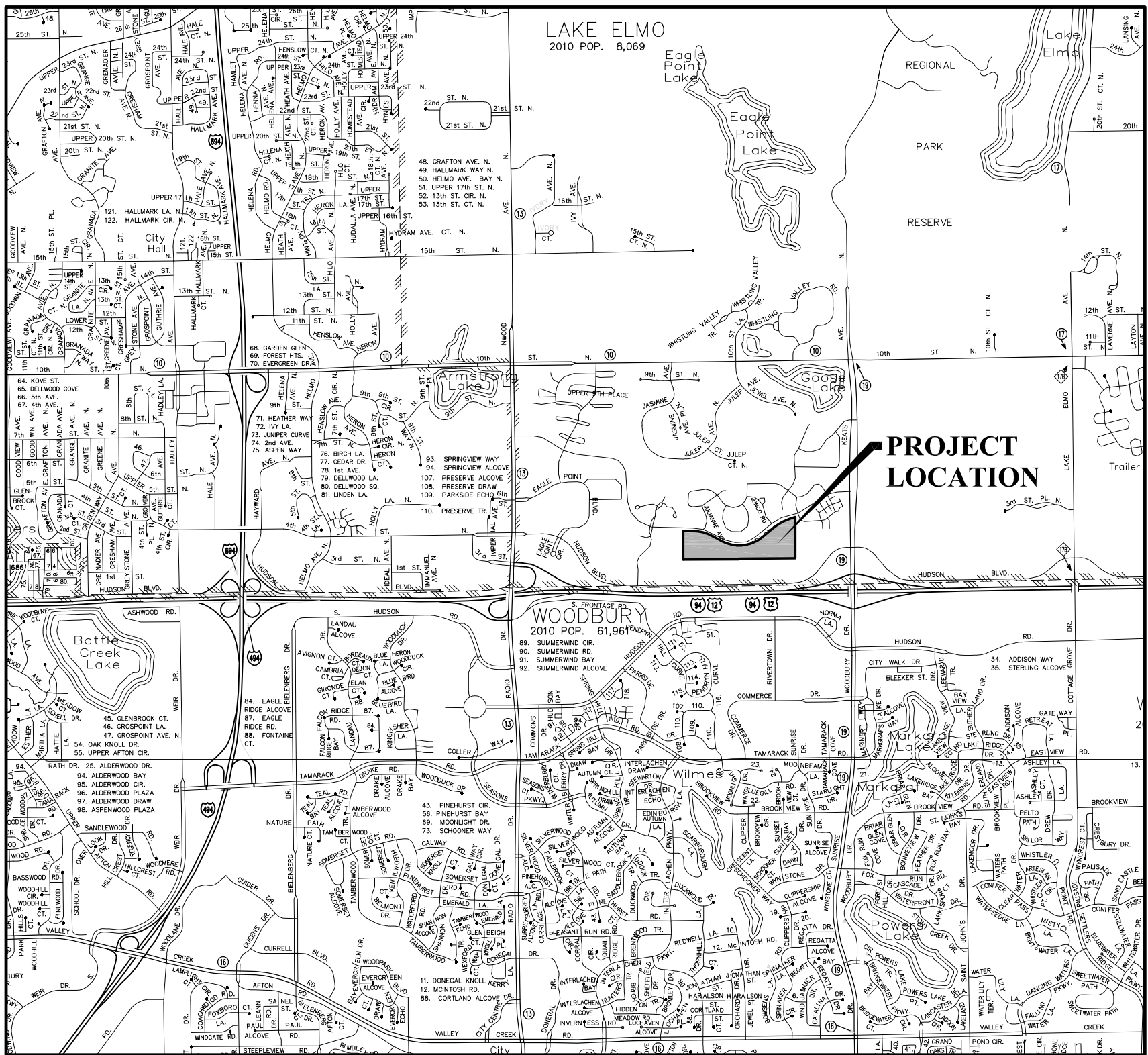
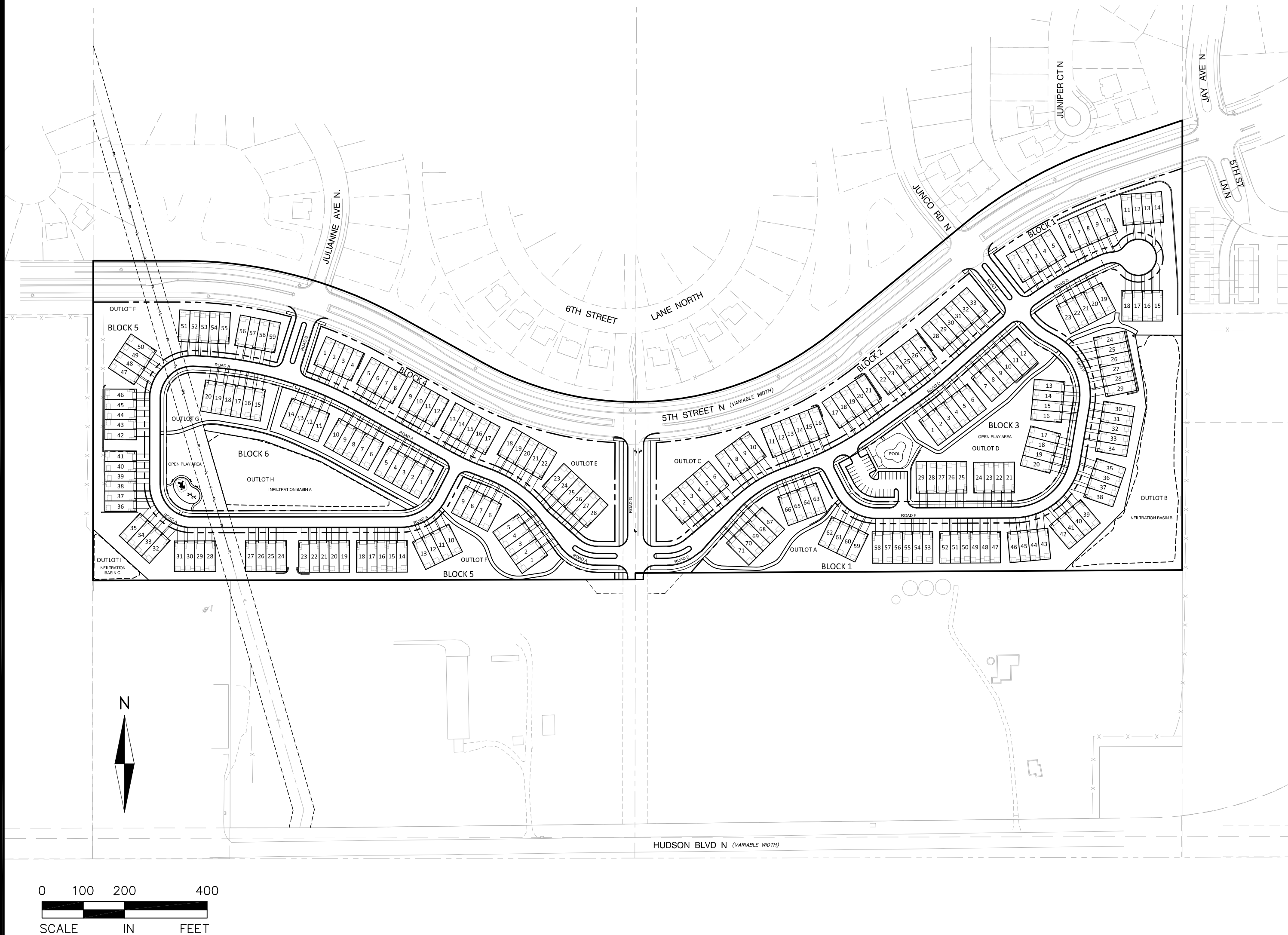


BENTLEY VILLAGE

LAKE ELMO, MINNESOTA



VICINITY MAP
NOT TO SCALE

SHEET INDEX

	NO.
COVER SHEET	1
EXISTING CONDITIONS SURVEY	2-3
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DEVELOPER

PULTE HOMES
7500 FLYING CLOUD DRIVE
SUITE 670
EDEN PRAIRIE, MN 55344
PH: 952-229-0722
CONTACT: PAUL HEUER
EM: Paul.Heuer@PulteGroup.com

CONSULTANT

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SURVEYOR

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LANDSCAPE ARCHITECT

MARK KRONBECK
LICENSE NO. 26222
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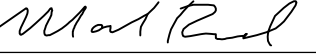
ALLIANT
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BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
COVER SHEET

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA


MARK RAUSCH, PE
1-25-19 43480
Date License No.

QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
1-25-19	CITY SUBMITTAL

PROJECT TEAM DATA	
DESIGNED:	MPR
DRAWN:	SIL
PROJECT NO:	218-0165

LEGAL DESCRIPTION

Commencing at the West Quarter corner of said Section 34; thence South 00 degrees 00 minutes 40 seconds East, along the West line of said Section 34, a distance of 472.55 feet; thence North 89 degrees 57 minutes 32 seconds East, a distance of 1131.91 feet to the West line of said East Half of the Southwest Quarter of said Township 00 degrees 02 minutes 55 seconds West, along said West line a distance of 714.99 feet to the point of beginning; thence North 89 degrees 55 minutes 22 seconds East, a distance of 212.38 feet; thence Southeasterly along a tangential curve concave to the Southwest having a central angle of 4 degrees 05 minutes 37 seconds, a radius of 1100.00 feet for an arc distance of 558.56 feet; thence South 60 degrees 59 minutes 01 seconds East, tangent to said curve, a distance of 224.27 feet; thence Southeasterly along a tangential curve concave to the North, having a central angle of 68 degrees 21 minutes 23 seconds, a radius of 760.00 feet for an arc distance of 906.71 feet; thence South 50 degrees 59 minutes 33 seconds East, along said parallel line, a distance of 100.00 feet to the point of beginning; thence Southeasterly along a tangential curve concave to the Southeast, having a central angle of 20 degrees 49 minutes 17 seconds, a radius of 1060.00 feet for an arc distance of 385.20 feet; thence North 71 degrees 28 minutes 52 seconds East, tangent to said curve, a distance of 202.22 feet to the East line of said West Half of the Southeast Quarter; thence South 00 degrees 01 minutes 13 seconds West, along the East line a distance of 151.753 to a line parallel with and distant 217.80 feet North of the North right of way line of Highway No. 12; thence South 89 degrees 54 minutes 16 seconds West, along said parallel line, a distance of 200.00 feet to a line parallel with and distant 217.80 feet North of the North right of way line of Highway No. 12; thence North 89 degrees 54 minutes 01 seconds 13 seconds West, along said parallel line, a distance of 173.18 feet to the North line of Minnesota Department of Transportation Right of Way Plat No. 82-43; thence South 89 degrees 18 minutes 12 seconds West, along said North line a distance of 1875.94 feet; thence continuing along said North line South 89 degrees 53 minutes 55 seconds West, a distance of 230.61 feet to the East line of the West 333.00 feet of said East Half of the Southwest Quarter; thence North 00 degrees 02 minutes 55 seconds East, along said line a distance of 598.99 feet to the North line of the South 675.00 feet of said East Half of the Southwest Quarter; thence North 00 degrees 02 minutes 55 seconds East, along said line a distance of 333.00 feet to said West line of the East Half of the Southwest Quarter; thence North 00 degrees 02 minutes 55 seconds East, along said West line a distance of 774.53 feet to the point of beginning.

Washington County, Minnesota
Abstract Property

PROPOSED DEVELOPMENT LEGAL DESCRIPTION

Commencing at the West Quarter corner of said Section 34; thence South 00 degrees 00 minutes 40 seconds East, along the West line of said Section 34, a distance of 472.55 feet; thence North 89 degrees 57 minutes 32 seconds East, a distance of 1315.91 feet to the West line of said East Half of the Southwest Quarter; thence South 00 degrees 02 minutes 55 seconds West, along said West line a distance of 714.99 feet to the point of beginning; thence North 89 degrees 55 minutes 22 seconds East, a distance of 1060.00 feet to the North line of said East Half of the Southwest Quarter; thence South 00 degrees 02 minutes 55 seconds West, along said West line a distance of 714.99 feet to the point of beginning; thence North 89 degrees 55 minutes 22 seconds East, a distance of 1060.00 feet to the North line of said East Half of the Southwest Quarter; thence South 00 degrees 02 minutes 55 seconds West, along said West line a distance of 714.99 feet to the point of beginning; thence North 89 degrees 55 minutes 22 seconds East, a distance of 1060.00 feet to the North line of said East Half of the Southwest Quarter; thence South 00 degrees 02 minutes 55 seconds West, along said West line a distance of 714.99 feet to the point of beginning.

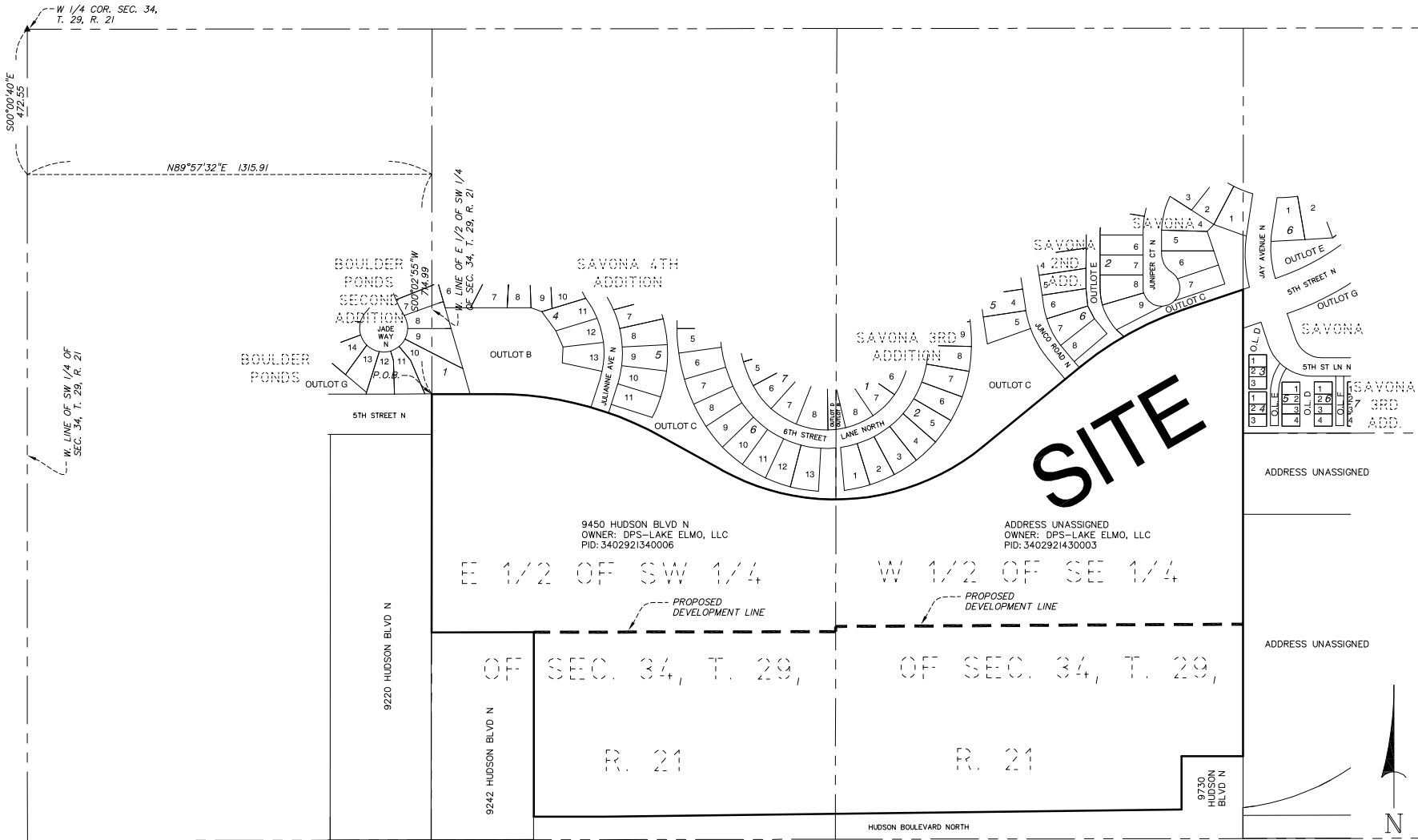
Commencing at the southwest corner of said West Half of the Southeast Quarter; thence North 00 degrees 06 minutes 31 seconds East, assumed bearing, along the west line of said West Half of the Southeast Quarter, a distance of 82.86 feet to the north line of Parcel 29C of Minnesota Department of Transportation Right of Way Plate Book, 82-43; thence North 89 degrees 18 minutes 27 seconds East, along said north line, a distance of 40.00 feet; thence North 00 degrees 06 minutes 31 seconds East, a distance of 607.73 feet to the point of beginning; thence North 89 degrees 40 minutes 54 seconds East, a distance of 1284.76 feet to the east line of said West Half of the Southeast Quarter, and said Line 'X' there terminating.

LEGEND

- | | | |
|--|---|-----------------------------|
| ● SET CAP IRON MONUMENT 18425 | —G— | GAS |
| ● FOUND IRON MONUMENT | —D— | SANITARY SEWER |
| ⊙ FOUND CAST IRON MONUMENT | —>>—<<— | STORM SEWER W/ FLARED END |
| ▲ FOUND MAG NAIL | —I— | WATERMAIN |
| X WATER VALVE | —FO— | FIBER OPTIC |
| Ⓢ TELEPHONE BOX | —OU— | OVERHEAD UTILITY |
| Ⓢ SANITARY MANHOLE | —E— | UNDERGROUND ELECTRIC |
| □ CATCH BASIN | —X— | FENCE |
| ⊞ POWER POLE | —1002— | CONTOUR PER FIELDWORK/LIDAR |
| — GUY WIRE | —1002— | CONTOUR PER RECORD PLAN |
| Ⓢ FIBER OPTIC VAULT | — — — — | EDGE OF WATER |
| ◇ FIRE HYDRANT |  | CONCRETE |
| * LIGHT POLE |  | BITUMINOUS |
| Δ SIGN |  | GRAVEL |
| ● WELL |  | TREE LINE |
| ● STORM MANHOLE |  | PROPOSED DEVELOPMENT LINE |
| ● CURB STOP | | |
| Ⓢ MAIL BOX | | |
| 0.57' X
LIN TOP OF EXPOSED GAS PIPE | | |
| 1773' ○ TREE W/ TAG NO. | | |
| ○ TREE | | |
| 0.57' X
LIN GROUND ELEVATION | | |
| (R) PER RECORD AS-BUILT | | |

NOTES

1. This survey and the property description shown herein are based upon Information found in the commitment for title Insurance prepared by Commercial Partners Title, LLC as issuing agent for Stewart Title Guaranty Company, Commitment no. 55162, dated November 6, 2018.
2. The locations of underground utilities are depicted based on Information from Gopher State One Call system for a "Boundary Survey locate". The information was provided by a combination of available maps, proposed plans or city records and field locations which may not be exact. Verify all utilities critical to construction or design.
3. The orientation of this bearing system is based on the Washington County Coordinate System NAD83 (1986).
4. All distances are in feet.
5. The area of the above described property is 3,162.661 square feet or 72.605 acres; area north of proposed development line is 1,811,430 square feet or 41.585 acres.
6. Bench Mark 1: Top Nut of Hydrant located in the NE quadrant of 5th Street and Julianne Ave N has an elevation of 1032.25 feet NGVD 29.
7. Bench Mark 2: Top Nut of Hydrant located in the NW quadrant of 5th Street and Junco Rd N has an elevation of 1009.69 feet NGVD 29.
8. Elevations at curb line are to top back of curb.
9. Names of adjacent owners per Washington County Tax Records.
10. Residential home dimensions on adjacent property are shown per City records where available.


$$1'' = 250'$$

PLAT	LOT	BLOCK	OWNER
BOULDER PONDS		OUTLOT G	CITY OF LAKE ELMO
BOULDER PONDS SECOND ADDITION	14	1	CREATIVE HOMES INC
BOULDER PONDS SECOND ADDITION	13	1	HART THOMAS & TONY HANSEN
BOULDER PONDS SECOND ADDITION	12	1	OPA BOULDER PONDS LLC
BOULDER PONDS SECOND ADDITION	11	1	BERG DANIEL R & GAYLE
BOULDER PONDS SECOND ADDITION	10	1	WINTER DEAN A & MARY P
BOULDER PONDS SECOND ADDITION	9	1	MACHADO EDUARDO & USA
BOULDER PONDS SECOND ADDITION	8	1	CREATIVE HOMES INC
BOULDER PONDS SECOND ADDITION	7	1	CREATIVE HOMES INC
SAVONA 4TH ADDITION		OUTLOT B	CITY OF LAKE ELMO
SAVONA 4TH ADDITION		OUTLOT C	CITY OF LAKE ELMO
SAVONA 4TH ADDITION		OUTLOT D	CITY OF LAKE ELMO
SAVONA 4TH ADDITION	6	4	US HOME CORPORATION
SAVONA 4TH ADDITION	7	4	US HOME CORPORATION
SAVONA 4TH ADDITION	8	4	US HOME CORPORATION
SAVONA 4TH ADDITION	9	4	US HOME CORPORATION
SAVONA 4TH ADDITION	10	4	US HOME CORPORATION
SAVONA 4TH ADDITION	11	4	US HOME CORPORATION
SAVONA 4TH ADDITION	12	4	US HOME CORPORATION
SAVONA 4TH ADDITION	13	4	US HOME CORPORATION
SAVONA 4TH ADDITION	7	4	US HOME CORPORATION
SAVONA 4TH ADDITION	8	5	US HOME CORPORATION
SAVONA 4TH ADDITION	9	5	US HOME CORPORATION
SAVONA 4TH ADDITION	10	5	US HOME CORPORATION
SAVONA 4TH ADDITION	11	5	US HOME CORPORATION
SAVONA 4TH ADDITION	5	6	US HOME CORPORATION
SAVONA 4TH ADDITION	6	6	US HOME CORPORATION
SAVONA 4TH ADDITION	7	6	US HOME CORPORATION
SAVONA 4TH ADDITION	8	6	ATENIZA ILLUMINADA & RANDOLPH
SAVONA 4TH ADDITION	9	6	US HOME CORPORATION
SAVONA 4TH ADDITION	10	6	SUBRAMANI VISWANATH & RENUKADEVI SUBRAMUNATHAN
SAVONA 4TH ADDITION	11	6	US HOME CORPORATION

SAVONA 4TH ADDITION	12	6	JASKA BRIAN J & ELIZABETH
SAVONA 4TH ADDITION	13	6	VUE TUF F & SABRINA YANG
SAVONA 4TH ADDITION	5	7	NOVAK JASON & KATHERINE
SAVONA 4TH ADDITION	6	7	US HOME CORPORATION
SAVONA 4TH ADDITION	7	7	US HOME CORPORATION
SAVONA 4TH ADDITION	8	7	PETERSON KELSEY & MITCHELL A
SAVONA 3RD ADDITION		OUTLOT B	CITY OF LAKE ELMO
SAVONA 3RD ADDITION		OUTLOT C	CITY OF LAKE ELMO
SAVONA 3RD ADDITION		OUTLOT D	SAVONA TOWNHOMES HOMEOWNERS ASSOC
SAVONA 3RD ADDITION		OUTLOT E	SAVONA TOWNHOMES HOMEOWNERS ASSOC
SAVONA 3RD ADDITION		OUTLOT F	SAVONA TOWNHOMES HOMEOWNERS ASSOC
SAVONA 3RD ADDITION	8	1	US HOME CORPORATION
SAVONA 3RD ADDITION	7	1	SHANLEY ROBERT J & KRISTIN T
SAVONA 3RD ADDITION			LECHNER JACOB W & KRISTEN A BERTELSON
SAVONA 3RD ADDITION	1	2	LANG HARRY D & ROBIN S
SAVONA 3RD ADDITION	2	2	MARTIN BLAKE & KELLI
SAVONA 3RD ADDITION	3	2	ROTH BRITINI & RYAN
SAVONA 3RD ADDITION	4	2	GIDDINGS CHRISTOPHER J & NICOLE D
SAVONA 3RD ADDITION	5	2	HUHN TAM & BANG TRINH
SAVONA 3RD ADDITION	6	2	HALVERSON JESSICA R & MATTHEW A
SAVONA 3RD ADDITION	7	2	DAUGHERTY ERIC M & ANN E
SAVONA 3RD ADDITION	8	2	US HOME CORPORATION
SAVONA 3RD ADDITION	9	2	BERSIE JOAN L
SAVONA 3RD ADDITION	1	3	DEGAN TERRY L & JAMES R NEWMAN
SAVONA 3RD ADDITION	2	3	THOR MARC T & DIANE L
SAVONA 3RD ADDITION	3	3	BURNSVOLO DEAN & ROBBIN
SAVONA 3RD ADDITION	1	4	LEONARD RUSSELL F & JUDY A
SAVONA 3RD ADDITION	2	4	PATEL HARESH R & SWATI H
SAVONA 3RD ADDITION	3	4	DEEB CAROLYN A
SAVONA 3RD ADDITION	1	5	MALMQUIST NOAH & BRITTANY
SAVONA 3RD ADDITION	2	5	DENNING JENNIFER L
SAVONA 3RD ADDITION	3	5	BORDERS-ROBINSON ANGALA B & AARON ROBINSON
SAVONA 3RD ADDITION	4	5	ARNT JODY

SAVONA 3RD ADDITION	2	6	YOSS JEFFREY R
SAVONA 3RD ADDITION	1	6	MILES MITCH & DREW
SAVONA 3RD ADDITION	3	6	OMALLEY SHEENA C & JASON L SPORTELL
SAVONA 3RD ADDITION	4	6	FRITZE KRISTEN & JOHN
SAVONA 3RD ADDITION	1	7	EFFIOM EMILIA B
SAVONA 3RD ADDITION	2	7	MEIERHOFF ROBERT
SAVONA 3RD ADDITION	3	7	MOROSKI JEFFERY W & SUSAN L
SAVONA 3RD ADDITION	4	7	THEIS RICHARD J & DIANE A
SAVONA 2ND ADDITION		OUTLET E	SAVONA NEIGHBORHOOD ASSOCIATION
SAVONA 2ND ADDITION	4	5	PICKEL KYLIE & JAMIE L
SAVONA 2ND ADDITION	5	5	NETO URBANO N S & ANA B M SANTIAGO
SAVONA 2ND ADDITION	4	4	KOBE MICHAEL W
SAVONA 2ND ADDITION	5	6	HAMMERLUND MICHAEL T & LYNN M
SAVONA 2ND ADDITION	6	6	FAM MARIAM V & DAVID
SAVONA 2ND ADDITION	7	6	BATTAH ANISA A ETAL
SAVONA 2ND ADDITION	8	6	WILLET MITCHELL S & LAUREN L
SAVONA		OUTLET C	SAVONA NEIGHBORHOOD ASSOCIATION
SAVONA		OUTLET E	SAVONA NEIGHBORHOOD ASSOCIATION
SAVONA		OUTLET G	CITY OF LAKE ELMO
SAVONA	6	2	NADEN NICHOLAS & MARY B NEUMAN
SAVONA	7	2	NGUYEN TOMMY T & ANTONELLA D POPTOLECAN-NGUYEN
SAVONA	8	2	RISTVEDT PAUL A & KATIE L
SAVONA	9	2	TAGUE MICHAEL J & MICHELLE L
SAVONA	1	3	MAJESI MATTHEW T & KATHERINE A
SAVONA	2	3	AYALEW TESSIT Z
SAVONA	3	3	BETTEN BRADLEY J
SAVONA	4	3	DAHLMAN DAN & JOOY
SAVONA	5	3	SIMON JESSICA J & JOHN W
SAVONA	6	3	ESHELMAN DANIEL S & KEISEY J
SAVONA	7	3	RANGEL JUSTIN L & KATHLEEN E
SAVONA	1	6	EVERS MATTHEW J & ANNE C
SAVONA	2	6	KOWALSKI MICHAEL A & KATERYNA R



ALLIANT
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www.alliant-inc.com



BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
EXISTING CONDITIONS SURVEY (SHEET 1 OF 2 SHEETS)

I hereby certify that this survey,
plan, or report was prepared by
me or under my direct supervision
and that I am a duly Licensed
Land Surveyor under the laws of
the state of Minnesota.

DENNIS B. OLMSTEAD, LS	
1-25-19	18425
Date	License No.

[illegible]

CHECKED: PG, DBO
DRAWN: DPE
PROJECT NO: 218-0165



EXISTING CONDITIONS SURVEY (SHEET 2 OF 2 SHEETS)

BENTLEY VILLAGE

LAKE ELMO, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

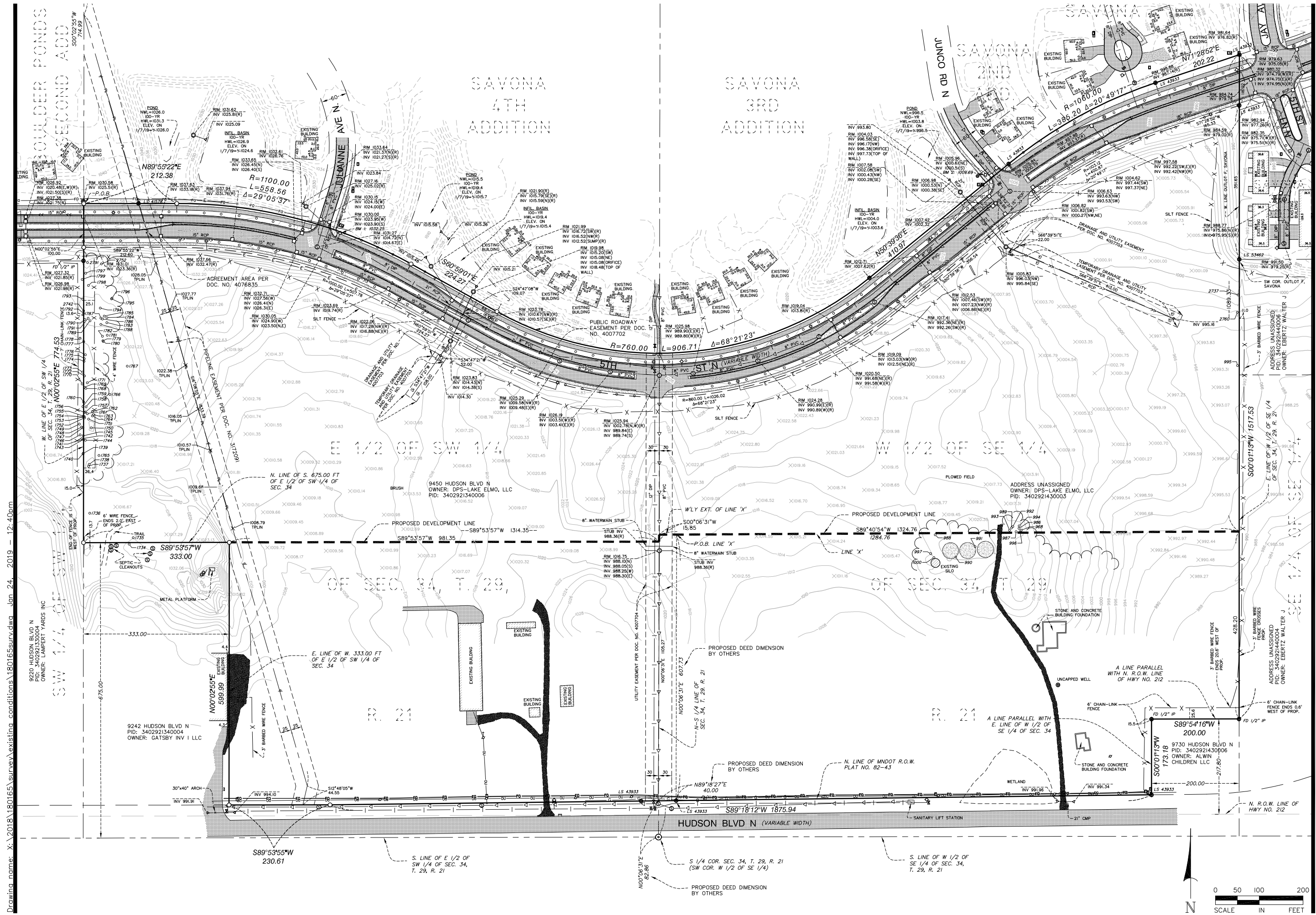
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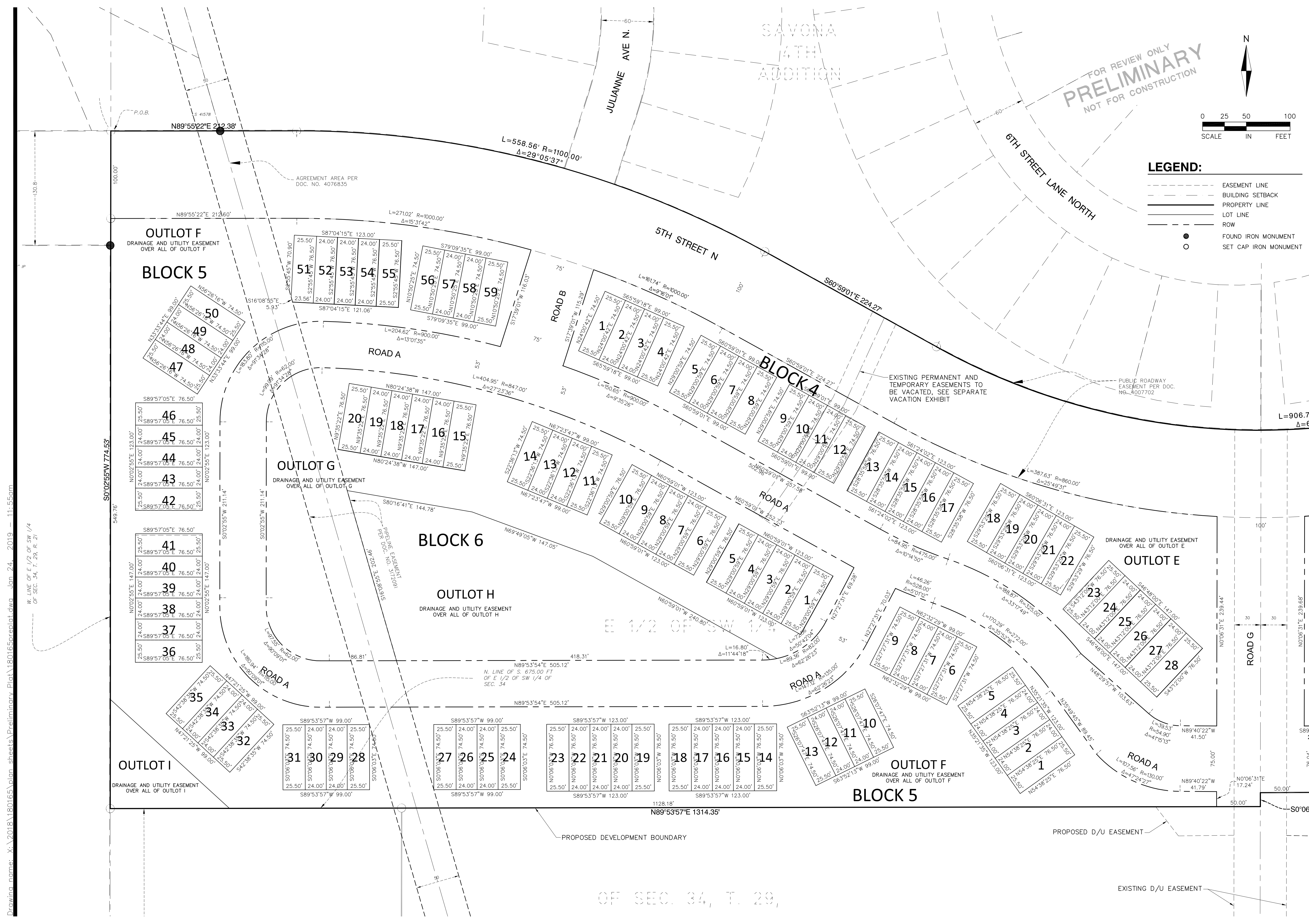

DENNIS B. OLMSTEAD, LS
1-25-19 18425
Date License No.

QUALITY ASSURANCE/CONTROL

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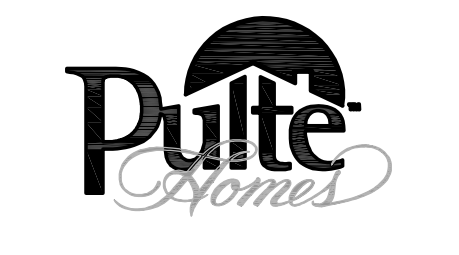
PROJECT TEAM DATA
 CHECKED: PG, DBO
 DRAWN: DPE
 PROJECT NO: 218-0165







- - - - - EASEMENT LINE
 - . - . - . BUILDING SETBACK
 _____ PROPERTY LINE
 _____ LOT LINE
 _____ ROW
 ● FOUND IRON MONUMENT
 ○ SET CAP IRON MONUMENT



BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT
PRELIMINARY PLAT

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA

MARK RAUSCH, PE
1-25-19 43480
Date License No.

QUALITY ASSURANCE/CONTROL

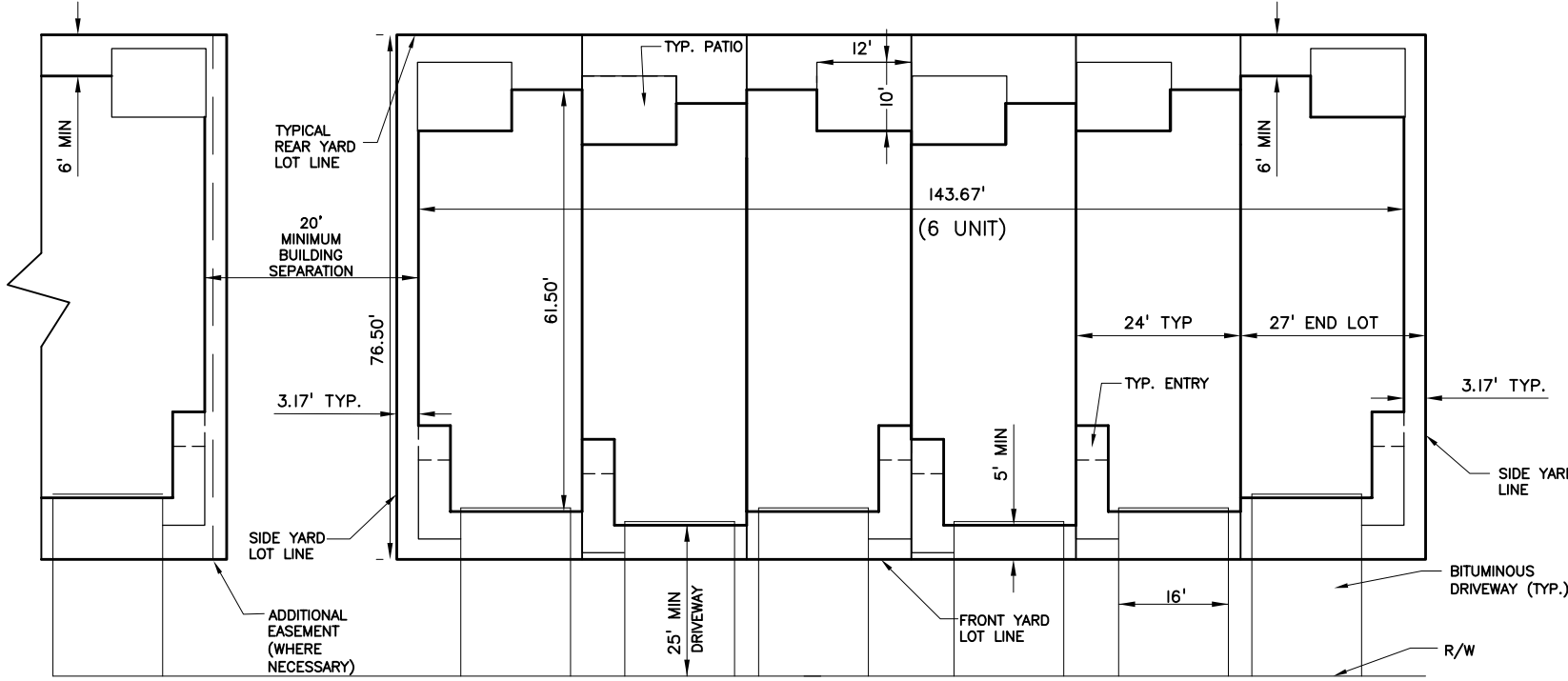
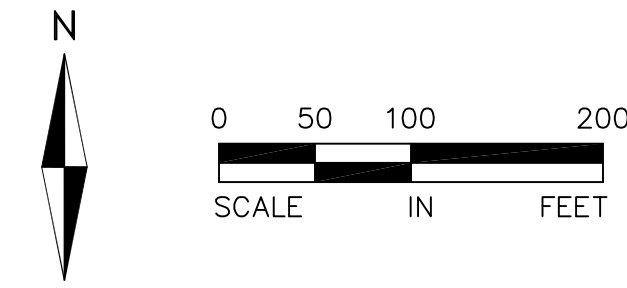
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DRAWN:	SIL
PROJECT NO:	218-0165

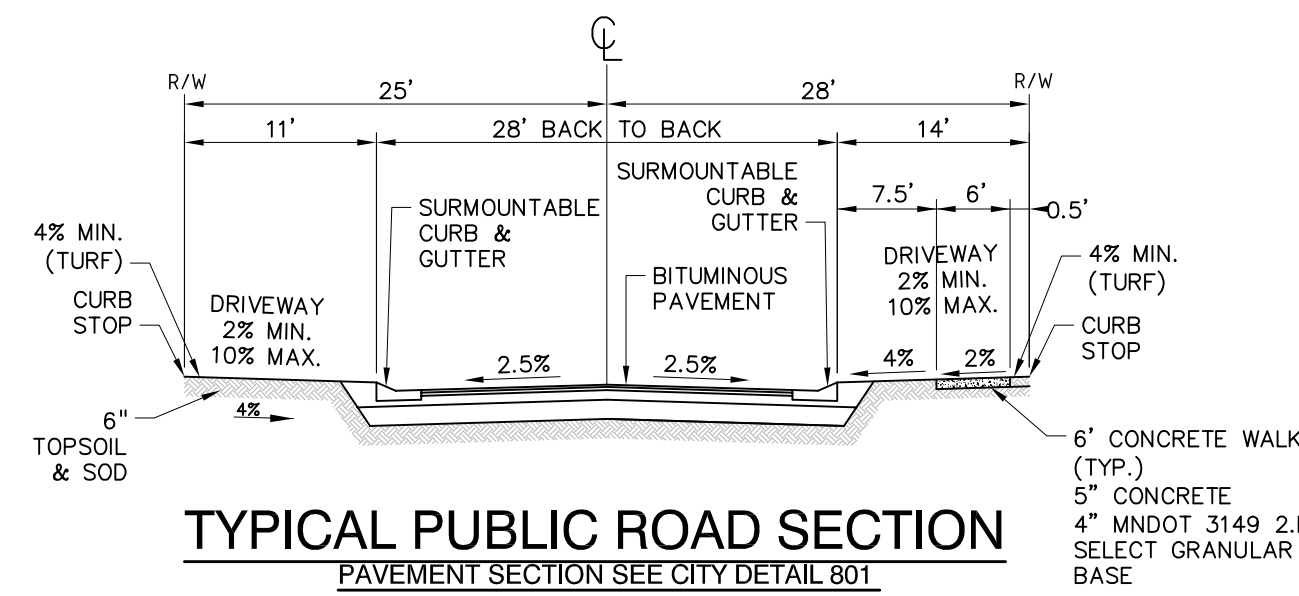
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LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- RETAINING WALL
- MAINTENANCE ACCESS



TYPICAL TOWNHOME LOT DETAIL

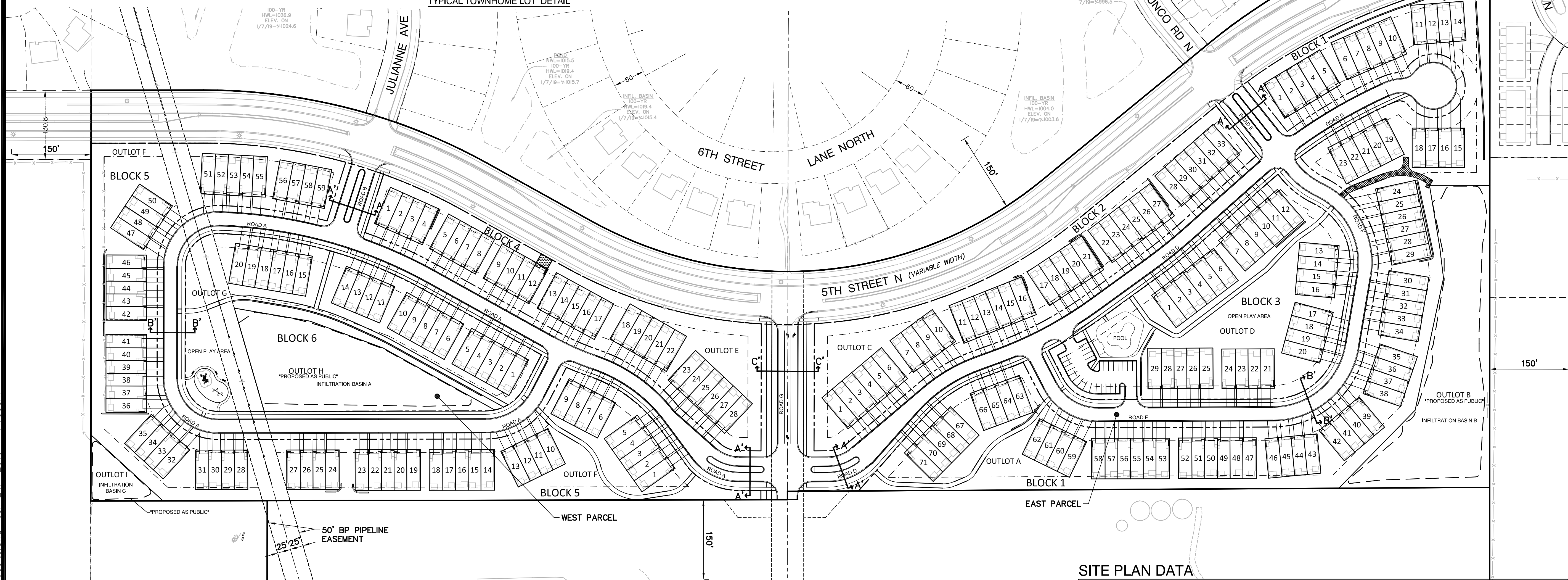


TYPICAL PUBLIC ROAD SECTION

PAVEMENT SECTION SEE CITY DETAIL 801

INTERNAL STREETS
SECTION B-B'

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PRELIMINARY
NOT FOR CONSTRUCTION



STANDARD PLAN NOTES
SIDEWALKS AND TRAILS

MARCH 2017

CITY OF LAKE ELMO

STANDARD PLAN NOTES
SIGNING/PAVEMENT MARKINGS/LIGHTING PLANS

MARCH 2017

CITY OF LAKE ELMO

TYPICAL LOCAL RESIDENTIAL STREET SECTION
(MINIMUM 7-TON DESIGN)

MARCH 2017

CITY OF LAKE ELMO

MEDIAN ROAD SECTION
PAVEMENT SECTION SEE CITY DETAIL 801
SECTION A-A'

COLLECTOR ROAD SECTION
"ROAD G" - SECTION C-C'

COLLECTOR PAVEMENT SECTION

BENTLEY VILLAGE		AREA DATA	
INCLUDED PID'S:	3402921340006 = DPS-LAKE ELMO LLC (PARTIAL) 3402921430003 = DPS-LAKE ELMO LLC (PARTIAL)	GROSS DEVELOPMENT AREA	1,811,430 SF / 41.58 ACRES
BENTLEY VILLAGE LAND USE AND ZONING:		EAST	971,593 SF / 22.30 ACRES
EXISTING ZONING:	R2-PUD - ONE- AND TWO-FAMILY	WEST	839,837 SF / 19.28 ACRES
RESIDENTIAL		WETLAND	NONE
PROPOSED ZONING:	MDR - MULTI-FAMILY BUILDING DISTRICT	5TH ST. R/W DEDICATION	294,126 SF / 6.75 ACRES
EXISTING LAND USE:	URBAN MEDIUM DENSITY	COLLECTOR ROAD R/W DEDICATION (ROAD G)	32,278 SF / 0.74 ACRES
PROPOSED LAND USE:	URBAN MEDIUM DENSITY	TOTAL LOTS PROPOSED	240
PROPOSED SETBACKS:		EAST	(133)
FRONT:	25 FT	WEST	(107)
REAR:	25 FT	TOTAL DEVELOPABLE AREA	1,485,026 SF / 34.09 AC
CORNER SIDE (R/W):	15 FT	TOTAL DEVELOPABLE IMPERVIOUS AREA	739,433 SF / 16.98 AC (49.79%)
SIDE INTERNAL (MINIMUM BUILDING SEPARATION)	20 FT	PROVIDED PARKING:	
MINIMUM OPEN SPACE PER UNIT	500 SF	PRIVATE DRIVEWAY (2/HOUSE)	480
MINIMUM OPEN SPACE PROVIDED	557 SF	PRIVATE GARAGE (2/HOUSE)	480
		PUBLIC STREET (22' LENGTH)	117
		AMENITY AREA STALLS (9'X20')	28
		TOTAL STALLS	1105

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Pulte
Homes

BENTLEY VILLAGE
LAKE ELMO, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - OVERALL

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA

MARK RAUSCH, PE
Date 1-25-19 License No. 43480

QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
1-25-19	CITY SUBMITTAL

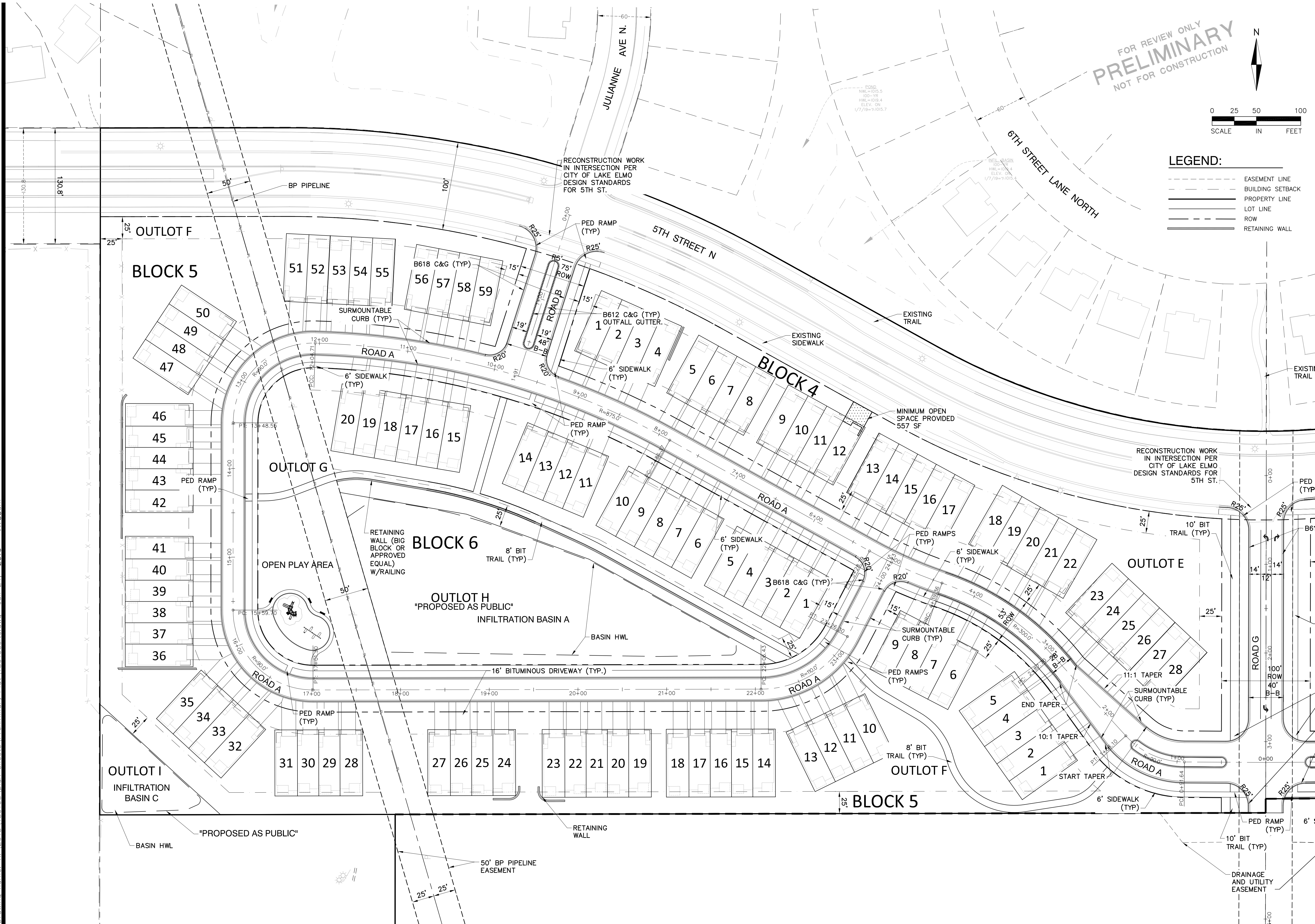
PROJECT TEAM DATA

DESIGNED:	MPR
DRAWN:	SIL
PROJECT NO:	218-0165

7

SHEET 7 of 33

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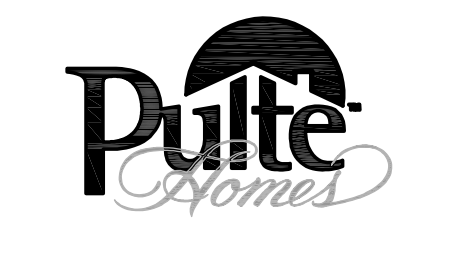
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SCALE IN FEET

LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- RETAINING WALL

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BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
SITE PLAN - WEST PARCEL

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MARK RAUSCH, PE
1-25-19 43480
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1-25-19	CITY SUBMITTAL

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PROJECT NO:	218-0165

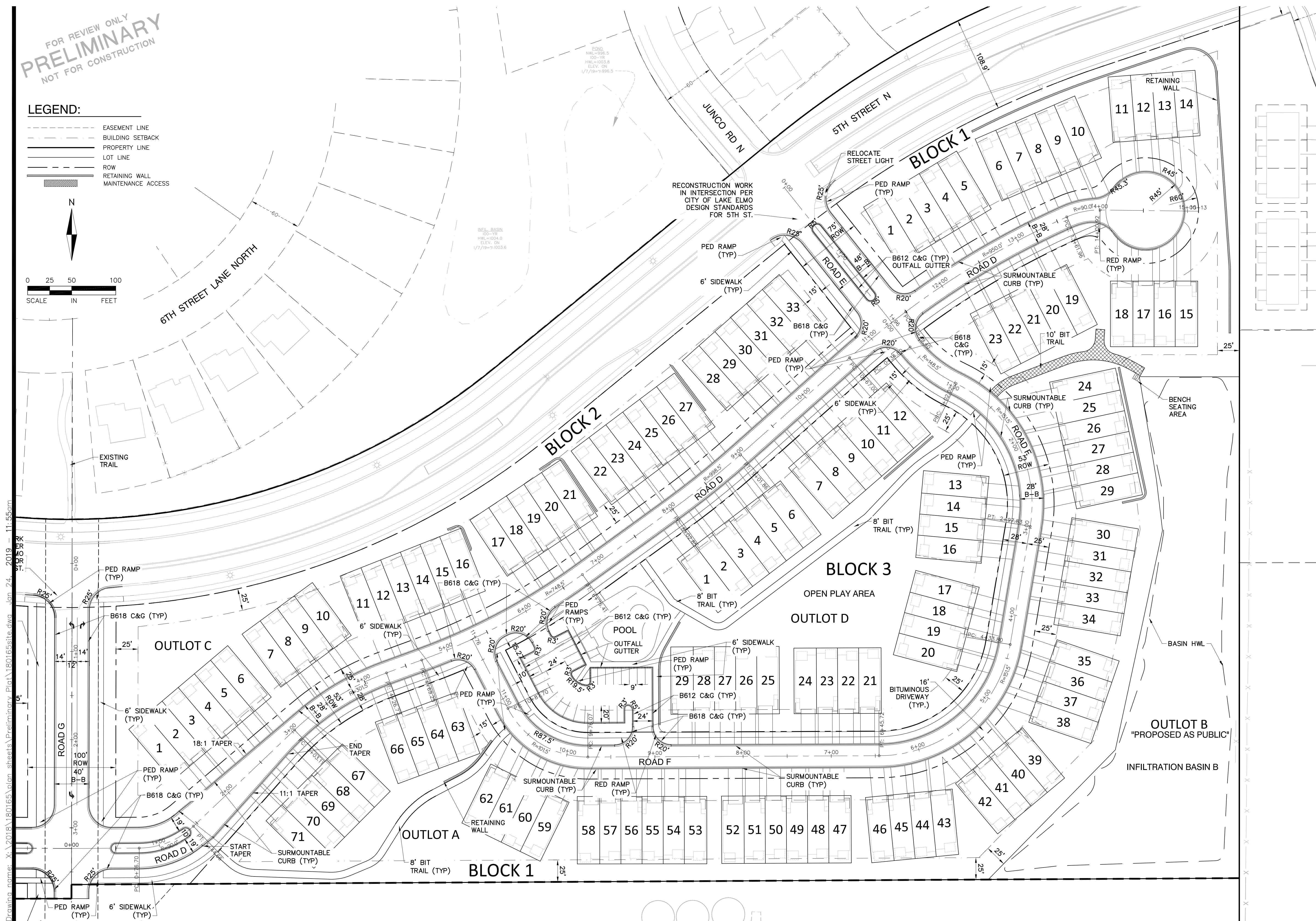
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LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- RETAINING WALL
- MAINTENANCE ACCESS



0 25 50 100
SCALE IN FEET



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BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
SITE PLAN - EAST PARCEL

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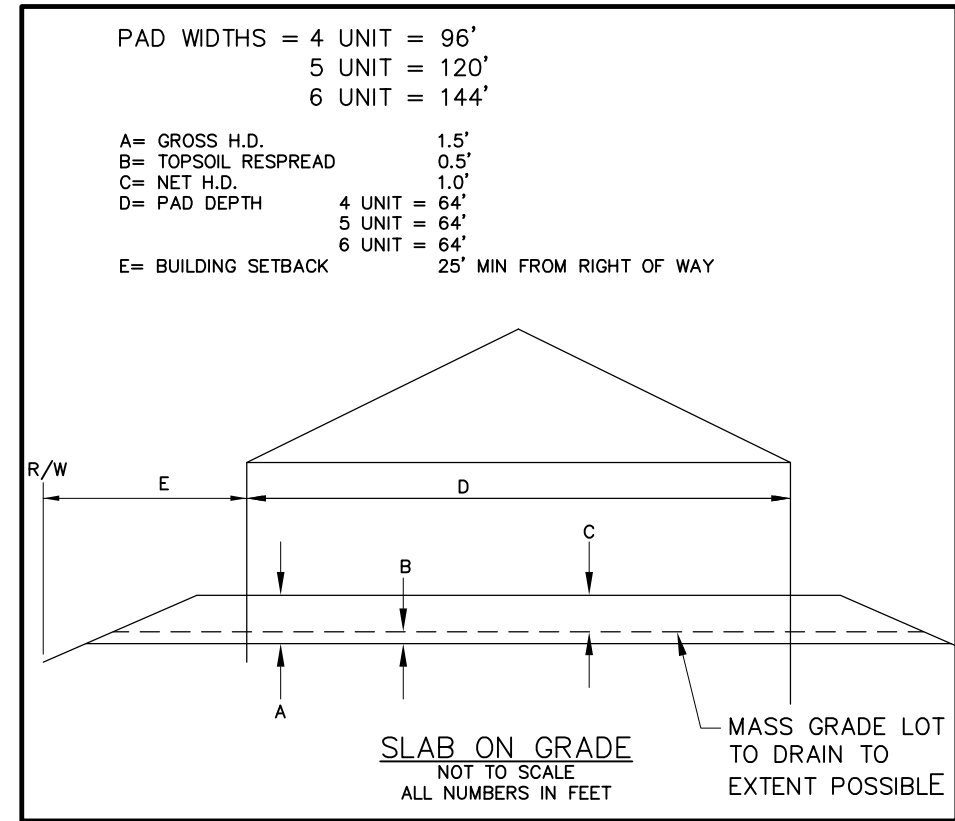
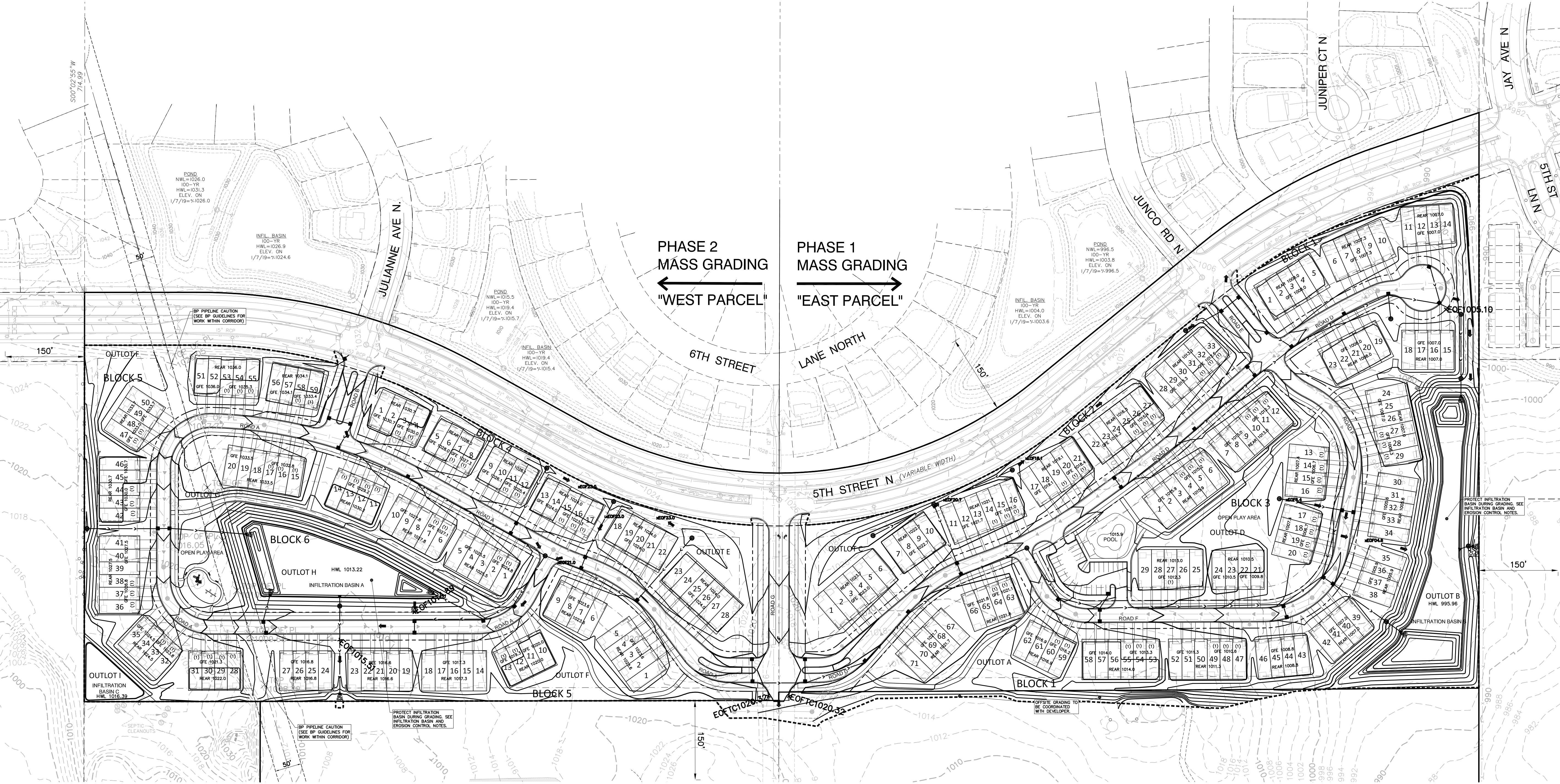
Mark Rausch
MARK RAUSCH, PE
1-25-19 43480
Date License No.

QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
1-25-19	CITY SUBMITTAL

PROJECT TEAM DATA
DESIGNED: MPR
DRAWN: SIL
PROJECT NO: 218-0165

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HOLD DOWN DETAILS TOWNHOMES

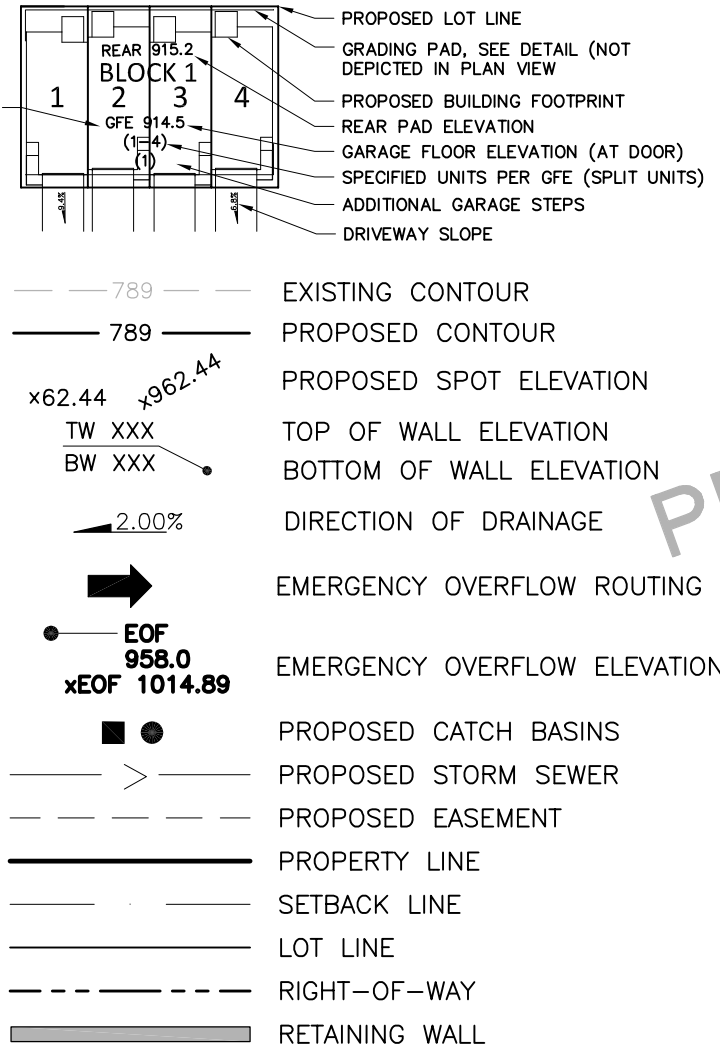
INFILTRATION BASIN NOTES:

1. ALL TEMPORARY EROSION CONTROL DEVICES MUST BE INSTALLED PRIOR TO INSTALLATION/CONSTRUCTION OF INFILTRATION BASIN.
2. ALL STORMWATER RUNOFF SHALL BE DIVERTED AWAY FROM INFILTRATION AREA TO TEMPORARY SEDIMENT POND OR FOREBAY UNTIL BASIN IS COMPLETELY GRADED AND PLANTED.
3. CONSTRUCTION OF BASIN SHALL BE SUSPENDED DURING PERIODS OF RAINFALL OR SNOWMELT. CONSTRUCTION SHALL REMAIN SUSPENDED IF PONDED WATER IS PRESENT OR IF RESIDUAL SOIL MOISTURE CONTRIBUTES SIGNIFICANTLY TO THE POTENTIAL FOR COMPACTION.
4. COMPACTION AND SMEARING OF THE SOILS BENEATH THE FLOOR AND SIDE SLOPES OF THE INFILTRATION BASIN AREA, SHALL BE MINIMIZED. DURING SITE DEVELOPMENT, THE AREA DEDICATED TO THE INFILTRATION BASIN SHALL BE CORDONED OFF TO PREVENT ACCESS BY HEAVY EQUIPMENT. ACCEPTABLE EQUIPMENT FOR CONSTRUCTING THE BASIN INCLUDES EXCAVATION HOES, LIGHT EQUIPMENT WITH TURF TYPE TIRES, MARSH EQUIPMENT OR WIDE TRACK LOADERS.
5. IF COMPACTION OCCURS AT THE BASE OF THE BASIN, THE SOIL SHALL BE REFRACUTURED TO A DEPTH AT LEAST 36". IF SMEARING OCCURS, THE SMEARED AREAS OF THE INTERFACE SHALL BE CORRECTED BY RAKING OR ROTO-TILLING.
6. CONTRACTOR TO DIG TEST PITS DURING TIME OF CONSTRUCTION TO EVALUATE ANY POSSIBLE NEEDS FOR SOIL CORRECTIONS. ENGINEER TO REVIEW TEST PITS TO DETERMINE THE NEED FOR AN UNDERDRAIN FOR EITHER TEMPORARY TURF ESTABLISHMENT, OR TO RELIEVE SEASONALLY HIGH WATER CONDITIONS.
7. INFILTRATION BASINS MUST MEET INFILTRATION RATES OF 0.2 IN/HR FOR BASIN A AND 0.8 IN/HR FOR BASIN B

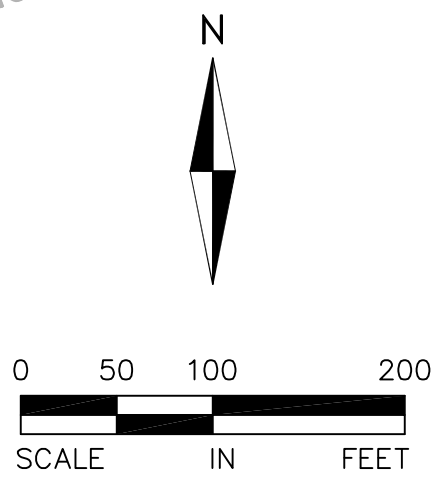
GRADING AND DRAINAGE NOTES:

1. ALL FINISHED GRADES SHALL SLOPE AWAY FROM PROPOSED BUILDINGS AT MINIMUM GRADE OF 2.0%. ALL SWALES SHALL HAVE A MINIMUM SLOPE OF 2.0%.
2. THE CONTRACTOR SHALL KEEP THE ADJACENT ROADWAYS FREE OF DEBRIS AND PREVENT THE OFF-SITE TRACKING OF SOIL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND WATERSHED.
3. NOTIFY GOPHER STATE ONE CALL, AT (800) 252-1166, 48 HOURS PRIOR TO START OF CONSTRUCTION.
4. ALL IMPROVEMENTS TO CONFORM WITH CITY OF LAKE ELMO CONSTRUCTION STANDARDS SPECIFICATION, LATEST EDITION.
5. ROCK CONSTRUCTION ENTRANCES SHALL BE PROVIDED AT ALL CONSTRUCTION ACCESS POINTS.
6. REFER TO GEOTECHNICAL REPORT AND PROJECT MANUAL, FOR SOIL CORRECTION REQUIREMENTS AND TESTING REQUIREMENTS.
7. STRIP TOPSOIL PRIOR TO ANY CONSTRUCTION. REUSE STOCKPILE ON SITE. STOCKPILE PERIMETERS MUST BE PROTECTED WITH SILT FENCE.
8. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
9. IMMEDIATELY FOLLOWING GRADING OF (3:1 OR GREATER) SIDE SLOPES AND DRAINAGE SWALES, WOOD FIBER BLANKET OR OTHER APPROVED SOIL STABILIZING METHOD (APPROVED BY ENGINEER) SHALL BE APPLIED OVER APPROVED SEED MIXTURE AND A MINIMUM OF 6" TOPSOIL.
10. THE GENERAL CONTRACTOR MUST DISCUSS DEWATERING PLANS WITH ALL SUBCONTRACTORS TO VERIFY NPDES REQUIREMENTS. IF DEWATERING IS REQUIRED DURING CONSTRUCTION, CONTRACTOR SHOULD CONSULT WITH EROSION CONTROL INSPECTOR AND ENGINEER TO DETERMINE APPROPRIATE METHOD.
11. REFER TO STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ALL EROSION AND SEDIMENT CONTROL DEVICE LOCATION, DESCRIPTIONS, NOTES AND DETAILS INCLUDING CONCRETE WASHOUT STATION INSTRUCTIONS.

GRADING LEGEND:



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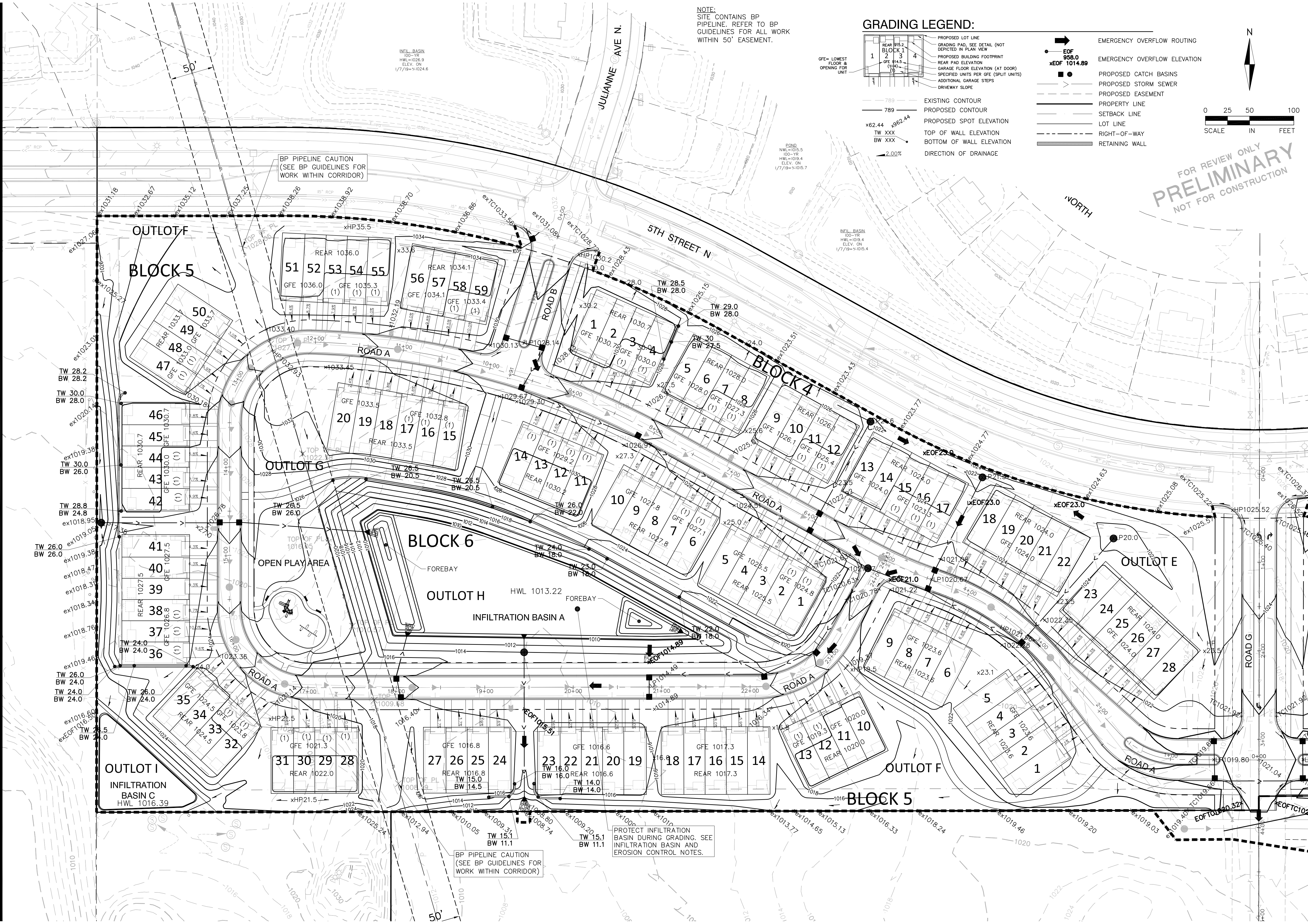
MARK RAUSCH, PE
1-25-19 43480
Date License No.

QUALITY ASSURANCE/CONTROL

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DATE	ISSUE
1-25-19	CITY SUBMITTAL

PROJECT TEAM DATA
DESIGNED: MPR
DRAWN: SIL
PROJECT NO: 218-0165

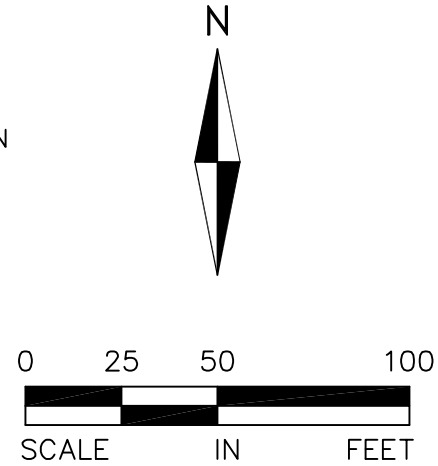
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NOTE:
SITE CONTAINS BP
PIPELINE. REFER TO BP
GUIDELINES FOR ALL WORK
WITHIN 50' EASEMENT.

GRADING LEGEND:

- PROPOSED LOT LINE
- GRADING PAD, SEE DETAIL (NOT DEPICTED IN PLAN VIEW)
- PROPOSED BUILDING FOOTPRINT
- REAR PAD ELEVATION
- GARAGE FLOOR ELEVATION (AT DOOR)
- SPECIFIED UNITS PER GFE (SPLIT UNITS)
- ADDITIONAL GARAGE STEPS
- DRIVEWAY SLOPE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- TOP OF WALL ELEVATION
- BOTTOM OF WALL ELEVATION
- DIRECTION OF DRAINAGE
- EMERGENCY OVERFLOW ROUTING
- EMERGENCY OVERFLOW ELEVATION
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPOSED EASEMENT
- PROPERTY LINE
- SETBACK LINE
- LOT LINE
- RIGHT-OF-WAY
- RETAINING WALL



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GRADING AND DRAINAGE PLAN - WEST PARCEL

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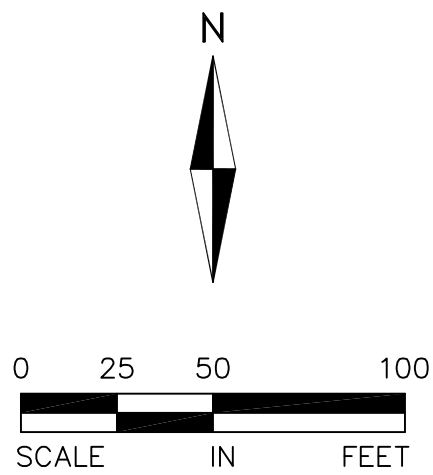
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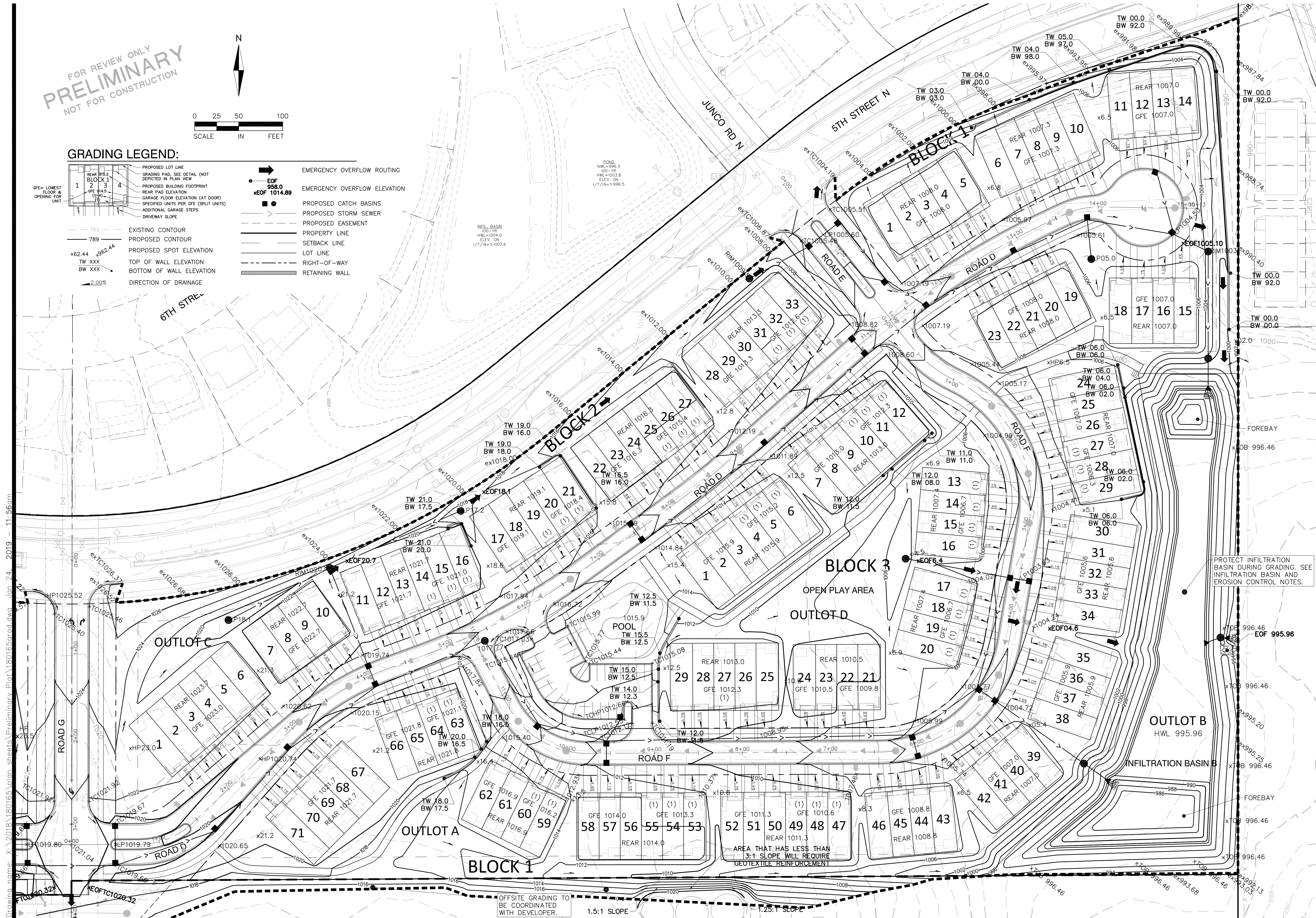
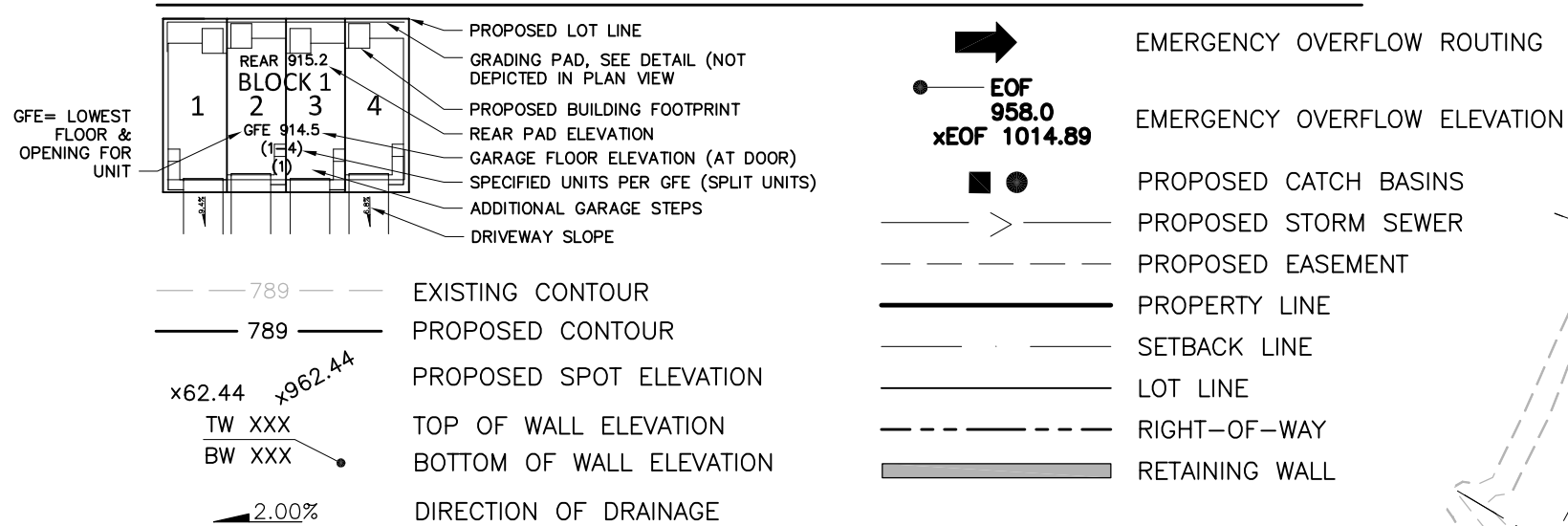
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BENTLEY VILLAGE

LAKE ELMO, MINNESOTA

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GRADING AND DRAINAGE PLAN - EAST PARCEL

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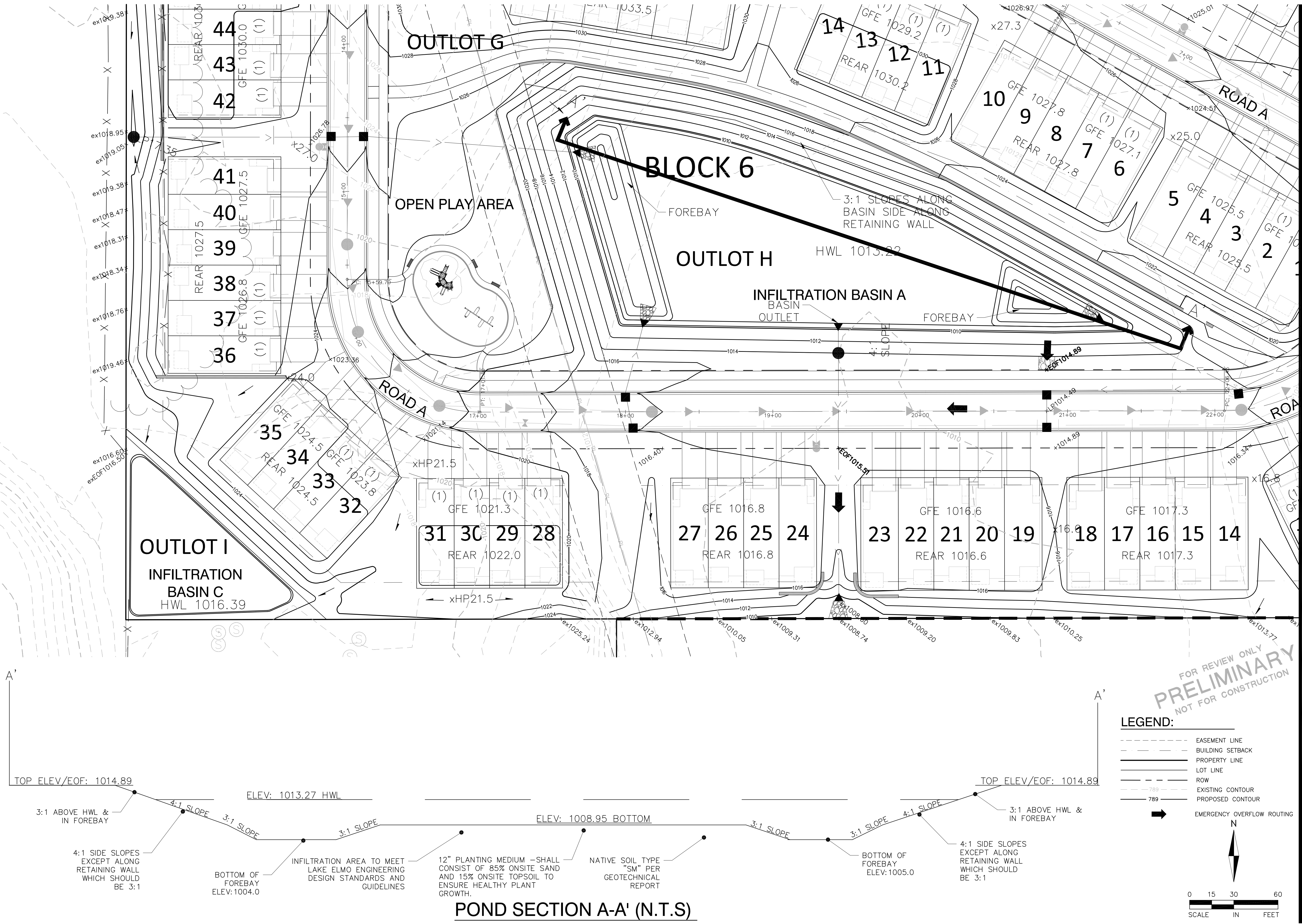
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DATE ISSUE
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PROJECT NO: 218-0165

12

SHEET 12 of 33

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POND DETAIL

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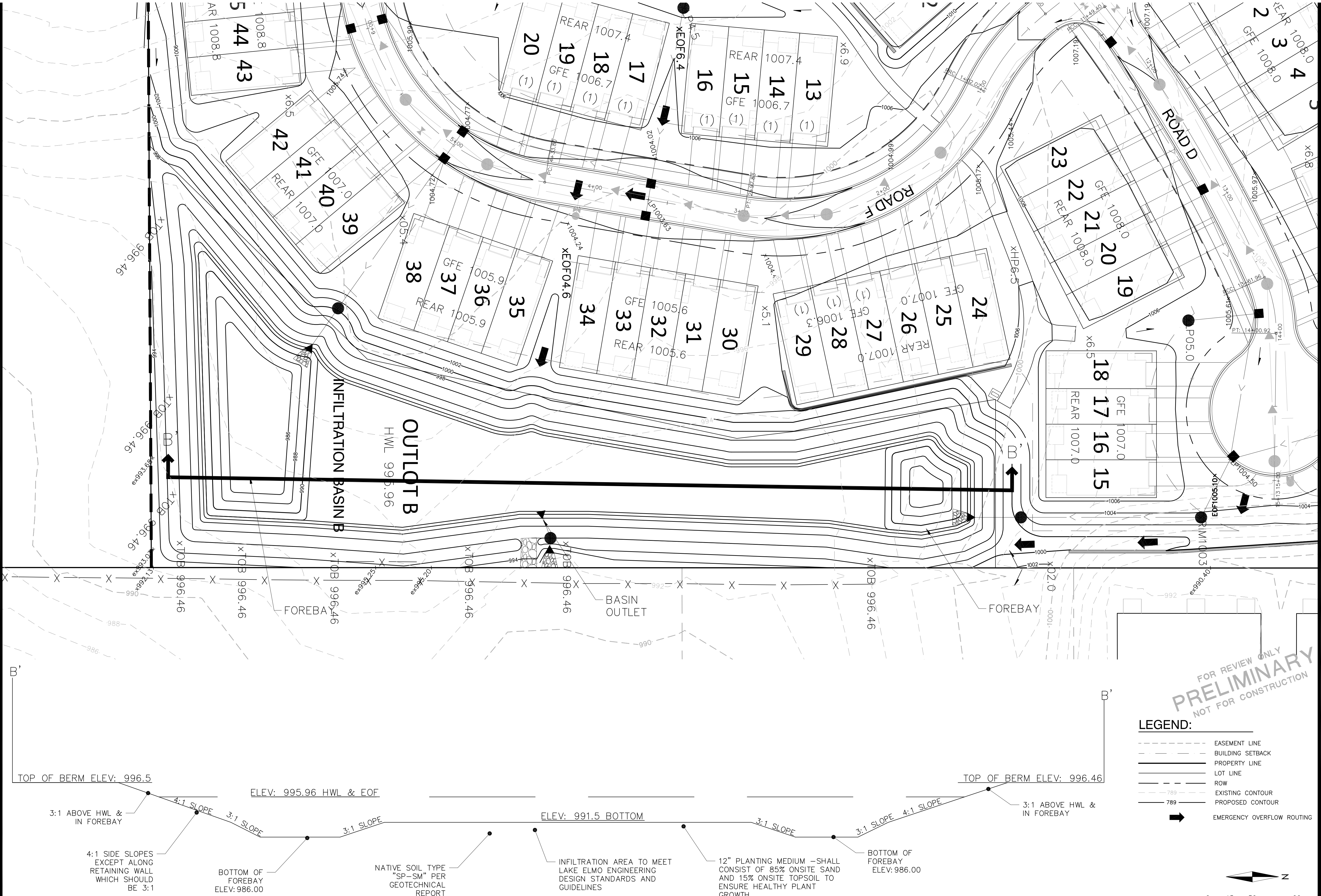
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DATE	ISSUE
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PROJECT TEAM DATA	
DESIGNED:	MPR
DRAWN:	SIL
PROJECT NO:	218-0165

13

SHEET 13 of 33

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INFILTRATION BASIN SECTION B-B' (N.T.S)

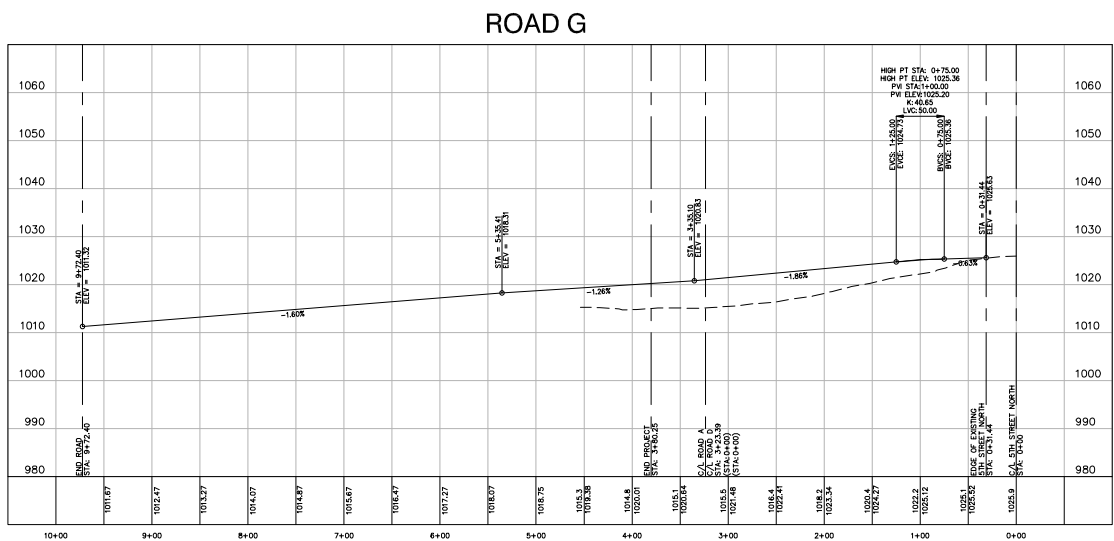
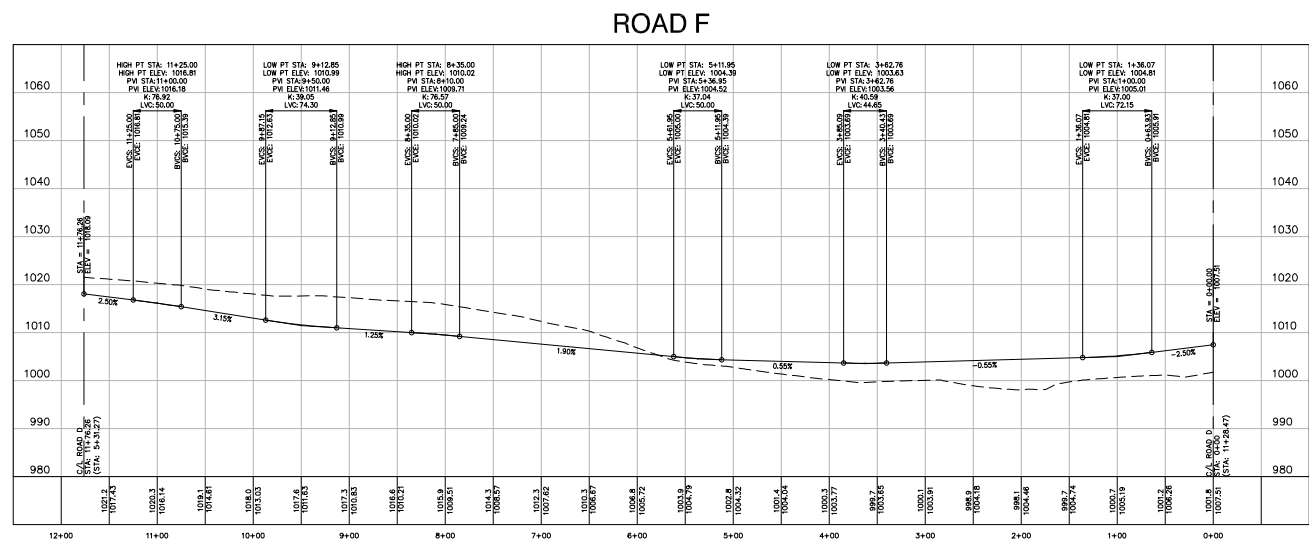
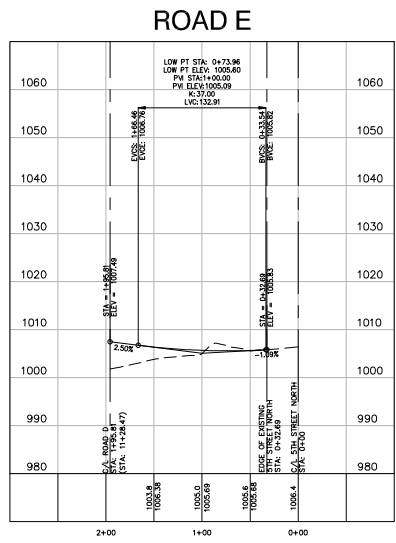
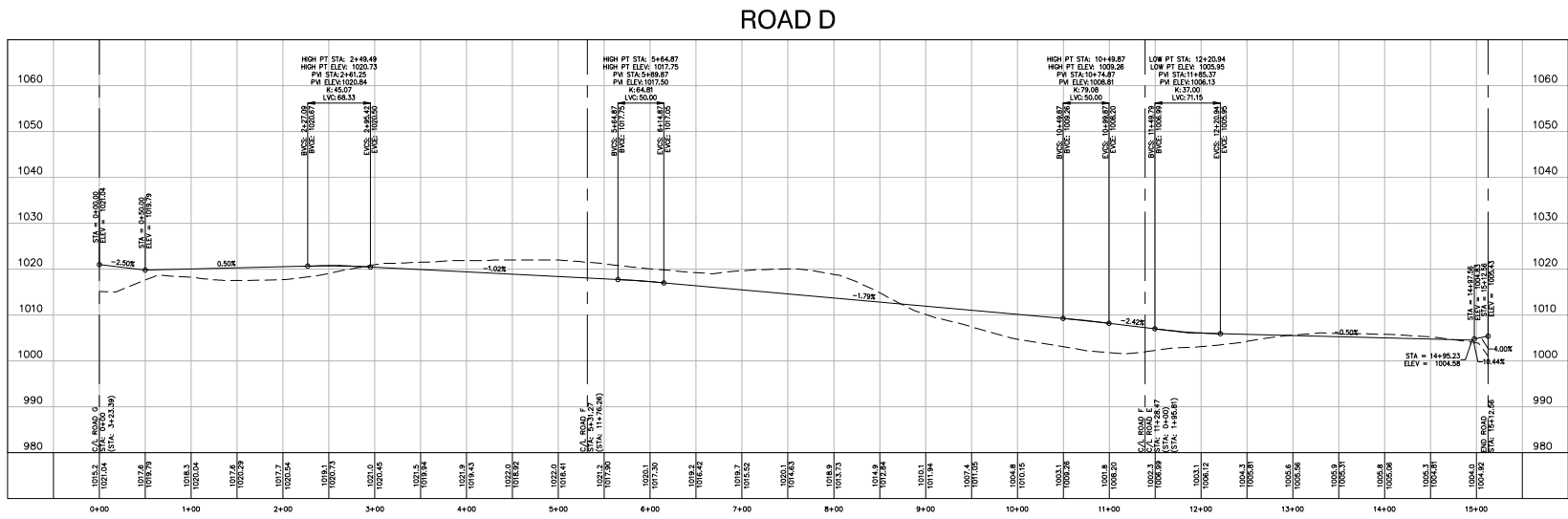
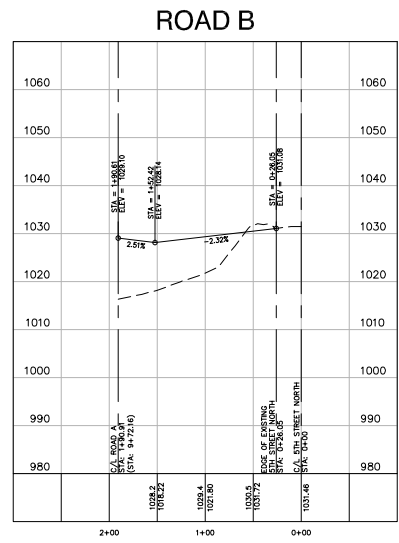
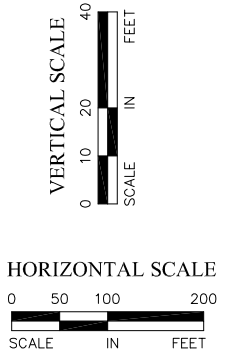
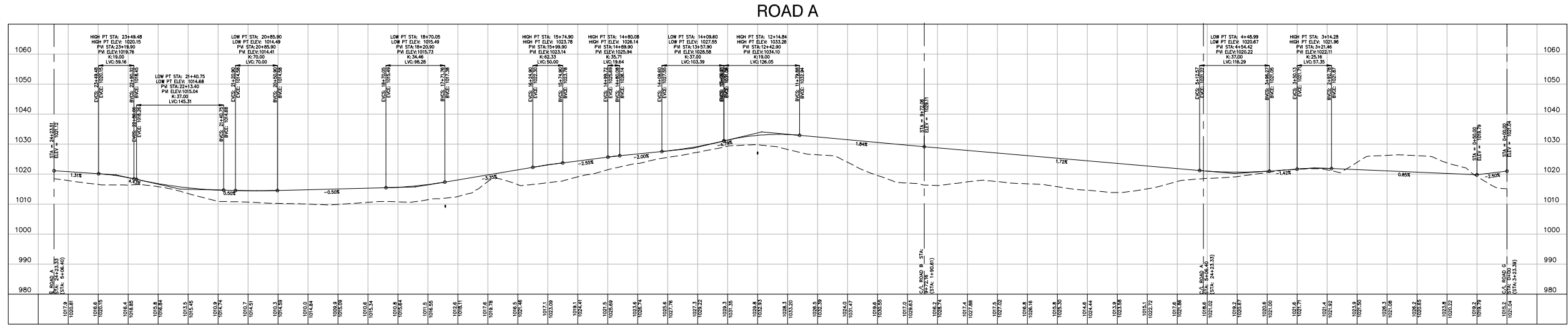
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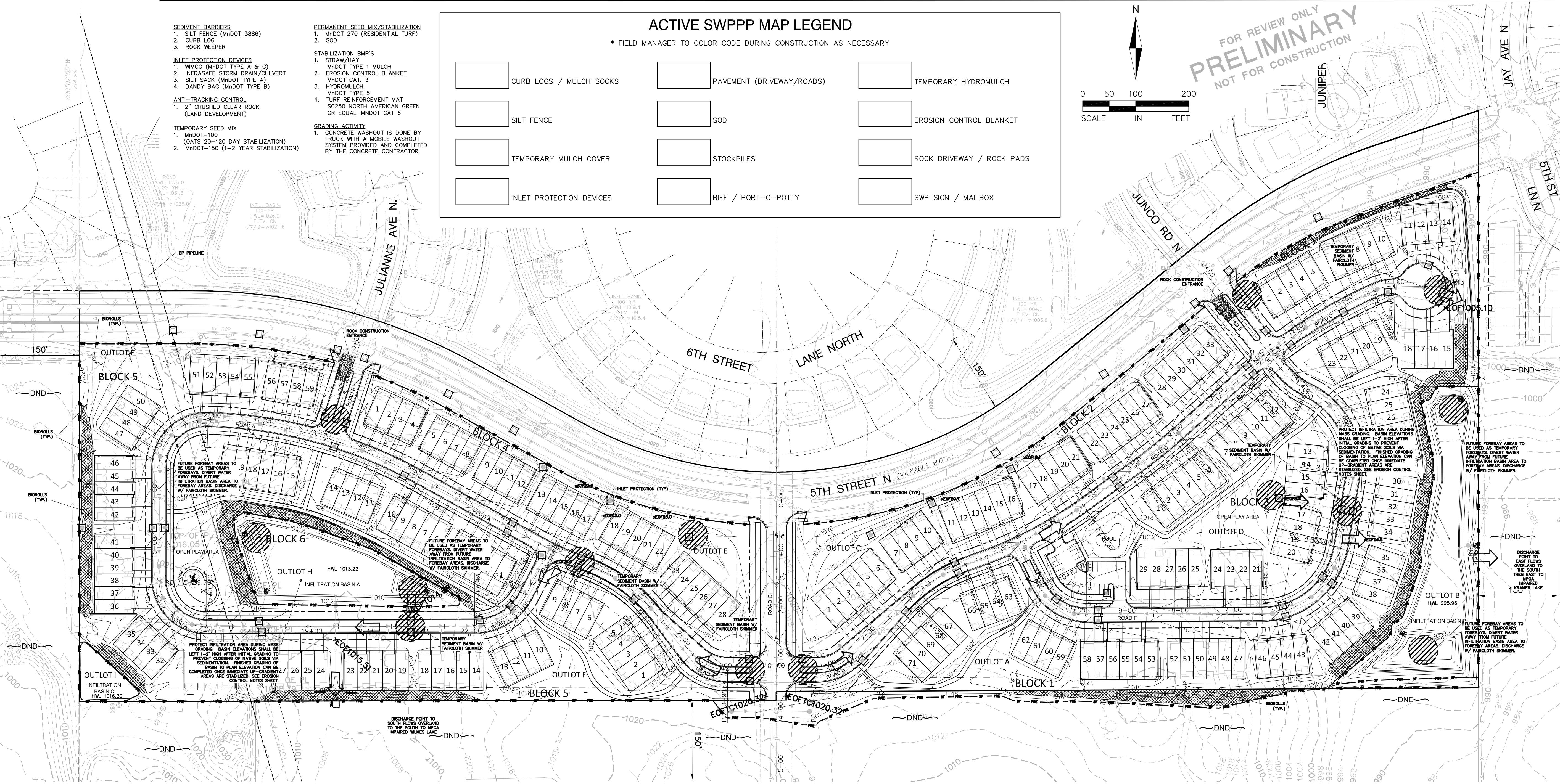
BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
GRADING PROFILES

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PROJECT NO:	218-0165	

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**SWPPP BMP QUANTITIES:
(PER PLAN)**

SILT FENCE	LF
INLET PROTECTION	EA
BIOROLL	EA
SEED/SOD POST GRADING AREA	AC

EROSION CONTROL

PULTE HOMES
7500 FLYING CLOUD DRIVE, SUITE 670
EDEN PRAIRIE, MN 55344
PH: 952-229-0723
CELL: 612-369-2694
CONTACT: CHAD ONSGARD
EM: chad.onsgard@pultegroup.com

NOTE:

- SEE SHEET 19 FOR ALL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

NOTE TO CONTRACTOR:

THE MASS GRADING CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ALL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs) AS SHOWN IN SWPPP (EXCEPT FOR POST GRADE BMPs NEEDED AFTER UTILITY CONSTRUCTION ACTIVITY). THE BMPs ARE TO BE INSTALLED AT A MINIMUM AS SHOWN IN THE PLAN. IF CONDITIONS ARISE, ADDITIONAL BMP SUPPLEMENTATION TO PREVENT SITE EROSION OR SEDIMENT TRANSPORT MAY BE NECESSARY. THE MASS GRADING CONTRACTOR IS RESPONSIBLE FOR ALL BMPs REQUIRED TO COMPLETE THE MASS GRADING ACTIVITIES AND SUBSEQUENT TEMPORARY SOIL STABILIZATION NECESSARY TO PREPARE SITE FOR STREET AND UTILITY CONSTRUCTION AND HOME BUILDING. AT THE COMPLETION OF MASS GRADING WORK AND SATISFACTORY SITE SOIL STABILIZATION, THE DEVELOPER AND MASS GRADING CONTRACTOR SHALL COORDINATE THE TRANSFER OF NPDES PERMIT RESPONSIBILITIES TO THE STREET AND UTILITY CONTRACTOR AND THE CITY.

THE STREET AND UTILITY CONTRACTOR AND CITY WILL THEN ASSUME THE RESPONSIBILITY TO PROVIDE INSPECTION AND MAINTENANCE OF ANY IN-PLACE BMPs AS WELL AS INSTALL THE ADDITIONAL BMPs REQUIRED IN THE STREET AND UTILITY CONSTRUCTION DOCUMENT SWPPP. UPON COMPLETION OF STREET AND UTILITY CONSTRUCTION, THE STREET AND UTILITY CONTRACTOR SHALL REMOVE ANY BMPs INSTALLED DURING THE STREET AND UTILITY PHASE THAT ARE NO LONGER REQUIRED AND COORDINATE THE TRANSFER OF NPDES PERMIT RESPONSIBILITIES BACK TO THE DEVELOPER OR TERMINATE THE PORTION OF THE NPDES PERMIT TRANSFERRED TO THE CITY AND THEIR CONTRACTOR.

CONSTRUCTION SEQUENCING:

MASS GRADING PHASE:

- INSTALL STABILIZED CONSTRUCTION ENTRANCES.
- PREPARE TEMPORARY PARKING AND STORAGE AREA.
- INSTALL THE PRE-GRADING SILT FENCES AND INLET PROTECTION BMPs ON THE SITE.
- CONSTRUCT ALL PRE-GRADING EROSION AND SEDIMENTATION CONTROL BMPs.
- COMPLETE MASS GRADING AND INSTALL TEMPORARY AND PERMANENT SEEDING AND PLANTING.
- CONSTRUCT POST-GRADING SILT FENCE ON THE SITE.

STREET & UTILITY PHASE:

- INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
- INSTALL RIP RAP AROUND OUTLET STRUCTURES.
- INSTALL INLET PROTECTION AROUND ALL STORM SEWER STRUCTURES.
- PREPARE SITE FOR PAVING.
- PAVE SITE.
- INSTALL INLET PROTECTION DEVICES.
- INSTALL POST STREET AND UTILITY SILT FENCE.
- INSTALL PRIVATE UTILITIES.
- REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED), IF REQUIRED BY THE CONTRACT

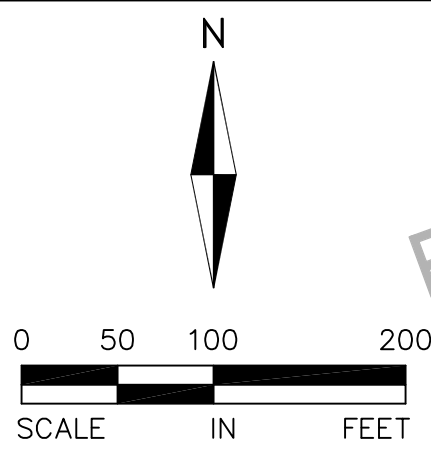
**IMPAIRED WATER REQUIREMENT
DURING CONSTRUCTION:**

- ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARY OR PERMANENTLY CEASED.
- TEMPORARY SEDIMENT BASIN REQUIREMENTS DESCRIBED IN PART III, B.1.5 MUST BE USED FOR COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH FIVE (5) OF MORE ACRES AT A TIME.

ACTIVE SWPPP MAP LEGEND

* FIELD MANAGER TO COLOR CODE DURING CONSTRUCTION AS NECESSARY

	CURB LOGS / MULCH SOCKS		PAVEMENT (DRIVEWAY/ROADS)		TEMPORARY HYDROMULCH
	SILT FENCE		SOD		EROSION CONTROL BLANKET
	TEMPORARY MULCH COVER		STOCKPILES		ROCK DRIVEWAY / ROCK PADS
	INLET PROTECTION DEVICES		BIFF / PORT-O-POTTY		SWP SIGN / MAILBOX



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BENTLEY VILLAGE

LAKE ELMO, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

EROSION AND SEDIMENT CONTROL PLAN - OVERALL

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Mark Paul

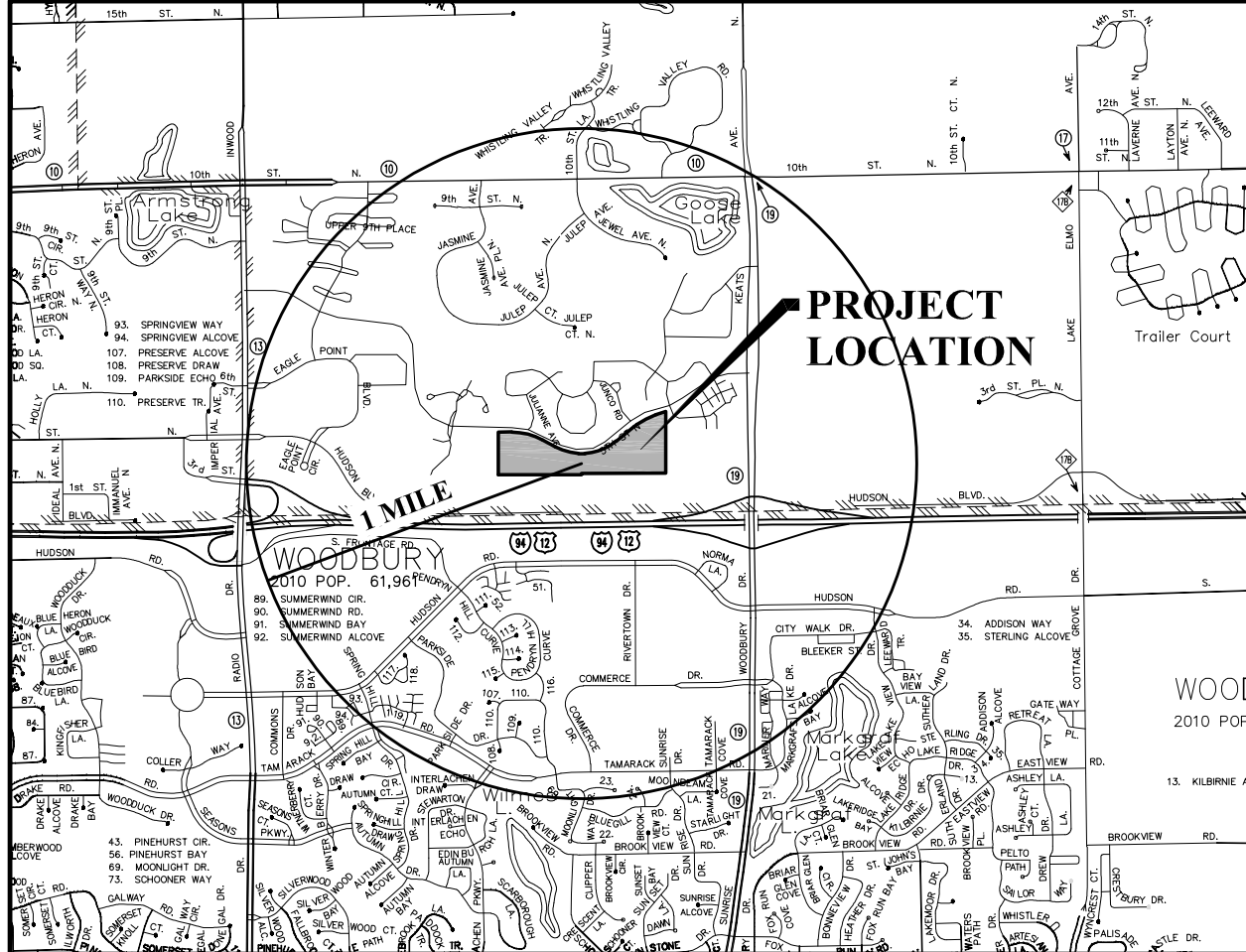
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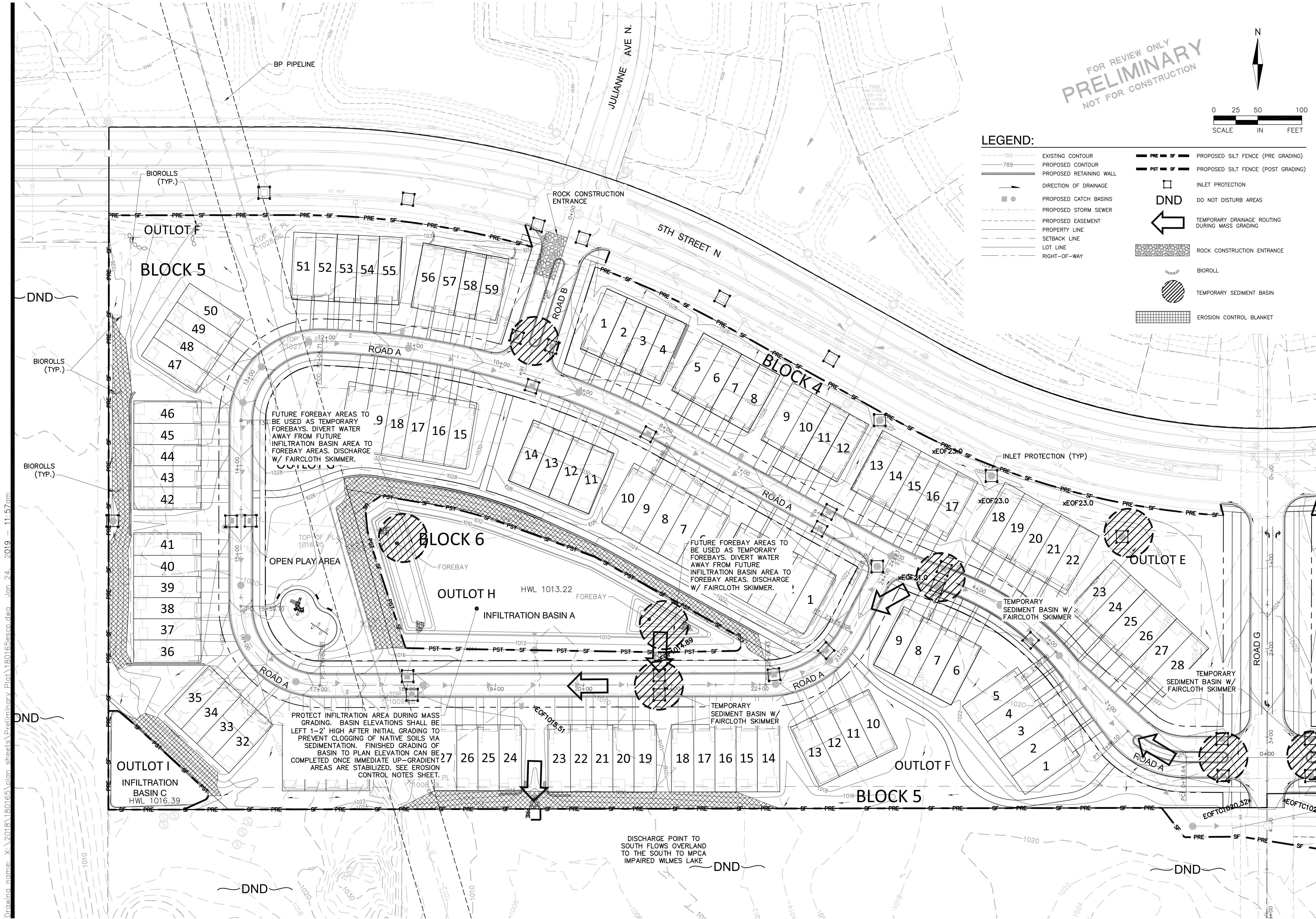
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DESIGNED: MPR
DRAWN: SIL
PROJECT NO: 218-0165

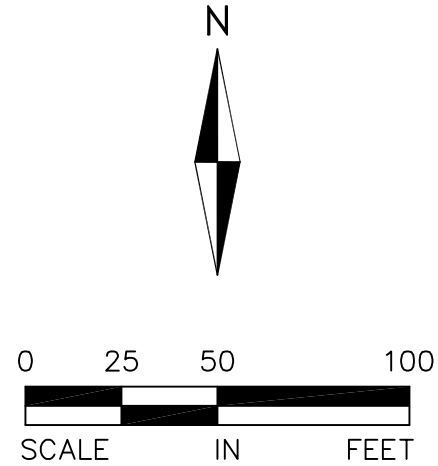


VICINITY MAP
SCALE: 1" = 3000'

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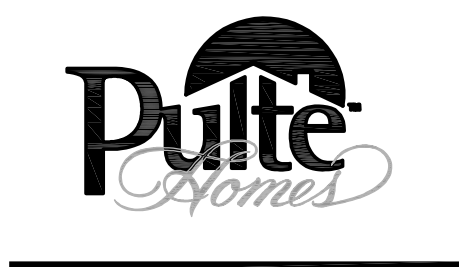


LEGEND:

- | | | | |
|-------------|-------------------------|--------------------|--|
| --- 789 --- | EXISTING CONTOUR | --- PRE --- SF --- | PROPOSED SILT FENCE (PRE GRADING) |
| --- 789 --- | PROPOSED CONTOUR | --- PST --- SF --- | PROPOSED SILT FENCE (POST GRADING) |
| --- | PROPOSED RETAINING WALL | □ | INLET PROTECTION |
| → | DIRECTION OF DRAINAGE | DND | DO NOT DISTURB AREAS |
| ● | PROPOSED CATCH BASINS | ← | TEMPORARY DRAINAGE ROUTING DURING MASS GRADING |
| --- | PROPOSED STORM SEWER | █ | ROCK CONSTRUCTION ENTRANCE |
| --- | PROPOSED EASEMENT | ○ | BIOROLL |
| --- | PROPERTY LINE | ⊗ | TEMPORARY SEDIMENT BASIN |
| --- | SETBACK LINE | ▨ | EROSION CONTROL BLANKET |
| --- | LOT LINE | | |
| --- | RIGHT-OF-WAY | | |

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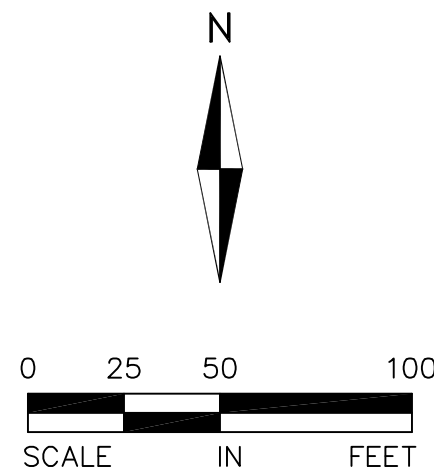
BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
EROSION AND SEDIMENT CONTROL PLAN - WEST PARCEL

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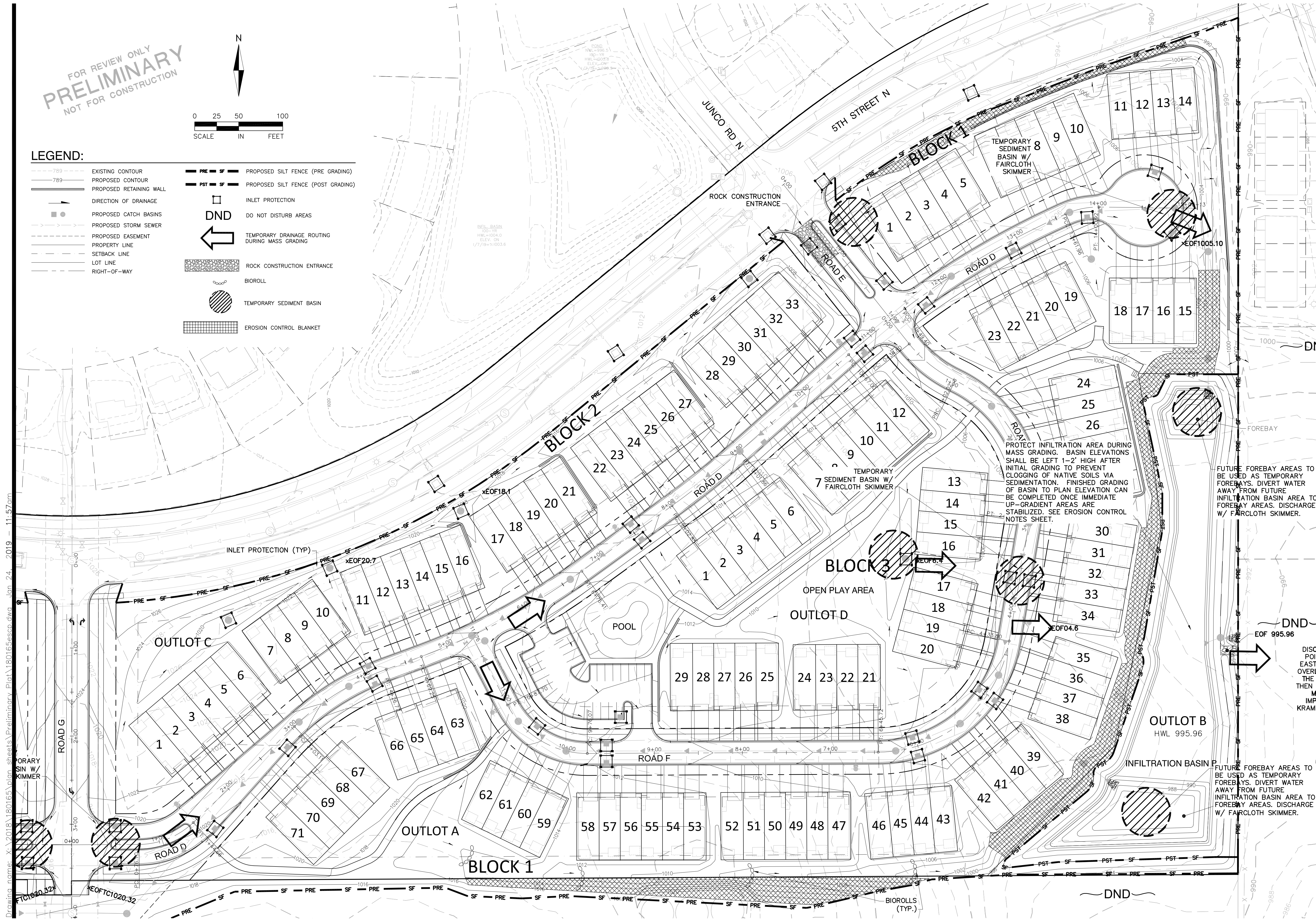
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DATE	ISSUE
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PROJECT TEAM DATA	
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DRAWN:	SIL
PROJECT NO:	218-0165

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LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED RETAINING WALL
- DIRECTION OF DRAINAGE
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPOSED EASEMENT
- PROPERTY LINE
- SETBACK LINE
- LOT LINE
- RIGHT-OF-WAY
- PROPOSED SILT FENCE (PRE GRADING)
- PROPOSED SILT FENCE (POST GRADING)
- INLET PROTECTION
- DO NOT DISTURB AREAS
- TEMPORARY DRAINAGE ROUTING DURING MASS GRADING
- ROCK CONSTRUCTION ENTRANCE
- BIOROLL
- TEMPORARY SEDIMENT BASIN
- EROSION CONTROL BLANKET



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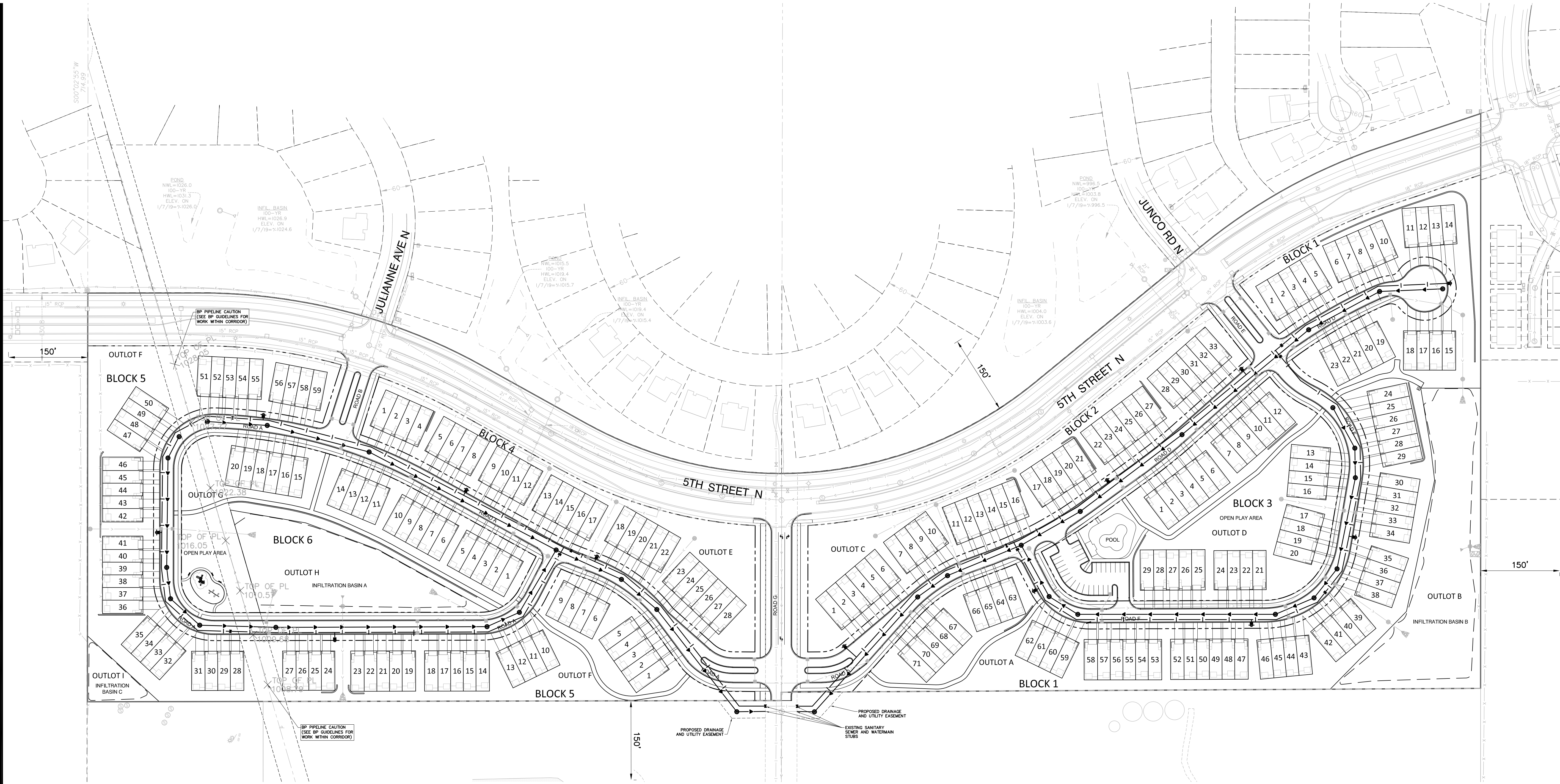
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LAKE ELMO, MINNESOTA
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MARK RAUSCH, PE
1-25-19 43480
Date License No.
QUALITY ASSURANCE/CONTROL

BY DATE
DATE ISSUE
1-25-19 CITY SUBMITTAL

PROJECT TEAM DATA
DESIGNED: MPR
DRAWN: SIL
PROJECT NO: 218-0165

Drawing name: X:\2018\180165\plan sheets\Preliminary Plat\180165\util.dwg Jan 24, 2019 11:58am



1. ALL SANITARY SEWER AND ACCESSORIES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF LAKE ELMO STANDARD SPECIFICATIONS AND DETAILS.
2. ALL SANITARY SEWER PVC PIPE SHALL BE INSTALLED ACCORDING TO CITY STANDARD DRAWING 103 "GRANULAR MATERIAL BEDDING METHOD (FOR PVC SANITARY SEWER PIPE)".
3. UNLESS NOTED OTHERWISE, ALL SMOOTH WALLED SANITARY SEWER PVC PIPE AND FITTINGS SHALL BE SDR 35 WITH ELASTOMERIC CASKETING JOINTS.
4. ALL SANITARY SEWER SERVICES SHALL BE 4-INCH PVC, SCH. 40.
5. SMOOTH WALLED PVC PIPE AND FITTINGS SHALL CONFORM WITH THE REQUIREMENTS OF ASTM D-3034 FOR THE SIZE, STANDARD DIMENSION RATIO (SDR), AND STRENGTH REQUIREMENTS INDICATED ON THE PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS.
6. REINFORCED CONCRETE PIPE AND FITTINGS SHALL CONFORM WITH THE REQUIREMENTS OF M-207 SPEC 3236 (REINFORCED CONCRETE PIPE) FOR THE TYPE, SIZE, AND STRENGTH CLASS SPECIFIED HEREIN.
7. JOINTS OF MANHOLE RISER SECTIONS SHALL BE TONGUE AND GROOVE WITH RUBBER "O" RING JOINTS PROVIDED ON ALL SANITARY SEWER MANHOLES.
8. SANITARY SEWER INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A CASKETING, FLEXIBLE, WATER-TIGHT CONNECTION TO ALLOW DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE TO TAKE PLACE.
9. A 1'-0" TO 1'-4" MANHOLE SECTION SHALL BE INSTALLED UNDER THE CONE SECTION TO ALLOW FOR HEIGHT ADJUSTMENT WHENEVER POSSIBLE.
10. ALL SERVICE LINE STUBS MUST HAVE A 2"x2" HARDWOOD MARKER WITH METAL SPIKE RUNNING FROM THE END OF PIPE TO FINISHED GRADE ELEVATION.
11. UPON MAKING A CONNECTION TO AN EXISTING SANITARY SEWER STUB OR MANHOLE, DIRT AND DEBRIS SHALL BE PREVENTED FROM ENTERING THE EXISTING SEWER BY IMMEDIATELY INSTALLING WATER-TIGHT PLUGS AS NEEDED IN THE EXISTING MANHOLE.
12. ALL MAINLINE SANITARY SEWER AND SERVICES SHALL HAVE TRACER WIRE PER CITY SPECIFICATIONS AND DETAILS.

STANDARD PLAN NOTES SANITARY SEWER PLANS

MARCH 2017

CITY OF LAKE ELMO

1. ALL WATERMAIN AND ACCESSORIES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF LAKE ELMO STANDARD SPECIFICATIONS AND DETAILS.
2. MANIPULATION OF EXISTING VALVES SHALL BE PERFORMED ONLY BY CITY PERSONNEL.
3. WATERMAIN SHALL BE DUCTILE IRON PIPE, ENCASED IN POLYETHYLENE, CLASS-52.
4. ALL FITTINGS SHALL COMPLY WITH CEAM SPEC 2611.2.A1. ALL FITTINGS SHALL BE DUCTILE IRON PIPE WITH POLYETHYLENE ENCASEMENT. ALL CONNECTIONS SHALL BE INSTALLED UTILIZING COR-SLEE NUTS & BOLTS.
5. USE GATE VALVES FOR ALL APPLICATIONS UP THROUGH 12 INCHES.
6. GATE VALVES SHALL BE RESILIENT WEDGE AMERICAN FLOW CONTROL SERIES 2600 OR APPROVED EQUAL. GATE VALVES MUST COMPLY WITH CEAM SPEC 2611.2.C.2.
7. USE BUTTERFLY VALVES FOR ALL APPLICATIONS GREATER THAN 12 INCHES.
8. BUTTERFLY VALVES SHALL BE MUELLER UNISEAL II, OR APPROVED EQUAL. BUTTERFLY VALVES SHALL COMPLY WITH CEAM SPEC. 2611.2.C.3.
9. BOLTS AND NUTS ON ALL VALVES AND HYDRANTS SHALL BE STAINLESS STEEL.
10. ALL HYDRANTS SHALL BE INSTALLED 5.0 FEET BACK OF CURB.
11. HYDRANTS SHALL BE WATERLOUS "PACER" MODEL WB-67 OR APPROVED EQUAL, FITTED WITH FH-800 SERIES FLEX SHAKE AND PAINTED RED.
12. HYDRANTS SHALL HAVE TWO OUTLET NOZZLES FOR 2-1/2" (LD), HOSE CONNECTIONS AND ONE 4" STORK NOZZLE (MODELS WB-67) AND PORTLAND NUT END CAP.
13. THE CURB STOP SERVICE ASSEMBLY SHALL HAVE A MINIMUM 1'-0" ADJUSTMENT RANGE AND SHALL EXTEND 8 INCHES ABOVE FINISHED GRADE FULLY EXTENDED.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER TO HOMES AND BUSINESSES WHOSE WATER SUPPLY IS DISRUPTED DURING THE COURSE OF THE PROJECT.

STANDARD PLAN NOTES WATERMAIN PLANS

MARCH 2017

CITY OF LAKE ELMO

UTILITY NOTES:

1. EXISTING UTILITIES, SERVICE LOCATIONS AND ELEVATIONS SHALL BE VERIFIED IN FIELD PRIOR TO CONSTRUCTION.
2. MAINTAIN A MIN 18" VERTICAL SEPARATION AT ALL PIPE CROSSINGS. WATER AND SANITARY SEWER LINES TO MAINTAIN 10' VERTICAL SEPARATION. LOWER WATERMAIN AS NECESSARY.
3. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS PRIOR TO THE START OF CONSTRUCTION.
4. PROVIDE POLYSTYRENE INSULATION FOR ALL STORM SEWER AND WATERMAIN CROSSINGS WHERE VERTICAL OR HORIZONTAL SEPARATION IS LESS THAN 3'.
5. ALL UTILITY WORK WITHIN THE R.O.W. SHALL COMPLY WITH THE CITY OF LAKE ELMO ENGINEERING GUIDELINES.
6. NOTIFY GOPHER STATE ONE CALL 48 HOURS IN ADVANCE OF ANY UTILITY WORK.
7. PROVIDE TEMPORARY TRAFFIC CONTROL IN COMPLIANCE WITH MNDOT "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS-FIELD MANUAL" LATEST REVISION, FOR ANY CONSTRUCTION WITHIN PUBLIC R.O.W.
8. CONTRACTOR SHALL CONTACT THE UTILITY SUPERVISOR, SCOTT NEWBERGER AT (763) 509-5999 AT LEAST 48 HOURS PRIOR TO WORKING IN THE STREET R.O.W.
9. ALL SANITARY MANHOLES TO BE 48" DIAMETER CONCRETE W/NEENAH R-1642 CASTING, UNLESS NOTED OTHERWISE.
10. WATERMAIN, SERVICES, AND VALVES SHALL BE INSTALLED WITH MINIMUM 7.5' OF COVER.
11. WATER SERVICES SHALL BE 1.5" DIA. COPPER, TYPE "K", CTS PIPE W/ 1.5" CORP. STOP + 1.5" CURB BOX.
12. SEWER SERVICES SHALL BE MINIMUM 2% SLOPE UNLESS OTHERWISE NOTED ON THE PLANS.
13. CONTRACTOR SHALL INSTALL "MEGALUG" OR APPROVED EQUAL MECHANICAL JOINT RESTRAINING DEVICE INSTEAD OF WOOD OR CONCRETE THRUST BLOCKING. CONCRETE AND/OR WOOD BLOCKING IS NOT ALLOWED.
14. WATER SERVICES MAY BE PLACED IN SAME TRENCH AS SEWER SERVICES PROVIDED THAT A 24" VERTICAL & A 36" HORIZONTAL SEPARATION ARE MAINTAINED.
15. ALL CURB BOXES SHALL BE ADJUSTED TO AN ELEVATION OF 1" BELOW FINISHED GRADE.
16. ALL PROPOSED OUTLOTS ARE TO BE COVERED FULLY BY DRAINAGE AND UTILITY EASEMENTS

LEGEND:

- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER



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BENTLEY VILLAGE

LAKE ELMO, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SANITARY SEWER AND WATERMAIN PLAN-OVERALL

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MARK RAUSCH, PE
1-25-19 43480
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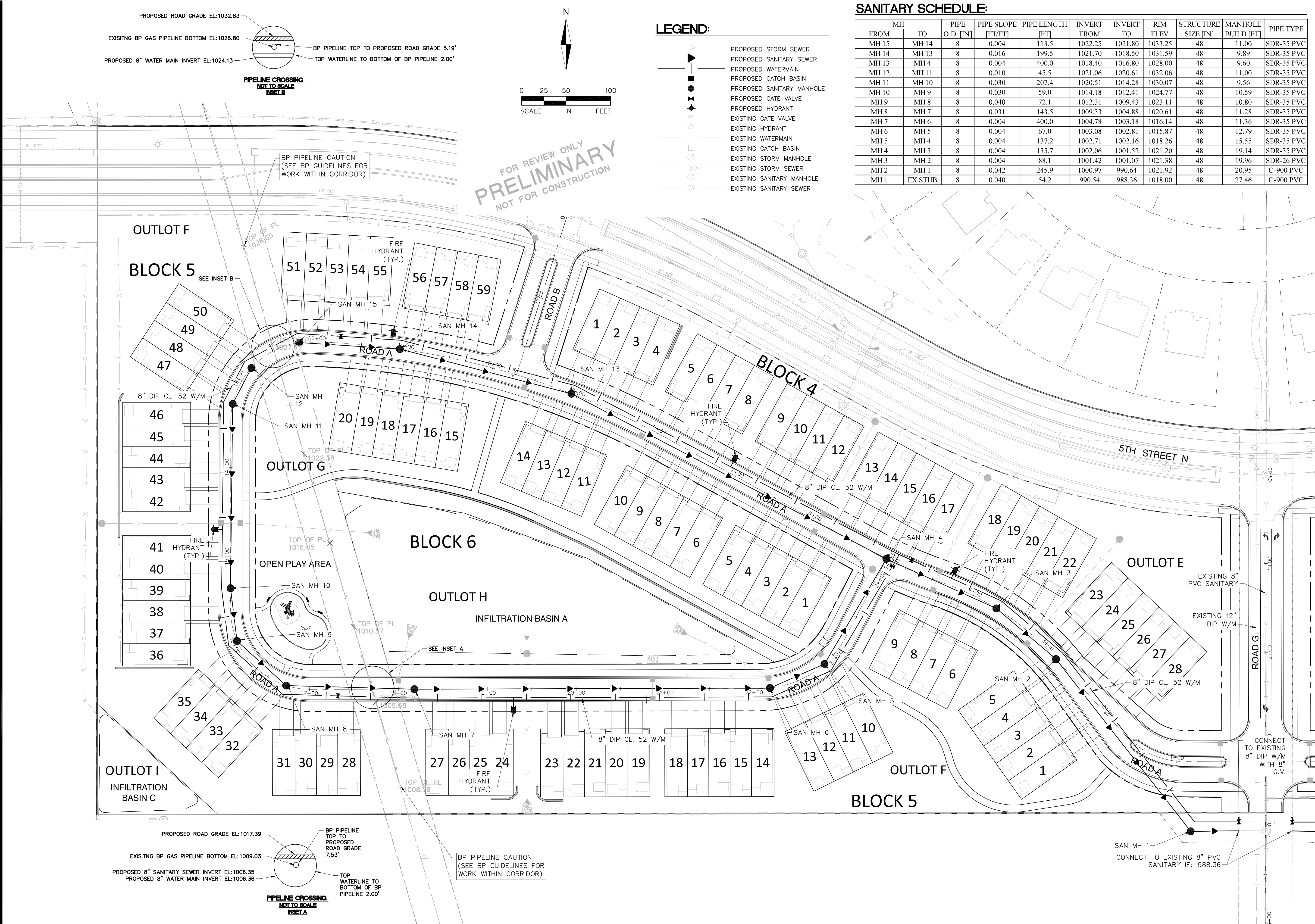
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DESIGNED: MPR
DRAWN: SIL
PROJECT NO: 218-0165

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Drawing name: X:\2018\180165\plan sheets\Preliminary Plat\180165.dwg Jan 24, 2019 11:58am



SANITARY SCHEDULE:

FROM	TO	PIPE O.D. [IN]	PIPE SLOPE [F/T/F]	PIPE LENGTH [F]	INVERT FROM	INVERT TO	RIM ELEV	STRUCTURE SIZE [IN]	MANHOLE BUILD [F]	PIPE TYPE
MH 15	MH 14	8	0.004	113.5	1022.25	1021.80	1033.25	48	11.00	SDR-35 PVC
MH 14	MH 13	8	0.016	199.5	1021.70	1018.50	1031.59	48	9.89	SDR-35 PVC
MH 13	MH 4	8	0.004	400.0	1018.40	1016.80	1028.00	48	9.60	SDR-35 PVC
MH 12	MH 11	8	0.010	45.5	1021.06	1020.61	1032.06	48	11.00	SDR-35 PVC
MH 11	MH 10	8	0.030	207.4	1020.51	1014.28	1030.07	48	9.56	SDR-35 PVC
MH 10	MH 9	8	0.030	59.0	1014.18	1012.41	1024.77	48	10.59	SDR-35 PVC
MH 9	MH 8	8	0.040	72.1	1012.31	1009.43	1023.11	48	10.80	SDR-35 PVC
MH 8	MH 7	8	0.031	143.5	1009.33	1004.88	1020.61	48	11.28	SDR-35 PVC
MH 7	MH 6	8	0.004	400.0	1004.78	1003.18	1016.14	48	11.36	SDR-35 PVC
MH 6	MH 5	8	0.004	67.0	1003.08	1002.81	1015.87	48	12.79	SDR-35 PVC
MH 5	MH 4	8	0.004	137.2	1002.71	1002.16	1018.26	48	15.55	SDR-35 PVC
MH 4	MH 3	8	0.004	135.7	1002.06	1001.52	1021.20	48	19.14	SDR-35 PVC
MH 3	MH 2	8	0.004	88.1	1001.42	1001.07	1021.38	48	19.96	SDR-26 PVC
MH 2	MH 1	8	0.042	245.9	1000.97	990.64	1021.92	48	20.95	C-900 PVC
MH 1	EX STUB	8	0.040	54.2	990.54	988.36	1018.00	48	27.46	C-900 PVC

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LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
SANITARY SEWER AND WATERMAIN PLAN - WEST PARCEL

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MARK RAUSCH, PE
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PROJECT TEAM DATA

DESIGNED:	MPR
DRAWN:	SIL
PROJECT NO:	218-0165

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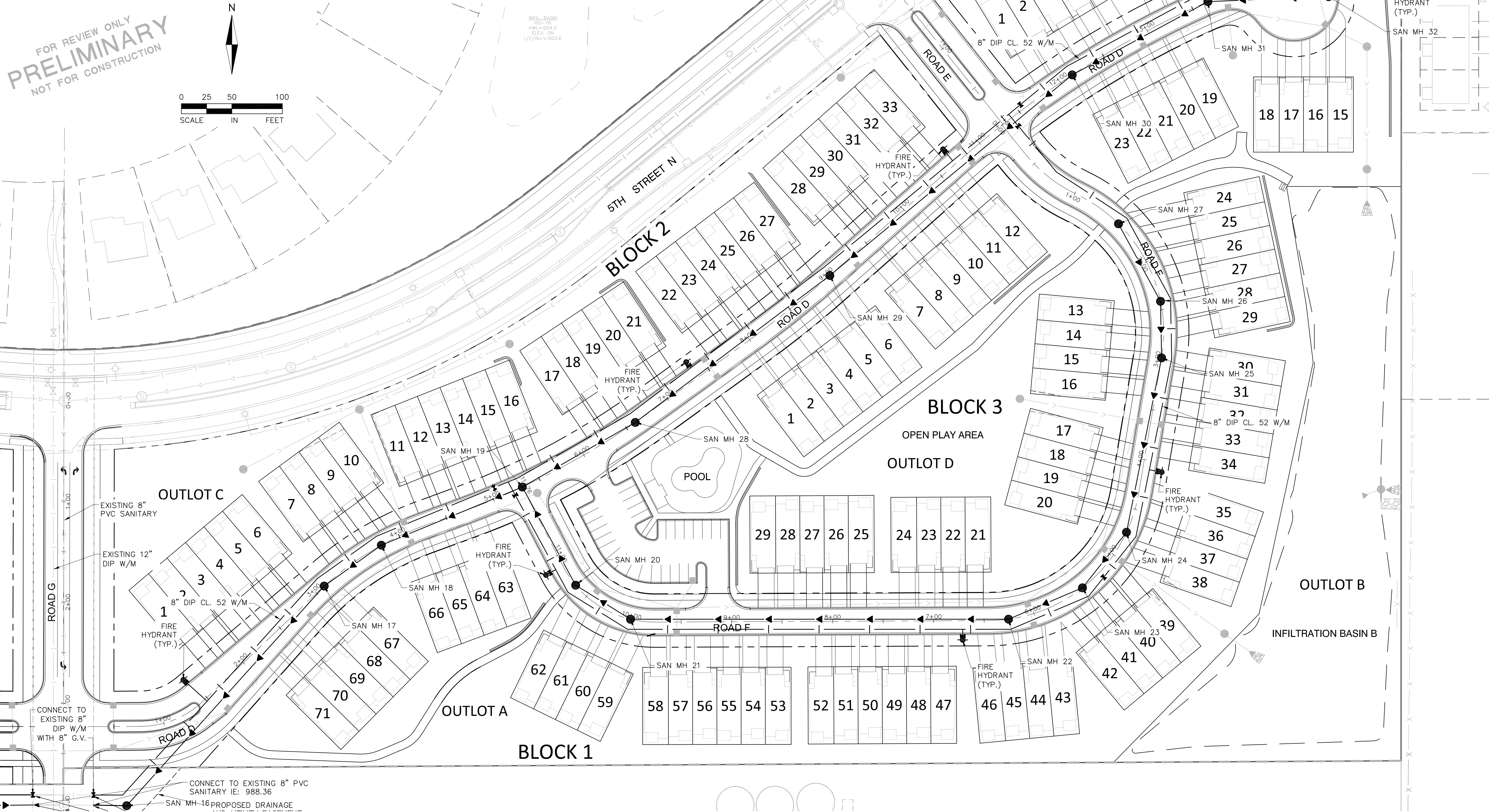
SHEET 21 of 33

SANITARY SCHEDULE:

MH		PIPE	PIPE SLOPE	PIPE LENGTH	INVERT FROM	INVERT TO	RIM ELEV	STRUCTURE SIZE [IN]	MANHOLE BUILD [FT]	PIPE TYPE
FROM	TO	O.D. [IN]	[FT/FT]	[FT]						
MH 32	MH 31	8	0.004	119.7	995.22	994.74	1004.62	48	9.40	SDR-35 PVC
MH 31	MH 30	8	0.004	152.7	994.64	994.03	1005.22	48	10.58	SDR-35 PVC
MH 30	MH 29	8	0.004	311.6	993.93	992.68	1006.00	48	12.07	SDR-35 PVC
MH 29	MH 28	8	0.004	241.5	992.58	991.62	1011.91	48	19.33	SDR-26 PVC
MH 28	MH 19	8	0.004	128.9	991.52	991.00	1016.23	48	24.71	SDR-26 PVC
MH 27	MH 26	8	0.004	87.3	995.80	995.45	1004.72	48	8.92	SDR-35 PVC
MH 26	MH 25	8	0.004	56.0	995.35	995.13	1004.15	48	8.80	SDR-35 PVC
MH 25	MH 24	8	0.004	176.2	995.03	994.32	1003.92	48	8.89	SDR-35 PVC
MH 24	MH 23	8	0.004	70.2	994.22	993.94	1004.18	48	9.96	SDR-35 PVC
MH 23	MH 22	8	0.004	79.6	993.84	993.52	1004.72	48	10.88	SDR-35 PVC
MH 22	MH 21	8	0.004	374.3	993.42	991.93	1006.21	48	12.79	SDR-26 PVC
MH 21	MH 20	8	0.004	63.9	991.83	991.57	1013.04	48	21.21	SDR-26 PVC
MH 20	MH 19	8	0.004	110.7	991.47	991.03	1015.09	48	23.62	SDR-26 PVC
MH 19	MH 18	8	0.004	151.0	990.90	990.30	1018.09	48	27.19	SDR-26 PVC
MH 18	MH 17	8	0.004	69.5	990.20	989.92	1019.62	48	29.42	C-900 PVC
MH 17	MH 16	8	0.004	292.0	989.82	988.65	1020.22	48	30.40	C-900 PVC
MH 16	EX STUB	8	0.006	32.9	988.55	988.36	1018.20	48	29.65	C-900 PVC

LEGEND:

- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER



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SANITARY SEWER AND WATERMAIN PLAN - EAST PARCEL

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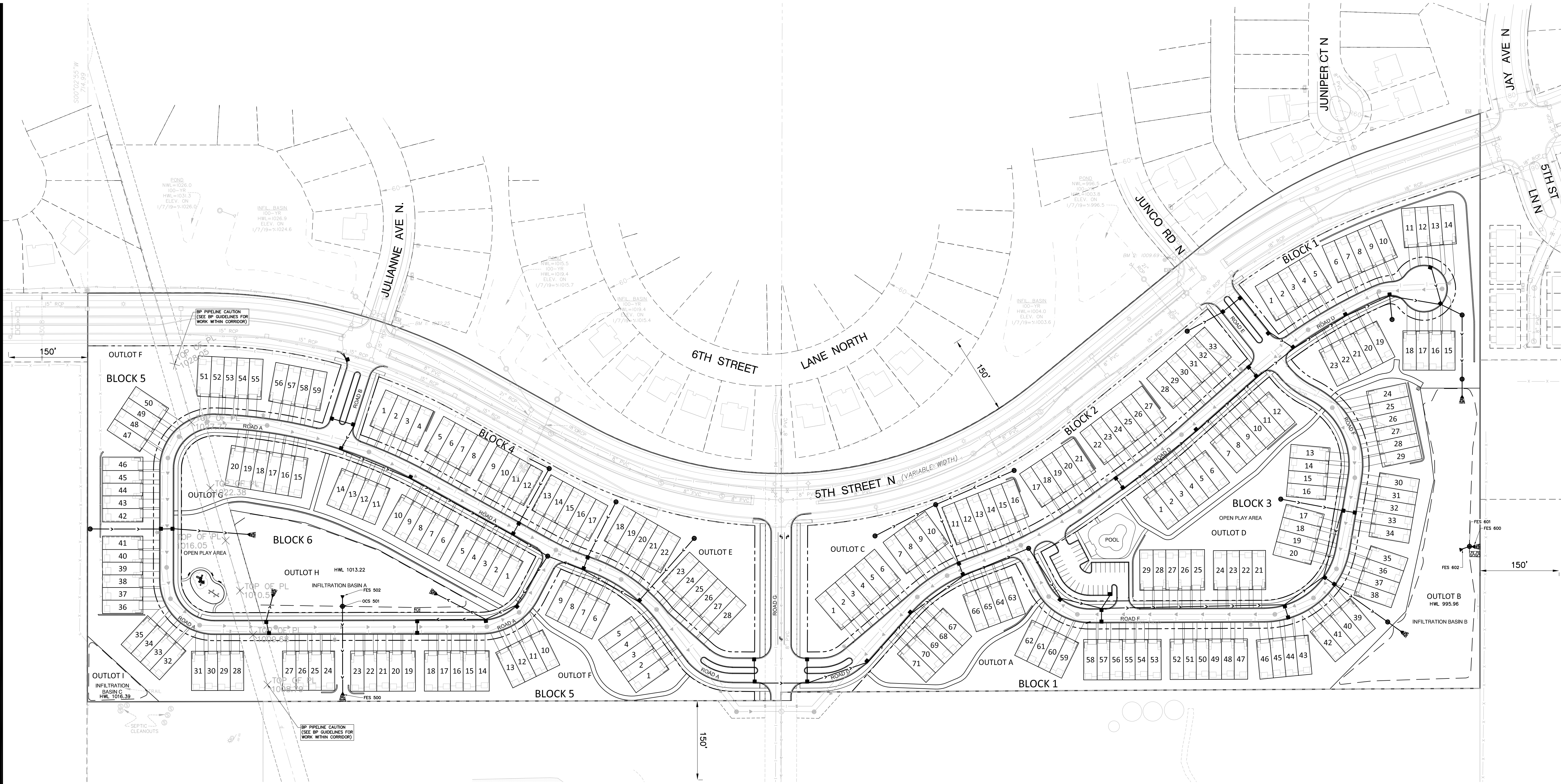
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DRAWN: SIL
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1. ALL STORM SEWER AND ACCESSORIES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF LAKE ELMO STANDARD SPECIFICATIONS AND DETAILS.
2. REINFORCED CONCRETE PIPE AND FITTINGS SHALL CONFORM WITH THE REQUIREMENTS OF M-HOT SPEC 3236 (REINFORCED CONCRETE PIPE) FOR THE TYPE, SIZE, AND STRENGTH CLASS SPECIFIED HEREIN.
3. PRECAST CONCRETE MANHOLE AND CATCH BASIN SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-477.
4. A 1'-0" TO 1'-4" MAN-HOLE SECTION SHALL BE INSTALLED UNDER THE COONE SECTION TO ALLOW FOR HEIGHT ADJUSTMENT WHENEVER POSSIBLE.
5. JOINTS OF MANHOLE RISER SECTIONS SHALL BE TONGUE AND GROOVE WITH RUBBER 'O' RING JOINTS PROVIDED ON ALL STORM SEWER MANHOLES.
6. RIP-RAP SHALL BE HAND-PLACED OVER GEOTEXTILE FABRIC AND CONFORM TO M-HOT SPEC. 3601, CLASS III, OR AS SPECIFIED HEREIN.
7. THE GEOTEXTILE FABRIC USED UNDER RIP-RAP SHALL EXTEND 3 FT UNDER THE APRON.
8. FURNISH & INSTALL TRASH GUARDS ON ALL FLARED END SECTIONS.
9. ALL SILT SHALL BE CLEANED OUT FROM THE RIP-RAP AT THE END OF THE PROJECT.
10. STORM SEWER STRUCTURES WITHIN 10 FT OF WATERMAIN ARE TO HAVE WATER TIGHT CONNECTIONS PER MDH REQUIREMENTS.

STANDARD PLAN NOTES
STORM SEWER PLANS

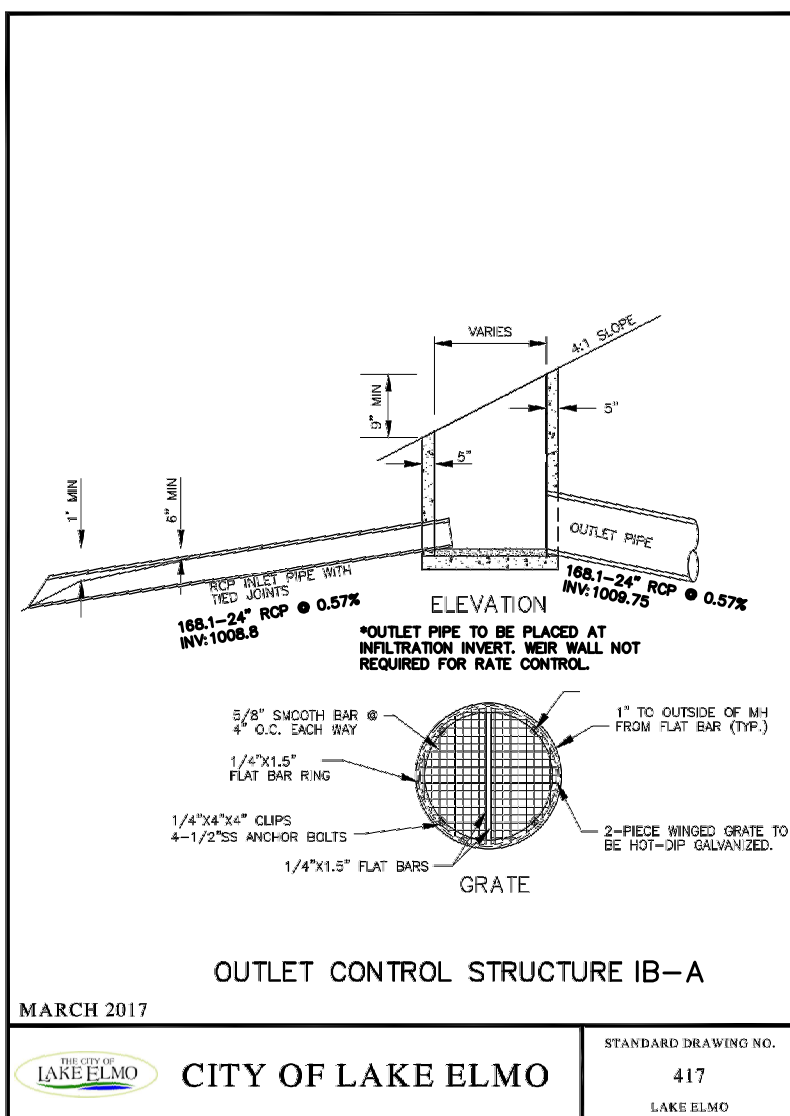
MARCH 2017

CITY OF LAKE ELMO

STANDARD DRAWING NO.
490A
LAKE ELMO

STORM SEWER NOTES:

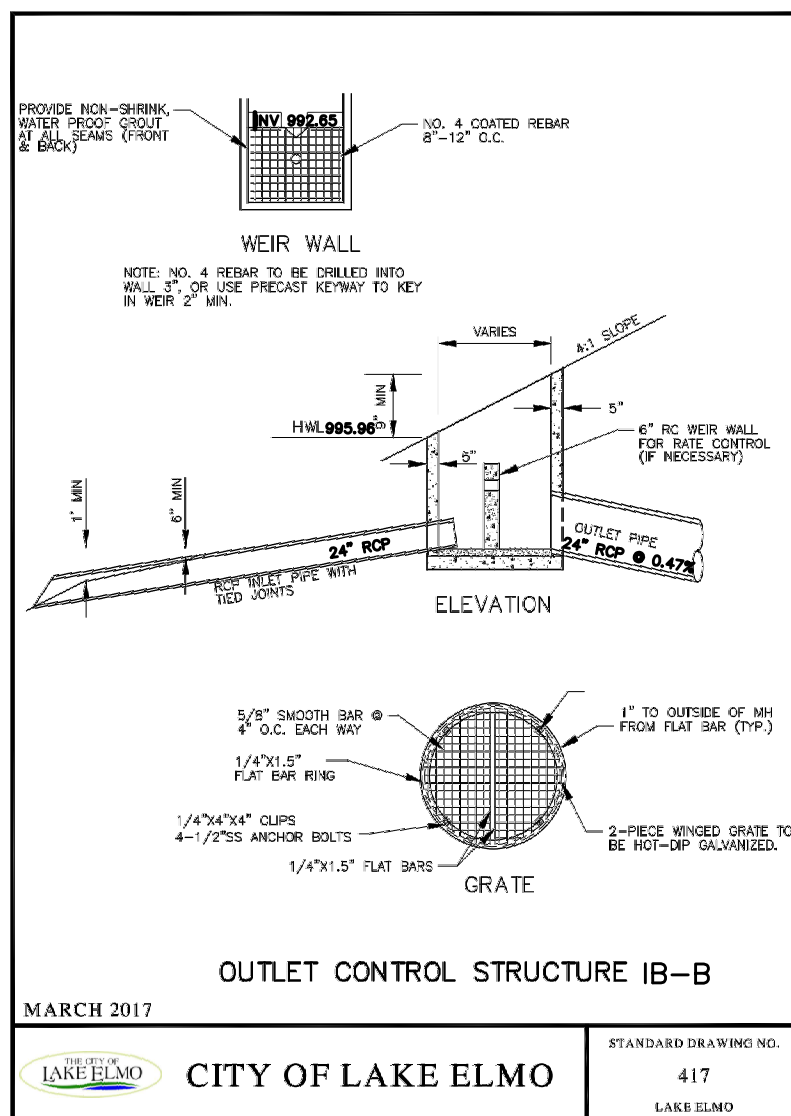
1. EXISTING UTILITIES, SERVICE LOCATIONS AND ELEVATIONS SHALL BE VERIFIED IN FIELD PRIOR TO CONSTRUCTION.
2. MAINTAIN A MIN 18" VERTICAL SEPARATION AT ALL PIPE CROSSINGS.
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4. PROVIDE POLYSTYRENE INSULATION FOR ALL STORM SEWER CROSSINGS WHERE VERTICAL OR HORIZONTAL SEPARATION IS LESS THAN 3'.
5. ALL STORM SEWER WORK SHALL COMPLY WITH THE CITY OF LAKE ELMO ENGINEERING GUIDELINES.
6. NOTIFY GOPHER STATE ONE CALL 48 HOURS IN ADVANCE OF ANY UTILITY WORK.
7. PROVIDE TEMPORARY TRAFFIC CONTROL IN COMPLIANCE WITH MNDOT "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS-FIELD MANUAL" LATEST REVISION, FOR ANY CONSTRUCTION WITHIN PUBLIC R.O.W.
8. ALL CASTINGS SHALL BE NEENAH OR APPROVED EQUAL.
9. ALL PROPOSED OUTLOTS ARE TO BE FULLY COVERED BY DRAINAGE AND UTILITY EASEMENTS.



MARCH 2017

CITY OF LAKE ELMO

STANDARD DRAWING NO.
417
LAKE ELMO



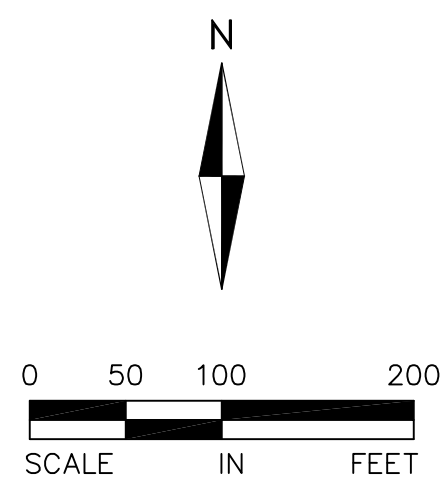
MARCH 2017

CITY OF LAKE ELMO

STANDARD DRAWING NO.
417
LAKE ELMO

LEGEND:

- PROPOSED STORM SEWER
- PROPOSED DRAIN TILE
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER



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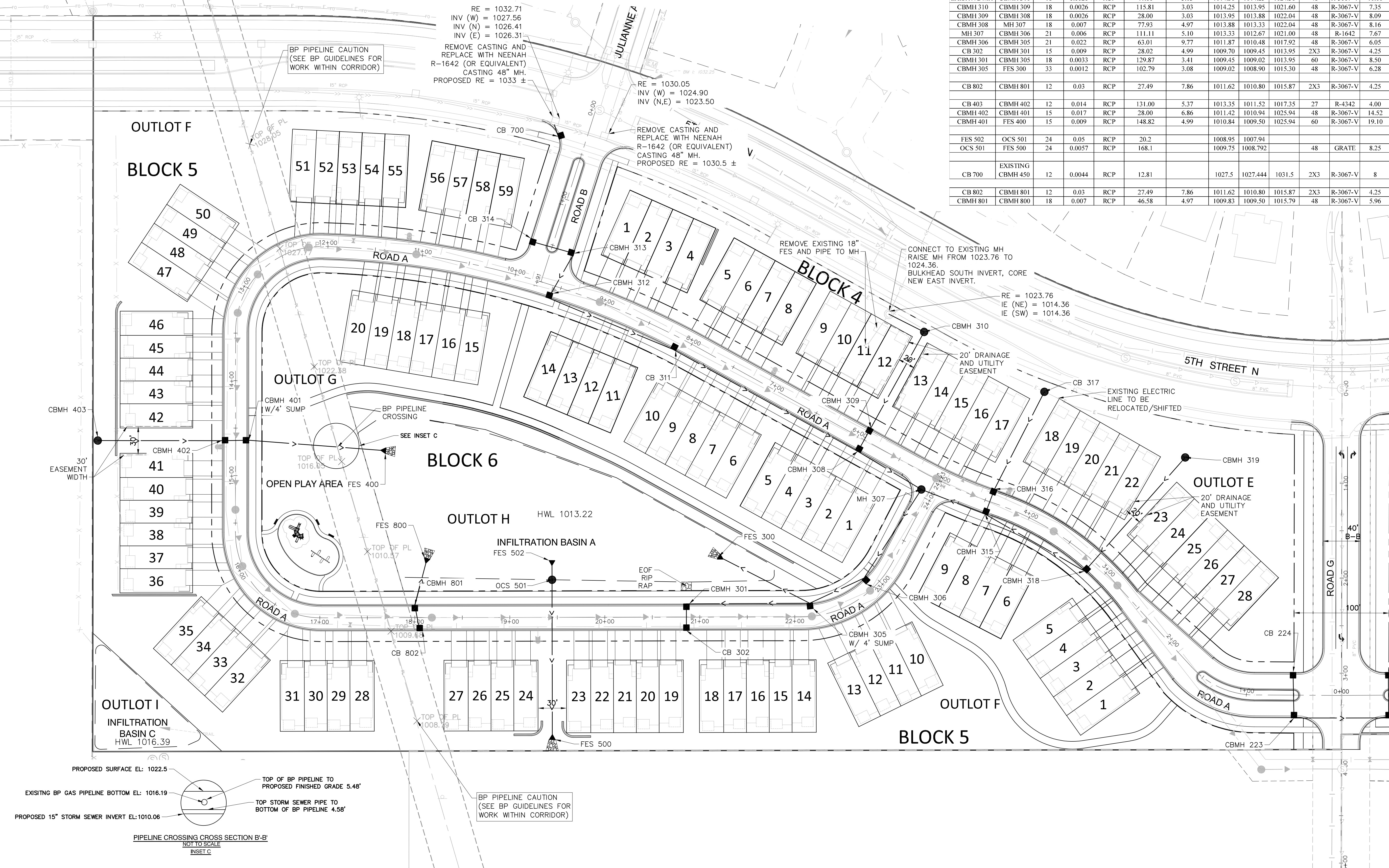


LEGEND:

- PROPOSED STORM SEWER
- PROPOSED DRAINTILE
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER

STORM SEWER SCHEDULE:

MH/CB		P. DIA.	P. SLOPE	P. TYPE	PIPE	P. VELOCITY	FROM	TO	RIM	STR.	CAST	BUILD
FROM	TO	D [IN]	S [FT/FT]		LENGTH [FT]	MAX [FT/S]	INVERT	INVERT	ELEV	TYPE	TYPE	[FT]
CB 319	CBMH 318	12	0.0044	RCP	159.83	3.01	1016.00	1015.30	1020.00	27	R-4342	4.00
CBMH 318	CBMH 315	15	0.0033	RCP	120.82	3.02	1015.20	1014.80	1021.41	48	R-3067-V	6.21
CB 317	CBMH 316	12	0.0142	RCP	115.05	5.41	1017.50	1015.87	1021.50	27	R-4342	4.00
CBMH 316	CBMH 315	15	0.0033	RCP	28.00	3.02	1015.87	1015.77	1020.13	48	R-3067-V	4.26
CBMH 315	MH 307	15	0.0037	RCP	71.90	3.20	1014.80	1014.53	1020.13	48	R-3067-V	5.33
CB 314	CBMH 313	12	0.015	RCP	48.03	5.56	1023.53	1022.81	1027.53	2X3	R-3067-V	4.00
CBMH 313	CBMH 312	15	0.02	RCP	54.11	7.44	1022.81	1021.73	1027.53	48	R-3067-V	4.72
CBMH 312	CBMH 311	15	0.02	RCP	141.92	7.44	1021.73	1018.89	1028.35	48	R-3067-V	6.62
CBMH 311	CBMH 308	15	0.02	RCP	222.10	7.44	1018.89	1014.45	1025.87	48	R-3067-V	6.98
EXISTING MH	CBMH 310	18	0.0026	RCP	41.60	3.03	1014.36	1014.25	1024.36	48	R-3067-V	10.00
CBMH 310	CBMH 309	18	0.0026	RCP	115.81	3.03	1014.25	1013.95	1021.60	48	R-3067-V	7.35
CBMH 309	CBMH 308	18	0.0026	RCP	28.00	3.03	1013.95	1013.88	1022.04	48	R-3067-V	8.09
CBMH 308	MH 307	18	0.007	RCP	77.93	4.97	1013.88	1013.33	1022.04	48	R-3067-V	8.16
MH 307	CBMH 306	21	0.006	RCP	111.11	5.10	1013.33	1012.67	1021.00	48	R-1642	7.67
CBMH 306	CBMH 305	21	0.022	RCP	63.01	9.77	1011.87	1010.48	1017.92	48	R-3067-V	6.05
CB 302	CBMH 301	15	0.009	RCP	28.02	4.99	1009.70	1009.45	1013.95	2X3	R-3067-V	4.25
CBMH 301	CBMH 305	18	0.0033	RCP	129.87	3.41	1009.45	1009.02	1013.95	60	R-3067-V	8.50
CBMH 305	FES 300	33	0.0012	RCP	102.79	3.08	1009.02	1008.90	1015.30	48	R-3067-V	6.28
CB 802	CBMH 801	12	0.03	RCP	27.49	7.86	1011.62	1010.80	1015.87	2X3	R-3067-V	4.25
CB 403	CBMH 402	12	0.014	RCP	131.00	5.37	1013.35	1011.52	1017.35	27	R-4342	4.00
CBMH 402	CBMH 401	15	0.017	RCP	28.00	6.86	1011.42	1010.94	1025.94	48	R-3067-V	14.52
CBMH 401	FES 400	15	0.009	RCP	148.82	4.99	1010.84	1009.50	1025.94	60	R-3067-V	19.10
FES 502	OCS 501	24	0.05	RCP	20.2		1008.95	1007.94				
OCS 501	FES 500	24	0.0057	RCP	168.1		1009.75	1008.792		48	GRATE	8.25
CB 700	EXISTING CBMH 450	12	0.0044	RCP	12.81		1027.5	1027.444	1031.5	2X3	R-3067-V	8
CB 802	CBMH 801	12	0.03	RCP	27.49	7.86	1011.62	1010.80	1015.87	2X3	R-3067-V	4.25
CBMH 801	CBMH 800	18	0.007	RCP	46.58	4.97	1009.83	1009.50	1015.79	48	R-3067-V	5.96



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BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
STORM SEWER PLAN - WEST PARCEL

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA

MARK RAUSCH, PE
1-25-19 43480
Date License No.

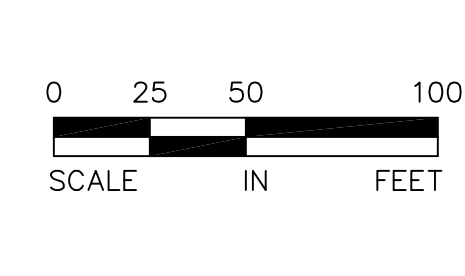
QUALITY ASSURANCE/CONTROL

BY DATE
DATE ISSUE
1-25-19 CITY SUBMITTAL

PROJECT TEAM DATA
DESIGNED: MPR
DRAWN: SIL
PROJECT NO: 218-0165

STORM SEWER SCHEDULE:

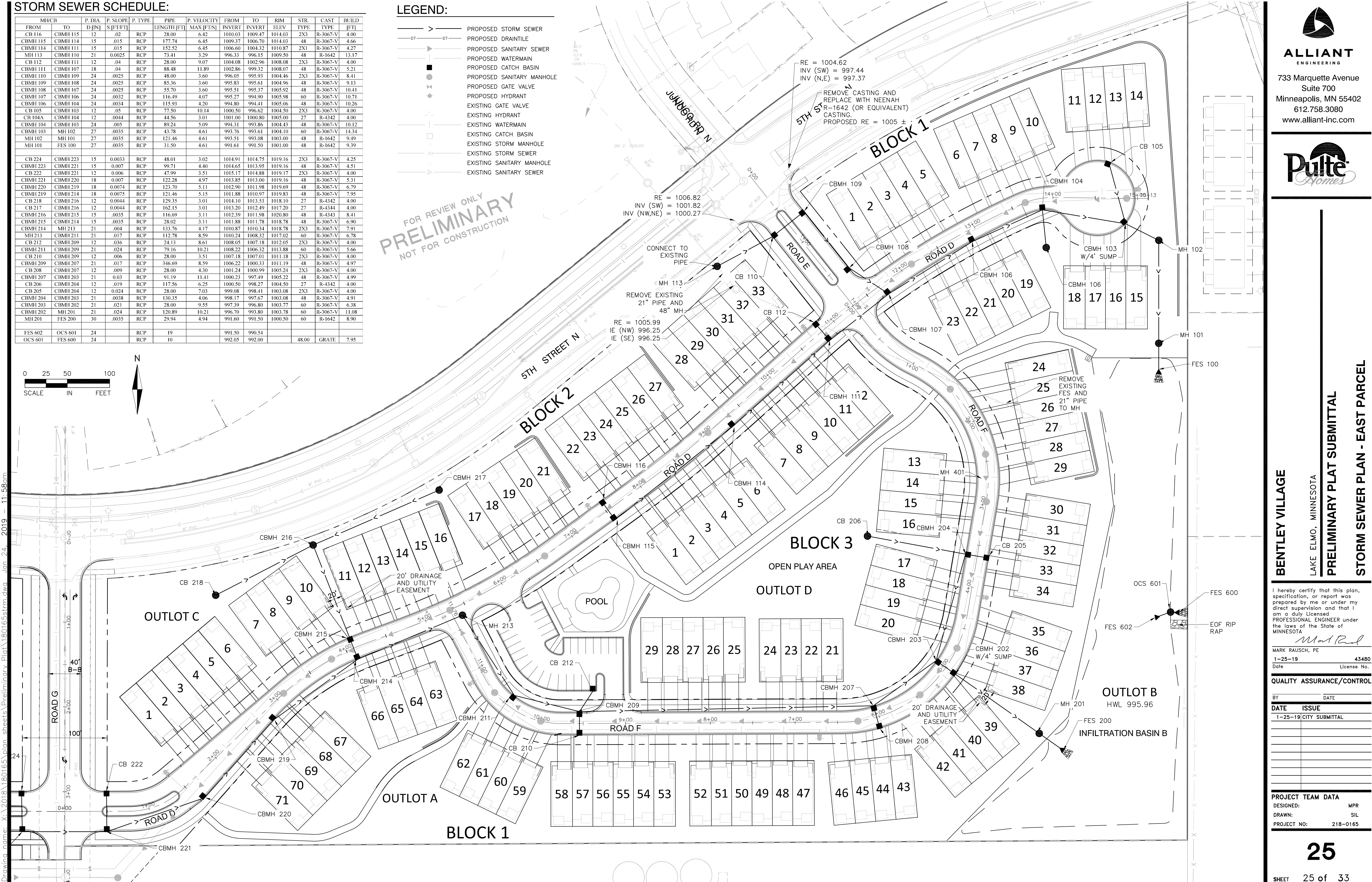
FROM	TO	MH/CB	P. DIA.	P. SLOPE	P. TYPE	PIPE	P. VELOCITY	FROM	TO	RIM	STR.	CAST	BUILD
INVERT	INVERT	D [IN]	S [FT/FT]	LENGTH [FT]	MAX. [FT/S]	INVERT	INVERT	INVERT	INVERT	TYPE	TYPE	TYPE	TYPE
CB 116	CBMH 115	12	.02	RCP	28.00	6.45	1009.37	1006.70	1014.03	48	R-3067-V	4.66	
CBMH 115	CBMH 114	15	.015	RCP	177.74	6.45	1009.37	1006.70	1014.03	48	R-3067-V	4.66	
CBMH 114	CBMH 111	15	.015	RCP	152.52	6.45	1006.60	1004.32	1010.87	2X1	R-3067-V	4.27	
MH 113	CBMH 110	21	.00025	RCP	73.41	3.29	996.33	996.15	1009.50	48	R-1642	13.17	
CB 112	CBMH 111	12	.04	RCP	28.00	9.07	1004.08	1002.96	1008.08	2X3	R-3067-V	4.00	
CBMH 111	CBMH 107	18	.04	RCP	88.48	11.89	1002.86	999.32	1008.07	48	R-3067-V	5.21	
CBMH 110	CBMH 109	24	.0025	RCP	48.00	3.60	996.05	995.93	1004.46	2X3	R-3067-V	8.41	
CBMH 109	CBMH 108	24	.0025	RCP	85.36	3.60	995.83	995.61	1004.96	48	R-3067-V	9.13	
CBMH 108	CBMH 107	24	.0025	RCP	55.70	3.60	995.51	995.37	1005.92	48	R-3067-V	10.41	
CBMH 107	CBMH 106	24	.0032	RCP	116.49	4.07	995.27	994.90	1005.98	60	R-3067-V	10.71	
CBMH 106	CBMH 104	24	.0034	RCP	115.93	4.20	994.80	994.41	1005.06	48	R-3067-V	10.26	
CB 105	CBMH 103	12	.05	RCP	77.50	10.14	1000.50	996.62	1004.50	2X3	R-3067-V	4.00	
CB 104A	CBMH 104	12	.0044	RCP	44.56	3.01	1001.00	1000.80	1005.00	27	R-4342	4.00	
CBMH 104	CBMH 103	24	.005	RCP	89.24	5.09	994.31	993.86	1004.43	48	R-3067-V	10.12	
CBMH 103	MH 102	27	.0035	RCP	43.78	4.61	993.76	993.61	1004.10	60	R-3067-V	14.34	
MH 102	MH 101	27	.0035	RCP	121.46	4.61	993.51	993.08	1003.00	48	R-1642	9.49	
MH 101	FES 100	27	.0035	RCP	31.50	4.61	991.61	991.50	1001.00	48	R-1642	9.39	
CB 224	CBMH 223	15	.00033	RCP	48.01	3.02	1014.91	1014.75	1019.16	2X3	R-3067-V	4.25	
CBMH 223	CBMH 221	15	.0007	RCP	99.71	4.40	1014.65	1013.95	1019.16	48	R-3067-V	4.51	
CB 222	CBMH 221	12	.0006	RCP	47.99	3.51	1015.17	1014.88	1019.17	2X3	R-3067-V	4.00	
CBMH 221	CBMH 220	18	.0007	RCP	122.28	4.97	1013.85	1013.00	1019.16	48	R-3067-V	5.31	
CBMH 220	CBMH 219	18	.00074	RCP	123.70	5.11	1012.90	1011.98	1019.69	48	R-3067-V	6.79	
CBMH 219	CBMH 214	18	.00075	RCP	121.46	5.15	1011.88	1010.97	1019.83	48	R-3067-V	7.95	
CB 218	CBMH 216	12	.00044	RCP	129.35	3.01	1014.10	1013.53	1018.10	27	R-4342	4.00	
CB 217	CBMH 216	12	.00044	RCP	162.15	3.01	1013.20	1012.49	1017.20	27	R-4344	4.00	
CBMH 216	CBMH 215	15	.0035	RCP	116.69	3.11	1012.39	1011.98	1020.80	48	R-4343	8.41	
CBMH 215	CBMH 214	15	.0035	RCP	28.02	3.11	1011.88	1011.78	1018.78	48	R-3067-V	6.90	
CBMH 214	MH 213	21	.004	RCP	133.76	4.17	1010.87	1010.34	1018.78	2X3	R-3067-V	7.91	
MH 213	CBMH 211	21	.017	RCP	112.78	8.59	1010.24	1008.32	1017.02	60	R-3067-V	6.78	
CB 212	CBMH 209	12	.036	RCP	24.13	8.61	1008.05	1007.18	1012.05	2X3	R-3067-V	4.00	
CBMH 211	CBMH 209	21	.024	RCP	79.16	10.21	1008.22	1006.32	1013.88	60	R-3067-V	5.66	
CB 210	CBMH 209	12	.006	RCP	28.00	3.51	1007.18	1007.01	1011.18	2X3	R-3067-V	4.00	
CBMH 209	CBMH 207	21	.017	RCP	346.69	8.59	1006.22	1000.33	1011.19	48	R-3067-V	4.97	
CB 208	CBMH 207	12	.009	RCP	28.00	4.30	1001.24	1000.99	1005.24	2X3	R-3067-V	4.00	
CBMH 207	CBMH 203	21	.03	RCP	91.19	11.41	1000.23	997.49	1005.22	48	R-3067-V	4.99	
CB 206	CBMH 204	12	.019	RCP	117.56	6.25	1000.50	998.27	1004.50	27	R-4342	4.00	
CB 205	CBMH 204	12	.0024	RCP	28.00	7.03	999.08	998.41	1003.08	2X3	R-3067-V	4.00	
CBMH 204	CBMH 203	21	.0038	RCP	130.35	4.06	998.17	997.67	1003.08	48	R-3067-V	4.91	
CBMH 203	CBMH 202	21	.021	RCP	28.00	9.55	997.39	996.80	1003.77	60	R-3067-V	6.38	
CBMH 202	MH 201	21	.024	RCP	120.89	10.21	996.70	993.80	1003.78	60	R-3067-V	11.08	
MH 201	FES 200	30	.0035	RCP	29.94	4.94	991.60	991.50	1000.50	60	R-1642	8.90	
FES 602	OCS 601	24		RCP	19		991.50	990.54					
OCS 601	FES 600	24		RCP	10		992.05	992.00					



LEGEND:

- PROPOSED STORM SEWER
- PROPOSED DRAIN TILE
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER

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LAKE ELMO, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

STORM SEWER PLAN - EAST PARCEL

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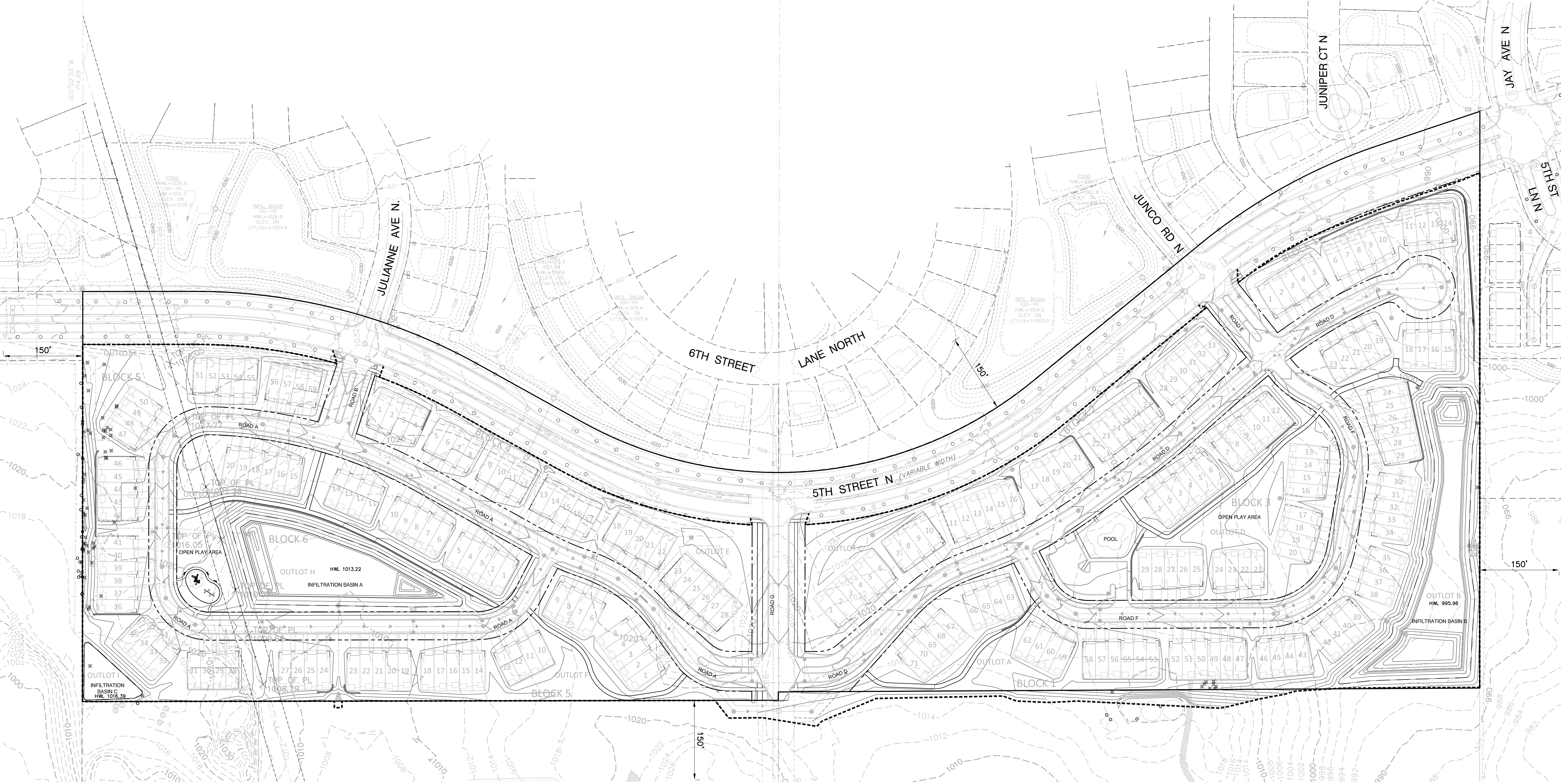
BY	DATE
DATE	ISSUE
1-25-19	CITY SUBMITTAL

PROJECT TEAM DATA
DESIGNED: MPR
DRAWN: SIL
PROJECT NO: 218-0165

25

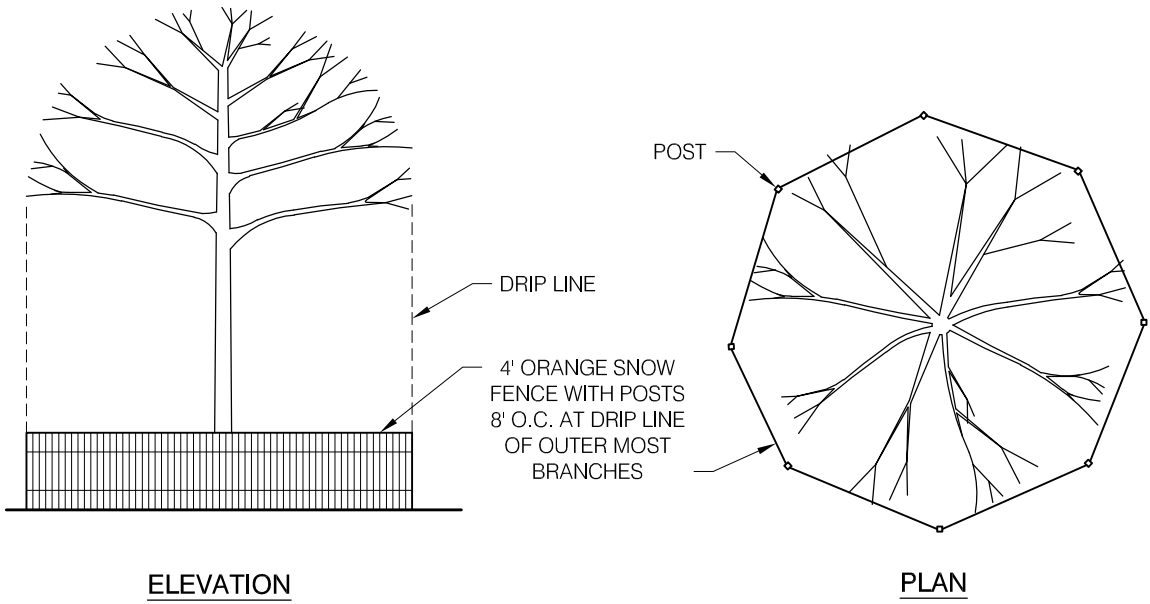
SHEET 25 of 33

Drawing name: X:\2018\180165\plan sheets\Preliminary Plot\180165tree.dwg Jan 24, 2019 11:59am



TREE PRESERVATION NOTES:

- SIGNIFICANT TREE, AS DEFINED BY CITY OF LAKE ELMO ZONING CODE, IS ANY HEALTHY TREE MEASURING SIX INCHES IN DIAMETER OR LARGER AT A HEIGHT OF 54 INCHES ABOVE GROUND FOR HARD WOOD DECIDUOUS TREES, EIGHT INCHES IN DIAMETER OR LARGER FOR CONIFEROUS/EVERGREEN TREES, OR TWELVE INCHES IN DIAMETER OR LARGER FOR COMMON TREES.
- BEFORE ANY CONSTRUCTION OR GRADING OF DEVELOPMENT PROJECT IS TO OCCUR, A TREE PROTECTION FENCE (AT LEAST 4 FEET IN HEIGHT AND STAKED WITH POSTS NO LESS THAN EVERY 8 FEET) SHALL BE INSTALLED AROUND THE DRIP LINE OF WOODED AREAS, THE DRIP LINES OF SIGNIFICANT TREES TO BE PRESERVED OR AT THE PERIMETER OF THE CRITICAL ROOT ZONE (WHICHEVER IS GREATER). SIGNS SHALL BE PLACED ALONG THIS FENCE LINE IDENTIFYING THE AREA AS A TREE PROTECTION AREA AND PROHIBITING GRADING BEYOND THE FENCE LINE. THIS FENCE MUST REMAIN IN PLACE UNTIL ALL GRADING AND CONSTRUCTION ACTIVITY IS TERMINATED.
- NO EQUIPMENT, CONSTRUCTION MATERIALS OR SOIL MAY BE STORED WITHIN THE DRIP LINES OF ANY SIGNIFICANT TREES TO BE PRESERVED.
- NO ENCROACHMENT, LAND DISTURBANCE, GRADE CHANGE, TRENCHING, FILLING, COMPACTION OF CHANGE IN SOIL CHEMISTRY SHALL OCCUR WITHIN FENCED AREAS PROTECTING SIGNIFICANT TREES.
- CONTRACTOR TO PREVENT THE CHANGE IN SOIL CHEMISTRY DUE TO CONCRETE WASHOUT AND LEAKAGE OR SPILLAGE OF TOXIC MATERIALS, SUCH AS FUELS OR PAINTS.
- DRAINAGE PATTERNS ON THE SITE SHALL NOT CHANGE CONSIDERABLY CAUSING DRASTIC ENVIRONMENTAL CHANGES IN THE SOIL MOISTURE CONTENT WHERE TREES ARE INTENDED TO BE PRESERVED.
- NO SIGNIFICANT TREES SHALL BE REMOVED UNTIL THIS TREE PRESERVATION PLAN IS APPROVED BY THE CITY OF LAKE ELMO.
- SEE SHEET 29 FOR TREE INVENTORY LIST.



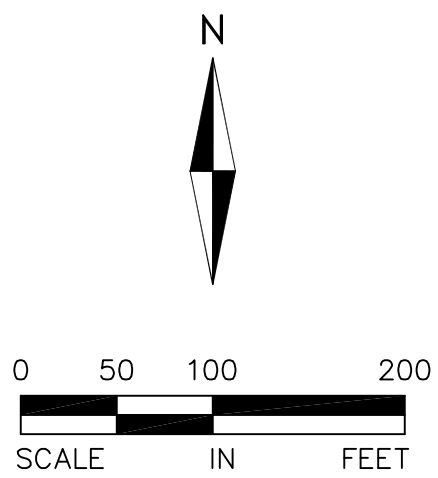
- NOTES:
- TREE PROTECTION SHALL BE PROVIDED BY CONTRACTOR AS REQUIRED TO ENSURE SURVIVABILITY OF EXISTING TREES TO REMAIN.
 - NO HEAVY EQUIPMENT SHALL BE STORED WITHIN THE TREE DRIP LINE AS DESIGNATED ABOVE.
 - REFER TO TREE PRESERVATION PLAN FOR LOCATION OF TREE PROTECTION FENCE.

1
26
TREE PROTECTION FENCE
NOT TO SCALE

LEGEND:

- TREES TO BE SAVED
- TREES TO BE REMOVED
- TREE PROTECTION LIMITS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER
- PROPOSED EASEMENT
- PROPERTY LINE
- SETBACK LINE
- LOT LINE
- RIGHT-OF-WAY

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BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
TREE PRESERVATION PLAN - OVERALL

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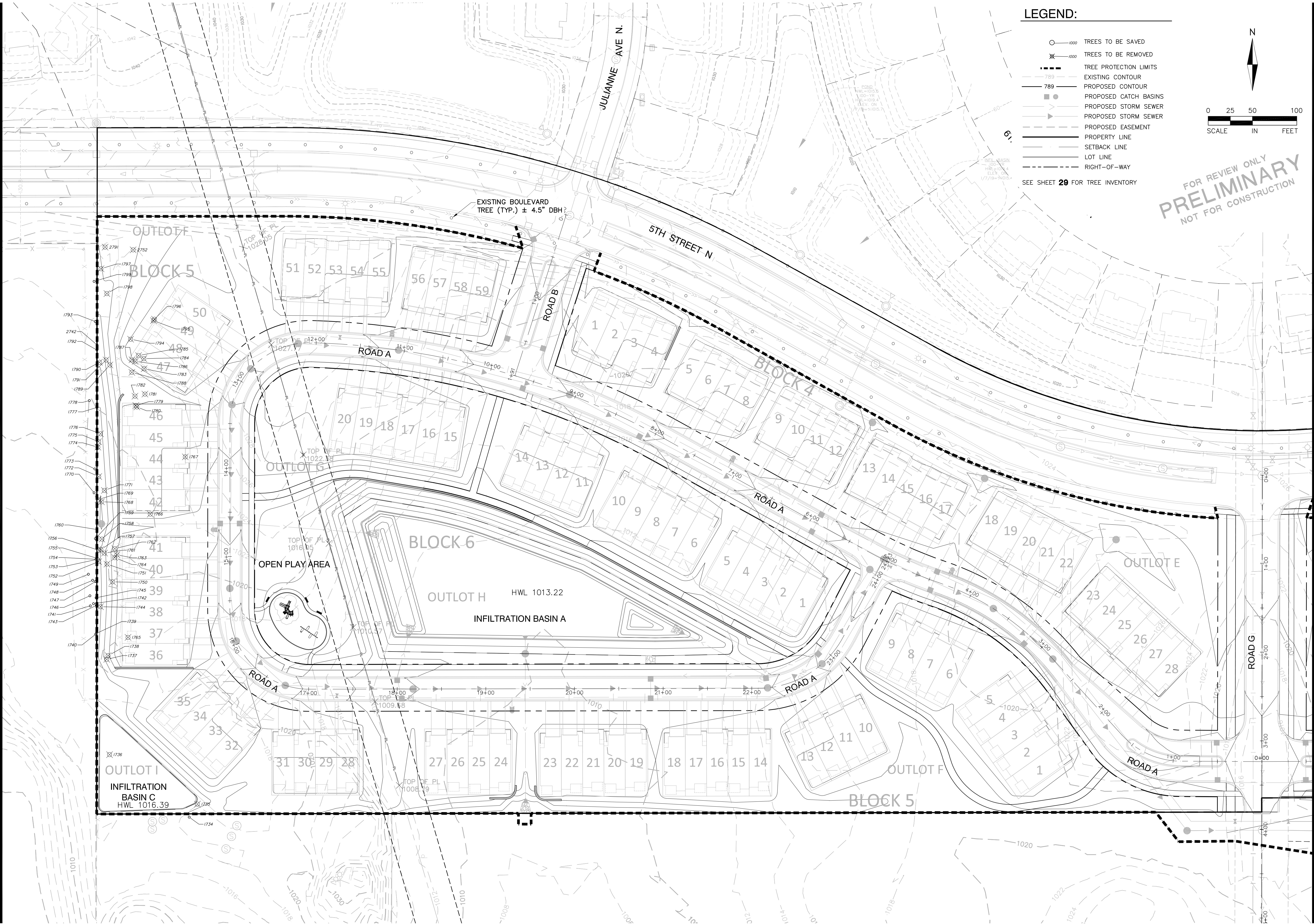
MARK KRONBECK, PLA, ASLA
1-25-19 26222
Date License No.

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BY	DATE
DATE	ISSUE
1-25-19	CITY SUBMITTAL

PROJECT TEAM DATA	
DESIGNED:	MPR
DRAWN:	SIL
PROJECT NO:	218-0165

Drawing name: X:\2018\180165\plan sheets\Preliminary Plat\180165Tree.dwg Jan 24, 2019 11:59am



LEGEND:

- 1000 TREES TO BE SAVED
 - ✕ 1000 TREES TO BE REMOVED
 - TREE PROTECTION LIMITS
 - - - 789 EXISTING CONTOUR
 - - - 789 PROPOSED CONTOUR
 - PROPOSED CATCH BASINS
 - PROPOSED STORM SEWER
 - PROPOSED STORM SEWER
 - PROPOSED EASEMENT
 - PROPERTY LINE
 - SETBACK LINE
 - LOT LINE
 - RIGHT-OF-WAY
- SEE SHEET 29 FOR TREE INVENTORY



0 25 50 100
SCALE IN FEET

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BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
TREE PRESERVATION PLAN - WEST PARCEL

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Mark Kronbeck
MARK KRONBECK, PLA, ASLA
1-25-19 26222
Date License No.

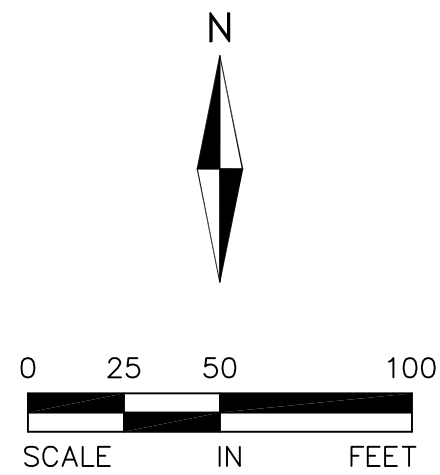
QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
1-25-19	CITY SUBMITTAL

PROJECT TEAM DATA	
DESIGNED:	MPR
DRAWN:	SIL
PROJECT NO:	218-0165

Drawing name: X:\2018\180165\plan sheets\Preliminary Plot\180165tree.dwg Jan 24, 2019 11:59am

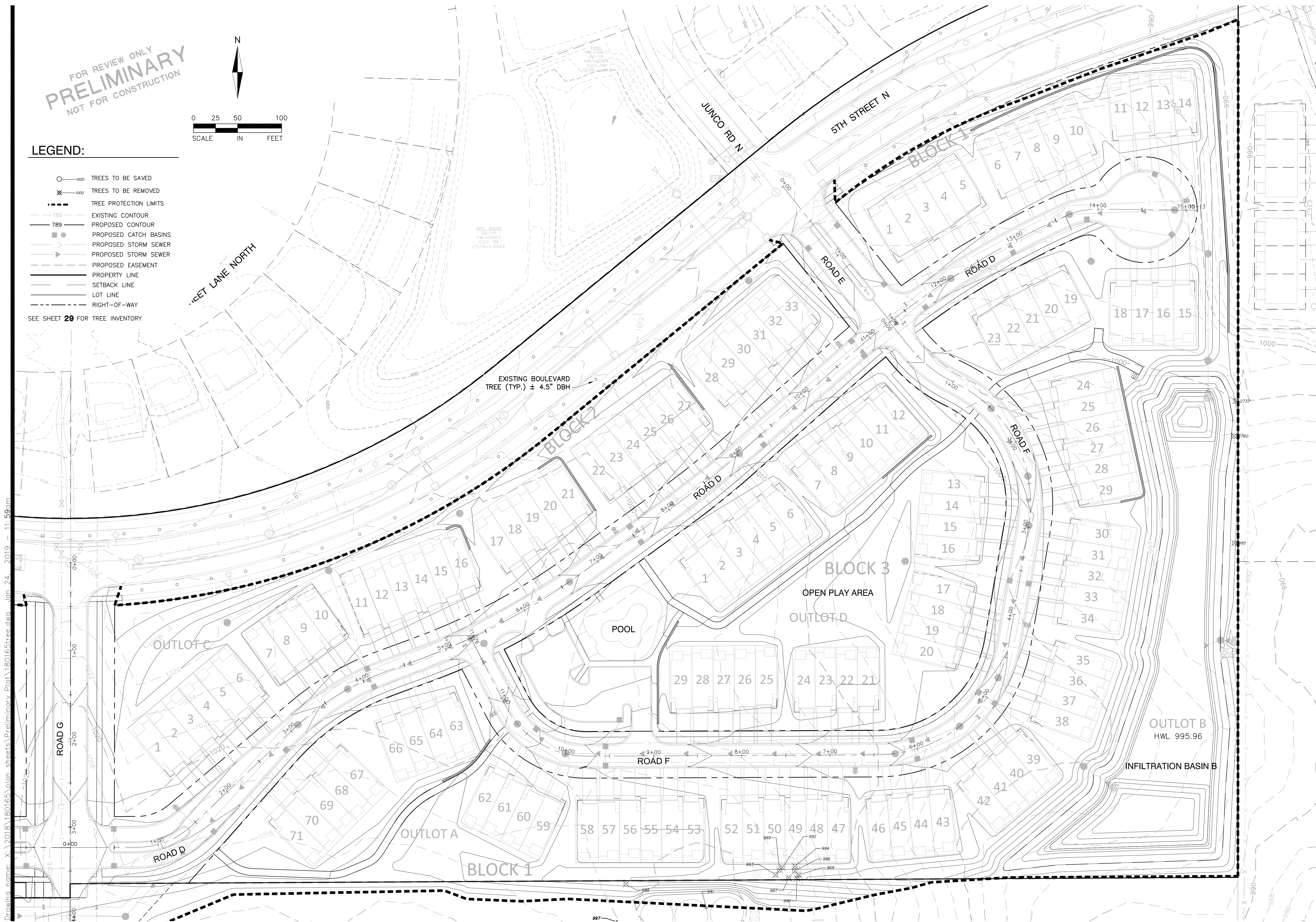
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LEGEND:

- 1000 TREES TO BE SAVED
- ✕ 1000 TREES TO BE REMOVED
- - - - - TREE PROTECTION LIMITS
- - - - - 789 EXISTING CONTOUR
- - - - - 789 PROPOSED CONTOUR
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER
- - - - - PROPOSED EASEMENT
- - - - - PROPERTY LINE
- - - - - SETBACK LINE
- - - - - LOT LINE
- - - - - RIGHT-OF-WAY

SEE SHEET 29 FOR TREE INVENTORY



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BENTLEY VILLAGE

LAKE ELMO, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

TREE PRESERVATION PLAN - EAST PARCEL

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Mark Kronbeck

MARK KRONBECK, PLA, ASLA
1-25-19 26222
Date License No.

QUALITY ASSURANCE/CONTROL

BY DATE

DATE ISSUE

1-25-19 CITY SUBMITTAL

PROJECT TEAM DATA

DESIGNED: MPR

DRAWN: SIL

PROJECT NO: 218-0165

28

SHEET 28 of 33

Drawing name: X:\2018\180165\oldn streets\Preliminary Plat\180165Tree.dwg Jan 24, 2019 11:59am

Tag Number	DBH	Common Name	Notes	SIGNIFICANT	Remove	Common Tree Remove Inches	Hardwood Trre Remove Inches
968	7	American Elm	good		X		
986	14	Big Tooth Aspen	Good	X	X	14	
987	16	American Elm	2x trunk 9,7 good	X	X	16	
988	13	Box Elder	Good	X	X	13	
989	12	American Elm	Good	X	X	12	
990	12	Box Elder	Good	Offsite			
991	8	Black Cherry	Good	Offsite			
992	11	American Elm	good	X	X	11	
993	10	American Elm	Good	X	X	10	
994	11	American Elm	Good	X	X	11	
995	18	Box Elder	Good	X	X	18	
996	11	American Elm	good	X	X	11	
997	17	Box Elder	Good	Offsite			
1000	13	Box Elder	Good	Offsite			
1734	15	Box Elder	Good	Offsite			
1735	12	Box Elder	Good	X	X	12	
1736	14	Box Elder	Good	X	X	14	
1737	10	Black Cherry	Good	X	X		10
1738	9	Black Cherry	good	X	X		9
1739	9	White Oak	stressed, epicchomic	X			
1740	18	White Oak	2x trunk 9,9 Stressed, branching	X			
1741	7	White Oak	Poor	Offsite			
1742	8	White Oak	Good	Offsite			
1743	8	White Oak	Good	X			
1744	9	White Oak	Good	X	X		9
1745	19	Box Elder	Good	X			
1746	8	White Oak	Good	Offsite			
1747	9	White Oak	Good	Offsite			
1748	9	White Oak	Good	Offsite			
1749	8	Red Oak	Good	Offsite			
1750	7	Red Oak	Good	X	X		7
1751	6	White Oak	Good	X	X		6
1752	15	Red Oak	Good	X	X		15
1753	18	Red Oak	Good	X			
1754	16	Red Oak	Good	X			
1755	15	Red Oak	Good	X			
1756	16	Red Oak	Poor, Stem Rot		X		
1757	18	Red Oak	Poor, Stem Rot		X		
1758	11	Red Oak	Poor		X		
1759	17	Red Oak	Good	Offsite			
1760	7	White Oak	Good	X	X		7
1761	8	Black Cherry	poor	X	X		8
1762	12	Red Oak	Good	X	X		12
1763	10	Red Oak	Good	X	X		10
1764	11	Red Oak	Good	X	X		11
1765	7	Red Oak	Good	X	X		7
1766	7	Red Oak	Good	X	X		7
1767	7	Black Cherry	Good	X	X		7
1768	21	Red Oak	Good	X	X		21
1769	20	Red Oak	Good	X	X		20
1770	17	Red Oak	Good	Offsite			
1771	19	Black Cherry	2x trunk 10,9 good	X	X		19
1772	17	White Oak	Good	X	X		17
1773	17	Box Elder	good	Offsite			
1774	21	Red Oak	Good	X	X		21
1775	28	White Oak	2x trunk 15,13 good	X	X		28
1776	28	White Oak	good	X	X		28
1777	15	Hackberry	Good	X			
1778	11	Red Oak	Good	Offsite			
1779	15	Big Tooth Aspen	Good	X	X	15	
1780	7	Red Oak	Good	X	X		7
1781	7	Red Oak	Good	X	X		7
1782	10	Red Oak	Good	X	X		10
1783	8	Red Oak	Good	X	X		8
1784	11	Red Oak	Good	X	X		11
1785	7	Red Oak	Good	X	X		7
1786	8	Red Oak	Good	X	X		8
1787	6	Red Oak	Good	X	X		6
1788	6	Red Oak	Good	X	X		6
1789	12	Black Cherry	Good	X	X		12
1790	27	White Oak	2x trunk 17,10 good	X	X		27
1791	14	Box Elder	Good	X	X	14	
1792	19	Red Oak	Good	X			
1793	16	Red Oak	Good	Offsite			
1794	7	Red Oak	Good	X	X		7
1795	15	Red Oak	2x trunk 8,7 good	X	X		15
1796	7	Red Oak	Good	X	X		7
1797	18	Red Oak	poor	X	X		18
1798	8	Red Oak	Good	X	X		8
1799	10	White Oak	good	Offsite			
2737	18	American Elm	Good	X	X	18	
2760	45	American Elm	4x trunk 12,11,11,11 good	X	X	45	
2791	26	Box Elder	Pt 25884 2x trunk 14,8	X	X	26	
2752	19	Box Elder	Pt 25886	X	X	19	
2742	44	Oak	Pt 25868 2x trunk 25, 19	X			

TREE SUMMARY

SIGNIFICANT TREE DBH ONSITE	
COMMON TREE DBH	313
HARDWOOD TREE DBH	590
TOTAL ONSITE	903
SIGNIFICANT TREE DBH ONSITE TO BE REMOVED	
COMMON TREE DBH	279
HARDWOOD TREE DBH	443
TOTAL REMOVED	722 (79.96%)
NET TREE DBH PRESERVED	181 (20.04%)

TREE PRESERVATION CALCULATION

TOTAL SIGNIFICANT TREE DBH ONSITE	903
30% TOTAL ALLOWED TO BE REMOVED	270.9
ALLOCATION OF 30% ALLOWED TREE DBH TO BE REMOVED	
COMMON TREE DBH	270.9
HARDWOOD TREE DBH	0
REQUIRED MITIGATION DBH	
COMMON TREE DBH	8.1
HARDWOOD TREE DBH	443
REPLACEMENT CALCULATION	
8.1 DBH X 0.25 IN	2.025
443 DBH X 0.5 IN	221.5
TOTAL REPLACEMENT DBH REQUIRED	224

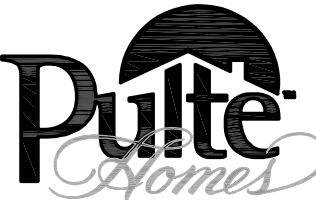
LEGEND

- DENOTES TREES TO BE REMOVED
- DENOTES OFFSITE TREES



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TREE INVENTORY

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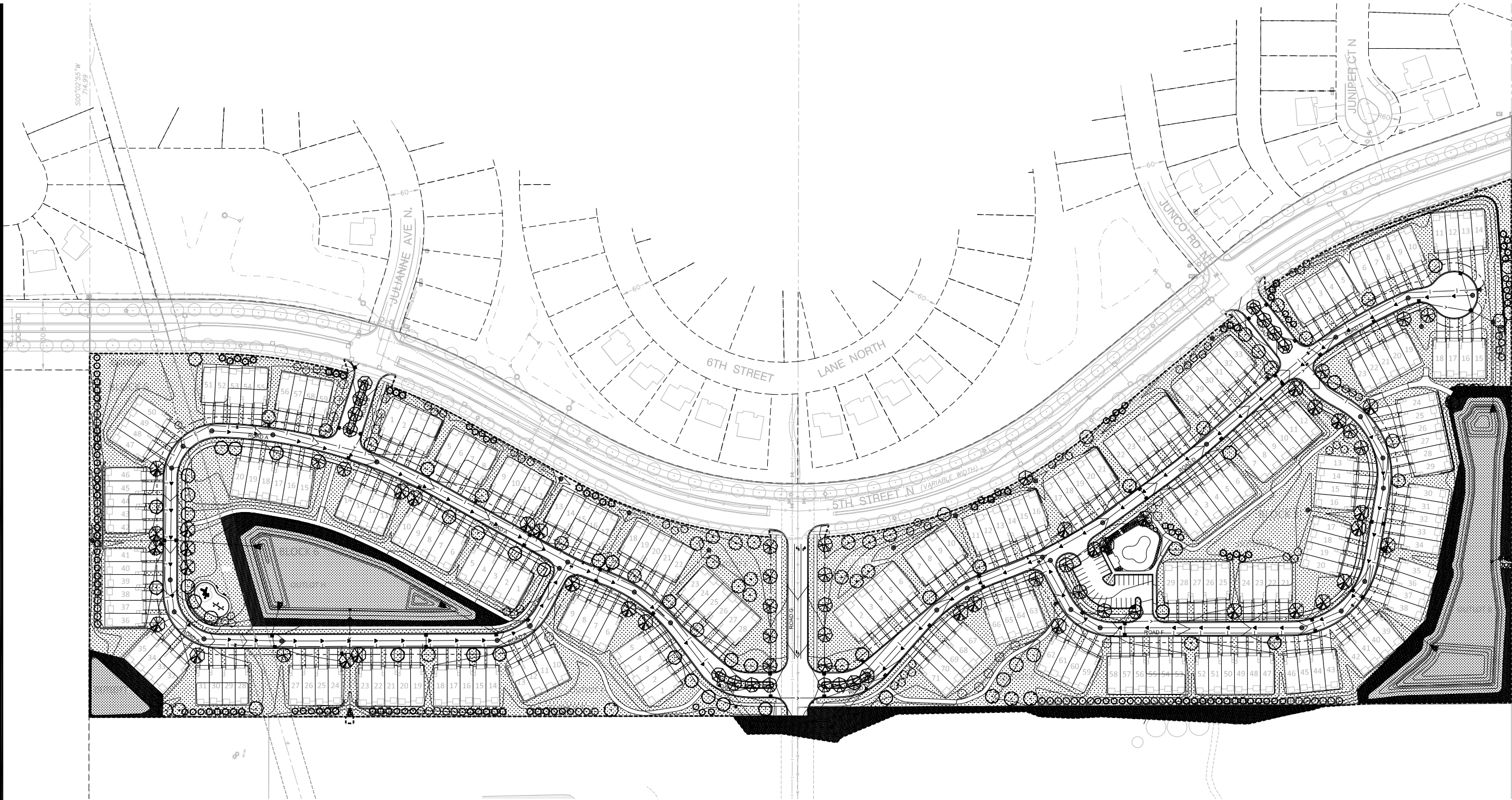
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1-25-19	CITY SUBMITTAL

PROJECT TEAM DATA

DESIGNED: MPR
DRAWN: SIL
PROJECT NO: 218-0165

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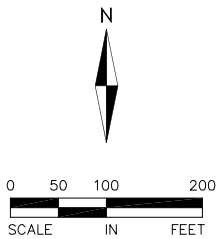
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LEGEND

- OVERSTORY DECIDUOUS TREES
- ORNAMENTAL TREES
- CONIFEROUS TREES
- FLOWERING & EVERGREEN SHRUBS
- PERENNIALS
- INFILTRATION AREA SEED MIX:
MN STATE SEED MIX 33-262 (DRY SWALE/POND)
- SIDE SLOPE MIX:
MN STATE SEED MIX 33-261 (STORMWATER SOUTH & WEST)
- SOD

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BENTLEY VILLAGE
LAKE ELMO, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
LANDSCAPE PLAN - OVERALL

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed LANDSCAPE ARCHITECT under the laws of the State of MINNESOTA

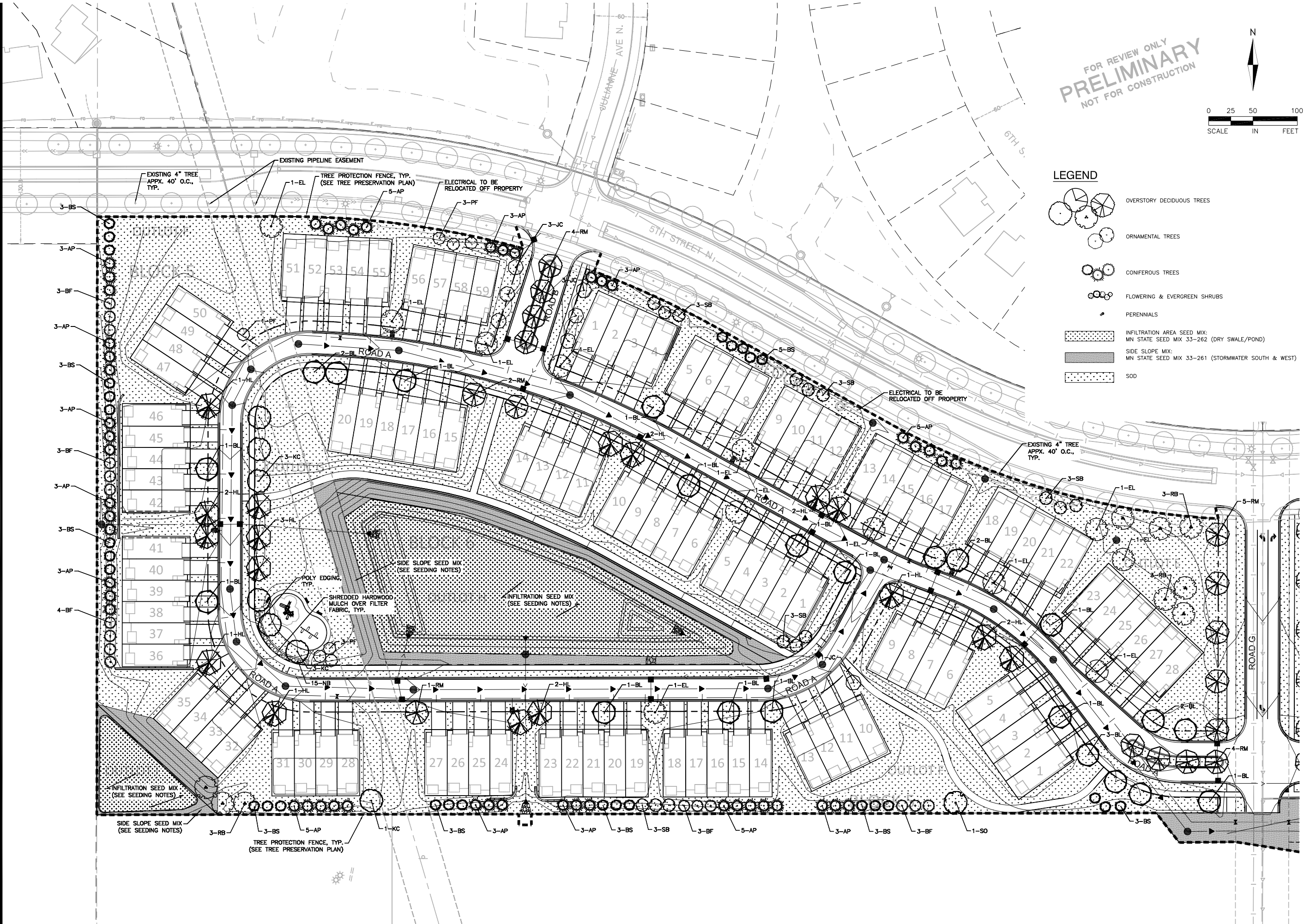
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1-25-19 26222
Date License No.

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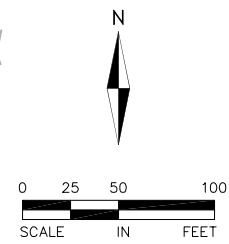
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- LEGEND**
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LANDSCAPE PLAN - WEST PARCEL

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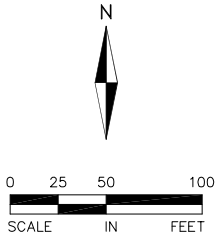
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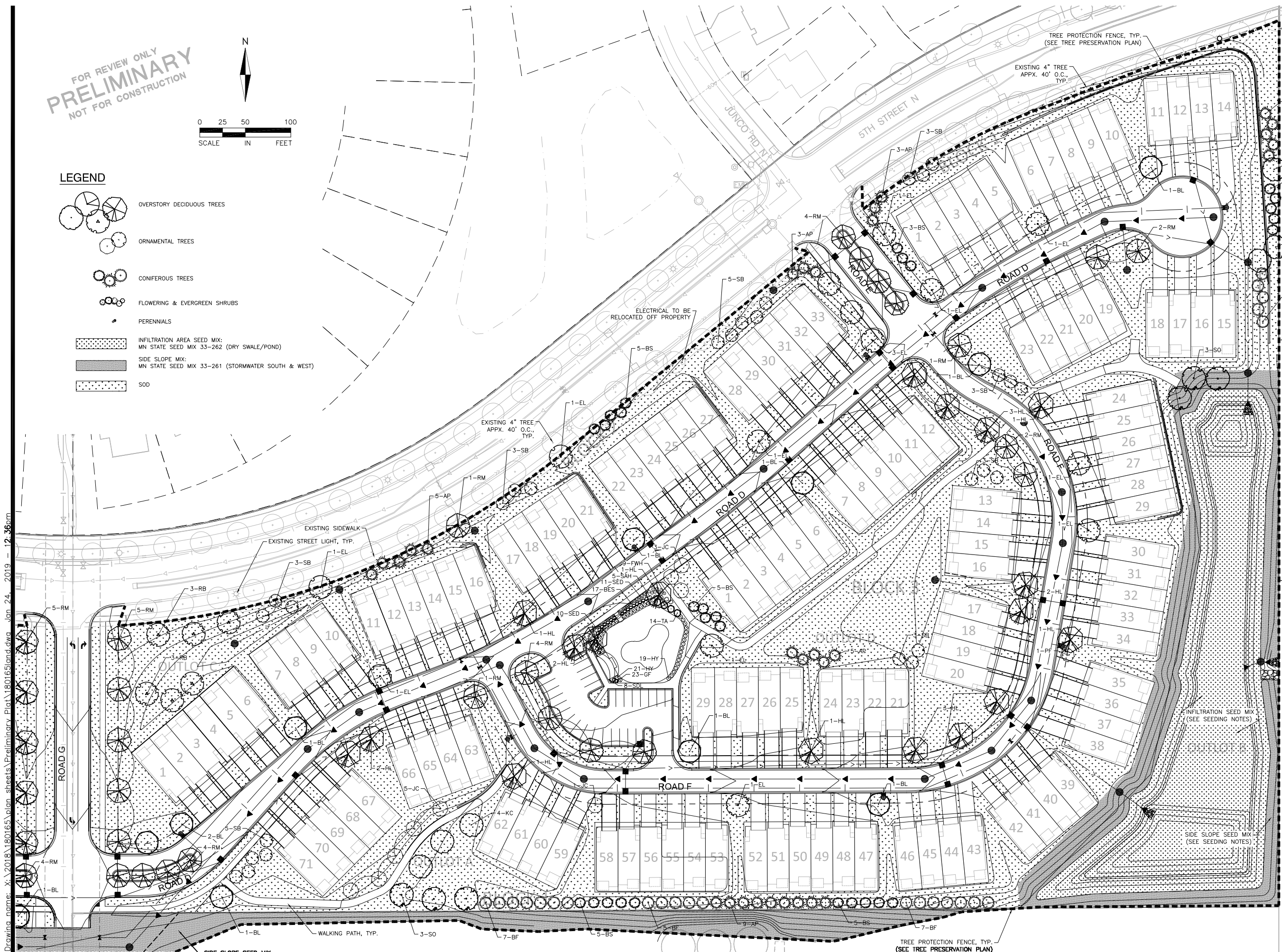
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LANDSCAPE PLAN - EAST PARCEL

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LANDSCAPE SCHEDULE

QTY	KEY	COMMON NAME / SCIENTIFIC NAME	SIZE	NOTES
OVERSTORY TREES - 168				
32	BL	Boulevard Linden <i>Tilia americana</i> 'Boulevard'	2.5" Cal. B&B	Straight Trunk, No V-Crotch
26	EL	Patriot Elm <i>Ulmus patriot</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
35	HL	Northern Acclaim Honeylocust <i>Gleditsia triacanthos</i> var. <i>Inermis</i> 'Harve'	2.5" Cal. B&B	Straight Trunk, No V-Crotch
13	KC	Kentucky Coffeetree 'Espresso' <i>Gymnocladus dioicus</i> 'Espresso'	2.5" Cal. B&B	Straight Trunk, No V-Crotch
15	RB	River Birch <i>Betula nigra</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
40	RM	Autumn Blaze Red Maple <i>Acer x freemanii</i> 'Jeffersred'	2.5" Cal. B&B	Straight Trunk, No V-Crotch
7	SO	Swamp White Oak <i>Quercus bicolor</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
CONIFEROUS TREES - 181				
80	AP	Austrian Pine <i>Pinus nigra</i>	6' ht. B&B	Full Form
40	BF	Balsam Fir <i>Abies balsamea</i>	6' ht. B&B	Full Form
57	BS	Blackhills Spruce <i>Picea glauca densata</i>	6' ht. B&B	Full Form
4	TA	Techny Arborvitae <i>Thuja occidentalis</i> 'Techny'	6' ht. B&B	Full Form
ORNATMENTAL TREES - 67				
16	JC	Japanese Tree Lilac <i>Syringa reticulata</i>	2.5" cal. B&B	Straight Trunk, No V-Crotch
8	PC	Prairie Rose Crabapple <i>Malus</i> 'Prairie Rose'	2.5" cal. B&B	Straight Trunk, No V-Crotch
43	SB	Autumn Brilliance Serviceberry <i>Amerflanchier x grandiflora</i> 'Autumn Brilliance'	6' ht. B&B	Clump Form
SHRUBS AND PERENNIALS - 139				
23	GF	Goldflame Spirea <i>Spirea x bumalda</i> 'Goldflame'	18" ht. cont.	Min. 5 canes at ht. specified.
38	HY	Little Lime Hydrangea <i>Hydrangea paniculata</i> 'Jane'	24" ht. cont.	Min. 5 canes at ht. specified.
15	NB	Tiny Wine Ninebark <i>Physocarpus opulifolius</i> 'SMPOTW'	24" ht. cont.	Min. 5 canes at ht. specified.
8	BDL	Baja Daylily <i>Hemerocalis</i> 'Baja'	1 gal. cont.	
17	BES	Black-eyed Susan <i>Rudbekia hirta</i> 'Little Gold Star'	1 gal. cont.	
9	FWH	Francis Williams Hosta <i>Hosta sieboldiana</i> 'Francis Williams'	1 gal. cont.	
8	SAH	Sagae Hosta <i>Hosta</i> 'Sagae'	1 gal. cont.	
21	SED	Neon Sedum <i>Sedum spectabile</i> 'Neon'	1 gal. cont.	

NOTE: QUANTITIES ON PLAN SUPERSEDE LIST QUANTITIES IN A DISCREPANCY

SEEDING NOTES:

INFILTRATION AREA SEED MIX: MN STATE SEED MIX 33–262.
SEEDING RATE TO BE 44 LBS/ACRE (PURE LIVE SEED).

SIDE SLOPE MIX: MN STATE SEED MIX 33–261.
SEEDING RATE TO BE 35 LBS/ACRE (PURE LIVE SEED).

APPLY SEED PER THE FOLLOWING: MULCH SEEDED AREAS WITH Mn/DOT TYPE 3 (MCIA CERTIFIED WEED FREE) MULCH AT A RATE OF 1 TON PER ACRE WITHIN 48 HOURS OF SEEDING. MULCH SHOULD THEN BE DISC ANCHORED TO KEEP IT FROM BLOWING AWAY.

SEEDING SHALL BE APPLIED FROM APRIL 15 – JULY 20 OR SEPTEMBER 20 – FREEZE UP. IF HYDROSEEDING UTILIZE APPROXIMATELY 500 GALLONS OF WATER PER ACRE. REFER TO MN/DOT SPEC 3884 FOR PROPER INSTALLATION OF HYDRO-SEED. ALL NATIVE SEEDS USED ON THIS PROJECT SHALL BE CERTIFIED TO BE OF MINNESOTA ORIGIN BY THE MINNESOTA CROP IMPROVEMENT ASSOCIATION (MCIA). SITE TO BE PREPARED BY LOOSENING TOPSOIL TO A MINIMUM DEPTH OF 3 INCHES. THE SITE TO BE HARROWED OR RAKED FOLLOWING SEEDING, AND THEN PACKED USING A CULTI-PACKER OR EQUIVALENT. SEE MNDOT SEEDING MANUAL FOR REFERENCE.

MAINTAIN SEEDED AREAS BY WATERING, REMULCHING AND REPLANTING AS NECESSARY TO ESTABLISH A UNIFORMLY DENSE STAND OF THE SPECIFIED GRASSES UNTIL ACCEPTED. ANY AREAS FAILING TO ESTABLISH A STAND SHALL BE RESEED, REFERTILIZED AND REMULCHED WHENEVER 70% VEGETATIVE COVER IS NOT ACHIEVED. RESEEDING SHALL CONFORM IN ALL RESPECTS TO THESE SPECIFICATIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE WORK AREAS RESULTING FROM EROSION AND/OR EQUIPMENT. THE CONTRACTOR SHALL REPAIR DAMAGE, INCLUDING REGRAIDING, RESEEDING, ETC. AS NECESSARY, BEFORE SIGNIFICANT DAMAGE OCCURS.

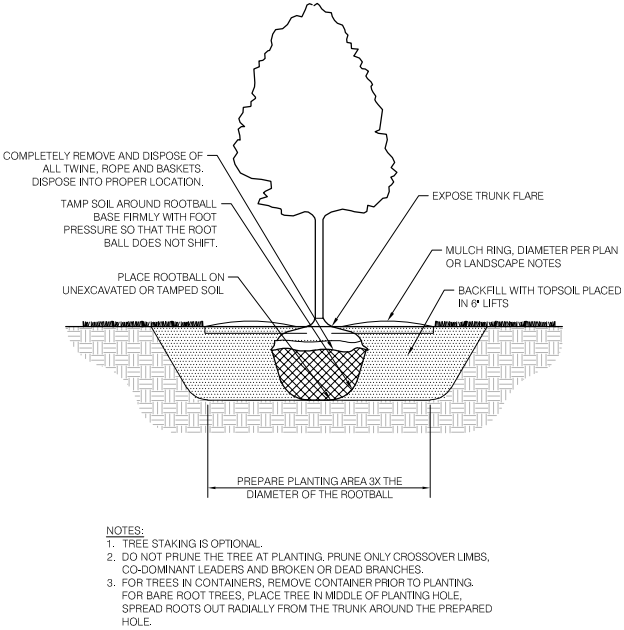
REFER TO MN STATE SEED MIX MANUAL.

PLANTING NOTES:

1. INSTALL 4" MIN. TOP SOIL TO ALL SOD AND SEED AREAS. FINE GRADE ALL SOD AND SEED AREAS.
2. STAKE OR MARK ALL PLANT MATERIAL LOCATIONS PRIOR TO INSTALLATION.
3. ALL MULCH AREAS, UNLESS SPECIFIED AS OTHER, TO BE BED MULCHED WITH 4" DEPTH OF DOUBLE SHREDDED HARDWOOD MULCH COLOR DARK BROWN OVER WEED BARRIER. POLY EDGING TO BE VALLEY VIEW BLACK DIAMOND OR APPROVED EQUAL.
4. INSTALL 4–6" DEPTH SHREDDED HARDWOOD MULCH AROUND ROOT SAUCER OF ALL TREES ISOLATED FROM PLANT BEDS.
5. PLANTING SOIL SHALL CONSIST OF 1:1:1 SELECT LOAMY TOPSOIL, PEAT MOSS, PIT RUN SAND.
6. COMPLETELY GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR BEGINNING AT THE DATE OF ACCEPTANCE. MAKE ALL REPLACEMENTS PROMPTLY (AS PER DIRECTION OF OWNER).
7. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMEN.
8. ALL TREE TRUNKS SHALL BE WRAPPED WITH BROWN CREPE TREE WRAP. APPLY WRAP IN NOVEMBER AND REMOVE IN APRIL.
9. CALL GOPHER STATE ONE CALL AT 651–454–0002 FOR LOCATING ALL UNDERGROUND UTILITIES AND AVOID DAMAGE TO UTILITIES DURING THE COURSE OF THE WORK.
10. MAINTAIN ALL PLANT MATERIALS, INCLUDING WATERING, UNTIL THE TIME OF ACCEPTANCE.
11. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.
12. STAKING AND GUYING OF TREES OPTIONAL: MAINTAIN PLUMBNESS OF TREES FOR DURATION OF WARRANTY PERIOD.
13. BLEND AREAS OF CONSTRUCTION LIMITS AT PROPERTY LINES.
14. CONTRACTOR TO SUPPLY DESIGN AND INSTALLATION OF AN IRRIGATION PLAN WITH 100% COVERAGE FOR DESIGNED SOD AND SHRUB AREAS. SOD AND SHRUB AREAS TO BE ON SEPARATE ZONES. USE RAIN BIRD OR APPROVED EQUAL. INSTALL SEPARATE METER FOR IRRIGATION SYSTEM. COORDINATE WITH G.C. PROVIDE RAIN SENSOR AND INSTALL NATIVE SEED AREAS ON SEPARATE ZONES. IRRIGATION RUN TIMES IN SEEDED AREAS SHOULD BE REDUCED FOR THE ZONES SHUT DOWN AFTER THE FIRST 2 YEARS OF ESTABLISHMENT.
15. SWEEP AND WASH ALL PAVED SURFACES AND REMOVE ALL DEBRIS RESULTING FROM LANDSCAPE OPERATIONS.
16. GENERAL CONTRACTOR SHALL FOLLOW THE COUNTY/STATE SOIL & EROSION CONTROL SPECIFICATION FOR DISTURBED AREA STABILIZATION.

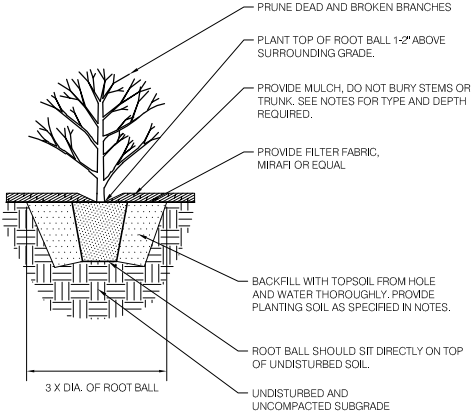
LANDSCAPE REQUIREMENTS:

<u>TREE REPLACEMENT:</u> 224 DBH / 2.5 INCHES: (SEE TREE PRESERVATION PLAN FOR CALCS)	90 TREES REQUIRED
<u>ONE TREE PER 50 FEET OF STREET FRONTAGE:</u> 5,908.0616 FT / 50 = 118 TREES	118 TREES REQUIRED
<u>5 TREES PER ACRE OF DEVELOPMENT:</u> 41.56 ac x 5 = 208 TREES	208 TREES REQUIRED
	416 TOTAL TREES REQUIRED 416 TOTAL TREES PROVIDED



1 DECIDUOUS TREE PLANTING

NO SCALE



2 SHRUB PLANTING

NOT TO SCALE



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LANDSCAPE SCHEDULE, NOTES AND DETAILS

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Mark Kronbeck

MARK KRONBECK, PLA, ASLA	
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DRAWN:	CKS
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