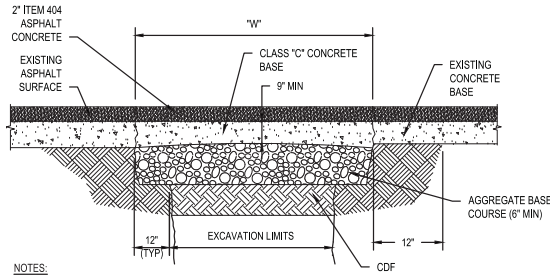


#### NOTES:

1. SEE MILL AND PAVE DETAIL ON THIS DRAWING. WIDTH SHALL BE 12\"/>

### SURFACE TYPE 1 RESTORATION STANDARD: HAMILTON COUNTY ASPHALT CONC. DRIVEWAY

SCALE: N.T.S.

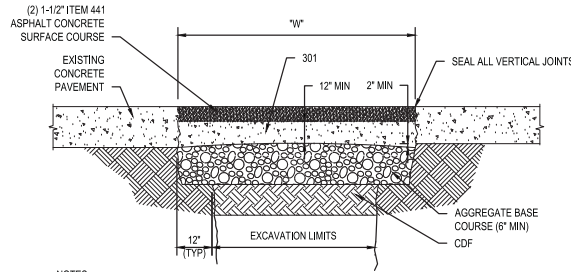


#### NOTES:

1. SEE MILL AND PAVE DETAIL ON THIS DRAWING. WIDTH SHALL BE THAT OF THE AFFECTED LANE(S).
2. THICKNESS OF ALL REPLACEMENT COURSES SHALL BE EQUAL TO EXISTING BUT SHALL NOT BE LESS THAN INDICATED.
3. CONCRETE PAVEMENT SHALL BE SAWCUT AND REMOVED TO NEAREST JOINT TO PREVENT PARTIAL PANEL REMOVAL. WIDTH OF PAVEMENT REMOVAL SHALL BE MINIMUM 2' EITHER SIDE OF UTILITY CENTERLINE AND UP TO NEXT PANEL LIMIT.
4. SAWCUTS THAT EXTEND OUTSIDE THE AREA OF REMOVAL AND REPLACEMENT SHALL BE FILLED WITH AN EPOXY-BASED GROUT APPROVED BY THE ENGINEER.
5. FULL DEPTH SAWCUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE PATCHED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTERLINE OF THE PAVEMENT.
6. LONGITUDINAL FULL DEPTH SAW CUTS SHALL BE AT EXISTING LONGITUDINAL JOINTS.
7. ADDITIONAL SAWCUTS MAY BE REQUIRED WITH THE AREA OF THE PATCH TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE PATCH EDGE.
8. SEAL ALL EDGES OF RESTORATION WITH ITEM 702.01 - JOINT SEALER.

### SURFACE TYPE 4 RESTORATION STANDARD: CINCINNATI, GOLF MANOR, AMBERLEY VILLAGE

SCALE: N.T.S.

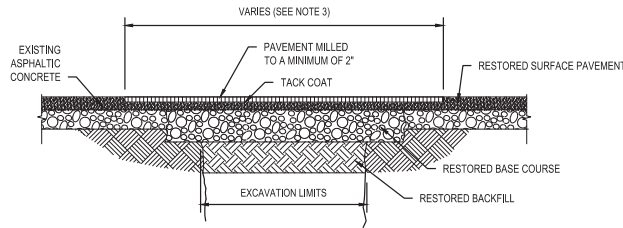


#### NOTES:

1. ALL RESTORATION IN VILLAGE OF EVENDALE RIGHT OF WAY SHALL BE MILLED AND PAVED TO THE ENTIRE WIDTH OF THE AFFECTED LANE(S). SEE MILL AND PAVE DETAIL ON THIS DRAWING.
2. EXCAVATION MUST BE REPLACED IN THE LIKE KIND OR BETTER.
3. IF PAVEMENT IS ASPHALT, REPLACE WITH NOT LESS THAN 12\"/>

### SURFACE TYPE 2 RESTORATION STANDARD: VILLAGE OF EVENDALE

SCALE: N.T.S.

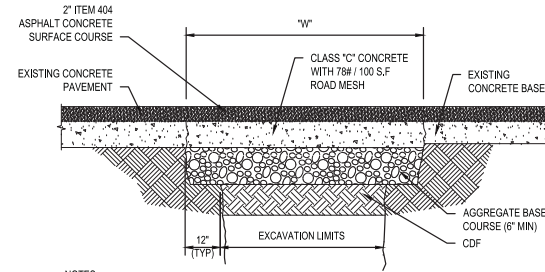


#### NOTES:

1. THICKNESS OF ALL REPLACEMENT COURSES SHALL NOT BE LESS THAN THAT OF EXISTING COURSE.
2. OVERLAY MATERIAL USED TO REPLACE MILLED SURFACE SHALL MATCH MATERIAL USED DURING RESTORATION.
3. MILLING WIDTHS VARY BASED ON LOCATION/MUNICIPALITY. SEE THE SELECTED RESTORATION TYPE FOR SPECIFIED WIDTHS.

### MILL AND PAVE

SCALE: N.T.S.



#### NOTES:

1. WHERE ASPHALT CONCRETE PAVEMENT IS REQUIRED, THE EDGES ARE TO BE CUT WITH A SAW IN A NEAT STRAIGHT LINE. ALL EDGES ARE TO BE SWEEPED AND TACKED, AND ALL JOINTS, AFTER THE SURFACE HAS BEEN PLACED, ARE TO BE SEALED WITH AC-20 IN A MANNER TO AVOID TRACKING.
2. WHERE CONCRETE BASE IS REQUIRED, THE SURFACE SHALL BE FLOATED SMOOTH BY THE USE OF HAND FLOATS OR BULL FLOATS AND THE FINAL FINISH OR TEXTURING SHALL BE COMPLETED WITH A BROOM.

### SURFACE TYPE 3 RESTORATION STANDARD: HAMILTON COUNTY ASPHALT CONC. SURFACE & CONC. BASE

SCALE: N.T.S.

C350 PROJECT  
RESTORATION DETAILS 2  
HAMILTON COUNTY, OHIO  
HAMILTON COUNTY, OHIO

REF. DWG(S): PNG-G-350-0001009

SHEET(S)	2 OF 3	DWG SCALE	NONE
DWG DATE	02/04/2020	SUPERSEDED	---
DRAWING NUMBER	PNG -C-350-0001294	REVISION	0
CHAMLTON COUNTY/C350			



NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
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						PROJECT NUMBER	1880115		MANAGER
						DRAWING BY	AKT		PRINCIPAL ENGINEER
						STATION ID	C350		
						CHECKER INITIALS	CNS		



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# PERMANENT STABILIZATION

AREAS REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS:
ANY AREAS THAT WILL LIE DORMANT FOR ONE (1) YEAR OR MORE	WITHIN SEVEN (7) DAYS OF THE MOST RECENT DISTURBANCE
ANY DISTURBED ARE WITHIN FIFTY (50) FEET OF A STREAM AND AT FINAL GRADE.	WITHIN TWO (2) DAYS OF REACHING FINAL GRADE.
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN (7) DAYS OF REACHING FINAL GRADE WITHIN THAT AREA
NOTE: WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. THESE TECHNIQUES MAY INCLUDE MULCHING OR EROSION MATTING.	

# TEMPORARY STABILIZATION

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

# SEEDING SCHEDULE:

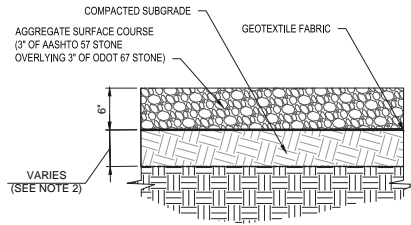
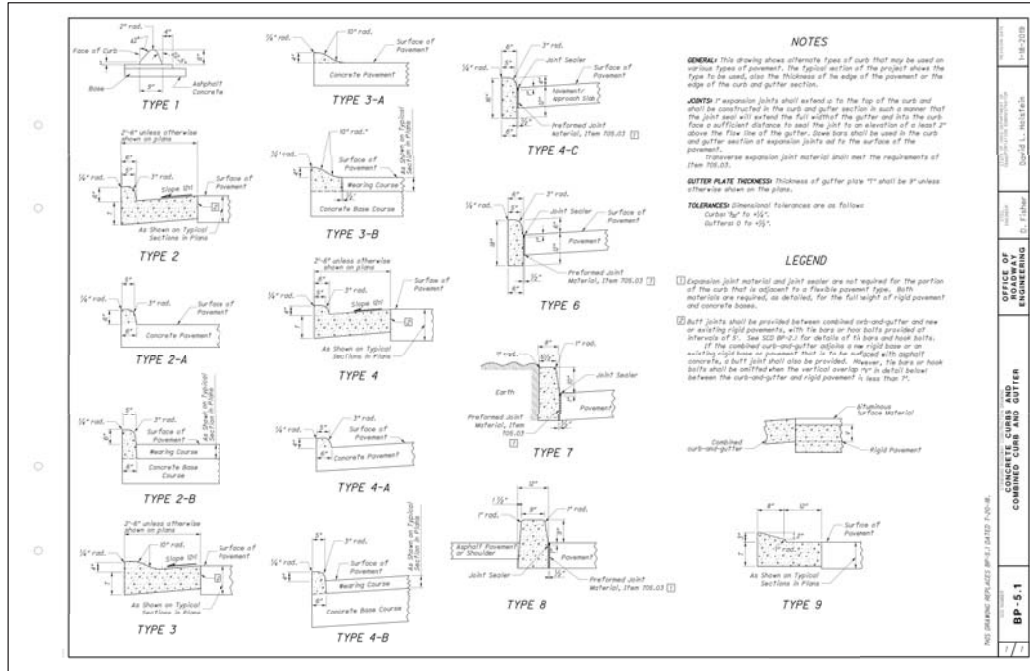
MIX TYPE	Name	Seeding rate		Notes
		lbs/acre	lbs/1,000 sq. ft.	
FINE	Kentucky Bluegrass	100-120	2	For shaded areas
	Perennial Ryegrass		2	
FINE	Kentucky Bluegrass	100-120	2	
	Creeping Red Fescue		1.5	
ROUGH	FESTUCA ARUNDINACEA (TALL FESCUE)	40-50	N/A	SEE BELOW

# ROUGH MIX NOTES:

- ALL ACTIVITIES, MATERIALS, EQUIPMENT AND PERFORMANCE IN CONNECTION WITH ESTABLISHING TURF SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- PERMANENT SEEDING SPECIES AND RATES SHALL BE IN ACCORDANCE WITH THE SEEDING SPECIFICATION.
- TEMPORARY TOPSOIL STOCKPILE SHALL BE SEED AT A RATE OF 150 POUNDS OF PURE LIVE SEED (PLS) PER ACRE IF LEFT UNDISTURBED FOR OVER 7 DAYS. SEEDING RATE SHALL BE 80 LBS/ACRE CEREAL RYE OR WHEAT PLUS 20 LBS/ACRE ANNUAL RYEGRASS.
- ACTIVITIES ASSOCIATED WITH APPLICATION OF LIME, SEED, MULCH, COMPACTING, WATERING, MAINTENANCE AND PROTECTION SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
- STABILIZATION SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLES.

# PERMANENT/TEMPORARY SEEDING, FERTILIZING, & MULCHING

SCALE: N.T.S.



MLV GRAVEL SURFACING

# SURFACE COURSE MATERIAL NOTES:

- NON-WOVEN GEOTEXTILE SHALL BE MIRAFI 140N OR ENGINEER-APPROVED EQUAL.
- CONTRACTOR SHALL REMOVE TOPSOIL AND ROOT MASSES FROM MLV AREA, THEN REPLACE WITH ACCEPTABLE FILL MATERIAL PER THE GEOTECHNICAL REPORT. COMPACT SUBGRADE AND FILL MATERIAL TO AT LEAST 95% MAXIMUM DRY DENSITY PER ASTM D698.



NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
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						PROJECT NUMBER	1880115		
						DRAWING BY	AKT		
						STATION ID	C350		
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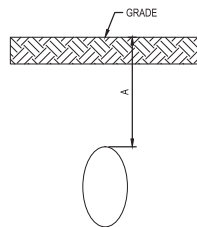


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**C350 PROJECT**  
**RESTORATION DETAILS 3**  
**HAMILTON COUNTY, OHIO**  
 HAMILTON COUNTY, OHIO

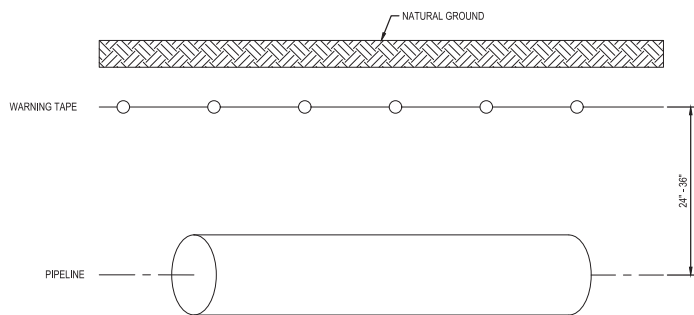
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SHEET(S) 3 OF 3	DWG SCALE NONE
DWG DATE 02/04/2020	SUPERSEDED
DRAWING NUMBER PNG -C-350-0001295	REVISION 0
CHAMLTON COUNTY/C350	

PIPE LOCATION	MIN. DEPTH OF COVER (A)
NORMAL	4'-0"
STREAM/WETLAND CROSSING	5'-0"
ROAD CROSSING	5'-0"
RAILROAD CROSSING	10'-0"
WITHIN 50' OF RAILROAD	6'-0"



### PIPELINE DEPTH OF COVER

SCALE: N.T.S.

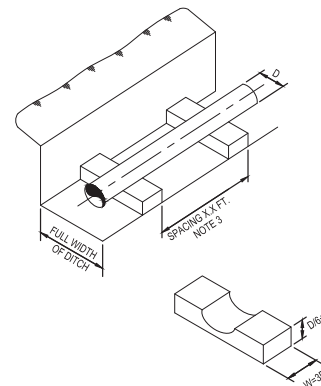


#### NOTES:

1. WARNING TAPE DEPTH MAY VARY BASED ON MANUFACTURER RECOMMENDATIONS OR AS OTHERWISE DIRECTED BY COMPANY.
2. WARNING TAPE INSTALLATION NOT APPLICABLE FOR TRENCHLESS INSTALLATIONS.
3. PIPE WARNING TAPE SHALL BE INSTALLED APPROXIMATELY 24"-36" ABOVE PIPELINE, OR AS OTHERWISE RECOMMENDED BY MANUFACTURER. MATERIALS SHALL BE SIGNAL TAPE® OR APPROVED EQUIVALENT AND SHALL BE NON-TRACEABLE VARIETY.

### UNDERGROUND WARNING TAPE INSTALLATION DETAIL

SCALE: N.T.S.

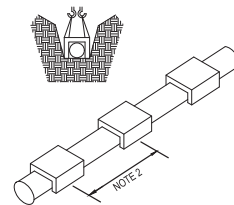


#### NOTES:

1. ALL MATERIALS SHALL BE SUPPLIED BY CONTRACTOR.
2. WIDTH SHALL BE INCREASED PROPORTIONAL TO SPACING INCREASE IF REQUIRED.
3. SPACING TO BE 20' FOR 20" PIPE.

### TYPICAL PIPELINE SUPPORT PILLOWS

SCALE: N.T.S.



#### NOTES:

1. GEOTEXTILE PIPELINE WEIGHT TO BE 5000 POUNDS.
2. GEOTEXTILE PIPELINE WEIGHT TO BE SPACED EVERY 34'.
3. GEOTEXTILE PIPELINE WEIGHT TO BE FILLED WITH SAND OR GRAVEL.
4. GEOTEXTILE PIPELINE WEIGHT VENDORS TO BE PIPESAK OR ECOBAG OR APPROVED BY OWNER.
5. ROCK SHIELD SHALL BE APPLIED IN ALL LOCATIONS WITH BUOYANCY CONTROL.
6. SPACING REQUIREMENTS SHALL ROUND CONSERVATIVELY OR EXTEND BEYOND PLANS DELINEATED WIDTH.

### GEOTEXTILE PIPELINE WEIGHT

SCALE: N.T.S.



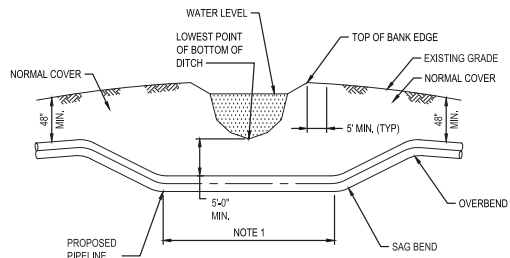
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						CHECKER INITIALS	CNS	11/18/2020	AMP	PRINCIPAL ENGINEER



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CONSTRUCTION DETAILS 1  
HAMILTON COUNTY, OHIO**  
HAMILTON COUNTY, OHIO

REF. DWG(S): PNG-G-350-0001009	
SHEET(S) 1 OF 10	DWG SCALE NONE
DWG DATE 09-05-2018	SUPERSEDED
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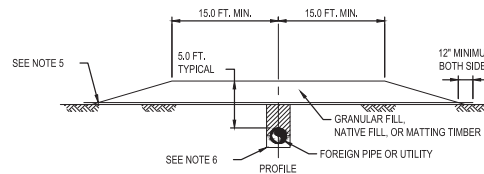
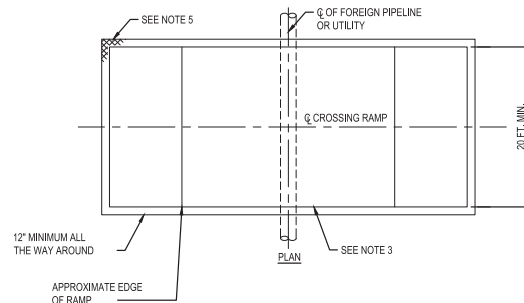


**NOTE:**

1. PIPELINE WEIGHTS OR ANCHORS TO BE INSTALLED PER PLANS OR AS DIRECTED BY COMPANY.

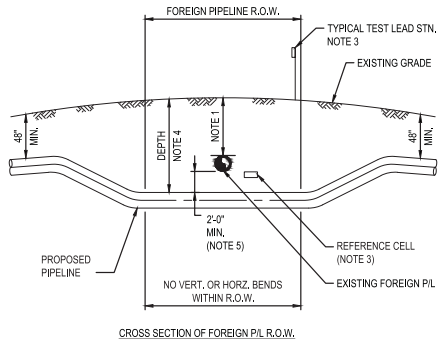
**TYPICAL OPEN CUT  
STREAM CROSSING**

SCALE: N.T.S.



**TEMPORARY RAMP CROSSING**

SCALE: N.T.S.

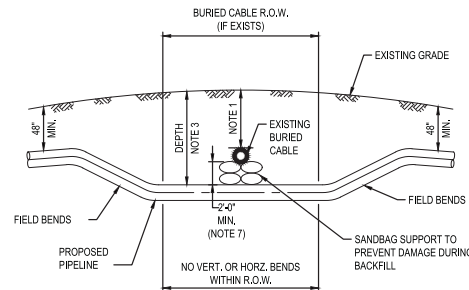


**NOTES:**

1. FOREIGN PIPELINE LOCATIONS & DEPTHS TO BE DETERMINED BY ELECTRONIC MEANS IN ADVANCE OF PIPELINE CONSTRUCTION AND CONFIRMED BY CAREFULLY EXPOSING BY HAND DIGGING WHERE WITHIN 24\"/>
- 2. OWNER OF FOREIGN PIPELINE(S) SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF EXCAVATION OF CROSSING.
- 3. TEST LEAD STATION TO BE INSTALLED WHERE PRACTICAL AT THE NEAREST FENCE, HEDGE ROW OR FIELD EDGE, AND WHERE READILY ACCESSIBLE. INSTALL PERMANENT REFERENCE CELL AND EXTEND CELL LEAD TO TEST LEAD STATION.
- 4. DEPTH OF PIPELINE INCLUDING 2'-0\"/>
- 5. PROPOSED PIPELINE MAY ONLY CROSS ABOVE THE FOREIGN PIPELINE(S) WHERE REQUESTED BY OR APPROVED BY FOREIGN OWNER IN WRITING.

**CROSSING FOREIGN PIPELINE**

SCALE: N.T.S.



**CROSS SECTION OF BURIED CABLE R.O.W.**

SCALE: N.T.S.

**NOTES:**

1. CONTRACTOR TO NOTIFY EXISTING PIPELINE/UTILITY COMPANY PRIOR TO INSTALLATION OF CROSSING RAMP.
2. LENGTH OF RAMP TO VARY IN ACCORDANCE WITH CROSSING ANGLE MINIMUM CROSSING ANGLE TO BE 45 DEGREES.
3. VEHICLES OR EQUIPMENT USING CROSSINGS SHALL PROCEED SLOWLY AND WITH CAUTION TO MINIMIZE IMPACT LOADING AND REDUCTION ON DEPTH OF COVER OVER PIPE/UTILITY.
4. ON COMPLETION OF CONSTRUCTION, CONTRACTOR TO REMOVE COMPLETE RAMP AND RESTORE AREA TO THE SATISFACTION OF THE EXISTING PIPELINE/UTILITY COMPANY AND THE COMPANY'S INSPECTOR.
5. GEOTEXTILE FABRIC (AND GEOTEXTILE GRID WHERE REQUIRED) SHALL BE INSTALLED TO PROTECT NATIVE TOP SOIL AS DIRECTED BY COMPANY'S INSPECTOR WHEN IMPORTED GRANULAR FILL OR NATIVE SUBSOIL FILL MATERIAL IS UTILIZED, IMPORTED GRANULAR FILL MATERIAL OR NATIVE SUBSOIL FILL MATERIAL TO BE REMOVED AND DISPOSED OF AS DIRECTED BY COMPANY'S REPRESENTATIVE.
6. IN ROCK TERRAIN THE CONTRACTOR SHALL, UNDER THE EXISTING PIPELINE COMPANY'S SUPERVISION, EXPOSE THE TOP HALF OF THE PIPE AND BACKFILL WITH COMPACTED SAND OR APPROVED SOIL.

**NOTES:**

1. BURIED CABLE LOCATIONS & PIPE DEPTHS TO BE DETERMINED BY ELECTRONIC MEANS IN ADVANCE OF PIPELINE CONSTRUCTION AND CONFIRMED BY CAREFULLY EXPOSING BY HAND DIGGING WHEN WITHIN 24\"/>
- 2. OWNER OF BURIED CABLE(S) SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF EXCAVATION OF CROSSING.
- 3. DEPTH OF PIPELINE INCLUDING 2'-0\"/>
- 4. PROPOSED PIPELINE MAY ONLY CROSS ABOVE BURIED CABLE(S) WHERE APPROVED IN WRITING BY BURIED CABLE OWNER.
- 5. CONTRACTOR TO SUPPORT EXPOSED CABLE WITH WOOD PLANK OR STRUCTURAL STEEL DURING CONSTRUCTION.
- 6. CONTRACTOR TO UTILIZE CAUTION WITH PLACEMENT OF BACKFILL TO MINIMIZE POSSIBLE DAMAGE TO THE CABLE.



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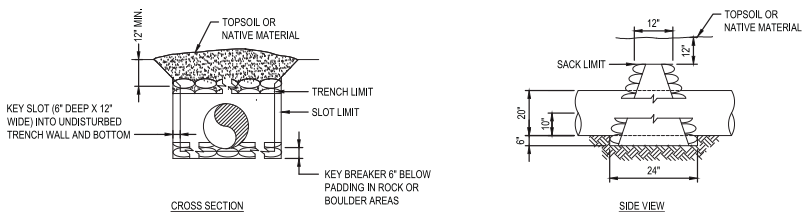


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HAMILTON COUNTY, OHIO**

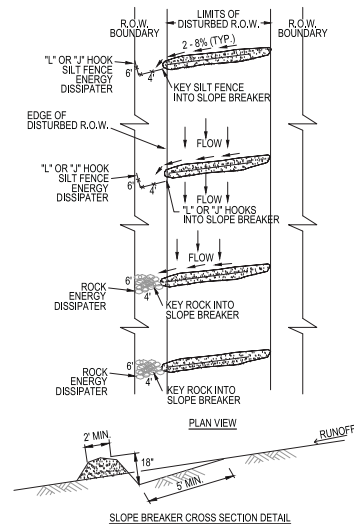
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HAMILTON COUNTY/C350		





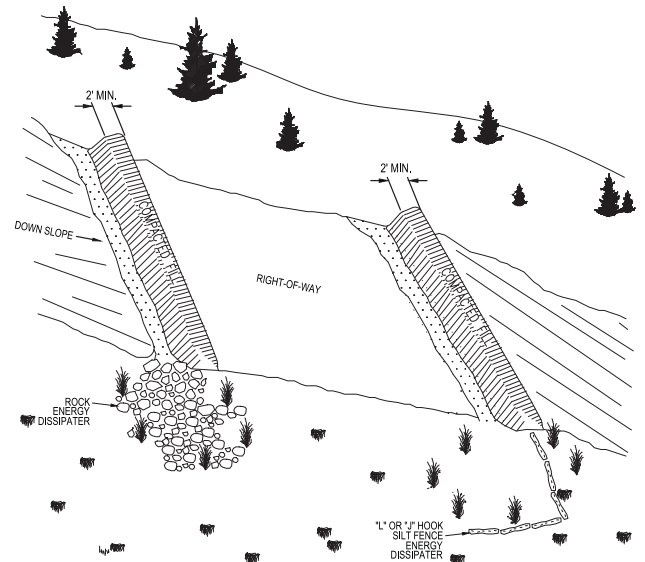
### TYPICAL TRENCH PLUG

SCALE: N.T.S.



### TYPICAL SLOPE BREAKER

SCALE: N.T.S.



NOTES:

1. TRENCH PLUGS SHALL BE INSTALLED:
  - ON SLOPES ALONG THE TRENCH LINE WHERE THE NATURAL DRAINAGE PATTERN, PROFILE, AND TYPE OF BACKFILL MATERIAL MAY RESULT IN LOSS OF BACKFILL MATERIAL OR ALTERATION OF THE NATURAL PATTERN;
  - AT THE BASE OF SLOPES ADJACENT TO WATERBODIES AND WETLANDS;
  - WHERE NEEDED TO AVOID DRAINING A WETLAND;
  - ON UPLAND SLOPES, AT THE SAME SPACING AS SLOPE BREAKERS AND UP SLOPE OF SLOPE BREAKERS;
  - IN CULTIVATED LANDS AND NON-IRRIGATED AREAS WHERE PERMANENT SLOPE BREAKERS ARE NOT TYPICALLY INSTALLED, AT THE SAME SPACING AS IF PERMANENT SLOPE BREAKERS WERE REQUIRED
2. PLUGS SHALL BE INSTALLED IN ACCORDANCE WITH DUKE CONSTRUCTION STANDARDS AND AS DIRECTED
  - BY COMPANY'S INSPECTOR, SACK BREAKS SHALL UTILIZE OPEN WEAVE HEMP OR JUTE SACKS FILLED WITH MINIMUM OF 55LBS OF SUBSOL, SAND OR A MIXTURE OF 1 PART CEMENT TO 2 PARTS SAND OR SUBSOL AS DETERMINED BY COMPANY'S INSPECTOR
  - POLYURETHANE FOAM BREAKERS MAY BE USED IN-LEAD-OF SACK BREAKERS, WHEN APPROVED BY COMPANY'S REPRESENTATIVE.
3. PLUG SPACING AND CONFIGURATION MAY BE CHANGED AS DIRECTED BY COMPANY, DEPTH OF DITCH MAY VARY WITH SITE CONDITIONS.
4. ALL MATERIALS SHALL BE SUPPLIED BY CONTRACTOR.

NOTES:

1. SLOPE BREAKERS SHALL BE CONSTRUCTED OF COMPACTED NATIVE SOIL AND INSTALLED AT LOCATIONS AS REQUIRED BY DUKE CONSTRUCTION STANDARDS OR AS DIRECTED BY THE COMPANY'S REPRESENTATIVE.
2. SLOPE BREAKERS SHALL BE ORIENTED AS SHOWN OR OTHER PATTERN AS DIRECTED BY THE COMPANY'S REPRESENTATIVE TO DIRECT THE WATER OFF THE RIGHT-OF-WAY.
3. SLOPE BREAKERS SHALL BE CONSTRUCTED AT 2-8% GRADIENT ACROSS THE SLOPE.
4. THE SLOPE BREAKERS SHALL BE 18" DEEP (AS MEASURED FROM THE TROUGH TO THE TOP OF THE SLOPE BREAKER), THE THROUGH WILL BE A MINIMUM OF 5' WIDE ACROSS THE WIDTH OF THE RIGHT-OF-WAY.
5. THE OUTLET OF THE SLOPE BREAKER MUST FREELY DISCHARGE ALL RUNOFF OFF THE DISTURBED RIGHT-OF-WAY INTO AN ENERGY DISSIPATOR.
6. WHERE SLOPE BREAKERS EXTEND BEYOND THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY TO DIRECT RUNOFF INTO STABLE, WELL VEGETATED AREAS, THESE LOCATIONS MUST BE APPROVED BY THE COMPANY'S REPRESENTATIVE.

FLOW ENERGY DISSIPATER NOTES:

1. THE OUTLET SHALL CONTAIN AN ENERGY DISSIPATER IF THE COMPANY'S INSPECTOR DETERMINES EXISTING VEGETATION IS NOT SUFFICIENTLY STABLE TO PREVENT EROSION. THE ENERGY DISSIPATER SHALL BE CONSTRUCTED AS FOLLOWS:
- OUTFALL END OF DISSIPATER SHOULD BE LOWER THAN SLOPE BREAKER END.
  - SILT FENCE OR ROCK DISSIPATORS SHOULD BE KEPT INTO THE END OF THE SLOPE BREAKER.
  - PROVIDE ENOUGH AREA INSIDE "L" TO CAPTURE AND HOLD SEDIMENT.

NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	APPROVALS		
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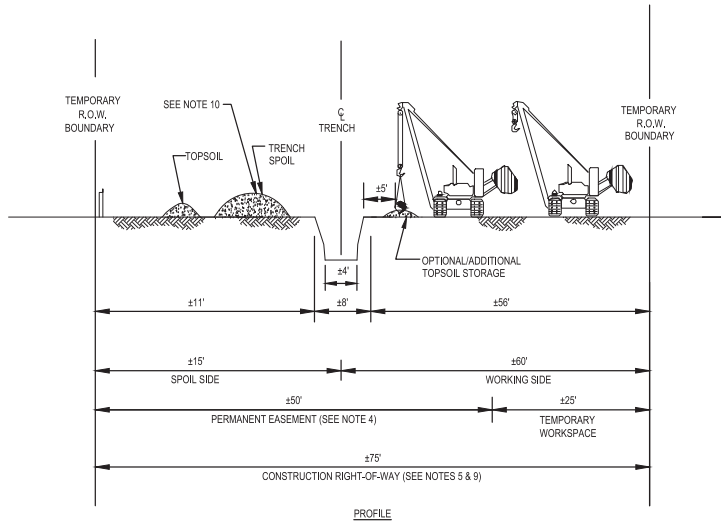
DUKE ENERGY  
Piedmont Natural Gas  
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CONSTRUCTION DETAILS 3  
HAMILTON COUNTY, OHIO  
HAMILTON COUNTY, OHIO

REF. DWG(S): PNG-G-350-0001009			
SHEET(S) 3 OF 10		DWG SCALE	NONE
DWG DATE 09-05-2018		SUPERSEDED	—
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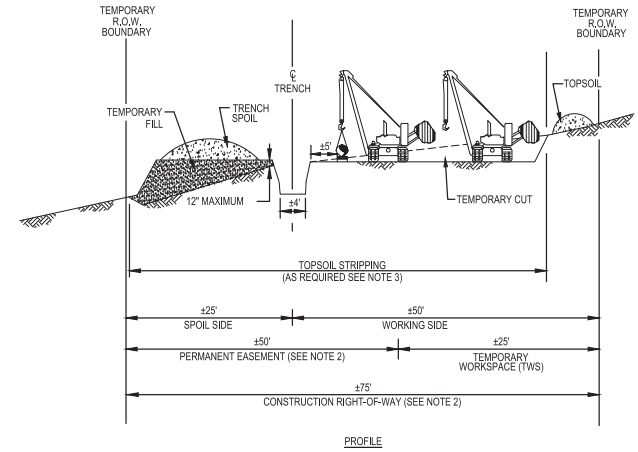


#### NOTES:

1. UTILIZE THE "TRENCH ONLY" TOPSOIL SALVAGE METHOD AT LOCATIONS SUCH AS RIPARIAN AREAS OR UNMANAGED WOODLAND, WHERE IDENTIFIED ON THE CONSTRUCTION DRAWINGS, OR AS DIRECTED BY THE COMPANY'S REPRESENTATIVE.
2. THE TRENCH ONLY METHOD IS NOT TO BE USED ON AGRICULTURAL LAND EXCEPT AS DIRECTED BY THE COMPANY'S INSPECTOR. (PER LANDOWNER REQUEST).
3. FOR TRENCH ONLY STRIPPING, THE STRIPPED AREA SHALL BE WIDE ENOUGH TO ACCOMMODATE TRENCHING EQUIPMENT.
4. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 80 FEET WIDE CONSISTING OF 50 FEET OF PERMANENT EASEMENT AND 25 FEET OF TEMPORARY WORKSPACE. EXTRA TEMPORARY WORK SPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL AND RIVER CROSSINGS AND OTHER SPECIAL CIRCUMSTANCES, AS REQUIRED. CERTAIN SITUATIONS MAY REQUIRE A NARROWER WIDTH.
5. STOCKPILE TOPSOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE COMPANY'S INSPECTOR. KEEP TOPSOIL CLEAN OF ALL CONSTRUCTION DEBRIS.
6. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH TOPSOIL INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING.
7. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING SPOIL AND TOPSOIL PILES.
8. SAME LAYOUT APPLIES WHERE CONSTRUCTION R.O.W. DOES NOT ABUT EXISTING R.O.W.
9. TEMPORARILY SUSPEND TOPSOIL HANDLING OPERATIONS DURING INORDINATELY WINDY CONDITIONS UNTIL MITIGATIVE MEASURES TO MINIMIZE WIND EROSION CAN BE IMPLEMENTED.
10. TOPSOIL AND TRENCH SPOIL RELATIVE POSITIONS CAN, AS DIRECTED BY THE COMPANY'S INSPECTOR, BE REVERSED.

### TYPICAL 75' WORKSPACE TOPSOIL SEPARATION

SCALE: N.T.S.



#### NOTES:

1. SIDE HILL CONSTRUCTION CUT AND FILL SHALL BE ALLOWED WHENEVER, IN THE OPINION OF THE CONTRACTOR, STEEP SIDE HILL CONSTRUCTION IS WARRANTED FOR PERSONNEL AND/OR EQUIPMENT SAFETY CONSIDERATIONS.
2. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75 FEET WIDE CONSISTING OF 50 FEET OF PERMANENT EASEMENT AND 25 FEET OF TEMPORARY WORKSPACE. EXTRA TEMPORARY WORK SPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL AND RIVER CROSSINGS AND OTHER SPECIAL CIRCUMSTANCES, AS REQUIRED. CERTAIN SITUATIONS MAY REQUIRE A NARROWER WIDTH.
3. THIS DRAWING REFLECTS "TRENCH, SPOIL, AND WORKING SIDE" TOPSOIL STRIPPING PROCEDURE AS NEEDED FOR HILL SIDE LEVELING. SALVAGE TOPSOIL OVER TRENCH UNDER THE SPOIL PILE AND FROM TEMPORARY CUT AND FILL AREAS AT LOCATIONS IDENTIFIED OF THE CONSTRUCTION ALIGNMENT SHEETS OR AS DIRECTED BY THE COMPANY'S REPRESENTATIVE.
4. STOCKPILE TOPSOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE COMPANY'S REPRESENTATIVE. KEEP TOPSOIL CLEAN OF ALL CONSTRUCTION DEBRIS.
5. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH TOPSOIL INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING TOPSOIL PILE.

### TYPICAL SIDE HILL CONSTRUCTION

SCALE: N.T.S.

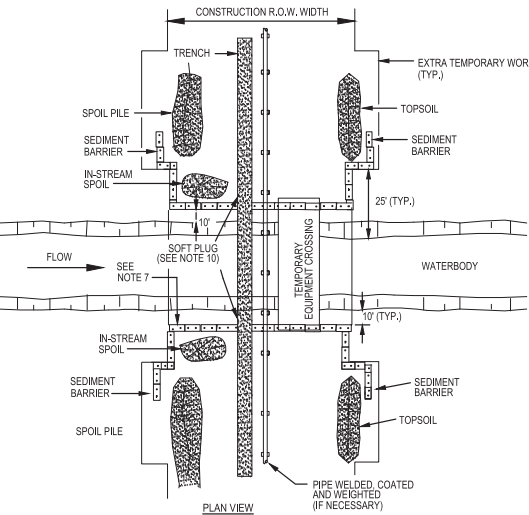


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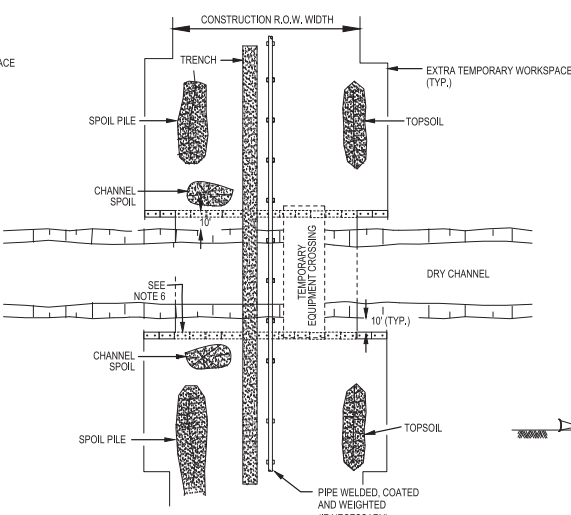
**C350 PROJECT**  
**CONSTRUCTION DETAILS 4**  
**HAMILTON COUNTY, OHIO**  
HAMILTON COUNTY, OHIO

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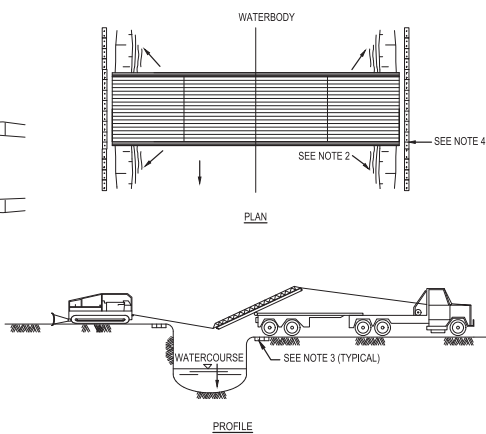
- NOTES:**
- METHOD APPLIES TO WATERBODIES THAT ARE NOT STATE-DESIGNATED FISHERIES WHERE FLUME CROSSINGS ARE NOT REQUIRED.
  - IF TOPOGRAPHY PERMITS TEMPORARY EQUIPMENT BRIDGE INSTALLATION, THE CONTRACTOR SHALL TRENCH, STRING, WELD, COAT, WEIGHT (IF NECESSARY), LOWER IN AND BACKFILL UTILIZING THE MAIN LINE CREW TRAVELING OVER THE BRIDGE.
  - IF TOPOGRAPHY PROHIBITS INSTALLATION OF A TEMPORARY EQUIPMENT BRIDGE, CONTRACTOR SHALL TRENCH UP TO BOTH SIDES OF CROSSING, STRING, WELD, COAT AND WEIGHT (IF NECESSARY) USING THE MAINLINE CREW. IN-STREAM EXCAVATION, LOWER IN, AND BACKFILL WILL UTILIZES A CLAM OR HOES WORKING FROM THE BANKS.
  - SCHEDULE CROSSING DURING LOW FLOW PERIOD IF POSSIBLE, NO IN-STREAM WORK BETWEEN APRIL 15 AND JUNE 30.
  - COMPLETE ALL IN-STREAM ACTIVITIES WITHIN 24 HOURS IF FEASIBLE.
  - NO REFUELING OF MOBILE EQUIPMENT WITHIN 100 FEET OF WATERBODY. REFUEL STATIONARY EQUIPMENT AS PER THE SPOC PLAN.
  - INSTALLATION OF TEMPORARY EQUIPMENT CROSSING IS REQUIRED AT ALL STATE-DESIGNATED FISHERIES AND STREAM CROSSINGS. IF A TEMPORARY EQUIPMENT CROSSING IS INSTALLED, IT MUST BE BUILT IN ACCORDANCE WITH SECTION PERMITS.
  - IN AGRICULTURAL LAND, STRIP TOPSOIL FROM SPOIL STORAGE AREA.
  - CONSTRUCT SEDIMENT BARRIERS ALONG THE SIDES OF STOCKPILES AND ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
  - IN-STREAM SPOIL TO BE STORED OUT OF THE STREAM CHANNEL A MINIMUM OF 10 FEET FROM THE WATERS EDGE AND WITHIN THE CONSTRUCTION R.O.W. UNLESS DEPICTED OTHERWISE IN SITE SPECIFIC CROSSING PLANS. TEMPORARY WORKSPACE MUST BE A MINIMUM OF 25' FROM THE WATERS EDGE.
  - TRENCH THROUGH WATERCOURSE USING MAINLINE EXCAVATION EQUIPMENT WHERE PRACTICAL.
  - INSTALL SOFT PLUGS AT THE EDGE OF STREAM BANKS UNTIL JUST PRIOR TO PIPE INSTALLATION TO CONTROL WATER FLOW & TRENCH SLOUGHING.
  - MAINTAIN STREAM FLOW THROUGHOUT CROSSING CONSTRUCTION.
  - BACKFILL WITH NATIVE MATERIAL.
  - RESTORE WATERBODY CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
  - RESTORE STREAM BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.
  - ALL DIMENSIONS INDICATED SHALL BE DETERMINED BY ACTUAL CONSTRUCTION CONDITIONS.
  - NO FORD CROSSINGS ARE PERMITTED.

**TYPICAL FLOWING WATERBODY CROSSING OPEN CUT TRENCHED**  
SCALE: N.T.S.



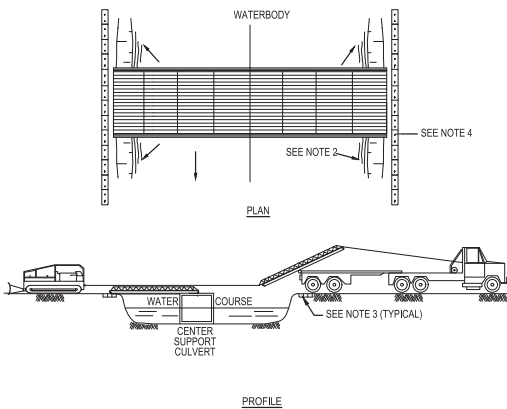
- NOTES:**
- METHOD APPLIES TO CROSSINGS WHERE NO FLOWING WATER IS PRESENT AT THE TIME OF CROSSING.
  - CONTRACTOR MAY "MAINLINE THROUGH" THE CROSSING OR UP TO BOTH SIDES OF THE CROSSING; STRING, WELD, COAT, AND WEIGHT (IF NECESSARY), USING THE MAINLINE CREW WITH THE PIPE SKIDDED OVER THE CROSSING.
  - NO REFUELING OF MOBILE EQUIPMENT WITHIN 100 FEET OF DRY CHANNEL. REFUEL STATIONARY EQUIPMENT AS PER THE SPOC PLAN.
  - INSTALLATION OF TEMPORARY EQUIPMENT CROSSING IS REQUIRED AT ALL STREAM CROSSINGS. EQUIPMENT CROSSING MUST BE BUILT IN ACCORDANCE WITH THE TYPICAL PORTABLE WATERBODY BRIDGE DETAIL.
  - IN AGRICULTURAL LAND, STRIP TOPSOIL FROM SPOIL STORAGE AREA, STOCKPILE TOPSOIL AND SPOIL SEPARATELY. TOPSOIL AND SPOIL WILL NOT BE STOCKPILED IN THE CROSSING CHANNEL AND WILL BE PLACED A MINIMUM OF 10 FEET FROM CROSSING BANKS WITHIN THE CONSTRUCTION R.O.W.
  - CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. FOLLOWING CLEARING AND GRADING AND MAINTAIN UNTIL CONSTRUCTION OF THE CROSSING. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING BACKFILLING OF TRENCH AND STABILIZATION OF BANKS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
  - IN-STREAM SPOIL TO BE STORED OUT OF THE STREAM CHANNEL A MINIMUM OF 10 FEET FROM HIGH BANK AND WITHIN THE CONSTRUCTION R.O.W. UNLESS DEPICTED OTHERWISE IN SITE SPECIFIC CROSSING PLANS.
  - BACKFILL WITH NATIVE MATERIAL.
  - RESTORE CROSSING CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
  - RESTORE CROSSING BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.
  - ALL DIMENSIONS INDICATED SHALL BE DETERMINED BY ACTUAL CONSTRUCTION CONDITIONS.

**TYPICAL NON-FLOWING WATERBODY CROSSING OPEN CUT TRENCHING**  
SCALE: N.T.S.




- NOTES:**
- THIS TYPE OF BRIDGE IS GENERALLY USED ON NARROW, DEEP CROSSINGS.
  - BRIDGE IS ANCHORED AND/OR TIED OFF TO ANCHOR BLOCKS FOR STABILITY.
  - UTILIZE APPROACH FILLS OF CLEAN GRANULAR MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD. AS REQUIRED, ENSURE THAT FILL MATERIAL USED DOES NOT SPILL INTO WATERCOURSE.
  - CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. SILT FENCE OR SANDBAGS MAY BE USED INTERCHANGEABLY.
  - REMOVE PORTABLE BRIDGES AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY COMPANY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING, AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.
  - DISPOSE OF ANY ROCK AS DIRECTED BY THE COMPANY REPRESENTATIVE.
  - RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.

**TYPICAL PORTABLE WATERBODY BRIDGE**  
SCALE: N.T.S.





- NOTES:**
- THIS TYPE OF BRIDGE IS GENERALLY USED FOR CROSSINGS THAT ARE TOO WIDE FOR A SINGLE BRIDGE SECTION AND RELATIVELY SHALLOW.
  - BRIDGE IS ANCHORED AND/OR TIED OFF TO ANCHOR BLOCKS FOR STABILITY.
  - UTILIZE APPROACH FILLS OF CLEAN GRANULAR MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD. AS REQUIRED, ENSURE THAT FILL MATERIAL, IF USED, DOES NOT SPILL INTO WATERCOURSE.
  - CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. SILT FENCE OR SANDBAGS MAY BE USED INTERCHANGEABLY.
  - REMOVE PORTABLE BRIDGES AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY COMPANY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING, AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.
  - DISPOSE OF ANY ROCK AS DIRECTED BY COMPANY REPRESENTATIVE.
  - RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.

**TYPICAL PORTABLE WATERBODY BRIDGE WITH CULVERT SUPPORT**  
SCALE: N.T.S.



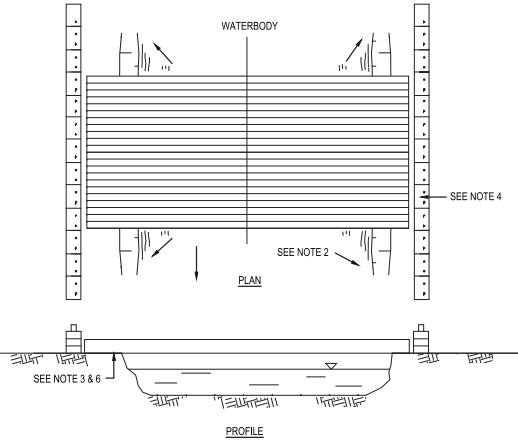
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**C350 PROJECT**  
**CONSTRUCTION DETAILS 5**  
**HAMILTON COUNTY, OHIO**  
HAMILTON COUNTY, OHIO

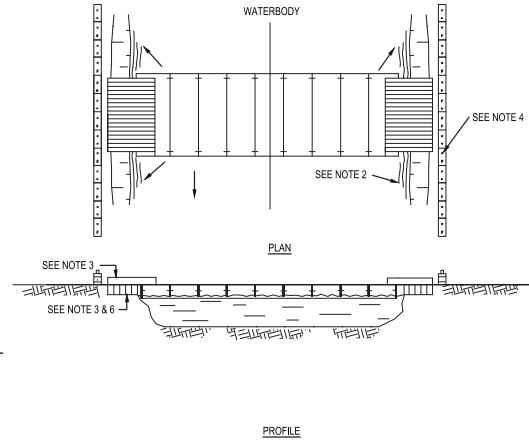
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1. THIS TYPE OF BRIDGE IS GENERALLY USED ON NARROW CROSSINGS, LESS THAN 20 FEET WIDE WITH APPROPRIATE BANK CONFIGURATION. MULTIPLE MATS MAY BE LAYERED FOR HEAVIER EQUIPMENT CROSSINGS.
2. BRIDGE IS ANCHORED AND/OR TIED OFF TO ANCHOR BLOCKS FOR STABILITY. BRIDGE SHOULD BE TEMPORARILY REMOVED IF HIGH WATER RENDERS IT UNSAFE TO USE.
3. IF REQUIRED, UTILIZE APPROACH FILLS OF CLEAN GRANULAR MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD, AS REQUIRED, ENSURE THAT FILL MATERIAL IF USED DOES NOT SPILL INTO WATERCOURSE INCLUDING REMOVAL OF DIRT FROM DECK DURING OPERATION.
4. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. SILT FENCE, HAY BALES OR SANDBAGS MAY BE USED INTERCHANGEABLY.
5. REMOVE BRIDGES AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY COMPANY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING, AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.
6. DISPOSE OF ANY ROCK AS DIRECTED BY COMPANY REPRESENTATIVE.
7. RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.

TYPICAL TIMBER MAT WATERBODY BRIDGE

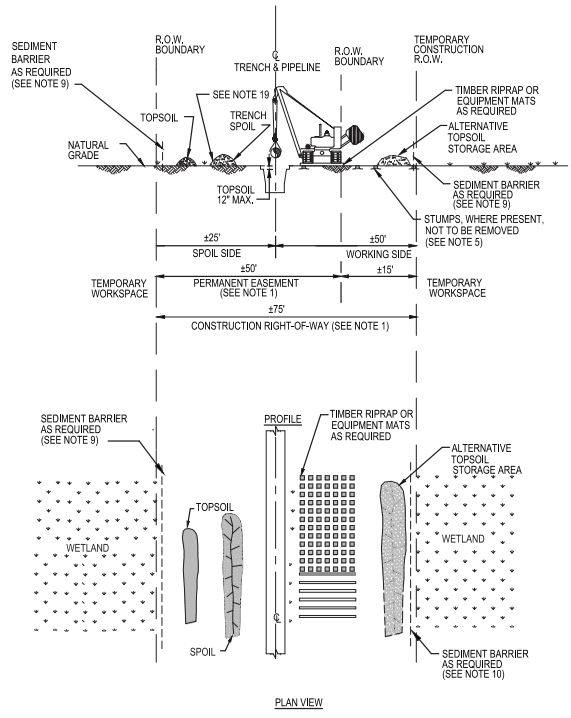
SCALE: N.T.S.



1. THIS TYPE OF BRIDGE IS GENERALLY USED ON WIDE, DEEP CROSSINGS.
2. BRIDGE IS ANCHORED AND/OR TIED OFF TO ANCHOR BLOCKS FOR STABILITY.
3. UTILIZE APPROACH FILLS OF CLEAN GRANULAR MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD, AS REQUIRED, ENSURE THAT FILL MATERIAL, IF USED, DOES NOT SPILL INTO WATERCOURSE.
4. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. SILT FENCE, HAY BALES OR SANDBAGS MAY BE USED INTERCHANGEABLY.
5. REMOVE FLOATING BRIDGES AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY COMPANY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.
6. DISPOSE OF ANY ROCK AS DIRECTED BY COMPANY REPRESENTATIVE.
7. RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.

TYPICAL FLEXI-FLOAT WATERBODY BRIDGE

SCALE: N.T.S.



1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75 FEET WIDE CONSISTING OF 50 FEET OF PERMANENT EASEMENT AND UP TO 25 FEET OF TEMPORARY WORKSPACE.
2. THE SAME LAYOUT APPLIES WHETHER CONSTRUCTION R.O.W. DOES OR DOES NOT ABUT A FOREIGN R.O.W.
3. LOCATE ANY EXTRA TEMPORARY WORK SPACE AREAS AT LEAST 25 FEET FROM EDGE OF WETLAND AND WITHIN THE APPLICABLE FULL WIDTH CONSTRUCTION R.O.W.
4. CLEARING OF VEGETATION AND TREES IS PROHIBITED BETWEEN TEMPORARY EXTRA WORK SPACE AND THE EDGE OF THE WETLAND
5. CUT VEGETATION AND TREES OFF AT GROUND LEVEL, LEAVING EXISTING ROOT SYSTEMS IN PLACE WHEREVER PRACTICABLE, AND REMOVE CUTTINGS FROM THE WETLAND FOR DISPOSAL.
6. LIMIT CONSTRUCTION EQUIPMENT TO ONE PASS THROUGH WETLANDS TO THE EXTENT PRACTICABLE.
7. NO REFUELING OF EQUIPMENT WITHIN 100 FEET OF WETLAND EXCEPT IN ACCORDANCE WITH THE SPOC PLAN.
8. IF SATURATED AT TIME OF CONSTRUCTION, REDUCE SOIL COMPACTION BY UTILIZING WIDE-TRACK OR BALLOON TIRE CONSTRUCTION EQUIPMENT OR NORMAL EQUIPMENT OPERATED ON TIMBER RIPRAP OR EQUIPMENT MATS.
9. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS IMMEDIATELY AFTER INITIAL GROUND DISTURBANCE AND AT THE EDGE OF THE CONSTRUCTION R.O.W. ALONG THE WETLAND AS DIRECTED BY THE COMPANY'S INSPECTOR.
10. THIS DRAWING REFLECTS 'TRENCH ONLY' TOPSOIL STRIPPING PROCEDURE FOR AREAS WHERE STANDING WATER OR SATURATED SOIL ARE NOT PRESENT.
11. SALVAGE UP TO 12" OF TOPSOIL OVER TRENCH AT LOCATIONS IDENTIFIED ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE COMPANY'S INSPECTOR. MAINTAIN SEPARATION BETWEEN TOPSOIL AND TRENCH SPOIL.
12. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT USE TOPSOIL FOR PADDING. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING SPOIL PILE.
13. IN UNSATURATED CONDITIONS, SPOIL MAY BE USED TO STABILIZE THE WORKING SIDE.
14. IF SATURATED AT TIME OF CONSTRUCTION, LEAVE HARD PLUGS AT THE EDGE OF WETLAND UNTIL JUST PRIOR TO TRENCHING.
15. TRENCH THROUGH WETLANDS.
16. LOWER-IN PIPE, INSTALL TRENCH BREAKERS AT WETLAND EDGES AS DIRECTED BY THE COMPANY'S INSPECTOR TO PREVENT DRAINAGE. BACKFILL UPON COMPLETION OF CONSTRUCTION.
17. REMOVE ALL TIMBER, RIPRAP OR EQUIPMENT MATS FROM WETLANDS UPON COMPLETION OF CONSTRUCTION.
18. RESTORE GRADE TO NEAR PRE-CONSTRUCTION TOPOGRAPHY AND REPLACE TOPSOIL, WHERE SALVAGED, WITHOUT A CROWN OVER THE TRENCH.
19. IF STANDING WATER IS NOT PRESENT, SEED AS SPECIFIED.
20. TOPSOIL AND TRENCH SPOIL RELATIVE POSITIONS CAN, AS DIRECTED BY THE COMPANY'S INSPECTOR, BE REVERSED.

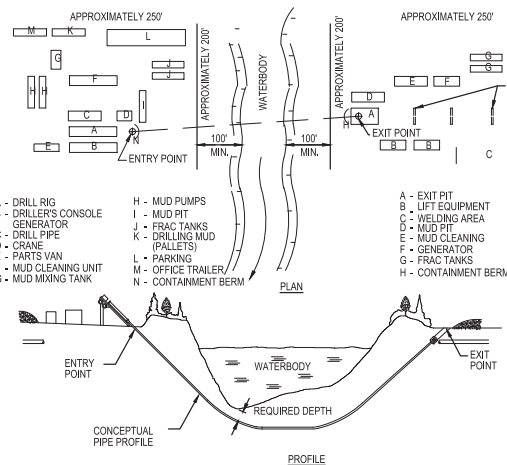
TYPICAL WETLAND CROSSING

SCALE: N.T.S.

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C350 PROJECT  
CONSTRUCTION DETAILS 6  
HAMILTON COUNTY, OHIO  
HAMILTON COUNTY, OHIO

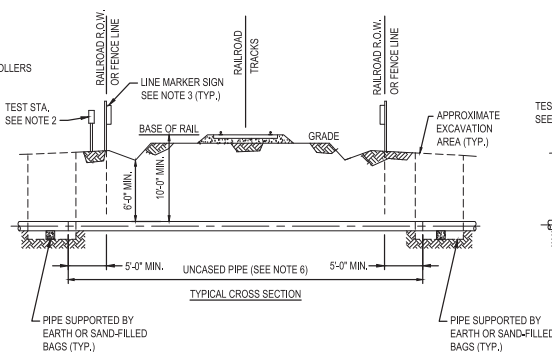


#### NOTES:

- SET UP DRILLING EQUIPMENT A MINIMUM OF 100 FEET FROM THE EDGE OF THE WATERCOURSE. DO NOT CLEAR OR GRADE WITHIN THE 100 FOOT ZONE.
- ENSURE THAT ONLY BENTONITE BASED DRILLING MUD IS USED. DO NOT ALLOW THE USE OF ANY ADDITIVES TO THE DRILLING MUD WITHOUT THE APPROVAL OF COMPANY'S INSPECTOR.
- INSTALL SUITABLE DRILLING MUD TANKS OR SUMPS TO PREVENT CONTAMINATION OF WATERCOURSE.
- INSTALL BERMS DOWNSLOPE FROM THE DRILL ENTRY AND ANTICIPATED EXIT POINTS TO CONTAIN ANY RELEASE OF DRILLING MUD.
- DISPOSE OF DRILLING MUD IN ACCORDANCE WITH THE APPROPRIATE REGULATORY AUTHORITY REQUIREMENTS.

### CONCEPTUAL CROSSING METHOD FOR HORIZONTAL DIRECTIONAL DRILL

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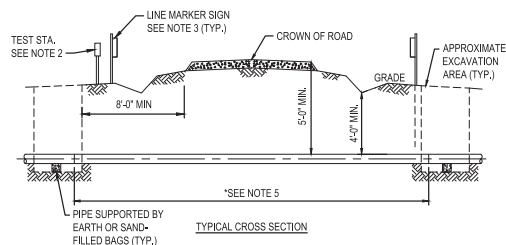


#### NOTES:

- WHERE CONFLICTS MAY EXIST, PERMIT SPECIFICATIONS SHALL ALWAYS GOVERN THIS DRAWING.
- CATHODIC TEST STATION TO BE INSTALLED (IF REQUIRED), SEE TYPICAL DRAWING PNG-E-350-0001013.
- PIPELINE MARKER TO BE INSTALLED PER TYPICAL DRAWING, PNG-C-350-0001311 (IF REQUIRED).
- ANY EXCAVATION WITHIN THE LIMITS OF THE R.O.W. SHALL BE REPLACED WITH BACKFILL SPECIFIED BY THE ENGINEER AND COMPACTED IN 6-INCH LAYERS.
- SAND BAG SUPPORT SHALL BE PLACED ON UNDISTURBED SOIL UNDER THE CARRIER PIPE TO AVOID SAGGING WHEN BACKFILLED.
- PIPE TO BE IN ACCORDANCE WITH SPECIFIC STATE REQUIREMENTS.
- THE ANGLE OF INTERSECTION BETWEEN A PIPELINE CROSSING AND THE RAILROAD TO BE CROSSED SHOULD BE AS NEAR TO 90 DEGREES AS PRACTICABLE. IN NO CASE SHOULD IT BE LESS THAN 30 DEGREES.
- UNCASED GAS PIPELINES SHALL NOT BE LESS THAN 10 FEET FROM THE BASE OF RAIL TO THE TOP OF THE PIPE AT ITS CLOSEST POINT. AT ALL OTHER LOCATIONS WHERE CROSSING THE RIGHT-OF-WAY, THE MINIMUM GROUND COVER MUST BE 6 FEET.

### CONCEPTUAL UNCASED BORED RAILROAD CROSSING

SCALE: N.T.S.

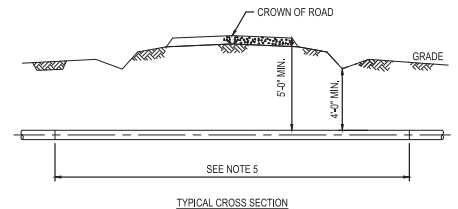


#### NOTES:

- CARRIER PIPE IS TO BE COATED WITH APPROVED EXTERNAL PROTECTIVE COATING.
- CATHODIC TEST STATION TO BE INSTALLED (IF REQUIRED), SEE TYPICAL DRAWING PNG-E-350-0001013.
- PIPELINE MARKER TO BE INSTALLED PER TYPICAL DRAWING, PNG-C-350-0001311 (IF REQUIRED).
- INSTALL PIPELINE MARKER & TEST STATIONS ON ROW LINE NEXT TO FENCE IF POSSIBLE.
- CROSSING SHALL BE INSTALLED BY BORING.
- PIPE WALL THICKNESS AND GRADE SHALL BE AS SPECIFIED ON ALIGNMENT DRAWINGS.
- CROSSING TO BE AS NEAR TO 90 DEGREES TO THE CENTERLINE OF ROADWAY AS PRACTICAL.
- CONTRACTOR TO FURNISH AND THOROUGHLY COMPACT SAND BACK FILL AT ALL BELL HOLES TO CENTERLINE OF PIPE.
- IN WET CONDITIONS, USE SAND BAG SUPPORTS AT 10 FEET INTERVALS IN LIEU OF CONTINUOUS SAND BACK FILL, AT THE DISCRETION OF THE COMPANY REPRESENTATIVE.

### CONCEPTUAL UNCASED BORED ROAD CROSSING

SCALE: N.T.S.



#### NOTES:

- CARRIER PIPE IS TO BE COATED WITH APPROVED EXTERNAL PROTECTIVE COATING.
- CATHODIC TEST STATION TO BE INSTALLED (IF REQUIRED), SEE TYPICAL DRAWING PNG-E-350-0001013.
- PIPELINE MARKER TO BE INSTALLED PER TYPICAL DRAWING, PNG-C-350-0001311 (IF REQUIRED).
- INSTALL PIPELINE MARKER & TEST STATIONS ON ROW LINE NEXT TO FENCE IF POSSIBLE.
- CROSSING SHALL BE INSTALLED BY OPEN CUTTING.
- PIPE WALL THICKNESS AND GRADE SHALL BE AS SPECIFIED ON ALIGNMENT DRAWINGS.
- CROSSING TO BE AS NEAR TO 90 DEGREES TO THE CENTERLINE OF ROADWAY AS PRACTICAL.
- EXCAVATION WITHIN THE LIMITS OF THE ROAD EASEMENT SHALL BE REPLACED WITH BACKFILL SPECIFIED BY THE ENGINEER AND COMPACTED IN 6-INCH LAYERS.

### CONCEPTUAL OPEN CUT ROAD CROSSING

SCALE: N.T.S.

REF. DWG(S): PNG-C-350-0001009

NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
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						PROJECT NUMBER	1880115	-	
						DRAWING BY	AKT	-	
						STATION ID	C350	-	
						CHECKER INITIALS	CNS	11/18/2020	AMP



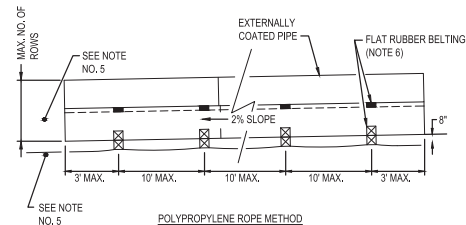
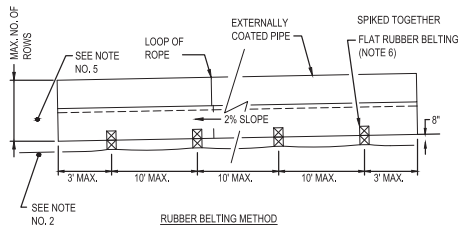
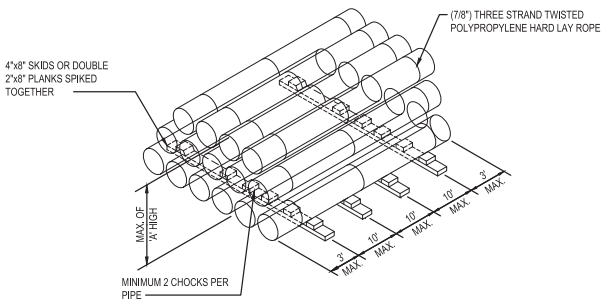
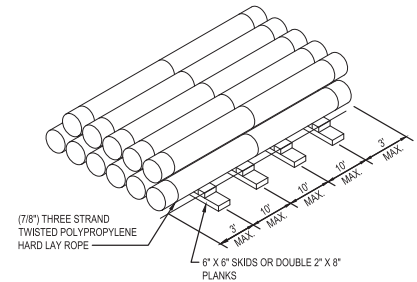
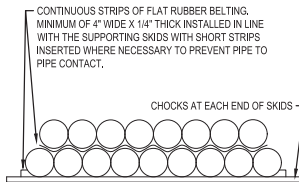
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C350 PROJECT  
CONSTRUCTION DETAILS 7  
HAMILTON COUNTY, OHIO  
HAMILTON COUNTY, OHIO

SHEET(S): 7 OF 10	DWG SCALE: NONE
DWG DATE: 09-05-2018	SUPERSEDED: ---
DRAWING NUMBER: PNG -C-350-0001309	REVISION: 0
C:HAMILTON COUNTY/C350	



SIZE	1/4" (NO. OF ROWS)	CIRCUMFERENCE OF FINISHED LOOPS	SIZE	1/4" (NO. OF ROWS)	CIRCUMFERENCE OF FINISHED LOOPS	* PIPE GREATER THAN 20" WILL BE 4 ROWS.
4"	12	16"	18"	5	60"	
6"	10	24"	20"	4*	66"	
8"	8	30"	24"	4	72"	
10"	6	37"	32"	4	80"	
12"	6	43"	36"	4	92"	
16"	5	54"	42"	4	98"	



CIRCUMFERENCE OF LOOPS								
THE CIRCUMFERENCE OF LOOPS (MINIMUM) SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE								
PIPE O.D.	30"	24"	20"	16"	12"	10"	8"	6"
CIRCUMFERENCE OF FINISHED LOOPS	98"	80"	66"	54"	43"	37"	30"	34"

#### NOTES:

- ALL PIPE THAT IS SURPLUS AFTER A CONSTRUCTION PROJECT MUST BE PERMANENTLY STOCKPILED.
- THE USE OF ALTERNATE METHODS FOR STOCKPIILING PIPE AND/OR THE USE OF ALTERNATE MATERIALS FOR PREVENTING PIPE TO PIPE CONTACT SHALL REQUIRE THE APPROVAL OF THE COMPANY REPRESENTATIVE.
- NUMBER OF ROWS TO BE SPECIFIED BY COMPANY.
- ALL MATERIALS SHALL BE FURNISHED BY CONTRACTOR.
- EARTHEN BERMS WILL BE ACCEPTABLE ALTERNATIVES AS APPROVED BY COMPANY REPRESENTATIVE.

#### ROPE INSTALLATION

ROPE SPACING SHOULD BE A MAXIMUM OF 6 FEET FROM THE PIPE ENDS AND A MAXIMUM OF 6 FEET FROM GIRTH WELDS. THE INTERVALS BETWEEN RINGS SHOULD BE BETWEEN 10 FEET AND 25 FEET WITH A MINIMUM OF FOUR LOOPS SPACED OVER A STANDARD DOUBLE RANDOM LENGTH (40 FEET). THE INTERVALS MUST BE ADJUSTED TO INSURE THERE IS NO PIPE TO PIPE CONTACT. ROPE ENDS SHALL BE FUSED WITH A BLOW TORCH PRIOR TO SLIPPING THE LOOP OVER THE PIPE.

#### NOTES:

- THE USE OF THE RUBBER BELTING METHOD OR THE POLYPROPYLENE ROPE METHOD TO PREVENT PIPE TO PIPE CONTACT IN THE STOCKPILE SHALL BE AS DIRECTED BY THE COMPANY.
- SITE TO BE GRADED TO 2% SLOPE AND PADDED WITH 8" OF PIT RUN GRAVEL.
- SKIDS TO BE CAREFULLY LEVELED TO MAINTAIN 2% SLOPE. PIPES TO MAINTAIN CLOSE CONTACT THROUGHOUT ENTIRE LENGTH TO PREVENT SPLITTING AND ROLLING OF THE STOCKPILE.
- LONGITUDINAL WELDS TO BE ARRANGED AT TOP OF PIPE TO ALIGN WITH SPACES BETWEEN NESTED PIPES.
- PIPE 4.5" TO 6.625" TO BE STOCKPILED A MAXIMUM OF 4 ROWS HIGH. PIPE 6.625" TO 18" TO BE STOCKPILED A MAXIMUM OF 3 ROWS HIGH. PIPE LARGER THAN 18" TO BE STOCKPILED A MAXIMUM OF 2 ROWS HIGH.
- THE BOTTOM ROW OF PIPE SHALL REST ON SKIDS PROTECTED BY A CONTINUOUS STRIP OF FLAT RUBBER BELTING.
- ALL MATERIAL TO BE SUPPLIED BY CONTRACTOR.

#### ROPE INSTALLATION:

ROPE SPACING SHOULD BE A MAXIMUM OF 6 FEET FROM THE PIPE ENDS AND A MAXIMUM OF 6 FEET FROM GIRTH WELDS. THE INTERVAL BETWEEN RINGS SHOULD BE BETWEEN 10 FEET AND 25 FEET WITH A MINIMUM OF FOUR LOOPS SPACED OVER A STANDARD DOUBLE RANDOM LENGTH (40 FEET). THE INTERVALS MUST BE ADJUSTED TO INSURE THERE IS NO PIPE TO PIPE CONTACT. ROPE ENDS SHALL BE FUSED WITH A BLOW TORCH PRIOR TO SLIPPING THE LOOP OVER THE PIPE.

### TYPICAL TEMPORARY PIPE STOCKPILE

SCALE: N.T.S.

### TYPICAL PERMANENT PIPE STOCKPILE

SCALE: N.T.S.



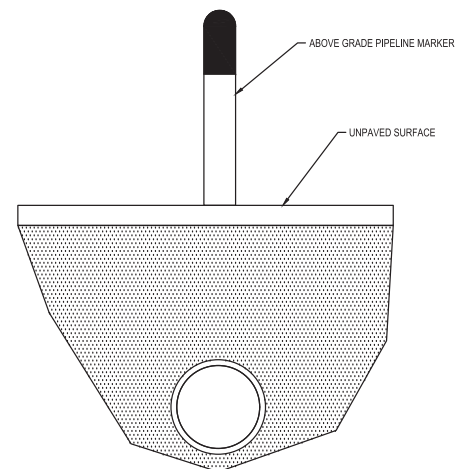
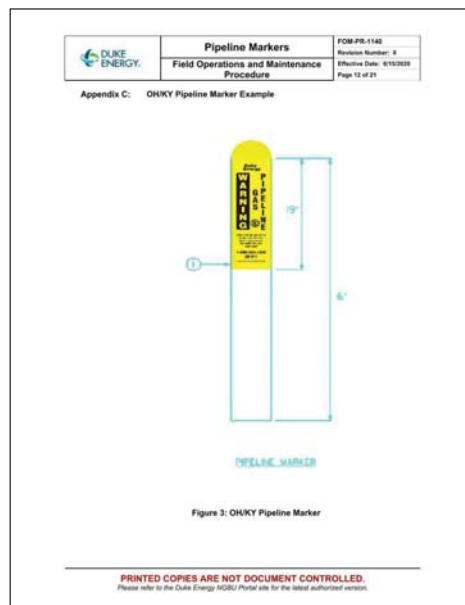
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						ACCOUNT NUMBER	Q3680	-	MSR TECH REC & STD
						PROJECT NUMBER	1880115	-	
						DRAWING BY	AKT	-	
						STATION ID	C350	-	
						CHECKER INITIALS	CNS	11/18/2020	AMP



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C350 PROJECT  
CONSTRUCTION DETAILS 8  
HAMILTON COUNTY, OHIO

REF. DWG(S): PNG-G-350-0001009		
SHEET(S) 8 OF 10	DWG SCALE	NONE
DWG DATE 09-05-2018	SUPERSEDED	—
DRAWING NUMBER		REVISION
PNG -C-350-0001310		0
C:HAMILTON COUNTY/C350		

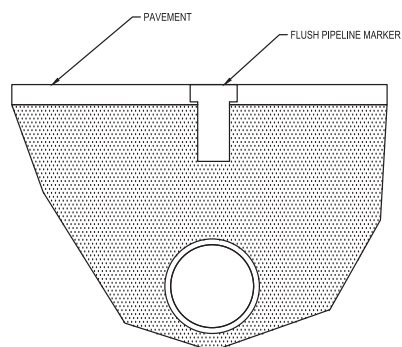


**NOTE:**

1. ABOVE GRADE PIPELINE MARKERS TO BE INSTALLED IN GRASS OR UNPAVED AREAS WHEN PIPELINE MARKER IS REQUIRED.
2. PIPELINE MARKERS SHALL BE INSTALLED PER FOM-PR-1140.

**ABOVE GRADE PIPELINE MARKER**

SCALE: N.T.S.



**NOTE:**

1. FLUSH PIPELINE MARKERS TO BE INSTALLED IN PAVEMENT WHEN PIPELINE MARKER IS REQUIRED.

**FLUSH PIPELINE MARKER**

SCALE: N.T.S.

**NOTES:**

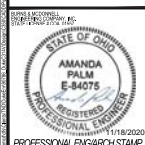
1. PIPELINE MARKERS SHALL BE PLACED AT:
  - IN LINE-OF-SIGHT INTERVALS AND TURNING POINTS
  - ALL PUBLIC ROAD CROSSINGS
  - ALL RAILROAD CROSSINGS
  - RIVER, STREAM, CREEK, DITCH AND CANAL CROSSINGS
  - UTILITY CROSSINGS (PER DUKE DISCRETION)
  - SWAMPS OR WETLANDS (ENTRY AND EXIT)
  - ROAD MEDIANS
  - ABOVE GROUND FACILITIES SUCH AS VALVE SETTINGS, BORDER STATIONS, REGULATOR STATIONS, AND PIPELINE INTERCONNECTS
  - UNDERGROUND VALVES
  - HDD ENTRY AND EXIT POINTS
2. PIPELINE MARKERS SHALL BE PLACED DIRECTLY ON TOP OR WITHIN 24 INCHES OF THE PIPELINE.
3. SET MARKERS AS SOON AS PRACTICAL AFTER THE INSTALLATION OF THE PIPELINE. MAKE EVERY EFFORT TO PROVIDE MARKERS BEFORE VEGETATION IS RE-ESTABLISHED AFTER CONSTRUCTION.

**PIPELINE MARKER LOCATIONS**

**NOTES:**

1. CONSTRUCTION FENCE SHALL BE INSTALLED ALONG THE CONSTRUCTION BOUNDARY EXCEPT FOR THE FOLLOWING LOCATIONS:
  - A. NO FENCE REQUIRED ACCESS DRIVES.
  - B. CONSTRUCTION BOUNDARY IN ROAD SHALL BE BARRICADED IN ACCORDANCE WITH TRAFFIC PLANS AND MUTCD REQUIREMENTS.
  - C. OTHER BOUNDARY SPECIFIED ON PLANS.
2. FENCE SHALL BE REMOVABLE FOR RESIDENTIAL AND COMMERCIAL DRIVE ACCESS.

**CONSTRUCTION BOUNDARY BARRIER**



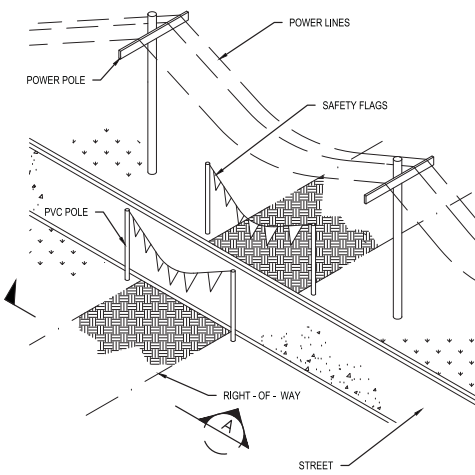
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						ACCOUNT NUMBER	Q3680	-	MSR TECH REC & STD
						PROJECT NUMBER	1880115	-	
						DRAWING BY	AKT	-	
						STATION ID	C350	-	
						CHECKER INITIALS	CNS	11/18/2020	AMP



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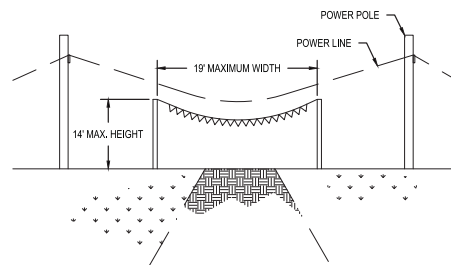
**C350 PROJECT**  
**CONSTRUCTION DETAILS 9**  
**HAMILTON COUNTY, OHIO**  
HAMILTON COUNTY, OHIO

REF. DWG(S): PNG-G-350-0001009			
SHEET(S) 9 OF 10		DWG SCALE	NONE
DWG DATE 09-05-2018		SUPERSEDED	---
DRAWING NUMBER			REVISION
PNG -C-350-0001311			0
CHAMILTON COUNTY/C360			



**OVERHEAD ELECTRICAL  
WARNING FLAGS**

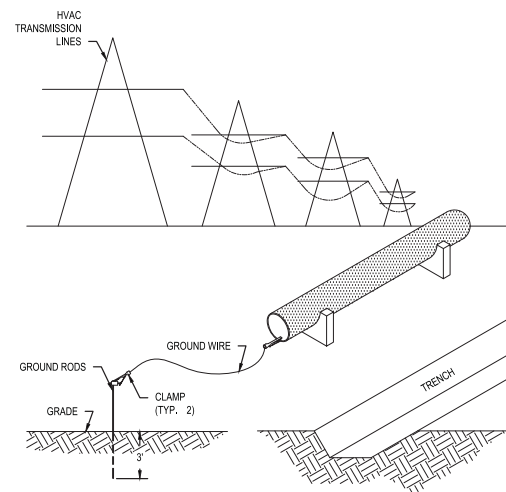
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**SECTION A-A**

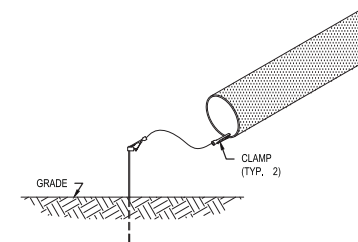
SCALE: N.T.S.

NOTE:  
1. FLAG HEIGHT AND WIDTH MAY BE ADJUSTED  
BASED ON SITE CONDITIONS OR AS DIRECTED BY  
COMPANY REPRESENTATIVE.



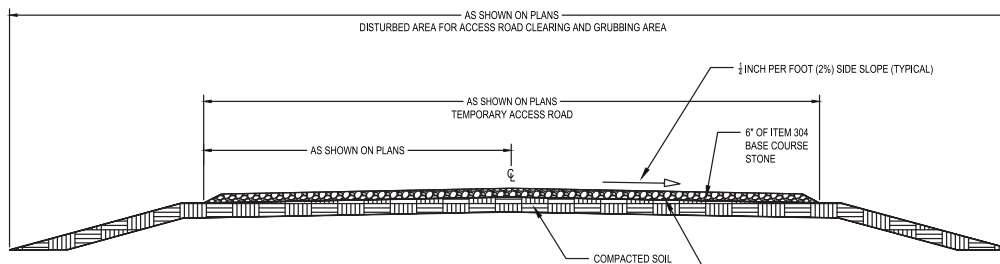
**SAFETY GROUNDING**

SCALE: N.T.S.



**CLIP CONNECTION**

SCALE: N.T.S.



**TEMPORARY ACCESS ROAD  
DETAIL**

SCALE: N.T.S.

SCALE: N.T.S.

**INSTALLATION NOTES:**

- USE 6" OF COMPACTED ITEM 304 BASE COURSE STONE AS SHOWN ON PLANS.

**MAINTENANCE NOTES:**

- MONITOR TO SUPPLEMENT STONE OR BLADE TO MAINTAIN UNIFORM RIDING SURFACE.

**C350 PROJECT  
CONSTRUCTION DETAILS 10  
HAMILTON COUNTY, OHIO**

REF. DWG(S): PNG-G-350-0001009

SHEET(S) 10 OF 10	DWG SCALE NONE
DWG DATE 09-05-2018	SUPERSEDED
DRAWING NUMBER <b>PNG -C-350-0001312</b>	REVISION <b>0</b>
C:\HAMILTON COUNTY\C350	

NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
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						PROJECT NUMBER	1880115	-	PRINCIPAL ENGINEER
						DRAWING BY	AKT	-	
						STATION ID	C350	-	
						CHECKER INITIALS	CNS	11/18/2020	AMP



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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD
0	11/18/2020	ISSUED FOR CONSTRUCTION	HEC	CNS	CDW

DESCRIPTION
AREA CODE -
ACCOUNT NUMBER Q3680
PROJECT NUMBER 1880115
DRAWING BY HEC
STATION ID C350
CHECKER INITIALS CNS

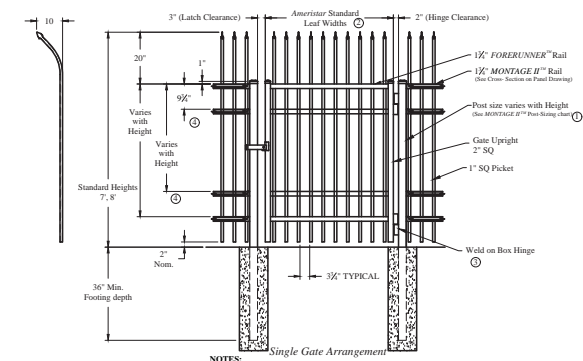
APPROVALS
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DATE - INITIALS - MGR TECH REC & STD
DATE - INITIALS - PRINCIPAL ENGINEER



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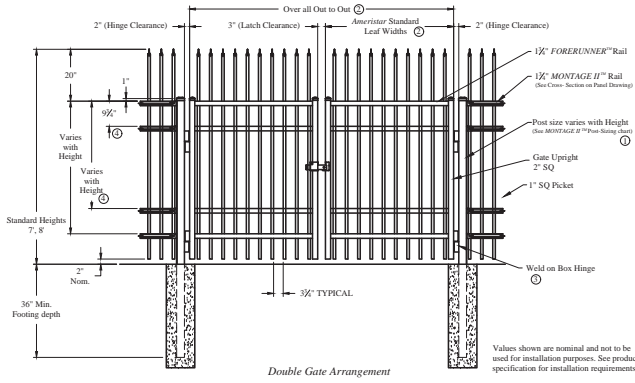
C350 PROJECT  
MAINLINE VALVE  
SCREENING WALL DETAILS 01  
HAMILTON COUNTY, OHIO

REF. DWG(S): G-350-0001009 C-350-0001338 L-350-0001000		
SHEET(S) 1 OF 7	DWG SCALE	AS NOTED
DWG DATE 07/26/2019	SUPERSEDED	—
DRAWING NUMBER <b>PNG -C-350-0001335</b>	REVISION <b>0</b>	
C / HAMILTON COUNTY / 350		



Single Gate Arrangement

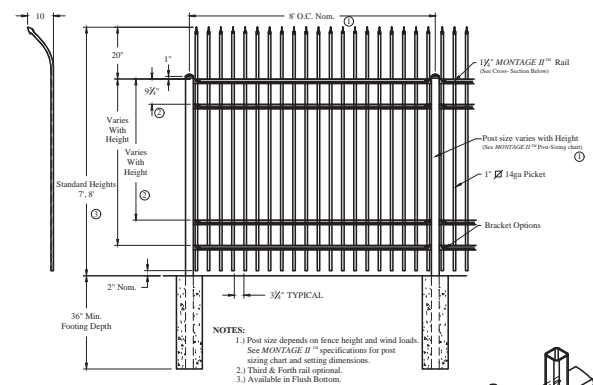
- NOTES:
- 1) Post size depends on fence height, weight and wind loads. See MONTAGE II™ specifications for post sizing chart.
  - 2) See Ameristar gate table for standard out to out. Custom gate openings available for special out to outleaf widths. This could change the Latch & Hinge Clearance.
  - 3) Additional styles of gate hardware are available on request. This could change the Latch & Hinge Clearance.
  - 4) Third & Forth rail optional.



Double Gate Arrangement

DETAIL 1  
SCALE: NTS

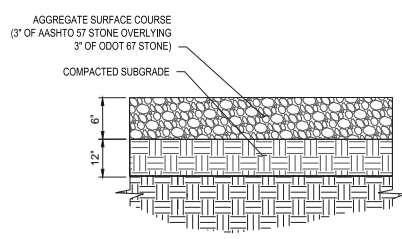
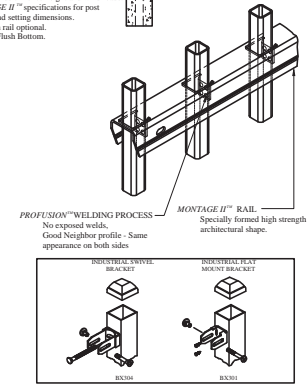
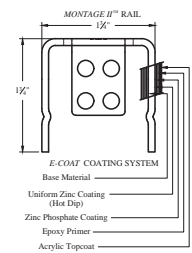
FENCE GATE



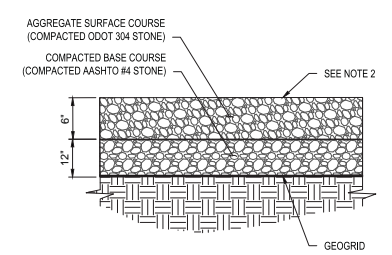
DETAIL 2

SCALE: NTS

FENCE



GRAVEL SURFACE COURSE



ACCESS ROAD SURFACE COURSE

**SURFACE COURSE MATERIAL NOTES:**

1. GEOGRID SHALL BE TENSAR FG30 OR ENGINEER APPROVED EQUAL.
2. ACCESS ROAD SURFACE COURSE DETAIL APPLIES TO MLV 2 ONLY. SEE DRAWING C-350-0001342 FOR MLV 1 ACCESS PATH DETAILS.

DETAIL 3  
SCALE: NTS  
SURFACE COURSE MATERIAL



NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
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						PROJECT NUMBER	1880115	-	-
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						STATION ID	C350	-	-
						CHECKER INITIALS	CNS	11/18/2020	CDW

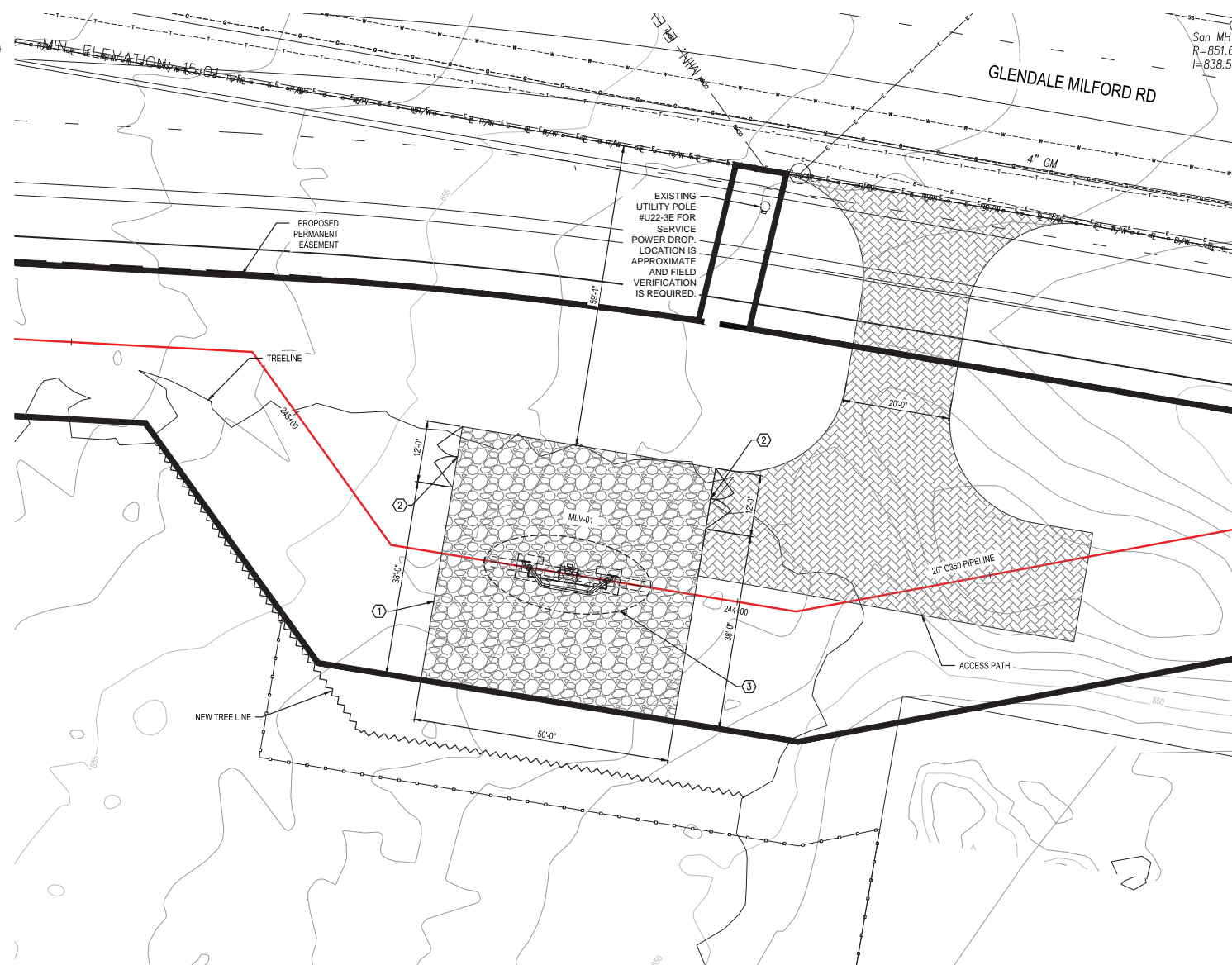
MR. TECH REC & STD  
 PRINCIPAL ENGINEER

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**C350 PROJECT**  
**MAINLINE VALVE**  
**SURFACING AND FENCE DETAILS**  
 HAMILTON COUNTY, OHIO

REF. DWG(S):	G-350-0001009	L-350-0001000
	C-350-0001338	L-350-0001001
	C-350-0001340	
SHEET(S)	2 OF 7	DWG SCALE AS NOTED
DWG DATE:	07/26/2018	SUPERSEDED
DRAWING NUMBER		REVISION
<b>PNG -C-350-0001336</b>		<b>0</b>
C / HAMILTON COUNTY / 350		





San MH  
R=851.69  
I=838.51

1. THE EXISTING SITE UTILITIES AND FEATURES SHOWN ARE BASED ON A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED BY BERDING SURVEYING IN FEBRUARY 2020.
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.
3. SEE DRAWINGS PNG-G-350-0001009 THRU 0001013 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.

① 10' SCREENING WALL

② 12' DOUBLE SWING GATE

③ MLV-01 (C350-0004) SECTION VIEW



C-350-0001342

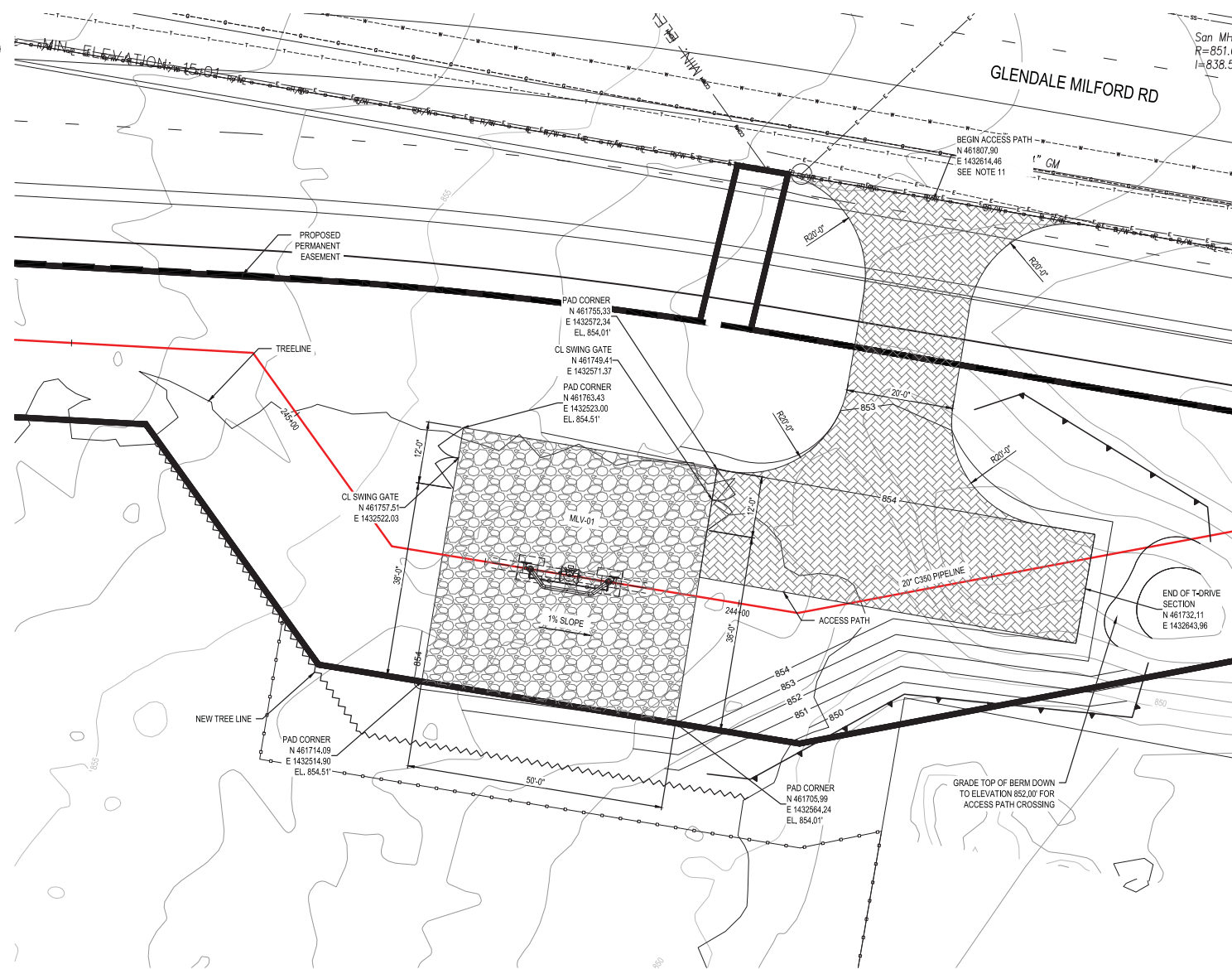
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						PROJECT NUMBER	1880115	DATE	INITIALS	MGR TECH REC & ST
						DRAWING BY	HEC	-	-	
						STATION ID	C350	DATE	INITIALS	PRINCIPAL ENGINEER
						CHECKER INITIALS	CNS	11/18/2020	CDW	

 Piedmont  
Natural Gas

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C350 PROJECT  
MLV-01 SITE PLAN  
HAMILTON COUNTY, OHIO  
HAMILTON COUNTY, OH

REF. DWG(S)		G-350-0001009 C-350-0001339	
SHEET(S)	3 OF 7	DWG SCALE	1"=10'
DWG DATE 08-21-2018		SUPERSEDED	—
DRAWING NUMBER			REVISION
PNG C-350-0001338			0
C:\HAMILTON COUNTY\G350			



#### NOTES:

1. THE EXISTING SITE UTILITIES AND FEATURES SHOWN ARE BASED ON A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED BY BERDING SURVYEING IN FEBRUARY 2020.
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.
3. SEE DRAWINGS PNG-G-350-0001009 THRU 0001013 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
4. COORDINATES SHOWN ARE IN OHIO STATE PLANE SOUTH, ZONE 3402, NAD83 AND NAVD88 HORIZONTAL AND VERTICAL DATA, RESPECTIVELY.
5. CALLOUTS WITH NO ELEVATION DESIGNATED SHALL MATCH EXISTING GRADE.
6. ALL ELEVATIONS INDICATED ARE TO FINISHED GRADE (TOP OF STONE SURFACE).
7. ALL SIDE SLOPES ARE 3:1 (HORIZONTAL TO VERTICAL) UNLESS OTHERWISE NOTED.
8. STRIP AND GRUB ALL EXISTING TOPSOIL AND VEGETATION PRIOR TO GRADING. REPLACE WITH APPROVED FILL MATERIAL PER THE GEOTECHNICAL REPORT.
9. TOPSOIL ALL SIDE SLOPES NOT RECEIVING CRUSHED STONE SURFACING.
10. POROUS PAVERS SHALL BE INSTALLED ALONG THE ACCESS PATH PER GEOBLOCK DETAILS ON SHEET C-004-00010XX. SEED AND SOD OVER PAVERS.
11. ACCESS PATH SHALL CONNECT TO CURRENT ALIGNMENT OF GLENDALE MILFORD ROAD. ADJUST TIE IN LOCATION AS NEEDED IF ROAD ALIGNMENT DIFFERS FROM THAT SHOWN ON THIS DRAWING.

#### LEGEND:



PROPOSED GRAVEL SURFACE COURSE



POROUS PAVEMENT



SILT FENCE

3  
C-350-0007336

4  
C-350-0007342

C350 PROJECT  
MLV-01 GRADING PLAN  
HAMILTON COUNTY, OHIO  
HAMILTON COUNTY, OH

REF. DWG(S) C-350-0001009  
C-350-0001338

SHEET(S) 4 OF 7 DWG SCALE 1"=10'

DWG DATE 08-21-2018 SUPERSEDED

DRAWING NUMBER REVISION

PNG C-350-0001339 0

C-HAMILTON COUNTY/C350

NO. DATE REVISION(S) DESCRIPTION

BY CHK APPD

HEC CNS CDW

DESCRIPTION

AREA CODE

ACCOUNT NUMBER

PROJECT NUMBER

DRAWING BY

STATION ID

CHECKER INITIALS

CNS

DATE

INITIALS

DATE

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DATE

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INITIALS

DATE

APPROVALS

REGIONAL ENGINEER

MGR. TECH REC & STD.

PRINCIPAL ENGINEER

DATE

INITIALS

DATE

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DATE

APPROVALS

REGIONAL ENGINEER

MGR. TECH REC & STD.

PRINCIPAL ENGINEER

DATE

INITIALS

DATE

INITIALS

DATE

APPROVALS

REGIONAL ENGINEER

MGR. TECH REC & STD.

PRINCIPAL ENGINEER

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REGIONAL ENGINEER

MGR. TECH REC & STD.

PRINCIPAL ENGINEER

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MGR. TECH REC & STD.

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MGR. TECH REC & STD.

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MGR. TECH REC & STD.

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REGIONAL ENGINEER

MGR. TECH REC & STD.

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REGIONAL ENGINEER

MGR. TECH REC & STD.

PRINCIPAL ENGINEER

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REGIONAL ENGINEER

MGR. TECH REC & STD.

PRINCIPAL ENGINEER

DATE

INITIALS

DATE

INITIALS

DATE

APPROVALS

REGIONAL ENGINEER

MGR. TECH REC & STD.

PRINCIPAL ENGINEER

DATE

INITIALS

DATE

INITIALS

DATE

APPROVALS

REGIONAL ENGINEER

MGR. TECH REC & STD.

PRINCIPAL ENGINEER

DATE

INITIALS

DATE

INITIALS

DATE

APPROVALS

REGIONAL ENGINEER

MGR. TECH REC & STD.

PRINCIPAL ENGINEER

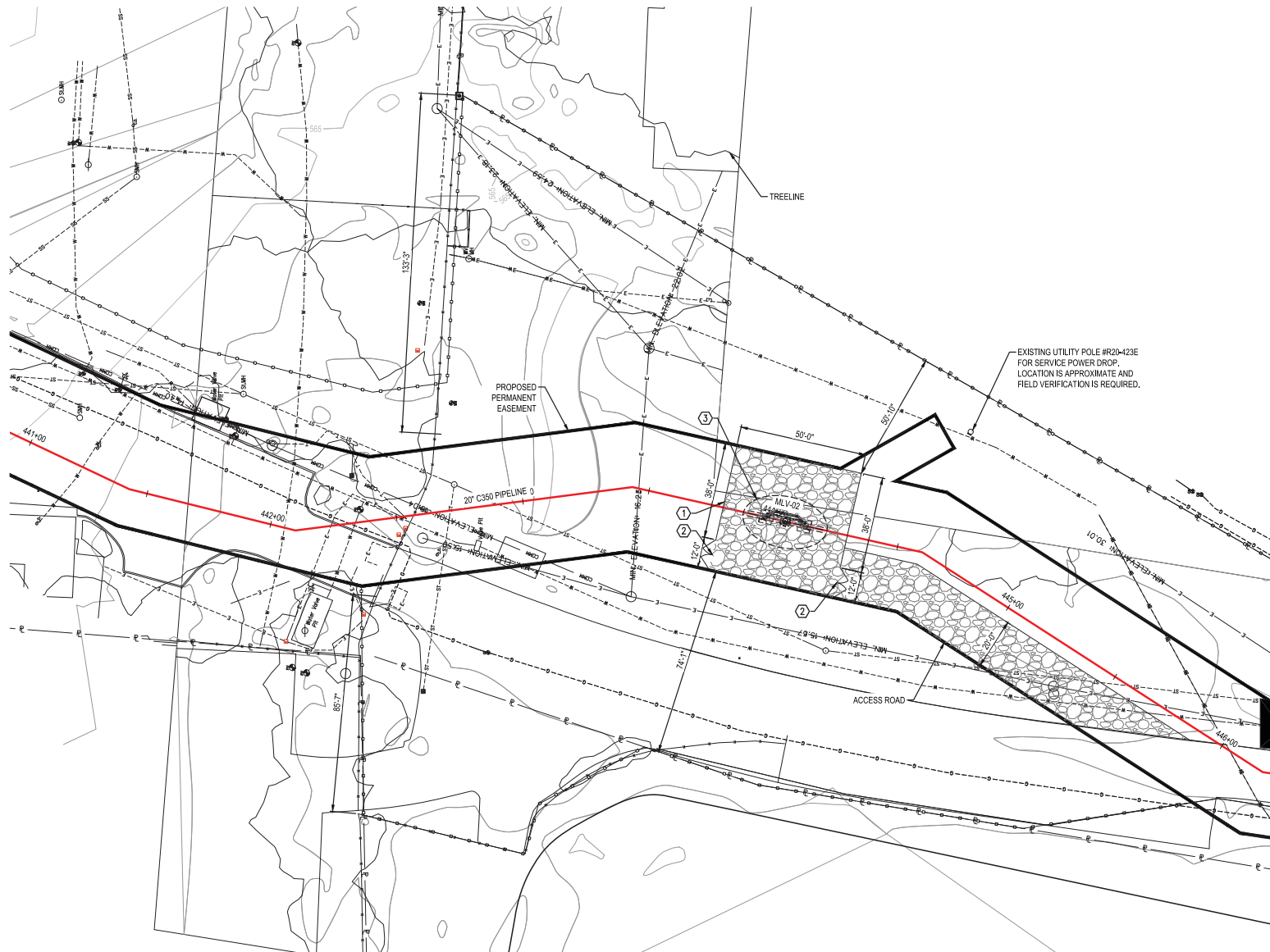
DATE

INITIALS

DATE

INITIALS

DATE



#### NOTES:

1. THE EXISTING SITE UTILITIES AND FEATURES SHOWN ARE BASED ON A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED BY BERDING SURVEYING IN FEBRUARY 2020.
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.
3. SEE DRAWINGS PNG-G-350-0001009 THRU 0001013 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.

#### KEY NOTES:

- 1 9' BLACK METAL LANDSCAPING FENCE
- 2 12' DOUBLE SWING GATE
- 3 MLV-02 (C35-0004) SECTION VIEW

2  
C-350-0007336

1  
C-350-0007336

1  
M-350-0007010

#### LEGEND:



PROPOSED GRAVEL SURFACE COURSE

2  
C-350-0007336



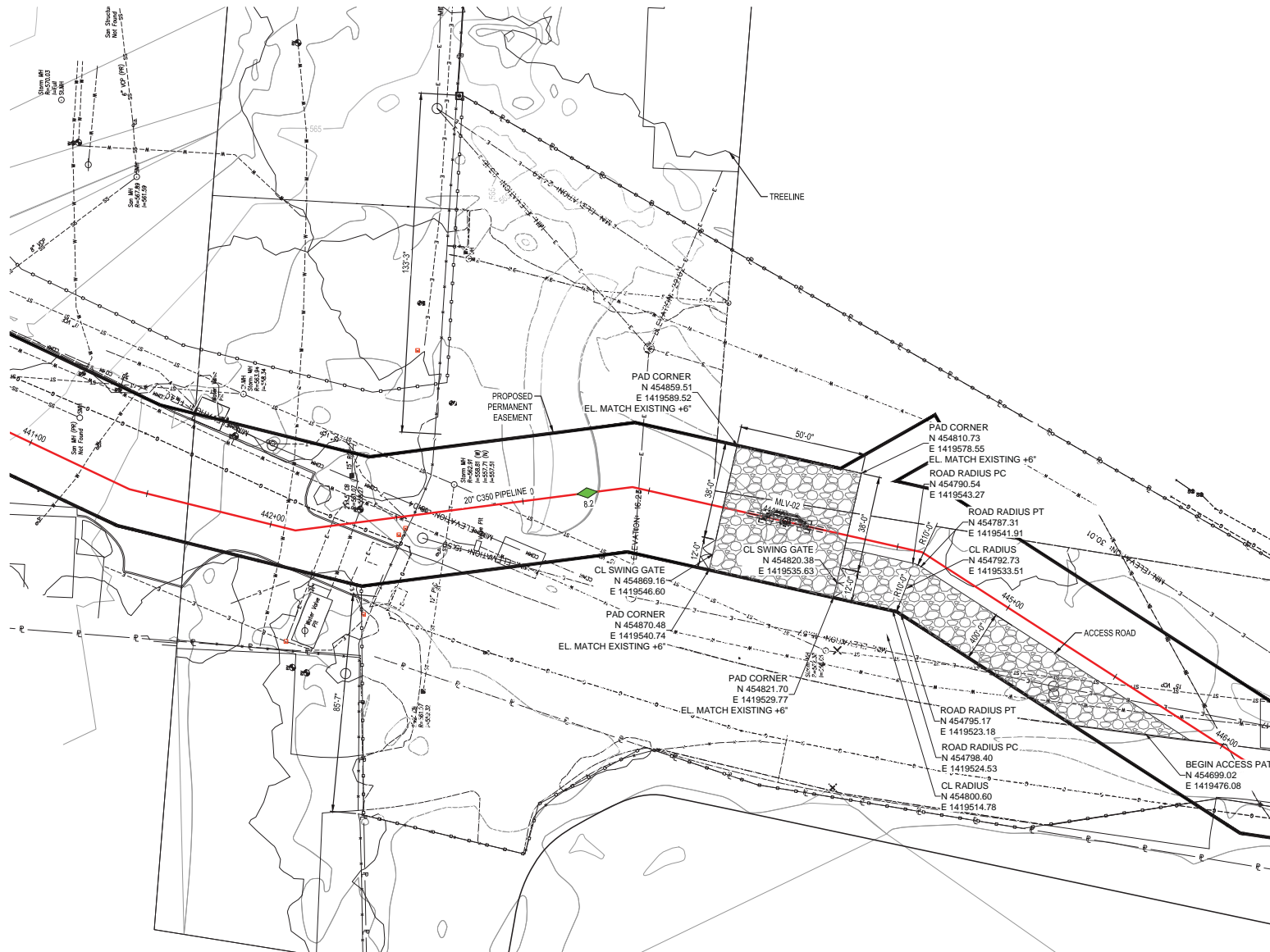
NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	APPROVALS
0	11/18/2020	ISSUED FOR CONSTRUCTION	HEC	CNS	CDW	AREA CODE	
						ACCOUNT NUMBER	Q3680
						PROJECT NUMBER	1880115
						DRAWING BY	HEC
						STATION ID	C350
						CHECKER INITIALS	CNS



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**C350 PROJECT**  
**MLV-02 SITE PLAN**  
**HAMILTON COUNTY, OHIO**  
HAMILTON COUNTY, OH

REF. DWG(S)	G-350-0001009 C-350-0001341
SHEET(S)	5 OF 7
DWG DATE	08-21-2018
DRAWING NUMBER	PNG C-350-0001340
REVISION	0



#### NOTES:

1. THE EXISTING SITE UTILITIES AND FEATURES SHOWN ARE BASED ON A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED BY BERDING SURVEYING IN FEBRUARY 2020.
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.
3. SEE DRAWINGS PNG-G-350-0001009 THRU 0001013 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
4. COORDINATES SHOWN ARE IN OHIO STATE PLANE SOUTH, ZONE 3402, NAD83 AND NAVD88 HORIZONTAL AND VERTICAL DATA, RESPECTIVELY.
5. CALLOUTS WITH NO ELEVATION DESIGNATED SHALL MATCH EXISTING GRADE.
6. ALL ELEVATIONS INDICATED ARE TO FINISHED GRADE (TOP OF ROCK SURFACING).
7. STRIP AND GRUB ALL EXISTING TOPSOIL AND VEGETATION PRIOR TO GRADING. REPLACE WITH APPROVED FILL MATERIAL PER THE GEOTECHNICAL REPORT.

#### LEGEND:



PROPOSED GRAVEL SURFACE  
COURSE

3  
C-350-0001336



NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPR	DESCRIPTION	APPROVALS
0	11/18/2020	ISSUED FOR CONSTRUCTION	HEC	CNS	CDW	AREA CODE	
						PROJECT NUMBER	Q3680
						ACCOUNT NUMBER	1880115
						DRAWING BY	HEC
						STATION ID	C350
						CHECKER INITIALS	CNS
						DATE	11/18/2020
						INITIALS	CDW
						REGIONAL ENGINEER	
						MGR. TECH. REC. & STD.	
						PRINCIPAL ENGINEER	

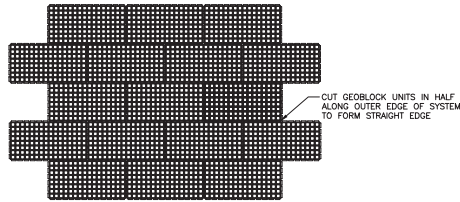


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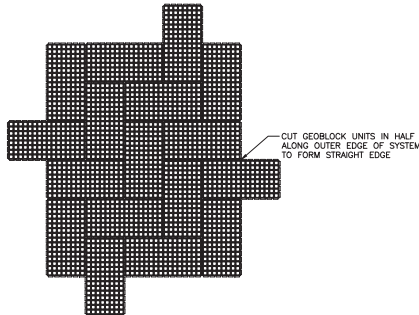
**C350 PROJECT**  
**MLV-02 GRADING PLAN**  
**HAMILTON COUNTY, OHIO**  
HAMILTON COUNTY, OH

REF. DWG(S)	C-350-0001009 C-350-0001340
SHEET(S)	6 OF 7
DWG DATE	08-21-2018
DWG SCALE	SUPERSEDED
DRAWING NUMBER	
REVISION	
PNG	C-350-0001341
0	
HAMILTON COUNTY/C350	



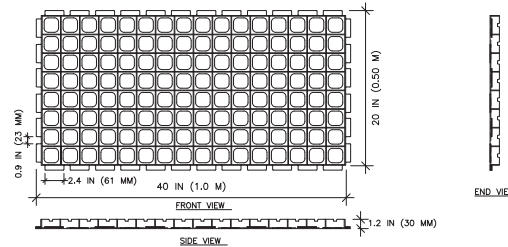


TYPICAL LAYOUT – BRICKLAYER PATTERN



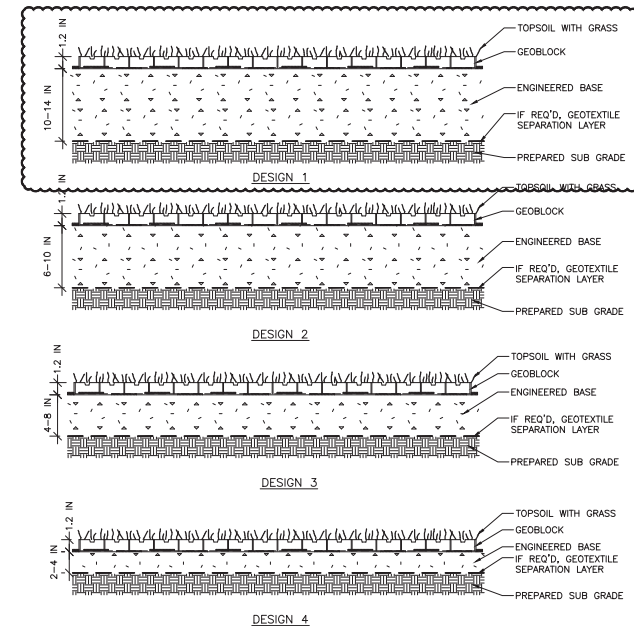
TYPICAL LAYOUT – HERRINGBONE PATTERN

GEOBLOCK MATERIAL SPECIFICATION	
MATERIAL	UP TO 100% RECYCLED POLYETHYLENE
COLOR	RANGES DARK SHADES GRAY TO BLACK
CHEMICAL RESISTANCE	SUPERIOR
CARBON BLACK FOR UV STABILIZATION, %	1.5 TO 2.0%
UNIT MIN CRUSH STRENGTH – EMPTY @ 70F (21C)	420 PSI (2,900 KPa)
UNIT MIN CRUSH STRENGTH – SAND FILLED @ 70F (21C)	5,980 PSI (41,285 KPa)
FLEXURAL MODULUS @ 73F (21C)	35,000 PSI (240,000 KPa)
NOMINAL DIMENSIONS – WIDTH X LENGTH	20 X 40 IN (0.5 X 1.0 M)
NOMINAL UNIT DEPTH	1.2 IN (30 MM)
NOMINAL AREA	5.3 SQFT (0.5 SQMTR)
CELLS PER UNIT	128
CELL SIZE	2.25 X 2.25 IN (57 X 57 MM)
TOP OPEN AREA PER UNIT	88%
BOTTOM OPEN AREA PER UNIT	56%
INTERLOCKING OFFSET SHEAR TRANSFER PINS	12 TABS PER 40 IN (PER 1 M)
NOMINAL WEIGHT PER UNIT	4.7 LBS (2.1 KG)
RUNOFF COEFFICIENT @ 2.5 IN/HR (64 MM) RAIN	0.15
UNITS PER PALLET	92



GEOBLOCK® COMPONENTS

DESIGN GUIDELINES – BASE DEPTH		
LOAD DESCRIPTION	CBR 2 – 4%	CBR > 4%
Heavy Fire Truck Access & H/H525 loading. Typical 110 psi (758 kPa) tire pressure. Single axle loadings of 40 kips (178 kN). Gross vehicle weight of 90,000 lbs (40.1 MT).	Design 1 – 14" Base	Design 1 – 10" Base
Heavy Fire Truck Access & H/H525 loading. Typical 110 psi (758 kPa) tire pressure. Single axle loadings of 32 kips (145 kN). Gross vehicle weight of 80,000 lbs (36.3 MT).	Design 1 – 14" Base	Design 1 – 10" Base
Light Fire Truck Access & H/H515 loading. Typical 85 psi (586 kPa) tire pressure. Single axle loadings of 24 kips (110 kN). Gross vehicle loads of 60,000 lbs (27.2 MT).	Design 2 – 10" Base	Design 2 – 6–10" Base
Utility & Delivery Truck Access & H/H510 loading. Typical 60 psi (414 kPa) tire pressure. Single axle loadings of 16 kips (75 kN). Gross vehicle loads of 40,000 lbs (18.1 MT).	Design 2 – 6–10" Base	Design 3 – 4–8" Base
Cars & Pick-up Truck Access. Typical 45 psi (310 kPa) tire pressure. Single axle loadings of 4 kips (18 kN). Gross vehicle loads of 8,000 lbs (3.6 MT).	Design 3 – 4–8" Base	Design 4 – 2–4" Base
Trail Use. Loading for pedestrian, wheelchair, equestrian, bicycle, motorcycle and ATV traffic.	Design 4 – 2–4" Base	Design 4 – 0–2" Base



Notes:

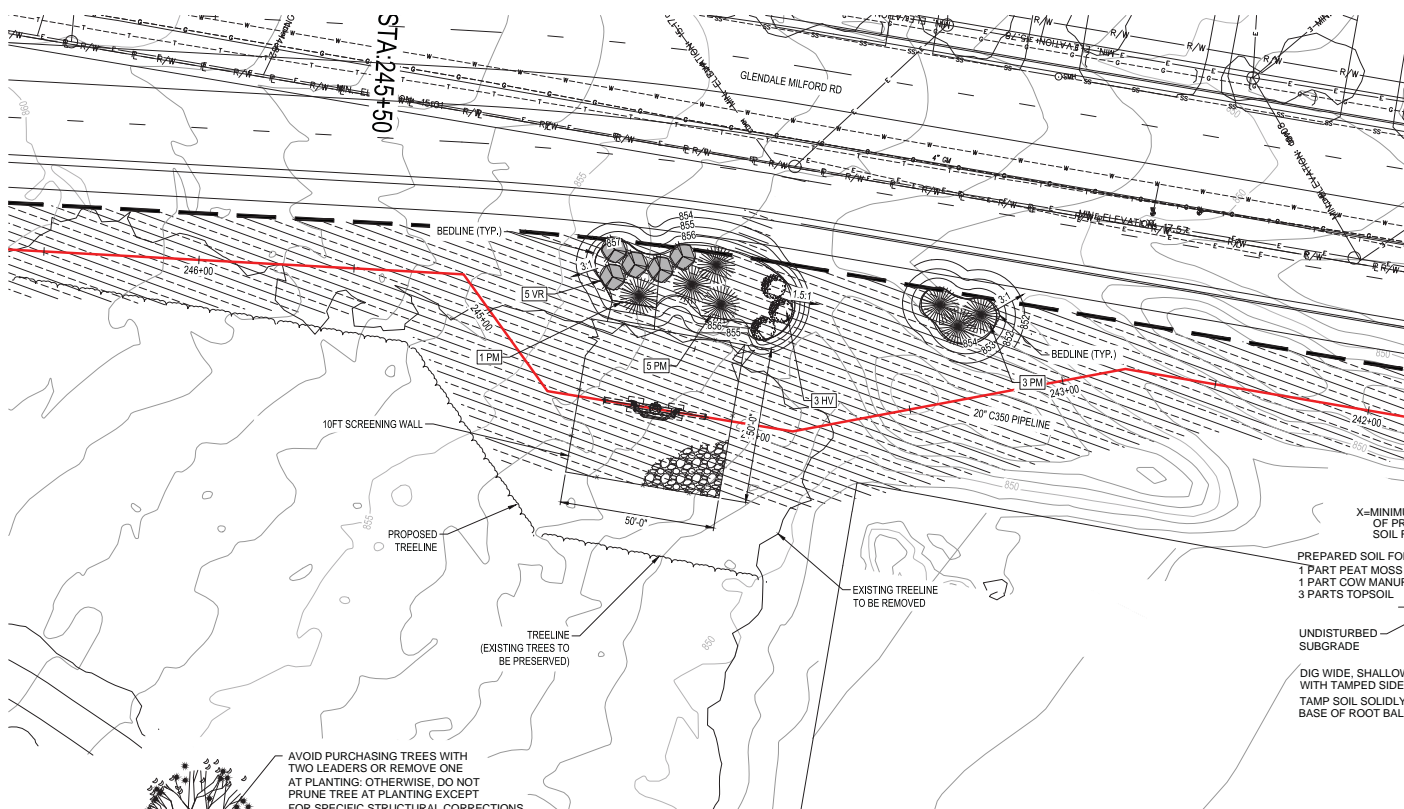
- This information is based on the use of Geoblock manufactured by Reynolds Presto Products, Inc. All rights reserved. Any use of this information for any rigid porous paver product other than that manufactured by Reynolds Presto Products, Inc. is strictly prohibited and makes this information invalid.
- Engineered base is a homogenous mixture consisting of open graded crushed aggregate having an ASTM # 5 or similar designation blended with pulverized topsoil and a void component generally containing air and/or water. This homogenous mixture will promote vegetative growth and provide required structural support. The aggregate portion shall have a particle range from 9.5 mm to 25 mm (0.375 to 1.0 in) with a D50 of 13 mm (0.5 in). The percentage void-space of the aggregate portion when compacted shall be at least 30%. The pulverized topsoil portion shall equal 33% +/- of the total volume and be added and blended to produce a homogenous mixture prior to placement.
- Provide a non-woven geotextile separation layer and install in accordance with Manufacturer recommendations including overlaps based on sub grade CBR. Geotextile shall be TENCATE MIRAFI 140N or engineer-approved equivalent.
- Connect Geoblock panels with the interlocking offset tab so that adjacent sections have horizontally level profiles.
- Refer to the Geoblock Design and Construction Overview for a complete description of the design and construction methods.
- Prior to geotextile placement, wet or dry subgrade to within 2% of optimum moisture content as determined by ASTM D698. Compact subgrade to within 95% of maximum dry density per ASTM D698 or 85% of relative density per ASTM D5253/D4254. In place compaction testing shall be per ASTM D2167, D6938, or D3017.




NOTE: DESIGN 1 SHALL BE USED.

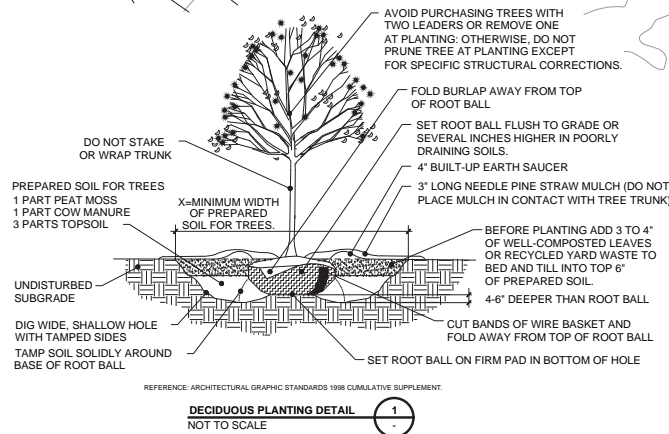
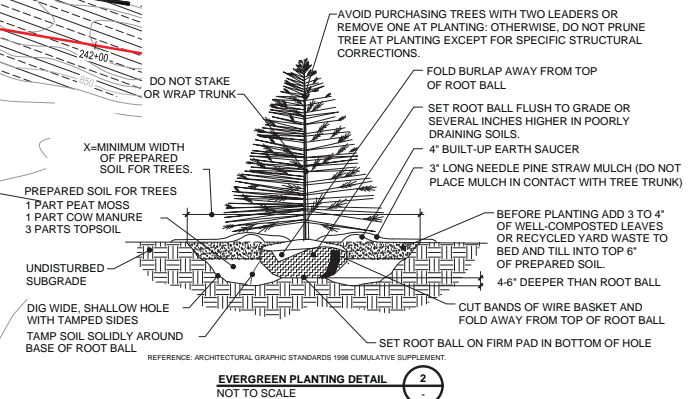
C350 PROJECT  
MLV-01 ACCESS PATH DETAILS  
HAMILTON COUNTY, OHIO  
HAMILTON COUNTY, OH

REF. DWG(S)	G-350-0001009 C-350-0001338	C-350-0001339
SHEET(S)	7 OF 7	DWG SCALE NONE
DWG DATE	06-01-2020	SUPERSEDED —
DRAWING NUMBER	PNG C-350-0001342	REVISION 0
CHAMBLISS COUNTY/C350		





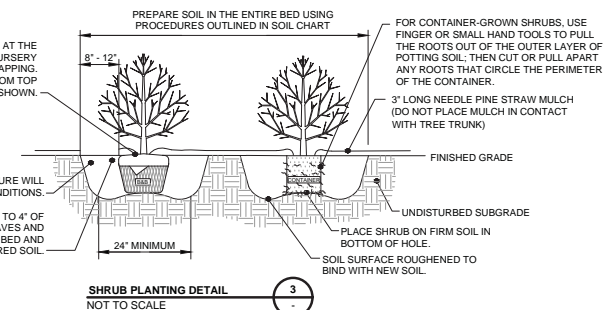
LANDSCAPE SCHEDULE					
SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
EVERGREEN TREES					
PM		7	PSUDOTSUGA MENSIESII	DOUGLAS FIR	6' - 8' B & B
EVERGREEN SHRUBS					
VR		5	VIBURNUM RHYTIDOPHYLLUM	LEATHERLEAF VIBURNUM	3' - 4' B & B
DECIDUOUS SHRUB					
HV		3	HAMMELIS VIRGINIANA	COMMON WITCH-HAZLE	3' - 4' B & B
TOTAL	15				
ANY DISCREPANCIES BETWEEN QUANTITIES ON THE PLAN AND SCHEDULE, THE PLAN SHALL DICTATE.					



GENERAL RANGE OF SOIL MODIFICATIONS & VOLUMES FOR VARIOUS SOIL CONDITIONS		
POST-CONSTRUCTION SOIL CONDITION	MIN./ WIDTH PREPARED SOIL FOR TREES (X)	TYPE OF PREPARATION
GOOD SOIL (NOT PREVIOUSLY GRADED OR COMPACTED, TOPSOIL LAYER INTACT)	6 FT. OR TWICE THE WIDTH OF THE ROOT BALL, WHICHEVER IS GREATER	GENERAL RANGE OF SOIL MODIFICATIONS & VOLUMES FOR VARIOUS SOIL CONDITIONS
COMPACTED SOIL (NOT PREVIOUSLY GRADED, TOPSOIL LAYER DISTURBED BUT NOT ELIMINATED)	15 Ft	LOOSEN THE EXISTING SOILS TO THE WIDTHS AND DEPTHS SHOWN IN DETAILS ABOVE. ADD COMPOSTED ORGANIC CONTENT UP TO 5% DRY WEIGHT.
GRADED SUBSOILS AND CLEAN FILLS WITH CLAY CONTENT BETWEEN 5 & 35%	20 Ft	MINIMUM TREATMENT: LOOSEN EXISTING SOIL TO WIDTHS AND DEPTHS SHOWN. ADD COMPOSTED ORGANIC MATTER TO BRING ORGANIC CONTENT UP TO 5% DRY WEIGHT. OPTIMUM TREATMENT: REMOVE TOP 8-10 IN. OF THE EXISTING SOILS TO THE WIDTHS AND DEPTHS SHOWN, ADD 8-10 IN. OF LOAM TOPSOIL.
POOR QUALITY FILLS, HEAVY CLAY SOILS, SOILS CONTAMINATED WITH RUBBLE OR TOXIC MATERIAL	20 Ft	REMOVE EXISTING SOILS TO THE WIDTHS AND DEPTHS SHOWN. CONTAMINATED WITH RUBBLE OR TOXIC MATERIAL.

PLANT SHALL BE TRANSPLANTED AT THE SAME GRADE AS IT BORE IN THE NURSERY PLOT PRIOR TO BAILING AND BURLAPPING. CUT AND REMOVE BURLAP FROM TOP ONE-THIRD OF ROOT BALL AS SHOWN.

PLANTING MIX:  
1 PART PEAT MOSS  
1 PART COW MANURE  
3 PARTS TOPSOIL



						REF. DWG(S) C-350-0001338	
NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	APPROVALS
0	11/18/2020	ISSUED FOR CONSTRUCTION	TLV	CNS	CDW	AREA CODE - ACCOUNT NUMBER Q3680 PROJECT NUMBER 1680115 DRAWING BY TLV STATION ID C350 CHECKER INITIALS CNS	REGIONAL ENGINEER MGR TECH REC & STD PRINCIPAL ENGINEER
						C350 PROJECT MLV-01 LANDSCAPING HAMILTON COUNTY, OH HAMILTON COUNTY, OH	
						SHEET(S) 1 OF 2 DWG SCALE 1"=40' DWG DATE 01/09/2020 SUPERSEDED DRAWING NUMBER PNG L-350-0001000 REVISION 0 CHAMOUNT COUNTY C350	

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**12/4/2020 1:47:03 PM**

**in**

**Case No(s). 16-0253-GA-BTX**

Summary: Exhibit CCP Drawings for Preconstruction Conference Set 2 part 3 electronically filed by Mrs. Debbie L Gates on behalf of Duke Energy Ohio Inc. and Kingery, Jeanne W and Vaysman, Larisa