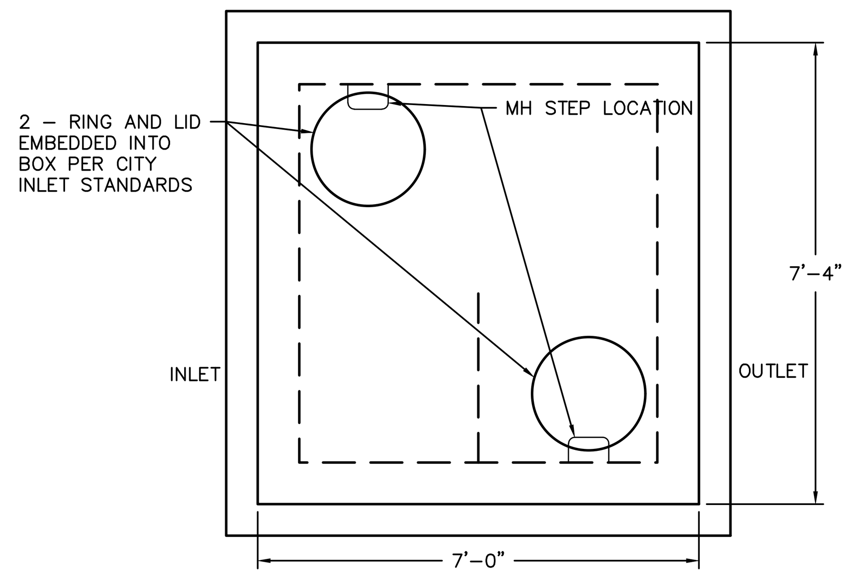
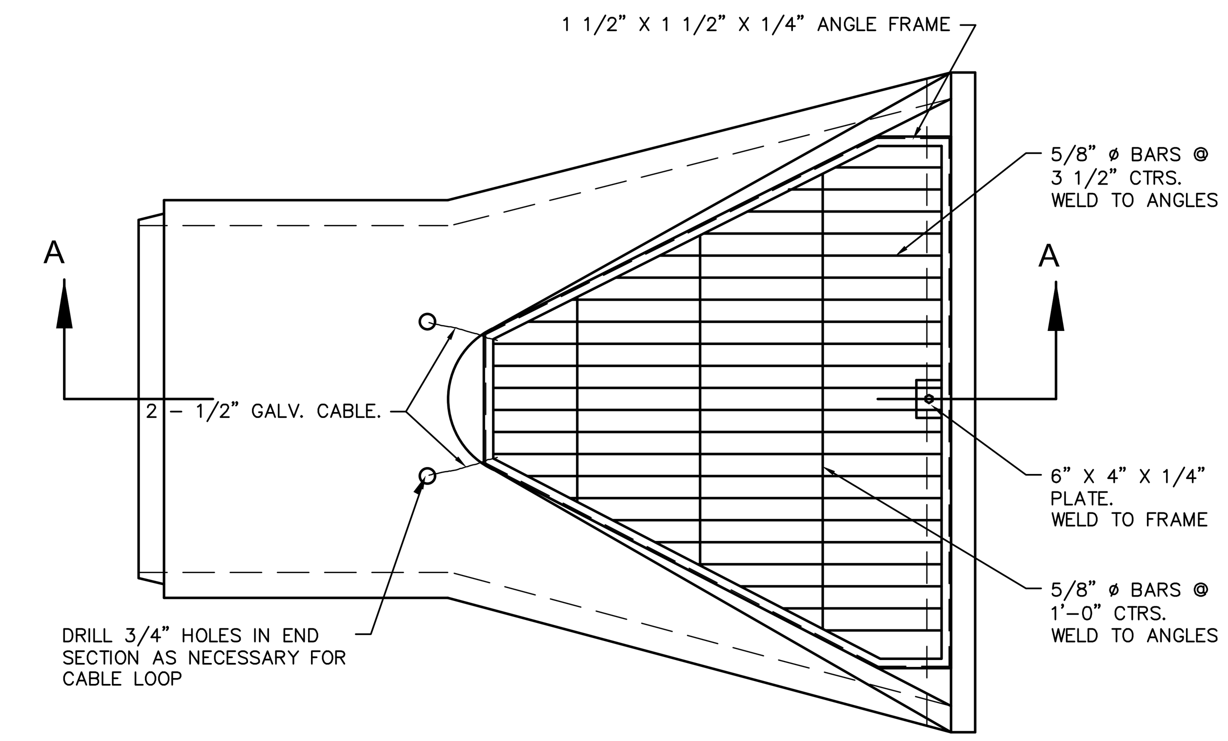
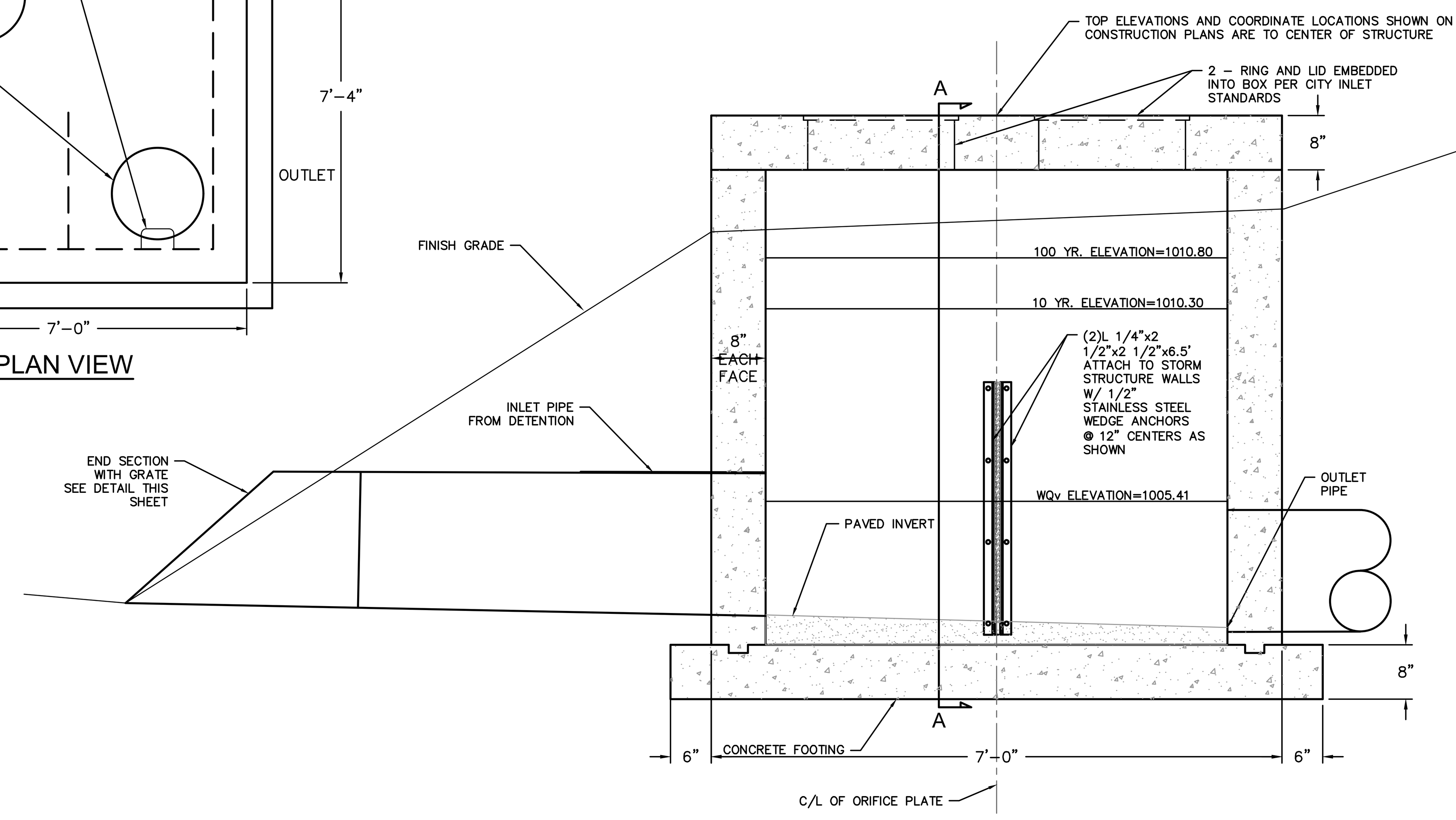


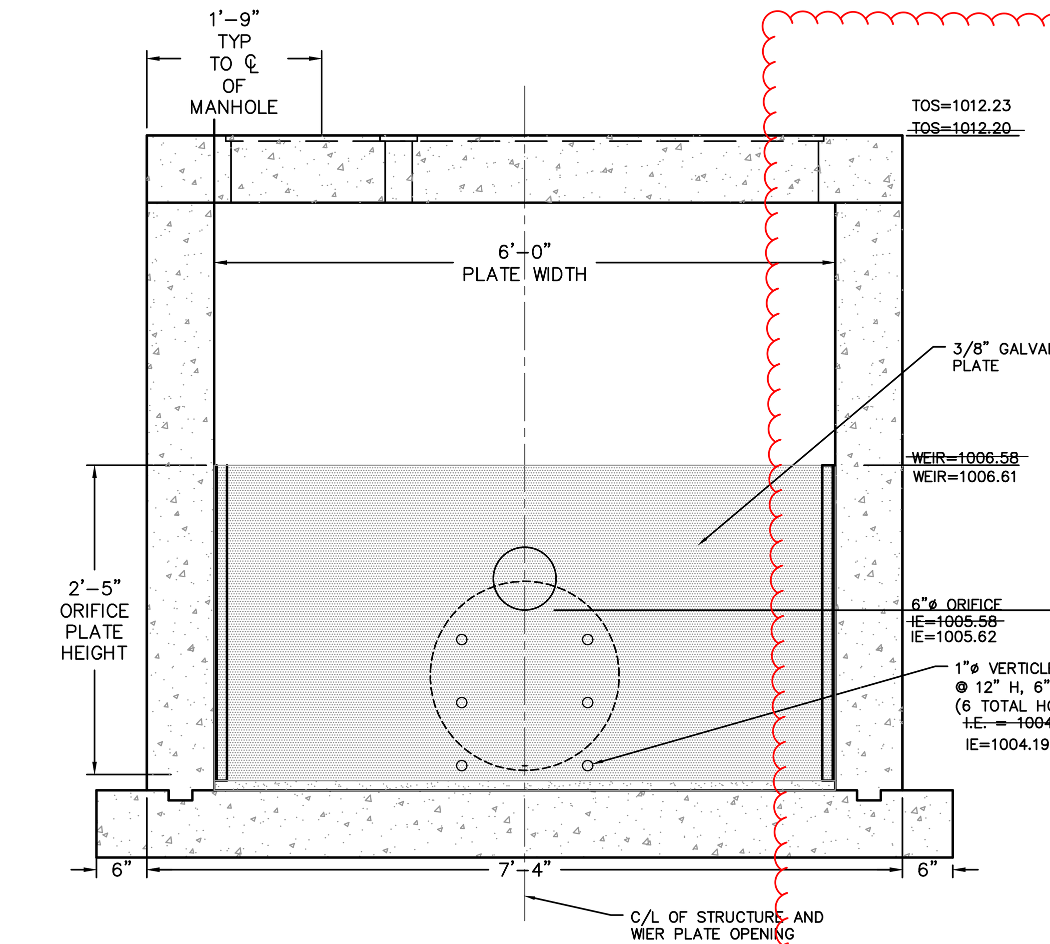
PLAN VIEW



PLANVIEW



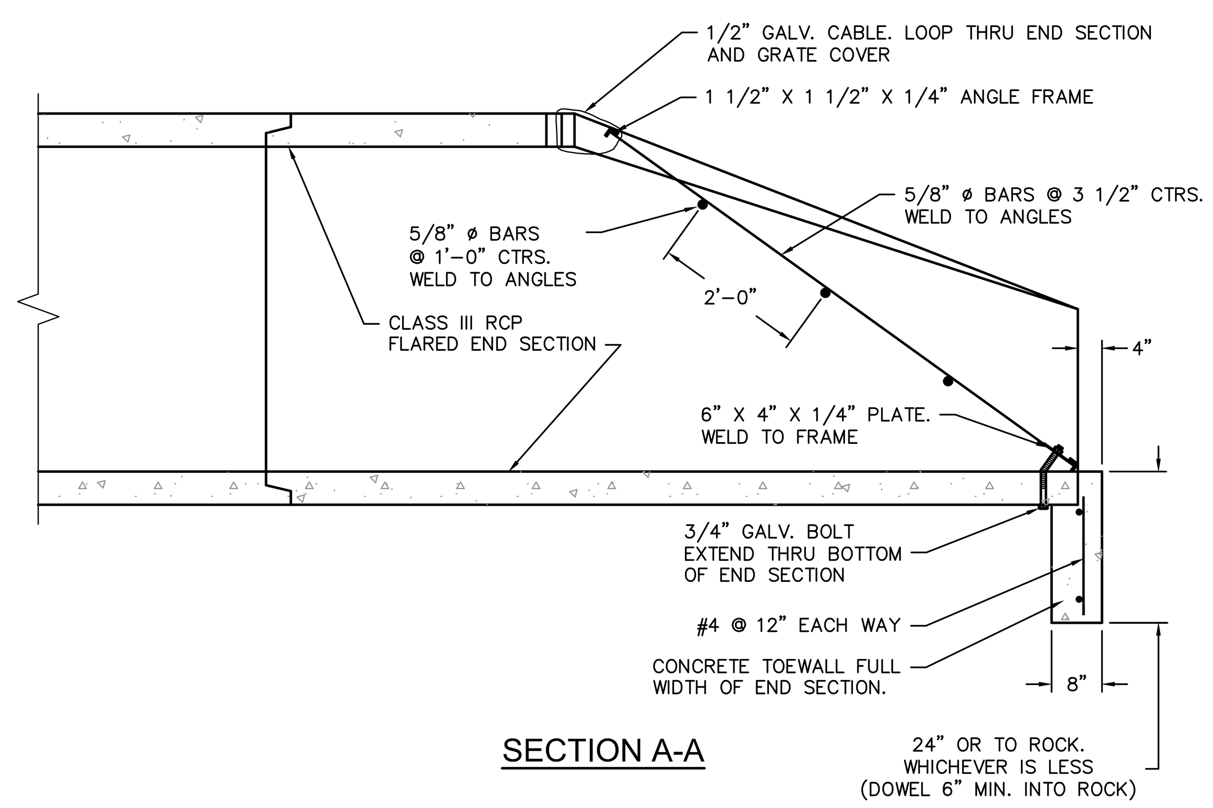
PROFILE VIEW



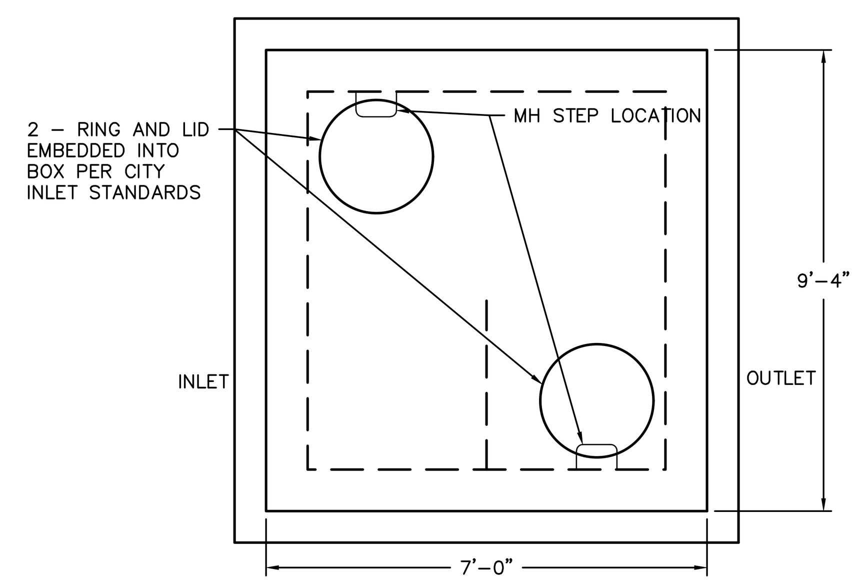
SECTION A-A

CONTROL STRUCTURE EDD-1
(STRUCTURE B3)

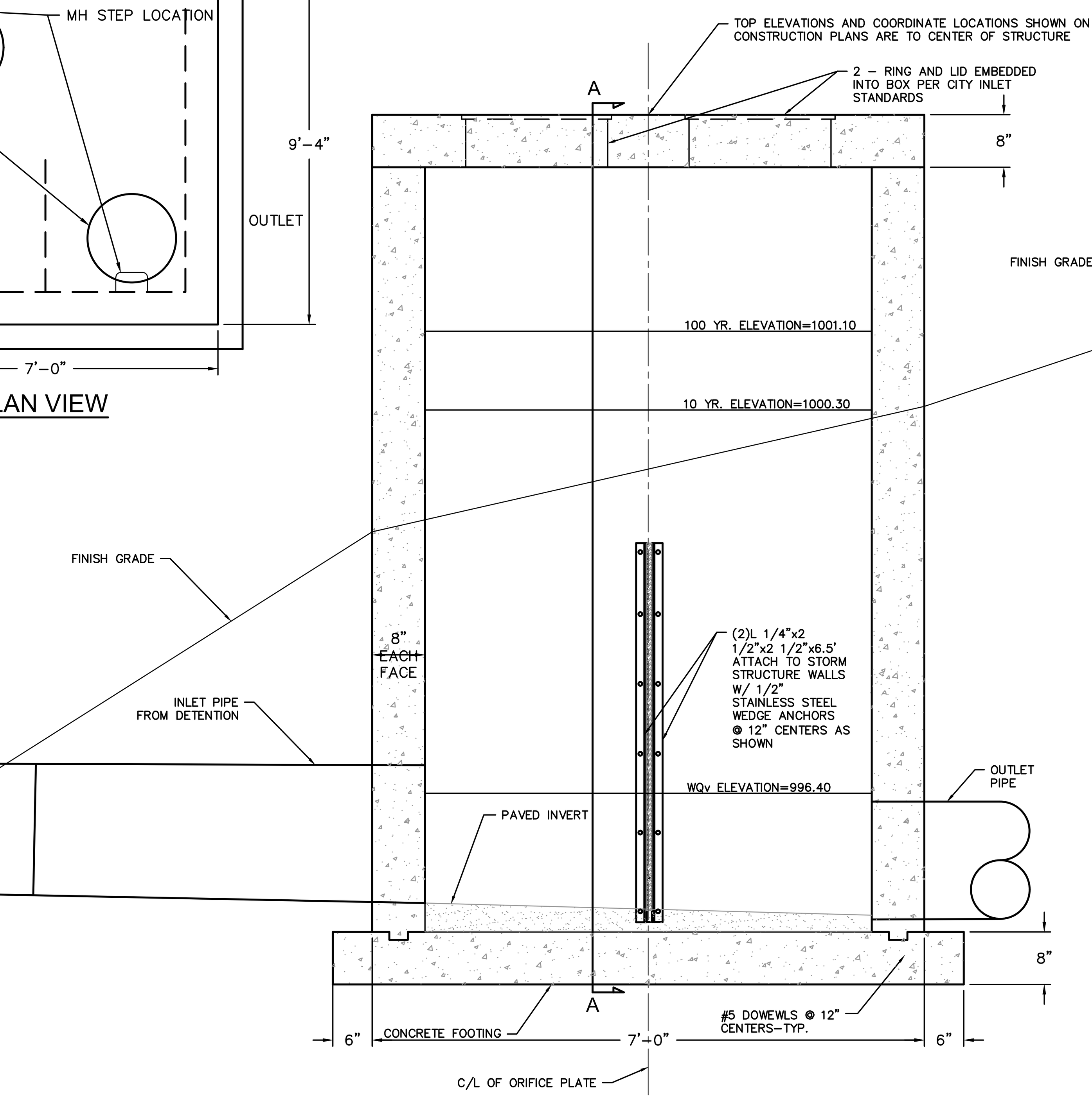
DETENTION AS-BUILTS
08-08-2022



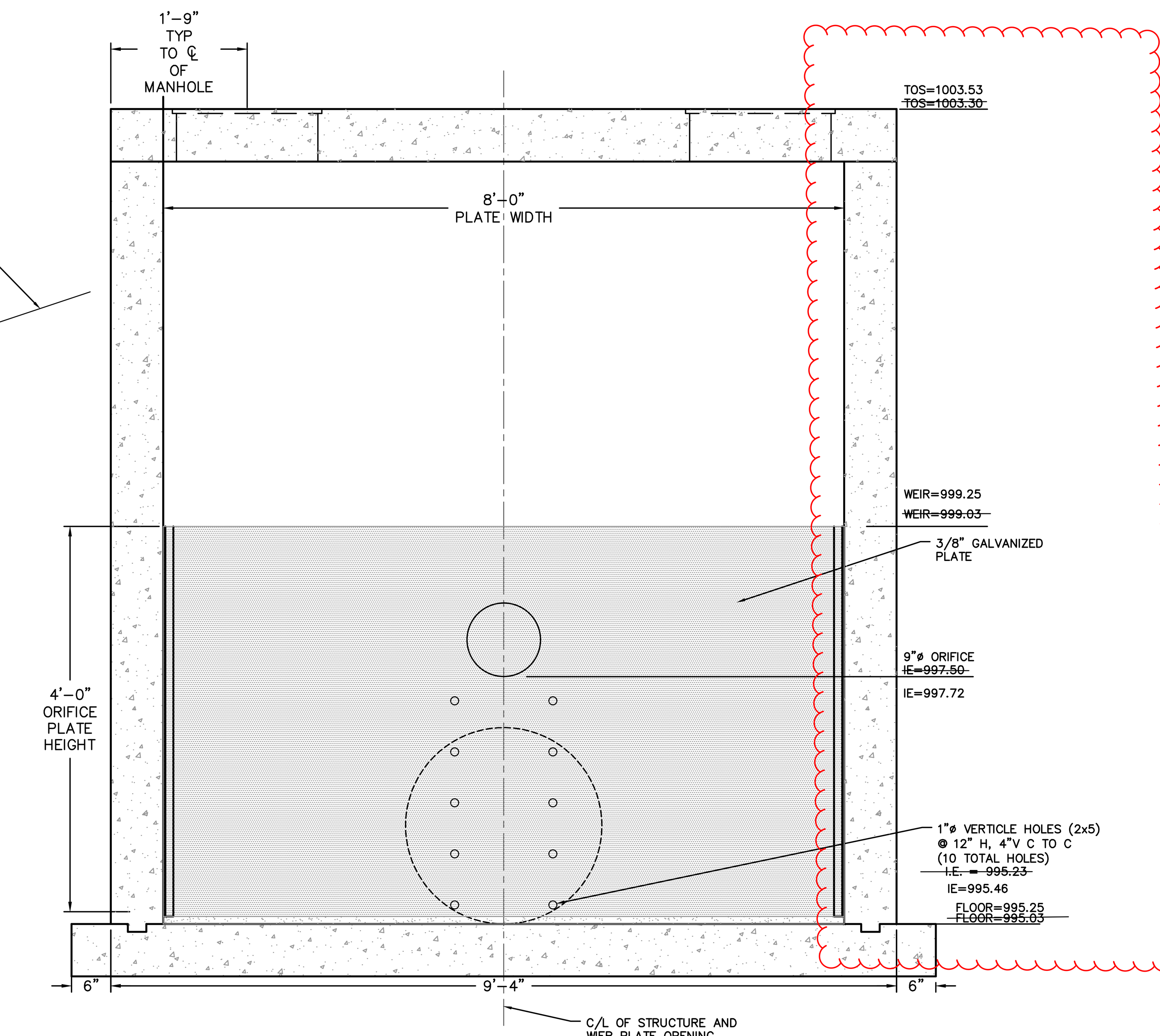
SECTION A-A



PLAN VIEW



PROFILE VIEW



SECTION A-A

CONTROL STRUCTURE EDD-2
(STRUCTURE D2)

END SECTION NOTES

1. GRATE COVER DETAIL SHALL BE ADJUSTED AS NECESSARY TO FIT END SECTION PROVIDED.
2. MAXIMUM OPENING THRU END SECTION SHALL BE NO GREATER THAN 6". ADJUST DETAIL AS NECESSARY.
3. ALL METAL SURFACES SHALL BE HOT DIP ZINC COATED IN ACCORDANCE WITH ASTM A-123.
4. USE CITY APPROVED CONCRETE THROUGHOUT.
5. ALL CONCRETE AND MATERIALS USED IN THIS WORK SHALL MEET THE REQUIREMENTS OF THE GOVERNING BODY.
6. REINFORCING STEEL SHALL BE NEW BILLET, MINIMUM GRADE 40 AS PER ASTM A615, AND SHALL BE BENT COLD.
7. ALL DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO CENTERLINE OF BARS. 2" CLEARANCE SHALL BE PROVIDED THROUGHOUT UNLESS NOTED OTHERWISE. TOLERANCE OF ±1/8" SHALL BE PERMITTED.
8. ALL LAP SPLICES NOT SHOWN SHALL BE A MINIMUM OF 40 BAR DIAMETERS IN LENGTH.
9. ALL DOWELS SHALL BE ACCURATELY PLACED AND SECURELY TIED IN PLACE PRIOR TO PLACEMENT OF BOTTOM SLAB CONCRETE. STICKING OF DOWELS INTO FRESH OR PARTIALLY HARDENED CONCRETE WILL NOT BE ACCEPTABLE.
10. ALL REINFORCING STEEL SHALL BE SUPPORTED ON FABRICATED STEEL BAR SUPPORTS @ 3'-0" MAXIMUM SPACING.
11. DO NOT SCALE THESE DRAWINGS FOR DIMENSIONS OR CLEARANCES. ANY QUESTIONS REGARDING DIMENSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION.

END SECTION TOE WALL WITH GRATE
NOT TO SCALE

DLR Group

STATE OF MISSOURI
TERRY M. PARSONS
NUMBER PE-2018010505
PROFESSIONAL ENGINEER

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PACKAGE 2-
STRUCTURAL & SITE UTILITIES
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08/28/20

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13-20102-00

STANDARD DETAILS

C1057

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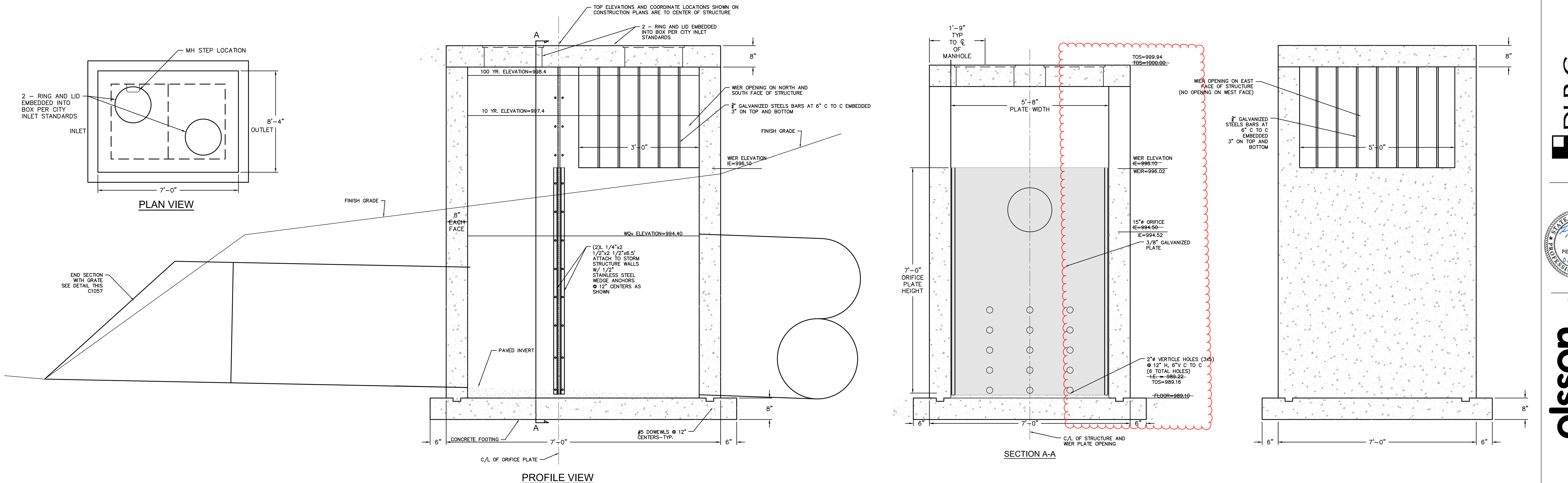
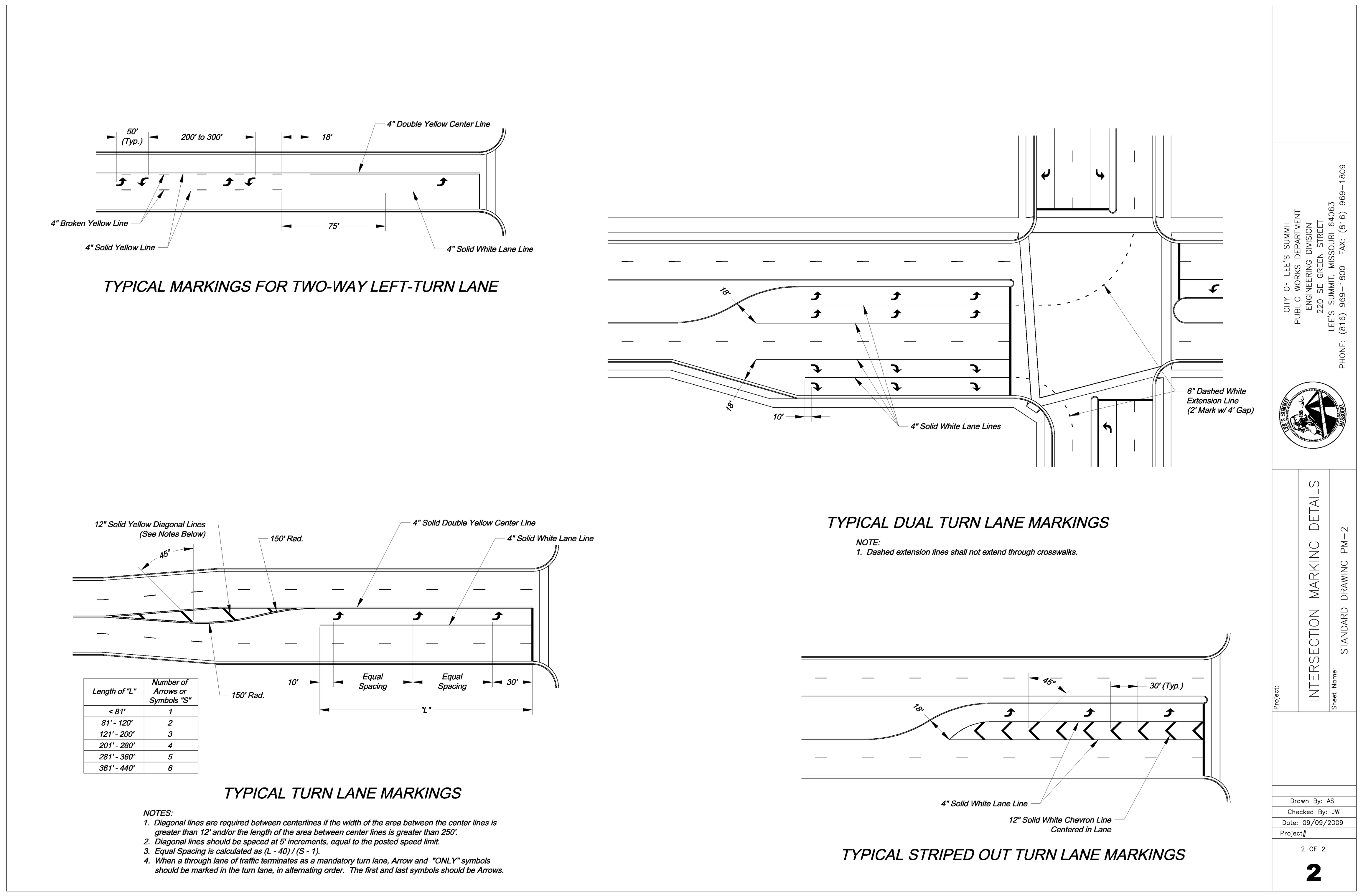


CONTROL STRUCTURE EDD-3 (STRUCTURE J2)

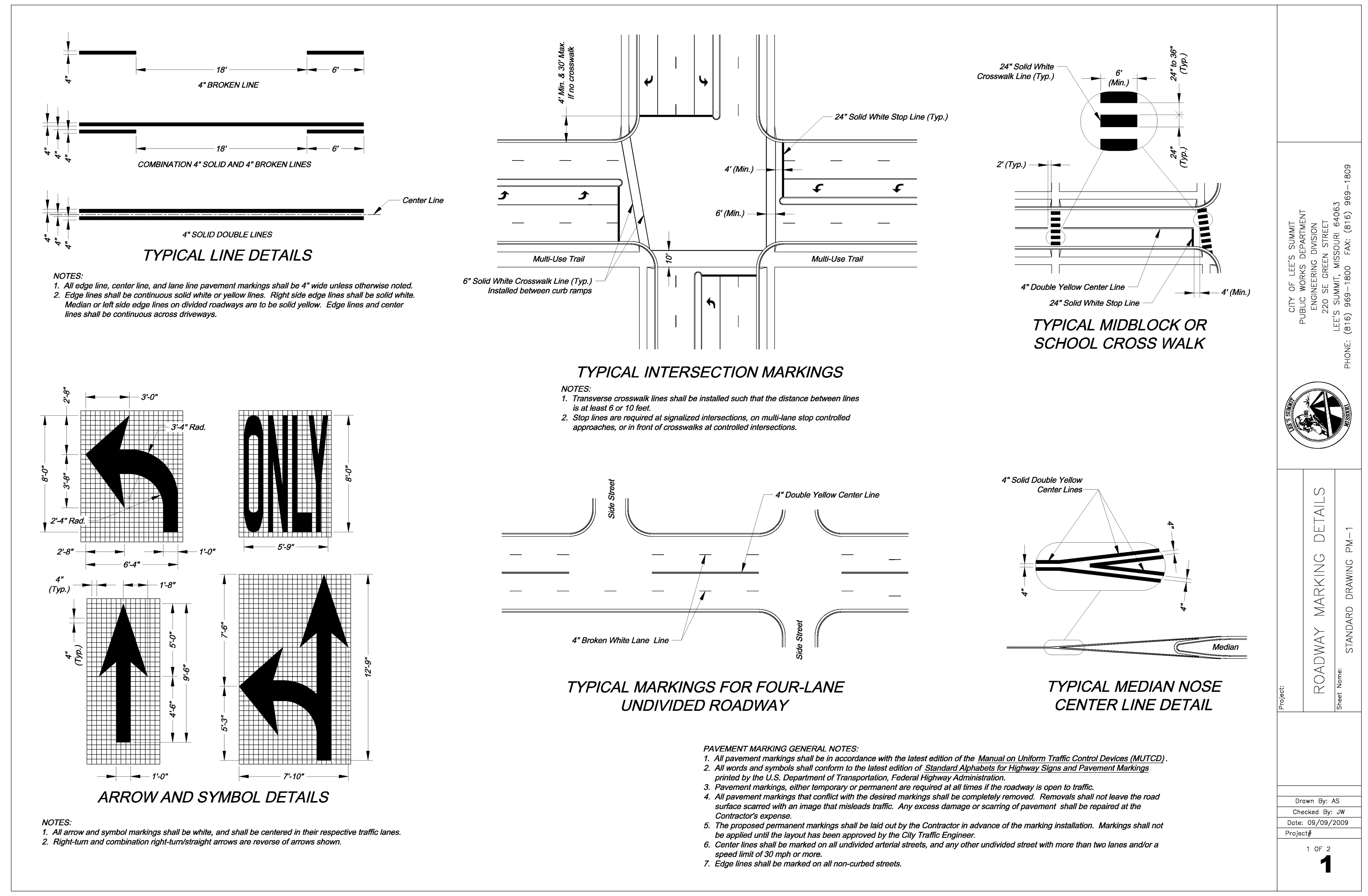
DETENTION AS-BUILTS
08-08-2022



Length of "L"	Number of Arrows or Symbols "S"
< 81'	1
81' - 120'	2
121' - 200'	3
201' - 280'	4
281' - 360'	5
361' - 440'	6

TYPICAL TURN LANE MARKINGS

NOTES:
1. Diagonal lines are required between centerlines if the width of the area between the center lines is greater than 12' and/or the length of the area between center lines is greater than 250'.
2. Diagonal lines should be spaced at 5' increments, equal to the posted speed limit.
3. Equal Spacing is calculated as (L - 40) / (S - 1).
4. When a through lane of traffic terminates as a mandatory turn lane, Arrow and "ONLY" symbols should be marked in the turn lane, in alternating order. The first and last symbols should be Arrows.



TYPICAL LINE DETAILS

NOTES:
1. All edge line, center line, and lane line pavement markings shall be 4" wide unless otherwise noted.
2. Edge lines shall be continuous solid white or yellow lines. Right side edge lines shall be solid white. Median or left side edge lines on divided roadways are to be solid yellow. Edge lines and center lines shall be continuous across driveways.

TYPICAL INTERSECTION MARKINGS

NOTES:
1. Transverse crosswalk lines shall be installed such that the distance between lines is at least 6 or 10 feet.
2. Stop lines are required at signalized intersections, on multi-lane stop controlled approaches, or in front of crosswalks at controlled intersections.

ARROW AND SYMBOL DETAILS

NOTES:
1. All arrow and symbol markings shall be white, and shall be centered in their respective traffic lanes.
2. Right-turn and combination right-turn/straight arrows are reverse of arrows shown.

TYPICAL MARKINGS FOR FOUR-LANE UNDIVIDED ROADWAY

TYPICAL MEDIAN NOSE CENTER LINE DETAIL

PAVEMENT MARKING GENERAL NOTES:
1. All pavement markings shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2. All words and symbols shall conform to the latest edition of Standard Alphabets for Highway Signs and Pavement Markings printed by the U.S. Department of Transportation, Federal Highway Administration.
3. Pavement markings, either temporary or permanent are required at all times if the roadway is open to traffic.
4. All pavement markings that conflict with the desired markings shall be completely removed. Removals shall not leave the road surface scarred with an image that misleads traffic. Any excess damage or scarring of pavement shall be repaired at the Contractor's expense.
5. The proposed permanent markings shall be laid out by the Contractor in advance of the marking installation. Markings shall not be applied until the layout has been approved by the City Traffic Engineer.
6. Center lines shall be marked on all undivided arterial streets, and any other undivided street with more than two lanes and/or a speed limit of 30 mph or more.
7. Edge lines shall be marked on all non-curbed streets.

DLR Group
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Missouri State Certificate of Authority #000939

STATE OF MISSOURI
TERRY M. PARSONS
NUMBER PE-2018010505
08/08/2022
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PACKAGE 2- STRUCTURAL & SITE UTILITIES
ISSUED FOR PERMIT
08/28/20

2 PR002R 01.14.21

13-20102-00

STANDARD DETAILS

C1058

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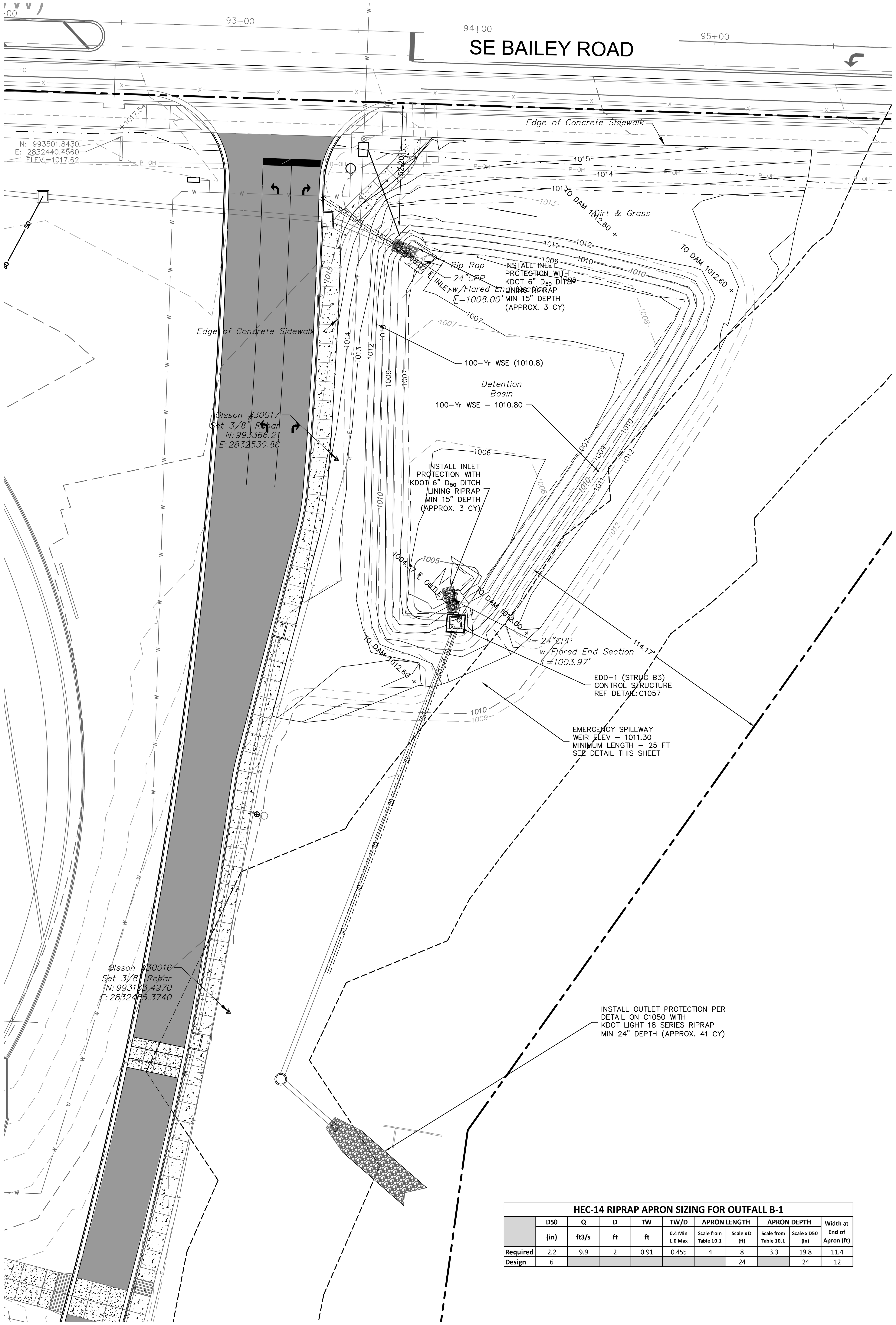
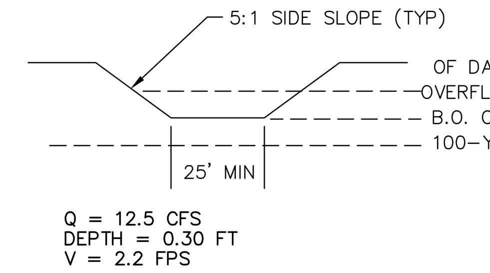
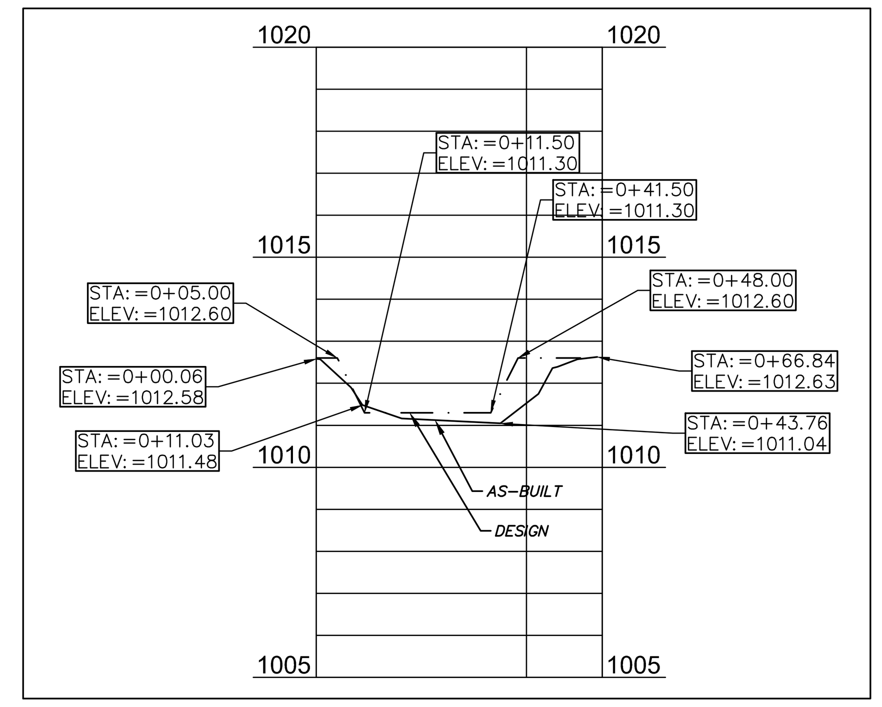


HEC-14 RIPRAP APRON SIZING FOR OUTFALL B-1										
	D50	Q	D	TW	TW/D	APRON LENGTH		APRON DEPTH		Width at End of Apron (ft)
	(in)	ft3/s	ft	ft	0.4 Min 1.0 Max	Scale from Table 10.1	Scale x D (ft)	Scale from Table 10.1	Scale x D50 (in)	
Required	2.2	9.9	2	0.91	0.455	4	8	3.3	19.8	11.4
Design	6						24		24	12



EDD-1
EMERGENCY SPILLWAY DETAIL



EDD-1
EMERGENCY SPILLWAY DETAIL
(DESIGN VS AS-BUILT)

DESIGN VS AS-BUILT DETENTION AREA		
ELEVATION	DESIGN AREA (ACRES)	AS-BUILT AREA (ACRES)
1004	0.00	0.00
1005	0.02	0.01
1006	0.04	0.05
1007	0.14	0.13
1008	0.26	0.27
1009	0.35	0.35
1010	0.38	0.39
1011	0.41	0.42

EDD -1 ORIFICE PLATE

LEGEND
- PROPERTY LINE
- 995 DESIGN MAJOR CONTOUR
- 995 DESIGN MINOR CONTOUR
- 998 AS-BUILT MAJOR CONTOUR
- 998 AS-BUILT MINOR CONTOUR

CONTRACTOR NOTE:

ALL TEMPORARY SILTATION BASINS, SEDIMENT BASINS AND DETENTION BASINS MUST BE CONSTRUCTED PRIOR TO ANY OTHER IMPROVMENTS.

DETENTION AS-BUILTS
08-08-2022

N
0' 10' 20' 40'
SCALE IN FEET

DLR Group

STATE OF MISSOURI
TERRY M. PARSONS
NUMBER PE-2018010505
PROFESSIONAL ENGINEER
08/08/2022

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PACKAGE 2- STRUCTURAL & SITE UTILITIES
ISSUED FOR PERMIT
08/28/20

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13-20102-00

DETENTION BASIN DETAIL

C1059

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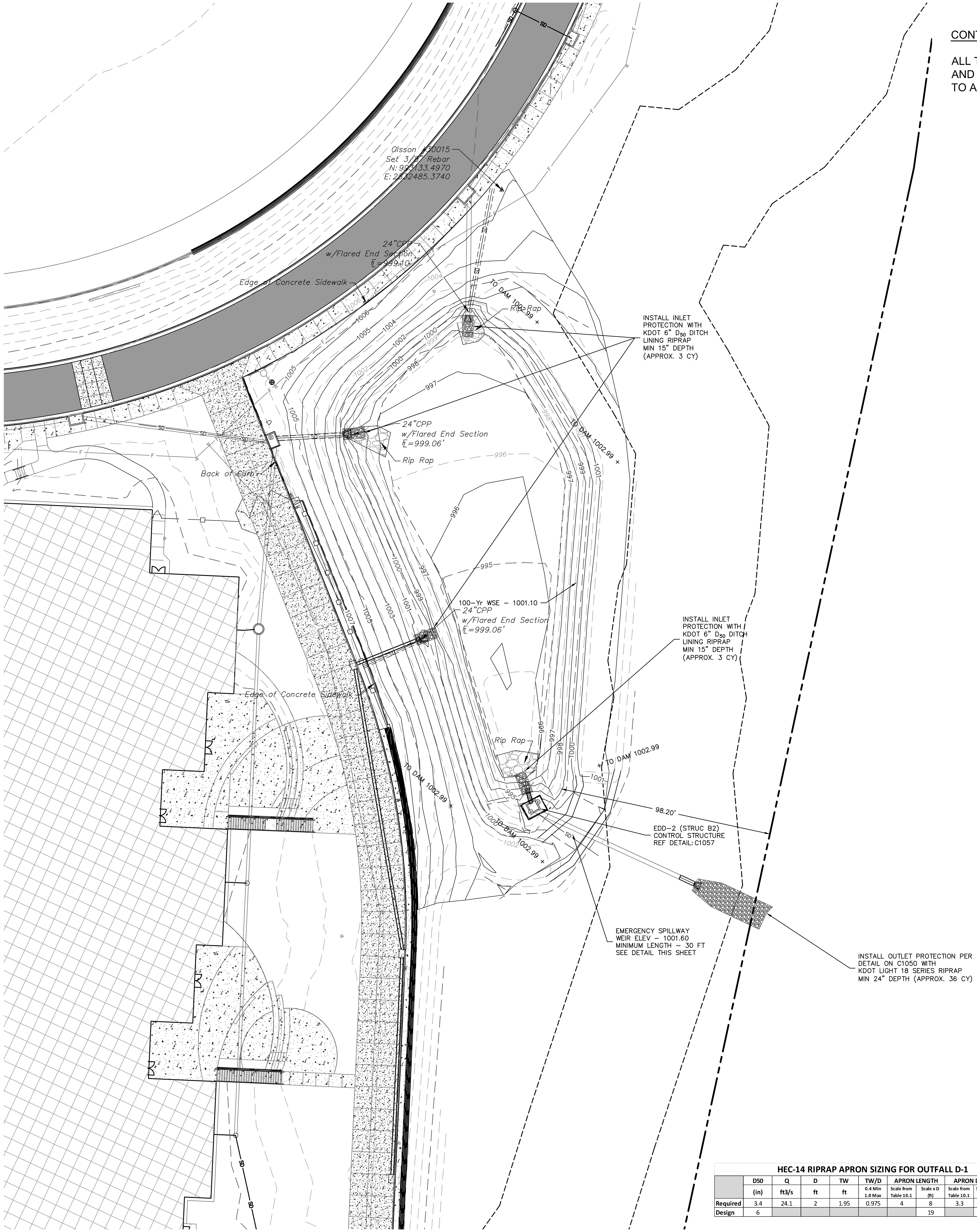
USER: kprice

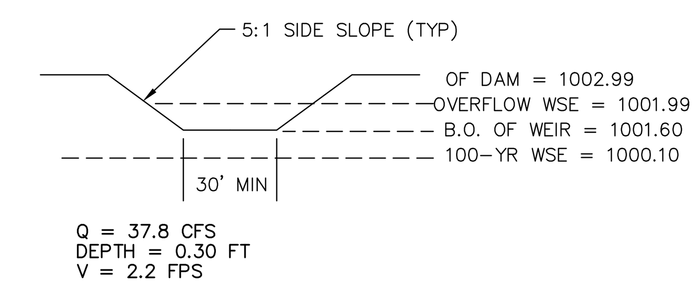


CONTRACTOR NOTE:

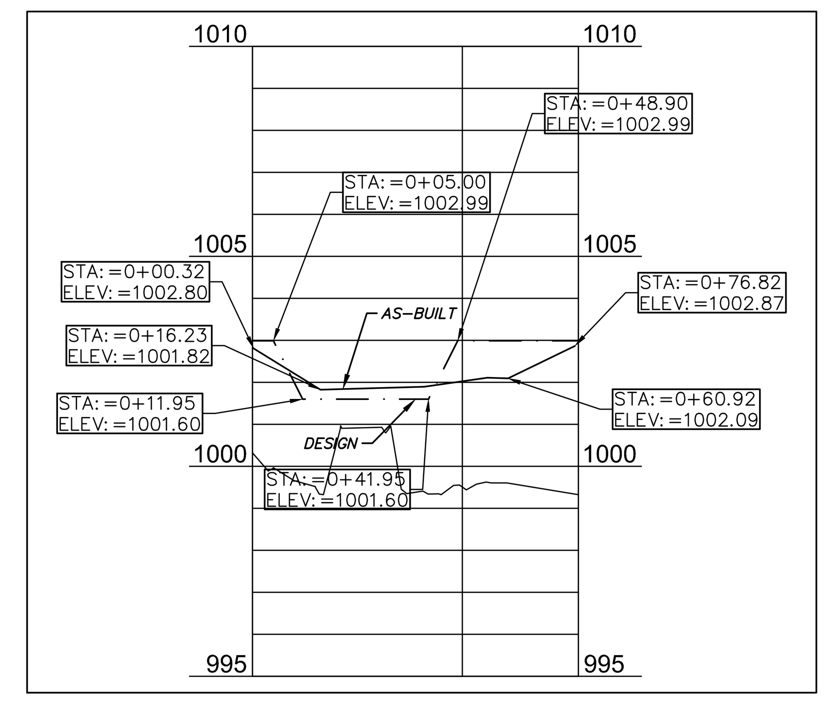
ALL TEMPORARY SILTATION BASINS, SEDIMENT BASINS AND DETENTION BASINS MUST BE CONSTRUCTED PRIOR TO ANY OTHER IMPROVMENTS.

LEGEND

- PROPERTY LINE
- 995 DESIGN MAJOR CONTOUR
- 995 DESIGN MINOR CONTOUR
- 998 AS-BUILT MAJOR CONTOUR
- 998 AS-BUILT MINOR CONTOUR



EDD-2
EMERGENCY SPILLWAY DETAIL



EDD-2
EMERGENCY SPILLWAY DETAIL
(DESIGN VS AS-BUILT)

DESIGN VS AS-BUILT DETENTION AREA

ELEVATION	DESIGN AREA (ACRES)	AS-BUILT AREA (ACRES)
995	0.00	0.00
996	0.13	0.11
997	0.26	0.25
998	0.26	0.30
999	0.35	0.34
1000	0.38	0.38
1001	0.41	0.42
1002	0.45	0.46

EDD-2 ORIFICE PLATE

DETENTION AS-BUILTS
08-08-2022

HEC-14 RIPRAP APRON SIZING FOR OUTFALL D-1

	D50	Q	D	TW	TW/D	APRON LENGTH		APRON DEPTH		Width at End of Apron (ft)
	(in)	ft3/s	ft	ft	0.4 Min 1.0 Max	Scale from Table 10.1	Scale x D (ft)	Scale from Table 10.1	Scale x D50 (in)	
Required	3.4	24.1	2	1.95	0.975	4	8	3.3	19.8	11.4
Design	6						19		24	12

N

0' 10' 20' 40'
SCALE IN FEET

DLR Group

TERRY M. PARSONS NUMBER PE-2018010505 STATE OF MISSOURI PROFESSIONAL ENGINEER

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LEE'S SUMMIT, MO 64081

PACKAGE 2-
STRUCTURAL & SITE
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08/28/20

2 PR002R 12.18.20

13-20102-00

DETENTION BASIN DETAIL

C1060

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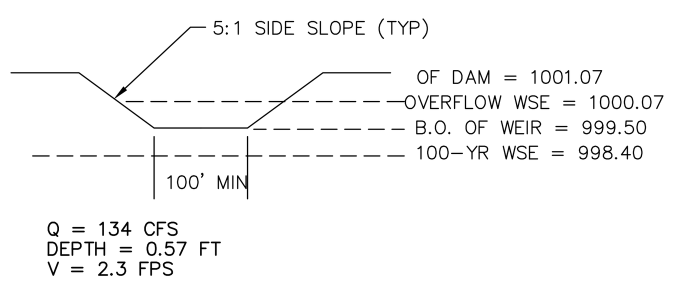
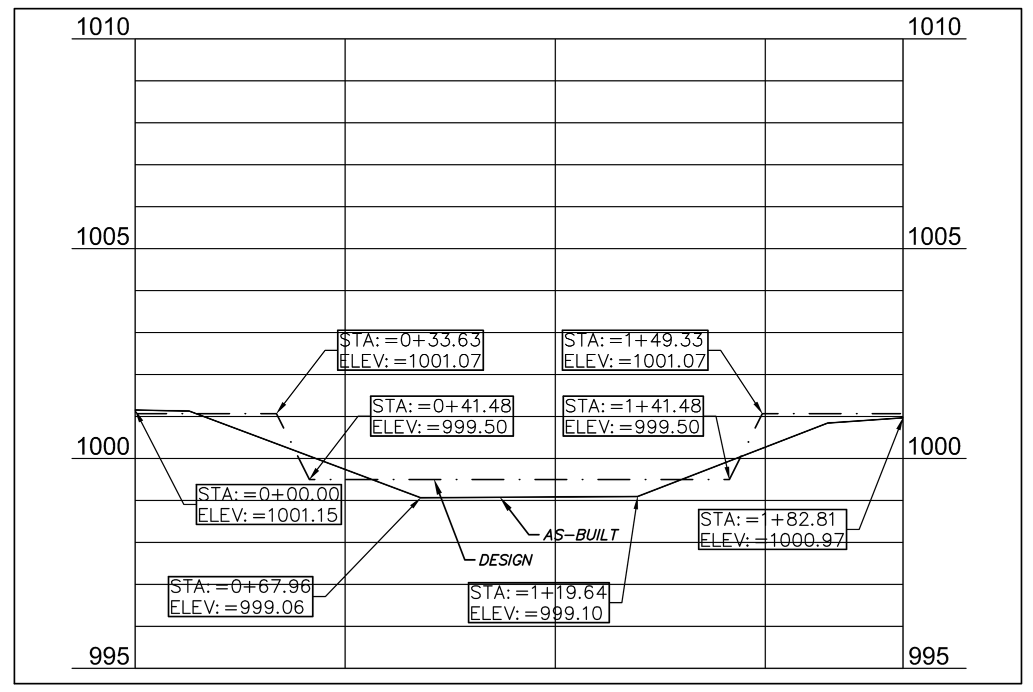
CONTRACTOR NOTE:

ALL TEMPORARY SILTATION BASINS, SEDIMENT BASINS AND DETENTION BASINS MUST BE CONSTRUCTED PRIOR TO ANY OTHER IMPROVMENTS.



EDD-3
EMERGENCY SPILLWAY DETAIL



EDD-3 EMERGENCY SPILLWAY DETAIL
(DESIGN VS AS-BUILT)

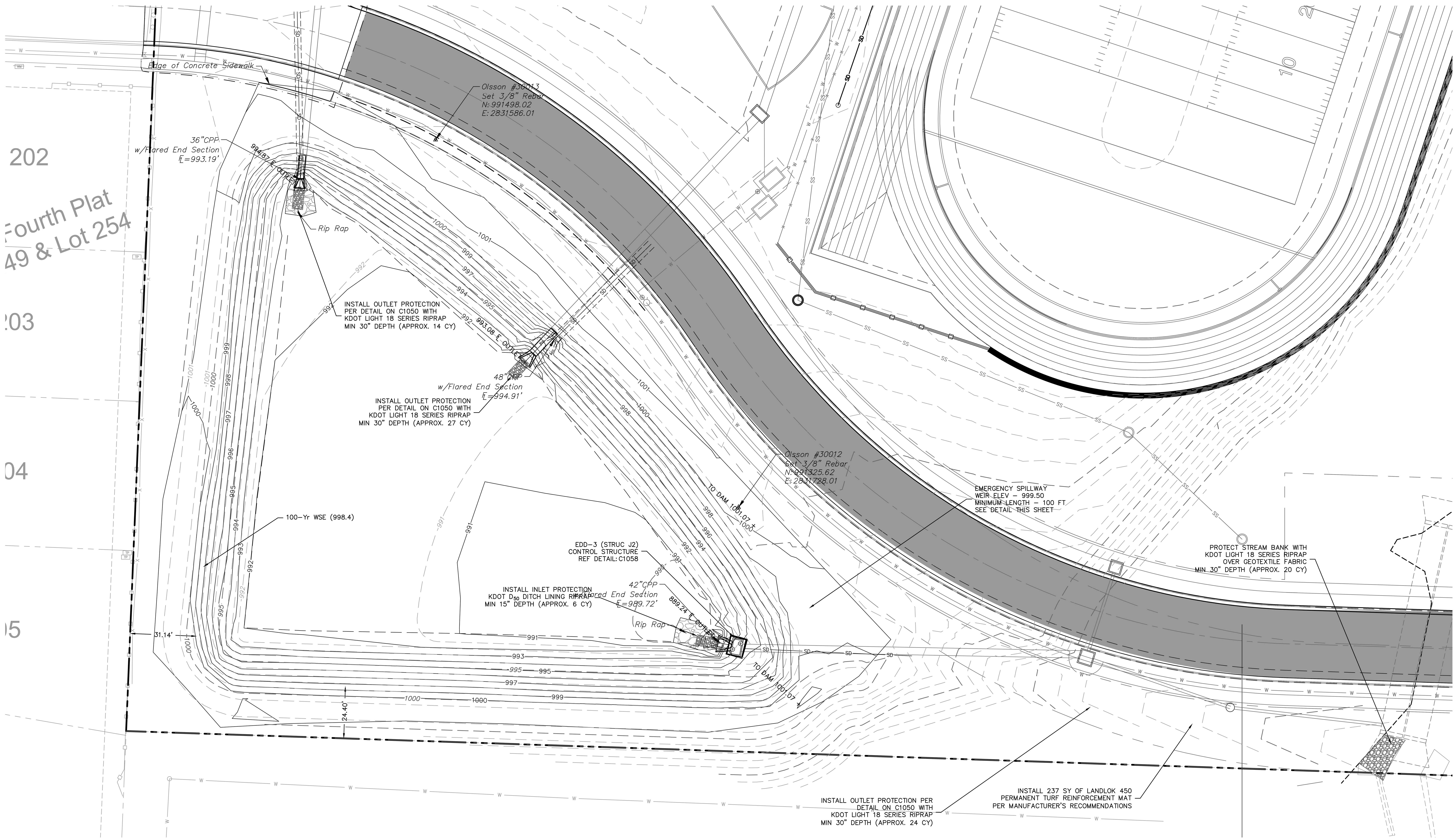
DESIGN VS AS-BUILT DETENTION AREA		
ELEVATION	DESIGN AREA (ACRES)	AS-BUILT AREA (ACRES)
989	0.00	0.00
990	0.04	0.01
991	0.28	0.27
992	0.65	0.63
993	0.76	0.76
994	0.82	0.84
995	0.88	0.91
996	0.93	0.98
997	0.99	1.04
998	1.06	1.10
999	1.12	1.14
1000	1.23	1.26

EDD -3 ORIFICE PLATE

LEGEND

- PROPERTY LINE
- 995 DESIGN MAJOR CONTOUR
- 995 DESIGN MINOR CONTOUR
- 998 AS-BUILT MAJOR CONTOUR
- 998 AS-BUILT MINOR CONTOUR

DETENTION AS-BUILTS
08-08-2022



HEC-14 RIPRAP APRON SIZING FOR OUTFALL J-1										
	D50	Q	D	TW	TW/D	APRON LENGTH		APRON DEPTH		Width at End of Apron (ft)
	(in)	ft3/s	ft	ft	0.4 Min 1.0 Max	Scale from Table 10.1	Scale x D (ft)	Scale from Table 10.1	Scale x D50 (in)	
Required	4.5	63	3.5	2.48	0.708571	4	14	3.3	29.7	19.9
Design	9						28		30	20

N

0 10' 20' 40'
SCALE IN FEET

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DLR Group

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08/28/20

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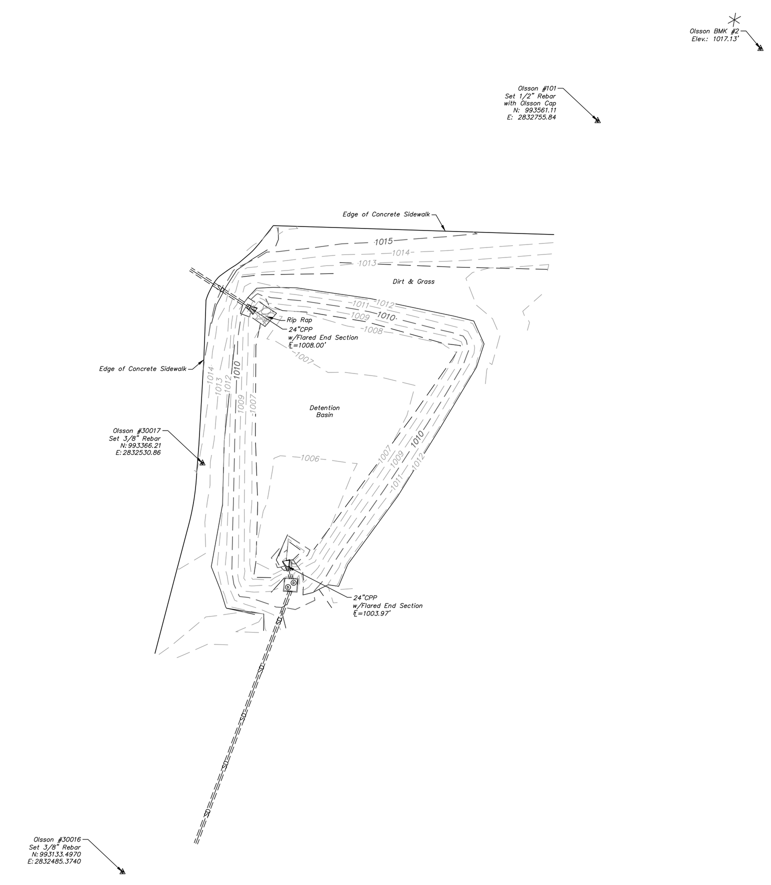
13-20102-00

DETENTION BASIN DETAIL

C1061



LEGEND

	SET 3/8"x24" REBAR W/ OLSSON CONTROL CAP
	SET 1/2"x24" REBAR W/ OLSSON CONTROL CAP
	OLSSON INC. BENCHMARK
FES	FLARED END SECTION
— SD —	STORM SEWER LINE
CPP	CORRUGATED PLASTIC PIPE
CP	CONTROL POINT
CTL	CONTROL
ELEV.	ELEVATION
FL	FLOW LINE

N

1" = 30'

0' 15' 30'

SCALE IN FEET

CONTROL POINT INFORMATION

Basis of coordinates shown hereon are based on Missouri state plane coordinate system, West Zone, and scaled to ground coordinates utilizing a combined adjustment factor of 0.9998986, holding Jackson County GPS Control Point JA–45 as a base point. Distances shown hereon are ground distances in US Survey Feet.

MO DNR JA–45:
KC Metro Aluminum GRS Disk set in concrete ±3" below pavement on shoulder of SE Ranson Rd. Stamped "JA–45".
N: 994990.346
E: 2834265.611
Elev.: 1046.26'

Olsson #101:
Set 1/2" Rebar with Olsson Control Cap. Set in the grass on the North side of SE Bailey Rd.
N: 993561.11
E: 2832755.84
Ties:
1. East 80.94' to the NW corner of a concrete curb inlet on the North side of SE Bailey Rd.
2. SE 91.53' to the SW corner of a concrete curb inlet on the South side of SE Bailey Rd.
3. NE 94.82' to the SW corner of a concrete overflow structure on the South side of a pond on the North side of SE Bailey Rd.
4. West ±871' to the centerline of Country Ln. on the North side of SE Bailey Rd.

Olsson #30012:
Set 3/8" Rebar in the grass on the North side of most Southerly detention basin.
N: 991325.62
E: 2831728.01
Ties:
1. South 63.9' to the center of the Northeast storm sewer manhole lid of two.
2. South 66.6' to the center of the Southwest storm sewer manhole lid of two.
3. SSW 64.2' to the flow line of a 42" CPP at the Southeast side of the South detention basin.

Olsson #30013:
Set 3/8" Rebar in the grass on the North side of most Southerly detention basin.
N: 991498.02
E: 2831586.01
Ties:
1. SE 270.5' to the flow line of a 42" CPP at the Southeast corner of the South detention basin.
2. SE 109.0' to the flow line of a CPP, middle of South detention pond, North side.
3. SW 66.1' to the flow line of a 36" CPP at the North end of the South detention basin.

Olsson #30015:
Set 3/8" Rebar in the grass on the North side of middle detention basin.
N: 993133.4970
E: 2832485.3740
Ties:
1. South 281.7' to the center of the NE storm manhole lid of two at the South side of the middle detention basin.
2. South 109.0' to the flow line of a 24" CPP, at the South side of the middle detention basin.
4. SW 58.4' to the flow line of a 24" CPP at the North end of the middle detention basin.

Olsson #30016:
Set 3/8" Rebar in the grass on the South side of most Northerly detention basin.
N: 993133.4970
E: 2832485.3740
Ties:
1. NNE 329.3' to the flow line of a 24" CPP at the Northwest corner of the North detention basin.
2. NE 187.4' to the center of the SW storm manhole lid of two at the South side of the North detention basin.
3. NE 191.2' to the center of the NE storm manhole lid of two at the South side of the North detention basin.

Olsson #30017:
Set 3/8" Rebar in the grass on the Southwest side of most Northerly detention basin.
N: 993366.21
E: 2832530.86
Ties:
1. NE 92.5' to the flow line of a 24" CPP at the Northwest corner of the North detention basin.
2. SE 76.3' to the flow line of a 24" CPP at the South side of the North detention basin.
3. SE 85.8' to the center of the SW manhole lid of two at the South side of North detention basin.

Basis of elevations shown hereon are based upon NAVD '88 utilizing MoDOT's continuously monitored GNSS system and holding the elevation of JA–45 elevation 1046.26'

Olsson Benchmark #1:
Set chiseled square cut on center front face of a curb inlet on North side of SE Bailey Rd. ±42' West of Country Ln.
Elevation: 1028.43'

Olsson Benchmark #2:
Set chiseled square cut on SE corner of overflow structure on South side of pond on North side of SE Bailey Rd. ±962' East of Country Ln.
Elevation: 1017.13'

Olsson Benchmark #3:
Set chiseled "+" cut on SSE flange bolt of fire hydrant in the NW quadrant of the intersection of SE 15th St. and SE Dalton Dr.
Elevation: 1016.27'

Olsson Benchmark #4:
Set chiseled square cut on edge of sidewalk at the West center of a curb inlet in the NW quadrant of the intersection of SE Cape Dr. and SE Dalton Dr.
Elevation: 999.24'