

CITY OF MADISON CITY ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS PLAN OF PROPOSED IMPROVEMENT

4800 VOGES ROAD

CITY PROJECT NO. 12582

CONTRACT NO. 9025

PUBLIC IMPROVEMENT PROJECT APPROVED

MARCH 30, 2021

BY THE COMMON COUNCIL OF MADISON, WISCONSIN

PUBLIC IMPROVEMENT DESIGN APPROVED BY:

N- Greg Fries

Jan 13, 2022

City Engineer

______ Date

C:t. I

STORMWATER MANAGEMENT

DESIGNED BY:

SEE INDIVIDUAL SHEETS STREET DESIGNED BY:



Jan 13, 2022

GEOMETRY DESIGNED BY:



Jan 13, 2022

Jan 13, 2022

minim.

DESIGNED BY:

SANITARY SEWER



Jan 13, 2022

WATER DESIGNED BY:



STORM SEWER DESIGNED BY:



Jan 13, 2022

INDEX OF SHEETS

SHEET NO. D1

SHEET NO. D2-D3 TYPICAL SECTION

SHEET NO. P1-P5 PLAN & PROFILE

SHEET NO. U1-U4 UTILITIES PLAN & PROFILE

SHEET NO. USAN

SANITARY SEWER SCHEDULE

SHEET NO. USTM

STORM SEWER SCHEDULE

SHEET NO. C2.0

GRADING & EROSION CONTROL

STANDARD NOTES

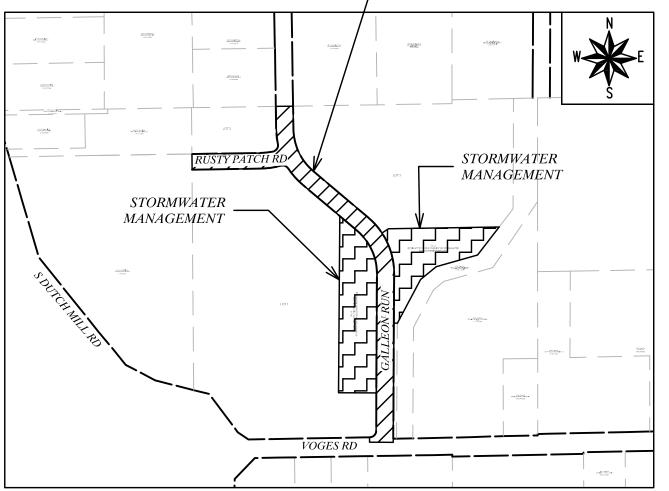
SHEET NO. C2.0 GRADING & EROS.
SHEET NO. D1.1-D1-2 POND DETAILS

SHEET NO. WI-W4 WATER PLAN AND PROFILE SHEET NO. W5 WATER IMPACT PLAN

SHEET NO. W6 WATER ESTIMATE OF MATERIALS

SHEET NO. MN-1 MAINTENANCE PLAN

PROJECT LOCATION



FILE NAME: M:\DESIGN\Projects\12582\CAD\Streets\12582EN-TitleSheet.dw;

DATE: 12/14/2021 6:01 PM

ALL PROPOSED STREET TREE REMOVALS WITHIN THE RIGHT OF WAY SHALL BE REVIEWED BY CITY FORESTRY BEFORE THE PLAN COMMISSION MEETING. STREET TREE REMOVALS REQUIRE APPROVAL AND A TREE REMOVAL PERMIT ISSUED BY CITY FORESTRY. ANY STREET TREE REMOVALS REQUESTED AFTER THE DEVELOPMENT PLAN IS APPROVED BY THE PLAN COMMISSION OR THE BOARD OF PUBLIC WORKS AND CITY FORESTRY WILL REQUIRE A MINIMUM OF A 72-HOUR REVIEW PERIOD WHICH SHALL INCLUDE THE NOTIFICATION OF THE ALDERPERSON WITHIN WHO'S DISTRICT IS AFFECTED BY THE STREET TREE REMOVAL(S) PRIOR TO A TREE REMOVAL PERMIT BEING ISSUED.

AS DEFINED BY THE SECTION 107.13 OF CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION: NO EXCAVATION IS PERMITTED WITHIN 5 FEET OF THE TRUNK OF THE STREET TREE OR WHEN CUTTING ROOTS OVER 3 INCHES IN DIAMETER. IF EXCAVATION IS NECESSARY, THE CONTRACTOR SHALL CONTACT MADISON CITY FORESTRY (266-4816) PRIOR TO EXCAVATION. CITY OF MADISON FORESTRY PERSONNEL SHALL ASSESS THE IMPACT TO THE TREE AND TO ITS ROOT SYSTEM PRIOR TO WORK COMMENCING. TREE PROTECTION SPECIFICATIONS CAN BE FOUND ON THE FOLLOWING WEBSITE: HTTPS://WWW.CITYOFMADISON.COM/BUSINESS/PW/SPECS.CFM

DEVELOPER MUST SUBMIT A TRAFFIC CONTROL PLAN TO CITY TRAFFIC ENGINEERING AT LEAST 14 DAYS PRIOR TO THE START OF WORK, WORK SHALL NOT PROCEED UNTIL AN APPROVED TRAFFIC CONTROL PLAN IS IN PLACE.

CONTACT PROJECT ENGINEER AND STREET DESIGNER FADI EL MUSA GONZALEZ AT FELMUSAGONZALEZ@CITYOFMADISON.COM FOR CAD AND ALIGNMENT DATA PRIOR TO STAKING.

CONVENTIONAL FIELD VERIFY ALL UTIL	
GAS STORM SEWER SANITARY SEWER WATER	——————————————————————————————————————
BURIED ELECTRIC OVERHEAD ELECTRIC POWER POLE	—— E —— —— ОН———
ADA COMPLIANT RAMP I DETECTABLE WARNING	I i i i i i i i i i i i i i i i i i i i
COMBUSTIBLE FLUIDS	

ALL PAVEMENT IN THE GALLEON RUN AND RUSTY PATCH ROAD RIGHTS-OF-WAY SHALL BE TYPE C PAVEMENT PER STANDARD DETAIL DRAWING 4.02.

UNDERDRAINS SHALL BE INSTALLED PER STANDARD DETAIL DRAWING 4.05 FOR 75' ON EACH SIDE OF THE LOW POINT, OR TO THE NEAREST CURB HIGH POINT. ALL UNDERDRAIN SHALL BE WRAPPED.

ALL GUTTERS SHALL DRAIN WITH A MINIMUM GRADE OF 0.5% TOWARD STORM SEWER INLETS.

ALL DITCHES SHALL DRAIN WITH A MINIMUM GRADE OF 0.5%

THE CROSS SLOPE OF SIDEWALKS AND BARRIER FREE SIDEWALK CURB RAMPS SHALL TYPICALLY BE 1.5%. THE LONGITUDINAL GRADE OF BARRIER FREE SIDEWALK CURB RAMPS SHALL NOT EXCEED 8.33%. ALL SIDEWALK RAMPS SHALL BE CONSTRUCTED ACCORDING TO S.D.D. 3.04. AT ALL OTHER LOCATIONS THE LONGITUDINAL GRADE OF SIDEWALKS SHALL NOT BE LESS THAN 0.5% AND SHALL DRAIN TOWARD STORM SEWER INLETS. ALL SIDEWALK AND SIDEWALK RAMP ELEVATIONS AND GRADES SHALL BE FIELD VERIFIED AND SET TO COMPLY WITH THE CITY OF MADISON STANDARD SPECIFICATIONS AND THE A.D.A. GUIDELINES.

CURB STATION AND OFFSETS SHALL BE TO THE <u>EDGE OF PAVEMENT</u> UNLESS OTHERWISE INDICATED. CURB ELEVATIONS SHALL BE TO THE <u>EDGE OF PAVEMENT</u> UNLESS OTHERWISE INDICATED.

POWER POLES AND OTHER OBSTRUCTIONS SHALL BE MOVED TO PROVIDE 2 FEET MINIMUM OF CLEAR DISTANCE FROM ANY FACE OF CURB OR EDGE OF SIDEWALK.

ANY INFORMATION SHOWN ON THIS PLAN, WHICH IS NOT PART OF THIS RIGHT-OF-WAY PROJECT, IS PRELIMINARY AND NOT FOR CONSTRUCTION.

THERE MAY BE EXISTING UTILITIES OR OTHER FEATURES WHICH ARE EITHER NOT SHOWN OR SHOWN INCORRECTLY ON THIS PLAN. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO LOCATE AND IDENTIFY ALL UTILITIES AND TOPOGRAPHY WHICH MAY AFFECT THE CONSTRUCTION OF THESE IMPROVEMENTS.

ALL PERMANENT SIGNING AND POSTING WILL BE DETERMINED AND PROVIDED BY THE TRAFFIC ENGINEERING DIVISION, FOLLOWING CONSTRUCTION OF THESE IMPROVEMENTS.

THE DEVELOPER SHALL PROVIDE, INSTALL AND MAINTAIN ALL STREET END BARRICADES, SIGNING AND TRAFFIC CONTROL, AS REQUIRED BY THE CITY TRAFFIC ENGINEER.

PAVEMENT SAWCUTS SHALL BE AS DIRECTED BY THE CITY CONSTRUCTION ENGINEER. SAWCUTS SHOWN ON THE PLAN ARE APPROXIMATE.

ALL WORK IN THE RIGHT OF WAY AND PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION



i	i	i	i	MARK	Designed By: ###	12582
00107	79071		MADISON W		3000	3023

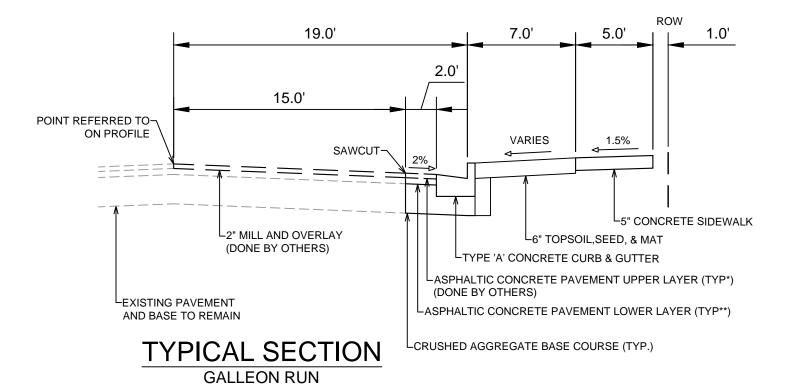
CONTRACT





STANDARD NOTES

12582



ROW ROW 66.0' 5.0' 7.0' 20.0' 20.0' 7.0' 5.0' 18.0' 18.0' 1.0' 1.0' 1.5% 4% L_{5"} CONCRETE SIDEWALK 5" CONCRETE SIDEWALK 6" TOPSOIL, SEED, & MAT-L6" TOPSOIL, SEED, & MAT -CRUSHED AGGREGATE BASE COURSE (TYP.) LTYPE 'A' CONCRETE CURB & GUTTER TYPE 'A' CONCRETE CURB & GUTTER J $\mathsf{L}_{\mathsf{ASPHALTIC}}$ CONCRETE PAVEMENT UPPER LAYER (TYP*). ASPHALTIC CONCRETE PAVEMENT LOWER LAYER (TYP*) (DONE BY OTHERS) (DONE BY OTHERS)

STA 99+75 TO STA 101+00

* GALLEON RUN SHALL BE CONSTRUCTED AS TYPE 'C' PAVEMENT PER CITY OF MADISON MINIMUM PAVEMENT DESIGN. THE CITY SHALL BE RESPONSIBLE FOR ALL BINDER (EXCEPT FROM STA 99+75 TO 101+00) AND ALL SURFACE PAVING UNDER THE CITY'S RESURFACING CONTRACT. THE DEVELOPER SHALL COORDINATE PAVING WORK WITH CITY ENGINEERING AND SHALL PROVIDE THE RESURFACING PROJECT CONTRACTOR A TWO WEEK NOTICE WHEN FINISH GRADING WORK IS COMPLETED AND THE STREET IS SET FOR PAVING.

NOTES:

**TYPE 'C' PAVEMENT PER CITY OF MADISON MINIMUM PAVEMENT DESIGN. THE DEVELOPER SHALL BE RESPONSIBLE FOR BINDER PAVING.

TYPICAL SECTION

GALLEON RUN STA 101+00 TO STA 115+15

CITY OF MADISON MINIMUM PAVEMENT DESIGN

		CRUSHED AGGREG	SATE BASE COURSE		ASPHALTIC CONCRETE PAVEMENT								
	TYPE	LOWER LAYER	UPPER LAYER		LAYER	UPPER LAYER							
L		GRADATION 1	GRADATION 2	TYPE	THICKNESS	TYPE	THICKNESS						
	Α	6"	6"	4 LT 58-28 S	1.75"	4 LT 58-28 S	1.75"						
	В	6"	6"	3 LT 58-28 S	2.50"	4 LT 58-28 S	2.00"						
	С	6"	6"	3 MT 58-28 S/H 3.50" 4 MT 58-28 S/H 2.00"									
-							-						

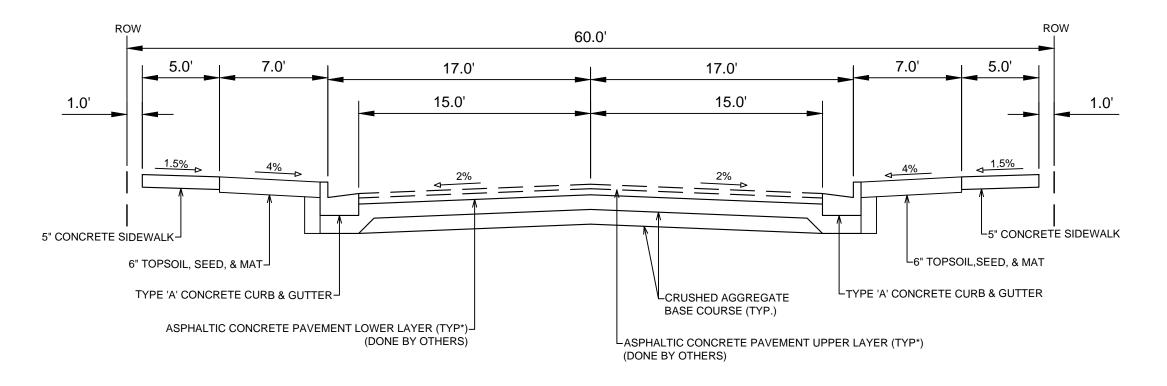


MADISON, WI

12582

12582

D-2



TYPICAL SECTION RUSTY PATCH ROAD

NOTES:

* RUSTY PATCH ROAD SHALL BE CONSTRUCTED AS TYPE 'C' PAVEMENT PER CITY OF MADISON MINIMUM PAVEMENT DESIGN. THE CITY SHALL BE RESPONSIBLE FOR ALL BINDER AND SURFACE PAVING UNDER THE CITY'S RESURFACING CONTRACT. THE DEVELOPER SHALL COORDINATE PAVING WORK WITH CITY ENGINEERING AND SHALL PROVIDE THE RESURFACING PROJECT CONTRACTOR A TWO WEEK NOTICE WHEN FINISH GRADING WORK IS COMPLETED AND THE STREET IS SET FOR PAVING.

CITY OF MADISON MINIMUM PAVEMENT DESIGN

	CRUSHED AGGREG	SATE BASE COURSE	ASPHALTIC CONCRETE PAVEMENT											
TYPE	LOWER LAYER	UPPER LAYER	LOWER	RLAYER	UPPER LAYER									
	GRADATION 1	GRADATION 2	TYPE	THICKNESS	TYPE	THICKNESS								
Α	6"	6"	4 LT 58-28 S	1.75"	4 LT 58-28 S	1.75"								
В	6"	6"	3 LT 58-28 S	2.50"	4 LT 58-28 S	2.00"								
С	6"	6"	3 MT 58-28 S/H	3.50"	4 MT 58-28 S/H	2.00"								

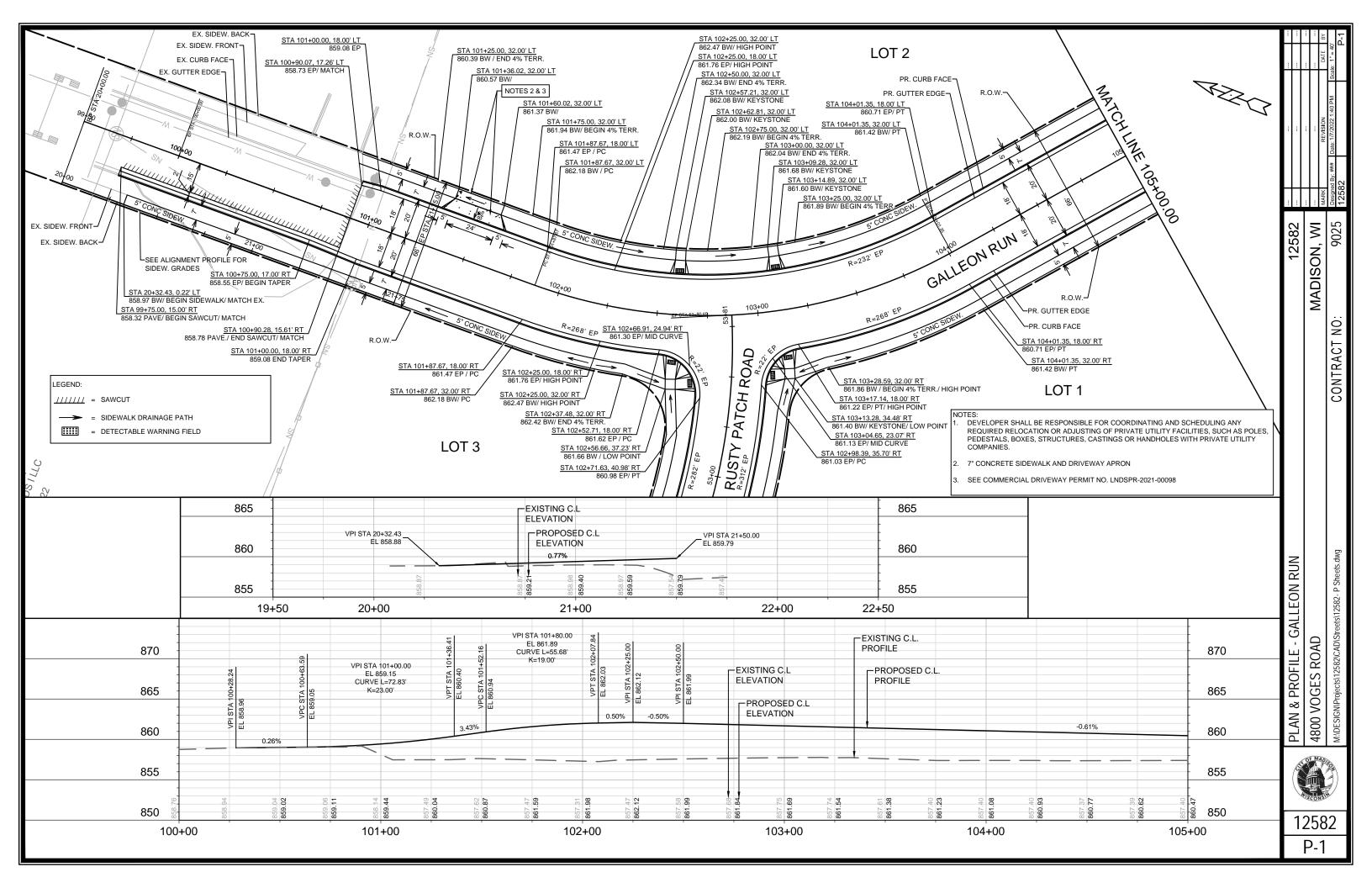


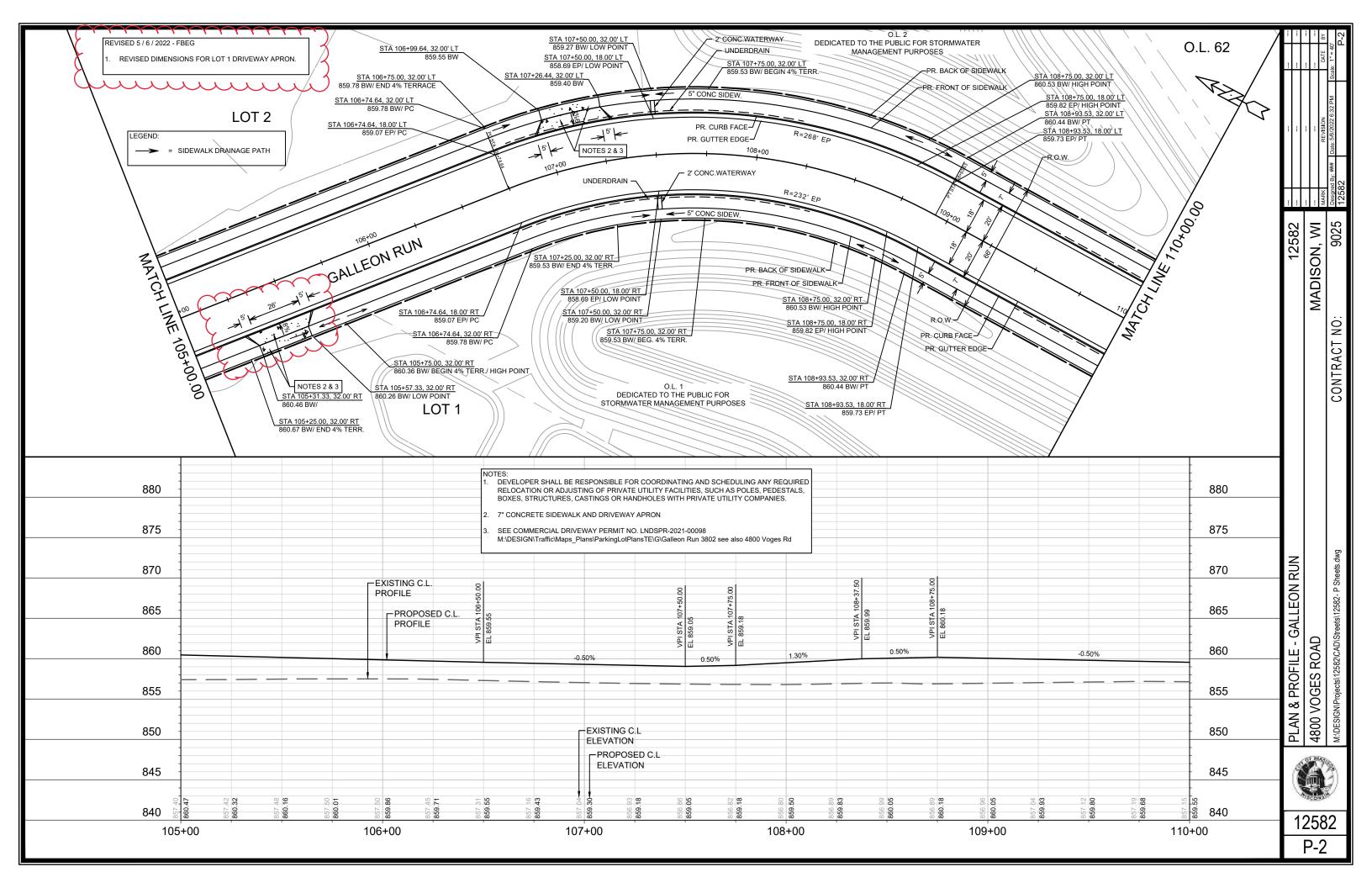
TYPICAL SECTION

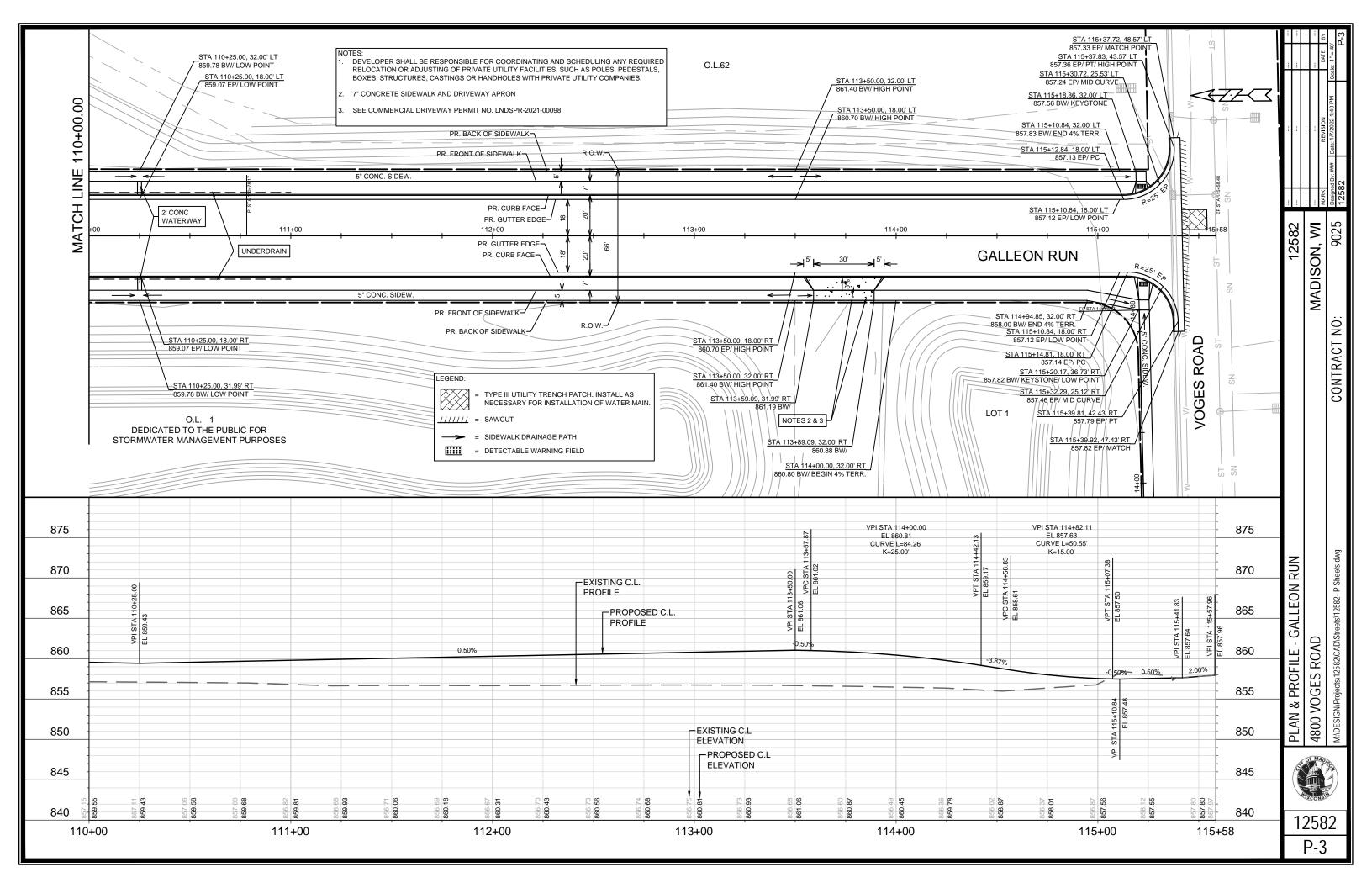
MADISON, WI

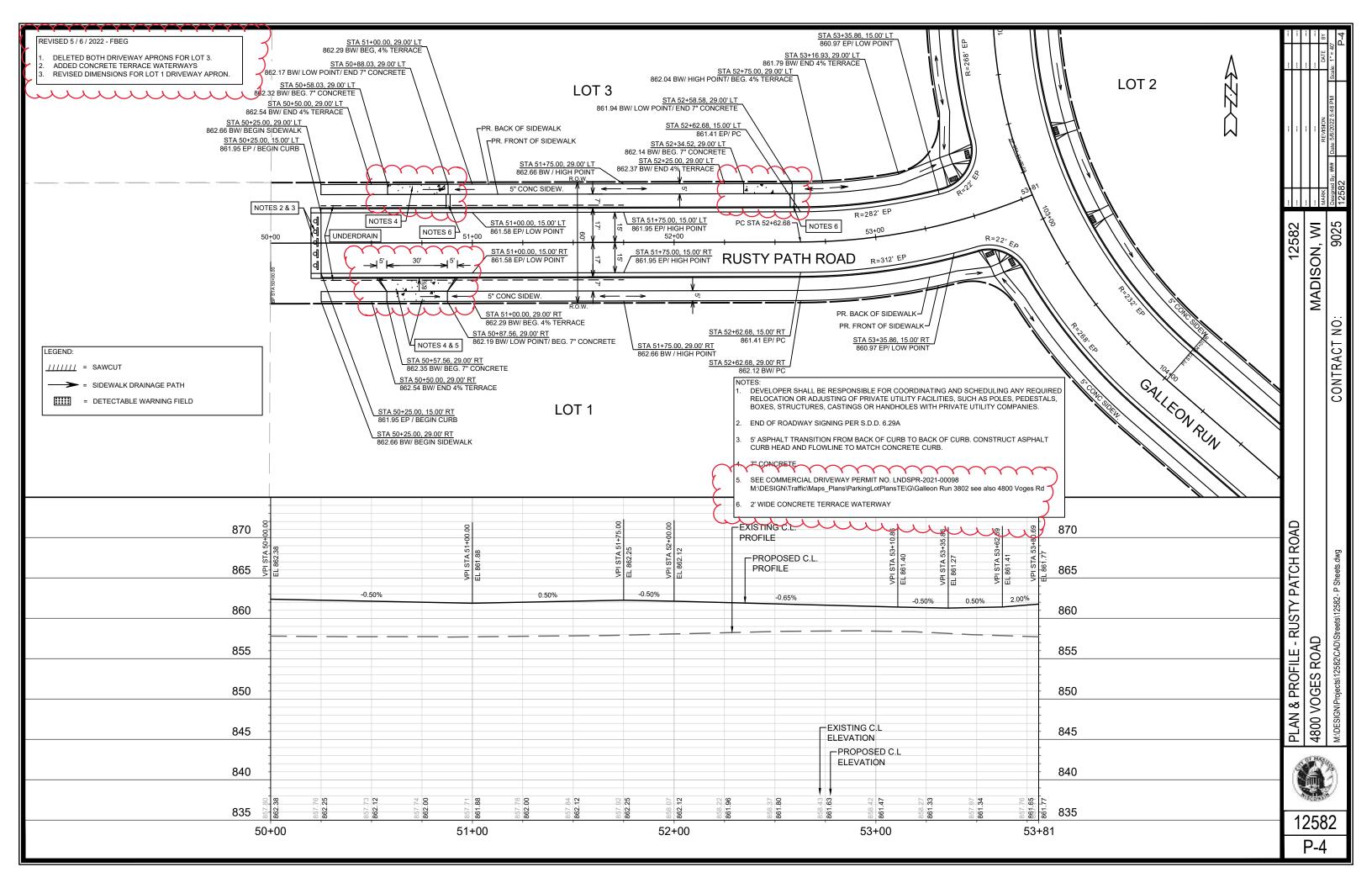
12582

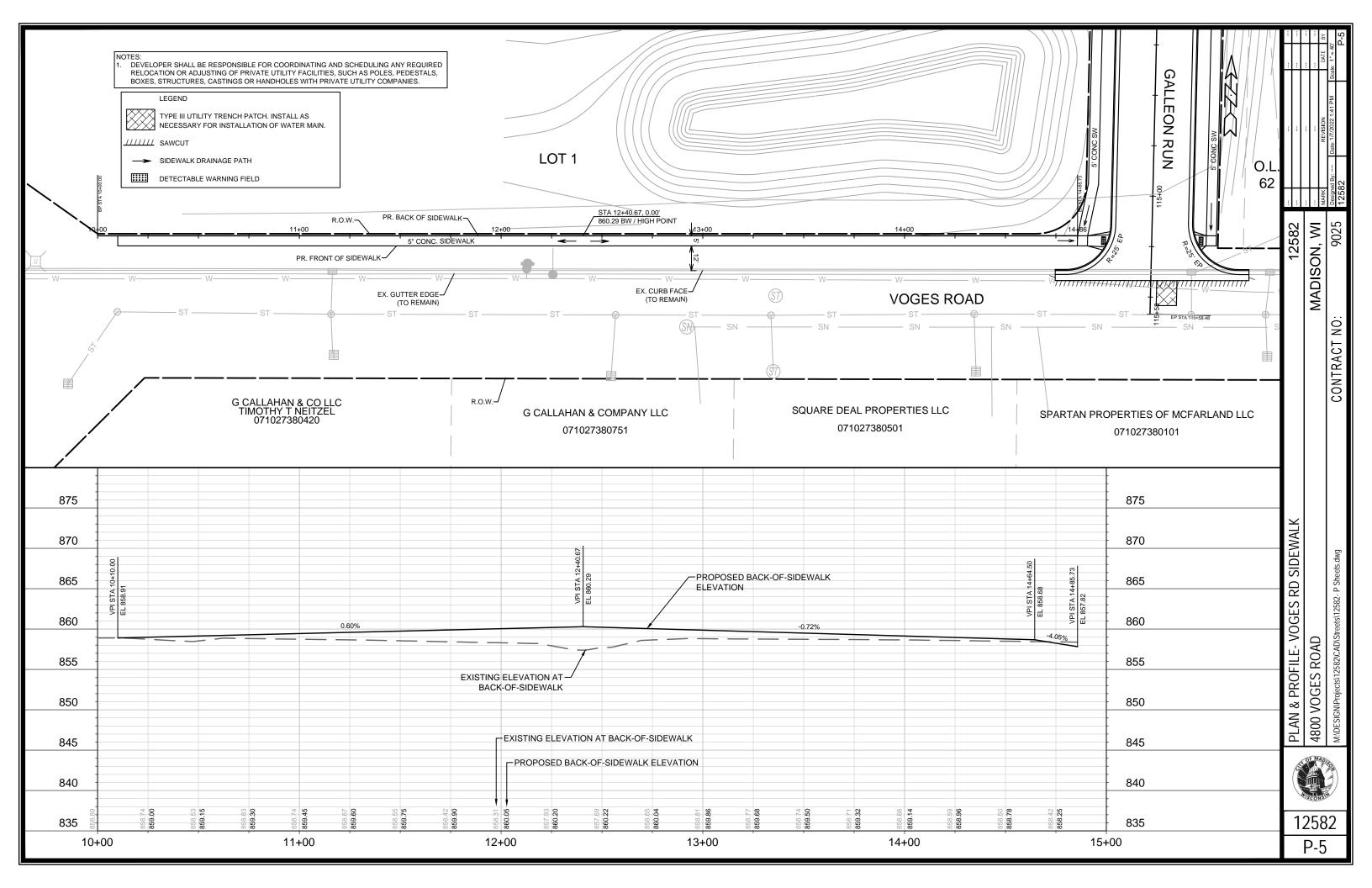
12582 D-3

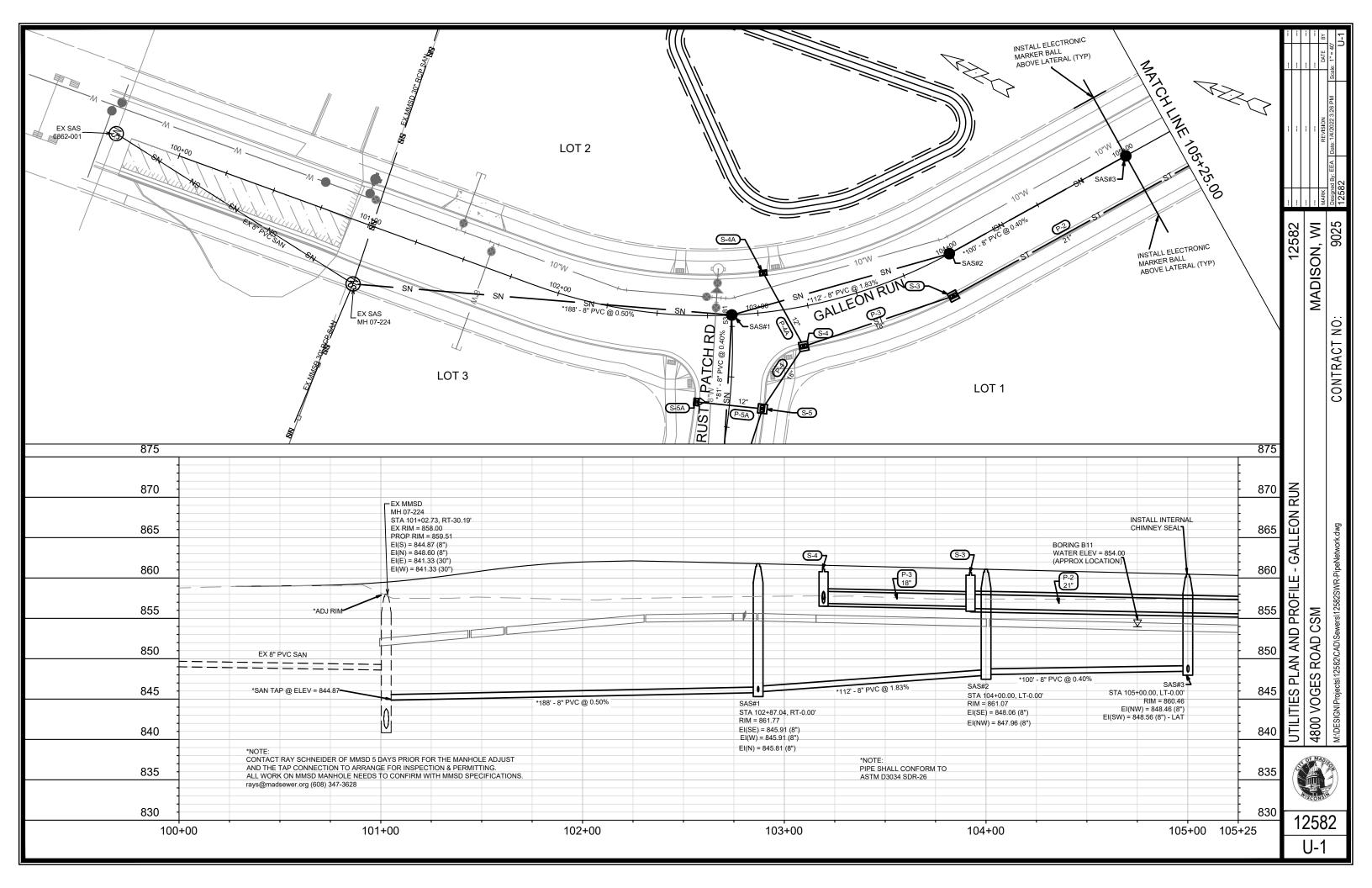


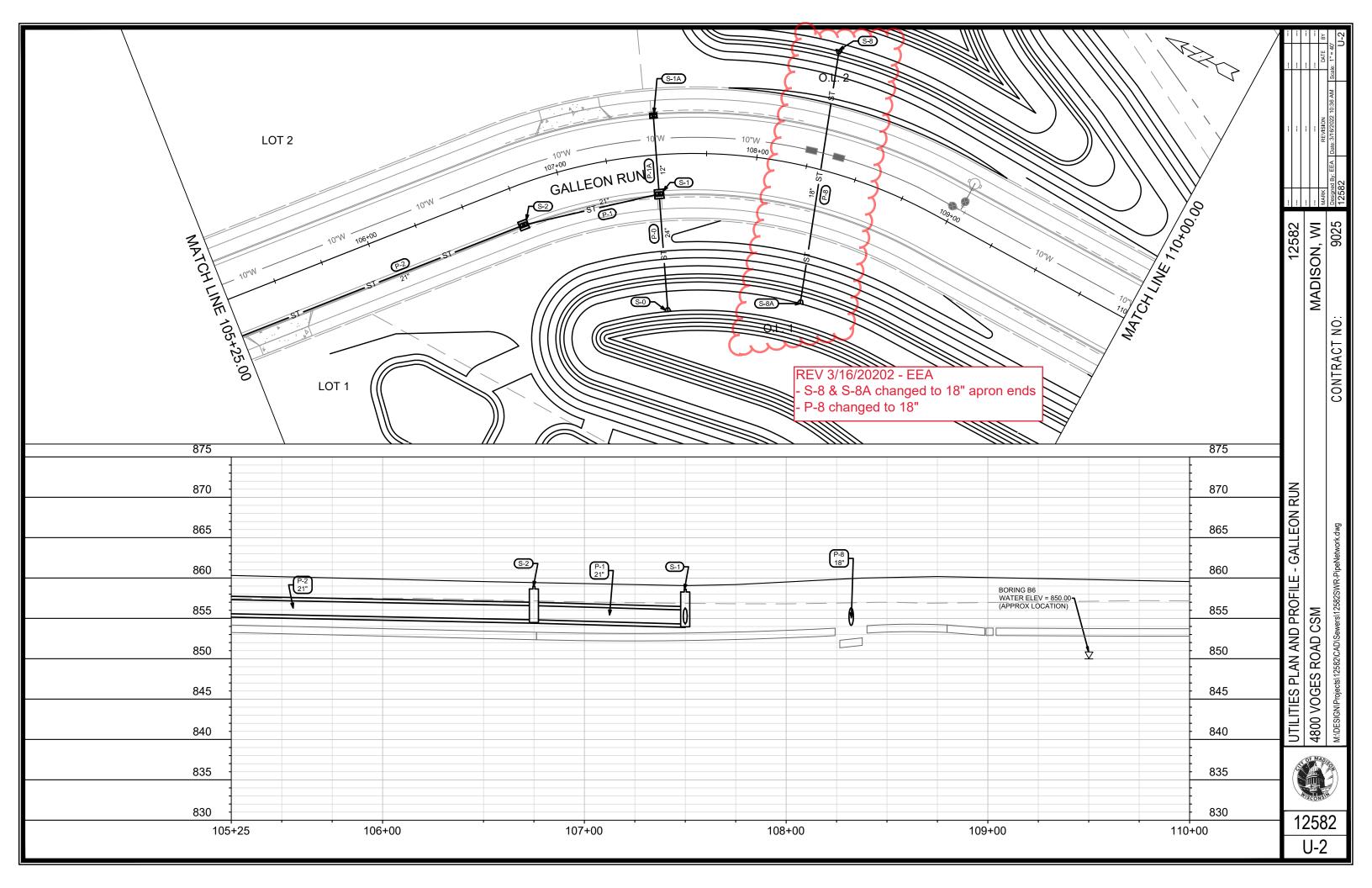


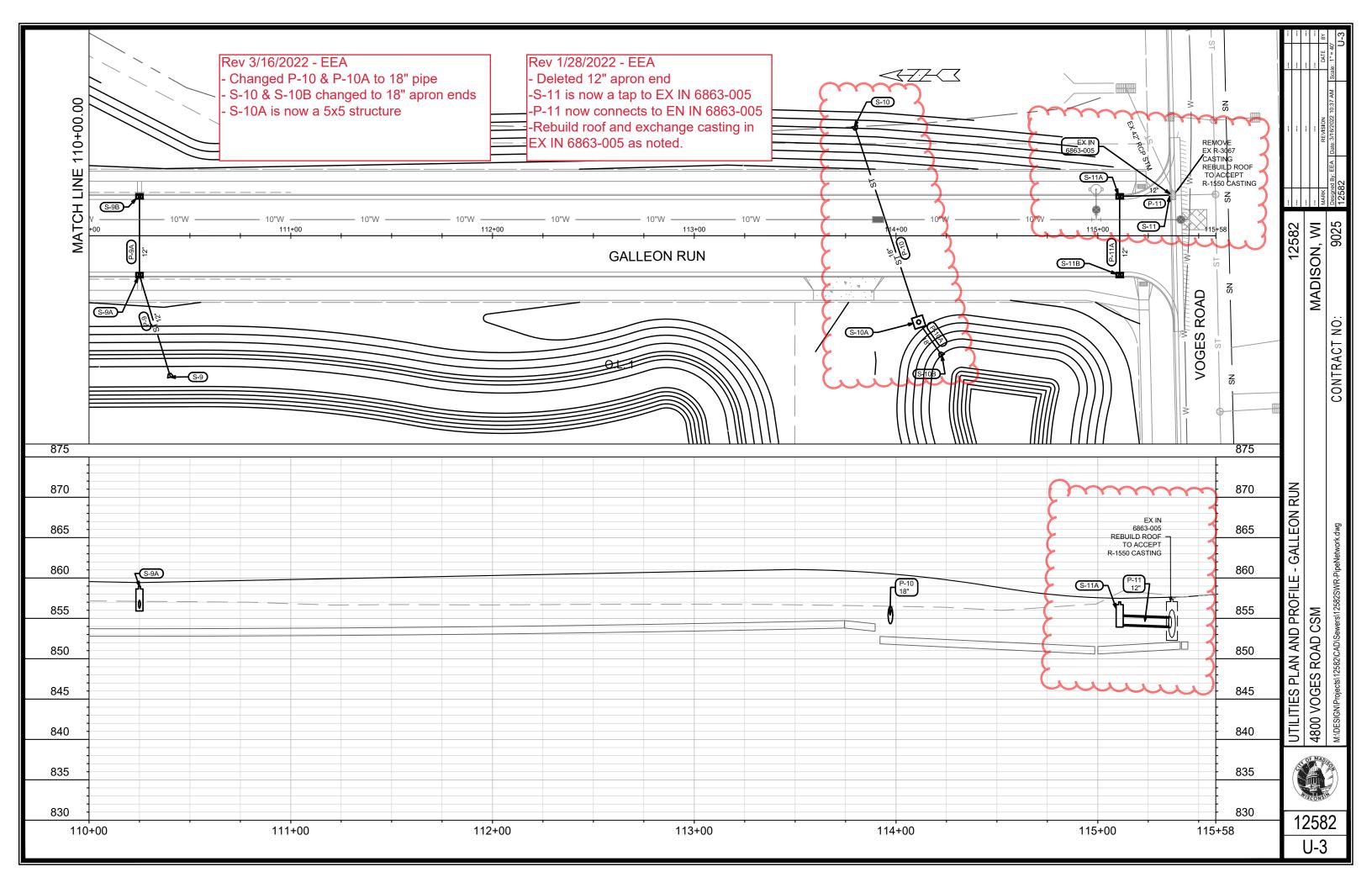


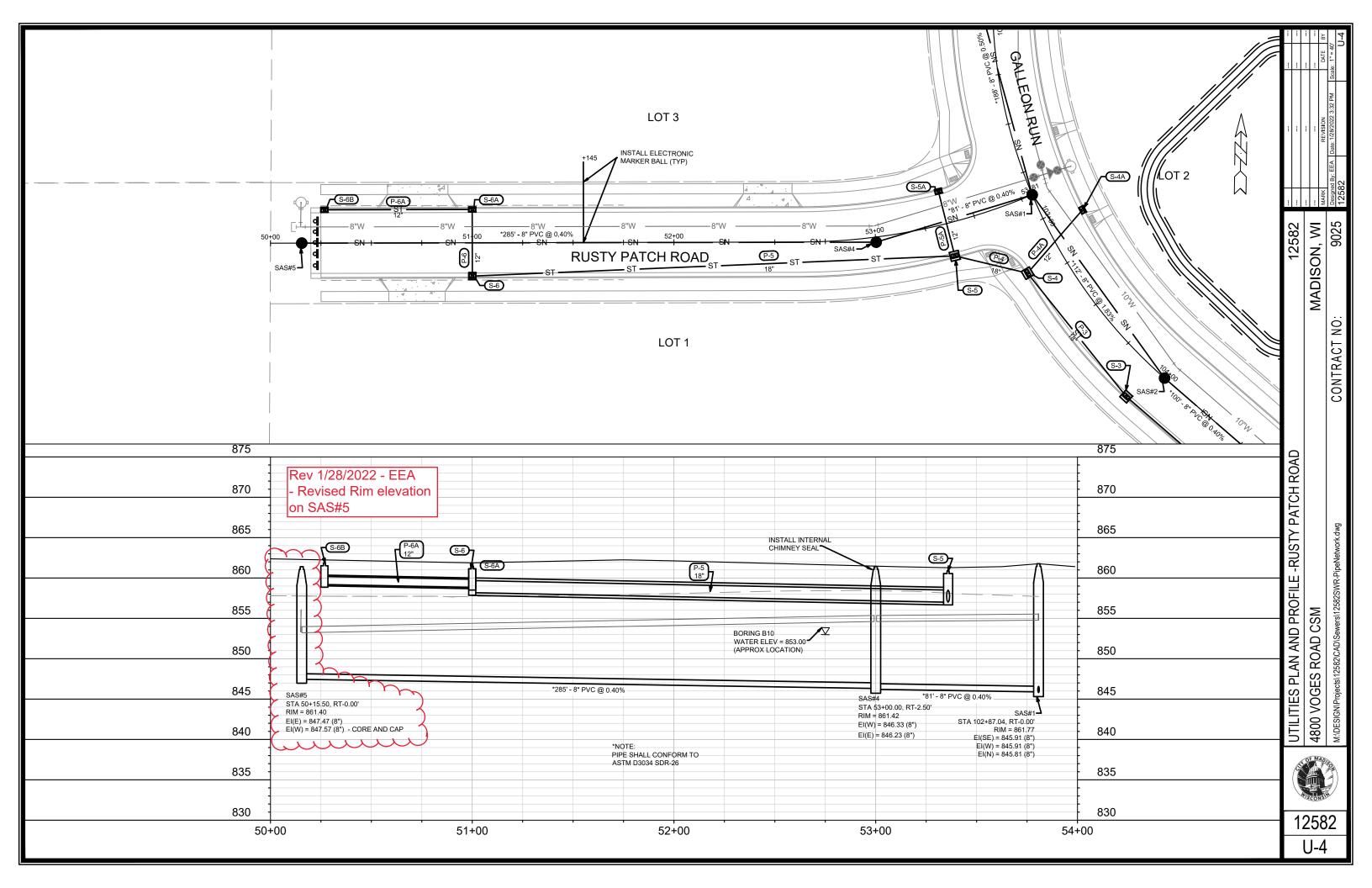












SANITARY SEWER SCHEDULE

* REVISED 1/28/2022 - EEA

4800 VOGES ROAD CSM	SHEET NO.
PROJECT NO. 12582	U-SAN
SANITARY SEWER SCHEDULE	

CITY OF MADISON

PROPO	SED SANI	TARY					PROPOSED S	ANITARY PI	PES				<u> </u>		
SAS	STATION	LOCATION	TOP OF	E.I.	DEPTH	NOTES	FROM	TO (UDSTM)	DWNSTRM	UPSTRM	PLAN	SLOPE	PIPE	PVC	NOTES
NO.		(OFFSET)	CASTING	1	(FT)		(DNSTM)	(UPSTM)	E.I.	E.I.	LGTH (FT)	(%)	SIZE	TYPE	
GALLEON	RUN						GALLEON RUN								
SAS#1	102+87.04	CL	861.77	845.81	15.96	(1)	EX MH07-224	SAS#1	844.87	845.81	188	0.50%	8"	SDR-26	(3)
SAS#2	104+00.00	CL	861.07	847.96	13.11	(1)	SAS#1	SAS#2	845.91	847.96	112	1.83%	8"	SDR-26	-
SAS#3	105+00.00	CL	860.46	848.98	11.48	(1); (2)	SAS#2	SAS#3	848.06	848.46	100	0.40%	8"	SDR-26	-
RUSTY PA	TCH ROAD						RUSTY PATCH ROAL	2							
SAS#4	53+00.00	CL	861.42	846.23	15.19	(1); (2)	SAS#1	SAS#4	845.91	846.23	81	0.40%	8"	SDR-26	-
* SAS#5	50+15.50	CL	861.40	847.47	13.93	(1)	SAS#4	SAS#5	846.33	847.47	285	0.40%	8"	SDR-26	-

SPECIFIC NOTES:

NOTES:

- ALL STRUCTURES SHALL BE SUBMITTED TO CITY ENGINEERING FOR APPROVAL. CONTACT ELIA E ACOSTA OF CITY ENGINEERING AT (608) 266-4096 FOR PRECAST APPROVALS, FAX SHOP DRAWINGS TO (608)264-9275, OR EMAIL SHOP DRAWINGS TO EACOSTA@CITYOFMADISON.COM.

⁽¹⁾ INSTALL EXTERNAL RUBBERIZED JOINT WRAPP PER S.D.D. 5.7.2

⁽²⁾ INSTALL INTERNAL CHIMNEY SEAL PER S.D.D. 5.7.17

⁽³⁾ CONTACT RAY SCHNEIDER OF MMSD AT rays@madsewer.org or (608) 347-3628, 5 DAYS PRIOR FOR THE MANHOLE ADJUST AND THE TAP CONNECTION TO ARRANGE FOR INSPECTION & PERMITTING. ALL WORK ON MMSD MANHOLE NEEDS TO CONFIRM WITH MMSD SPECIFICATIONS.

STORM SEWER SCHEDULE

PROPOSED STORM STRUCTURES

* REVISED 1/28/2022 - EEA

++ REVISED 3/16/2022 - EEA

4800 VOGES ROAD CSM SHEET NO. PROJECT NO. 12582 U-STM STORM SEWER SCHEDULE

CITY OF MADISON

FILOF	OSED STOR	CIMI STICOCT	UKLS					FROE	OSED STON	IVIFIFES								
STRUC.	STATION	LOCATION	TYPE	TOP OF		DEPTH	NOTES	PIPE	FROM	TO	DISCH.	INLET	PLAN (PAY)	PIPE	SLOPE	PIPE	TYPE	NOTES
NO.		(OFFSET)		CASTING				NO.	(DNSTM)	(UPSTM)	E.I.	E.I.	LGTH (FT)	LGTH (FT)	(%)	SIZE		
GALLEON	I RUN							GALLEO	N RUN									
S-0	107+50.00	RT-77.85	24" RCP APRON END	-	854.00	-	W/ GATE	P-0	S-0	S-1	854.00	854.29	58	57	0.51%	24"	TYPE II	_
S-1	107+50.00	RT-19.50	4X4 SAS	859.07	854.29	4.78	LP; W/ R-3067-7004-VB	P-1	S-1	S-2	854.29	854.82	69	65	0.82%	21"	TYPE II	NCM
S-1A	107+50.00	LT-19.50	H INLET	859.07	855.85	3.22	LP; W/ R-3067-7004-VB	P-1A	S-1	S-1A	855.24	855.85	39	36	1.69%	12"	TYPE I	-
S-2	106+75.00	RT-19.50	4X4 SAS	859.45	854.82	4.63	W/ R-3067-7004-V	P-2	S-2	S-3	854.82	856.22	283	279	0.50%	21"	TYPE II	-
S-3	103+92.30	RT-19.50	4X4 SAS	861.15	856.22	4.93	W/ R-3067-7004-V	P-3	S-3	S-4	856.47	856.84	78	74	0.50%	18"	TYPE I	-
S-4	103+19.45	RT-19.50	4X4 SAS	861.59	856.84	4.75	W/ R-3067-7004-V	P-4	S-4	S-5	856.84	857.00	37	32	0.50%	18"	TYPE II	-
S-4A	103+05.00	LT-19.50	H INLET	861.68	858.08	3.60	W/ R-3067-7004-V	P-4A	S-4	S-4A	857.34	858.08	42	38	1.95%	12"	TYPE I	-
++ _{S-8}	108+27.33	LT-59.72	18" RCP APRON END	-	854.00	-	-	++ P-8	S-8	S-8A	854.00	855.00	127	127	0.79%	18"	TYPE I	-
++ S-8A	108+41.59	RT-66.67	18" RCP APRON END	-	855.00	-	-											
S-9	110+40.38	RT-70.06	12" RCP APRON END	-	854.50	-	W/ GATE	P-9	S-9	S-9A	854.50	856.25	53	52	3.37%	12"	TYPE II	-
S-9A	110+25.00	RT-19.50	H INLET	859.45	856.25	3.20	LP; W/ R-3067-7004-VB	P-9A	S-9A	S-9B	856.25	856.45	39	37	0.54%	12"	TYPE I	-
S-9B	110+25.00	LT-19.50	H INLET	859.45	856.45	3.00	LP; W/ R-3067-7004-VB											
S-10	113+79.46	LT-54.25	12" RCP APRON END	-	854.00	-	W/ GATE	++ P-10	S-10	S-10A	854.25	855.00	102	101	0.74%	18"	TYPE I	-
+ S-10A	114+11.21	RT-42.78	5X5 SAS	859.50	855.00	4.50	W/ R-1550	++ P-10A	S-10A	S-10B	855.00	855.00	20	19	0.00%	18"	TYPE II	-
S-10B	114+22.77	RT-59.43	12" RCP APRON END	-	855.00	-	W/ GATE											
* S-11	115+35.84	LT-20.13	STORM TAP	-	854.02	-	TAP EX IN 6863-005; (1)	* P-11	S-11	S-11A	854.02	854.26	25	24	1.00%	12"	TYPE II	NCM
S-11A	115+10.84	LT-19.50	H INLET	857.50	854.26	3.24	LP; W/ R-3067-7004-VB	P-11A	S-11A	S-11B	854.26	854.46	39	37	0.54%	12"	TYPE I	-
S-11B	115+10.84	RT-19.50	H INLET	857.50	854.46	3.04	LP; W/ R-3067-7004-VB											
RUSTY PA	ATCH ROAD							RUSTY P	ATCH ROAD									
S-5	53+35.86	RT-16.50	4X4 SAS	861.35	857.00	4.35	LP; W/ R-3067-7004-VB	P-5	S-5	S-6	857.00	858.18	239	236	0.50%	18"	TYPE I	-
S-5A	53+35.86	LT-16.50	H INLET	861.35	857.66	3.69	LP; W/ R-3067-7004-VB	P-5A	S-5	S-5A	857.50	857.66	33	30	0.53%	12"	TYPE I	-
S-6	51+00.00	RT-16.50	3X3 SAS	861.96	858.18	3.78	FP; LP; W/ R-3067-7004-VB	P-6	S-6	S-6A	858.68	858.84	33	31	0.52%	12"	TYPE I	-
S-6A	51+00.00	LT-16.50	H INLET	861.96	858.84	3.12	LP; W/ R-3067-7004-VB	P-6A	S-6A	S-6B	858.84	859.19	73	70	0.50%	12"	TYPE II	-

PROPOSED STORM PIPES

SPECIFIC NOTES:

50+26.73

LT-16.50

S-6B

(1) REMOVE EXISTING R-3067 CASTING; REBUILD ROOF TO ACCEPT R-1550 CASTING

H INLET

STANDARD NOTES:

-PLAN LENGTH (PAY LENGTH) IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. PIPE LENGTH IS ACTUAL LENGTH OF PIPE FROM STRUCTURE WALL TO STRUCTURE WALL. SLOPE CALCULATED USING PIPE LENGTH.

- ABBREVIATIONS: AE = APRON ENDWALL; RCP = REINFORCED CONCRETE PIPE; HERCP = HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE: DNA = DOES NOT APPLY; SAS = SEWER ACCESS STRUCTURE; LP = LOW POINT INLET STRUCTURE; FP = FIELD POURED STRUCTURE; TR = TOP OF CONCRETE ROOF; NCM = NO CROWN MATCH FOR PIPES; UD = UNDERDRAIN
- APPROXIMATE DISCHARGE E.I. GIVEN, ADJUST E.I. AND PIPE SLOPE IN THE FIELD.
- TOP OF CASTING GRADE GIVEN IS THE TOP OF CURB FOR INLET STRUCTURES AND THE FLOWLINE OF THE CLOSED CASTING FOR SAS's.

862.32

859.19

3.13

W/ R-3067-7004-V

- ALL REINFORCED CONCRETE PIPES TO BE CLASS III UNLESS OTHERWISE NOTED.

-FOR SWM PRECAST APPROVALS CONTACT PHIL GAEBLER AT (608) 266-4059 OR EMAIL SWM SHOP DRAWINGS TO PGAEBLER@CITYOFMADISON.COM

-ALL FIELD POURED SAS STORM STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL DRAWING 5.7.3. ALL PRECAST

- ALL STRUCTURES CALLED OUT AS FIELD POURED SHALL BE FIELD POURED. ALL OTHER STRUCTURES (NOT INDICATED AS FIELD POURED)

SHALL BE SUBMITTED TO CITY ENGINEERING FOR APPROVAL IF PRECAST STRUCTURES ARE PREFERRED. CONTACT ELIA E ACOSTA OF CITY

ENGINEERING AT (608) 266-4096 FOR STORM SEWER PRECAST APPROVALS, FAX SHOP DRAWINGS TO (608) 264-9275, OR EMAIL SHOP DRAWINGS

- SURVEYOR TO CONFIRM THAT ALL INLET STATION / OFFSETS LINE UP WITH PROPOSED CURB AND GUTTER.

TO EACOSTA@CITYOFMADISON.COM.

SAS STORM STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL DRAWING 5.7.5.

SANITARY SEWER SCHEDULE

4800 VOGES ROAD CSM	SHEET NO.
PROJECT NO. 12582	U-SAN
SANITARY SEWER SCHEDULE	

CITY OF MADISON

PROPO	OSED SANI	TARY					PROPOSED S	ANITARY PI	PES						
SAS NO.	STATION	LOCATION (OFFSET)	TOP OF CASTING	E.I.	DEPTH (FT)	NOTES	FROM (DNSTM)	TO (UPSTM)	DWNSTRM E.I.	UPSTRM E.I.	PLAN LGTH (FT)	SLOPE (%)	PIPE SIZE	PVC TYPE	NOTES
GALLEON	I RUN						GALLEON RUN								
SAS#1 SAS#2 SAS#3	102+87.04 104+00.00 105+00.00	CL CL CL	861.77 861.07 860.46	845.81 847.96 848.98	15.96 13.11 11.48	(1) (1) (1); (2)	EX MH07-224 SAS#1 SAS#2	SAS#1 SAS#2 SAS#3	844.87 845.91 848.06	845.81 847.96 848.46	188 112 100	0.50% 1.83% 0.40%	8" 8" 8"	SDR-26 SDR-26 SDR-26	(3) - -
RUSTY PA	ATCH ROAD						RUSTY PATCH ROA	<u>D</u>							
SAS#4 SAS#5	53+00.00 50+15.50	CL CL	861.42 857.77	846.23 847.47	15.19 10.30	(1); (2) (1)	SAS#1 SAS#4	SAS#4 SAS#5	845.91 846.33	846.23 847.47	81 285	0.40% 0.40%	8" 8"	SDR-26 SDR-26	- -

SPECIFIC NOTES:

NOTES:

- ALL STRUCTURES SHALL BE SUBMITTED TO CITY ENGINEERING FOR APPROVAL. CONTACT ELIA E ACOSTA OF CITY ENGINEERING AT (608) 266-4096 FOR PRECAST APPROVALS, FAX SHOP DRAWINGS TO (608)264-9275, OR EMAIL SHOP DRAWINGS TO EACOSTA@CITYOFMADISON.COM.

⁽¹⁾ INSTALL EXTERNAL RUBBERIZED JOINT WRAPP PER S.D.D. 5.7.2

⁽²⁾ INSTALL INTERNAL CHIMNEY SEAL PER S.D.D. 5.7.17

⁽³⁾ CONTACT RAY SCHNEIDER OF MMSD AT rays@madsewer.org or (608) 347-3628, 5 DAYS PRIOR FOR THE MANHOLE ADJUST AND THE TAP CONNECTION TO ARRANGE FOR INSPECTION & PERMITTING. ALL WORK ON MMSD MANHOLE NEEDS TO CONFIRM WITH MMSD SPECIFICATIONS.

6	RI	15	FL	VER	9	CH	IFN	111	F
J	RIV			VER	J	J		UL	.⊏

4800 VOGES ROAD CSM	SHEET NO.
PROJECT NO. 12582	U-STM
STORM SEWER SCHEDULE	

CITY OF MADISON

PROP	OSED STOR	M STRUCT	URES					PROP	OSED STOR	M PIPES								OTT OF WINDSOON
STRUC.	STATION	LOCATION	TYPE	TOP OF		DEPTH	NOTES	PIPE	FROM	ТО	DISCH.	INLET	PLAN (PAY)	PIPE	SLOPE	PIPE	TYPE	NOTES
NO.		(OFFSET)		CASTING				NO.	(DNSTM)	(UPSTM)	E.I.	E.I.	LGTH (FT)	LGTH (FT)	(%)	SIZE		
GALLEON	I RUN							GALLEON	I RUN									
S-0	107+50.00	RT-77.85	24" RCP APRON END	-	854.00	-	W/ GATE	P-0	S-0	S-1	854.00	854.29	58	57	0.51%	24"	TYPE II	-
S-1	107+50.00	RT-19.50	4X4 SAS	859.07	854.29	4.78	LP; W/ R-3067-7004-VB	P-1	S-1	S-2	854.29	854.82	69	65	0.82%	21"	TYPE II	NCM
S-1A	107+50.00	LT-19.50	H INLET	859.07	855.85	3.22	LP; W/ R-3067-7004-VB	P-1A	S-1	S-1A	855.24	855.85	39	36	1.69%	12"	TYPE I	-
S-2	106+75.00	RT-19.50	4X4 SAS	859.45	854.82	4.63	W/ R-3067-7004-V	P-2	S-2	S-3	854.82	856.22	283	279	0.50%	21"	TYPE II	-
S-3	103+92.30	RT-19.50	4X4 SAS	861.15	856.22	4.93	W/ R-3067-7004-V	P-3	S-3	S-4	856.47	856.84	78	74	0.50%	18"	TYPE I	-
S-4	103+19.45	RT-19.50	4X4 SAS	861.59	856.84	4.75	W/ R-3067-7004-V	P-4	S-4	S-5	856.84	857.00	37	32	0.50%	18"	TYPE II	-
S-4A	103+05.00	LT-19.50	H INLET	861.68	858.08	3.60	W/ R-3067-7004-V	P-4A	S-4	S-4A	857.34	858.08	42	38	1.95%	12"	TYPE I	-
S-8	108+27.33	LT-59.72	24" RCP APRON END	-	854.00	-	-	P-8	S-8	S-8A	854.00	855.00	127	127	0.79%	24"	TYPE I	-
S-8A	108+41.59	RT-66.67	24" RCP APRON END	-	855.00	-	-											
S-9	110+40.38	RT-70.06	12" RCP APRON END	-	854.50	_	W/ GATE	P-9	S-9	S-9A	854.50	856.25	53	52	3.37%	12"	TYPE II	-
S-9A	110+25.00	RT-19.50	H INLET	859.45	856.25	3.20	LP; W/ R-3067-7004-VB	P-9A	S-9A	S-9B	856.25	856.45	39	37	0.54%	12"	TYPE I	-
S-9B	110+25.00	LT-19.50	H INLET	859.45	856.45	3.00	LP; W/ R-3067-7004-VB											
S-10	113+79.46	LT-54.25	12" RCP APRON END	_	854.00	_	W/ GATE	P-10	S-10	S-10A	854.00	854.80	102	101	0.79%	12"	TYPE I	_
S-10A	114+11.21	RT-42.78	3X3 SAS	859.50	854.80	4.70	W/ R-1550	P-10A	S-10A	S-10B	854.80	855.00	20	19	1.05%	12"	TYPE II	_
S-10B	114+22.77	RT-59.43	12" RCP APRON END	-	855.00	-	W/ GATE											
S-11	114+82.73	LT-62.43	12" RCP APRON END	_	854.00	_	W/ GATE	P-11	S-11	S-11A	854.00	854.26	51	50	0.52%	12"	TYPE II	_
S-11A	115+10.84	LT-19.50	HINLET	857.50	854.26	3.24	LP; W/ R-3067-7004-VB	P-11A	S-11A	S-11B	854.26	854.46	39	37	0.54%	12"	TYPE I	_
S-11B	115+10.84	RT-19.50	H INLET	857.50	854.46	3.04	LP; W/ R-3067-7004-VB											
RUSTY PA	ATCH ROAD							RUSTY PA	ATCH ROAD									
S-5	53+35.86	RT-16.50	4X4 SAS	861.35	857.00	4.35	LP; W/ R-3067-7004-VB	P-5	S-5	S-6	857.00	858.18	239	236	0.50%	18"	TYPE I	-
S-5A	53+35.86	LT-16.50	H INLET	861.35	857.66	3.69	LP; W/ R-3067-7004-VB	P-5A	S-5	S-5A	857.50	857.66	33	30	0.53%	12"	TYPE I	-
S-6	51+00.00	RT-16.50	3X3 SAS	861.96	858.18	3.78	FP; LP; W/ R-3067-7004-VB	P-6	S-6	S-6A	858.68	858.84	33	31	0.52%	12"	TYPE I	-
S-6A	51+00.00	LT-16.50	H INLET	861.96	858.84	3.12	LP; W/ R-3067-7004-VB	P-6A	S-6A	S-6B	858.84	859.19	73	70	0.50%	12"	TYPE II	-
S-6B	50+26.73	LT-16.50	H INLET	862.32	859.19	3.13	W/ R-3067-7004-V											

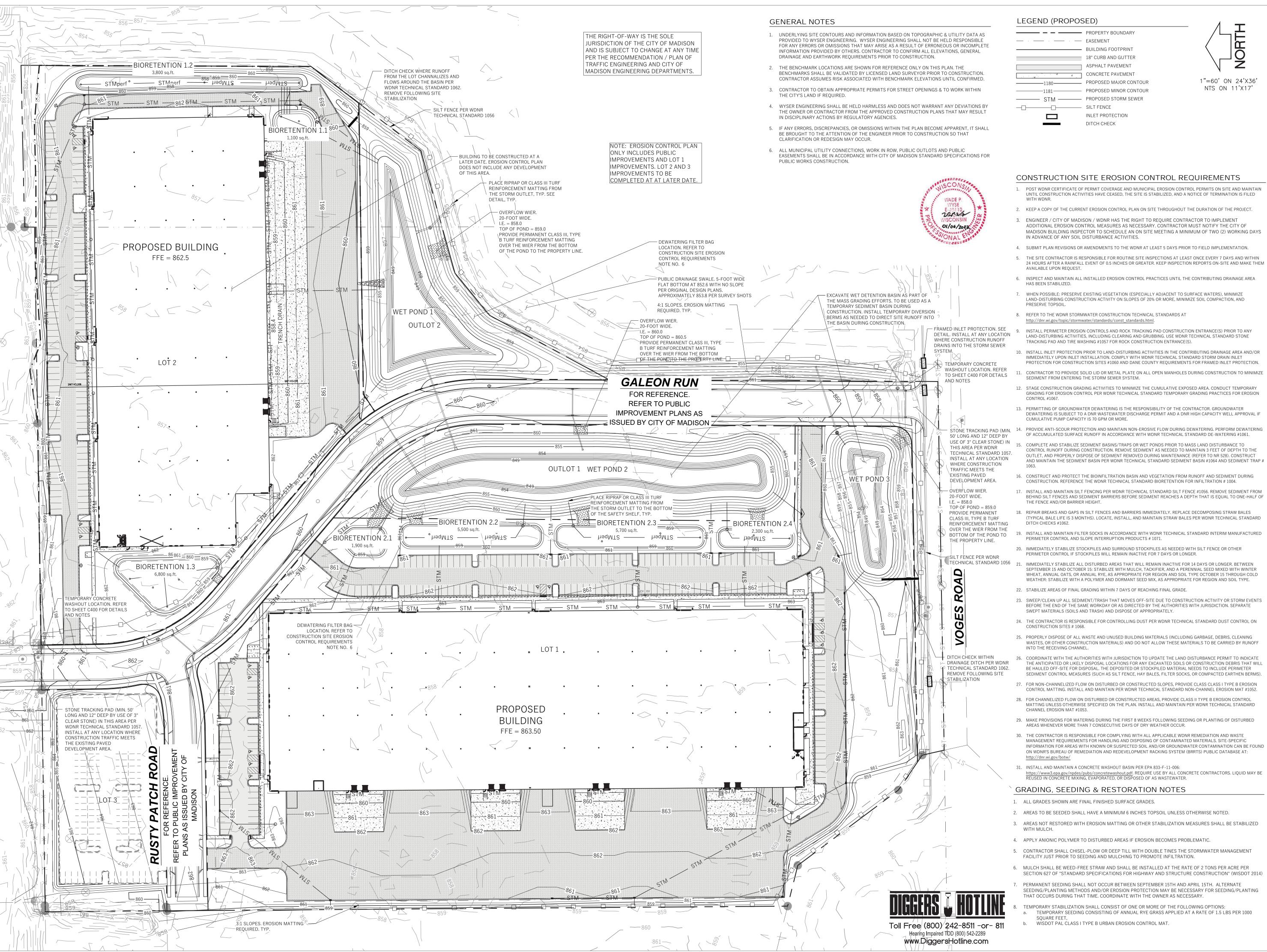
STANDARD NOTES:

-PLAN LENGTH (PAY LENGTH) IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. PIPE LENGTH IS ACTUAL LENGTH OF PIPE FROM STRUCTURE WALL TO STRUCTURE WALL. SLOPE CALCULATED USING PIPE LENGTH.

- ABBREVIATIONS: AE = APRON ENDWALL; RCP = REINFORCED CONCRETE PIPE; HERCP = HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE; DNA = DOES NOT APPLY; SAS = SEWER ACCESS STRUCTURE; LP = LOW POINT INLET STRUCTURE; FP = FIELD POURED STRUCTURE; TR = TOP OF CONCRETE ROOF; NCM = NO CROWN MATCH FOR PIPES; UD = UNDERDRAIN
- APPROXIMATE DISCHARGE E.I. GIVEN, ADJUST E.I. AND PIPE SLOPE IN THE FIELD.
- TOP OF CASTING GRADE GIVEN IS THE TOP OF CURB FOR INLET STRUCTURES AND THE FLOWLINE OF THE CLOSED CASTING FOR SAS's.
- ALL REINFORCED CONCRETE PIPES TO BE CLASS III UNLESS OTHERWISE NOTED.
- SURVEYOR TO CONFIRM THAT ALL INLET STATION / OFFSETS LINE UP WITH PROPOSED CURB AND GUTTER.

-ALL FIELD POURED SAS STORM STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL DRAWING 5.7.3. ALL PRECAST SAS STORM STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DETAIL DRAWING 5.7.5.

- ALL STRUCTURES CALLED OUT AS FIELD POURED SHALL BE FIELD POURED. ALL OTHER STRUCTURES (NOT INDICATED AS FIELD POURED) SHALL BE SUBMITTED TO CITY ENGINEERING FOR APPROVAL IF PRECAST STRUCTURES ARE PREFERRED. CONTACT ELIA E ACOSTA OF CITY ENGINEERING AT (608) 266-4096 FOR STORM SEWER PRECAST APPROVALS, FAX SHOP DRAWINGS TO (608)264-9275, OR EMAIL SHOP DRAWINGS TO EACOSTA@CITYOFMADISON.COM.
- -FOR SWM PRECAST APPROVALS CONTACT PHIL GAEBLER AT (608) 266-4059 OR EMAIL SWM SHOP DRAWINGS TO PGAEBLER@CITYOFMADISON.COM



LEGEND (PROPOSED)

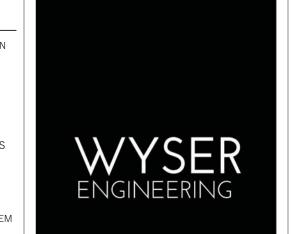
PROPERTY BOUNDARY --- · --- · --- EASEMENT BUILDING FOOTPRINT 18" CURB AND GUTTER ASPHALT PAVEMENT CONCRETE PAVEMENT PROPOSED MAJOR CONTOUR -1181 PROPOSED MINOR CONTOUR PROPOSED STORM SEWER SILT FENCE INLET PROTECTION

DITCH CHECK



1"=60' ON 24'X36 NTS ON 11'X17'





608.843.3388

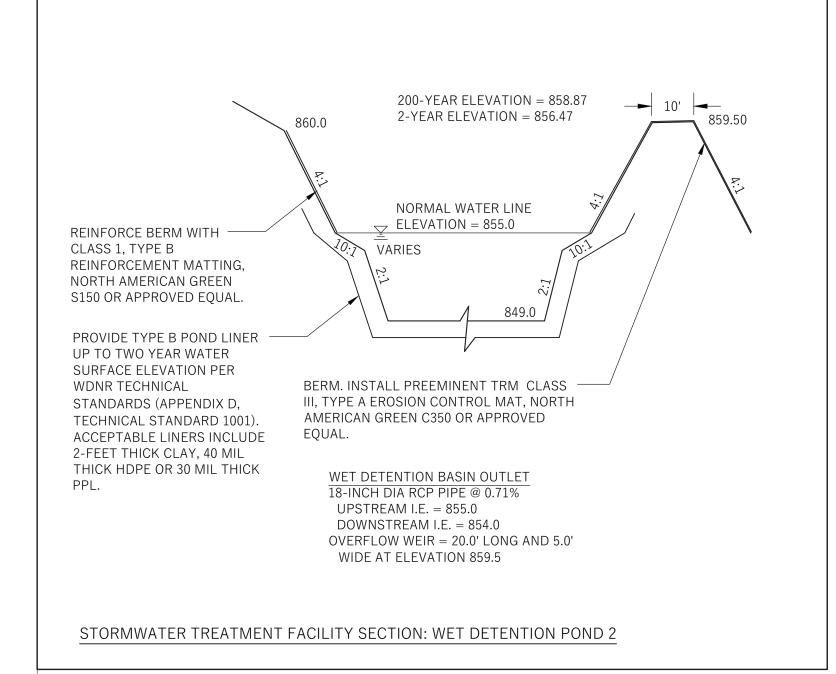
www.wyserengineering.com

GRADING & EROSION CONTROL PLAN

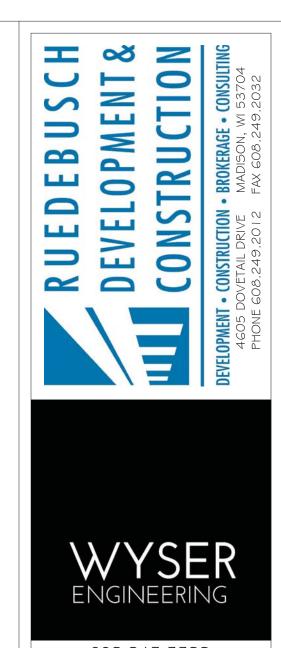
JOB NUMBER: 19032 DESIGNED BY: DOS/AJW DRAWN BY: DOS/AJW CHECKED BY: 11.04.2021

SHEET NO:

ut.pdf. REQUIRE USE BY ALL CONCRETE CONTRACTORS. LIQUID MAY BE







608.843.3388

www.wyserengineering.com

WYOMING

SHEET TITLE: DETAILS

SHEET NO:

JOB NUMBER: 19032 DESIGNED BY: DOS/AJW DRAWN BY: DOS/AJW CHECKED BY: DATE: 11.04.2021

This item includes all work necessary to provide and place a 2-foot clay liner (finish depth) in the pond areas below the permanent pool, as shown in the plan set. Excavation of the in-situ soil to accommodate the clay liner placement is paid under Bid Item 20101 -Excavation Cut. The top of the clay liner shall have a finish grade as shown in the plan

The estimated clay quantity was determined by using the average end area method for a 2-foot layer.

Estimated Quantity: 11,000 CY (Two basins within public outlots only)

The quantity listed above represents fully compacted material, with a thickness of 2 feet. If the Contractor elects to place more than 2 feet of clay for ease of placement, it shall not be compensated. Further, if additional depth is placed the finish grade for top of clay shall not be modified from the plan grade. As a result any additional clay depth shall be done on the bottom of the clay layer and shall not result in any additional compensation in Bid Item 20101--Excavation Cut.

SUBMITTALS AND APPROVALS

The Contractor is responsible submitting the following documents, and/or for receiving approval for the following items. Failure to do so may result in forfeiture of payment for this bid item.

Submittals:

- a. Test results for proposed clay liner material, to include Atterberg limits, grain size distribution, and proctor tests.
- b. In-Situ Material Substitution Plan, if applicable.

Approvals:

- a. Material: written approval from the Project Engineer or Construction engineer for use of the proposed material.
- b. In-Situ Material Substitution Plan: written approval from the Project Engineer or Construction Engineer to substitute in-situ clay with placed clay liner.
- c. Foundation Preparation: verbal approval from the Project Engineer or Construction Engineer prior to placement of the first lift of clay.
- d. Final Acceptance: written approval from the Project Engineer or Construction Engineer accepting placement of the liner. This will only be granted after all field testing has been reviewed and approved.

MATERIAL

Soils used in clay liner construction shall not contain sod, brush, roots, frozen soil, or other perishable materials. Rock particles larger than 3 inches shall be removed prior to compaction of the clay.

The material used shall meet the following specifications:

- a. Be comprised of 50% fines (passing 200 sieve) or more;
- b. An in-place hydraulic conductivity of 1 x 10⁻¹ centimeters per second, or less;
- c. An average liquid limit of 25 or greater, with no value less than 20;
- d. An Average Plasticity Index of 12 or more, with no values less than 10.

The Contractor may use material generated on site, provided it meets all specifications listed above. In-situ material may also be used to replace up to 1 foot of the 2-foot liner. The Contractor shall submit an In-Situ Material Substitution plan to be reviewed by the Project Engineer, Construction Engineer, and soils testing consultant.

CONSTRUCTION

FOUNDATION PREPARATION

Foundation surfaces shall be graded to remove surface irregularities and shall be scarified, or otherwise acceptably scored or loosened, to a minimum depth of 2 inches. The moisture content of the loosened material shall be controlled as specified for the clay liner, and the surface materials of the foundation shall be compacted and bonded with the first layer of the clay liner as specified for subsequent layers of clay liner.

PLACEMENT

The clay liner shall not be placed until the required foundation preparation has been completed and the foundation has been inspected and approved by the Project Engineer and Construction Engineer. The clay liner shall not be placed upon a frozen surface, nor shall snow, ice, or frozen material be incorporated in the clay liner.

The liner shall be placed in lifts. The thickness of each lift, before compaction, shall not exceed the smaller of 6 inches or the length of the teeth of the footed compactor used.

The distribution of materials throughout the clay liner shall be essentially uniform, and the clay liner shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture, moisture content, or gradation from the surrounding material.

If the surface of any layer becomes too and smooth for proper bond with the succeeding layer, it shall be scarified to a depth of not less than 2 inches before the next layer is placed.

CONTROL OF MOISTURE CONTENT

During placement and compaction of the clay liner, the moisture content of the clay being placed shall be maintained above optimum moisture as determined by the Standard Proctor Test (ASTM D698) or Modified Proctor Test (ASTM D1557).

The application of water to the clay shall be accomplished at the borrow area insofar as practicable. If necessary, water may be applied by sprinkling the clay after placement and before compaction of the liner. Uniform moisture distribution shall be obtained by disking.

If the moisture conditions described herein cannot be achieved, the Contractor shall work with the soils testing consultant to assure the placement meets the intent of the specification.

COMPACTION

The clay liner shall be compacted to a minimum of 95% of standard proctor dry density (ASTM D698) or to a minimum of 90% of modified proctor dry density (ASTM D1557), at a moisture content above optimum moisture.

The clay liner shall be compacted with a non-vibratory, footed compactor weighting at least 25,000 pounds, operated continuously, in uncompacted lift thicknesses not to exceed the smaller of 6 inches or the length of the teeth on the footed compactor used. Alternate compaction equipment shall be approved by the Project Engineer and soil testing consultant prior to use on site.

REWORKING OR REMOVAL AND REPLACEMENT OF DEFECTIVE CLAY LINER

Clay placed at densities lower than the specified minimum density or at moisture contents lower than optimum moisture content or otherwise not conforming to the requirement of the specifications shall be reworked to meet the specifications, or shall be removed and replaced. The replacement clay and the foundation fill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control, and compaction.

Warranty of the liner will be determined by the capacity of the pond to maintain a consistent water level. Failure of the pond to maintain a consistent water level within the warranty period will result in the Contractor repairing or replacing the liner as needed.

TESTING AND DOCUMENTATION REQUIREMENTS

Prior to placement of any material, the Contractor shall submit testing results showing the proposed material is appropriate for use in a clay liner. This includes a minimum of one of each of the following: Standard Proctor or Modified Proctor, grain size distribution, and Atterberg Limits. These tests shall be completed at the expense of the Contractor.

Field and laboratory soil tests shall be completed on the clay liner, by a third party soil testing consultant retained by the City, to document compliance with this specification. Testing shall be completed as the liner is being placed. The Contractor shall accommodate access and scheduling of this work, including potential delays if a representative is not immediately available. The following tests shall be completed at the specified frequency. Copies of the documentation report, including test locations and test results, shall be provided to Construction Engineer.

TEST FOR PROJECT	STANDARD	FREQUENCY	TESTS REQUIRED
		(per liner quantity)	
Standard Proctor	ASTM D-698	1 per 500 cy	
Modified Proctor	ASTM D-1557	1 per 500 cy	
Field Density	ASTM D-2922, D-2167,		
	D-1556, D-2937	1 per 100 sf	
Atterberg Limit	ASTM D-4318	1 per 500 cy	
Grain Size Distribution	ASTM D-422	1 per 500 cy	
PermeabilityASTM	D-5084	1 per 500 cy	

Atterberg limits, grain size distribution, and permeability tests shall be completed on undisturbed samples obtained from the constructed clay liner. The Contractor shall prepare test locations at the direction of the soil testing consultant. A minimum of one of each of the laboratory tests specified above shall be completed per clay liner.

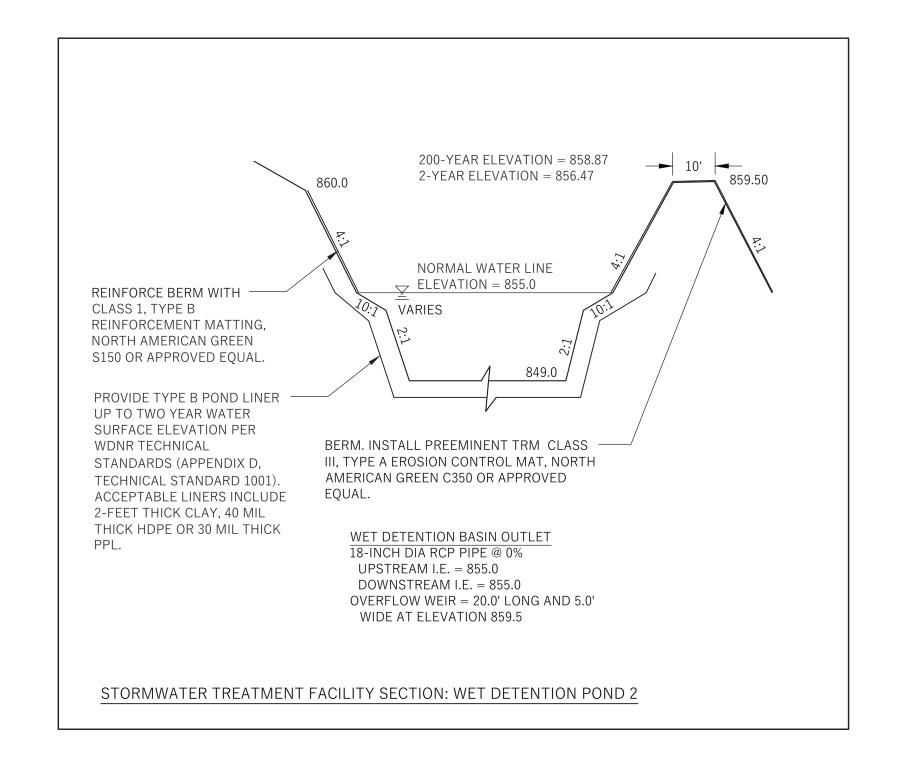
All test holes shall be backfilled using powdered bentonite mixed with clay soil used in liner construction and compacted by hand tamping. The clay shall be broken down into clods less than ½ inch in diameter. A minimum of 25% of the backfilled test hole volume shall be occupied by powdered bentonite after backfilling.

METHOD OF MEASUREMENT

Clay Liner Provision and Placement shall be measured by the Cubic Yard based on plan quantity, without measurement thereof. The quantity listed on the Proposal Page was calculated using the average end area method for a 2-foot layer of clay below the permanent water pool elevation (top of safety bench to top of safety bench).

BASIS OF PAYMENT

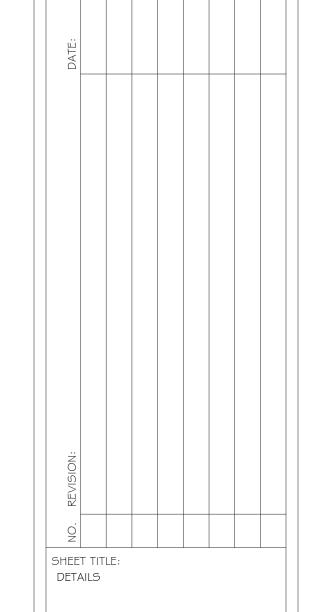
Clay Liner Provision and Placement shall be measured as defined above and paid at the contract unit price, which shall be full payment for all work as laid out in the description.







608.843.3388 www.wyserengineering.com





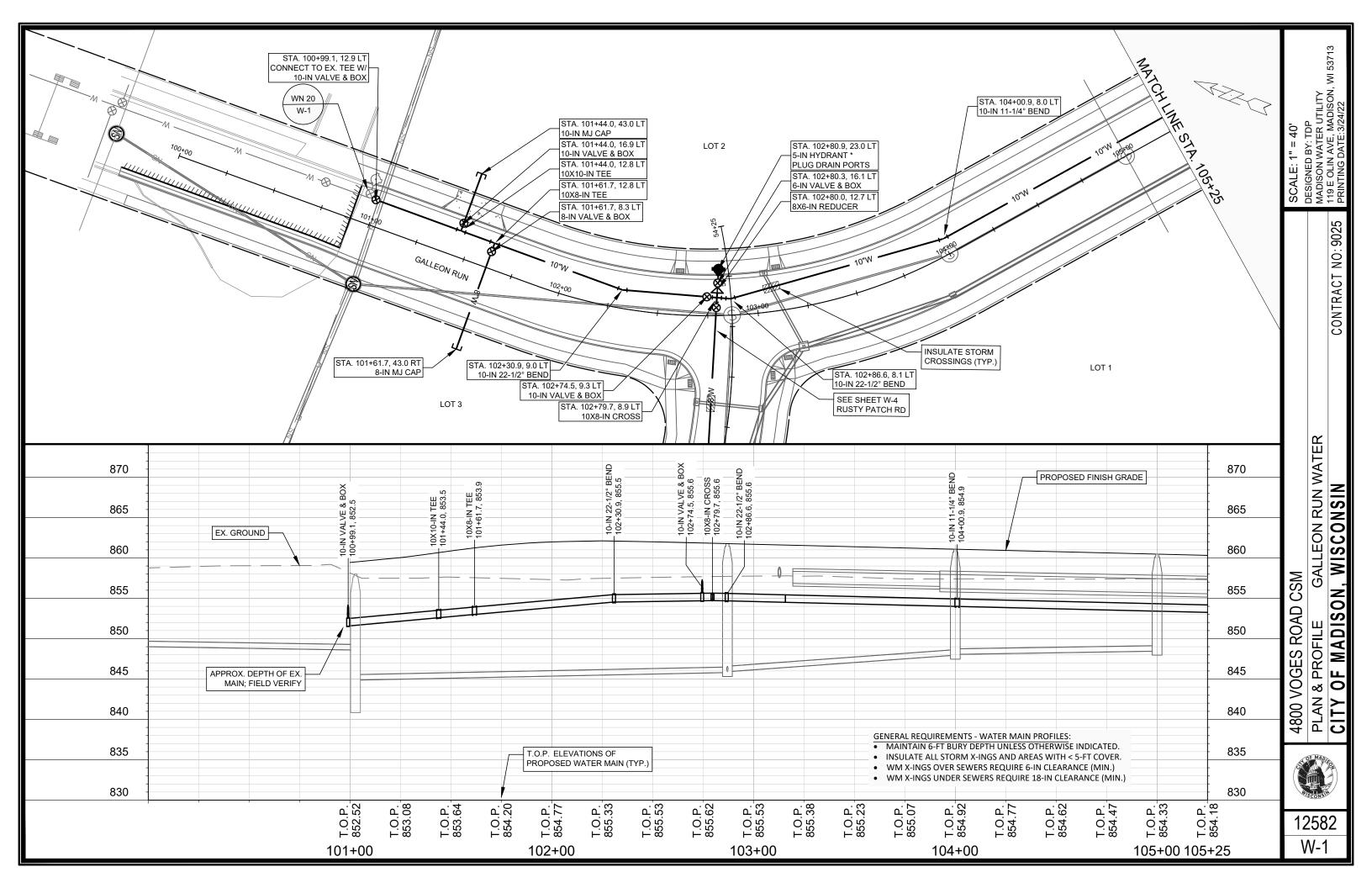
11.04.2021

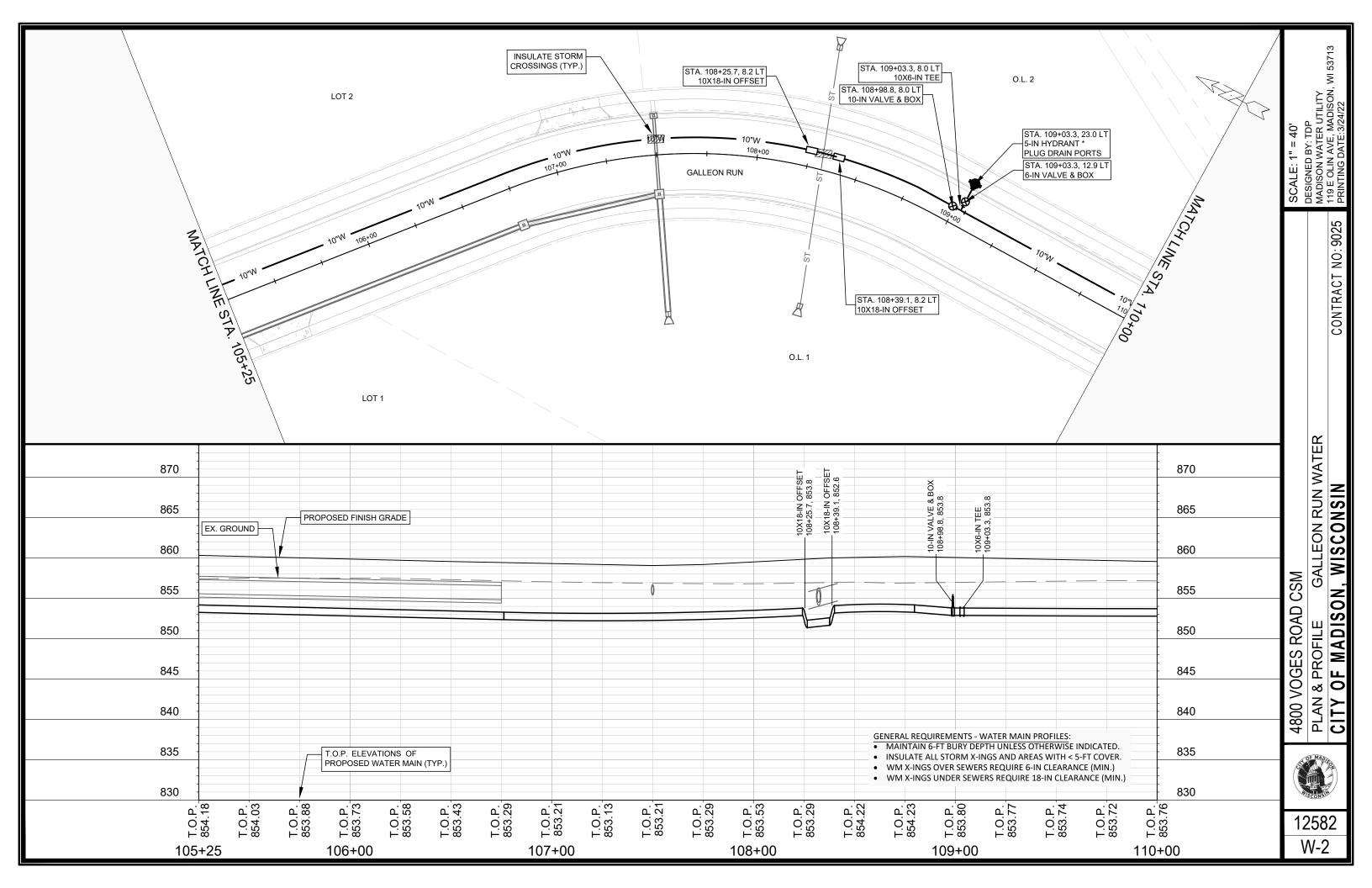
DOS/AJW DOS/AJW

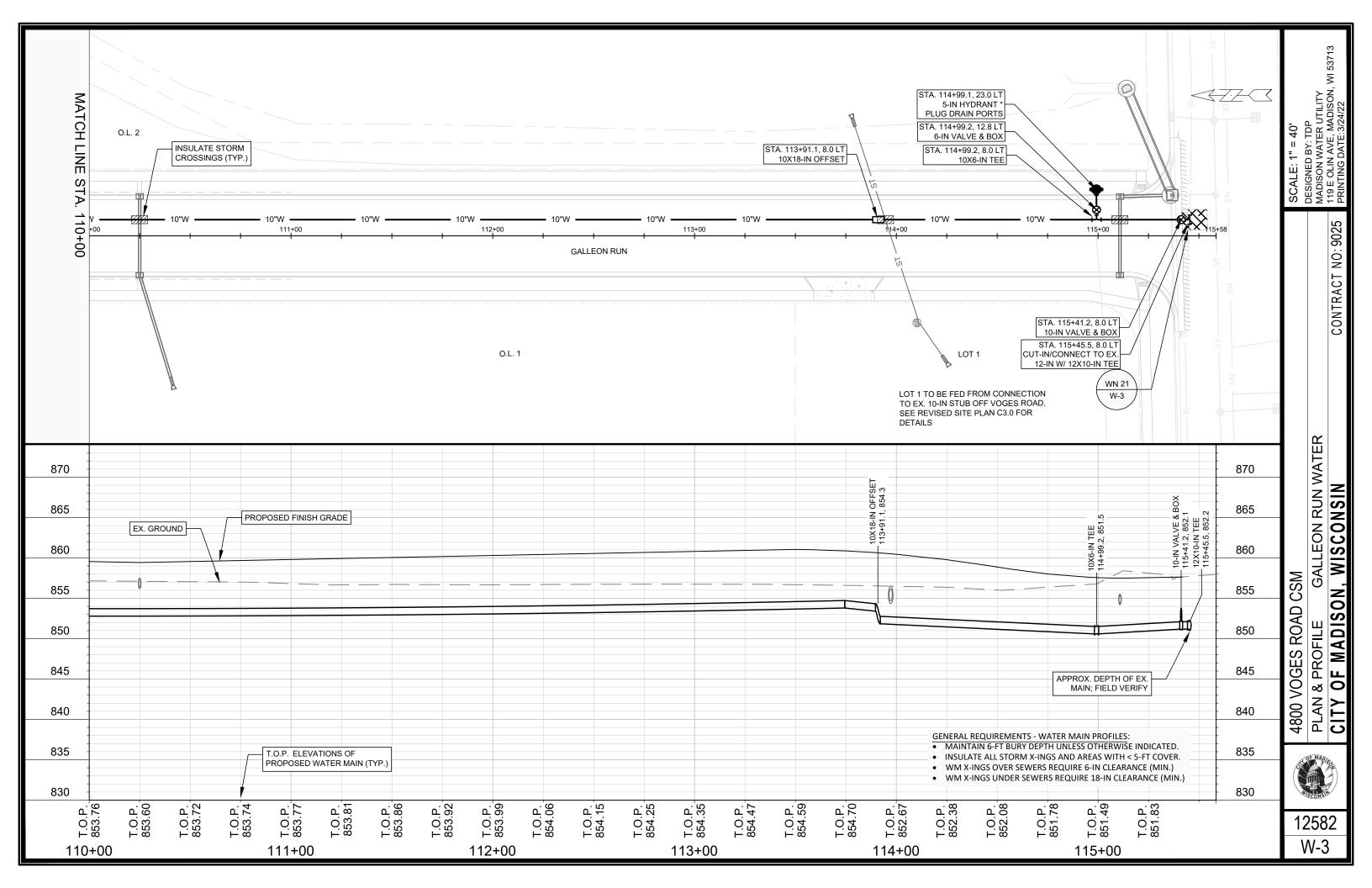
DESIGNED BY:

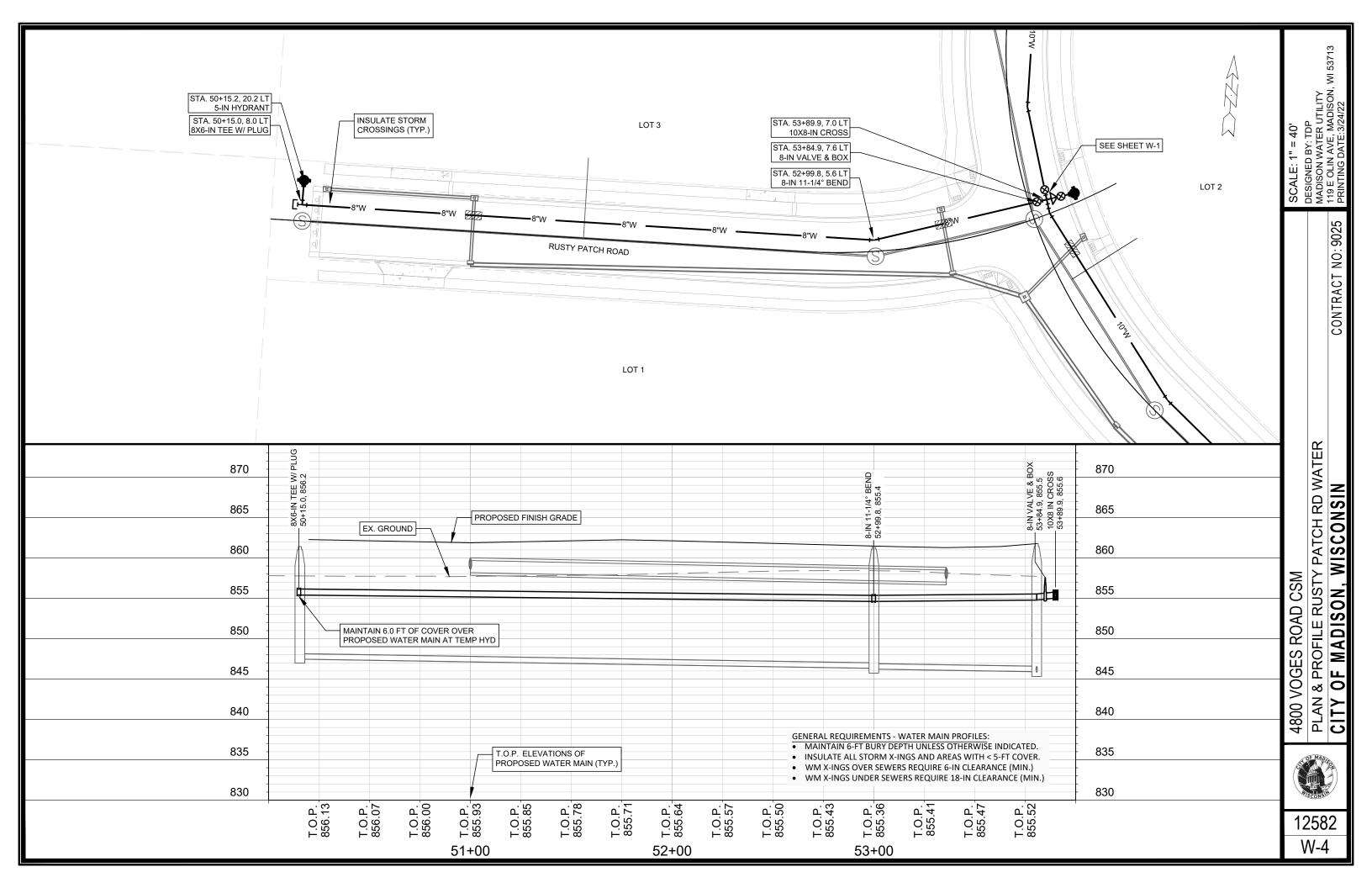
CHECKED BY

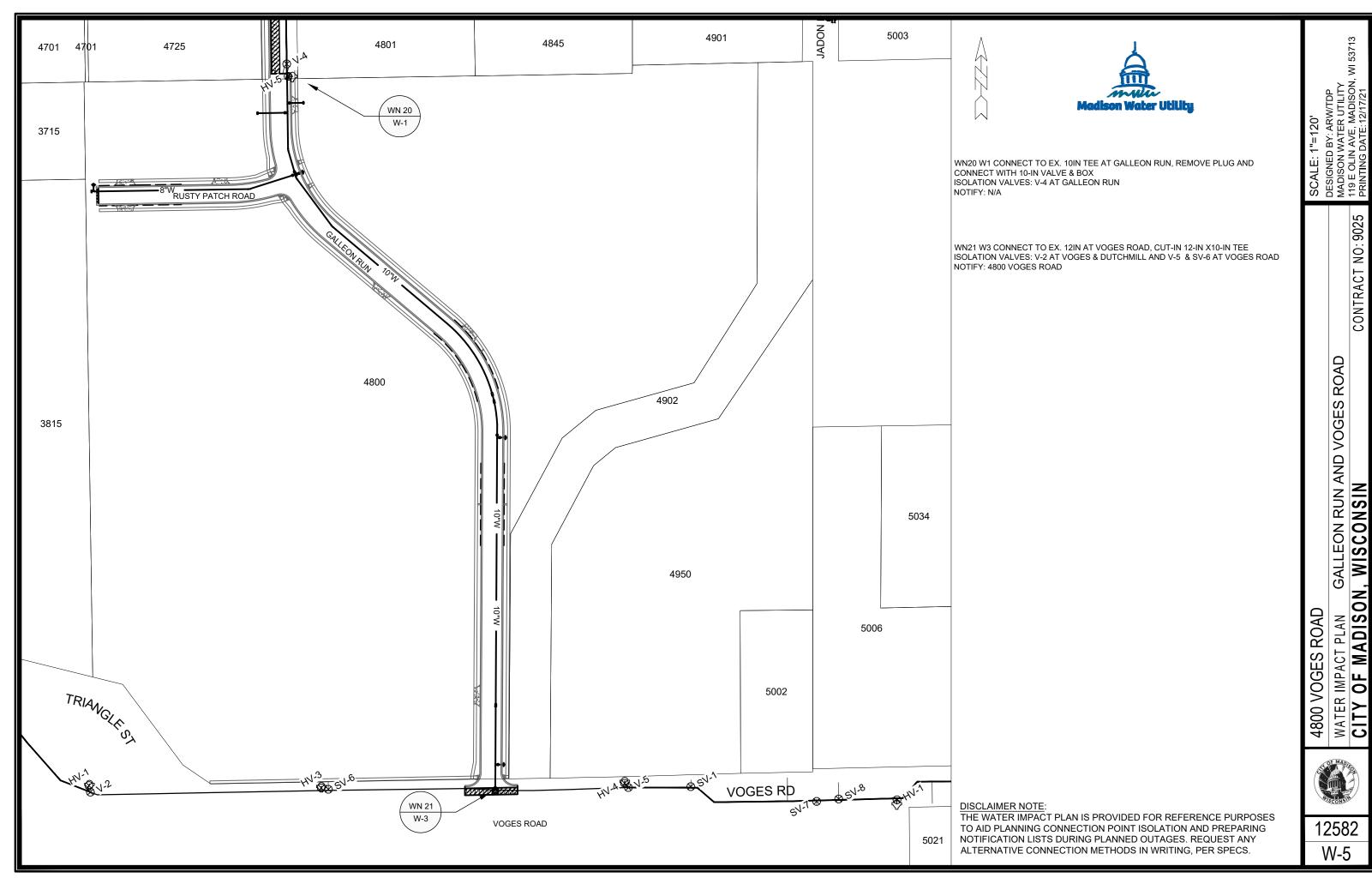
SHEET NO:











JECTS/12582\CAD\WATER\12582 WU IMPACT PLAN.DWG

SHEET

12582

W-6

OF MADISON

CONSTRUCTION NOTES:

1.	CONSTRUCT NEW WATER MAIN 6.0' BELOW FINISHED GRADE,
	UNLESS OTHERWISE NOTED. INSULATE MAIN WITH
	POLYSTYRENE BOARD AT UTILITY CROSSINGS OR OTHER
	AREAS IDENTIFIED BY ENGINEER AS HAVING INADEQUATE
	COVER.

- VERIFY SIZE OF EXISTING WATER SERVICES AND RECONNECT SERVICES AS INDICATED.
- MINIMIZE DISRUPTION OF SERVICE TO CUSTOMERS. NOTIFY PER CONTRACT REQUIREMENTS OF ANY PLANNED WATER
- THE EXISTING UTILITIES SHOWN ON THIS REPRESENT THE BEST INFORMATION AVAILABLE TO THE WATER UTILITY AT THE TIME OF PLAN PREPARATION. CONTRACTOR IS RESPONSIBLE FOR HAVING EACH UTILITY LOCATED PRIOR TO COMMENCING WORK.

WN1	REPLACE THE EXISTING LEAD SERVICE WITH A NEW COPPER SERVICE.

WN-2 EXTEND AND RECONNECT THE EXISTING COPPER SERVICE TO THE NEW WATER MAIN.

- EXISTING SERVICE TO BE ABANDONED WHEN THE WATER MAIN IS CUT OFF. WN-3
- WN-4 DISCONNECT FROM THE OLD WATER MAIN AND RECONNECT THE EXISTING COPPER WATER SERVICE LATERAL TO THE NEW WATER MAIN.
- WN-5 RELOCATE THE EXISTING FIRE HYDRANT.
- ABANDON WATER VALVE ACCESS STRUCTURE. WN-6
- WN-7 FURNISH AND INSTALL THE NEW TOP SECTION FOR THE WATER ACCESS STRUCTURE.
- WN-8 ABANDON THE VALVE BOX.
- WN-9 FURNISH THE DITCH, COMPACTION, AND ALL MATERIALS AND LABOR FOR THE INSTALLATION OF NEW SERVICE LATERAL.
- WN-10 REMOVE AND SALVAGE EXISTING HYDRANT
- REPLACE THE EXISTING COPPER SERVICE WITH A COPPER SERVICE WN-11
- SEE WATER IMPACT PLAN FOR CONNECTION POINT ISOLATION AND WATER WN-20+ SHUT-OFF NOTIFICATION INFORMATION.

*ESTIMATE OF MATERIALS SUPPLIED BY CONTRACTOR:					
PAY_ITEM_ID	DESCRIPTION	QUANTITY	<u>UNIT</u>		
70002	FURNISH AND INSTALL 6-INCH PIPE & FITTINGS	55	LNFT		
70003	FURNISH AND INSTALL 8-INCH PIPE & FITTINGS	470	LNFT		
70004	FURNISH AND INSTALL 10-INCH PIPE & FITTINGS	1600	LNFT		
70031	FURNISH AND INSTALL 6-INCH WATER VALVE	3	EACH		
70032	FURNISH AND INSTALL 8-INCH WATER VALVE	2	EACH		
70033	FURNISH AND INSTALL 10-INCH WATER VALVE	5	EACH		
70040	FURNISH AND INSTALL AND SALVAGE HYDRANT	4	EACH		
70101	FURNISH AND INSTALL STYROFOAM	10	EACH		
71002	8-IN MJ CAP	1	EACH		
71003	10-IN MJ CAP	1	EACH		
71014	8-IN MJ PLUG	1	EACH		
71044	10X8-IN CROSS	1	EACH		
71136	10-IN 22-1/2° BEND	2	EACH		
71148	10-IN 11-1/4° BEND	1	EACH		
71147	8-IN 11-1/4° BEND	1	EACH		
71159	8X6-IN REDUCER	1	EACH		
71210	8X6-IN TEE	1	EACH		
71213	10X6-IN TEE	2	EACH		
71214	10X8-IN TEE	1	EACH		
71215	10X10-IN TEE	1	EACH		
71219	12X10-IN TEE	1	EACH		
71343	10X18-IN OFFSET	3	EACH		

*ESTIMATE OF MATERIALS IS FOR INFORMATION ONLY. ENGINEER DOES GUARANTEE THE ACCURACY OF THE MATERIAL TAKE OFF

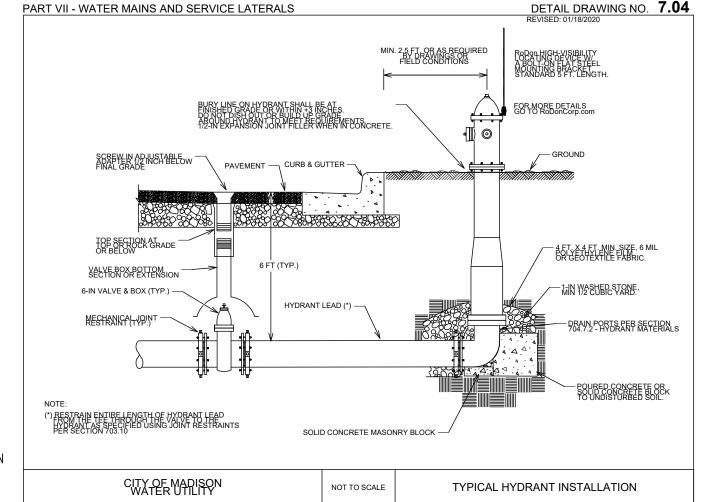
TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND **FACILITIES BEFORE YOU** DIG IN WISCONSIN

CALL DIGGERS HOTLINE TOLL FREE 811 OR 1-800-242-8511 FAX-A-LOCATE 1-800-338-3860 TDD (FOR HEARING IMPAIRED) 1-800-542-2289

> WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.



DISCLAIMER NOTE: UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES PRIOR TO COMMENCING WORK.



WATER UTILITY ULO SCHEDULE

OFFSET

STATION

UTILITY

ULO

