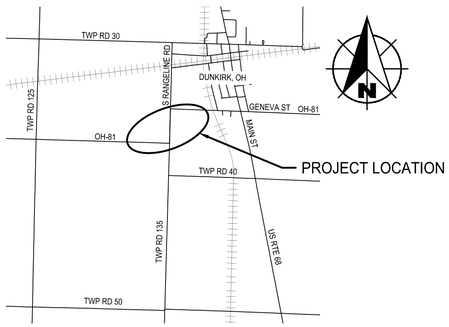
WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER
FOR THE
HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO



VILLAGE OF DUNKIRK, OHIO
VICINITY MAP
SCALE: NONE

STATE LOCATION MAP
SCALE: NONE

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PROJECT NO. 708025-04-001

DRAWINGS PREPARED FOR:

SCHOOL BOARD

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ANGIE WHITAKER, VICE PRESIDENT
BROOKE MCBRIDE, TREASURER
BOB BAME, MEMBER
JOSH CRAMER, MEMBER

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BRENNON HATTERY, TREASURER
BRIAN WEBB, MAINTENANCE DIRECTOR

SEPTEMBER 2026

STATE OF OHIO
BENJAMIN SCHROEDER
E-85179
REGISTERED
PROFESSIONAL ENGINEER
10/26/2026

BENJAMIN SCHROEDER
REGISTERED ENGINEER STATE OF OHIO NO. E-85179

STATE OF OHIO
WAYNE C. MOORE
E-70068
REGISTERED
PROFESSIONAL ENGINEER
10/23/2026

WAYNE C. MOORE
REGISTERED ENGINEER STATE OF OHIO NO. E-70068
COVERING ELECTRICAL DESIGN

Drawing: X:\Hardin N Local School District\708025 Hardin N LSD Lift Station\DWG\Sheets\708025-GS.dwg | Layout: 1G1 (Ohio) | Plotted: 09/28/26 @ 03:13:23 | LastSavedBy: MichelleE

2019 OSIP III IMAGERY

LOCATION AND SCOPE OF WORK PLAN

0 125 250 500 1" = 250'

HORIZONTAL AND VERTICAL CONTROL INFORMATION

JOB NUMBER: HAR-WAS-2501
FIELD WORK BY: KME EMK
R/W LINES BY: AJB / CJS2
PROJECT LOCATION:
SECTIONS 13 & 18/TOWN 3 S/RANGE 11 E
WASHINGTON TOWNSHIP/BLANCHARD TOWNSHIP
VILLAGE OF DUNKIRK

HORIZONTAL POSITIONING

CHOICE ONE HORIZONTAL CONTROL: LEVEL 2

REFERENCE FRAME: NAD83 (CORS 2011 ADJUSTMENT)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE, NORTH
POSITIONING METHOD: ODOT VRS

SCALE FACTOR: 1.00004638
LATITUDE: N40° 46' 50.46755"
LONGITUDE: W83° 39.36353"
ELEVATION: 945.05'
SOUNDING DATUM: N/A

VERTICAL POSITIONING

CHOICE ONE VERTICAL CONTROL: LEVEL 2

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID 12A

BENCHMARK #1 ELEV: 956.89
MAG NAIL IN POWER POLE SOUTHEAST OF THE TREATMENT PLANT AT THE SCHOOL.

BENCHMARK #2 ELEV: 957.70
MAG NAIL IN POWER POLE AT NORTHEAST CORNER OF ST. RT. 81 AND THE EAST ENTRANCE TO THE SCHOOL.

BENCHMARK #3 ELEV: 945.58
MAG NAIL IN POWER POLE AT EAST SIDE OF THE INTERSECTION OF ST. RT. 81 AND S. RANGELINE RD.

BENCHMARK #4 ELEV: 953.85
MAG NAIL IN TELEPHONE POLE AT 295 GENEVA ST. ALONG RANGELINE RD SIDE.

BENCHMARK #5 ELEV: 953.84
MAG NAIL IN POWER POLE AT 269 GENEVA ST. SOUTH OF THE EXISTING PUMP STATION.

CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 103	407564.63	1647599.61	956.0	MAG NAIL
CP 106	407525.10	1649471.05	944.1	MAG NAIL
CP 107	408820.16	1649552.19	954.5	MAG NAIL
CP 108	408824.34	1650073.15	955.0	MAG NAIL
CP 109	408055.18	1647625.33	956.1	CUT 'X'
CP 110	408583.65	1647732.53	955.6	CP MAG

DRAWING INDEX

SHEET NO.	DESCRIPTION
GENERAL	
01	TITLE SHEET
02	LOCATION PLAN AND DRAWING INDEX
03	LEGEND, ABBREVIATIONS, UTILITY CONTACTS AND GENERAL NOTES
PLAN AND PROFILE SHEETS	
04	SITE DEMOLITION PLAN
05	SITE IMPROVEMENTS PLAN
06 - 11	LOW PRESSURE SEWER PLAN AND PROFILE - LINE A
DETAILS AND TABLES	
12 - 13	MISCELLANEOUS DETAILS
14 - 15	EROSION CONTROL DETAILS
16	MAINTENANCE OF TRAFFIC DETAILS
ELECTRICAL	
17	ELECTRICAL LEGEND
18	ELECTRICAL SITE PLAN AND ONE LINE DIAGRAM
19	ELECTRICAL DETAILS

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	APPROVED BY	BJS
	ISSUE DATE	SEPTEMBER 2026
	PROJECT NUMBER	708025-04-001

NO.	DATE	INITIALS	REVISION DESCRIPTIONS

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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

LOCATION PLAN AND DRAWING INDEX

SHEET NO. **02**

TOTAL SHEETS 19

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EXISTING FEATURES LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
BM	BENCH MARK	CB	CISTERN		EASEMENT - CONSTRUCTION/PERMANENT
TBM	TEMPORARY BENCH MARK	E/M	ELECTRIC METER		LOT BOUNDARY
SB-01	SOIL BORING LOCATION	AC	AIR CONDITIONING UNIT	R	PROPERTY BOUNDARY
	SECTION CORNER	XXX	UTILITY RISER (DEFINED BY UTILITY)		RIGHT-OF-WAY - TEMPORARY/PERMANENT
	DRILL HOLE IN CONCRETE/HARRISON MONUMENT	XXX	UTILITY PEDESTAL (DEFINED BY UTILITY)		SECTION BOUNDARY
CP	CONTROL POINT (SET/FOUND)	X	UTILITY MARKER (DEFINED BY UTILITY)		WETLANDS
MS	MAGNETIC NAIL (SET/FOUND)	J	JOINT POWER/TELEPHONE POLE	849	CONTOUR - INTERMEDIATE ELEVATION
BS	BOAT SPIKE (SET/FOUND)	L	LIGHT POLE	850	CONTOUR - INDEX ELEVATION
PK	PK NAIL (SET/FOUND)	LP	LIGHT ON POWER POLE	OHE OHE	OVERHEAD ELECTRIC
RS	RAILROAD SPIKE (SET/FOUND)	LJ	LIGHT ON JOINT POLE	OHC OHC	OVERHEAD CABLE TV
R/W	R/W MARKER - CONCRETE/GRANITE/STONE	P	POWER POLE	OHT OHT	OVERHEAD TELEPHONE
	IRON PIPE/IRON PIN/REBAR (WITH DIAMETER)	T	TELEPHONE POLE	UGC UGC	UNDERGROUND CABLE TV
BP	BRASS PLUG		LAMP POST	UGE UGE	UNDERGROUND ELECTRIC
C	CABLE TV MANHOLE		GUY ANCHOR	UGF UGF	UNDERGROUND FIBER OPTIC
E	ELECTRIC MANHOLE		GUY POLE OR STUB	G G G	GAS MAIN
G	GAS MANHOLE		CONTROLLER CABINET	DG DG	DIGESTER GAS
O	OTHER MANHOLE	FP	FLAG POLE	P P P	PETROLEUM MAIN
T	TELEPHONE MANHOLE		POST	UGT UGT	UNDERGROUND TELEPHONE
TEL	TELEPHONE VAULT		GROUND LIGHT	W W W	WATER MAIN
I	TRAFFIC MANHOLE	M	MAILBOX	W W W	WATER SERVICE
H	TRAFFIC HANDHOLE	M M	DOUBLE/MULTIPLE MAILBOX	FM FM	FORCEMAIN
W	WATER MANHOLE		MAST ARM POLE		GRAVITY SEWER PIPE
A	AIR RELEASE VALVE		TRAFFIC SIGNAL STRAIN POLE		PLANT CHEMICAL LINE
S	SANITARY SEWER MANHOLE		SIGNAL LOOP DETECTOR BOX	D D	PLANT DRAIN LINE
D	DRAINAGE/STORM SEWER MANHOLE		SIGNAL LOOP DETECTOR LOOP		TOP OF BANK/TOE OF SLOPE
C O	SANITARY SEWER CLEANOUT		SIGN - SINGLE POST		CENTERLINE OF DITCH/SWALE/STREAM
ST	SEPTIC TANK		SIGN - DOUBLE POST	x x x x x x x x x	FENCE - FIELD
V V	VALVE VAULT		SIGN - RAILROAD SIGNAL	o o o o o o o o o	FENCE - METAL
	BEEHIVE INLET	R/R	SIGN - RAILROAD CROSSING	o o o o o o o o o	FENCE - WOOD
	CURB INLET		BUSH		GUARDRAIL
	DROP INLET		STUMP		STREAM
	CATCH BASIN		TREE - CONIFEROUS		TREE/BRUSH LINE
DS	DOWNSPOUT		TREE - DECIDUOUS		
GM	GAS METER		ROCK OUTCROP		
GV	GAS VALVE		SATELLITE		
GS	GAS SERVICE VALVE	SPH	SPRINKLER CONTROL VALVE		
PV	PETROLEUM VALVE		WATER METER		
PS	PETROLEUM SHUTOFF VALVE	WV	WATER VALVE		
GM	GAS STATION MONITORING WELL	WS	WATER SERVICE VALVE		
GFC	GAS STATION FILL CAP	W	WATER WELL		
GW	NATURAL GAS WELL/STORAGE WELL	WW	WET WELL		
SP	SPRINKLER HEAD		FIRE HYDRANT		
	YARD HYDRANT	PV	PROCESS VALVE		

*NOTE: THIS TABLE IS A LISTING OF TYPICAL EXISTING SYMBOLS AND MAY NOT INCLUDE ALL EXISTING SYMBOLS FOUND WITHIN THIS PLAN SET. ALL PROPOSED ITEMS WILL BE CALLED OUT ON THEIR PLAN SHEETS. IF A QUESTION ARISES ON THE MEANING OF ANY SYMBOL NOT LISTED IN THIS TABLE, PLEASE CONTACT THE ENGINEER FOR CLARIFICATION. THE SYMBOLS ARE NOT TO SCALE.

Ohio Utilities Protection Service
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TABLE OF ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	IPS	IRON PIPE SIZE
ALUM	ALUMINUM	OSPC	OHIO STATE PLANE COORDINATE
APP	APPARENT	LB	POUND(S)
APPROX	APPROXIMATE(LY)	LF	LINEAR FEET
ASPH	ASPHALT	LN	LANE
ASSOC	ASSOCIATES	LS	LIFT STATION
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	MA EX	MATCH EXISTING
AVE	AVENUE	MJ	MECHANICAL JOINT
AVG	AVERAGE	MATL	MATERIAL
BLDG	BUILDING	MAX	MAXIMUM
BLVD	BOULEVARD	MH	MANHOLE
BM	BENCHMARK	MIN	MINIMUM
CO	CLEANOUT	MISC	MISCELLANEOUS
CI	CAST IRON	MNFR	MANUFACTURER
CL	CENTER LINE	N	NORTHING, NORTH
CMA	COLD MIX ASPHALT	NGS	NATIONAL GEODETIC SURVEY
CMP	CORRUGATED METAL PIPE	NO.	NUMBER
CMU	CONCRETE MASONRY UNIT	OC	ON CENTER
CONC	CONCRETE	OD	OUTSIDE DIAMETER
CONT	CONTINUOUS	ODOT	OHIO DEPARTMENT OF TRANSPORTATION
CNR	CORNER	PC	POINT OF CURVE (BEGIN CURVE)
CP	CONTROL POINT	POLY	POLYETHYLENE
CPP	CORRUGATED PLASTIC PIPE	PI	POINT OF INTERSECTION
CR STN	CRUSHED STONE	POT	POINT ON TANGENT
CYD	CUBIC YARD	PT	POINT OF TANGENT (END CURVE)
D	DEPTH	PSI	POUNDS PER SQUARE INCH
DI	DUCTILE IRON	PT	PRESSURE TREATED
DI MJ	DUCTILE IRON MECHANICAL JOINT	PVC	POLYVINYL CHLORIDE
DBL	DOUBLE	R	RADIUS
DIA	DIAMETER	ROW	RIGHT-OF-WAY
DIP	DUCTILE IRON PIPE	RCP	REINFORCED CONCRETE PIPE
DIPS	DUCTILE IRON PIPE SIZE	RD	ROAD
DR	DRIVE	S	SOUTH
E	EASTING, EAST	SR	STATE ROUTE
EF	EACH FACE	SST	STAINLESS STEEL
EW	EACH WAY	SVA	SERVICE VALVE ASSEMBLY
EA	EACH	SB	SOIL BORING
EJ	EAGLE PICHER IRON WORKS	SCHED	SCHEDULE
EL	ELEVATION	SDR	STANDARD DIMENSION RATIO
EX	EXISTING	SECT	SECTION
EXP	EXPANSION	SF	SQUARE FEET
FFE	FINISH FLOOR ELEVATION	SHT	SHEET
FM	FORCE MAIN	SPECS	SPECIFICATION(S)
FND	FOUND	SQ	SQUARE
FT	FEET	SRF	STATE REVOLVING FUND
FTG	FOOTING	ST	STREET
GALV	GALVANIZED	STA	STATION
GPS	GLOBAL POSITIONING SYSTEM	SYD	SQUARE YARD
HMA	HOT MIX ASPHALT	TBM	TEMPORARY BENCHMARK
HDPE	HIGH DENSITY POLYETHYLENE	TC	TOP OF CASTING
HORIZ	HORIZONTAL	TYP	TYPICAL
ID	INSIDE DIAMETER	UNO	UNLESS NOTED OTHERWISE
IE	INVERT ELEVATION	USGS	US GEOLOGICAL SURVEY
INC	INCORPORATED	VERT	VERTICAL
INDOT	INDIANA DEPARTMENT OF TRANSPORTATION	VLV	VALVE
INSTR	INSTRUMENT	W	WIDTH, WEST
INV	INVERT	WSE	WATER SURFACE ELEVATION
		YR	YEAR

*NOTE: THIS TABLE IS A LISTING OF TYPICAL ABBREVIATIONS AND MAY NOT INCLUDE ALL ABBREVIATIONS FOUND WITHIN THIS PLAN SET. IF A QUESTION ARISES ON THE MEANING OF AN ABBREVIATION NOT LISTED IN THIS TABLE, PLEASE CONTACT THE ENGINEER FOR CLARIFICATION.

GENERAL NOTES:

1. NOTIFY THE ENGINEER IF ANY CONFLICTING INFORMATION BECOMES APPARENT IN THE CONTRACT DOCUMENTS AS SOON AS POSSIBLE AND PRIOR TO THE COMMENCEMENT OF ANY WORK IN THE VICINITY OF OR RELATIVE TO THE APPARENT CONFLICT SO THAT CLARIFICATION MAY OCCUR PRIOR TO CONSTRUCTION.
2. ANY ALTERATIONS TO THESE DRAWINGS NOT AUTHORIZED BY WESSLER ENGINEERING AND NOT IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS AND RECORDS ON FILE AT WESSLER ENGINEERING SHALL RELIEVE WESSLER ENGINEERING OF ANY RESPONSIBILITY FOR THE ACCURACY OF THE DRAWINGS.
3. USE CAUTION DURING THE EXECUTION OF WORK TO PREVENT DAMAGE TO STATE, COUNTY, MUNICIPAL, AND PRIVATE PROPERTY. REPAIR ALL DAMAGES AS A RESULT OF OPERATIONS, INCLUDING DAMAGE TO DRAINAGE STRUCTURES, FIELD TILES, PUBLIC/PRIVATE ROADS, AND LANDSCAPING (INCLUDING FENCING). REPAIR AND REPLACE DAMAGED ITEMS AT NO ADDITIONAL COST TO THE OWNER. PERFORM ALL REPAIR AND REPLACEMENT WORK TO THE SATISFACTION OF THE PERMITTING AGENCY, THE OWNER AND THE ENGINEER.
4. TAKE CARE TO AVOID DAMAGE TO PAVED AREAS WHICH ARE NOT SPECIFICALLY CALLED OUT FOR REPAIR OR REPLACEMENT. REPAIR, OR REPLACE ALL SUCH PAVEMENTS WHICH ARE DAMAGED BY CONSTRUCTION ACTIVITIES AND CONSTRUCTION TRAFFIC AT NO ADDITIONAL COST TO THE OWNER.
5. OBTAIN ALL TEMPORARY EASEMENTS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
6. COMPLY WITH ALL APPLICABLE PERMITS AND REGULATIONS. APPLICABLE PERMITS ISSUED TO THE OWNER WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT ALL APPLICABLE PERMITTING AGENCIES WITHIN THE TIME PERIOD SPECIFIED BY THAT AGENCY PRIOR TO BEGINNING CONSTRUCTION.
7. ALL EXISTING AND NEW UTILITY INFORMATION, INCLUDING BUT NOT LIMITED TO LOCATION, SIZE AND INVERT ELEVATION, IS SHOWN BASED UPON AVAILABLE INFORMATION. THE ENGINEER DOES NOT GUARANTEE OR ASSUME SUCH INFORMATION TO BE TRUE, ACCURATE, EXCLUSIVE OR EVEN APPROXIMATE. CONTACT THE OHIO UTILITIES PROTECTION SERVICES (O.U.P.S.) AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY. CONTACT NON-O.U.P.S. UTILITIES DIRECTLY.
8. DETERMINE WHICH UTILITIES MAY CONFLICT WITH WORK AND VERIFY THEIR LOCATION, SIZE AND ELEVATION PRIOR TO CONSTRUCTION AND DETERMINE IF THERE ARE ANY DISCREPANCIES OR CONFLICTS. IF ANY DISCREPANCIES OR CONFLICTS ARE DISCOVERED, NOTIFY THE ENGINEER AS SOON AS POSSIBLE.
9. EXISTING UTILITY SERVICE LINES TO INDIVIDUAL CUSTOMERS MAY NOT BE SHOWN ON THE DRAWINGS. ASSUME THAT UNDERGROUND SERVICE LINES FOR ALL UTILITIES EXIST TO EACH PROPERTY ALONG THE ROUTE OF THE PLANNED IMPROVEMENTS.
10. COORDINATE WORK WITH THE RESPECTIVE UTILITIES. SCHEDULE WORK ACCORDINGLY, AND NOTIFY ALL UTILITIES AFFECTED AT TWO (2) WEEKS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY.
11. COORDINATE PLANNED UTILITY SERVICE INTERRUPTIONS WITH THE RESPECTIVE UTILITIES AND THE UTILITIES' AFFECTED CUSTOMERS. SERVICE INTERRUPTIONS SHOULD NOT LAST MORE THAN FOUR (4) HOURS. GIVE WRITTEN NOTICE TO ALL AFFECTED UTILITY CUSTOMERS AND PROPERTY OWNERS AT LEAST TWENTY-FOUR (24) HOURS BUT NOT MORE THAN SEVENTY-TWO (72) HOURS PRIOR TO ANY PLANNED INTERRUPTION OF UTILITY SERVICE.
12. USE CAUTION DURING THE EXECUTION OF WORK TO PREVENT DAMAGE TO EXISTING UTILITIES. REPAIR OR REPLACE ALL PUBLIC AND PRIVATE FACILITIES DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS.
13. BRACE AND PROTECT ALL UTILITY POLES AND EXISTING STRUCTURES ADJACENT TO NEW EXCAVATIONS. UTILITY POLE BRACING SHALL BE AS DIRECTED BY THE GOVERNING UTILITY.
14. MAINTAIN EXISTING STORMWATER DRAINAGE FOR THE ENTIRE DURATION OF THE PROJECT.
15. DO NOT DISTURB EXISTING MANHOLES OR INLETS, UNLESS NOTED OTHERWISE.
16. ALL EQUIPMENT, APPURTENANCES AND PIPING REMOVED AS PART OF THE DEMOLITION SHALL FIRST BE OFFERED TO THE OWNER FOR SALVAGE. DELIVER SALVAGED ITEMS SELECTED BY OWNER TO A LOCATION DESIGNATED BY THE OWNER OR ENGINEER. IN THE EVENT THE OWNER DOES NOT ELECT TO KEEP THE REMOVED ITEMS, REMOVE SUCH ITEMS FROM THE SITE AND DISPOSE OF AT A LOCATION APPROVED FOR SUCH DISPOSAL AT THE CONTRACTOR'S EXPENSE.
17. COORDINATE STAGING AREA LOCATIONS WITH THE OWNER.
18. ALL CONSTRUCTION TRAFFIC SHALL USE MAJOR ROADS. NO CONSTRUCTION TRAFFIC SHALL USE LOCAL STREETS FOR INDIRECT ACCESS.
19. TO CONTROL DUST, REMOVE SOIL FROM STREETS USED BY CONSTRUCTION TRAFFIC DAILY, VACUUM AND WATER AS NECESSARY AND/OR AS DIRECTED BY THE OWNER.
20. ALL EXISTING PIPING MAY NOT BE SHOWN. REFERENCE EXISTING RECORD DRAWINGS ON FILE WITH THE OWNER AND WESSLER ENGINEERING FOR ADDITIONAL INFORMATION OF EXISTING PIPING AND CONDUIT THROUGHOUT THE PLANT SITE.
21. THE WORK SHOWN ON THESE DRAWINGS IS OCCURRING ON A PLANT SITE IN WHICH BURIED ELECTRICAL CONDUIT AND SMALL PIPING MAY EXIST THROUGHOUT AND IN THE VICINITY OF THE PROJECT AND MAY NOT BE SHOWN ON THESE DRAWINGS. EXPECT TO ENCOUNTER BURIED ELECTRICAL AND COMMUNICATIONS WIRING, WITH OR WITHOUT CONDUIT, SMALL PIPING, AND FIELD TILE WHILE DIGGING ON THIS SITE.
22. NEW PIPING CARRYING LIQUIDS SHALL HAVE MINIMUM COVER AS DEFINED IN SPEC 02660, UNLESS SPECIFIC ELEVATIONS ON THE DRAWINGS INDICATE OTHERWISE.
23. INSPECT THE SITE PRIOR TO BIDDING TO UNDERSTAND THE EXTENT OF THE DEMOLITION WORK INVOLVED AND ADJUST BID ACCORDINGLY.
24. COMPLETELY REMOVE UNDERGROUND PIPING THAT HAS PREVIOUSLY BEEN OR WILL BE TAKEN OUT OF SERVICE, IN CONFLICT WITH THE NEW WORK. UNLESS OTHERWISE NOTED, ABANDON IN PLACE ALL UNDERGROUND PIPING NOT IN CONFLICT WITH THE NEW WORK. DO NOT LEAVE ABANDONED PIPING LIVE. SEE SPECIFICATION SECTION 02050 FOR DEMOLITION PROCEDURES. SEE SPECIFICATION SECTION 01550 FOR PLANT OPERATIONS DURING CONSTRUCTION FOR COORDINATION OF DEMOLITION WORK AND NEW CONSTRUCTION.
25. ALL EQUIPMENT TO BE REMOVED THAT HAS ELECTRICAL COMPONENTS, CONDUIT AND WIRING, OR SMALL PIPING CONNECTED SHALL HAVE THE ELECTRICAL COMPONENTS AND SMALL PIPING REMOVED BACK TO THE SOURCE.
26. LENGTHS OF SEWERS AS SHOWN ON THE DRAWINGS AND INDICATED AS LINEAR FEET (LF) ARE FROM CENTER TO CENTER OF STRUCTURES.
27. NORTHING AND EASTING INFORMATION IS GIVEN AT CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
28. PLACE NO. 8 CRUSHED AGGREGATE BETWEEN PIPES AT ALL PIPE CROSSINGS TO PREVENT PIPE SETTLEMENT UNLESS SHOWN OTHERWISE.
29. VERIFY EXISTING SEWER INVERTS AND LOCATIONS PRIOR TO CONSTRUCTION AND DETERMINE IF THERE ARE ANY DISCREPANCIES OR CONFLICTS.
30. RESET ALL MAILBOXES AND SIGNS DISTURBED BY CONSTRUCTION ACTIVITIES.
31. IF REQUIRED, PLACE TEMPORARY OVERNIGHT AGGREGATE WEDGES AT DRIVEWAYS TO ALLOW PROPERTY OWNER ACCESS.
32. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.

UTILITY CONTACTS

MUNICIPAL WATER AND SEWER
VILLAGE OF DUNKIRK
201 N MAIN ST
DUNKIRK, OH 45836
419-759-2808
ATTN: TODD HACKWORTH, SUPERINTENDENT

GAS
SHELDON GAS CO.
129 TOWNSHIP RD. 50
DUNKIRK, OH 45836
419-759-2351
ATTN: RICHARD WALDEN

ELECTRIC
AMERICAN ELECTRIC POWER
OHIO
300 SOUTH MAIN ST
KENTON, OH 43326
419-675-5629
ATTN: CHET RITTENHOUR

FIBER/TELEPHONE
BRIGHTSPEED
303-525-2994
XAN MARIE RYPKEMA, ANALYST FOR ROAD MOVES

FIBER/TELEPHONE
CHARTER SPECTRUM
3760 INTERCHANGE ROAD
COLUMBUS, OHIO 43204
ATTN: LARRY BUSBY, CONSTRUCTION COORDINATOR

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	ISSUE DATE	SEPTEMBER 2026					
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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER
HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

LEGEND, ABBREVIATIONS, UTILITY CONTACTS AND GENERAL NOTES

SHEET NO. 03
TOTAL SHEETS 19

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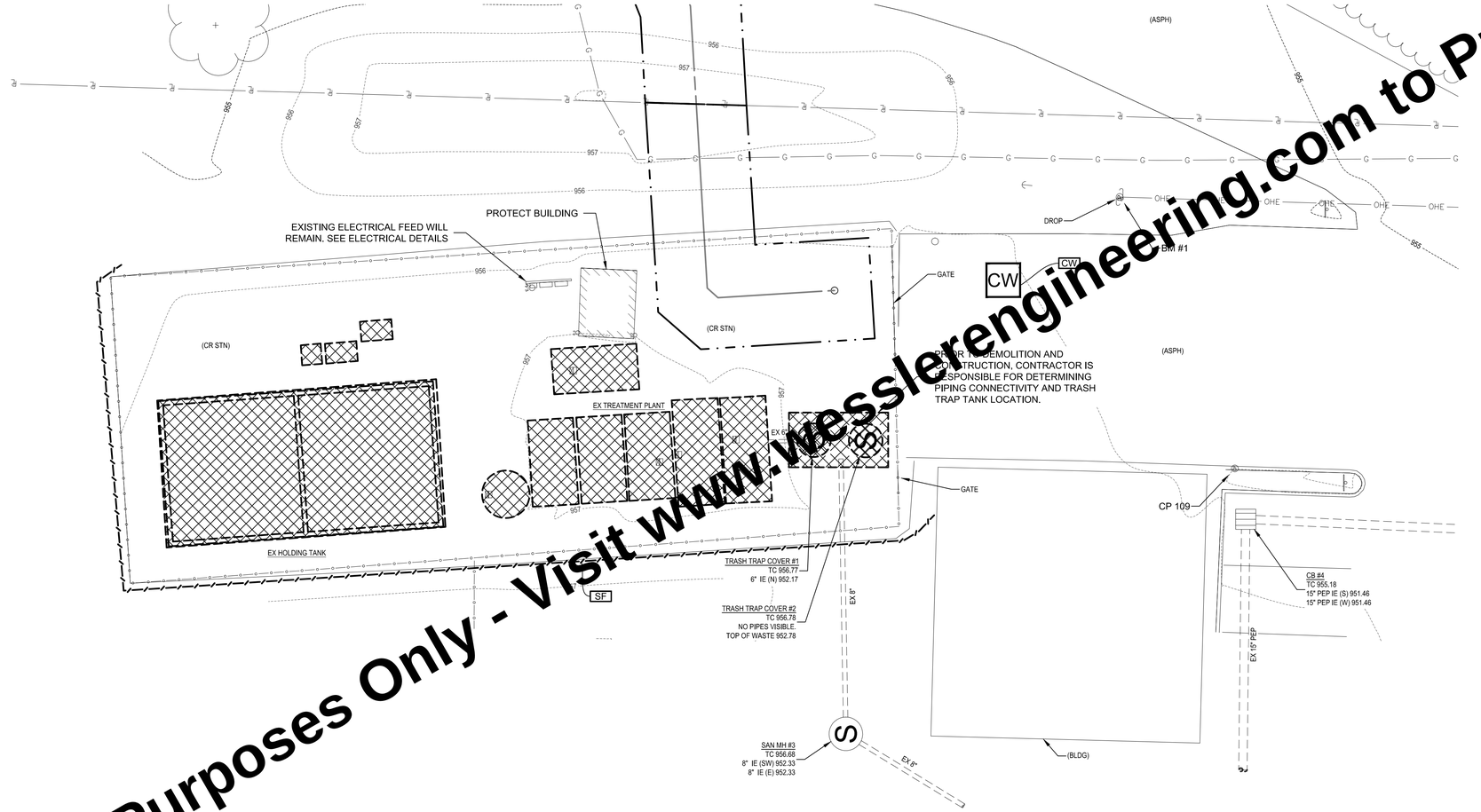

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0 5 10 20 FT
1" = 10'

GENERAL NOTES:

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN SHEETS AND AS NECESSARY TO PROVIDE ADEQUATE CONTROL FOR THE CONSTRUCTION AREA. SEE SPECIFICATION 02101.
2. ABANDON PIPES BY FILLING WITH FLOWABLE CEMENT AND CAPPING.
3. DEMOLISH ENTIRE WASTEWATER TREATMENT FACILITY MINIMUM 4 FEET BELOW FINISHED GRADE INCLUDING STRUCTURES, PIPING, AND EQUIPMENT. EXISTING WASTEWATER TREATMENT FACILITY DRAWINGS INCLUDED IN PROJECT MANUAL.
4. EXISTING FENCE IS TO REMAIN. IF NECESSARY, PORTIONS OF THE FENCE CAN BE TAKEN DOWN FOR DEMOLITION OF THE WASTEWATER TREATMENT FACILITY BUT WILL NEED TO BE RESTORED AND/OR REPLACED PRIOR TO PROJECT COMPLETION. ALL NEW FENCE SHALL MATCH EXISTING.
5. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER BEFORE CONNECTING THE SEWER TO THE GRINDER STATION. REMOVE THE TRASH TRAP TANK AS NEEDED TO INSTALL THE NEW GRAVITY SEWER LINE SERVING THE GRINDER STATION. PROVIDE BYPASS PUMPING FROM SANITARY MANHOLE #3 TO THE AERATION TANK, IF NECESSARY. AFTER THE GRINDER STATION IS OPERATIONAL, DEMOLISH THE REMAINING PACKAGE TREATMENT PLANT FACILITIES.

KEYED NOTES - ERC

(SEE DETAILS AND SCHEDULES ON SHEETS 14-15)

CW CONCRETE WASHOUT CW

SF SILT FENCE OR FILTER TUBE

LEGEND

EXISTING FEATURES TO REMAIN

DEMOLISH EXISTING FEATURES

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS	
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	ISSUE DATE	SEPTEMBER 2026					
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STATE OF OHIO BENJAMIN SCHROEDER E-85179 REGISTERED PROFESSIONAL ENGINEER 10/26/2026

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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

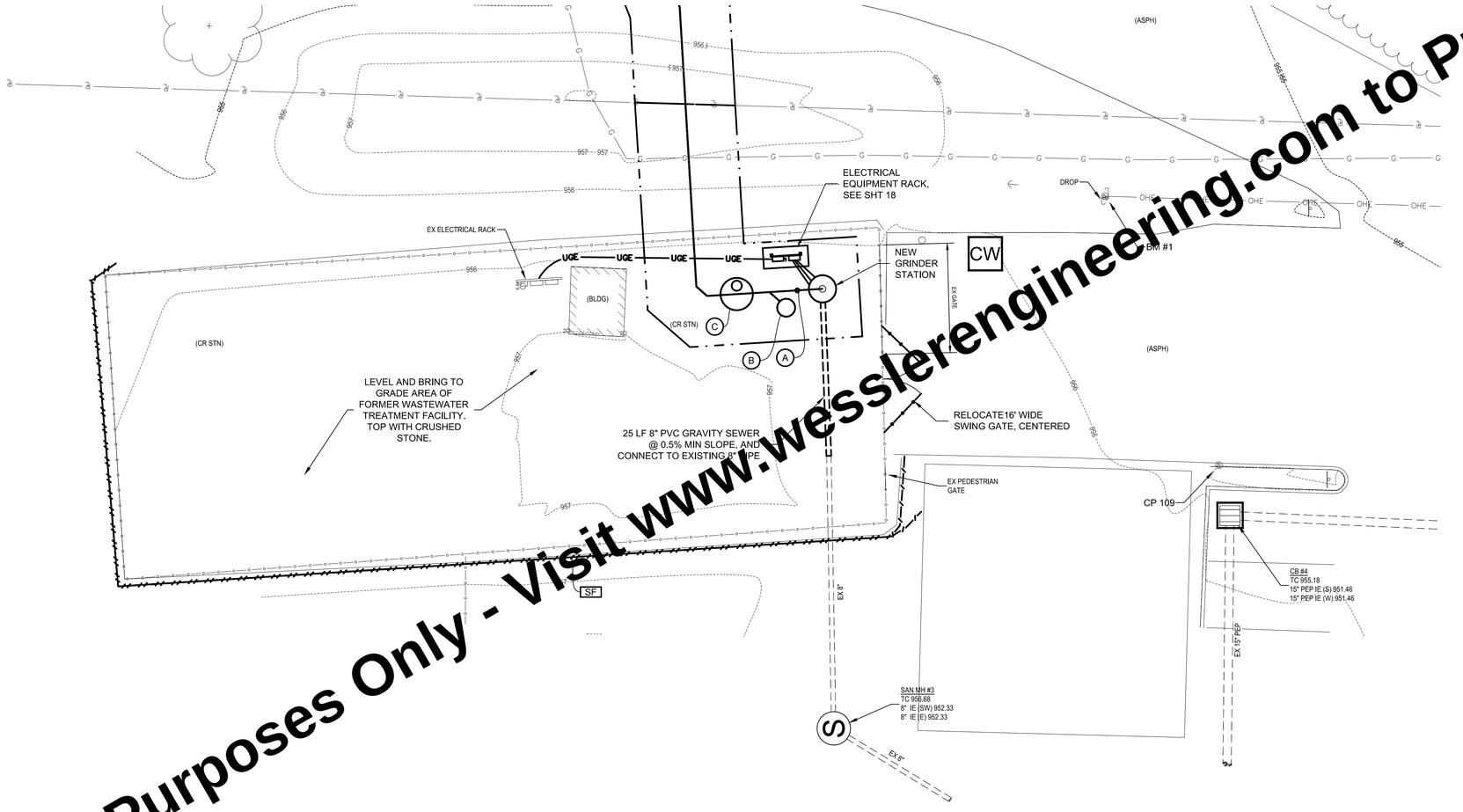
HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

SITE DEMOLITION PLAN

SHEET NO. 04

TOTAL SHEETS 19

Drawing: X:\Hardin N Local School District\708025 Hardin N LSD Lift Station\DWG\Sheets\708025-SI.dwg | Layout: SI1 | Plotted: 09/28/26 @ 03:13:56 | LastSavedBy: MichelleE



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0 5 10 20 FT
1" = 10'

GENERAL NOTES:

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN SHEETS AND AS NECESSARY TO PROVIDE ADEQUATE CONTROL FOR THE CONSTRUCTION AREA. SEE SPECIFICATION 02101.
2. EXISTING FENCE IS TO REMAIN. IF NECESSARY, PORTIONS OF THE FENCE CAN BE TAKEN DOWN FOR DEMOLITION OF THE WASTEWATER TREATMENT FACILITY BUT WILL NEED TO BE RESTORED AND/OR REPLACED PRIOR TO PROJECT COMPLETION. ALL NEW FENCE SHALL MATCH EXISTING.
3. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER BEFORE CONNECTING THE SEWER TO THE GRINDER STATION. REMOVE THE TRASH TRAP TANK AS NEEDED TO INSTALL THE NEW GRAVITY SEWER LINE SERVING THE GRINDER STATION. PROVIDE BYPASS PUMPING FROM SANITARY MANHOLE #3 TO THE AERATION TANK, IF NECESSARY. AFTER THE GRINDER STATION IS OPERATIONAL, DEMOLISH THE REMAINING PACKAGE TREATMENT PLANT FACILITIES.

KEYED NOTES ○

A STAINLESS STEEL LATERAL KIT, SEE DTL SHT 12

B LPS IN-LINE FLUSHING CONNECTION, SEE DTL SHT 12

C IN-LINE ARV, SEE DTL SHT 13

D LPS IN-LINE ARV AND FLUSHING CONNECTION, SEE DTL SHT 13

KEYED NOTES - ERC ▭

(SEE DETAILS AND SCHEDULES ON SHEETS 14-15)

CW CONCRETE WASHOUT CW

SF SILT FENCE OR FILTER TUBE —/—/—/—/—

THE E

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS	
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BJS					
	APPROVED BY	BJS					
	ISSUE DATE	SEPTEMBER 2026					
	PROJECT NUMBER	708025-04-001					

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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

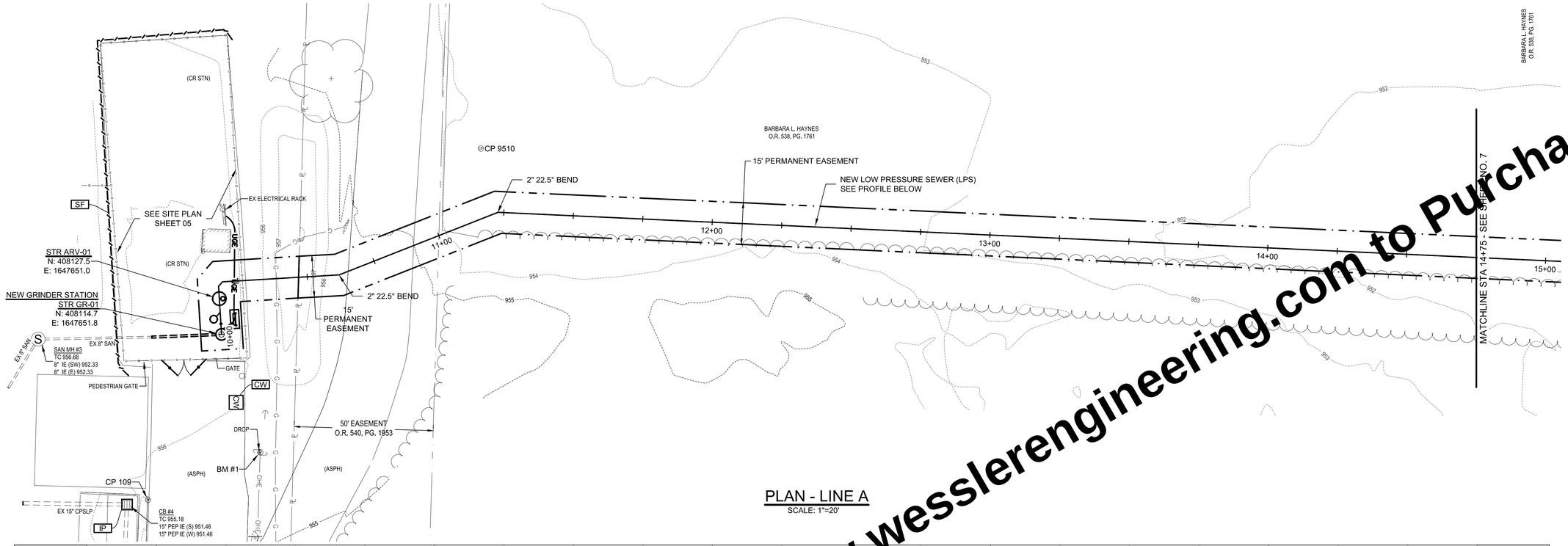
HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

SITE IMPROVEMENTS PLAN

SHEET NO. **05**

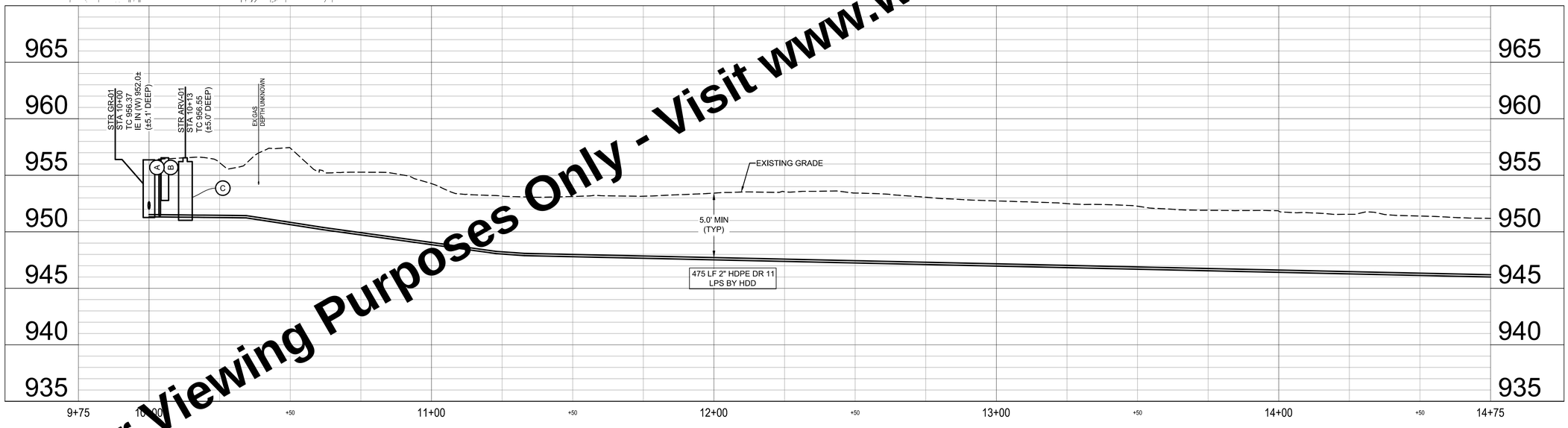
TOTAL SHEETS 19

Drawing: X:\Hardin N Local School District\708025 Hardin N LSD Lift Station\DWG\Sheets\708025-SI-NEW.dwg | Layout: SI1 | Plotted: 09/29/26 @ 03:20:24 | LastSavedBy: MichelleE



PLAN - LINE A

SCALE: 1"=20'



PROFILE - LINE A

HORIZ SCALE: 1" = 20'
VERT SCALE: 1" = 5'

GENERAL NOTES:

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN SHEETS AND AS NECESSARY TO PROVIDE ADEQUATE CONTROL FOR THE CONSTRUCTION AREA. SEE SPECIFICATION 02101.
2. CONTRACTOR TO REPAIR AND REINSTATE ANY DAMAGED FIELD TILE WITHIN 24 HOURS OF OCCURRENCE.
3. CONTRACTOR IS TO AVOID INTERMEDIATE HIGH POINTS IN LOW PRESSURE LINE DURING INSTALLATION. INTERMEDIATE HIGH POINTS THAT OCCUR IN THE FIELD AND NOT INDICATED ON THE DRAWINGS WILL REQUIRE INLINE AIR RELEASE VALVES INSTALLED AT THE CONTRACTOR'S EXPENSE.
4. ALL EXCAVATION AND BORE PITS MUST MEET THE MINIMUM EROSION AND SEDIMENT CONTROL REQUIREMENTS ILLUSTRATED IN THE DETAIL. REFER TO PLAN SHEET 15.
5. CONTRACTOR IS TO PROTECT ALL PAVEMENT FROM DAMAGE AND IS RESPONSIBLE FOR REPLACING ANY DAMAGED PAVEMENT TO ORIGINAL OR BETTER CONDITION.

KEYED NOTES

A	STAINLESS STEEL LATERAL KIT, SEE DTL SHT 12
B	LPS IN-LINE FLUSHING CONNECTION, SEE DTL SHT 12
C	IN-LINE ARV, SEE DTL SHT 13
D	LPS IN-LINE ARV AND FLUSHING CONNECTION, SEE DTL SHT 13

KEYED NOTES - ERC

(SEE DETAILS AND SCHEDULES ON SHEETS 14-15)

CW	CONCRETE WASHOUT	CW
IP	INLET PROTECTION	
SF	SILT FENCE OR FILTER TUBE	

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	PROJECT NUMBER	708025-04-001				

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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

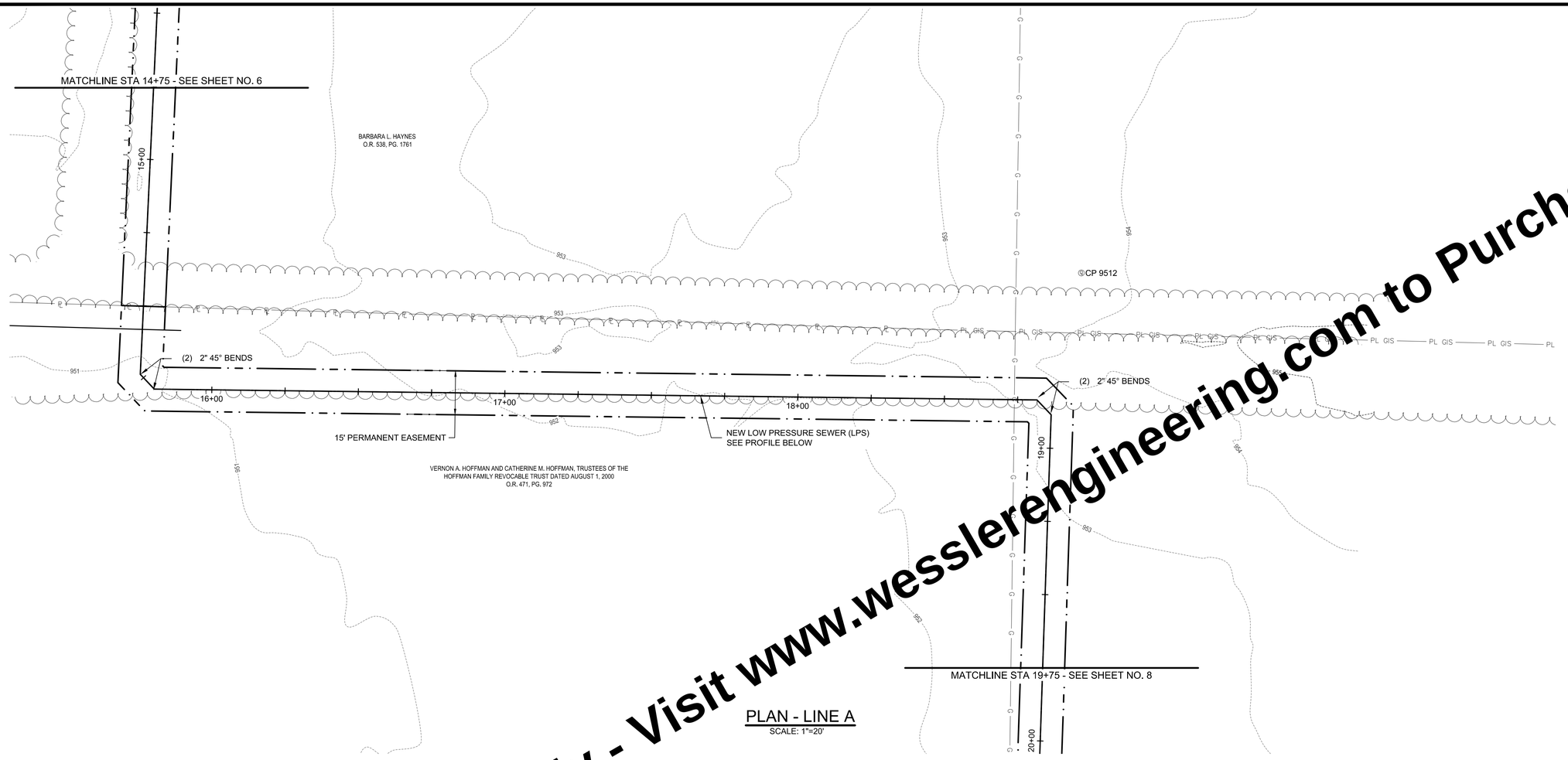
HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

LOW PRESSURE SEWER PLAN AND PROFILE - LINE A

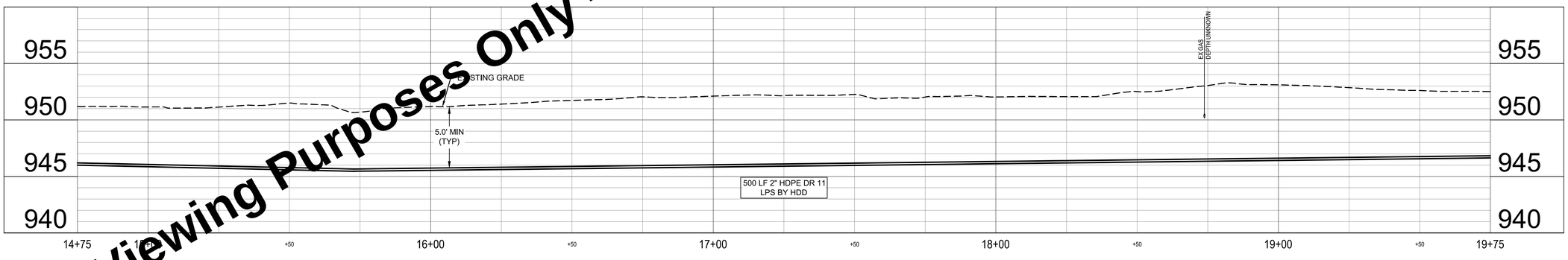
SHEET NO. **06**

TOTAL SHEETS 19

Drawing: X:\Hardin N Local School District\708025 Hardin N LSD Lift Station\DWG\Sheets\708025-PP.dwg | Layout: PP1 | Plotted: 09/28/26 @ 03:20:55 | LastSavedBy: MichelleE



PLAN - LINE A
SCALE: 1"=20'



PROFILE - LINE A
HORIZ SCALE: 1" = 20'
VERT SCALE: 1" = 5'

0 10 20 40 FT
1" = 20'

GENERAL NOTES:

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN SHEETS AND AS NECESSARY TO PROVIDE ADEQUATE CONTROL FOR THE CONSTRUCTION AREA. SEE SPECIFICATION 02101.
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KEYED NOTES

A	STAINLESS STEEL LATERAL KIT, SEE DTL SHT 12
B	LPS IN-LINE FLUSHING CONNECTION, SEE DTL SHT 12
C	IN-LINE ARV, SEE DTL SHT 13
D	LPS IN-LINE ARV AND FLUSHING CONNECTION, SEE DTL SHT 13

KEYED NOTES - ERC

(SEE DETAILS AND SCHEDULES ON SHEETS 14-15)

CW	CONCRETE WASHOUT	CW
IP	INLET PROTECTION	
SF	SILT FENCE OR FILTER TUBE	

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	ISSUE DATE	SEPTEMBER 2026				
	PROJECT NUMBER	708025-04-001				

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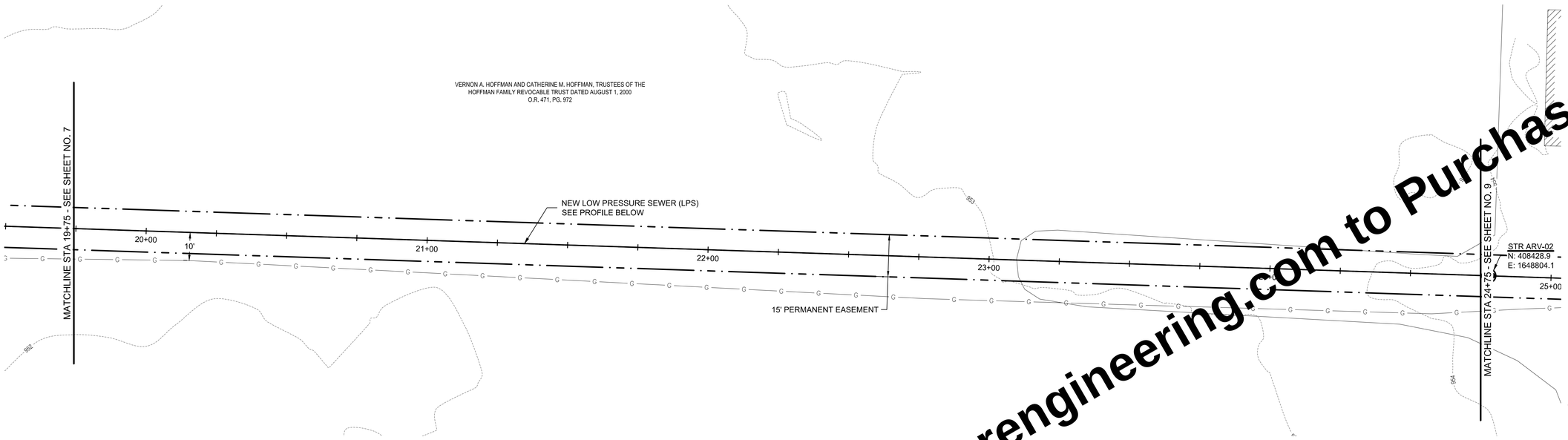
WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

LOW PRESSURE SEWER PLAN AND PROFILE - LINE A

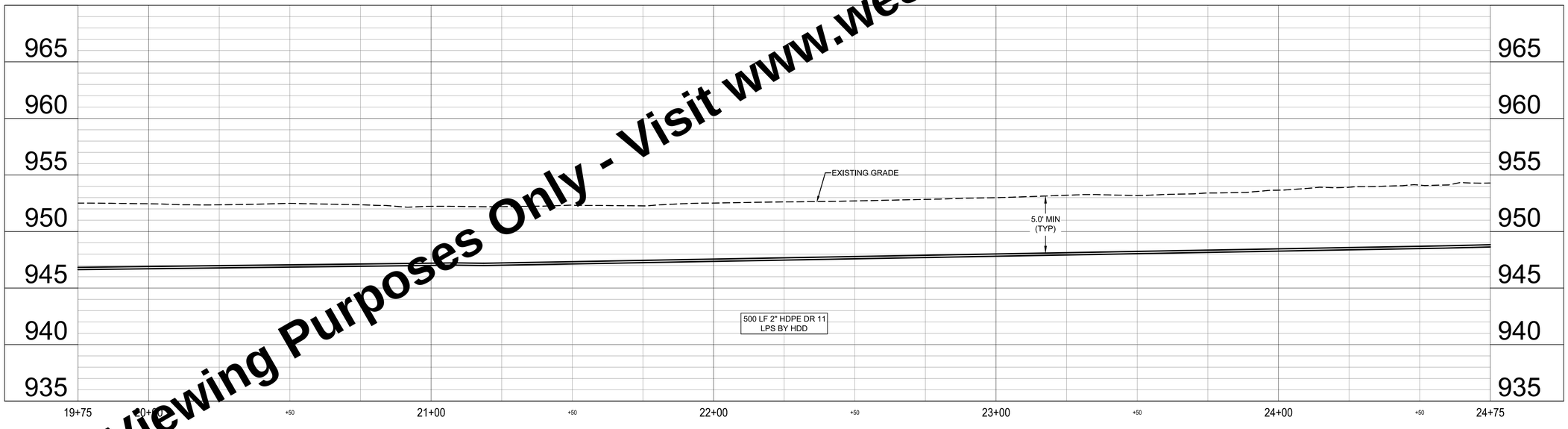
SHEET NO. 07
TOTAL SHEETS 19

Drawing: X:\Hardin N Local School District\708025 Hardin N LSD Lift Station\DWG\Sheets\708025-PP.dwg | Layout: PP2 | Plotted: 09/28/26 @ 03:21:06 | LastSavedBy: MichelleE



PLAN - LINE A

SCALE: 1"=20'



PROFILE - LINE A

HORIZ SCALE: 1" = 20'

VERT SCALE: 1" = 5'

0 10 20 40 FT

1" = 20'

GENERAL NOTES:

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN SHEETS AND AS NECESSARY TO PROVIDE ADEQUATE CONTROL FOR THE CONSTRUCTION AREA. SEE SPECIFICATION 02101.
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KEYED NOTES ○

A STAINLESS STEEL LATERAL KIT, SEE DTL SHT 12

B LPS IN-LINE FLUSHING CONNECTION, SEE DTL SHT 12

C IN-LINE ARV, SEE DTL SHT 13

D LPS IN-LINE ARV AND FLUSHING CONNECTION, SEE DTL SHT 13

KEYED NOTES - ERC ▭

(SEE DETAILS AND SCHEDULES ON SHEETS 14-15)

CW CONCRETE WASHOUT CW

IP INLET PROTECTION

SF SILT FENCE OR FILTER TUBE

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	CHECKED BY	BJS				
	APPROVED BY	BJS				
	ISSUE DATE	SEPTEMBER 2026				
	PROJECT NUMBER	708025-04-001				

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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

LOW PRESSURE SEWER PLAN AND PROFILE - LINE A

SHEET NO. 08

TOTAL SHEETS 19

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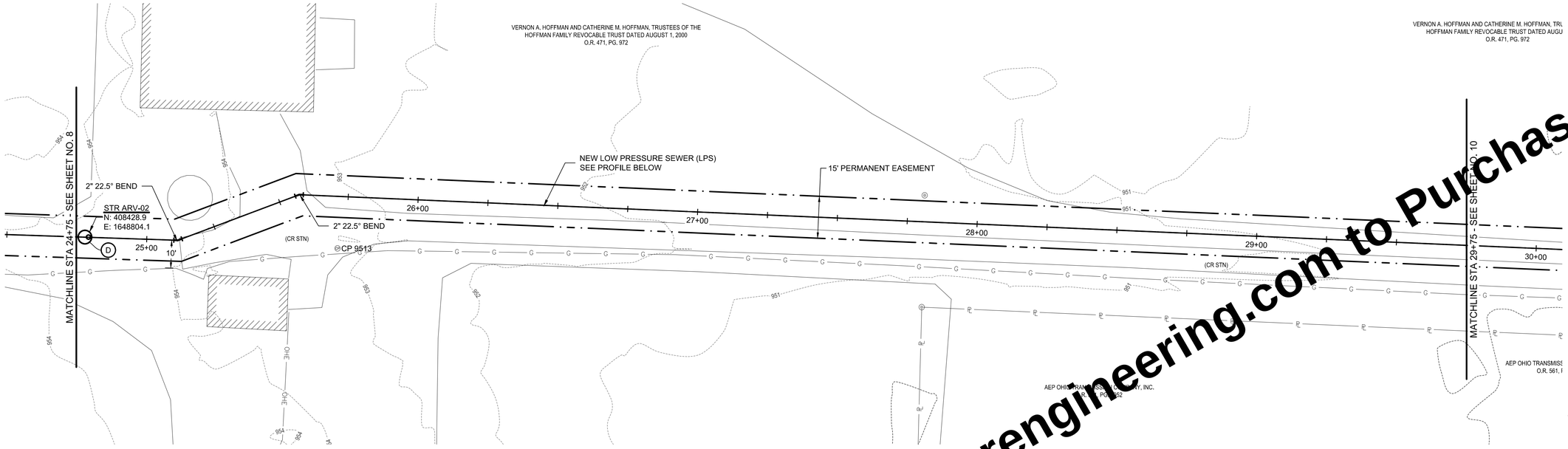
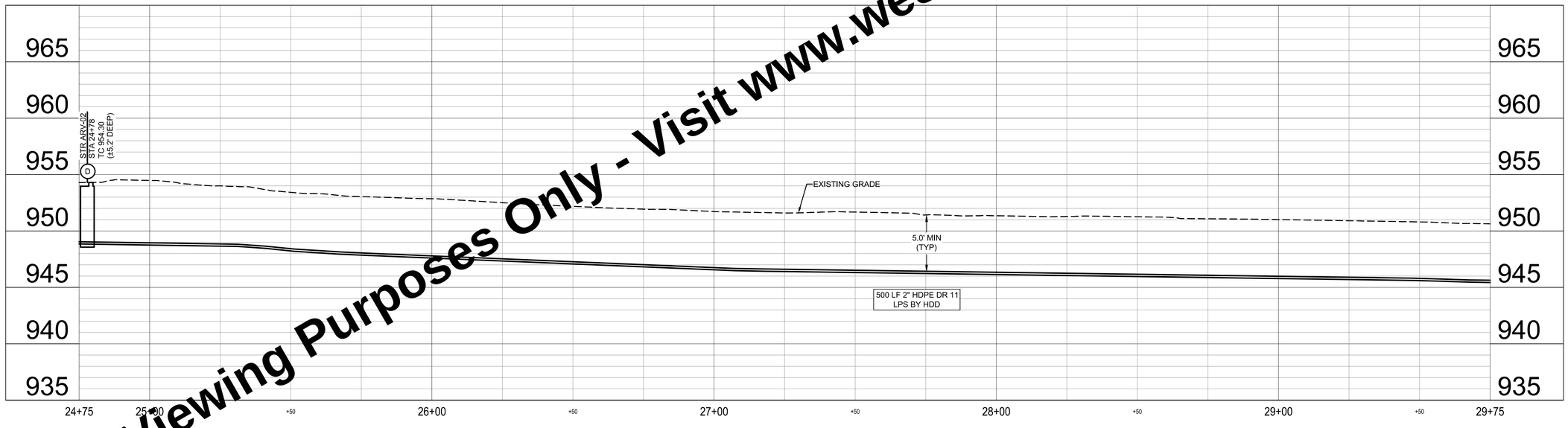


PLAN - LINE A
SCALE: 1"=20'



PROFILE - LINE A
HORIZ SCALE: 1" = 20'
VERT SCALE: 1" = 5'

GENERAL NOTES:

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN SHEETS AND AS NECESSARY TO PROVIDE ADEQUATE CONTROL FOR THE CONSTRUCTION AREA. SEE SPECIFICATION 02101.
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KEYED NOTES ⬡

A	STAINLESS STEEL LATERAL KIT, SEE DTL SHT 12
B	LPS IN-LINE FLUSHING CONNECTION, SEE DTL SHT 12
C	IN-LINE ARV, SEE DTL SHT 13
D	LPS IN-LINE ARV AND FLUSHING CONNECTION, SEE DTL SHT 13

KEYED NOTES - ERC ▭

(SEE DETAILS AND SCHEDULES ON SHEETS 14-15)

CW	CONCRETE WASHOUT	CW
IP	INLET PROTECTION	
SF	SILT FENCE OR FILTER TUBE	

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	CHECKED BY	BJS				
	APPROVED BY	BJS				
	ISSUE DATE	SEPTEMBER 2026				
	PROJECT NUMBER	708025-04-001				

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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER
HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

LOW PRESSURE SEWER PLAN AND PROFILE - LINE A

SHEET NO. **09**
TOTAL SHEETS 19

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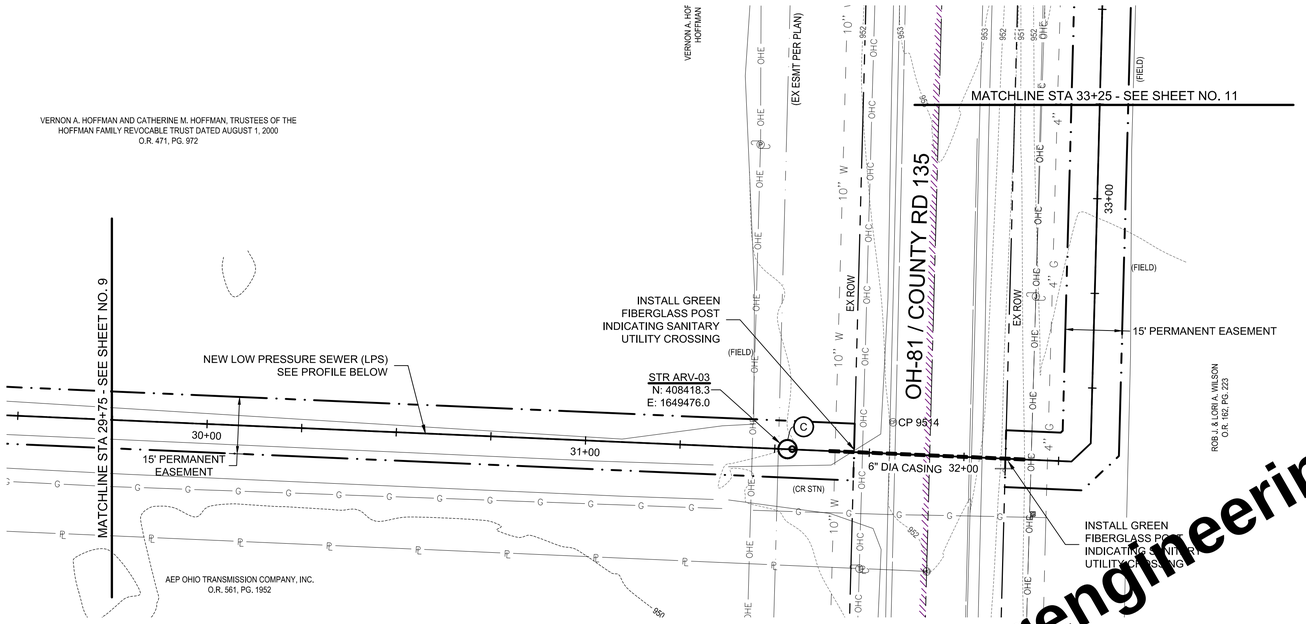
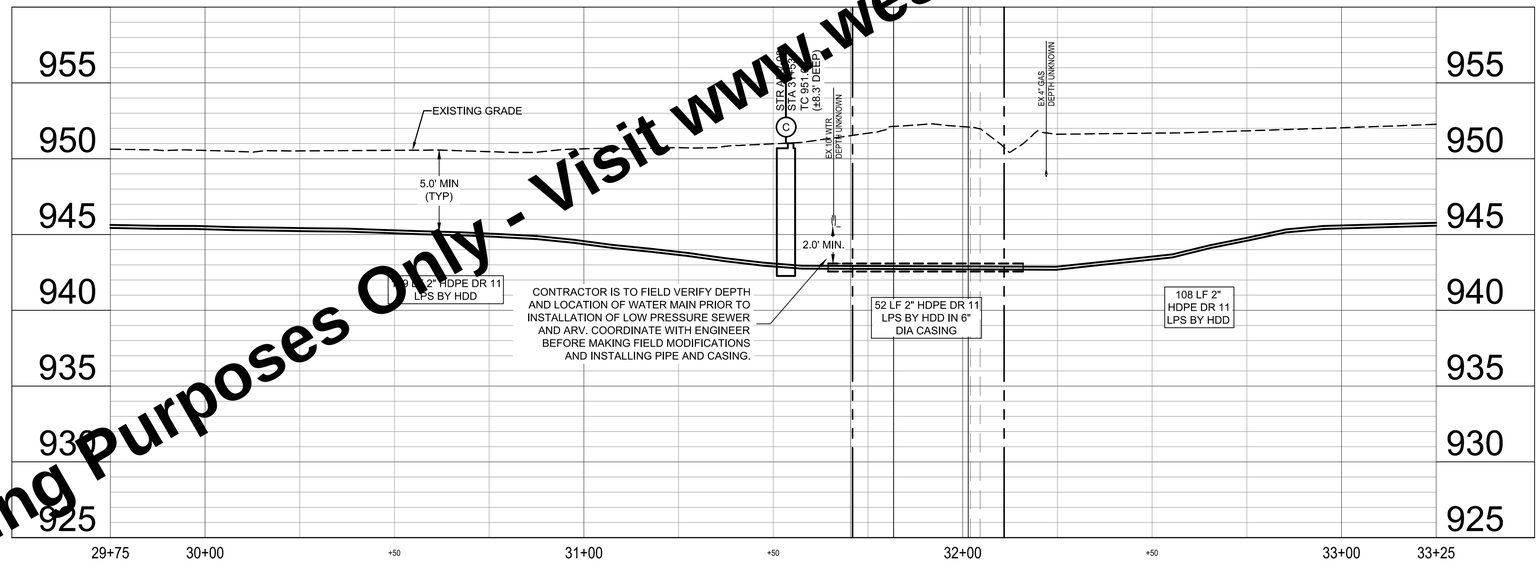


PLAN - LINE A

SCALE: 1"=20'



PROFILE - LINE A

HORIZ SCALE: 1" = 20'
VERT SCALE: 1" = 5'

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0 10 20 40 FT
1" = 20'

GENERAL NOTES:

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B	LPS IN-LINE FLUSHING CONNECTION, SEE DTL SHT 12
C	IN-LINE ARV, SEE DTL SHT 13
D	LPS IN-LINE ARV AND FLUSHING CONNECTION, SEE DTL SHT 13

KEYED NOTES - ERC ▭

(SEE DETAILS AND SCHEDULES ON SHEETS 14-15)

CW	CONCRETE WASHOUT	CW
IP	INLET PROTECTION	
SF	SILT FENCE OR FILTER TUBE	

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS	
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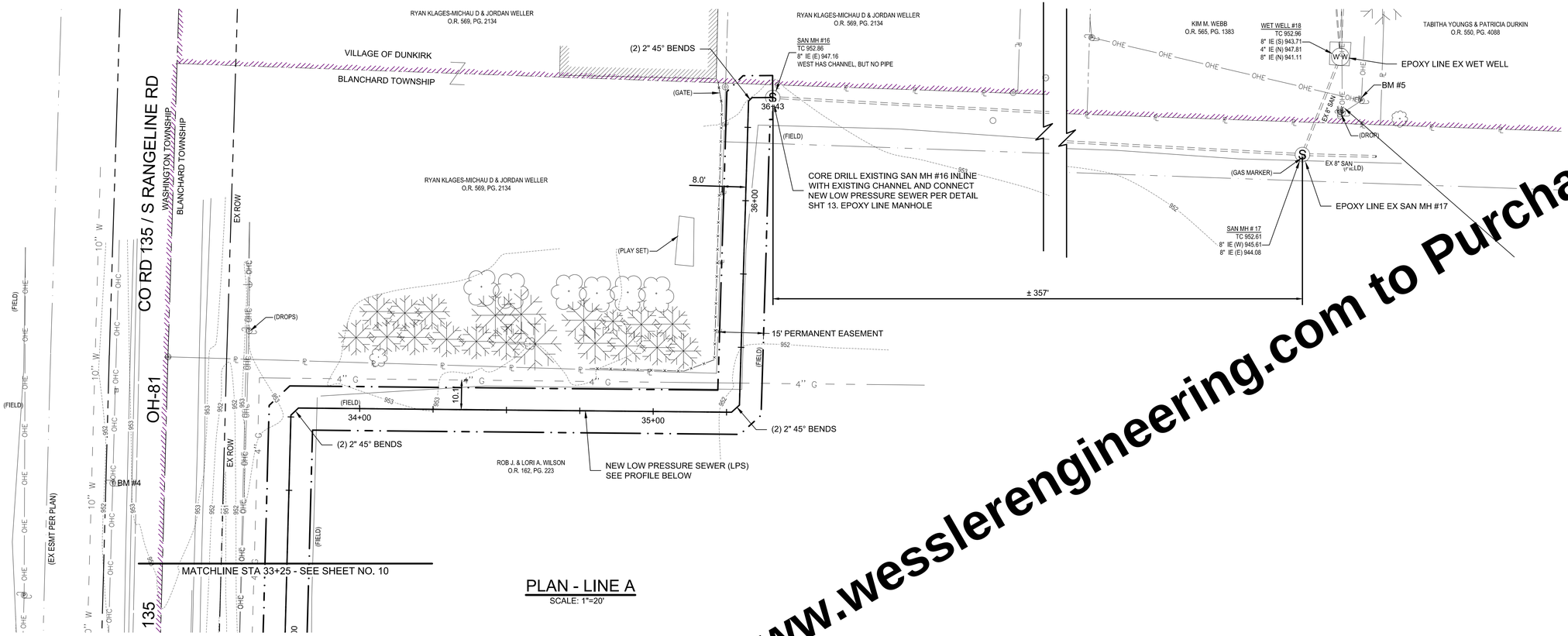
HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

LOW PRESSURE SEWER PLAN AND PROFILE - LINE A

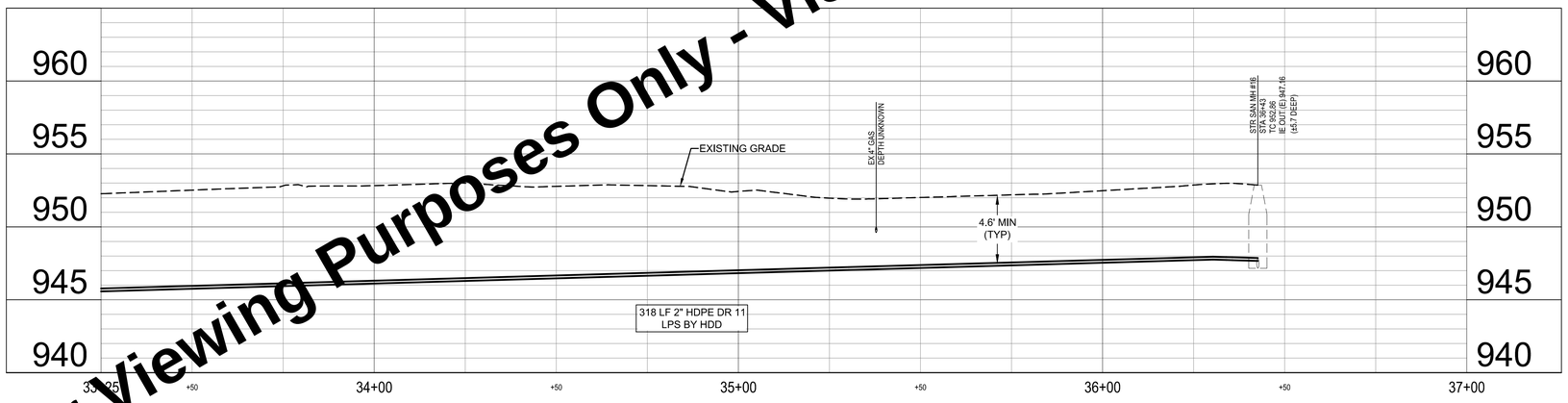
SHEET NO. 10
TOTAL SHEETS 19

Drawing: X:\Hardin N Local School District\708025 Hardin N LSD Lift Station\DWG\Sheets\708025-PP.dwg | Layout: PP5 | Plotted: 10/02/26 @ 11:03:30 | LastSavedBy: MichelleE



PLAN - LINE A

SCALE: 1"=20'



PROFILE - LINE A

HORIZ SCALE: 1" = 20'
VERT SCALE: 1" = 5'

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GENERAL NOTES:

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KEYED NOTES

A	STAINLESS STEEL LATERAL KIT, SEE DTL SHT 12
B	LPS IN-LINE FLUSHING CONNECTION, SEE DTL SHT 12
C	IN-LINE ARV, SEE DTL SHT 13
D	LPS IN-LINE ARV AND FLUSHING CONNECTION, SEE DTL SHT 13

KEYED NOTES - ERC

(SEE DETAILS AND SCHEDULES ON SHEETS 14-15)

CW	CONCRETE WASHOUT	CW
IP	INLET PROTECTION	
SF	SILT FENCE OR FILTER TUBE	

0 10 20 40 FT
1" = 20'

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BJS				
	APPROVED BY	BJS				
	ISSUE DATE	SEPTEMBER 2026				
	PROJECT NUMBER	708025-04-001				

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HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

LOW PRESSURE SEWER PLAN AND PROFILE - LINE A

SHEET NO. 11
TOTAL SHEETS 19

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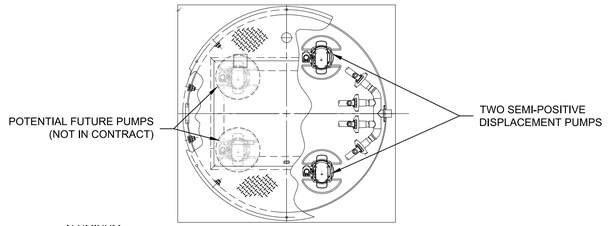
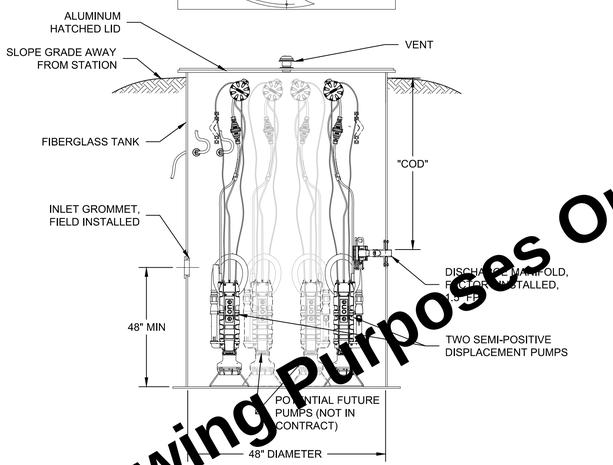
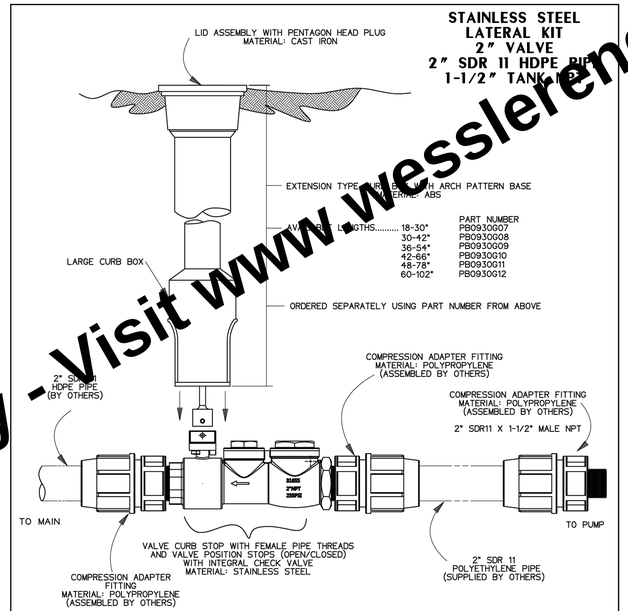




NOTES:
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS
2. PROVIDE TWO PUMPS WITHIN THE QUADPLEX STATION.

FIBERGLASS QUADPLEX GRINDER STATION

SCALE: NONE



STAINLESS STEEL LATERAL KIT
2" VALVE
2" SDR 11 HDPE PIPE
1-1/2" TANK NPT

	PART NUMBER
18-30"	PB0930G07
30-42"	PB0930G08
36-54"	PB0930G09
42-66"	PB0930G10
48-78"	PB0930G11
60-102"	PB0930G12

ORDERED SEPARATELY USING PART NUMBER FROM ABOVE

NOTES:
1. SS CURB STOP/CHECK VALVE AND FITTINGS ARE PROVIDED SEPARATELY, TO BE ASSEMBLED BY OTHERS
2. TO ASSEMBLE, APPLY A DOUBLE LAYER OF TEFLON TAPE, AND A LAYER OF PIPE DOPE (SUPPLIED BY OTHERS) TO THE THREADS ON THE PLASTIC FITTINGS AND INSTALL PER THE MANUFACTURER'S INSTRUCTIONS
   *FOR SS FITTING INTO SS THREAD, USE EITHER PIPE DOPE OR TEFLON TAPE, NOT BOTH
3. ASSEMBLY IS TO BE PRESSURE TESTED (BY OTHERS)
4. ASSEMBLY IS TO BE USED WITH SDR11 HDPE PIPE
5. TO ORDER SS LATERAL KIT, USE PART NUMBER NC0517G02
6. CURB BOX IS TO BE ORDERED SEPARATELY, SEE ABOVE

KIT PARTS ARE NOT ASSEMBLED

SGS	NS	07/22/19	-	3/16
DR BY	CHK'D	DATE	ISSUE	SCALE

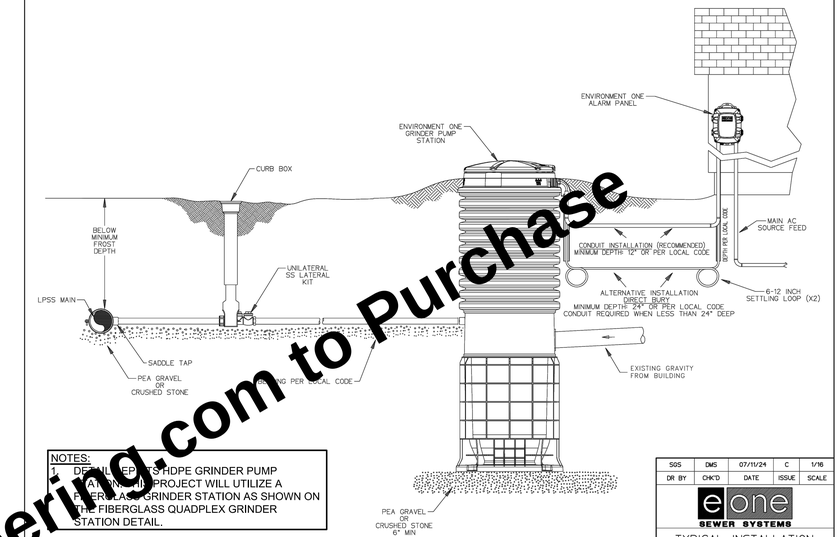
SEWER SYSTEMS

STAINLESS STEEL LATERAL KIT
2" VALVE, 2" SDR 11, 1-1/2" TANK NPT

NA0330P08

Ⓐ STAINLESS STEEL LATERAL KIT

SCALE: NONE



NOTES:
1. DEFAULT PER STHDPE GRINDER PUMP STATION. THIS PROJECT WILL UTILIZE A FIBERGLASS GRINDER STATION AS SHOWN ON THE FIBERGLASS QUADPLEX GRINDER STATION DETAIL.

SGS	DMS	07/11/24	C	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE

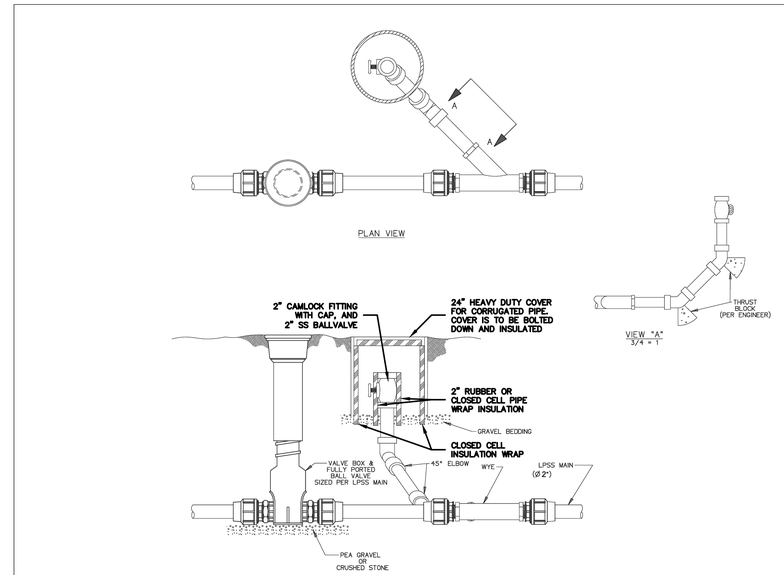
SEWER SYSTEMS

TYPICAL INSTALLATION

LM000114

TYPICAL GRINDER INSTALLATION

SCALE: NONE



environment one CORPORATION

TYPICAL FLUSHING CONNECTION ON LPSS MAIN

LM000113 REV. A

Ⓑ LPS IN-LINE FLUSHING CONNECTION

SCALE: NONE

SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BJS				
	APPROVED BY	BJS				
	ISSUE DATE	SEPTEMBER 2026				
	PROJECT NUMBER	708025-04-001				

STATE OF OHIO
BENJAMIN SCHROEDER
E-85179
REGISTERED PROFESSIONAL ENGINEER
10/26/2026

WESSLER ENGINEERING
More than a Project™

WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

MISCELLANEOUS DETAILS

SHEET NO. **12**

TOTAL SHEETS 19

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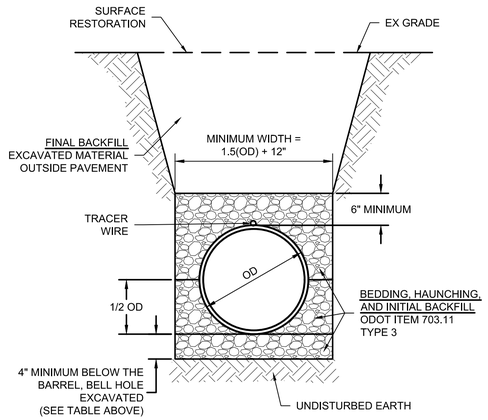
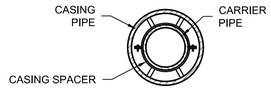
Drawing: X:\Hardin N Local School District\708025 Hardin N LSD Lift Station\DWG\Sheets\708025-MD.dwg | Layout: MD1 | Plotted: 09/28/26 @ 03:22:09 | LastSavedBy: MichelleE

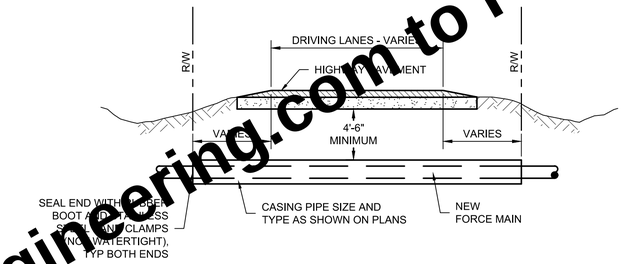
PIPE SIZE	16" AND LESS	18" TO 30"	33" AND OVER
BEDDING BELOW THE PIPE BARREL	4"	OD / 4	8"



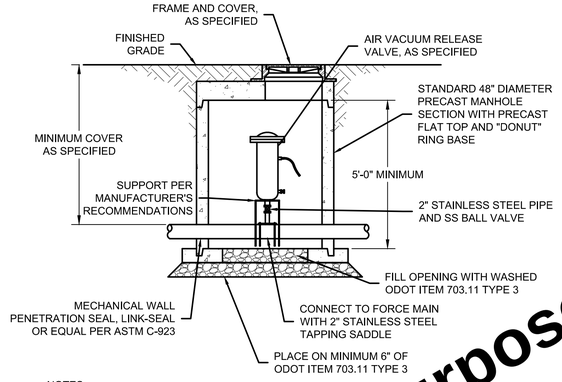
PLASTIC PIPE TRENCH (PRESSURE)
SCALE: NONE



CASING SPACER
SCALE: NONE

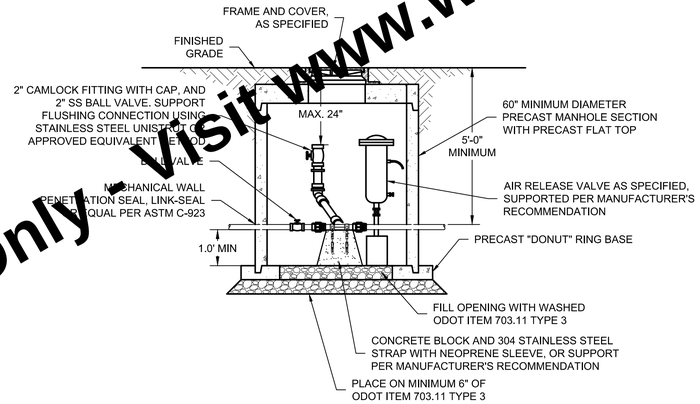


CASING PIPE
SCALE: NONE



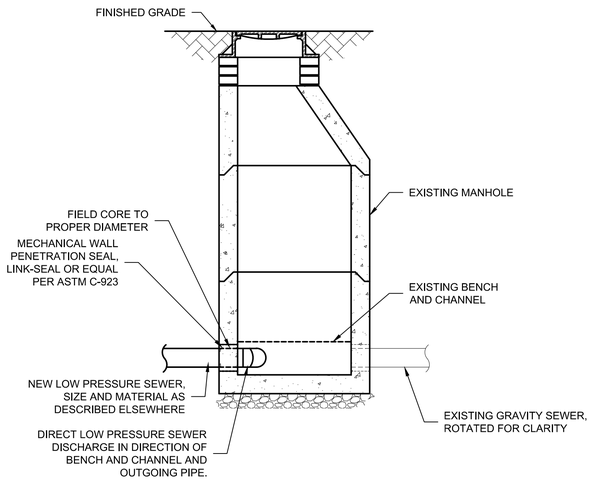
NOTES:
1. THE CONTRACTOR SHALL DETERMINE THE REQUIRED FORCE MAIN DEPTH AT THE STRUCTURE TO ENSURE THAT THE VALVE VAULT STRUCTURE DOES NOT EXTEND ABOVE FINISHED GRADE.
2. LOCATION OF AIR/VACUUM RELEASE STRUCTURES ARE APPROXIMATE. THE FINAL LOCATION TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR AT THE HIGH ELEVATION POINT OF THE FORCE MAIN.

AIR/VACUUM RELEASE VALVE AND VAULT
SCALE: NONE



NOTES:
1. THE CONTRACTOR SHALL DETERMINE THE REQUIRED FORCE MAIN DEPTH AT THE STRUCTURE TO ENSURE THAT THE VALVE VAULT STRUCTURE DOES NOT EXTEND ABOVE FINISHED GRADE.
2. LOCATION OF AIR/VACUUM RELEASE STRUCTURES ARE APPROXIMATE. THE FINAL LOCATION TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR AT THE HIGH ELEVATION POINT OF THE FORCE MAIN.
3. FLOW DIRECTION THROUGH STRUCTURE IS VARIABLE. FLUSHING CLEANOUT AND ARV PLACED AT DOWNSTREAM END OF STRUCTURE.

IN-LINE ARV FLUSHING CONNECTION
SCALE: NONE



LOW PRESSURE SEWER CONNECTION AT EXISTING MANHOLE
SCALE: NONE

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SCALE VERIFICATION	DRAWN BY	MRE	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BJS				
	APPROVED BY	BJS				
	ISSUE DATE	SEPTEMBER 2026				
	PROJECT NUMBER	708025-04-001				

STATE OF OHIO — BENJAMIN SCHROEDER E-85179 — REGISTERED PROFESSIONAL ENGINEER — 10/26/2026

WESSLER ENGINEERING — More than a Project™

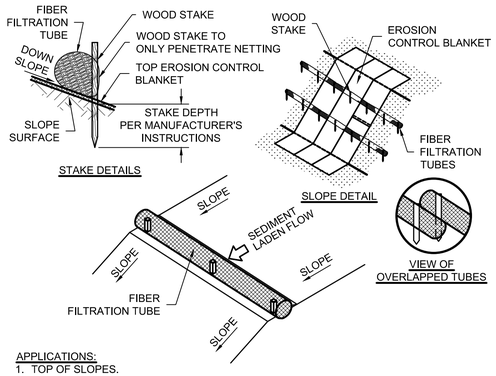
WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

MISCELLANEOUS DETAILS

SHEET NO. 13
TOTAL SHEETS 19

Drawing: X:\Hardin N Local School District\708025 Hardin N LSD Lift Station\DWG\Sheets\708025-MD.dwg | Layout: MD2 | Plotted: 09/28/26 @ 03:22:18 | LastSavedBy: MichelleE



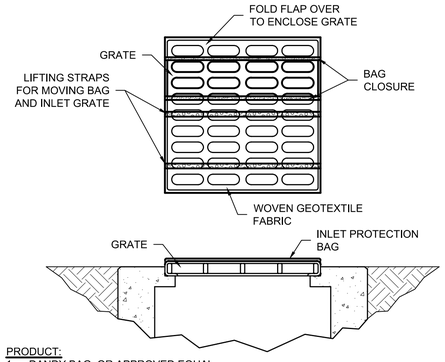
APPLICATIONS:
1. TOP OF SLOPES.
2. AT PROJECT PERIMETER.

INSTALLATION:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. USE THE APPROPRIATE SIZE, LENGTH AND DISTANCE BETWEEN TUBES AS SPECIFIED BY THE MANUFACTURER.
3. ENTRENCH PER MANUFACTURER'S INSTRUCTIONS.

MAINTENANCE:
1. REMOVE ALL ACCUMULATED SEDIMENT WHEN IT REACHES 1/4 THE HEIGHT OF THE TUBE.
2. REPAIR ERODED AND DAMAGED AREAS.
3. IF PONDING BECOMES EXCESSIVE DUE TO REDUCED FILTERING CAPACITY, REMOVE THE TUBE AND EITHER RECONSTRUCT OR REPLACE WITH NEW PRODUCT.
4. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.

FIBER FILTRATION TUBES - SLOPE

SCALE: NONE



PRODUCT:
1. DANDY BAG, OR APPROVED EQUAL.

INSTALLATION:
1. THE EMPTY INLET PROTECTION BAG SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END.
2. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE.
3. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE), PLACE THE GRATE INTO ITS FRAME.

MAINTENANCE:
1. REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT.
2. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE INLET PROTECTION BAG AS NEEDED.
3. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND ONCE EVERY 7 CALENDAR DAYS.

INLET PROTECTION BAG

SCALE: NONE

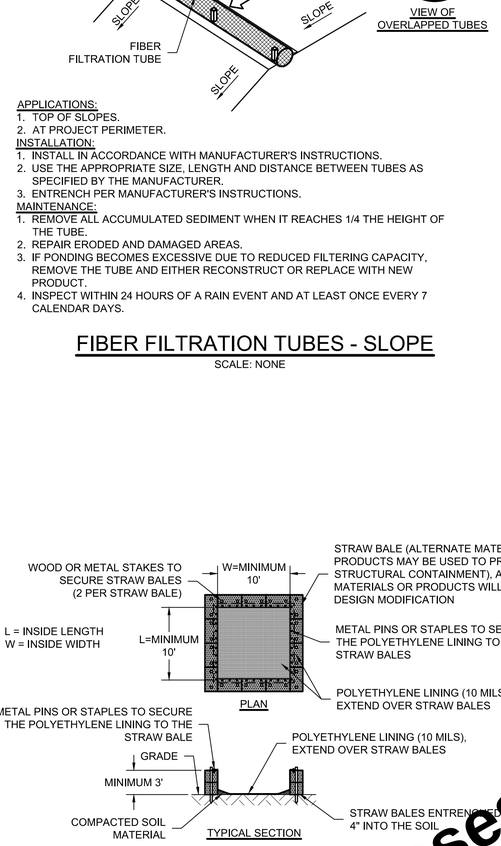
SEASONAL SOIL PROTECTION CHART

STABILIZATION PRACTICE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDING						A						
DORMANT SEEDING	B											B
TEMPORARY SEEDING					C				D			
SODDING				E								
MULCHING	F											

A. = KENTUCKY BLUEGRASS AND PERENNIAL RYEGRASS 100 LB/ACRE
B. = KENTUCKY BLUEGRASS AND PERENNIAL RYEGRASS 150 LB/ACRE, TO BE SEEDED PRIOR TO NOV 20
C. = MIX 1 (128 LB/ACRE OATS, 40 LB/ACRE TALL FESCUE, 40 LB/ACRE ANNUAL RYEGRASS), MIX 2 (40 LB/ACRE PERENNIAL RYEGRASS, 40 LB/ACRE TALL FESCUE, 40 LB/ACRE ANNUAL RYEGRASS), MIX 3 (55 LB/ACRE ANNUAL RYEGRASS, 142 LB/ACRE PERENNIAL RYEGRASS, 17 LB/ACRE CREEPING RED FESCUE, 17 LB/ACRE KENTUCKY BLUEGRASS), OR MIX 4 (128 LB/ACRE OATS, 40 LB/ACRE TALL FESCUE, 40 LB/ACRE ANNUAL RYEGRASS)
D. =MIX 5 (112 LB/ACRE RYE, 40 LB/ACRE TALL FESCUE, 40 LB/ACRE ANNUAL RYEGRASS), MIX 6 (120 LB/ACRE WHEAT, 40 LB/ACRE TALL FESCUE, 40 LB/ACRE ANNUAL RYEGRASS), MIX 7 (40 LB/ACRE PERENNIAL RYE, 40 LB/ACRE TALL FESCUE, 40 LB/ACRE PERENNIAL RYEGRASS), OR MIX 8 (40 LB/ACRE ANNUAL RYEGRASS, 40 LB/ACRE PERENNIAL RYEGRASS, 40 LB/ACRE CREEPING RED FESCUE, 40 LB/ACRE KENTUCKY BLUEGRASS)
E. = SOD
F. = ANCHORED STRAW (2 TONS/ACRE) OR WOOD CELLULOSE FIBER (750 LB/ACRE) OR WOOD MULCH/CHIPS (6 TONS/ACRE)

NOTES:
1. IRRIGATION NEEDED DURING MAY THROUGH SEPTEMBER.
2. IRRIGATION NEEDED FOR 2 TO 4 WEEKS AFTER APPLYING SOD.
3. ANCHORED MULCH IS REQUIRED FOR PERMANENT, DORMANT AND TEMPORARY SEEDING.
4. OPTIMUM SEEDING DATES PROVIDED. DATES MAY BE EXTENDED OR SHORTENED BASED ON PROJECT LOCATION.
5. SEED MIXTURES PROVIDED FOR LAWNS AND HIGH MAINTENANCE AREAS.
6. ADDITIONAL REQUIREMENTS AND INFORMATION ARE LOCATED IN THE OHIO DEPT. OF NATURAL RESOURCES RAINWATER AND LAND DEVELOPMENT MANUAL.

MAINTENANCE:
1. INSPECT WITHIN 24 HOURS OF EACH 0.5-INCH RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.
2. CHECK FOR EROSION AND MOVEMENT OF MULCH AND REPAIR IMMEDIATELY.
3. MONITOR FOR EROSION DAMAGE AND ADEQUATE COVER (70% DENSITY).
4. RESEED, FERTILIZE OR APPLY MULCH WHERE NECESSARY.



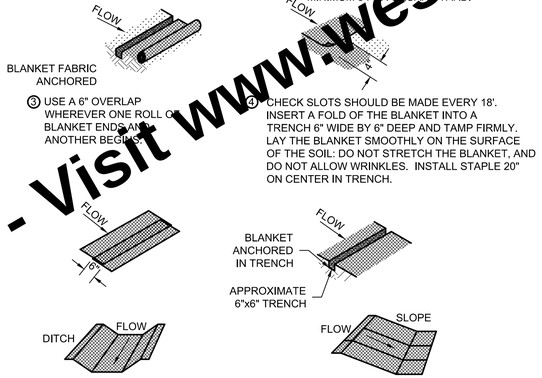
NOTES:
1. LOCATE WASHOUTS AT LEAST 50' FROM ANY CREEKS, WETLANDS, DITCHES, KARST FEATURES, OR STORM DRAIN/CONVEYANCES.

WASHOUT PROCEDURES:
1. DO NOT LEAVE EXCESS MUD IN THE CHUTES OR HOPPER AFTER POURING CONCRETE. MAKE EVERY EFFORT TO EMPTY THE CHUTE AND HOPPER AT THE PLANT. THE LESS MATERIAL LEFT IN THE CHUTES AND HOPPER, THE QUICKER AND EASIER THE CLEANOUT. SMALL AMOUNTS OF EXCESS CONCRETE (NOT WASHOUT WATER) MAY BE DISPOSED OF IN AREAS THAT WILL NOT FLOW TO AN AREA THAT IS TO BE PROTECTED.
2. SCRAPE AS MUCH MATERIAL FROM THE CHUTES AS POSSIBLE BEFORE WASHING THEM. USE NON-WATER CLEANING METHODS TO MINIMIZE THE CHANCE FOR WASTE TO FLOW OFF SITE.
3. STOP WASHING OUT IN ANY AREA IF YOU OBSERVE WATER RUNNING OFF THE DESIGNATED AREA OR IF THE WATER IS NOT BEING CONTAINED WITHIN THE WASHOUT AREA.
4. DO NOT BACK CHUTES UP TO EQUIPMENT AT THE PROJECT SITE.
5. DO NOT USE EXCESS WATER WITH WASH WATER.
6. DO NOT WASH OUT OR DRAIN WASTE WATERS TO STORM DRAINS, WETLANDS, STREAMS, RIVERS, CREEKS, DITCHES OR STREETS.

MAINTENANCE:
1. NO MAINTENANCE REQUIREMENTS PROVIDED IN SPECIFICATIONS.

CONCRETE WASHOUT

SCALE: NONE



PLACE BLANKET PARALLEL TO THE DIRECTION OF FLOW. DO NOT JOIN STRIPS IN THE CENTER OF THE DITCH. USE CHECK SLOTS AS REQUIRED.

PLACE BLANKET PARALLEL TO THE DIRECTION OF FLOW AND ANCHOR SECURELY. BRING BLANKET TO A LEVEL AREA BEFORE TERMINATING THE INSTALLATION.

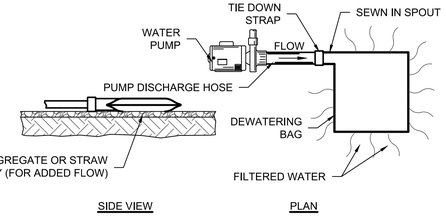
PRODUCT:
1. NORTH AMERICAN GREEN SC150, OR EQUAL.

NOTES:
1. PROTECT THE SLOPES WITH AN EROSION CONTROL BLANKET WHERE CONSTRUCTION DISTURBS SLOPES EQUAL OR STEEPER THAN 3:1.

MAINTENANCE:
1. INSPECT FOR EROSION AFTER EACH STORM EVENT DURING VEGETATION ESTABLISHMENT, AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.
2. IF ANY AREAS SHOW EROSION, PULL BACK THAT PORTION OF THE BLANKET, ADD SOIL, RESEED, RELAY AND STAPLE THE BLANKET.
3. CHECK AREAS PERIODICALLY AFTER VEGETATION ESTABLISHMENT.

EROSION CONTROL BLANKET

SCALE: NONE



MECHANICAL PROPERTIES	TEST METHOD	UNITS	INDUSTRY STANDARD
GRAB TENSILE STRENGTH	ASTM D4632	kN (LB)	0.9 (205) X 0.9 (205)
GRAB TENSILE ELONGATION	ASTM D4632	%	50 X 50
PUNCTURE STRENGTH	ASTM D4833	kN (LB)	0.58 (130)
MULLEN BURST STRENGTH	ASTM D3786	kPa (PSI)	2618 (380)
TRAPEZOID TEAR STRENGTH	ASTM D4533	kN (LB)	0.36 (80) X 0.36 (80)
UV RESISTANCE	ASTM D4355	%	70
APPARENT OPENING SIZE	ASTM D4751	Mm (US STD SIEVE)	0.180 (80)
FLOW RATE	ASTM D4491	1/MIN/M² (GAL/MIN/FT²)	3866 (95)
PERMITTIVITY	ASTM D4491	S^{-1}	1.2

MAINTENANCE:
1. DURING THE ACTIVE DEWATERING PROCESS, INSPECTION OF THE PUMPING BAG SHOULD BE REVIEWED FREQUENTLY. SPECIAL ATTENTION SHOULD BE PAID TO THE BUFFER AREA FOR ANY SIGN OF EROSION AND CONCENTRATION OF FLOW. OBSERVE WHERE POSSIBLE THE VISUAL QUALITY OF THE EFFLUENT AND DETERMINE IF ADDITIONAL TREATMENT CAN BE PROVIDED.
2. DISPOSE OF ACCUMULATED SEDIMENT REMOVED DURING PUMPING OPERATIONS IN CONFORMANCE WITH THE SPECIFICATIONS.
3. REPLACE THE BAG OR DISPOSE OF SILT WHEN HALF FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE TO AN IMPRACTICAL RATE.

SOURCE:
KRISTAR
DANDY DEWATERING BAG
SEDCATCH

PUMPING BAG

SCALE: NONE

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SCALE VERIFICATION	DRAWN BY	MRE
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BJS
	APPROVED BY	BJS
	ISSUE DATE	SEPTEMBER 2026
	PROJECT NUMBER	708025-04-001

NO.	DATE	INITIALS	REVISION DESCRIPTIONS

STATE OF OHIO — BENJAMIN SCHROEDER — E-85179 — REGISTERED PROFESSIONAL ENGINEER — 10/26/2026

WESSLER ENGINEERING
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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

EROSION CONTROL DETAILS

SHEET NO. 14
TOTAL SHEETS 19

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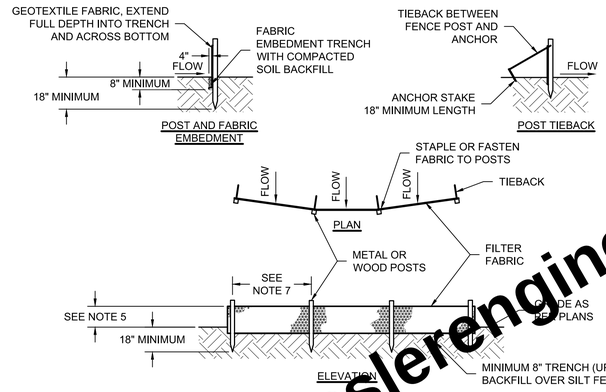
EROSION CONTROL SCHEDULE

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
REVIEW THE EROSION CONTROL SCHEDULE ON THE DRAWINGS AND REVISE AS NEEDED TO PHASE CONSTRUCTION ACTIVITIES TO MINIMIZE THE FOOTPRINT OF DISTURBED UNSTABLE AREAS. SUBMIT A REVISED EROSION CONTROL SCHEDULE AS NEEDED FOR TEMPORARY AND PERMANENT EROSION CONTROL WORK AS APPLICABLE.	COMPLETE BEFORE CONSTRUCTION BEGINS.
CONSTRUCTION ACCESS - ENTRANCE TO SITE, CONSTRUCTION ROUTES, AREAS DESIGNATED FOR EQUIPMENT PARKING OR MATERIAL STAGING AND WASTE HANDLING.	THIS IS THE FIRST LAND-DISTURBING ACTIVITY. AS SOON AS CONSTRUCTION BEGINS, STABILIZE ANY BARE AREAS WITH AGGREGATE AND TEMPORARY VEGETATION.
SEDIMENT TRAPS AND BARRIERS - BASIN TRAPS, SILT FENCE AND PERIMETER PROTECTION.	AFTER CONSTRUCTION IS ACCESSED, BASINS SHALL BE INSTALLED, WITH THE ADDITION OF MORE TRAPS AND BARRIERS AS NEEDED DURING GRADING. SET UP PROTECTION FOR NATURAL FEATURES, TREES AND BUFFERS.
RUNOFF CONTROL - DIVERSIONS, PERIMETER PROTECTION, CHECK DAMS, OUTLET PROTECTION.	RUNOFF CONTROL PRACTICES SHALL BE INSTALLED AFTER THE INSTALLATION OF SEDIMENT TRAPS AND BEFORE LAND GRADING. ADDITIONAL RUNOFF CONTROL MEASURES MAY BE INSTALLED DURING GRADING.
RUNOFF CONVEYANCE SYSTEM - STABILIZE STREAM BANKS, STORM DRAINS, CHANNELS, INLET AND OUTLET PROTECTION, SLOPE DRAINS.	AS NECESSARY, STABILIZE STREAM BANKS AND SIDE SLOPES OF RUNOFF SYSTEMS AS SOON AS POSSIBLE. USE EROSION CONTROL BLANKETS OR SLOPE DRAINS TO PREVENT EROSION. INSTALL INLET PROTECTION TO PREVENT SEDIMENTS FROM ENTERING STORM DRAINAGE SYSTEMS. PROTECT STORM OUTLETS TO PREVENT EROSION.
LAND CLEARING AND GRADING - SITE PREPARATION (CUTTING, FILLING, AND GRADING, SEDIMENT TRAPS, BARRIERS, DIVERSIONS, DRAINS, SURFACE ROUGHENING).	IMPLEMENT CLEARING AND GRADING AFTER INSTALLATION OF SEDIMENT TRAPS AND RUNOFF CONTROL MEASURES, AND INSTALL ADDITIONAL CONTROL MEASURES AS GRADING CONTINUES. CLEAR BORROW AND DISPOSAL AREAS AS NEEDED.
SURFACE STABILIZATION - TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP, EROSION CONTROL BLANKET.	APPLY TEMPORARY OR PERMANENT STABILIZING MEASURES IMMEDIATELY TO ANY DISTURBED AREAS WHERE WORK HAS BEEN EITHER COMPLETED OR DELAYED.
CONSTRUCTION - STRUCTURES, UTILITIES, PAVING, CONCRETE WASHOUT, AND CONSTRUCTION ENTRANCES.	DURING CONSTRUCTION, INSTALL ANY EROSION AND SEDIMENTATION CONTROL MEASURES THAT ARE NEEDED.
LANDSCAPING AND FINAL STABILIZATION - TOPSOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIPRAP.	THIS IS THE POST-CONSTRUCTION PHASE. STABILIZE ALL DISTURBED AREAS, INCLUDING BORROW AND SPOIL AREAS. REMOVE ALL TEMPORARY CONTROL MEASURES. FINAL STABILIZATION IS WHEN A UNIFORM DENSITY OF 70% VEGETATION COVER IS MET. PROVIDE NOTIFICATION TO THE OWNER WHEN THE ENTIRE SITE HAS BEEN STABILIZED AND ALL CONSTRUCTION MATERIALS, WASTES, AND EQUIPMENT HAVE BEEN REMOVED.

EROSION CONTROL SCHEDULE

SCALE: NONE

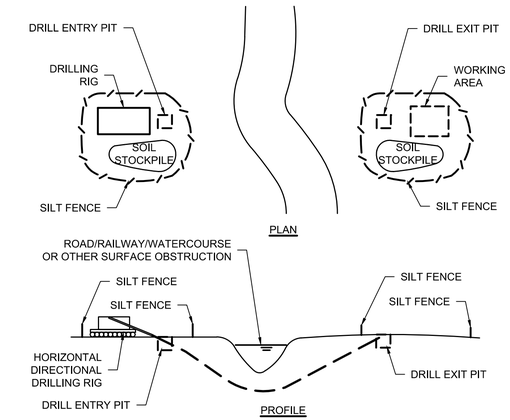


NOTES:
1. SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF WOVEN OR NON-WOVEN GEOTEXTILE FABRIC AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS:
   a. TEXTILE STRENGTH AT 20% (MAXIMUM) ELONGATION - ASTM D4632.
   b. WOVEN EXTRA STRENGTH - 50 LB/LINEAR INCH (MINIMUM), NON-WOVEN EXTRA STRENGTH - 70 LB/INCH (MINIMUM).
   c. WOVEN STANDARD STRENGTH - 30 LB/LINEAR INCH (MINIMUM), NON-WOVEN STANDARD STRENGTH - 50 LB/INCH (MINIMUM).
   d. APPARENT OPENING SIZE (AOS) (U.S. SIEVE) - NO. 30 PARTICLE SIZE OF 0.6 mm (MAXIMUM), ASTM D4751.
   e. PERMITTIVITY - 0.05 S^{-1} (MAXIMUM) - ASTM D4491.
2. POSTS FOR SILT FENCES SHALL BE 1"X2" SQUARE WOOD OR EQUIVALENT METAL POSTS WITH A MINIMUM LENGTH OF 5'. METAL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM.
3. ANCHOR STAKES FOR SILT FENCES SHALL BE 1"x2" WOOD (PREFERRED) OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 18".
4. WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD STRENGTH FILTER CLOTH SHALL BE A MINIMUM OF 42" IN HEIGHT, A MINIMUM OF 14 GAUGE, AND SHALL HAVE A MAXIMUM MESH SPACING OF 6".
5. THE HEIGHT OF THE BARRIER SHALL BE A MINIMUM OF 18" AND A MAXIMUM OF 30".
6. THE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER FABRIC SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND SECURELY SEALED.
7. POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 18"). WHEN STANDARD STRENGTH FABRIC IS USED WITH THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 8'.
   THE SPACING OF TIEBACKS SHALL EQUAL THE SPACING OF THE POSTS. ADDITIONAL POST DEPTH OR TIEBACKS MAY BE REQUIRED IN UNSTABLE SOILS.
9. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4" WIDE AND A MINIMUM OF 8" DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
10. WHEN STANDARD STRENGTH FILTER FABRIC IS USED WITH A WIRE MESH SUPPORT FENCE IT SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY 1" WIRE STAPLES, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2" AND SHALL NOT EXTEND MORE THAN 36" ABOVE THE ORIGINAL GROUND SURFACE.
11. THE STANDARD STRENGTH FILTER FABRIC, WITHOUT A WIRE MESH SUPPORT FENCE, SHALL BE STAPLED OR WIRED TO THE FENCE, AND A MINIMUM 8" OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36" ABOVE THE ORIGINAL GROUND SURFACE. DO NOT STAPLE FILTER FABRIC TO EXISTING TREES.
12. WHEN EXTRA STRENGTH FILTER FABRIC OR BURLAP AND POST SPACING IS LESS THAN THE MAXIMUM SPECIFIED SPACING OF 6', THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED.
13. BACKFILL THE TRENCH AND COMPACT THE SOIL OVER THE FILTER FABRIC.
14. REMOVE SILT FENCES WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
15. SILT FENCE SHALL NOT BE USED AS A DIVERSION AND SHALL NOT BE INSTALLED ACROSS A STREAM, CHANNEL, DITCH, SWALE, ETC.

MAINTENANCE:
1. INSPECT AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. INSPECT AT LEAST ONCE EVERY 7 CALENDAR DAYS.
2. REPLACE OR REPAIR FABRIC IMMEDIATELY IF IT DECOMPOSES OR IS INEFFECTIVE.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.
4. SPREAD ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED AND DRESS TO CONFORM WITH THE FINISHED GRADING.

SILT FENCE

SCALE: NONE



NOTES:
1. INSTALL SILT FENCE PRIOR TO ANY EXCAVATION.
2. FILTER WATER FROM BORE PIT DEWATERING, AND DO NOT DIRECTLY DISCHARGE TO ANY DITCH, STREAM, WETLAND OR STORM WATER CONVEYANCE. REFER TO PUMPING BAG DETAIL.
3. PLACE SOIL STOCKPILES WITHIN THE SILT FENCE BOUNDARY.
4. SOIL FROM STOCKPILES SHALL BE USED FOR BACKFILL OR DISPOSED OF PROPERLY.
5. RESEED AND MULCH ALL DISTURBED SOIL SURFACES.
6. ENVIRONMENTAL PROTECTION TO BE PROVIDED AS NECESSARY TO CONTAIN ANY DRILLING FLUID SPILLS.

MAINTENANCE:
1. INSPECT SILT FENCE BARRIERS AFTER EACH RAINFALL, AND REPAIR OR REPLACE IMMEDIATELY.
2. REMOVE SEDIMENT DEPOSITS FROM THE SILT FENCE AFTER STORM EVENTS.

HORIZONTAL DIRECTIONAL DRILL

SCALE: NONE

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BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BJS				
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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

EROSION CONTROL DETAILS

SHEET NO. **15**

TOTAL SHEETS 19

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Table 6H-2. Meaning of Symbols on Typical Application Diagrams

- Arrow panel
- Arrow panel support or trailer (shown facing down)
- Changeable message sign or support trailer
- Channelizing device
- Crash Cushion
- Direction of temporary traffic detour
- Direction of traffic
- Flagger
- High level warning device (Flag tree)
- Luminaire
- Pavement markings that should be removed for a long term project
- Sign (shown facing left)
- Surveyor
- Temporary barrier
- Temporary barrier with warning lights
- Traffic or Pedestrian signal
- Truck mounted attenuator
- Type III Barricade
- Warning lights
- Work space
- Work vehicle

Table 6H-3. Meaning of Letter Codes on Typical Application Diagrams

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	30 (100)	30 (100)	30 (100)
Urban (high speed)*	100 (350)	100 (350)	100 (350)
Rural	150 (500)	150 (500)	150 (500)
Expressway / Freeway	300 (1,000)	450 (1,500)	800 (2,640)

* Speed category to be determined by highway agency

** Distances are shown in meters (feet). The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The third sign is the first one in a three-sign series encountered by a driver approaching a TTC zone.)

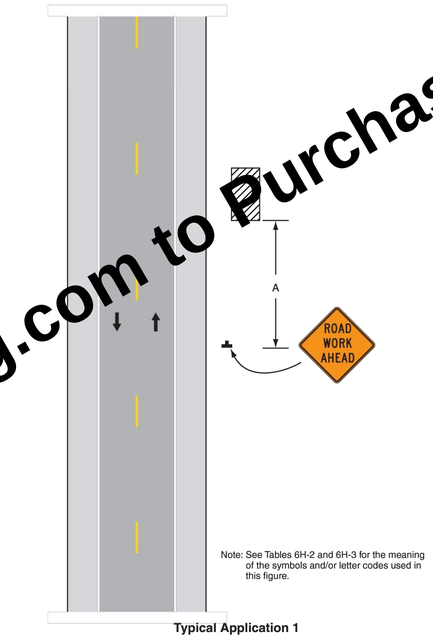
Table 6H-4. Formulas for Determining Taper Lengths

Speed Limit (S)	Taper Length (L) Meters
60 km/h or less	$L = \frac{WS^2}{155}$
70 km/h or more	$L = \frac{WS}{1.6}$

Speed Limit (S)	Taper Length (L) Feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	L = WS

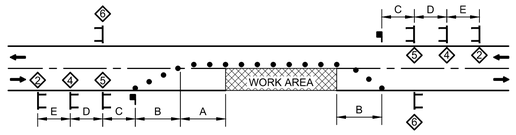
Where: L = taper length in meters (feet)
W = width of offset in meters (feet)
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in km/h (mph)

Figure 6H-1. Work Beyond the Shoulder (TA-1)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 1



TEMPORARY FLAGGER OPERATION
SCALE: NONE

SPEED (MPH)	DISTANCE (FEET)				
	A	B	C	D	E
20 OR LESS	120	100	100	100	100
25	160	100	100	100	100

NOTES:
1. DISTANCES SHOWN ARE APPROXIMATE. ADJUST SIGN FOR CURVES, HILLS, INTERSECTIONS, DRIVEWAYS, ETC TO IMPROVE SIGN VISIBILITY.
2. THE SPACING OF CHANNELIZING DEVICES SHOULD BE A DISTANCE IN FEET EQUAL TO THE SPEED LIMIT IN MPH WHEN USED FOR TAPER CHANNELIZATION, AND A DISTANCE IN FEET EQUAL TO 2.0 TIMES THE SPEED LIMIT IN MPH USED FOR TANGENT CHANNELIZATION.

ADVANCE WARNING SIGN AND FLAGGER OPERATION SPACING
SCALE: NONE

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BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	BJS					
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	ISSUE DATE	SEPTEMBER 2026					
	PROJECT NUMBER	708025-04-001					

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MAINTENANCE OF TRAFFIC DETAILS

SHEET NO. **16**
TOTAL SHEETS 19

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LIGHTING

- SURFACE/PENDANT MOUNTED LIGHT FIXTURE LETTER DENOTES TYPE, # DENOTED CIRCUIT, SHADING DENOTES EMERGENCY AND/OR NIGHT LIGHT
- SURFACE/PENDANT MOUNTED LIGHT FIXTURE LETTER DENOTES TYPE, # DENOTES CIRCUIT, SHADING DENOTES EMERGENCY AND/OR NIGHT LIGHT
- RECESS MOUNTED LIGHT FIXTURE LETTER DENOTES TYPE, # DENOTED CIRCUIT, SHADING DENOTES EMERGENCY AND/OR NIGHT LIGHT
- RECESS MOUNTED LIGHT FIXTURE LETTER DENOTES TYPE, # DENOTES CIRCUIT, SHADING DENOTES EMERGENCY AND/OR NIGHT LIGHT
- H.I.D. OR INCANDESCENT FIXTURE CEILING MOUNTED LETTER DENOTES TYPE, # DENOTES CIRCUIT
- WALL MOUNTED FIXTURE LETTER DENOTES TYPE, # DENOTES CIRCUIT
- WALL MOUNTED PHOTOCELL
- CEILING MOUNTED EXIT SIGN
- WALL MOUNTED EXIT SIGN
- EMERGENCY LIGHT FIXTURE # DENOTES CIRCUIT
- POLE MOUNTED FIXTURE

RECEPTACLE

- DUPLEX RECEPTACLE SUBSCRIPT DENOTES TYPE: UPS DENOTES UNINTERRUPTIBLE POWER SUPPLY # DENOTES CIRCUIT
- SINGLE OUTLET RECEPTACLE
- SPECIAL PURPOSE OUTLET
- MULTI-OUTLET RECEPTACLE SINGLE
- MULTI-OUTLET RECEPTACLE DUPLEX
- 240 VOLT RECEPTACLE

PANELS AND BOXES

- JUNCTION BOX
- PULL BOX
- PANEL

HVAC AND FIRE ALARM

- FIRE ALARM PULL STATION
- FIRE ALARM CONTROL PANEL
- ANNUNCIATOR
- HORN/LIGHT DEVICE
- DUCT DETECTOR
- SMOKE DETECTOR SUBSCRIPT DENOTES TYPE:
  - Z DENOTES IONIZATION
  - P DENOTES PHOTOELECTRIC
  - T DENOTES THERMAL
- THERMOSTAT
- AMBIENT TEMPERATURE TRANSMITTER
- UNIT HEATER
- WALL MOUNTED GAS DETECTION FIXTURE

SWITCHES

- WALL SWITCH
  SUBSCRIPT DENOTES TYPE:
  NO SUBSCRIPT DENOTES SINGLE POLE
  3 DENOTES 3 WAY
  4 DENOTES 4 WAY
  M DENOTES MANUAL MOTOR STARTER
- MOTOR STARTER
- COMBINATION MOTOR STARTER
- DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- LIMIT SWITCH
- LOCAL CONTROL STATION
- SPEED SWITCH

WIRING

- CONDUIT HOME RUN
- CONDUIT EXPOSED
- CONDUIT CONCEALED
- FLEXIBLE CONDUIT

SCHEMATICS

- 3-POSITION SELECTOR SWITCH HAND - OFF - AUTO
- PUSHBUTTON SWITCH N.O. TEXT DENOTES LEGEND PLATE
- PUSHBUTTON SWITCH N.C. TEXT DENOTES LEGEND PLATE
- MUSHROOM HEAD EMERGENCY STOP PUSHBUTTON SWITCH N.C. MAINTAINED TEXT DENOTES LEGEND PLATE
- PUSHBUTTON SWITCH N.C. WITH LOCK-OUT TEXT DENOTES LEGEND PLATE
- DISCONNECT SWITCH N.O.
- DISCONNECT SWITCH N.C.
- TEMPERATURE SWITCH OR THERMOSTAT N.O. TEXT DENOTES TAG NUMBER
- TEMPERATURE SWITCH OR THERMOSTAT N.C. TEXT DENOTES TAG NUMBER
- PRESSURE SWITCH N.O. TEXT DENOTES TAG NUMBER
- PRESSURE SWITCH N.C. TEXT DENOTES TAG NUMBER
- LEVEL SWITCH N.O. TEXT DENOTES TAG NUMBER
- LEVEL SWITCH N.C. TEXT DENOTES TAG NUMBER
- ON DELAY TIMED SWITCH N.O.T.C. TEXT DENOTES TAG NUMBER
- ON DELAY TIMED SWITCH N.C.T.O. TEXT DENOTES TAG NUMBER
- OFF DELAY TIMED SWITCH N.O.T.O. TEXT DENOTES TAG NUMBER
- OFF DELAY TIMED SWITCH N.C.T.C. TEXT DENOTES TAG NUMBER
- TORQUE SWITCH TEXT DENOTES TAG NUMBER
- LIMIT SWITCH TEXT DENOTES TAG NUMBER
- CONTACT (NORMALLY OPEN) # DENOTES COIL NUMBER
- CONTACT (NORMALLY CLOSED) # DENOTES COIL NUMBER
- INDICATOR LIGHT - LETTER DENOTES COLOR
- PUSH-TO-TEST INDICATOR LIGHT LETTER DENOTES COLOR
- ELAPSED TIME METER
- SOLENOID VALVE
- MECHANICAL INTERLOCK CONNECTION
- COIL
  - M DENOTES MOTOR STARTER
  - CR DENOTES CONTROL RELAY
  - TR DENOTES TIME DELAY RELAY
  - LC DENOTES LIGHTING CONTACTOR
  - PR DENOTES INTERPOSING PILOT RELAY
  - XXX DENOTES REFERENCE LINE NUMBER

SINGLE LINE

- EXISTING TO REMAIN
- EXISTING TO BE DEMOLISHED
- NEW
- FUTURE
- TX-STRUCTURE DESIGNATION XXX kVA 480-120/208V
- TRANSFORMER
- 3P/4W TYPE OF TRANSFORMER
- PROTECTIVE RELAY, NUMBER DENOTES IEEE DEVICE FUNCTION
- 1200A 52 MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER
- 100 A FUSE
- XXA DRAWOUT POWER CIRCUIT BREAKER
- XXA MOLDED CASE CIRCUIT BREAKER
- THERMAL OVERLOAD RELAY
- GROUND
- 600:5A (3) CURRENT TRANSFORMER NUMBER DENOTES QUANTITY
- 480-120V (3) POTENTIAL TRANSFORMER NUMBER DENOTES QUANTITY
- DRAW-OUT ELEMENT
- 800 A 3Ø 3W ATS N E AUTOMATIC OR MANUAL TRANSFER SWITCH
- M 25 MOTOR NUMBER DENOTES HORSEPOWER
- XXkW 480V,3Ø,4W GENERATOR XX NUMBER DENOTES REQUIRED kW RATING AND VOLTAGE

EQUIPMENT/DEVICE LOCATION SYMBOLS

- LOCATED AT MCC, COMBINATION STARTER, OR BYPASS STARTER
- LOCATED IN FIELD
- 1 LOCATED AT DCU 1A REMOTE I/O RACK
- LOCATED AT VFD

MISC PLAN VIEW SYMBOLS

- EQUIPMENT CONNECTION
- GROUND ROD
- INSTRUMENT TRANSMITTER

COMMUNICATIONS

- TELEPHONE OR NETWORK DROP
- ETHERNET JACK

SINGLE LINE, CONT'D.

- X% LINE REACTOR X% NUMBER DENOTES PERCENT IMPEDANCE
- CAPACITOR
- VOLTMETER AND SWITCH
- SHUNT TRIP
- SURGE PROTECTION DEVICE
- LIGHTNING ARRESTOR
- KIRK-KEY INTERLOCK
- MPU-# MINI POWER UNIT
- VFD VARIABLE FREQUENCY DRIVE

SITE DUCTBANKS

- UGC UNDERGROUND CONTROL
- UGE UNDERGROUND ELECTRICAL
- UGF UNDERGROUND FIBER

ABBREVIATIONS

A	AMPERE(S)	MAN	MANUFACTURER SUPPLIED (EX. MAN-CP)
ACU	AIR CONDITIONING UNIT	MAU	MAKEUP AIR UNIT
AE	ANALYTICAL SENSOR	MCC	MOTOR CONTROL CENTER
AF	AMP FRAME	MH	MANHOLE
AFF	ABOVE FINISHED FLOOR	MOL	MOTOR OPERATED LOUVER
AHU	AIR HANDLING UNIT	MPU	MINI POWER UNIT
AIT	ANALYTICAL INDICATOR TRANSMITTER	MV	MEDIUM VOLTAGE
AM	AMMETER	N	NEUTRAL
AMP	AMPERE(S)	N/A	NOT APPLICABLE
AT	AMP TRIP	NC	NORMALLY CLOSED
ATL	ACROSS THE LINE (STARTER)	NEC	NATIONAL ELECTRICAL CODE
ATS	AUTOMATIC TRANSFER SWITCH	NET	NETWORK (PANEL)
AUX	AUXILIARY	NF	NON-FUSED
AWG	AMERICAN WIRE GAUGE	NFSS	NON-FUSED SAFETY SWITCH
BKR	BREAKER	N.O.	NORMALLY OPEN
BLDG	BUILDING	NTS	NOT TO SCALE
C	CONDUIT	OL	OVERLOAD
CB	CIRCUIT BREAKER	PB	PUSHBUTTON
CKT	CIRCUIT	PLC	PROGRAMMABLE LOGIC CONTROLLER
CMS	COMBINATION MOTOR STARTER	PM	POWER METER/MONITOR
CP	CONTROL PANEL	PNL	PANEL
CR	CORROSION RESISTANT	PP	POWER PANEL
CU	COPPER	RCPT	RECEPTACLE
DF	DUCT FAN	RGS	RIGID GALVANIZED STEEL
DH	DUCT HEATER	RIO	REMOTE INPUT/OUTPUT
DISC	DISCONNECT	R/S	RING SWITCH
EF	EXHAUST FAN	RVSS	REDUCED VOLTAGE SOFT STARTER
ELEV	ELEVATION	RVAT	REDUCED VOLTAGE AUTOTRANSFORMER
EMH	ELECTRICAL MANHOLE	SF	SUPPLY FAN
EMT	ELECTRICAL METALLIC TUBING	SHLD	SHIELDED
EQUIP	EQUIPMENT	SOL	SOLENOID
EXP	EXPLOSION PROOF	SP	SINGLE POLE
F	FUSED OR FUSE	SPD	SURGE PROTECTIVE DEVICE
FE	FLOW SENSOR	SST	STAINLESS STEEL
FIT	FLOW INDICATING TRANSMITTER	STR	STARTER
FLA	FULL LOAD AMPS	SW	SWITCH
FOPP	FIBER OPTIC PATCH PANEL	SWBD	SWITCHBOARD
FV(N)R	FULL VOLTAGE (NON) REVERSING	SWGR	SWITCHGEAR
G	GROUND	TB	TERMINAL BOX
GEN	GENERATOR	TPS	TWISTED PAIR SHIELDED
GF	GROUND FAULT	TYP	TYPICAL
GF(C)I	GROUND FAULT (CIRCUIT) INTERRUPTER	UGE	UNDERGROUND ELECTRICAL
HH-(P/C)	HANDHOLE (POWER/CONTROLS)	UGT	UNDERGROUND TELEPHONE
HOA	HAND-OFF-AUTOMATIC	UGCC	UNDERGROUND CONTROLS CABLE
HOR	HAND-OFF-REMOTE	UGF	UNDERGROUND FIBER
HP	HORSEPOWER	UH	UNIT HEATER
JB	JUNCTION BOX	UL	UNDERWRITERS LABORATORIES
KV	KILOVOLTS	UNO	UNLESS NOTED OTHERWISE
KVA	KILOVOLTS AMPS	V	VOLTS
KVAR	KILOVAR	VFD	VARIABLE FREQUENCY DRIVE
KW	KILOWATTS	VM	VOLTMETER
LCP	LOCAL CONTROL PANEL	VS	VOLTMETER SWITCH
LCS	LOCAL CONTROL STATION	W	WIRE/WATT
LE	LEVEL SENSOR	WH	WATER HEATER
LIT	LEVEL INDICATING TRANSMITTER	WP	WEATHERPROOF
LOR	LOCAL-OFF-REMOTE	XFMR	TRANSFORMER
LP	LIGHTING PANEL		
LTG	LIGHTING		
LV	LOW VOLTAGE		

GENERAL NOTES:

1. PROVIDE SPARES AND SPARE EQUIPMENT AS OUTLINED IN SPECIFICATIONS.
2. CONDUIT AND WIRE BETWEEN DEVICES (SUCH AS VERTICAL TURBINE PUMP MOTOR THERMOSTATS OR DISCONNECT AUX. CONTACTS) AND POWER EQUIPMENT (SUCH AS VFDS AND MOTOR STARTERS) WHERE NOT EXPLICITLY SHOWN SHALL BE #14, CONDUIT SIZE TO FOLLOW THE REQUIREMENTS SET FORTH IN THE NEC, 3/4"C MINIMUM EXPOSED, 1"C MINIMUM BURIED.
3. CONTRACTOR RESPONSIBLE FOR INFORMING THE ENGINEER DURING CONSTRUCTION OF ANY CONDITIONS ON SITE WHICH MAY PREVENT ANY ASPECT OF THE INSTALLATION FROM MEETING THE REQUIREMENTS SET FORTH IN THE NEC. SPECIAL CARE SHALL BE TAKEN WITH REGARDS TO CONDUIT FILL, CLEARANCE, JUNCTION/PULL BOX, AND CIRCUIT DISCONNECTING MEANS REQUIREMENTS.
4. ALL CONTROL PANELS AND LOCAL STATIONS NOT EXPLICITLY INDICATED TO HAVE A DISCONNECT SWITCH MOUNTED ADJACENT TO THE PANEL SHALL HAVE A MAIN CIRCUIT BREAKER WITH THRU PANEL OPERATOR WHICH SHALL BE LOCKABLE AND INTERLOCKED WITH THE PANEL DOOR AS NEEDED TO MEET THE REQUIREMENTS OF THE NEC.
5. CONTRACTOR RESPONSIBLE FOR ALL CONDUIT AND WIRE BETWEEN MECHANICAL EQUIPMENT (INCLUDING BUT NOT LIMITED TO UNIT HEATERS, EXHAUST FANS AND AIR CONDITIONING UNITS) AND CONTROLLERS (INCLUDING BUT NOT LIMITED TO MOTOR STARTERS, THERMOSTATS AND MOTOR OPERATED LOUVERS). FOR BID PURPOSES THIS IS TO BE 1"C, 4#14, #14G BETWEEN EACH PIECE OF EQUIPMENT AND CONTROLLER.
6. MANUFACTURER EQUIPMENT SHOWN FOR BIDDING PURPOSES ONLY. FINAL WIRING LIST TO BE PROVIDED BY EQUIPMENT SUPPLIER IN SHOP DRAWING SUBMITTAL. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL WIRING AND CONDUIT BETWEEN THE MANUFACTURER'S CONTROL PANELS AND THE EQUIPMENT PROVIDED BY THE MANUFACTURER.

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	PROJECT NUMBER	708025-04-001

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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

ELECTRICAL LEGEND

SHEET NO. 17

TOTAL SHEETS 19

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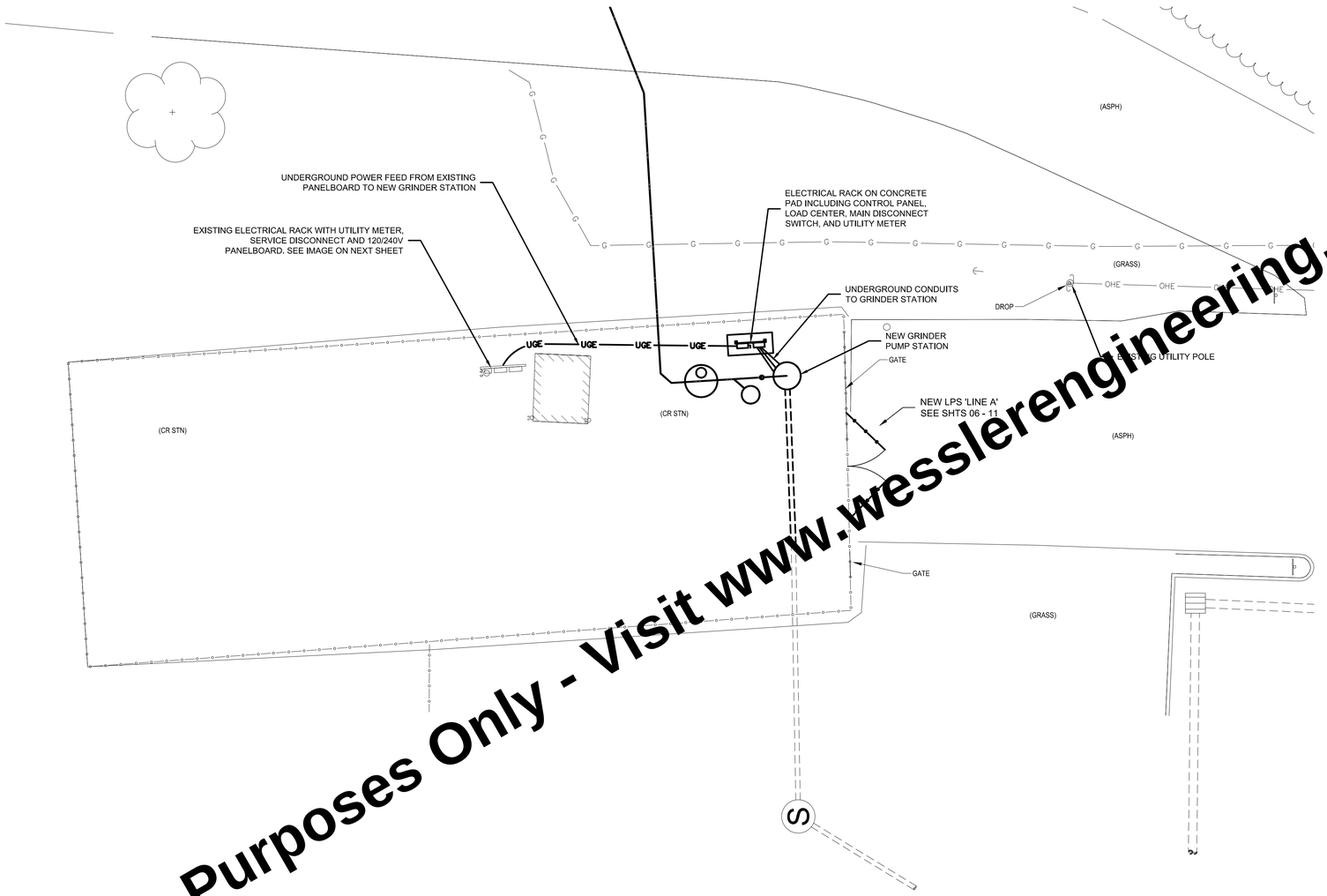
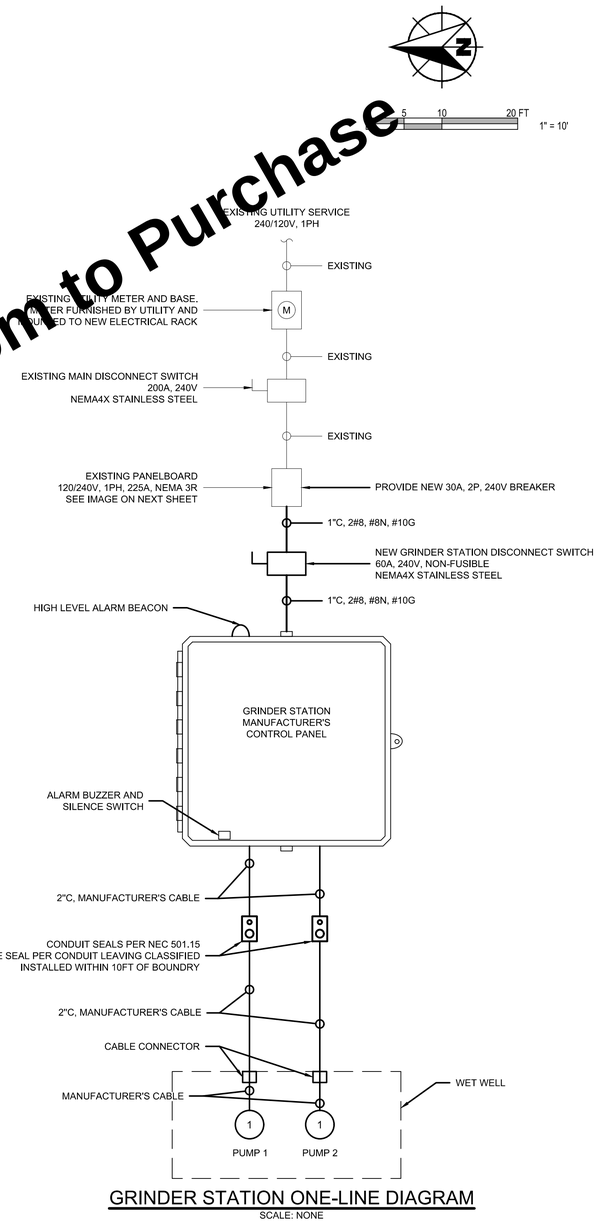


ELECTRICAL SITE PLAN
SCALE: NONE



GRINDER STATION ONE-LINE DIAGRAM
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WASTEWATER GRINDER STATION AND LOW PRESSURE SEWER

HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

ELECTRICAL SITE PLAN AND ONE LINE DIAGRAM

SHEET NO. **18**

TOTAL SHEETS 19

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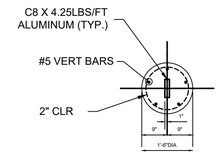
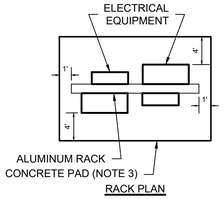
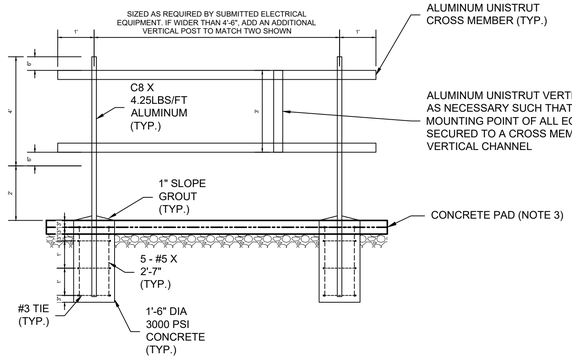


VERTICAL POST PLAN



RACK PLAN

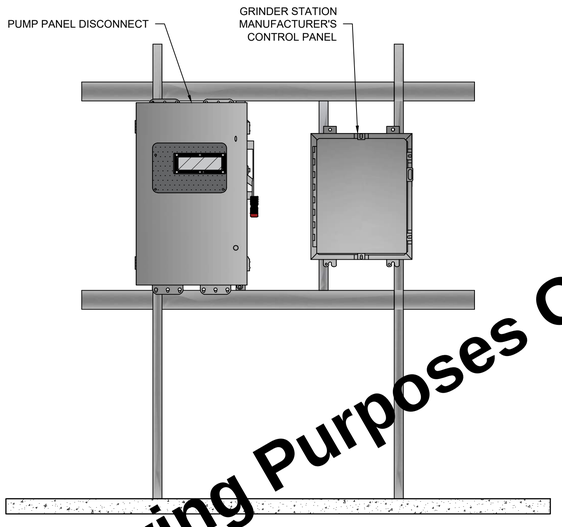


NOTES:

1. ALL HARDWARE ANCHORS, BOLTS, WASHERS AND ALL OTHER HARDWARE TO BE STAINLESS STEEL
2. WHERE ALUMINUM COMES IN CONTACT WITH CONCRETE, COAT WITH BITUMINOUS.
3. CONCRETE PAD SIZED PER SUBMITTED EQUIPMENT AND DIMENSIONS SHOWN IN RACK PLAN. 4' SPACING ONLY REQUIRED ON SIDES OF RACK WITH MOUNTED EQUIPMENT. CONCRETE PAD TO BE 4" THICK SLAB.

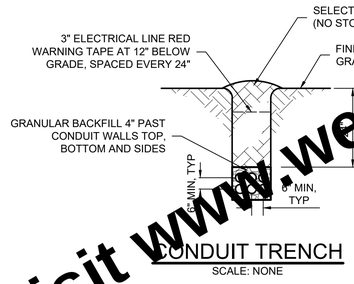
ELECTRICAL EQUIPMENT RACK

SCALE: NONE



ELECTRICAL RACK ELEVATION

SCALE: NONE



CONDUIT TRENCH

SCALE: NONE

EXISTING 120/240V PANELBOARD MODIFICATION

SCALE: NONE

EXISTING ELECTRICAL RACK - FOR REFERENCE

SCALE: NONE

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SCALE VERIFICATION	DRAWN BY	JLK	NO.	DATE	INITIALS	REVISION DESCRIPTIONS
BAR IS ONE INCH LONG ON ORIGINAL DRAWING	CHECKED BY	JAP				
	APPROVED BY	WCM				
	ISSUE DATE	SEPTEMBER 2026				
	PROJECT NUMBER	708025-04-001				

STATE OF OHIO — WAYNE C. MOORE E-70068 — REGISTERED PROFESSIONAL ENGINEER — 10/23/2026

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HARDIN NORTHERN LOCAL SCHOOL DISTRICT
DUNKIRK, OHIO

ELECTRICAL DETAILS

SHEET NO. **19**

TOTAL SHEETS 19

Drawing: X:\Hardin N Local School District\708025 Hardin N LSD Lift Station\DWG\Sheets\708025-EL.dwg | Layout: 18 | Plotted: 09/23/26 @ 09:17:20 | LastSavedBy: jpshk