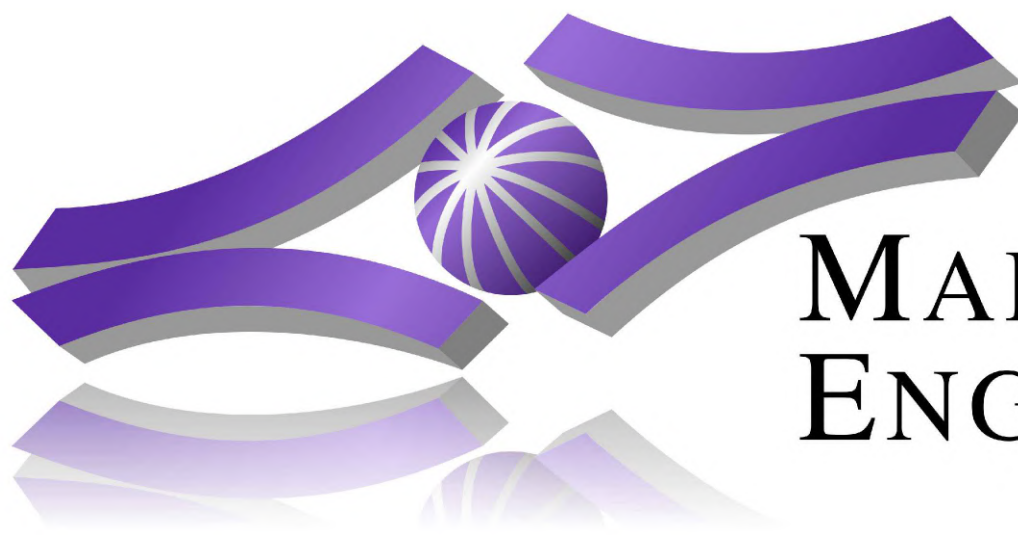


Civil Plans for Magruder Asphalt Plant in Wright City

Matt Lindsay,
Magruder Companies
Roekler Rd
Wright City, MO 63390

by



MARSCHKE
ENGINEERING

Matthew J. Marschke, P.E.

415 East Vandalia Street
Edwardsville, IL 62025
&

5610 Alona Point
Osage Beach, MO 65065

573-216-0066

matt.m@mwec.us

GENERAL NOTES:

This drawing is copyright protected, do not copy.
Ownership of these drawings is retained by Midwest Engineering Company.

Quantities shown are approximate in accordance with contract documents.

These drawings are a graphical representation of a set of contract documents. Technical specifications, photos and contract documents shall provide primary source of detail.

Do not scale from drawings.

Existing utilities on site to include gas, electric, telephone, fiber optics, storm sewer and others that must be protected, repaired and replaced at no cost to owner by contractor.

There will be rock excavation on this project.

Sanitary Sewage Estimation

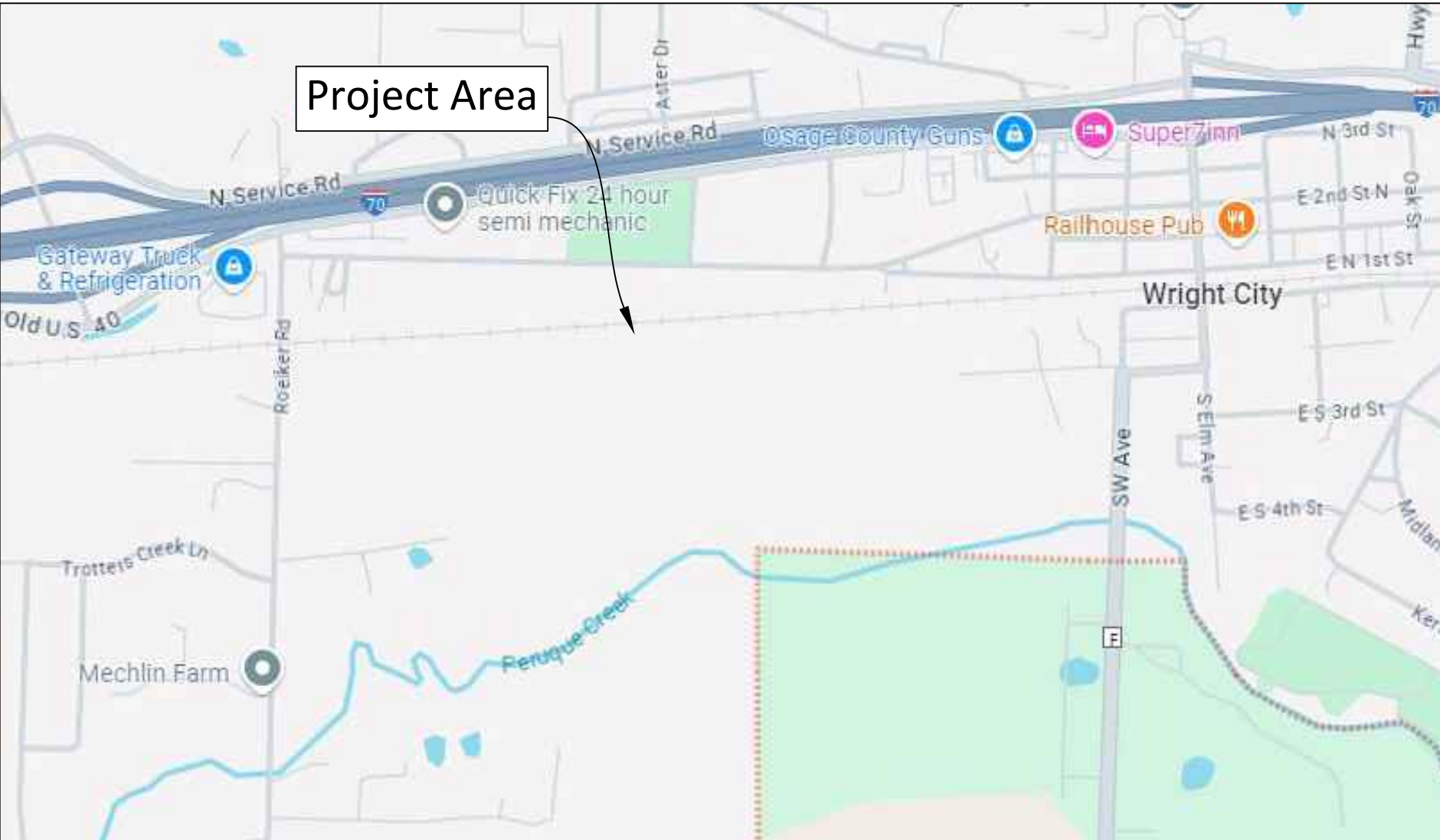
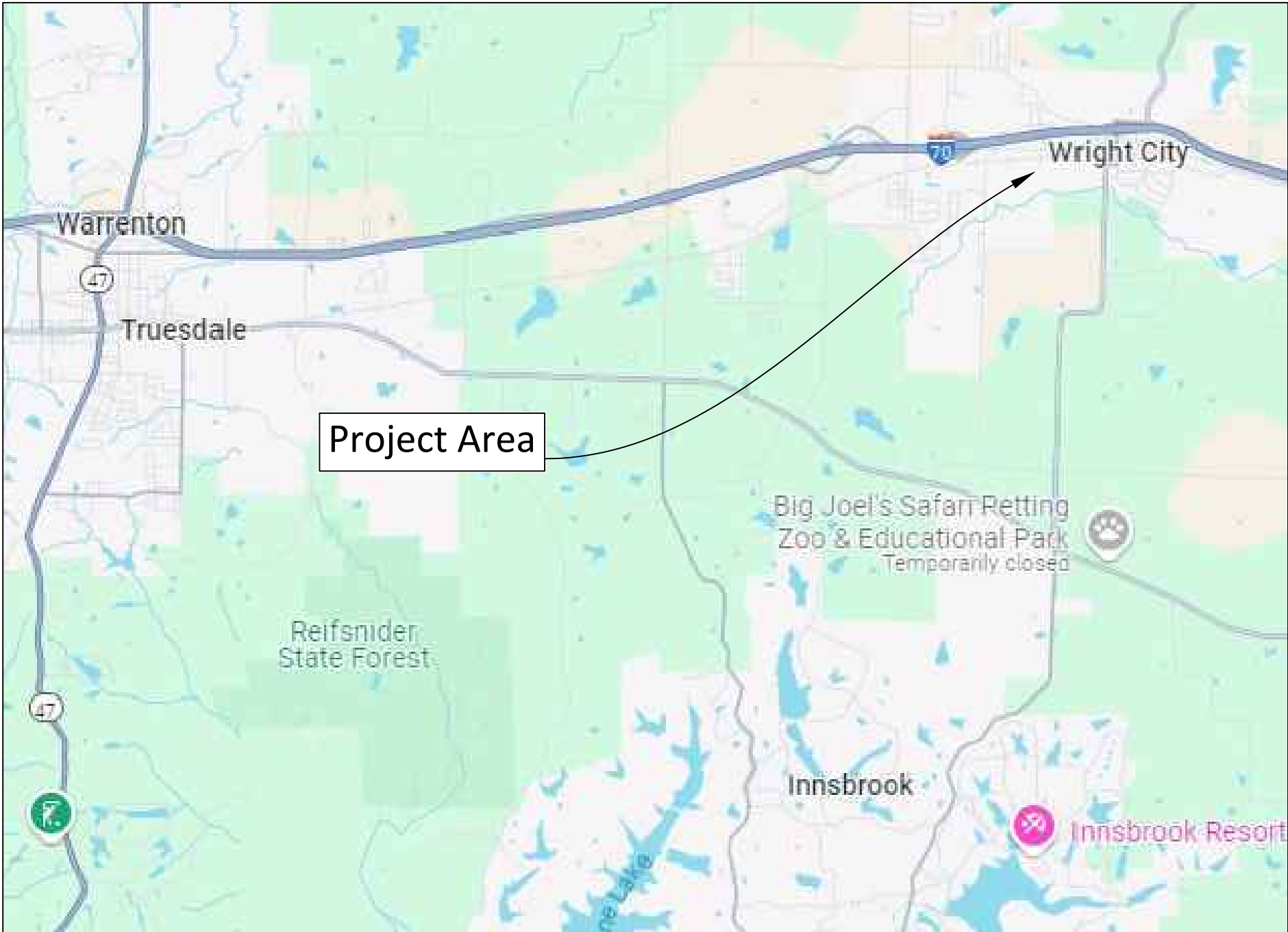
Flow = Lots x Employees per Lot x 30gpd per employee
Flow = 5 x 10 x 30 = 1,500 gpd

It is the contractor's responsibility to obtain any City or MODOT permits required to work along the roadways.



SHEET INDEX:

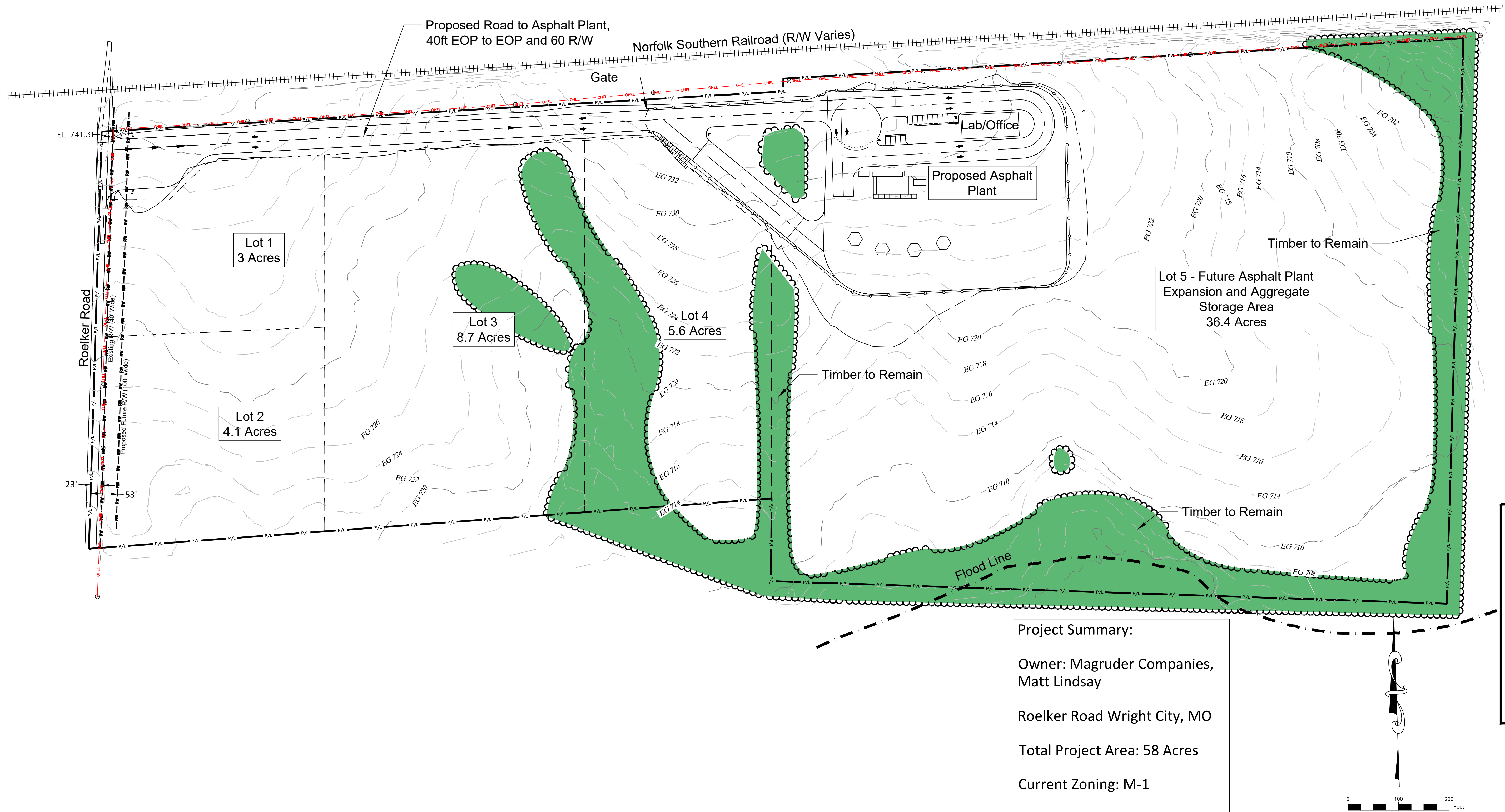
1. Cover
2. C-1 Preliminary Plat
3. C-2 Site Plan
4. C-3 Roadway Plan and Profile
5. C-4 Asphalt Plant Site Plan
6. C-5 Grading Plan
7. C-6 Entrance Detail
8. C-7 Water Details
9. C-8 Water Details
10. C-9 Pipe Profiles
11. C-10 Pond Cross Sections
12. C-11 Sewer Plan and Profile
13. C-12 Sewer Details
14. C-13 SWPPP
15. C-14 Concrete Washout Area Detail



NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES OR APPURTENANCES PRIOR TO COMMENCING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS ARE FOR REFERENCE ONLY, AND THEIR ACCURACY AND COMPLETENESS ARE NOT GUARANTEED. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ALL UNDERGROUND UTILITIES DAMAGED DURING CONSTRUCTION.

- Legend:
- Proposed Lot Lines
 - Existing Property Limit
 - Existing Contour Major
 - Existing Contour Minor
 - Proposed Contour Major
 - Proposed Contour Minor
 - Railway
 - Tree Line
 - Right of Way
 - Overhead Elec. Line

Wright City Asphalt Plant
Preliminary Plat
1"=100ft



Project Summary:

Owner: Magruder Companies,
Matt Lindsay

Roelker Road Wright City, MO

Total Project Area: 58 Acres

Current Zoning: M-1

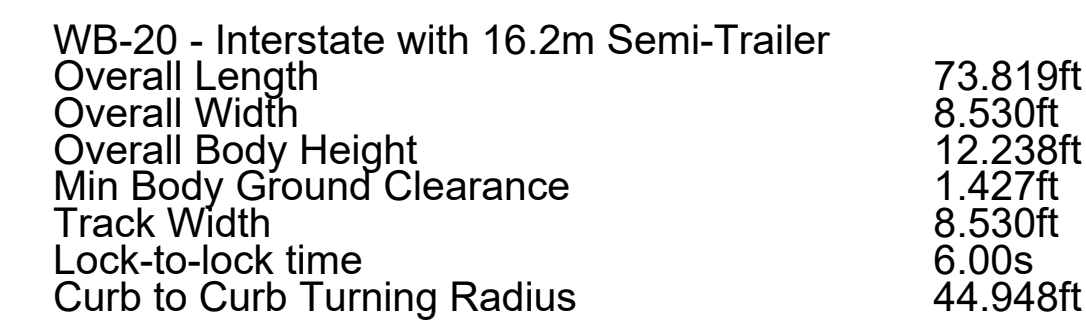
Proposed Number of
Employees: 10



MARSCHKE ENGINEERING
415 East Vandalia Street
Edwardsville, IL 62025
matt.m@mweec.us
Telephone: 573-216-0066
www.mweec.us

Plot: 1/29/2026 9:18:54 AM
MO Corp: 2001015503
Expires 12/31/2028

C-1



SCALE: N.T.S.

REF. DWG. MULT

SCALE: N.T.S.

See Fire Hydrant
Location Detail
Typ. All

REF. DWG. MULTI

Private 8" Water
Line, C900 DR
18 PVC

8" Gate Valve
18" CRP,
Each End, S
Pipe Di

Pond #2

connection
PWSD NO. 2

Lot 2
4.1 Acres

Future Development
25 Acres

Pond Discharge Pipe
and F.E.S., Size 24".
4'x6' Rip Rap
Blanket Typ. All
F.E.S. Discharges

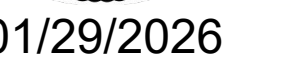
See Storm water
Design Notes

Find This Existing MH

- Any Proposed Connection to an Existing Public Sanitary Sewer Main Shall be Made per the Water District's Specifications

Site Legend:

- | | |
|--|----------------------------------|
| | Concrete Limit |
| | Asphalt Limit |
| | Gravel Limit |
| | Timber to Remove, Clear and Grub |
| | Light Pole |
| | Existing Utility Pole |
| | Hydrant |
| | Frost Proof Hydrant |
| | Water Meter |
| | Water Valve |
| | Trace Wire Access Pit |
| | Water T |
| | Proposed Trees |
| | New Fence |



Wright City Asphalt Plant

Site Plan

1"=100ft

Joyce C. Wheeler
Jacqueline M.
Parcel ID: 0421010
Instrument NO.:



ot: 1/29/2026 9:19:03 AM

MO Corp: 2001015503
Expires 12/31/2028

C-2

Project Summary:

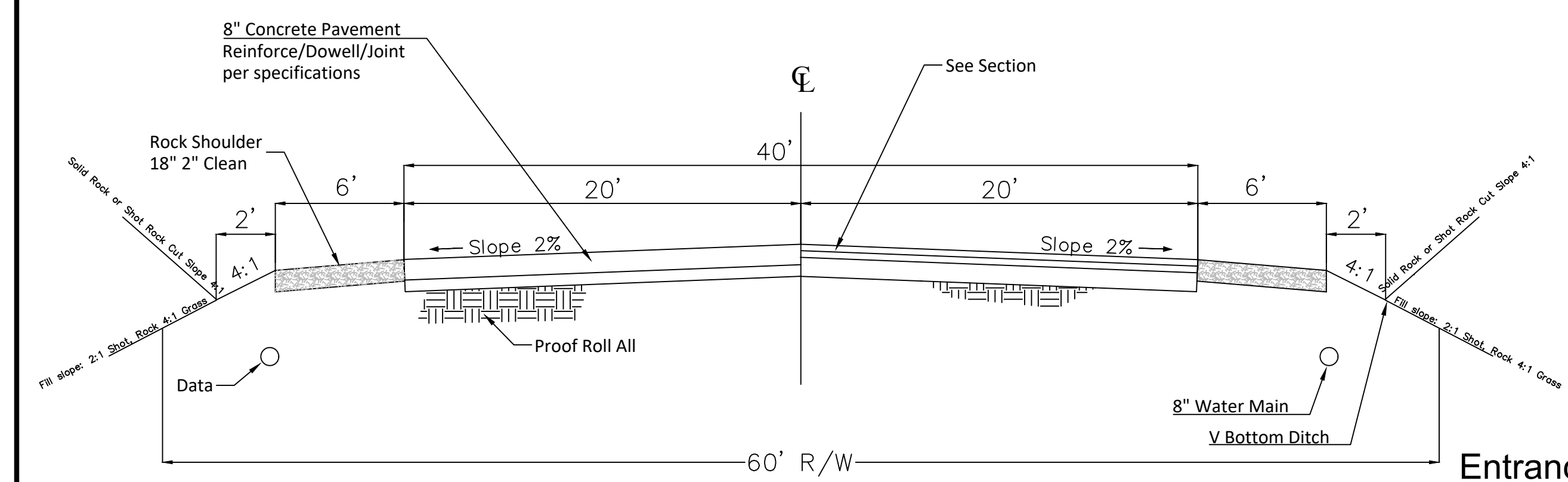
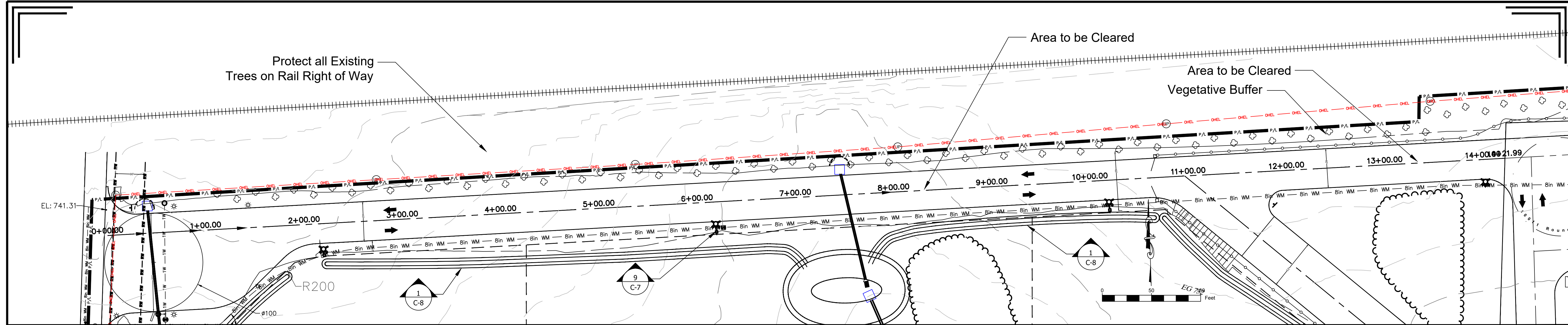
Parking Total: 14
Parking Provided: 13
ADA Provided: 1

Total Project Area: 58 Acres

Current Zoning: M-1

HWG: C:\WEGC\mwes\us\Marschke_Engineering - Documents\Projects_Current\Magruder Quarry Wright City MO\Magruder Quarry Master 21.dwg
PLOT DATE: 1/29/2026 9:16:39 AM PLOT DATE: 1/29/2026 9:19:03 AM

Wright City Asphalt Plant Roadway Plan and Profile 1"=50ft



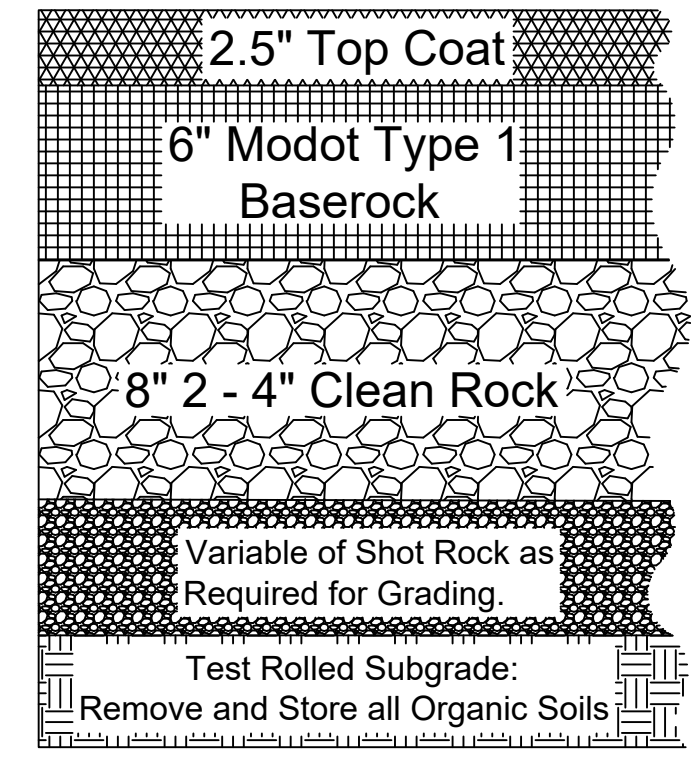
Asphalt Pavement Notes:

1. All aggregate for asphalt to be tested and approved to be DOT approved baserock.
2. Asphalt to be laid in 2" lift or less meeting DOT compaction for mix design available.
3. Test all subgrade and pavement with roll test of loaded tandem axle dump truck.
4. Report all soft spots, fills, trash or other unexpected conditions to engineer.
5. Asphalt to be core tested for density and thickness by owner.

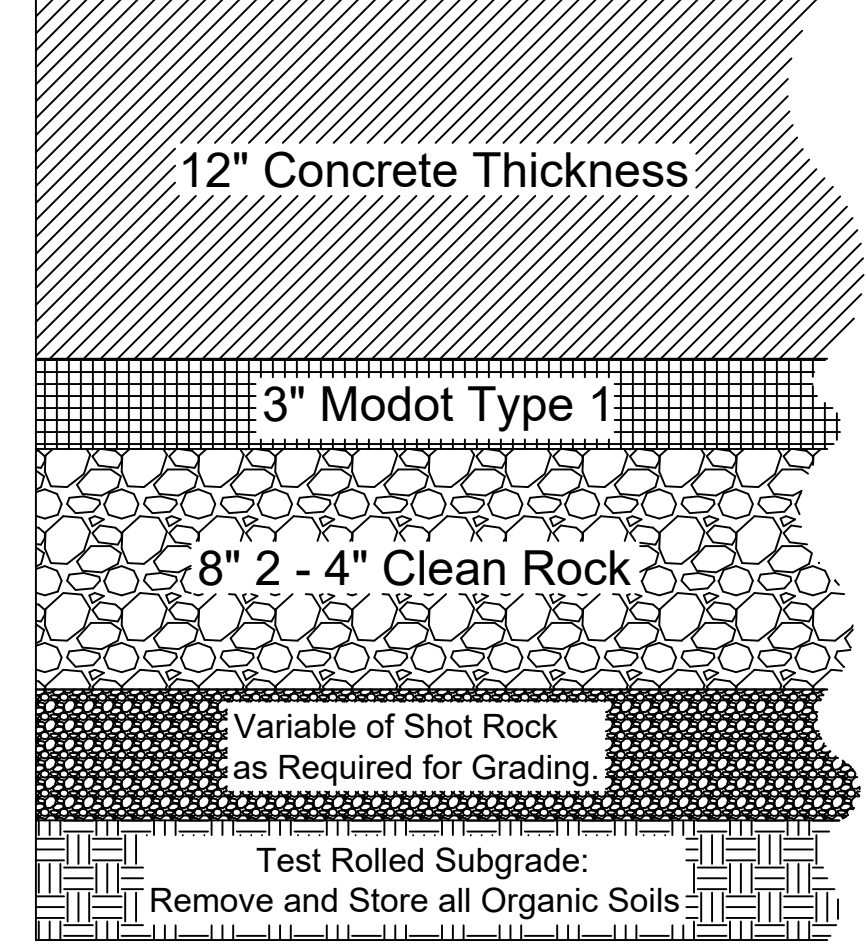
Concrete Notes

1. Inspection by Engineer is required for payment prior placement of steel and prior to pour.
2. Min. steel to be #4 @ 12" O.C.E.W. or 4x4-W4.0xW4.0 WWF. Lap fabric 9". Lap #4 18" O.C.
3. Spray on DOT approved Curing Compound required on all concrete.
4. Mix design must be approved by Engineer. Concrete to be 3,500 PSI. DOT approved Mix and Aggregate, 6% Air using air entrain admixture per ASTM C260. Retaining walls and exterior slabs to be 4,000 PSI.
5. MODOT approved Mix and Aggregate, 4% Air using air entrain admixture per ASTM C260.
6. Retaining walls and exterior slabs to be 4,000 PSI.
7. Retaining walls to be installed in 50-foot lengths between expansion joints. All walls to have bedded subsurface drains to daylight.
8. Joints for slabs and pavements to be as shown or as approved by engineer prior to the pour. Joints shall form nearly square shapes. Contractor shall coordinate joint locations with tile layout as shown in the floor plans and floor finish plans as applicable. Do not wait over night to cut slabs.
 - a. Joint 1: Isolation Joints: Trowel joint (free or dowelled) Joint Filler, Sealant: grey self-leveling epoxy-based crack fill.
 - b. Joint 2: Contraction Joints: Saw Cut joints to be 1/4 slab depth, above steel. For sidewalks, 4" Concrete, use 4 ft max joint spacing. For pavement 8" thick, use 8 ft max joint spacing. Control / Contraction Joint Required @ 50Ft on Center Minimum for all walls. Curbs to be jointed at 10' on center with 3" deep saw cut.
 - c. Joint 3: Expansion Joints. Preformed Fiber Expansion Joint. Cold joints to be installed with fiberglass joint mastic and filled with grey self-leveling epoxy-based crack fill. Continue all steel. Required at all location between old, new, and different pours. Curb cold joint place @ 250' min intervals and at radius points. Use three #4 reinforcing bars 36" long with 2" clear spacing to reinforce the joint. use a performed mastic joint material between each section of concrete.
 - d. Expansion Joint Material: Shall meet the latest test dates for ASTM D 1751 and ASTM D 1752 or ASTM D 5249, Type 2, and ASTM D 1572, Sections 5.1 through 5.4, Modified. Currently accepted preformed expansion joint material. W.R. Meadows "Seal Tight Sponge Rubber Expansion Joint"; Right Pointe "Company Grey Sponge Rubber Expansion Joint"; J.D. Russell "Reflex" Rubber Expansion Joint Material. All Expansion joint material shall be precut to proper dimension before being delivered to the project. No fiber expansion joint material shall be used.
 - e. Joint 4: Decorative Concrete Joints. Ensure the owner and architect approve of the joints prior to placing concrete.
 - f. Construction joints as required, do not place construction joints parallel with control joints.
9. Curb joints to be placed at 10' intervals as described in joint.
10. ACI certified finisher required to be on the project at all times.
11. Wall footings may be designed for solid rock. Special inspection required.
12. DO NOT add water on site to the mix. Use a water reducing additive per ASTM C494.
13. Vibration Required.
14. Super plasticizer required for slump meeting ASTM standard.
15. All Rebar Grade 60, rebar chairs required per ASTM A615. Lap splice lengths per ACI: 36" for #5 tension bars. 60" #7 Bars.
16. Reinforce holes with two #4 bars at each corner.
17. Shop drawings of reinforcement shall be submitted including the details of all reinforcement.
18. Failure to allow inspection of rebar or placement on concrete by giving 48-hour notice to Engineer will result in the work being rejected.
19. Anchor bolts to be ASTM A307/A36. Provide a minimum of 3" cover on all anchor bolts. Place reinforcement between bolt and surface for containment.
20. When installing concrete to old, #5 @ 18" O.C., 4.5" embedment dowels to be used with epoxy adhesives per manufacture' recommendations. Dowels to be #4, with 4" embedment @ 18" O.C.
21. Take three cylinders from each day pour or each 50 Cubic yard. Test at 7/28 provide results to engineer.
22. Cure all concrete with spray on curing membrane as approved by MODOT or wet cure 7 days.
23. All pavements to be 8" slab with #4 on 12" O.C.E.W.

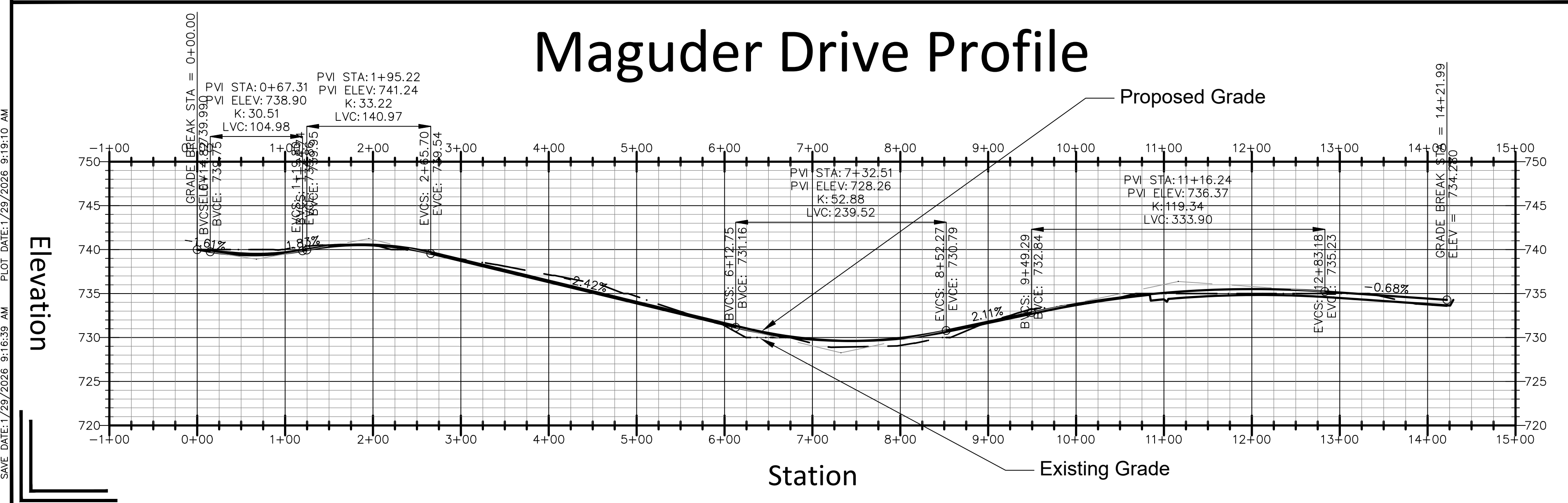
1 District Class II Road SCALE: N.T.S. Asphalt Pavement REF. DWG. MULTI



Entrance Concrete Pavement



Maguder Drive Profile



MARSCHKE ENGINEERING
415 East Vandalia Street
Edwardsville, IL 62025
matt.m@mweec.us
Telephone: 573-216-0066
www.mweec.us

Plot: 1/29/2026 9:19:10 AM
MO Corp: 2001015503
Expires 12/31/2028

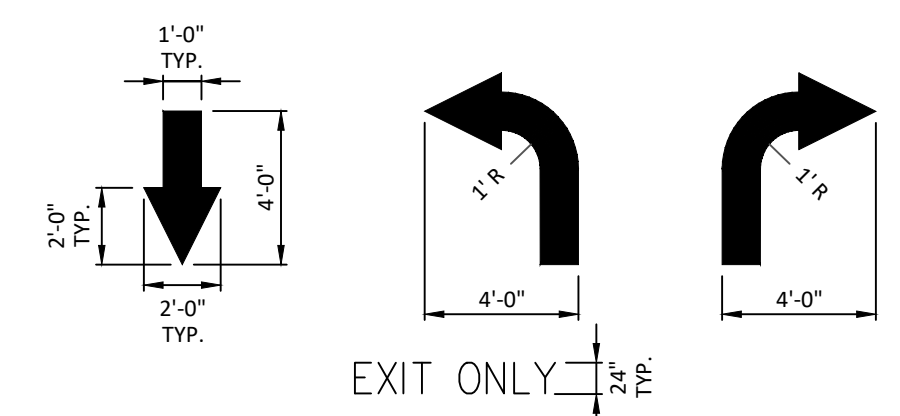
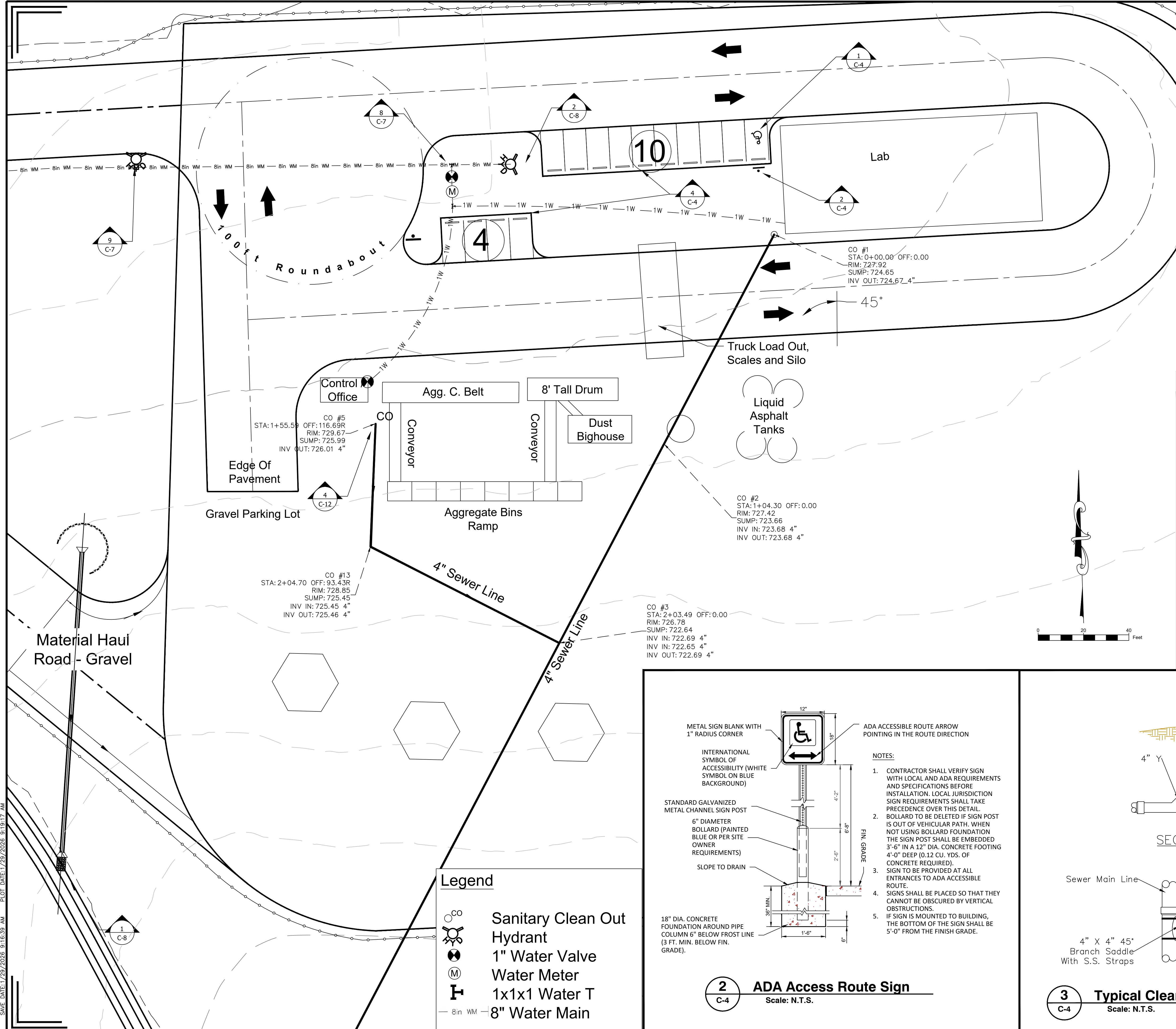
C-3



01/29/2026

Wright City Asphalt Plant Asphalt Plant Site Plan

1"=20ft



NOTES:

ALL PAVEMENT MARKINGS TO BE YELLOW PAVEMENT PAINT, UNLESS STATED OTHERWISE.

MARKING (STRIPING) PAINT FOR PARKING SPACES, TRAFFIC ARROWS, ADA PARKING AND SYMBOLS, ETC., PER ASTM-P-78-66T STANDARDS AND AS FOLLOWS:

NEW SURFACES: RUBBER BASE TYPE (CHLORINATED RUBBER) TO MEET FEDERAL SPECIFICATION TTP-115.

EXISTING SURFACES WITHOUT ANY SEAL COATING: OIL BASE (ALKYD RESIN TYPE TO MEET FEDERAL SPECIFICATION TTP-85).

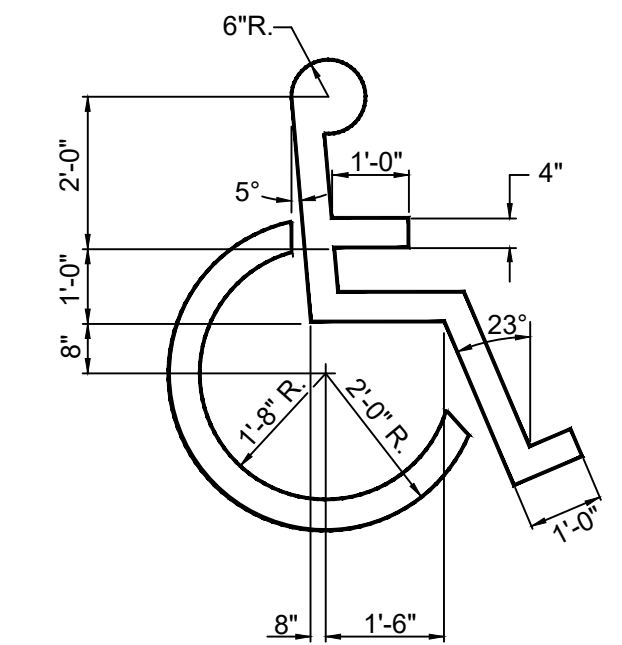
NEW OR EXISTING SURFACES WITH A TOP COATING OR SEAL COATING (USUALLY WATER BASE): WATER BASE TYPE TO MEET FEDERAL SPECIFICATION TTP-01952.

PROVIDE A NON-SLIP AGGREGATE ADDITIVE TO MARKING PAINT USED AT ADA ACCESS RAMP.

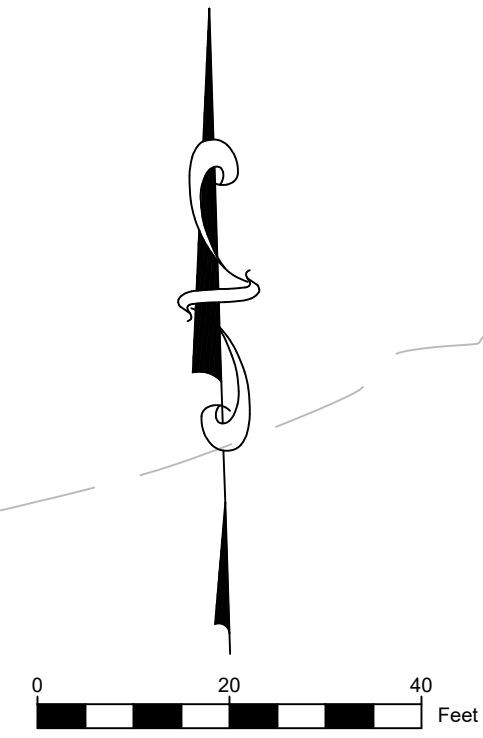
APPLY 2 COATS WITH STRAIGHT EDGES, YELLOW ON CONCRETE/YELLOW ON ASPHALT EXCEPT WHEN MATCHING ADJACENT OR EXISTING COLOR WHEN THE PAVING IS AN EXPANSION OR SEGMENT OF A LARGER LOT.

PAINT ADA SYMBOLS BLUE.

5 Pavement Markings & Notes
C-4 Scale: N.T.S.

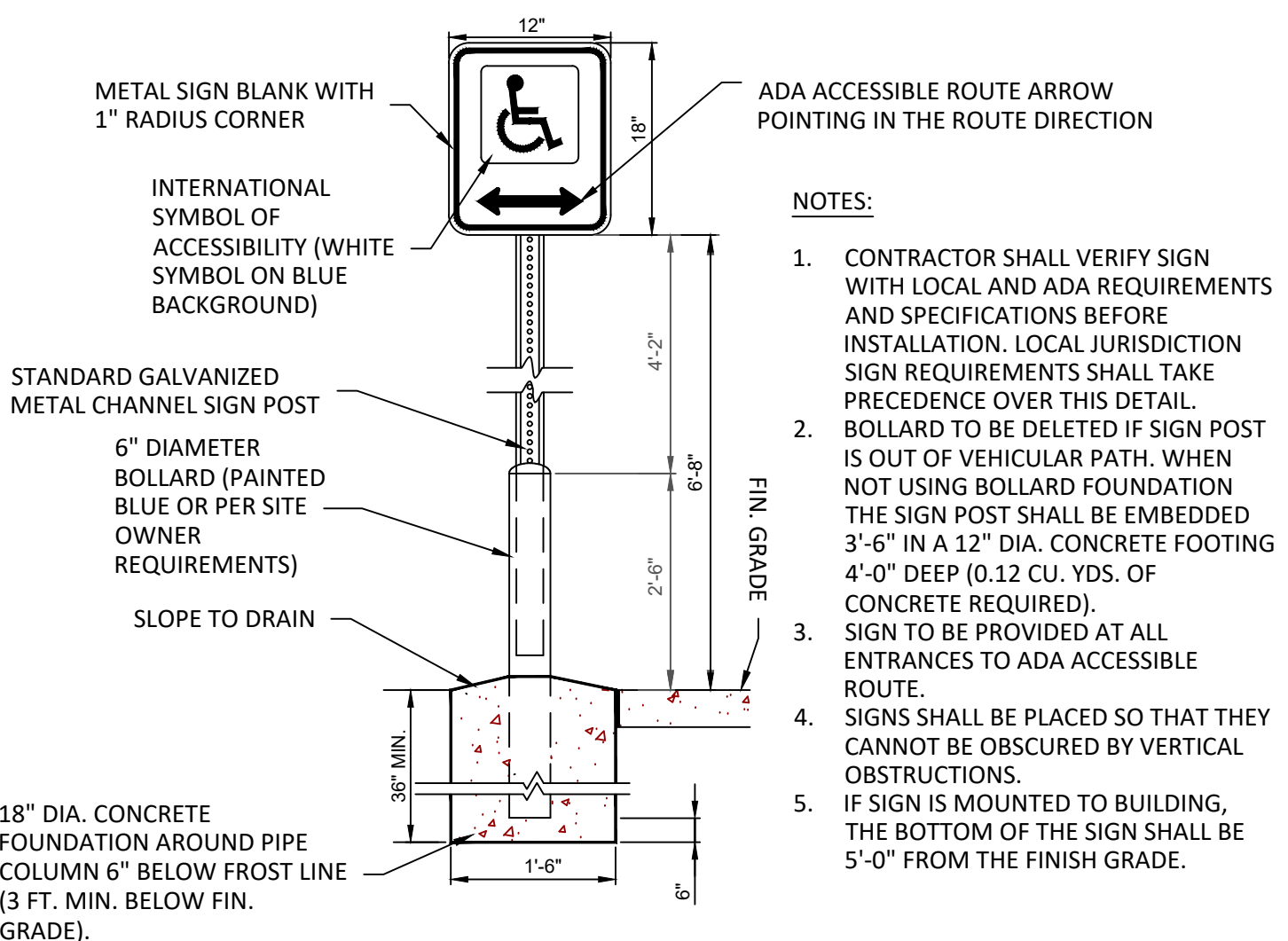


1 Handicap Symbol Detail
C-4 Scale: N.T.S.



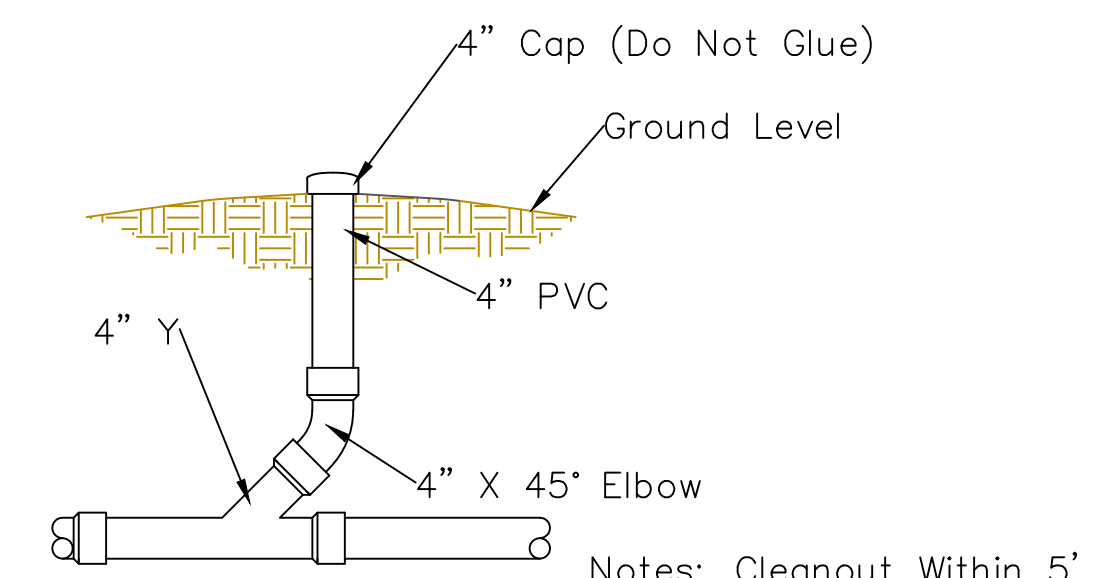
Legend

- Sanitary Clean Out
- Hydrant
- 1" Water Valve
- Water Meter
- 1x1x1 Water T
- 8" Water Main



2 ADA Access Route Sign
C-4 Scale: N.T.S.

- NOTES:**
- CONTRACTOR SHALL VERIFY SIGN WITH LOCAL AND ADA REQUIREMENTS AND SPECIFICATIONS BEFORE INSTALLATION. LOCAL JURISDICTION SIGN REQUIREMENTS SHALL TAKE PRECEDENCE OVER THIS DETAIL.
 - BOLLARD TO BE DELETED IF SIGN POST IS OUT OF VEHICULAR PATH. WHEN NOT USING BOLLARD FOUNDATION THE SIGN POST SHALL BE EMBEDDED 3'-6" IN A 12" DIA. CONCRETE FOOTING 4'-0" DEEP (0.12 CU. YDS. OF CONCRETE REQUIRED).
 - SIGN TO BE PROVIDED AT ALL ENTRANCES TO ADA ACCESSIBLE ROUTE.
 - SIGNS SHALL BE PLACED SO THAT THEY CANNOT BE OBSCURED BY VERTICAL OBSTRUCTIONS.
 - IF SIGN IS MOUNTED TO BUILDING, THE BOTTOM OF THE SIGN SHALL BE 5'-0" FROM THE FINISH GRADE.



3 Typical Clean Out/Residential Connection
C-4 Scale: N.T.S.



MARSCHKE ENGINEERING
415 East Vandalia Street
Edwardsville, IL 62025
matt.m@mwec.us
Telephone: 573-216-0066
www.mwec.us

Plot: 1/29/2026 9:19:18 AM
MO Corp: 2001015503
Expires 12/31/2028

C-4

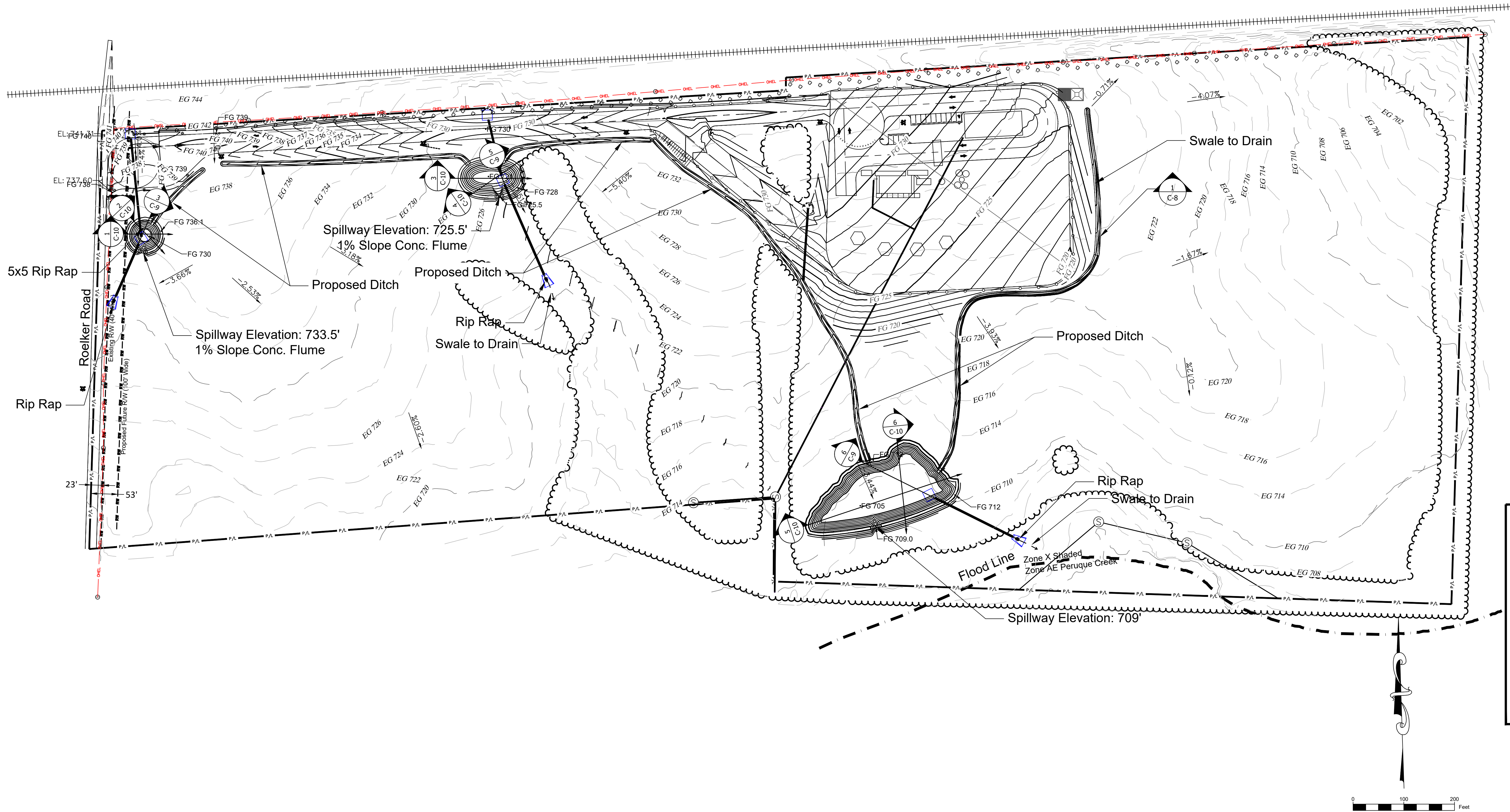
Grading Notes:

1. See specifications for earth work requirements on the project.
2. Keep all public roads clean at all times.
3. All subgrade to be proof rolled by fully loaded tandem axle dump truck. Any soft spots that were removed and replaced with one-inch clean rock. Areas that cannot be proof rolled will be compaction tested with the appropriate nuclear density gauge to the density requirements as required by the soils found.
4. Compliance with stormwater erosion control practices is required during and after the disturbance of soils before revegetation is established. See requirements of city and stormwater pollution prevention plan as required to complete the work.

Cut: 17,696 Yd³
Fill: 9,556 Yd³
Late Update: 1/27/26



**Wright City Asphalt Plant
Grading Plan
1"=100ft**

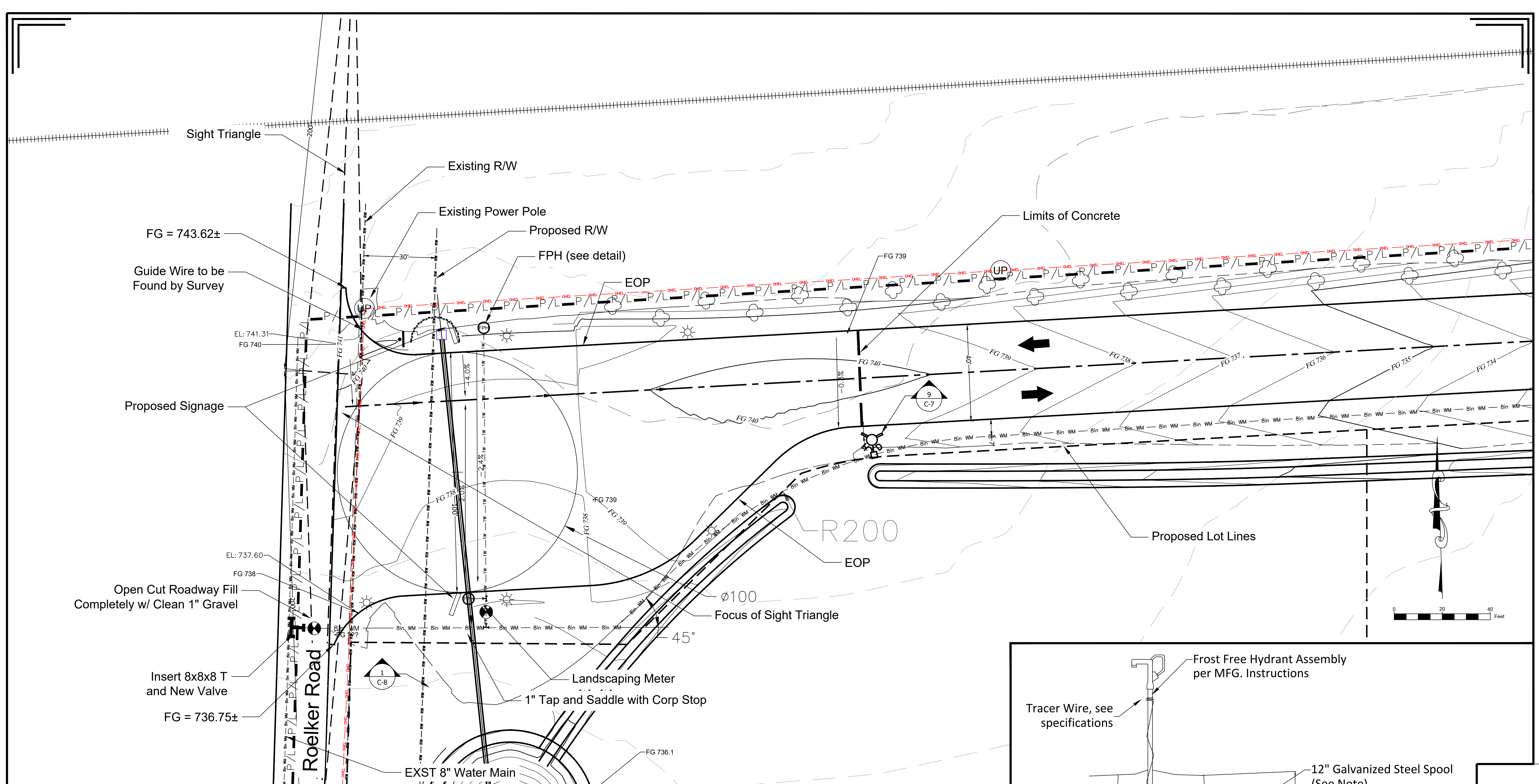


MARSCHKE ENGINEERING
415 East Vandalia Street
Edwardsville, IL 62025
matt.m@mwec.us
Telephone: 573-216-0066
www.mwec.us

Plot: 1/29/2026 9:19:23 AM
MO Corp: 2001015503
Expires 12/31/2028

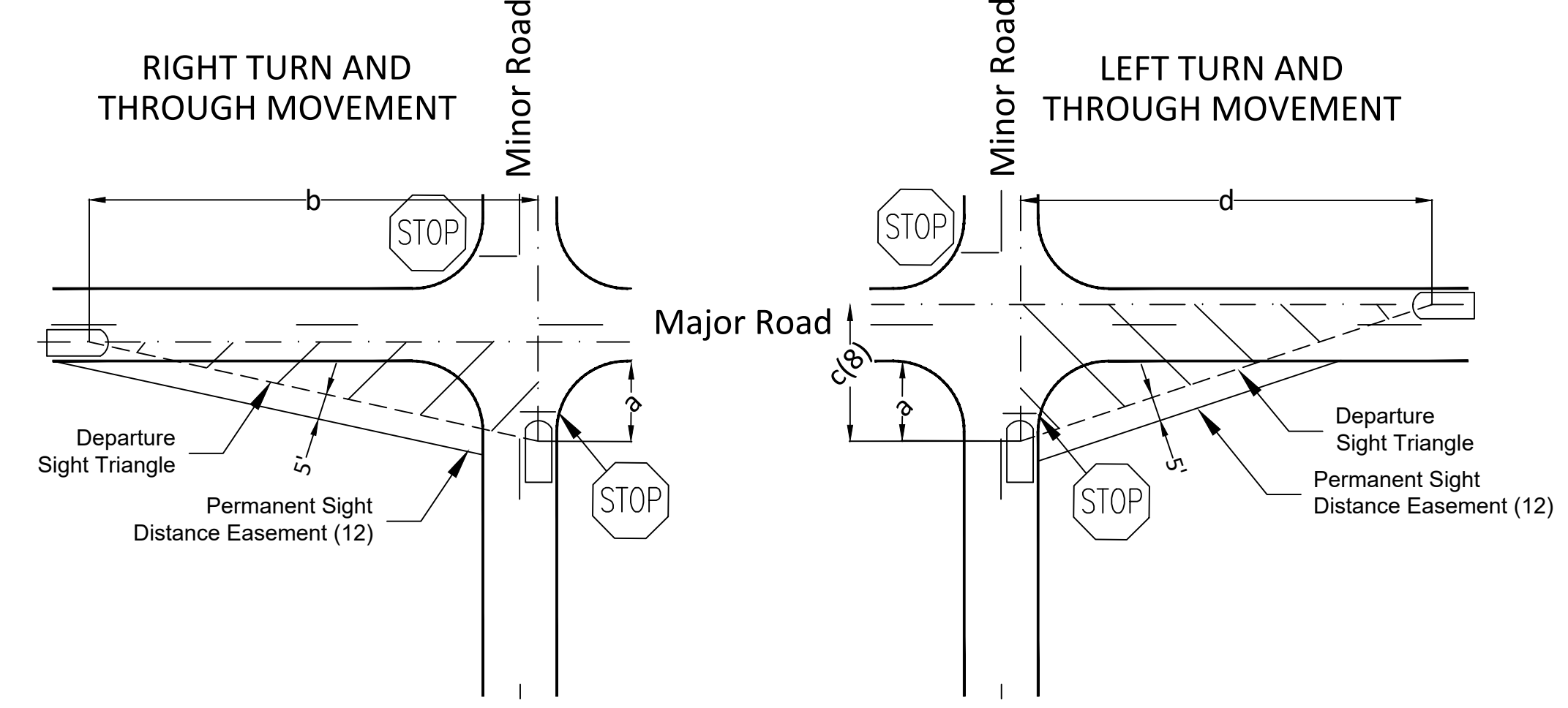
C-5

Wright City Asphalt Plant
Entrance Detail
1"=20ft

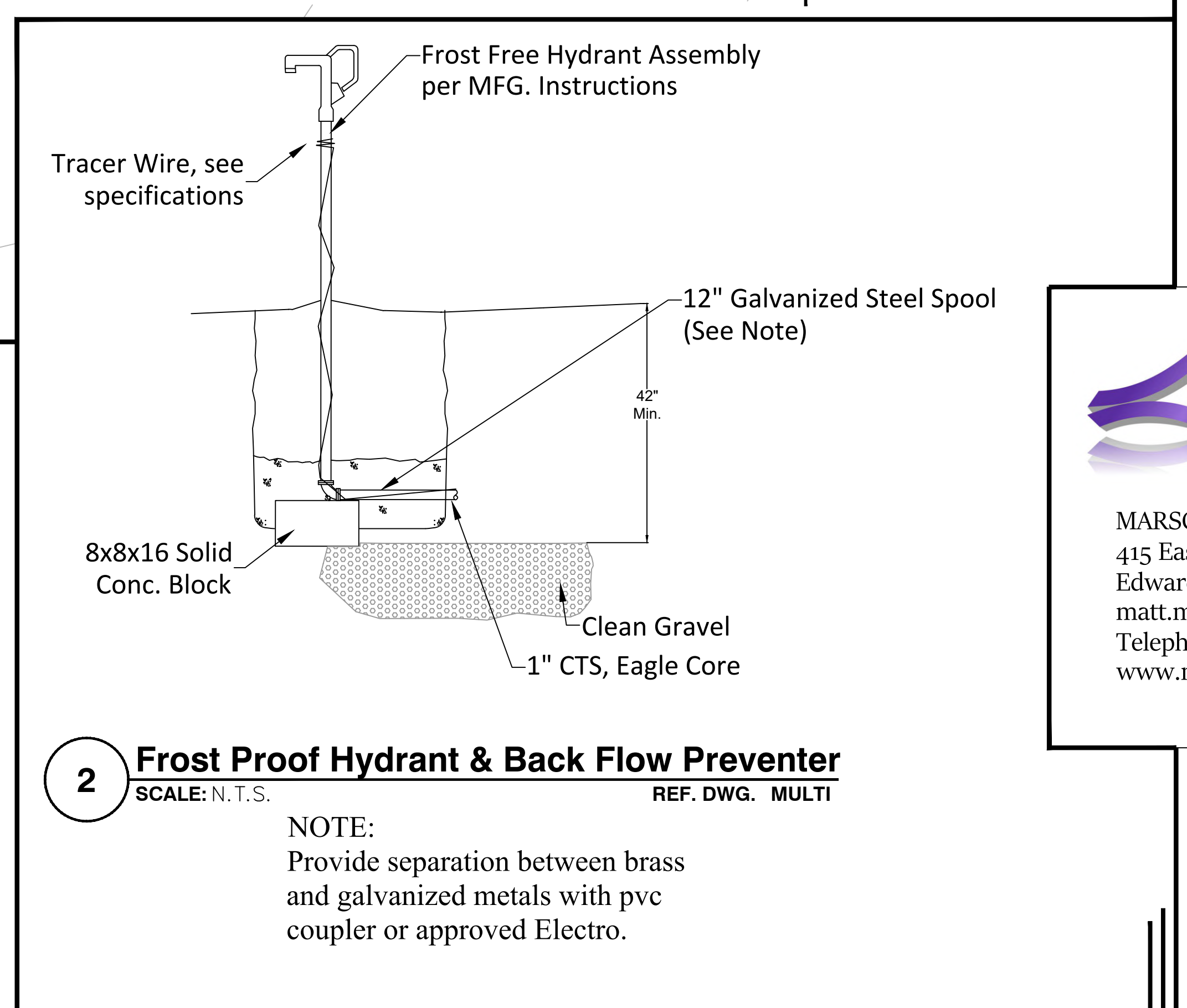


Sight Distance for Vehicle Existing Minor Road Associated with New Development

Design Speed (MPH)	a(8)	b	d	Case F (Feet)	Crossing Number of Lanes Adjustment (Feet)	Sight Distance Adjustment for Approach Grade (11) (Feet)	
				ISD (9)	W(10)	4%	5%
15	14.50	145	170	125	15	15	25
20	14.50	195	225	165	15	20	35
25	14.50	240	280	205	20	30	40
30	14.50	290	335	245	25	35	50
35	14.50	335	390	285	30	40	60
40	14.50	385	445	325	30	45	70
45	14.50	430	500	365	35	50	80
50	14.50	480	555	405	40	60	85
55	14.50	530	610	445	45	65	95



1 Intersection Sight Triangle
SCALE: Not To Scale
REF. DWG. MULTI



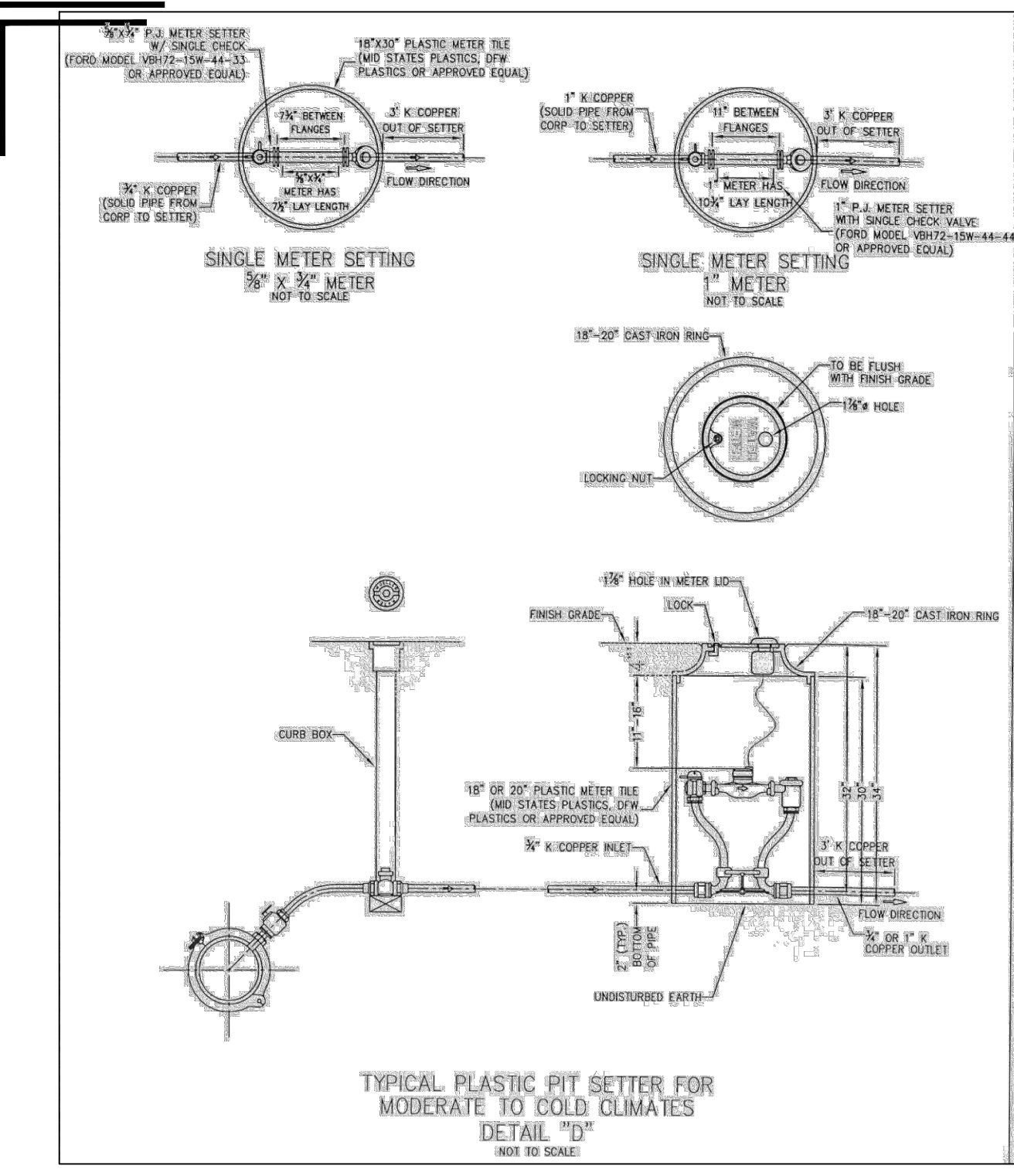
2 Frost Proof Hydrant & Back Flow Preventer
SCALE: N.T.S.
REF. DWG. MULTI
NOTE: Provide separation between brass and galvanized metals with pvc coupler or approved Electro.

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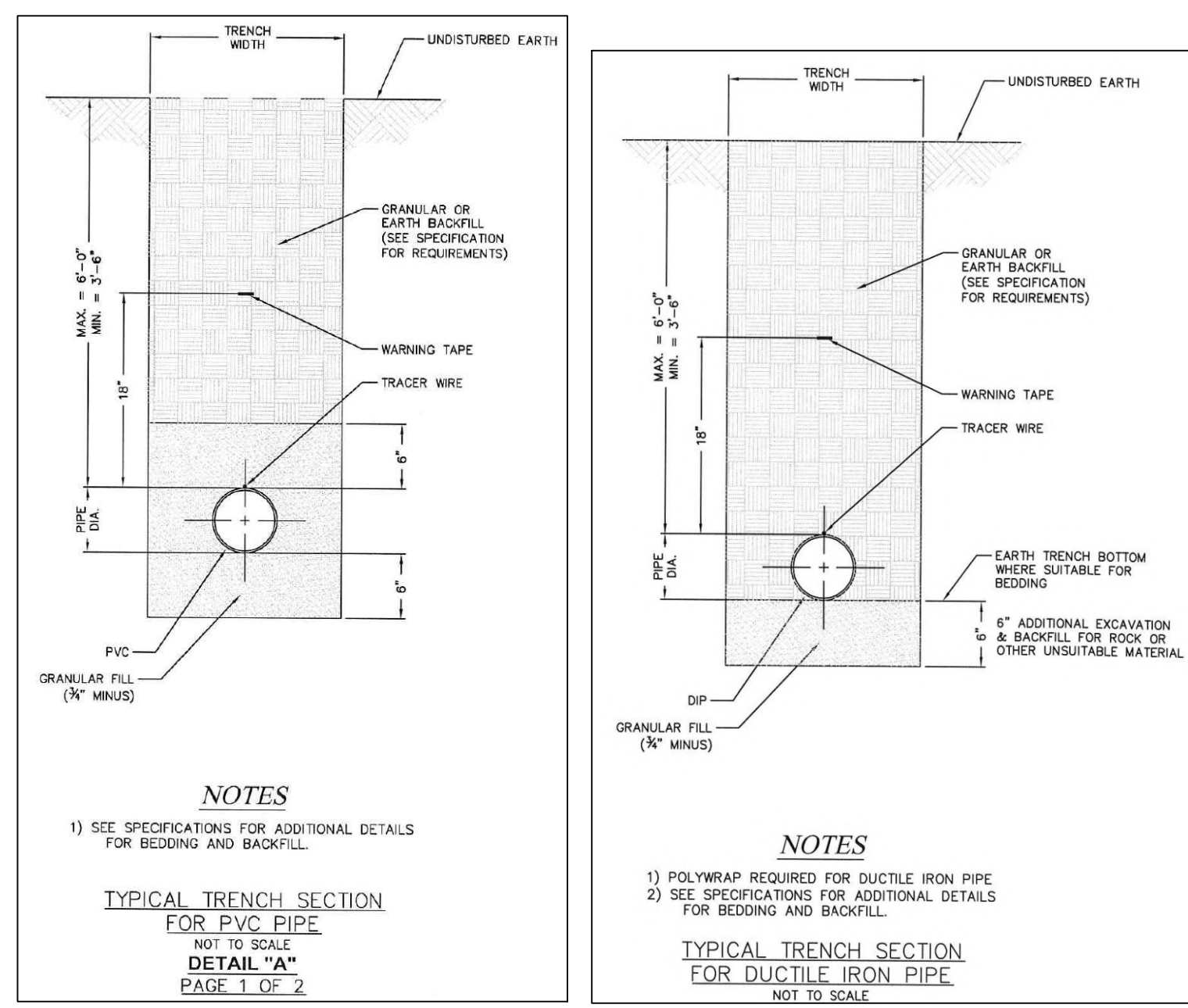
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Expires 12/31/2028

C-6

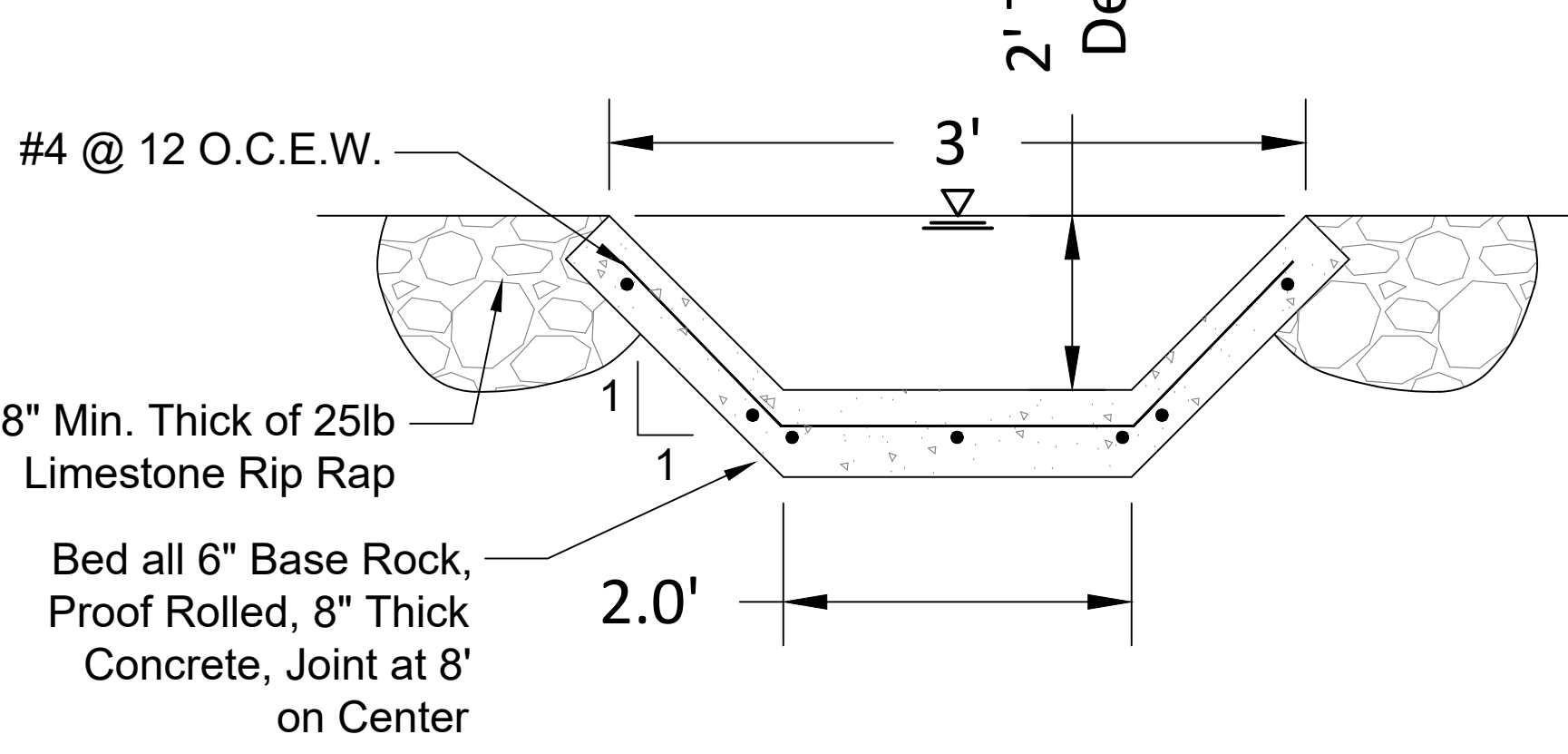
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SAVE DATE: 1/29/2026 9:18:35 AM PLOT DATE: 1/29/2026 9:18:35 AM



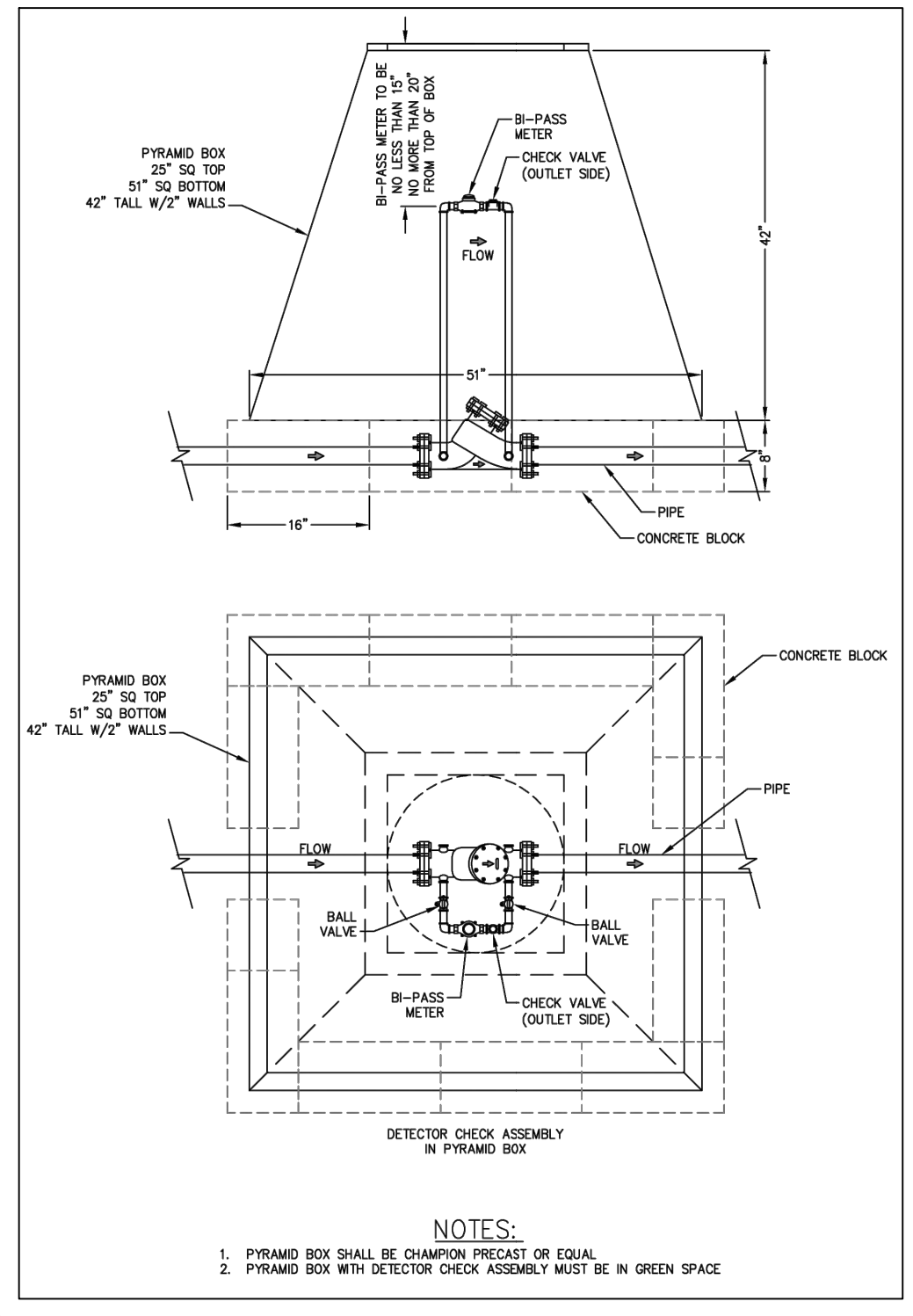
1 Plastic Pit Setter
SCALE: N.T.S. REF. DWG. MULTI



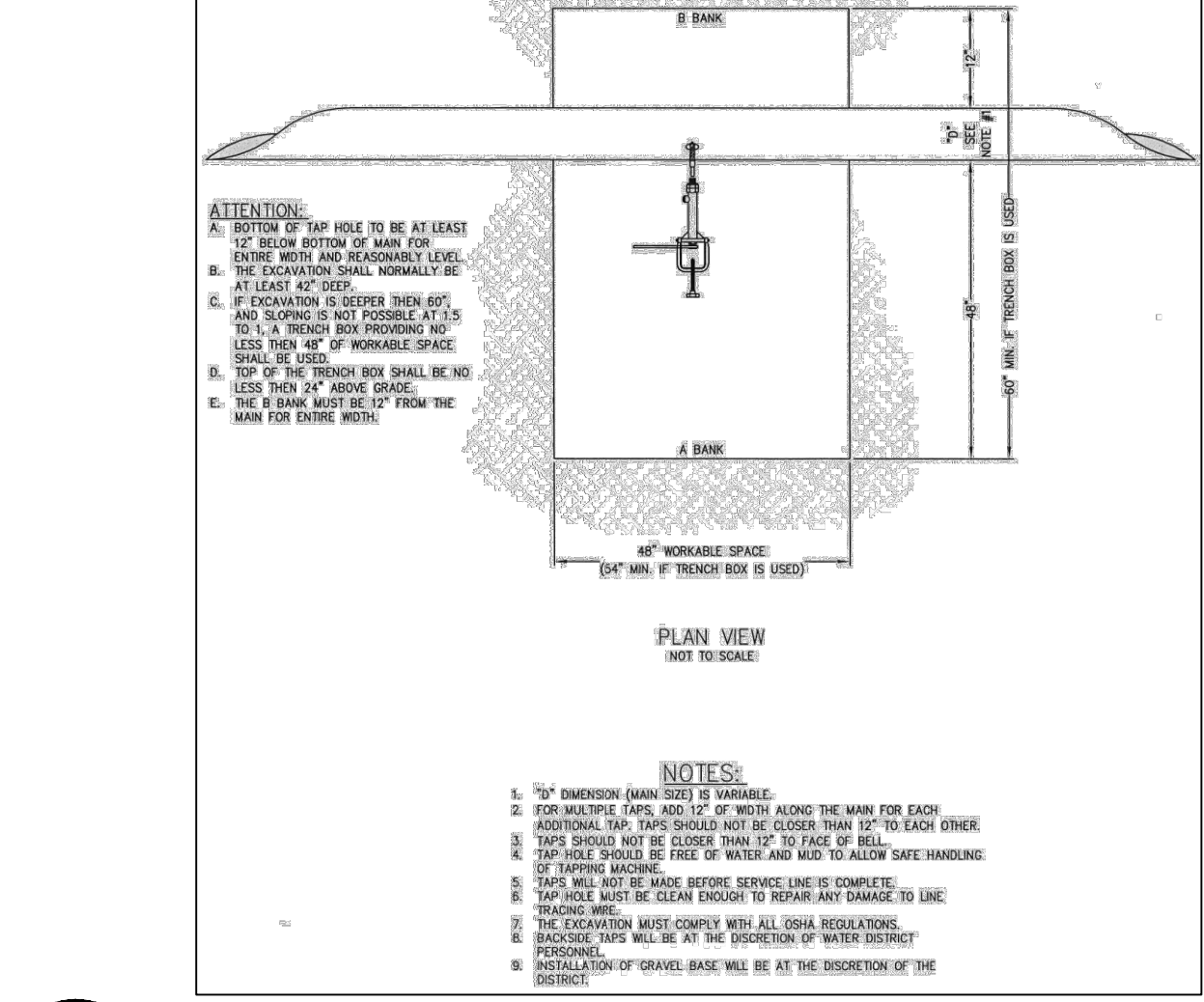
2 Water and Sewer Ditch
SCALE: N.T.S. REF. DWG. MULTI



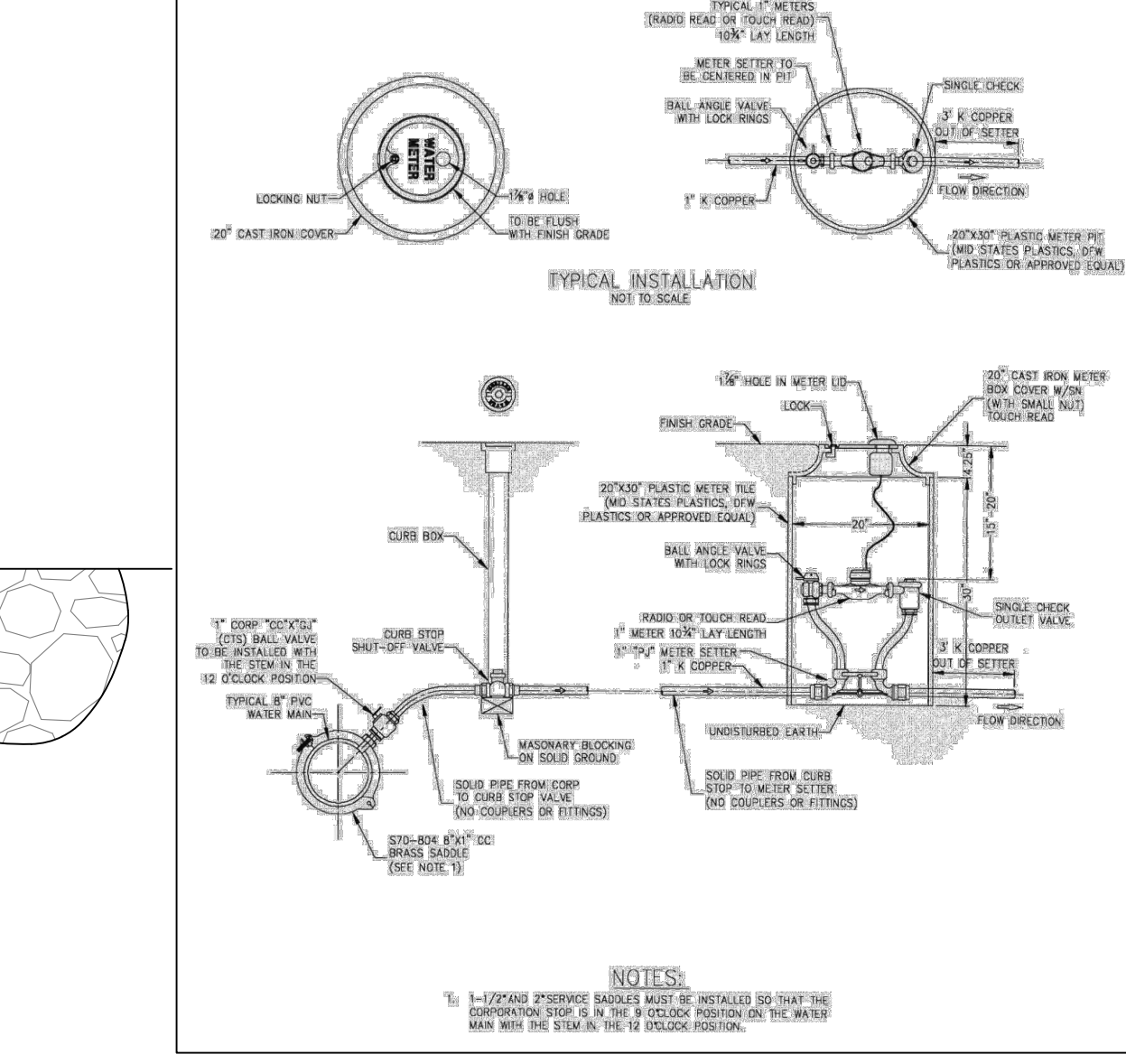
10 Concrete Flume Section
SCALE: N.T.S. MULTI REF. DWG.



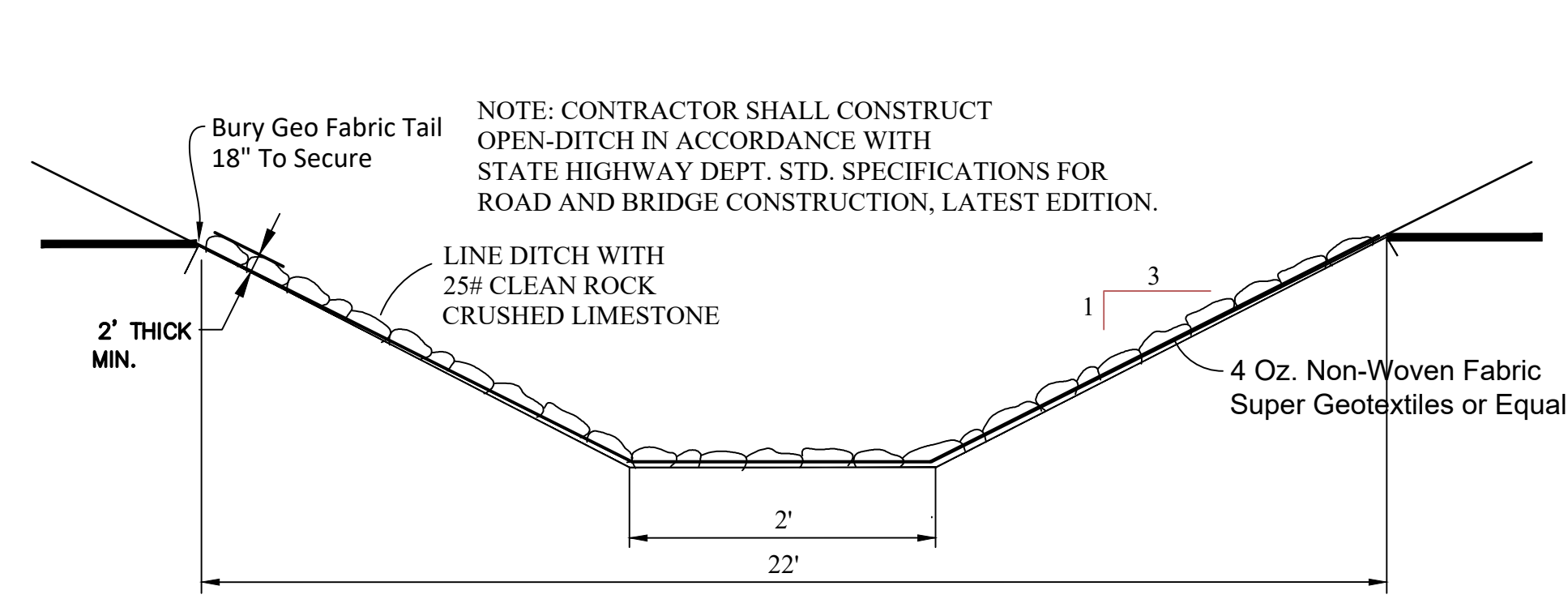
3 Detector Check Assembly
SCALE: N.T.S. REF. DWG. MULTI



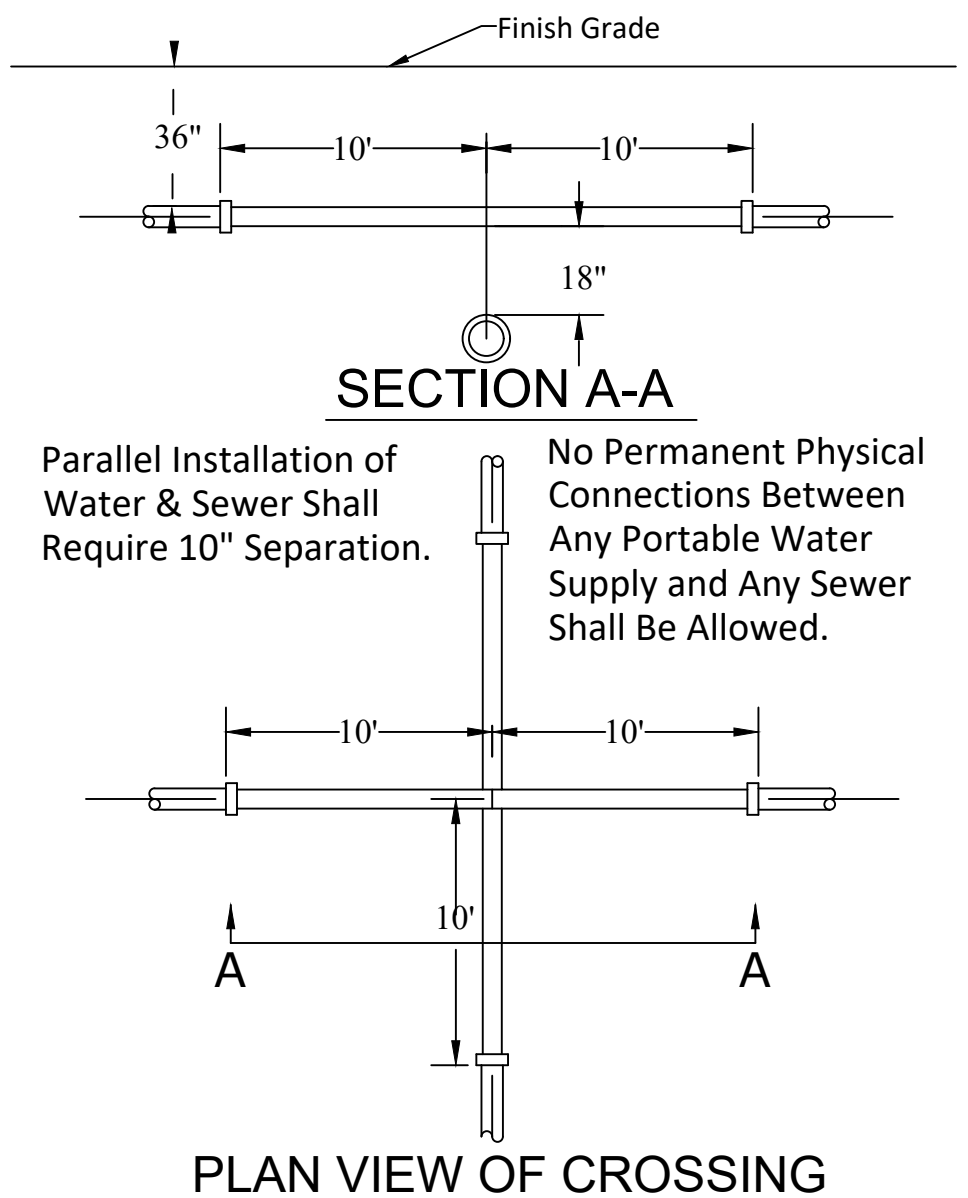
4 Service Connection Tap 3/4" and 1"
SCALE: N.T.S. REF. DWG. MULTI



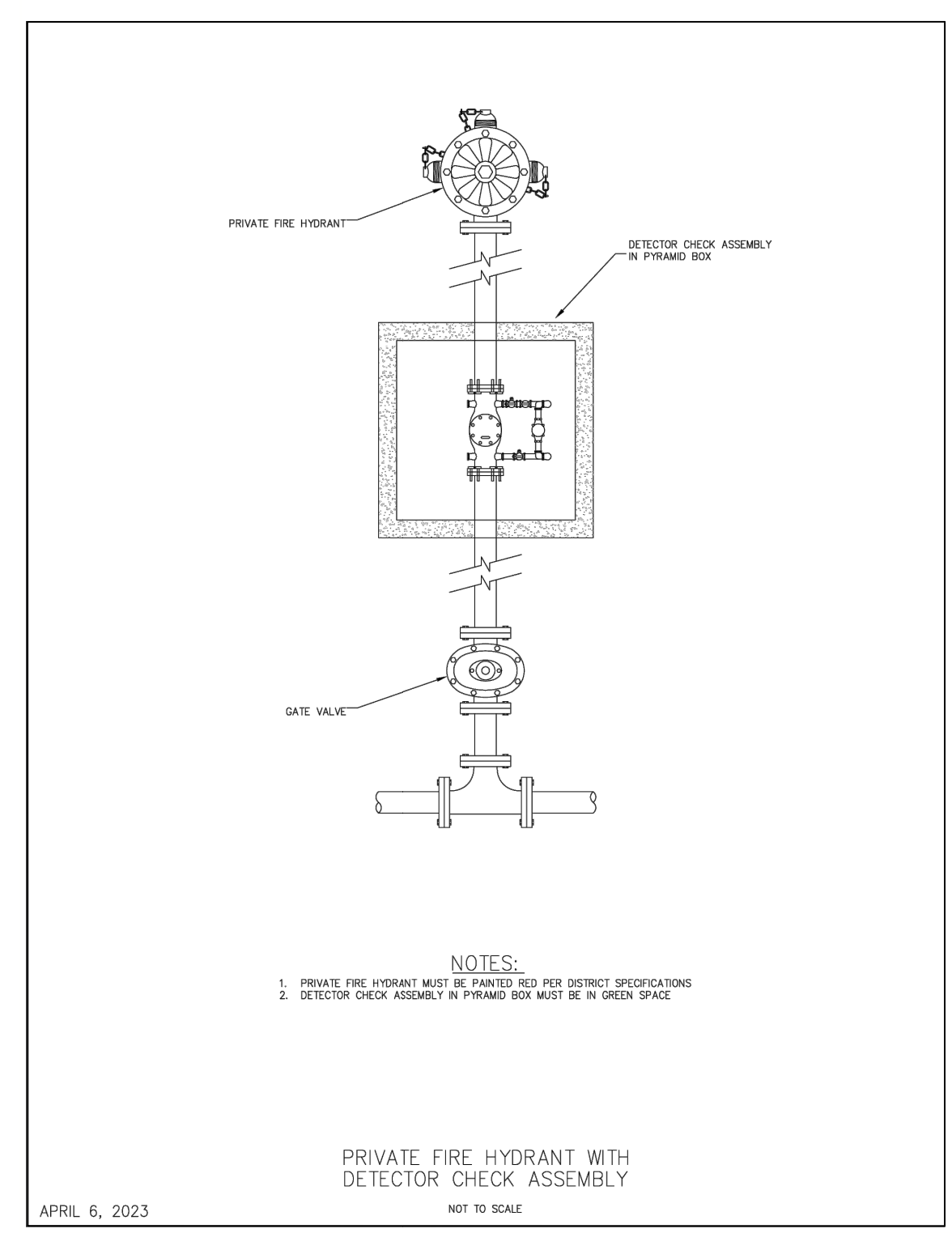
5 Typical Water Service Detail
SCALE: N.T.S. MULTI REF. DWG.



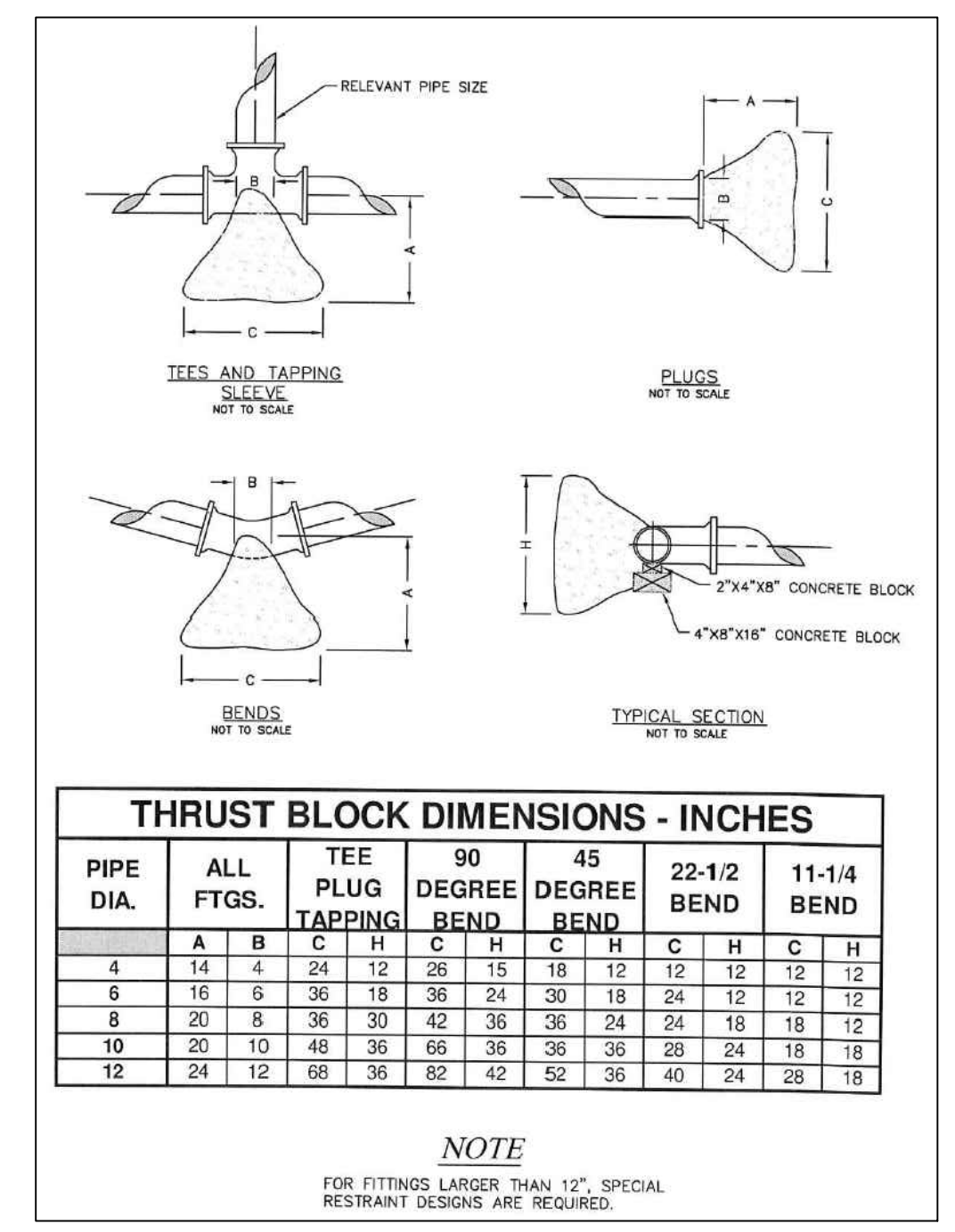
10 Pond Emergency Overflow Detail
SCALE: Not To Scale REF. DWG. MULTI



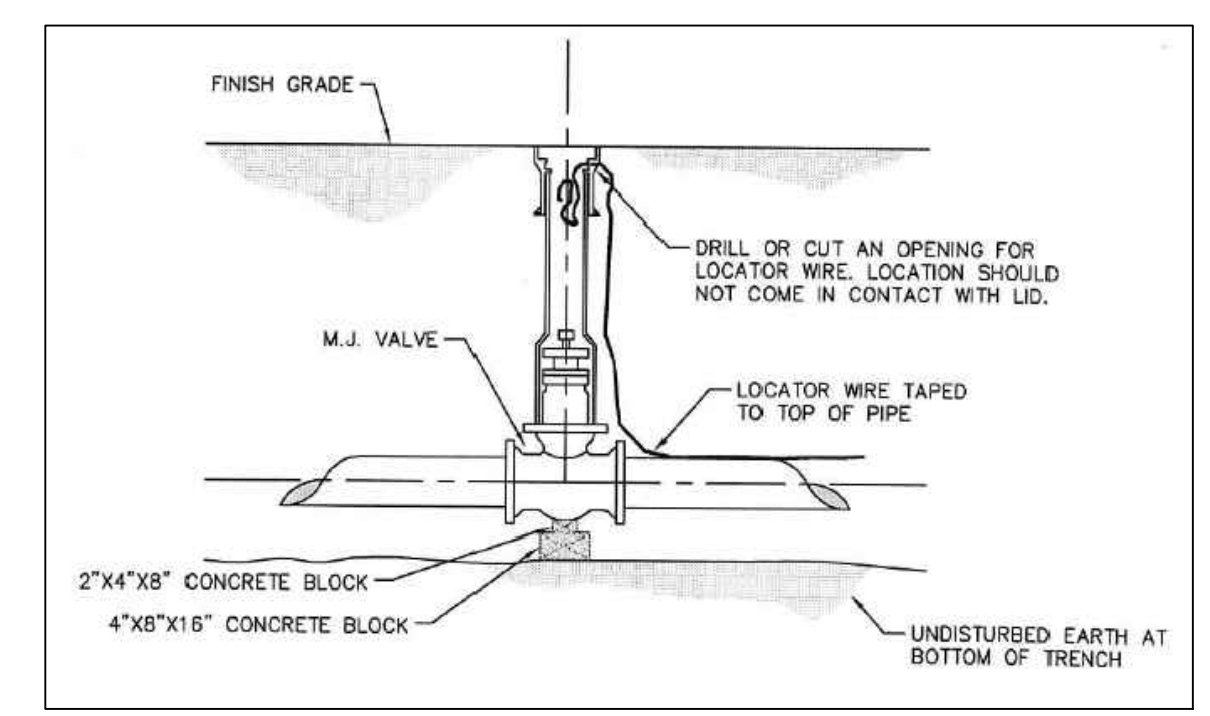
6 Sewer and Water Crossing
SCALE: N.T.S. REF. DWG. MULTI



9 Private Fire Hydrant & Detector Check
SCALE: Not To Scale REF. DWG. MULTI



7 Thrust Block Detail
SCALE: N.T.S. REF. DWG. MULTI



8 Water Valve Detail
SCALE: N.T.S. REF. DWG. MULTI

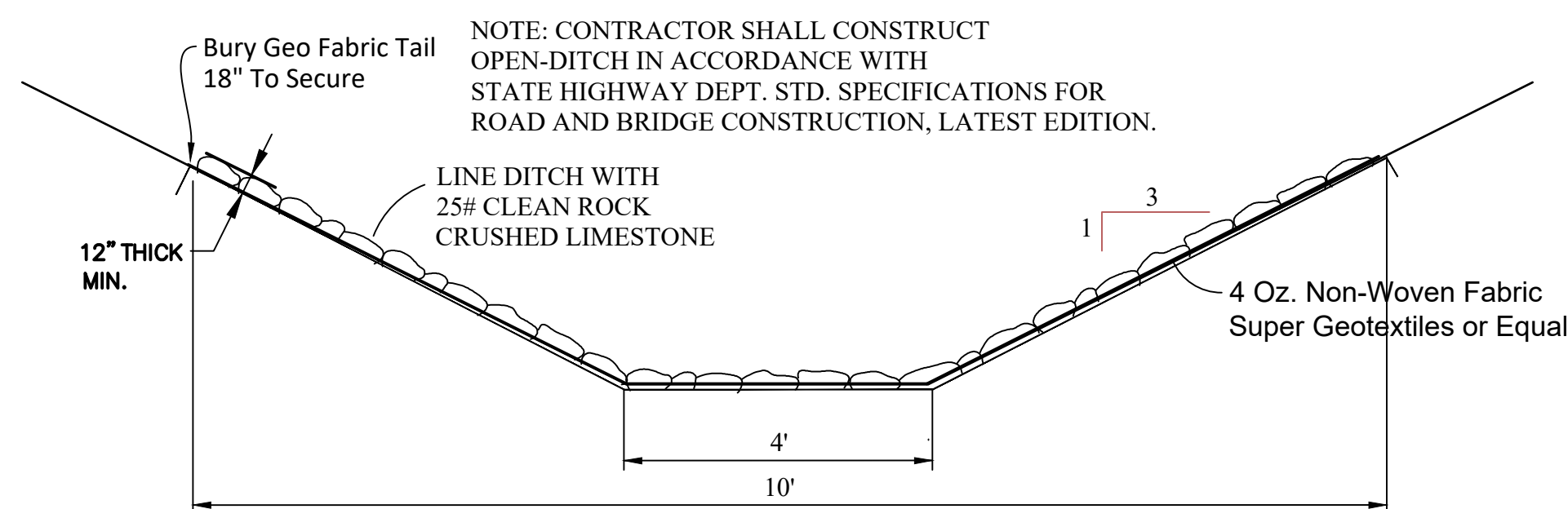
- Water System Notes
1. All materials and workmanship to comply with Wright City, MO. See St Charles County Public Water Supply District #2 Specification June 2023 for trench section and connection details.
 2. All new main line pipe to be ASTM 2241, PVC SDR 21 Class 200 pipe with D.I. M.J. Fittings for 1.5"-3" Push on type with rubber gasket. AWWA DR 18, C900 PVC w/ CLASS 200 D.I. M.J. fittings for 6"-8" pipe. All materials to be approved by Engineer and District.
 3. Laterals to be 2" or 1" AWWA C901-88, PE 3408, IDR 7, Class 200 or HDPE AWWA C905, 200psi DR9 with brass ford compression fittings. Maintain sewer and water separations as detailed.
 4. All electric to be 12" min below all water mains. Storm sewer to be 18" above water.
 5. Water meters pit and assembly to be 3' behind curb where required.
 6. All pipes to be installed with detectable marking tape
 7. For all water mains a locator wire shall provided and shall be a single (solid) insulated no.12 copper wire, THNN or THWN, gasoline and oil resistant. The insulated wire shall furnished in rolls of not less than 500'. Where plices are required, all splices shall be made with 3M splice kits or approved equal. Stranded or clad wire will not be permitted. All wire must be solid copper.
 8. Water District will permit and supervise the wet tap, furnish tapping saddle, corp stop, meter service line, meter setter, meter, shut off valve, and meter pit.
 9. Contractor to furnish and install bldg. service line and do all trenching, back fill and clean-up.
 10. Joint restraints to be ford style RF, Uni-Flange 1300 Series, or approved equal. Approved concrete thrust blocks required.
 11. All water service lines, fire lines and private water mains must be installed per PWSD No.2's specifications. All "private" fire hydrants are to be painted red per PWSD No. 2 specifications.
 12. The connection point to the existing "public" water main that will serve the site that states, the connection must be made per PWSD No.2 specifications.
 13. All "private" fire hydrants are to be painted red per PWSD No.2 specifications.
 14. The Water District requires one (1) week notice before the start of construction.
 15. All water mains, valves, fittings, hydrants, and related items are to be installed in accordance with the current PWSD2 of St Charles County Guidelines and specifications as approved by MODNR Review No. 6050805-13
 16. All meter pits/vaults must be installed in "Green Space" per the Water Districts Specifications.

Wright City Asphalt Plant Water Details



MARSCHKE ENGINEERING
415 East Vandalia Street
Edwardsville, IL 62025
matt.m@mwec.us
Telephone: 573-216-0066
www.mwec.us

Plot: 1/29/2026 9:19:35 AM
MO Corp: 2001015503
Expires 12/31/2028



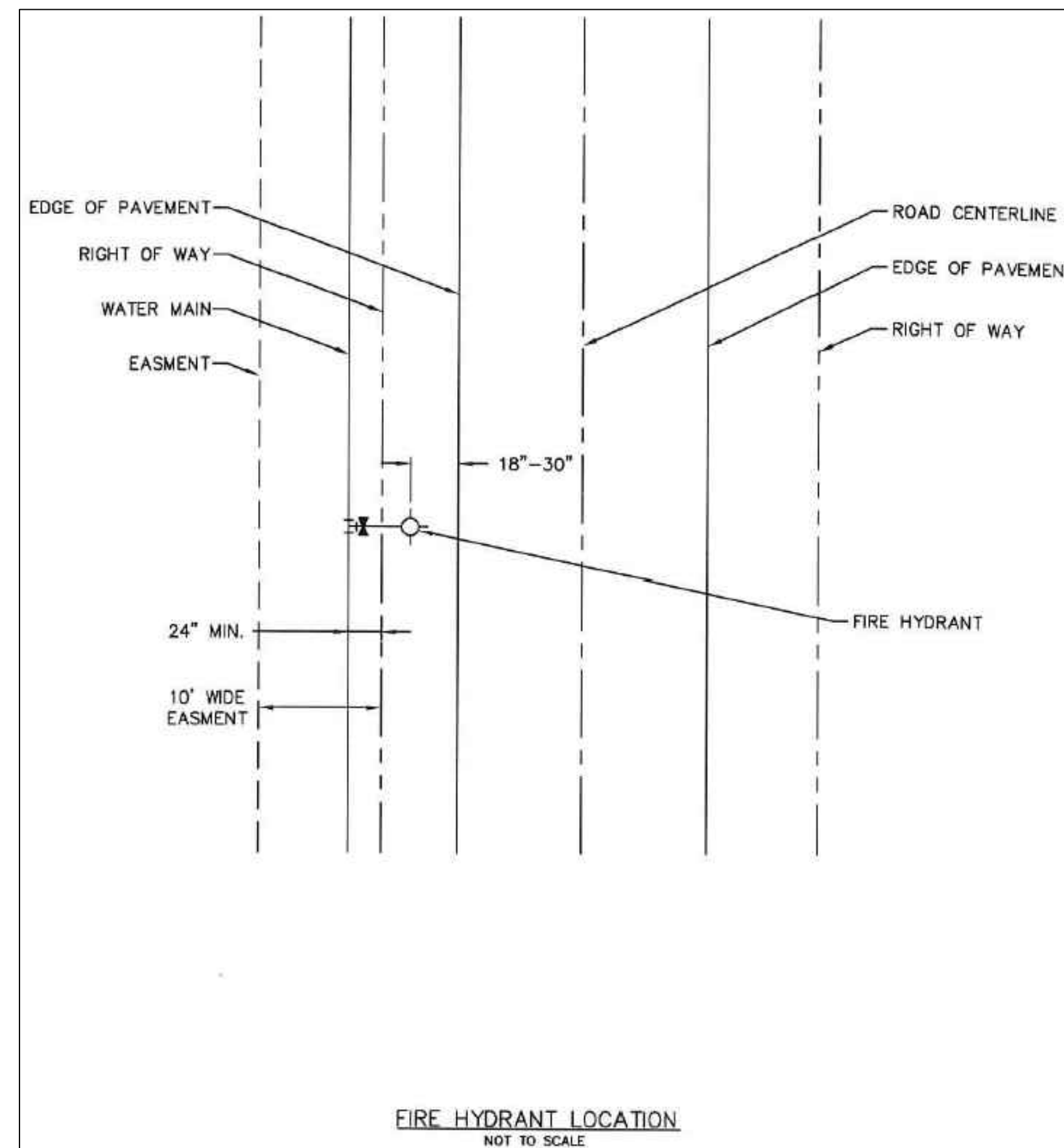
1 Swale to Drain

SCALE: N.T.S.

REF. DWG. C-1

Storm Sewer Notes

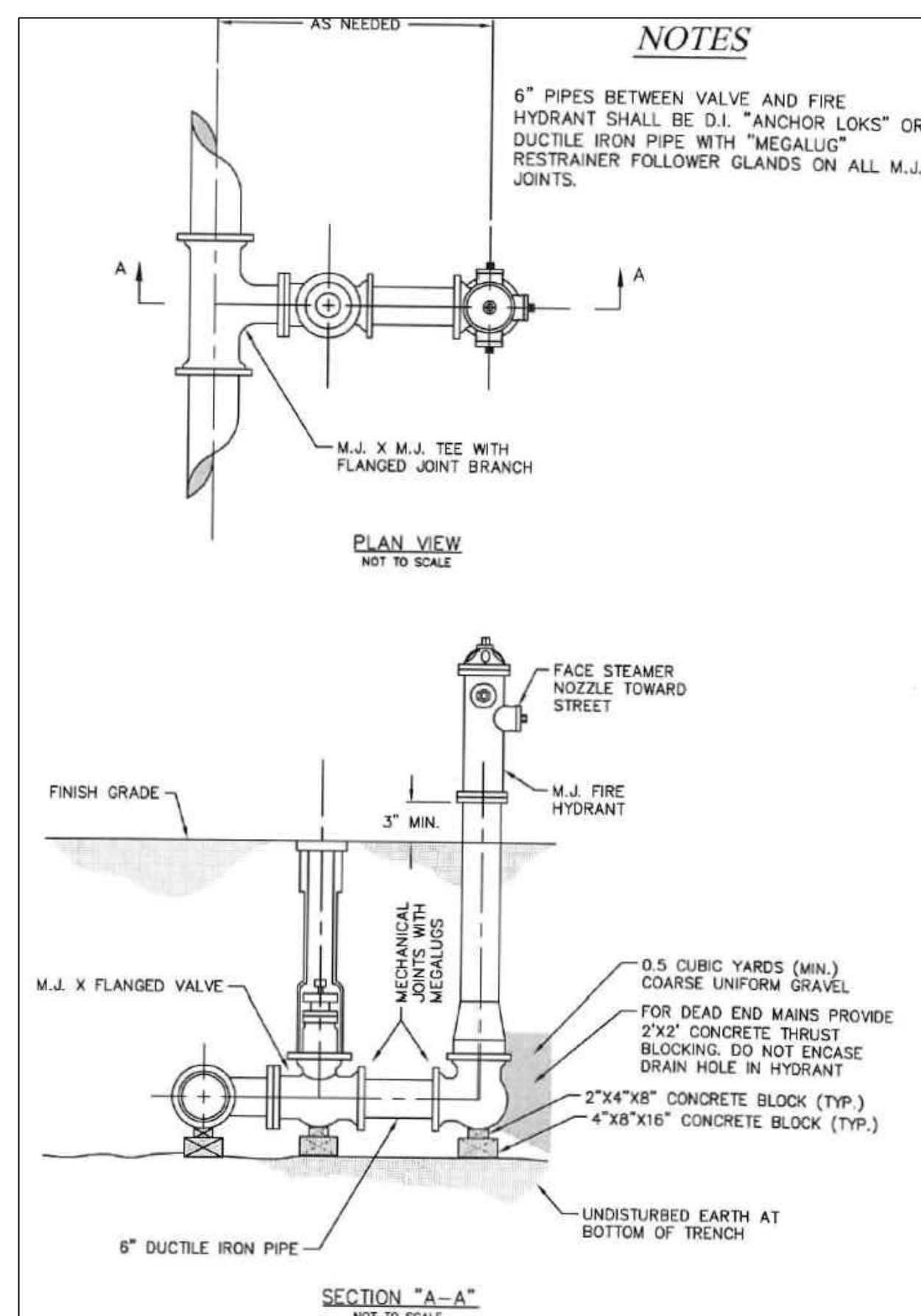
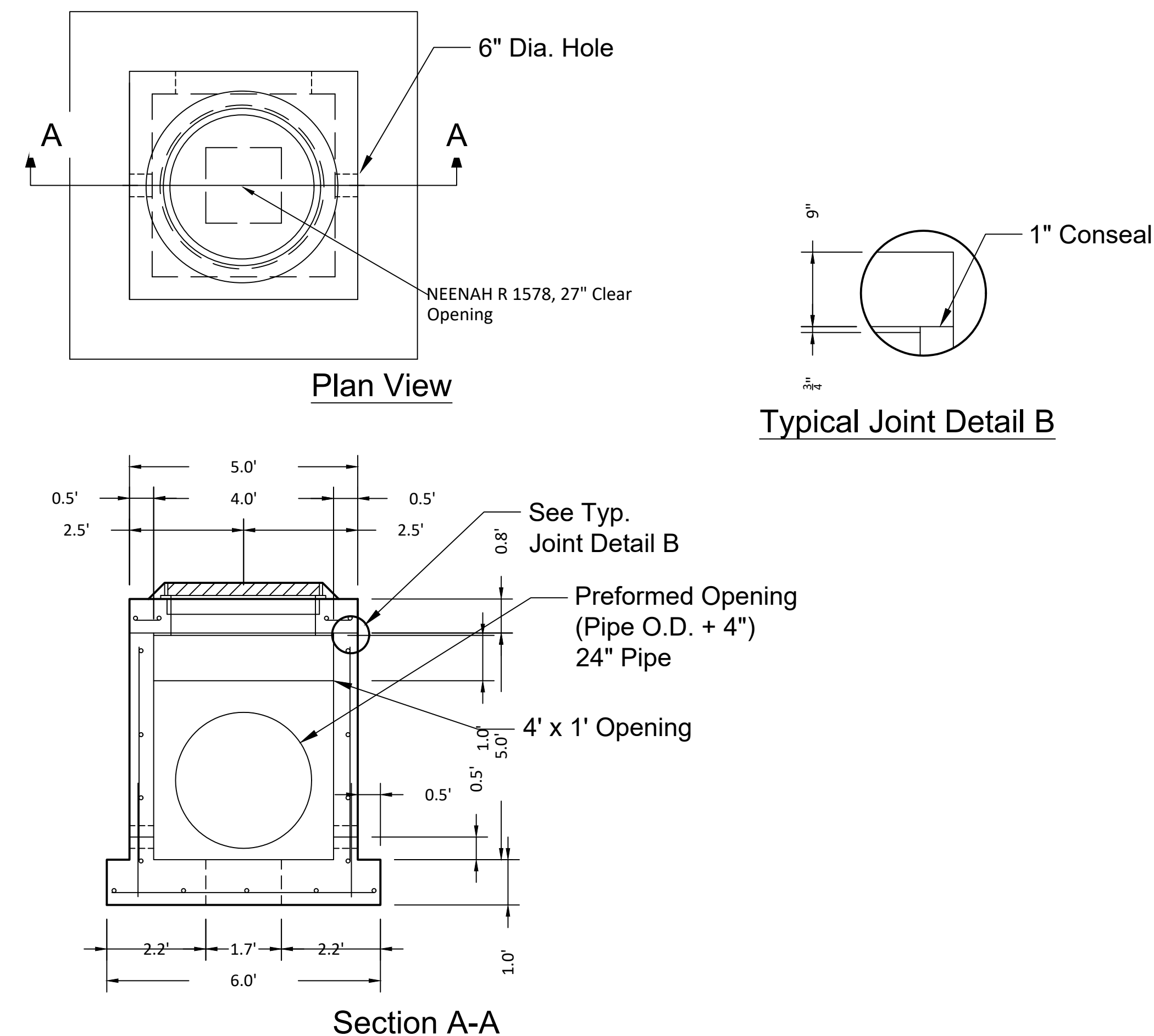
1. All pipe to be ADS N-12 for 18" and larger.
2. All fittings to be PVC SDR 35 or precast concrete.
3. Inlet grates as shown on plans. Drop inlets to be precast or SDR 35 18" pipe.
4. Lay inlets low with adjustment up.
5. All pipe to be bedded with 1" clean rock 6" about pipe. Provide 18" separation to all other utilities.
6. Flare end sections to be CMP. Rip rap energy dissipation mats to be installed at all downstream flared end sections 6' wide 8' long 18" deep per rip rap detail above.
7. Rip rap to be placed on non-woven geo fabric per detail. Rock to be DOT approved 25# plus clean rock.



Fire Hydrant Location

SCALE: N.T.S.

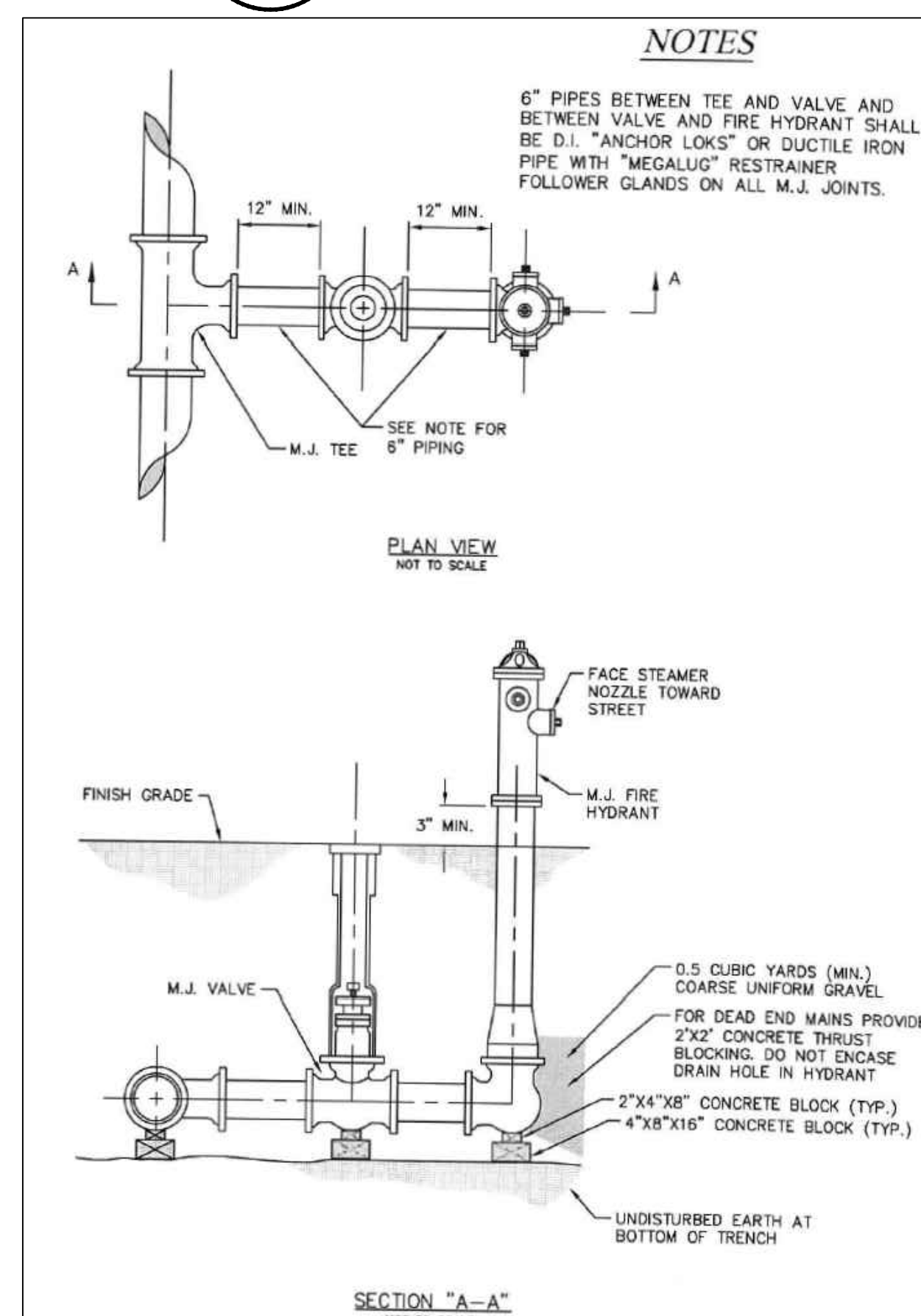
REF. DWG. C-1



Fire Hydrant Detail

SCALE: N.T.S.

REF. DWG. C-1



Typical Trench and FES

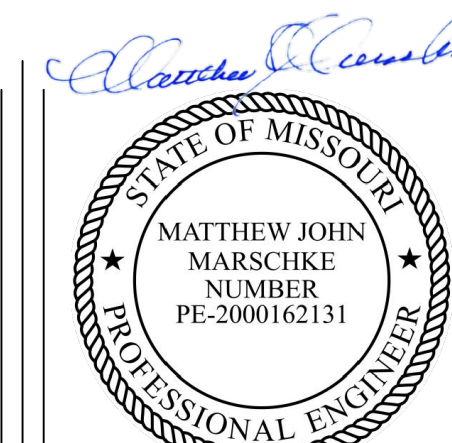
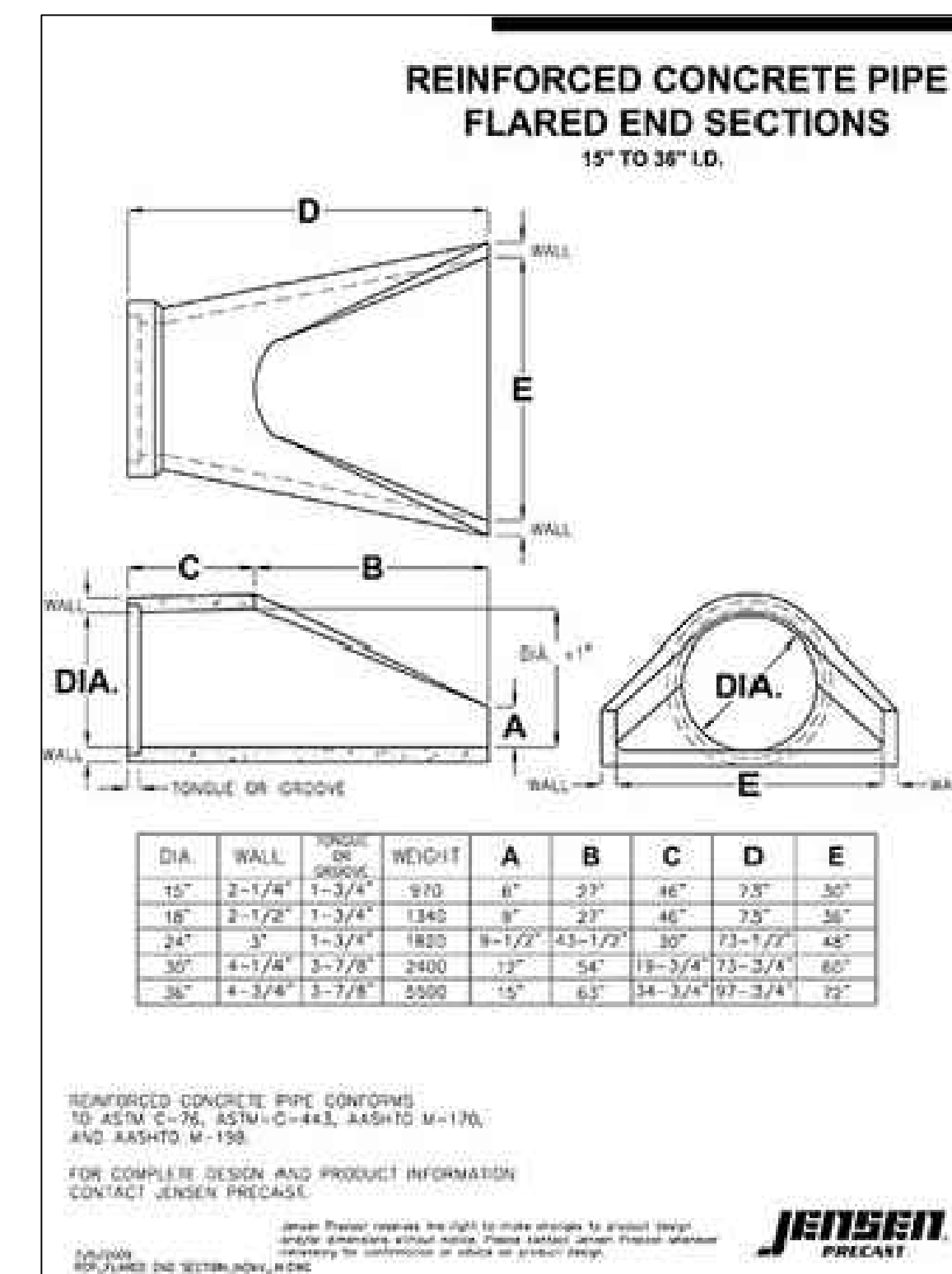
SCALE: N.T.S.

REF. DWG. C-1

Discharge Structure

SCALE: N.T.S.

REF. DWG. C-1



01/29/2026

Wright City Asphalt Plant Water Details

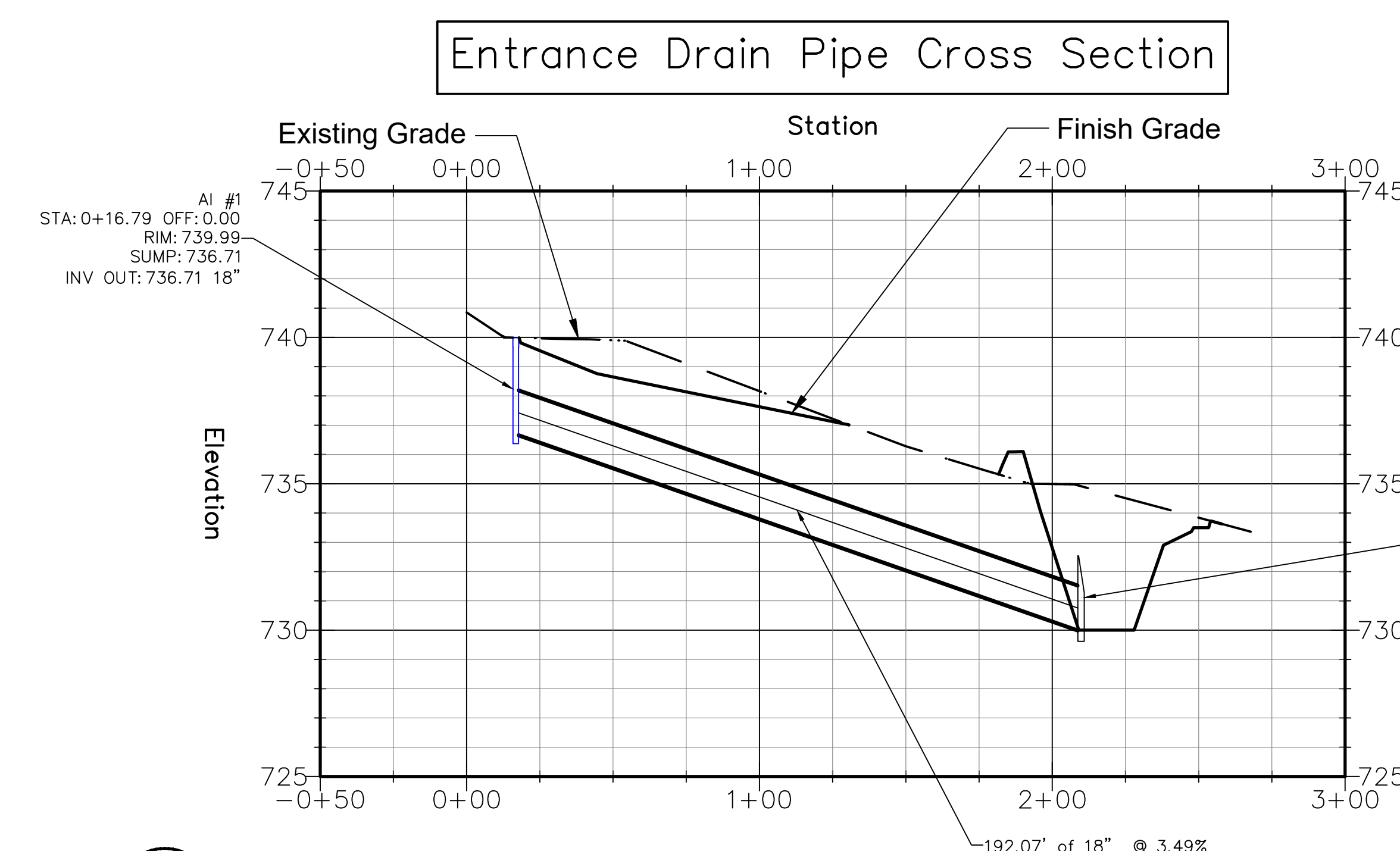


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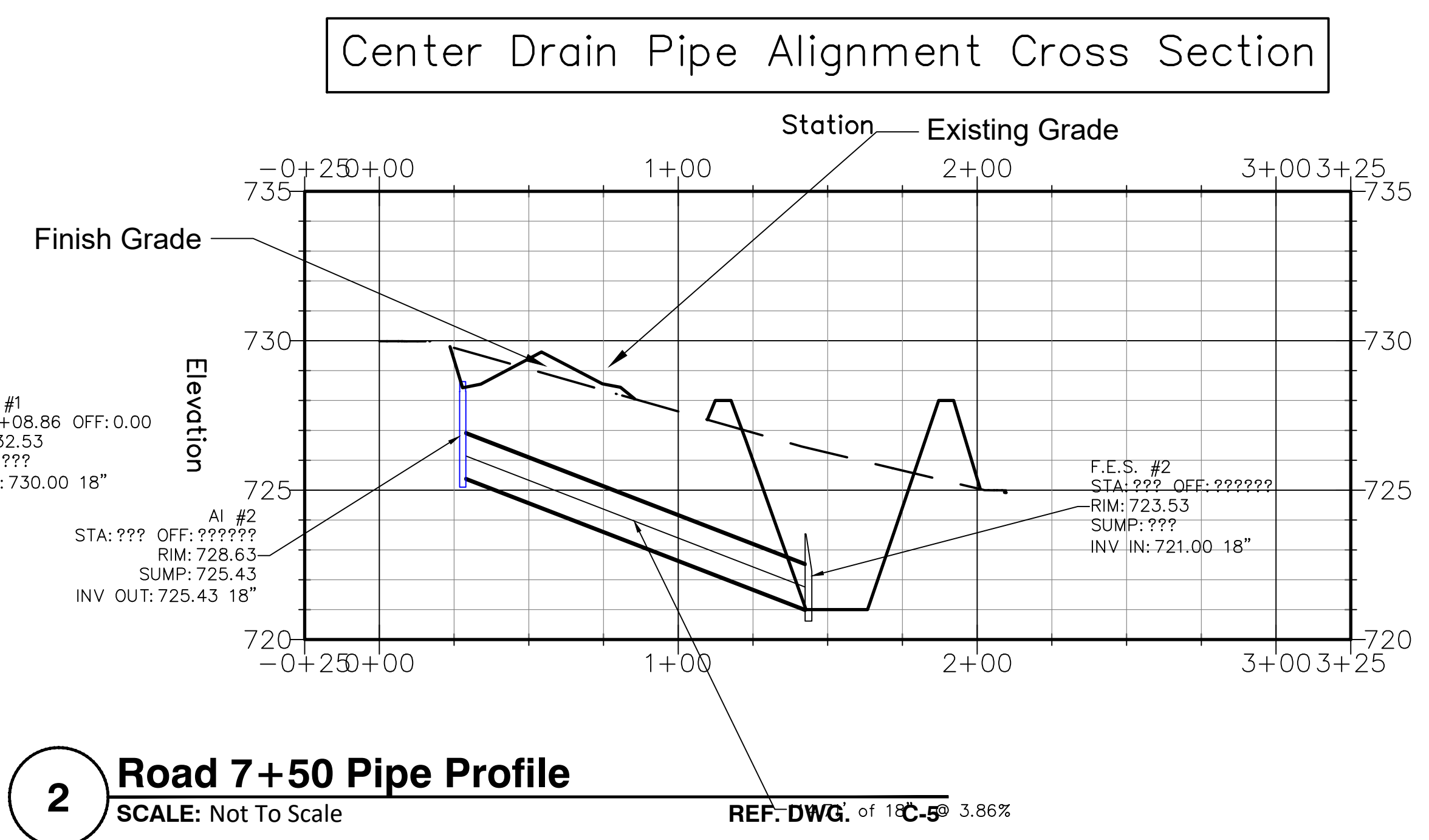
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Expires 12/31/2028

C-8

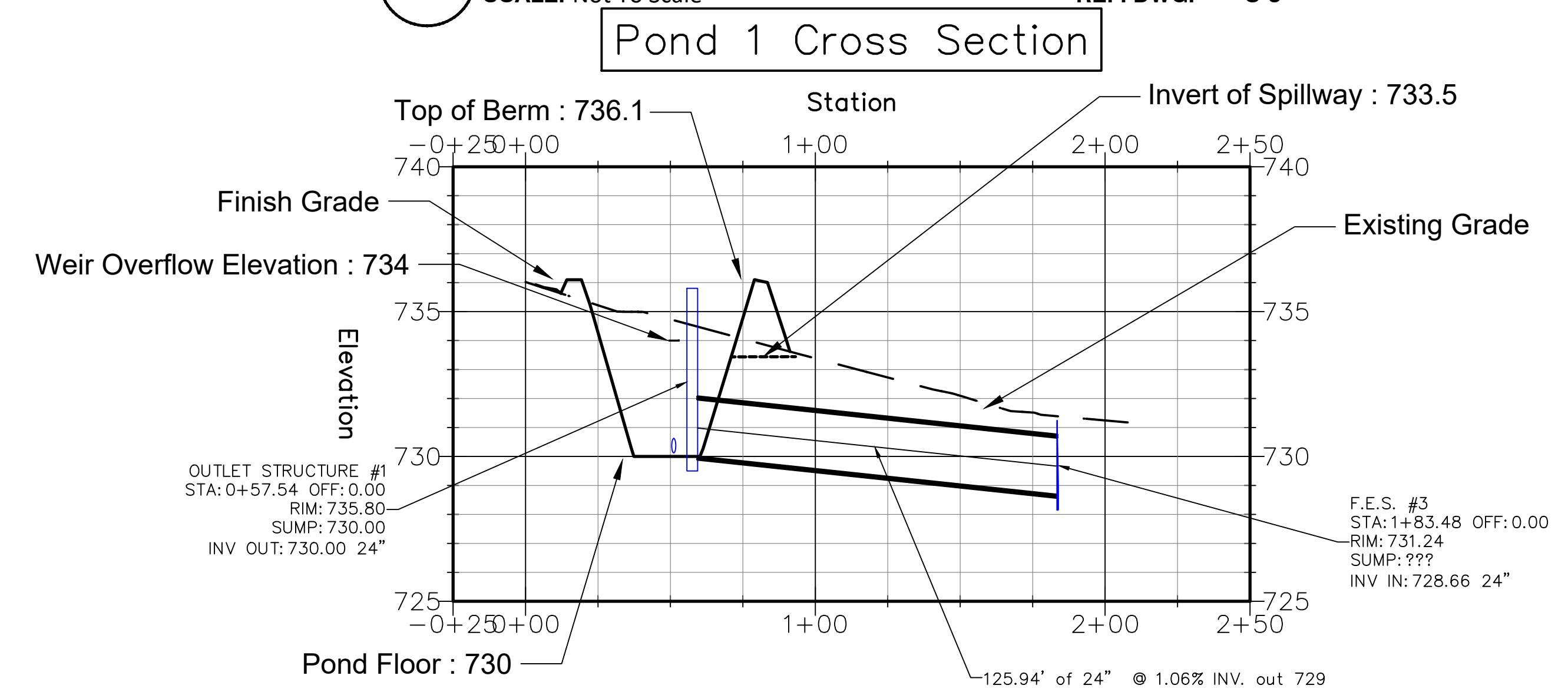
Wright City Asphalt Plant Pipe Profiles



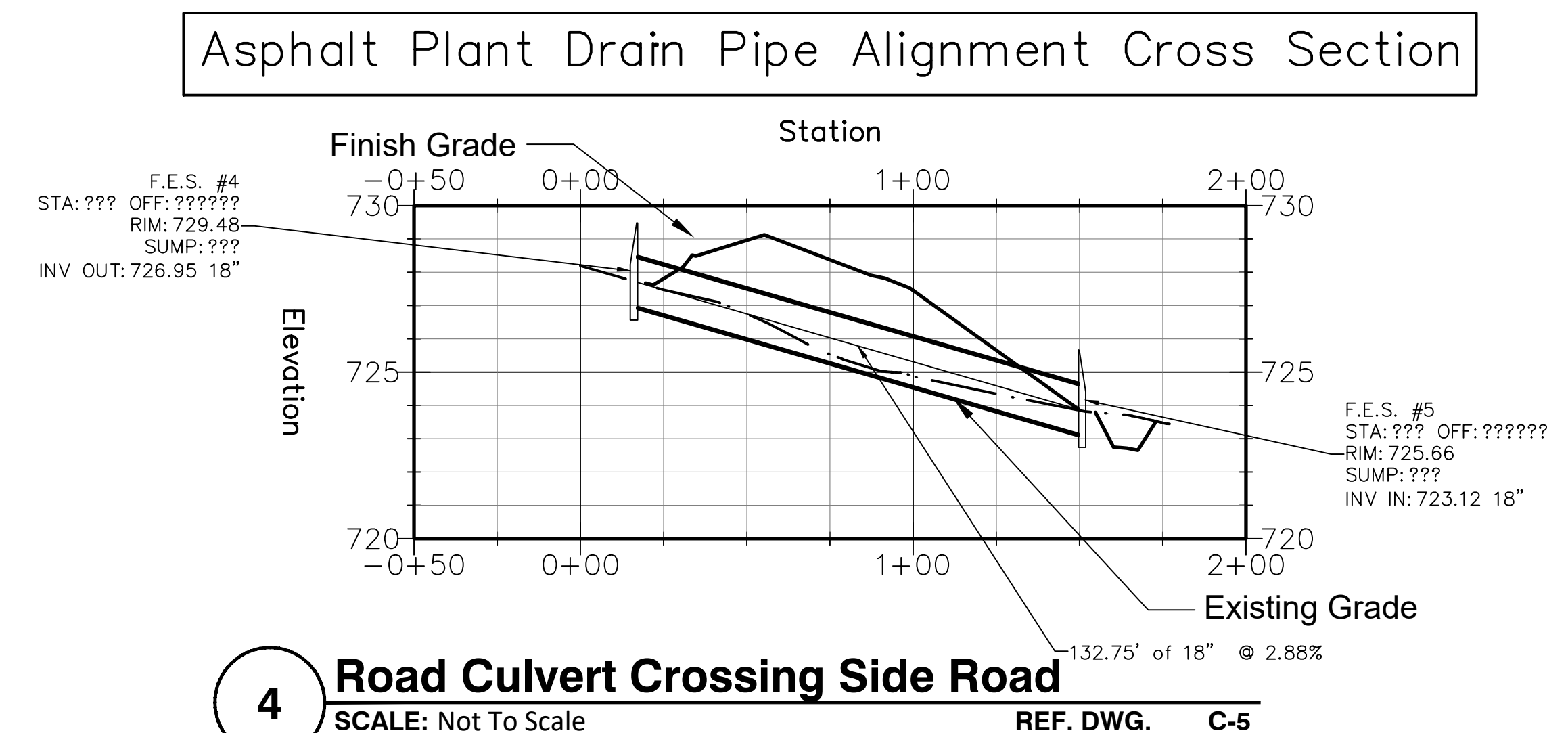
1 Entrance Drain Pipe Profile
SCALE: Not To Scale REF. DWG. C-5



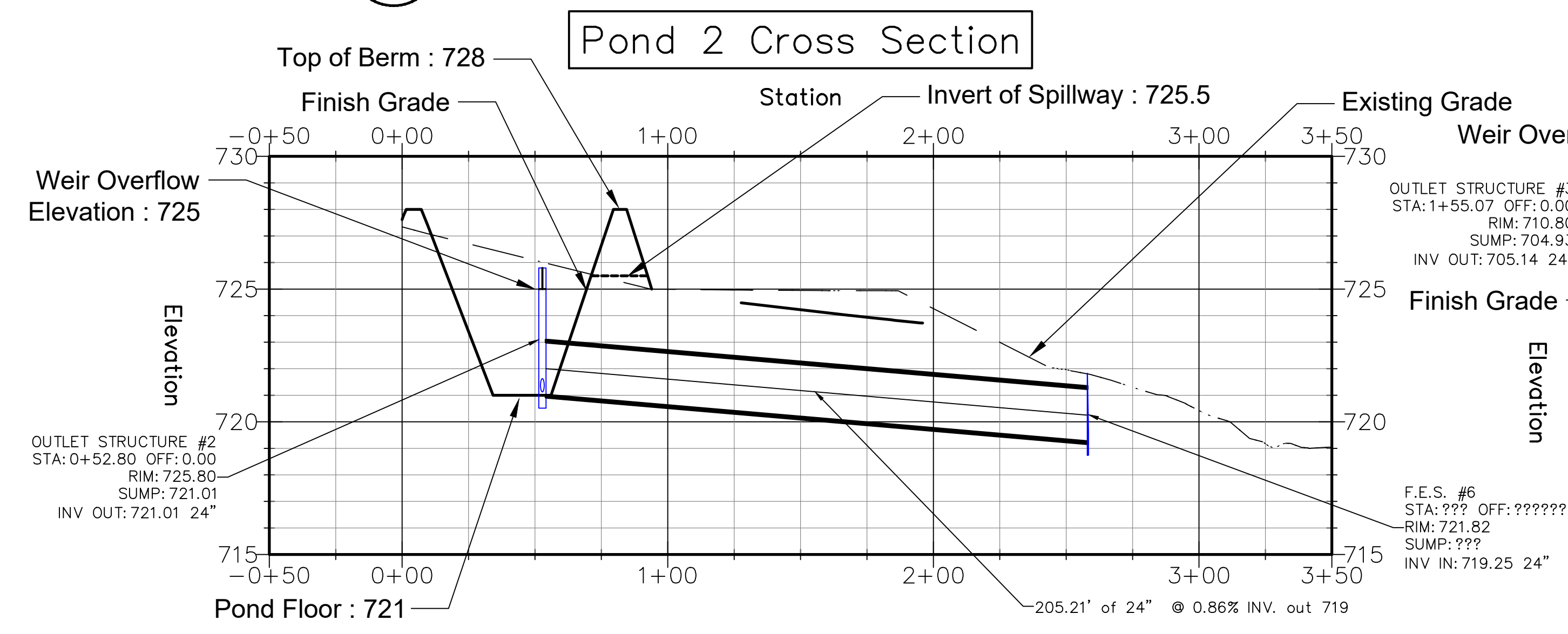
2 Road 7+50 Pipe Profile
SCALE: Not To Scale REF. DWG. C-5



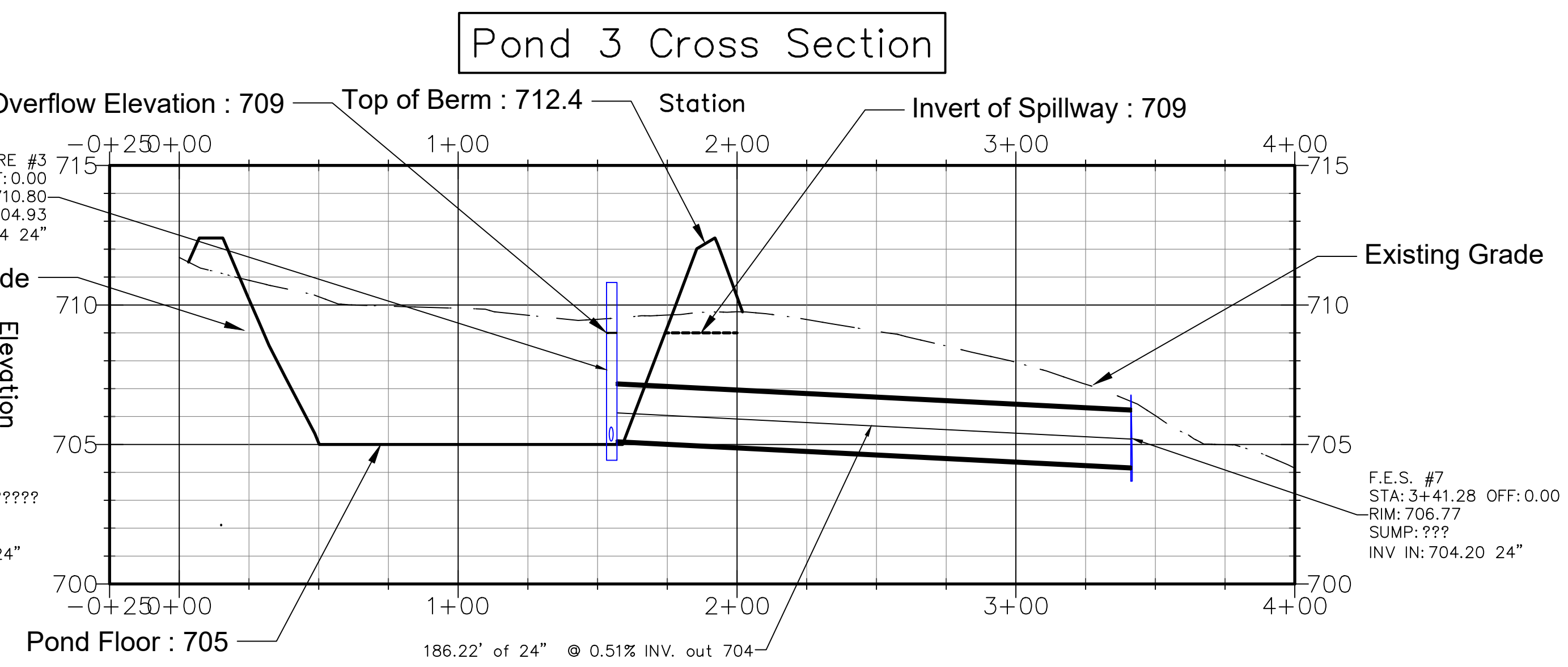
3 Pond 1 Outflow Profile
SCALE: Not To Scale REF. DWG. C-5



4 Road Culvert Crossing Side Road
SCALE: Not To Scale REF. DWG. C-5



5 Pond 2 Outflow Profile
SCALE: Not To Scale REF. DWG. C-5



6 Pond 3 Outflow Profile
SCALE: Not To Scale REF. DWG. C-5

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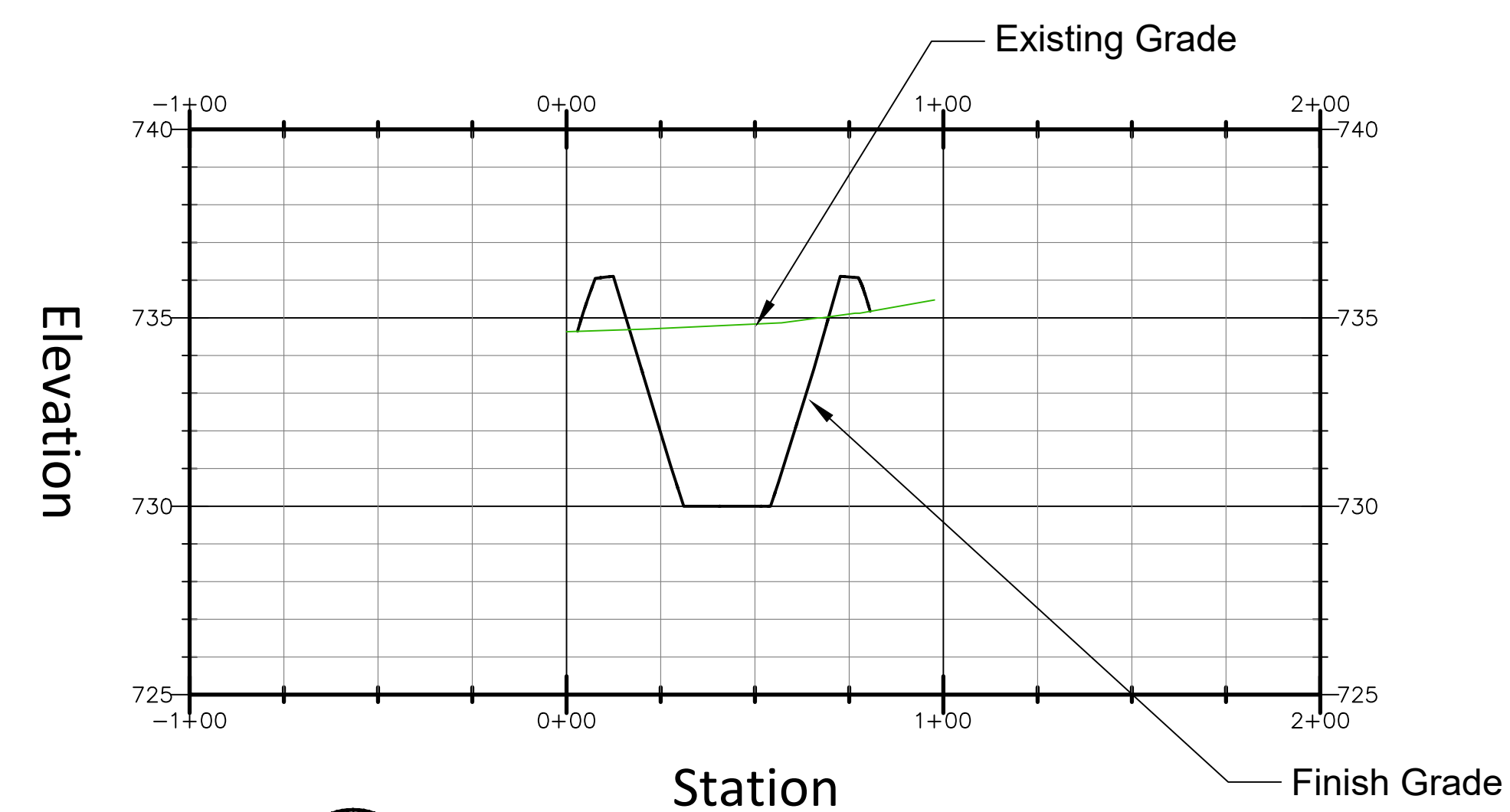
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MO Corp: 2001015503
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Wright City Asphalt Plant
Pond Cross Sections

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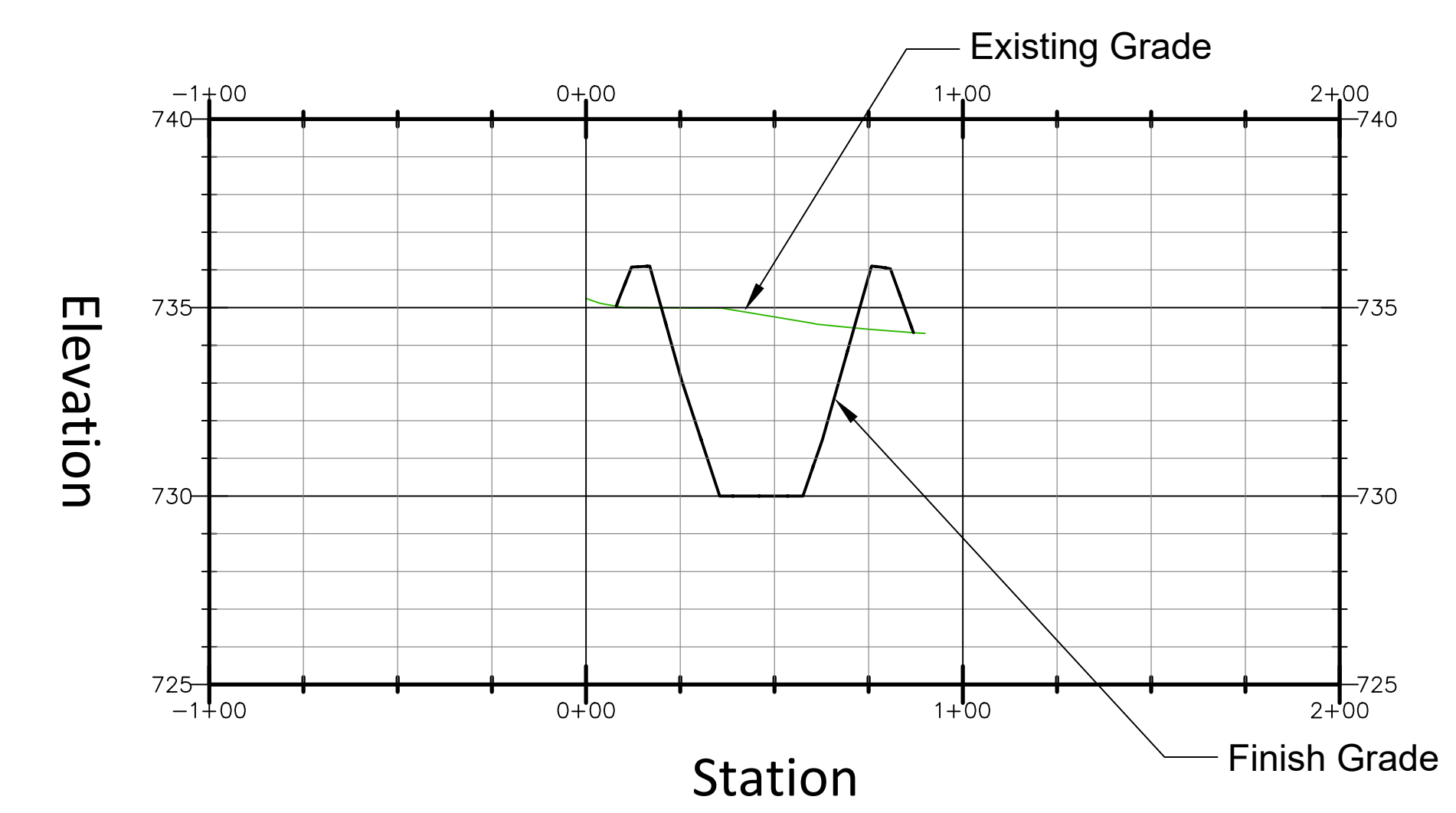
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MO Corp: 2001015503
Expires 12/31/2028

Pond 1 Cross Section



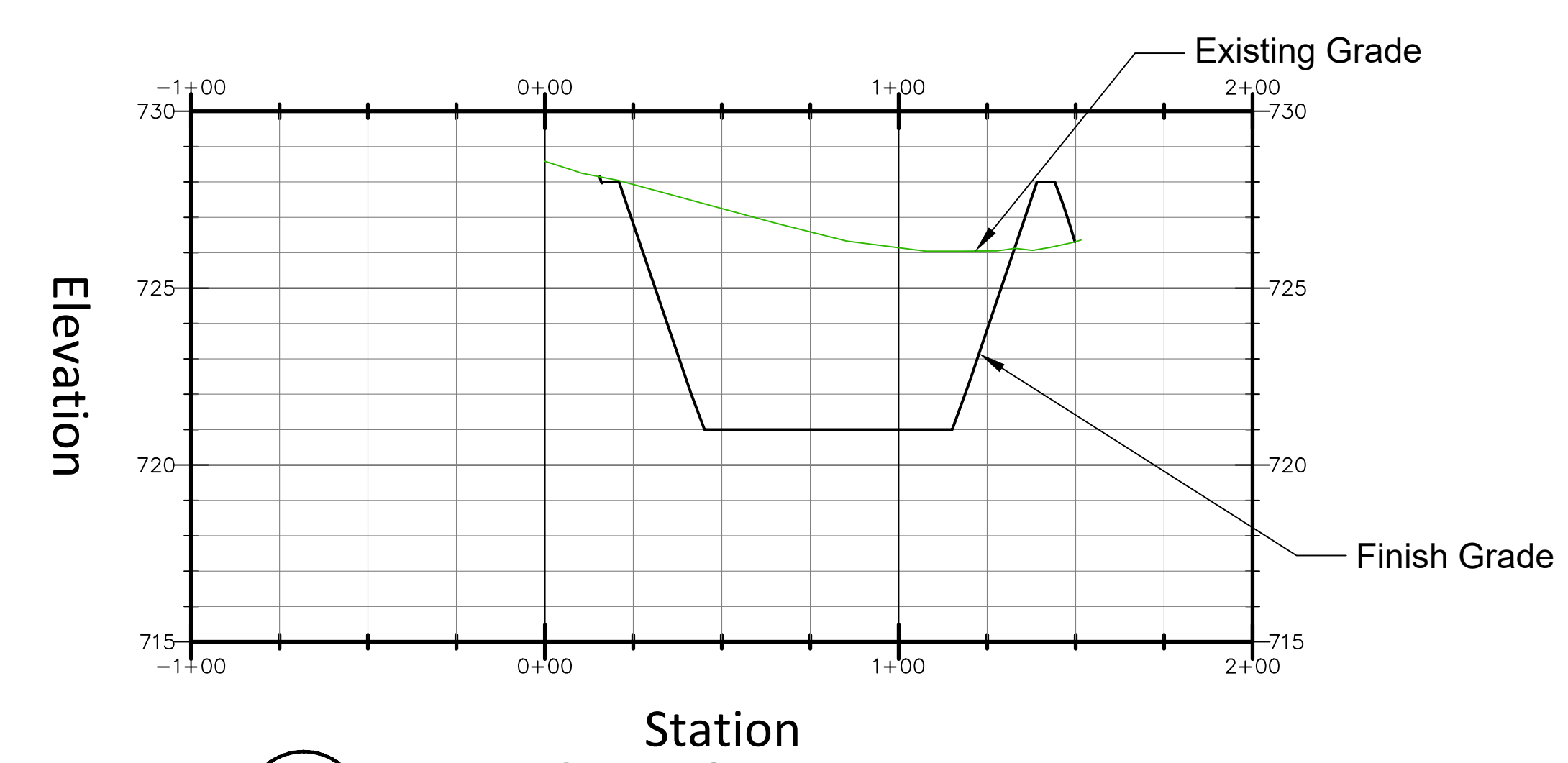
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SCALE: Not To Scale REF. DWG. C-5

Pond 1 Cross Section 2



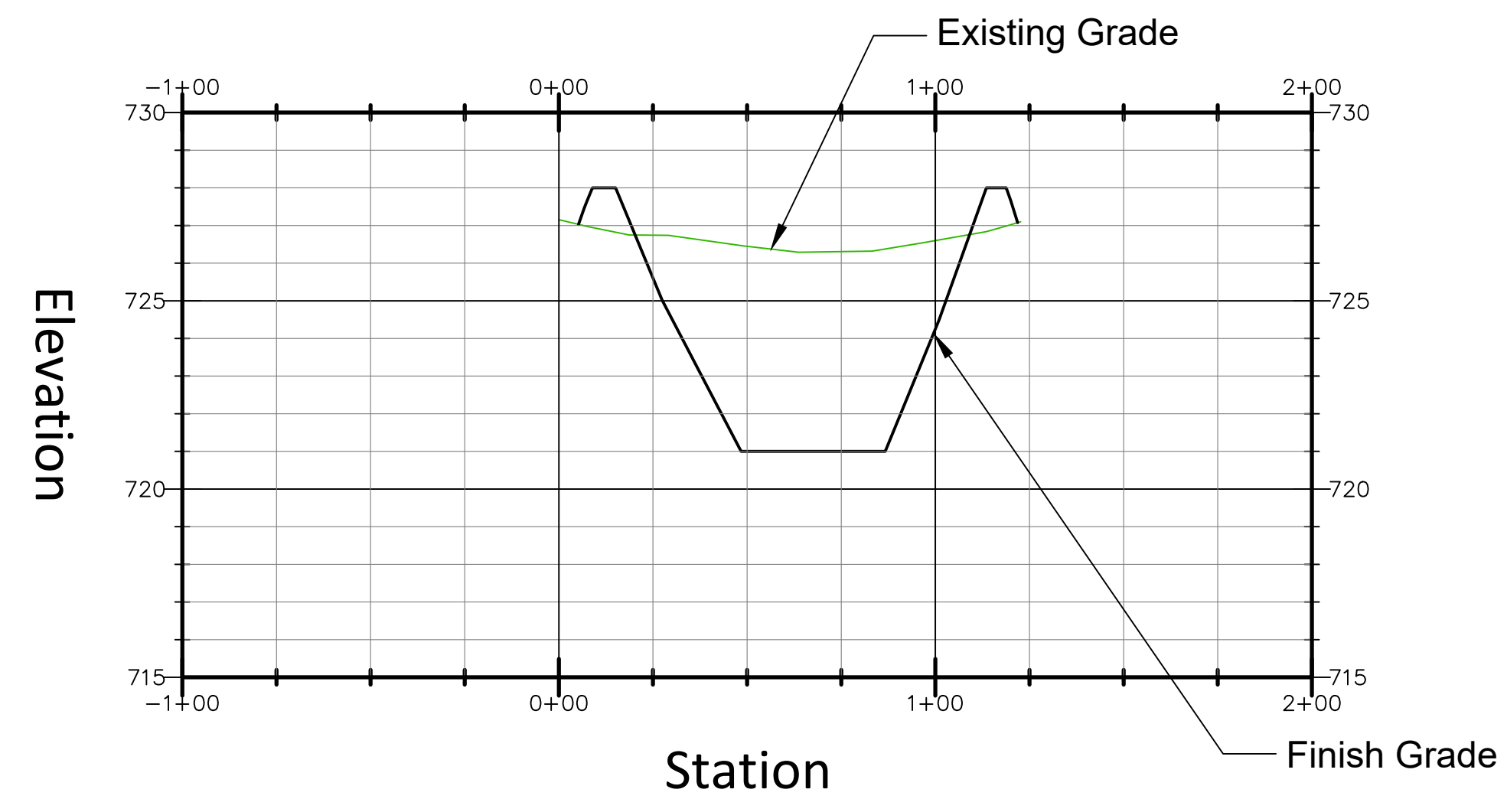
2 **Pond 1 Cross Section 2**
SCALE: Not To Scale REF. DWG. C-5

Pond 2 Cross Section



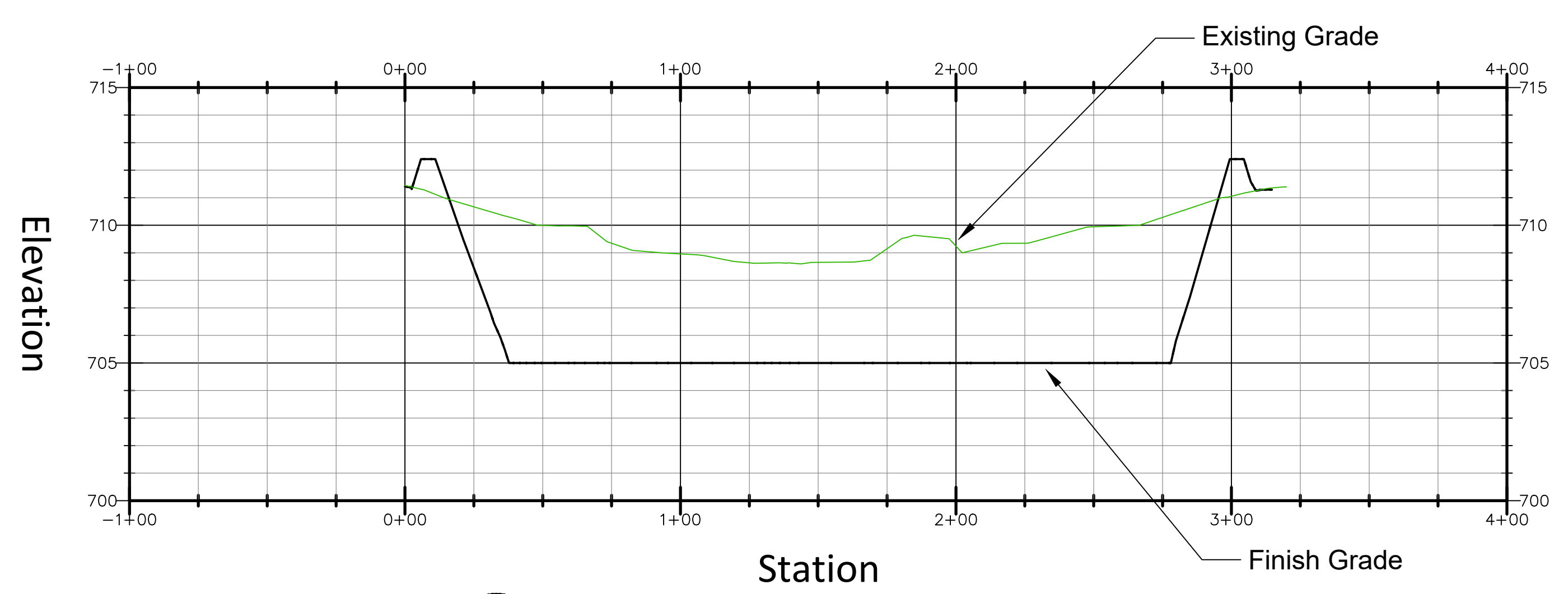
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SCALE: Not To Scale REF. DWG. C-5

Pond 2 Cross Section 2



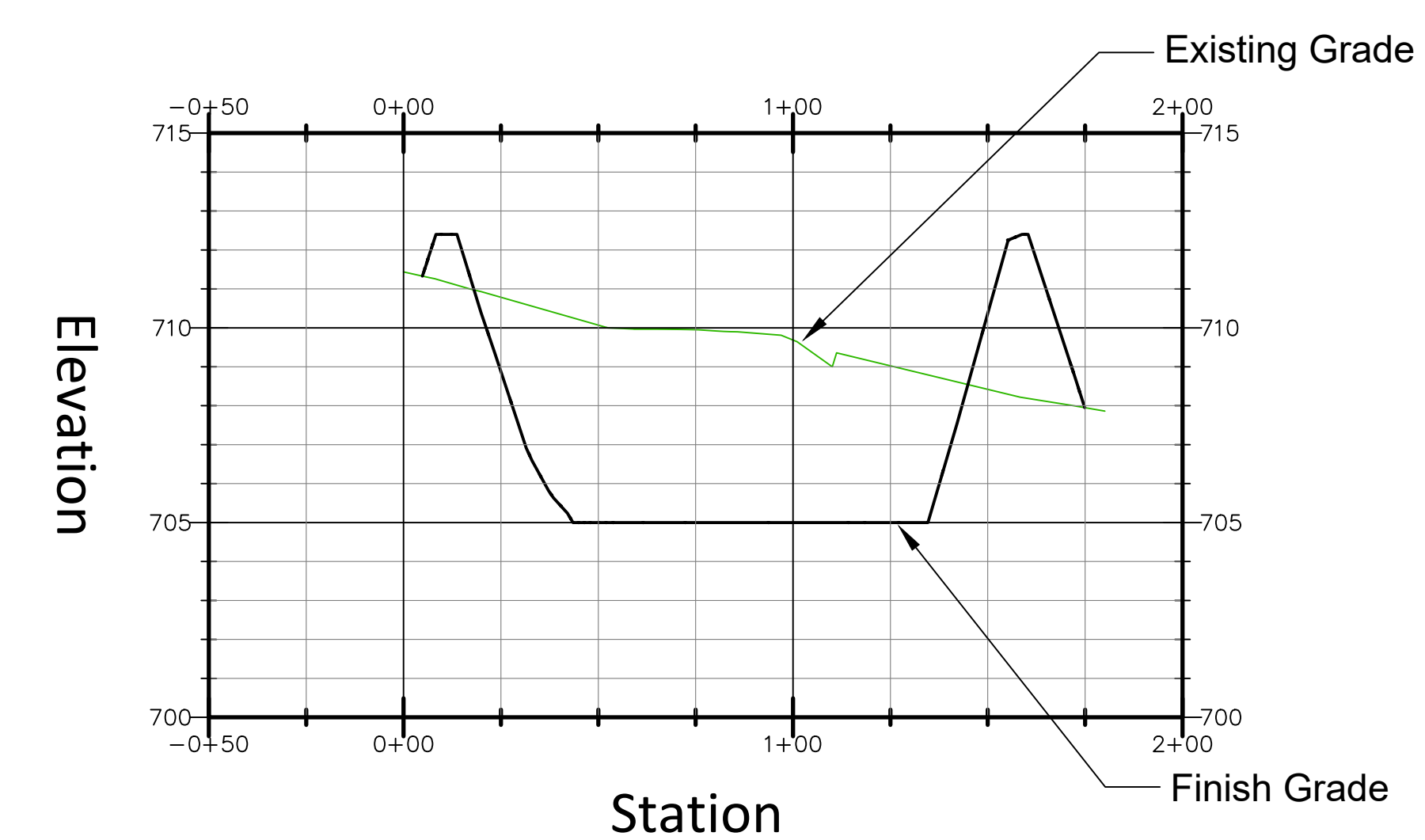
4 **Pond 2 Cross Section 2**
SCALE: Not To Scale REF. DWG. C-5

Pond 3 Cross Section



5 **Pond 3 Cross Section**
SCALE: Not To Scale REF. DWG. C-5

Pond 3 Cross Section 2



6 **Pond 3 Cross Section 2**
SCALE: Not To Scale REF. DWG. C-5

DWG: C:\MWE\mweec\mweec\Projects\Current\Magruder Quarry\Wright City MO\Magruder Quarry Master 21.dwg
SAVE DATE: 1/29/2026 9:18:39 AM PLOT DATE: 1/29/2026 9:19:58 AM

01/29/2026

Wright City Asphalt Plant Sewer Plan and Profile

1"=40ft

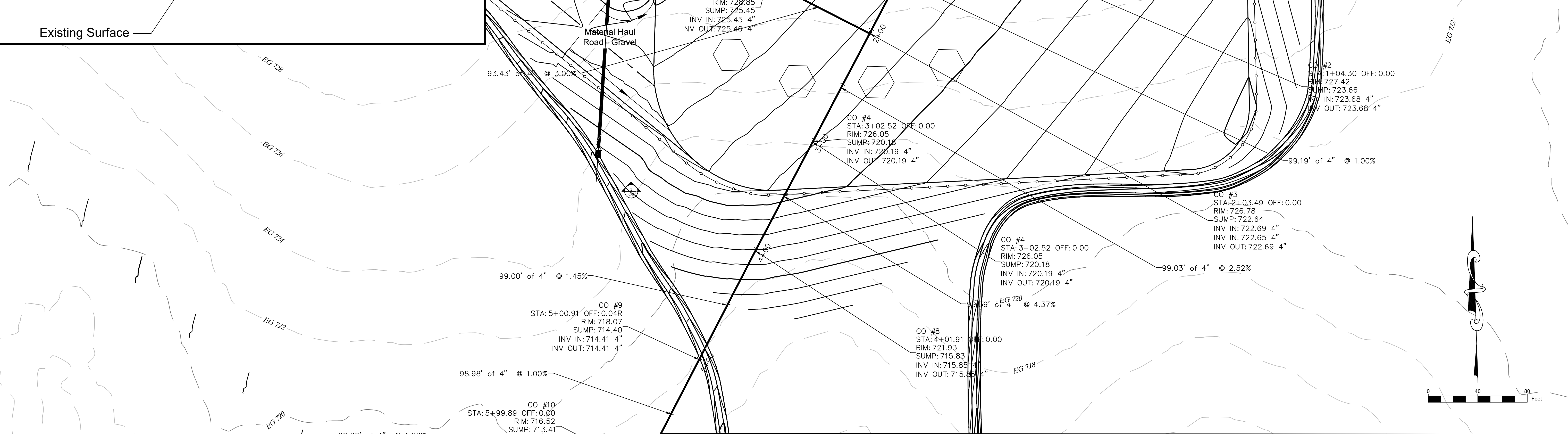
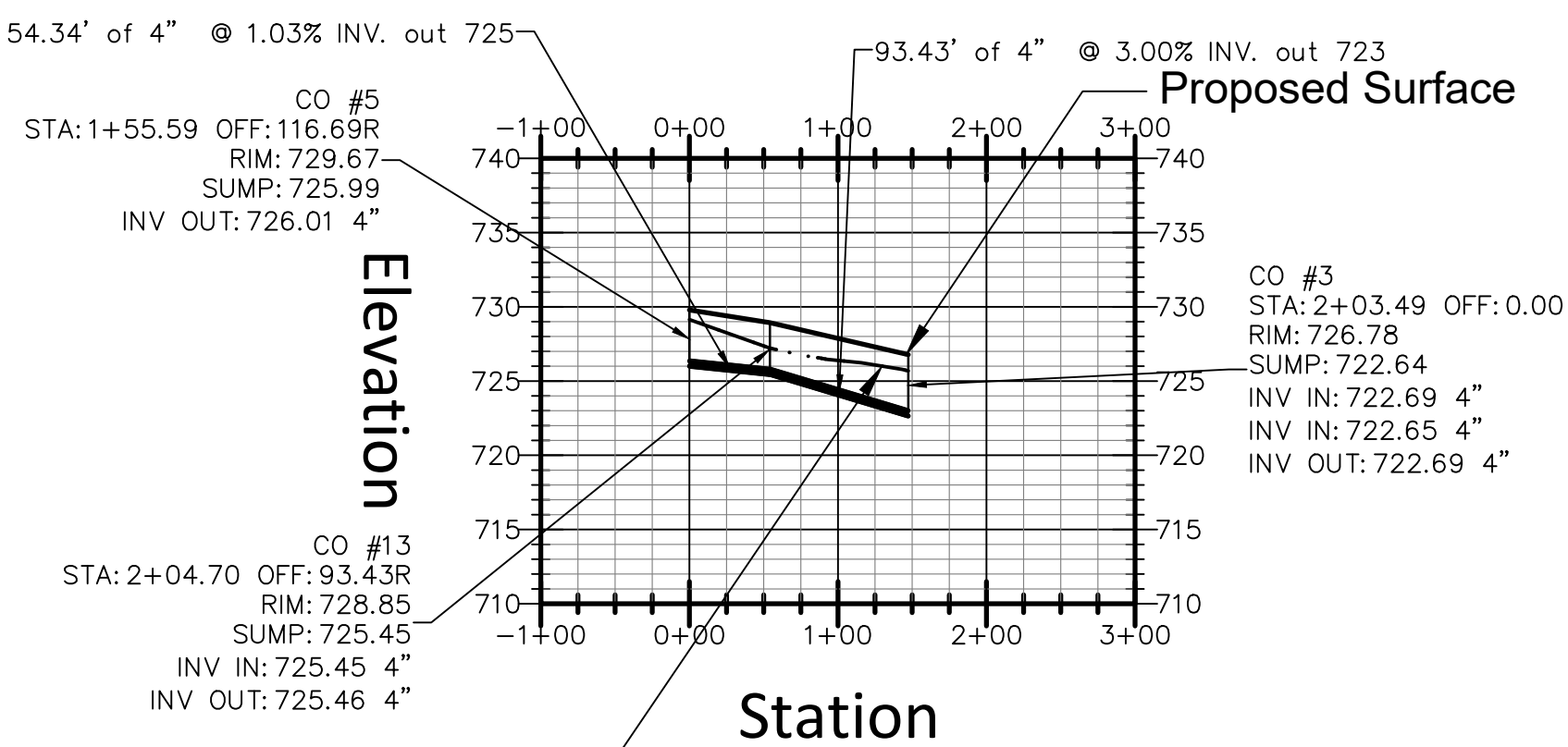


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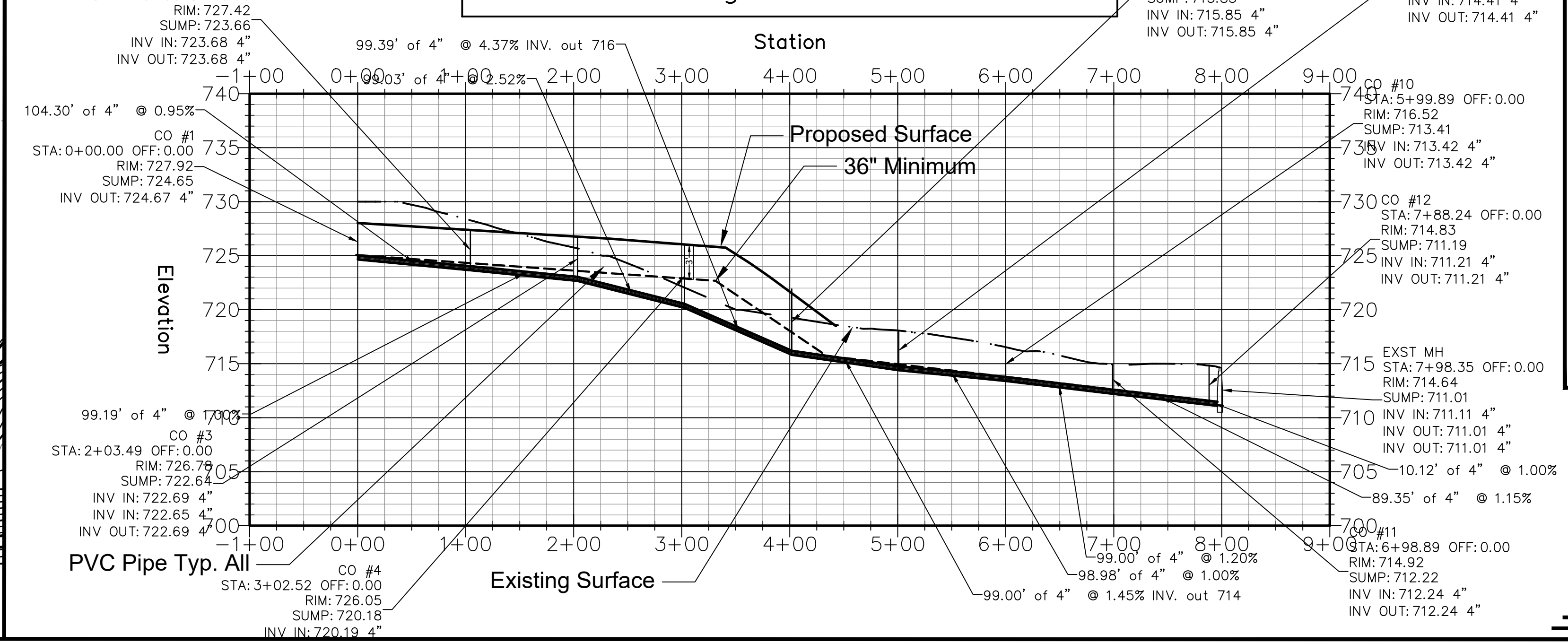
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Expires 12/31/2028

C-11

Sewer Lateral



Sewer Line Alignment Cross Section

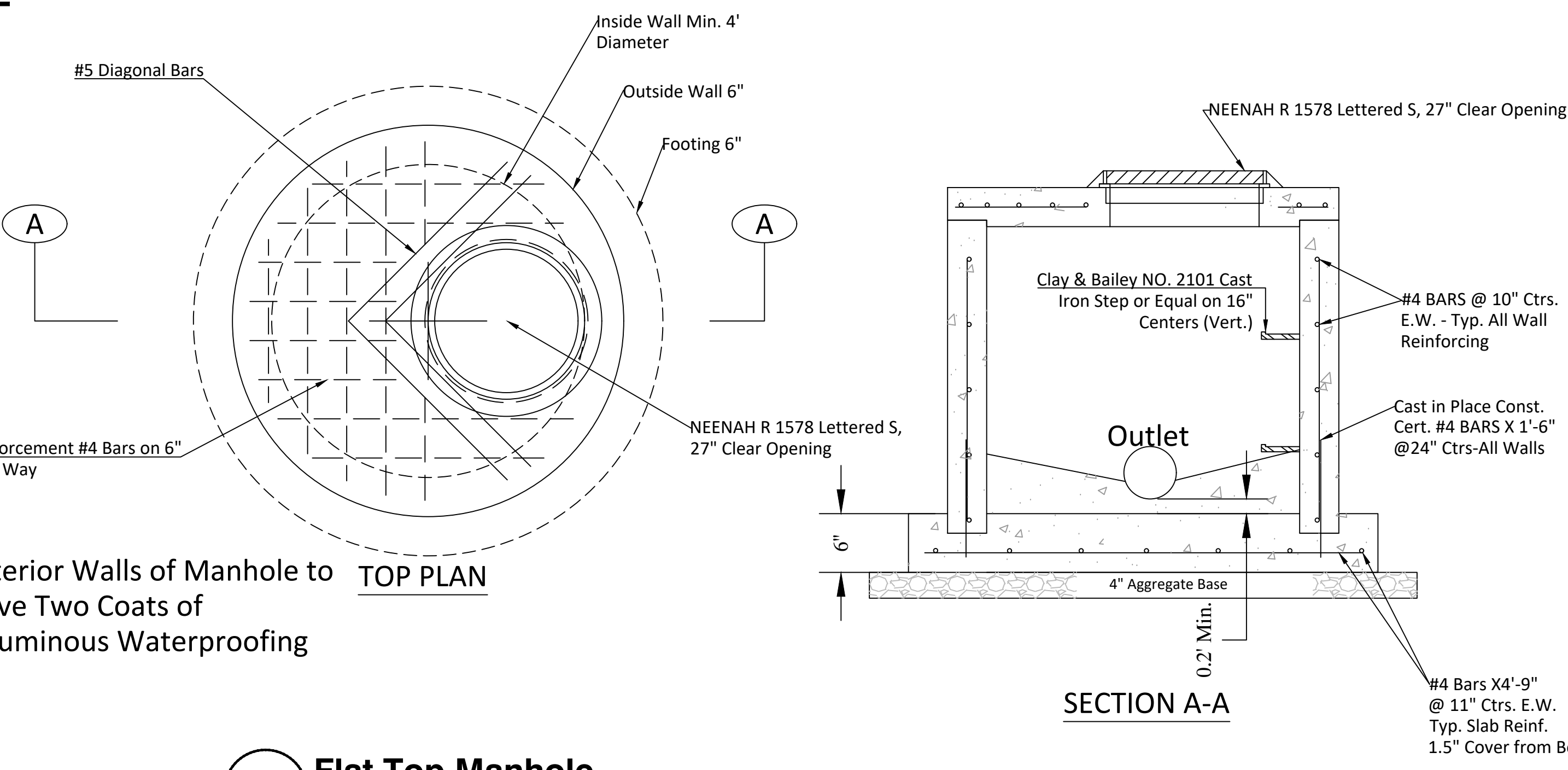


Wright City Asphalt Plant
Sewer Details



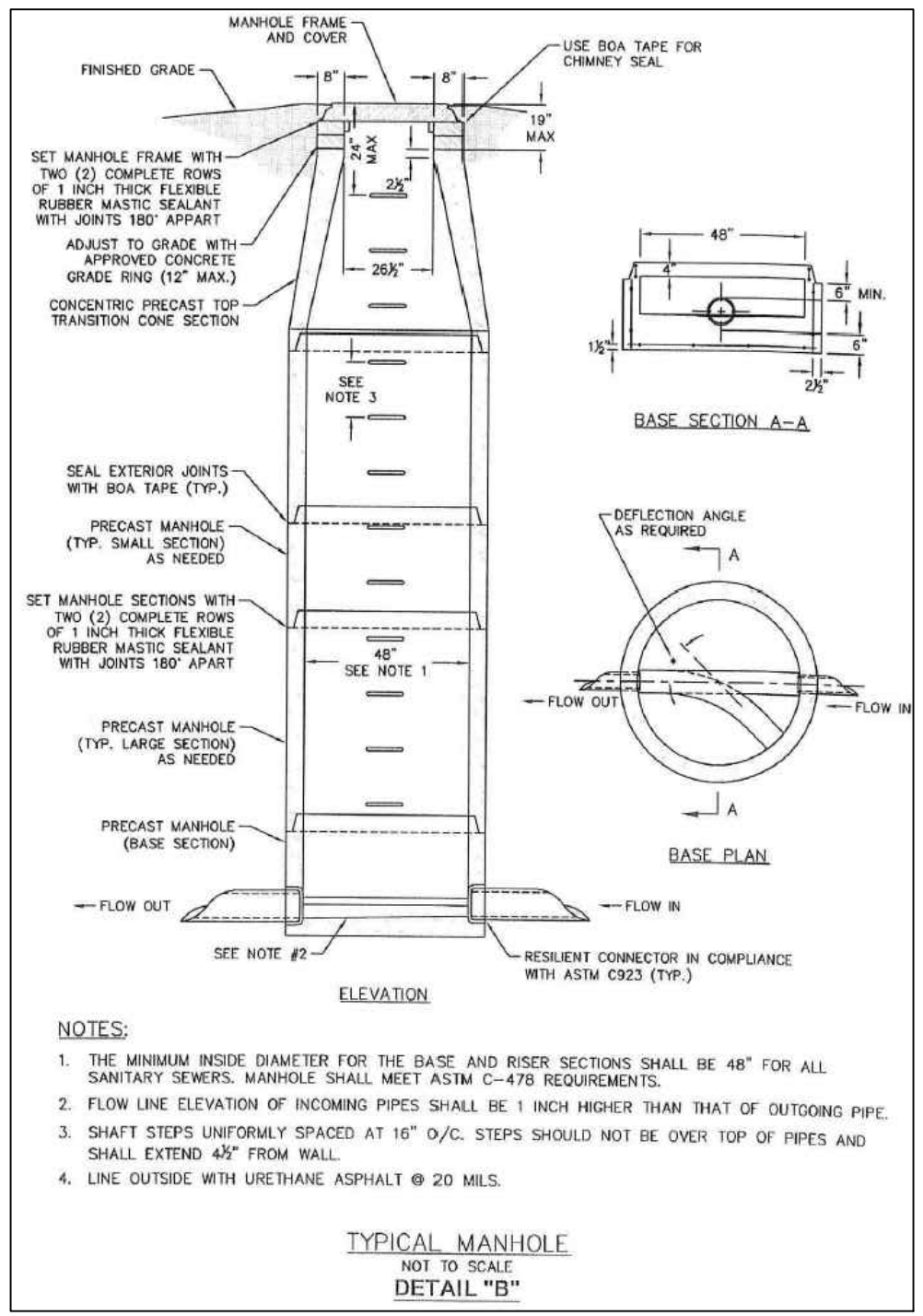
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Plot: 1/29/2026 9:20:10 AM
MO Corp: 2001015503
Expires 12/31/2028

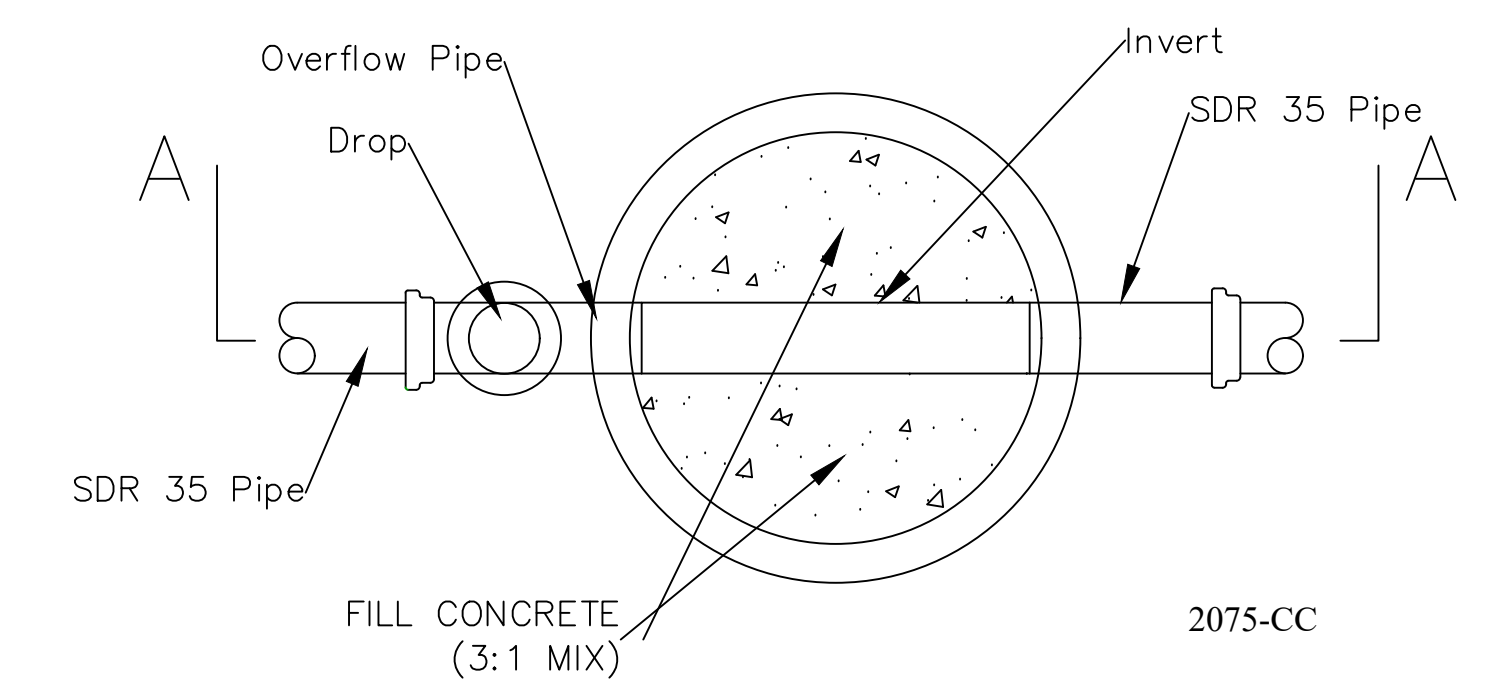
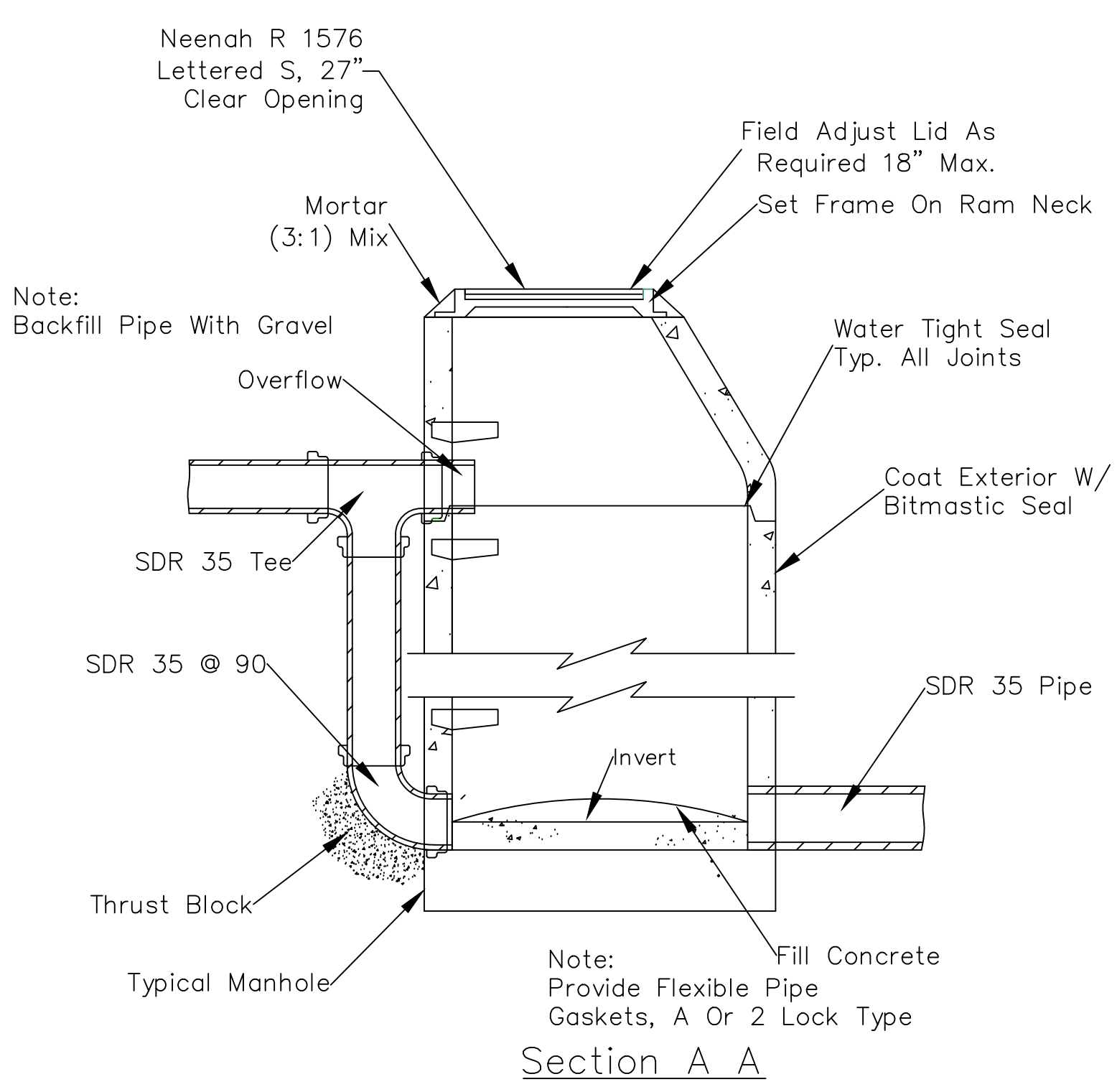
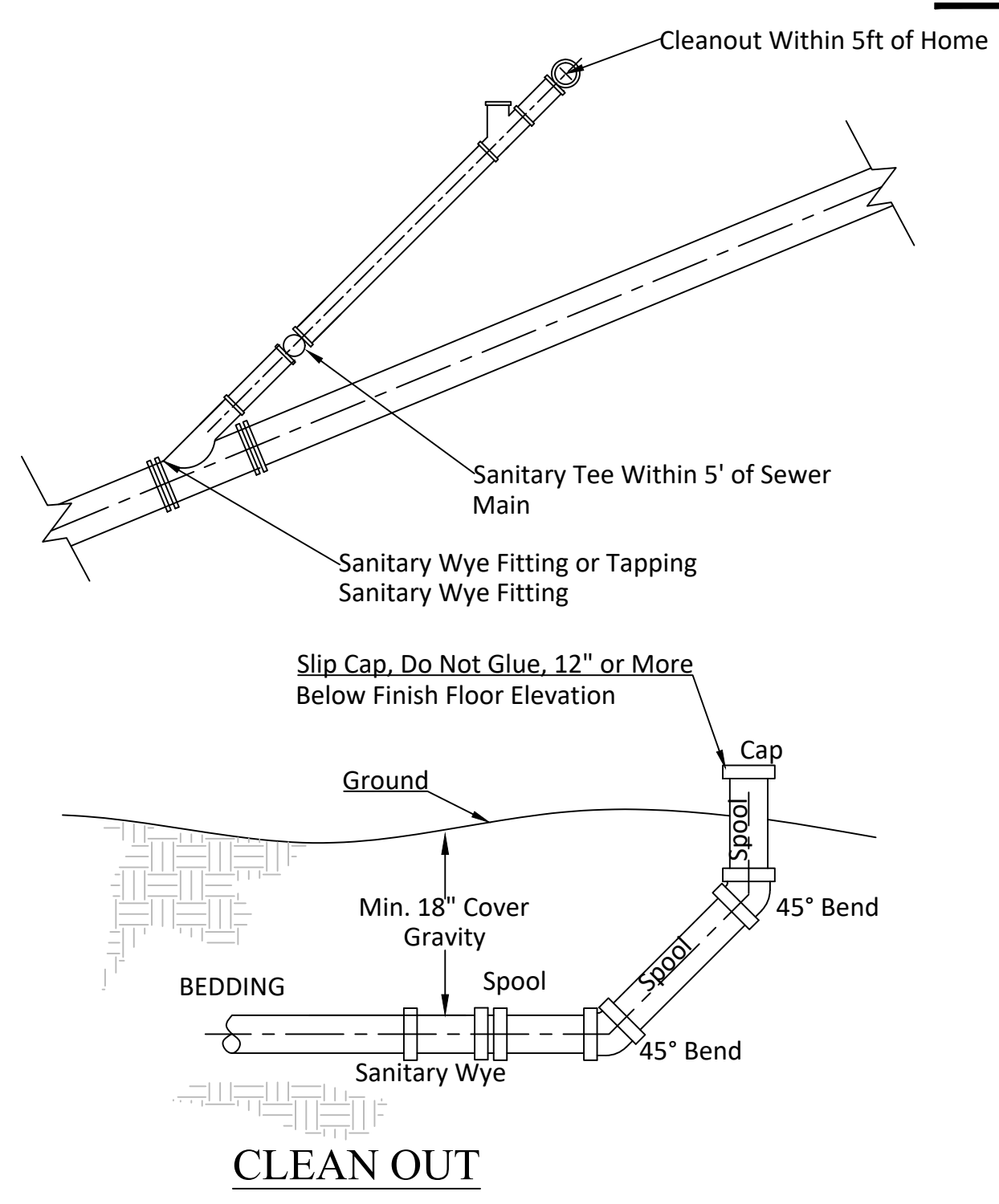


1 Flat Top Manhole
SCALE: N.T.S. REF. DWG. C-1

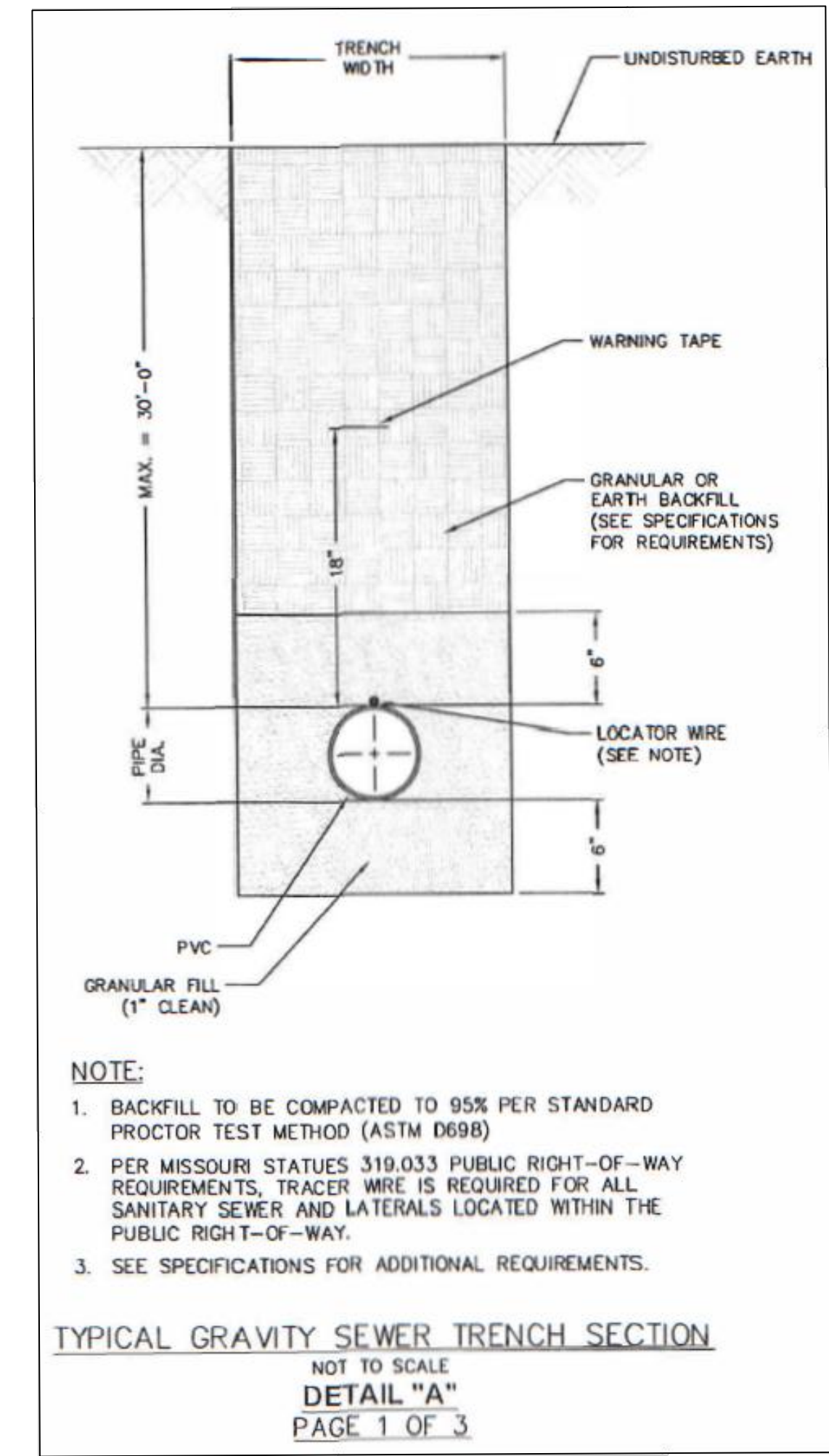
2 Typical Manhole
SCALE: N.T.S. REF. DWG. MULTI



3 Typical Residential Connection
SCALE: N.T.S. REF. DWG. MULTI



4 Typical Drop Manhole
SCALE: N.T.S. REF. DWG. MULTI



5 Gravity Sewer Trench
SCALE: N.T.S. REF. DWG. MULTI

- Sewer Notes Wright City, MO :
1. All work to be inspected by Engineer and St. Charles County Public Water Supply District #2.
 2. All materials to confirm to District.
 3. Min Bedding to be as required by District.
 4. Pressure pipe to be 2.5" AWWA C906, DR 9, CTS
 5. Pressure pipe to have a min 32" cover.
 6. Pressure pipe be separated to any water main and primary electric by 24".
 7. 6" Leads to be required at all cleanouts, manholes and valves.
 8. All pipes to be installed with detectable marking tape
 9. Tapping saddle and isolation valve at tap shall be conform to District standards.
 10. All gravity mains to be SDR 35, with neoprene gaskets.
 11. All sewer pipes to have a minimum of 36" of cover
 12. All new gravity mains and manholes to be water tested and mandrelled in accordance with project specifications when required. PVC gravity pipe and precast manholes inspected by engineer during construction will not be required to be tested.
 13. All testing to completed in the presence of the Engineer including tracer wire.
 14. Gravity mains inspected during installation will not be required to be tested.
 15. All connection to units to include a 6" clean out within 5ft of the unit, followed by a backflow preventor.
 16. All pipes to be installed with detectable marking tape, type III and insulated 14-gauge green copper tracer wire.
 17. Where possible install F.M. and G.M. in same ditch.
 18. See Lift Station Detail page for more information.
 19. See Architect for locations of lateral connection for buildings.
 20. All laterals to be laid with 2% min slope.
 21. MH's and other structures to be rated for HS20 load rating.
 22. All sanitary sewer mains, manholes, fittings and related items must be installed per the PWSD2 Guidelines and Specifications as approved by MODNR on July 30, 2015.
 23. Any proposed connections to the existing public sanitary sewer mains which states that the connection must be per the Water District's specifications.
 24. All lateral connections must be made per PWSD No. 2's specifications.
 25. The entire length of the sanitary sewer lateral must be inspected by PWSD No.2's personal.
 26. All sanitary sewer laterals are "private" and maintained by the property owners.
 27. All sanitary sewer laterals are required to be schedule 35 PVC pipe.
 28. Any sanitary sewer lateral that is installed at a depth greater than 15' deep is required to be a schedule 40 PVC pipe.
 29. All sanitary sewer laterals are prohibited from containing bends greater than a 45 degree angle.

TEMPORARY/PERMANENT SEEDING SPECS.

Provide temporary seeding as needed*** at the following rates: limestone @ 1 ton/ac.
50-50-50 fertilizer @ 150 lbs./ac.
Seed: annual rye grass @ 40 lbs./ac.
Mulching: hay @ 3 tons/ac.
Provide permanent seeding on all disturbed non-impervious areas at the following rates limestone @ 6 tons/ac.
100-200-200 fertilizer @ 500 lbs./ac.
Slopes 3:1 or flatter seed: tall fescue @ 79 lbs./ac.
Perennial rye grass @ 19 lbs./ac.
Slopes 2:1 seed: crown vetch @15 lbs./ac.
Perennial rye grass @ 25 lbs./ac.
Mulching: hay or straw @ 6 tons/ac.
***use temporary seeding if non-impervious areas are left exposed for more than twenty days

TOPSOIL NOTE:

Replace all non-impervious areas with min. 3" topsoil prior to seeding if possible.
Test and lime all soils as required by lavatory suggested application rates.
Existing organic soils to be stockpiled for future use import of topsoil not required provided all efforts are made to save existing soils.

EROSION & SEDIMENTATION CONTROL PLAN NOTES

- Only limited disturbance will be permitted to provide access to sediment trap for grading and acquiring borrow to construct those controls.
- Erosion and sedimentation controls must be constructed, stabilized, and functional before site disturbance within the tributary areas of those controls.
- After final site stabilization has been achieved, temporary erosion and sedimentation controls must be removed areas disturbed during removal of the controls must be stabilized immediately.
- Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2:1 of flatter.
- Any disturbed area on which activity has ceased and which will remain exposed for more than 20 days must be stabilized immediately. During non-germinating periods, mulch must be applied at the recommended rates. Disturbed areas which are not at finish grade and which will be redisturbed within 1 year may be stabilized in accordance with temporary seeding specifications. Disturbed areas which are either at finish grade or will not be redisturbed within 1 year must be stabilized in accordance with permanent seeding specifications.
- Diversions, channels, sedimentation basins, sediment traps, and stockpiles must be stabilized immediately.
- Until the site is stabilized, all erosion and sedimentation must be maintained properly. Maintenance must include inspections of all erosion and sedimentation control after each runoff event on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching, and renetting must be performed immediately.

Sediment basin:
 $V = \text{Area} \times \text{Depth} \times \text{Runoff Coefficient}$
Area = 12.4 acres
Depth = 2 year 24 hour storm: 3.17 inches of rain
Runoff Coefficient = 0.5
Required Volume = $12.4 \times 3.17 \times 0.5 = 19.7$ acre inches or 71,344 ft³

Pond to be 5ft deep
Cross sectional area at 705 Elevation: 15,353 ft²
Cross Section Area at 710 Elevation: 20,747 ft²
Volume to be provided: 90,250 ft³ which exceeds the 71,344 ft³ requirement

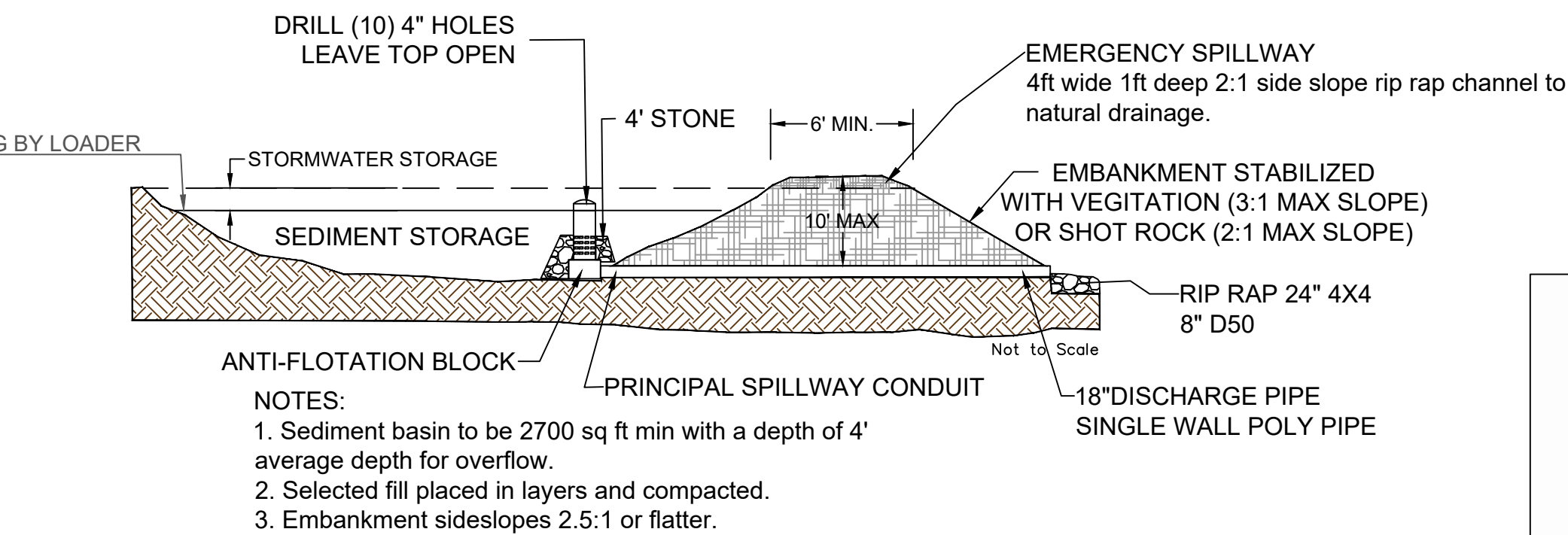
MAINTENANCE SCHEDULE

The filter fabric fence will be cleaned and repaired as required to keep the fence functional. Deposits will be removed behind the fence when the accumulations reach 1/2 the above ground height of the fence. Undermining or erosion of the toe anchor will be repaired immediately with compacted back fill material. The sediment trap will be cleaned when the sediment reaches 1/3 the depth of the trap or when entrapped water appears to stop filtering through the media. A construction stake will be placed in the trap to notify the contractor the clean out elevation. The thickness of the rock construction entrance will be constantly maintained on the site for this purpose. At the end of each construction day all sediment deposited on the public roadway will be removed & to the construction site. The public roadway will be kept clean and clear from all sediment and debris. Sediment deposits removed from all sedimentation and erosion control devices will be stockpiled at a level area located within the project limits as determined by the contractor. The sediment stockpile will be surrounded with filter fabric fence to prevent spreading of the material during precipitation events.

See storm water pollution prevention plan

Fueling, Hazardous Wastes, & Paints Notes

- Fuel Tanks:** Temporary fuel tanks shall be allowed only if installed in an approved containment area with a berm.
- Fueling & Servicing:** No fueling, servicing, maintenance, or repair of equipment or machinery may be done within 50 feet of a stream, or within 100 feet of a classified stream, losing stream or sinkhole.
- Other Discharges:** Water for pressure testing sanitary sewers, flushing water lines, etc., may be discharged only in approved areas.
- Hazardous products:** Products will be kept in original containers unless they are not re-sealable. If product is transferred to a new container, it must be properly marked and labeled.
 - Original labels and material safety data will be retained.
 - If surplus product must be disposed of, disposal must be done in accordance with State law.
 - In the event soil contamination or hazardous substances are discovered at the site during land disturbance activities, the permittee shall notify MDNR in writing.
- Paint:** All paint containers will be tightly sealed and stored when not required for use. Excess paint will not be dumped into the storm sewer system but will be properly disposed of according to manufacturer's instructions and State regulations.

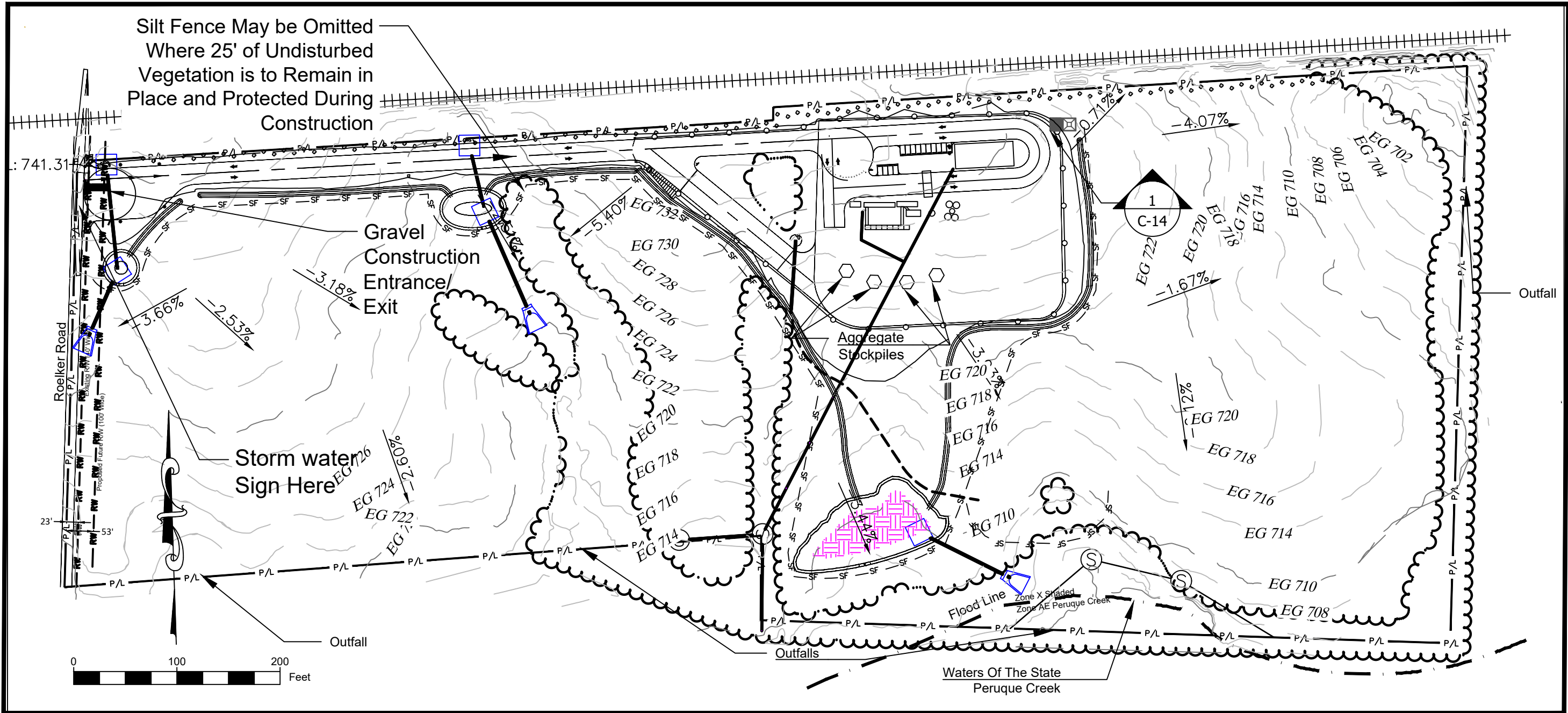


1 TYPICAL SEDIMENT BASIN
SCALE: Not To Scale REF. DWG. MULTI

Waters of the State
An approximately 320-Linear Foot northern bend of Peruque Creek is located along the southern edge of the Project Site. A wooded riparian approximately 150-foot wide is located on both sides of Peruque Creek at this location. The channel of Peruque Creek at this location is approximately 15 to 20 feet wide and 12 to 18 inches deep at the ordinary high-water mark. The substrate is comprised of gravel, cobble, and bedrock. Riffle and pool features were present.

Based on the above-described channel and flow characteristics, the segment of Peruque Creek located on the Project Site is a 3rd order perennial stream and would likely be classified as a relatively permanent body of water. This segment would, therefore, likely be considered WOTS under paragraph (a)(3) of the amended rule.

Please see Storm Water Pollution Prevention Plan Document for additional detail concerning on site storage.

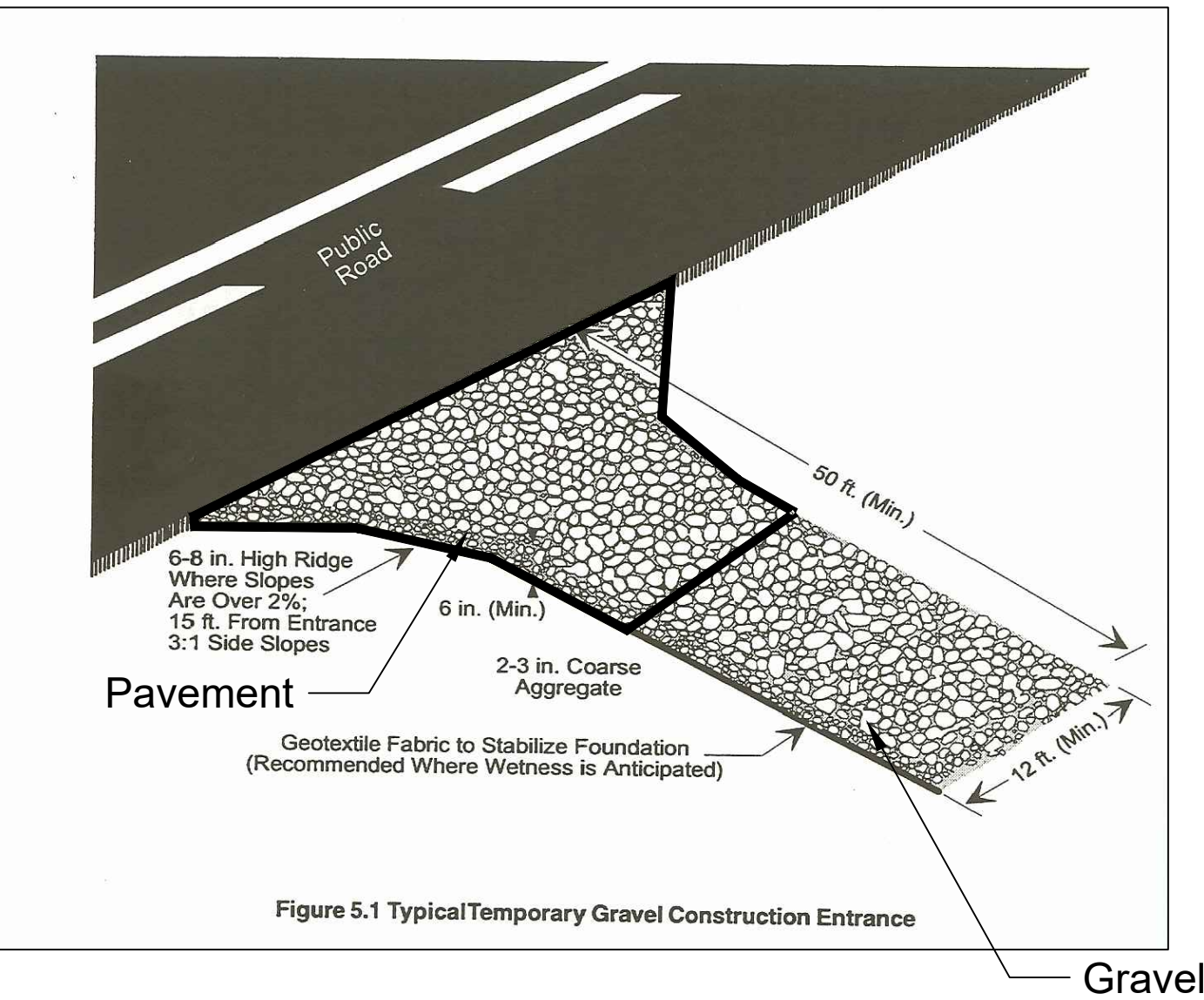


GENERAL NOTES

The public roadway will be kept clean and clear from all sediment and debris. The limit of exposed area will be controlled by permanent seeding/mulching of all non-impervious areas immediately after grading operations are completed. Clear and grub to the limit of the area to be developed. All temporary erosion controls are to remain in place and functional, until there is at least a uniform, 70% vegetative cover over the entire disturbed area.

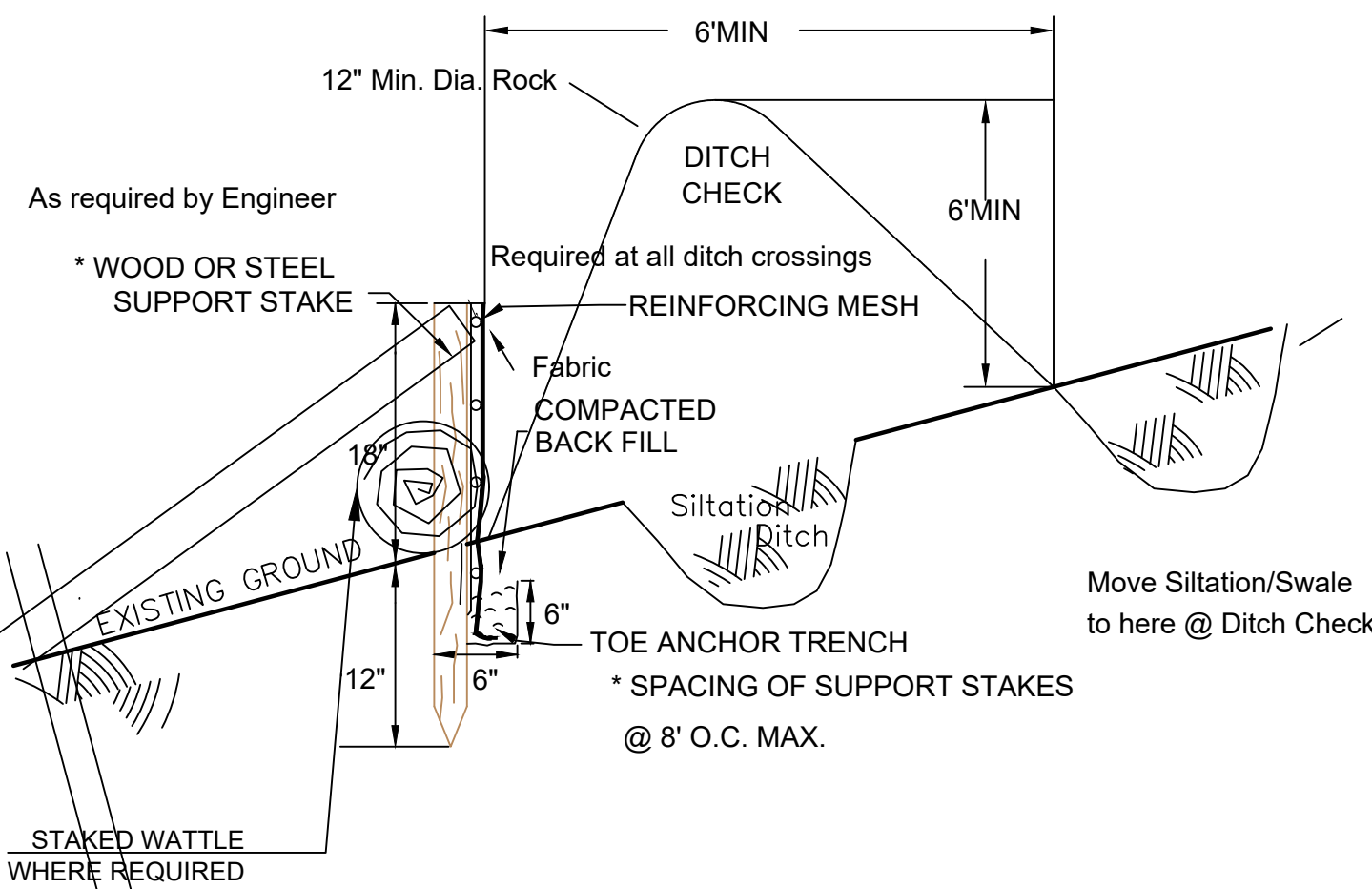
INSPECTION SCHEDULE

All temporary and permanent erosion and sedimentation control devices will be inspected weekly and after every precipitation event by a forman -in-charge representing the contractor performing the work. Inspection must be documented in and retained for submission to missouri dnr.

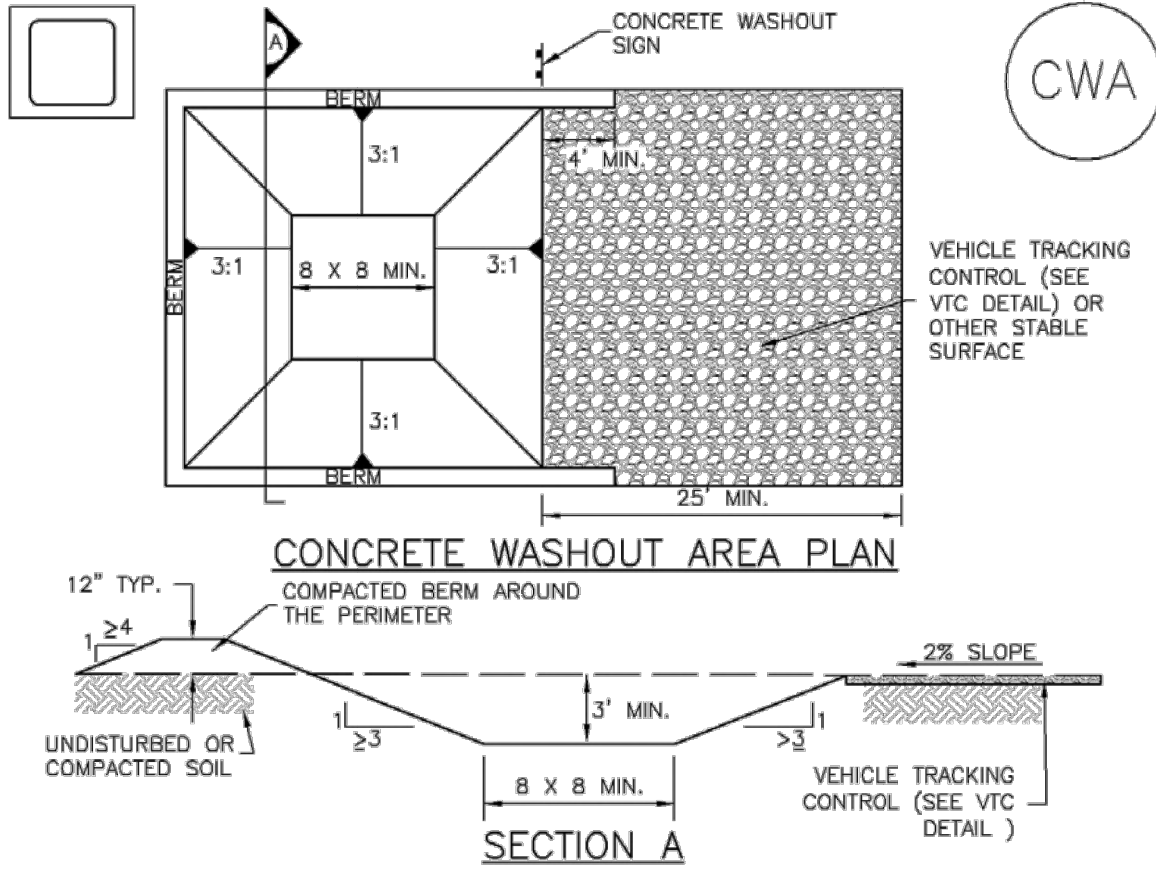


2 Construction Entrance
SCALE: Not To Scale REF. DWG. MULTI

- LEGEND
- Silt Fence
 - Property Line
 - Swale to Drain
 - Sediment Basin
 - Existing Manholes



Concrete Washout Area (CWA) MM-1



- CWA-1. CONCRETE WASHOUT AREA**
- CWA INSTALLATION NOTES**
1. SEE PLAN VIEW FOR:
-CWA INSTALLATION LOCATION.
 2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINER ABOVE GROUND STORAGE ARE SHOULD BE USED.
 3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
 4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
 5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
 6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
 7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
 8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

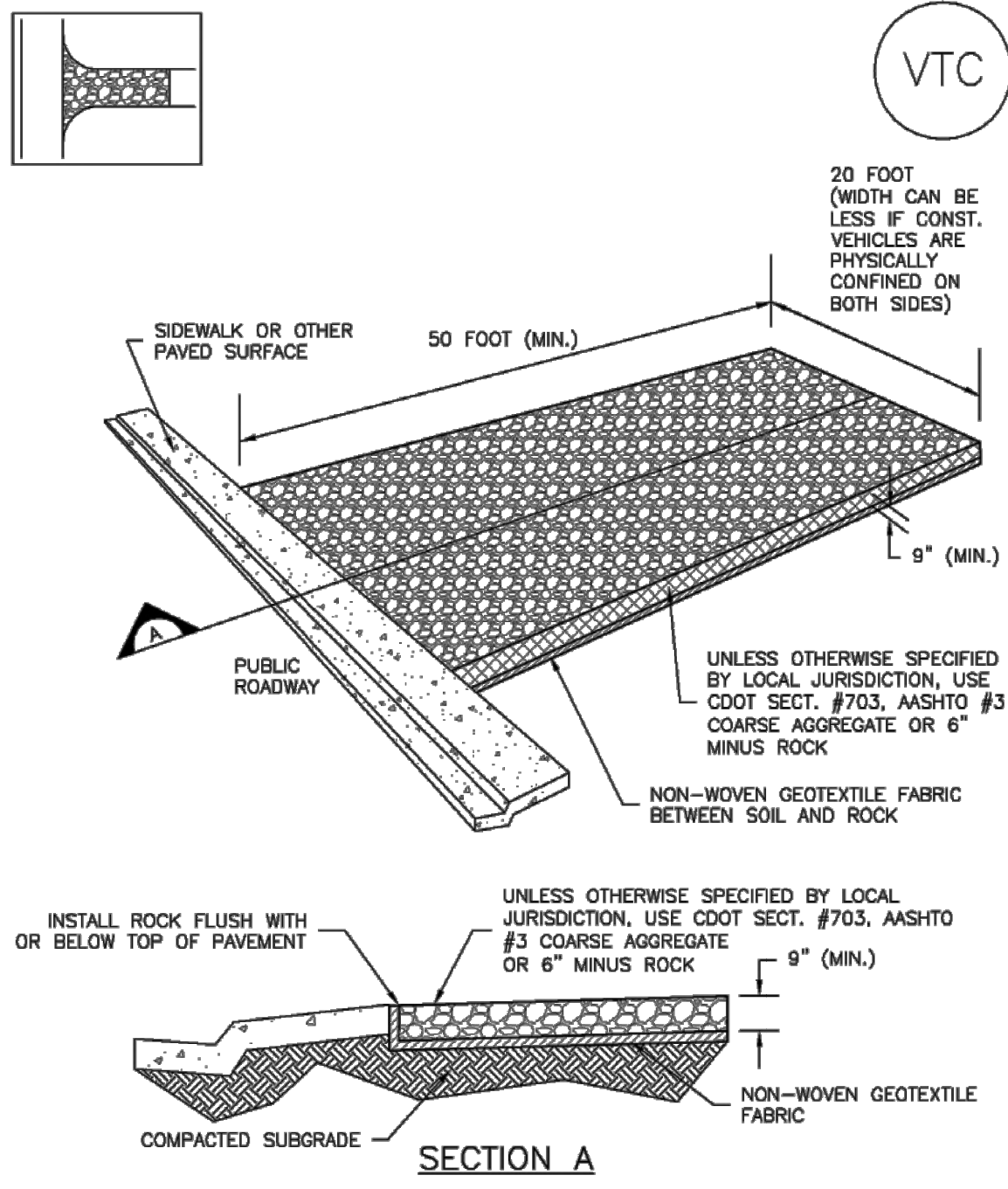
November 2010 Urban Drainage and Flood Control District CWA-3
Urban Storm Drainage Criteria Manual Volume 3

Concrete Washout Area (CWA) MM-1

- CWA MAINTENANCE NOTES**
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
 5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
 6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
 7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
- (DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD).
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

CWA-4 Urban Drainage and Flood Control District November 2010
Urban Storm Drainage Criteria Manual Volume 3

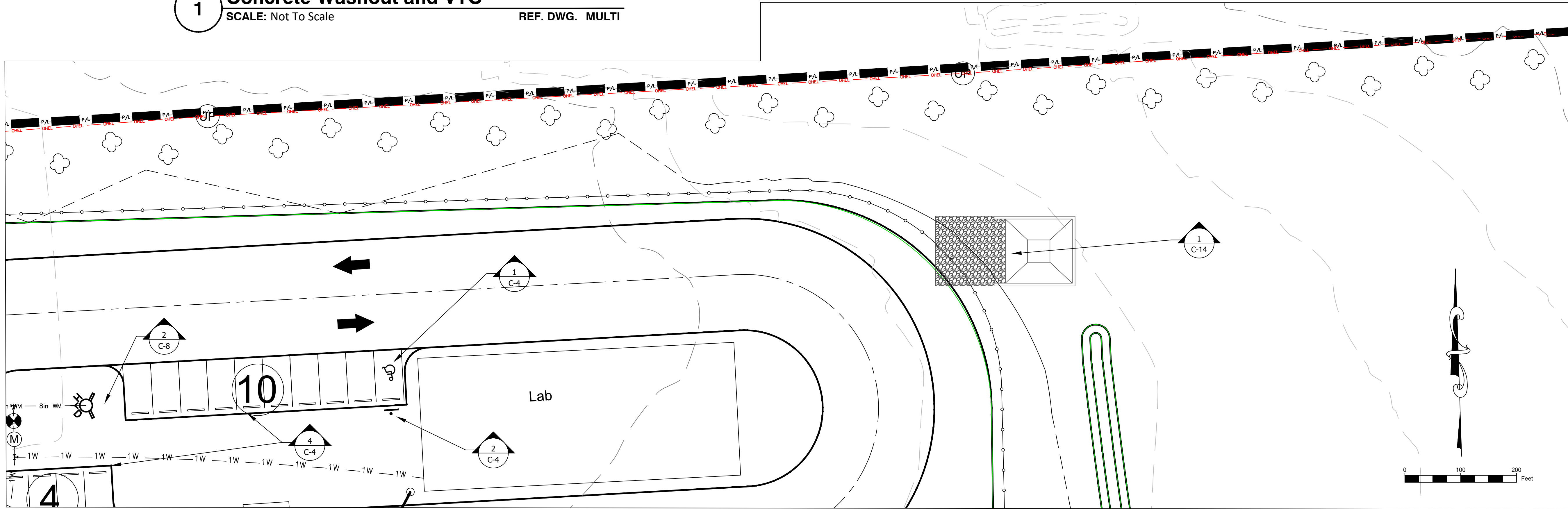
Vehicle Tracking Control (VTC) SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

November 2010 Urban Drainage and Flood Control District VTC-3
Urban Storm Drainage Criteria Manual Volume 3

1 Concrete Washout and VTC
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C-14