

GENERAL NOIES:

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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

$$\text{Flow} = \text{Lots} \times \text{Employees per Lot} \times 30\text{gpd per employee}$$
$$\text{Flow} = 5 \times 10 \times 30 = 1,500 \text{ gpd}$$

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
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8. C-7 Water Details
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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



MARSCHKE
ENGINEERING

Matthew J. Marschke, P.E.

415 East Vandalia Street
Edwardsville, IL 62025

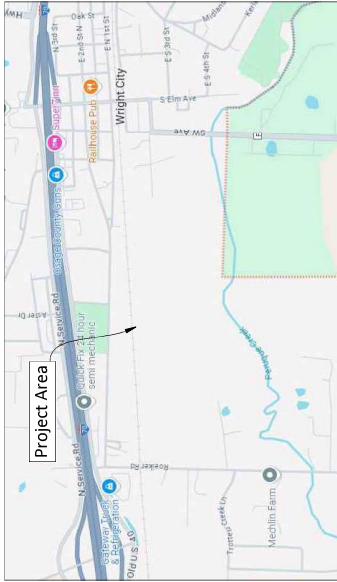
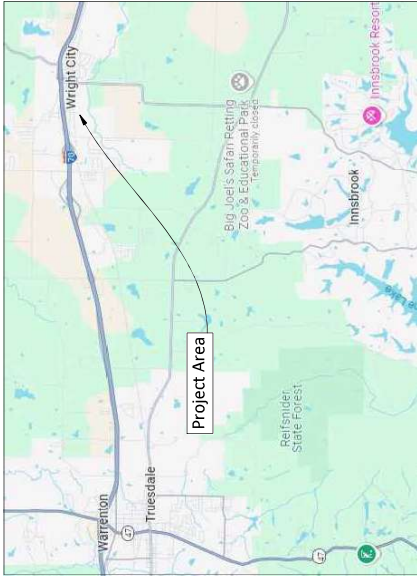
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5610 Alona Point

Osage Beach MO 65065

573-216-0066

matt.m@mwec.us



NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTING 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
- Proposed EOP Line
- Tree Line
- Right of Way
- Overhead Elec. Line
- EOP Edge of Pavement

Project Summary:

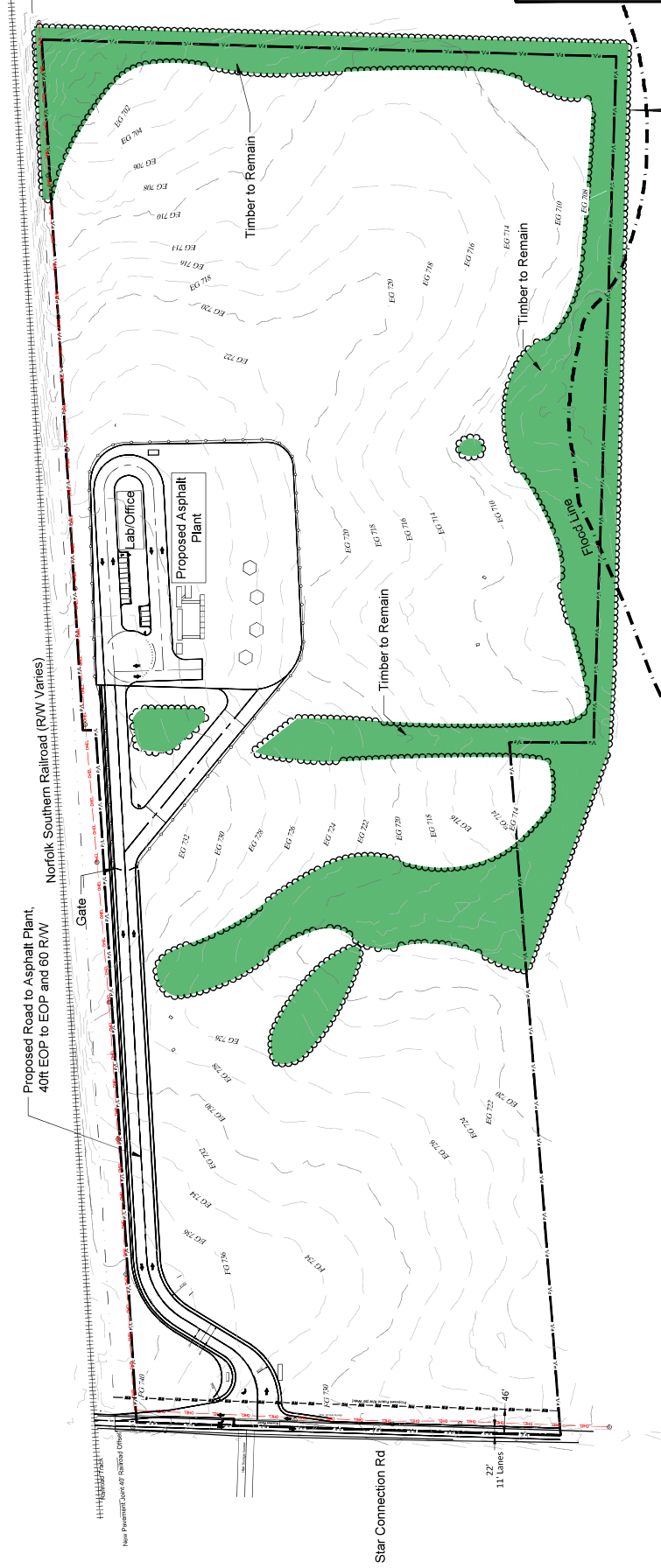
Owner: Magruder Companies, Matt Lindsay
 Roelker Road Wright City, MO
 Total Project Area: 58 Acres
 Current Zoning: M-1
 Proposed Number of Employees: 10

Magruder Asphalt Plant Preliminary Plat 1"=100ft

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 Expires 12/31/2028

C-1





Magruder Asphalt Plant Site Plan 1"=100ft



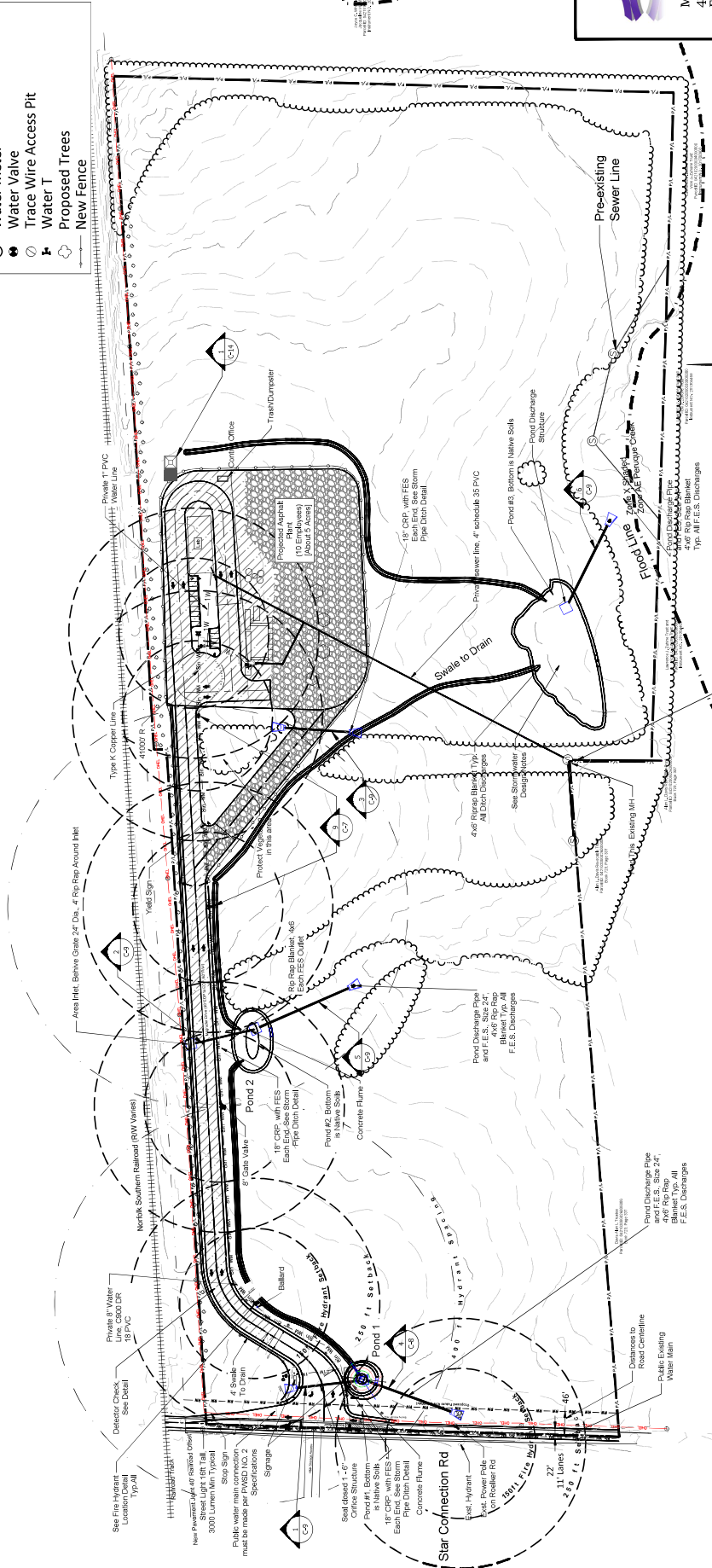
MARSCHKE ENGINEERING
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Expires 12/31/2028

C-2

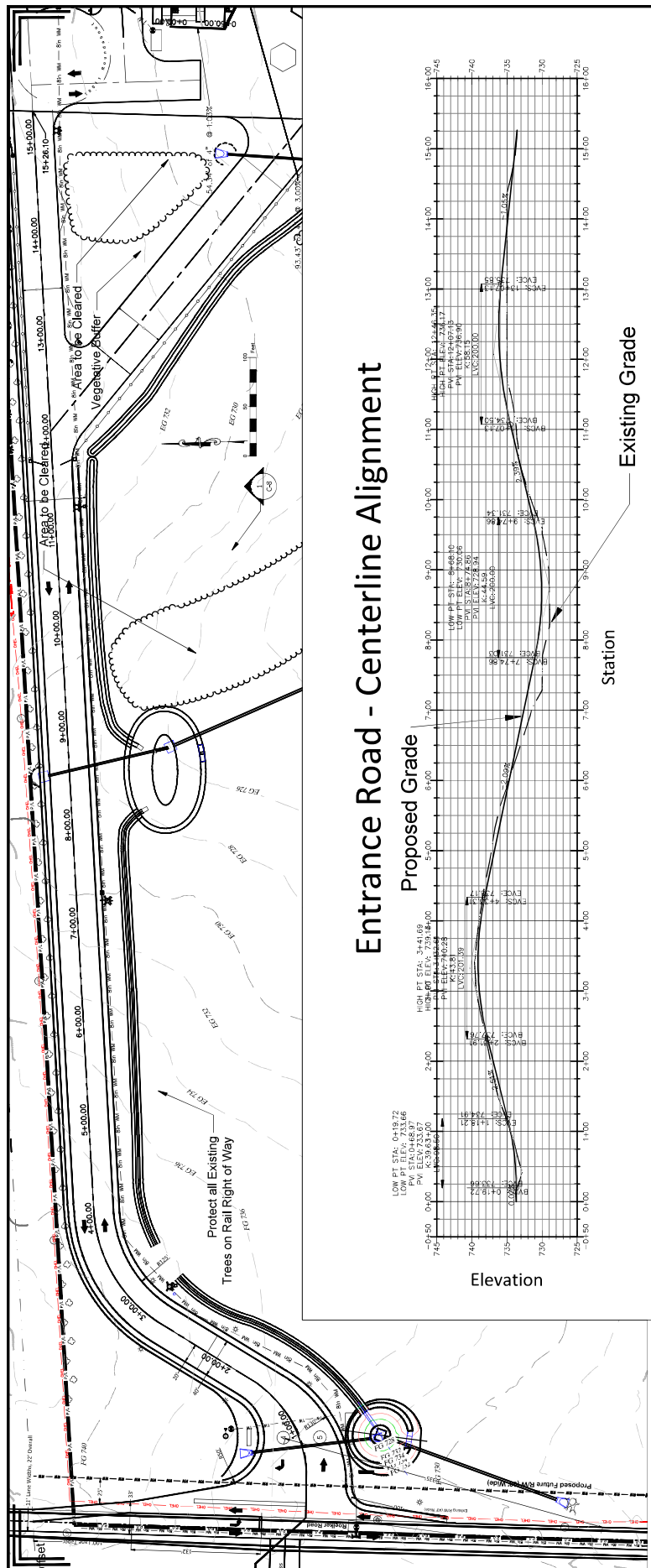
- Site Legend:**
- Concrete Limit
 - Asphalt Limit
 - Gravel Limit
 - Timber to Remove, Clear and Grub
 - Light Pole
 - Existing Utility Pole
 - Hydrant
 - Frost Proof Hydrant
 - Water Meter
 - Water Valve
 - Trace Wire Access Pit
 - Water T
 - Proposed Trees
 - New Fence

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



Project Summary:
Parking Total: 14
Parking Provided: 13
ADA Provided: 1
Total Project Area: 58 Acres
Current Zoning: M-1

- Site Plan Notes:**
- Owner to maintain the landscaping in the stormwater basins in a neat and orderly fashion.



Station

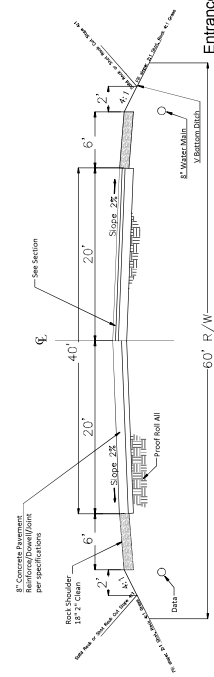
Existing Grade

Station

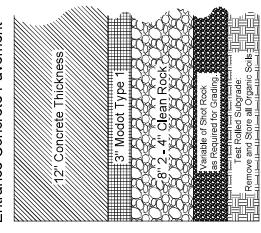
Elevation

Asphalt Pavement Notes:

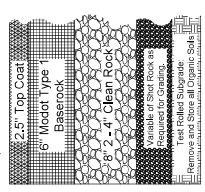
1. All aggregate for asphalt to tested and approved to be DOT approved Base rock.
2. Asphalt to be laid in 2" lift or less meeting DOT compaction for mix design available.
3. Test all subgrade and pavement with roll test of loaded tandem axle dump truck.
4. Report all soft spots, fills, trash or other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



Entrance Concrete Pavement



1 **District Class II Road**
SCALE: N.T.S. Asphalt Pavement

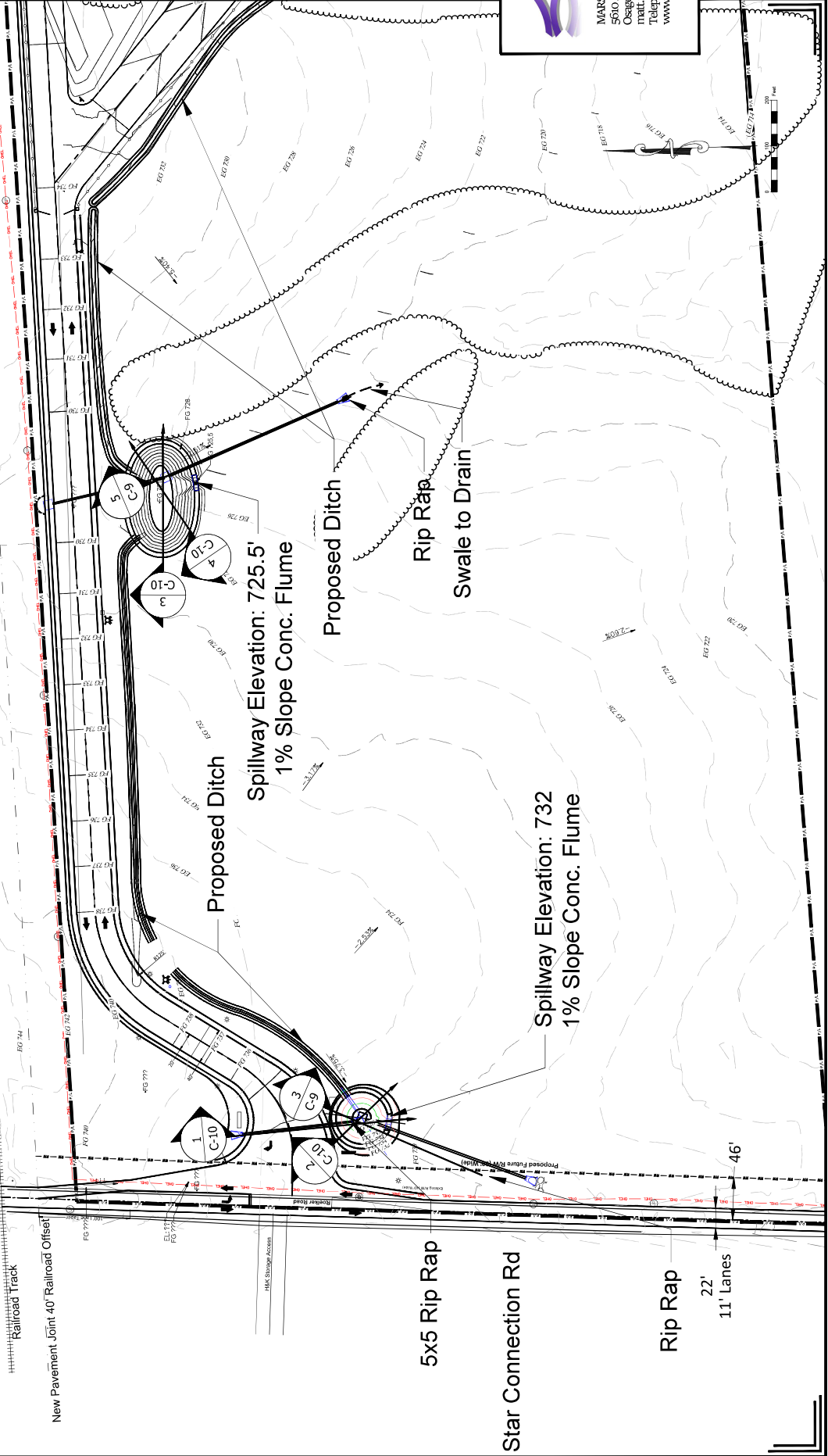


REF. DWG. MULTI

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: 06/29/26



Magruder Asphalt Plant Grading Plan 1"=100ft



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C-5



07/09/2028

Magruder Asphalt Plant Entrance Detail

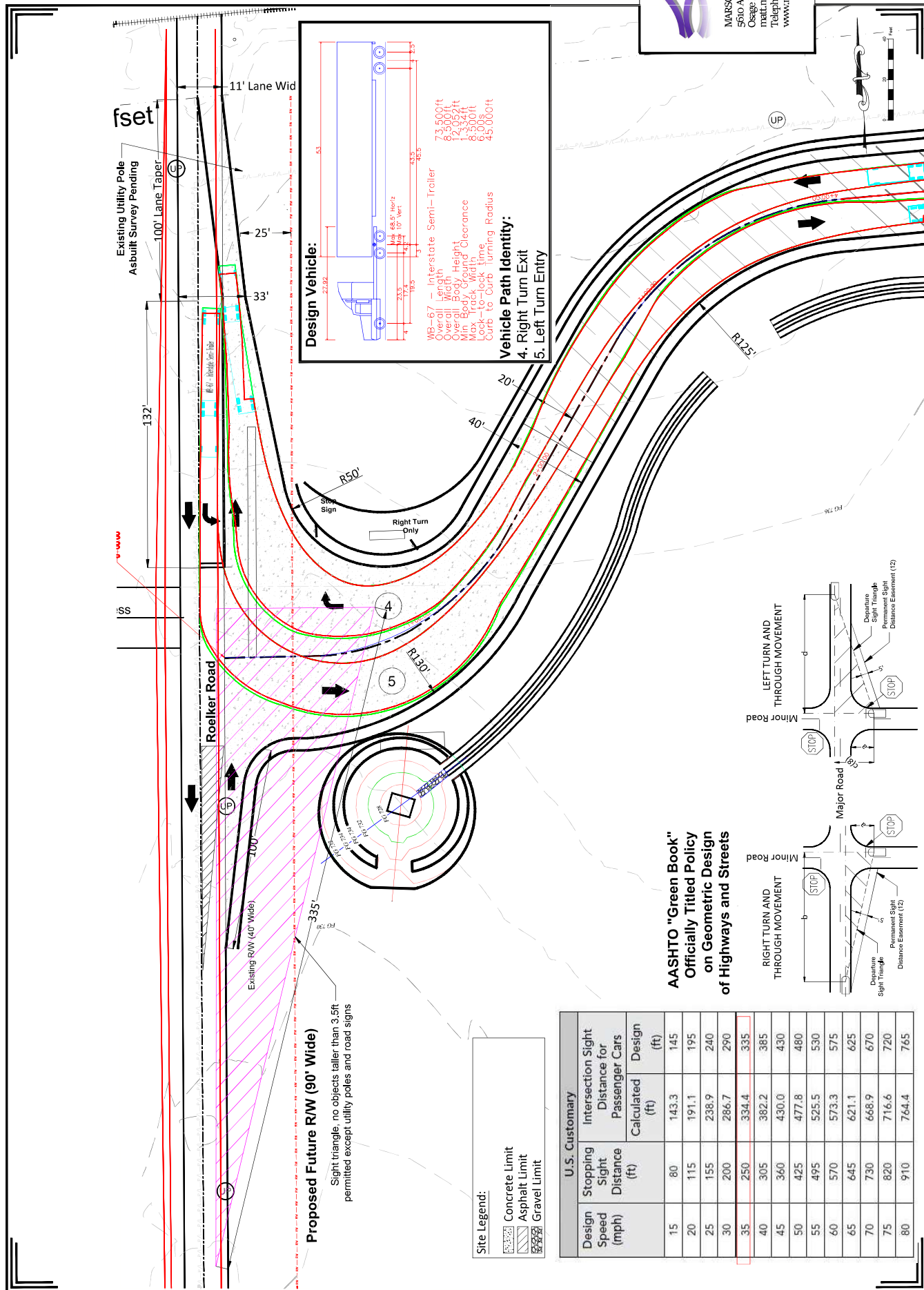
1"=20ft



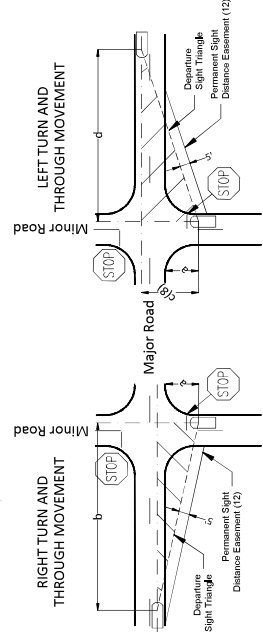
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MO Exp: 12/31/2028
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C-6



AASHTO "Green Book"
Officially Titled Policy
on Geometric Design
of Highways and Streets



Design Speed (mph)	U.S. Customary	
	Stopping Sight Distance (ft)	Intersection Sight Distance for Passenger Cars (ft)
15	80	143.3
20	115	191.1
25	155	238.9
30	200	286.7
35	250	334.4
40	305	382.2
45	360	430.0
50	425	477.8
55	495	525.5
60	570	573.3
65	645	621.1
70	730	668.9
75	820	716.6
80	910	764.4

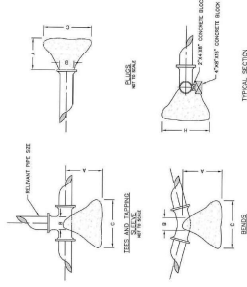
Magruder Asphalt Plant Water Details



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C-7

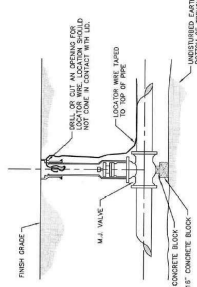


THRUST BLOCK DIMENSIONS - INCHES									
PIPE DIA.	ALL FTGS.	TEE	ADJ. LAPPING	45° BEND	22 1/2° BEND	11 1/4° BEND	11 1/4° BEND	11 1/4° BEND	11 1/4° BEND
4	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1
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NOTE
FOR ALL OTHERS, SEE SPEC. 10.01. SPECIAL

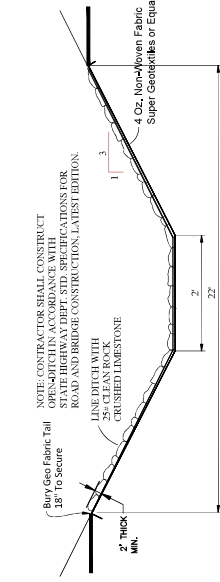
7 Thrust Block Detail SCALE: N.T.S.

REF. DWG. MULTI



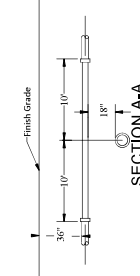
8 Water Valve Detail SCALE: N.T.S.

REF. DWG. MULTI



10 Pond Emergency Overflow Detail SCALE: Not To Scale

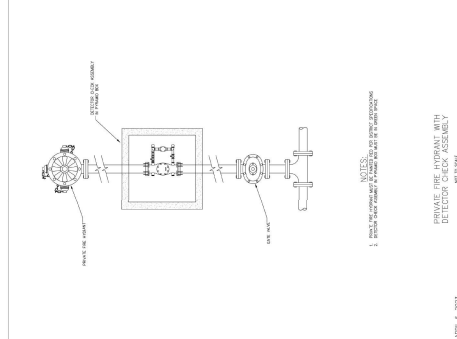
REF. DWG. MULTI



Parallel Installation of Water & Sewer Shall Require 10' Separation.

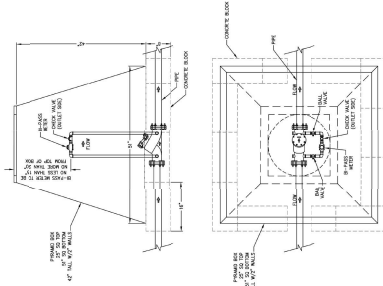
PLAN VIEW OF CROSSING Sewer and Water Crossing

REF. DWG. MULTI



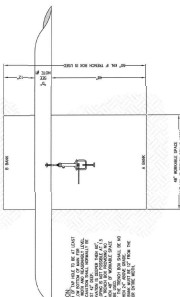
9 Private Fire Hydrant & Detector Check SCALE: Not To Scale

REF. DWG. MULTI



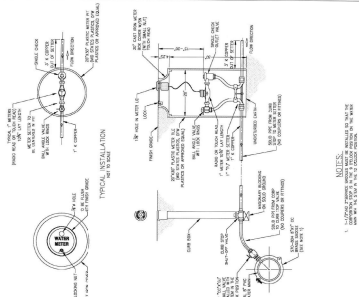
3 Detector Check Assembly SCALE: N.T.S.

REF. DWG. MULTI



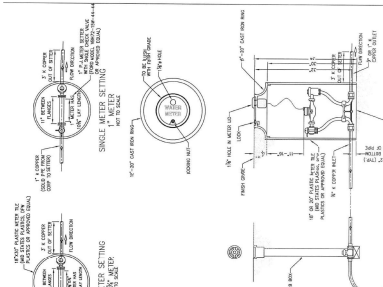
4 Service Connection Tap 3/4" and 1" SCALE: N.T.S.

REF. DWG. MULTI



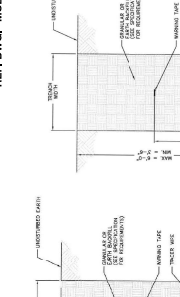
5 Typical Water Service Detail SCALE: N.T.S.

REF. DWG. MULTI



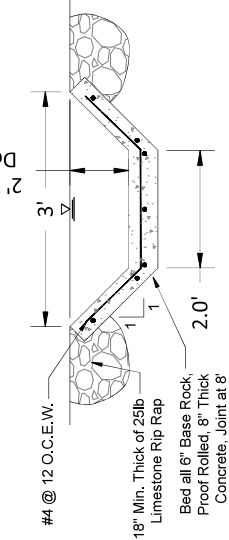
1 Plastic Pit Setter SCALE: N.T.S.

REF. DWG. MULTI



2 Water and Sewer Ditch SCALE: N.T.S.

REF. DWG. MULTI



10 Concrete Flume Section SCALE: N.T.S.

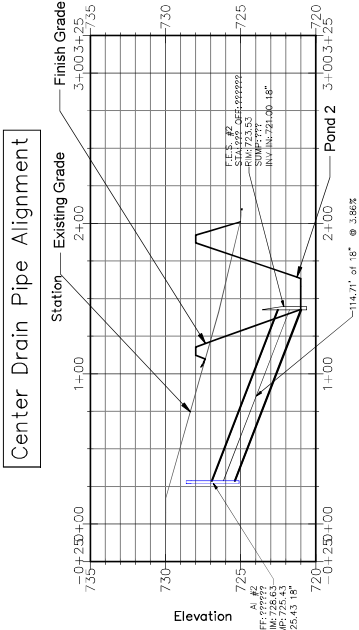
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Magruder Asphalt Plant Pipe Profiles

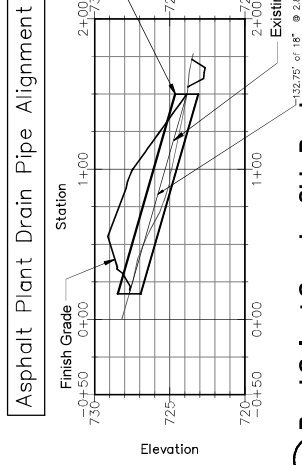
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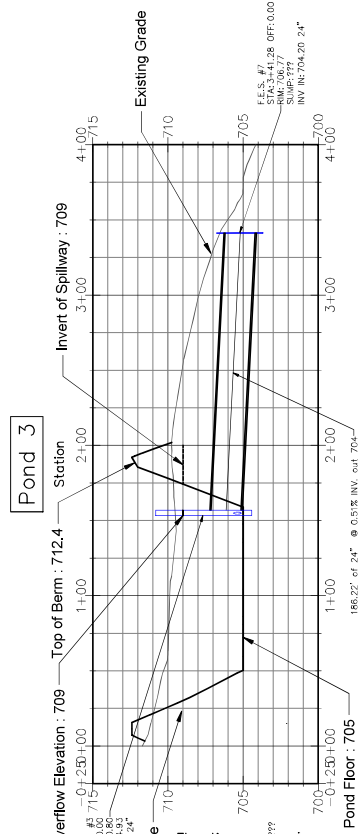
C-9



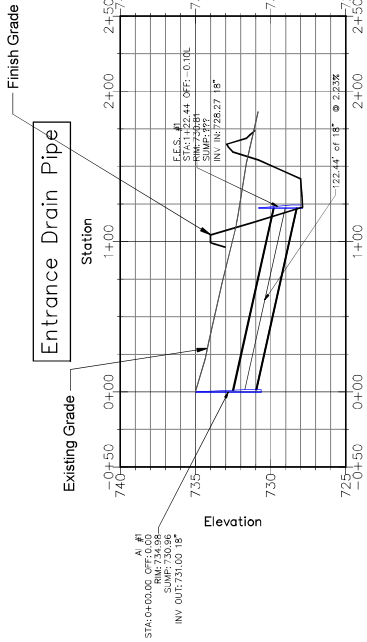
2 Road 8+50 Pipe Profile
 SCALE: Not To Scale
 REF. DWG. C-5



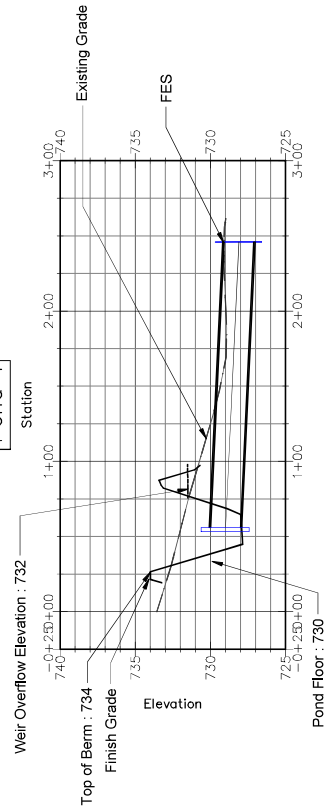
4 Road Culvert Crossing Side Road
 SCALE: Not To Scale
 REF. DWG. C-5



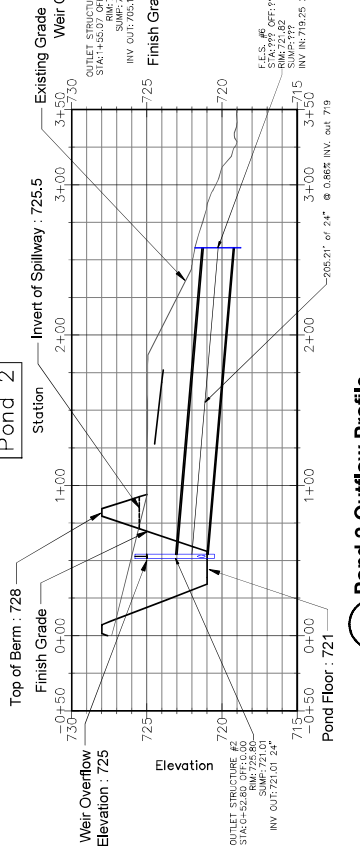
6 Pond 3 Outflow Profile
 SCALE: Not To Scale
 REF. DWG. C-5



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



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



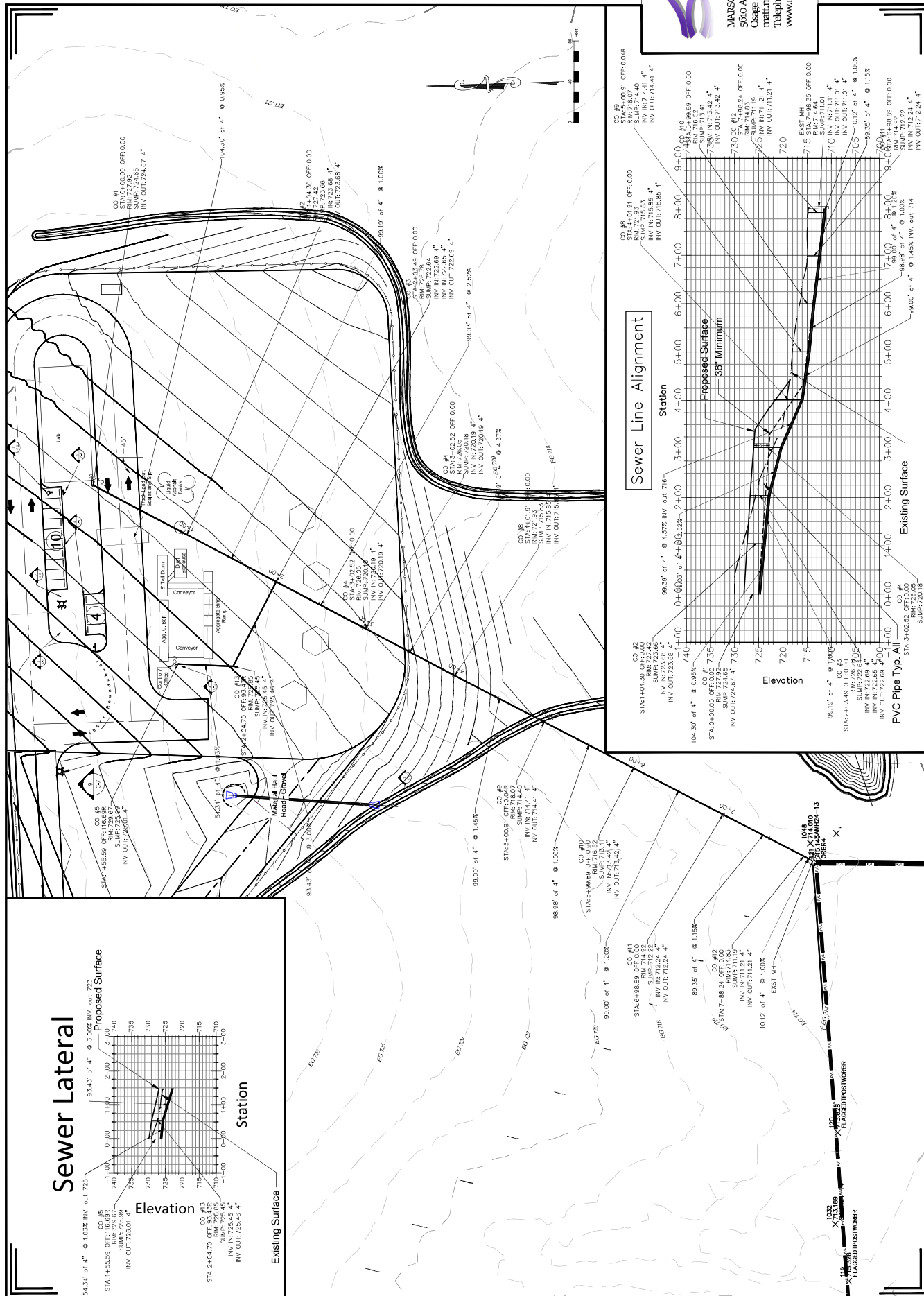
5 Pond 2 Outflow Profile
 SCALE: Not To Scale
 REF. DWG. C-5

1"=40ft



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PKA: 7/6/2026 4:51:19 PM
MO Corp: 2001015503
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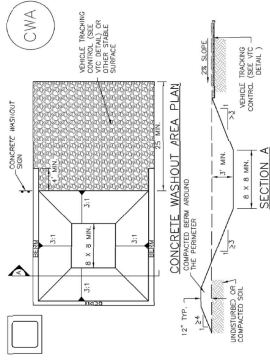
Concrete Washout Area (CWA)

MM-1

Concrete Washout Area (CWA)

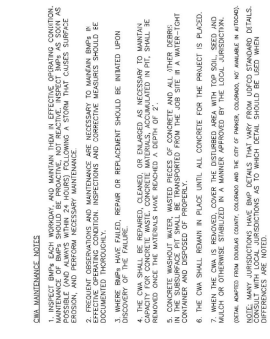
SM-4

Vehicle Tracking Control (VTC)



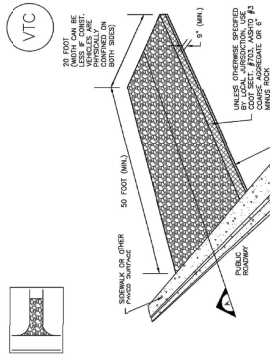
CWA-1. CONCRETE WASHOUT AREA

- SEE PLAN VIEW FOR CWA INSTALLATION LOCATION.
- DO NOT LOCATE AN UNPAVED CWA NEAR OR ON ANY NATURAL DRAINAGE PATHWAY OR NEAR ANY EXISTING OR PROPOSED CULVERTS, DRAINAGE STRUCTURES, OR OTHER OBSTACLES.
- THE CWA SHALL BE INSTALLED ON A MINIMUM 4% SLOPE AWAY FROM THE ROADWAY. THE CWA SHALL BE INSTALLED ON A MINIMUM 4% SLOPE AWAY FROM THE ROADWAY. THE CWA SHALL BE INSTALLED ON A MINIMUM 4% SLOPE AWAY FROM THE ROADWAY.
- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- CWA SHALL INCLUDE A FLAT SURFACE AT THAT IS AT LEAST 8" BY 8" SLOPES LEAST 3' DEEP. THE SUBSURFACE SHALL BE 3" IN FLAT. THE PIT SHALL BE AT LEAST 3' DEEP.
- BEFORE SURROUNDING SIDE AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- CWA SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE OF THE CWA AND OPERATIONS ENTRANCE OF THE CWA. THE CWA SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE OF THE CWA AND OPERATIONS ENTRANCE OF THE CWA.
- USE LOCATED MATERIAL FOR PERMIT CONSTRUCTION.



CWA-1. CONCRETE WASHOUT AREA

- SEE PLAN VIEW FOR CWA INSTALLATION LOCATION.
- DO NOT LOCATE AN UNPAVED CWA NEAR OR ON ANY NATURAL DRAINAGE PATHWAY OR NEAR ANY EXISTING OR PROPOSED CULVERTS, DRAINAGE STRUCTURES, OR OTHER OBSTACLES.
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- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- CWA SHALL INCLUDE A FLAT SURFACE AT THAT IS AT LEAST 8" BY 8" SLOPES LEAST 3' DEEP. THE SUBSURFACE SHALL BE 3" IN FLAT. THE PIT SHALL BE AT LEAST 3' DEEP.
- BEFORE SURROUNDING SIDE AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- CWA SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE OF THE CWA AND OPERATIONS ENTRANCE OF THE CWA. THE CWA SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE OF THE CWA AND OPERATIONS ENTRANCE OF THE CWA.
- USE LOCATED MATERIAL FOR PERMIT CONSTRUCTION.



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

- SEE PLAN VIEW FOR VTC INSTALLATION LOCATION.
- DO NOT LOCATE AN UNPAVED VTC NEAR OR ON ANY NATURAL DRAINAGE PATHWAY OR NEAR ANY EXISTING OR PROPOSED CULVERTS, DRAINAGE STRUCTURES, OR OTHER OBSTACLES.
- THE VTC SHALL BE INSTALLED ON A MINIMUM 4% SLOPE AWAY FROM THE ROADWAY. THE VTC SHALL BE INSTALLED ON A MINIMUM 4% SLOPE AWAY FROM THE ROADWAY. THE VTC SHALL BE INSTALLED ON A MINIMUM 4% SLOPE AWAY FROM THE ROADWAY.
- THE VTC SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- VTC SHALL INCLUDE A FLAT SURFACE AT THAT IS AT LEAST 8" BY 8" SLOPES LEAST 3' DEEP. THE SUBSURFACE SHALL BE 3" IN FLAT. THE PIT SHALL BE AT LEAST 3' DEEP.
- BEFORE SURROUNDING SIDE AND BACK OF THE VTC SHALL HAVE MINIMUM HEIGHT OF 1'.
- VTC SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE OF THE VTC AND OPERATIONS ENTRANCE OF THE VTC. THE VTC SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE OF THE VTC AND OPERATIONS ENTRANCE OF THE VTC.
- USE LOCATED MATERIAL FOR PERMIT CONSTRUCTION.

Concrete Notes

- Inspection by Engineer is required for payment prior placement of steel and prior to pour.
- Min. steel to be #4 @ 12" O.C.E.W. or 4x4-W4.0W4.0 WWF. Lap fabric 9". Lap #4 18" O.C.
- Spray on DOT approved Curing Compound required on all concrete.
- Mix design must be approved by Engineer. Concrete to be 3,500 PSI. DOT approved Mix and Aggregate, 6% Air using air entrainment admixture per ASTM C260. Retaining walls and exterior slabs to be 4,000 PSI.
- MODOT approved Mix and Aggregate, 4% Air using air entrainment admixture per ASTM C260.
- Retaining walls and exterior slabs to be 4,000 PSI.
- Retaining walls to be installed in 50-foot lengths between expansion joints. All walls to have bedded subsurface drains to daylight.
- 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 water right to cut slabs.
- Joint 1: Isolation Joints: Trowel joint (free or doweled) Joint Filler, Sealant: grey self-leveling epoxy-based crack fill.
- 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. Curb to be jointed at 10' on center with 3" deep saw cut.
- 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.
- Expansion Joint Material: Shall meet the latest test dates for ASTM D 1751 and ASTM D 1752 or ASTM D 3249, 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; Night Pointe Company Grey Sponge Rubber Expansion Joint; J.D. Russell "Reflex" Rubber Expansion Joint Material. All Expansion joint material shall be pre-cut to proper dimension before being delivered to the project. No fiber expansion joint material shall be used.
- Joint 4: Decorative Concrete Joints. Ensure the owner and architect approve of the joints prior to placing concrete.
- Construction joints as required, do not place construction joints parallel with control joints.
- Curbs to be placed at 10' intervals as described in joint.
- ACI 117 certified finish shall be required to be on the project at all times.
- Wall footings may be designed for solid rock. Special inspection required.
- DO NOT add water on site to the mix. Use a water reducing additive per ASTM C494.
- Vibration Required.
- All Rebar Grade 60, rebar chairs required per ASTM A615. Lap splice lengths per ACI: 36" for #5 tension bars, 60" for #7 Bars.
- Reinforce holes with two #4 bars at each corner.
- Shop drawings of reinforcement shall be submitted including the details of all reinforcement.
- Failure to allow inspection of rebar or placement on concrete by giving 48-hour notice to Engineer will result in the work being rejected.
- Anchor bolts to be ASTM A307/A336. Provide a minimum of 3" cover on all anchor bolts. Place reinforcement between bolt and surface for containment.
- When installing concrete to old #5 @ 18" O.C. 4.5" embedment dowels to be used with epoxy adhesives per manufacturer recommendations. Dowels to be #4, with 4" embedment @ 18" O.C.
- Take three cylinders from each day pour or each 50 Cubic yard. Test at 7/28 provide results to engineer.
- Cure all concrete with spray on curing membrane as approved by MODOT or wet cure 7 days.
- All pavements to be 8" slab with #4 on 12" O.C.E.W.

Concrete Washout and VTC

SCALE: Not To Scale

REF. DWG. MULTI

