SPECIAL PROVISIONS

WATERWAY PERMITS CONDITIONS

C-R-S: GEA-608-3.09

PID: 103884

Date: 10/05/2020

1. Waterway Permits Time Restrictions:

Regional General Permit (RGP) Section A (Linear Transportation), is authorized for GEA-608-3.09 (Buggy Lane), PID: 103884. A copy of the RGP and authorization letter (USACE ID: LRH-2020-00511-CUY) shall be kept at the work site at all times and made available to all contractors and subcontractors. The permit is effective starting: October 5, 2020. The permit expires: October 24, 2024.

For authorized work in aquatic resources (including streams, wetlands, jurisdictional ditches, captured streams, lakes, ponds), the Department will consider the Contractor's submission of a reauthorization to the waterway permit expiration date based on project constraints. If more than one permit is authorized for the project, then all permits become invalid once the first permit expires. In order for the request to be considered, the Contractor must submit a justification to the Engineer at least 90 days prior to the waterway permit expiration date. The Engineer will submit the request for a time extension to the Ohio Department of Transportation, Office of Environmental Services, Waterway Permits Unit (ODOT-OES-WPU) for consideration and coordination with the U.S. Army Corps of Engineers (USACE), Ohio Environmental Protection Agency (OEPA), U.S. Coast Guard (USCG), U.S. Fish and Wildlife Service (USFWS), and Ohio Department of Natural Resources (ODNR) as appropriate.

2. Deviations From Permitted Construction Activities:

No deviation from the requirements for work in aquatic resources depicted in the plans, Special Provisions, and/or Working Drawings may be made unless a modification has been submitted to ODOT-OES-WPU and approved by the appropriate agencies (i.e., USACE, OEPA, USCG, ODNR, and USFWS).

NOTE: Plan sheets submitted with the Pre-Construction Notification were approved by the USACE in accordance with RGP A and are included in these Special Provisions.

For emergency situations resulting in unanticipated impacts to aquatic resources, provide notification (verbal or written) to the Engineer as soon as possible following discovery of the situation. Written notification to the Engineer and notification to the ODOT-OES-WPU (614-466-2159) must be made within 24 hours.

For non-emergency situations, notify the Engineer in writing for submission to the ODOT-OES-WPU (614-466-2159) for consideration and coordination with the appropriate agencies. Notification must be made at least 90 days prior to planned, non-permitted activities. Consideration of the requested deviation is at the discretion of the Director and must be coordinated with the appropriate regulatory agencies.

3. In-Stream Work Restrictions:

Work in the following aquatic resources is further restricted as follows:

Stream Name /Description	Location	Work restriction dates* (No in-stream work permitted)
Tare Creek	STA 226+10	None

In-stream work has been defined as the placement and/or removal of fill materials (temporary or permanent) below ordinary high water of a stream. Examples of "fill" include, but are not limited to: bridge piers, abutments, culverts, rock channel protection, scour protection, and temporary access fills.

Fills placed within a stream identified in the above table (outside of the work restriction dates) can continue to be worked from during the work restriction dates, but cannot be expanded, removed, or otherwise modified (below ordinary high water) until once again outside of the work restriction dates.

4. Materials:

Materials utilized in or adjacent to aquatic resources for temporary or permanent fill or bank protection shall consist of suitable material free from toxic contaminants in other than trace quantities. Asphalt products are specifically excluded for use as fill. Chromated Copper Arsenate (CCA), creosote, and other pressure treated lumber shall not be used in structures that are placed in aquatic resources.

5. Cultural Resources:

Per CMS 107.10, if archeological sites, historical sites, or human remains are discovered, cease all work in the immediate area and notify the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-Cultural Resource Section at 614-466-2159. In the event of human remains are identified by OES-Cultural Resources Section, the Engineer shall also contact the Geauga County Sheriff's Office at 440-286-1234.

6. Aquatic Resource Demarcation:

Table C attached includes detailed fill quantities authorized within the aquatic resources. Aquatic resources not authorized for impact by these Special Provisions shall be demarcated in the field as per SS 832 prior to site disturbance. The fence shall remain in place and be maintained throughout the construction process. Following the completion of the project, the fence and posts shall be removed.

7. Spill containment:

Provide and Maintain an Oil Spill Kit with a minimum capacity of 65 gallons. The Spill Kit shall contain:

- 6 - 3 in. X 8 ft. Oil only socks
- 4 - 18 in. X18 in. Oil only pillows
- 2 - 5 in. X 10ft. Booms
- 50 - 16in. X 20 in. Oil only pads
- 10- Disposable Bags
- 1 - 65 Gallon drum with lid
- 25 pounds of Granular Oil Absorbent

The Oil Spill Kit shall be located within 150 feet of any equipment working in a stream or wetland. The oil Spill Kit shall be maintained for the life of the contract. Any materials utilized during the project will be replaced within 48 hours. All costs associated with furnishing and maintaining the above referenced spill containment kit is incidental to work.

8. Blasting:

State law requires notification to the Ohio Department of Natural Resources should blasting be required within or near stream channels (See ORC 1533.58 & CMS 107.09). Notify the Engineer, in writing, a minimum of 30 days in advance of blasting, for submission to ODOT-OES-WPU (614-466-2159) for coordination with ODNR.

9. Project Inspection:

Inspection of Work may include inspection by representatives of other government agencies or railroad corporations that pay a portion of the cost of the Work or regulate the Work through State and Federal law. Comments from the representatives of these agencies shall be directed to the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-WPU at 614-466-2159.

10. Temporary Access Fills:

Definitions:

Hydraulic Opening
The cross-sectional area allowing an unimpeded discharge equal to twice the highest monthly flow without producing a rise in the backwater above the Ordinary High Water Mark (OHWM).

Standard Temporary Discharge
Discharge equal to twice the *highest monthly flow* without producing a rise in the backwater above the OHWM. The U.S. Geologic Service publication "Techniques for estimating Selected Streamflow Characteristics of Rural Unregulated Streams in Ohio" provides equations that estimate monthly flow for Ohio Waterways These flows are also available in a web application by USGS StreamStats, (https://water.usgs.gov/osw/streamstats/ohio.html). The highest monthly flow is the highest monthly mean discharge occurring in a 12-month period from January to December.

Average Monthly Flow
The average monthly flow represents the estimated "normal" flow.

Temporary Access Fills (TAFs)
Include, but are not limited to, dewatering fills, causeways, cofferdams, access pads, temporary bridges, etc. below the OHWM.

Requirements
21 calendar days prior to the initiation of any in-stream work, provide the Engineer with Working Drawings that include:

- Plan view drawing (50 scale or less) showing the location of all TAFs proposed for use on the project
- Scaled cross section and profile drawing showing the OHWM and the proposed hydraulic opening.
- Identify the minimum diameter size, placement location and thickness of non-erodible Dumped Rock Fill material on the plan and profile.
- Calculations analyzing the hydraulic impacts of the TAF on the waterway. Include in the calculations an analysis of the hydraulic opening sized adequately to pass the Standard Temporary Discharge without producing a rise in backwater above the OHWM. Include, in the analysis, calculated channel velocities adjacent to the TAF, culvert exit velocities, calculated headwater and tailwater elevations, and any additional appropriate calculations to assess potential impacts to the waterway during normal and anticipated high flow (twice the highest monthly flow) events.
- A description of all temporary material to be placed below the OHWM elevation.
- A description of the installation and staging of all temporary fill over the life of the contract.
- Identify the protection methods and/or structural Best Management Practices for minimizing impacts to the waterway.
- Volume of temporary fill below the OHWM elevation.
- A description of the diversion ditches, equipment, conduits or means for maintaining normal flows in the waterway.

- A description of the removal of all temporary fill and restoration of the channel and all areas impacted by the TAFs.
- A schedule outlining the timing of the placement and removal of all temporary fill.
- Have competent individuals prepare and check the Working Drawings and hydraulic calculations. Provide a cover sheet containing the preparer(s) and checker(s): First Name, Last Name and Initials. The preparer(s) and checker(s) shall not be the same individual. Have an Ohio Registered Engineer review, approve, sign, seal and date the Working Drawings and hydraulic calculations according to ORC 4733 and OAC 4733-35. Include the following statement on the Working Drawings:

  "These Working Drawings were prepared in compliance with the terms of these Special Provisions and all contract documents."

Do not begin in-stream work until the Engineer has accepted the Working Drawings and hydraulic calculations.

The design and construction of the Contractor's TAF must minimize impacts to water bodies, stream banks, stream beds, and riparian zones to the maximum extent practicable.

Fording of waterways and other aquatic resources is prohibited.

Construct TAFs in such a manner that will maintain flows, minimize upstream flooding, and avoid overtopping the TAF on a regular basis. ***TAFs shall be designed and constructed so that the hydraulic opening provides capacity for a discharge equal to twice the highest monthly flow without producing a rise in the backwater above the (OHWM)***.

If the Contractor proposes a TAF which does not meet all the requirements of these Special Provisions, the Contractor must submit a request in writing for a modified TAF to the Engineer. The request must include all Working Drawings and hydraulic calculations required by these Special Provisions. The Department makes no guarantee to grant the request. The Contractor's proposed TAF request will be coordinated by OES with the USACE and the OEPA, as appropriate. The time frame allowed for the coordination of the contractor's proposed TAF will be a minimum of 60 days.

Installation of any temporary fill without appropriate authorization is strictly prohibited. All direct coordination with the USACE and/or OEPA will be performed through OES.

TAFs Construction and Payment

Begin planning and installing causeways and access fills as early in construction as possible to avoid conflicts with these Special Provisions or other environmental commitments that have been included in the construction plans.

TAFs in Streams and Rivers may include, but are not limited to, causeways, cofferdams, access pads, sheet piling, temporary bridges, etc. The Contractor must make every attempt to minimize disturbance to waterbodies, stream banks, stream beds and riparian zones during the construction, maintenance, and removal of the TAF. Construct the TAFs as narrow as practical. Install in-stream conduits parallel to the stream banks. Make the TAFs in shallow areas rather than deep pools where possible. Minimize clearing, grubbing, and excavation of stream banks, and approach sections. Construct the TAFs as to not cause erosion or allow sediment deposits in the waterway.

Prior to the initiation of any in-stream work, establish a monument upstream of the proposed TAF to visually monitor the water elevation in the waterway where the fill is permitted. Maintain the monument throughout the project. Provide a visual mark on the monument that identifies the elevation 1 foot above the OHWM. Ensure that the monument can be read from the bank of the waterway. Have this elevation set and certified by an Ohio Registered Surveyor. All costs associated with furnishing and maintaining the above referenced monument is incidental to the work.

Should the surface water elevation exceed the elevation 1 foot above OHWM, the Department will compensate the Contractor for repair of any resulting damage to the TAF up to the elevation of 1 foot above the OHWM, except as noted. The Department will recognize this event as an excusable, non-compensable delay in accordance with Section 108.06 B. of the Construction & Materials Specifications.

Follow the requirements in Item 502 for Structures for Maintaining Traffic and in Item 503 for Cofferdams and Excavation Bracing and any modifications to these items as shown in the plans. The Department will not pay for repair and maintenance of TAFs associated with Items 502 and 503 as a result of surface water elevation exceeding 1 foot above the OHWM. Compensation for damages associated with waterway flows will be provided as described in Items 502 and 503.

Construct the TAFs, not including Items 502 and 503, to a water elevation at least 1 foot (0.3 m) above the OHWM. If more than one-third the width of the stream is filled, then use culvert pipes to allow the movement of aquatic life. Ensure that any ponding of water behind the TAF will not damage property, flood roadways, or threaten human health and safety.

The following minimum requirements apply to TAFs where culverts are used:

A. Furnish culverts on the existing stream bottom.
B. Avoid a drop in water elevation at the downstream end of the culvert that would result in an adverse impact to the waterway.
C. Furnish a sufficient number of culverts in addition to stream openings to provide a discharge equal to twice the highest monthly flow without producing a rise in the backwater above the OHWM.
D. Furnish culverts with a minimum diameter of 18 inches (0.5 m).

All TAFs must be constructed of suitable materials. Causeways and access fills must be encapsulated with clean, non-erodible, nontoxic Dumped Rock Fill, Type A, B, C, or D, meeting the requirements of C&MS 703.19.B. Utilize appropriately sized Dumped Rock Fill determined by the Contractor's engineer for encapsulating the sides of the TAF. Encapsulate all sides of the TAF with the non-erodible material. For causeways, contractors may use clean aggregate meeting C&MS 703.01 Size Number 1 and 2 for creating a working surface above the OHWM. Extend the non-erodible encapsulating material to at least the elevation of the top of the working surface. Extend clean aggregate up the slope from the original stream bank for 50 feet (10 m) to remove erodible material and prevent tracking from equipment onto the TAF.

When the work requiring TAF is complete, all portions of the TAF (including all rock and culverts) will be removed in its entirety. Do not dispose of TAF material in other aquatic resources or where erosion into another aquatic resource is possible. The stream bottom affected by the TAFs will be restored to its pre-construction elevations. The TAFs will not be paid as a separate item but will be included by the Contractor as part of the total project cost.

Unless specific TAF compensation is included in the plans, all environmental protection and control associated with the authorized activities, are incidental to the work within the boundaries of the aquatic resources.

11. Excavation Activities:

Excavated material will be placed at an upland site and disposed of in such a manner that sediment and runoff to streams and other aquatic resources is controlled and minimized. Additionally, no more than incidental fallback into aquatic resources is permitted during the excavation process. If any changes to the proposed work are deemed necessary, notify the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-WPU at 614-466-2159

12. Demolition Debris:

The temporary discharge of demolition debris into aquatic resources (including but not limited to bridges, culverts, abutments, wing walls, piers) is conditionally authorized for this project. Perform demolition activities in a manner to prevent the discharge of fine (erodible) debris into aquatic resources. Utilize TAF or other catchment methods accepted by the Engineer and authorized by these Special Provisions to prevent erodible demolition debris from entering aquatic resources. Demolition debris may not remain in the waterway for more than 72 hours and must be removed in its entirety. If removal of debris material cannot be achieved within 72 hours, notify the Engineer in writing, who will contact ODOT-OES-WPU at 614-466-2159.

13. Construction Completion Certification:

Upon completion of the work, notify the Engineer. The USACE Construction Completion Certification must be completed and signed by the Engineer then provided via US mail or email to:

Waterway Permits Program Manager
ODOT - Office of Environmental Services
1980 West Broad Street, Mail Stop 4170
Columbus, Ohio 43223
Adrienne.Earley@dot.ohio.gov

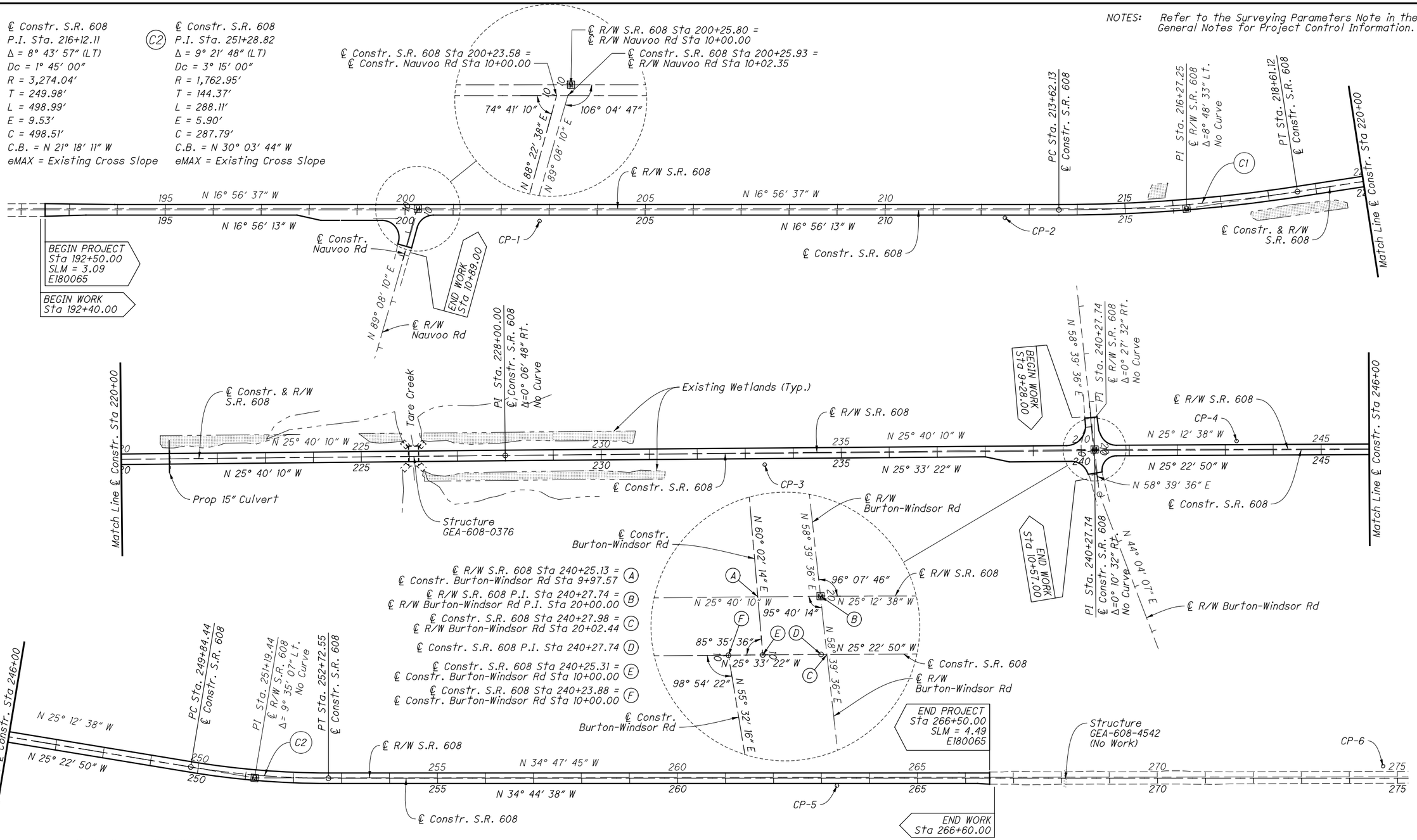
A copy of the certification has been attached to these Special Provisions.

Version: July 2020

NOTES: Refer to the Surveying Parameters Note in the General Notes for Project Control Information.

(C1) ℄ Constr. S.R. 608
P.I. Sta. 216+12.11
Δ = 8° 43′ 57″ (LT)
Dc = 1° 45′ 00″
R = 3,274.04′
T = 249.98′
L = 498.99′
E = 9.53′
C = 498.51′
C.B. = N 21° 18′ 11″ W
eMAX = Existing Cross Slope

(C2) ℄ Constr. S.R. 608
P.I. Sta. 251+28.82
Δ = 9° 21′ 48″ (LT)
Dc = 3° 15′ 00″
R = 1,762.95′
T = 144.37′
L = 288.11′
E = 5.90′
C = 287.79′
C.B. = N 30° 03′ 44″ W
eMAX = Existing Cross Slope



PROJECT DATUM PROJECTION = NAD83 (2011)
PROJECT COMBINED SCALE FACTOR = 1.000084997 (GRID TO GROUND)

PRIMARY PROJECT CONTROL INFORMATION

POINT NUMBER	GRID COORDINATES U.S. SURVEY FEET		SCALED COORDINATES U.S. SURVEY FEET		ORTHOMETRIC HEIGHT (ELEVATION)	STATION & OFFSET ℄ R/W S.R. 608	STATION & OFFSET ℄ CONSTR. S.R. 608	DESCRIPTION
	NORTHING	EASTING	NORTHING	EASTING				
CP-1	663786.25	2357765.16	663842.67	2357965.56	1151.07	202+79.29, 25.62′ RT	202+80.08, 23.33′ RT	5/8″ CAPPED REBAR
CP-2	664711.78	2357476.25	664768.28	2357676.63	1143.60	212+48.93, 18.98′ RT	212+49.71, 16.58′ RT	5/8″ CAPPED REBAR
CP-3	666622.71	2356627.99	666679.37	2356828.30	1118.82	233+40.38, 24.60′ RT	233+40.43, 23.53′ RT	5/8″ CAPPED REBAR
CP-4	667492.01	2356166.55	667548.75	2356366.82	1183.73	243+23.74, 17.11′ LT	243+23.78, 18.66′ LT	5/8″ CAPPED REBAR
CP-5	669225.27	2355164.95	669282.15	2355365.13	1250.69	263+32.77, 17.23′ RT	263+32.12, 15.40′ RT	5/8″ CAPPED REBAR
CP-6	670136.60	2354483.36	670193.56	2354683.48	1255.27	274+70.19, 22.44′ LT	274+69.51, 25.30′ LT	5/8″ CAPPED REBAR

MONUMENT TABLE

℄ of Exist. R/W S.R. 608		PROJECT COORDINATES SEE SURVEY CERTIFICATION		MONUMENTS TO BE SET DURING CONSTRUCTION		R/W MON. EXPECTED TO BE DISTURBED	
STATION	OFFSET	NORTH (Y)	EAST (X)	MON. ASSY.	REF. MON.	R/W MON.	DESCRIPTION
200+25.80	0.00	663592.72	2358014.93	1			RM-1.1
216+27.25	0.00	665124.65	2357548.22	1			RM-1.1
240+27.74	0.00	667288.24	2356508.38	1			RM-1.1
251+19.44	0.00	668275.95	2356043.38	1			RM-1.1
TOTAL CARRIED TO GENERAL SUMMARY SHEET				4			

HORIZONTAL SCALE IN FEET
0 50 100 200
CALCULATED MSD CHECKED RAW

SCHEMATIC PLAN

GEA-608-3.09

2
179

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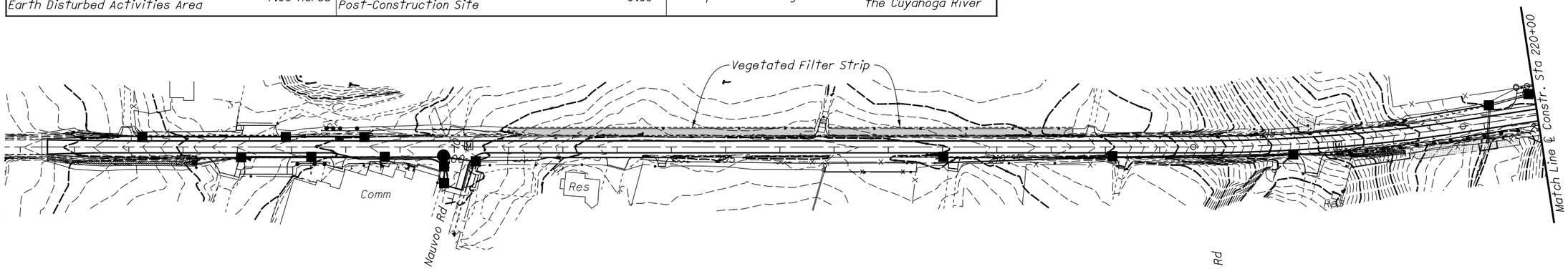
Project Data					
Total Area (Right-of-Way)	11.05 Acres	Impervious (Paved) Area for Pre-Construction Site	6.23 Acres	Post-Construction BMP: A Vegetated Filter Strip and Vegetated Biofilter has been provided to meet NPDES post-construction water quality requirements.	
Project Earth Disturbed Activities Area	6.59 Acres	Impervious (Paved) Area for Post-Construction Site	6.76 Acres		
Estimated Contractor Earth Disturbed Activities Area	0.50 Acres	Runoff Coefficient for Pre-Construction Site	0.64	Immediate Receiving Waters	Tare Creek
Notice of Intent (NOI) Earth Disturbed Activities Area	7.09 Acres	Runoff Coefficient for Post-Construction Site	0.68	Subsequent Receiving Waters	East Branch of the Cuyahoga River

Vegetated Filter Strip

Longitudinal Length of BMP:	1040 Ft.
Width of BMP (Table 1117-3 L&D Vol. 2):	15 Ft.
Slope of BMP:	3:1 Ft./Ft.
Total Contributing Drainage Area inside and outside ODOT R/W to BMP:	0.817 Ac.
Contributing Drainage Area to BMP within ODOT R/W:	0.817 Ac.

Vegetated Biofilter

Longitudinal Length of BMP (ft):	700 Ft.
Enhanced Bankfull Width (ft):	4 Ft.
Total Contributing Drainage Area inside and outside ODOT R/W to BMP:	2.7 Acres
Contributing Drainage Area to BMP within ODOT R/W (Ac.):	0.66 Acres



The Following Items Have Been Carried to the General Summary:

Item 832, Storm Water Pollution Prevention Plan	Lump
Item 832, Erosion Control	81,737 Each

USGS Quadrant: Middlefield, Oh
NGA Ref No: USGSX24K13353
*Latitude: 41° 29′ 10″ **
*Longitude: 81° 04′ 55″ **

* *Longitude and Latitude to approximate center of project*

BMP Type	Location					End Treatment Credit Area
	Begin Station	End Station	SIDE	Begin Latitude/Longitude	End Latitude/Longitude	
Vegtated Filter Strip	Sta 201+00	Sta 211+40	LT	41.479528, -81.078583	41.482167, -81.079583	0.66 Acres
Vegetated Biofilter	Sta 250+50	Sta 257+50	RT	41.492167, -81.085167	41.493778, -81.086528	0.82 Acres
					Treatment Required	1.32 Acres

Legend

- Catch Basins / Inlets
- Manholes
- Area of Vegetated Filter Strip or Vegetated Biofilter

Project Description

Improvement of 1.40 miles of s.r. 608 by widening shoulders to accommodate horse drawn vehicles. improvements include pavement resurfacing, drainage upgrades, and turn-lane construction.

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED RMS
CHECKED

PROJECT SITE PLAN

GEA-608-3.09

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LEGEND

CONSTRUCTION LIMITS

TURF REINFORCING MAT, TYPE 1

UTILITY LEGEND

DEO = DOMINION EAT OHIO GAS
MID = VILLAGE OF MIDDLEFIELD
ORW = ORWELL NATURAL GAS COMPANY
WND = WINDSTREAM
MCH = MIDDLEFIELD CHEESE HOUSE

BEGIN WORK STA 192+40.00

BEGIN PROJECT STA 192+50.00 SLM = 3.09

ROCK CHANNEL PROTECTION 18"X4'-0"X5'-0" TYPE C, WITH FILTER FABRIC

PAVEMENT TAPER 69:1 (145')
SHOULDER TAPER 25.4:1

PAVEMENT TAPER 35.4:1 (85')
SHOULDER TAPER 12.1:1

Rock with House Number (TAKE)

Barn
2 Sty Frame
Flower Bed
FB
Gray Drive
Asph Apron
Asph Drive
Field Drive
30" MAPLE
60" MAPLE
4" Vinyl Fence
4" Wire Fence
5' Split Rail Fence
15" CPP
8" SPP
12" STL
24" CMP
30" RCP
6" Gas (ORW)
3" Gas (ORW)
4" Gas (DEO)
4" Gas (ORW)
8" WTR (MID)
12" WTR (MID)
℄ R/W S.R. 608
℄ CONSTR. S.R. 608
℄ CONSTR.
MATCH LINE STA 194+00
STA 193+95.00
STA 193+35.00
BEGIN DITCH
END DITCH
BEGIN CURB, RT
+00.00
+97.00
D-1
D-2
U-1
R-1
E-1
DR-1
RES CONC
CMP
TMP
SH
VCP
B-001-1-18
12' CURB TAPER
SAWCUT
90°
N 16°56'37" W
N 16°56'13" W
13.4'
13.1'
8' Wood Comm Sign
Ex SH
I.P.F.

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS

✱ = STORM SEWER/STRUCTURE REMOVED

GRAPHIC GRADE

Ex CB-2-2B
Sta 189+55.46, 23.63' Lt
Ex T/G 1125.50
Ex 8" (N) 1122.90
Ex 15" (S) 1122.55

Ex CB-2-2B
Sta 190+40.72, 26.54' Lt
Ex T/G 1125.25
Ex 10" (E) 1123.62

MEET EXISTING
STA 192+50.00
ELEV 1129.49±
BUTT JOINT

HW 2.2
STA 193+00.00, 26.75' LT
12" (N) 1127.10

125'-12" TYPE B @ 2.03% (Left Side)

Ex 12" STL✱
Ex 8" SPP
Ex 12" STL
Ex 24" CMP
Ex 30" RCP
Ex 15" CPP
4" G (Rt)
6" & 3" G (Lt)
8" W (Lt)
12" W (Lt)
4" G (Rt)

1126.68 1127.02 1127.46 1127.84 1128.35 1128.90 1129.49 1130.29 1131.25 1132.22

189+00 190+00 191+00 192+00 193+00 194+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MSD
CHECKED SAC

PLAN AND PROFILE
STA. 189+00 TO STA. 194+00

GEA-608-3.09

27
179

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LEGEND

CONSTRUCTION LIMITS

TURF REINFORCING MAT, TYPE 1

= SAVE BOLLARDS AT BRIDGE PIERS

** = USE MGS GUARDRAIL WITH QUARTER POST SPACING IN FRONT OF PIER COLUMNS

***= EXISTING VERTICAL CLEARANCE = 16.1'±

UTILITY LEGEND

DEO = DOMINION EAT OHIO GAS
MID = VILLAGE OF MIDDLEFIELD
ORW = ORWELL NATURAL GAS COMPANY
WND = WINDSTREAM
MCH = MIDDLEFIELD CHEESE HOUSE

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS

* = STORM SEWER/STRUCTURE REMOVED

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED MSD CHECKED SAC

PLAN AND PROFILE
STA. 194+00 TO STA. 199+00

GEA-608-3.09

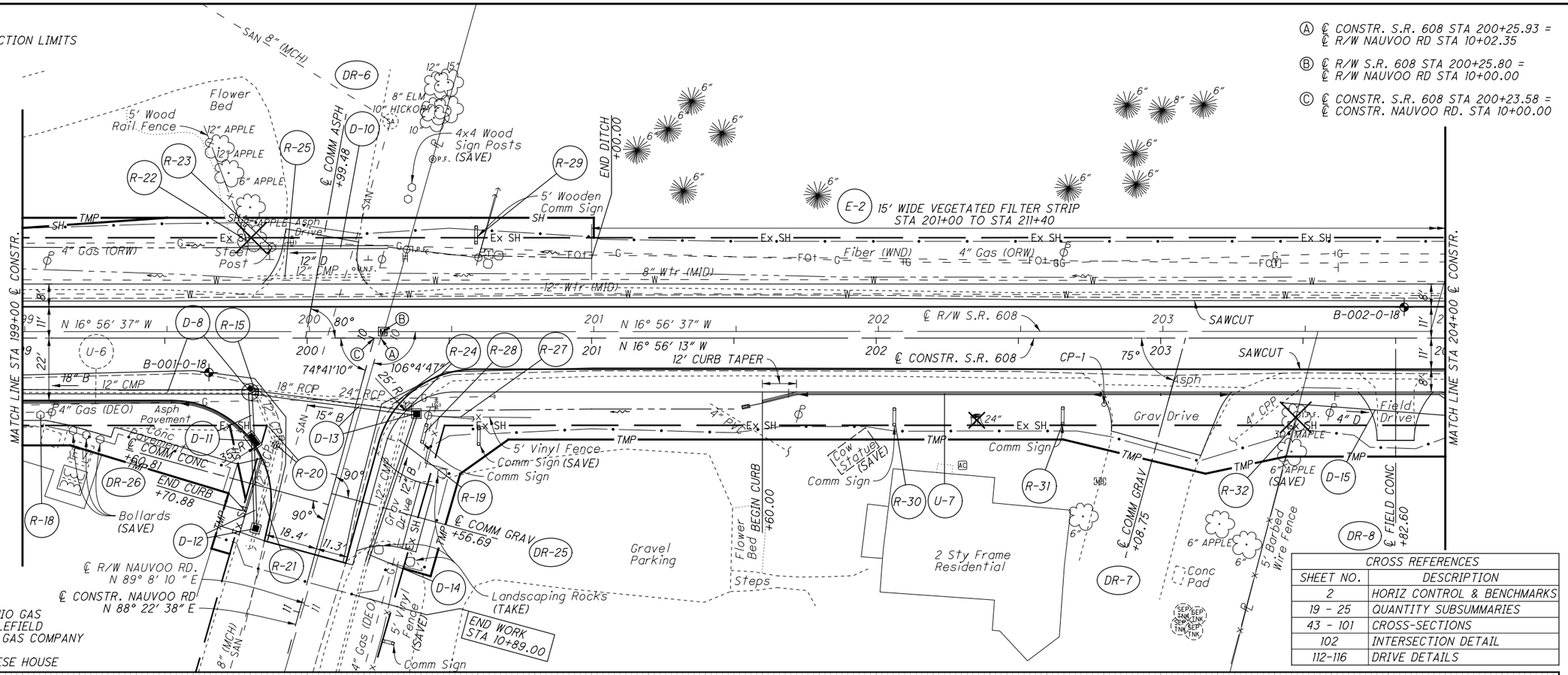
LEGEND

——•—— CONSTRUCTION LIMITS

Ⓐ ℄ CONSTR. S.R. 608 STA 200+25.93 = ℄ R/W NAUVOO RD STA 10+02.35

Ⓑ ℄ R/W S.R. 608 STA 200+25.80 = ℄ R/W NAUVOO RD STA 10+00.00

Ⓒ ℄ CONSTR. S.R. 608 STA 200+23.58 = ℄ CONSTR. NAUVOO RD. STA 10+00.00



CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
102	INTERSECTION DETAIL
112-116	DRIVE DETAILS

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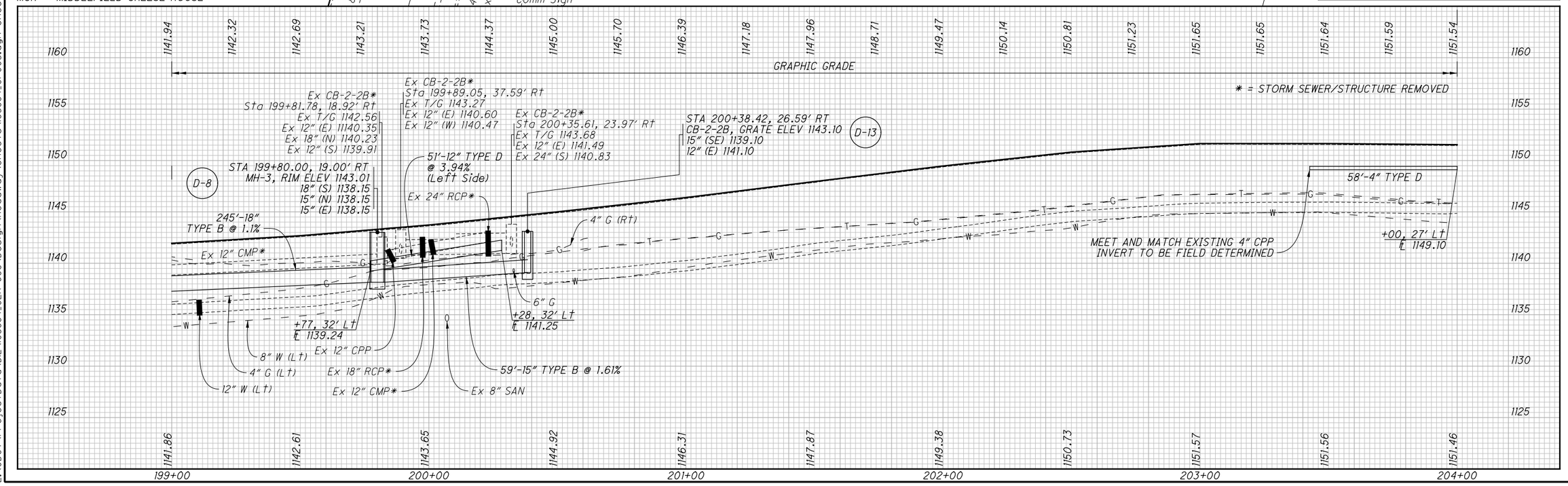
WND = WINDSTREAM
MCH = MIDDLEFIELD CHEESE HOUSE



CALCULATED MSD CHECKED SAC

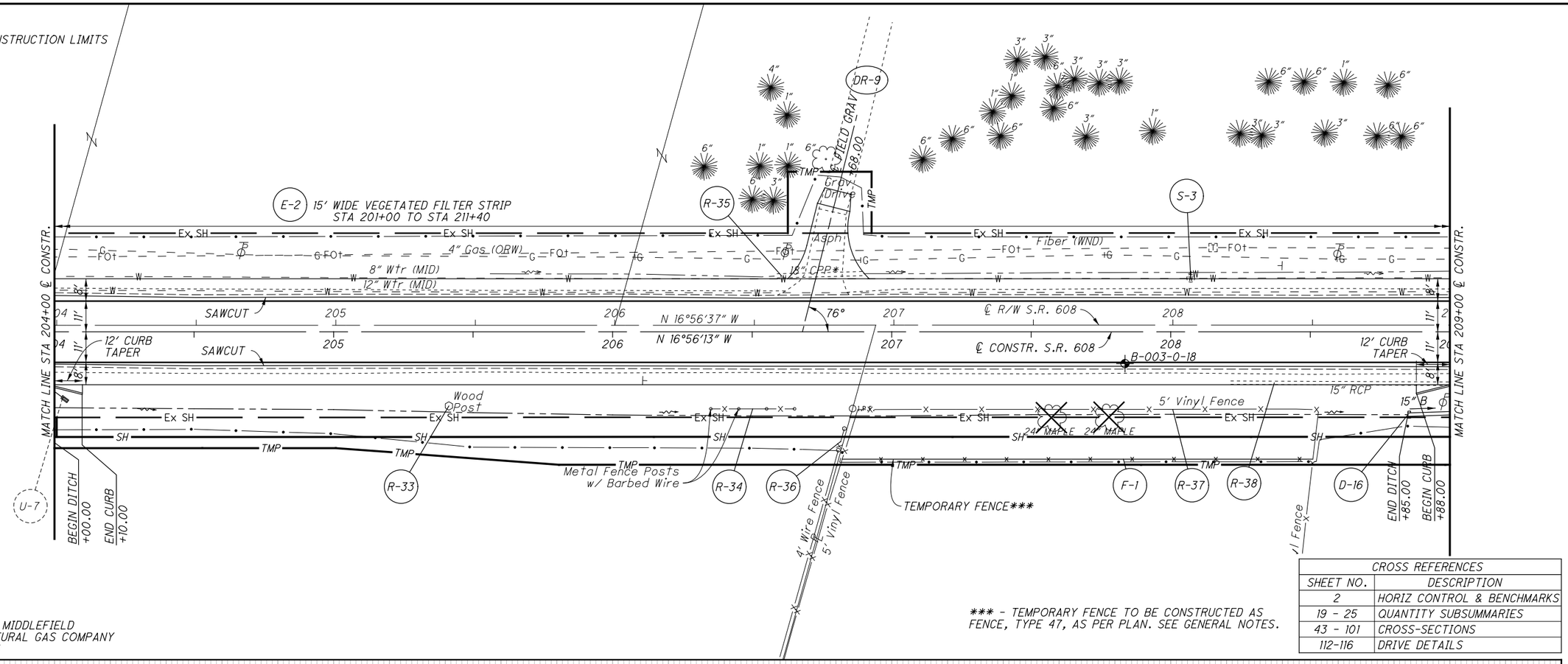
0 10 20 40 HORIZONTAL SCALE IN FEET

PLAN AND PROFILE
STA. 199+00 TO STA. 204+00

GEA-608-3.09

LEGEND

CONSTRUCTION LIMITS

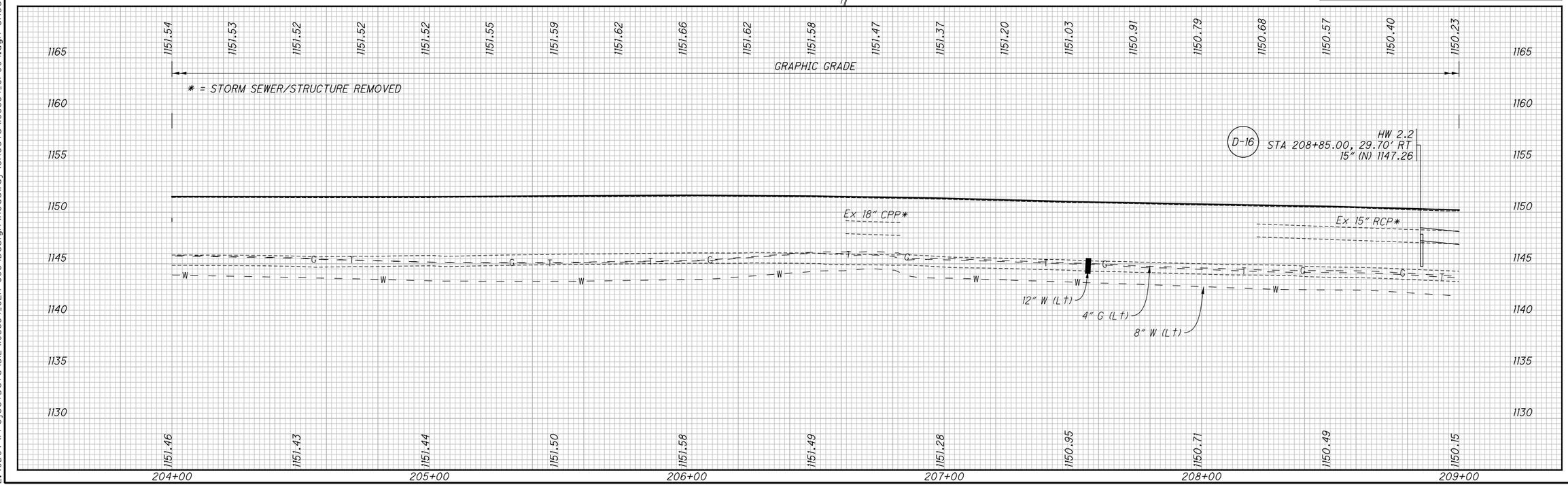


UTILITY LEGEND

MID = VILLAGE OF MIDDLEFIELD
ORW = ORWELL NATURAL GAS COMPANY
WND = WINDSTREAM

*** - TEMPORARY FENCE TO BE CONSTRUCTED AS FENCE, TYPE 47, AS PER PLAN. SEE GENERAL NOTES.

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS



PLAN AND PROFILE
STA. 204+00 TO STA. 209+00

GEA-608-3.09

30
179

HORIZONTAL SCALE IN FEET
0 10 20 40

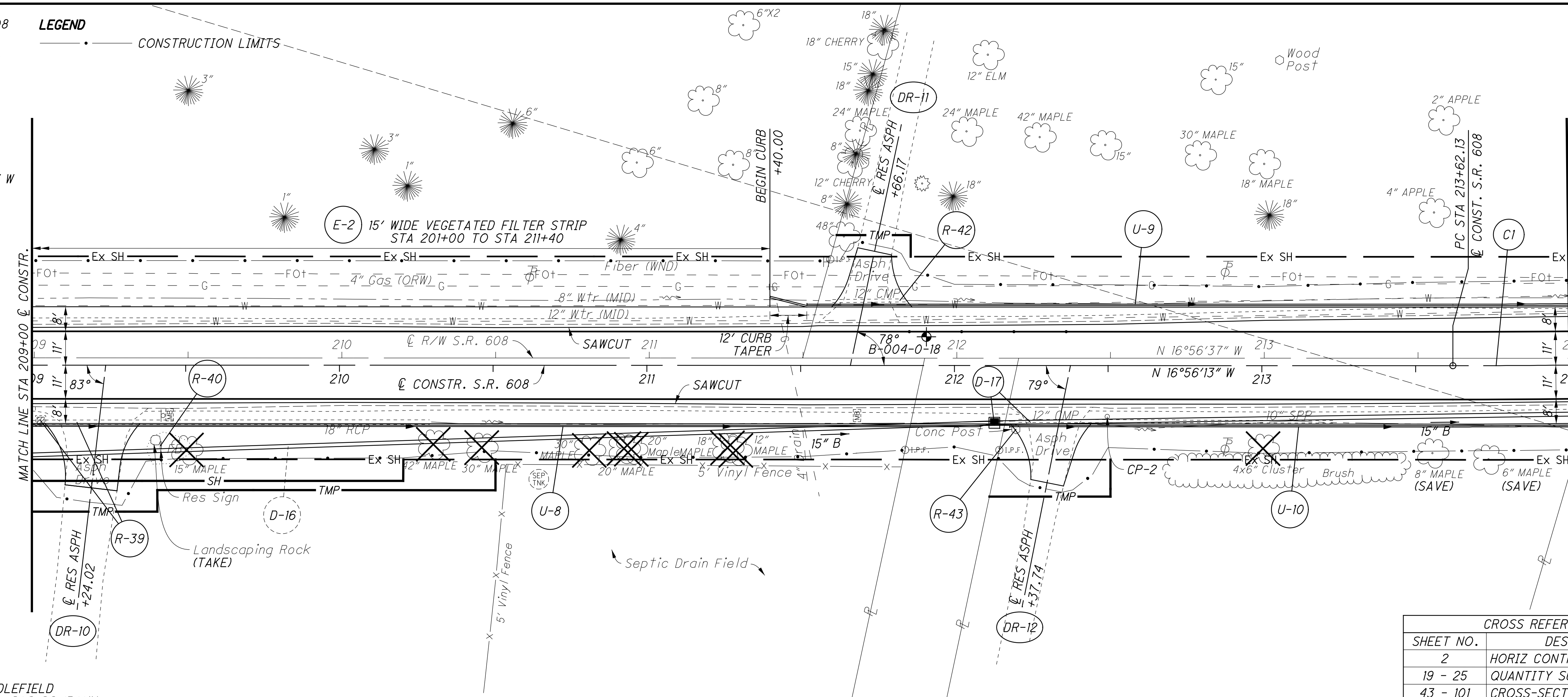
CALCULATED MSD
CHECKED SAC

E:\ODOT\ProjectData\D12\103884_GEA-608\Design\Roadway\Sheets\103884_GP004.dgn Sheet 12/12/2019 12:00:57 PM rsabol

Ⓒ Constr. S.R. 608
(C1) P.I.Sta. 216+12.11
Δ = 8° 43′ 57″ (LT)
Dc = 1° 45′ 00″
R = 3,274.04′
T = 249.98′
L = 498.99′
E = 9.53′
C = 498.51′
C.B. = N 21° 18′ 11″ W
eMAX = Existing Cross Slope

LEGEND

———•——— CONSTRUCTION LIMITS

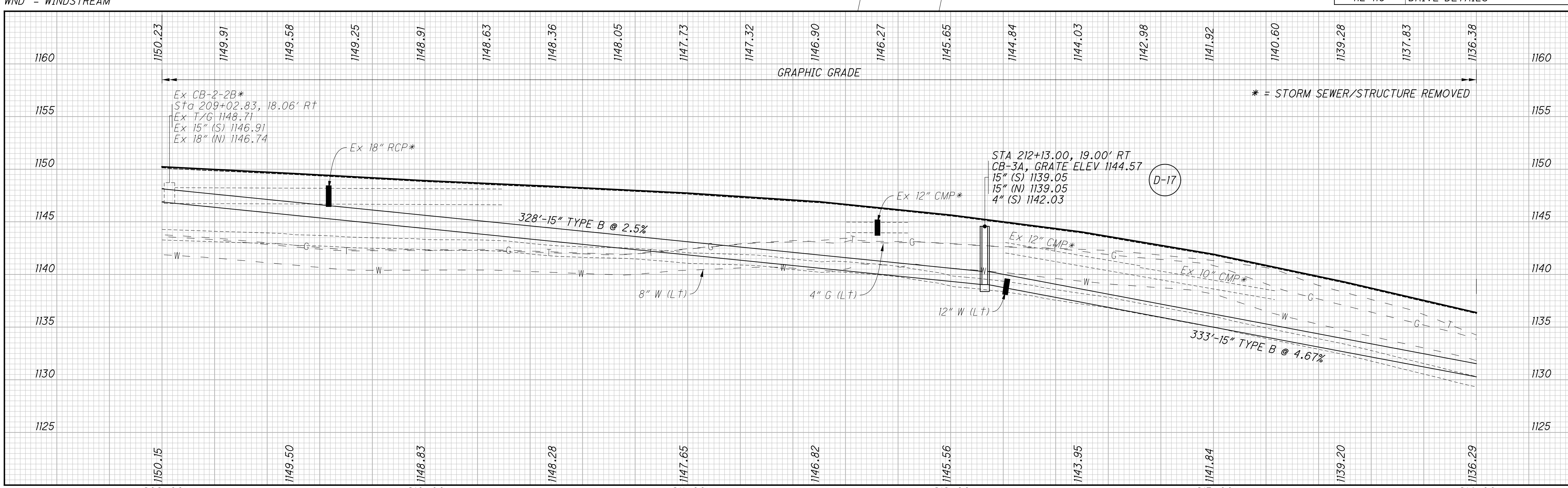


E-2 15′ WIDE VEGETATED FILTER STRIP STA 201+00 TO STA 211+40
MATCH LINE STA 209+00 Ⓒ CONSTR.
MATCH LINE STA 214+00 Ⓒ CONSTR.
Ⓒ CONSTR. S.R. 608
Ⓒ R/W S.R. 608
SAWCUT
12′ CURB TAPER
BEGIN CURB +40.00
B-004-0-18
N 16°56′37″ W
N 16°56′13″ W
PC STA 213+62.13 Ⓒ CONST. S.R. 608
Ⓒ RES ASPH +24.02
Ⓒ RES ASPH +66.17
Ⓒ RES ASPH +37.14
4″ Gas (ORW)
8″ Wtr (MID)
12″ Wtr (MID)
Fiber (WND)
Landscaping Rock (TAKE)
Res Sign
Septic Drain Field
5′ Vinyl Fence
4x6″ Cluster Brush
8″ MAPLE (SAVE)
6″ MAPLE (SAVE)
Conc Post
Asph Drive
CP-2
Wood Post

UTILITY LEGEND

MID = VILLAGE OF MIDDLEFIELD
ORW = ORWELL NATURAL GAS COMPANY
WND = WINDSTREAM

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS



GRAPHIC GRADE
* = STORM SEWER/STRUCTURE REMOVED
Ex CB-2-2B* Sta 209+02.83, 18.06′ Rt Ex T/G 1148.71 Ex 15″ (S) 1146.91 Ex 18″ (N) 1146.74
Ex 18″ RCP*
328′-15″ TYPE B @ 2.5%
Ex 12″ CMP*
STA 212+13.00, 19.00′ RT CB-3A, GRATE ELEV 1144.57 15″ (S) 1139.05 15″ (N) 1139.05 4″ (S) 1142.03
D-17
Ex 10″ CMP*
333′-15″ TYPE B @ 4.67%
8″ W (Lt)
4″ G (Lt)
12″ W (Lt)
209+00
210+00
211+00
212+00
213+00
214+00

HORIZONTAL SCALE IN FEET

CALCULATED MSD CHECKED SAC

PLAN AND PROFILE STA. 209+00 TO STA. 214+00

GEA-608-3.09

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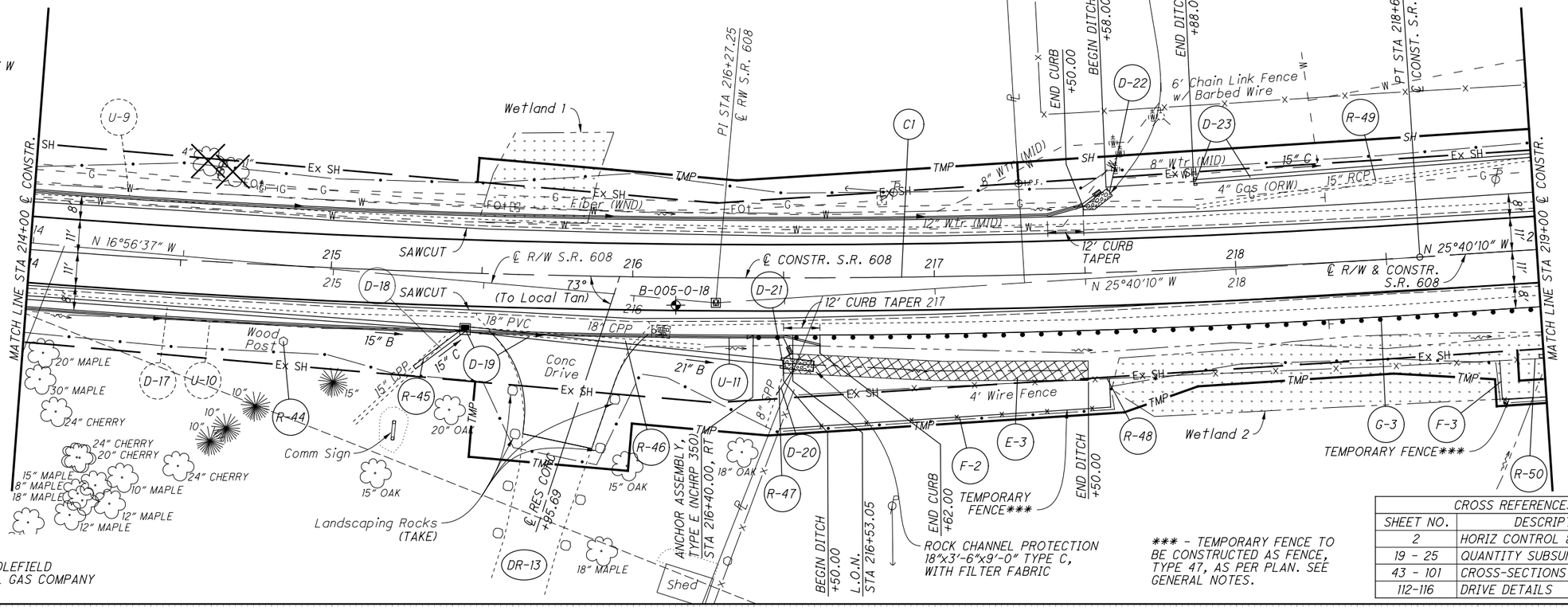
℄ Constr. S.R. 608
(C1) P.I.Sta. 216+12.11
Δ = 8° 43′ 57″ (LT)
Dc = 1° 45′ 00″
R = 3,274.04′
T = 249.98′
L = 498.99′
E = 9.53′
C = 498.51′
C.B. = N 21° 18′ 11″ W
eMAX = Existing Cross Slope

LEGEND

CONSTRUCTION LIMITS
EXISTING WETLAND
TURF REINFORCEMENT MAT, TYPE 2

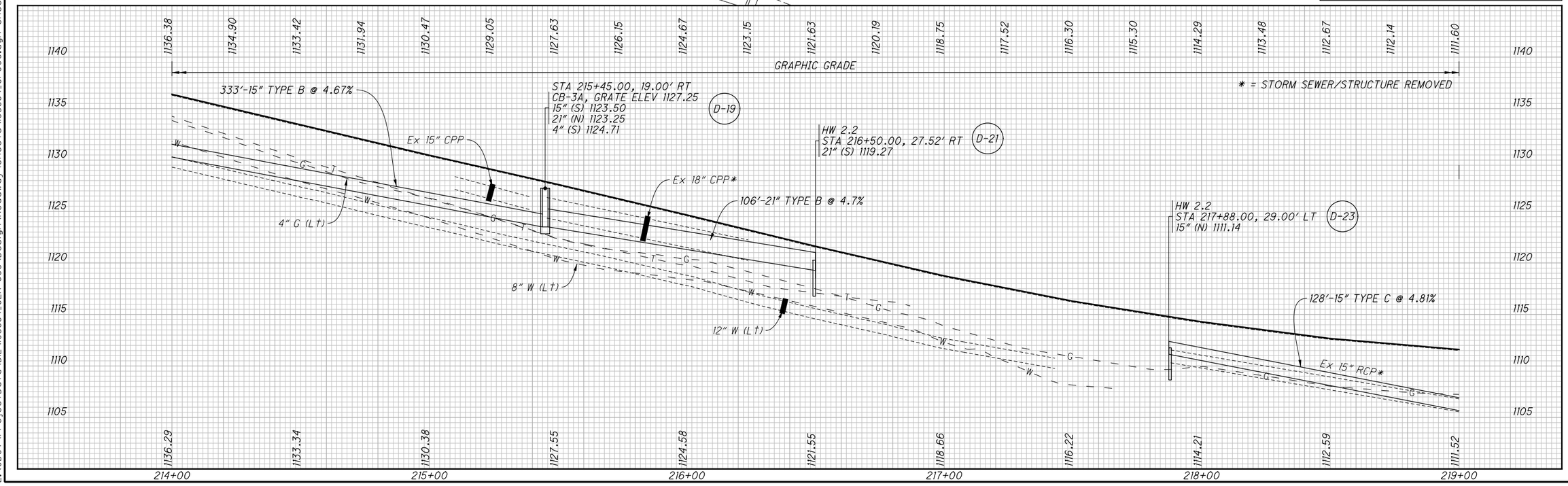


*** - TEMPORARY FENCE TO BE CONSTRUCTED AS FENCE, TYPE 47, AS PER PLAN. SEE GENERAL NOTES.

UTILITY LEGEND

MID = VILLAGE OF MIDDLEFIELD
ORW = ORWELL NATURAL GAS COMPANY
WND = WINDSTREAM

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS



PLAN AND PROFILE
STA. 214+00 TO STA. 219+00

GEA-608-3.09

32
179

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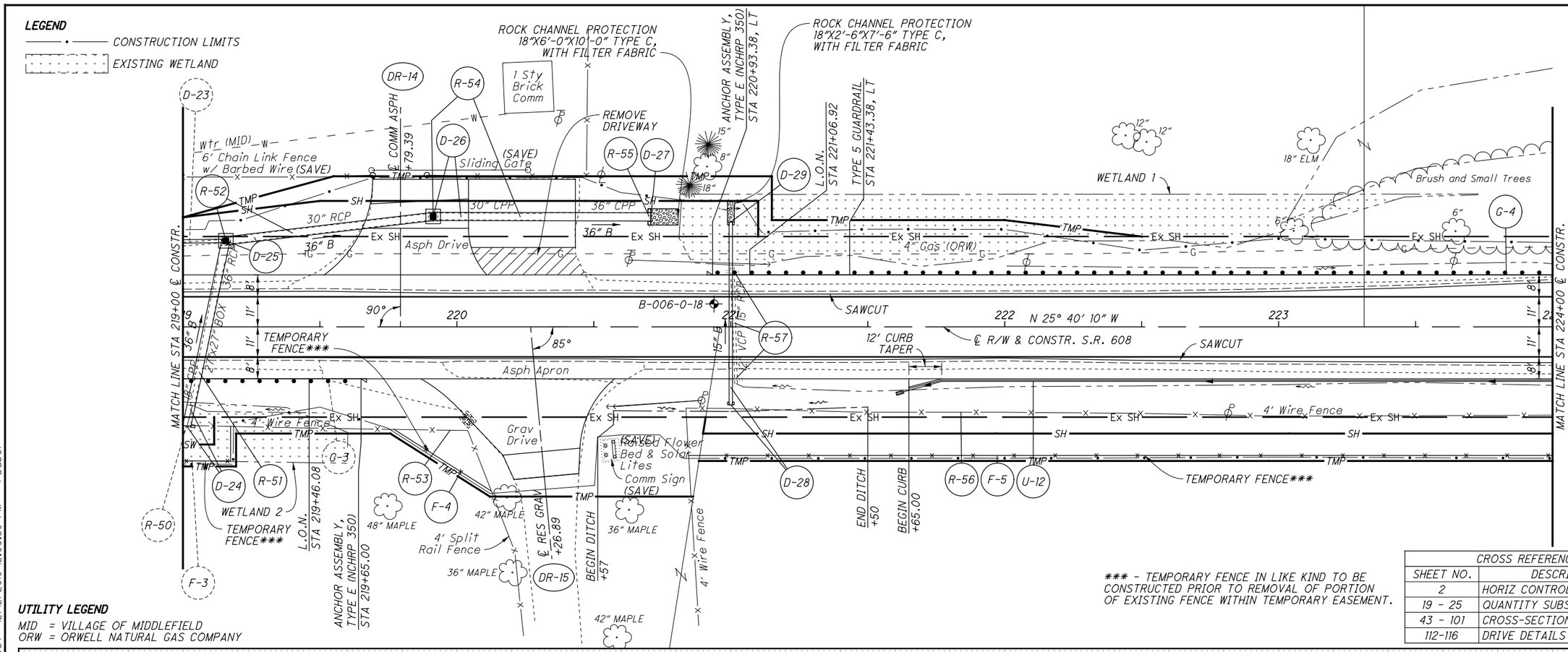
LEGEND

CONSTRUCTION LIMITS

EXISTING WETLAND



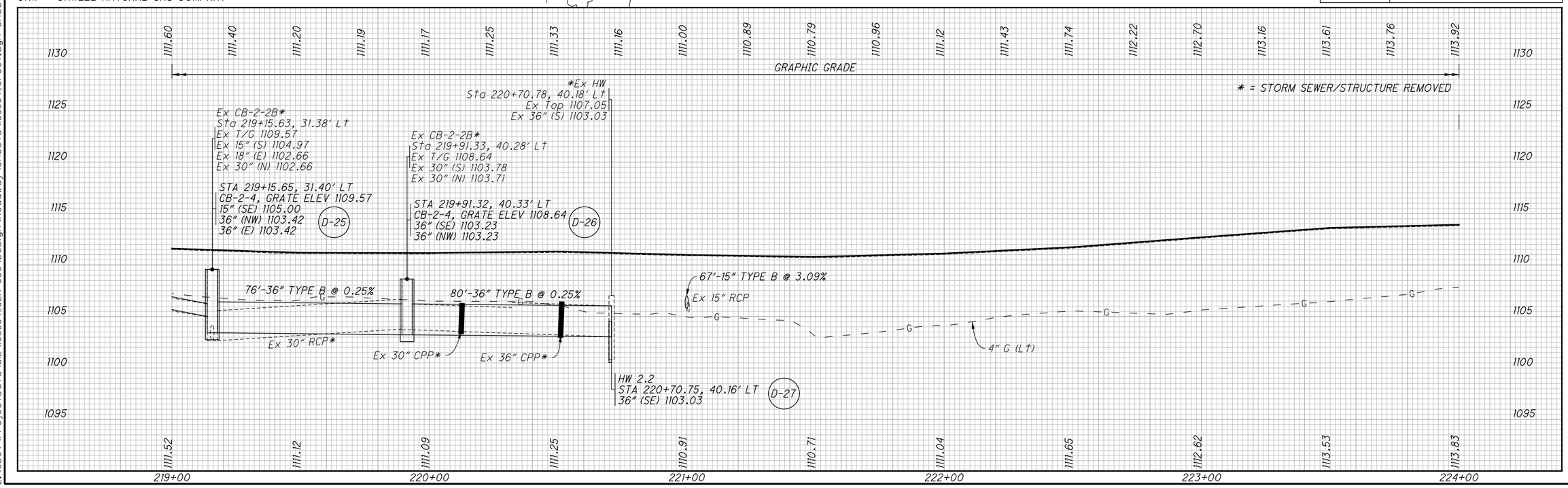
*** - TEMPORARY FENCE IN LIKE KIND TO BE CONSTRUCTED PRIOR TO REMOVAL OF PORTION OF EXISTING FENCE WITHIN TEMPORARY EASEMENT.

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS

UTILITY LEGEND

MID = VILLAGE OF MIDDLEFIELD

ORW = ORWELL NATURAL GAS COMPANY



PLAN AND PROFILE
STA. 219+00 TO STA. 224+00

GEA-608-3.09

33
179

CALCULATED MSD
CHECKED SAC

HORIZONTAL SCALE IN FEET
0 10 20 40

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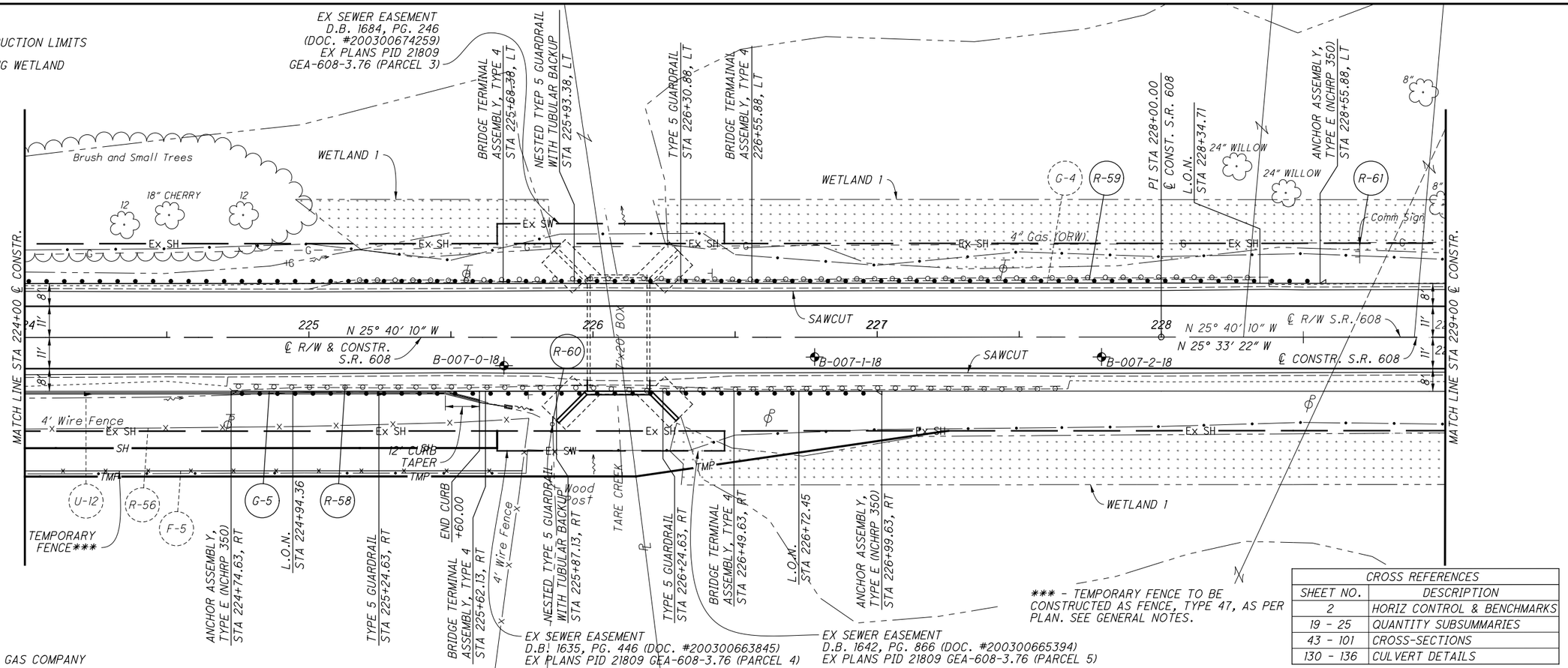
LEGEND

CONSTRUCTION LIMITS

EXISTING WETLAND

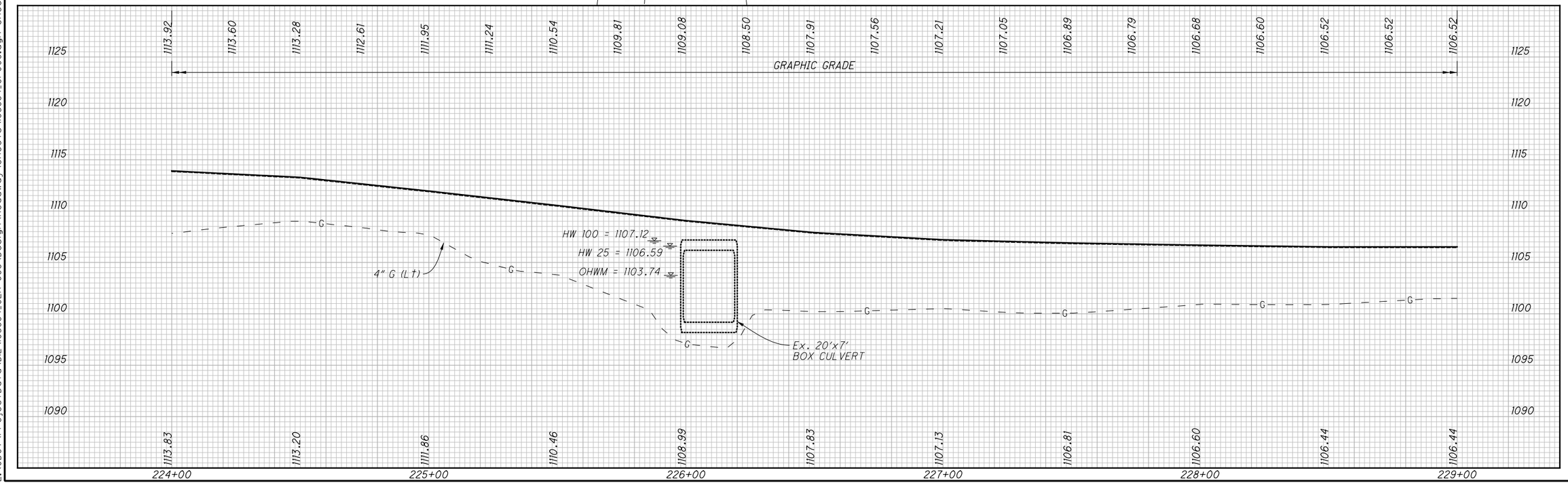
UTILITY LEGEND

ORW = ORWELL NATURAL GAS COMPANY



*** - TEMPORARY FENCE TO BE CONSTRUCTED AS FENCE, TYPE 47, AS PER PLAN. SEE GENERAL NOTES.

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
130 - 136	CULVERT DETAILS



PLAN AND PROFILE
STA. 224+00 TO STA. 229+00

GEA-608-3.09

34
179

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MSD
CHECKED SAC

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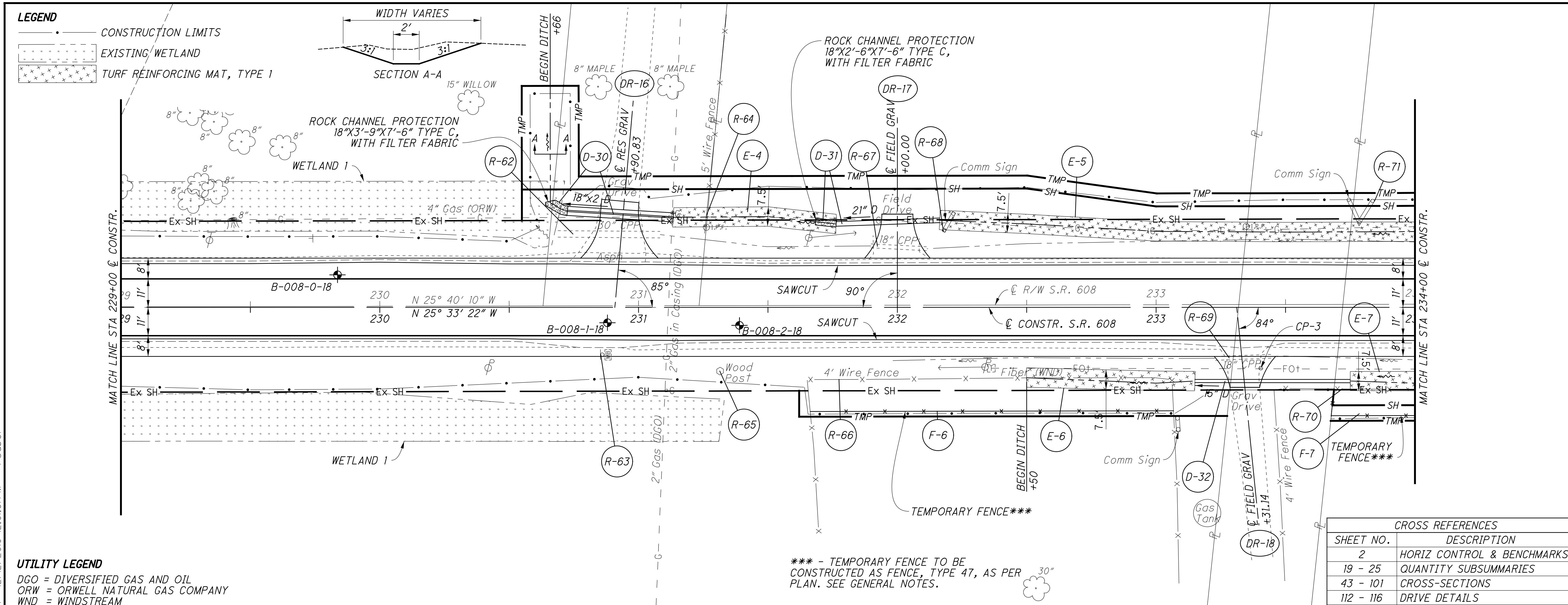
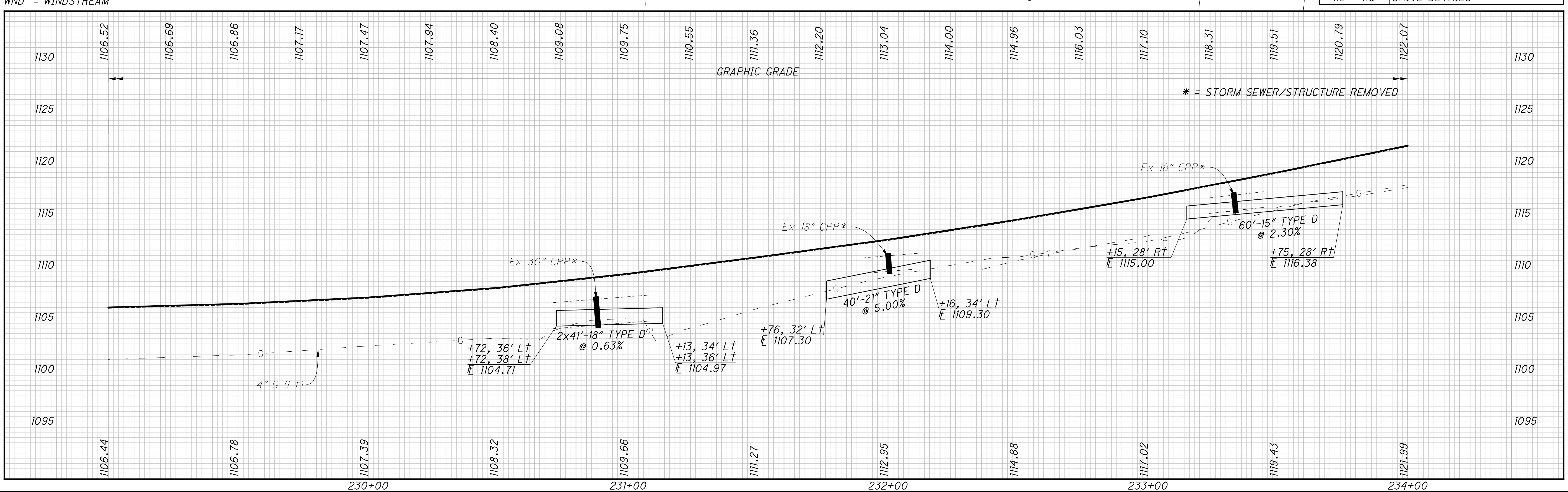


CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112 - 116	DRIVE DETAILS



HORIZONTAL SCALE IN FEET

CALCULATED MSD
CHECKED SAC

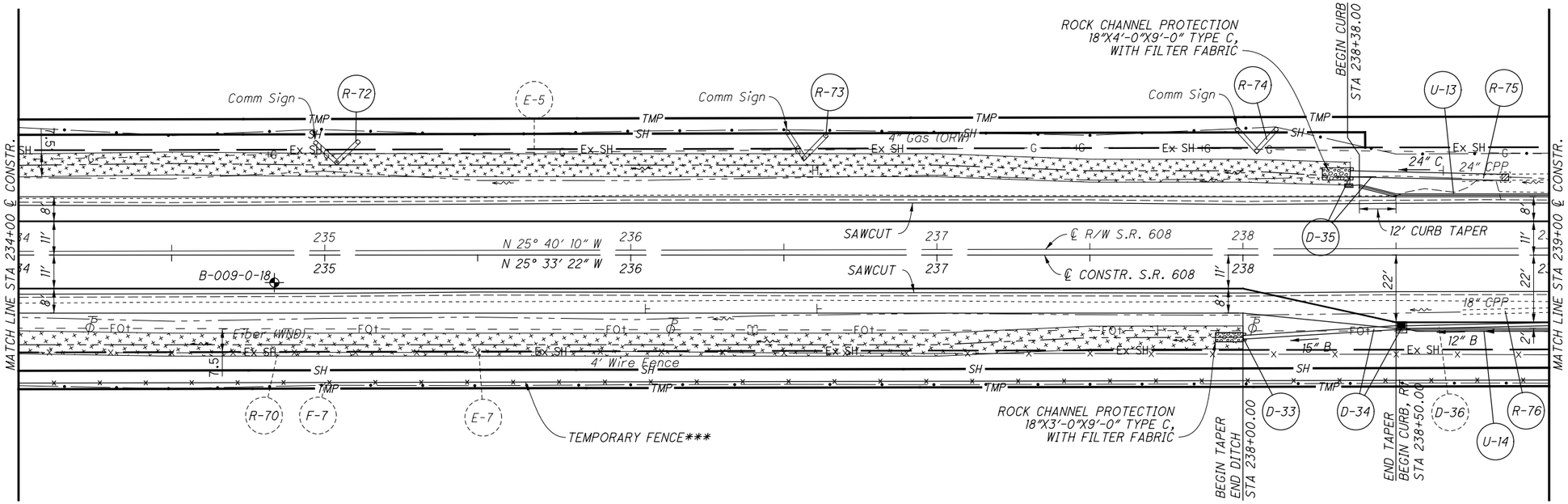
PLAN AND PROFILE STA. 229+00 TO STA. 234+00

GEA-608-3.09

LEGEND

CONSTRUCTION LIMITS

TURF REINFORCING MAT, TYPE 1

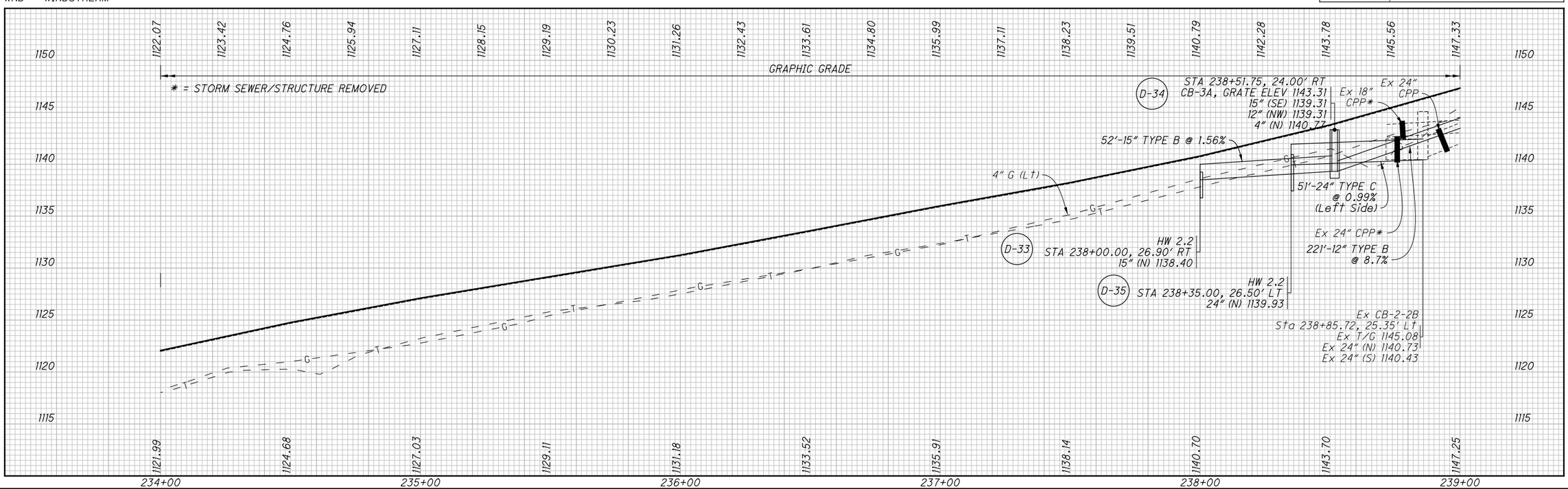


*** - TEMPORARY FENCE TO BE CONSTRUCTED AS FENCE, TYPE 47, AS PER PLAN. SEE GENERAL NOTES.

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	Cross-Sections

UTILITY LEGEND

ORW = ORWELL NATURAL GAS COMPANY
WND = WINDSTREAM



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MSD
CHECKED SAC

PLAN AND PROFILE
STA. 234+00 TO STA. 239+00

GEA-608-3.09

36
179

Ⓐ ℄ R/W S.R. 608 Sta 240+25.13 = ℄ Constr. Burton-Windsor Rd Sta 9+97.57

Ⓑ ℄ R/W S.R. 608 P.I. Sta 240+27.74 = ℄ R/W Burton-Windsor Rd P.I. Sta 20+00.00

Ⓒ ℄ Constr. S.R. 608 Sta 240+27.98 = ℄ R/W Burton-Windsor Rd Sta 20+02.44

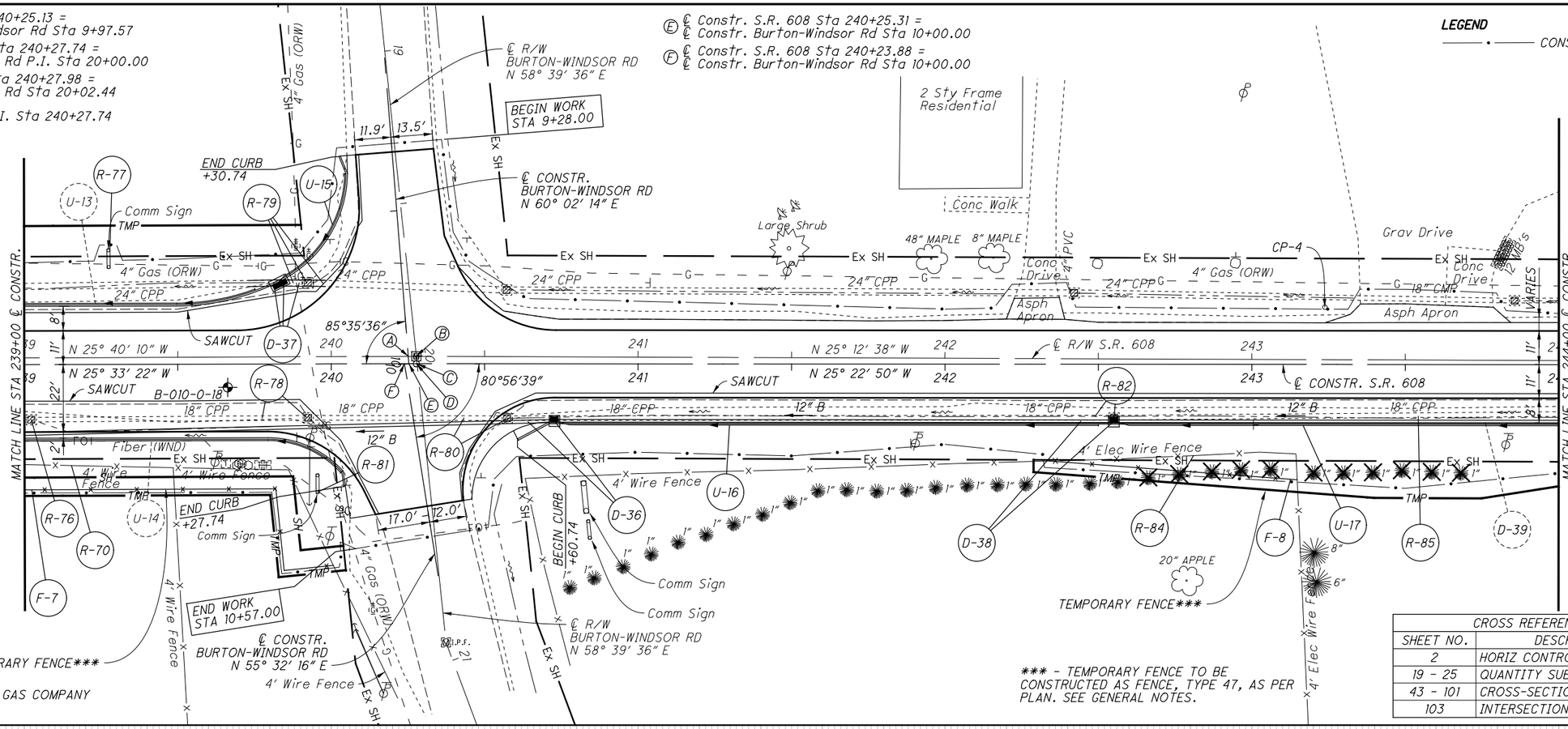
Ⓓ ℄ Constr. S.R. 608 P.I. Sta 240+27.74

Ⓔ ℄ Constr. S.R. 608 Sta 240+25.31 = ℄ Constr. Burton-Windsor Rd Sta 10+00.00

Ⓕ ℄ Constr. S.R. 608 Sta 240+23.88 = ℄ Constr. Burton-Windsor Rd Sta 10+00.00

LEGEND

——•—— CONSTRUCTION LIMITS

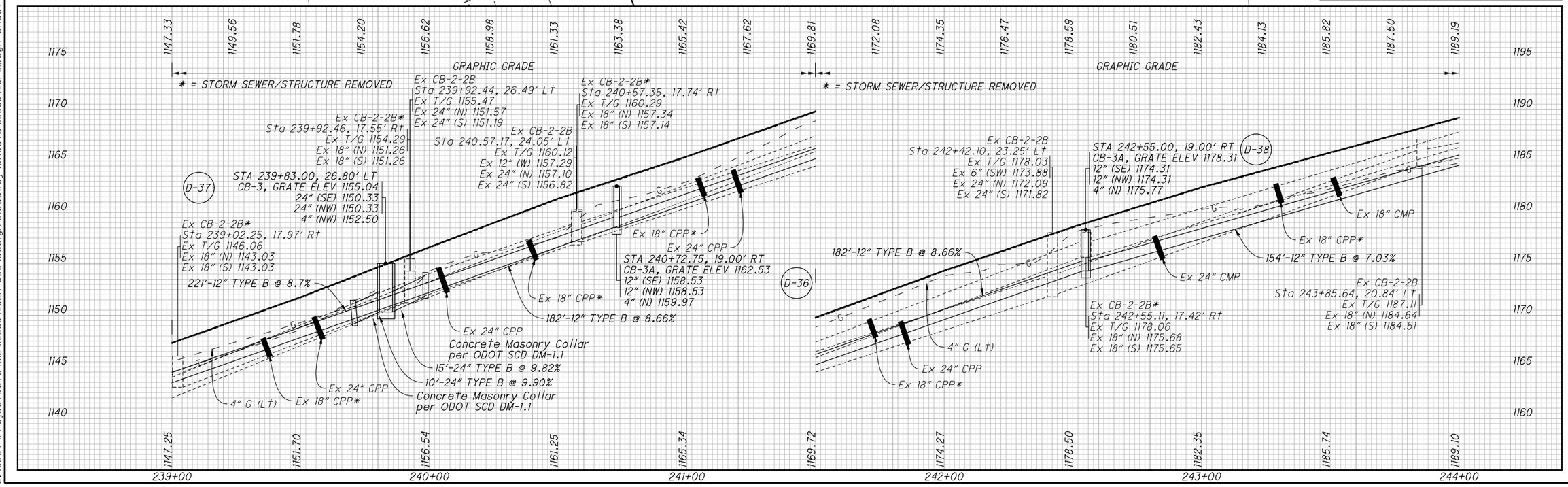


UTILITY LEGEND

ORW = ORWELL NATURAL GAS COMPANY
WND = WINDSTREAM

*** - TEMPORARY FENCE TO BE CONSTRUCTED AS FENCE, TYPE 47, AS PER PLAN. SEE GENERAL NOTES.

CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
103	INTERSECTION DETAIL



PLAN AND PROFILE
STA. 239+00 TO STA. 244+00

GEA-608-3.09

37
179

CALCULATED MSD CHECKED SAC

HORIZONTAL SCALE IN FEET 0 10 20 40

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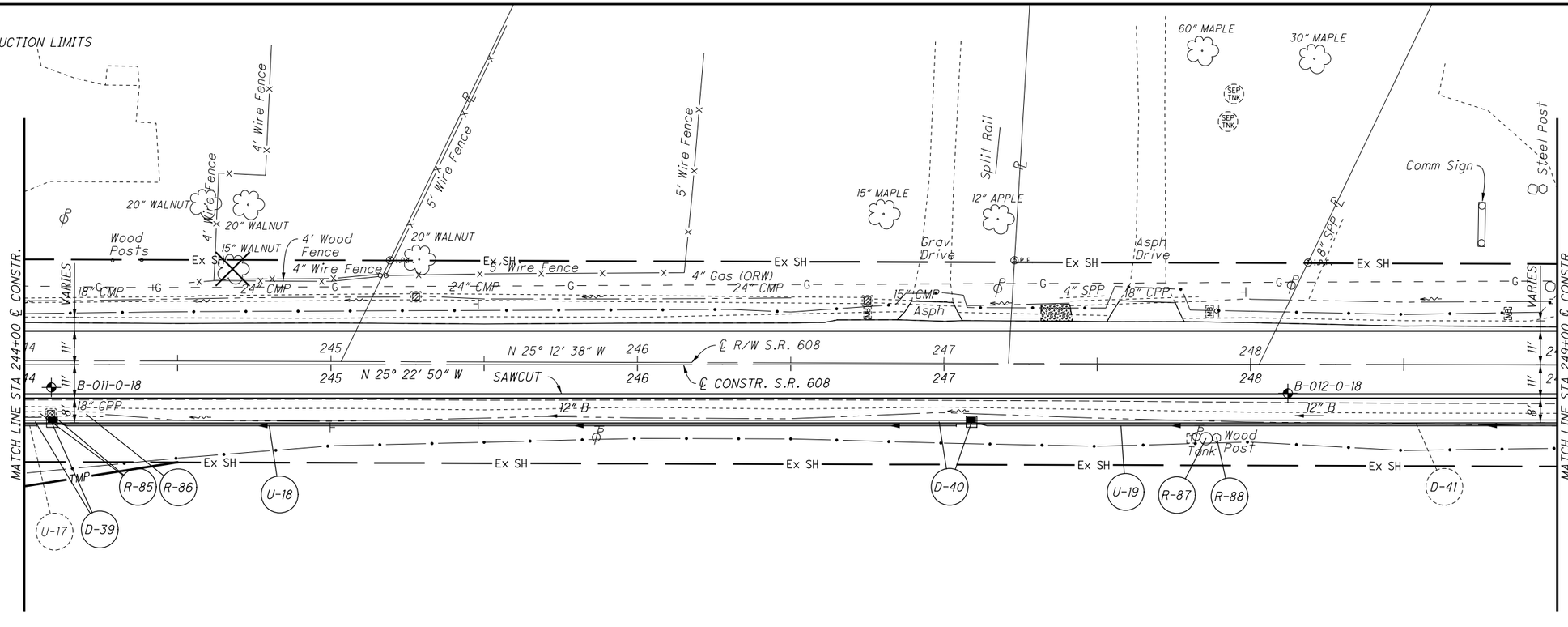
LEGEND

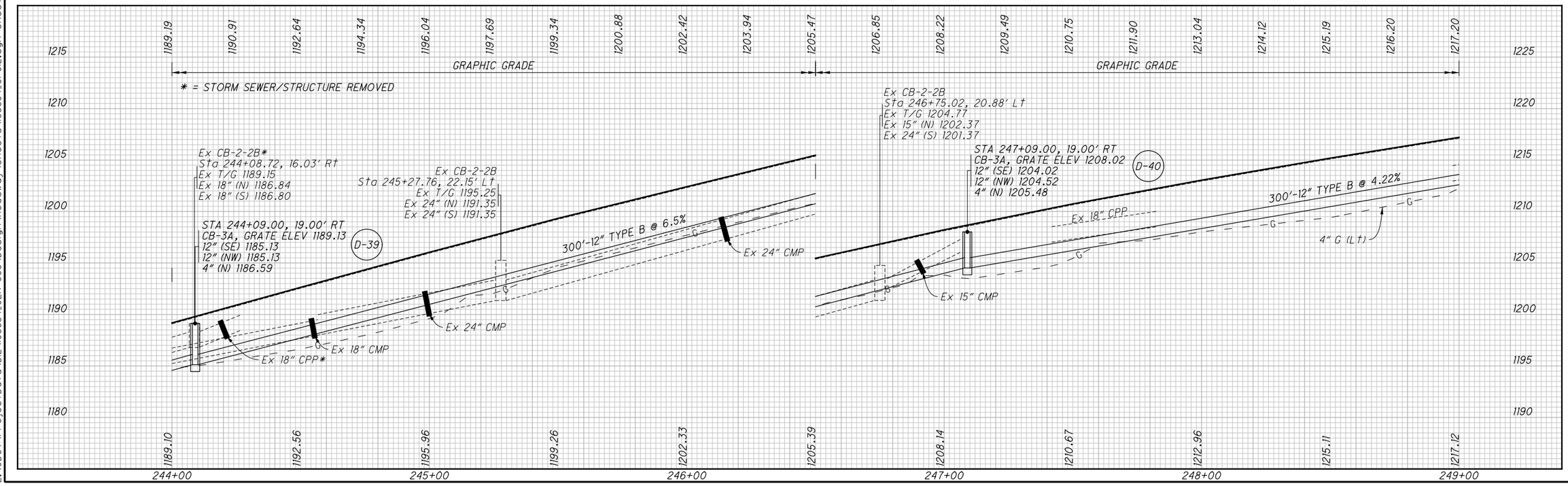
CONSTRUCTION LIMITS



CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS

UTILITY LEGEND

ORW = ORWELL NATURAL GAS COMPANY



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MSD CHECKED SAC

PLAN AND PROFILE
STA. 244+00 TO STA. 249+00

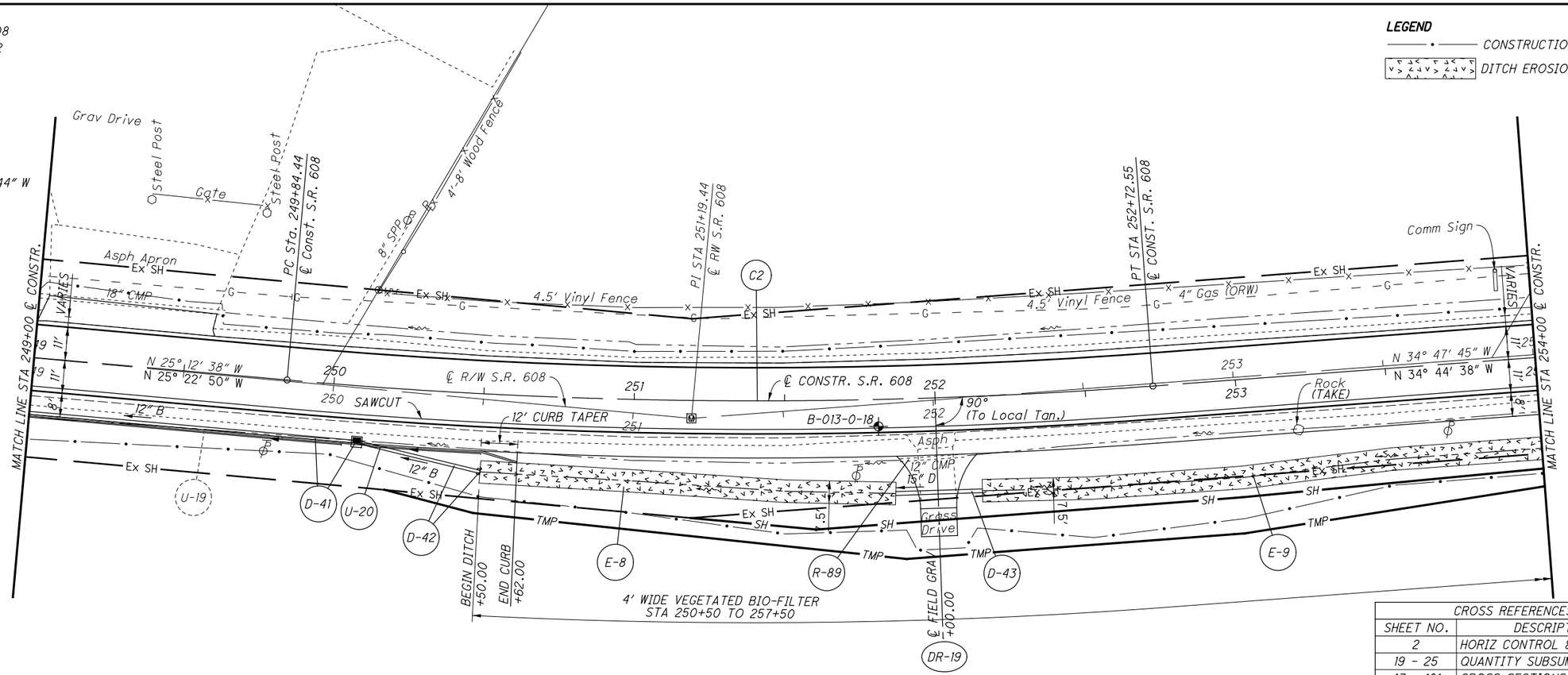
GEA-608-3.09

38
179

E:\ODOT\ProjectData\D12\03884_GEA-608\Design\Roadway\Sheets\03884_GP012.dgn Sheet 12/12/2019 12:01:04 PM rsabol

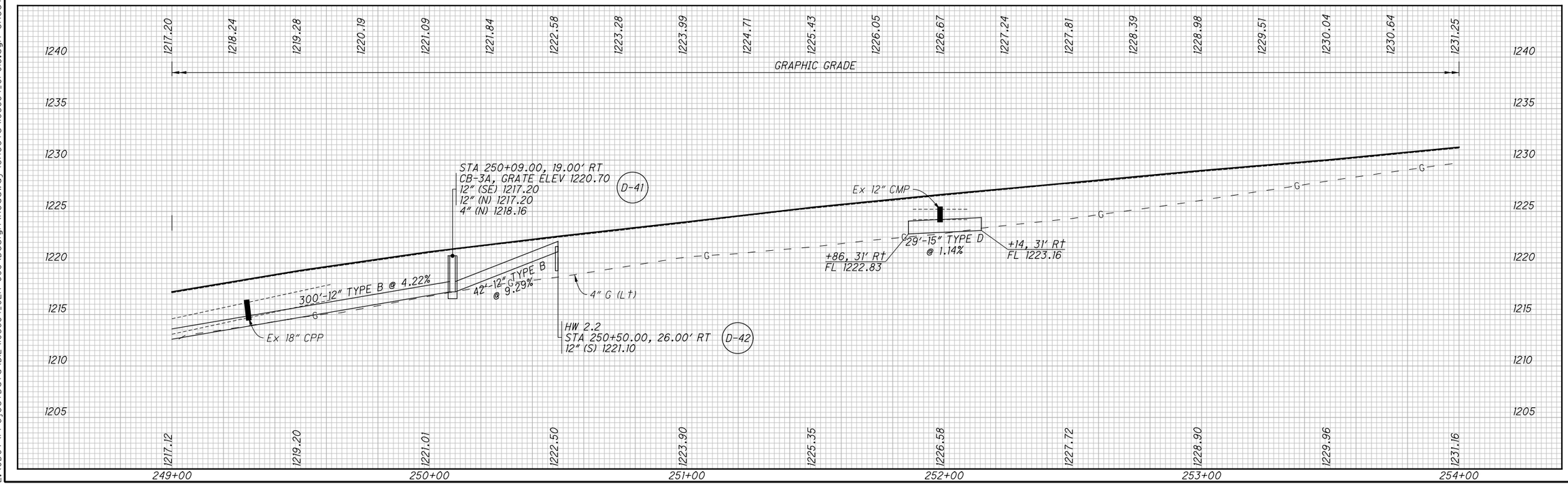
℄ Constr. S.R. 608
P.I.Sta. 251+28.82
Δ = 9° 21′ 48″ (LT)
Dc = 3° 15′ 00″
R = 1,762.95′
T = 144.37′
L = 288.11′
E = 5.90′
C = 287.79′
C.B. = N 30° 03′ 44″ W
eMAX = Existing Cross Slope

LEGEND
CONSTRUCTION LIMITS
DITCH EROSION PROTECTION



CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS

UTILITY LEGEND
ORW = ORWELL NATURAL GAS COMPANY



HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED MSD
CHECKED SAC

PLAN AND PROFILE
STA. 249+00 TO STA. 254+00

GEA-608-3.09

39
179

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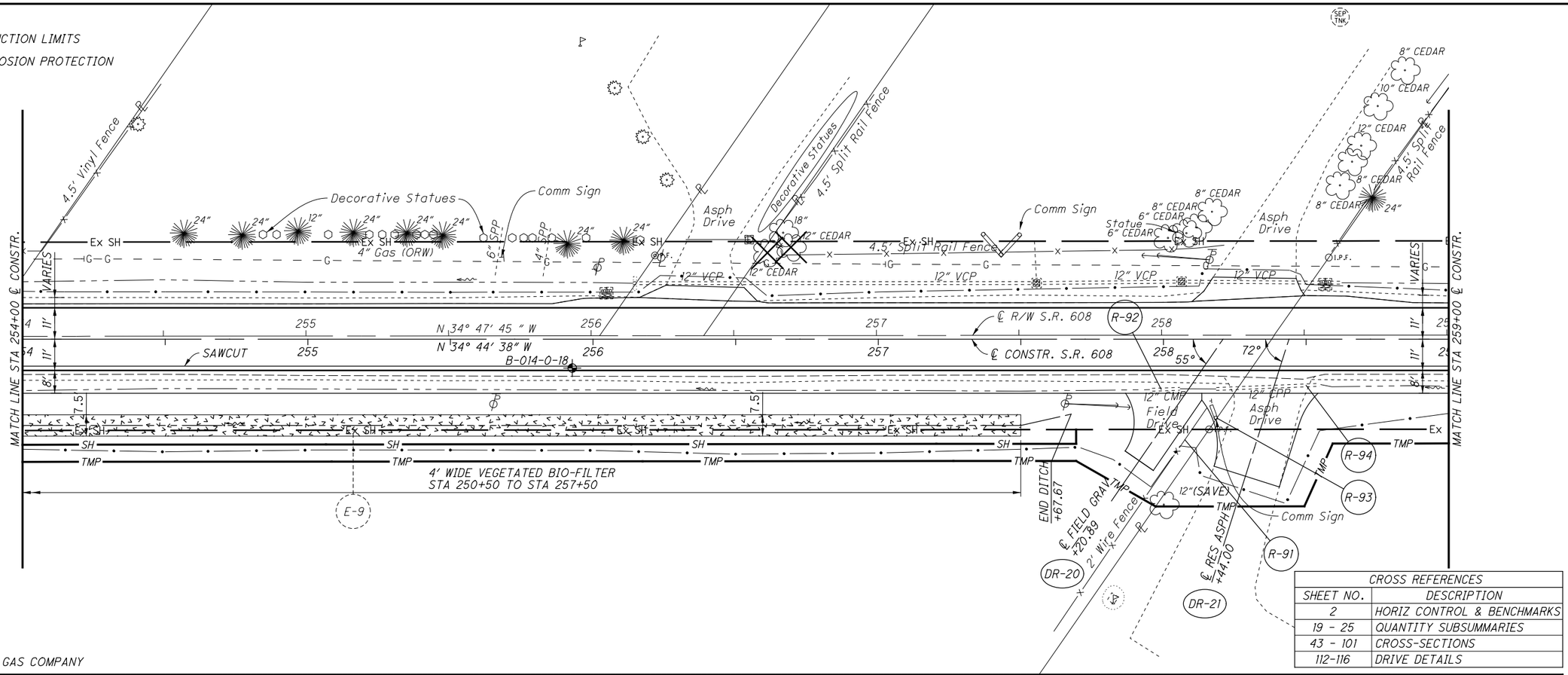
LEGEND

CONSTRUCTION LIMITS

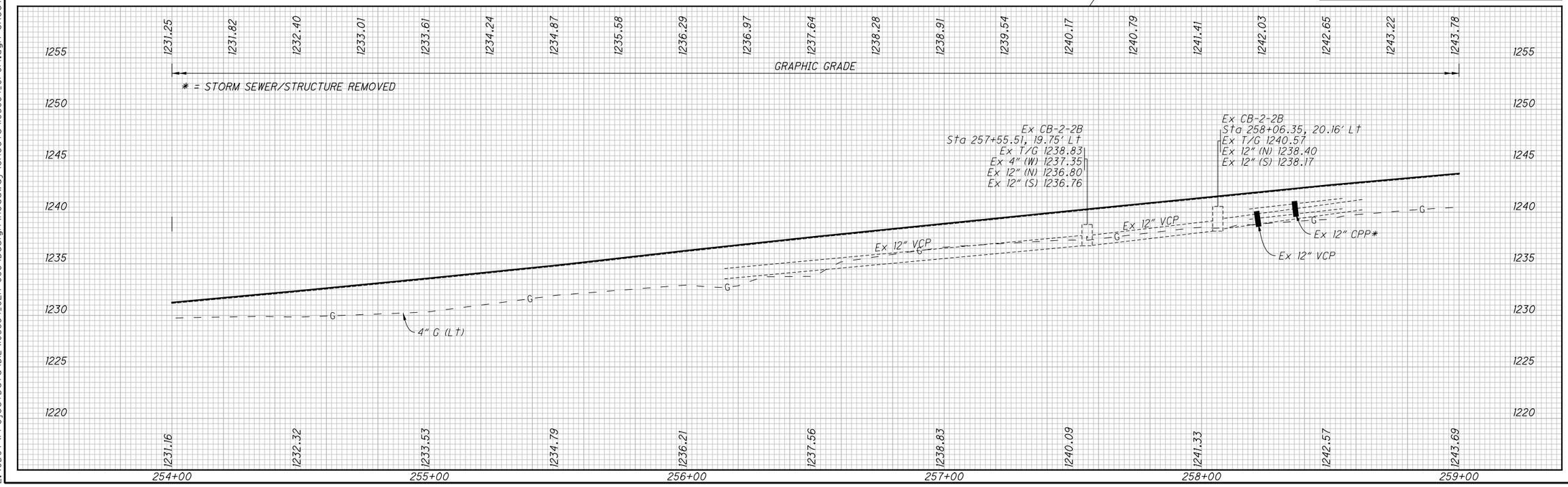
DITCH EROSION PROTECTION



CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS

UTILITY LEGEND

ORW = ORWELL NATURAL GAS COMPANY



PLAN AND PROFILE
STA. 254+00 TO STA. 259+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MSD
CHECKED SAC

GEA-608-3.09

40
179

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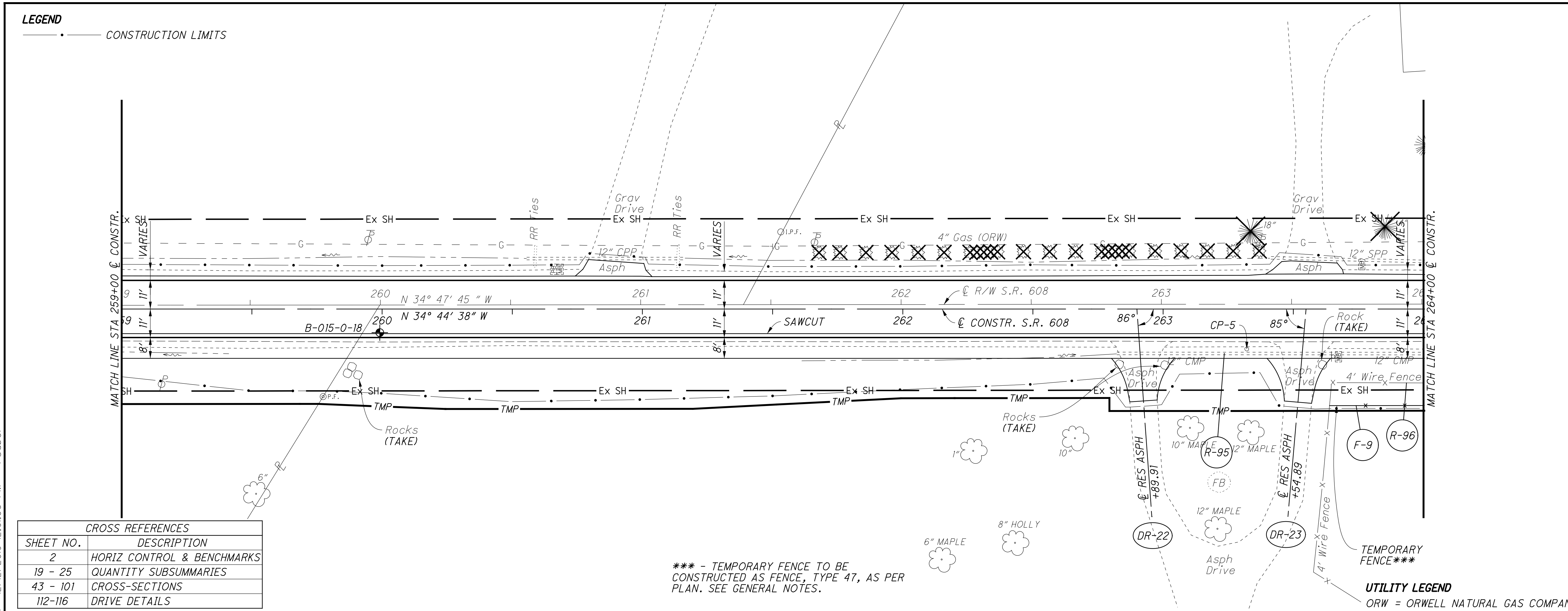
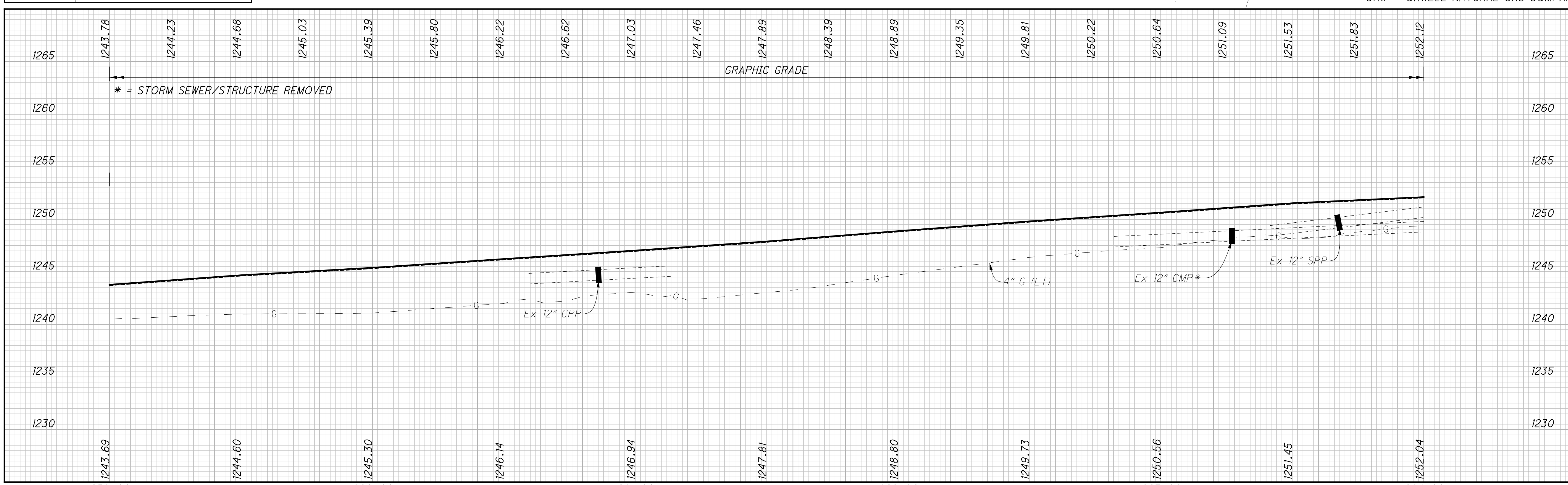


CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS



CALCULATED MSD
CHECKED SAC

PLAN AND PROFILE
STA. 259+00 TO STA. 264+00

GEA-608-3.09

LEGEND

CONSTRUCTION LIMITS

*** - TEMPORARY FENCE TO BE CONSTRUCTED AS FENCE, TYPE 47, AS PER PLAN. SEE GENERAL NOTES.

UTILITY LEGEND

ORW = ORWELL NATURAL GAS COMPANY

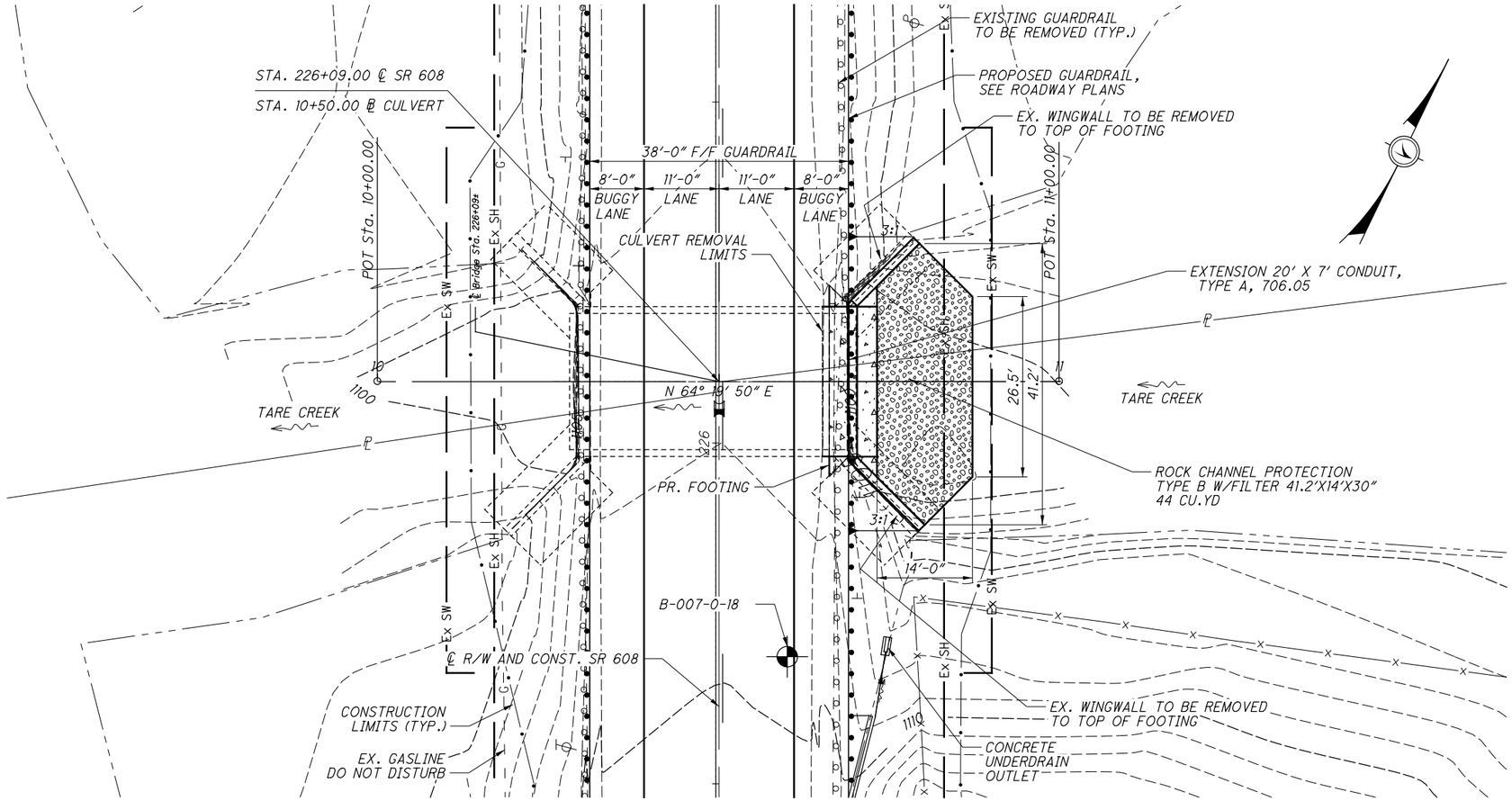
CROSS REFERENCES	
SHEET NO.	DESCRIPTION
2	HORIZ CONTROL & BENCHMARKS
19 - 25	QUANTITY SUBSUMMARIES
43 - 101	CROSS-SECTIONS
112-116	DRIVE DETAILS

HORIZONTAL SCALE IN FEET

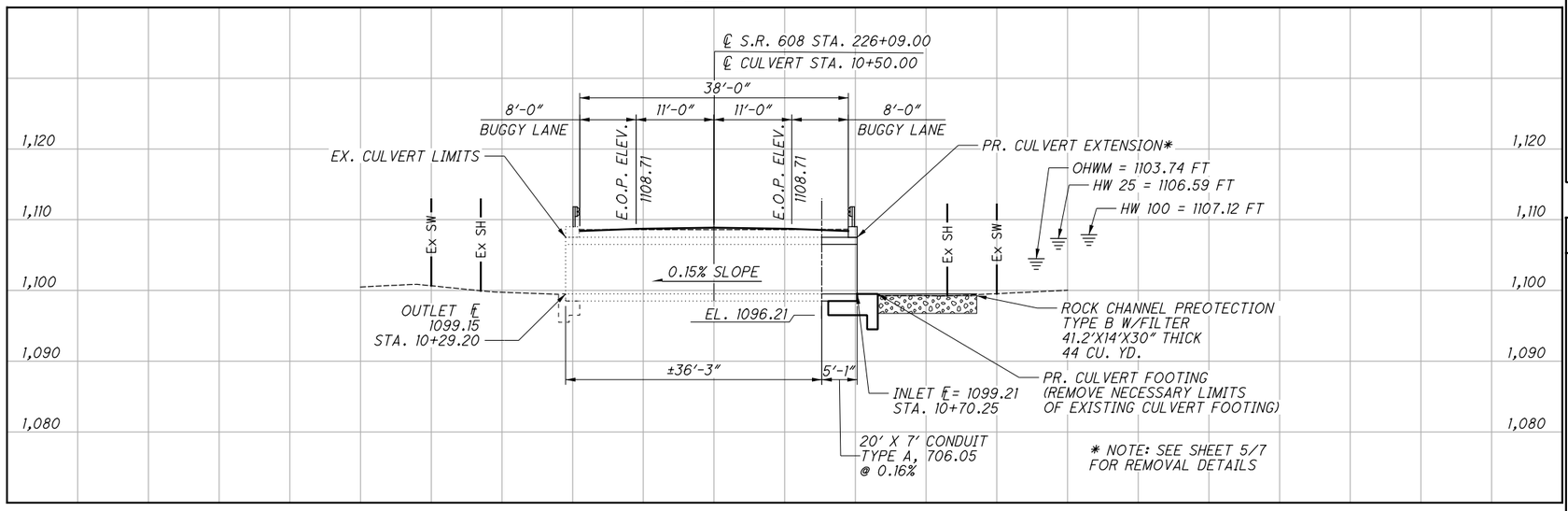
CALCULATED MSD CHECKED SAC

PLAN AND PROFILE STA. 264+00 TO STA. 269+00

GEA-608-3.09



PLAN



PROFILE ALONG CULVERT

CONTROL POINT DATA

CP-2 STA. 212+49.71, ELEV. 1143.60, OFFSET 16.58', RT.
CP-3 STA. 233+40.38, ELEV. 1118.82, OFFSET 24.60', RT.

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET (2/172)

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC:
2020 ADT = 6400
2040 ADT = 6800
DIRECTIONAL DISTRIBUTION = 56%

LEGEND

BORING LOCATION

HYDRAULIC DATA

DRAINAGE AREA = 3565 ACRES

Q (25) =	828	CFS	V (25) =	5.9 FT/S	HW (25) =	1106.59 FT
Q (100) =	1090	CFS	V (100) =	7.8 FT/S	HW (100) =	1107.12 FT

EXISTING STRUCTURE

TYPE: PRECAST, REINFORCED BOX CULVERT
20' SPAN X 7' RISE

SPANS: 20-FT
ROADWAY: 36-FT F/F SAFETY CURB
LOADING: HS20-40 AND ALTERNATE MILITARY
SKEW: 90°
APPROACH SLABS: NONE
ALIGNMENT: STRAIGHT
CROWN: NORMAL
STRUCTURAL FILE NUMBER: 2802201
DATE BUILT: 7/1/2005
DISPOSITION: TO BE EXTENDED

PROPOSED STRUCTURE

TYPE: PRECAST, REINFORCED BOX CULVERT
20' SPAN X 7' RISE

SPANS: 20-FT
ROADWAY: 38-FT TOE/TOE PARAPET
LOADING: HL-93 AND FWS 0.06 KIPS / SQ. FT.
SKEW: 90°
APPROACH SLABS: NONE
ALIGNMENT: STRAIGHT
CROWN: 0.016 FT/FT
COORDINATES: LATITUDE 41° 29' 9.20"
LONGITUDE 81° 4' 56.20"

DESIGN AGENCY
2LMW Inc.
2475 Sugar Grove Rd., SE Lancaster, Ohio 43130
(740) 687-5542 Phone - (740) 687-0086 Fax

DESIGNED	DRAWN	REVIEWED	DATE
AKA	AKA	MUR	08/29/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
LAW		2802201	

GEAUGA
STA. 225+98.07
STA. 226+20.07

SITE PLAN
BRIDGE NO. GEA-608-0376
SR 608 OVER TARE CREEK

GEA-608-3.09
PID No. 103884

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

800 DATED 8-01-20
832 DATED 10-19-18
940 DATED 4-17-15

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 8TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

DESIGN DATA

THE FOLLWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL (ϕ) = 34 DEGREE
UNIT WEIGHT OF SOIL = 120 PCF
UNIT WEIGHT OF CONCRETE = 150 PCF
SLOPE OF BACKFILL = 3:1 MAX.
LIVE LOAD SURCHARGE = 0 FT.
MAXUMUM FOUNDATION BEARING PRESSURE = 4200 P.S.F.
DESIGN EARTH COVER < 2 FEET

MATERIALS SHALL CONFORM TO THE FOLLOWING:

INTERNAL ANGLE OF FRICTION FOR SOIL (ϕ) = 34 DEGREE
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4 KSI (FOOTING, WINGWALLS AND FORSLOPE WALL)
REINFORCING STEEL - ASTM A615, A616, OR A617 GRADE 60 MINIMUM YIELD STRENGTH 60 KSI (ALL REINFORCING SHALL BE EPOXY COATED)

DESIGN LOADING

DESIGN LOADING: HL-93
FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SQ.FT.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THE WORK FOR THIS ITEM SHALL INCLUDE REMOVAL AND DISPOSAL OF PORTIONS OF THE EXISTING CULVERT, FOOTING, AND WINGWALLS TO THE LIMITS SHOWN IN THESE PLANS. THE WORK SHALL INCLUDE REMOVAL AND DISPOSAL OF ALL EXISTING MATERIALS. REMOVE EXISTING CULVERT TO FIRST JOINT, PRESERVING CONNECTION END DETAILS. 1 FOOT OF THE EXISTING CULVERT SHALL BE EXPOSED FOR OVERLAP OF THE EXISTING AND PROPOSED WATERPROOFING. CARE SHOULD BE TAKEN TO NOT DAMAGE THE EXISTING WATERPROOFING.

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

BACKFILL LIMITATION:

WHEN THE DESIGN HEIGHT IS GREATER THAN 10 FT, THE BACKFILL BEHIND THE WINGWALLS SHALL NOT BE PLACED HIGHER THAN THE ELEVATION OF THE SOIL ABOVE THE TOE. WHEN THE SOIL ABOVE THE TOE IS AT ITS FINISHED ELEVATION, THE REMAINDER OF THE BACKFILL MAY BE PLACED.

POROUS BACKFILL W/ GEOTEXTILE FABRIC:

POROUS BACKFILL WITH GEOTEXTILE FABRIC , 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE END OF THE WINGWALLS. GEOTEXTILE FABRIC TYPE A SHALL BE PLACED BETWEEN POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILLAND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELELVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0", A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

FORESLOPE WALL ANCHOR DOWELS:

ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH SPECIFIED ON SHEET 7 / 7. PAYMENT FOR DOWEL HOLES, GROUT AND INSTALLATION SHALL BE INCLUDED WITH ITEM 511 - CONCRETE CLASS QC1, HEADWALL.

AS AN ALTERNATIVE TO RESIN BONDING, THREADED INSERTS OR NONPROTRUDING MECHANICAL CONNECTORS CAST INTO THE CULVERT BY THE MANUFACTURER MAY BE USED PROVIDED THEY CAN RESIST AN ULTIMATE PULL-OUT STRENGTH OF 12 KIPS AND MAINTAIN A MINIMUM COVER OF 3 INCHES AT THE BOTTOM OF THE CULVERT SLAB.

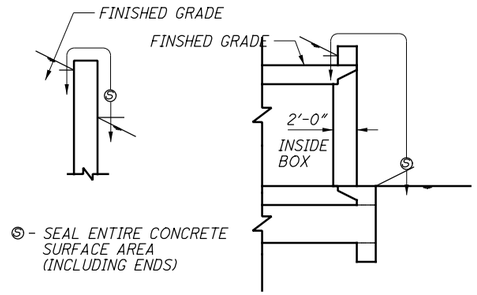
MECHANICAL CONNECTORS MUST PROVIDE AN " L-SHAPED" BAR INSIDE THE CULVERT WITH A MINIMUM HORIZONTAL LENGTH OF 12 INCHES. PAYMENT FOR INSERTS OR MECHANICAL CONNECTORS SHALL BE INCLUDED WITH ITEM-611 - 20' X 7' CONDUIT, TYPE A, 706.05.

SUBSTRUCTURE CONCRETE REMOVAL

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

SEALING OF FORESLOPE WALL AND WINGWALLS:

ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH EPOXY-URETHANE SEALER PER CMS 512.03 AND 705.23. A. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR MATERIALS AND INSTALLATION SHALL BE INCLUDED WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



WINGWALL

FORESLOPE WALL AND PRECAST BOX (CULVERT OUTLET BEVEL SHOWN)

LIMIT OF ITEM 512 - SEALING CONCRETE SURFACES

PREFORMED EXPANSION JOINT FILLER:

PREFORMED EXPANSION JOINT FILLER (PEJF) CONFORMING TO CMS 705.03, ONE INCH THICK, SHALL BE PLACED ABOVE THE FOOTING BETWEEN THE SIDES OF THE BOX CULVERT AND END OF THE WINGWALLS. PAYMENT FOR MATERIALS AND INSTALLATION SHALL BE INCLUDED WITH ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER.

ABBREVIATIONS:

APP - AS PER PLAN
AS - APPROACH SLAB
BOT. - BOTTOM
BRG. - BEARINGS
CIP - CAST-IN-PLANE
CLR. - CLEARANCE
CJ - CONSTRUCTION JOINT
CONST. - CONSTRUCTION
DIA. - DIAMETER
EF - EACH FACE
EL. - ELEVATION
EQ. - EQUAL
EX. - EXISTING
EXP. - EXPANSION
FA - FORWARD ABUTMENT
F/F - FACE TO FACE
FF - FAR FACE
FIX. - FIXED
GR - GUARDRAIL
LT. - LEFT
MAX. - MAXIMUM
MIN. - MINIMUM
N/A - NON-APPLICABLE
NF - NEAR FACE
NB - NORTHBOUND
NO. - NUMBER
PCB. - PORTABLE CONCRETE BARRIER
PEJF - PREFORMED EXPANSION JOINT FILLER
P.G. - PROFILE GRADE
PR. - PROPOSED
RA - REAR ABUTMENT
REF. - REFERENCE
RT. - RIGHT
SB - SOUTHBOUND
SHT. - SHEET
SPA. - SPACES
SR - STATE ROUTE
STA. - STATION
STD. DWG. - STANDARD DRAWING
SUPER. - SUPERSTRUCTURE
TBD - TO BE DETERMINED
TR - TOWNSHIP ROAD
T/S - TOE OF SLOPE
T/T - TOE TO TOE
TYP. - TYPICAL
UNO - UNLESS NOTED OTHERWISE
W/ - WITH

DESIGN AGENCY
DLZ Ohio, Inc.
2475 Sugar Grove Rd., SE Lancaster, Ohio 43130
(740) 687-5542 Phone - (740) 687-0086 Fax

DESIGNED AKA | DRAWN AKA | REVIEWED MUR | DATE 08/29/19
CHECKED LAW | REVISED | STRUCTURE FILE NUMBER 2802201

GENERAL NOTES
BRIDGE NO. GEA-608-0376
SR 608 OVER TARE CREEK

GEA-608-3.09
PID No. 103884

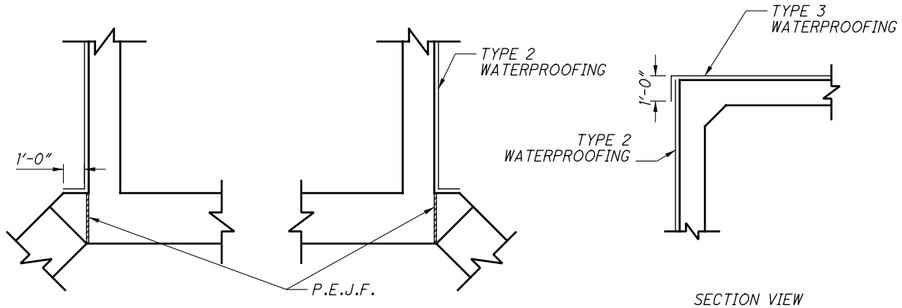
2 / 7

131
172

WATERPROOFING:

TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTION FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH BACKFILL. PAYEMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 TYPE 2 WATERPROOFING.

TYPE 3 WATERPROOFING, PER CMS 512.10 AND 711.29 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYEMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 TYPE 3 WATERPROOFING.



PLAN VIEW

SECTION VIEW

WATERPROOFING DETAILS

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AKA	AKA	MUR	08/29/19
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LAW		2802201	

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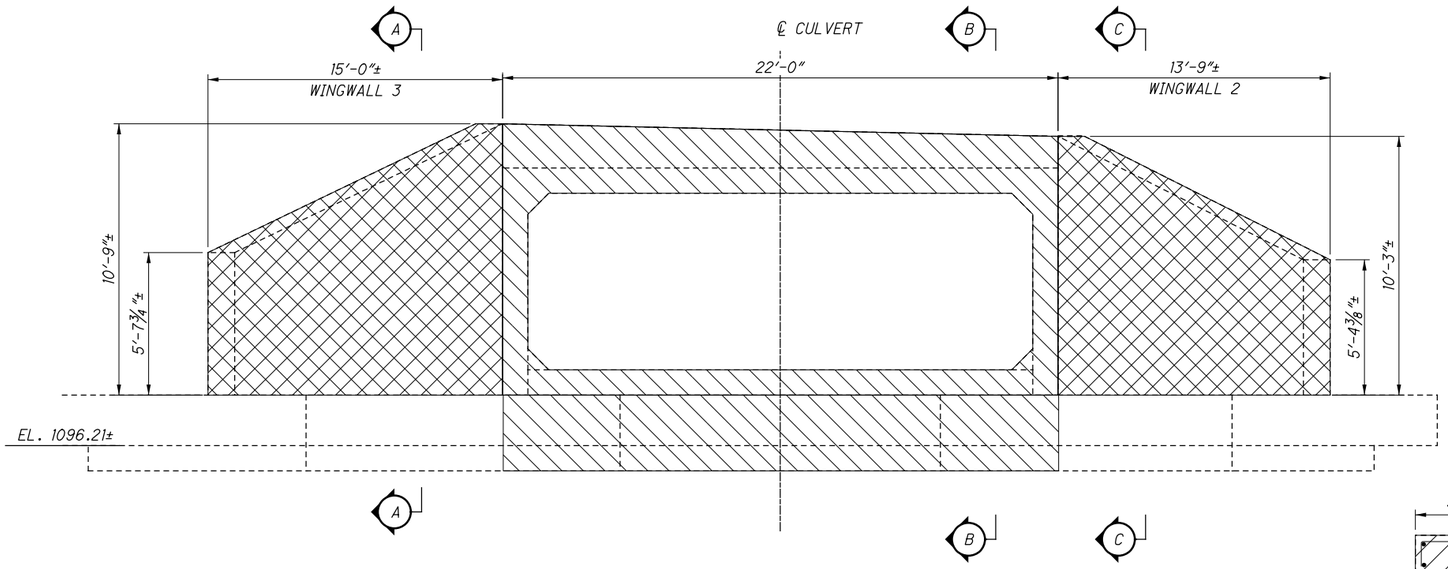
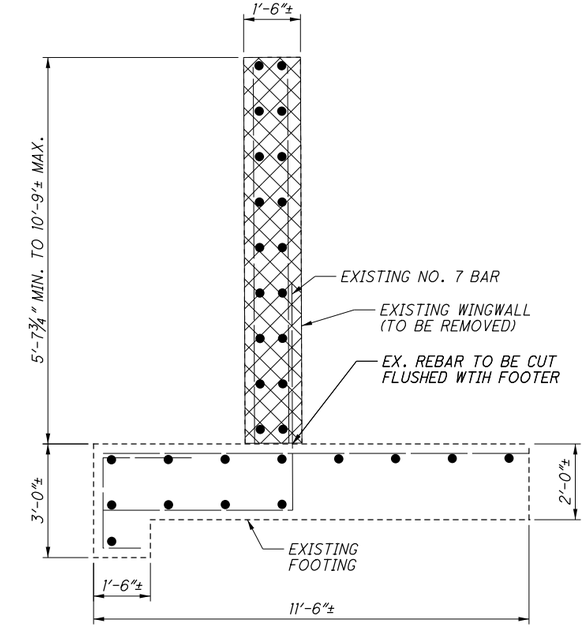
3 / 7

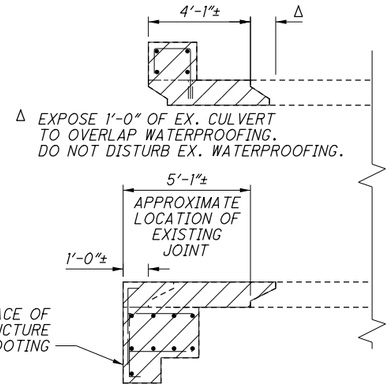
132
172



INLET WINGWALL REMOVAL ELEVATION



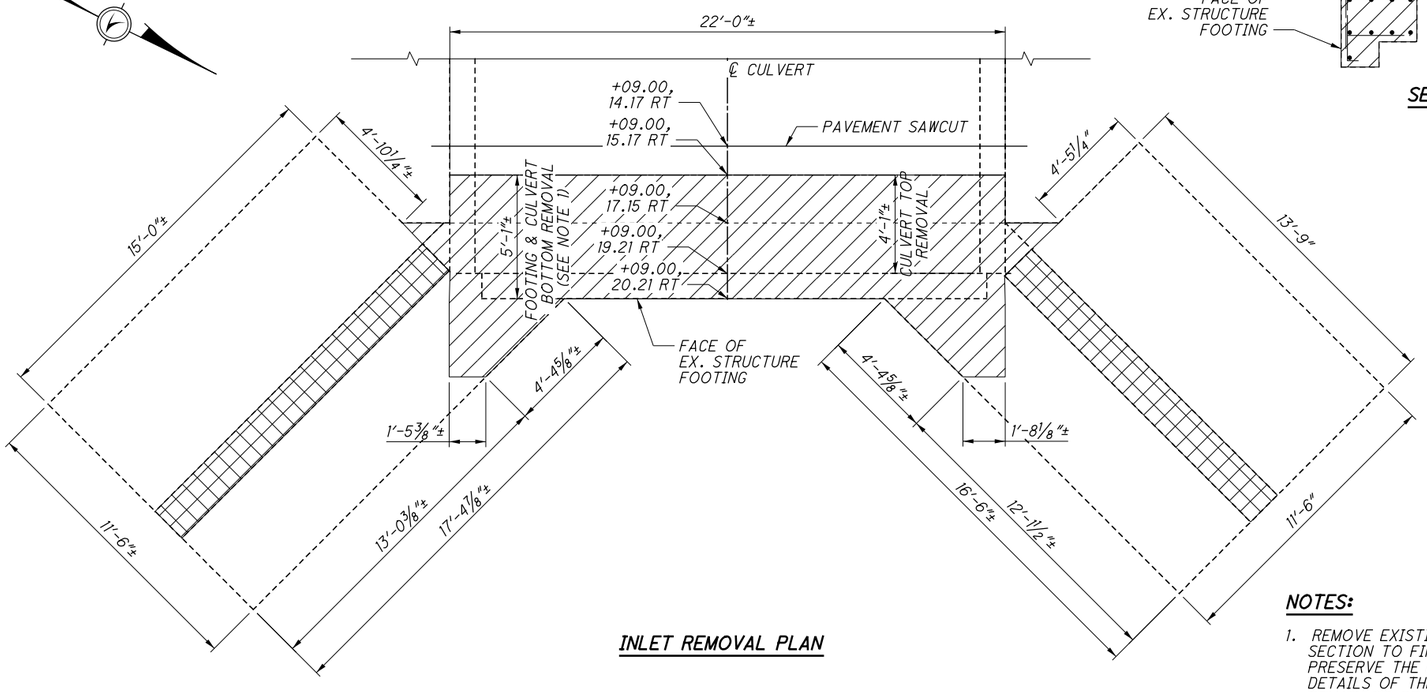
SECTION A-A



SECTION B-B

LEGEND

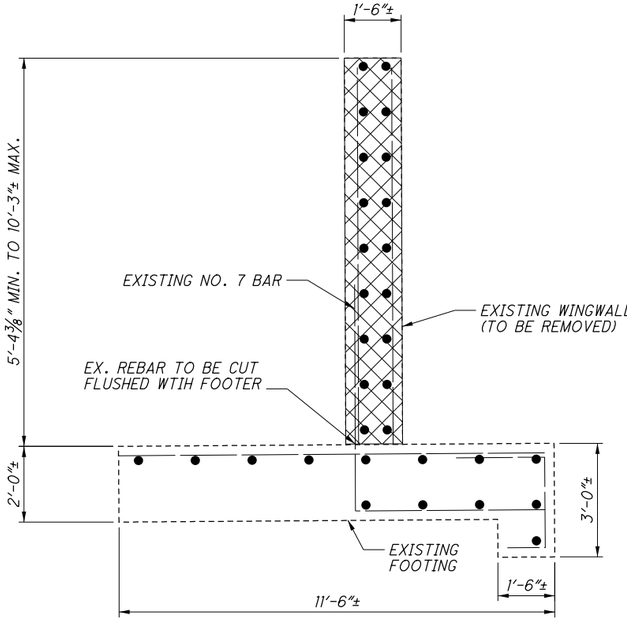
- WINGWALL REMOVAL LIMITS
- FOOTING & EX. CULVERT REMOVAL LIMITS



INLET REMOVAL PLAN

NOTES:

1. REMOVE EXISTING CULVERT END SECTION TO FIRST JOINT. PRESERVE THE END CONNECTION DETAILS OF THE SECTION TO REMAIN TO BE RE-USED.



SECTION C-C

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2475 Sugar Grove Rd., SE Lancaster, Ohio 43130
(740) 687-5542 Phone - (740) 687-0066 Fax

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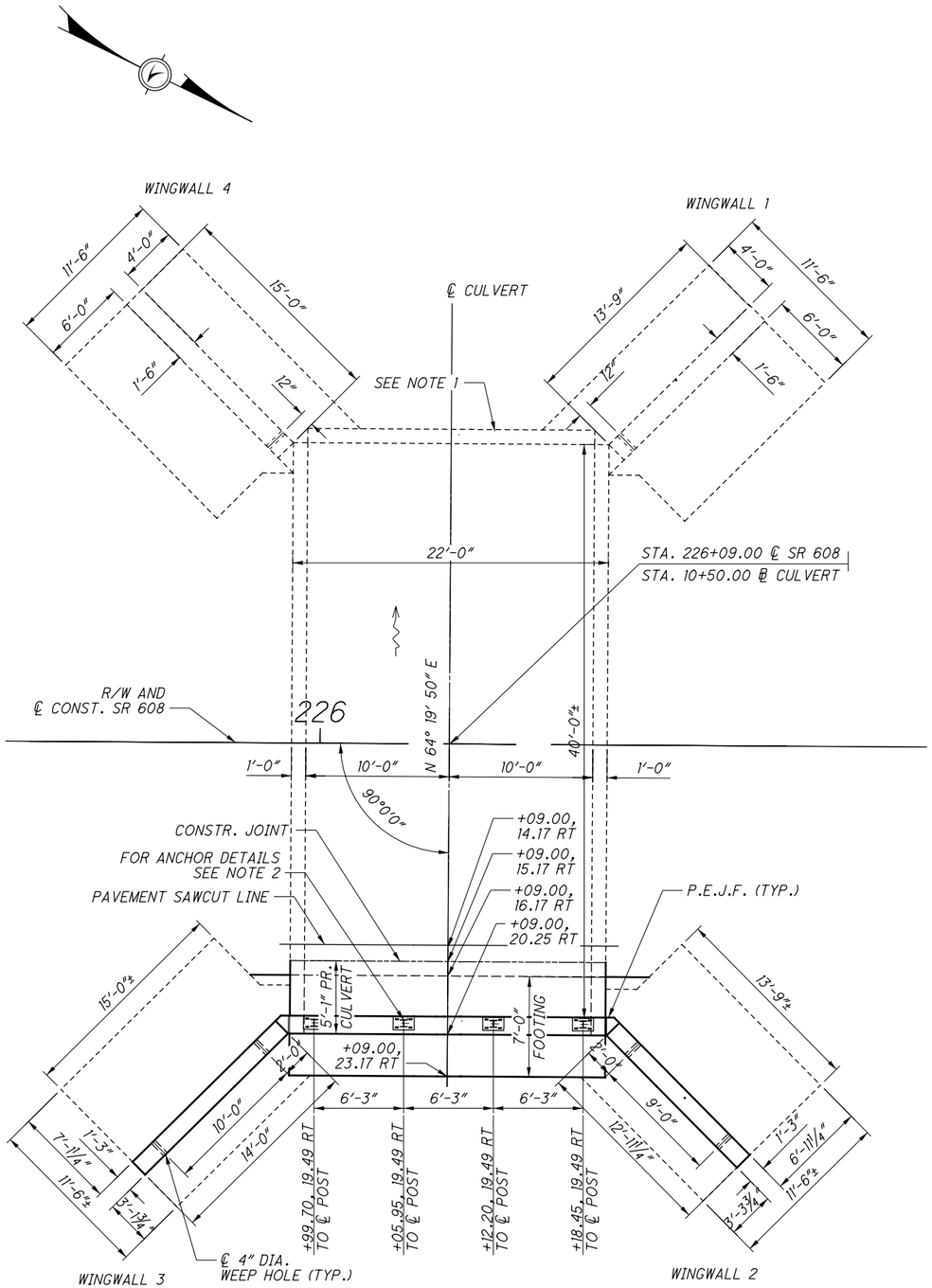
LAW		2802201	

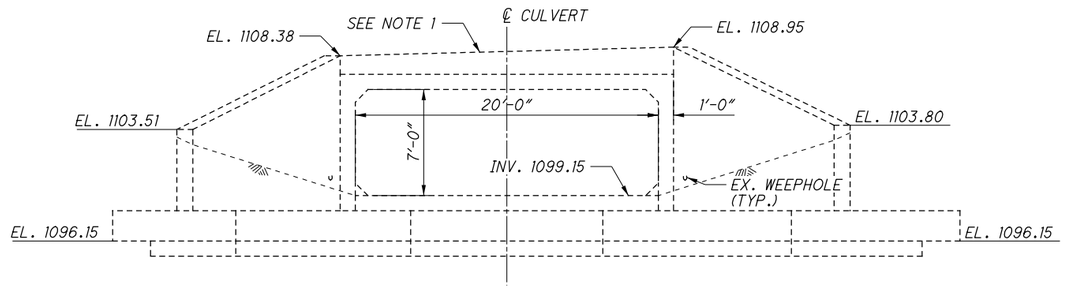
STRUCTURE REMOVAL

BRIDGE NO. GEA-608-0376
SR 608 OVER TARE CREEK

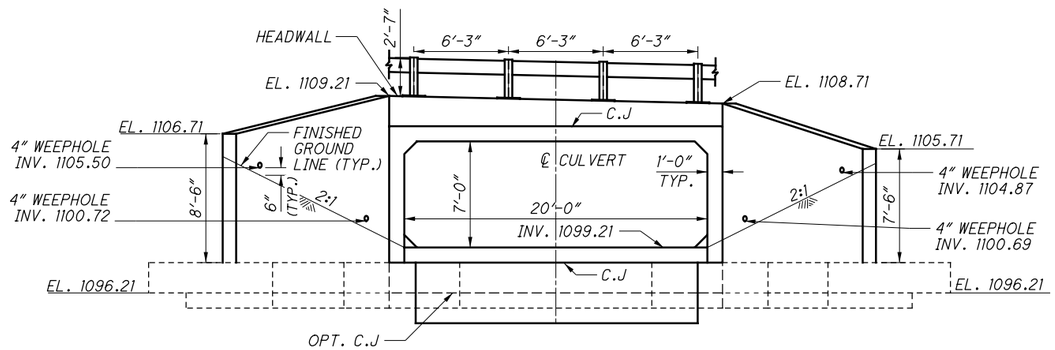
GEA-608-3.09 PID No. 103884



CULVERT & WINGWALL LAYOUT



OUTLET ELEVATION



INLET ELEVATION

NOTES:

1. EXISTING ANCHORS SHOULD BE REUSED FOR PROPOSED GUARDRAIL ON THE OUTLET HEADWALL.
2. SEE SHEETS 104/172 TO 111/172 FOR PROPOSED GUARDRAIL INFORMATION.
3. THE GUARDRAIL IS PAID FOR UNDER ROADWAY QUANTITIES.

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STRUCTURE DETAILS
BRIDGE NO. GEA-608.0376
SR 608 OVER TARE CREEK

GEA-608-3.09
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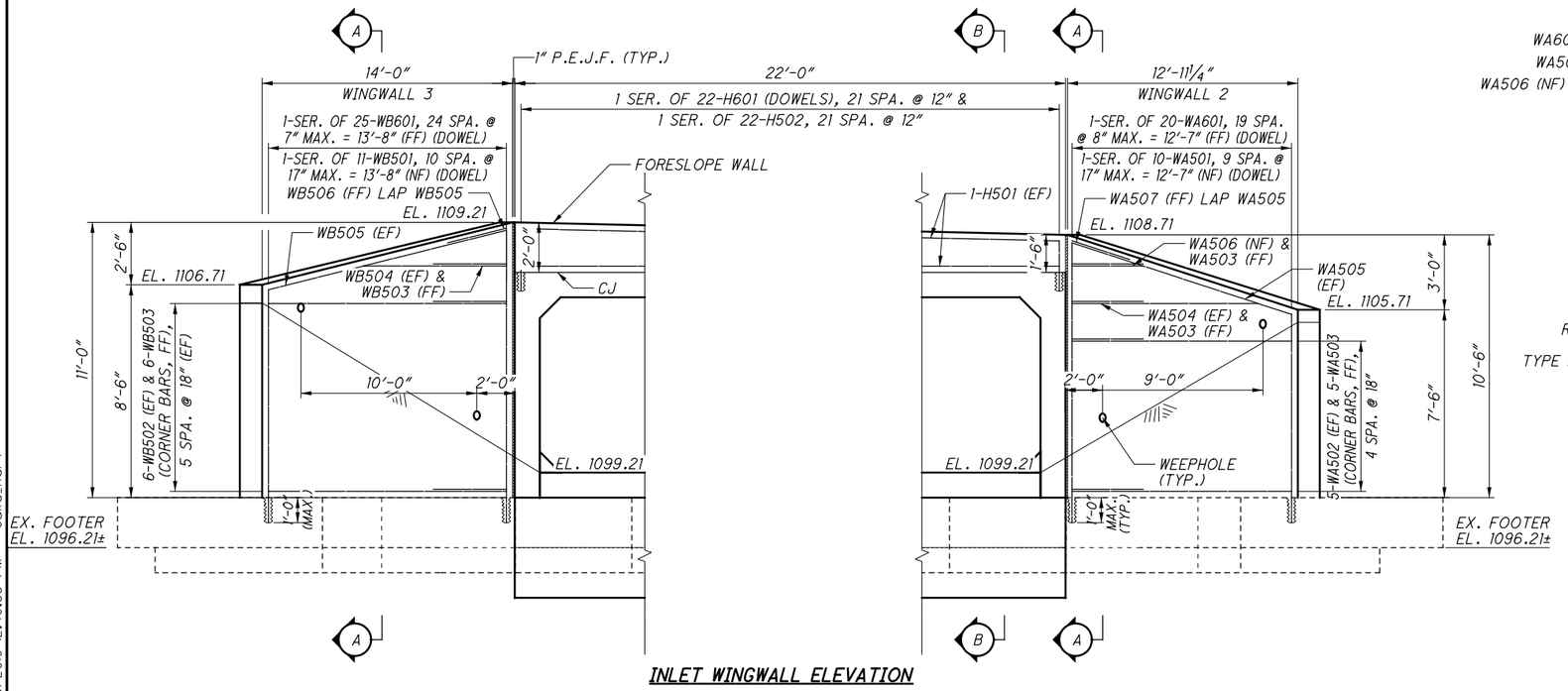
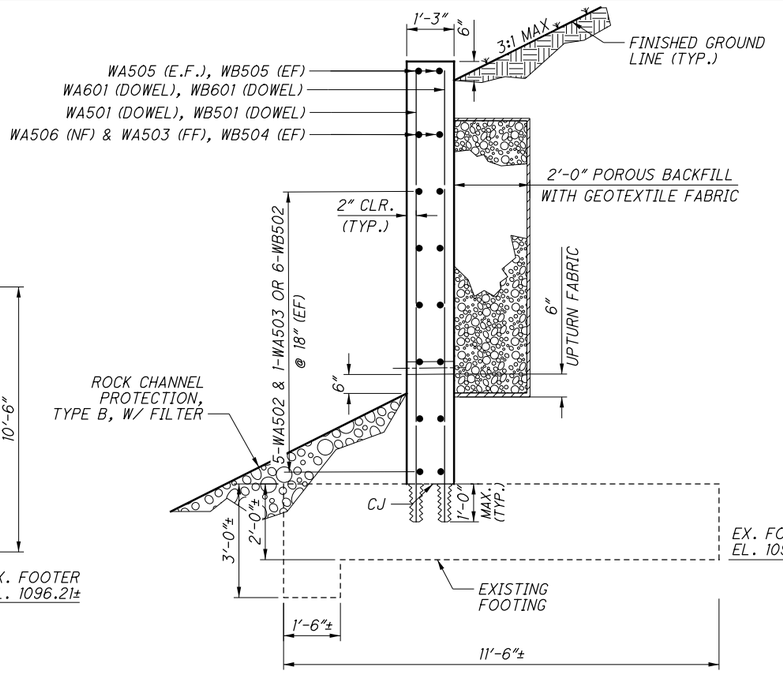
6 / 7

135
172

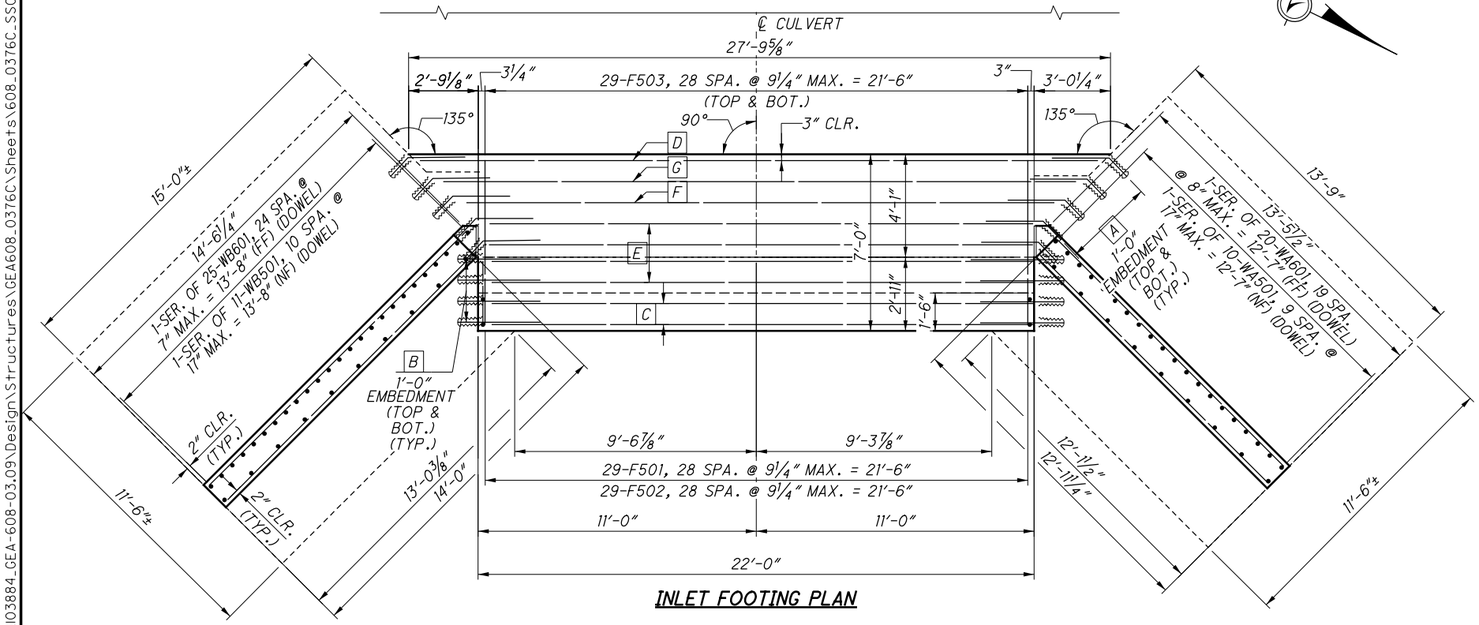


INLET WINGWALL ELEVATION



SECTION A-A

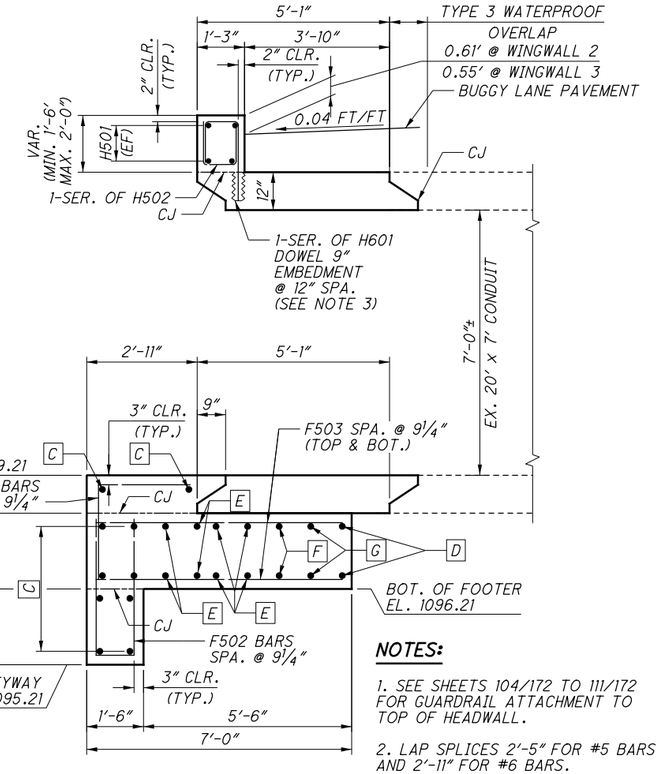
FOOTING REBAR CALL-OUTS			
A	4-F601 (TOP & BOT.)	E	1-F603 (TOP & BOT.)
B	4-F602 (TOP & BOT.)	F	1-F606 (TOP & BOT.)
C	10-F603	G	1-F605 (TOP & BOT.)
D	1-F604 (TOP & BOT.)		



INLET FOOTING PLAN

WINGWALL 3

WINGWALL 2



SECTION B-B

NOTES:

1. SEE SHEETS 104/172 TO 111/172 FOR GUARDRAIL ATTACHMENT TO TOP OF HEADWALL.
2. LAP SPLICES 2'-5" FOR #5 BARS AND 2'-11" FOR #6 BARS.
3. SEE SHEET 2 / 7 FOR FORESLOPE ANCHOR DOWEL (H601) INFORMATION.

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DESIGNED AKA | DRAWN JAA | CHECKED LAW | REVIEWED MUR | DATE 08/29/19 | STRUCTURE FILE NUMBER 2802201 | REVISED

STRUCTURE DETAILS
BRIDGE NO. GEA-608-0376
SR 608 OVER TARE CREEK

GEA-608-3.09
PID No. 103884

7 / 7

136 / 172

Pre-Construction Notification
GEA-608-3.09 (PID 103884)
7/14/2020

TABLE C. DISCHARGE AND FILL QUANTITIES

STREAMS								Permanent Fill Within/Below OHWM												
Aquatic Resource ID	Station	Description of Impacts/Activities Within OHWM	Total Length Within Project Area	Stream Width (LF)	Stream Depth (LF)	Existing Culvert	Existing Culvert Replaced (overlap)	Proposed Concrete (Includes Culvert, Piers, Walls, Abutments, etc.)			Proposed RCP			Total Permanent Fill Within OHWM			Total Temporary Fill Within OHWM			TOTAL IMPACT (Upstream to Downstream)	TOTAL NEW IMPACT (Total Impact Minus Pre-Existing Impacts)
						Length (LF)	Length (LF)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Length (LF)
Tare Creek	STA 226+10	Concrete Culvert Extension, RCP Placement, Demolition Debris, TAF	102 LF	41.20	3.75	36.0	0.0	10.0	0.005	43.1	14.0	0.011	44.0	24.0	0.116	87.1	76.0	0.051	308.5	76.0	40.0
					SUM:			10.0	0.005	43.1	14.0	0.011	44.0	24.0	0.116	87.1	76.0	0.051	308.5	76.0	40.0

WETLANDS, JURISDICTIONAL DITCHES, PONDS						Permanent Fill Within Wetland Boundary								Total Permanent Fill Within Wetland Boundary		TOTAL IMPACT	TOTAL NEW IMPACT (Total - Existing)
Aquatic Resource ID	Station	Description of Impacts/Activities within Wetland Boundary	Total Acreage Within Project Area	Width (LF)	Depth (LF)	Proposed Earthen, Granular, or Embankment Fill, Grading		Proposed Stormwater Drainage Pipe		Proposed RCP		Proposed Fence					
						Area (AC)	Volume (CY)	Area (AC)	Volume (CY)	Area (AC)	Volume (CY)	Area (AC)	Volume (CY)	Area (AC)	Volume (CY)	Area (AC)	Area (AC)
Wetland 1	STA 215+75, 220+80 - 223+25, & 225+00 - 230+70	Grading & Earthen Fill, Stormwater Drainage Pipe Installation, RCP Placement	0.58 AC	26	1	0.069	111.9	0.001	0.8	0.001	1.8	N/A	N/A	0.071	114.5	0.071	0.071
Wetland 2	STA 217+50 - 219+60	Grading & Earthen Fill, Fence Placement	0.1 AC	22	1	0.040	65.3	N/A	N/A	N/A	N/A	0.001	0.8	0.041	66.1	0.041	0.041
					SUM:	0.109	177.2	0.001	0.8	0.001	1.8	0.001	0.8	0.112	180.6	0.112	0.112

LF = linear feet; AC = acres; CY = cubic yards; RCP = rock channel protection or the like (specify if different, ie. concrete block matting); NA = Not Applicable

US Army Corps of Engineers
Huntington District

Permit Number: 2020-00511-CUY

Name of Permittee: Ohio Department of Transportation

Date of Issuance: October 2, 2020

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers - Huntington District
Building 10/ Section 10
PO Box 3990
Columbus, OH 43218-3990

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____
Signature of Permittee Date