

General Notes

- Each contractor is responsible for the complete review of all drawings and specifications. The contractor shall provide a complete building package as shown in the drawings and specifications.
- All construction shall be in accordance with the City of Lebanon standards. Verify soil bearing capacity in accordance with the specifications prior to footing excavation.
- Site Contractor is responsible for the rough and final grading of existing site. This requires all construction debris, large objects, etc., to be removed and prepare existing site for topsoil and seeding.
- Site Contractor is required to excavate, remove, and dispose spoils for all building pads, sidewalks, driveways, curbs, and parking lot.
- Refer to Architectural Plans for building configuration and dimensions.
- All utilities in pavement shall be backfilled with granular material.
- Any under-drains encountered during construction shall be connected to the storm sewer.
- Each contractor is responsible for the complete review of all drawings and specifications. The contractor shall provide a complete building package as shown in the drawings and specifications.
- Owner shall pay for all utility tap fees.
- All mud/dirt tracked onto public roads from site, due to construction, shall be promptly removed by the contractor.
- All sewer and water trenches shall be visually inspected by the City of Lebanon Engineering Department prior to backfill.
- Roof drains, foundation drains, sump pumps, and other clean water sources shall not be connected to the sanitary sewer system. Such conditions are strictly prohibited.
- All work shown on plans shall be done by the Owner unless otherwise indicated.
- All work on plans shall be done in accordance with City of Lebanon standards, regulations, and specifications.
- All water mains shall be hydrostatically leak tested and chlorine tested with two consecutive negative bacteria samples being returned prior to being placed in use.
- All sanitary sewers shall pass deflection and air testing in the presence of the City of Lebanon Engineering Department prior to being placed in service.
- All sanitary manholes shall pass vacuum testing in the presence of the City of Lebanon Engineering Department prior to backfill.
- All sewer mains shall be video inspected by a professional firm specializing in video inspection. Copies of all reports and videos shall be provided to the City of Lebanon Engineering Department for review. Any abnormal findings shall be corrected based on the recommendations of the City Engineer.

Coded Notes

- New Heavy Duty Asphalt for entrance and middle 26 feet of parking area (Hatched Area). See detail. New Standard Duty Asphalt everywhere else. See detail.
- New H/C symbol, painted (typical). See detail on Sheet C6.
- New H/C sign installed (typical). See detail on Sheet C6.
- New parking space lines. Painted white. 3" wide. See detail on Sheet C6.
- Pavement widening. Meet existing pavement. Sawcut for clean edge, seal with Hot A.C. when meeting existing asphalt.
- Landscape area. Contractor shall finish grade and seed or landscape. See detail.
- New 4" poured concrete sidewalk over 4" compacted gravel w/ 6x6 w.w.m. See detail.
- New Monolithic Curb and Walk. See Detail.
- Provide & install 20'x20' concrete mechanical pad. GW&C contractor shall coordinate location with mechanical contractor.
- 12' x 12', 8" thick reinforced concrete dumpster pad with concrete block enclosure, stone veneer to match the building
- Electric transformer
- Vault for water connection, 2" service line, 6" for sprinkler system, See City of Lebanon Exterior/Fire Split Detail, Sheet C11.

REVISIONS - 10/30/2025

- Updated waterline type.
- Updated sanitary sewer type.
- Added 60" sidewalk.
- Added plumbing plan to the site drawings. See Architectural Plans for building plumbing details.
- Added type for all catch basins.
- Added type of drive and curb.
- Added type, size, and tapping sleeve.

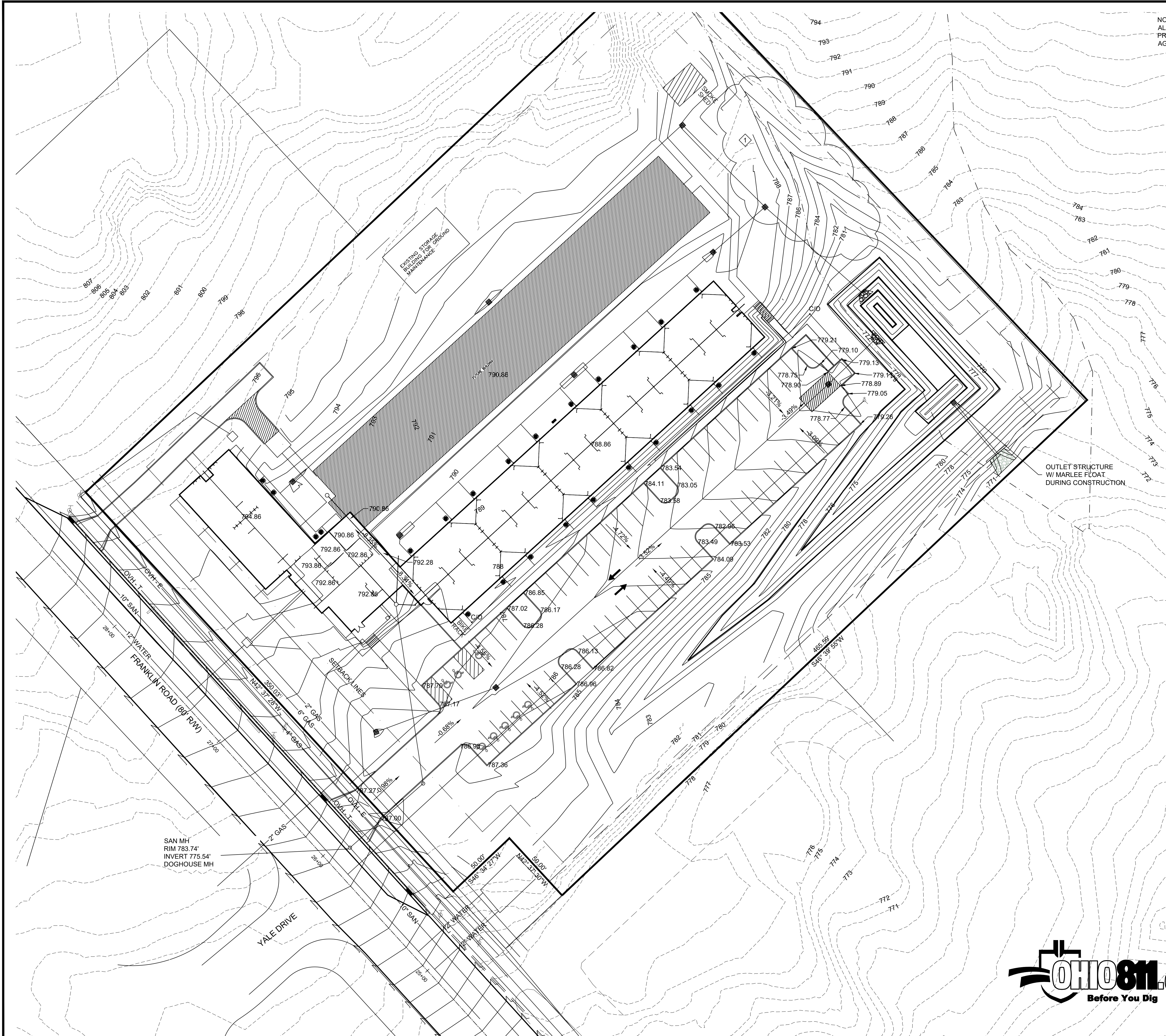
STRUCTURE TABLE:			
CB1	GRATE ELEV: 778.11'	CB8	GRATE ELEV: 789.86'
	INVERT ELEV: 776.36'		INVERT ELEV: 785.12'
CB2	GRATE ELEV: 785.91'	CB9	GRATE ELEV: 789.86'
	INVERT ELEV: 779.26'		INVERT ELEV: 786.40'
CB3	GRATE ELEV: 785.86'	CB10	GRATE ELEV: 789.86'
	INVERT ELEV: 780.08'		INVERT ELEV: 787.68'
CB4	GRATE ELEV: 788.63'	CB11	GRATE ELEV: 796.38'
	INVERT OUT ELEV: 779.40'		INVERT ELEV: 792.11'
	INVERT IN FROM CB6: 783.48'		
	INVERT IN FROM CB8: 784.37'		
CB5	GRATE ELEV: 787.68'	CB12	GRATE ELEV: 788.19'
	INVERT ELEV: 783.86'		INVERT ELEV: 784.22'
CB6	GRATE ELEV: 787.86'	CB13	GRATE ELEV: 784.03'
	INVERT ELEV: 784.96'		INVERT ELEV: 782.38'
CB7	GRATE ELEV: 787.86'		
	INVERT ELEV: 785.86'		
CATCH BASINS 1-10 IN THIS TABLE ARE ODOT CB2-2			
CATCH BASINS 11-13 IN THIS TABLE ARE CB3			



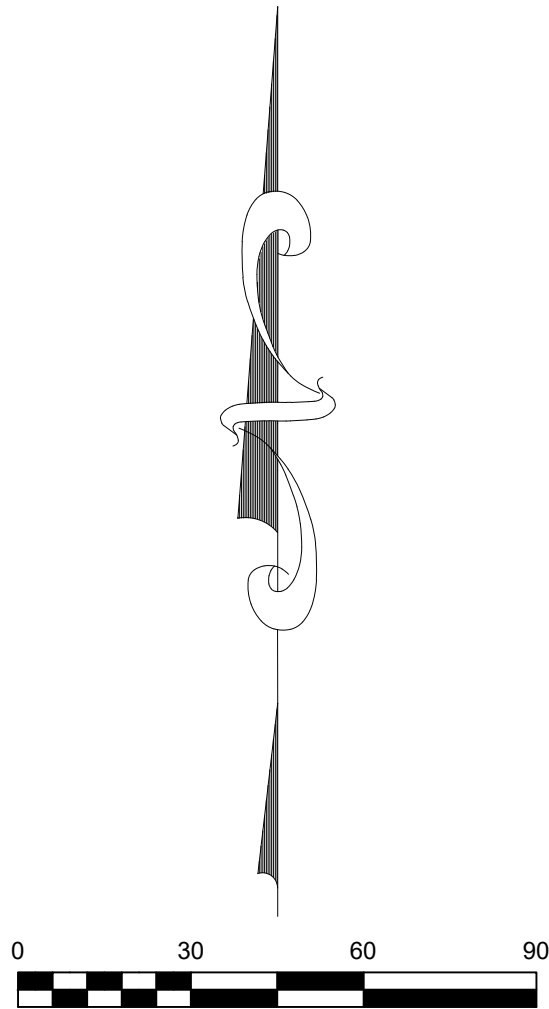
STATE OF OHIO
REGISTERED
PROFESSIONAL ENGINEER
TODD A. CLUXTON
E-69677

TODD A. CLUXTON, P.E. 69677

REVISIONS



NOTE:
ALL DETENTION INLETS AND OUTLETS SHALL HAVE
PROPER SAFETY GUARDS IN PLACE AS TO PROTECT
AGAINST ACCESS FOR ANIMALS AND SMALL CHILDREN.



REVISIONS - 10/30/2025

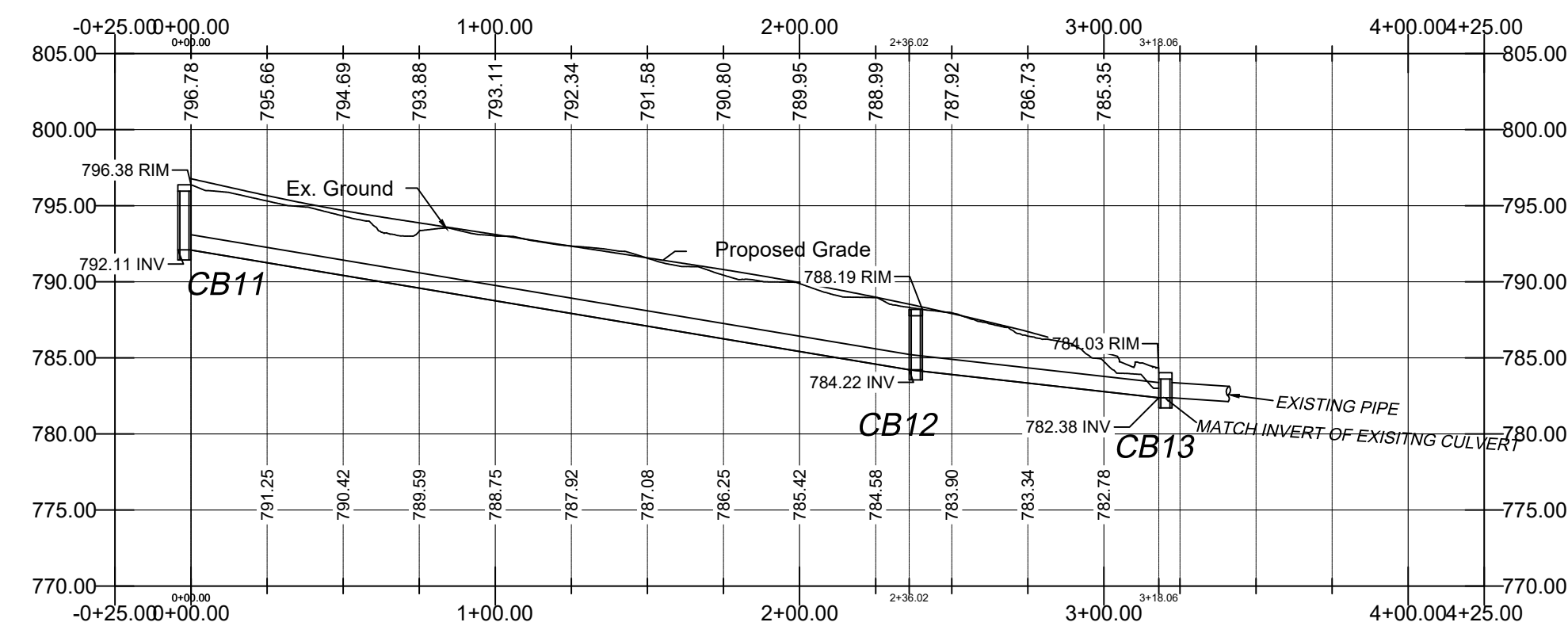
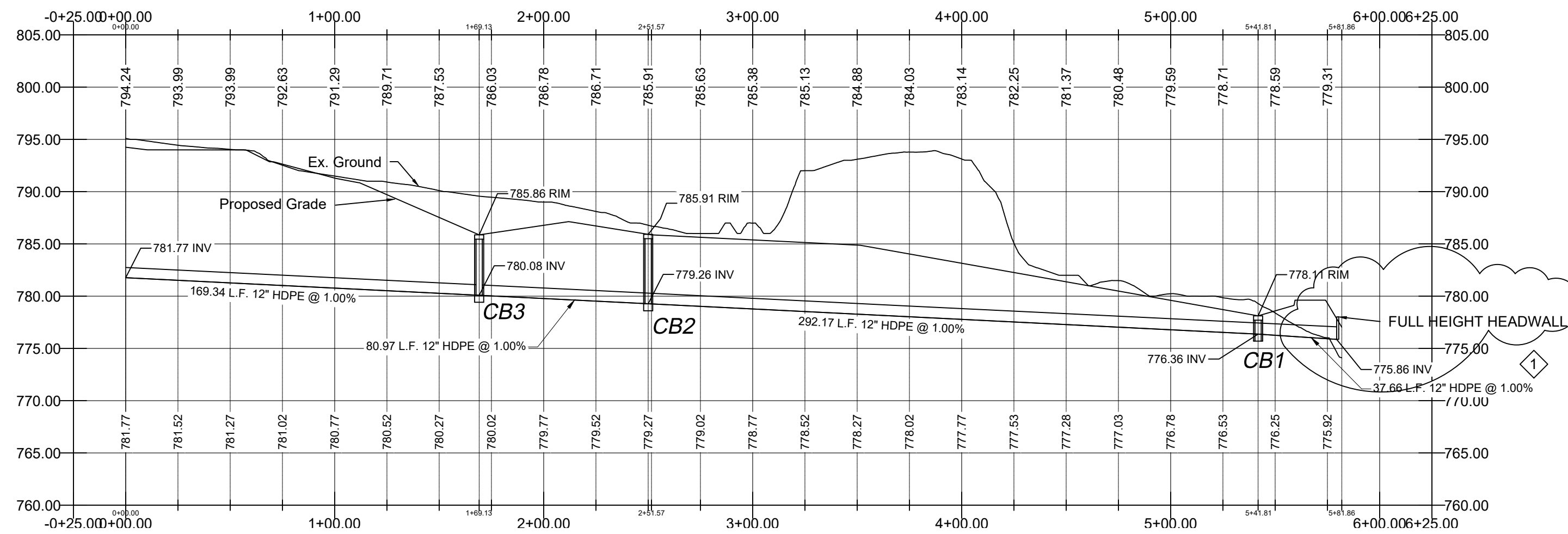
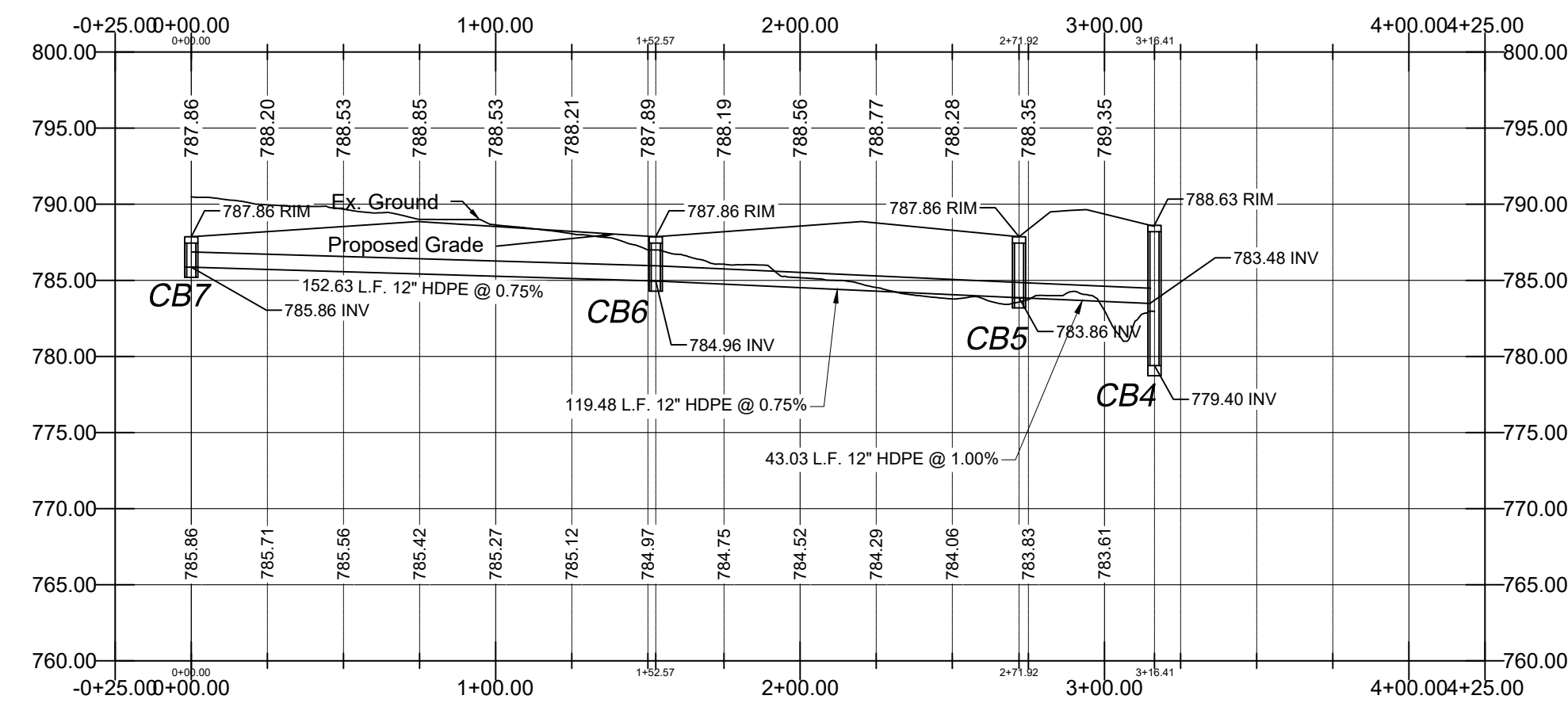
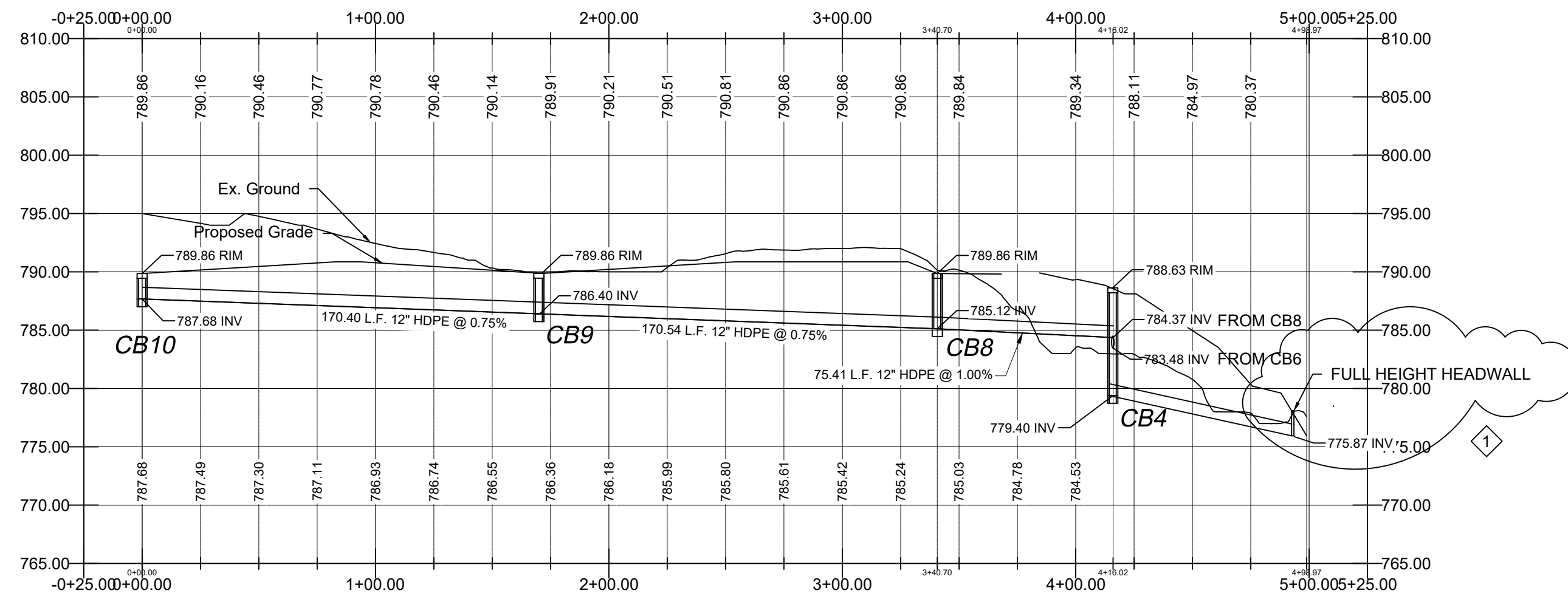
- 1 Revised the grading in this area to accommodate the existing swale.



Todd A. Cluxton
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GRADING PLAN
1" = 30'

REVISIONS



REVISIONS - 10/30/2025
1 Added full height headwalls



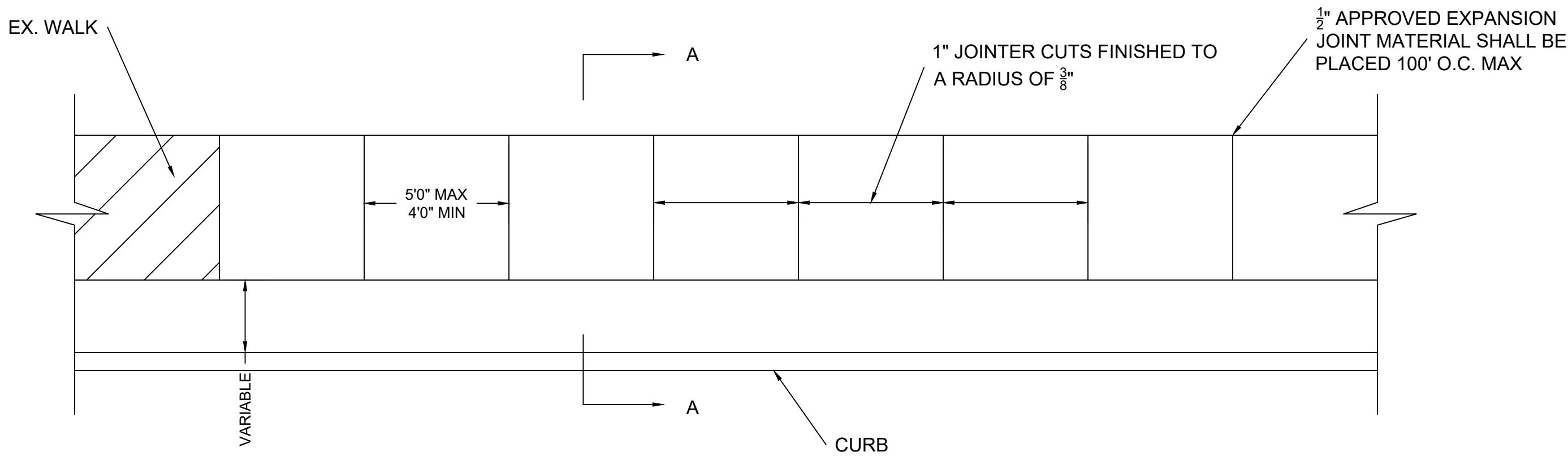
TODD A. CLUXTON, P.E. 69677

PROJECT: SITE PLANS
LOCATION: 830 FRANKLIN ROAD, LEBANON, OH
CLIENT: NEW HOUSING
ADDRESS:
COUNTY: WARREN
PROJECT #: 23-783
DATE: JULY 10, 2025

SHEET: C4/20

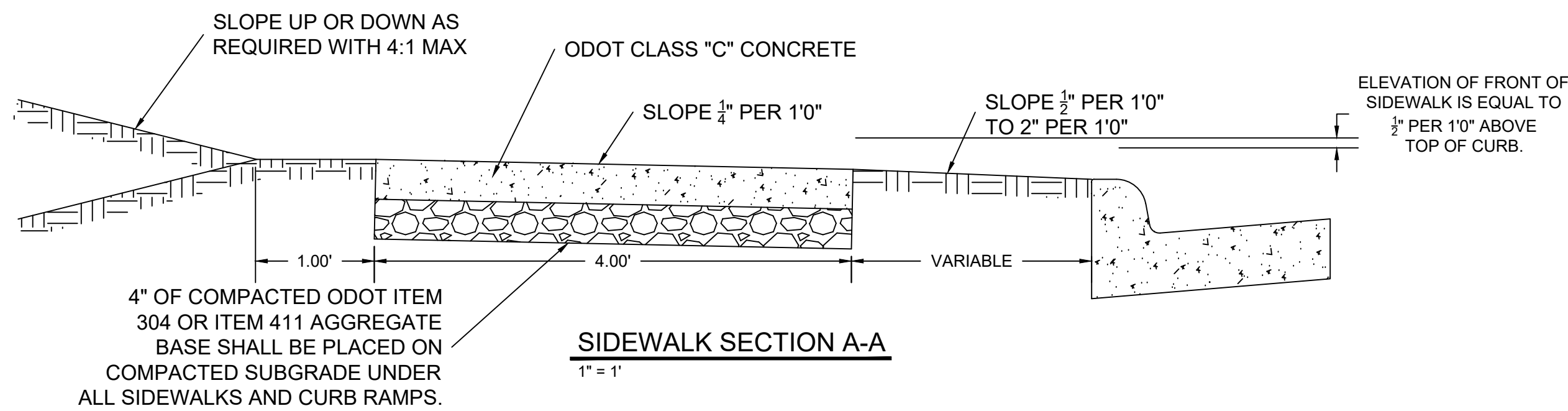
DS2 engineers & surveyors
107 West Second Street, Maysville, KY 41056
280 Chillicothe Ave., Hillsboro, OH 45133

Phone: 888-564-0961 Fax: 606-564-0962



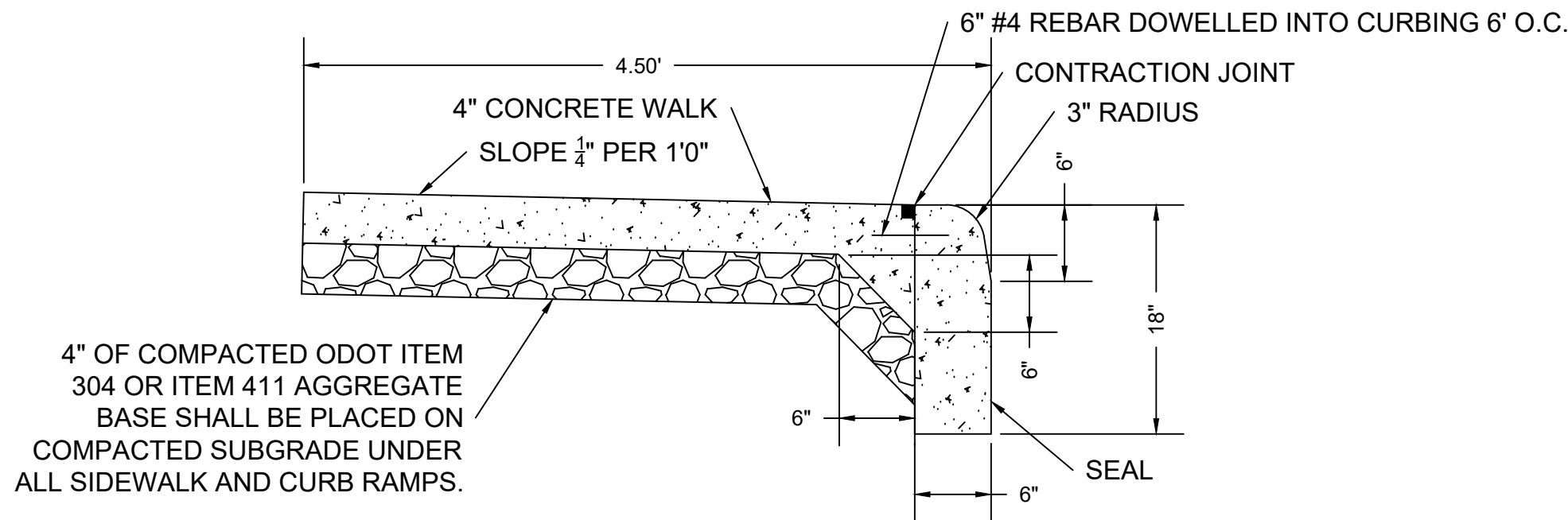
SIDEWALK PLAN VIEW

1" = 3"



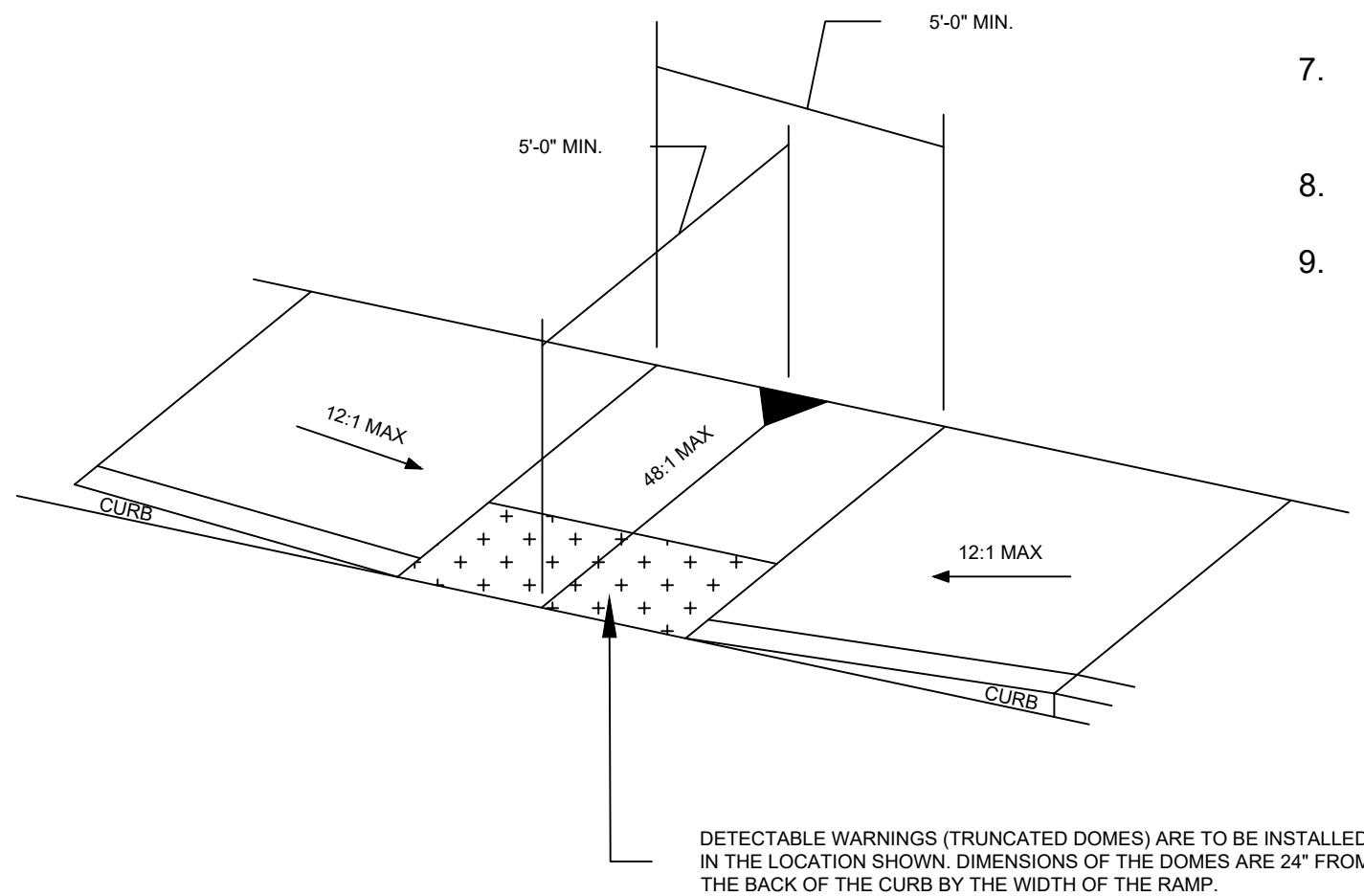
SIDEWALK SECTION A-A

1" = 1"



COMBINED CURB AND SIDEWALK DETAIL

1" = 1"



PARALLEL CURB RAMP DETAIL (DOUBLE) (TYPE "A")

NOT TO SCALE

NOTES:

- CONCRETE AND WORK SHALL MEET THE REQUIREMENTS SET FORTH IN ODOT ITEM 609 CURBING.
- CURBING SHALL HAVE CONTRACTION JOINTS EVERY 10'.
- MINIMUM OF 6" OF ODOT 304 SHALL BE PLACED UNDER CURBING.
- CURBING SHALL BE BACKFILLED IMMEDIATELY AFTER FORMS ARE REMOVED OR AS SOON AS PRACTICAL WHEN SLIP FORMING PRIOR TO OTHER CONSTRUCTION OPERATIONS.
- PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.
- WITH PRIOR CITY DIRECTION, APPLY WHITE PIGMENTED CURING COMPOUND 80°F AIR TEMPERATURE OR CLEAR ON ALL SURFACES INCLUDING BACK IMMEDIATELY AFTER FINISHING SURFACES.
- ALL CONCRETE SHALL BE ODOT CLASS QC1, (4000 PSI, 600 LB/CY CEMENT) PROPORTIONING OPTIONS 1, 2, AND 3, NOT ALLOWED.
- CONCRETE SHALL CONTAIN 6% ± 2% OF TOTAL AIR.
- ALL CURBING PLACED SHALL HAVE A FRONT AND REAR FORM. EXCEPTION: UNLESS CURBING IS SLIP FORMED BY MACHINE OR IS ABUTTING CONCRETE DRIVEWAY OR SIDEWALK OR OTHERWISE APPROVED BY THE ENGINEER.



SIDEWALKS

- WALK TO BE PORED ON UNDISTURBED EARTH OR COMPACTED GRANULAR BEDDING.
- PROVIDE BROOM FINISH TO ALL EXPOSED SURFACES.
- CONCRETE SHALL CONFORM TO ODOT ITEM 499 UNLESS OTHERWISE SPECIFIED.
- PROVIDE EDGING AROUND ALL EXPOSED SURFACES.
- APPLY ONE COAT OF A CLEAR ODOT APPROVED SEALER ON ALL SURFACES INCLUDING THE BACK PER THE MANUFACTURER'S RECOMMENDATIONS.
- WHEN RENOVATING EXISTING STREETS, THE SIDEWALKS SHALL BE REPLACED TO CONFORM WITH CITY CONSTRUCTION STANDARDS AND DRAWINGS.
- CONCRETE SHALL BE ODOT QC1 (4000 PSA, 600 LB/CY CEMENT) PROPORTIONING OPTIONS 1,2 & 3 NOT ALLOWED.
- CONCRETE SHALL CONTAIN 6% ± 2% OF TOTAL AIR.
- PROPERTY PINS SHALL BE RE-ESTABLISHED AFTER FINISHING OF SIDEWALK.

SIDEWALK JOINTS

- GENERAL: CONSTRUCT ISOLATION,CONSTRUCTION, AND CONTRACTION JOINTS, AND TOLL EDGINGS TRUE TO LINE FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO CENTERLINE, UNLESS OTHERWISE INDICATED.
A. WHEN JOINING EXISTING PAVEMENT, PLACE TRANSVERSE JOINTS TO ALIGN WITH PREVIOUSLY PLACED JOINTS, UNLESS OTHERWISE INDICATED.
- CONSTRUCTION JOINTS: ST CONSTRUCTION JOINTS AT SIDE AND END TERMINATION OF PAVEMENT AND AT LOCATIONS WHERE PAVEMENT OPERATIONS ARE STOPPED FOR MORE THAN ONE-HALF HOUR, UNLESS PAVEMENT TERMINATES AT ISOLATION JOINTS.
- EXPANSION JOINTS: FORM ISOLATION JOINTS OF PREFORMED

JOINT-FILLER STRIPS ABUTTING MANHOLES, STRUCTURES, WALKS, OTHER FIXED OBJECTS, AND WHERE INDICATED. EXPANSION JOINTS SHALL NOT BE PLACED AT THE BUILDING FACE UNLESS DIRECTED BY THE CITY OF PIQUA.

A. LOCATION OF EXPANSION JOINTS AT INTERVALS OF 60', UNLESS OTHERWISE INDICATED.

B. LOCATE EXPANSION JOINTS ALONG BUILDINGS.

C. THE EXPANSION JOINT MATERIAL SHALL BE ½" THICK ODOT SPECIFICATIONS.

- CONTRACTION JOINTS: FORM WEAKENED-PLANE CONTRACTION JOINTS, SECTIONING CONCRETE AREAS AS INDICATED IN THE PLANS. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF THE CONCRETE THICKNESS, WHERE INDICATED, AS FOLLOWS:

A. GROOVED JOINTS: FORM CONTRACTION JOINTS AFTER INITIAL FLOATING BY GROOVING AND FINISHING EACH EDGE OF JOINT WITH GROOVER TOOL TO THE FOLLOWING RADIUS. REPEAT GROOVING OF THE CONTRACTION JOINTS AFTER APPLYING SURFACE FINISHES. ELIMINATE GROOVER OVERFLOW SLURRY MARKS ON CONCRETE SURFACES. QUALITY WORK SHALL BE PERFORMED OR THE NEW SIDEWALK WILL BE REMOVED AND REDONE AT THE CONTRACTOR'S EXPENSE. RADIUS TO BE ½ INCH (6 MM).

B. SAWED JOINTS WILL NOT BE PERMITTED.

- EDGING: TOOL EDGES OF JOINTS IN CONCRETE AFTER INITIAL FLOATING WITH AN EDGING TOOL TO A RADIUS OF ½ INCH (6 MM). REPEAT TOOLING OF EDGES AFTER APPLYING SURFACES FINISHES. ELIMINATE TOOL MARKS (OVERFLOW SLURRY) ON CONCRETE SURFACES.

BEDDING

GRANULAR BEDDING MATERIAL SHALL BE CRUSHED STONE OR GRAVEL COMPLYING WITH TYPE 2 BEDDING (#57 OR #67). BEDDING SHALL EXTEND 6 INCHES BELOW THE CONDUIT. BEDDING MATERIAL SHALL EXTEND 12 INCHES ABOVE THE TOP AND TO EACH SIDE OF THE CONDUIT. USE SHOVEL SLICING SPUD BARS IN CONJUNCTION WITH THE COMPACTION OPERATIONS TO COMPACT THE MATERIAL AND TO MANIPULATE THE MATERIAL UNDER THE HAUNCH OF THE PIPE.

BACKFILL

ALL TRENCH EDGES WITHIN THE STREET RIGHT-OF-WAY, UNDER OR WITHIN 5 FEET OF PROPOSED OR EXISTING PAVEMENT CURB, DRIVEWAYS, ALLEYS, OR WALKS SHALL BE BACKFILLED WITH EITHER GRANULAR BACKFILL MATERIAL (#304, #411) OR ODOT ITEM 613 LOW STRENGTH MORTAR BACKFILL

- GRANULAR MATERIAL SHALL BE PLACED IN MAXIMUM 8-INCH LIFTS. FOR GRANULAR EMBANKMENT AND STRUCTURAL BACKFILL, COMPACT EACH LIFT OF MATERIAL USING MECHANICAL DEVICES, HOE RAMS, JUMPING JACKS, HAND DEVICES, VIBRATING PLATES, OR OTHER SIMILAR EQUIPMENT. COMPACTION REQUIREMENTS SHALL BE 98% OF THE STANDARD PROCTOR CURVE.
- LOW STRENGTH MORTAR BACKFILL SHALL BE FURNISHED AND PLACED AS PER ODOT ITEM 613.

ALL TRENCH EDGES NOT WITHIN THE STREET RIGHT-OF-WAY, NOT UNDER OR WITHIN 5 FEET OF PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, OR WALKS CAN BE BACKFILLED WITH CLEAN NATIVE MATERIAL COMPACTED IN 12 INCH LIFTS. MATERIAL SHALL BE COMPACTED TO 85% OF THE ORIGINAL COMPACTION. NO MATERIAL SHALL BE USED FOR BACKFILLING THAT CONTAINS GRANULAR MATERIAL ROCK OR STONE GREATER THAN 4 INCHES IN DIAMETER.

PAVEMENT RESTORATION

IN PAVED AREAS WITHIN THE STREET RIGHT-OF-WAY THE

PAVEMENT AND AGGREGATE BASE COMPOSITION SHALL BE PROVIDED EQUAL TO THE EXISTING PAVEMENT BUT IN NO CASE SHALL THE COMPOSITION BE LESS THAN THE FOLLOWING: 1-1/2 INCHES OF ODOT ITEM 448, SURFACE COURSE, TYPE 1 2-1/2 INCHES OF ODOT ITEM 448 INTERMEDIATE COURSE, TYPE 2 10 INCHES OF ODOT ITEM 304 AGGREGATE BASE IN ALLEYWAYS AND DRIVEWAYS OUTSIDE OF THE STREET RIGHT-OF-WAY THE REPLACEMENT OF PAVEMENT AND/OR AGGREGATE SHALL BE EQUAL TO THE EXISTING ALLEYWAY OR DRIVEWAY COMPOSITION. IF THE PERMANENT ASPHALT CANNOT BE APPLIED WITHIN 48 HOURS OF THE INITIAL REPAIR. ODOT ITEM 405 OR COLD PATCH SHALL BE APPLIED TO THE TRENCH SURFACE. MINIMUM THICKNESS OF THE COLD PATCH MATERIAL SHALL BE 4 INCHES. SAID MATERIAL SHALL BE REMOVED PRIOR TO THE PLACEMENT OF ODOT ITEM 448.

CONCRETE RESTORATION

ALL CONCRETE DRIVEWAYS, DRIVE APPROACHES, AND SIDEWALKS WITH THE STREET RIGHT-OF-WAY, SHALL BE REPLACED WITH ODOT CLASS QC1 OR QCMS CONCRETE FOR THE FOLLOWING:

SIDEWALKS --- MINIMUM THICKNESS OF 4" INCHES OF CONCRETE.

- MATCH ORIGINAL WIDTH OF SIDEWALK
- MINIMUM WIDTH OF 4 FEET REQUIRED
- MINIMUM THICKNESS OF 4 INCHES
- DRIVEWAYS AND DRIVE APPROACHES
- RESIDENTIAL: MINIMUM THICKNESS OF 6 INCHES OF CONCRETE
- BUSINESS: MINIMUM THICKNESS OF 8 INCHES OF CONCRETE
- INDUSTRIAL: MINIMUM OF THICKNESS 10 INCHES OF CONCRETE

ALL CONCRETE DRIVEWAYS, DRIVE APPROACHES, AND SIDEWALKS OUTSIDE OF THE STREET RIGHT-OF-WAY SHALL BE REPLACED EQUAL TO THE EXISTING MATERIAL COMPOSITION.

COMPACTION GUIDELINES

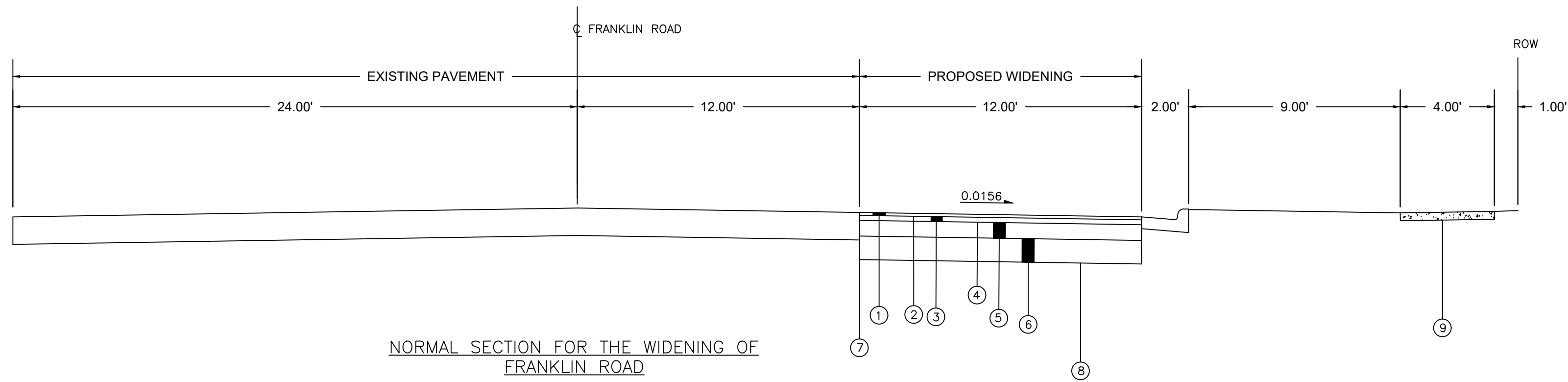
THE CONTRACTOR MAY OPERATE SMALL COMPACTION EQUIPMENT WITH LESS THAN A TOTAL WEIGHT OF 1 TON OVER THE CONDUIT TO COMPACT THE BACKFILL. DO NOT USE HOE RAMS ON TOP OF THE CONDUIT UNTIL 2 FEET OF BACKFILL IS COMPACTED ON TOP OF THE CONDUIT. THE CONTRACTOR MAY OPERATE COMPACTION EQUIPMENT WITH LESS THAN A TOTAL WEIGHT OF 8 TONS, BUT MORE THAN 1 TON, OVER THE CONDUIT AFTER PLACING AND COMPACTING 2 FEET OF BACKFILL. DO NOT OPERATE EQUIPMENT WITH A TOTAL WEIGHT OF 8 TONS OR MORE UNTIL PLACING AND COMPACTING A COVER OF 4 FEET OVER THE TOP OF THE CONDUIT. THE ABOVE RESTRICTIONS APPLY WHEN WORKING WITHIN ONE SPAN ON EACH SIDE OF THE CONDUIT, OR 6 FEET, WHICHEVER IS LESS.

ALL TRENCHES AND EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER THE PLACEMENT OF THE CONDUIT. UNLESS DIRECTED OTHERWISE BY THE CITY ENGINEER. UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE CONDUIT HAS BEEN PLACED.



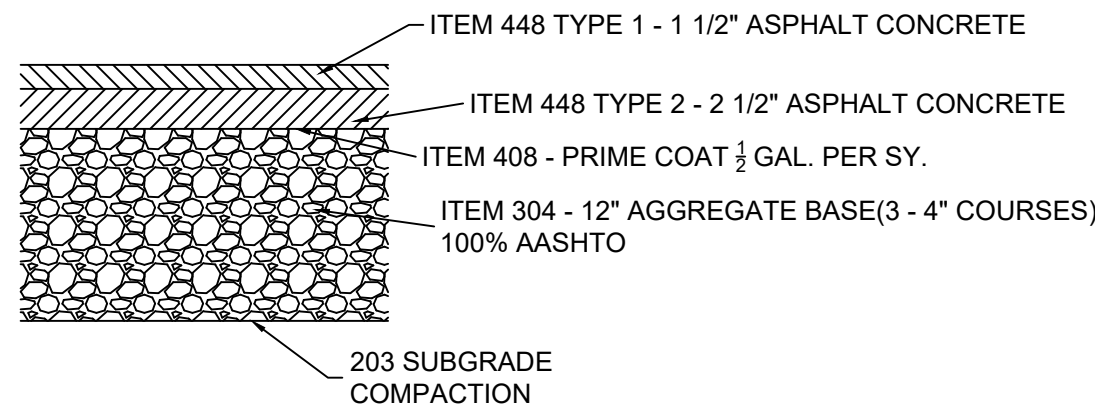
TODD A. CLUXTON, P.E. 69677

REVISIONS

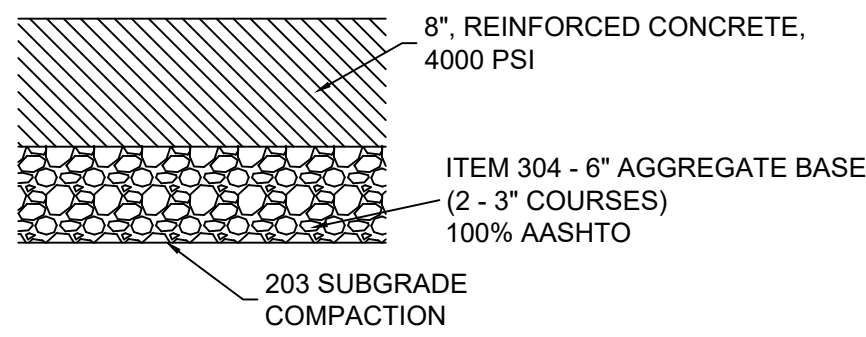


NORMAL SECTION FOR THE WIDENING OF
FRANKLIN ROAD
LEGEND

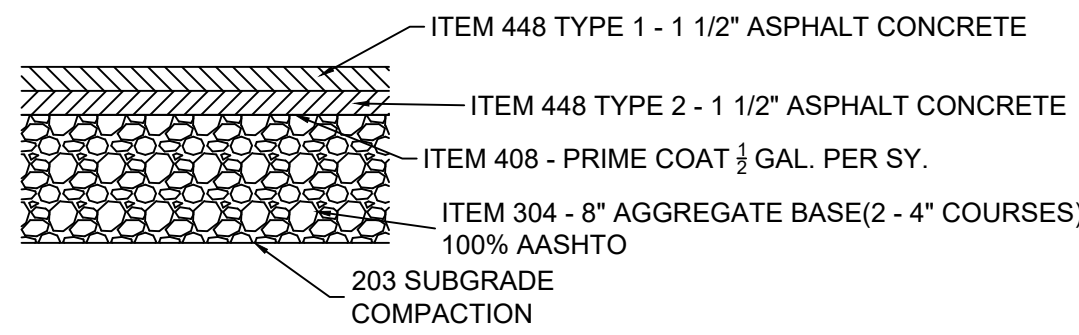
- ① ODOT ITEM 442 - 1.5" ASPHALT CONCRETE, SURFACE COURSE, TYPE A(448) (IN 1 LIFT)
- ② ODOT ITEM 407 - TRACKLESS TACK COAT(0.06 GAL/SQ.YD.)
- ③ ODOT ITEM 442 - 2.5" ASPHALT CONCRETE, INTERMEDIATE COURSE, Type A(448) (IN 1 LIFT)
- ④ ODOT ITEM 407 - TRACKLESS TACK COAT(0.06 GAL/SQ.YD.)
- ⑤ ODOT ITEM 302 - 8" BITUMINOUS AGGREGATE BASE (IN 2 LIFTS)
- ⑥ ODOT ITEM 304 - 12" CRUSHED LIMESTONE AGGREGATE BASE (IN 3 LIFTS)
- ⑦ ODOT ITEM 705 - SEAL PAVEMENT EDGE
- ⑧ ODOT ITEM 203 - COMPACTED SUBGRADE
- ⑨ ODOT TEM 608 - CONCRETE SIDEWALK (SEE DETAIL)



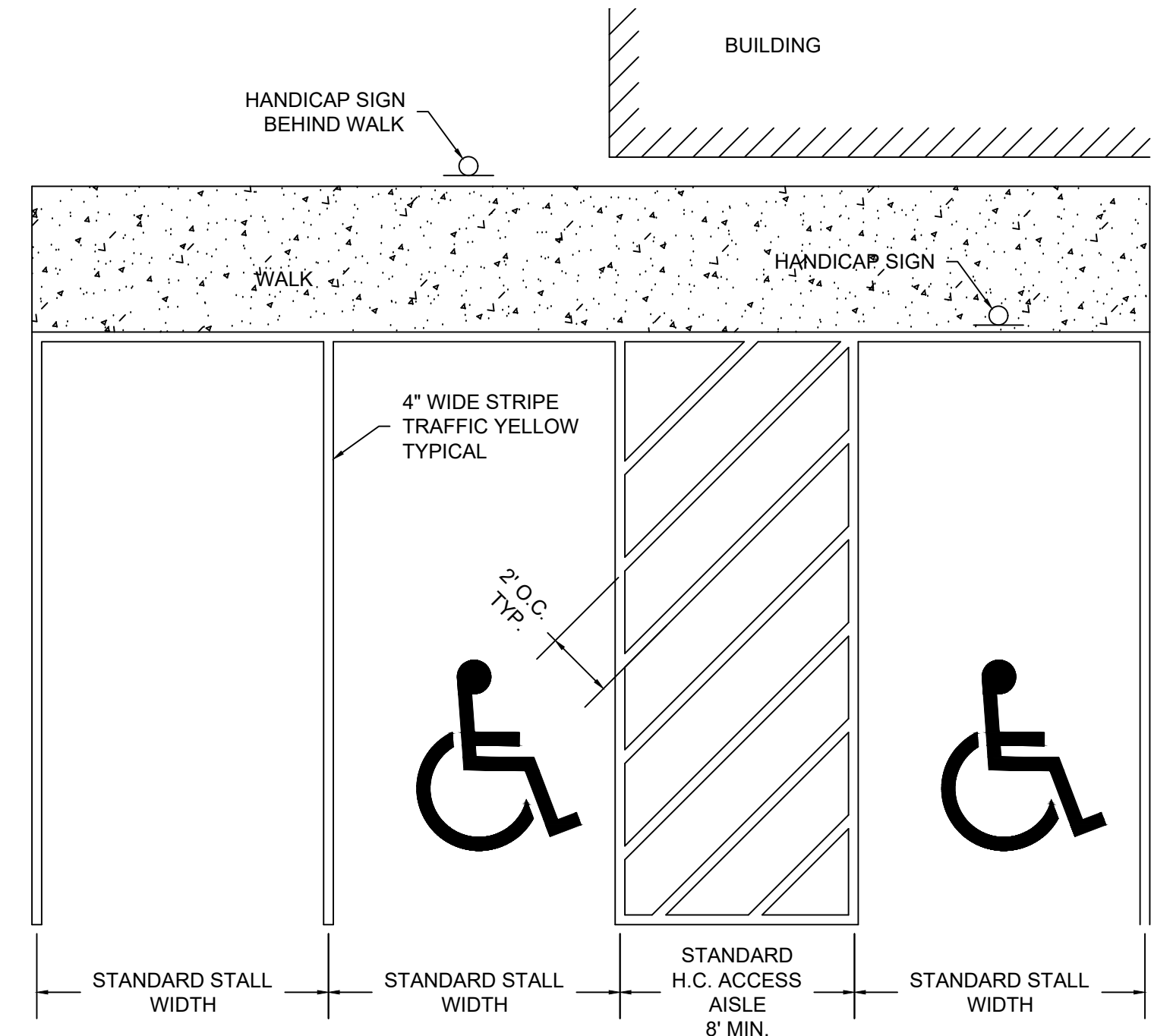
HEAVY DUTY ASPHALT PAVEMENT DETAIL
NOT TO SCALE



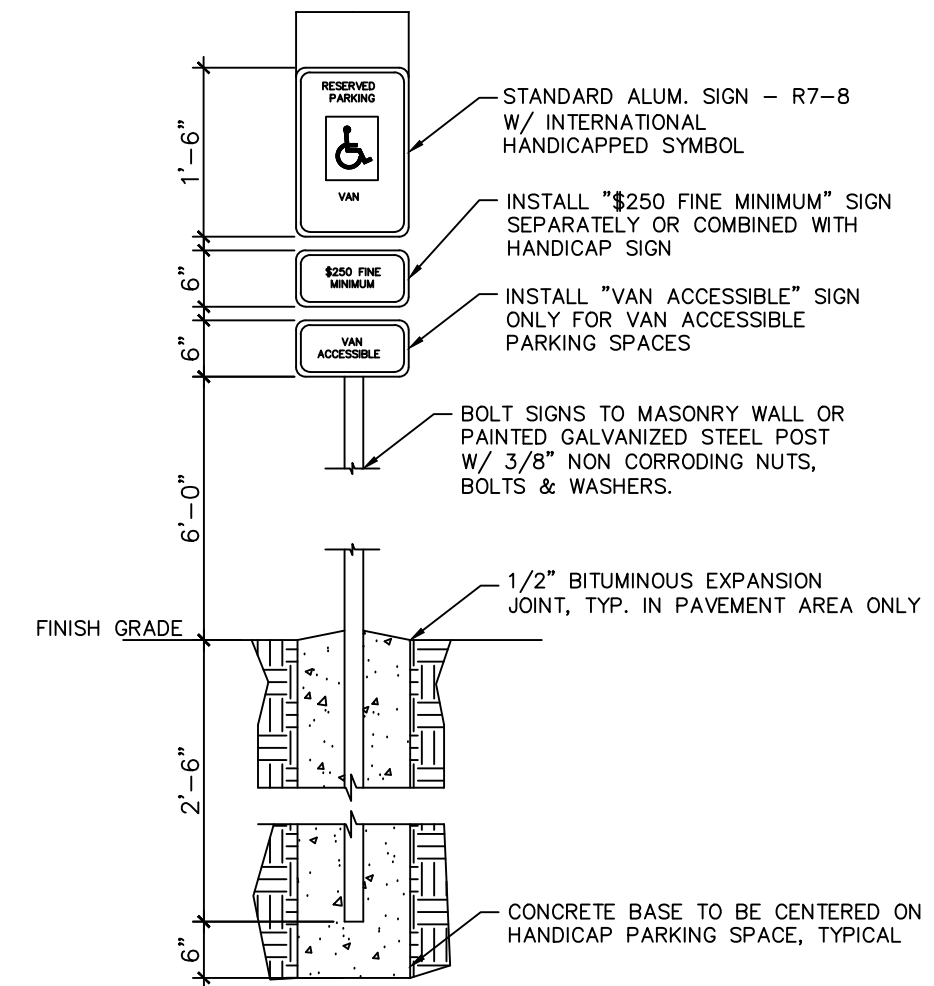
DUMPSTER PAD/APPROACH DETAIL
NOT TO SCALE



STANDARD DUTY ASPHALT PAVEMENT DETAIL
NOT TO SCALE



TYPICAL HANDICAP PARKING AREA
NOT TO SCALE



TYPICAL HANDICAP PARKING SIGN
NOT TO SCALE



TODD A. CLUXTON, P.E. 69677

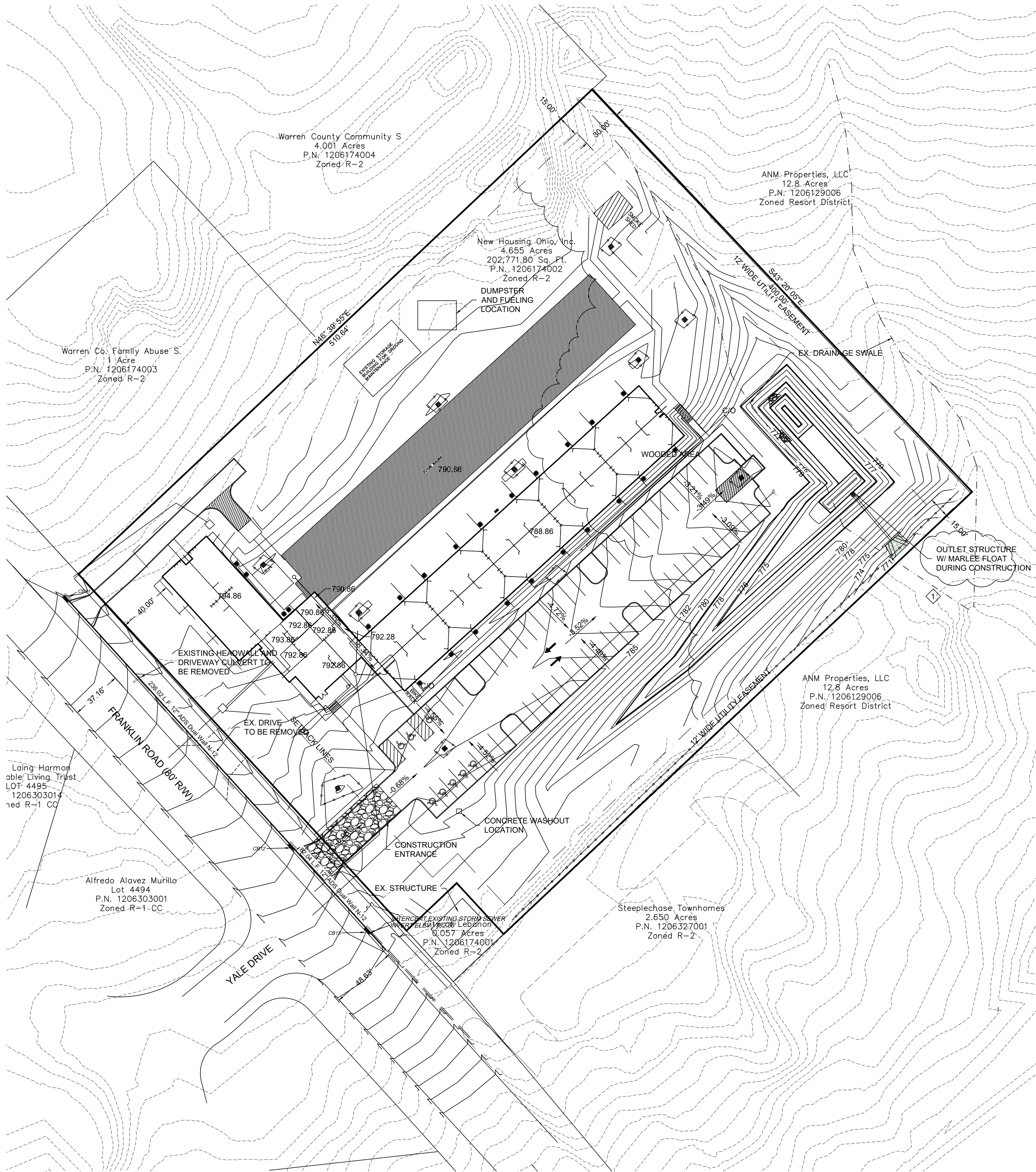
DS2 engineers & surveyors
107 West Second Street, Maysville, KY 41056
280 Chillicothe Ave., Hillsboro, OH 45133

Phone: 888-564-0961 Fax: 606.564.0962

REVISIONS

PROJECT: SITE PLANS
LOCATION: 830 FRANKLIN ROAD, LEBANON, OH
CLIENT: NEW HOUSING
ADDRESS:
COUNTY: WARREN
PROJECT #: 23-783
DATE: JULY 10, 2025

SHEET: C6/20



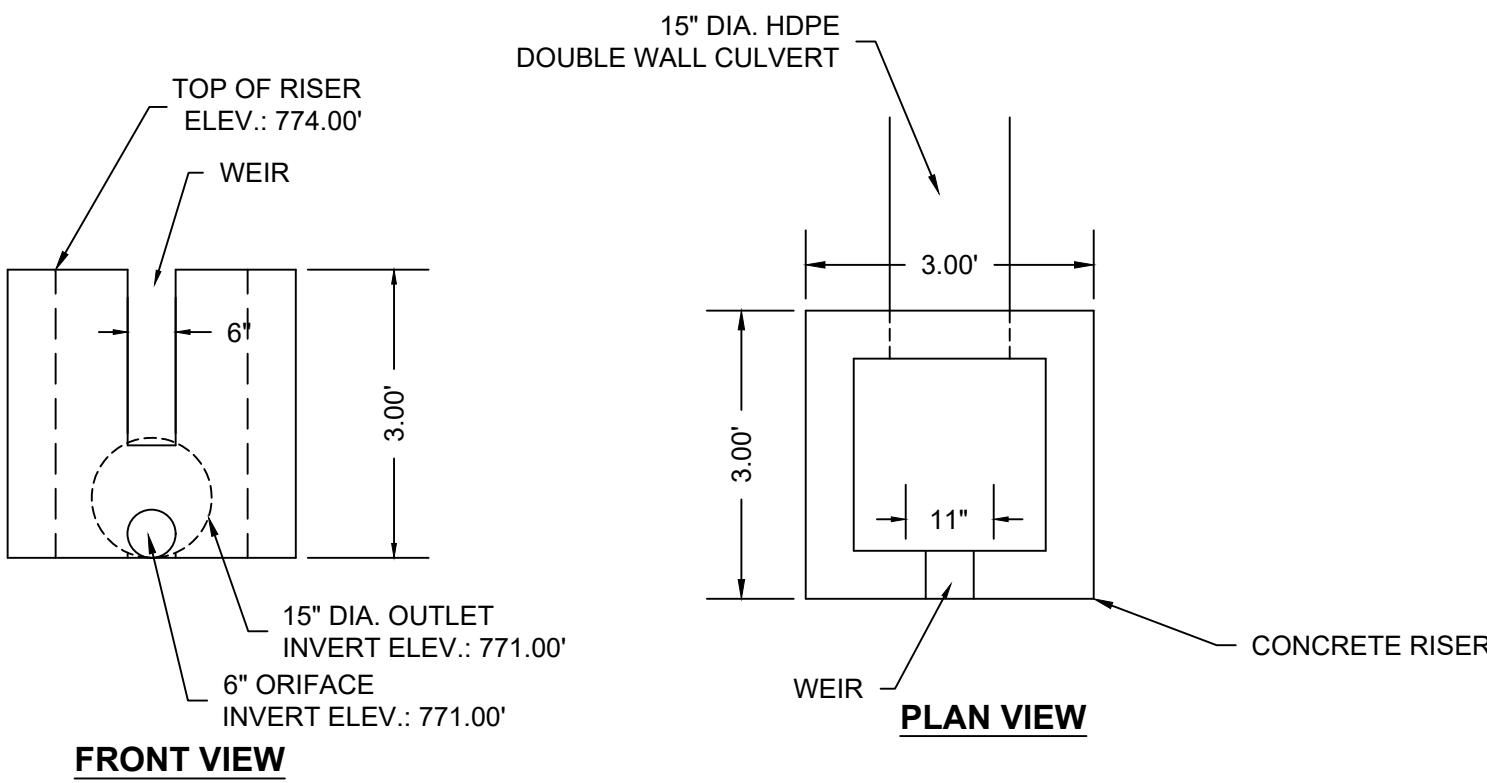
SEDIMENT AND EROSION CONTROL PLAN
1" = 40'

LEGEND
SILT FENCE —○—○—○—○—



PROJECT AREA SOIL MAP
NOT TO SCALE

REVISIONS - 10/30/2025
1 Added Marlee Float.



STATE OF OHIO
TODD A. CLUXTON
E-69677
REGISTERED
PROFESSIONAL ENGINEER
Todd A. Cluxton
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STORMWATER POLLUTION PREVENTION NOTES

The "Rainwater and Land Development, Ohio's Standards for Stormwater Management, Land Development and Urban Stream Protection", Third Edition, including all supplements thereto, in force on the date of contract, shall govern all materials and workmanship involved in the improvements shown on these plans, except as such specifications are modified by the following specifications or by the construction details set forth herein. Summarized details of temporary erosion and sediment control installations used are shown on this plan.

This plan must be posted on-site. A copy of the SWPPP plan and the EPA approved stormwater permit (with the site-specific NOI number) shall be kept on-site at all times.

The contractor shall remove existing ground cover only as necessary for the project phase currently under construction.

All cleaning and grading operations shall be confined to the limits shown on the plan.

Sediment & Erosion Controls and all Silt Fencing shall be installed (in place) prior to the commencement of grading (earth disturbing) operations, including sewer line and water line improvements and shall remain in place until construction activities are complete and upstream areas have been stabilized. NOTE: Sediment and Erosion Controls are defined to include sediment basins, traps, or detention/ retention basins temporarily used as such.

The Contractor shall engage or provide "qualified inspection personnel" to perform all required inspections. Erosion and sediment control installations shall be inspected ever seven (7) days and within 24 hours after any storm event exceeding 0.5 inch of rainfall per 24-hour period. The Contractor shall make necessary repairs immediately and clean installations of trapped sediment and debris as necessary.

An inspection and maintenance schedule records of said inspections and maintenance shall be kept and made available to jurisdictional agencies if requested.

Inspection checklist will be completed and signed by the inspector after each inspection.

Inspection records will be kept for 3 years after termination of construction activities.

BMPs that require repair or maintenance shall be repaired within 3 days of inspection.

New BMPs shall be installed within 10 days of the inspection finding BMPs not meeting the intended function.

Missing BMPs required by this plan shall be installed within 10 days of the inspection.

Any trapped sediment or debris removed during cleaning of or removal of installations shall be permanently stabilized to prevent further erosion.

All vehicles and equipment that regularly enter and leave the construction site should be fueled offsite.

Designated fueling areas and/or equipment maintenance areas are selected by the contractor. The fueling area should be on level grade and must be at least 50 ft downstream of storm drain facilities or receiving waters. The fueling area should be protected by a berm or dike to prevent storm water run-on and to prevent storm water from leaving the fueling area.

Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fueling trucks. Spills should be cleaned up immediately. Absorbent materials should be used on small spills. All used absorbent materials should be disposed of properly.

Drip pans or absorbent pads must be placed under vehicles/ equipment if being fueled in areas other than a dedicated fueling area with an impermeable surface.

Any spills of fuels and/or construction site liquids (less than 25 gallons) are to be immediately cleaned/vacuumed and properly disposed of. Contractor must contact the Ohio EPA (at 1-800-282-9378), the local fire department, and the local emergency planning committee (LEPC) within 30 minutes of a spill of 25 or more gallons. Petroleum based and concrete curing compounds must have special handling procedures.

The contractor is responsible for minimizing any tracking of material onto public streets. Street cleaning (on an as-needed basis) is required through the duration of this construction project. This includes sweeping, power cleaning and (if necessary) manual removal of dirt or mud in the street gutters. Any required public street cleaning will be at the contractor's expense.

If pumps are used to remove water from trenches or ponded areas, the discharge shall be filtered before the water leaves the site or enters the storm drainage system. Filtration may be accomplished by discharging the water across a vegetated area, through a silt fence, through a rock berm, or with similar measures. The discharged water shall be visibly inspected to verify the filtration is producing a noticeable reduction in sediment load. Additional measures shall be taken if the filtered water is not visibly clearer than the water discharged by the pump.

Dust control if required may be implemented by application of water only.

No open burning is allowed on this site.

All construction and demolition debris (C&DD) waste will be disposed of in an Ohio EPA approved C&DD landfill as required by the Ohio Revised Code (ORC) 3714.

Hazardous Waste Storage Areas - Ensure that adequate waste storage volume is provided and is located away from the storm drains and receiving waters. Provide temporary containment sufficient to contain precipitation from a 24- hour, 25-year storm even, plus 10% of the aggregate volume of all containers of 100% of the capacity of the largest tank within its boundary, whichever is greater. Temporary containment should be impervious to spilled wastes for a minimum of 72 hours. Equip storage areas with appropriate spill clean-up materials. Allow sufficient space between storage containers to allow for spill cleanup and emergency response access.

Hazardous Waster Containers- Store hazardous wastes in appropriate sealed containers that are clearly labeled with contents and starting date of accumulation. Do not mix different types of waste together in one container. Do not store incompatible wastes in the same temporary containment facility. If dry waste containers are not watertight, store containers on pallets. Prior to predicted rain events, cover the containment area.

Disposal of hazardous & toxic waste is to be transported from the site by a licensed hazardous waste transporter and disposed of at an authorized, licensed disposal or recycling facility within 90 days of being accumulated. Properly disposal of rain water removed from temporary containment that may have mixed with hazardous waste.

All contaminated soils must be treated and/or disposed in Ohio EPA approved solid waste management facilities or hazardous waste treatment, storage or disposal facilities (TSDFs).

All temporary erosion control measures, including but not limited to seeding, straw bales, etc. shall be included in the Contractors bid, lump sum.

ALL EROSION AND SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATIONS AT THE DISCRETION OF THE CITY OF LEBANON AND/OR THE OHIO EPA.

Mulch and/or other appropriate vegetative practices (i.e. temporary seeding) shall be applied to disturbed areas within seven (7) days of grading if the area is to remain dormant (undisturbed) for more than 14 days or on areas and portions of the site which can be brought to final grade. Permanent seeding should be applied if the areas will be idle for more than a year.

Remaining areas are subject to permanent or temporary seeding requirements and may not be left dormant in anticipation of construction.

- All right of way areas shall be permanently seeded or sodded upon installation of underground utilities.
- All other disturbed areas not in the right of way shall be temporarily seeded upon completion of grading operations.

SEEDING AND MULCHING

All areas disturbed during construction are to be seeded and mulched or sodded. Accompanying are the minimum requirements for both the rate of application and the time table for seeding.

- Anchor mulch by one of the means below:
 - Mechanical- Use a disk, crimper, or similar type tool set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but be left generally longer than 6 inches.
 - Mulch Nettings- Use according to the manufacturer's recommendations, following all placement and anchoring requirements. Use in areas of water concentration and steep slopes to hold mulch in place.
 - Synthetic Binders- For straw mulch, synthetic binders such as Acrylic DLF (Agri-Tac), DCA-70, Pertoset, Terra Tack or equal may be used at rates recommended by the manufacturer. All applications of Synthetic Binders must be conducted in such a manner where there is no contact with waters of the state.
 - Wood Cellulose Fiber- Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 lb./acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lb./100 gal. of wood cellulose fiber.
- Seeding shall be made within three (3) days after final grading or following seedbed preparation with a disk or other suitable equipment. On sloping land, the final operation shall be done on the contour.
- Mulch shall be applied immediately after seeding and spread evenly over the entire seeding area.
- Seed shall be applied uniformly with a cyclone seeder, drill, cultipacker seeder or hydro-seeder.

POST CONSTRUCTION BMP MAINTENANCE & INSPECTION

The Property Owner, its Administrators, Executors, Successors, Heirs or Assigns including future co-permittees and home owners association shall maintain the stormwater control facilities in good working condition acceptable to the City of Lebanon and the long term maintenance schedule listed herein. Responsibility and assurance of maintenance and the continuous functionality of this private stormwater facility is perpetual; Beginning with the Owner at the time of installation and continuing to all future owners.

This plan must be posted on-site.

The site will be stabilized with landscaping, sodding, and/or permanent seeding as outlined on the plans. Only after all disturbed areas have been stabilized, seeded/sodded and a base course of pavement is in place may the sock and inlet protection be removed from the erosion control devices and the storm sewer pipe and inlets inspected and cleaned if necessary.

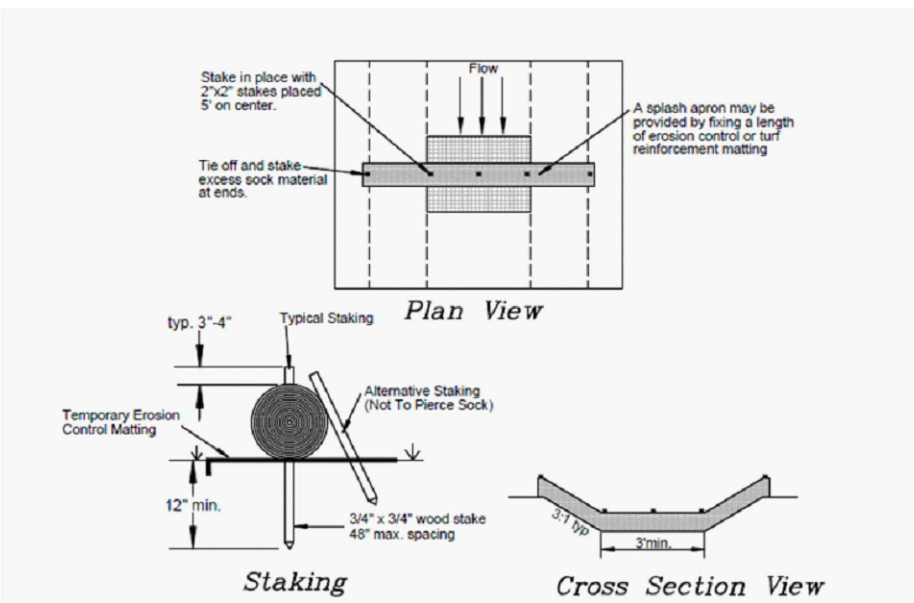
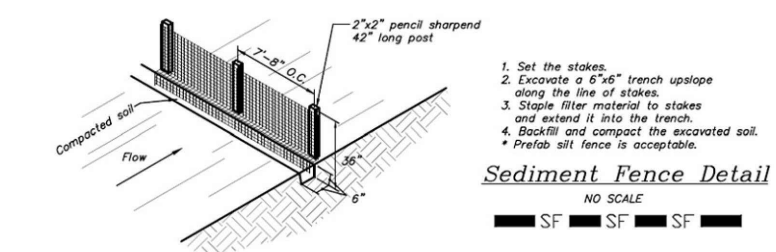
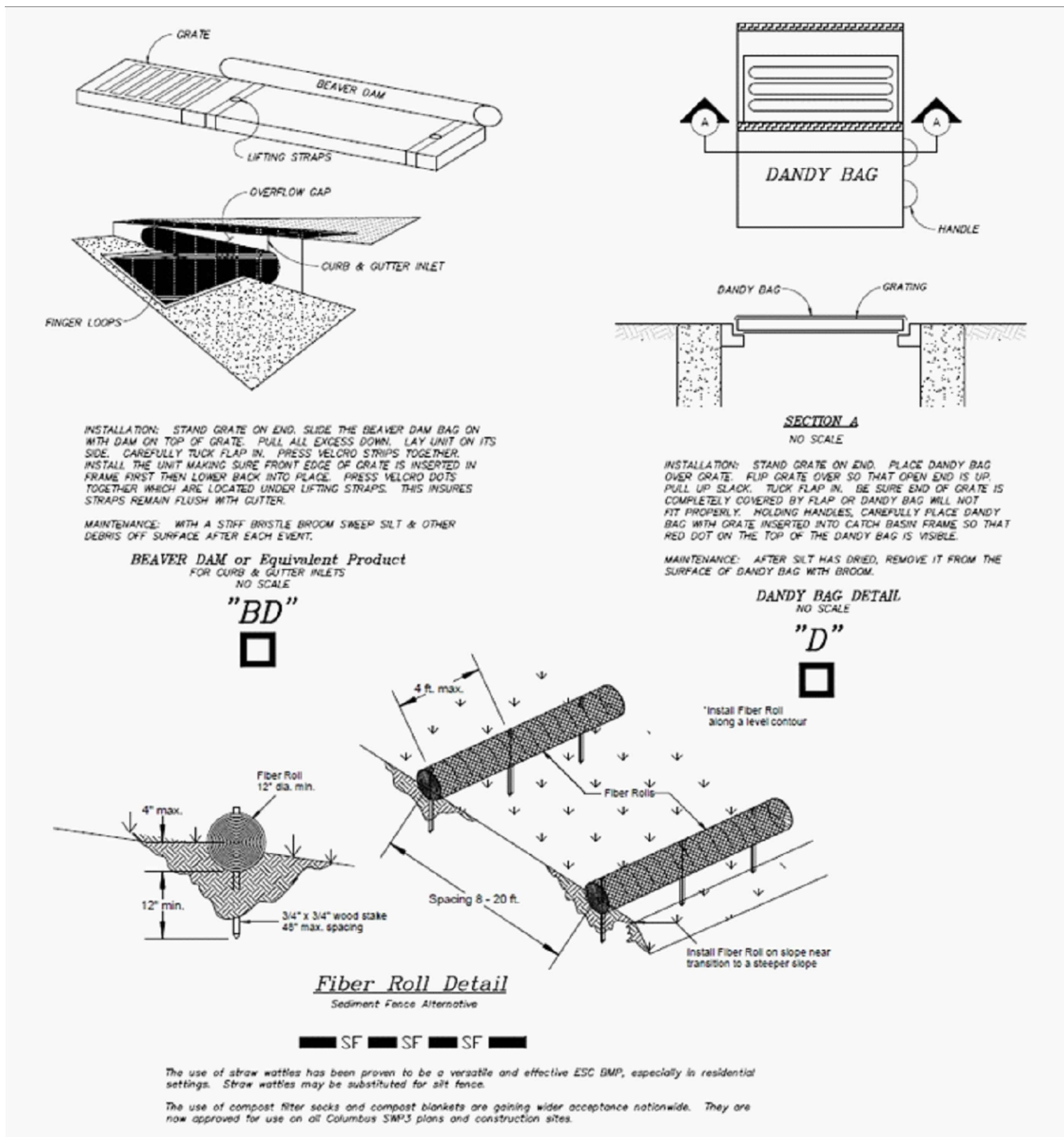
Any removed sediment is to be disposed of on-site or be disposed of in an appropriate manner. Any discharge of sediment laden water offsite is prohibited.

Regular maintenance is required to ensure proper operation of the detention and sediment control measures established.

The roadway surface and grounds are to be maintained by sweeping and raking and general debris pickup on a monthly basis, or as needed. Grate inlets are to remain clear, with debris removal as required.

The grassed and landscaped areas of the site are to be kept mowed and maintained. Any rill erosion channels or earth exposure that may develop are to be addressed by fine grading, netting, seeding or sodding and/or receive mulch cover or other appropriate repair to eliminate any soil erosion as may be appropriate.

Storm sewers and catch basins including the water quality structure, are to be visually inspected annually for accumulation of sediment or debris and flushed if necessary. Any accumulated sediment or debris in excess of three inches of depth is to be removed by vac truck or by hand methods and disposed of in accordance with all local, state and federal requirements.



TEMPORARY DRAINAGE SWALE W/ COMPOST SOCK CHECK DAM

PLACE SOCK CHECK DAM AT MAX. 200' SPACING

Notes:

- Compost sock netting shall use a knitted mesh fabric with 1/8 - 3/8 inch openings, and compost media with particle sizes 99% < 3 inches, and 60% > 3/8 inches (conforming to media described in Chapter 6 Filter Sock).
- Compost sock check dams shall be used in areas that drain 5 acres or less.
- Sediment shall be removed from behind the sock when it reaches 1/2 the height of the check dam.
- Compost sock check dams shall be constructed with 12, 18, or 24 inch diameter compost socks, and shall completely cover the width of the channel. The midpoint of the compost sock check dam shall be a minimum of 6 inches lower than the sides in order to direct flow across the center and away from the channel sides. Filter sock check dams shall be filled to a density such that they shall reach their intended height (diameter). After installation and use, they shall be considered unsuitable in a need of replacement after falling below 80% of their minimum required height (diameter).
- Although no trenching is necessary, compost sock check dams shall be placed on a graded surface where consistent contact with the soil surface is made without bridging over gaps, rills, gullies, stones, or other irregularities.
- Place compost sock check dams so that the ends extend to the top of bank. Staking for compost sock check dams shall use 2-inch x 2-inch wooden stakes, placed 5 feet on center. Stake length shall allow them to be driven 12 inches into existing soil and allow at least 2 inches above the sock.
- Space compost sock check dams so that the toe of the upstream dam is at the same elevation or lower elevation as the top of the downstream compost sock check dam (at the center of the channel). This will be influenced by the height of the sock and gradient of the waterway.
- A splash apron may be needed where flows over the sock may erode the channel and undercut the compost sock check dam. Create the apron by fixing a length of Temporary Rolled Erosion Control Product (Erosion Control Matting) or Turf Reinforcement Matting starting upstream of the sock a distance equal to the sock height and extending a length two times the height of the compost sock check dam. See Chapter 7 for information regarding these materials. Materials used should be able to be left in place (e.g. biodegradable/photodegradable TRECP) without creating problems for future mowing or maintenance of the channel.

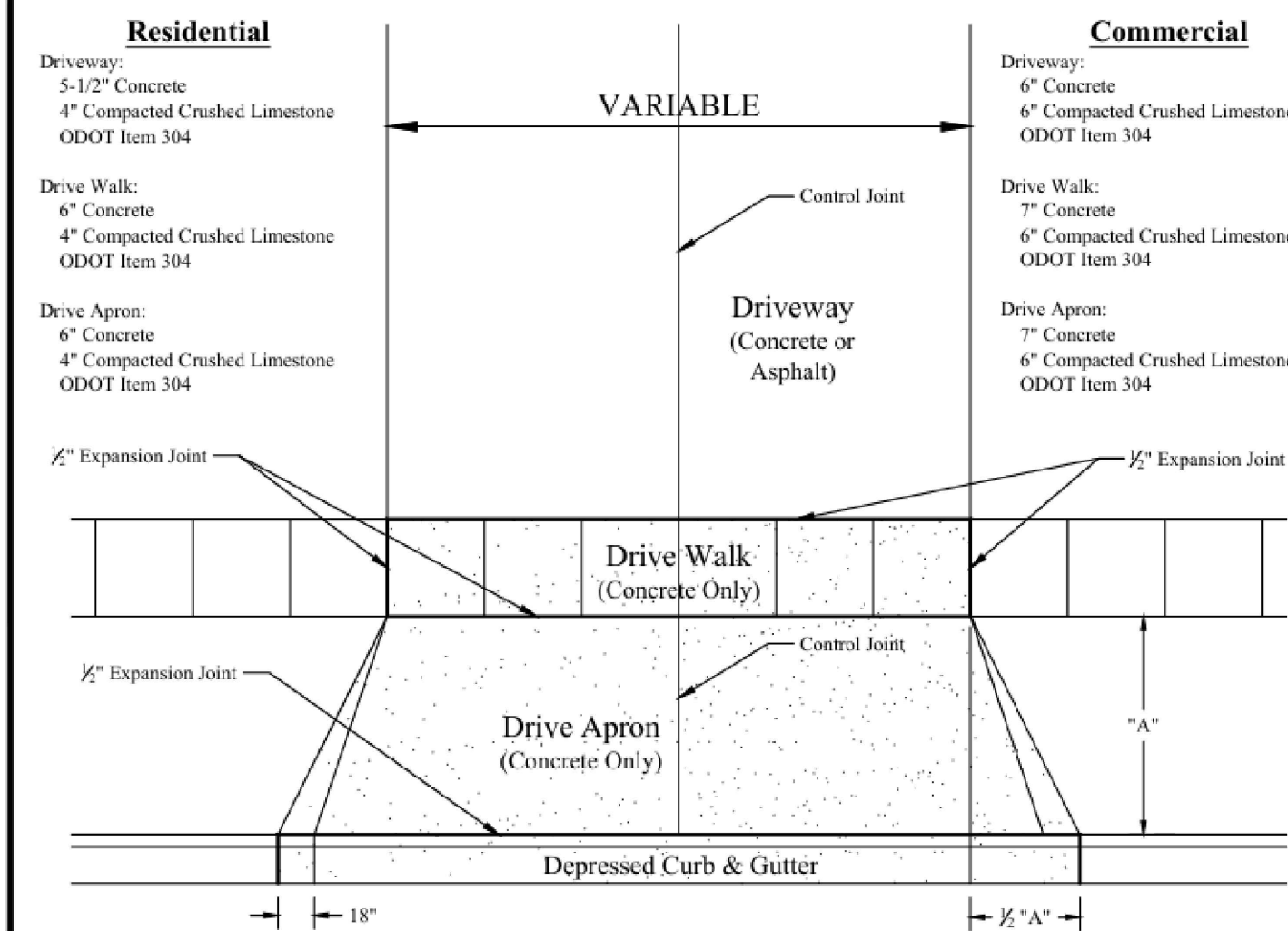


TODD A. CLUXTON, P.E. 69677

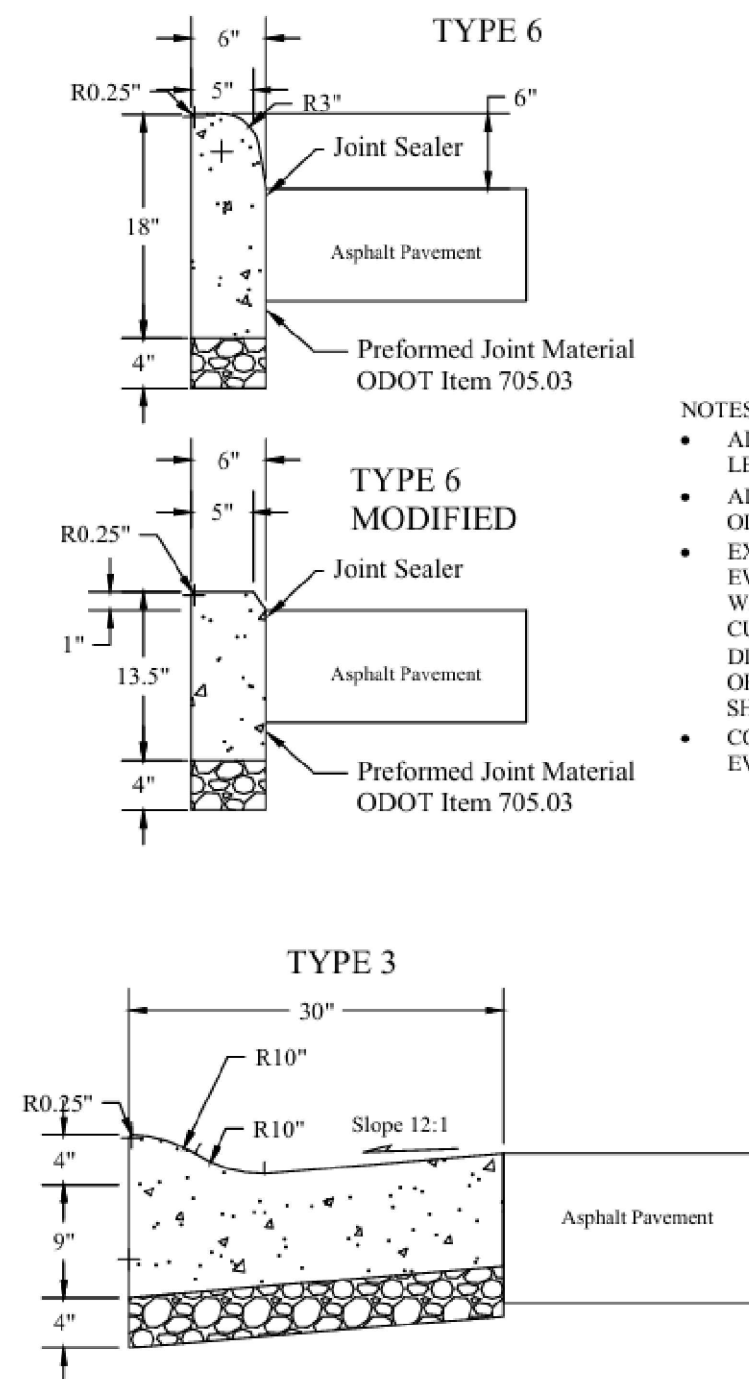
PROJECT: SITE PLANS
LOCATION: 830 FRANKLIN ROAD, LEBANON, OH
CLIENT: NEW HOUSING
ADDRESS: WARREN
COUNTY: WARREN
PROJECT #: 23-783
DATE: JULY 10, 2025

REVISIONS

DS2 engineers & surveyors
107 West Second Street, Maysville, KY 41056
280 Chillicothe Ave., Hillsboro, OH 45133
Phone: 888-564-0961 Fax: 606.564.0962

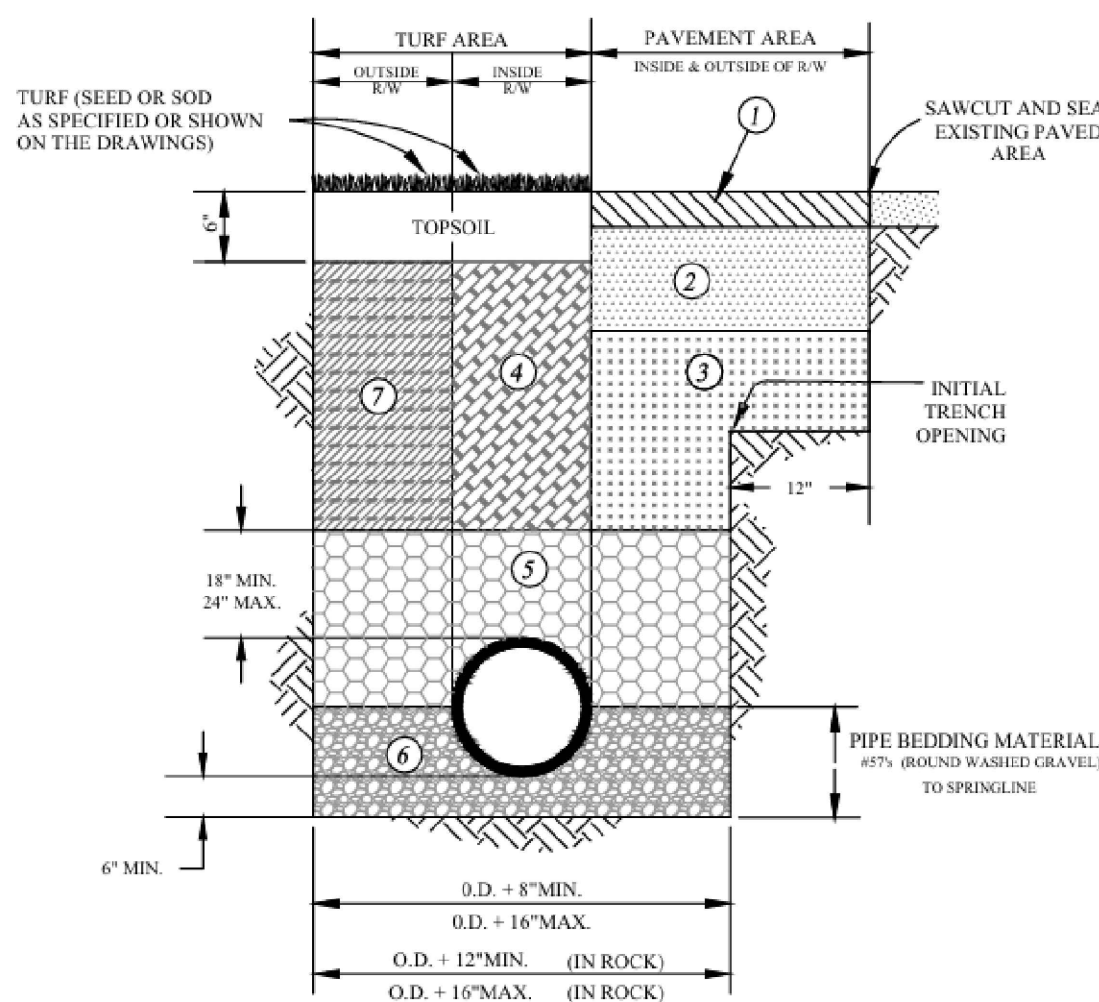


DRIVEWAY AND APRON DETAIL



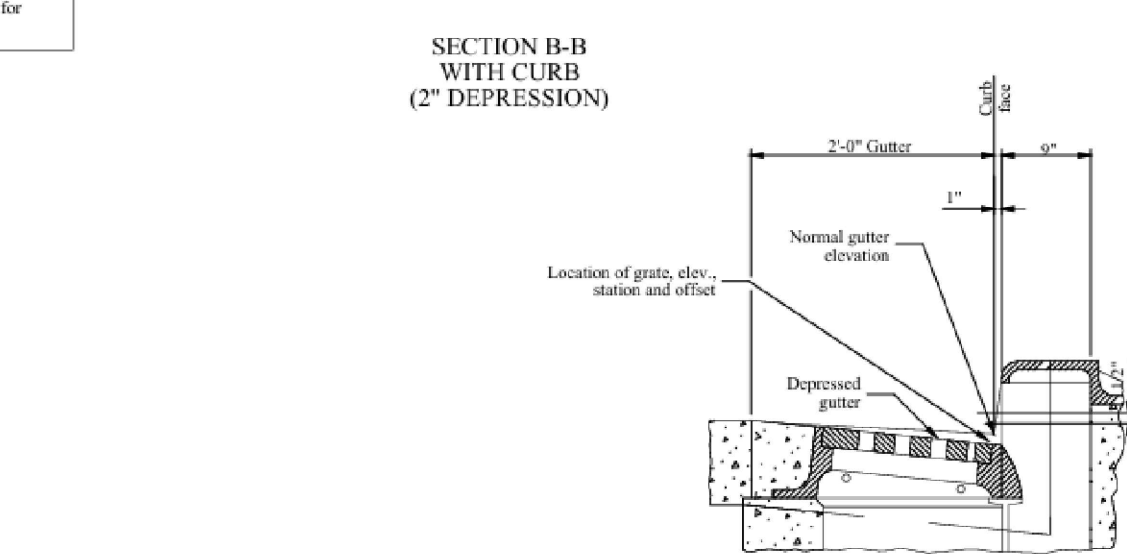
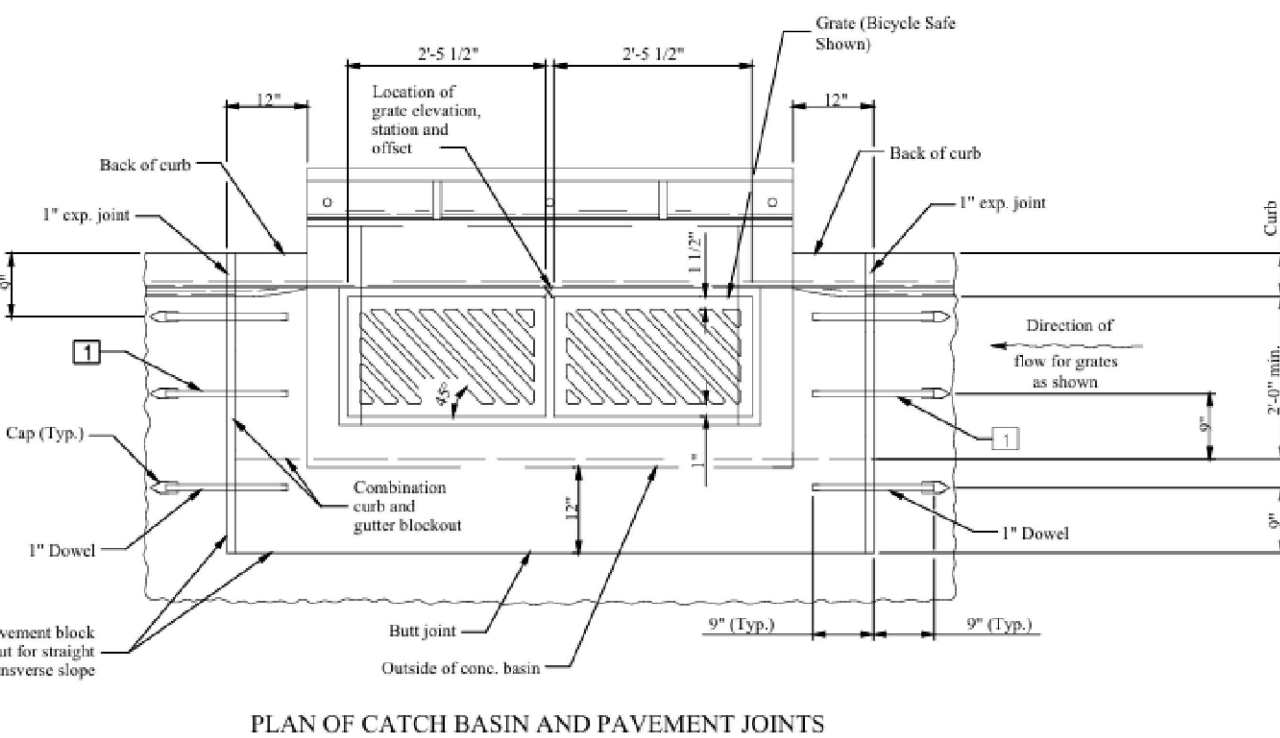
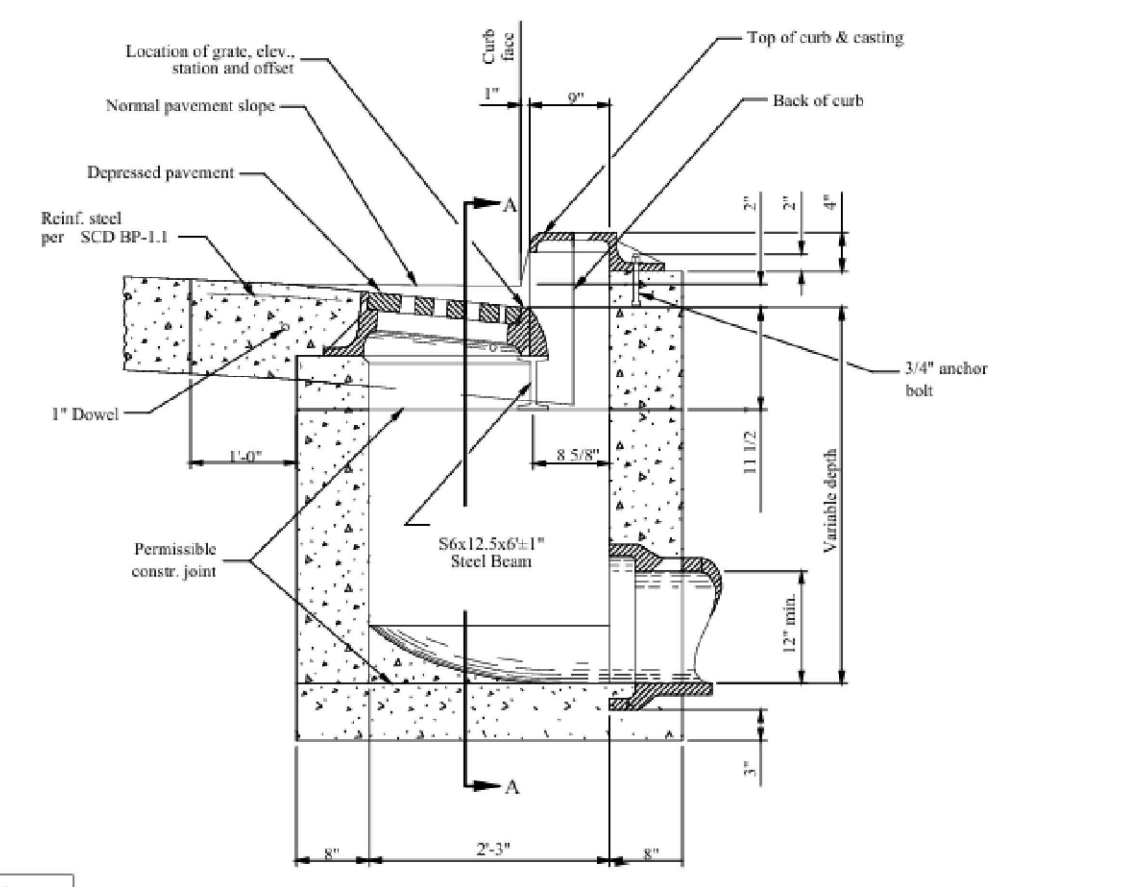
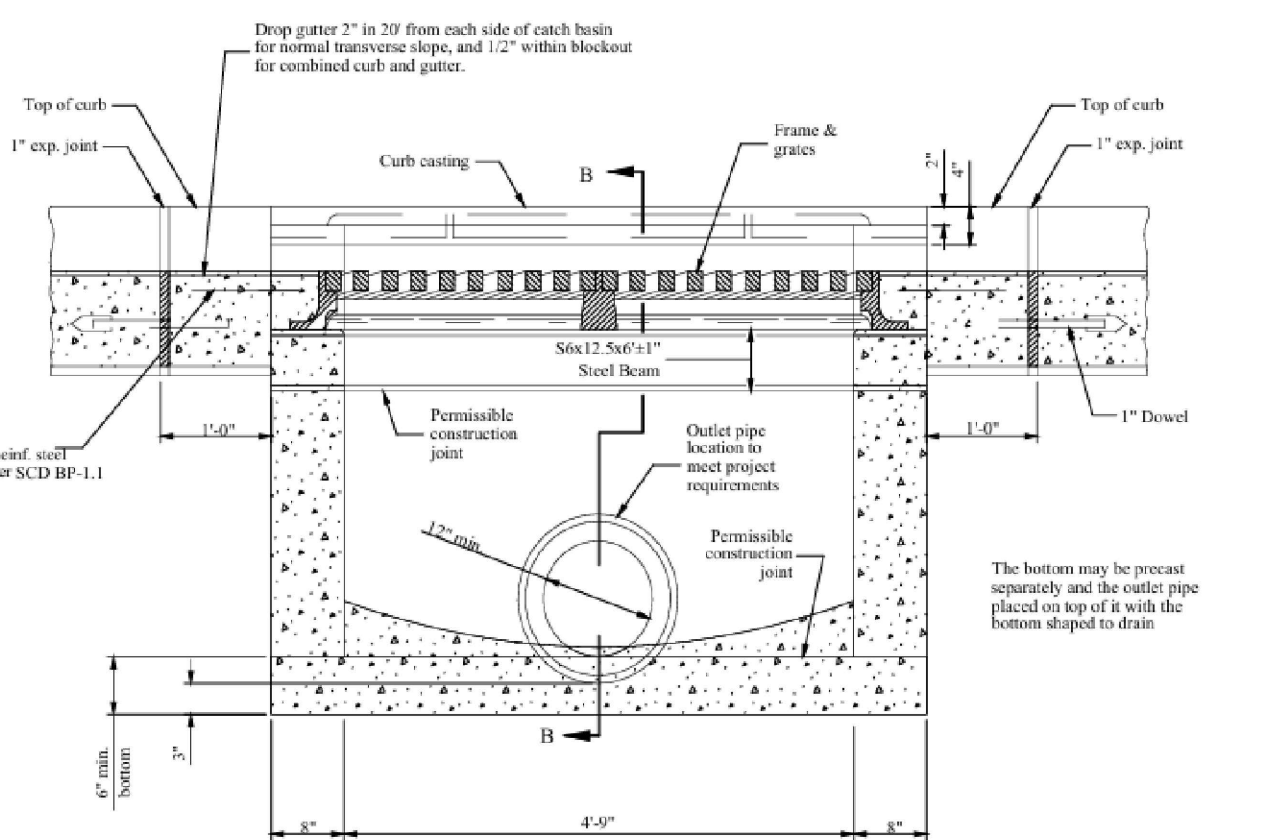
ASPHALT PAVEMENT IS SHOWN FOR CLARITY. THICKNESSES SHOWN ARE ARBITRARY. ACTUAL PAVEMENT THICKNESSES SHALL BE BASED UPON A COMPLETE PAVEMENT DESIGN.

- NOTES:
- ALL CONCRETE SHALL BE CITY OF LEBANON STANDARD CONCRETE.
 - ALL CURB SHALL HAVE A BASE OF 4" OF ODOT ITEM 304 CRUSHED LESTONE.
 - EXPANSION JOINTS SHALL BE PLACED EVERY 100' AT ALL STRUCTURES, WHEREVER NEW CURB ABUTS EXISTING CURB, AND AT ALL CHANGES IN DIRECTION. ONLY RECYCLED RUBBER OR VINYL EXPANSION JOINT MATERIAL SHALL BE USED.
 - CONTROL JOINTS SHALL BE PLACED EVERY FIVE FEET.

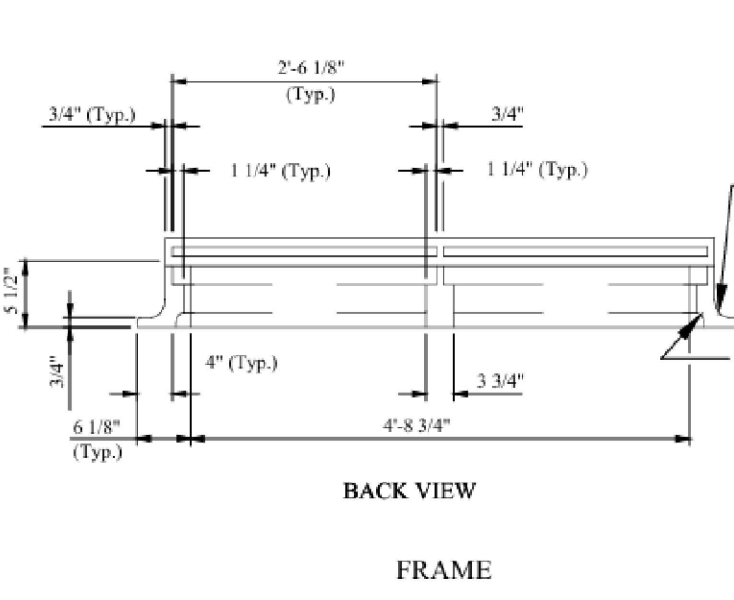
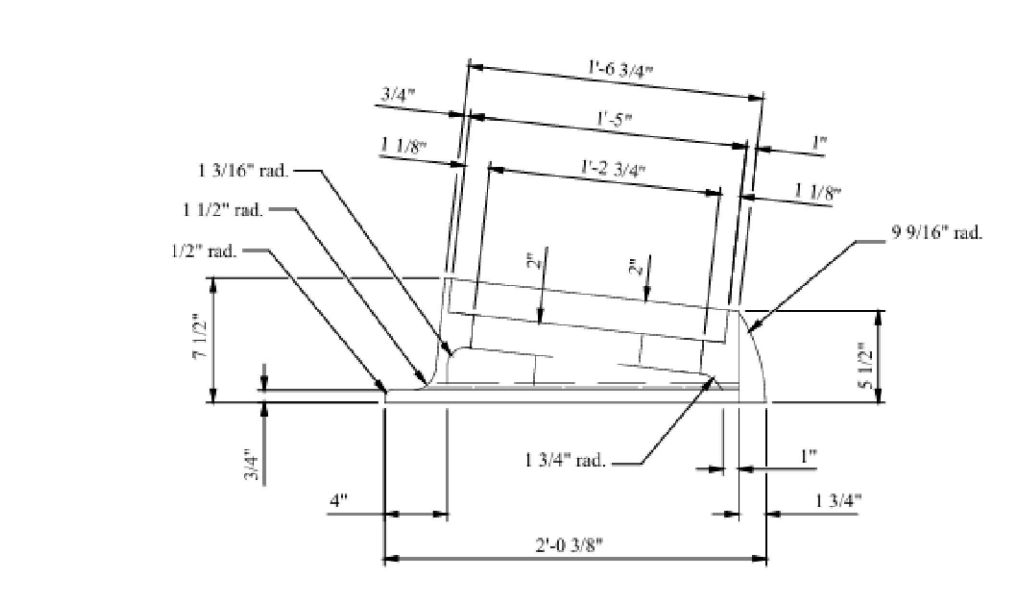
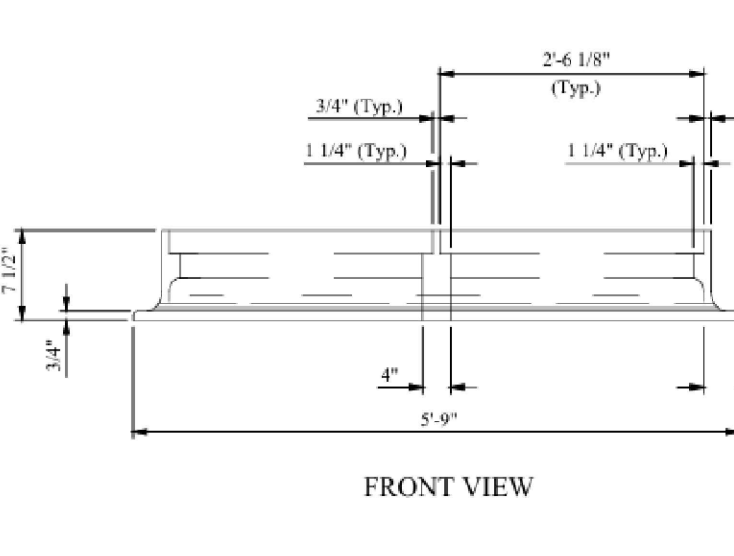
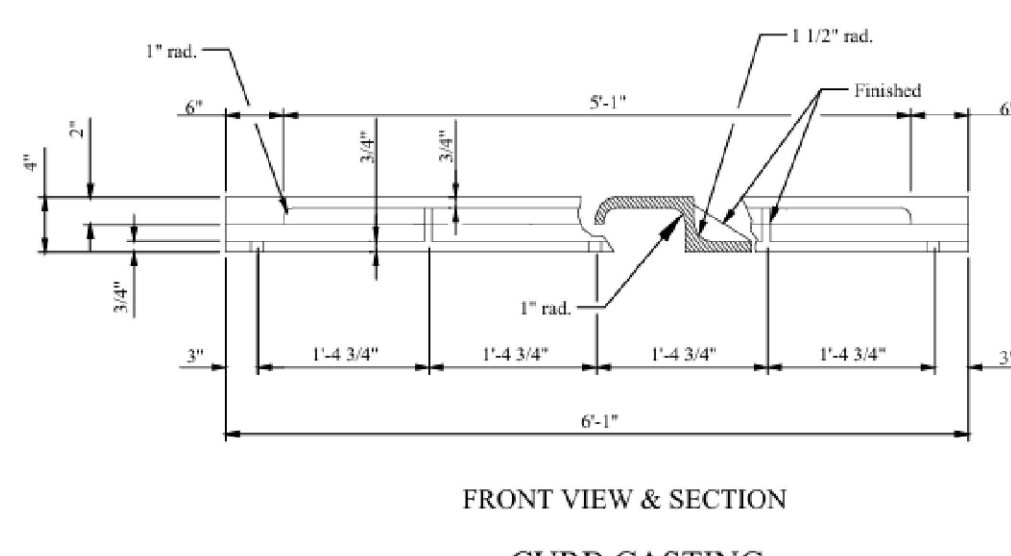
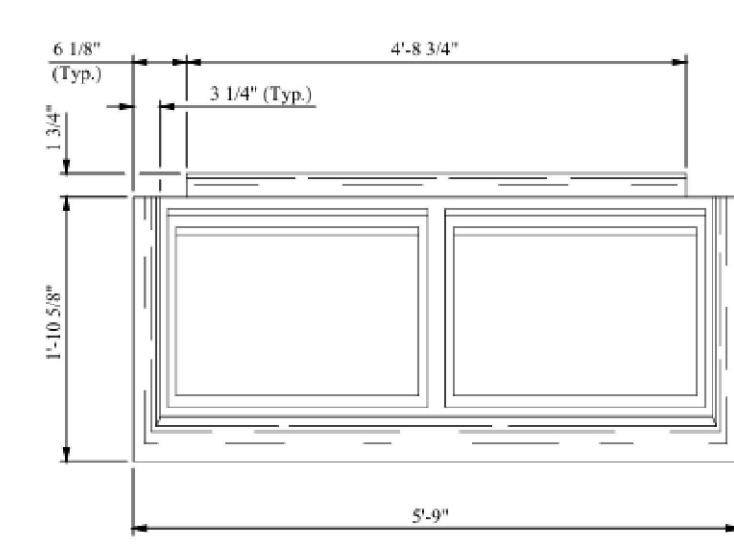
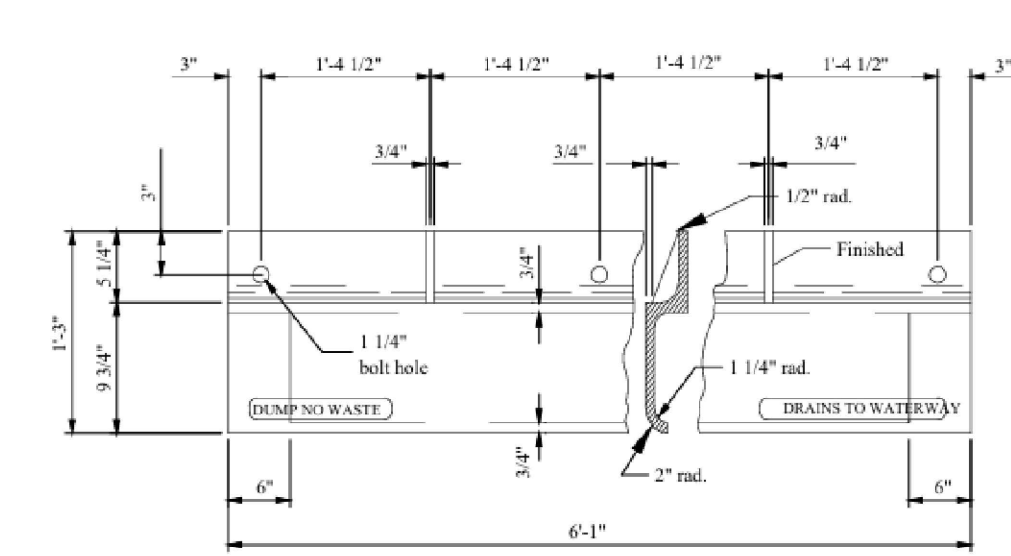


- ODOT ITEM 441 OR 442 - ASPHALT CONCRETE - INCLUDES INTERMEDIATE & SURFACE COURSES - REFER TO PAVEMENT DETAILS
- ODOT ITEM 302 - BITUMINOUS AGGREGATE BASE (IN 2 COURSES) - REFER TO PAVEMENT DETAILS
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- OUTSIDE OF PAVEMENT AREA ONLY - CRUSHED LESTONE OR CRUSHED GRAVEL ODOT ITEM 304, 411, OR 617 COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY IN MAXIMUM OF 8 INCH LIFTS OR ODOT ITEM 613 LSM - OR - CLAY FILL COMPACTED TO MIN. 98 PERCENT OF MAXIMUM DENSITY (MAX. 6" LIFTS). DENSITY TESTING IN ACCORDANCE WITH ODOT 5-1015 SHALL BE PERFORMED EVERY 10 INCHES OF DEPTH AND EVERY 25 LINEAR FEET OF TRENCH WITH REPORTS PROVIDED TO CITY. ANY MATERIAL NOT MEETING DENSITY REQUIREMENTS SHALL BE REMOVED AND REPLACED. ADDITIONAL BONDING REQUIRED IF CLAY TRENCH BACKFILL IS USED.
- #9S/GRITS GRANULAR BACKFILL (15" MINIMUM/24" MAXIMUM) ABOVE TOP OF PIPE MATERIAL IS TO BE PLACED AND COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY IN 6 INCH MAXIMUM LIFTS.
- PIPE BEDDING & HAUNCHING MATERIAL - #57S (ROUND WASHED GRAVEL) MATERIAL TO BE PLACED AND COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY IN 6 INCH MAXIMUM LIFTS.
- EXCAVATED MATERIAL BACKFILL AND COMPACTED TO A MINIMUM OF 98 PERCENT PROCTOR IN MAXIMUM OF 12" LIFTS OUTSIDE R/W ONLY.

STORM SEWER TRENCH DETAIL



CB-3 CATCH BASIN (1/2)



NOTES

GRATES: Two required. For details, see ODOT SCD CB-2.2. Provide Grate "V" unless the plans specifically require the diagonal grate. If the diagonal grate is specified, place it so that the diagonal bars direct drainage flow toward the curb.

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

Curb Casting 305 lbs.
Two Grates 254 lbs.
Frame 590 lbs.
Two Grate "V" 210 lbs.

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

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

"DUMP NO WASTE" "DRAINS TO WATERWAY"

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

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

PREFRST CONSTRUCTION: Precast construction is required except for the apron. Meet CMS 706.13 concrete requirements. Provide precast walls at least 6" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the outside.

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

OPENINGS: Obtain the Engineer's approval for any pipe openings greater than 4" from the outside of the pipe to the structure. Fill all voids per CMS 611.

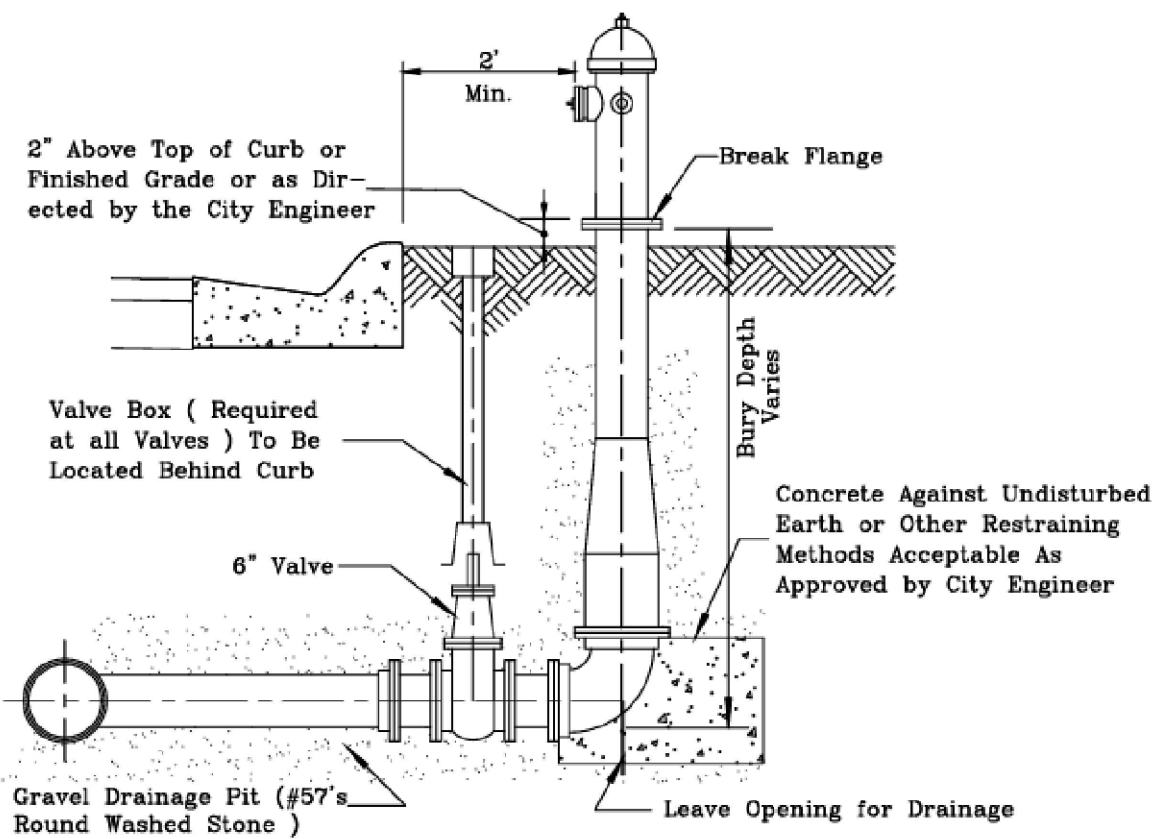
DOWELS: Furnish four 1"x18" dowels for concrete pavement or gutter breakout. See SCD BP-2.2 dowel details.

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

ALL PIPE TIE-INS TO CATCH BASINS SHALL HAVE CONCRETE COLLARS

CB-3 CATCH BASIN (2/2)





FIRE HYDRANT DETAILS

- Acceptable Models: American Darling B-62-B, Mueller Super Centurion 250, Kennedy KB1D Guardian
- Dia. Main Valve Opening: 5 1/4"
- Pumper Connection: 5" I. D. with Storz Fitting
- Hose Connection: Two 2 1/2"
- Thread Typ: National Standard - No Thread Exposed to Water
- Shape-Caps & Operating Nut: Pentagon
- Dim. Operating Nuts: 1 3/8"
- Direction of Opening: Right (Clockwise)
- Color to be Painted: White Barrel with Green Caps
- Valve Seal: Bronze
- Barrel: Two piece-Break Away Flange
- Top: Dry
- Bearing: Anti-Friction Thrust Bearing
- Spacing Requirements: 250 Feet Commercial/Industrial (MAX), 400 Feet Residential (MAX)

PAINT

- Primer: PPG Multiprime 35, 97-680 Medium White
- Enamel: PPG Pitthane 35 Gloss, Urethane Enamel
- Colors: Green: Federal Spec 14062, White: Federal Spec 17875

Private Hydrants Shall be Painted Red

FIRE HYDRANT DETAIL

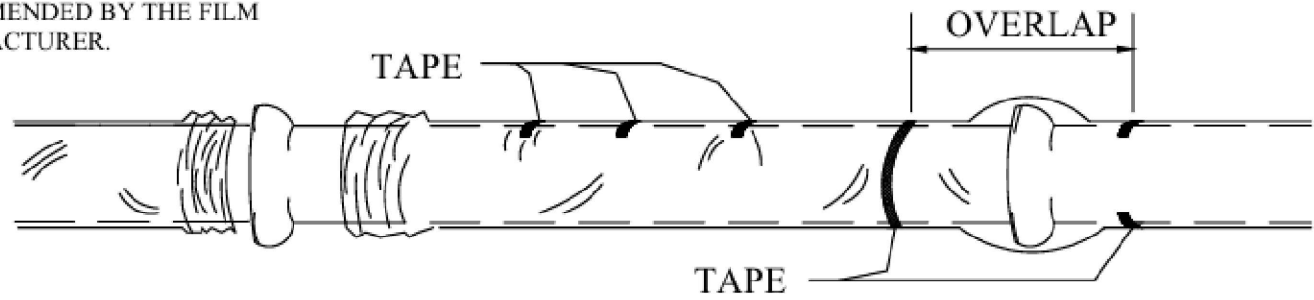
LEBANON
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DATE: 7/25/2006, 3/16/2007, 5/16/2010, 1/17/2016, 4/8/2017, 1/9/2019, 1/15/2019

APPROVED BY: *Dan L. Riffe*

STANDARD DRAWING

TAPE MATERIAL
POLYETHYLENE TAPE 1-1/2" WIDE AS RECOMMENDED BY THE FILM MANUFACTURER.



MATERIAL SPECIFICATIONS
8 MIL POLYETHYLENE SHALL CONFORM TO ANSI/AWWA SPECIFICATION C105/A21.5

THE FOLLOWING METHOD ILLUSTRATES THE PROCEDURE FOR APPLYING POLYETHYLENE:
CUT POLYETHYLENE TUBE TO A LENGTH APPROXIMATELY TWO FEET LONGER THAN THE LENGTH OF THE PIPE SECTION, SLIP THE TUBE AROUND THE PIPE, CENTERING IT TO PROVIDE A ONE-FOOT OVERLAP ON EACH ADJACENT PIPE SECTION, AND BUNCHING IT ACCORDION FASHION LENGTHWISE UNTIL IT CLEARS THE PIPE ENDS.

LOWER THE PIPE INTO THE TRENCH AND MAKE THE PIPE JOINT WITH THE PRECEDING SECTION OF PIPE. A SHALLOW BELL HOLE MUST BE MADE AT THE JOINTS TO FACILITATE INSTALLATION OF THE POLYETHYLENE TUBE.

AFTER ASSEMBLING THE PIPE JOINT, MAKE THE OVERLAP OF THE POLYETHYLENE TUBE, PULL THE BUNCHED POLYETHYLENE FROM THE PRECEDING LENGTH OF PIPE, SLIP IT OVER THE END OF THE NEW LENGTH OF PIPE AND SECURE IT IN PLACE. THEN SLIP THE END OF THE POLYETHYLENE FROM THE NEW PIPE SECTION OVER THE END OF THE PRECEDING LENGTH OF PIPE, SECURE THE OVERLAP IN PLACE, TAKE UP THE SLACK WIDTH TO MAKE IT SNUG, BUT NOT TO TIGHT, FIT ALONG THIS BARREL OF PIPE, SECURING THE FOLD AT QUARTER POINTS.

REPAIR ANY RIPS, PUNCTURES, OR OTHER DAMAGE TO THE POLYETHYLENE WITH ADHESIVE TAPE OR WITH A SHORT LENGTH OF THE POLYETHYLENE TUBE CUT OPEN, WRAPPED AROUND THE PIPE, AND SECURED IN PLACE. PROCEED WITH INSTALLATION OF THE NEXT SECTION OF PIPE IN THE SAME MANNER.

PIPE-SHAPED APPURTENANCES:
BENDS, REDUCERS, OFFSETS AND OTHER PIPE-SHAPED APPURTENANCES SHALL BE COVERED WITH POLYETHYLENE IN THE SAME MANNER AS THE PIPE.

JUNCTIONS BETWEEN WRAPPED AND UNWRAPPED PIPE:
WHERE POLYETHYLENE WRAPPED PIPE JOINS A PIPE WHICH IS NOT WRAPPED, EXTEND THE POLYETHYLENE TUBE TO COVER THE UNWRAPPED PIPE A DISTANCE OF AT LEAST TWO FEET. SECURE THE END WITH CIRCUMFERENTIAL TURNS OF TAPE.

ODD SHAPED APPURTENANCES:
VALVES, TEES, CROSSES AND OTHER ODD-SHAPED PIECES WHICH CANNOT BE WRAPPED PRACTICALLY IN A TUBE SHALL BE WRAPPED WITH A FLAT SHEET OR SPLIT LENGTH OF POLYETHYLENE TUBE. THE SHEET SHALL BE PASSED UNDER THE APPURTENANCE AND BROUGHT UP AROUND THE BODY. SEAMS SHALL BE MADE BY BRINGING THE EDGES TOGETHER, FOLDING OVER TWICE, AND TAPPING DOWN. SLACK WIDTH AND OVERLAPS AT JOINTS SHALL BE HANDLED AS DESCRIBED ABOVE. TAPE POLYETHYLENE SECURELY IN PLACE AT VALVE STEM AND OTHER PENETRATIONS.

BACKFILL FOR POLYETHYLENE WRAPPED PIPE:
BACKFILL MATERIAL SHALL BE THE SAME AS SPECIFIED FOR PIPE WITHOUT POLYETHYLENE WRAPPING. SPECIAL CARE SHOULD BE TAKEN TO PREVENT DAMAGE TO THE POLYETHYLENE WRAPPING WHEN PLACING BACKFILL. BACKFILL MATERIAL SHOULD BE FREE FROM CINDERS, REFUSE, BOULDERS, ROCKS, STONES OR OTHER MATERIAL THAT COULD DAMAGE POLYETHYLENE.

TUBE SIZE REQUIRED					
PIPE DIAMETER	4"	6"	8"	10"	12"
MIN. FLAT TUBE WIDTH (INCHES)	14	16	20	24	27
				34	41

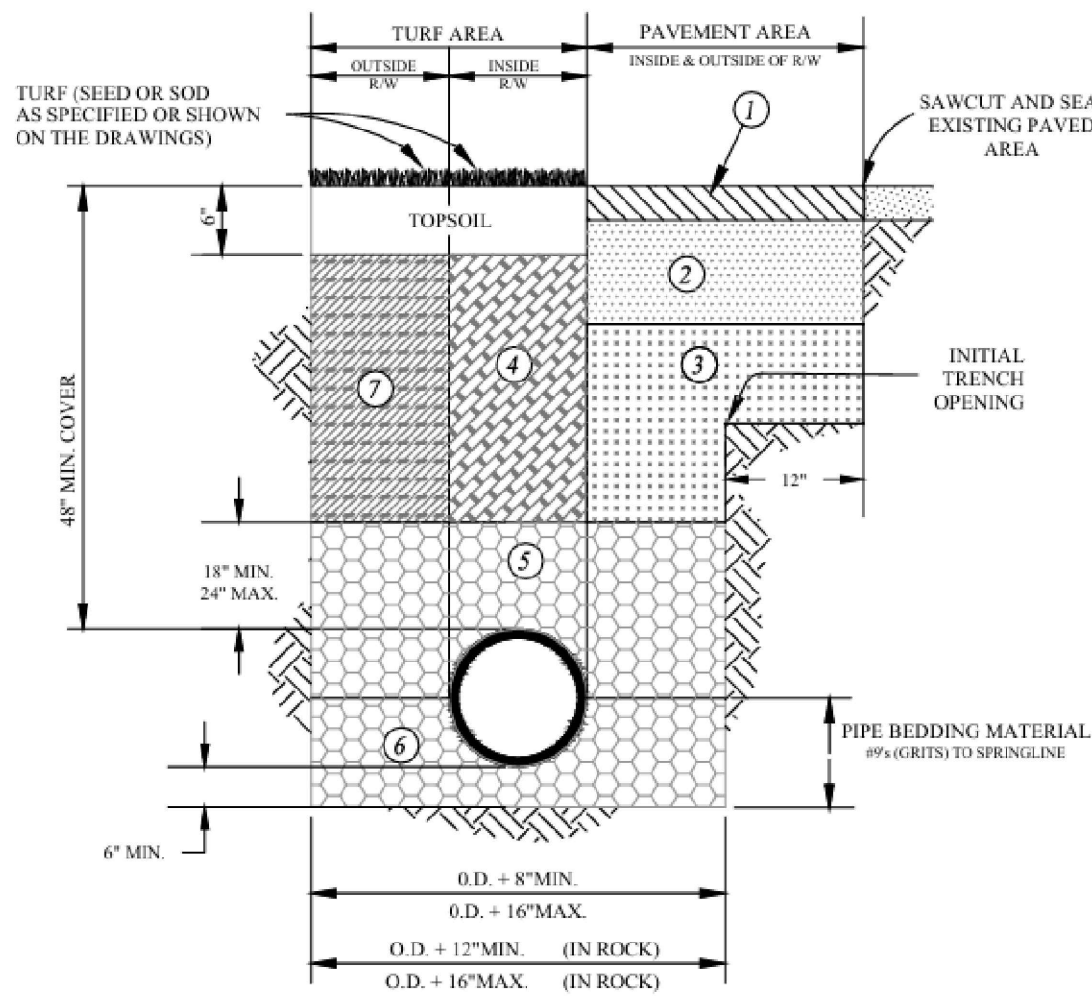
POLYETHYLENE PIPE WRAP

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DATE: 7/25/2006, 3/16/2007, 5/16/2010, 1/17/2016, 4/8/2017, 1/9/2019, 1/15/2019

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STANDARD DRAWING



- ODOT ITEM 441 OR 442 - ASPHALT CONCRETE - INCLUDES INTERMEDIATE & SURFACE COURSES - REFER TO PAVEMENT DETAILS
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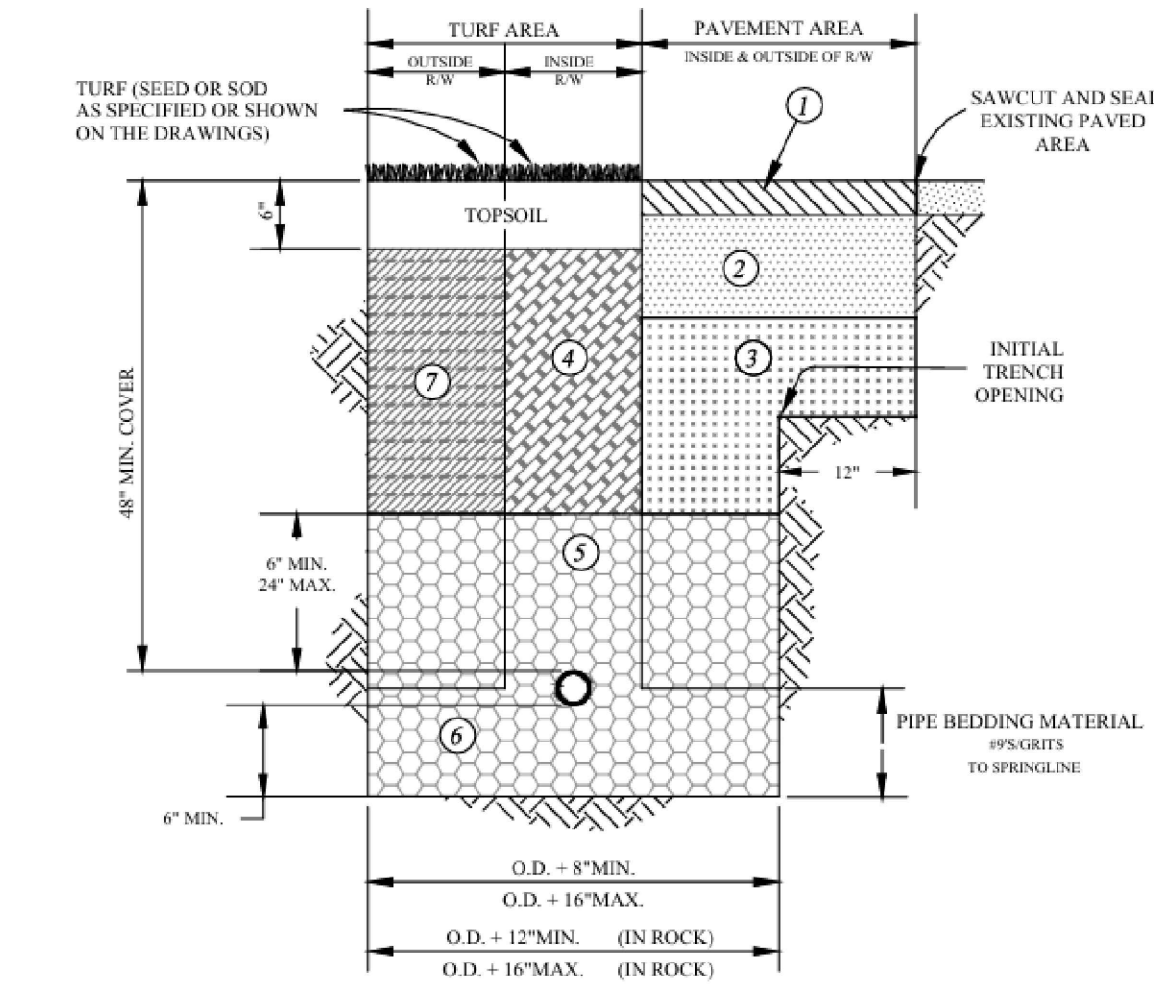
DUCTILE IRON WATER MAIN TRENCH DETAIL

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APPROVED BY: *Dan L. Riffe*

STANDARD DRAWING



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WATER SERVICE TRENCH DETAIL

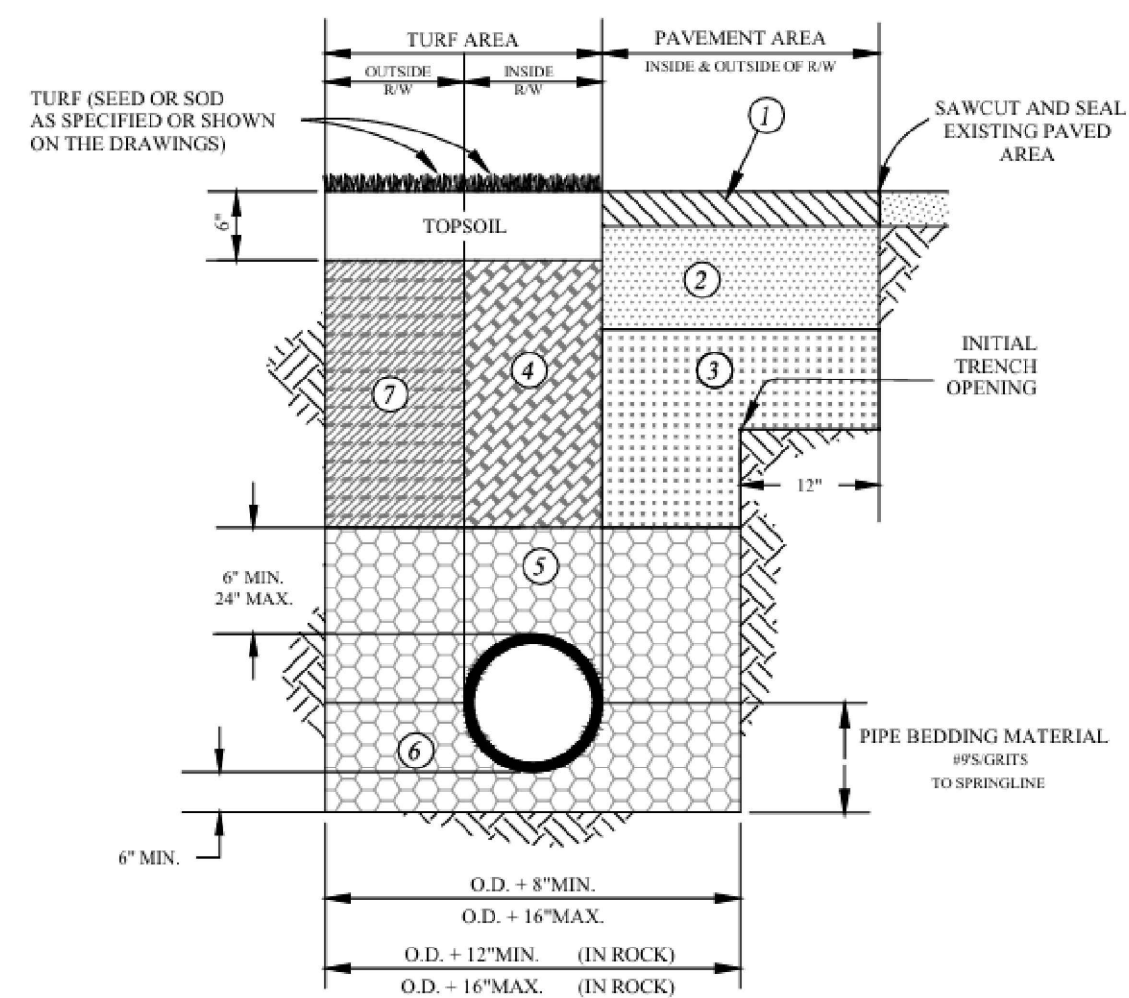
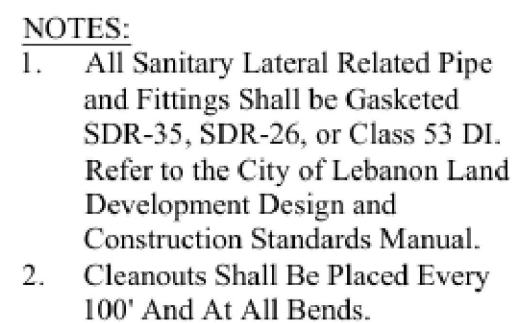
LEBANON
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DATE: 10/26/2011, 1/9/2019, 4/29/2020, 3/23/2022

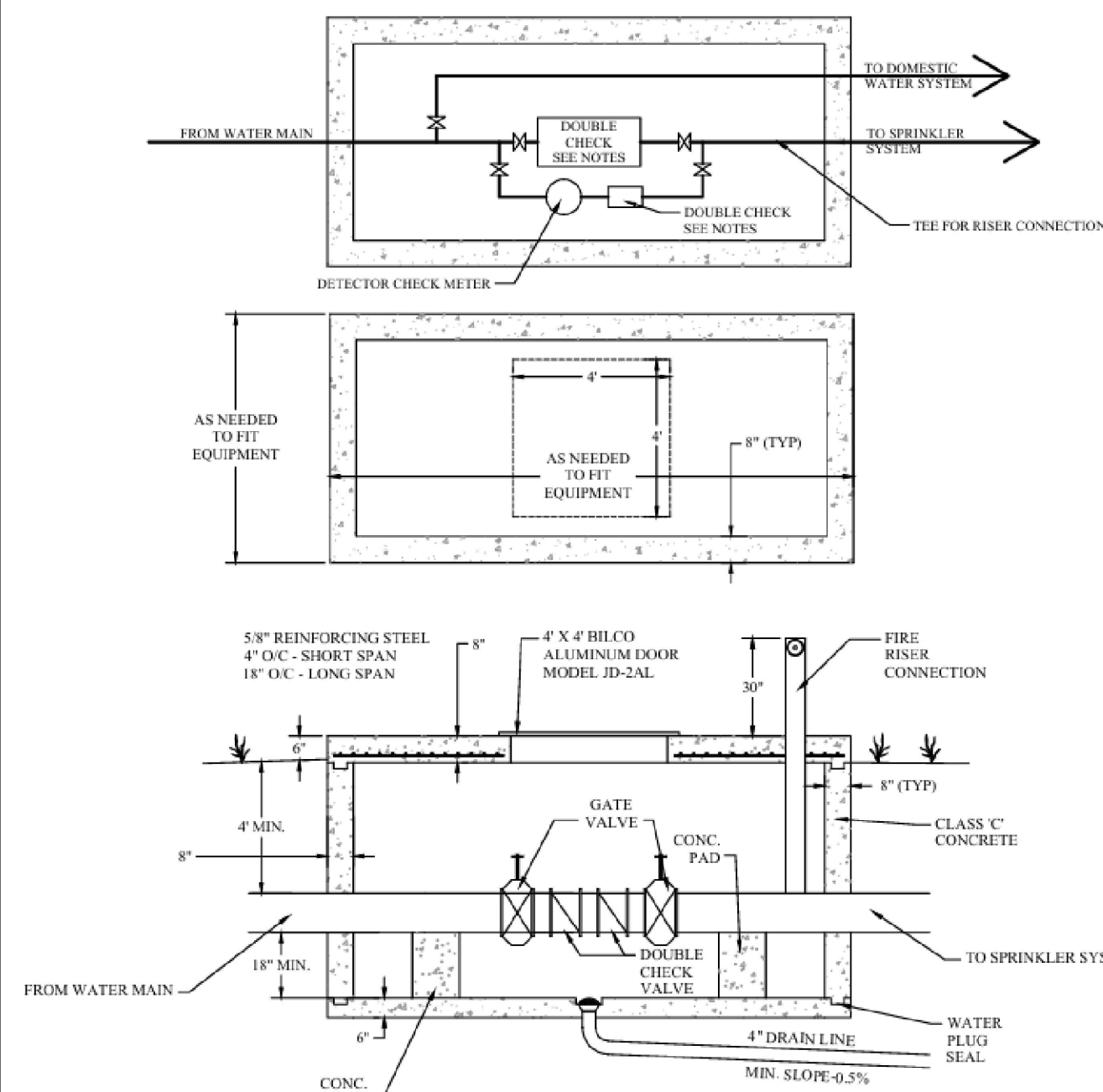
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STANDARD DRAWING

REVISIONS



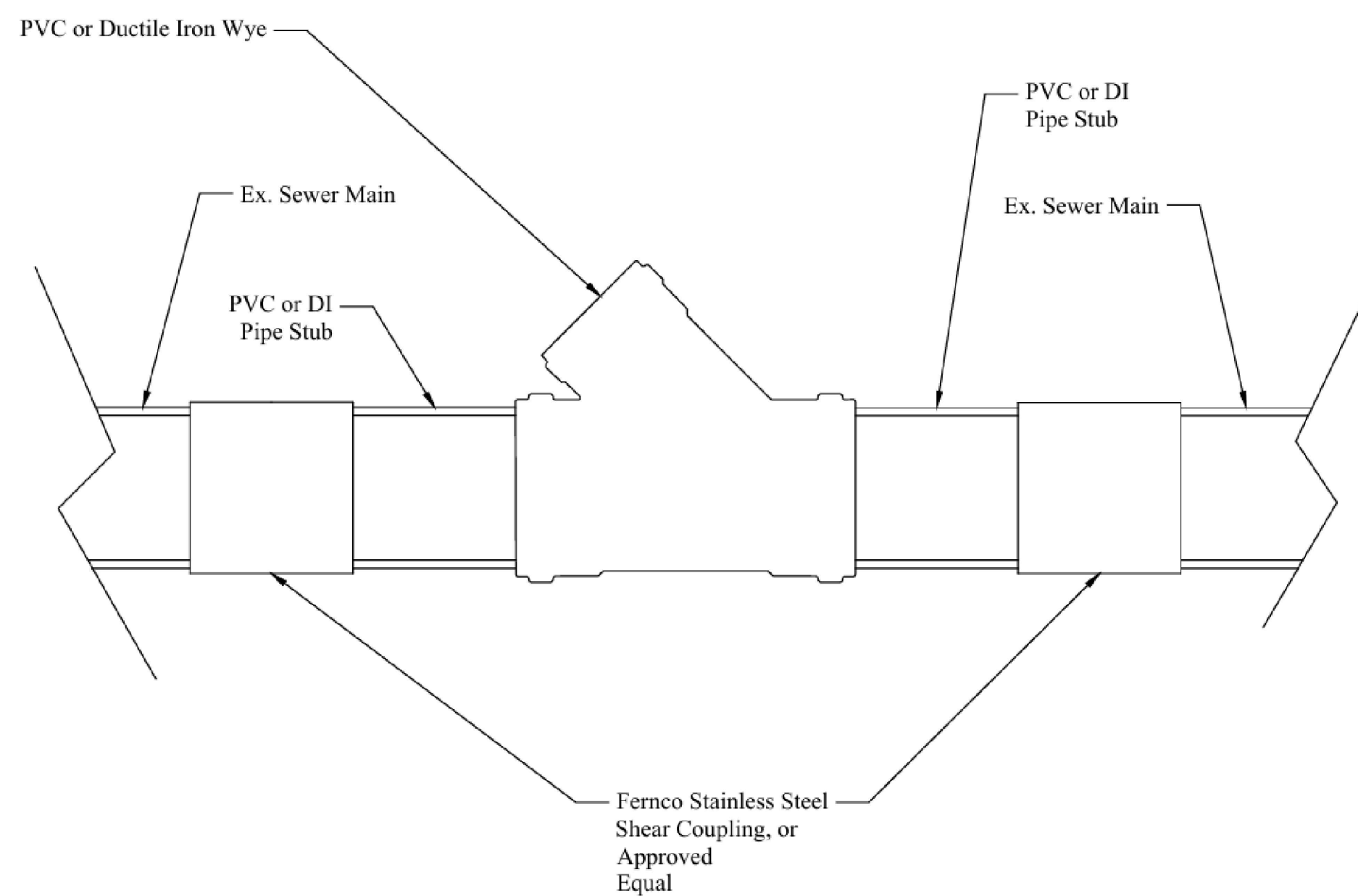
- 1 ODOT ITEM 411 OR 442 - ASPH/CONCRETE BASE - INCLUDES INTERMEDIATE & SURFACE COURSES - REFER TO PAVEMENT DETAILS
- 2 ODOT ITEM 302 - BITUMINOUS AGGREGATE BASE (IN 2 COURSES) - REFER TO PAVEMENT DETAILS
- 3 UNDER PAVEMENT AREA - CRUSHED LIMESTONE OR CRUSHED GRAVEL ODOT ITEM 304, 411, OR 617 COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY IN MAXIMUM OF 6 INCH LIFTS OR ODOT ITEM 617.5 L/S - REFER TO PAVEMENT DETAILS. FOR GRANULAR BACKFILL, THE TOP 3" SHALL BE ODOT ITEM CRUSHED LIMESTONE ONLY.
- 4 OUTSIDE OF PAVEMENT AREA ONLY - CRUSHED LIMESTONE OR CRUSHED GRAVEL ODOT ITEM 304, 411, OR 617 COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY IN MAXIMUM OF 6 INCH LIFTS OR ODOT ITEM 617.5 L/S -
-OR-
CLAY FILL COMPACTED TO MIN. 98 PERCENT OF MAXIMUM DENSITY (MAX. 6" LIFTS); DENSITY TESTING IN ACCORDANCE WITH ODOT S-1015 SHALL BE PERFORMED EVERY 18 INCHES OF DEPTH AND EVERY 2.5 LINEAR FEET OF TRENCH WITH RECORDS PROVIDED TO CITY. ANY MATERIAL NOT MEETING DENSITY REQUIREMENTS SHALL BE REMOVED AND REPLACED. ADDITIONAL BONDING REQUIRED IF CLAY TRENCH BACKFILL IS USED.
- 5 #5/GIRTS GRANULAR BACKFILL (1" MAXIMUM MAXIMUM ABOVE TOP OF PIPE MATERIAL IS TO BE PLACED AND COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY IN 6 INCH MAXIMUM LIFTS.
- 6 PIPE BEDDING & HAUSING MATERIAL - #5/GIRTS MATERIAL TO BE PLACED AND COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY IN 6 INCH MAXIMUM LIFTS.
- 7 EXCAVATED MATERIAL BACKFILL AND COMPACTED TO A MINIMUM OF 98 PERCENT PROCTOR IN MAXIMUM OF 12" LIFTS OUTSIDE R/W ONLY.



- NOTES :**
1. The exterior sides of pit walls shall be waterproofed with two coats of: Thoroseal, U.S.S. Chemical Tarmatmo No. 102, Koppers Bitumatium Super Service Black Slanch, Amercoat No. 78, or approved equal.
 2. Each pit shall be drained by means of a 4" Drain leading to a storm sewer. The pit floor shall be sloped to a floor drain placed in the center of the pit. The floor drain casting shall have a 4" outlet and a raised or beehive dome grate similar to Wade No. 1634, Josam No. 7234-N, or an approved equal.
 3. Back flow Preventer
 - Fire Line without chemical additives in Fire System - ASSE 1015
 - Fire line with chemical additives in Fire System - ASSE 1013 (shall be installed inside of building - not permitted in pit)
 4. Double Check Valve must be E.P.A. Approved.
 5. All fire lines shall be Class 53 Ductile Iron regardless of size. All domestic water lines (less than three inches (< 3") in diameter shall be Type K copper. All domestic lines three inches or larger (> 3") shall be Class 53 Ductile Iron.
 6. An OSHA approved ladder shall be provided as part of fire meter pit for safe ingress/egress.
 7. Domestic water meter and domestic backflow preventer shall be placed inside of the building. Domestic line shall have an ASSE 1013 backflow preventer.
 8. The fire riser connection shall be provided with a 5" Storm fitting.
- EXTERIOR DOMESTIC/FIRE LINE
SPLIT DETAIL**

APPROVED BY: STANDARD

DATE
10/08/2022
12:53



Phone: 888-564-0961 Fax: 606 564 0962

REVISIONS

PROJECT: SITE PLANS
LOCATION: 830 FRANKLIN ROAD, LEBANON, OH
CLIENT: NEW HOUSING
ADDRESS:
COUNTY: WARREN
PROJECT #: 23-783
DATE: JULY 10, 2025

SHEET: C11/2

- 1.1. PURPOSE**
- 1.1.1. The purpose of this section is to outline requirements for design, construction, inspection, and final acceptance of sanitary sewer mains, house service connections, manholes, and appurtenances.
- 1.2. AMERICAN MADE PRODUCTS**
- 1.2.1. All manhole lids, castings, frames, and grates located within the public Right-of-Way or outside of the public Right-of-Way and that will be owned and maintained by the City of Lebanon shall be manufactured in the United States of America.
- 1.3. PROTECTION OF PUBLIC WATER SUPPLIES**
- 1.3.1. There shall be no physical connection between a public or private potable water system and a sanitary sewer or its appurtenances, which would permit passage of any sewage into the potable water supply system.
- 1.3.2. Sanitary sewers and manholes shall be laid at least ten feet (10') horizontally from any existing or proposed water main. When local conditions prevent a separation of ten feet (10'), a sewer main may be laid closer than ten feet (10') to a water main if it is laid in a separate trench; if it is laid in the same trench, the water main must be located at one side on a bench of undisturbed earth. In either case, the elevation of the crown of the sewer must be at least eighteen inches (18") below the invert of the water main.
- 1.3.2.1. When it is not possible to obtain proper horizontal and vertical separation as stipulated above, the sanitary sewer shall be constructed of Class 53 ductile iron pipe. The sewer main shall be pressure tested and shall withstand a 50 psi pressure test for a distance of ten feet (10') on each side of the water main. One full length of sewer main shall be centered over the water main so that both joints will be as far from the water main as possible.
- 1.4. STORM WATER PROHIBITED**
- 1.4.1. Storm drainage and subsurface drainage, including foundation drains, shall not be permitted to empty into any sanitary sewer.
- 1.4.2. The following two notes shall appear on all sanitary sewer plans submitted for review and approval:
- 1.4.2.1. Roof drains, foundation drains, sump pump drains, and all other clean water connections to the sanitary sewer system are prohibited.
- 1.4.2.2. No buildings shall be connected to a sanitary sewer lateral until the building is under roof or as directed by the City Engineer.
- 1.5. SANITARY SEWER MAIN PIPE MATERIAL**
- 1.5.1. Pipe must be delivered to the job site by means that will adequately support it and not subject it to undue stresses. In particular, the load shall be so supported that the bottom rows of pipe are not damaged by crushing. Pipe shall be unloaded carefully and strung or stored as close to the final point of placement as is practical. Pipe shall be stored on the job site in accordance with the manufacturer's recommendations. Any pipe that has been left uncovered and has subsequently been allowed to discolor, (this discoloration represents an indication of a possible reduction in pipe impact strength) may be subject to rejection by the City of Lebanon.
- 1.5.2. The depth of cover shall determine the required type of pipe to be installed. The City of Lebanon shall determine the type of pipe to be installed based on the depth of cover and the manufacturer's recommendation.
- 1.5.3. Sewer mains larger than eighteen inches (18") in diameter require special design considerations and shall be given special design criteria. An Owner/Developer anticipating construction of sewer mains larger than eighteen inches (18") in diameter shall meet with the City of Lebanon to establish design criteria.
- 1.5.4. The following pipe materials shall be used at the following depths:
- 1.5.4.1. 14 feet or less - SDR-35 Polyvinyl Chloride (PVC) Pipe, Fittings and Joints
- 1.5.4.2. Greater than 14 feet through 25 feet - SDR-26 Polyvinyl Chloride (PVC) Pipe, Fittings and Joints
- 1.5.4.3. Greater than 25 feet - Class 53 Ductile Iron Pipe, Fittings and Joints with 8-mil polywrap or AWWA C900 (6"-12") or AWWA C900/C905 (14"-48").
- 1.5.4.4. Gasketed ABS or PVC Composite Pipe (8"-15") ODOT Item 707.47, Fitting and Joints may be permitted on a case-by-case basis with written permission by the City Engineer.
- 1.5.5. PVC Pipe
- 1.5.5.1. PVC pipe shall meet the requirements for Poly Vinyl Chloride (PVC) gravity sewer pipes with integral bell and spigot gasketed joints. Nominal sized 4", 6", 8", 10", 12" and 15" are manufactured to meet requirements of American Society for Testing and Materials standard ASTM D-3034, *Standard Specification for Type PSM Poly (Vinyl Chloride)(PVC) Sewer Pipe*. Nominal sized 18", 21", 24", 27" and 30" comply with ASTM F-679, *Standard Specification for PVC Large Diameter Plastic Gravity Sewer Pipe*.
- 1.5.5.2. All pipes used shall be manufactured for use in gravity flow applications, such as sanitary sewer lines. These pipes shall be produced with wall thickness corresponding to dimension ratio SDR-35 for pipes with 14 feet or less of cover and SDR-26 for pipes with 25 feet or less of cover. The pipe shall possess a pipe stiffness value of 46 psi for SDR-35 and 115 psi for SDR-26 when tested in accord with ASTM D-2412, *Standard Test Methods for Determination of External Loading of Plastic Pipe by Parallel Plate Loading*. Standard laying length is 13 feet; however, twenty-foot (20') lengths will be acceptable.
- 1.5.5.3. All pipe shall utilize a "locked in" integral gasket joint design meeting the requirements of ASTM D-3212 *Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals*. The gaskets shall be reinforced with a steel band and conform to the requirements of ASTM F-477, *Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipes*.
- 1.5.5.4. The pipe shall be manufactured from PVC compound meeting the requirements of cell class 12454-B as defined by ASTM D-1784, *Standard Specification for Rigid Poly (Vinyl Chloride)(PVC) Compounds*. These materials are classified as type T-1 in ASTM F-679.
- 1.5.5.5. Pipe markings shall be as specified in ASTM D-3034 and ASTM F-679.
- 1.5.5.6. Quality assurance testing shall be as required by ASTM D-3034 and ASTM F-679.
- 1.5.6. Gasketed ABS or PVC Composite Pipe (8"-15") ODOT Item 707.47, Fitting and Joints
- 1.5.6.1. Gasketed ABS or PVC composite pipe shall conform to the requirements of ASTM Designation D2680-90 (or latest revision). Pipe and fitting shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions, or other injurious defects. Minimum pipe stiffness, when measured in accordance with ASTM Test Method D2412, shall be 200 psi. The thermoplastic material shall be a rigid ABS or PVC plastic and shall meet or exceed the requirements of ASTM Specification D1784 for a minimum cell classification of 12454B or 12454C. The other component for semi-rigid pipe shall be Portland cement, Mearlcrete concrete or other inert filler material that essentially fills the truss annulus to form a composite pipe.
- 1.5.6.2. All fittings for PVC composite pipe shall conform to ASTM D2680-90 Section 7.1 and Tables 5 and 6. To insure compatibility, the pipe manufacturer shall furnish all fittings.
- 1.5.6.3. All joints shall be made with gasketed bell coupling connections. The manufacturer shall provide documentation showing no leakage when gasketed pipe joints are tested in accordance with ASTM D2680 Section 10.4.2 and ASTM Test Method D3212. Elastomeric seals (gaskets) shall meet the requirements of ASTM Designation F477.
- 1.5.7. Ductile Iron Pipe, Fittings and Joints
- 1.5.7.1. Ductile iron pipe shall be Class 53 unless otherwise approved in writing by the City Engineer. Ductile iron pipe shall conform to ANSI A21.51 and AWWA C151. All ductile iron pipe thickness shall be designed according to ANSI A21.50 and AWWA C 151 requirements.
- 1.5.7.2. Ductile iron pipe and fittings shall receive the standard cement mortar lining with bituminous seal coat on the inside in accordance with ANSI 21.4 requirements. Pipe and fittings shall have a standard coal tar or asphalt based bituminous outside coating a minimum of 1 mil thick.
- 1.5.7.3. All ductile iron pipe shall be protected by an eight-mil thick polyethylene encasement meeting the requirements of ANSI A21.5.
- 1.5.7.4. Each piece of pipe shall bear the manufacturer's name or trademark, the year in which it was produced and the letters "DI" or word "DUCTILE". Shop inspection and testing shall be in accordance with the AWWA Specifications cited above and shall be certified by an independent laboratory.
- 1.5.7.5. Fittings for ductile iron pipe shall be flanged Class 50 gray iron conforming to ANSI A21.10 and AWWA C110 for short body cast iron fittings or as approved by the City Engineer. Fittings shall have bituminous seal coat on the inside as specified herein.
- 1.5.7.6. All ductile iron pipe and fittings used for sanitary sewer gravity mains or force mains shall have Protecto 401 ceramic epoxy lining, or an equal lining material, as approved by The City of Lebanon.
- 1.5.8. C900 and C905 Pipe
- 1.5.8.1. C900 Pipe (6"-12")
- 1.5.8.1.1. Provisions must be made for expansion and contraction at each joint with an elastomeric seal.
- 1.5.8.1.2. The bell shall consist of an integral thickened wall section with an elastomeric seal. The wall thickness in the bell section shall conform to the requirements of Section 6.2 of ASTM D3139, "Standard Specification for Joint for Plastic Pressure Pipes Using Flexible Elastomeric Seals."
- 1.5.8.1.3. The pipe shall be manufactured to cast iron outside diameters (CIOD) in accordance with AWWA C900.
- 1.5.8.1.4. The pipe shall be DR14
- 1.5.8.1.5. The seal shall meet the requirement of ASTM F477 "Standard for Elastomeric Seals (Gaskets) for Joining Plastic Pipe."
- 1.5.8.2. C905 Pipe (14"-48")
- 1.5.8.2.1. Provisions must be made for expansion and contraction at each joint with an elastomeric seal.
- 1.5.8.2.2. The bell shall consist of an integral thickened wall section with an elastomeric seal. The wall thickness in the bell section shall conform to the requirements of Section 6.2 of ASTM D3139, "Standard Specification for Joint for Plastic Pressure Pipes Using Flexible Elastomeric Seals."
- 1.5.8.2.3. The pipe shall be manufactured to cast iron outside diameters (CIOD) in accordance with AWWA C905.
- 1.5.8.2.4. The seal shall meet the requirements of ASTM F477 "Standard for Elastomeric Seals (Gaskets) for Joining Plastic Pipe."
- 1.5.8.2.5. The pipe shall be DR14.
- 1.5.9. Steel Encasement Pipe
- 1.5.9.1. Encasement pipe shall be steel, plain end, uncoated and unwrapped, have minimum yield point strength of 35,000 psi and conform to ASTM A252 Grade 2 of ASTM A130 Grade B without hydrostatic tests. The steel pipe shall have welded joints and be in at least 18-foot (18') lengths.
- 1.5.9.2. The diameter and wall thickness of the pipe shall conform to the requirements of the American Railway Engineering Association for railroad crossings, and the requirements of ODOT for highway crossings.
- 1.6. SEWERS BETWEEN STRUCTURES**
- 1.6.1. Any sewer main located between building lots or within 20' of any residential or commercial structure shall be constructed of C-900 or C-905 PVC pipe regardless of pipe depth.
- 1.7. SEWER LINES (COLLECTORS, MAINS AND TRUNK LINES)**
- 1.7.1. Depth
- 1.7.1.1. In general, sewers shall be deep enough to prevent freezing and to receive sewage from basements and cellars. In no case shall mains be less than sixty inches (60") deep. Unless otherwise approved, all homes within a new development shall be serviced by gravity flow to the sanitary sewer main.
- 1.7.2. Location
- 1.7.2.1. Unless otherwise approved by the City Engineer, public sanitary sewer mains shall be installed in the centerline of the street or, upon approval, in a public utility easement granted to the City of Lebanon. A sanitary sewer maintenance area shall be provided. This sanitary sewer maintenance area width shall be no less than twenty feet (20') and shall be totally within the public right-of-way or public utility easement. It shall be centered on the sanitary sewer main.
- 1.7.2.1.1. In situations in which a sanitary sewer is deeper than ten feet, the City Engineer reserves the right to require an easement greater than 20 feet in width.
- 1.7.2.2. No sewer main shall run between residential or commercial structures unless authorized by the City Engineer.
- 1.7.2.3. The Contractor shall install a four-inch by four-inch (4"x 4") wood location post at all sanitary sewer plugs, including sanitary sewer main termination points. The location post shall be painted green and marked so as to identify the sanitary sewer line.
- 1.7.3. Alignment
- 1.7.3.1. The sanitary sewer mains shall be laid at uniform grade and in straight alignment. Proper grade and alignment shall be verified for each section of pipeline using appropriate instrumentation and methodology.
- 1.7.4. Flow Velocity
- 1.7.4.1. All sanitary sewers shall be designed to give a mean velocity of at least two feet per second (2 FPS) when flowing full. This is based on Manning's formula using an "n" factor of 0.013 for design. When velocities greater than twelve feet per second (12 FPS) are expected, provisions shall be made to protect against displacement and erosion of the pipe.
- 1.7.5. Slope
- 1.7.5.1. All sewers shall be laid with uniform slope and straight alignment between manholes. Refer to the Table found in the LDDCSM for minimum pipe slopes
- 1.7.6. Changes in Pipe Size and Grade
- 1.7.6.1. All changes in pipeline size and grade shall occur in a manhole. Inverts of pipes shall be matched in manholes.
- 1.8. SANITARY SEWER SERVICE LINES (LATERALS)**
- 1.8.1. The City of Lebanon shall approve the location of the sanitary sewer service laterals on the sewer main. The Contractor shall lay the sanitary sewer service lateral from the sanitary sewer main to a point along the Right-of-Way line, installing a cleanout with a screw out cap and a Ford metallic lid assembly marked "sewer".
- 1.8.1.1. In general, locating a sanitary sewer service lateral under a walkways or driveways should be avoided.
- 1.8.1.2. Cleanouts shall be the responsibility of the Developer. The developer may install the cleanouts at the time of utility installation, or the Developer may elect to have the cleanouts installed at the time of home construction. In either case bonds will not be released until properly installed cleanouts are in place.
- 1.8.2. All sanitary sewer service laterals shall be gasketed SDR-35, SDR-26 PVC, C900 PVC pipe, or Class 53 Ductile Iron as specified herein unless otherwise specified by the City of Lebanon.
- 1.8.3. All pipe joints and fittings shall be gasketed. Glued joints are not acceptable.
- 1.8.4. Trenching, pipe laying, joints and backfilling shall conform to the requirements set out herein.
- 1.8.5. All open ends shall be sealed with standard plugs to the satisfaction of the City of Lebanon.
- 1.8.5.1. Laterals installed on mains with cover less than 14 feet shall be gasketed SDR-35 PVC.
- 1.8.5.2. Laterals installed on mains with cover between 14 and 25 feet shall be gasketed SDR-26 PVC.
- 1.8.5.3. Laterals installed on mains with cover 25 feet or more shall be C900 PVC or Class 53 Ductile Iron.
- 1.8.6. All sewer laterals shall be bedded with a minimum of six inches (6") of compacted #9's (grits), or washed round stone and shall be backfilled to a minimum of twelve inches (12") above the top of the sanitary sewer lateral with compacted #9's (grits).
- 1.8.7. The installation of sewer laterals shall follow immediately or be concurrent with the construction of the sanitary sewer main.
- 1.8.8. Size
- 1.8.8.1. The size of sanitary sewer laterals shall be subject to the approval of the City of Lebanon, but in no case shall the diameter be less than six inches (6") from the sanitary sewer main to the required cleanout assembly.
- 1.8.8.2. The sewer cleanout shall be covered at grade level by an approved Ford Type A cover marked "SEWER". Sewer laterals shall tie directly to the building sewer.
- 1.8.8.3. The transition coupling from the building sewer to the cleanout will be accomplished by the use of a rigid coupling (PVC, rubber/stainless steel) or a flexible rubber boot (Fernco or approved).
- 1.8.9. Slope
- 1.8.9.1. The general requirements for the slope of sanitary sewer laterals shall be one quarter (1/4) inch per linear foot (2% slope).
- 1.8.10. Location
- 1.8.10.1. No sanitary sewer lateral shall be laid parallel to or within five feet (5') of any load-bearing wall that might thereby be weakened.
- 1.8.10.2. Whenever a sanitary sewer service line crosses a concrete street curb, the Contractor shall clearly mark the location of the sewer service line with an "S" cut or imprinted into the concrete curb near the top.
- 1.8.11. Depth
- 1.8.11.1. Sanitary sewer laterals shall be deep enough to receive sewage from basements and cellars.
- 1.8.11.2. The minimum sewer lateral depth shall be twenty-four inches (24").

Using Flexible Elastomeric Seals."

1.5.8.1.3. The pipe shall be manufactured to cast iron outside diameters (CIOD) in accordance with AWWA C900.

1.5.8.1.4. The pipe shall be DR14

1.5.8.1.5. The seal shall meet the requirement of ASTM F477 "Standard for Elastomeric Seals (Gaskets) for Joining Plastic Pipe."

1.5.8.2. C905 Pipe (14"-48")

1.5.8.2.1. Provisions must be made for expansion and contraction at each joint with an elastomeric seal.

1.5.8.2.2. The bell shall consist of an integral thickened wall section with an elastomeric seal. The wall thickness in the bell section shall conform to the requirements of Section 6.2 of ASTM D3139, "Standard Specification for Joint for Plastic Pressure Pipes Using Flexible Elastomeric Seals."

1.5.8.2.3. The pipe shall be manufactured to cast iron outside diameters (CIOD) in accordance with AWWA C905.

1.5.8.2.4. The seal shall meet the requirements of ASTM F477 "Standard for Elastomeric Seals (Gaskets) for Joining Plastic Pipe."

1.5.8.2.5. The pipe shall be DR14.

1.5.9. Steel Encasement Pipe

1.5.9.1. Encasement pipe shall be steel, plain end, uncoated and unwrapped, have minimum yield point strength of 35,000 psi and conform to ASTM A252 Grade 2 of ASTM A130 Grade B without hydrostatic tests. The steel pipe shall have welded joints and be in at least 18-foot (18') lengths.

1.5.9.2. The diameter and wall thickness of the pipe shall conform to the requirements of the American Railway Engineering Association for railroad crossings, and the requirements of ODOT for highway crossings.

1.6. SEWERS BETWEEN STRUCTURES

1.6.1. Any sewer main located between building lots or within 20' of any residential or commercial structure shall be constructed of C-900 or C-905 PVC pipe regardless of pipe depth.

1.7. SEWER LINES (COLLECTORS, MAINS AND TRUNK LINES)

1.7.1. Depth

1.7.1.1. In general, sewers shall be deep enough to prevent freezing and to receive sewage from basements and cellars. In no case shall mains be less than sixty inches (60") deep. Unless otherwise approved, all homes within a new development shall be serviced by gravity flow to the sanitary sewer main.

1.7.2. Location

1.7.2.1. Unless otherwise approved by the City Engineer, public sanitary sewer mains shall be installed in the centerline of the street or, upon approval, in a public utility easement granted to the City of Lebanon. A sanitary sewer maintenance area shall be provided. This sanitary sewer maintenance area width shall be no less than twenty feet (20') and shall be totally within the public right-of-way or public utility easement. It shall be centered on the sanitary sewer main.

1.7.2.1.1. In situations in which a sanitary sewer is deeper than ten feet, the City Engineer reserves the right to require an easement greater than 20 feet in width.

1.7.2.2. No sewer main shall run between residential or commercial structures unless authorized by the City Engineer.

1.7.2.3. The Contractor shall install a four-inch by four-inch (4"x 4") wood location post at all sanitary sewer plugs, including sanitary sewer main termination points. The location post shall be painted green and marked so as to identify the sanitary sewer line.

1.7.3. Alignment

1.7.3.1. The sanitary sewer mains shall be laid at uniform grade and in straight alignment. Proper grade and alignment shall be verified for each section of pipeline using appropriate instrumentation and methodology.

1.7.4. Flow Velocity

1.7.4.1. All sanitary sewers shall be designed to give a mean velocity of at least two feet per second (2 FPS) when flowing full. This is based on Manning's formula using an "n" factor of 0.013 for design. When velocities greater than twelve feet per second (12 FPS) are expected, provisions shall be made to protect against displacement and erosion of the pipe.

1.7.5. Slope

1.7.5.1. All sewers shall be laid with uniform slope and straight alignment between manholes. Refer to the Table found in the LDDCSM for minimum pipe slopes

1.7.6. Changes in Pipe Size and Grade

1.7.6.1. All changes in pipeline size and grade shall occur in a manhole. Inverts of pipes shall be matched in manholes.

1.8. SANITARY SEWER SERVICE LINES (LATERALS)

1.8.1. The City of Lebanon shall approve the location of the sanitary sewer service laterals on the sewer main. The Contractor shall lay the sanitary sewer service lateral from the sanitary sewer main to a point along the Right-of-Way line, installing a cleanout with a screw out cap and a Ford metallic lid assembly marked "sewer".

1.8.1.1. In general, locating a sanitary sewer service lateral under a walkways or driveways should be avoided.

1.8.1.2. Cleanouts shall be the responsibility of the Developer. The developer may install the cleanouts at the time of utility installation, or the Developer may elect to have the cleanouts installed at the time of home construction. In either case bonds will not be released until properly installed cleanouts are in place.

1.8.2. All sanitary sewer service laterals shall be gasketed SDR-35, SDR-26 PVC, C900 PVC pipe, or Class 53 Ductile Iron as specified herein unless otherwise specified by the City of Lebanon.

1.8.3. All pipe joints and fittings shall be gasketed. Glued joints are not acceptable.

1.8.4. Trenching, pipe laying, joints and backfilling shall conform to the requirements set out herein.

1.8.5. All open ends shall be sealed with standard plugs to the satisfaction of the City of Lebanon.

1.8.5.1. Laterals installed on mains with cover less than 14 feet shall be gasketed SDR-35 PVC.

1.8.5.2. Laterals installed on mains with cover between 14 and 25 feet shall be gasketed SDR-26 PVC.

1.8.5.3. Laterals installed on mains with cover 25 feet or more shall be C900 PVC or Class 53 Ductile Iron.

1.8.6. All sewer laterals shall be bedded with a minimum of six inches (6") of compacted #9's (grits), or washed round stone and shall be backfilled to a minimum of twelve inches (12") above the top of the sanitary sewer lateral with compacted #9's (grits).

1.8.7. The installation of sewer laterals shall follow immediately or be concurrent with the construction of the sanitary sewer main.

1.8.8. Size

1.8.8.1. The size of sanitary sewer laterals shall be subject to the approval of the City of Lebanon, but in no case shall the diameter be less than six inches (6") from the sanitary sewer main to the required cleanout assembly.

1.8.8.2. The sewer cleanout shall be covered at grade level by an approved Ford Type A cover marked "SEWER". Sewer laterals shall tie directly to the building sewer.

1.8.8.3. The transition coupling from the building sewer to the cleanout will be accomplished by the use of a rigid coupling (PVC, rubber/stainless steel) or a flexible rubber boot (Fernco or approved).

1.8.9. Slope

1.8.9.1. The general requirements for the slope of sanitary sewer laterals shall be one quarter (1/4) inch per linear foot (2% slope).

1.8.10. Location

1.8.10.1. No sanitary sewer lateral shall be laid parallel to or within five feet (5') of any load-bearing wall that might thereby be weakened.

1.8.10.2. Whenever a sanitary sewer service line crosses a concrete street curb, the Contractor shall clearly mark the location of the sewer service line with an "S" cut or imprinted into the concrete curb near the top.

1.8.11. Depth

1.8.11.1. Sanitary sewer laterals shall be deep enough to receive sewage from basements and cellars.

1.8.11.2. The minimum sewer lateral depth shall be twenty-four inches (24").

1.8.12. Alignment

1.8.12.1. The sanitary sewer lateral shall be laid in a uniform grade and in alignment from the main to meet the probable building sewer grade at the cleanout assembly so that no bends will be required.

1.8.12.2. Sanitary laterals are to run perpendicular to the sanitary sewer main from the utility standard cleanout assembly. Any deviation from this standard must have the written approval of the City Engineer.

1.8.13. Cleanouts

1.8.13.1. Cleanouts for sanitary sewer laterals shall be built at all horizontal or vertical changes of direction and shall consist of a six-inch (6") directional tee and wye. Along straight segments of pipe outside the right-of-way, cleanouts shall be installed as required by the Ohio Plumbing Code. A copy of the City of Lebanon standard cleanout detail is contained in the Appendix.

1.8.13.2. The cleanout cap/plug shall have a protruding operating nut.

1.8.13.3. When within the Right-of-Way, cleanouts shall be covered by a Ford Type A twenty inch (20") single lid cover lettered "SEWER" with an 11 1/2" locking lid to be flush with final ground level. Installation of cleanouts in traffic areas shall be covered by an "extra heavy cover" Ford Type A twenty-inch (20") single lid cover lettered "SEWER" with an 11-1/2" locking lid; flush to the grade of the pavement.

1.8.14. Lateral Connections

1.8.14.1. Lateral connections to the sanitary sewer main shall only be located at an existing "wye" connection on the main. When none exist on the main, an approved manufactured saddle wye shall be installed at the sanitary sewer main cut in a neat, even manner. The connection shall be rendered watertight by means of commercial fittings and/or a rubber gasket seal. (Examples are Fernco, Indiana Seal, Mission, or manufactured products of equal standards approved by the City of Lebanon). Concrete encasement shall only be permitted by special written authorization by the City of Lebanon.

1.8.14.2. All connections between the sanitary sewer main and sanitary sewer lateral, as well as the connection between the sanitary sewer lateral and the building connection, shall be inspected by the City of Lebanon prior to backfilling.

1.8.14.3. Under no circumstances shall the lateral be connected to the sewer main at the top of the pipe.

1.8.15. Maintenance

1.8.15.1. The owner of a premises served by a sanitary lateral shall be responsible for the operation, maintenance, repair and reconstruction of the sanitary lateral from the building to the point of connection with the public sanitary sewer main. (§1311.17)

1.9. SEWER TAPS

1.9.1. All sewer taps shall be oriented to the nine o'clock or 3 o'clock position.

1.9.2. Taps shall be provided for each lot in a development.

1.9.3. Taps being added to an existing sewer main or replacing an existing tap on an existing main shall be installed using a PVC or ductile iron wye, any needed PVC or ductile iron pipe needed to abut the existing sanitary sewer main. Connections between the new tap assembly and the existing sanitary sewer main shall be made with Fernco stainless steel shear couplings, or approved equal.

1.9.4. The existing sanitary sewer main shall be neatly and carefully saw cut to provide an edge square to the centerline of the pipe.

1.10. SANITARY GRINDER/LIFT PUMPS

1.10.1. Sufficient depth of sewer mains shall be provided to allow gravity flow for all sanitary sewer lateral connections. The use of grinder/lift pumps for sanitary sewer laterals is not permitted within new developments unless approval is granted, in writing, by the City Engineer.

1.11. TRENCH EXCAVATION

1.11.1. Unless specifically directed otherwise by the City Engineer, not more than 500 feet of trench shall be opened ahead of the pipe laying work of any one crew and not more than 500 feet of open ditch shall be left behind the pipe laying work of any one crew.

1.11.2. All backfilled ditches shall be maintained in such a manner that they will offer no hazard to the passage of traffic. The convenience of the traveling public and property owners abutting shall be taken into consideration. All public or private drives shall be taken into consideration and shall be promptly backfilled or bridged. Excavated materials shall be disposed of so as to cause the least interference.

1.11.3. Trenches in which pipes are to be laid shall be excavated via open cut to the depths shown on the approved plans. The minimum allowable trench width shall not be less than the outside diameter of the pipe plus eight inches (8"). Where rock is encountered, it shall be removed to a minimum depth of four inches below the pipe bells.

1.11.4. Unless specifically authorized by the City Engineer, trenches shall in no case be excavated or permitted to become wider than two feet six inches (2' - 6"), plus the nominal diameter of the pipe at the level of or below the top of the pipe.

1.11.5. All excavation materials shall be placed a minimum of two feet (2') back from the edge of the trench.

1.11.6. Where conditions exist that may be conducive to slides or cave-ins, proper and adequate sheeting, shoring and bracing shall be installed to provide safe working conditions and to prevent damage of work.

1.11.7. It is the Contractor's sole responsibility to maintain safe working conditions on the job site and to conform to "Specific Safety Requirements Relating to Construction of the Industrial Commission of Ohio", "Construction Safety and Health Regulations, Part 1926, Subpart P "Occupational Safety and Health Administration, U. S. Department of Labor, and all local laws, ordinances, and regulations.

1.11.8. Trenches shall be kept free of water during the laying of pipe until the pipeline has been backfilled.

1.11.9. Obstructions

1.11.9.1. In cases where storm sewers, sanitary sewers, gas lines, water lines, telephone lines, and other utilities, or other underground structures are encountered, they shall not be displaced or disturbed unless necessary, in which case they shall be replaced in as good condition as found as quickly as possible.

1.11.10. Shoring, Sheeting, and Bracing

1.11.10.1. The shoring, sheeting and bracing of excavations shall be performed by the Contractor in compliance with applicable safety codes and OSHA requirements.

1.11.10.2. Where unstable material is encountered or where the depth of excavation in earth exceeds five feet (5'), the sides of the trench or excavation shall be supported by substantial sheeting, bracing and shoring, or the sides shall be sloped to the angle of repose. Sloping the sides of the ditch to the angle of repose will not be permitted in streets, roads, narrow rights-of-way or other constricted areas unless otherwise specified. The design and installation of all sheeting, sheet piling, bracing and shoring shall be based on computations of pressure exerted by the materials to be retained under construction conditions. Adequate and proper shoring of all excavations shall be the entire responsibility of the Contractor; however, the City Engineer may require the submission of shoring plans (accompanied by supporting computations) for review prior to the Contractor undertaking any portion of the work. Submitted plans shall be signed and stamped by a Professional Engineer registered in the State of Ohio.

1.11.10.3. Excavations to be made below the depth of an existing foundation, shall be supported by shoring, bracing or underpinning as long as the excavation shall remain open, or thereafter if required to insure the stability of the structure supported by the foundation. The Contractor shall be held strictly responsible for any damage to said foundation.

1.11.10.4. Solid sheeting will be required for wet or unstable material.

1.11.10.5. Care shall be taken to avoid excessive backfill loads on the completed pipelines. The requirements that the width of the ditch at the level of the crown of the pipe be no more than two feet six inches (2'-6") plus the nominal diameter of the pipe shall be strictly observed.

1.11.10.6. Trench sheeting shall not be removed until sufficient backfill has been placed to protect the pipe.

1.11.10.7. All sheeting, planking, timbering, bracing and bridging shall be placed, renewed and maintained as long as necessary.

1.12. PIPE BEDDING

1.12.1. All sanitary sewer pipe shall be bedded in accordance with the standard detail contained in the Appendix.

1.12.2. In all cases, the foundation for sanitary sewer mains shall be prepared so that the entire load of the backfill on top of the sewer pipe will be carried on the barrel of the pipe so that none of the load will be carried on the bells.

1.12.3. The depth at the bottom of the bells of the pipe will be at least four inches (4") above the bottom of the trench as excavated. Supporting of sewer pipe shall be as set out herein, and in no case shall the sewer pipe be supported on blocks.



General Notes



Project:

1.27. ADJUSTMENT TO GRADE

- 1.27.1. All manholes located within pavement areas shall be installed or adjusted to grade using Mr. Manhole or an equal approved by the City Engineer.
- 1.27.2. Precautions must be taken to prevent debris from entering the manhole during the entire removal and reconstruction process. This will prevent the possibility of plugged sewers, interruptions in sewage flow and time required to remove the debris after construction.
- 1.27.3. Cut and remove the asphalt pavement, around the existing manhole casting, in a circular fashion with a minimum diameter of 54" and centered about the casting. Dispose of the asphalt.
- 1.27.4. Remove the casting (manhole rim and cover) from the top of the manhole or manhole adjusting ring(s). Inspect the rim and cover for defects. If defects are present, replace with new rim/cover as If defects are not present, clean & retain for use in reconstruction.
- 1.27.5. Remove all adjusting rings to the top of the concrete cone. Dispose of this material.
- 1.27.6. Remove all aggregate around the manhole that has been exposed by the asphalt removal and dispose of this aggregate. The aggregate must be removed to a minimum of 3" below the level of the top of the concrete cone.
- 1.27.7. Clean and inspect the top surface of the concrete cone. The surface should be smooth and free of bumps and pits that may prevent a good water tight seal. Grind the surface as needed to remove protrusions. Utilize compressed air to blow dust and debris from the surface after grinding. Clean the surface with acetone. Utilize a hydraulic cement, according to manufacturers recommendations, to fill in depressions.
- 1.27.8. Bring the area around the cone back to flush with the top of the cone using ODOT Item 304 crushed limestone aggregate. This aggregate layer is inten.ded to lessen the effects of freeze/thaw on the concrete collar by providing voids for excess water to expand into if subjected to freezing conditions. Manholes with excessive free water around them must be remediated on a case by case basis to further prevent freeze/thaw problems from occurring.
- 1.27.9. A Vylon® pipe shall be used as a chimney liner and must be cut to the exact profile of the road in all directions such that when the manhole rim and cover are resting on top of the liner, the top of the casting shall "be exactly 0.25" below flush with the pavement surface in all directions.
- 1.27.10. The liner shall be marked in such a way, upon completion of the cutting process, that .rotation does not occur, which could be detrimental to the end product. The top and/ or bottom of the liner shall also be marked to prevent the liner from being installed up side down,, which could be detrimental to the end product.
- 1.27.11. Apply a liberal amount of white Mr. Manhole Sealant MM 3006 to the bottom of the liner and set in place on tap of the concrete cone while making sure it is properly aligned. This will create a water tight seal between the liner and the concrete cone.
- 1.27.12. Apply a liberal amount of white Mr. Manhole Sealant, MM 3006 to the top of the liner. Set the manhole rim casting on the liner while making sure it is properly aligned. This will create a water tight seal between the liner and the manhole rim casting.
- 1.27.13. Place the manhole lid on the rim casting to lessen the possibility of debris entering the manhole.
- 1.27.14. Place Epoxy Coated #3 rebars as shown below. The circular shaped rebars shall have a 6" minimum overlap.
- 1.27.15. Apply waterstop. This will add an additional water tight seal where the liner meets the concrete cone.
- 1.27.16. The surface of the concrete shall be finished from flush with the pavement to flush with the rim casting. The edge of the concrete shall be rounded (1/4" radius) where it meets the asphalt. This will create a small groove for a joint sealer at this location.
- 1.27.17. Fill the groove with a cold pour crack sealer such as Brewer Cote brand liquid crack filler or equivalent. This will prevent water from entering the circular seam where the concrete collar meets the asphalt Brewer Cote liquid crack filler is available from the Brewer Company of Markham,, Illinois.
- 1.27.18. Apply an acrylic polymer concrete curing and sealing compound, such as Rez-Seal ®1 to the surface of the concrete collar. Rez-Seal® is available from the Euclid Chemical Company (www.euclidchemical.com).
- 1.27.19. Barricade the area around the concrete to protect it until the concrete attains a modulus of rupture of 400 pounds per square inch. A chemical admixture that acts as a concrete accelerator may be used to speed up the process if the roadway needs to be opened sooner.
- 1.27.20. In order to minimize inconvenience to motorists, the contractor performing the work described in this specification must be capable of performing all steps of this specification in 1.5 hours or less.
- 1.27.21. The contractor shall warrant the reconstructed manhole chimney to be leak free and structurally sound for a minimum of 5 years from the date of reconstruction.



General Notes



UNDERGROUND UTILITIES

TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED
DIRECTLY

Project:

City of Lebanon Sanitary
Sewer Notes and
Specifications

Document Number

Date
September 2021
Scale
None

Sheet
2

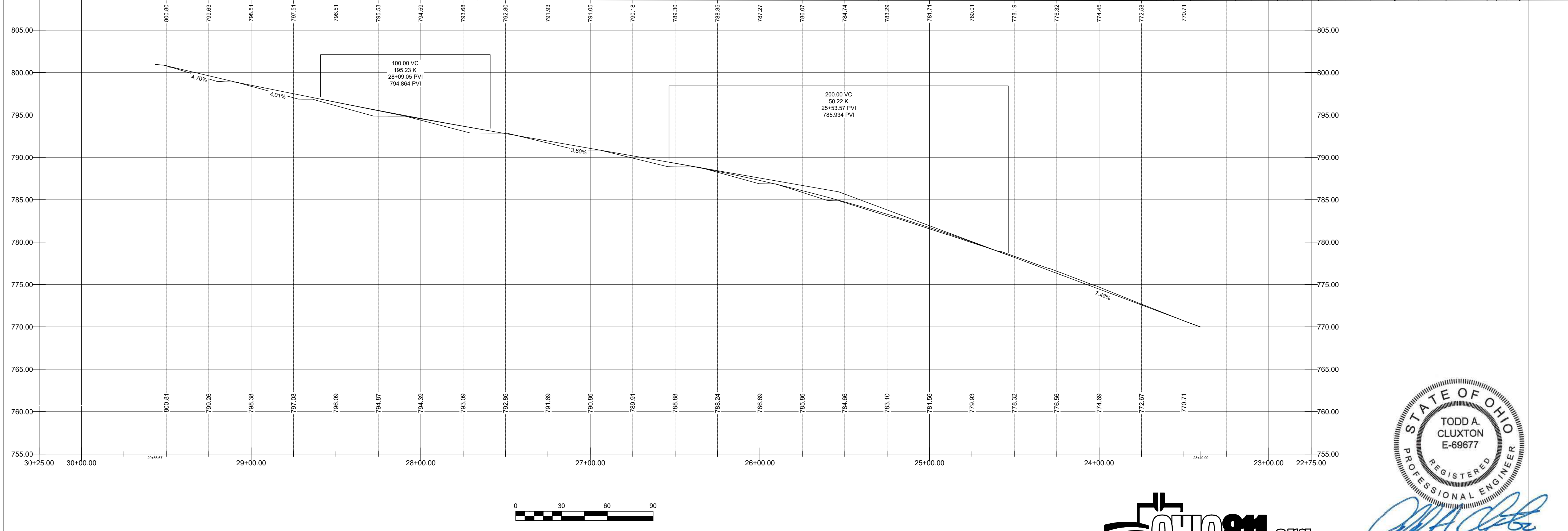
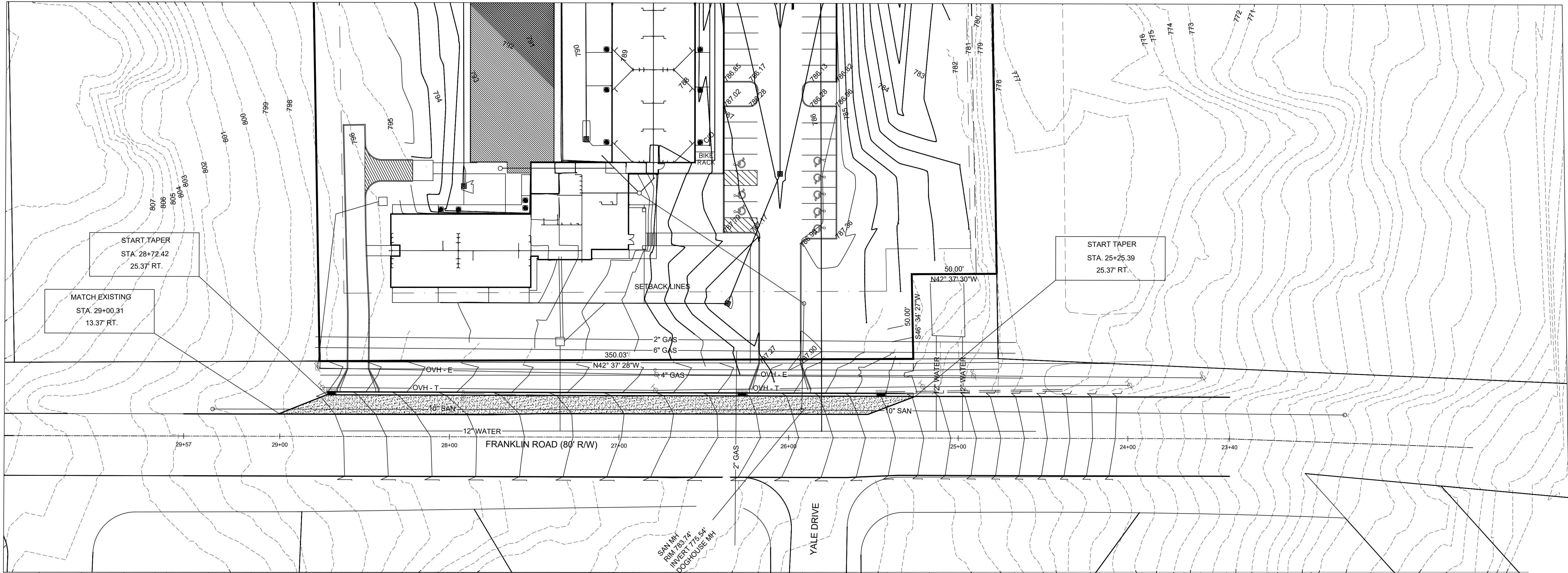
DS2 engineers & surveyors
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REVISIONS

PROJECT: SITE PLANS
LOCATION: 830 FRANKLIN ROAD, LEBANON, OH
CLIENT: NEW HOUSING
ADDRESS: WARREN
COUNTY: WARREN
PROJECT #: 23-783
DATE: JULY 10, 2025

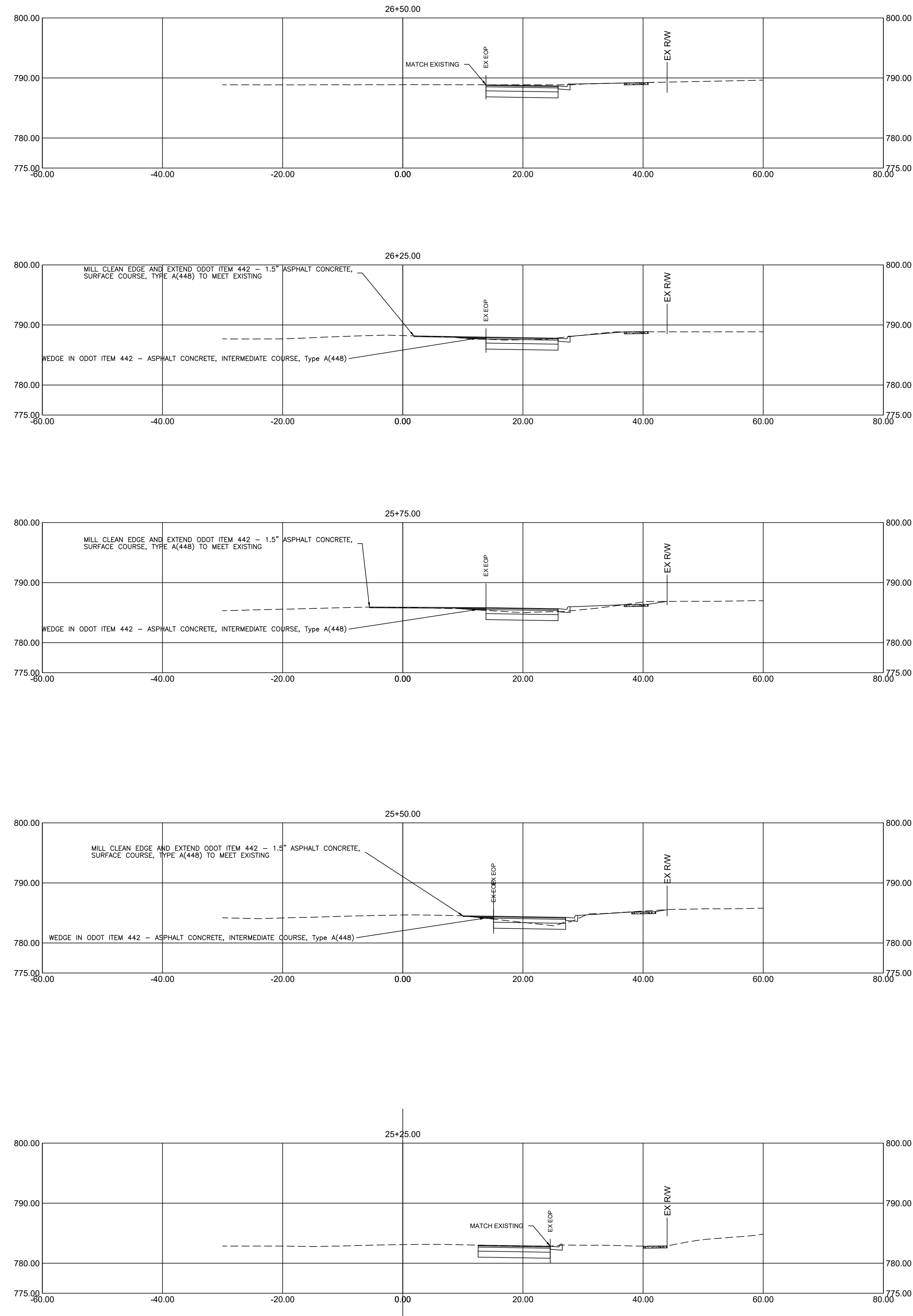
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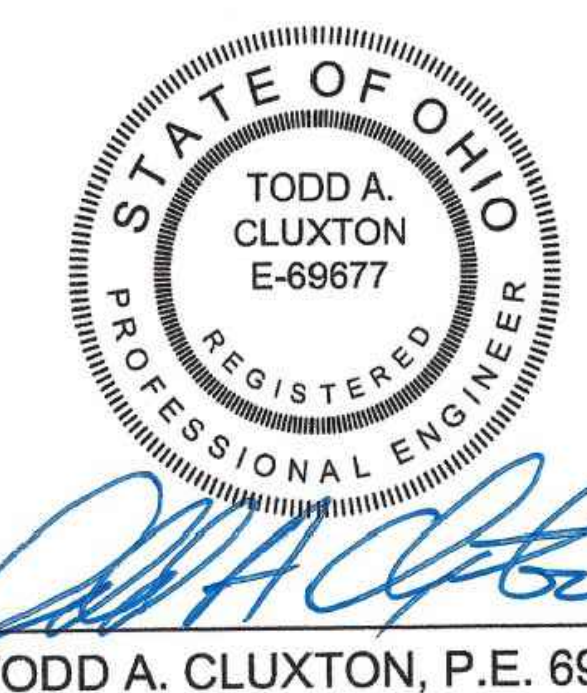
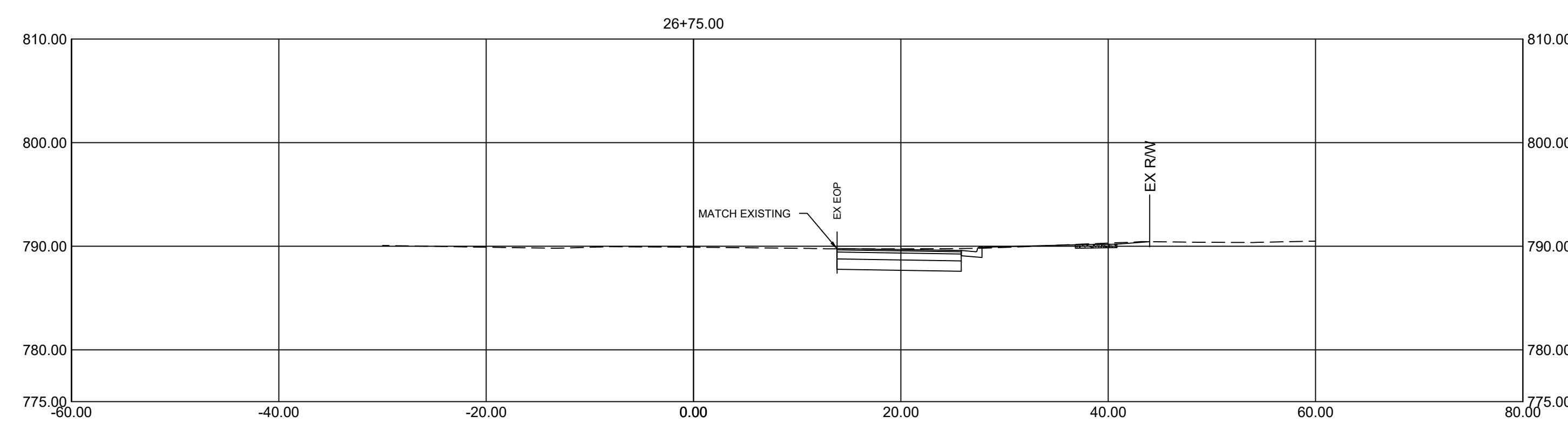
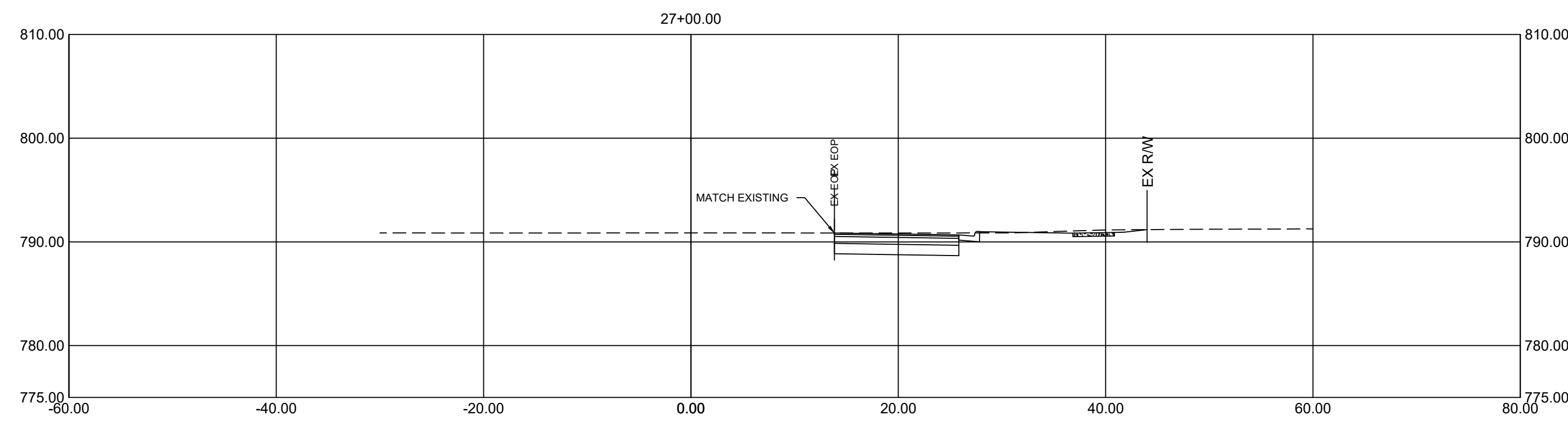
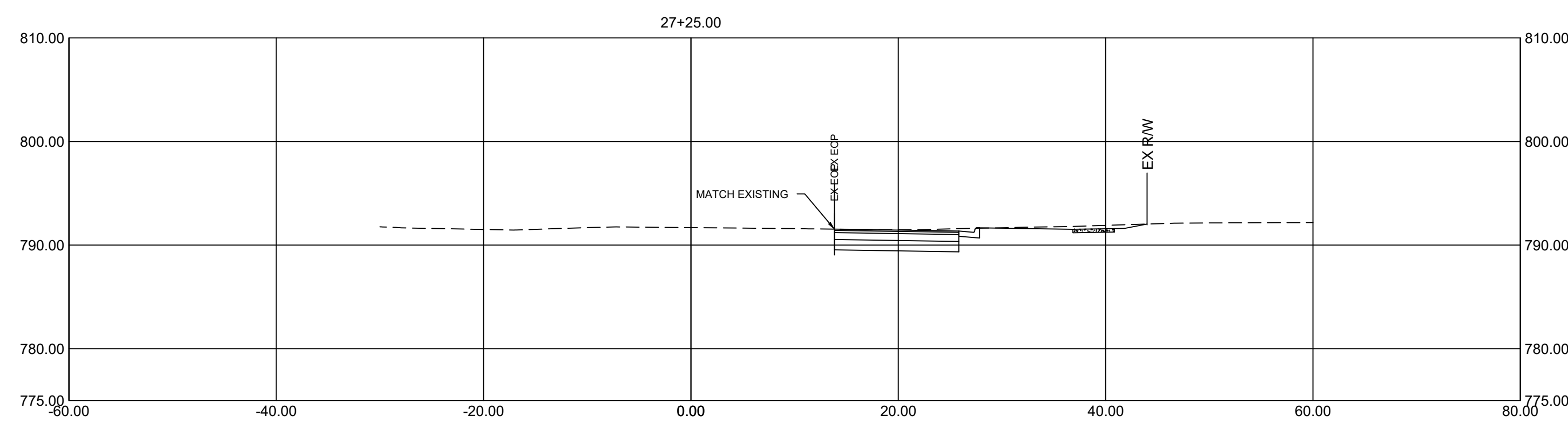
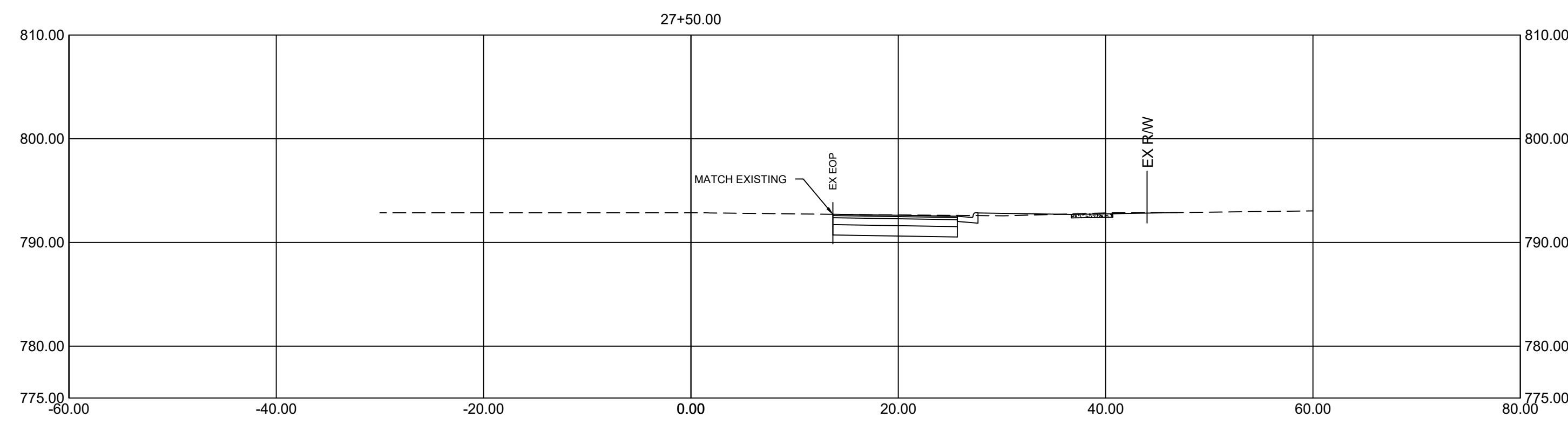
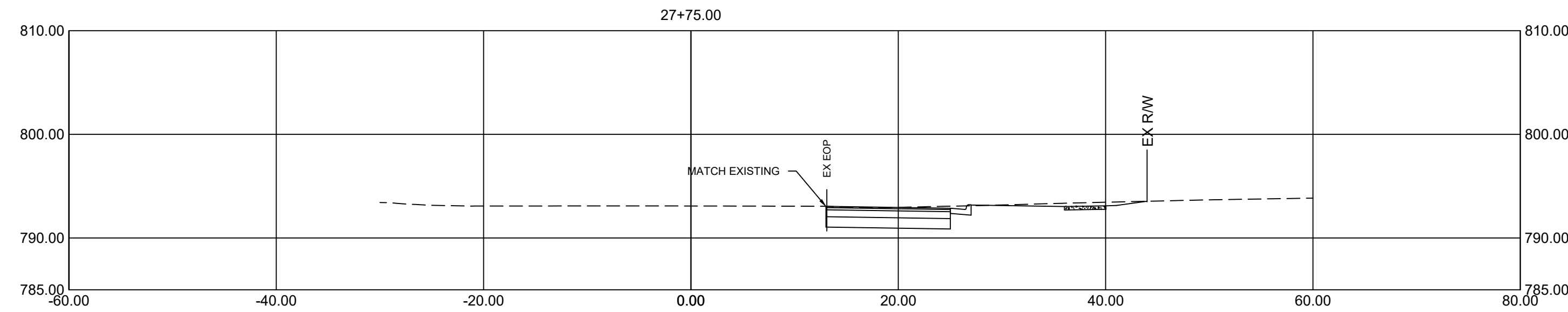
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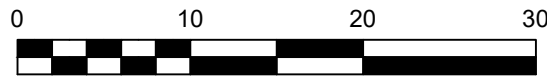
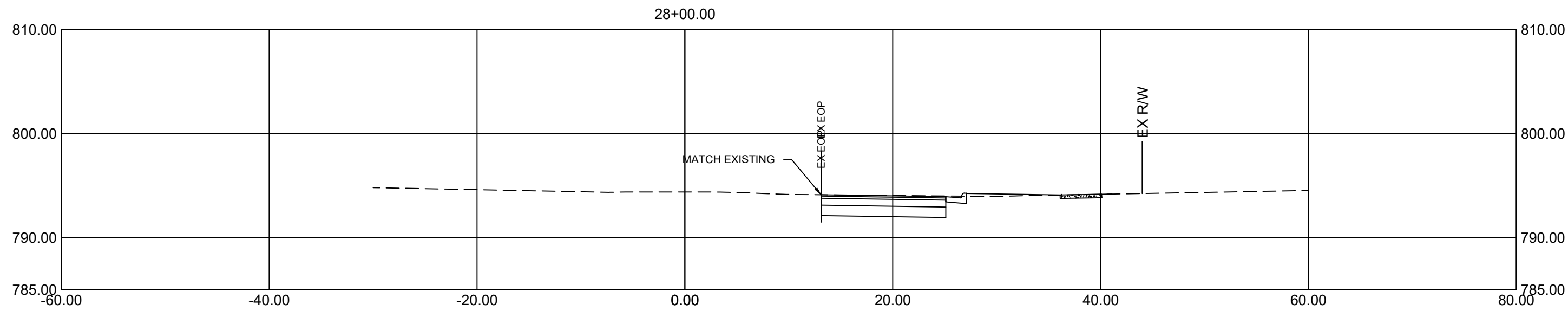
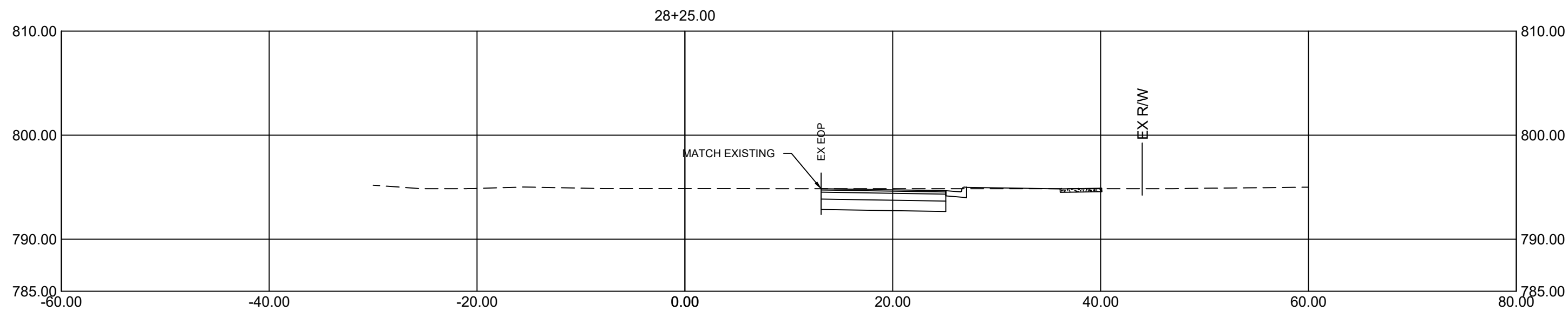
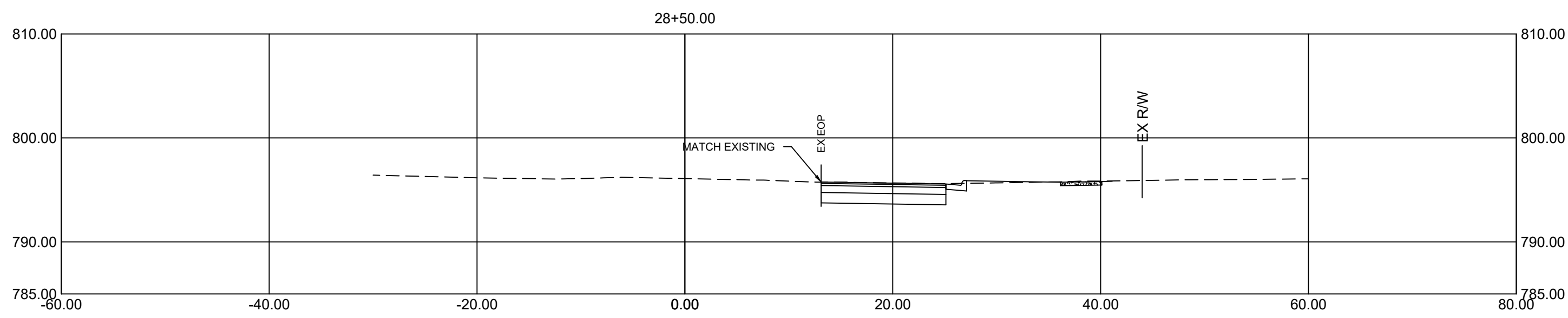
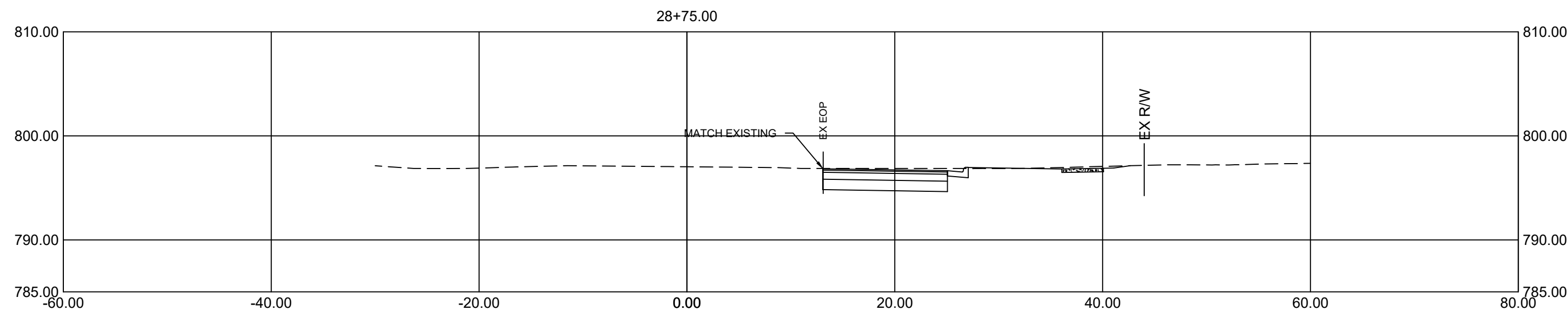
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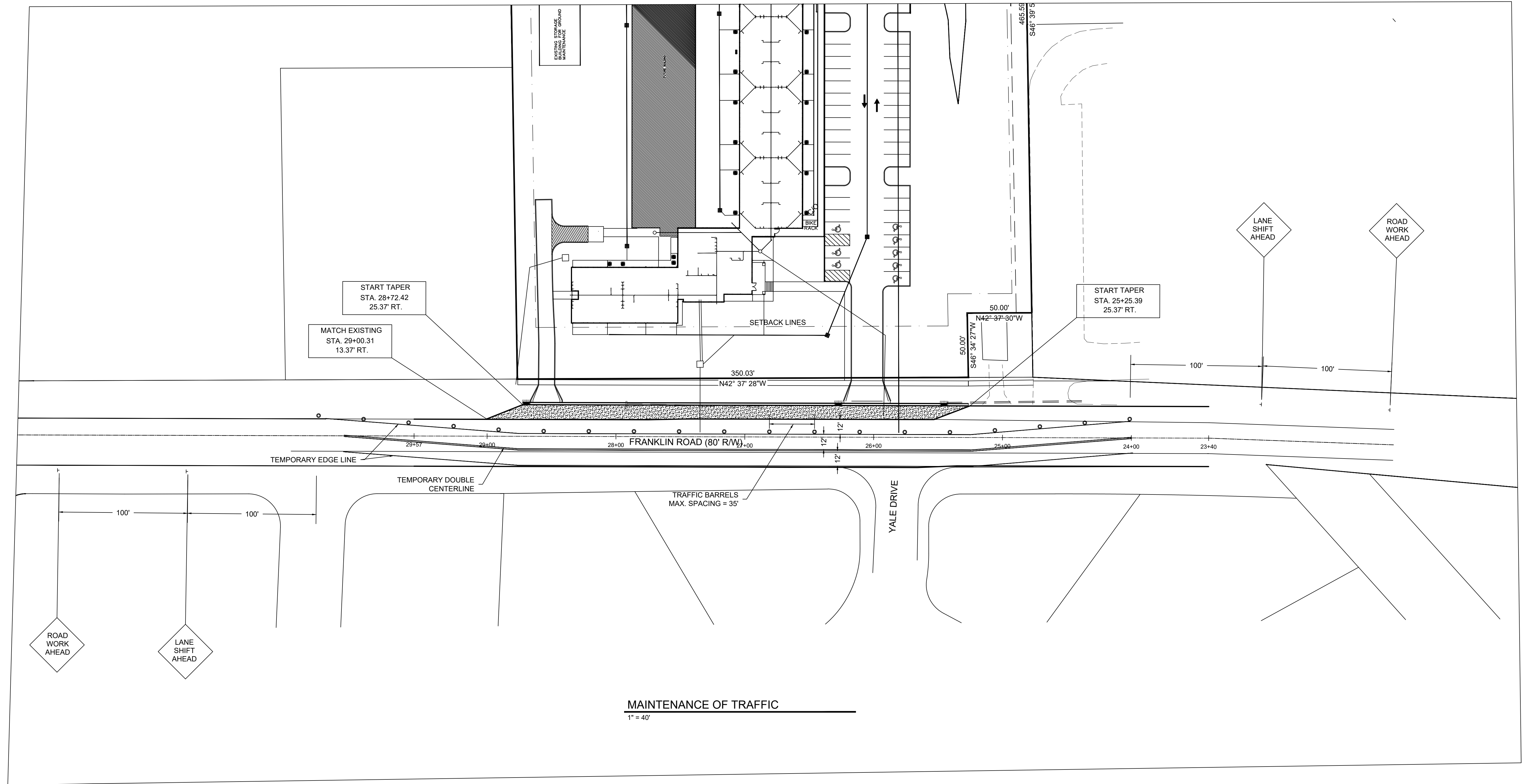


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