% FULL.

CONCRETE WASHOUT DETAIL

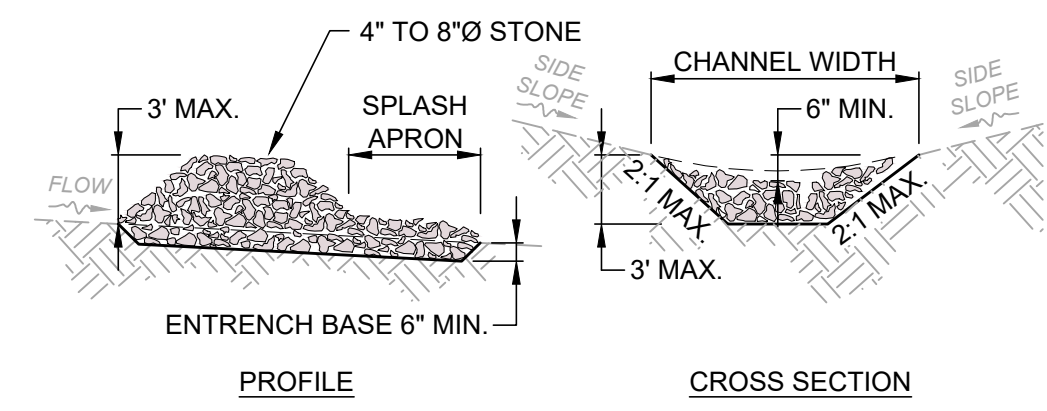
SCALE: NONE



DATE	REVISION	NO.	REVIEW	ISSUED FOR:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
				10/23/2023	AS SHOWN	PAB/RV	AM/CZ/PAB	M/RD

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK BOARDMAN, OH
MAHONING COUNTY
SWPPP DETAILS (1 OF 2)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	SWP-03
SHEET	42
OF	43

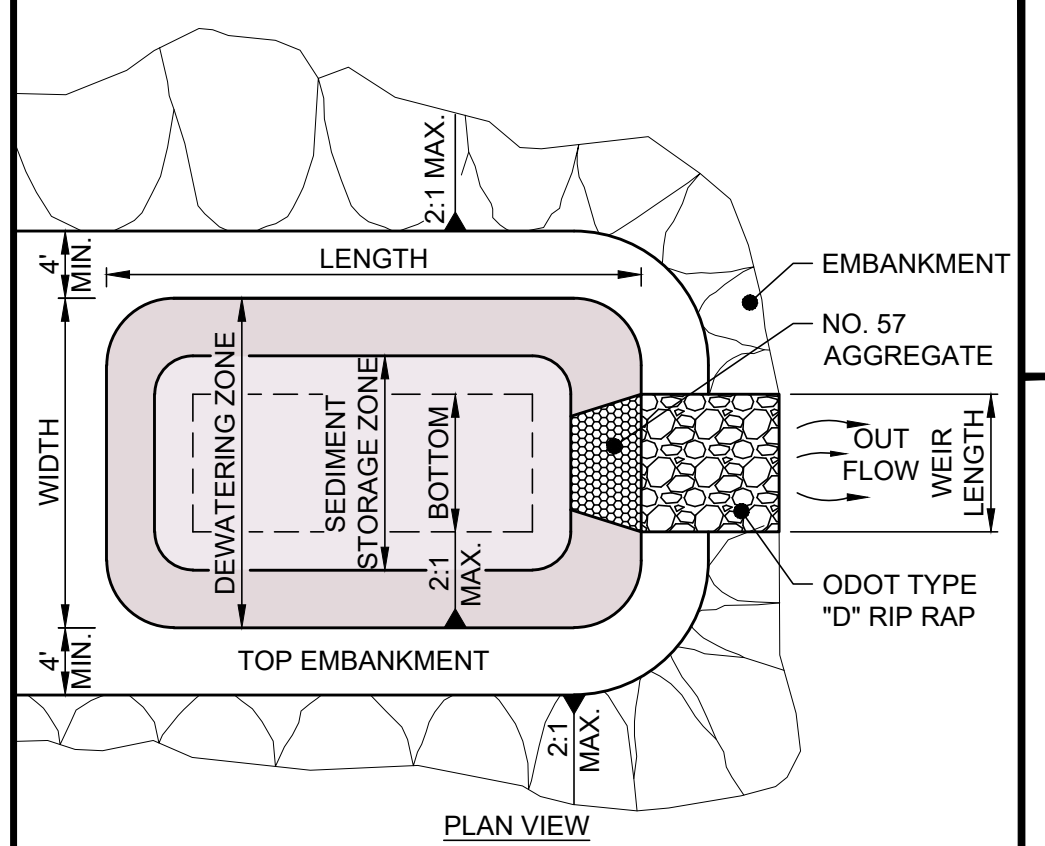


- NOTES:
- STONE MUST COVER THE FULL CHANNEL WIDTH.
 - ODOT TYPE 'D' STONE IS ACCEPTABLE, BUT MUST BE UNDERLAIN WITH NO. 3 OR 4 STONE OR FILTER FABRIC.
 - THE MIDPOINT OF THE CHECK DAM SHALL BE A MINIMUM OF 6" LOWER THAN THE SIDES TO DIRECT WATER ACROSS THE CENTER AND AWAY FROM CHANNEL SIDES.
 - SPACE CHECK DAMS SO TOE OF UPSTREAM DAM IS AT SAME ELEVATION AS TOP OF DOWNSTREAM DAM, OR AS FOLLOWS:

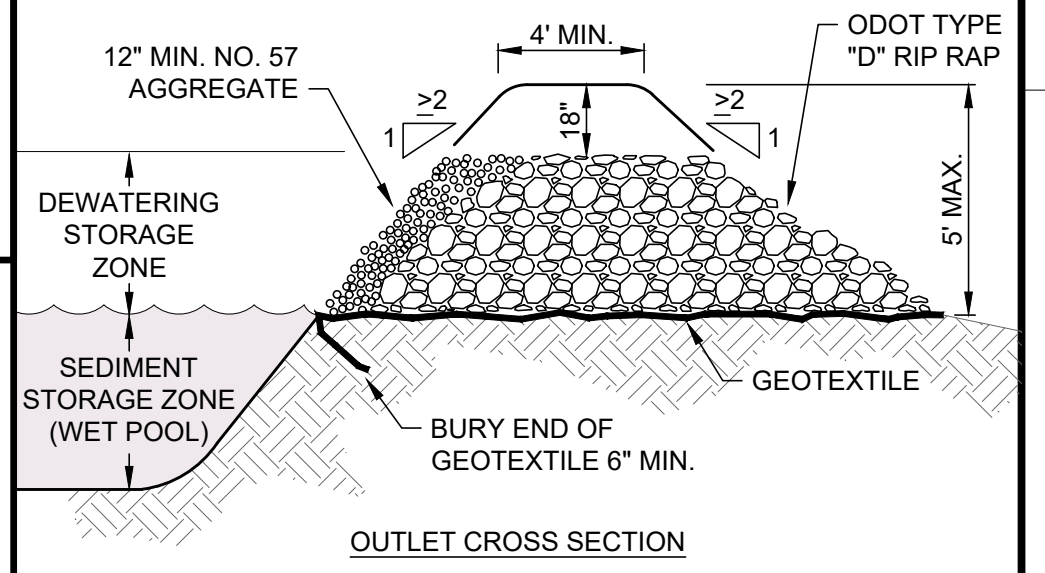
CHECK DAM HEIGHT	CHANNEL SLOPE			
	< 5%	5% - 10%	10% - 15%	15% - 20%
1 FT.	65 FT.	30 FT.	20 FT.	15 FT.
2 FT.	130 FT.	65 FT.	40 FT.	30 FT.
3 FT.	200 FT.	100 FT.	65 FT.	50 FT.

- IF CHECK DAMS TO REMAIN IN USE FOR EXTENDED PERIOD OF TIME, INSTALL SPLASH APRON 6" MINIMUM THICK WITH LENGTH 2 TIMES CHECK DAM HEIGHT.

CHECK DAM DETAIL
SCALE: NONE



DRAINAGE AREA	WEIR LENGTH
≤ 1 AC.	4 FT.
≤ 2 AC.	6 FT.
≤ 3 AC.	8 FT.
≤ 4 AC.	10 FT.
≤ 5 AC.	12 FT.



- NOTES:
- WORK SHALL CONSIST OF INSTALLATION, MAINTENANCE AND REMOVAL OF SEDIMENT TRAP.
 - SEDIMENT TRAP MUST BE CONSTRUCTED AND OPERATIONAL PRIOR TO UPSLOPE LAND DISTURBANCE.
 - THE AREA BENEATH THE EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF VEGETATION TO A MINIMUM DEPTH OF 6". THE POOL SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT CLEANOUT.
 - EMBANKMENT FILL SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION, LARGE ROCKS, ORGANICS OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL SHALL BE PLACED IN 6" LIFTS AND COMPACTED. CONSTRUCTION SHALL NOT BE PERMITTED IF THE FILL OR COMPACTION SURFACE IS FROZEN.
 - DIKES DIRECTING WATER TO THE TRAP SHALL BE HIGHER THAN THE HEIGHT OF THE EMBANKMENT.
 - 67 C.Y. OF STORAGE VOLUME IS REQUIRED BELOW THE OUTLET CREST FOR EACH 1 AC. OF CONTRIBUTING DRAINAGE AREA. THIS STORAGE VOLUME IS ACHIEVED BY THE DIMENSIONS SHOWN ON THE PLANS.
 - ESTABLISH TEMPORARY SEEDING ON ALL NON-SUBMERGED AREAS AND MAINTAIN OVER THE LIFE OF THE SEDIMENT TRAP.
 - WHERE GEOTEXTILE IS USED, OVERLAPS SHALL BE 2' MINIMUM WITH THE UPPER MOST LAYER PLACED LAST.
 - WARNING SIGNS AND SAFETY FENCE SHALL BE PLACED AROUND THE ENTIRE SEDIMENT TRAP AND MAINTAINED UNTIL THE SEDIMENT TRAP IS REMOVED.
 - REMOVE SEDIMENT AND RESTORE THE SEDIMENT TRAP TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS FILLED 40% OF THE TRAP'S ORIGINAL DEPTH. SPREAD REMOVED SEDIMENT IN A SUITABLE AREA AND STABILIZED SO IT WILL NOT ERODE.
 - AFTER UPSLOPE SEDIMENT PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, THE SEDIMENT TRAP AND ALL SEDIMENT SHALL BE REMOVED, BACKFILLED AND SEEDED.

SEDIMENT TRAP DETAIL
SCALE: NONE



DATE	REVISION	NO	REVIEW	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
			10/23/2023	AS SHOWN			PAB/RW	AM/CZ/PAB	MRD

ABC WATER & STORMWATER DISTRICT
FOREST LAWN STORMWATER PARK
BOARDMAN, OH
MAHONING COUNTY
SWPPP DETAILS (2 OF 2)

PROJECT NO.	231566
DISCIPLINE	CIVIL
SHEET NAME	SWP-04
SHEET	43
OF	43