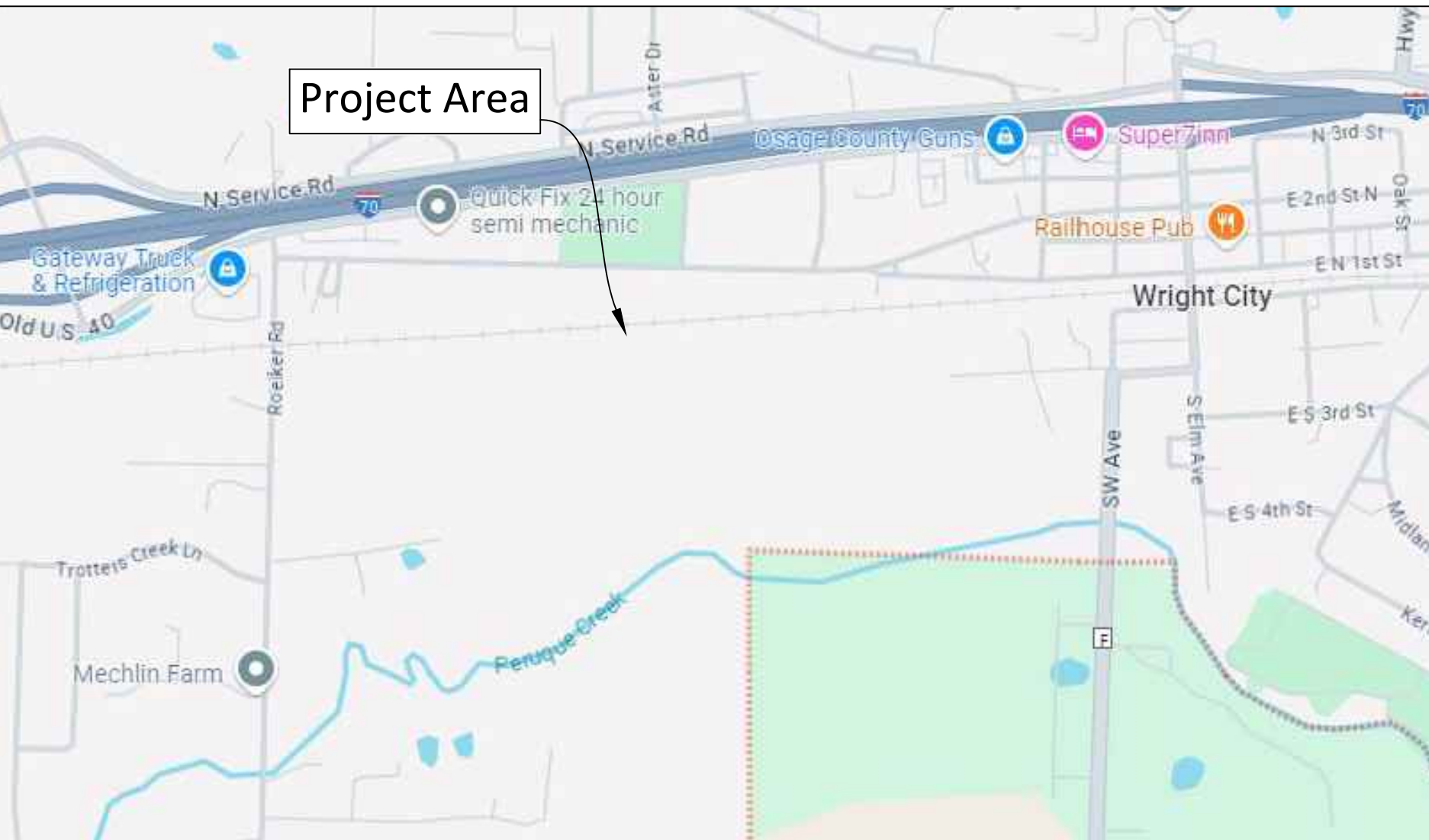
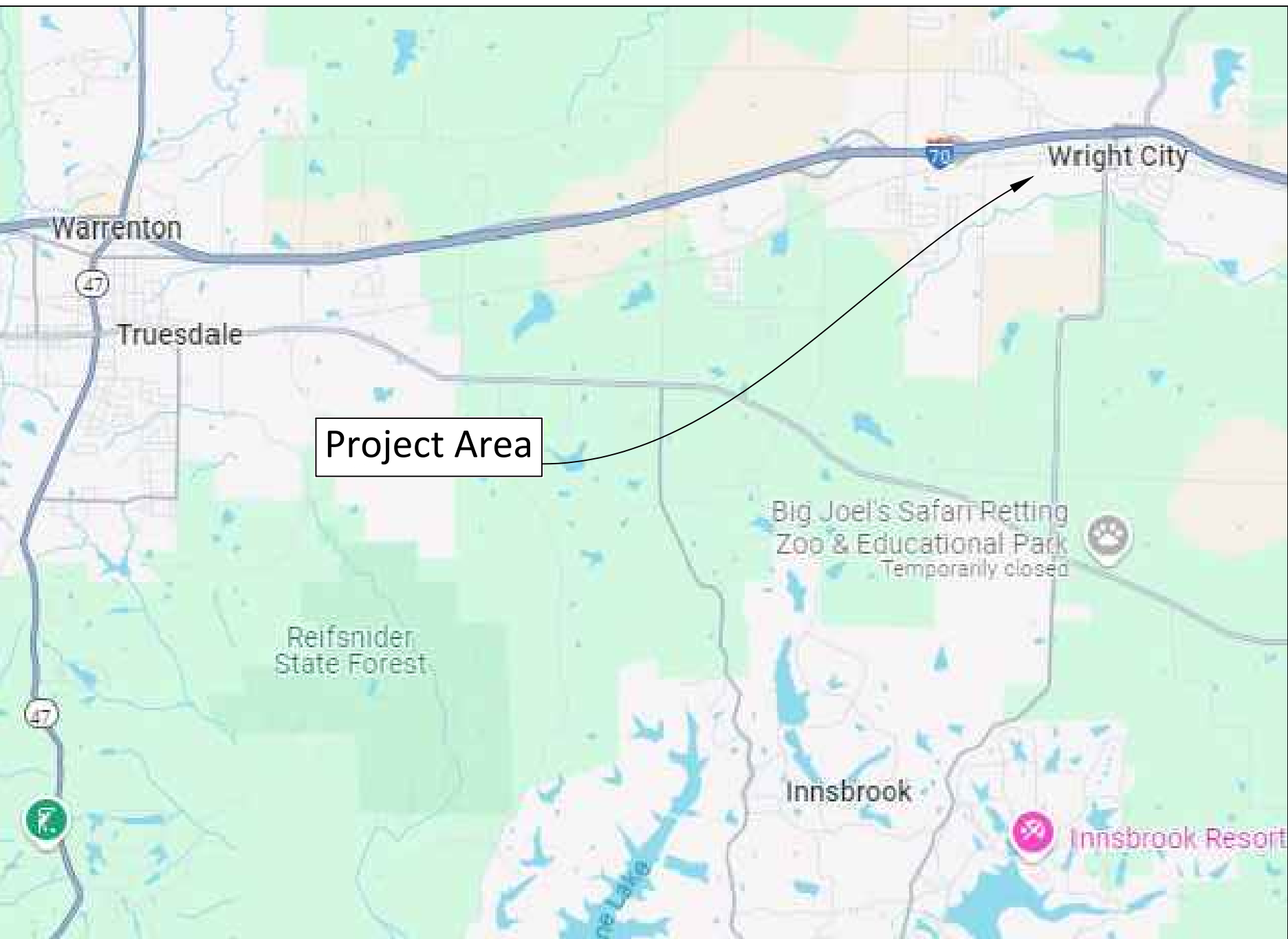


Directions to project:



Civil Plans for Magruder Asphalt Plant in Wright City

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

by



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



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 Sewer Plan and Profile
11. C-10 Sewer Details
12. C-11 SWPPP

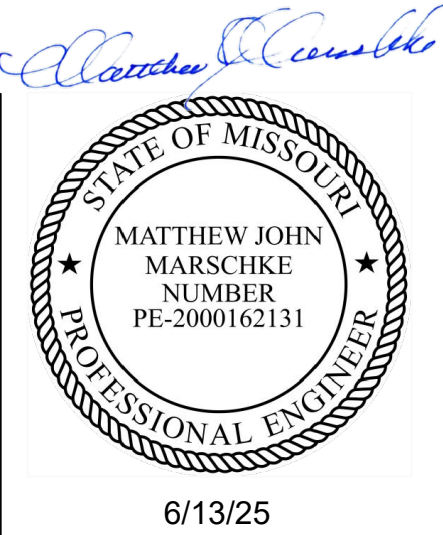


NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES OR APPURTENANCES PRIOR TO COMMENCING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS ARE FOR REFERENCE ONLY, AND THEIR ACCURACY AND COMPLETENESS ARE NOT GUARANTEED. CONTRACTOR SHALL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

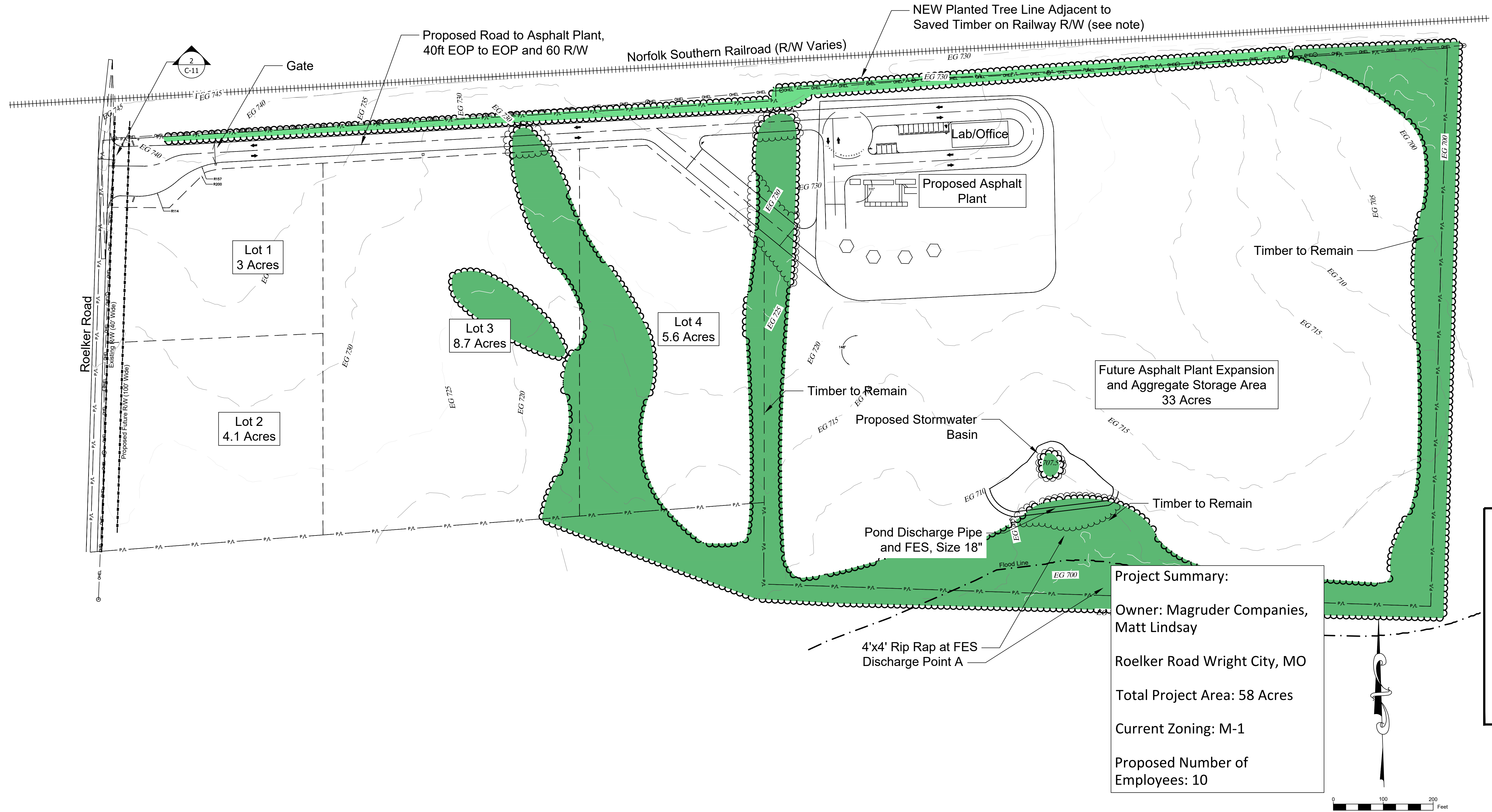
- Legend:
- Proposed Lot Lines
 - Existing Property Limit
 - Existing Contour Major
 - Existing Contour Minor
 - Proposed Contour Major
 - Proposed Contour Minor
 - Railway
 - Tree Line
 - Right of Way
 - Overhead Elec. Line

Landscaping Notes:

Area 1: Plant 6" Caliper Evergreen Species: any evergreen listed on Plantnative.org for Missouri.



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



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Plot: 6/13/2025 11:55:00 AM
MO Corp: 2001015503
Expires 12/31/2025

C-1

Wright City Asphalt Plant Site Plan 1"=100ft



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C-2

Stormwater Design Notes:

Pre-Existing Conditions

Pasture and Timber: 58 acres

No Impervious Surfaces

Existing Flow Rate:
2yr-55.38/10yr-130.02/100yr-267.29 CFS

Proposed Conditions

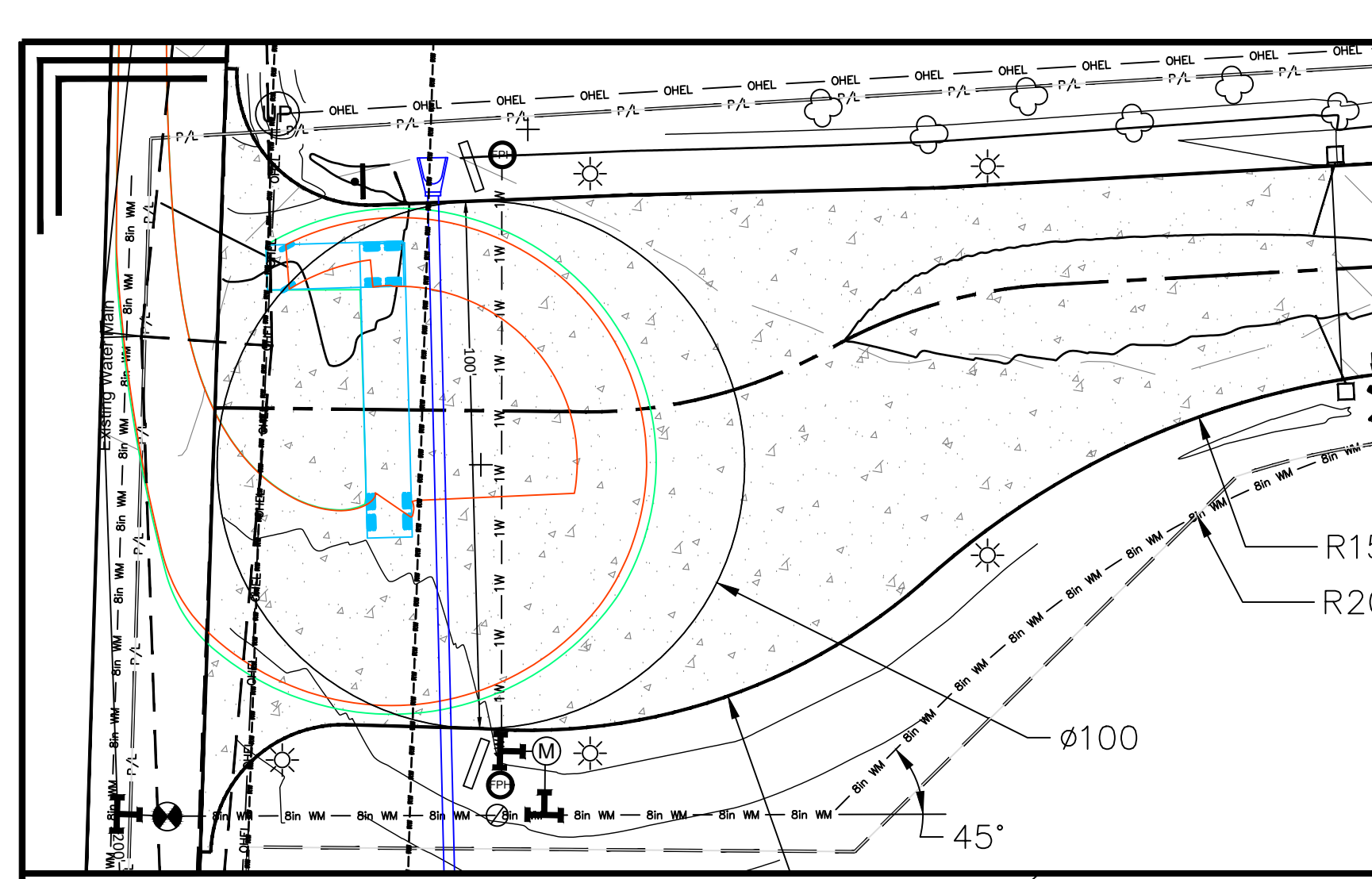
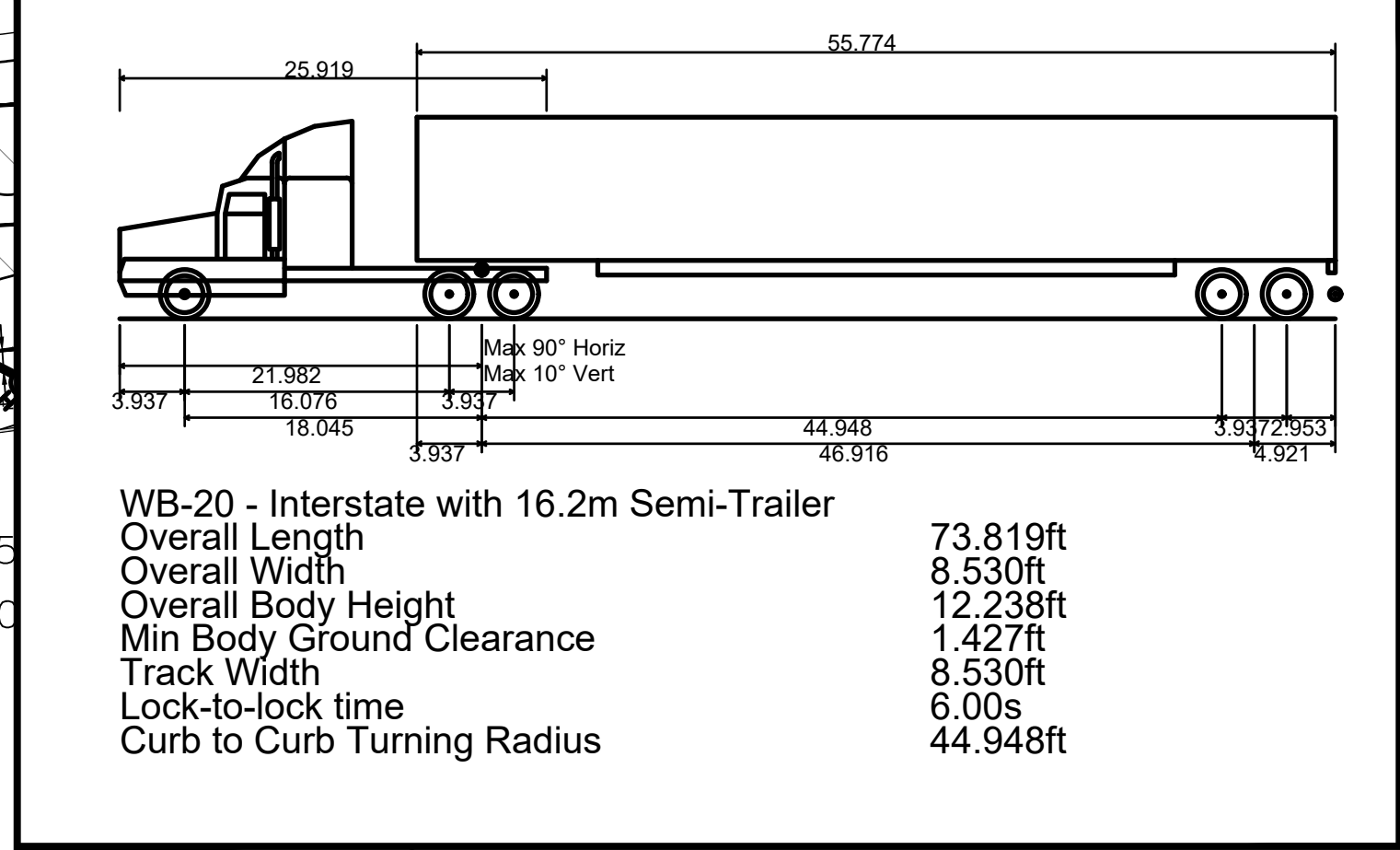
Impervious Area: 6.2 acres
(Concrete, Asphalt, Gravel Lots, and Roofs)

Post Development without Detention
2yr-62.06/10yr-137.54/100yr-274.03 CFS

With Detention Pond, Post Development Flow is
2yr-49.59/10yr-115.60/100yr-267.17 CFS

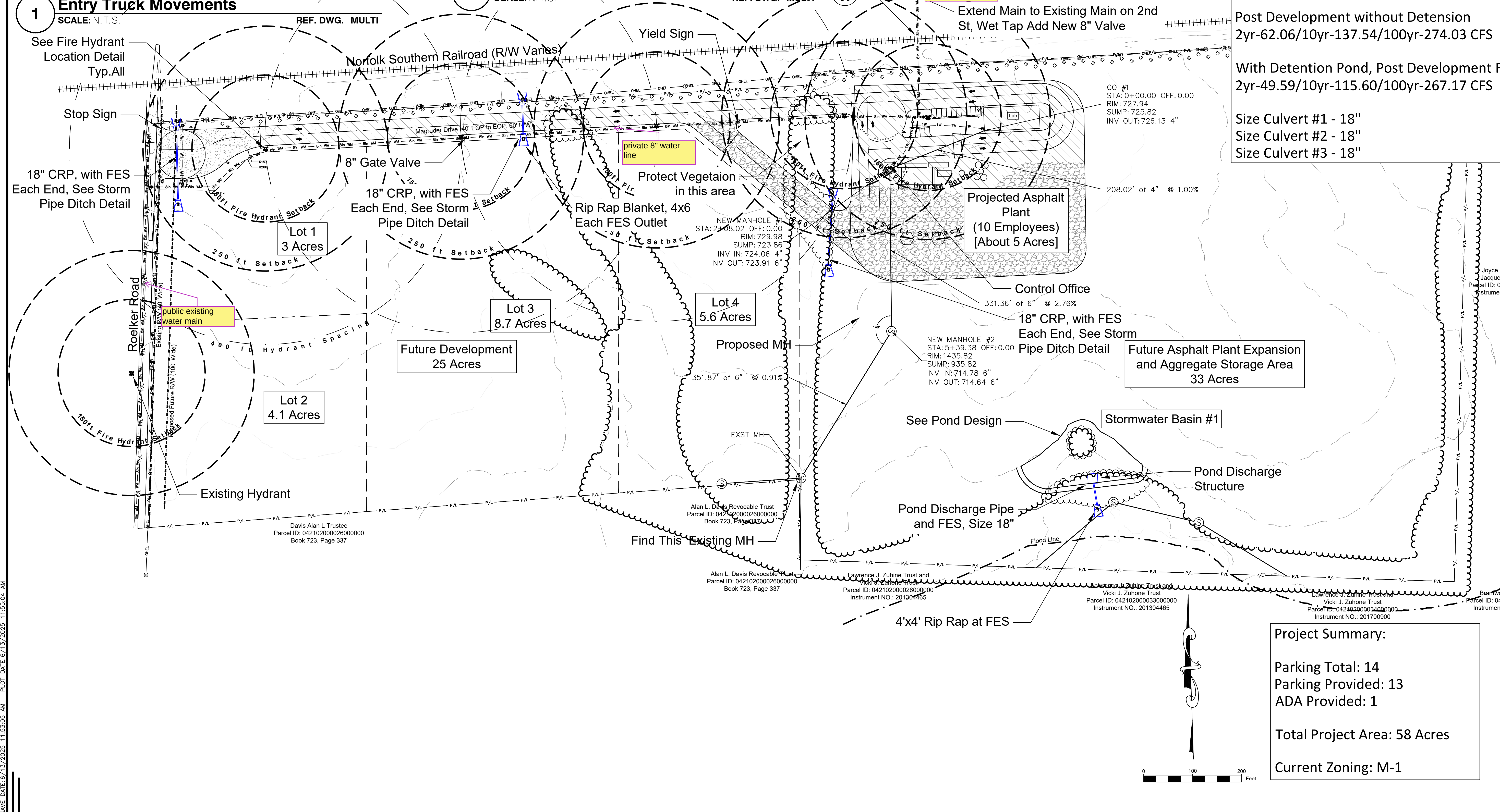
Size Culvert #1 - 18"
Size Culvert #2 - 18"
Size Culvert #3 - 18"

- 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



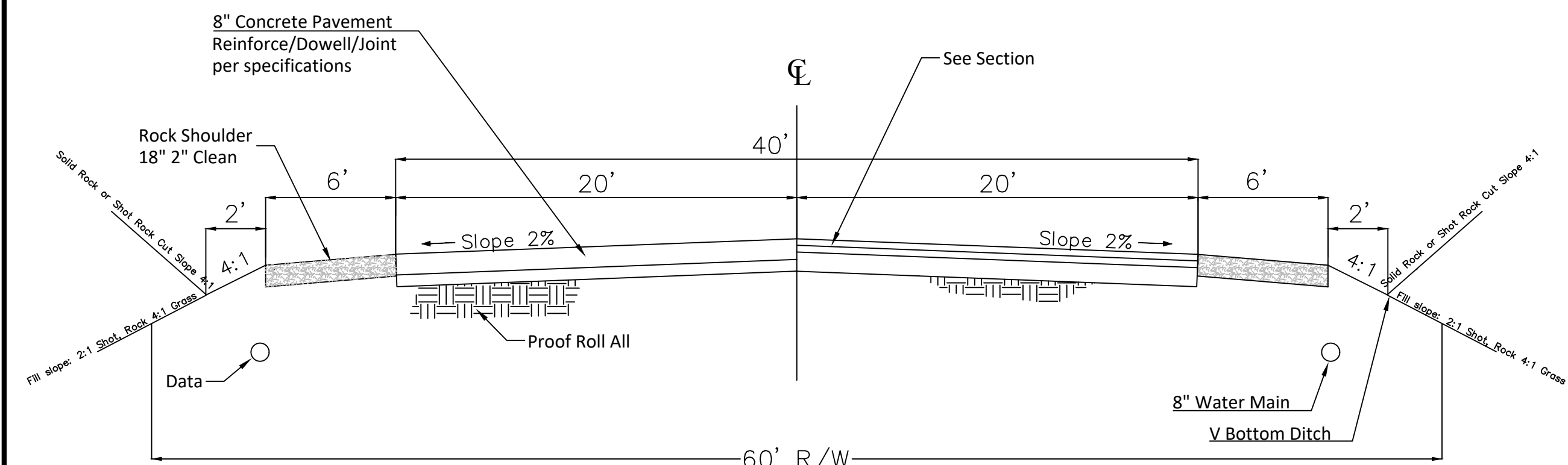
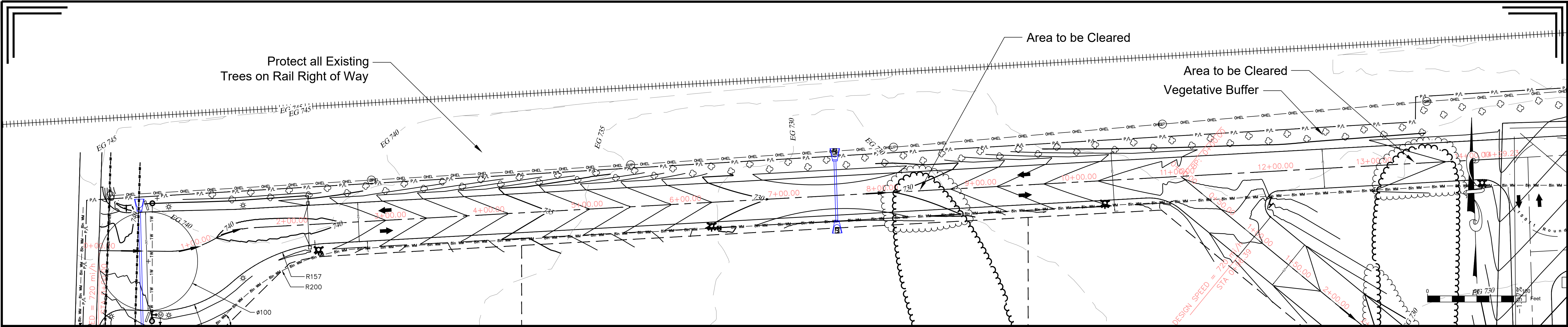
1 Entry Truck Movements SCALE: N.T.S.

2 DESIGN VEHICLE PROFILE SCALE: N.T.S.



DWG: C:\VMEC\mweecus\Marschke Engineering - Documents\Projects\Current\Wright City MO\Magruder Quarry Master 7-Luke.dwg
SAVE DATE: 6/13/2025 11:53:05 AM PLOT DATE: 6/13/2025 11:55:04 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

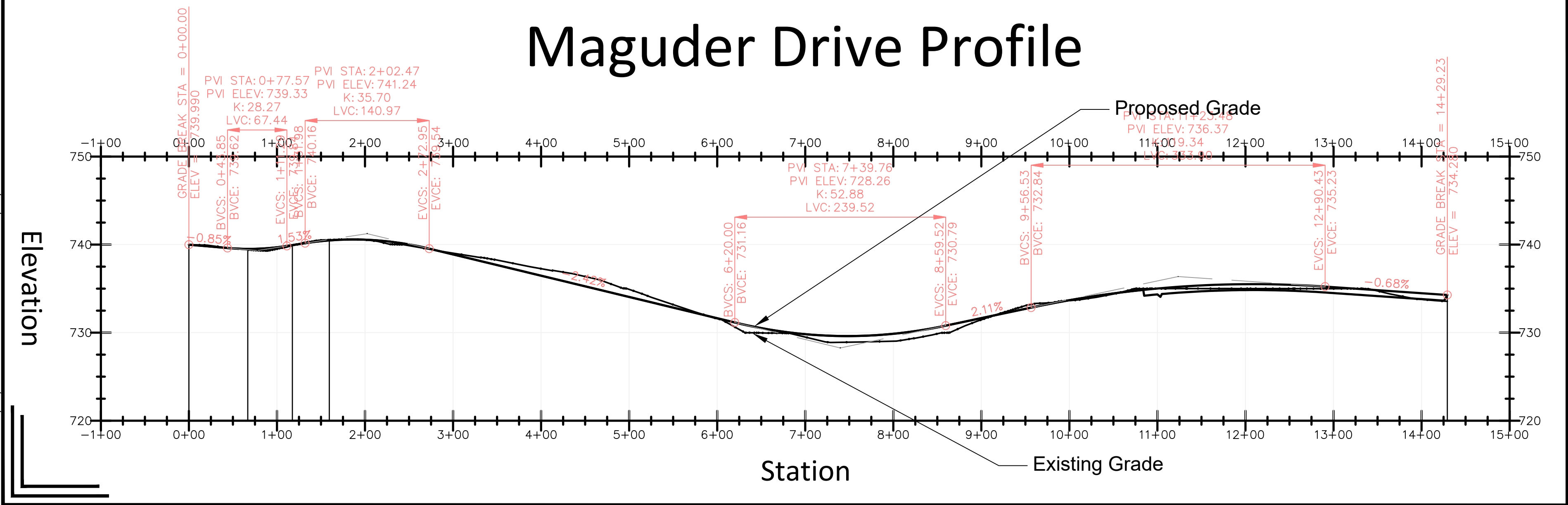
- 2.5" Top Coat
- 3" Modot Type 1
- 8" 2 - 4" Clean Rock
- Variable of Shot Rock as Required for Grading
- Test Rolled Subgrade Remove and Store all Organic Soils

REF. DWG. MULTI

Entrance Concrete Pavement

- 12" Concrete Thickness
- 3" Modot Type 1
- 8" 2 - 4" Clean Rock
- Variable of Shot Rock as Required for Grading
- Test Rolled Subgrade Remove and Store all Organic Soils

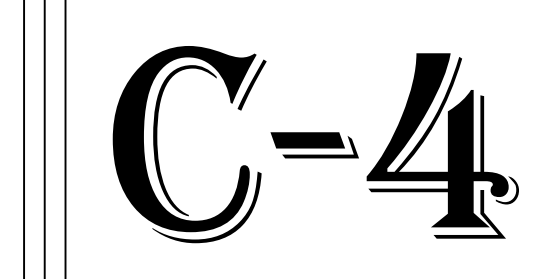
Maguder Drive Profile



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Plot: 6/13/2025 11:55:09 AM
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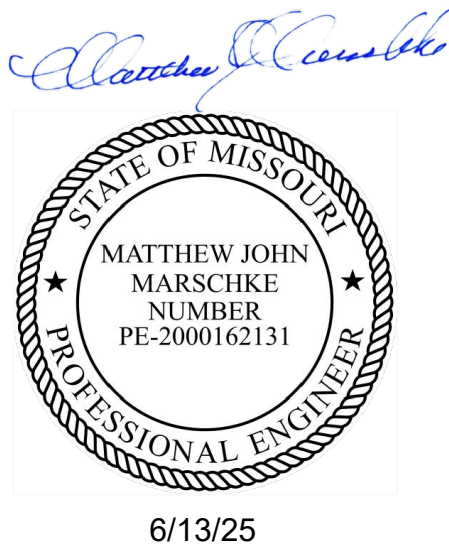
C-3



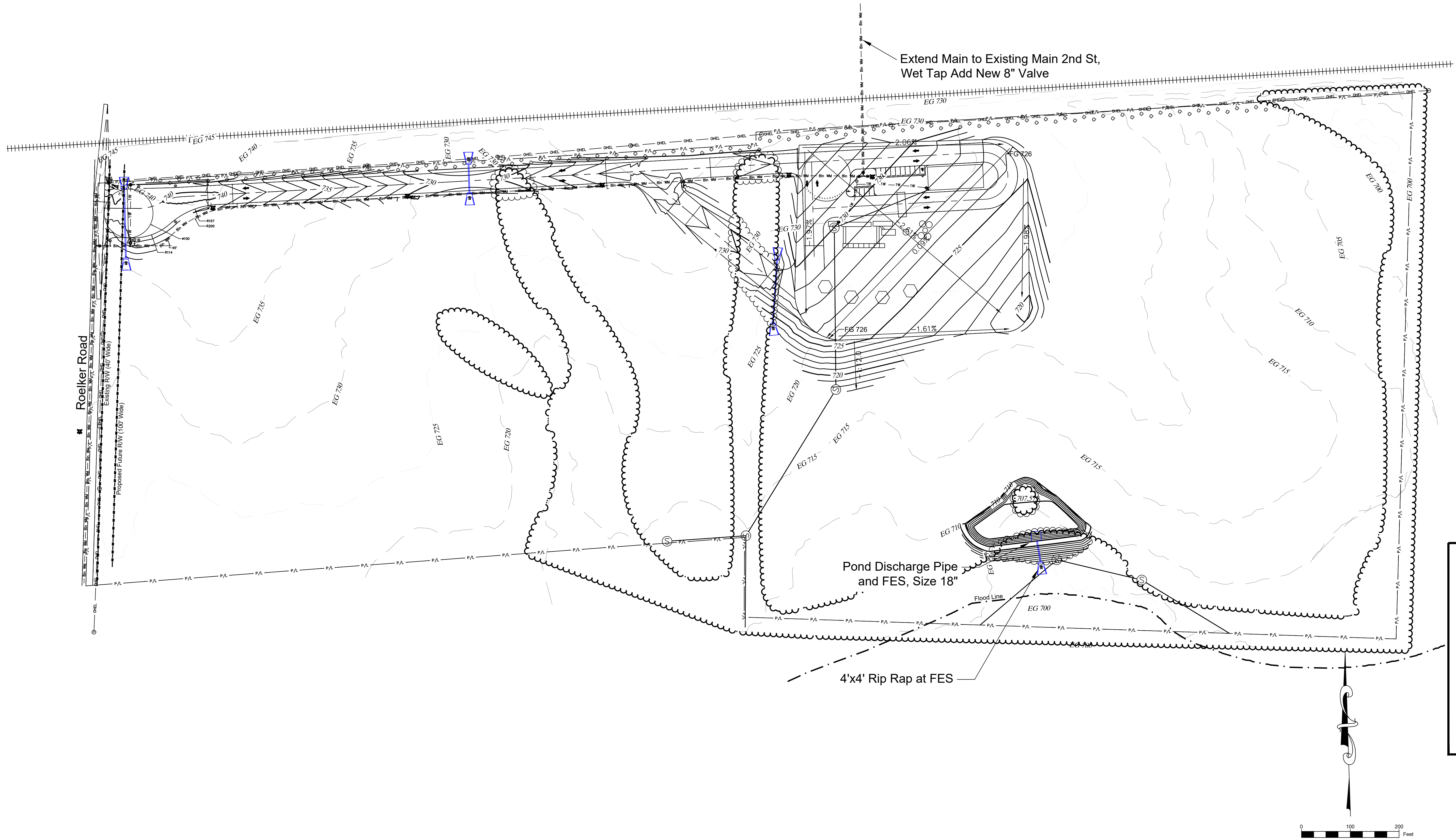
Grading Notes:

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: 12,380 Yd³
Fill: 10,361 Yd³
Late Update: 6/9/25



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

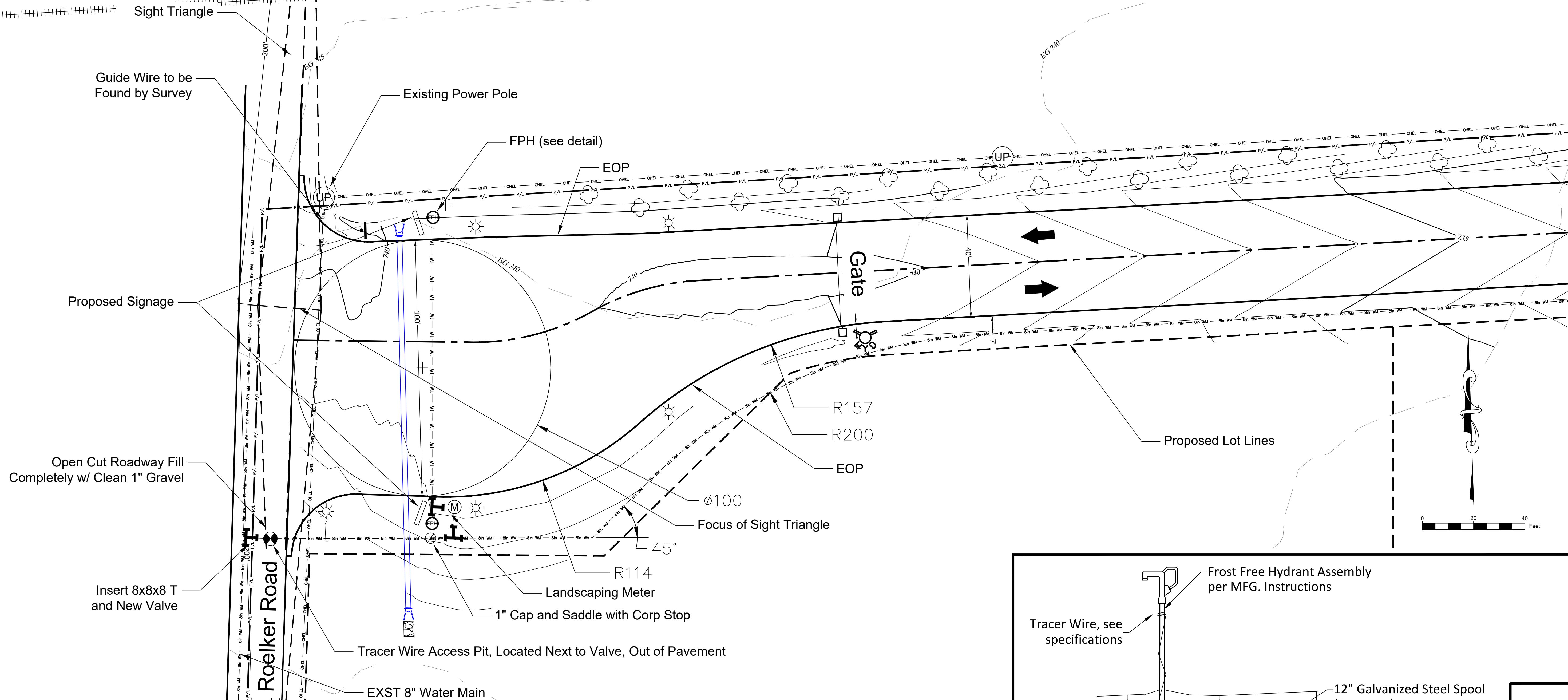


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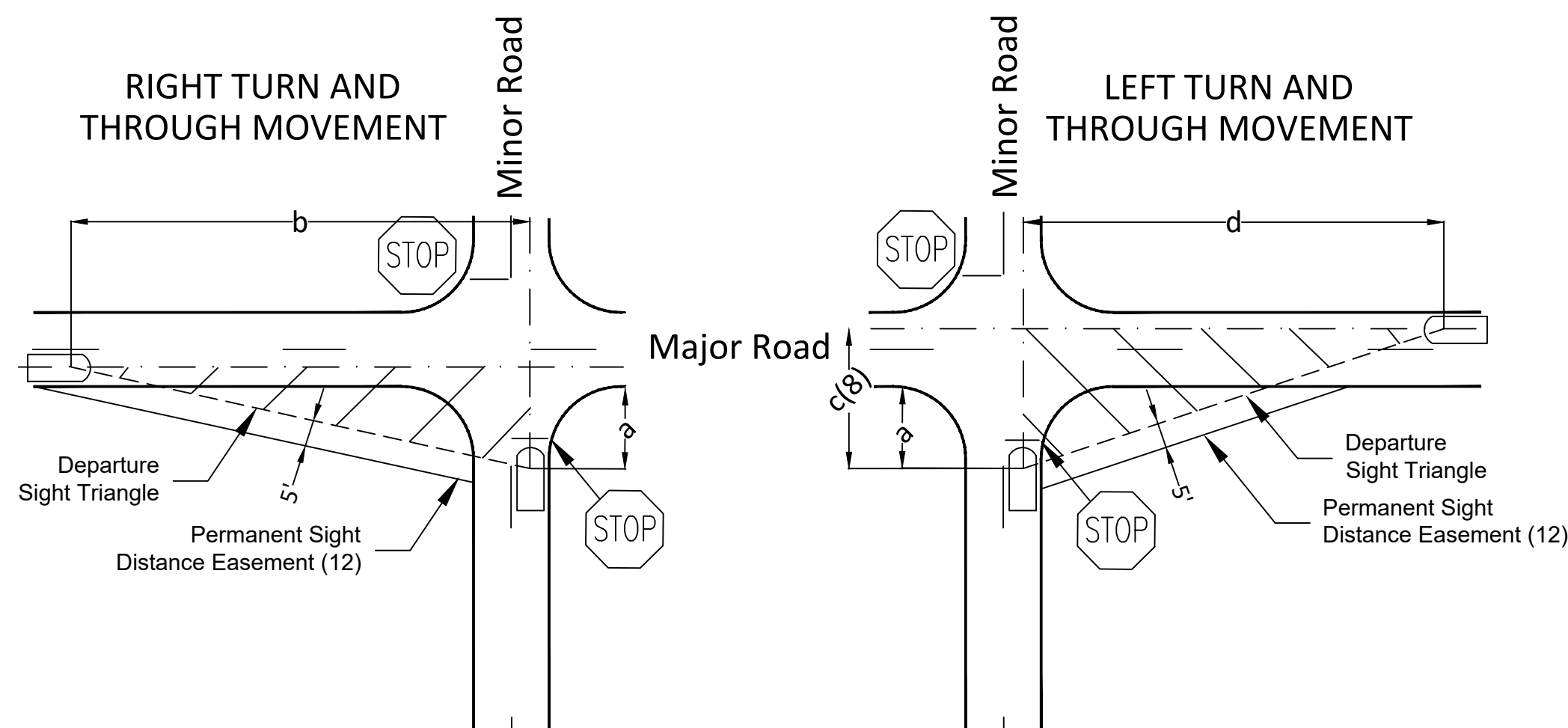
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Expires 12/31/2025

C-5

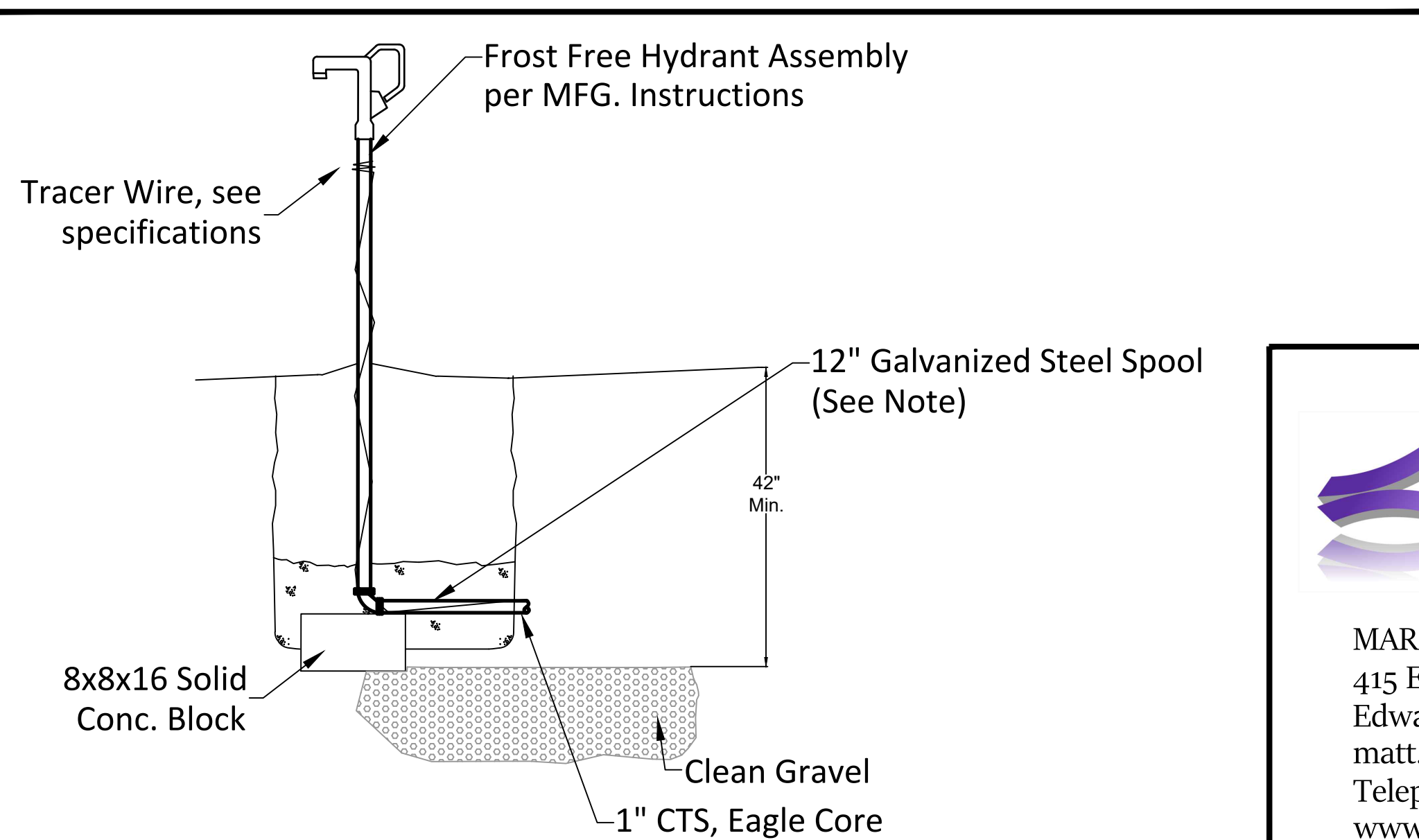
Wright City Asphalt Plant
Entrance Detail
1"=20ft



Sight Distance for Vehicle Existing Minor Road Associated with New Development							
Design Speed (MPH)	Length of Departure Sight Triangle Leg (6) (Feet)	Case F (Feet)	Crossing Number of Lanes Adjustment (Feet)	Sight Distance Adjustment for Approach Grade (11) (Feet)			
	a(8)	b	d	ISD (9)	W(10)	4%	5%
15	14.50	145	170	125	15	15	20
20	14.50	195	225	165	15	20	25
25	14.50	240	280	205	20	30	35
30	14.50	290	335	245	25	35	40
35	14.50	335	390	285	30	40	50
40	14.50	385	445	325	30	45	55
45	14.50	430	500	365	35	50	65
50	14.50	480	555	405	40	60	70
55	14.50	530	610	445	45	65	80



1 INTERSECTION SIGHT TRIANGLE
SCALE: Not To Scale
REF. DWG. MULTI



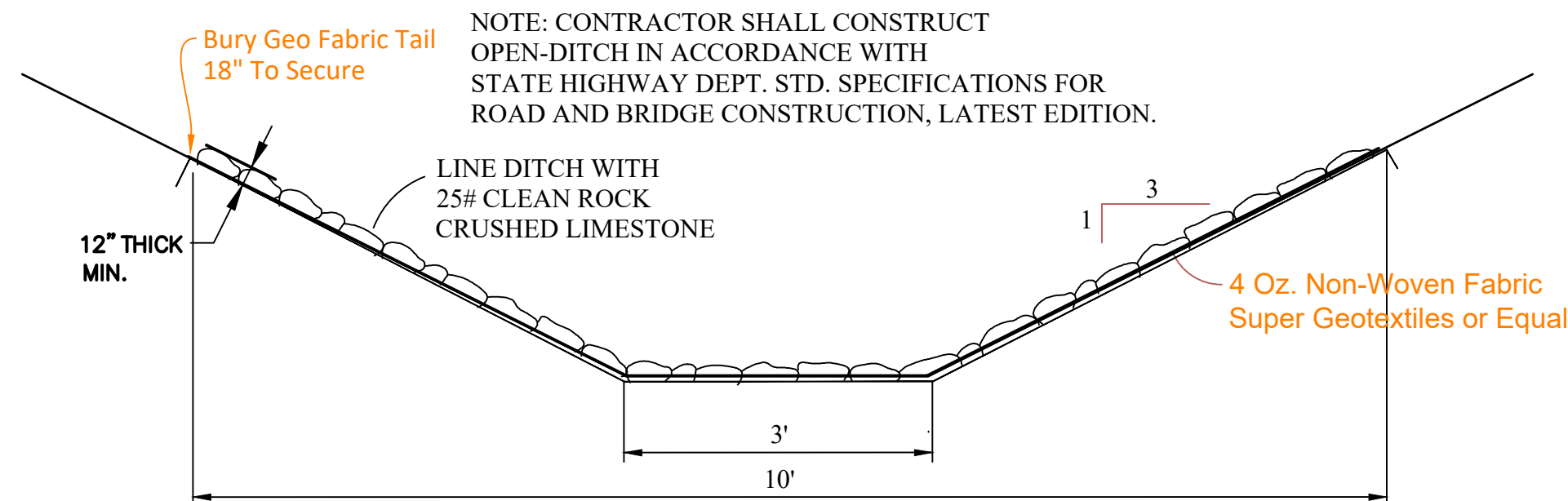
2 FROST PROOF HYDRANT & BACK FLOW PREVENTER
SCALE: N.T.S. NOTE: Provide separation between brass and galvanized metals with pvc coupler or approved Electro.
REF. DWG. MULTI



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Plot: 6/13/2025 11:55:24 AM
MO Corp: 2001015503
Expires 12/31/2025

C-6

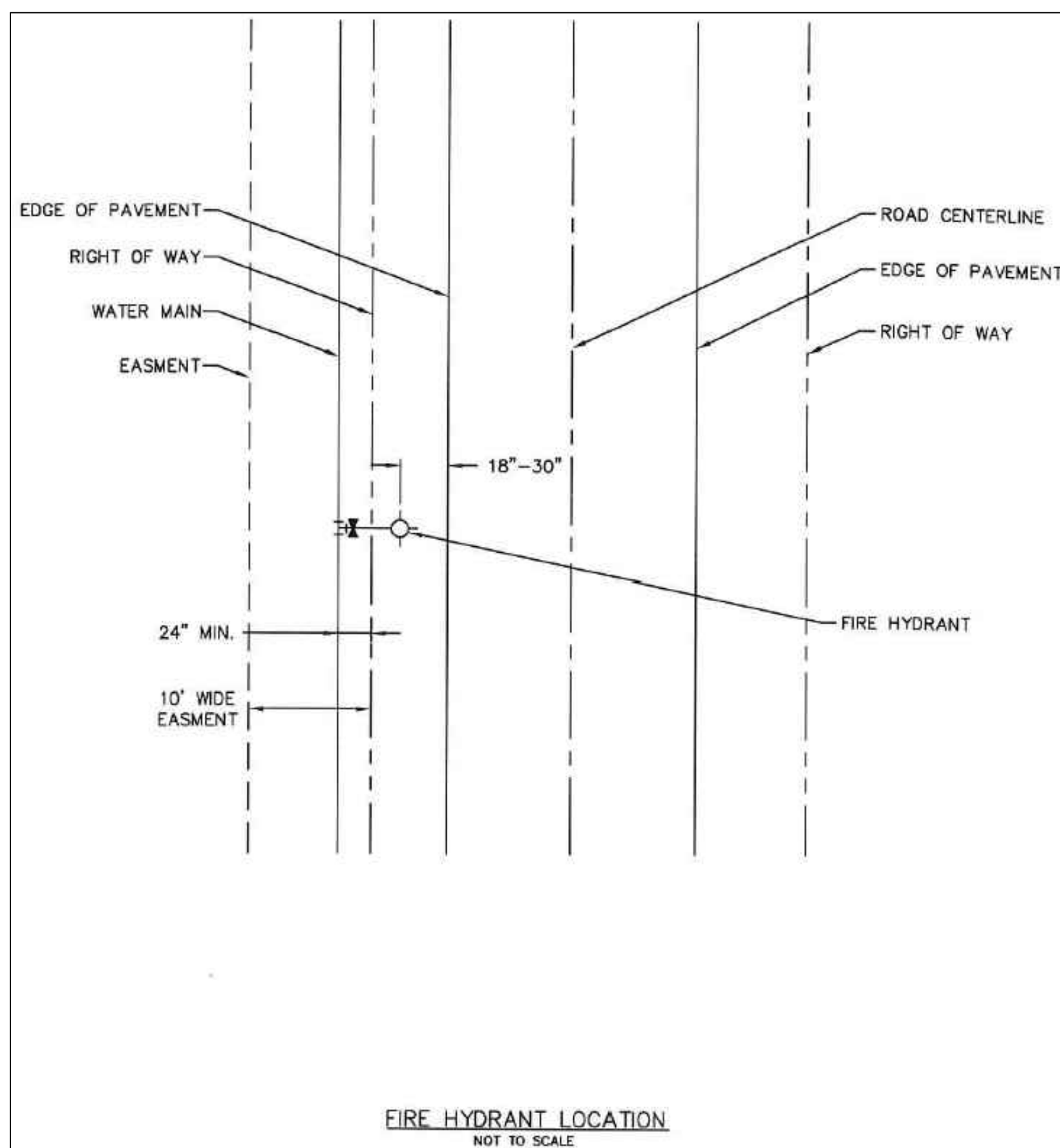


1 RIP RAP VELOCITY DISSIPATOR

SCALE: N.T.S. REF. DWG. C-1

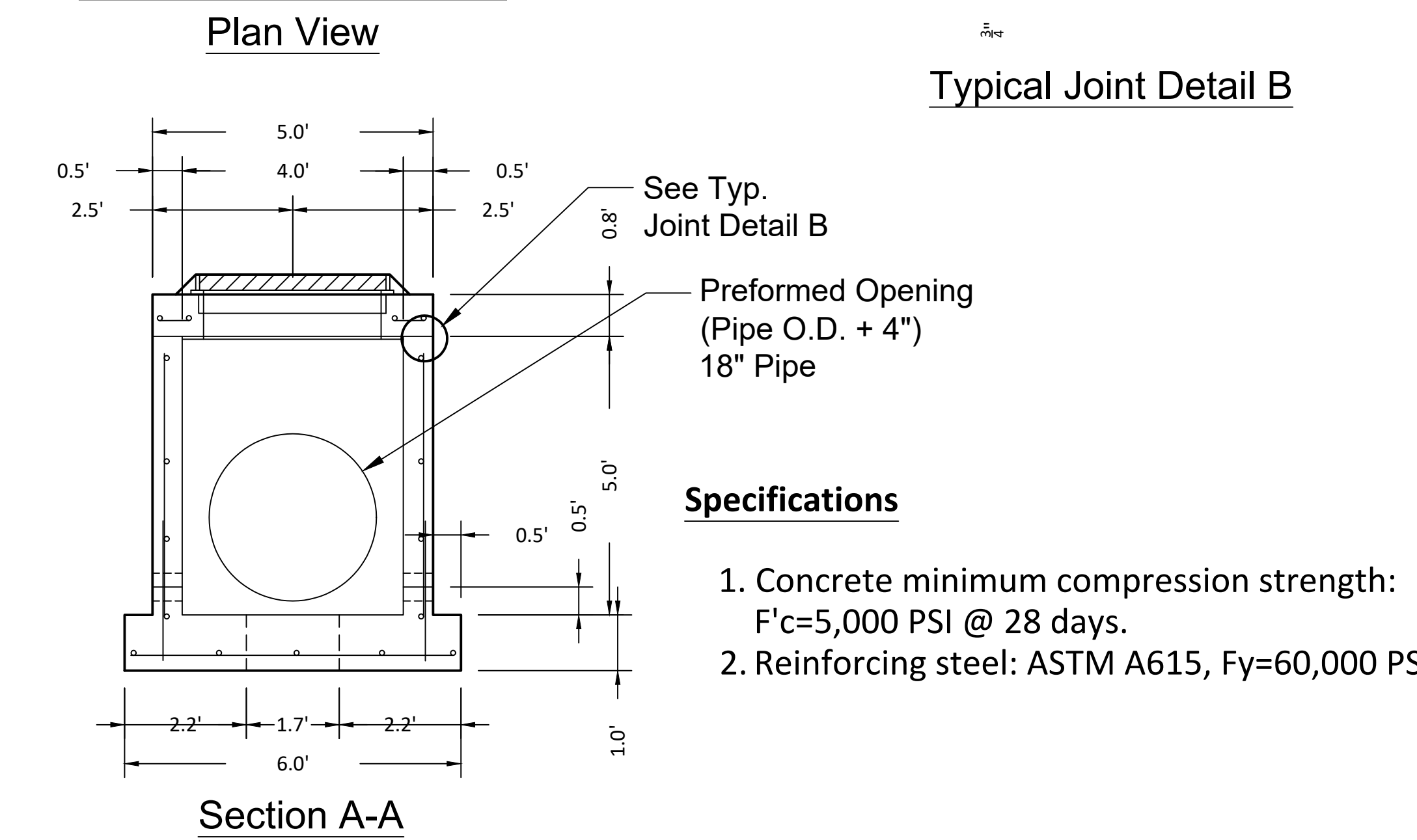
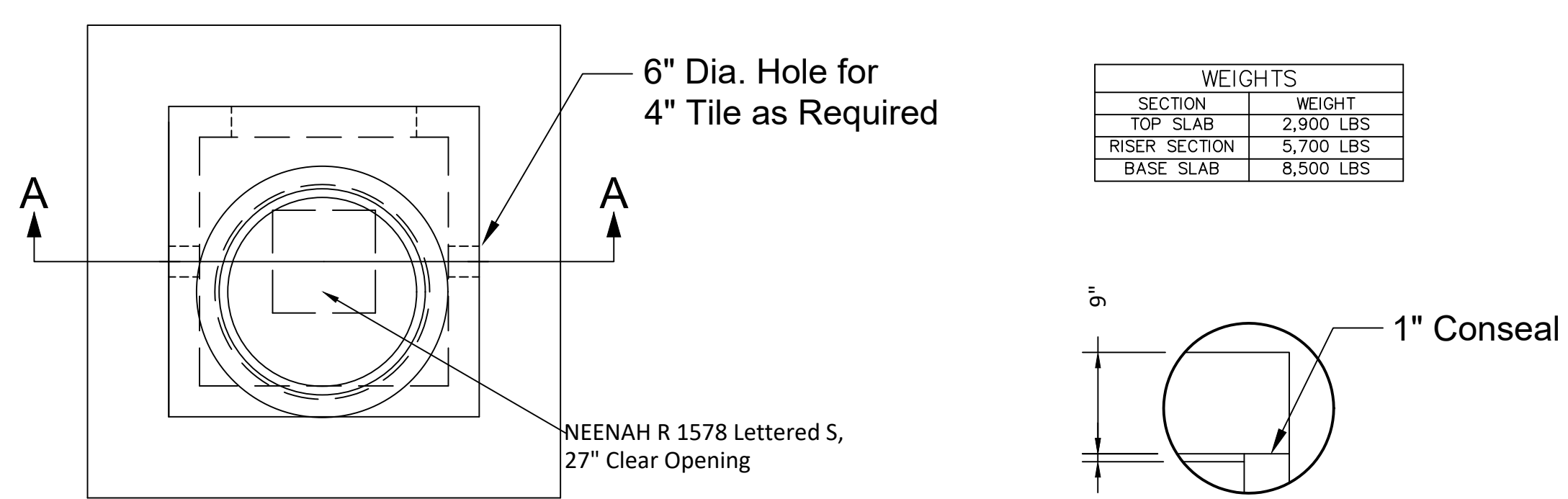
Storm Sewer Notes

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.
7. Rip rap be placed on nonwoven geo fabric per detail. Rock to be DOT approved 25# plus clean rock.



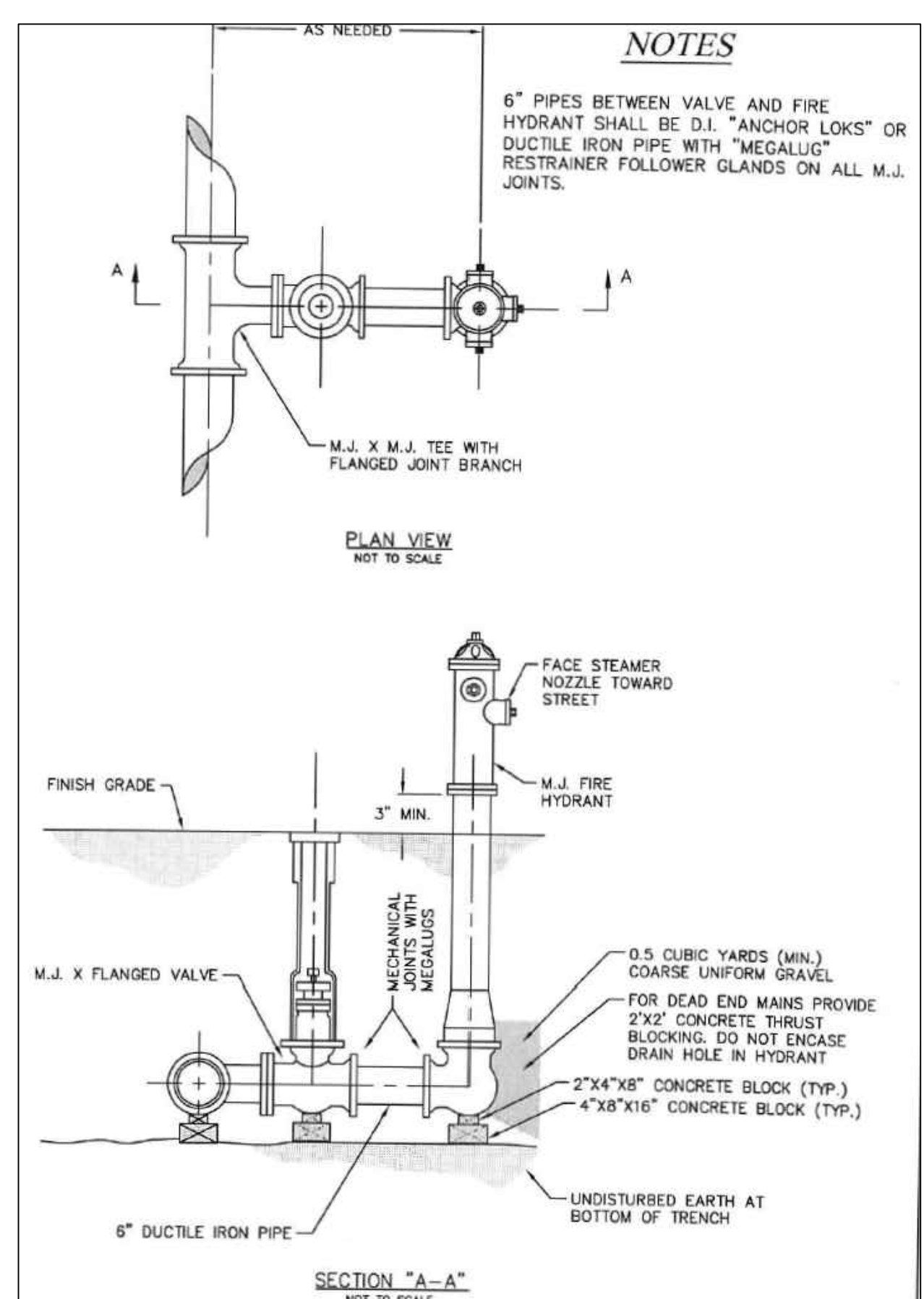
3 FIRE HYDRANT LOCATION

SCALE: N.T.S. REF. DWG. C-1



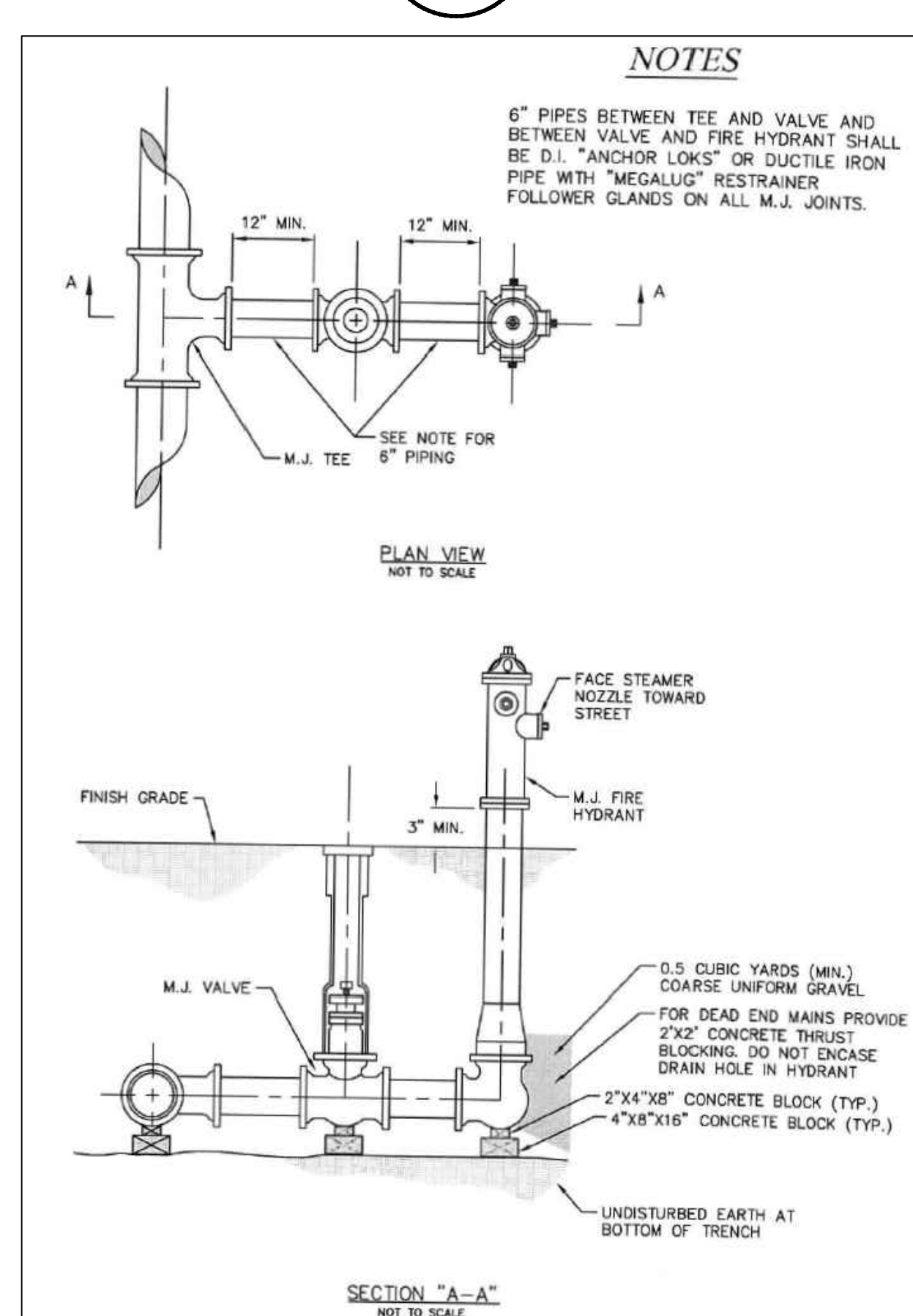
5 POND DISCHARGE STRUCTURE

SCALE: N.T.S. REF. DWG. C-1



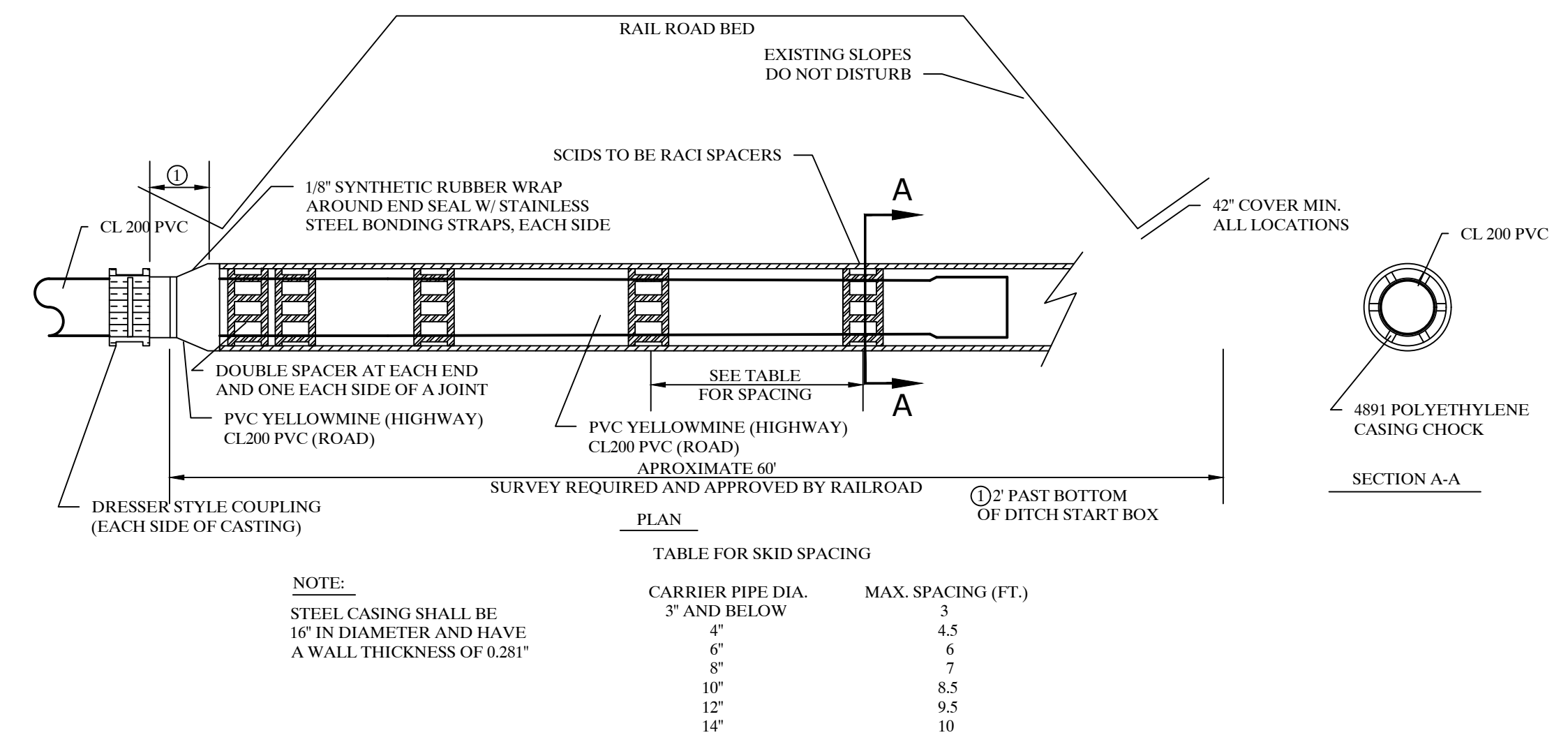
2 FIRE HYDRANT DETAIL

SCALE: N.T.S. REF. DWG. C-1



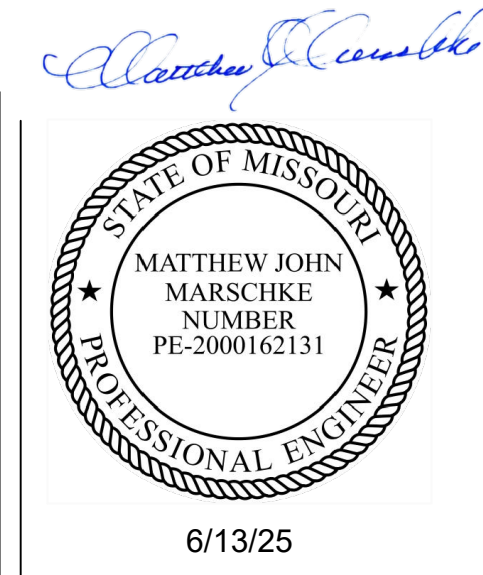
4 TYPICAL TRENCH SECTION

SCALE: N.T.S. REF. DWG. C-1



6 BORE UNDER RAIL LINE

SCALE: N.T.S. REF. DWG. C-1



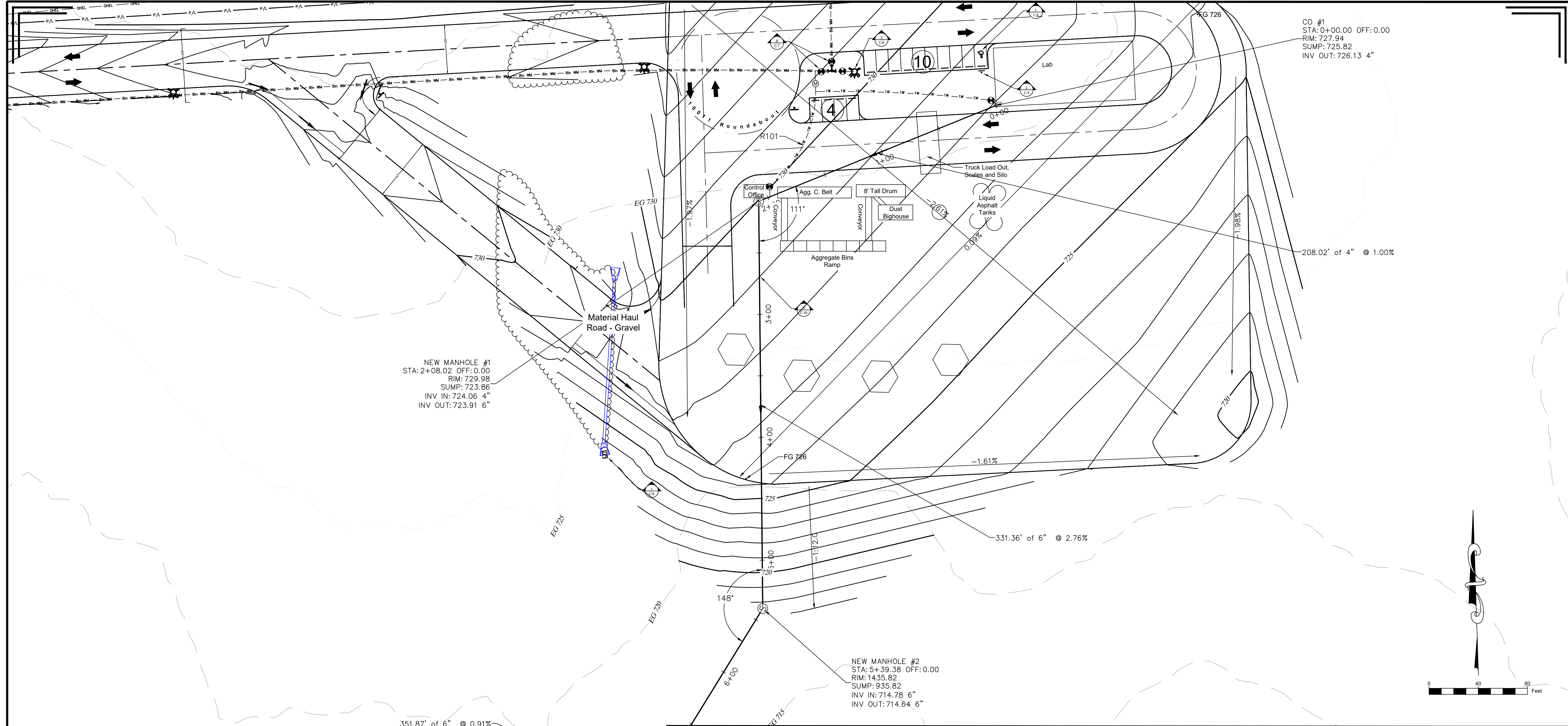
Wright City Asphalt Plant Water Details



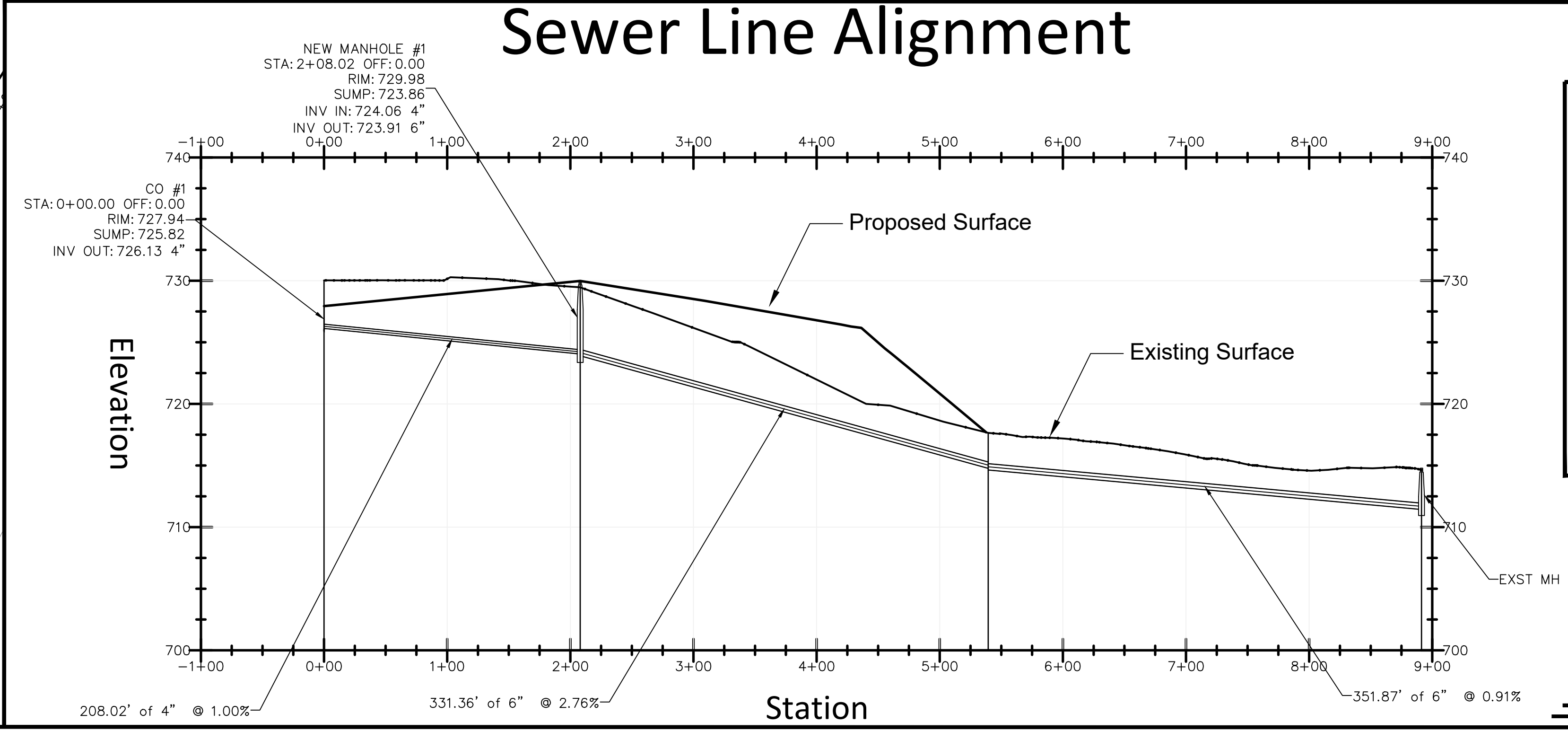
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www.mwec.us

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Wright City Asphalt Plant Sewer Plan and Profile 1"=40ft



Sewer Line Alignment



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Plot: 6/13/2025 11:55:38 AM
MO Corp: 2001015503
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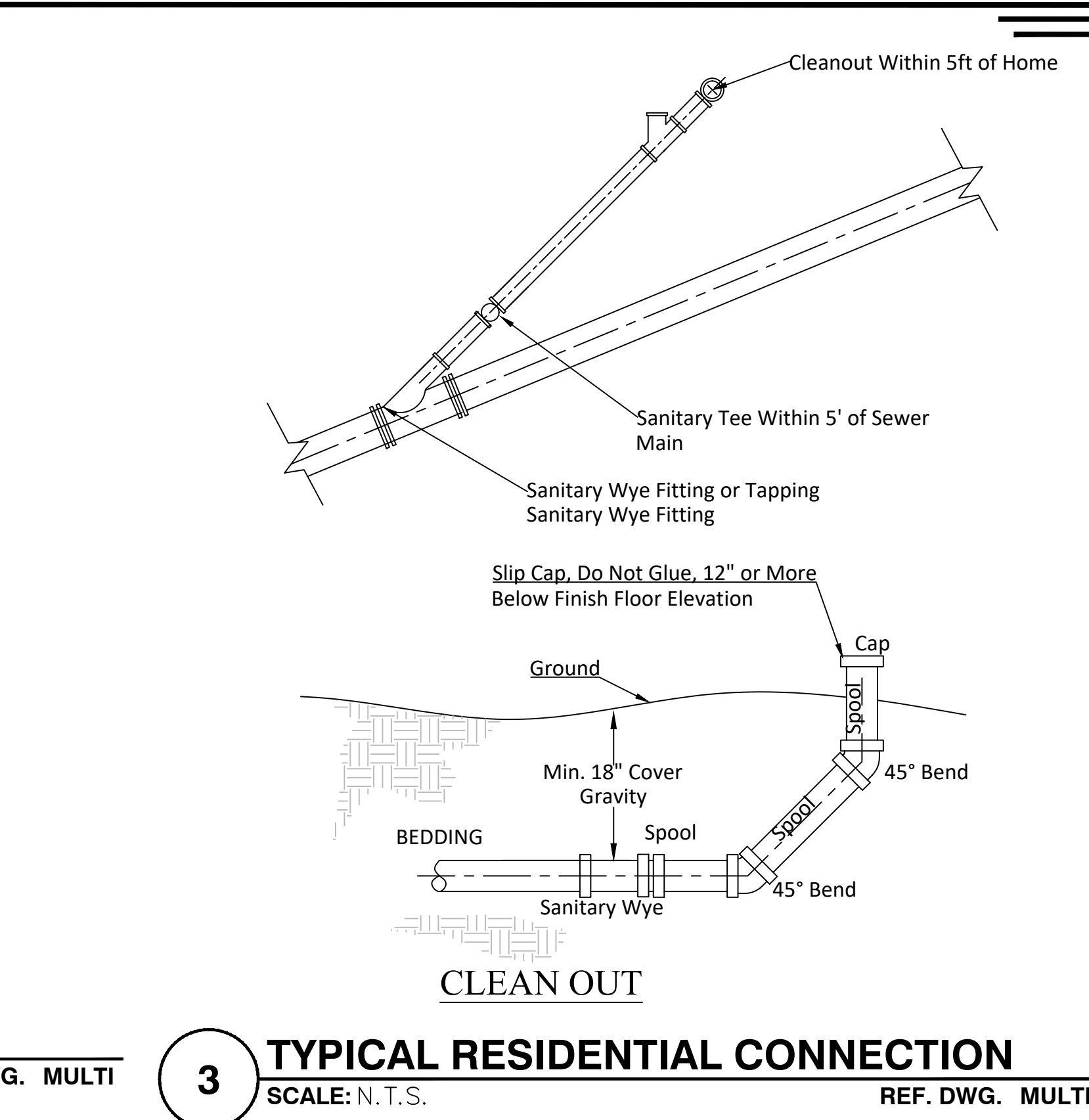
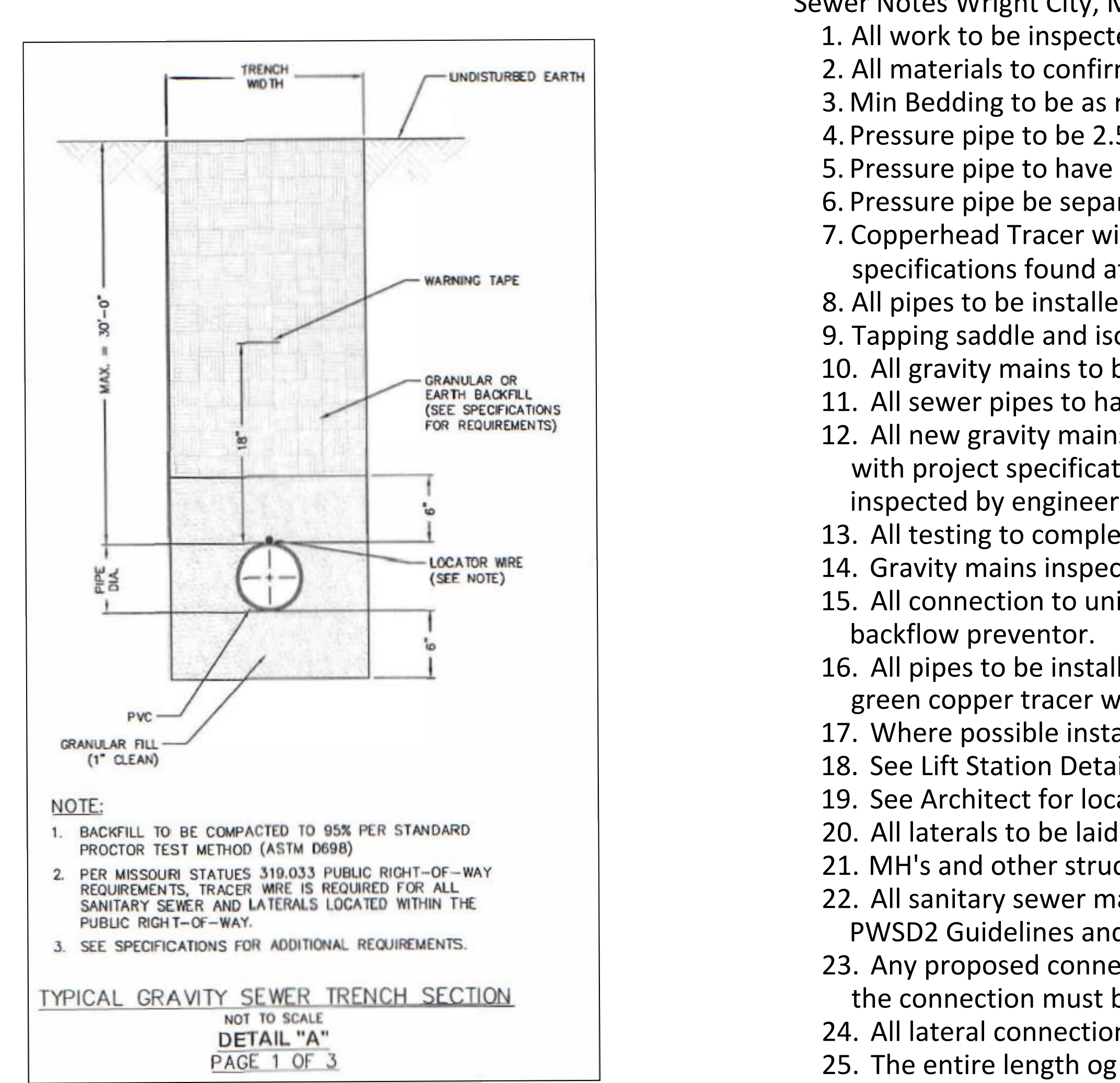
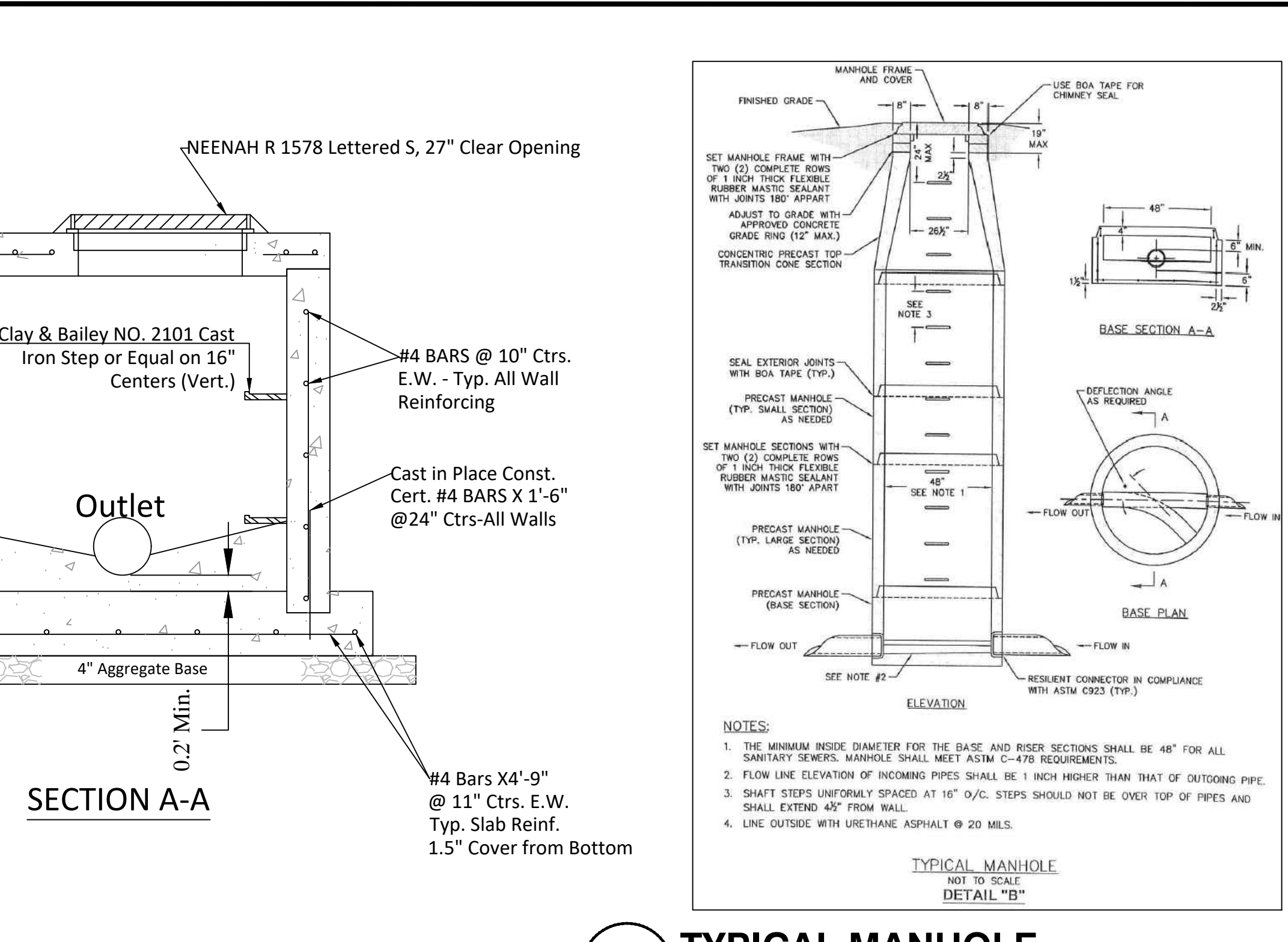
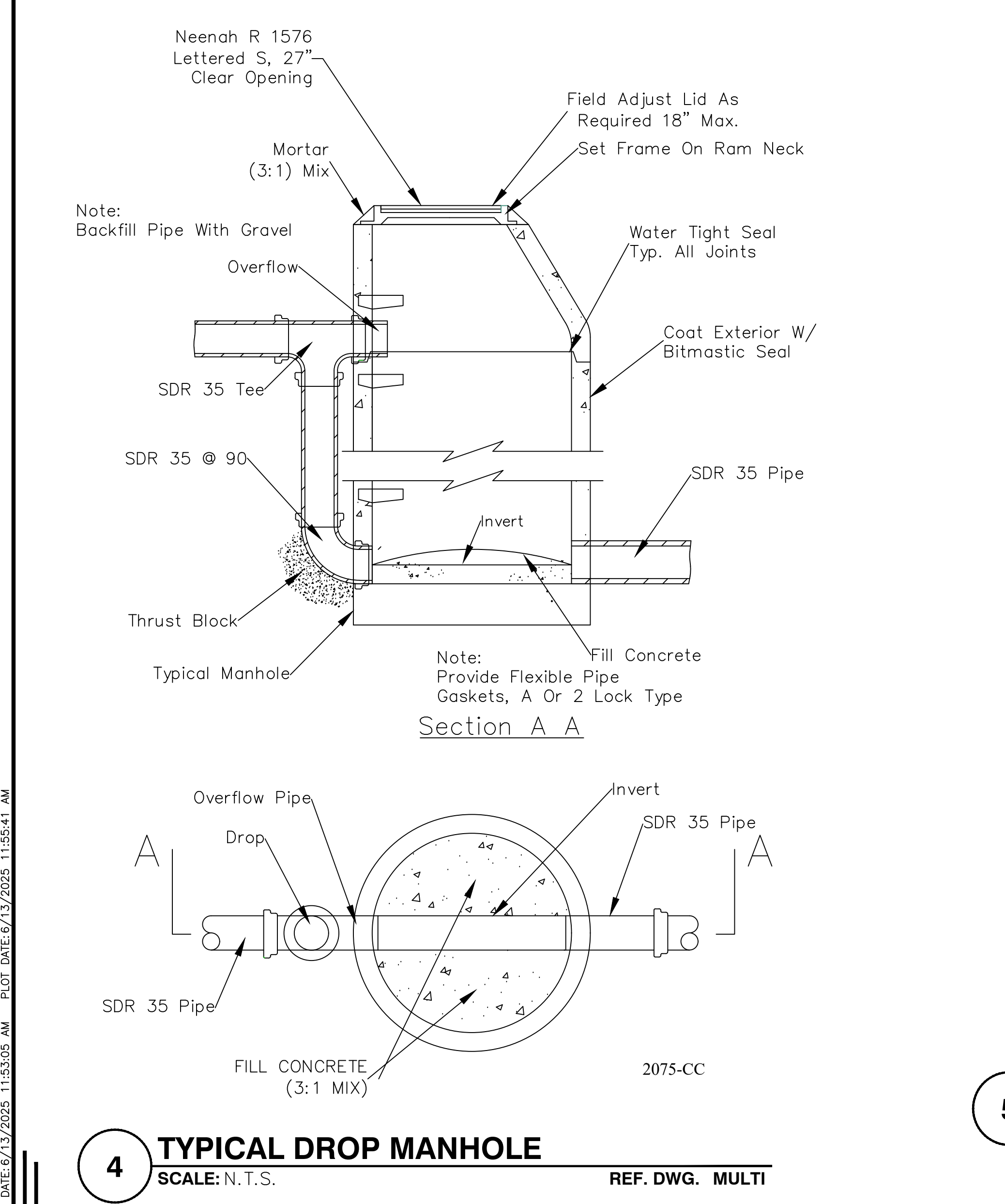
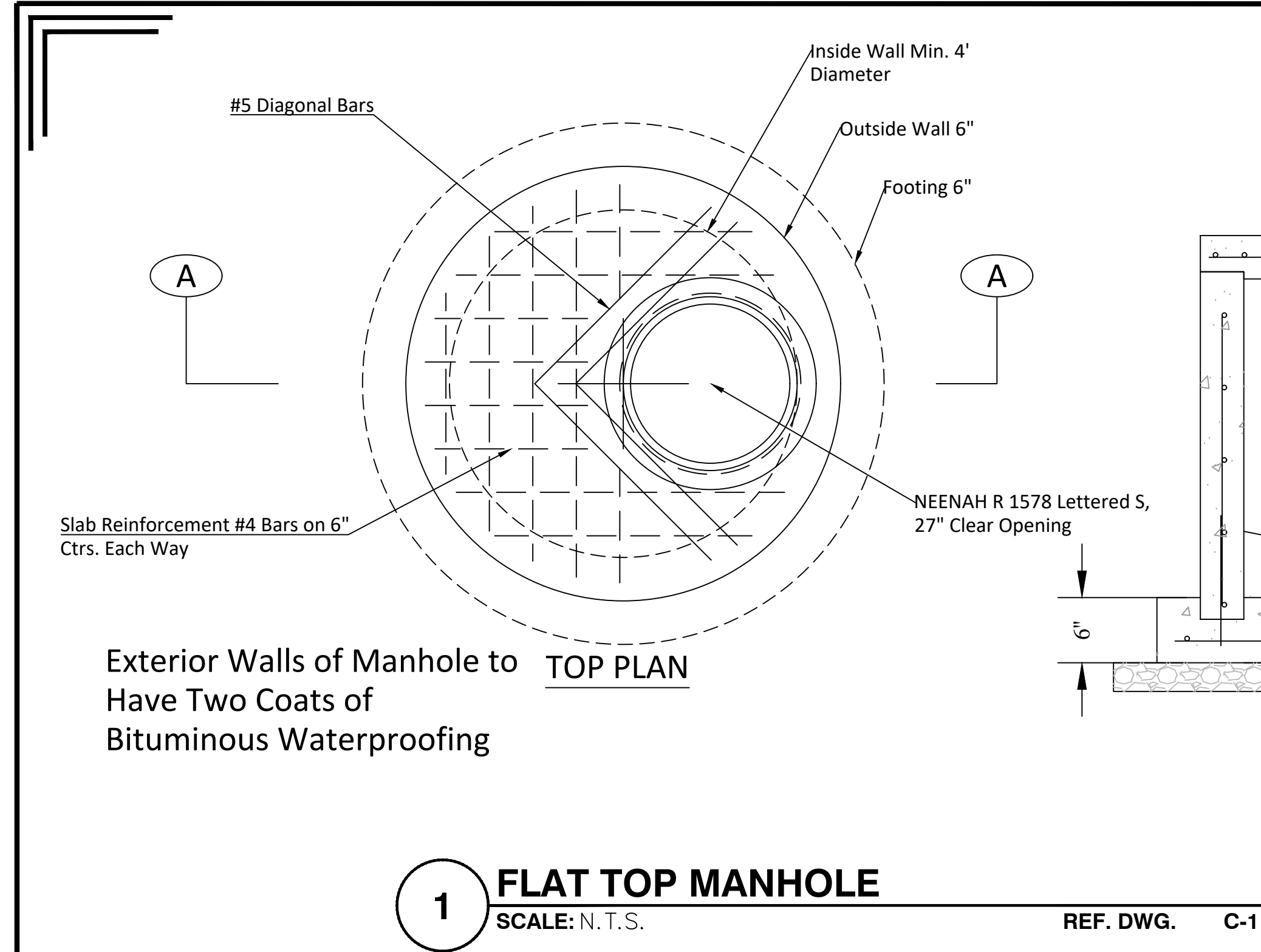
C-8

Wright City Asphalt Plant Sewer Details

**MARSCHKE
ENGINEERING**

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Plot: 6/13/2025 11:55:41 AM
MO Corp: 2001015503
Expires 12/31/2025



- 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. Copperhead Tracer wire system required on all sewer lines and gravity lines per specifications found at: <https://copperheadwire.com/resources/support-3/>
 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 og 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.

DWG: C:\VMEC\mwec\us\Projects\Current\Wright City\MO\Magruder Quarry Master 7-Luke.dwg
SAVE DATE: 6/13/2025 11:53:05 AM PLOT DATE: 6/13/2025 11:55:41 AM

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.

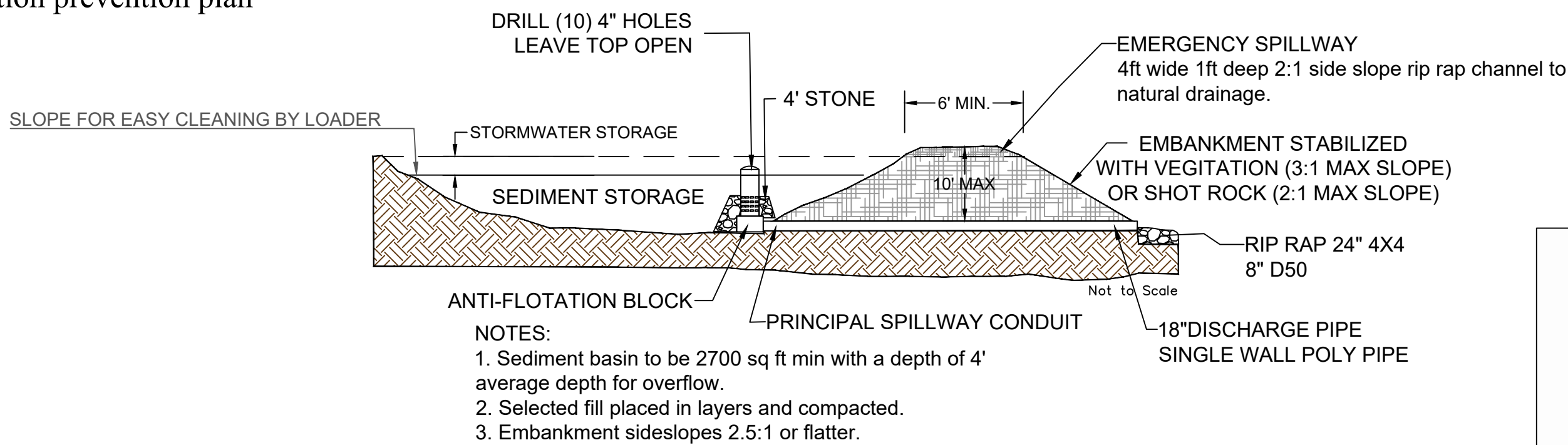
EROSION & SEDIMENTATION CONTROL PLAN NOTES

- 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.

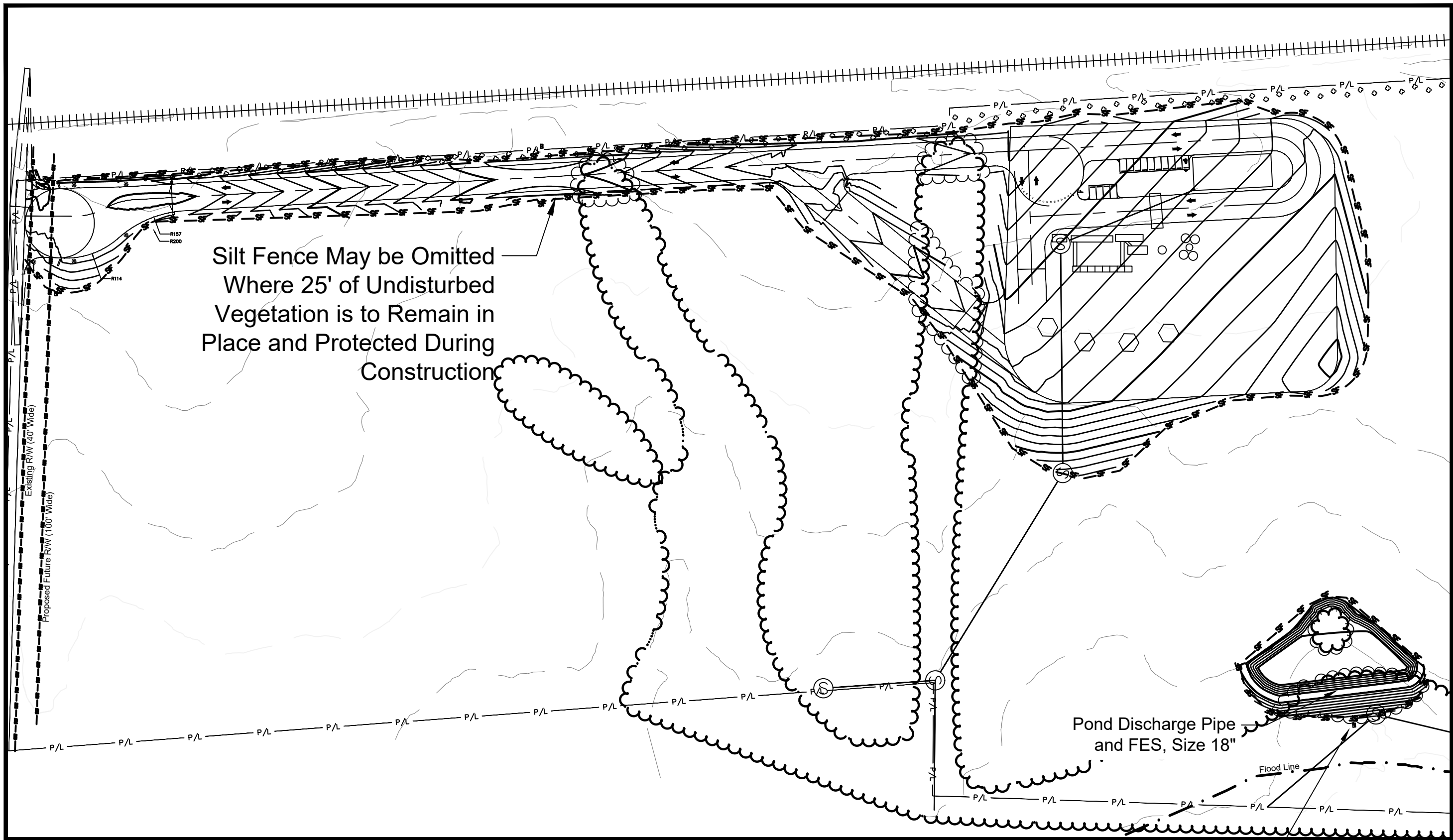
MAINTENANCE SCHEDULE

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



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

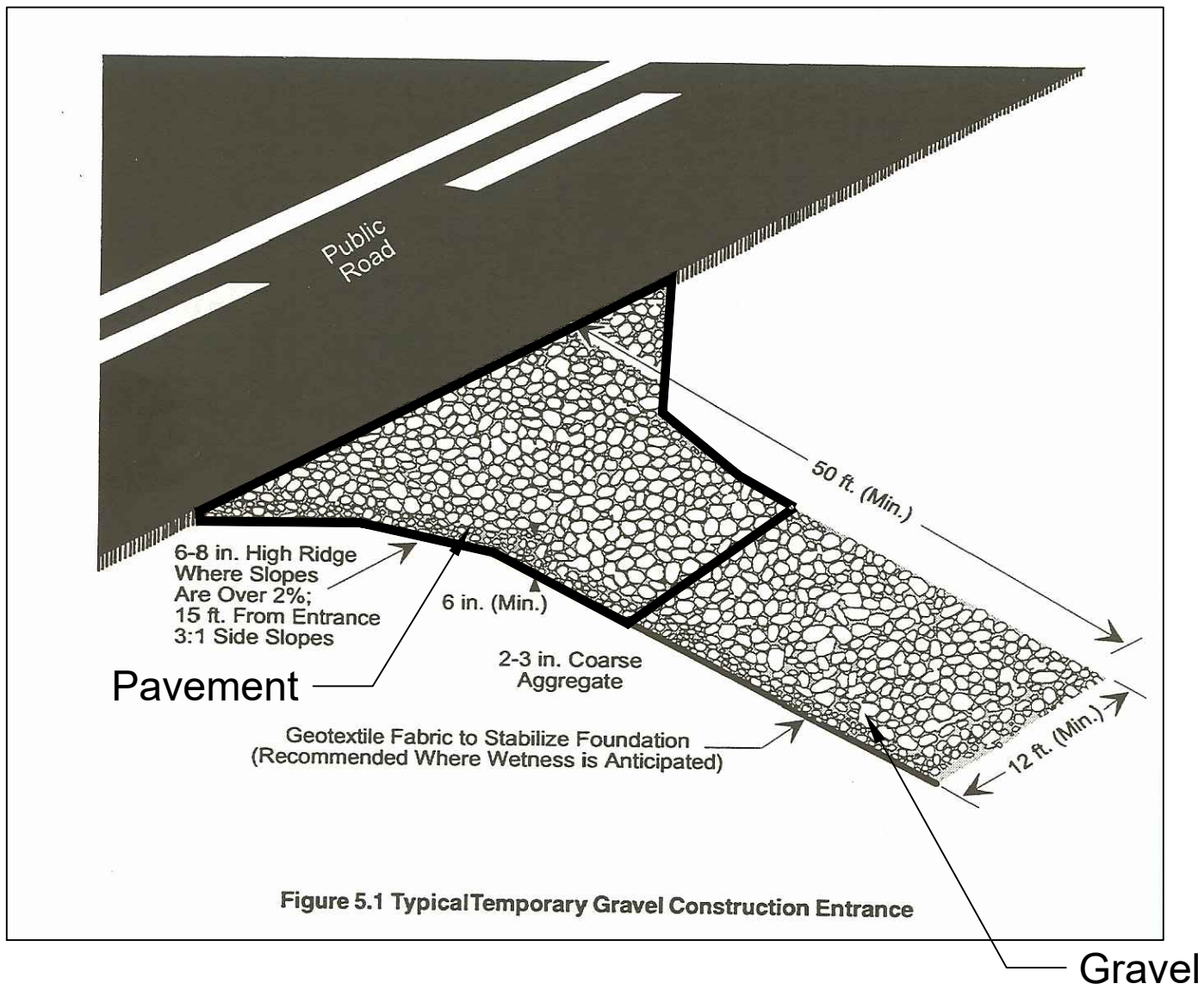


GENERAL NOTES

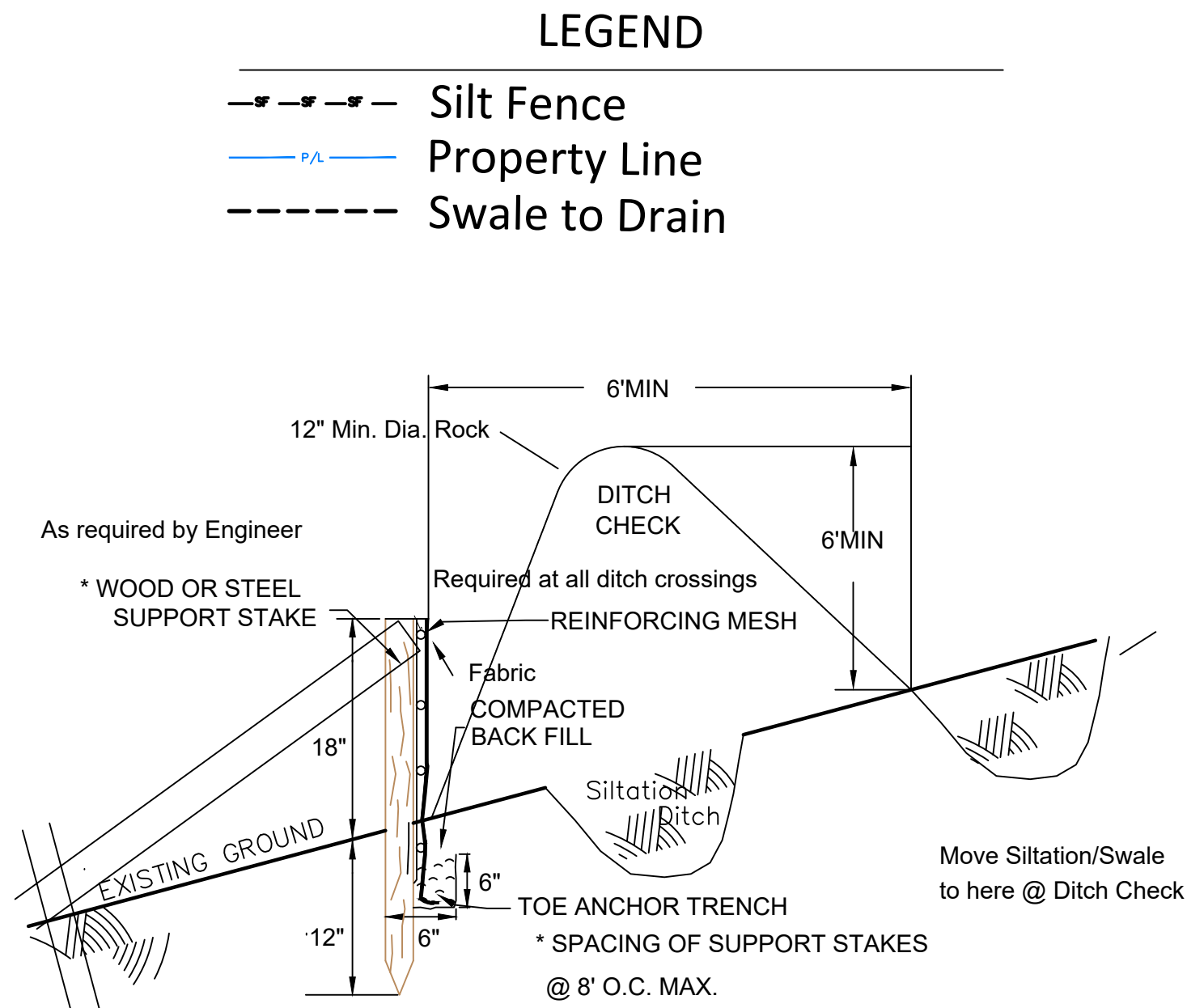
The public roadway will be kept clean and clear from all sediment and debris. The limit of exposed area will be controlled by permanent seeding/mulching of all non-impervious areas immediately after grading operations are completed. Clear and grub to the limit of the area to be developed. All temporary 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

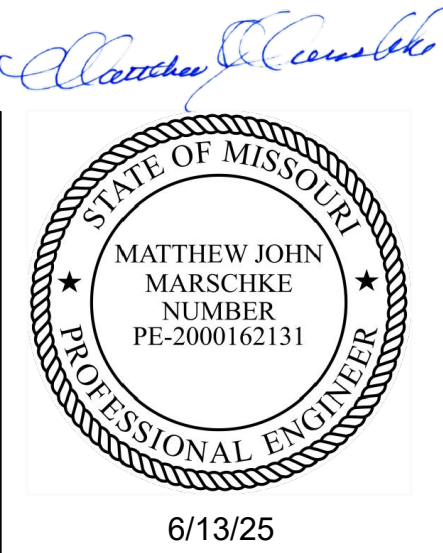
All temporary and permanent erosion and sedimentation control devices will be inspected weekly and after every precipitation event by a forman -in-charge representing the contractor performing the work. Inspection must be documented in and retained for submission to missouri dnr.



2 CONSTRUCTION ENTRANCE
SCALE: Not To Scale REF. DWG. MULTI



3 SILT FENCE/DITCH CHECK DETAIL
SCALE: Not To Scale REF. DWG. MULTI



Wright City Asphalt Plant
SWPPP



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MO Corp: 2001015503
Expires 12/31/2025