

SEE STORM SEWER PLAN
SHEETS 10 & 15 FOR
RIPRAP INFORMATION.

FLARED END SECTION DET3B
N. 979586.44 E. 2828222.25
W/ STANDARD CONCRETE TOEWALL

FLARED END SECTION DET2E
N. 97952.93 E. 2828231.99
W/ STANDARD CONCRETE TOEWALL

NOTE:
THE 100 YEAR WATER SURFACE ELEVATION WITH
CLOGGED OUTLET STRUCTURE = 977.49- 978.31

48" DIA. ADS HP MANHOLE WITH
30" GRATE DET2B
N. 980352.98 E. 2828263.34

4'x 14' CONCRETE OUTLET STRUCTURE DET1B
N. 980389.78 E. 2828248.55

2 - 48" END SECTIONS DET1A
N. 980416.30 E. 2828345.36

INSTALL 44.4 C.Y. (24' WIDE X
25' LONG X 2' DEEP) STONE
RIPRAP WITH MINIMUM 15"
STONE AND ADDITIONAL
ENERGY DISSIPATORS. PLACE
FILTER FABRIC PRIOR TO
INSTALLATION OF RIPRAP.

100 YEAR WATER SURFACE
ELEVATION = 976.5- 976.82

FLARED END SECTION DET2A
N. 980353.77 E. 2828245.35
W/ STANDARD CONCRETE TOEWALL

100 YEAR WATER SURFACE
ELEVATION = 976.5- 976.82

EMERGENCY SPILLWAY = 165' LONG
ELEV. = 977.00- 977.05

48" DIA. ADS HP MANHOLE WITH
30" GRATE DET3A
N. 979585.77 E. 2828238.74

48" DIA. ADS HP MANHOLE WITH
30" GRATE DET2D
N. 979851.29 E. 2828247.37

48" DIA. ADS HP MANHOLE WITH
30" GRATE DET2C
N. 980102.14 E. 2828255.35

GRADE SWALE AS SHOWN, FROM END OF RIP RAP TO THE
EXISTING SWALE. SWALE TO BE APPROXIMATELY 20' WIDE,
2' MAXIMUM DEPTH AND 3 TO 1 SIDE SLOPES. GRADING IS
LIMITED TO THE SOUTH SIDE OF THE PROPERTY LINE.

CENTERLINE EXISTING SWALE

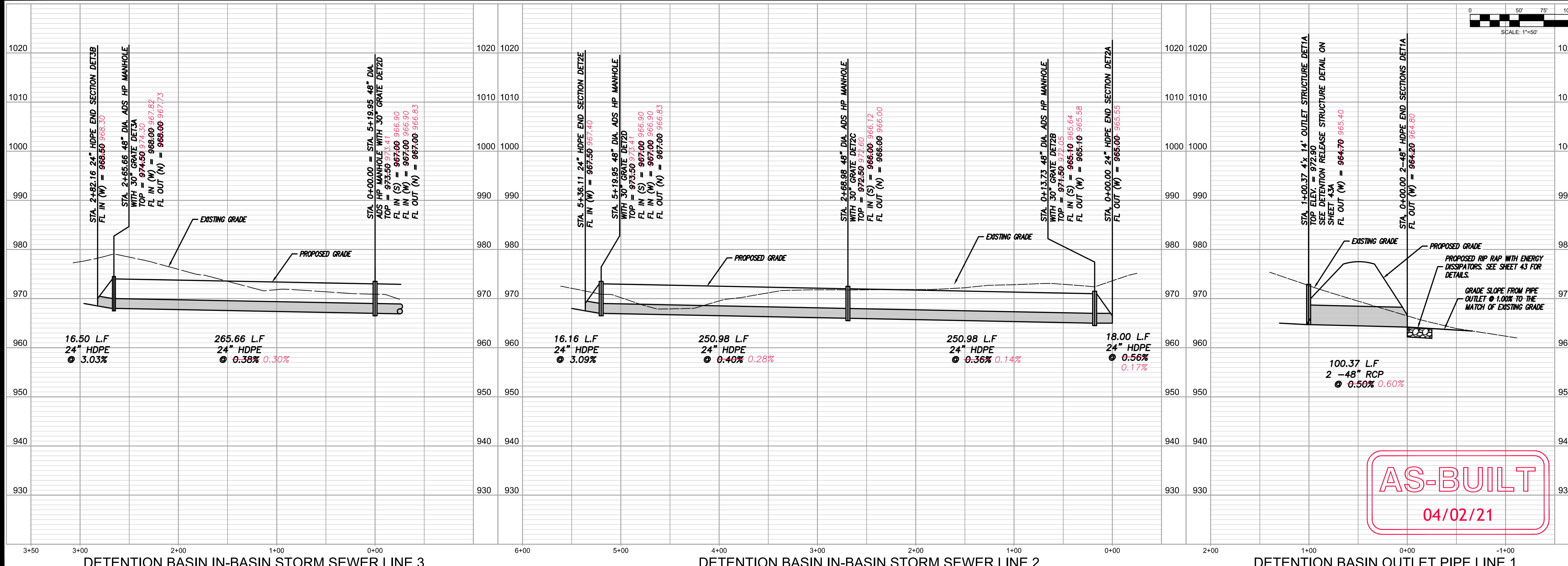
NOTE:

- AREAS TO RECEIVE FILL SHOULD BE STRIPPED OF VEGETATION, TOPSOIL, SOFT SOIL AND DELETERIOUS MATERIALS.
- THE EXPOSED SUBGRADE SHOULD BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK. SOFT AREAS THAT DEVELOP SHOULD BE OVEREXCAVATED AND BACKFILLED WITH COMPACTED CLAY SOIL OR THE AREA MOISTURE CONDITIONED, REWORKED AND COMPACTED.
- NON-ORGANIC, FINE-GRAINED CLAY SOIL SHOULD BE USED FOR FILL.
- SOIL FILL SHOULD BE PLACED IN UNIFORM 8-INCH THICK LIFTS.
- THE FILL SHOULD BE COMPACTED TO AT LEAST 95 PERCENT STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY AT A MOISTURE CONTENT BETWEEN MINUS 1 TO PLUS 3 PERCENT OF THE OPTIMUM MOISTURE CONTENT.
- DELETERIOUS MATERIAL AND PIECES OF ROCK LARGER THAN 2 INCHES SHOULD NOT BE INCLUDED IN THE FILL.
- THE FILL SHOULD NOT BE PLACED ON SOFT MATERIALS OR FROZEN GROUND. FROZEN SOILS SHOULD NOT BE USED FOR FILL.

1"=10'

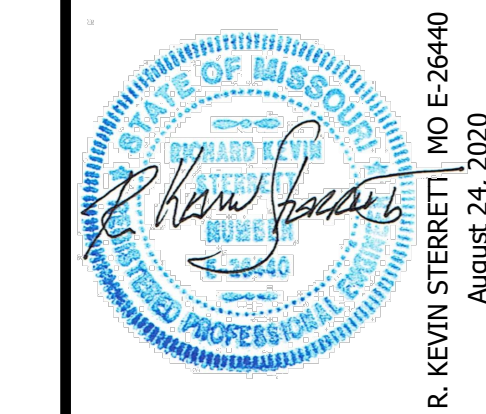


CONTOURS SHOWN ARE FROM
ASBUILT SHOTS AND EXSTING TOPO.



AS-BUILT
04/02/21

NO.	BY	DATE	REVISION
1	SW	04/02/21	AS-BUILT PER CITY COMMENTS
2	SW	04/02/21	REVISION NORTH OUTLET STRUCTURE PER ORIGINAL STORM REPORT
3	SW	07/27/20	PER CITY COMMENTS
4	SW	11/27/16	SUBMITAL TO CITY OF LEES SUMMIT



Consult Inc
engineers planners
11010 Haskell Street, Suite 210, Kansas City, Kansas 66109
CORPORATE LICENSE NO. E201000373 (MO.) / E-1736 (KS.)

STREET AND STORM SEWER PLANS
NORTH DETENTION BASIN, IN-BASIN STORM
LINE AND OUTLET STRUCTURE
COBEY CREEK FIRST PLAT
PHASE I
CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI

X-REF NO.
16-059 Base Phase I
DRAWING NO.
16-059 Phase I Street Plans
DATE
August 24, 2020
JOB NO.
16-059

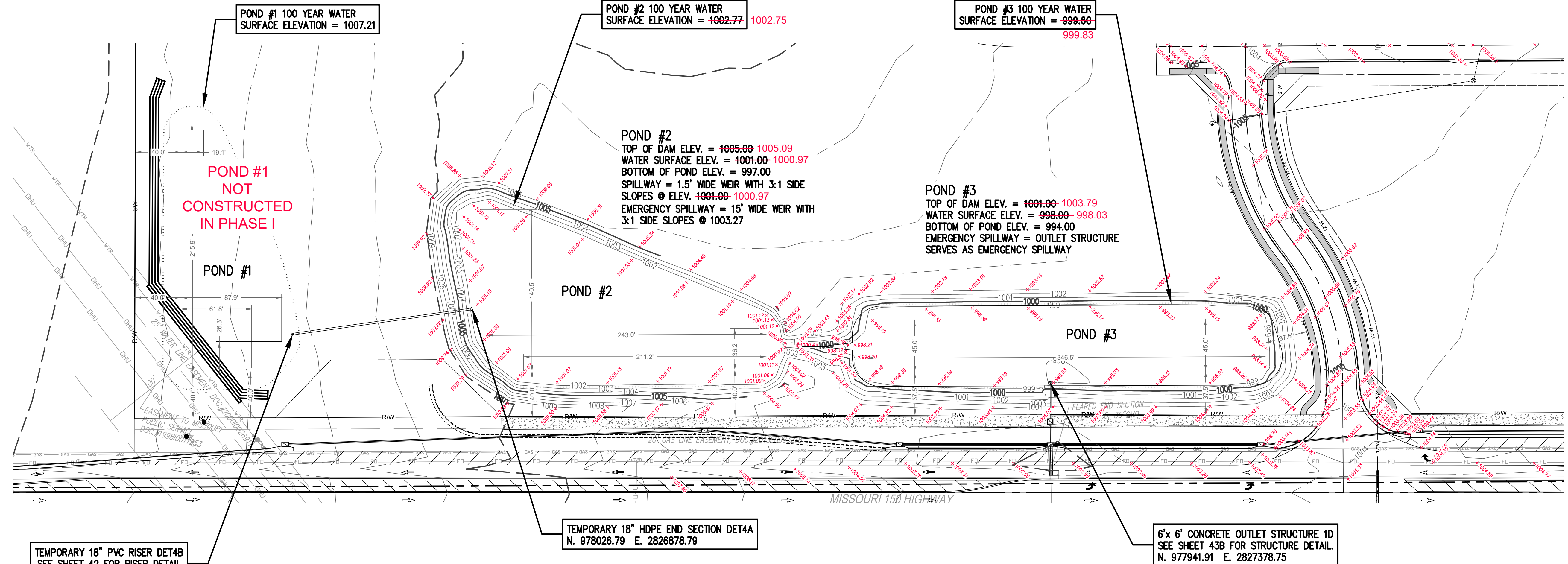
30 OF 53

POND #1
TOP OF DAM ELEV. = 1009.00
WATER SURFACE ELEV. = 1005.00
BOTTOM OF POND ELEV. = 1001.00
EMERGENCY SPILLWAY = RISER PIPE
SERVES AS EMERGENCY SPILLWAY.

NOTE:
THE POND #1 100 YEAR WATER
SURFACE ELEVATION WITH
CLOGGED OUTLET
STRUCTURE = 1008.28



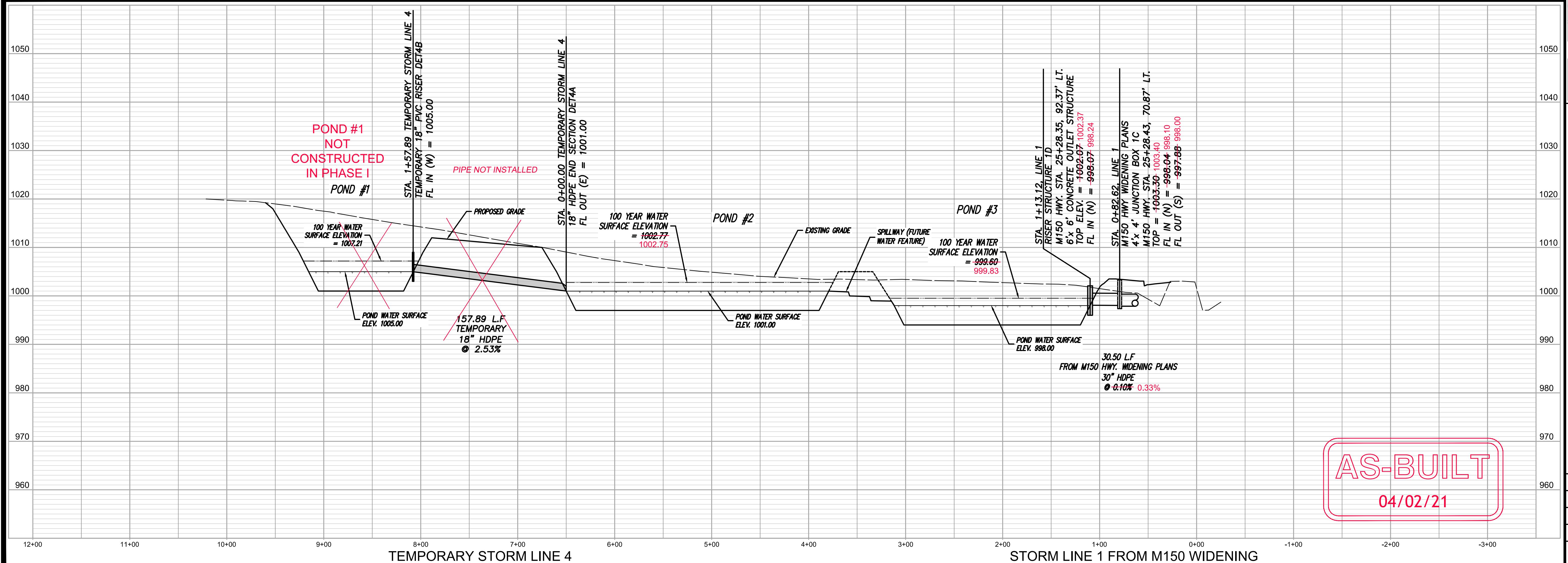
Know what's below.
Call before you dig.



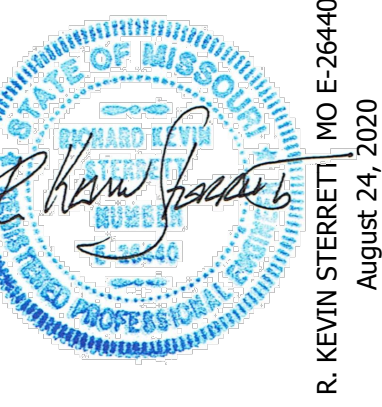
CONTOURS SHOWN ARE FROM
ASBUILT SHOTS AND EXSTING TOPO.

NOTE:
THE POND #2 100 YEAR WATER SURFACE ELEVATION
WITH CLOGGED OUTLET STRUCTURE = 1004.04 1004.04

NOTE:
THE POND #3 100 YEAR WATER SURFACE ELEVATION
WITH CLOGGED OUTLET STRUCTURE = 999.46 1000.75



DATE	REVISION	NO.	BY	CHKD
04/02/21	AS-BUILT PER CITY COMMENTS	1	SPW	RAS
08/24/20	REISED NORTH OUTLET STRUCTURE PER ORIGINAL STORM REPORT	6	SPW	RAS
07/29/20	REISED NORTH OUTLET STRUCTURE PER ORIGINAL STORM REPORT	8	SPW	RAS
11/27/18	SUBMITAL TO CITY OF LEES SUMMIT	7	SPW	RAS



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STREET AND STORM SEWER PLANS
SOUTH DETENTION BASINS, TEMPORARY
STORM LINE AND OUTLET STRUCTURE
COBEY CREEK FIRST PLAT
PHASE I
CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI

X-REF NO.
16-059 Base Phase I
DRAWING NO.
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DATE
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NORTH DETENTION BASIN STAGE / STORAGE

SOUTH DETENTION (PONDS #2 & #3) BASIN STAGE / STORAGE

NORTH DETENTION BASIN
Project: COBEY CREEK
Basin Description: PROPOSED BASIN

Contour Elevation	Contour Area (sq. ft)	Depth (ft)	Incremental Volume Avg. End (cu. ft)	Cumulative Volume Avg. End (cu. ft)	Incremental Volume Conic (cu. ft)	Cumulative Volume Conic (cu. ft)
964.700	21.68	N/A	N/A	0.00	N/A	0.00
965.000	761.23	0.300	117.44	117.44	91.14	91.14
966.000	2,381.27	1.000	1571.25	1688.69	1496.29	1587.43
967.000	5,052.83	1.000	3717.05	5405.74	3634.28	5221.71
968.000	8,421.62	1.000	6737.23	12142.96	6665.91	11887.61
968.000	40.87	0.000	0.00	12142.96	0.00	11887.61
969.000	12,437.41	1.000	6239.14	18382.11	4397.09	16284.71
969.000	4,214.01	0.000	0.00	18382.11	0.00	16284.71
969.000	40.87	0.000	0.00	18382.11	0.00	16284.71
970.000	16,991.05	1.000	8515.96	26898.07	5955.09	22239.80
970.000	10,875.37	0.000	0.00	26898.07	0.00	22239.80
970.000	4,201.27	0.000	0.00	26898.07	0.00	22239.80
971.000	22,160.88	1.000	13181.07	40079.14	12003.72	34243.52
971.000	18,638.13	0.000	0.00	40079.14	0.00	34243.52
971.000	8,623.73	0.000	0.00	40079.14	0.00	34243.52
972.000	66,409.02	1.000	37516.38	77595.52	32987.93	67231.45
973.000	76,263.76	1.000	71336.39	148931.91	71279.60	138511.05
974.000	82,953.98	1.000	79608.87	228540.78	79585.43	218096.48
975.000	89,182.85	1.000	86068.41	314609.19	86049.62	304146.11
976.000	95,470.16	1.000	92326.51	406935.70	92308.66	396454.77
977.000	101,817.85	1.000	98644.01	505579.71	98626.98	495081.75
978.000	108,225.91	1.000	105021.88	610601.59	105005.59	600087.34
979.000	114,688.61	1.000	111457.26	722058.84	111441.64	711528.98

NORTH DETENTION BASIN
Project: COBEY CREEK
Basin Description: AS-BUILT BASIN

Contour Elevation	Contour Area (sq. ft)	Depth (ft)	Incremental Volume Avg. End (cu. ft)	Cumulative Volume Avg. End (cu. ft)	Incremental Volume Conic (cu. ft)	Cumulative Volume Conic (cu. ft)
965.660	0.76	N/A	N/A	0.00	N/A	0.00
966.000	829.14	0.340	141.08	141.08	96.91	96.91
967.000	3,781.77	1.000	2305.45	2446.54	2127.22	2224.13
968.000	6,884.50	1.000	5333.13	7779.67	5256.26	7480.39
968.000	85.10	0.000	0.00	7779.67	0.00	7480.39
969.000	10,656.85	1.000	5370.97	13150.64	3898.09	11378.48
969.000	3,129.72	0.000	0.00	13150.64	0.00	11378.48
969.000	124.19	0.000	0.00	13150.64	0.00	11378.48
970.000	15,367.82	1.000	7746.01	20896.65	5624.51	17002.99
970.000	9,622.83	0.000	0.00	20896.65	0.00	17002.99
970.000	2,736.08	0.000	0.00	20896.65	0.00	17002.99
971.000	20,481.43	1.000	11608.76	32505.40	10234.47	27237.46
971.000	17,200.90	0.000	0.00	32505.40	0.00	27237.46
971.000	6,762.94	0.000	0.00	32505.40	0.00	27237.46
972.000	62,523.03	1.000	34642.98	67148.39	29949.68	57187.14
973.000	72,756.42	1.000	67639.72	134788.11	67575.12	124762.26
974.000	80,260.33	1.000	76508.37	211296.48	76477.69	201239.95
975.000	87,851.27	1.000	84055.80	295352.28	84027.22	285267.17
976.000	95,549.79	1.000	91700.53	387052.81	91673.59	376940.76
977.000	103,355.90	1.000	99452.85	486505.66	99427.31	476368.06
978.000	111,263.18	1.000	107309.54	593815.20	107285.25	583653.32
979.000	119,296.89	1.000	115280.03	709095.23	115256.70	698910.02
979.070	120,356.01	0.070	8387.85	717483.08	8387.82	707297.84

SOUTH DETENTION BASIN
Project: COBEY CREEK
Basin Description: PROPOSED POND #2

Contour Elevation	Contour Area (sq. ft)	Depth (ft)	Incremental Volume Avg. End (cu. ft)	Cumulative Volume Avg. End (cu. ft)	Incremental Volume Conic (cu. ft)	Cumulative Volume Conic (cu. ft)
997.0	21,691.0	N/A	N/A	0	N/A	0
998.0	23,399.6	1	22545	22545	22540	22540
999.0	25,147.5	1	24274	46819	24268	46808
1,000.0	26,934.6	1	26041	72860	26036	72844
1,001.0	28,761.0	1	27848	100708	27843	100687
1,002.0	30,626.7	1	29694	130402	29689	130376
1,003.0	32,531.7	1	31579	161981	31574	161950
1,004.0	34,475.9	1	33504	195485	33499	195449
1,005.0	36,459.4	1	35468	230952	35463	230912

SOUTH DETENTION BASIN
Project: COBEY CREEK
Basin Description: AS-BUILT POND #2

Contour Elevation	Contour Area (sq. ft)	Depth (ft)	Incremental Volume Avg. End (cu. ft)	Cumulative Volume Avg. End (cu. ft)	Incremental Volume Conic (cu. ft)	Cumulative Volume Conic (cu. ft)
997.0	21,691.0	N/A	N/A	0	N/A	0
998.0	23,399.6	1	22545	22545	22540	22540
999.0	25,147.5	1	24274	46819	24268	46808
1,000.0	26,934.6	1	26041	72860	26036	72844
1,001.0	27,933.4	1	27434	100294	27432	100277
1,002.0	30,284.6	1	29109	129403	29101	129378
1,003.0	32,742.1	1	31513	160916	31505	160883
1,004.0	35,223.4	1	33983	194899	33975	194858
1,005.0	37,769.0	1	36496	231395	36489	231347
1,005.1	38,002.9	0	3789	235184	3789	235136

SOUTH DETENTION BASIN
Project: COBEY CREEK
Basin Description: PROPOSED POND #3

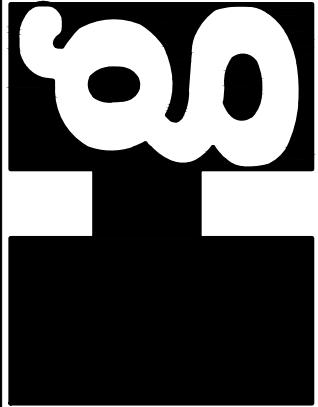
Contour Elevation	Contour Area (sq. ft)	Depth (ft)	Incremental Volume Avg. End (cu. ft)	Cumulative Volume Avg. End (cu. ft)	Incremental Volume Conic (cu. ft)	Cumulative Volume Conic (cu. ft)
994.0	15,461.3	N/A	N/A	0	N/A	0
995.0	17,385.4	1	16423	16423	16414	16414
996.0	19,348.8	1	18367	34790	18358	34772
997.0	21,351.4	1	20350	55141	20342	55114
998.0	23,393.3	1	22372	77513	22365	77479
999.0	25,474.5	1	24434	101947	24427	101905
1,000.0	27,594.9	1	26535	128482	26528	128433
1,001.0	29,754.7	1	28675	157156	28668	157101

SOUTH DETENTION BASIN
Project: COBEY CREEK
Basin Description: AS-BUILT POND #3

Contour Elevation	Contour Area (sq. ft)	Depth (ft)	Incremental Volume Avg. End (cu. ft)	Cumulative Volume Avg. End (cu. ft)	Incremental Volume Conic (cu. ft)	Cumulative Volume Conic (cu. ft)
994.0	15,461.3	N/A	N/A	0	N/A	0
995.0	17,385.4	1	16423	16423	16414	16414
996.0	19,348.8	1	18367	34790	18358	34772
997.0	21,351.4	1	20350	55141	20342	55114
998.0	22,393.1	1	21872	77013	21870	76984
999.0	24,966.4	1	23680	100693	23668	100652
1,000.0	28,147.0	1	26557	127249	26541	127193
1,001.0	31,084.6	1	29616	156865	29604	156797
1,002.0	34,938.4	1	33012	189877	32993	189790
1,003.0	38,036.6	1	36488	226364	36477	226266
1,003.8	40,534.2	1	31428	257792	31423	257689

AS-BUILT
04/02/21

DATE	REVISION	NO.	BY	CHKD
04/02/21	AS-BUILT PER CITY'S COMMENTS	1	SPW	RAS
07/20/20	AS-BUILT	2	SPW	RAS
09/24/20	RENDED NORTH DALLE STRUCTURE PER ORIGINAL STORM REPORT	3	SPW	RAS
07/27/20	PER CITY'S COMMENTS	4	SPW	RAS
11/27/16	SUBMITTAL TO CITY OF LEES SUMMIT	5	SPW	RAS
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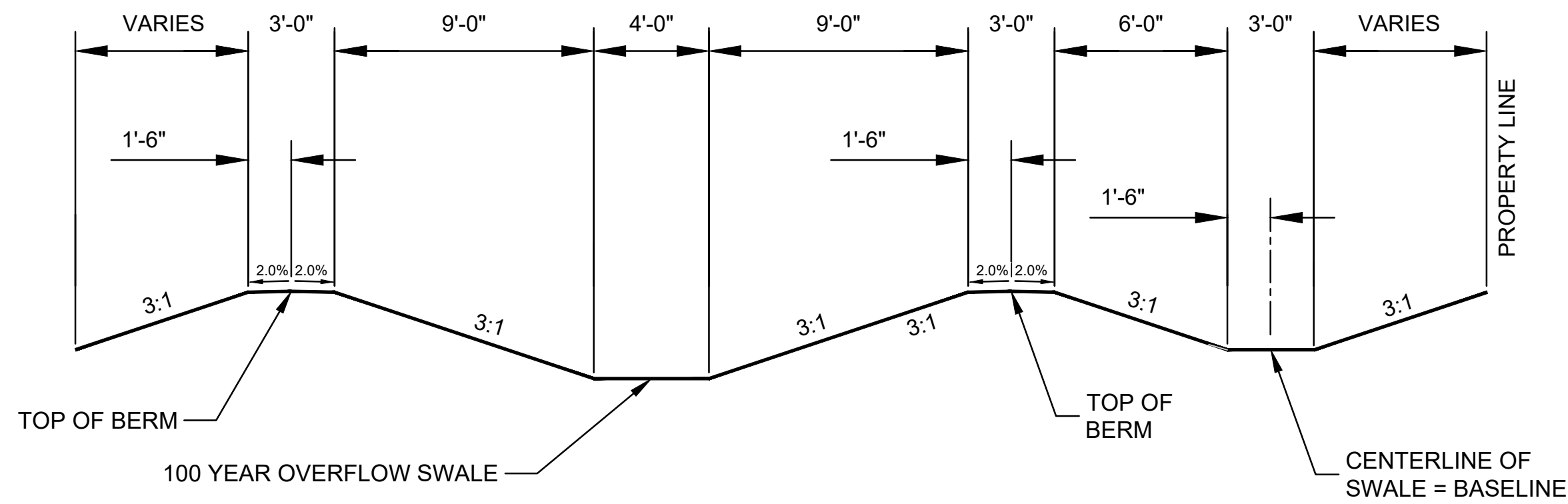
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STREET AND STORM SEWER PLANS
NORTH & SOUTH DETENTION BASINS
STAGE / STORAGE - PROPOSED & ASBUILT

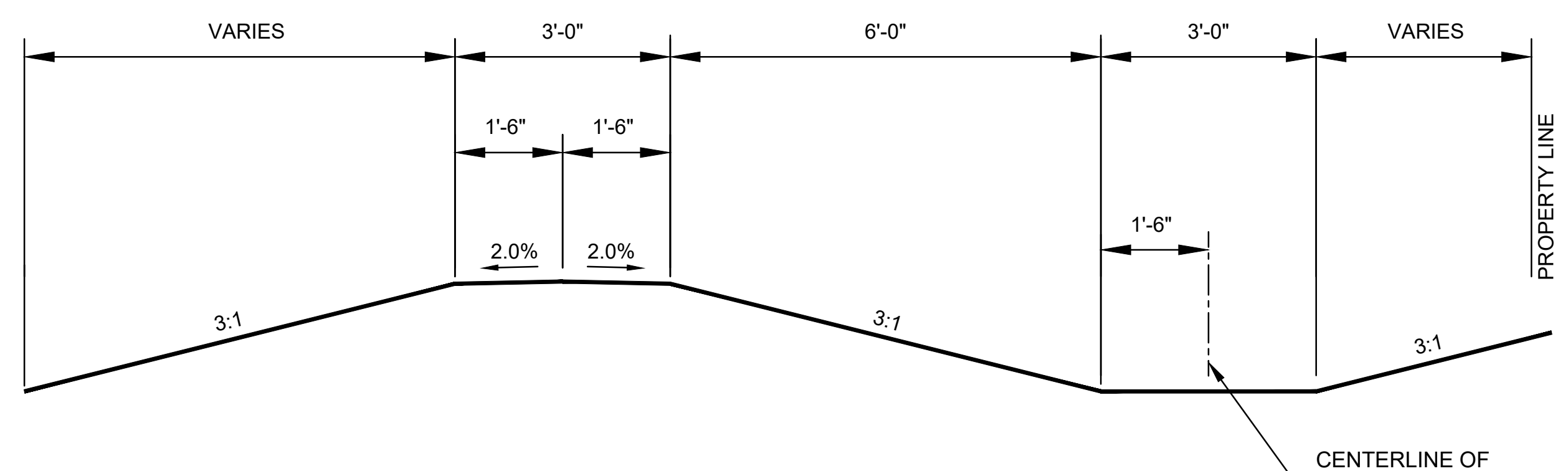
COBEY CREEK FIRST PLAT
PHASE I

CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI

X-REF NO. 16--059 Base Phase I
DRAWING NO. 16--059 Phase I Street Plans
DATE August 24, 2020
JOB NO. 16--059



3' SWALE, DIVERSION BERM & 100 YEAR OVERFLOW SWALE
NOT TO SCALE
(FROM STA. 13+50 TO 18+47)



3' SWALE AND DIVERSION BERM
NOT TO SCALE
(FROM STA. 10+00 TO 13+50)

Channel Report

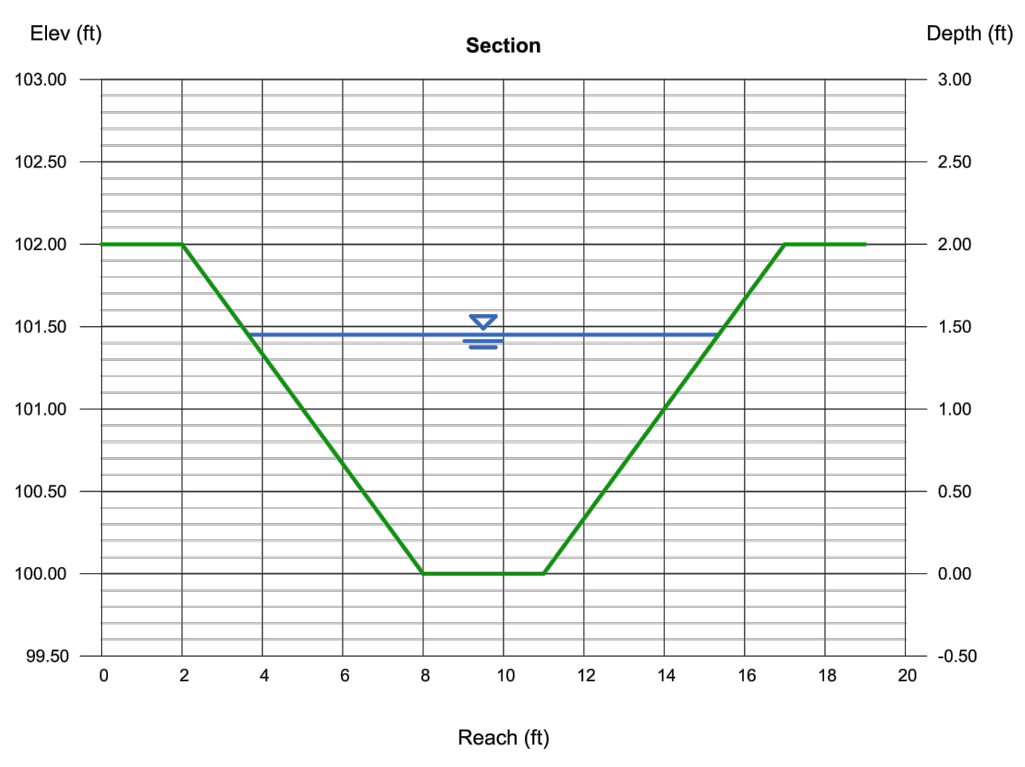
Hydroflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Thursday, Mar 7 2019

<Name>

Trapezoidal
Bottom Width (ft) = 3.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 2.00
Invert Elev (ft) = 100.00
Slope (%) = 2.00
N-Value = 0.030

Highlighted
Depth (ft) = 1.45
Q (cfs) = 67.57
Area (sqft) = 10.66
Velocity (ft/s) = 6.34
Wetted Perm (ft) = 12.17
Crit Depth, Yc (ft) = 1.57
Top Width (ft) = 11.70
EGL (ft) = 2.07

Calculations
Compute by: Known Q
Known Q (cfs) = 67.57



3' SWALE WATER SURFACE CALCS
CALCS @ STA. 18+47, WATER SURFACE VARIES FROM STA. 10+00 TO 16+00

Channel Report

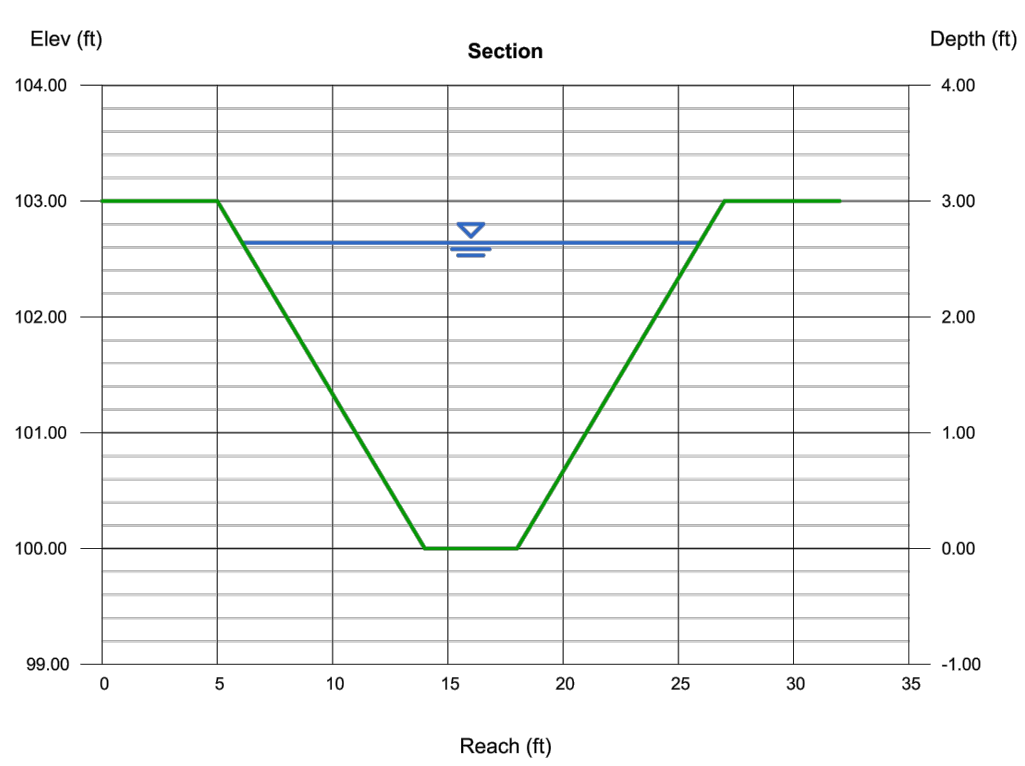
Hydroflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Monday, Feb 11 2019

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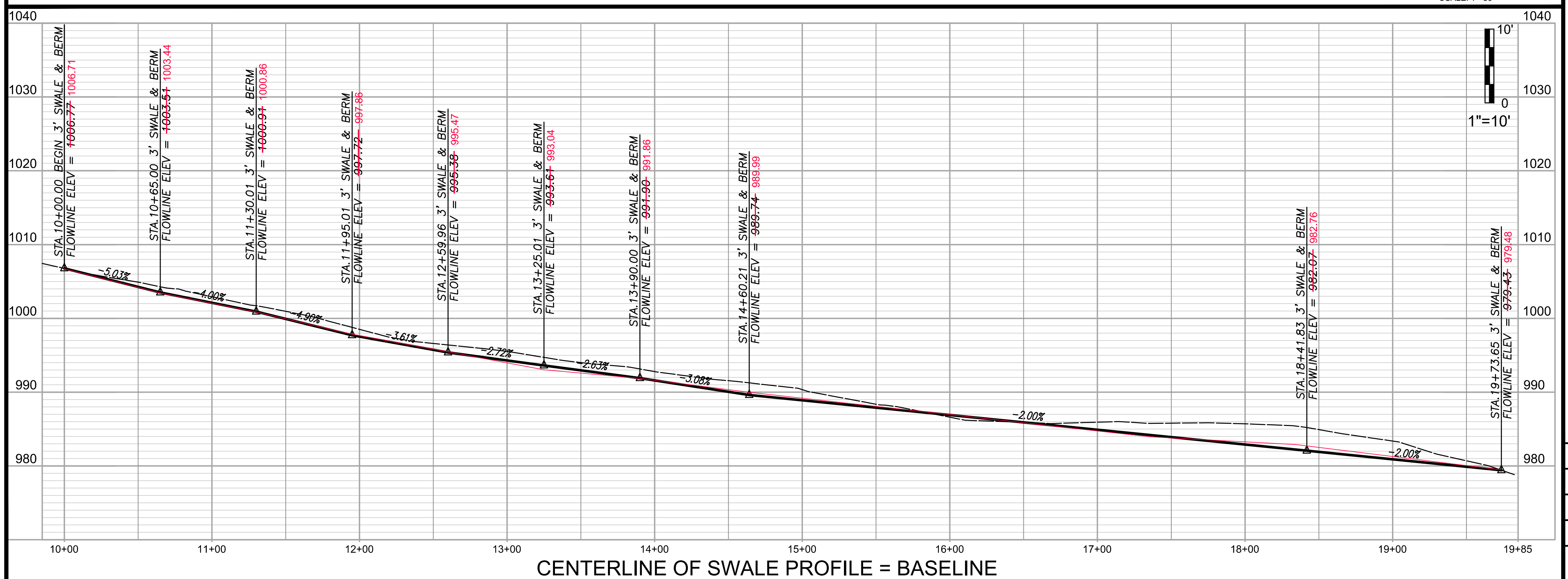
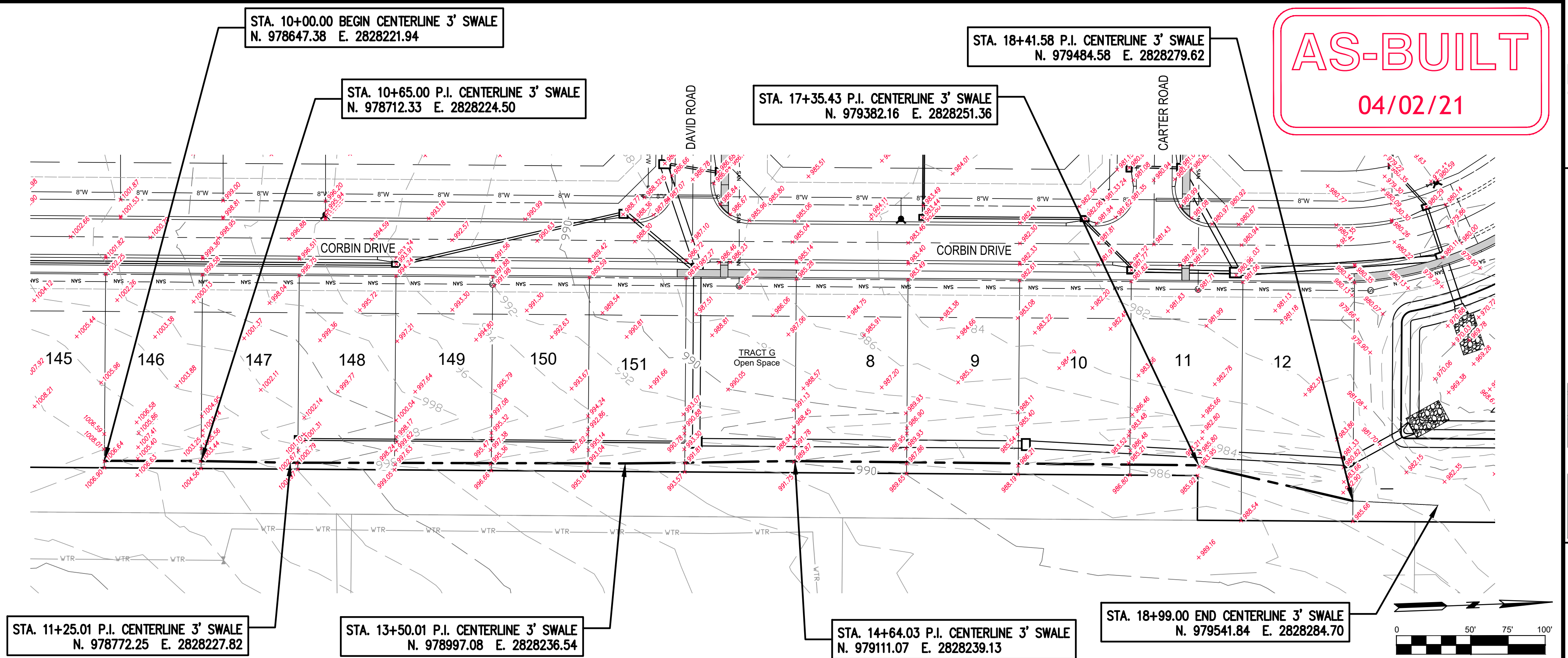
Trapezoidal
Bottom Width (ft) = 4.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 3.00
Invert Elev (ft) = 100.00
Slope (%) = 2.00
N-Value = 0.030

Highlighted
Depth (ft) = 2.64
Q (cfs) = 290.33
Area (sqft) = 31.47
Velocity (ft/s) = 9.23
Wetted Perm (ft) = 20.70
Crit Depth, Yc (ft) = 2.99
Top Width (ft) = 19.84
EGL (ft) = 3.98

Calculations
Compute by: Known Q
Known Q (cfs) = 290.33



100 YEAR WATER OVERFLOW SWALE WATER SURFACE CALCS
FROM STA. 13+75 TO 18+47



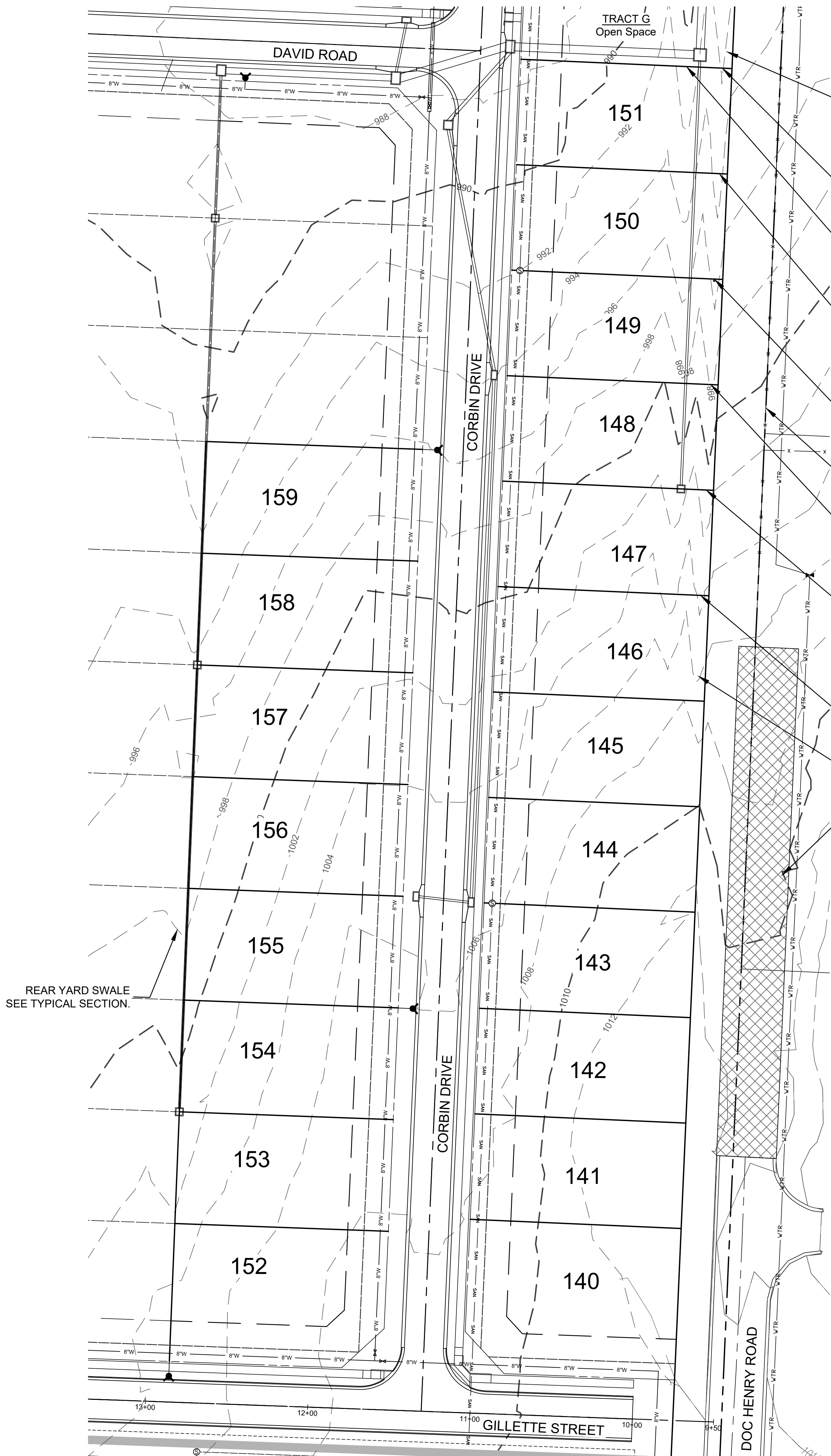
DATE	REVISION	NO.	BY	CORP.
04/02/21	AS-BUILT PER CITY COMMENTS	1	SPW	RCS
02/10/21	AS-BUILT			RCS
12/16/20	SUBMITAL TO CITY OF LEES SUMMIT			RCS



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STREET AND STORM SEWER PLANS
3' SWALE, DIVERSION BERM &
100 YEAR OVERFLOW SWALE
COBEY CREEK FIRST PLAT
PHASE I
CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI



TRACT G Open Space

SEE SHEET 31 FOR 3' SWALE, DIVERSION BERM & 100 YEAR OVERFLOW SWALE TYPICAL SECTION

CENTERLINE 3' DIVERSION SWALE
FL SWALE = ~~991.90~~ **991.81**
WATER SURFACE ELEV. = 992.98

CENTERLINE 100 YEAR FLOOD OVERFLOW SWALE
FL SWALE = ~~990.90~~ **990.78**
WATER SURFACE ELEV. = 993.38

CENTERLINE 3' DIVERSION SWALE
FL SWALE = ~~993.64~~ **993.04**
WATER SURFACE ELEV. = 994.57

CENTERLINE 3' DIVERSION SWALE
FL SWALE = ~~995.30~~ **995.36**
WATER SURFACE ELEV. = 996.16

EXISTING FENCE / HEDGE LINE

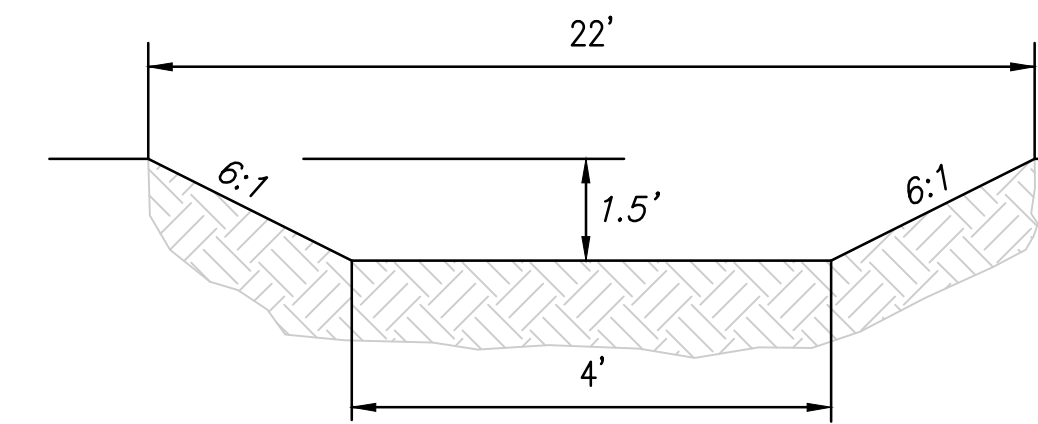
CENTERLINE 3' DIVERSION SWALE
FL SWALE = ~~997.72~~ **997.63**
WATER SURFACE ELEV. = 998.34

CENTERLINE 3' DIVERSION SWALE
FL SWALE = ~~1000.94~~ **1000.79**
WATER SURFACE ELEV. = 1001.47

CENTERLINE 3' DIVERSION SWALE
FL SWALE = ~~1003.54~~ **1003.44**
WATER SURFACE ELEV. = 1003.94

SEE SHEET 31 FOR TYPICAL 3' SWALE AND DIVERSION BERM SECTION

EXISTING GRADED ROADBED



TYPICAL REAR YARD SWALE DETAIL
(NO SCALE)
SWALE CAPACITY AT 2.0% SLOPE = 125 CFS

100 YEAR WATER DEPTH IN SWALE

LOTS: 1, 2, 18, 19, 20 & 21
DEPTH = 0.28'

LOTS: 22, 23, 24, 25, 152 & 153
DEPTH = 0.24'

LOTS: 3, 4, 5, 6, 7, 13, 14, 15, 16, 17, 154, 155, 156 & 157
DEPTH = 0.31'

LOTS: 26, 27, 28, 29, 30, 158 & 159
DEPTH = 0.34'

NOTES:

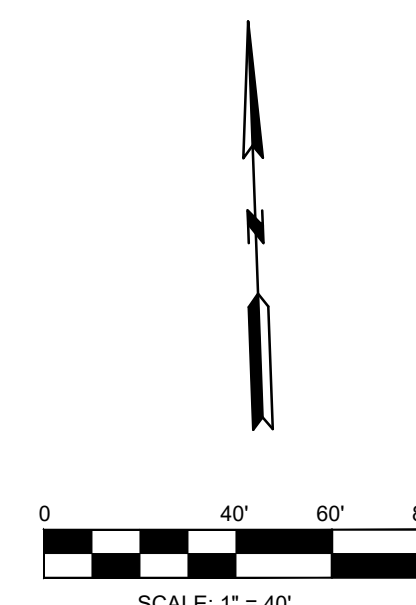
- 1) Corner descriptions are oriented as if standing on the street facing the lot.
- 2) Conventional basement type indicates windows only above finished basement elevation.
- 3) Walkout basement type was determined by subtracting the 70' lot elevation from the 25' B/L elevation. If the resulting elevation difference was greater than 6 feet it was determined that the buider could make the house a walkout by raising the top of foundation as needed. The intent of the designer was not to force these lots to be walkouts, only to suggest it was possible by raising the top of foundation.
- 4) Daylight basement type was determined by top of foundation being 2 feet above, and the back lot corner of the lot being 3 feet below the front right-of-way elevation on the high side of the lot.
- 5) Corner of house elevations based on top of foundation to be 1 foot above the high side front right-of-way elevation.
- 6) As-graded plot plans shall be required for the following lots: 1-30 and 140-159.
- 7) All proposed swales shall be established during Phase I construction and grading.
- 8) MBOEs are allowed to be interpolated from adjoining lot MBOEs where appropriate.

AS-BUILT
04/02/21

Lot Corner Elevations and MBOEs							ASBUILT Lot Corner Elevations and MBOEs						
LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE	LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE
No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR			No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR		
140	1008.0	1008.8	1012.8 E/F	1012.0 E/F	1014.8	CONVENTIONAL	140	1008.1	1008.8	1012.8 E/F	1012.1 E/F	1014.8	CONVENTIONAL
141	1007.2	1008.0	1013.3 E/F	1012.8 E/F	1015.3	CONVENTIONAL	141	1007.3	1008.1	1013.4 E/F	1012.8 E/F	1015.3	CONVENTIONAL
142	1006.5	1007.2	1013.0 E/F	1013.3 E/F	1015.3	CONVENTIONAL	142	1006.4	1007.3	1013.1 E/F	1013.4 E/F	1015.3	CONVENTIONAL
143	1005.6	1006.5	1012.0 E/F	1013.0 E/F	1015.0	DAYLIGHT	143	1005.6	1006.4	1012.1 E/F	1013.1 E/F	1015.0	DAYLIGHT
144	1004.2	1005.6	1009.8 E/F	1012.0 E/F	1014.0	DAYLIGHT	144	1004.1	1005.6	1009.9 E/F	1012.1 E/F	1014.0	DAYLIGHT
145	1002.2	1004.2	1007.0 E/F	1009.8 E/F	1011.8	DAYLIGHT	145	1002.3	1004.1	1007.0 E/F	1009.9 E/F	1011.8	DAYLIGHT
146	999.5	1002.2	1004.6	1007.0 E/F	1009.0	DAYLIGHT	146	999.6	1002.3	1004.6	1006.9	1009.0	DAYLIGHT
147	996.8	999.5	1001.9	1004.6	1006.6	DAYLIGHT*	147	996.8	999.6	1002.0	1004.6	1006.6	DAYLIGHT*
148	994.2	996.8	999.0	1001.9	1003.9	DAYLIGHT*	148	994.2	996.8	999.0	1002.0	1003.9	DAYLIGHT*
149	991.8	994.2	996.7	999.0	1001.0	DAYLIGHT	149	991.9	994.2	996.7	1000.4	1001.0	DAYLIGHT
150	989.6	991.8	995.1	996.7	998.7	DAYLIGHT	150	989.6	991.9	995.2	996.7	998.7	DAYLIGHT
151	987.5	989.6	993.5	995.1	997.1	DAYLIGHT	151	987.5	989.6	993.6	995.2	997.1	DAYLIGHT

Lot Corner Elevations and MBOEs							ASBUILT Minimum Building Opening Elevations						
LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE	LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE
No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR			No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR		
152	1008.8	1008.1	1004.9	1003.3	1010.8	DAYLIGHT	152	1008.8	1008.1	1005.0	1003.2	1010.8	DAYLIGHT
153	1008.1	1007.3	1003.2	1000.6	1010.1	DAYLIGHT	153	1008.1	1007.4	1003.2	1000.6	1010.1	DAYLIGHT
154	1007.3	1006.5	1000.6	999.0	1009.3	DAYLIGHT	154	1007.4	1006.6	1000.6	999.0	1009.3	DAYLIGHT
155	1006.5	1005.6	999.0	997.9	1008.5	DAYLIGHT	155	1006.6	1005.6	999.0	997.8	1008.5	DAYLIGHT
156	1005.6	1004.1	997.9	996.0	1007.6	DAYLIGHT	156	1005.6	1004.0	997.8	996.0	1007.6	DAYLIGHT
157	1004.1	1001.8	996.0	994.0	1006.1	DAYLIGHT	157	1004.0	1001.9	996.0	994.1	1006.1	DAYLIGHT
158	1001.8	999.0	994.0	992.0	1003.8	DAYLIGHT	158	1001.9	999.0	994.1	992.0	1003.8	DAYLIGHT
159	999.0	996.1	992.0	990.3	1001.0	DAYLIGHT	159	999.0	996.2	992.0	990.4	1001.0	DAYLIGHT

E/F = EXISTING = PROPOSED DAYLIGHT* = MBOE FOR WALKOUT WITH A WALKUP



NO.	BY	DATE	REVISION	CORP
1	SPW	04/02/21	AS-BUILT PER CITY'S COMMENTS	AS-BUILT PER CITY'S COMMENTS
2	SPW	03/27/19	PER CITY'S COMMENTS	PER CITY'S COMMENTS
1	SPW	03/26/19	PER CITY'S COMMENTS	PER CITY'S COMMENTS
1	SPW	11/21/18	SUBMITAL TO CITY OF LEES SUMMIT	SUBMITAL TO CITY OF LEES SUMMIT



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CORPORATE LICENSE NO. E201000373 (MO.) / E-1736 (KS.)

STREET AND STORM SEWER PLANS
MASTER DRAINAGE PLAN
LOT AND FOUNDATION DATA - VILLA LOTS
COBEY CREEK FIRST PLAT
PHASE I
CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI

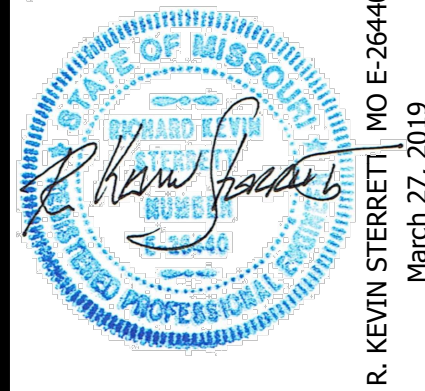


SEE SHEET 34A FOR DESIGN AND AS-BUILT
MINIMUM BUILDING OPENING ELEVATION TABLES

- NOTES:**
- 1) Corner descriptions are oriented as if standing on the street facing the lot.
 - 2) Conventional basement type indicates windows only above finished basement elevation.
 - 3) Walkout basement type was determined by subtracting the 70' lot elevation from the 25' B/L elevation. If the resulting elevation difference was greater than 6 feet it was determined that the buider could make the house a walkout by raising the top of foundation as needed. The intent of the designer was not to force these lots to be walkouts, only to suggest it was possible by raising the top of foundation.
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AS-BUILT
04/02/21

DATE	REVISION	NO.	BY	CORP.
04/02/21	AS-BUILT PER CITY'S COMMENTS	1	SPW	RAS
03/27/21	AS-BUILT PER CITY'S COMMENTS	2	SPW	RAS
03/26/19	PER CITY'S COMMENTS	1	SPW	RAS
11/27/18	SUBMITAL TO CITY OF LEES SUMMIT	1	SPW	RAS



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STREET AND STORM SEWER PLANS
MASTER DRAINAGE PLAN
LOT AND FOUNDATION DATA - R-1 LOTS
COBEY CREEK FIRST PLAT
PHASE I
CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI

Lot Corner Elevations and MBOEs							ASBUILT Lot Corner Elevations and MBOEs						
LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE	LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE
No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR			No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR		
1	995.8	994.1	997.2	992.2	999.5	WALKOUT	1	995.9	994.2	997.2	992.2	999.5	WALKOUT
2	994.1	992.4	992.2	990.2	996.4	WALKOUT	2	994.2	992.5	992.2	990.2	996.4	WALKOUT
3	992.4	990.5	990.2	988.1	994.4	WALKOUT	3	992.5	990.6	990.2	988.1	994.4	WALKOUT
4	990.5	989.2	988.1	986.0	992.5	WALKOUT	4	990.6	989.2	988.1	986.1	992.5	WALKOUT
5	989.2	988.1	986.0	984.5	991.2	WALKOUT	5	989.2	988.1	986.1	984.5	991.2	WALKOUT
6	988.1	987.3	984.5	983.2	990.1	WALKOUT	6	988.1	987.4	984.5	983.2	990.1	WALKOUT
7	987.3	986.7	988.2	983.4	989.3	WALKOUT	7	987.4	986.7	983.2	983.5	989.3	WALKOUT
8	983.6	985.2	989.7	991.7	993.3	DAYLIGHT*	8	983.5	985.3	989.7	991.8	993.3	DAYLIGHT*
9	982.5	983.6	988.3	989.7	991.5	DAYLIGHT*	9	982.7	983.5	988.2	989.7	991.5	DAYLIGHT*
10	981.8	982.5	986.8	988.3	990.3	DAYLIGHT*	10	981.6	982.7	986.8	988.2	990.3	DAYLIGHT*
11	981.0	981.8	987.3	986.8	988.6	DAYLIGHT	11	981.2	981.6	988.5	986.8	988.6	DAYLIGHT
12	980.3	981.0	985.8	987.3	987.3	DAYLIGHT*	12	980.3	981.2	985.7	988.5	987.3	DAYLIGHT*
Lot Corner Elevations and MBOEs							ASBUILT Lot Corner Elevations and MBOEs						
LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE	LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE
No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR			No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR		
13	981.1	981.8	983.4	983.2	985.7	DAYLIGHT	13	981.1	981.9	983.4	983.3	985.7	DAYLIGHT
14	981.8	982.7	983.2	984.5	986.8	DAYLIGHT	14	981.9	982.8	983.3	984.5	986.8	DAYLIGHT
15	982.7	983.6	984.5	985.9	988.2	DAYLIGHT	15	982.8	983.7	984.5	986.0	988.2	DAYLIGHT
16	983.6	984.5	985.9	987.9	990.2	DAYLIGHT	16	983.7	984.6	986.0	988.0	990.2	DAYLIGHT
17	984.5	986.4	987.9	990.0	992.3	DAYLIGHT	17	984.6	986.5	988.0	990.0	992.3	DAYLIGHT
18	986.4	989.1	990.0	991.6	993.9	DAYLIGHT	18	986.5	989.2	990.0	991.7	993.9	DAYLIGHT
19	989.1	992.3	991.6	993.7	996.0	CONVENTIONAL	19	989.2	992.3	991.7	993.8	996.0	CONVENTIONAL
20	992.3	994.6	993.7	996.6	998.9	CONVENTIONAL	20	992.3	994.6	993.8	996.5	998.9	CONVENTIONAL
21	994.6	996.8	996.6	999.1	1001.4	CONVENTIONAL	21	994.6	996.8	996.5	999.1	1001.4	CONVENTIONAL
Lot Corner Elevations and MBOEs							ASBUILT Lot Corner Elevations and MBOEs						
LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE	LOT	FRONT		REAR		M.B.O.E.	BASEMENT TYPE
No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR			No.	LEFT COR	RIGHT COR	LEFT COR	RIGHT COR		
22	995.9	994.6	1000.3	996.7	1002.6	CONVENTIONAL	22	996.6	994.7	1000.4	996.7	1002.6	CONVENTIONAL
23	994.6	992.3	996.7	994.0	999.0	CONVENTIONAL	23	994.7	992.3	996.7	993.9	999.0	CONVENTIONAL
24	992.3	989.1	994.0	990.8	996.3	WALKOUT	24	992.3	989.0	993.9	990.9	996.3	WALKOUT
25	989.1	986.4	990.8	988.1	993.1	WALKOUT	25	989.0	986.5	990.9	988.1	993.1	WALKOUT
26	986.4	984.5	988.1	986.3	990.5	WALKOUT	26	986.5	984.5	988.1	986.2	990.5	WALKOUT
27	984.5	983.6	986.3	983.9	988.7	WALKOUT	27	984.5	983.7	986.2	984.0	988.7	WALKOUT
28	983.6	982.7	983.9	982.3	986.3	WALKOUT	28	983.7	982.8	984.0	982.3	986.3	WALKOUT
29	982.7	981.8	982.3	980.8	984.7	DAYLIGHT*	29	982.8	981.8	982.3	980.7	984.7	DAYLIGHT*
30	981.8	981.0	980.8	980.3	983.8	DAYLIGHT*	30	981.8	980.9	980.7	980.3	983.8	DAYLIGHT*

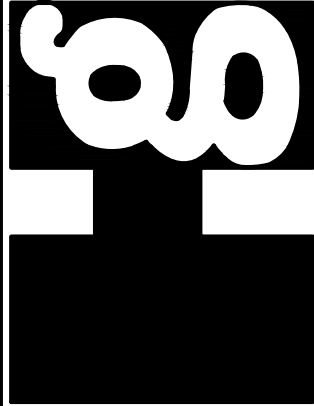
E/F = EXISTING = PROPOSED DAYLIGHT* = MBOE FOR WALKOUT WITH A WALKUP

AS-BUILT

04/02/21

DATE	REVISION	NO.	BY	CHKD
04/02/21	AS-BUILT PER CITY'S COMMENTS	1	SPW	RAS
03/27/19	AS-BUILT PER CITY'S COMMENTS	2	SPW	RAS
03/06/19	PER CITY'S COMMENTS			
11/27/18	SUBMITAL TO CITY OF LEES SUMMIT	1	SPW	RAS



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CORPORATE LICENSE NO. E201000373 (MO.) / E-1736 (KS.)

STREET AND STORM SEWER PLANS
MASTER DRAINAGE PLAN
LOT AND FOUNDATION DATA - R-1 LOTS

COBEY CREEK FIRST PLAT
PHASE I

CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI

X-REF NO. 16-059 Base Phase I
DRAWING NO. 16-059 Master Drainage
DATE March 27, 2019
JOB NO. 16-059

The scruffy dome is made of galvanised steel and is used in stormwater applications to provide a debris and security screen for manholes.

Design Specifications

- The type 1 debris screen is a full height design, suitable for manholes with a 600mm diameter or larger. (Refer to figure 1)
- The type 2 debris screen has a lower height profile making it less noticeable in areas such as parks and gardens. Suitable for manholes with a diameter of 600 mm or larger. (Refer to figure 2)

Installation

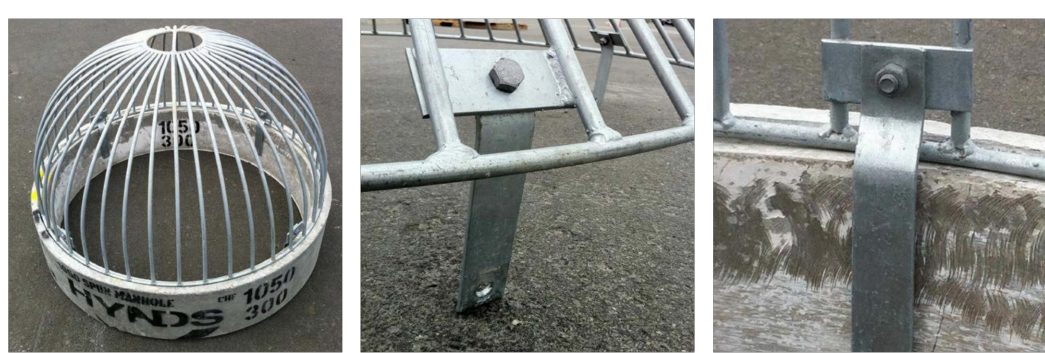
- Dome brackets are bolted to the manhole riser with stainless steel bolts.
- The bolts are purchased separately.

Note: The North Island and South Island have different versions of Scruffy Domes with small changes in the bracket design (See photos below). Please contact your local Hynds branch for more information.

North Island Scruffy Dome



South Island Scruffy Dome



Product Code	Manhole (mm)	Type	Riser ID (mm)	A = OD of Grille (mm)	B = Diameter of Inner Ring (mm)	C = Height of Dome (mm)	D = Leg Length (mm)
Type 1 High Profile							
MHD0600S	600	1	610	640	145	300	190
MHD0675S	675	1	686	715	145	300	190
MHD0900S	900	1	914	950	230	500	190
MHD1050S	1050	1	1066	1125	230	665	190
MHD1050S-H*	1050	1	1066	1125	230	665	190
MHD1200S	1200	1	1207	1270	230	635	190
MHD1200S-H*	1200	1	1207	1270	230	635	190
MHD1400S	1400	1	1372	1430	230	715	190
MHD1500S	1500	1	1524	1580	230	790	190
MHD1650S	1650	1	1676	1740	230	870	190
MHD1800S	1800	1	1829	1900	230	950	190
Type 2 Low Profile							
MHD0600S2	600	2	610	640	145	150	190
MHD0675S2	675	2	686	715	145	150	190
MHD0900S2	900	2	914	950	230	170	190
MHD1050S2	1050	2	1066	1125	230	200	190
MHD1050S2HL*	1050	2	1066	1125	230	200	190
MHD1200S2	1200	2	1207	1270	230	360	190
MHD1200S2HL*	1200	2	1207	1270	230	360	190
MHD1400S2	1400	2	1372	1430	230	390	190
MHD1500S2	1500	2	1524	1580	230	435	190
MHD1650S2	1650	2	1676	1740	230	480	190
MHD1800S2	1800	2	1829	1900	230	520	190

Note: Larger sizes 2000, 2300, 2550, 3000mm are available on request
*H - hinged HL - hinged and lockable

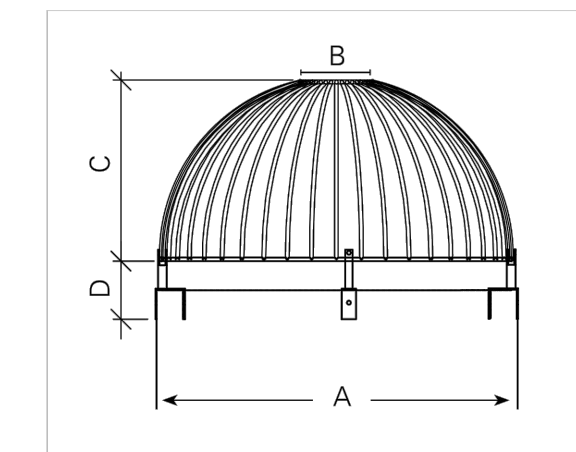


FIG. 1 Dimensions of Type 1 Hynds Scruffy Dome (see table).
Note: Brackets shown here are not supplied. Please see the North Island and South Island Scruffy Domes photos.

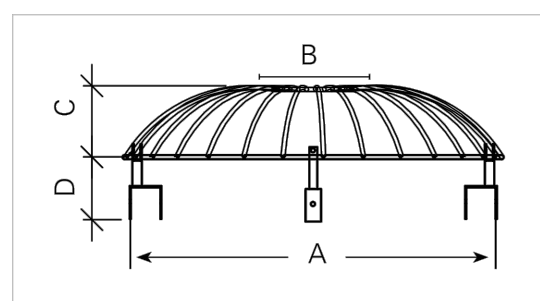
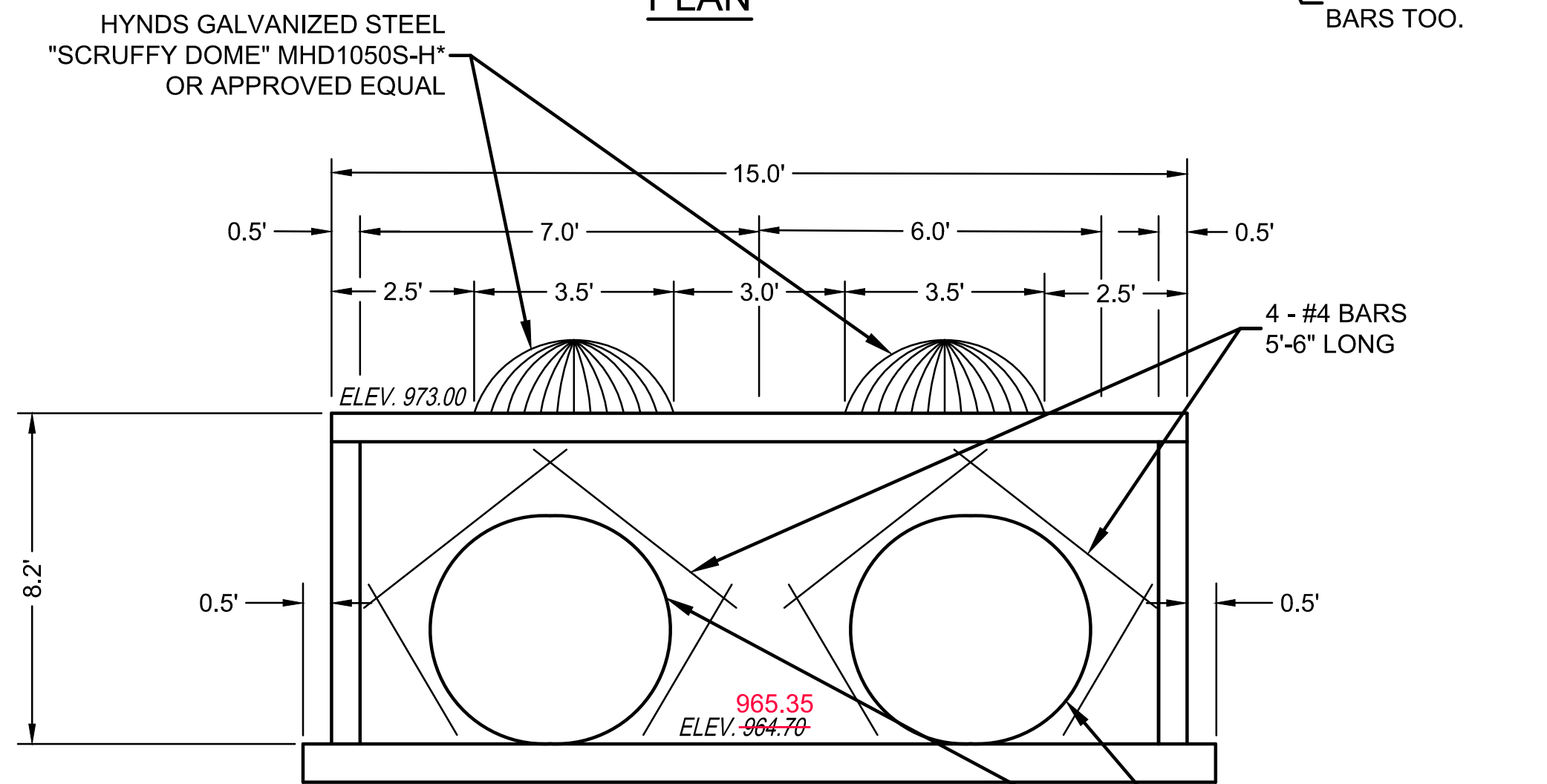
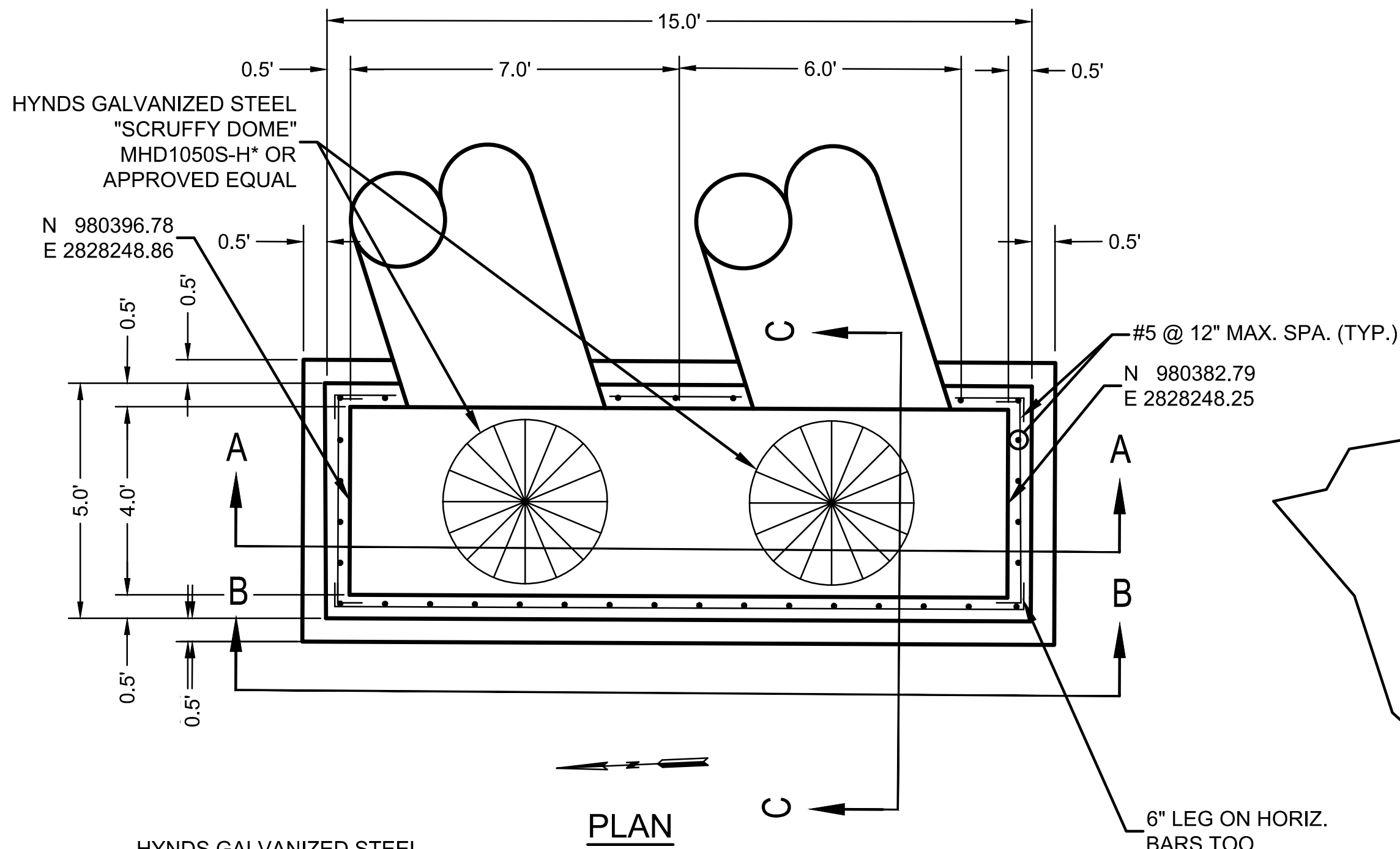
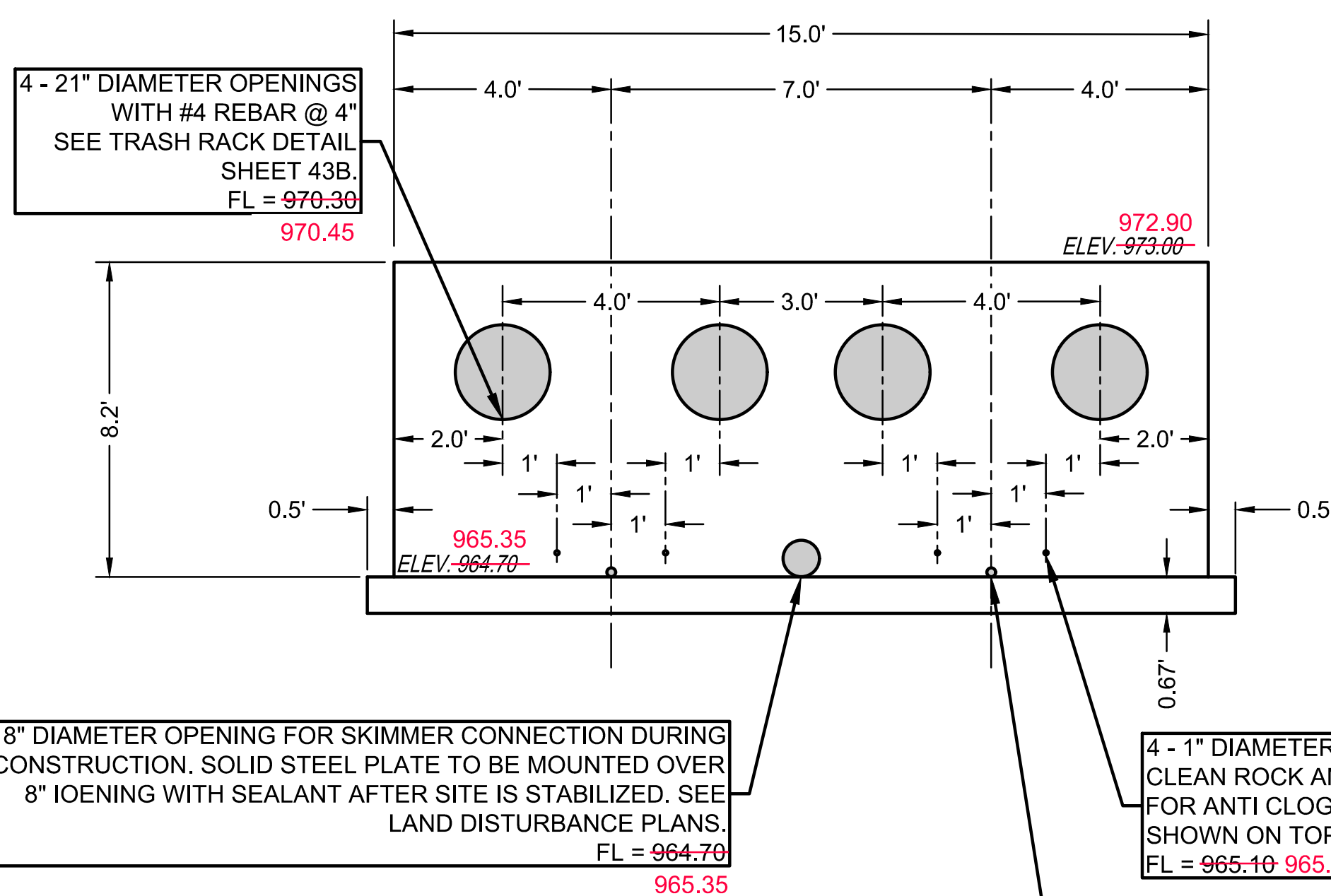


FIG. 2 Dimensions of Type 2 Hynds Scruffy Dome (see table).
Note: Brackets shown here are not supplied. Please see the North Island and South Island Scruffy Domes photos.



2 - 48\"/>



8\"/>

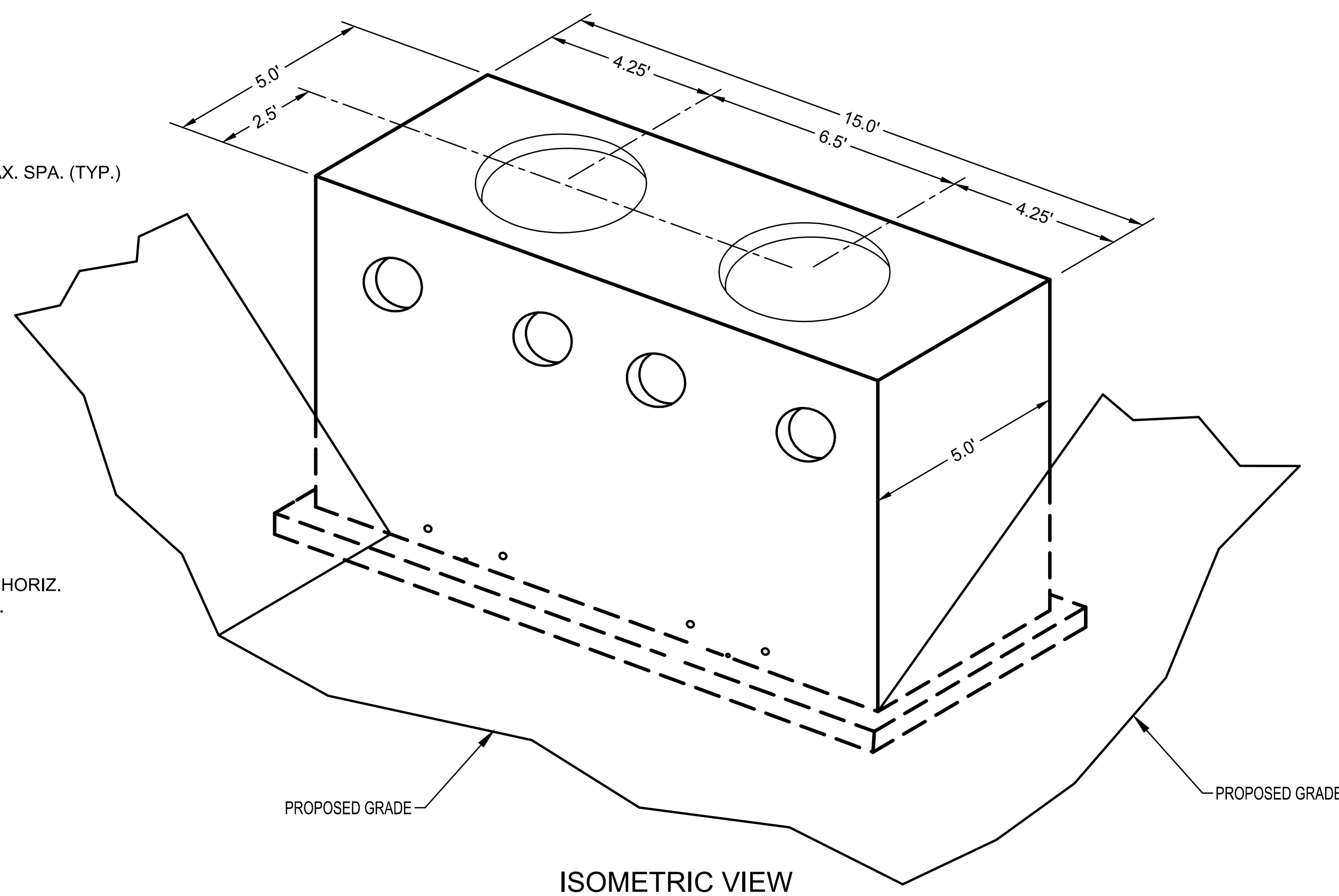
SECTION B-B

2 - 2\"/>

DETENTION OUTLET STRUCTURE
NOT TO SCALE

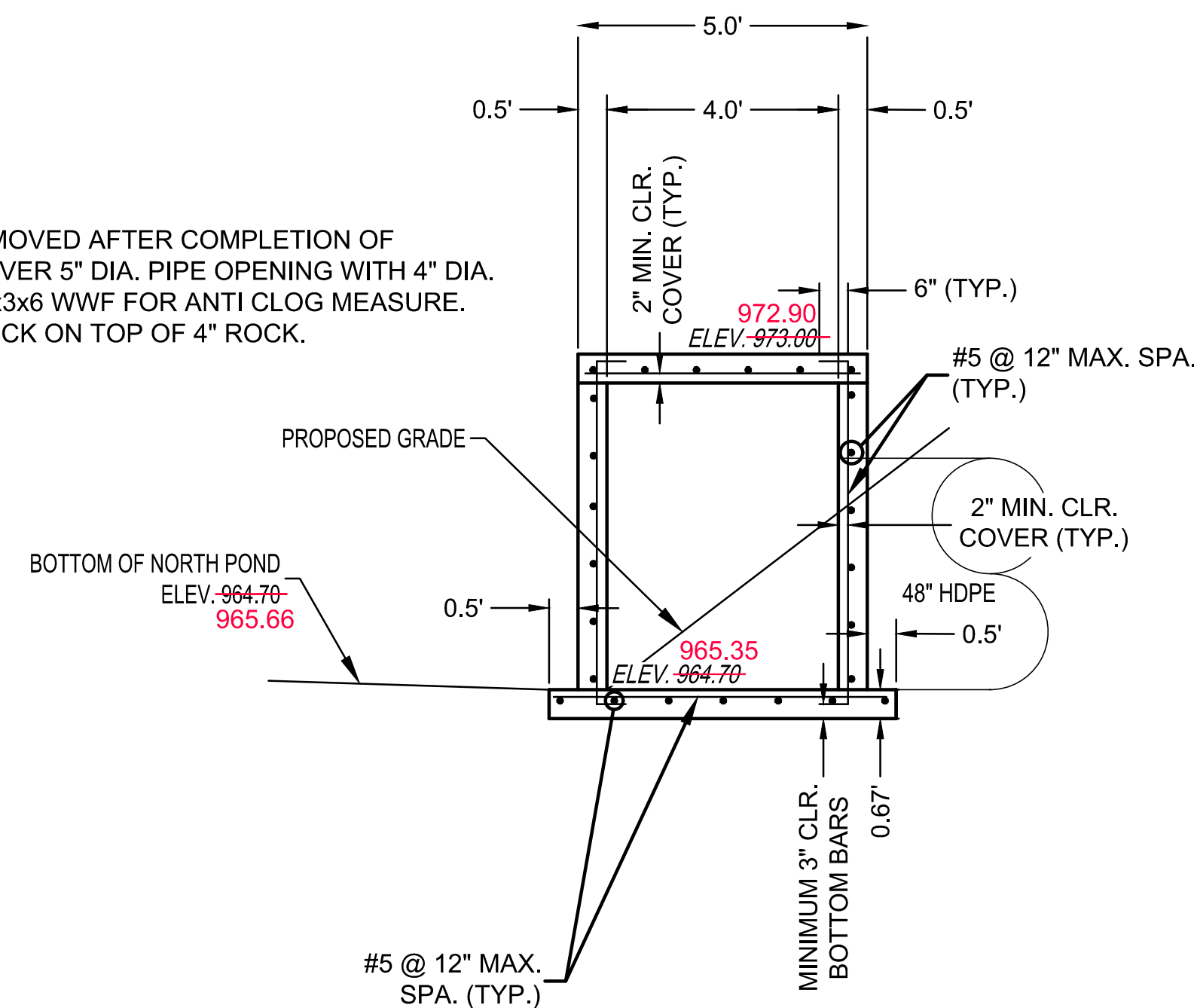
NOTE:

- REINFORCING STEEL FOR ALL WALLS, TOP AND BOTTOM SLABS WILL BE NO. 5 BARS WITH MAXIMUM SPACING OF 12\"/>
- REINFORCING STEEL EXPOSED AT THE INLET OPENING LOCATIONS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.

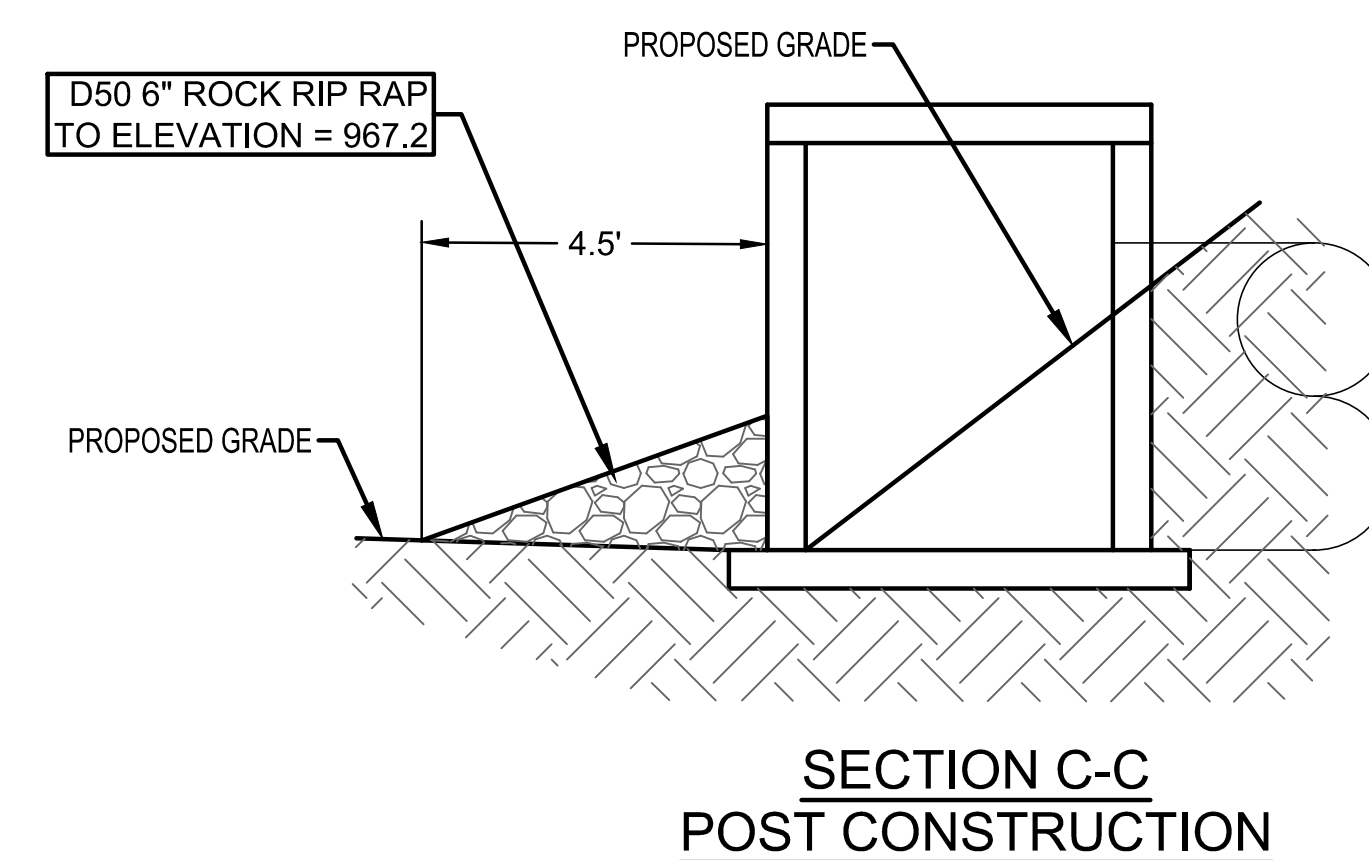


NOTE:

SKIMMER TO BE REMOVED AFTER COMPLETION OF CONSTRUCTION. COVER 5\"/>



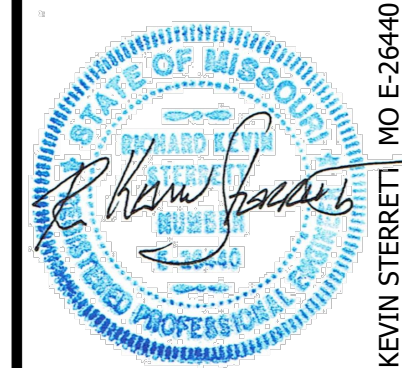
SECTION C-C



SECTION C-C POST CONSTRUCTION

AS-BUILT
04/02/21

NO.	BY	CHKD
1	SPW	RCS
2	SPW	RCS
3	SPW	RCS
4	SPW	RCS
5	SPW	RCS
6	SPW	RCS
7	SPW	RCS
8	SPW	RCS

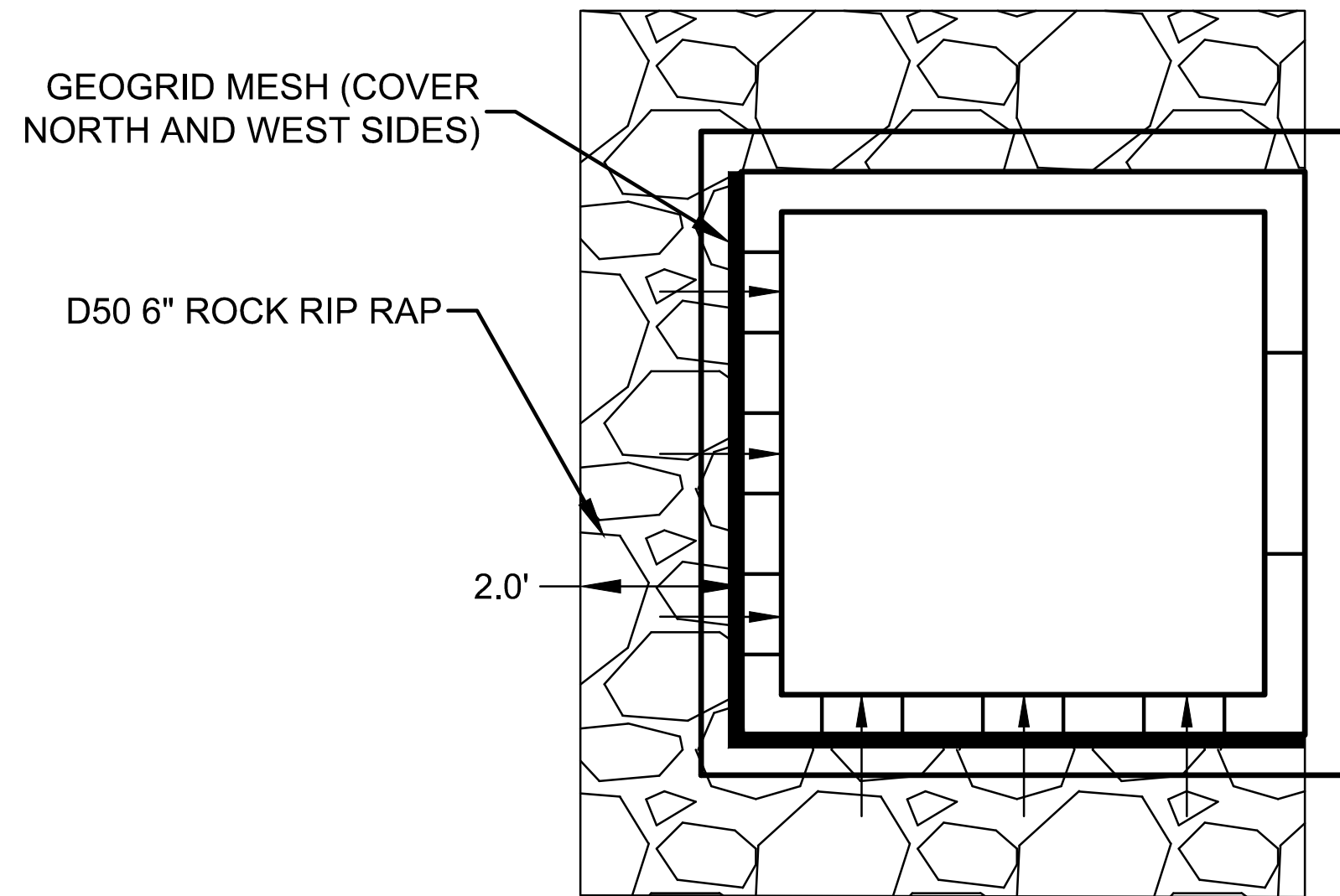


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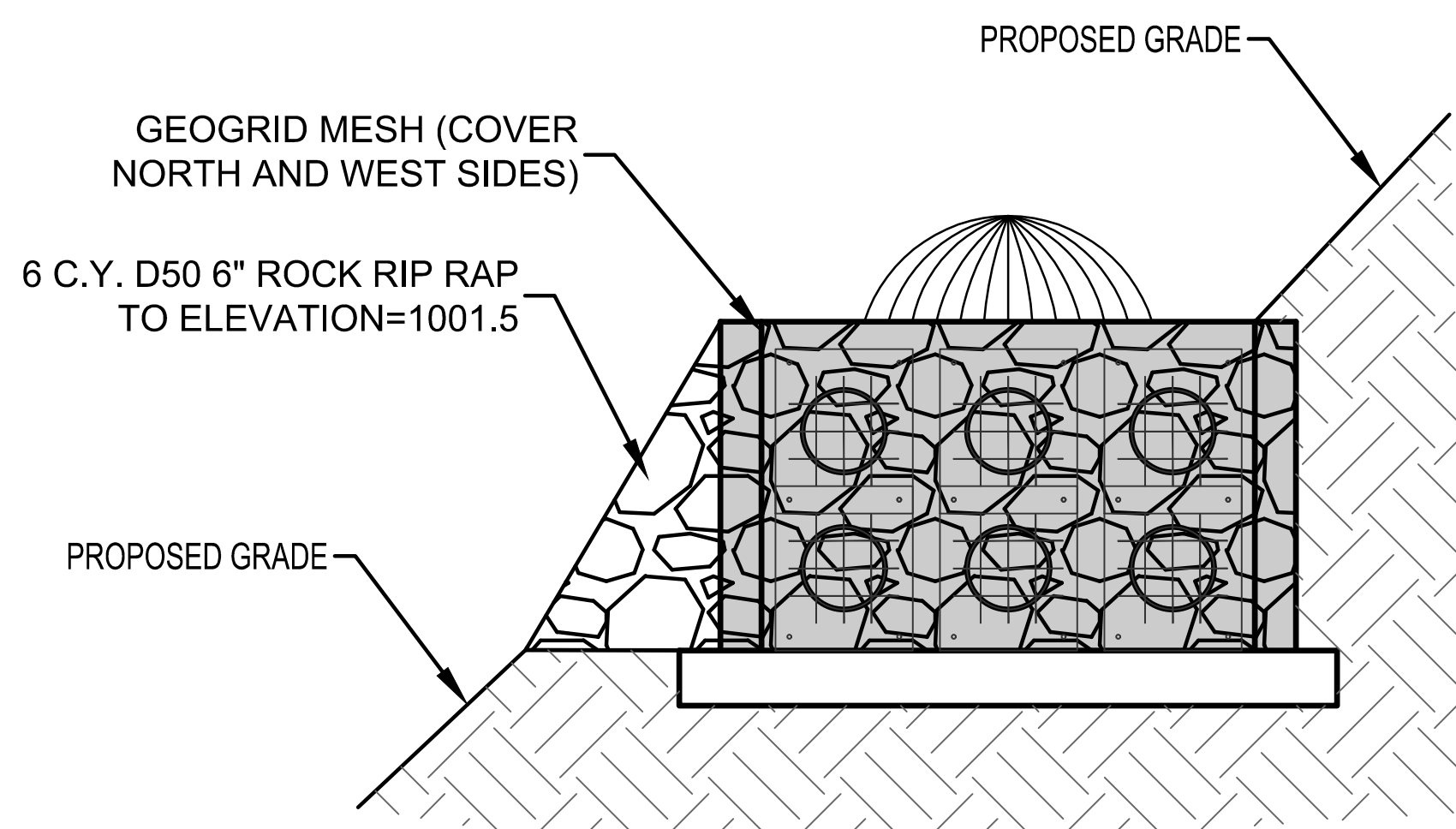
STREET AND STORM SEWER PLANS
NORTH DETENTION BASIN
OUTLET STRUCTURE
COBEY CREEK FIRST PLAT
PHASE I
CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI

X-REF NO.	16-059 Base Phase I
DRAWING NO.	16-059 Phase I Street Plans
DATE	August 24, 2020
SHEET NO.	16-059

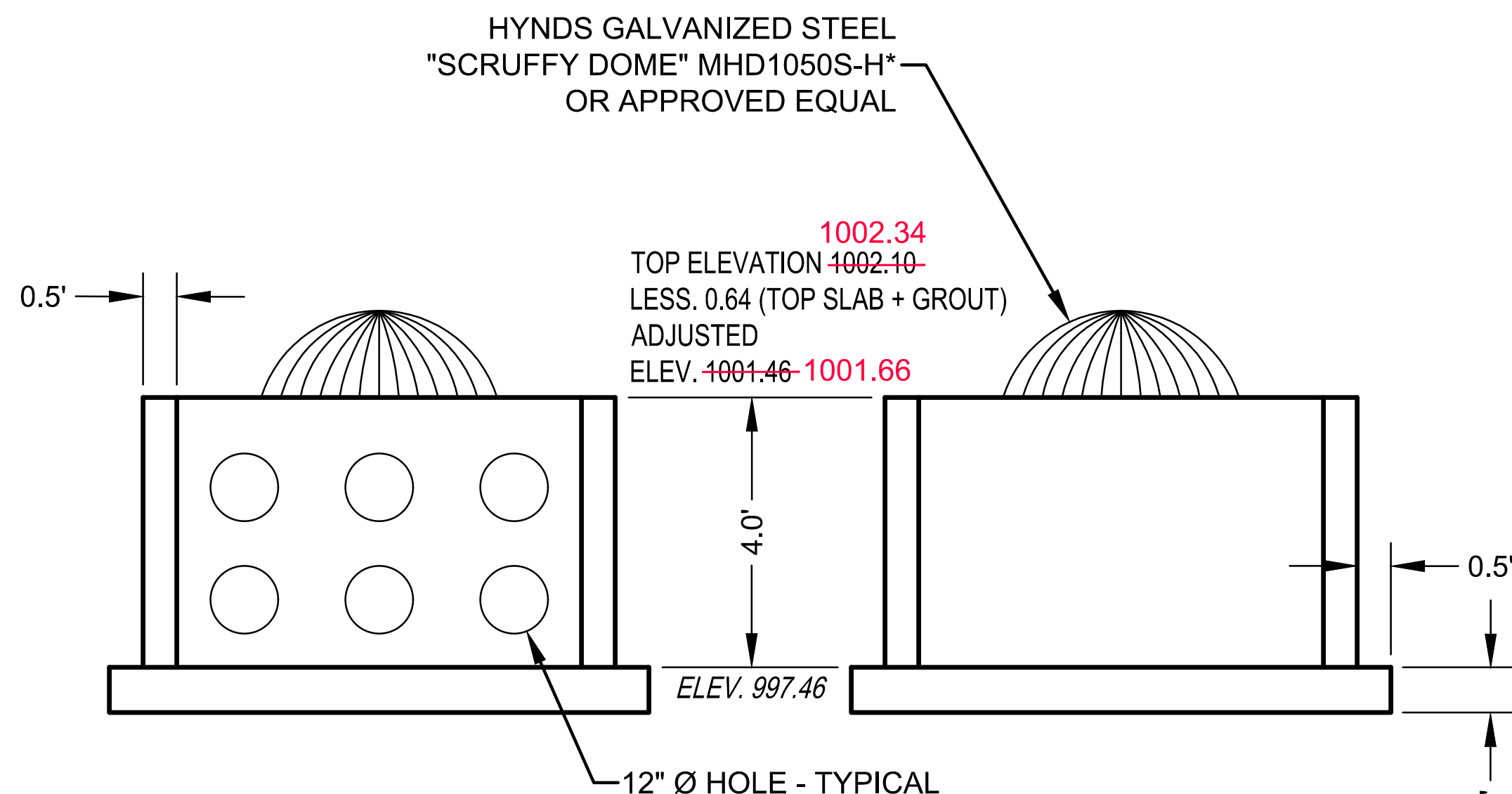
43A SHEET OF 53



PLAN

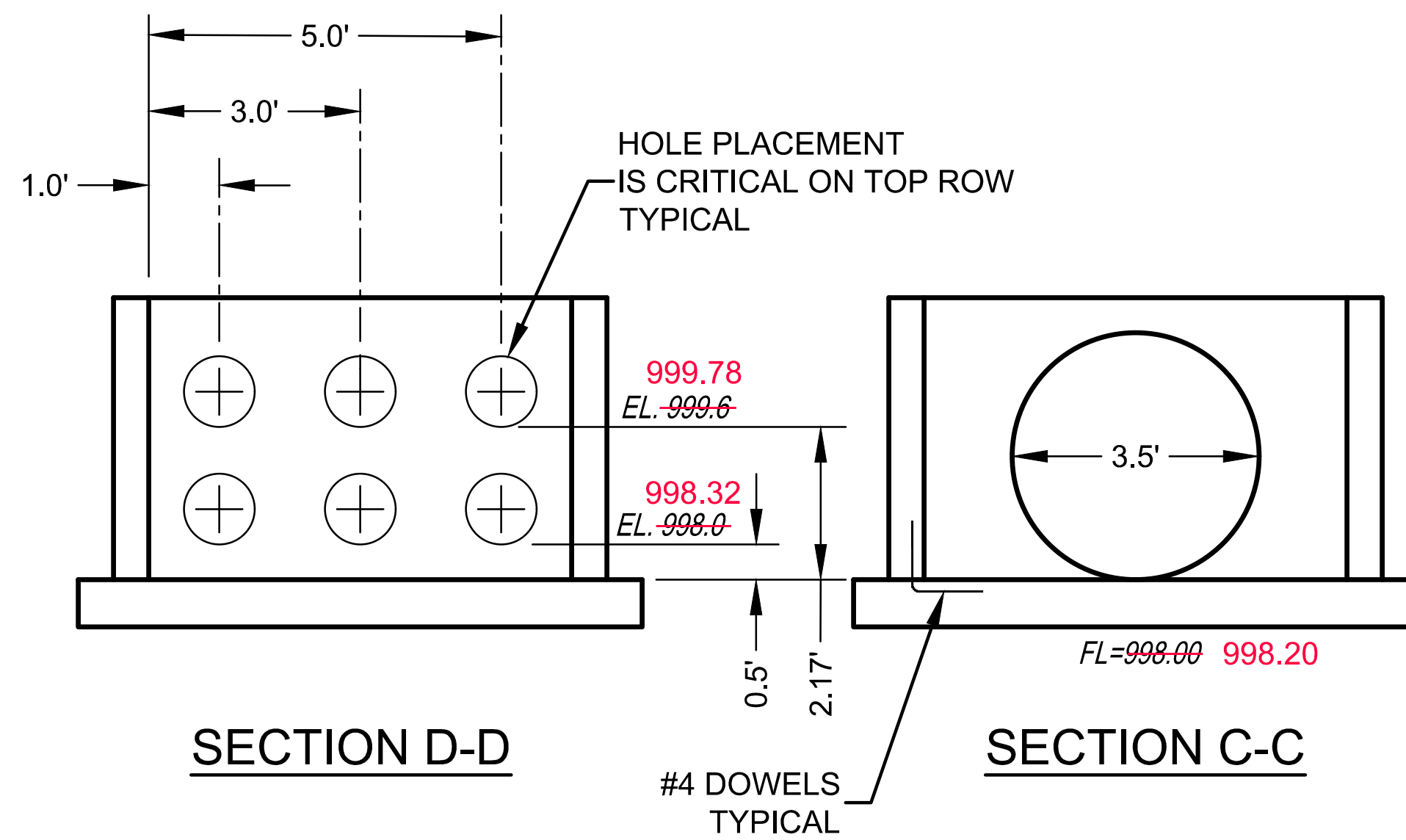


SIDE VIEW
FACING WEST SIDE



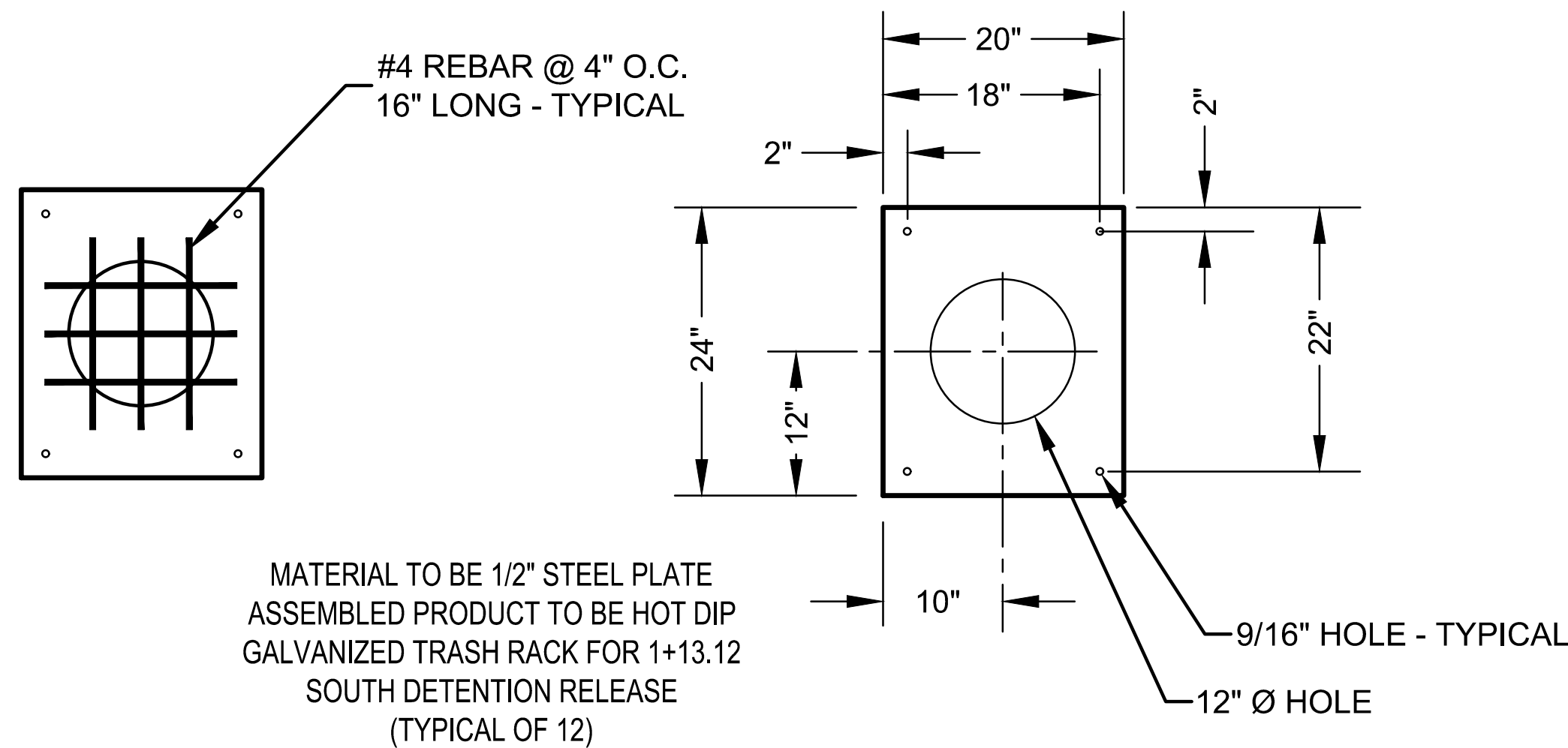
SECTION A-A

SECTION B-B

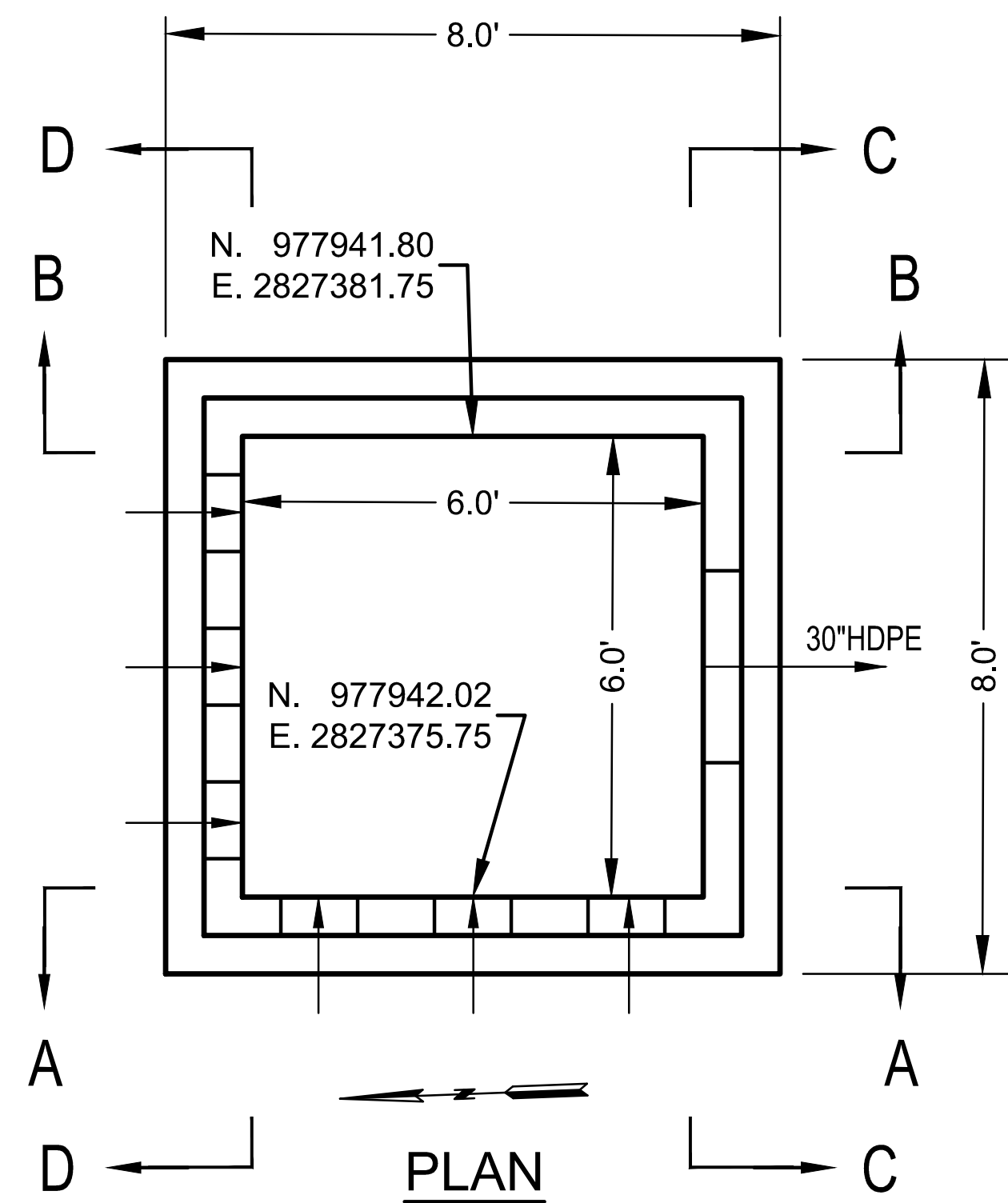


SECTION D-D

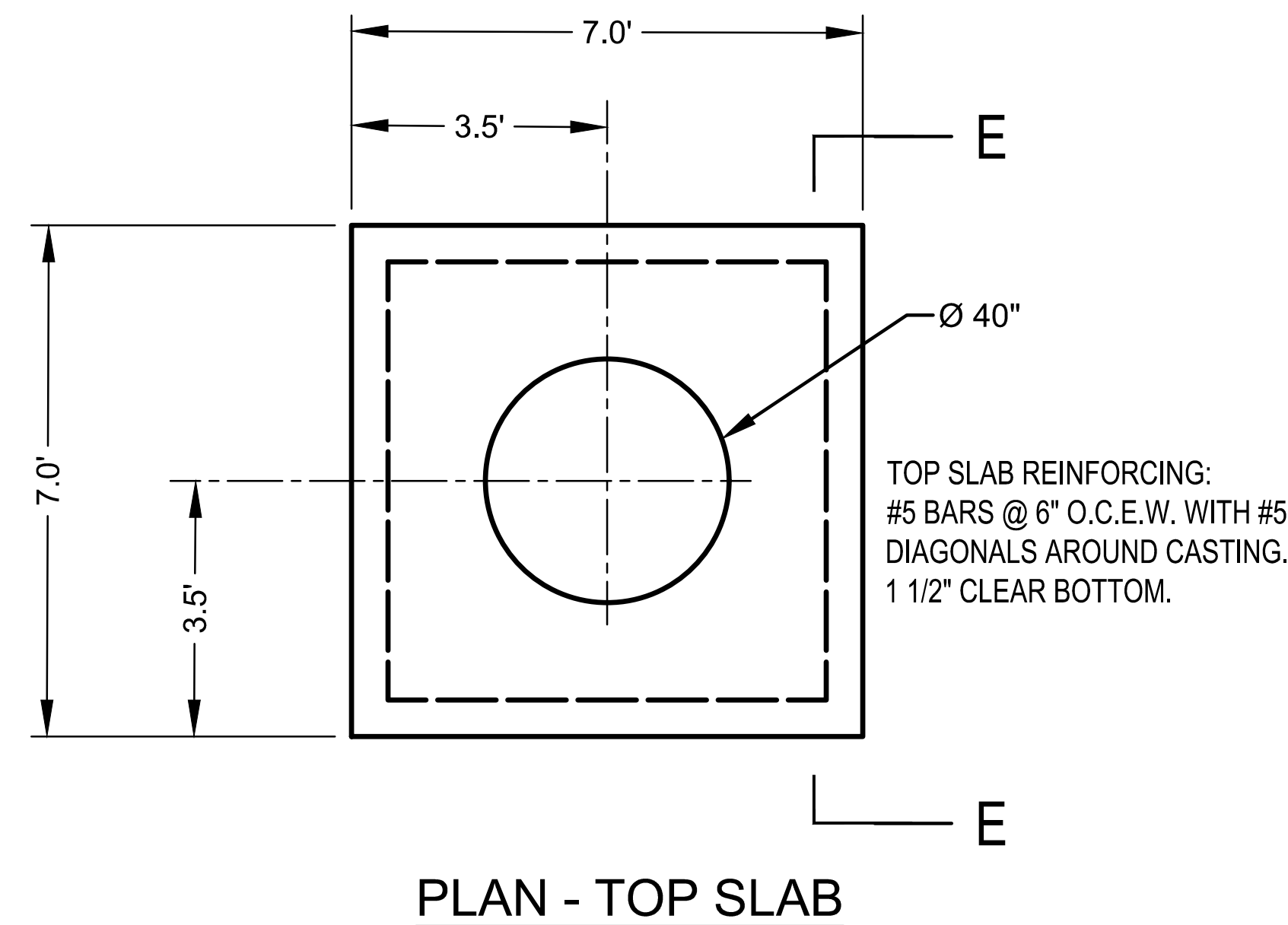
SECTION C-C



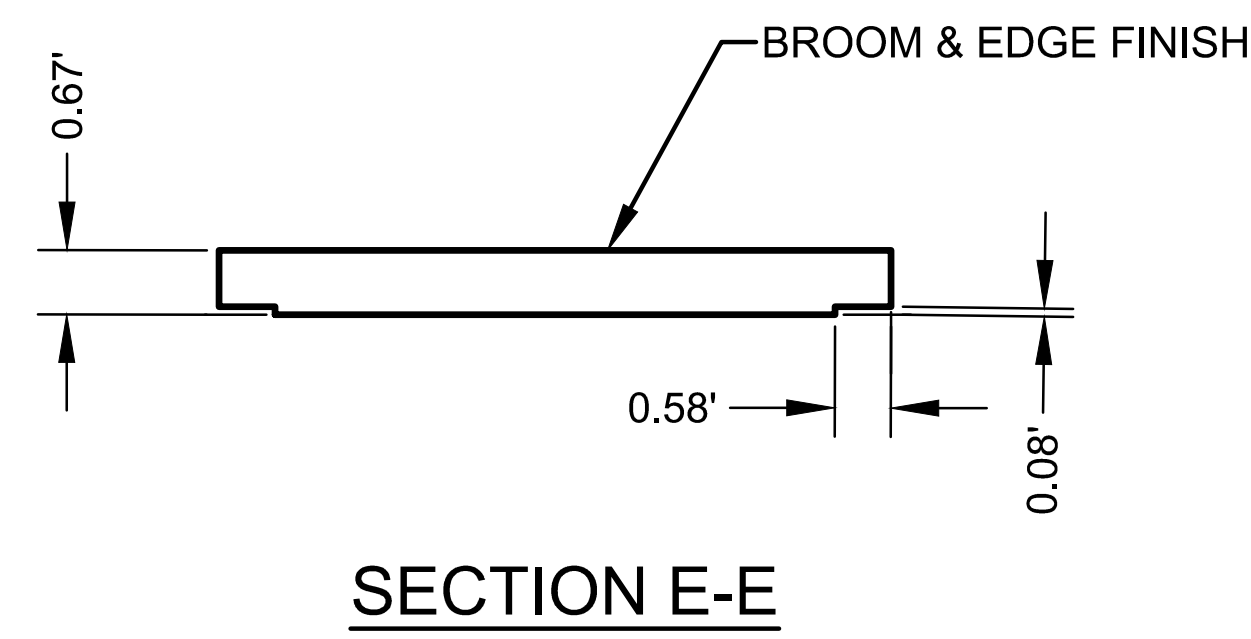
TRASH RACK



PLAN



PLAN - TOP SLAB



SECTION E-E

DETENTION OUTLET STRUCTURE

NOT TO SCALE

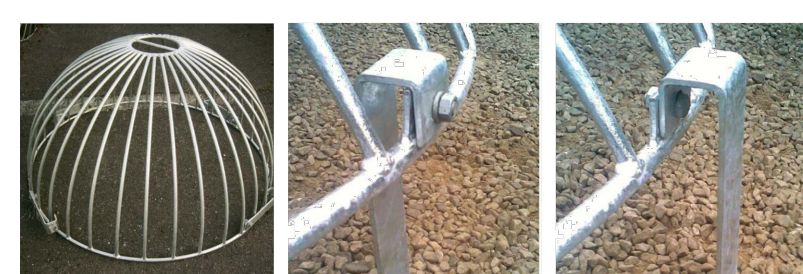
AS-BUILT

04/02/21

The scruffy dome is made of galvanised steel and is used in stormwater applications to provide a debris and security screen for manholes.

- Design Specifications**
- The type 1 debris screen is a full height design, suitable for manholes with a 600mm diameter or larger. (refer to figure 1)
 - The type 2 debris screen has a lower height profile making it less noticeable in areas such as parks and gardens. Suitable for manholes with a diameter of 600 mm or larger. (refer to figure 2)

North Island Scruffy Dome



South Island Scruffy Dome



Product Code	Manhole (mm)	Type	Riser ID (mm)	A x OD of Girth (mm)	B x Diameter of Inner Ring (mm)	C x Height of Dome (mm)	D x Leg Length (mm)
Type 1 High Profile							
MH-D1000S	600	1	610	640	145	200	190
MH-D1200S	675	1	685	715	145	200	190
MH-D1350S	800	1	814	850	230	300	190
MH-D1500S	1000	1	1005	1020	230	300	190
MH-D1650S-H*	1050	1	1057	1070	230	300	190
MH-D1800S	1200	1	1207	1220	230	300	190
MH-D1950S	1400	1	1372	1430	230	300	190
MH-D2100S	1600	1	1624	1660	230	300	190
MH-D2250S	1800	1	1816	1840	230	300	190
MH-D2400S	1900	1	1929	1950	230	300	190
Type 2 Low Profile							
MH-D1000L	600	2	610	640	145	150	190
MH-D1200L	675	2	685	715	145	150	190
MH-D1350L	800	2	814	850	230	170	190
MH-D1500L	1000	2	1005	1020	230	190	190
MH-D1650L-HL*	1050	2	1056	1026	230	200	190
MH-D1800L	1200	2	1207	1220	230	240	190
MH-D1950L-HL*	1300	2	1307	1320	230	260	190
MH-D2100L	1400	2	1372	1430	230	280	190
MH-D2250L	1600	2	1624	1660	230	320	190
MH-D2400L	1800	2	1816	1840	230	360	190
MH-D2550L	1900	2	1929	1950	230	380	190

Note: Larger sizes 2000, 2300, 2500, 3000mm are available on request.
*H - hinged top - hinged and lockable

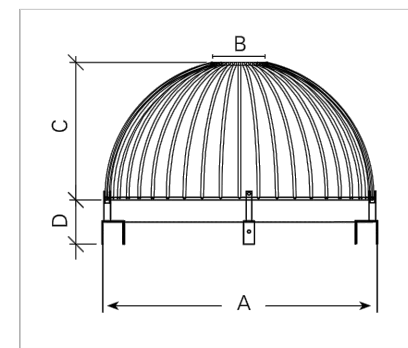


FIG. 1 Dimensions of Type 1 Hynds Scruffy Dome (see table).

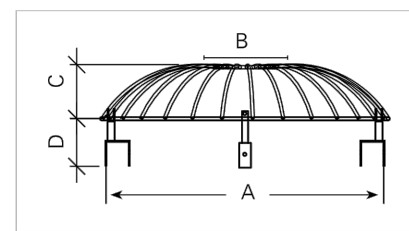
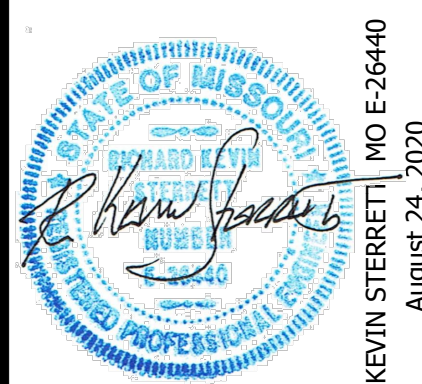


FIG. 2 Dimensions of Type 2 Hynds Scruffy Dome (see table).

DATE	REVISION	NO.	BY	CHKD
04/02/21	AS-BUILT PER CITY'S COMMENTS	1	SPW	RCS
07/24/20	REVISED NORTH OUTLET STRUCTURE PER ORIGINAL STORM REPORT	6	SPW	RCS
07/21/20	PER CITY'S COMMENTS	7	SPW	RCS
11/21/18	SUBMITTAL TO CITY OF LEES SUMMIT	7	SPW	RCS



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STREET AND STORM SEWER PLANS
SOUTH DETENTION BASIN
OUTLET STRUCTURE
COBEY CREEK FIRST PLAT
PHASE I
CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI

X-REF NO.
16-059 Base Phase I
DRAWING NO.
16-059 Phase I Street Plans
DATE
August 24, 2020
JOB NO.
16-059
SHEET OF
43B 53