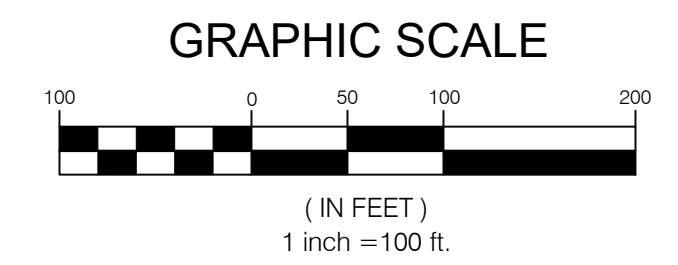



LOCATED IN THE NORTHEAST QUARTER OF SECTION 28,  
TOWNSHIP 6 NORTH NORTH, RANGE 2 WEST,  
SALT LAKE BASE AND MERIDIAN  
WEBER COUNTY, UTAH



## PRELIMINARY DRAWING INDEX

COVER	COVER SHEET
CGN.01	GENERAL NOTES, LEGEND AND ABBREVIATION
CSP.01	SITE PLAN
CSP.02	SITE PLAN
CUP.01	UTILITY PLAN
CUP.01	UTILITY PLAN
CGD.01	GRADING & DRAINAGE PLAN
CGD.02	GRADING & DRAINAGE PLAN

# PRELIMINARY CIVIL CONSTRUCTION PLANS

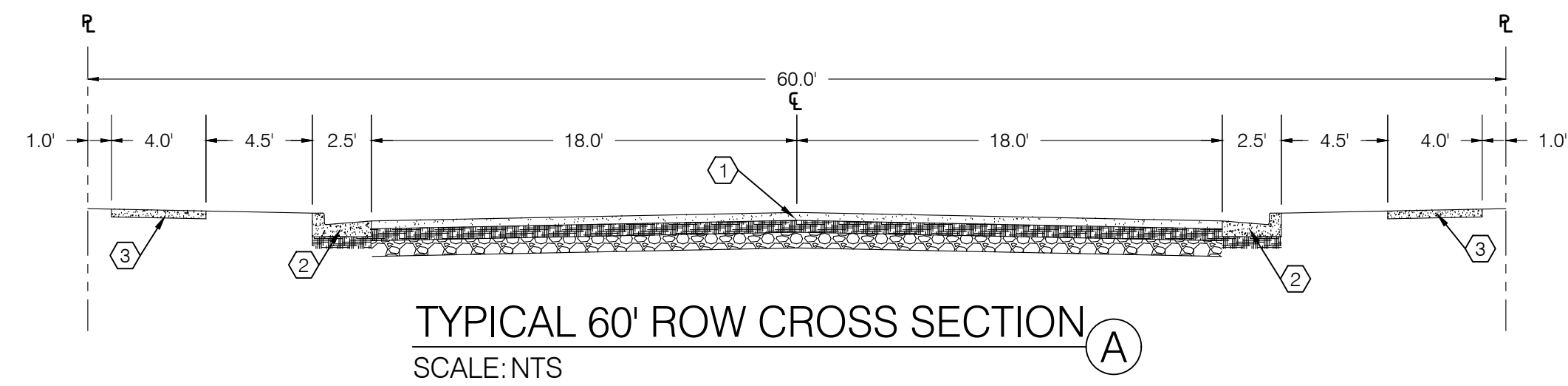
	<b>PRELIMINARY</b>  <b>PLAN</b>  <b>NOT FOR</b>  <b>CONSTRUCTION</b>	<b>BENCHMARK</b> <b>ENGINEERING &amp;</b> <b>LAND SURVEYING</b>  9138 SOUTH STATE STREET SUITE # 100 SANDY, UTAH 84070 (801) 542-7192 <a href="http://www.benchmarkcivil.com">www.benchmarkcivil.com</a>
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WINSTON PARK 3701 W 1800 S WEBER COUNTY, UTAH			DRAFT -JGD	DESIGN: AGB	CHECK: MCP	PROJECT NO. 2006142																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">No.</th> <th style="width: 15%;">DATE</th> <th style="width: 80%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>			No.	DATE	DESCRIPTION																															DATE: 06/02/2020	DATE: 06/02/2020	DATE: 06/03/2020	<div style="font-size: 2em; font-weight: bold;">COVER</div>
No.	DATE	DESCRIPTION																																					
<div style="text-align: right; font-size: 1.5em; font-weight: bold;">1 OF 8</div>																																							









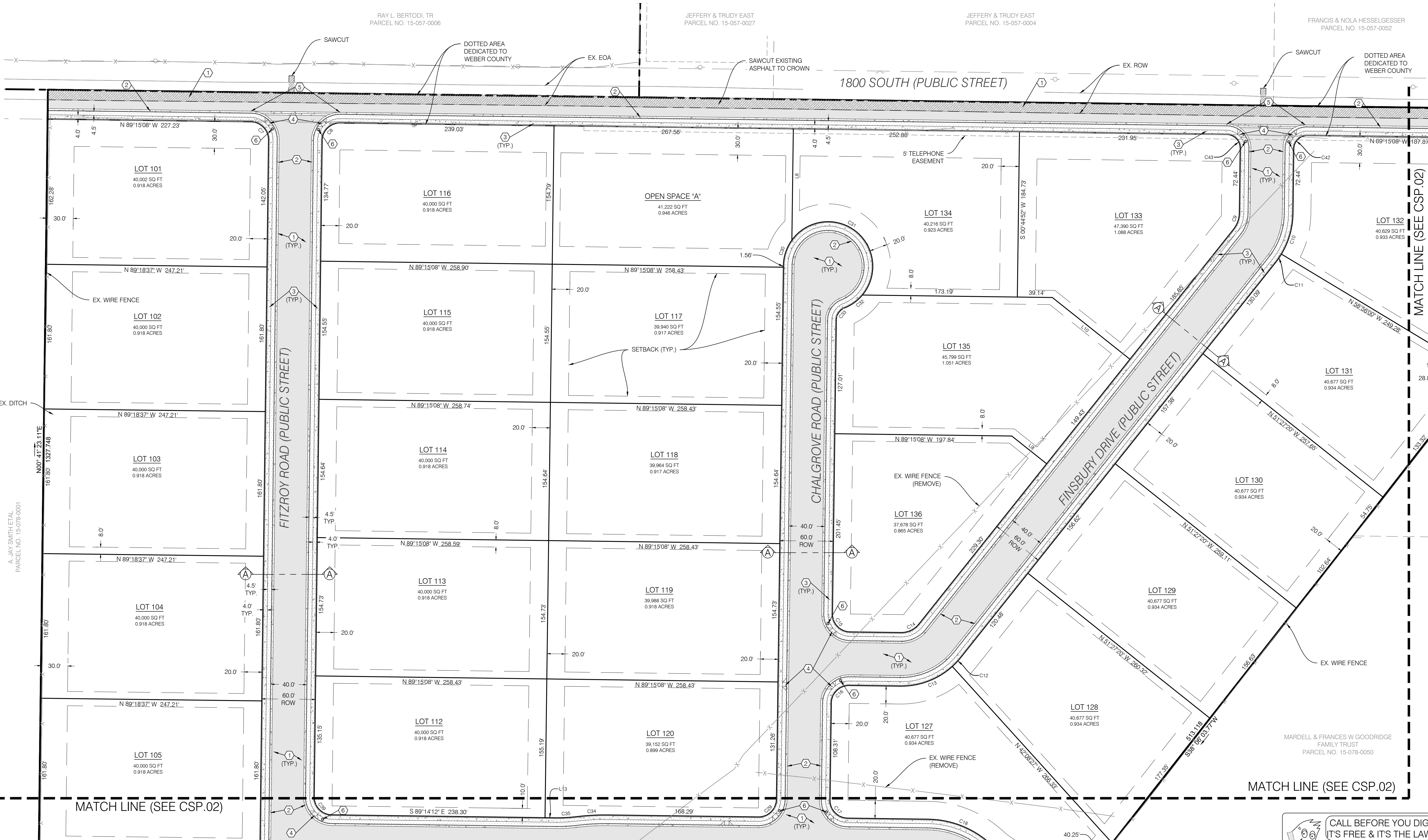
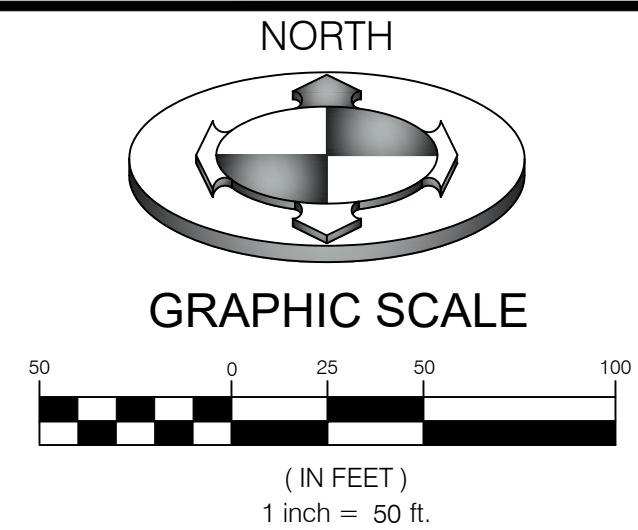
CONSTRUCTION KEY NOTE REFERENCE		
NO.	DESCRIPTION	DETAIL
①	ASPHALT PAVEMENT WITH GRANULAR BASE	1/CDT.01
②	CONCRETE CURB AND GUTTER PER WEBER COUNTY PUBLIC STDS.	2/CDT.01
③	SIDEWALK PER WEBER COUNTY PUBLIC STDS.	
④	ADA RAMP	1/CDT.02
⑤	DRIVE APPROACH PER APWA #225	
⑥	LIGHTPOLE	

AREA TABLE		
PARTICULARS	S.F.	%
BUILDING*	72,000	4.3
HARDSCAPE*	217,357	12.8
LANDSCAPE	1,406,160	82.9
DEDICATED	301,208	N/A
TOTAL	1,695,517	100

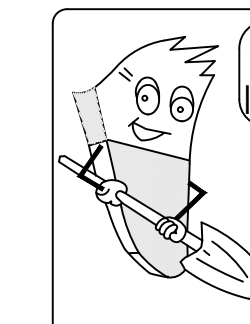
\*BUILDING AND HARDSCAPE AREAS ASSUME A BUILDING FOOTPRINT OF 2,000 S.F. AND A HARDSCAPE OF 500 S.F. PER LOT (36 LOTS).

NOTE:  
SAWCUT WIDTH, LOCATIONS AND TIE-IN ELEVATIONS IN EXISTING HARDSCAPE ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATION AND EXTENT OF SAWCUTTING PRIOR TO CONSTRUCTION. NOTIFY CIVIL ENGINEER IF REVISIONS ARE REQUIRED. SEE NOTE 58 ON CGN.01 FOR FURTHER DETAIL.

NOTE:  
ALL WORK DONE IN PUBLIC ROADS TO BE DONE IN STRICT ACCORDANCE WITH WEBER COUNTY STANDARDS & SPECIFICATIONS.



NOTE:  
SEE CURVE TABLE AND PARCEL LINE TABLE, CSP.02.



CALL BEFORE YOU DIG.  
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UTILITY NOTIFICATION CENTER

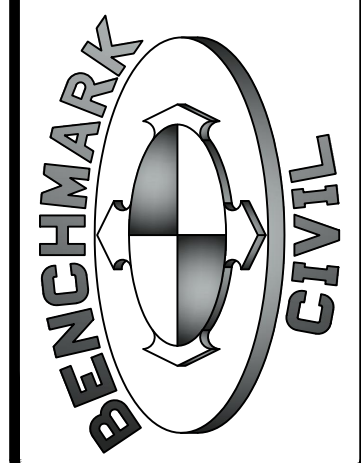
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www.bluestakes.org

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99	09/03/2020
100	09/03/2020

PRELIMINARY  
PLAN  
NOT FOR  
CONSTRUCTION

BENCHMARK  
ENGINEERING &  
LAND SURVEYING

9138 SOUTH STATE STREET SUITE #100  
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WINSTON PARK

3701 W 1800 S

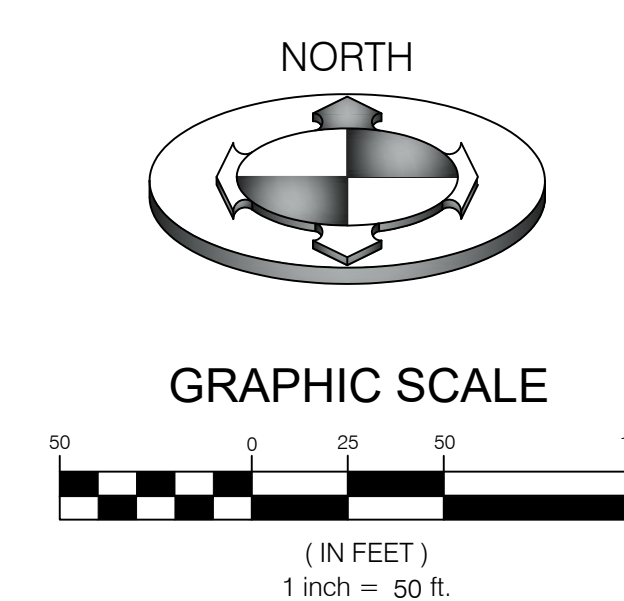
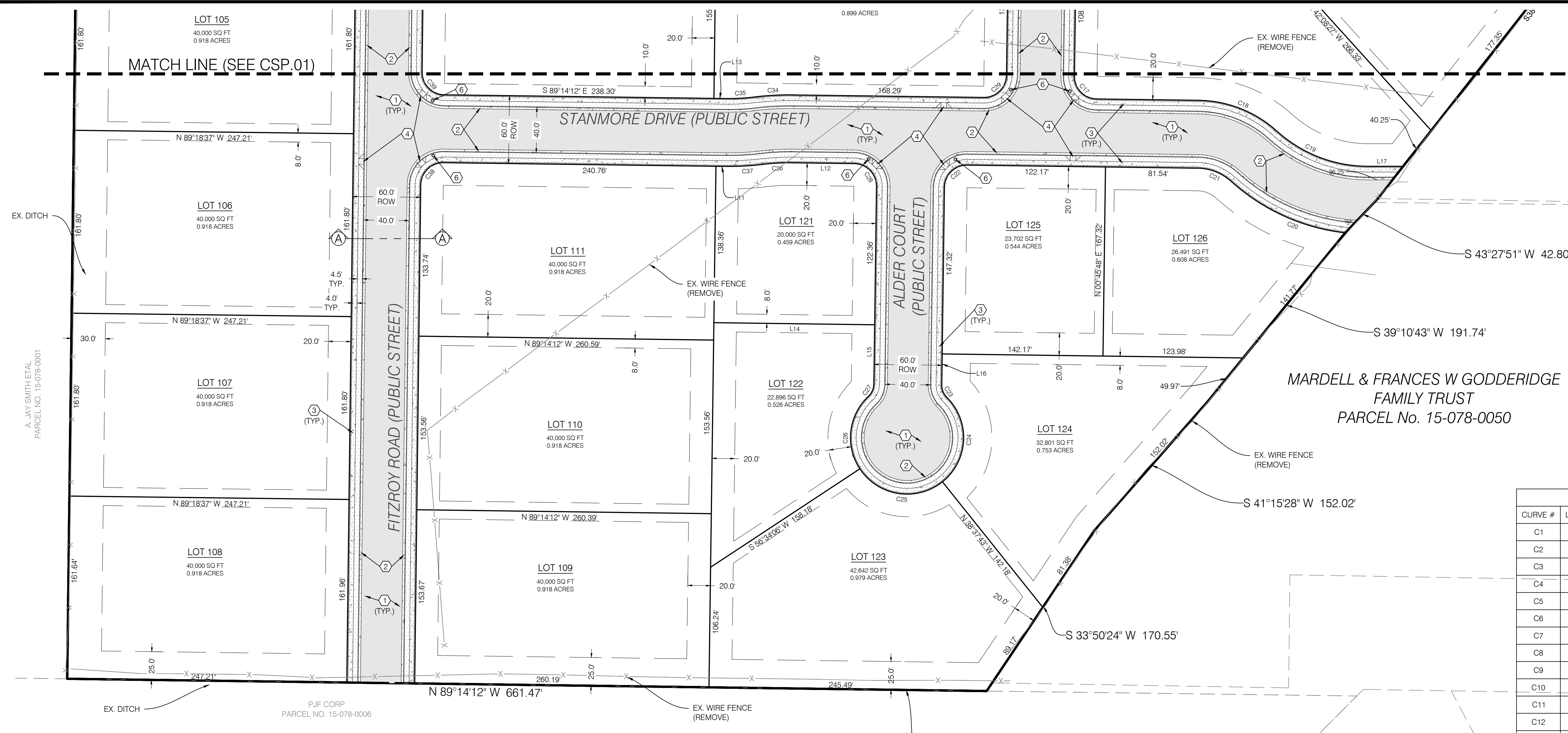
WEBER COUNTY, UTAH

PROJECT NO. 2006142

SITE  
PLAN

CSP.01  
2 OF 8





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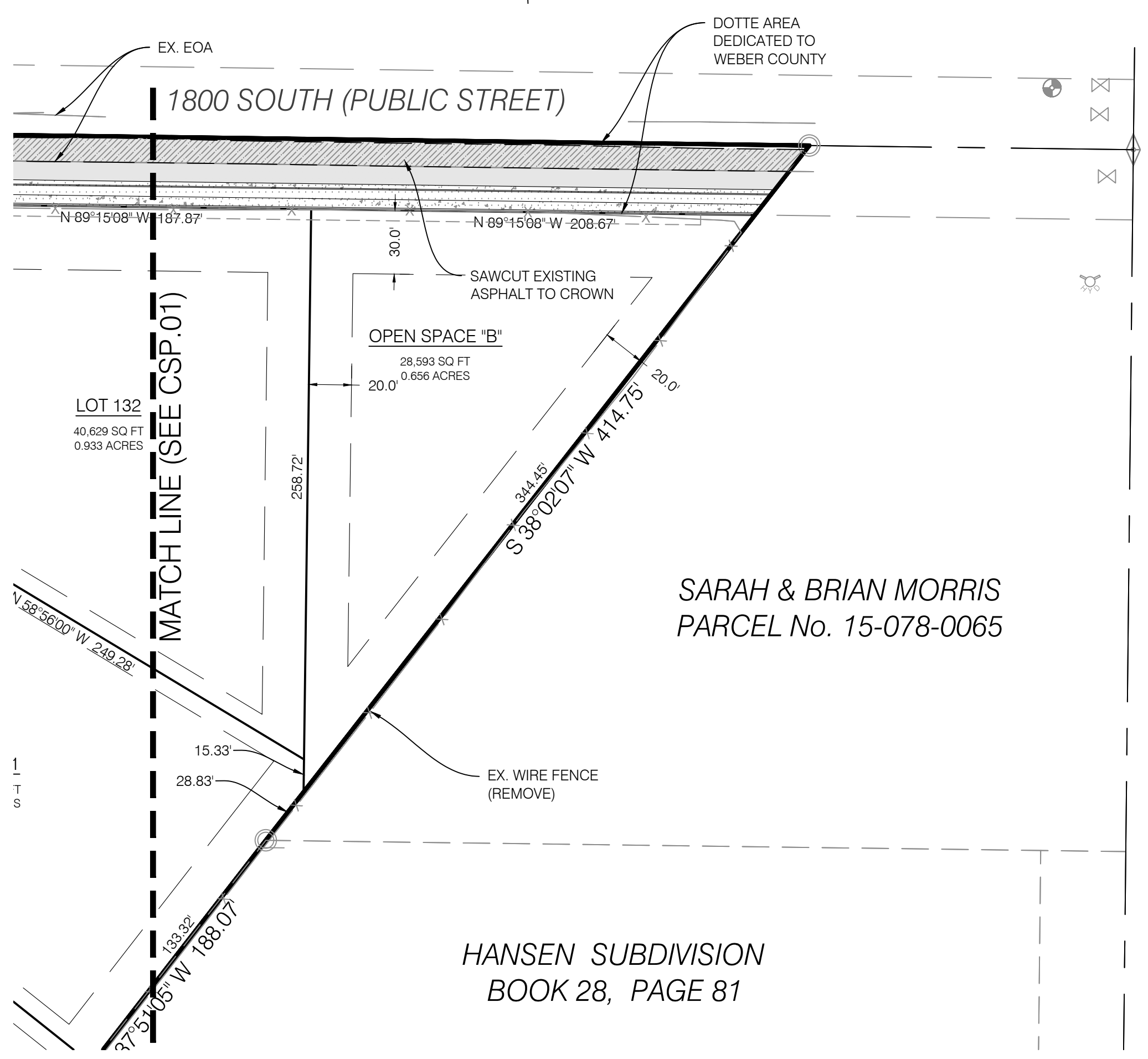
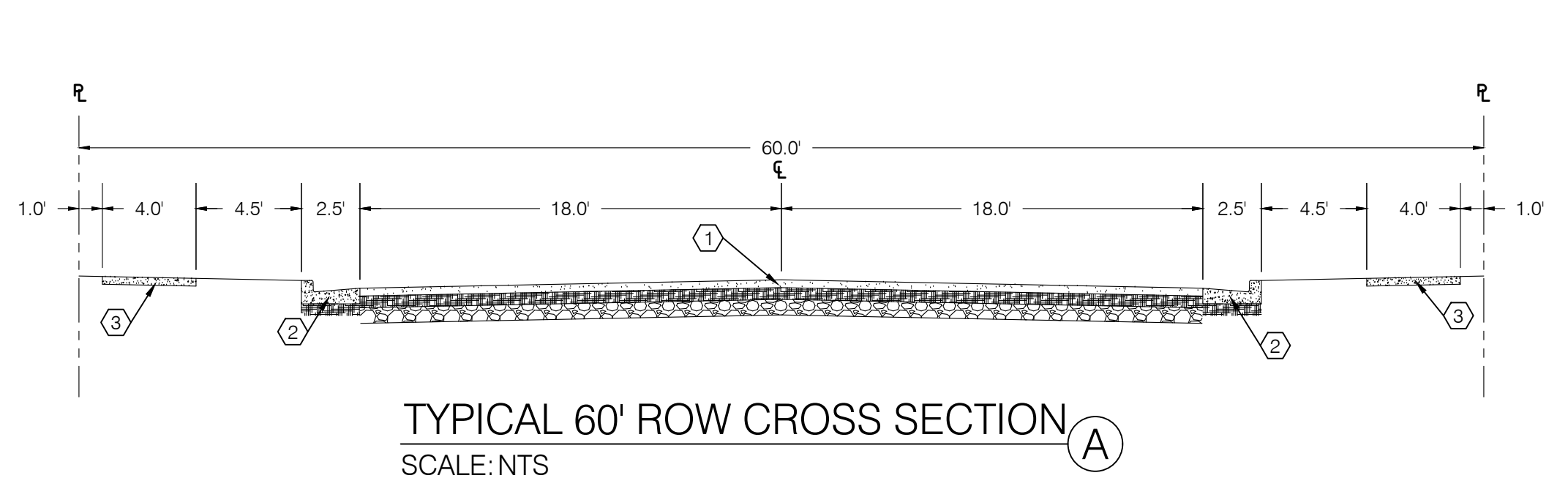
NOTE: SAWCUT WIDTH, LOCATIONS AND TIE-IN ELEVATIONS IN EXISTING HARDSCAPE ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATION AND EXTENT OF SAWCUTTING PRIOR TO CONSTRUCTION. NOTIFY CIVIL ENGINEER IF REVISIONS ARE REQUIRED. SEE NOTE 58 ON CGN.01 FOR FURTHER DETAIL.

NOTE: ALL WORK DONE IN PUBLIC ROADS TO BE DONE IN STRICT ACCORDANCE WITH WEBER COUNTY STANDARDS & SPECIFICATIONS.

CURVE TABLE				
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING
C1	39.58'	60.00'	37°47'48"	N 19°38'46" E
C2	50.06'	55.00'	52°08'43"	N 64°37'02" E
C3	110.55'	150.00'	42°13'40"	S 68°53'10" W
C4	54.28'	75.00'	41°27'52"	N 68°30'16" W
C5	30.02'	225.00'	7°38'43"	S 86°56'27" W
C6	29.73'	225.00'	7°34'18"	N 86°54'14" E
C7	31.40'	20.00'	89°56'32"	N 44°16'53" W
C8	31.44'	20.00'	90°03'28"	S 45°43'07" W
C9	19.79'	30.00'	37°47'48"	N 19°38'46" E
C10	47.62'	90.00'	30°19'08"	N 15°54'26" E
C11	11.75'	90.00'	7°28'40"	N 34°48'20" E
C12	13.82'	85.00'	9°18'53"	N 43°12'07" E
C13	63.54'	85.00'	42°49'50"	N 69°16'28" E
C14	22.75'	25.00'	52°08'43"	N 64°37'02" E
C15	31.44'	20.00'	90°03'28"	S 44°16'53" E
C16	31.40'	20.00'	89°56'32"	S 45°43'07" W
C17	31.41'	20.00'	89°59'03"	S 44°14'40" E
C18	75.99'	105.00'	41°27'52"	N 68°30'16" W
C19	88.44'	120.00'	42°13'40"	S 68°53'10" E
C20	112.46'	180.00'	35°47'47"	S 65°40'13" E
C21	32.57'	45.00'	41°27'52"	N 68°30'16" W
C22	31.42'	20.00'	90°00'00"	S 45°45'48" W
C23	12.09'	15.00'	46°11'13"	S 22°19'48" E
C24	84.47'	50.00'	96°47'42"	N 02°58'26" E
C25	83.07'	50.00'	95°11'48"	S 81°01'48" E
C26	70.15'	50.00'	80°22'56"	S 06°45'34" W
C27	12.09'	15.00'	46°11'13"	N 23°51'25" E
C28	31.42'	20.00'	90°00'00"	N 44°14'12" W
C29	31.42'	20.00'	90°00'57"	N 45°45'20" E
C30	30.70'	50.00'	35°10'59"	S 18°20'21" W
C31	160.46'	50.00'	183°52'15"	N 52°08'02" W
C32	24.72'	50.00'	28°19'35"	N 53°57'53" E
C33	17.64'	15.00'	67°22'48"	S 34°26'16" W
C34	34.03'	255.00'	7°38'43"	S 86°56'27" W
C35	25.75'	195.00'	7°33'58"	N 86°54'04" E
C36	26.02'	195.00'	7°38'43"	S 86°56'27" W
C37	33.72'	255.00'	7°34'34"	N 86°54'22" E
C38	31.44'	20.00'	90°04'25"	S 45°43'36" W
C39	31.39'	20.00'	89°55'35"	S 44°16'24" E
C40	237.69'	50.00'	272°22'26"	S 89°14'12" E
C41	215.88'	50.00'	247°22'48"	N 55°33'44" W
C42	23.56'	15.00'	90°00'00"	S 45°44'52" W
C43	23.56'	15.00'	90°00'00"	N 44°15'08" W

CONSTRUCTION KEY NOTE REFERENCE		
NO.	DESCRIPTION	DETAIL
①	ASPHALT PAVEMENT WITH GRANULAR BASE	1/CDT.01
②	CONCRETE CURB AND GUTTER PER APWA #205 TYPE 'A'	2/CDT.01
③	SIDEWALK PER APWA #231	
④	ADA RAMP	1/CDT.02
⑤	DRIVE APPROACH PER APWA #225	
⑥	LIGHTPOLE	

AREA TABLE		
PARTICULARS	S.F.	%
BUILDING	72,000	4.3
HARDSCAPE	217,357	12.8
LANDSCAPE	1,406,160	82.9
DEDICATION	301,208	N/A
TOTAL	1,695,517	100



PARCEL LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N 89°15'08" W	20.00'
L2	S 89°18'37" E	106.96'
L3	N 00°44'52" E	120.44'
L4	N 90°00'00" E	7.20'
L5	N 43°02'59" W	50.00'
L6	N 44°34'35" E	50.00'
L7	S 21°52'20" E	50.00'
L8	S 00°44'52" W	124.42'
L9	S 51°27'20" E	49.80'
L10	N 51°27'20" W	110.87'
L11	N 89°14'12" W	7.98'
L12	S 89°14'12" E	54.65'
L13	S 89°14'12" E	10.53'
L14	N 89°14'12" W	142.19'
L15	S 00°45'48" E	52.50'
L16	N 00°45'48" E	27.53'
L17	N 90°00'00" E	30.96'

PROJECT NO. 2006142

SITE PLAN

CSP.02  
3 OF 8

WINSTON PARK

3701 W 1800 S

WEBER COUNTY, UTAH

BENCHMARK ENGINEERING & LAND SURVEYING

9188 SOUTH STATE STREET SUITE #100

SANDY, UTAH 84070 (801) 542-7192

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PRELIMINARY PLAN NOT FOR CONSTRUCTION

FORMED BY: JHO

CHECKED BY: MGP

FIELD CREW: SURVEY

DATE: 09/03/2020

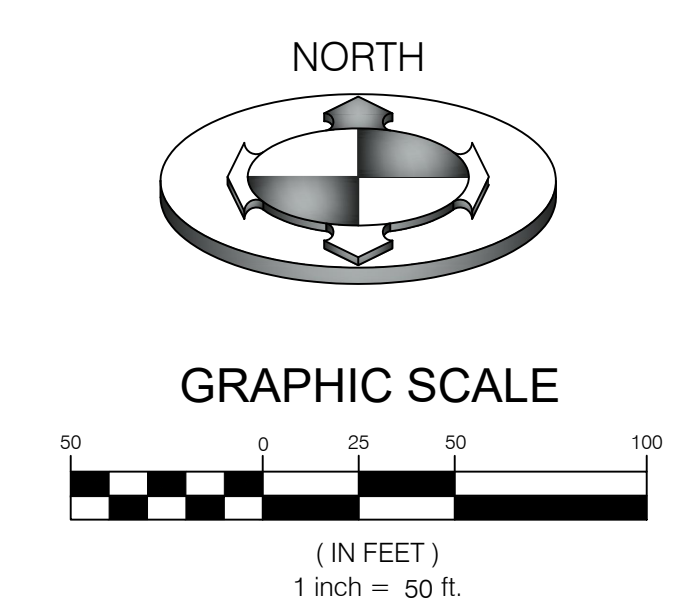
DRAWN BY: 2006142 SITE

SCALE: MEASURES SHOWN ON FULL SIZE SHEETS ADJUST ACCORDINGLY FOR REDUCED SIZE SHEETS

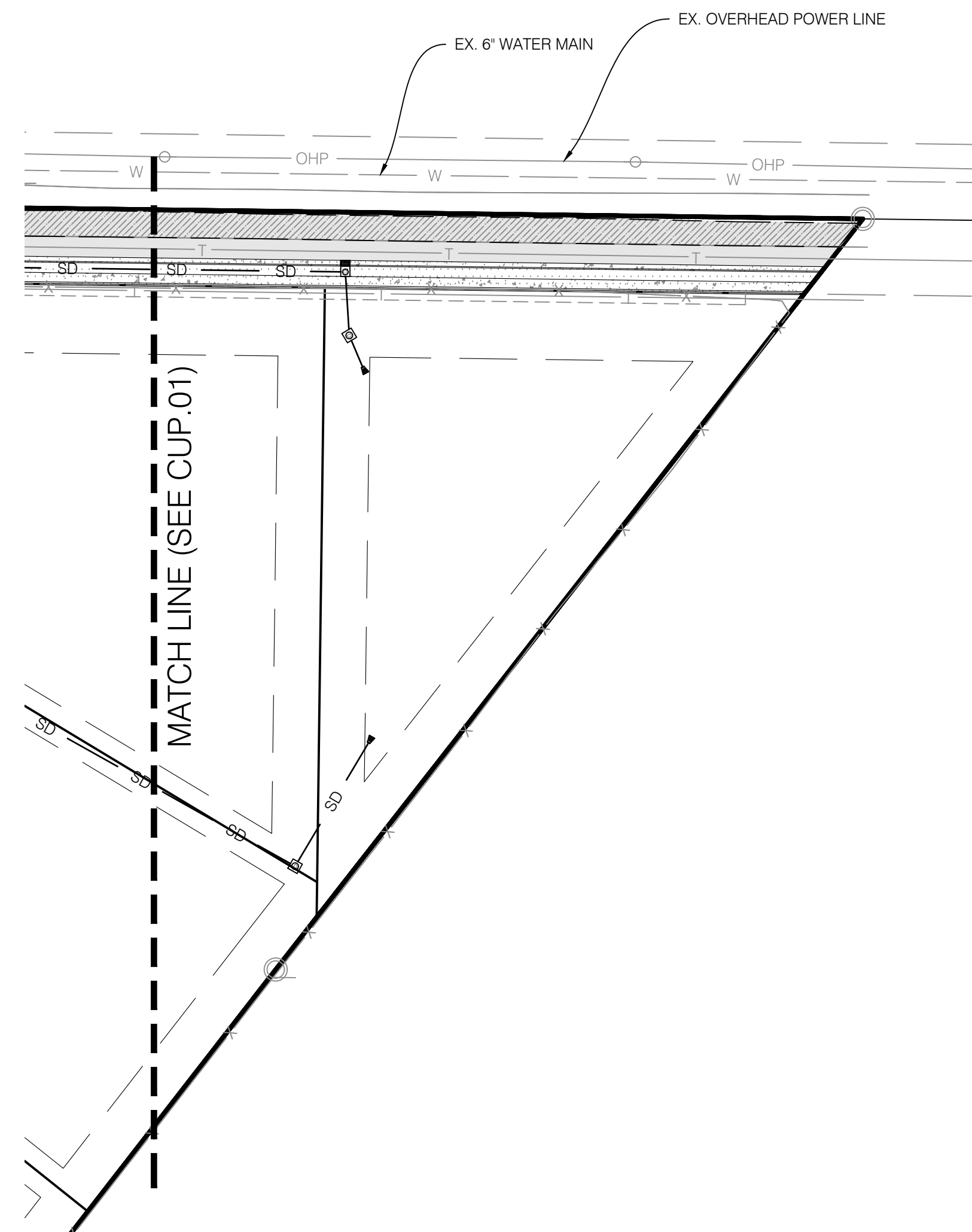








NOTE:  
POTHOLE TO IDENTIFY ANY CONFLICTS BEFORE ANY PIPE  
INSTALLATION. CONTACT ENGINEER IF ANY CONFLICTS ARE  
IDENTIFIED.

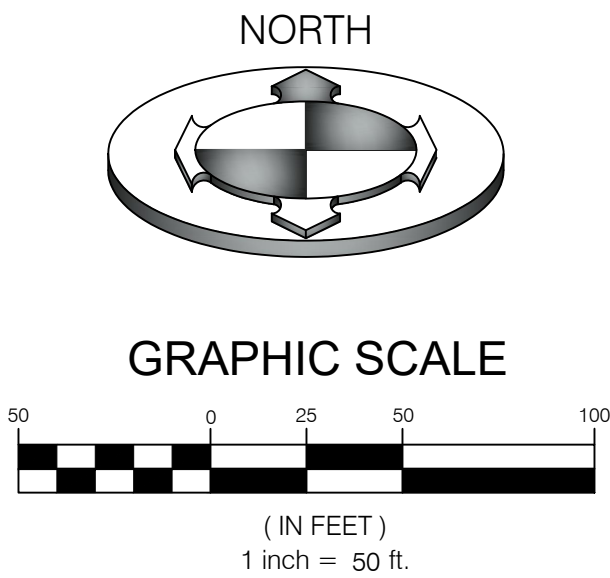
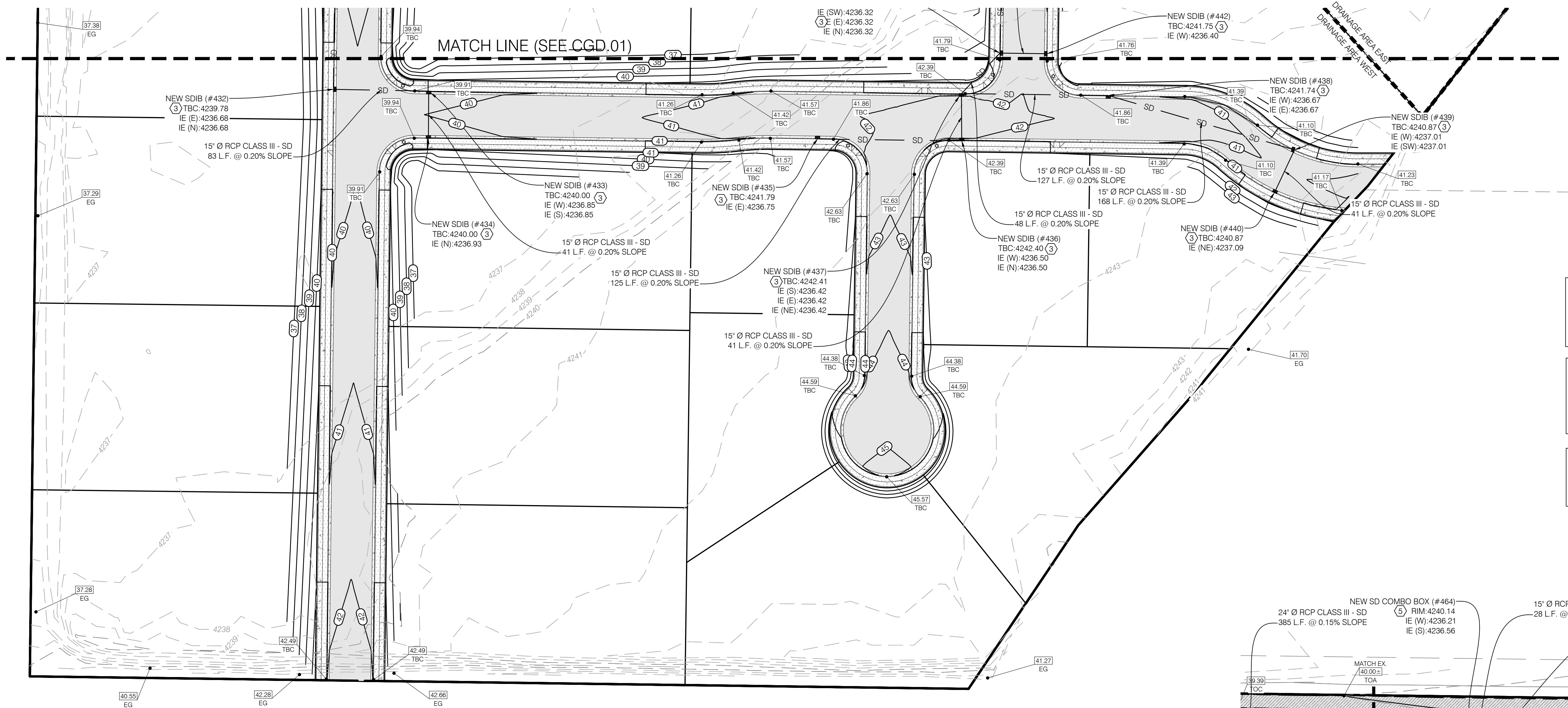


PROJECT NO.	2006142
UTILITY PLAN	
CUP.02 5 OF 8	









NOTE:  
PRIOR TO FABRICATION OR CONSTRUCTION, BEGIN AT THE LOW END OF ALL GRAVITY UTILITY LINES AND VERIFY THE INVERT ELEVATION OF THE POINT OF CONNECTION AND NOTIFY ENGINEER IF THIS POINT IS HIGHER THAN SHOWN ON THE PLANS FOR A REDESIGN.

NOTE:  
SAWCUT WIDTH, LOCATIONS AND TIE-IN ELEVATIONS IN EXISTING HARDSCAPE ARE APPROXIMATE, CONTRACTOR TO FIELD VERIFY LOCATION AND EXTENT OF SAWCUTTING PRIOR TO CONSTRUCTION. NOTIFY CIVIL ENGINEER IF REVISIONS ARE REQUIRED. SEE NOTE 58 ON CGN.01 FOR FURTHER DETAIL.

NOTE:  
POTHOLE TO IDENTIFY ANY CONFLICTS BEFORE ANY PIPE INSTALLATION. CONTACT ENGINEER IF ANY CONFLICTS ARE IDENTIFIED.

GRADING AND DRAINAGE KEY NOTE REFERENCE		
NO.	DESCRIPTION	DETAIL
①	GRADE SITE TO ELEVATIONS SHOWN ON PLAN	
②	5" ORIFICE PLATE	
③	STORM DRAIN INLET BOX	
④	STORM DRAIN CLEAN OUT	
⑤	STORM DRAIN COMBO BOX	
⑥	FLARED END SECTION	
⑦	SNOUT	
⑧	STORM DRAIN MANHOLE	

ALL HDPE/RCP CLASS III PIP TO HAVE SOIL TIGHT JOINTS

**SURVEY CONTROL NOTE:**  
THE CONTRACTOR OR SURVEYOR PERFORMING THE CONSTRUCTION SURVEYING SHALL BE RESPONSIBLE TO PROVIDE CONSTRUCTION LAYOUT PER THE APPROVED PLANS ONLY. THE SURVEYOR SHALL ALSO BE RESPONSIBLE FOR VERIFYING HORIZONTAL CONTROL FROM THE SURVEY MONUMENTS AND FOR VERIFYING ANY ADDITIONAL CONTROL POINTS SHOWN ON THE SURVEY OR IMPROVEMENTS PLANS OR ON ELECTRONIC DATA PROVIDED BY BENCHMARK ENGINEERING AND LAND SURVEYING. THE SURVEYOR SHALL ALSO USE THE BENCHMARKS AS SHOWN ON THE PLAN, AND VERIFY THEM AGAINST NO LESS THAN THREE EXISTING HARD IMPROVEMENT ELEVATIONS INCLUDED ON THESE PLANS OR ON ELECTRONIC DATA PROVIDED BY BENCHMARK ENGINEERING AND LAND SURVEYING. IF ANY DISCREPANCIES ARE ENCOUNTERED, THE SURVEYOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND RESOLVE THE DISCREPANCIES BEFORE PROCEEDING WITH ANY CONSTRUCTION SURVEYING. IT IS ALSO THE RESPONSIBILITY OF THE SURVEYOR TO VERIFY ANY ELECTRONIC DATA WITH THE APPROVED STAMPED AND SIGNED PLANS AND NOTIFY THE ENGINEER WITH ANY DISCREPANCIES.

WEST STORM DRAINAGE						
Rational Method (Q=CIA)						
Area Identification (A)			Rational Coefficient (C)		C*A	
Roof =	56,000		0.9		50400 S.F.	
Pavement =	173,358		0.9		156022 S.F.	
Landscaping =	1,055,374		0.2		211075 S.F.	
Sum:	1E+06 S.F.				Sum:	417497 S.F.

NOAA ATLAS 14 (100 YEAR STORM)				Allowable Discharge = 10cfs/acre		
Time	Intensity	Rainfall	Rainfall Excess	Allowed Discharge	Volume to Detain	
(min)	(in/hr)	(inches)	(cu.ft.)	(cu.ft.)	(cu.ft.)	
15	4.10	1.025	35661	2654	33007	
30	2.76	1.380	48012	5309	42703	
60	1.71	1.710	59493	10618	48876	
120	0.93	1.860	64712	21235	43477	
180	0.64	1.905	66278	31853	34425	
360	0.35	2.124	73897	63706	10191	
720	0.22	2.604	90597	127411	0	
1440	0.12	2.904	101034	254823	0	

Detention Calculations

Pond Volume	
WEST Pond	Civil 3D = 51,008 cf

Pipe Volume	
15 in. Pipe	Length = 2,597 lf
	Volume = 3,187 cf

Is there adequate storage?

Storage Provided = 54,195 cf

Req. Storage = 48,876 cf

YES

Orifice Design:

The storm runoff will be detained at 0.2 cfs/acre

$$Q = C_d A_o \sqrt{2gh}$$

Total acreage of development:	29.49 acres
Allowable discharge:	0.1 cfs/acre
Maxhead:	2.00 ft
Design diameter for new orifice:	8.8 inch

EAST STORM DRAINAGE						
Rational Method (Q=CIA)						
Area Identification (A)			Rational Coefficient (C)		C*A	
Roof =	16,000		0.9		14400 S.F.	
Pavement =	43,999		0.9		39599 S.F.	
Landscaping =	350,786		0.2		70157 S.F.	
Sum:	410785 S.F.		Sum:		124156 S.F.	

NOAA ATLAS 14 (100 YEAR STORM)				Allowable Discharge = 10cfs/acre	
Time	Intensity	Rainfall	Rainfall	Allowed	Volume to Detain
(min)	(in/hr)	(inches)	Excess	Discharge	
		(inches)	(cu.ft.)	(cu.ft.)	(cu.ft.)
15	4.10	1.025	10605	849	9756
30	2.76	1.380	14278	1697	12581
60	1.71	1.710	17692	3395	14297
120	0.93	1.860	19244	6790	12454
180	0.64	1.905	19710	10185	9525
360	0.35	2.124	21976	20370	1606
720	0.22	2.604	26942	40739	0
1440	0.12	2.904	30046	81478	0

Detention Calculations

**Pond Volume**

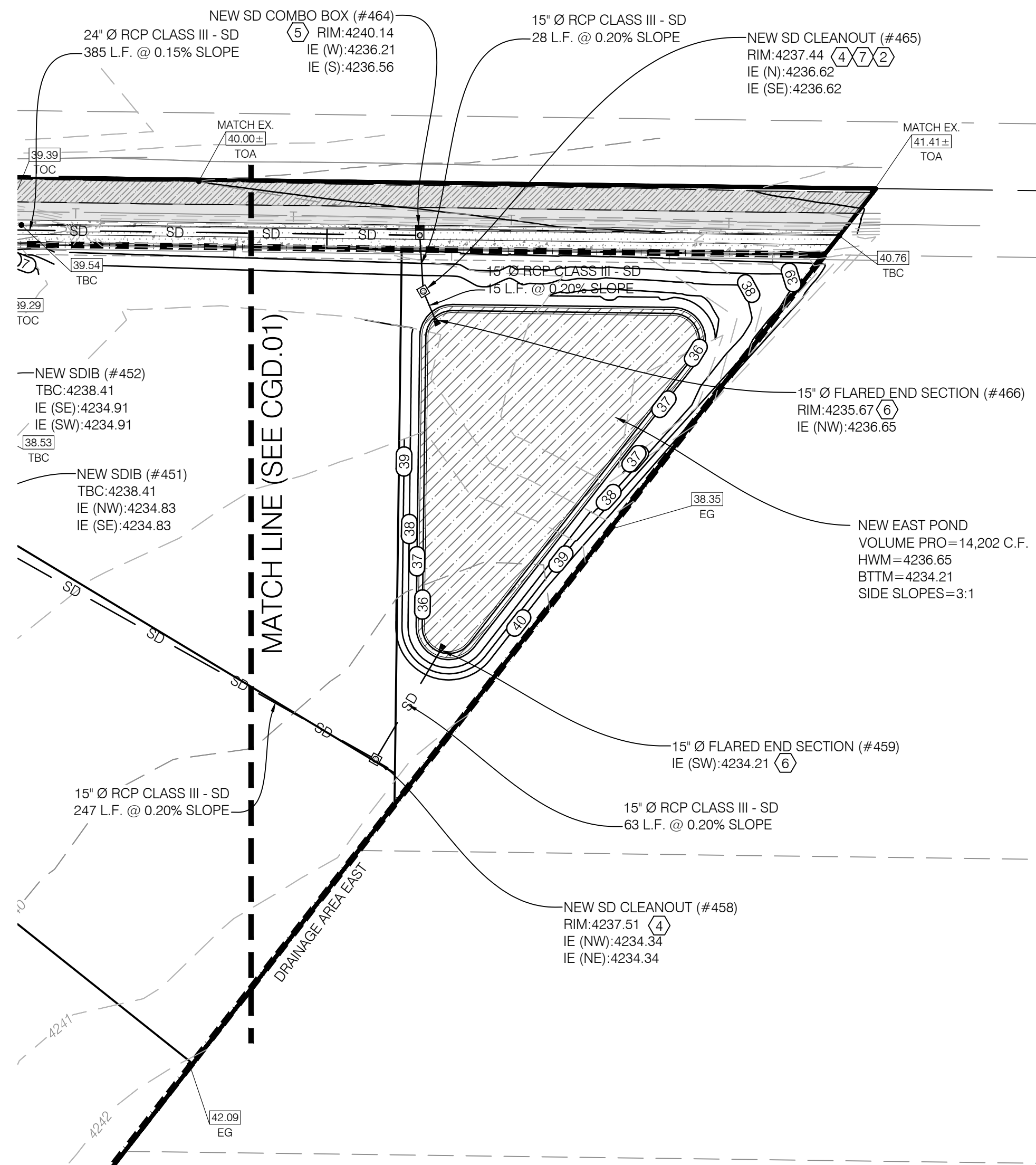
EAST Pond      Civil 3D =    **14,202 cf**

**Pipe Volume**

15 in. Pipe      Length =    **3,140 lf**

                         Volume =    **3,853 cf**

Is there adequate storage?    



PROJECT NO.		2006142	
PROJECT NAME		WINSTON PARK	
PROJECT ADDRESS		3701 W 1800 S	
PROJECT CITY		WEBER COUNTY, UTAH	
PROJECT STATE		UTAH	
PROJECT ZIP		84070	
PROJECT DATE		09/03/2020	
PROJECT DRAWN BY		JHO	
PROJECT CHECKED BY		MCP	
PROJECT SURVEYED BY		SURVEY	
PROJECT DATE		09/03/2020	
PROJECT DRAWING FILE		2006142 SITE	
PROJECT SCALE		1 inch = 50 ft.	
PROJECT SHEET NO.		CGD.02	
PROJECT SHEET TOTAL		7 OF 8	

**PRELIMINARY**  
**PLAN**  
**NOT FOR**  
**CONSTRUCTION**

**BENCHMARK**  
**ENGINEERING & LAND SURVEYING**  
9188 SOUTH STATE STREET SUITE #100  
SANDY, UTAH 84070 (801) 542-7192  
www.benchmarkcivil.com

**WINSTON PARK**  
**3701 W 1800 S**  
**WEBER COUNTY, UTAH**

**GRADING & DRAINAGE PLAN**  
**CGD.02**  
**7 OF 8**