

LEGEND

- U.P. EXIST. UTILITY POLE
GUY WIRE
ELEC. TRANSFORMER
AC UNIT
OH EXIST. OVERHEAD UTILITY LINE
EXIST. LIGHT POLE
g EXIST. ELECTRIC LINE
g EXIST. GAS LINE
g EXIST. WATER MAIN
g EXIST. HYDRANT
g EXIST. GATE VALVE IN BOX
g EXIST. GATE VALVE IN WELL
g EXIST. STORM SEWER
g EXIST. CATCH BASIN OR INLET
END SECTION
CULVERT
s EXIST. SANITARY SEWER
s EXIST. CLEANOUT
P/L PROPERTY LINE
EDGE OF WATER
FENCE
GUARDRAIL
FOUND MONUMENT
SECTION CORNER
PARKING SPACE #
BARRIER FREE PARKING SPACE #
EXCEPTION #
FLAG POLE

NOTES:

- 1) This survey was prepared using First American Title Insurance Company, Title Commitment File No. 856683, dated July 22, 2020.
2) The parcel herein described is currently zoned R4A - Multiple Family Dwelling District - City of Ann Arbor zoning.
3) The parcel herein described is in Zone X (unshaded); the area determined to be outside the 500-year flood hazard, per Federal Emergency Management Agency flood insurance rate map # 26161C0254E, effective date: April 3, 2012.
4) Parcel address: 3380 Nixon Road, Ann Arbor, MI 48105.
5) Parcel has direct access to Nixon Road, a public street.
6) M-14 Right-of-way fence encroaches onto subject parcel by up to 1.3 feet.
7) There are no improvements on the Proposed Park Parcel located in the SE corner of the subject parcel.
8) Site Address: 3380 Nixon Road, Ann Arbor, MI 48105
9) Building heights measured from ground to mid-point between roof peak and soffit as defined in zoning ordinance

PARKING:

The parcel hereon contains 492 regular parking spaces, an additional 44 regular spaces within garages and 12 handicap spaces. Total parking spaces = 548 spaces.

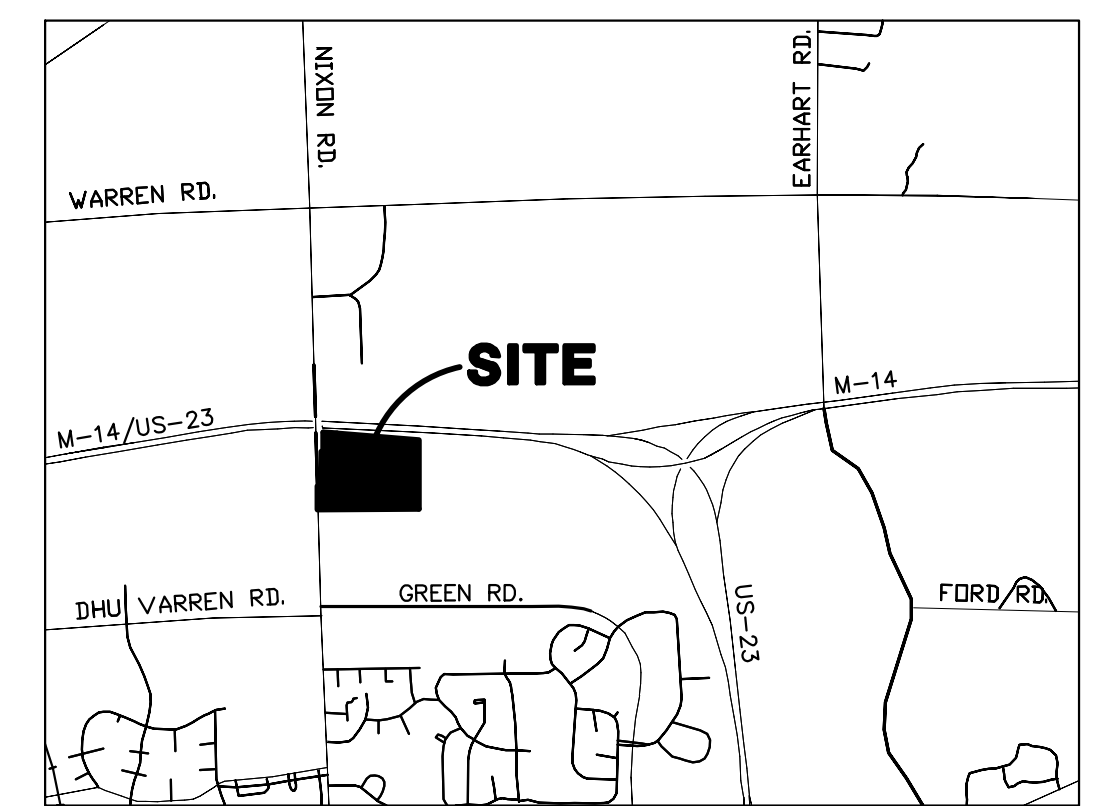
SURVEY CERTIFICATION

To: The Lafayette Life Insurance Company, and its respective successors and assigns, BRE Nixon Road Associates, LLC, a Michigan limited liability company, and First American Title Insurance Company:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 2, 3, 4, 6(b), 7(a), 7(b)(1), 7(c), 8, 9, 10(a), 11, 13, 14, 16, 18, 19 and 20 of Table A thereof. The field work was completed on 7/31/2020.

Date: August 26, 2020

Patrick L. Hastings, PS #37277



VICINITY MAP
SCALE 1"=300'

LEGAL DESCRIPTION

PARCEL 1: Tax Item No. 09-09-10-401-001 Legal Description taken from First American Title Insurance Company, Title Commitment File No. 856683, Dated July 26, 2019.

That part of the Northeast 1/4 of the Southeast 1/4 of Section 10, Town 2 South, Range 6 East, Ann Arbor Township, Washtenaw County, Michigan, lying South of the South right of way line of US-23. EXCEPT, All that part of the Northeast 1/4 of the Southeast 1/4 of said Section 10, described as: Beginning at a point which is South 01 degrees 22 minutes 57 seconds East along the centerline of Nixon Road 1011.81 feet from the Northwest corner of the Northeast 1/4 of the Southeast 1/4 of said Section 10; thence North 88 degrees 37 minutes 03 seconds East, 50.00 feet; thence North 01 degrees 22 minutes 57 seconds West, 450.00 feet; thence North 88 degrees 37 minutes 03 seconds East, 25.00 feet; thence North 01 degrees 22 minutes 57 seconds West, 248.26 feet to a point on the Southerly right-of-way line of Highway US-23; thence Westerly along said right-of-way line, to the centerline of Nixon Road; thence South 01 degrees 22 minutes 57 seconds East, 707.00 feet more or less, to the Point of Beginning.

ALSO DESCRIBED BY SURVEY AS FOLLOWS:

Commencing at the S 1/4 Corner of Section 10, T2S, R6E, City of Ann Arbor, Washtenaw County, Michigan; thence N 89°56'13" E 1316.52 feet along the South line of said Section 10; thence N 00°11'20" W 1317.61 feet along the West line of the E 1/2 of the SE 1/4 of said Section 10 and the centerline of Nixon Road (variable width) to the POINT OF BEGINNING;

thence continuing N 00°11'20" W 305.30 feet along said line; thence N 89°48'40" E 50.00 feet; thence N 00°11'20" W 450.00 feet; thence N 89°48'40" E 25.00 feet; thence N 00°11'20" W 248.26 feet; thence along the Southerly right-of-way line of U.S. 23 Highway in the following two (2) courses:

Southeasterly 178.65 feet along the arc of a circular curve to the right, radius 7442.45 feet, central angle 01°22'31", long chord S 86°08'16" E 178.65 feet; S 85°27'00" E 1071.04 feet;

thence S 00°05'49" E 895.15 feet along the East line of said Section 10; thence S 89°29'37" W 1319.16 feet along the South line of the NE 1/4 of the SE 1/4 of said Section 10 to the POINT OF BEGINNING. Being a part of the NE 1/4 of the SE 1/4 of said Section 10, T2S, R6E, City of Ann Arbor, Washtenaw County, Michigan, and containing 27.94 acres of land, more or less. Being subject to the rights of the public over the Westerly 33.00 feet thereof as occupied by said Nixon Road. Being subject to easements and restrictions of record, if any.

Being Subject to:

- 10. State Trunkline Highway US-23 is a Limited Access Highway as disclosed by instrument recorded in Liber 948, page 184. PLOTTED
11. Grant of Easement in favor of the City of Ann Arbor and the Covenants, Conditions and Restrictions contained in instrument recorded in Liber 5185, Page 222. PLOTTED
12. Terms and Conditions contained in Woodbury Club Development Agreement as disclosed by instrument recorded in Liber 5196, page 360. BLANKET
13. Grant of Easement in favor of Comcast of Colorado/Florida/Michigan/New Mexico/Pennsylvania/Washington, LLC and the Covenants, Conditions, and Restrictions contained in instrument recorded in Liber 5243, Page 780. BLANKET
14. Grant of Easement in favor of City of Ann Arbor and the Covenants, Conditions, and Restrictions contained in instrument recorded in Liber 5258, Page 247. PLOTTED
15. Grant of Easement in favor of City of Ann Arbor and the Covenants, Conditions, and Restrictions contained in instrument recorded in Liber 5258, Page 248. PLOTTED
16. Grant of Easement in favor of City of Ann Arbor and the Covenants, Conditions, and Restrictions contained in instrument recorded in Liber 5258, Page 249. PLOTTED
17. DTE Electric Company Underground Easement (Right of Way) No. 47083274-47118540 in favor of DTE Electric Company, a Michigan corporation and the Covenants, Conditions, and Restrictions contained in instrument recorded in Liber 5265, Page 207. PLOTTED
18. Any rights, title interest or claim thereof to that portion of the land taken, used or granted for streets, roads or highways.
22. Survey by Midwestern Consulting, dated September 12, 2017, last revised October 06, 2017, Job No. 12088, discloses the following:

- a. Overhead utility lines crossing property and property lines.
b. Utility poles and guy wires on property.
c. Fence inside and crossing Northerly property line, outside Northerly and Southerly property lines.

S 1/4 CORNER SECTION 10, T2S, R6E N89°56'13"E 1316.52'

NIXON ROAD N00°11'20" W 1317.61'

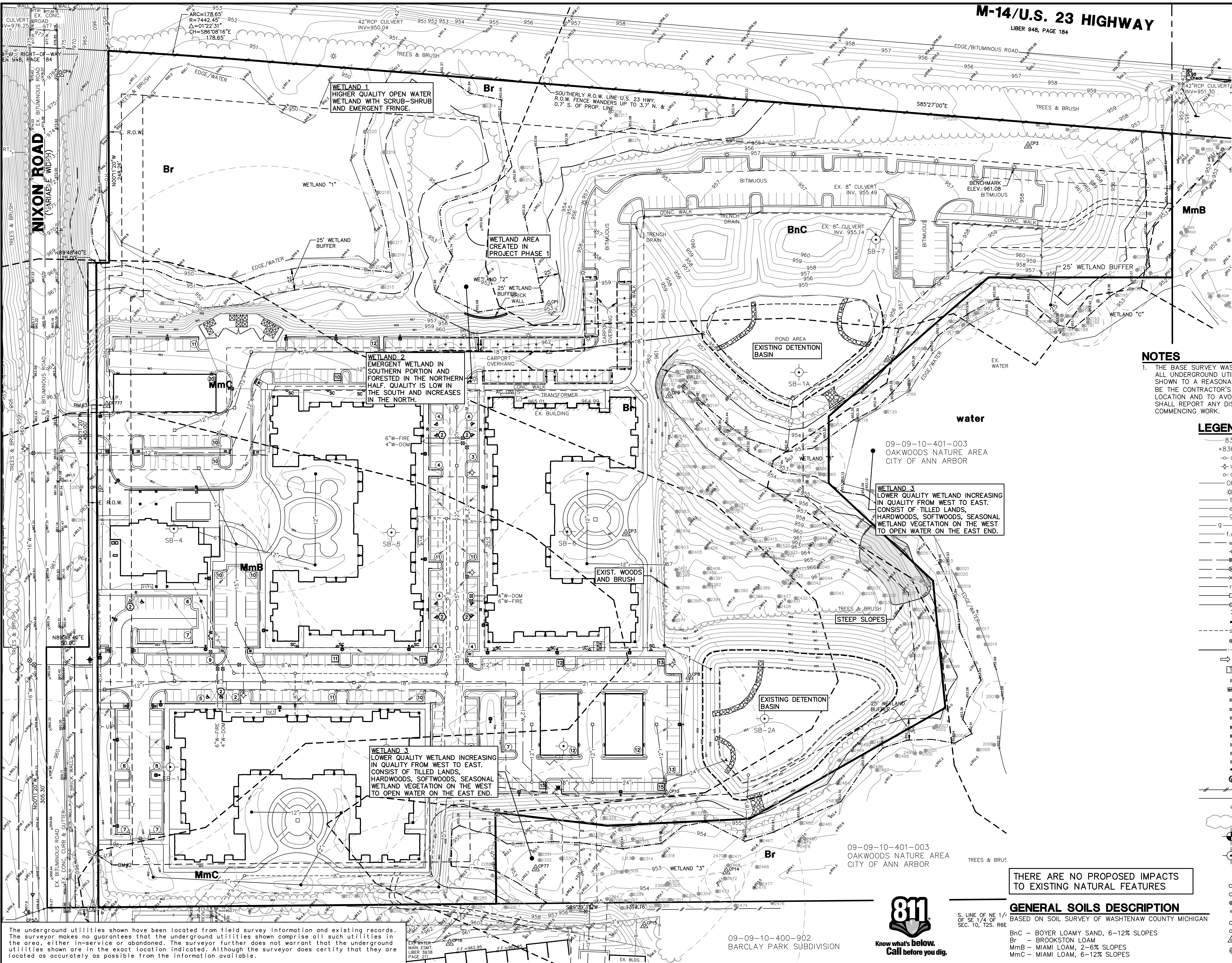
SOUTH LINE SECTION 10, T2S, R6E N89°55'13"E 1317.02'

SE CORNER SECTION 10, T2S, R6E

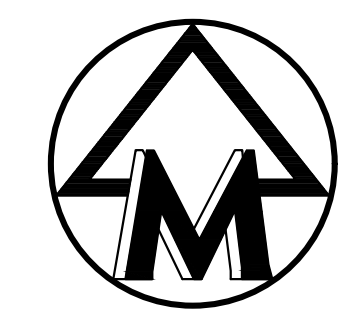
The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

MIDWESTERN CONSULTING
385 Plaza Drive Ann Arbor, Michigan 48108
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Land Development • Land Survey • Institutional • Municipal
Wireless Communications • Transportation • Landfill Services
CLIENT: BRE NIXON RD ASSOCIATES LLC
28555 Orchard Lake Road Farmington Hills, MI 48018
OWL CREEK PHASE 2
ALTA/NSPS LAND TITLE SURVEY OF A 27.94 ACRE PARCEL OF LAND LOCATED IN THE SE 1/4 OF SECTION 10, T2S, R6E, CITY OF ANN ARBOR, WASHTENAW COUNTY, MICHIGAN
2
REVISED NOTES 9/3/20
JOB NO. 12088
DATE: 9/13/17
SHEET 2 OF 2
REVISED PER COMMENTS 10/6/17
REVISED PER AS-BUILT CONDITIONS 8/14/19
REVISED 9/26/19
ADDED 3RD SHEET 9/27/19
NEW COMMENTS 8/28/20

M:\CIVIL\2023\3015\Site Plan\3015M1.dwg, 11/10/2023 2:55 PM, Jim Ahern, 3 NATURAL FEATURES AND SITE ANALYSIS PLAN, MCLC PDF.p3
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M-14/U.S. 23 HIGHWAY
LIBER 948, PAGE 184



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CLIENT
 BRE NIXON RD. ASSOCIATES, LLC
 260 E. BROWN ST.
 BIRMINGHAM, MICHIGAN 48009
 ADAM BLEZNAK
 (248) 540-9300

NOTES

1. THE BASE SURVEY WAS PREPARED BY MIDWESTERN CONSULTING. ALL UNDERGROUND UTILITIES AND STRUCTURES HAVE BEEN SHOWN TO A REASONABLE DEGREE OF ACCURACY AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.

LEGEND

	EXIST. CONTOUR
	EXIST. SPOT ELEVATION
	EXIST. UTILITY POLE
	EXIST. UTILITY POLE W/ TRANS.
	EXIST. GUY POLE
	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	EXIST. TELEPHONE LINE
	EXIST. ELECTRIC LINE
	EXIST. GAS LINE
	EXIST. GAS VALVE
	EXIST. FIBER OPTIC LINE
	EXIST. WATER MAIN
	EXIST. HYDRANT
	EXIST. GATE VALVE IN BOX
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	EXIST. CURB STOP & BOX
	EXIST. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	EXIST. END SECTION
	EXIST. DOWNSPOUT
	EXIST. SANITARY SEWER
	EXIST. CLEANOUT
	C/L OF DITCH
	DRAINAGE DIRECTION
	ENCLOSED TRASH AREA
	SIGN
	MAILBOX
	TELEPHONE RISER
	CABLE TELEVISION RISER
	ELECTRIC METER
	WATER METER
	SPRINKLER CONTROL BOX
	GAS METER
	FIBER OPTIC MARKER
	POST
	WELL
	FENCE
	GUARDRAIL
	SINGLE TREE
	TREE OR BRUSH LIMIT
	SECTION CORNER
	SOIL BORING LOCATION
	TEST PIT LOCATION
	SET IRON PIPE
	FOUND IRON PIPE
	SET MONUMENT
	FOUND MONUMENT
	SET IRON ROD
	FOUND IRON ROD
	CONTROL PT.
	PROPERTY LINE

THERE ARE NO PROPOSED IMPACTS TO EXISTING NATURAL FEATURES

GENERAL SOILS DESCRIPTION
 BASED ON SOIL SURVEY OF WASHTENAW COUNTY MICHIGAN

BnC – BOYER LOAMY SAND, 6-12% SLOPES
 Br – BROOKSTON LOAM
 MmB – MIAMI LOAM, 2-6% SLOPES
 MmC – MIAMI LOAM, 6-12% SLOPES



09-09-10-400-902
 BARCLAY PARK SUBDIVISION

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OWL CREEK PHASE 2
 SITE PLAN FOR CITY COUNCIL AND REZONING
 NATURAL FEATURES AND SITE ANALYSIS PLAN

3

DATE: 9/17/23
 SHEET 3 OF 19
 REV. DATE
 ENG. JCA
 CADD: SWB
 PM: SWB
 TECH: SWB
 /ZSD/DMF
23015
 JOB No.
 REVISIONS:

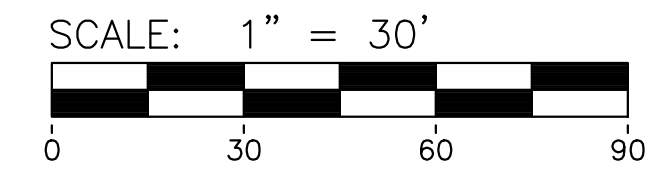
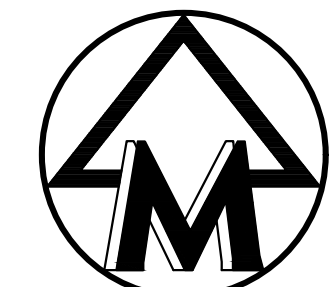
Midwestern Consulting L.L.C. 11/10/2023 2:55 PM, Jim Ahern, 4 EXISTING CONDITIONS PLAN, MCLLC PDF, pc3

M-14/U.S. 23 H

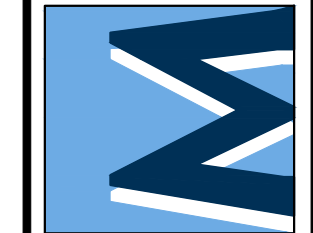
LIBER 948, PAGE 184



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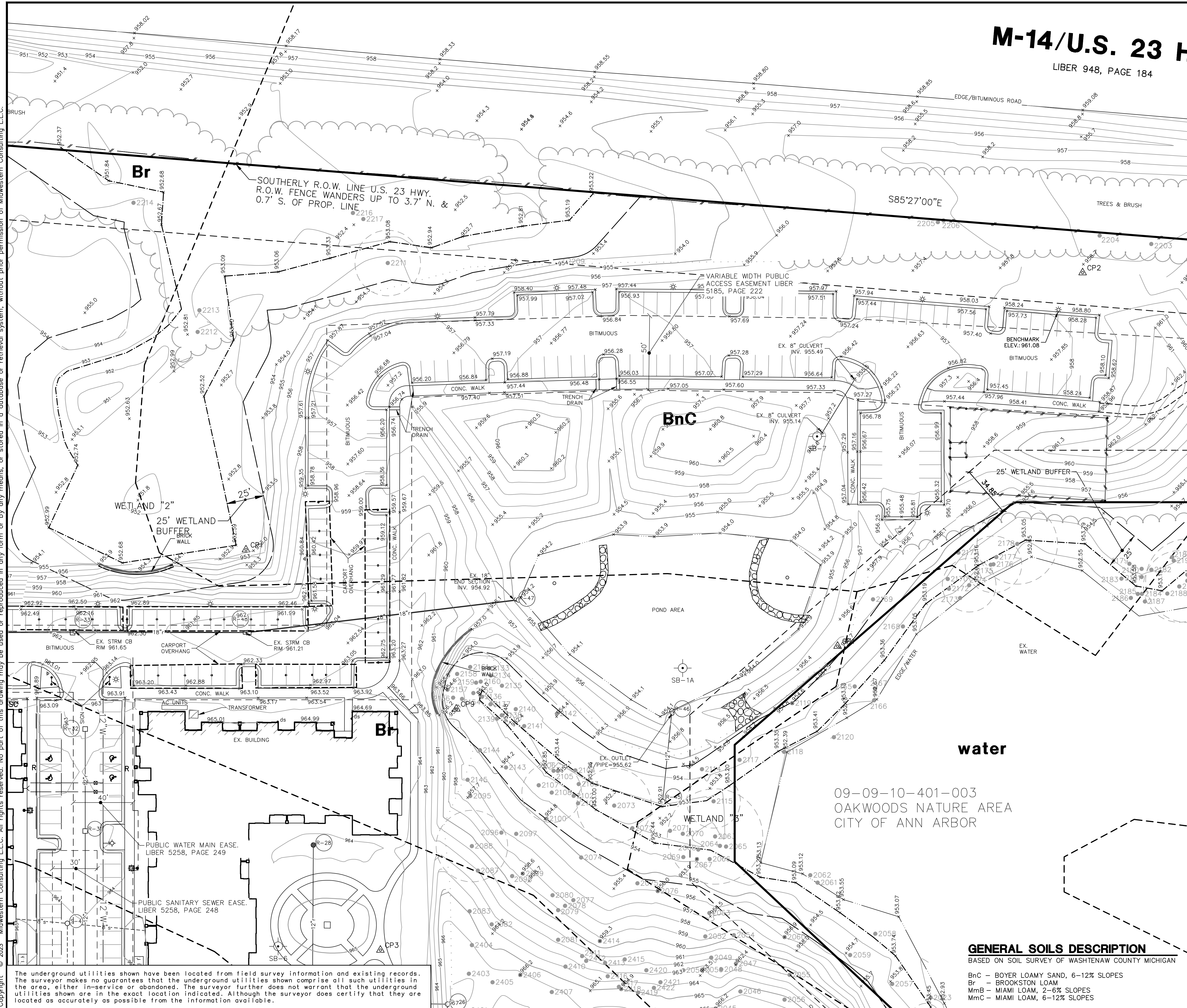


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ADAM BLEZNAK
(248) 540-9300

OWL CREEK PHASE 2 SITE PLAN FOR CITY COUNCIL AND REZONING EXISTING CONDITIONS PLAN

4

JOB No.	23015
DATE:	5/17/23
REV. DATE:	5/31/23
PER. CITY REVIEW:	
ENG. JCA	
PM. SWB	
TECH. SWE	
7/2012BX2	



NOTES

1. THE BASE SURVEY WAS PREPARED BY MIDWESTERN CONSULTING. ALL UNDERGROUND UTILITIES AND STRUCTURES HAVE BEEN SHOWN TO A REASONABLE DEGREE OF ACCURACY AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.

LEGEND

838	EXIST. CONTOUR
x836.2	EXIST. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.R.	EXIST. UTILITY POLE W/ TRANS.
GP	EXIST. GUY POLE
OH	EXIST. OVERHEAD UTILITY LINE
*	EXIST. LIGHT POLE
t	EXIST. TELEPHONE LINE
e	EXIST. ELECTRIC LINE
g	EXIST. GAS LINE
g	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
w	EXIST. WATER MAIN
+	EXIST. HYDRANT
+	EXIST. GATE VALVE IN BOX
+	EXIST. GATE VALVE IN WELL
x	EXIST. CURB STOP & BOX
r	EXIST. STORM SEWER
+	EXIST. CATCH BASIN OR INLET
+	EXIST. BEEHIVE INLET
+	END SECTION
+	EXIST. DOWNSPOUT
+	EXIST. SANITARY SEWER
+	EXIST. CLEANOUT
+	C/L OF DITCH
+	DRAINAGE DIRECTION
+	ENCLOSED TRASH AREA
+	MAILBOX
+	TELEPHONE RISER
+	CABLE TELEVISION RISER
+	ELECTRIC METER
+	WATER METER
+	SPRINKLER CONTROL BOX
+	GAS METER
+	GAS LINE MARKER
+	FIBER OPTIC MARKER
+	POST
+	WELL
+	FENCE
+	GUARDRAIL
+	SINGLE TREE
+	TREE OR BRUSH LIMIT
+	SECTION CORNER
+	SOIL BORING LOCATION
+	TEST PIT LOCATION
○	SET IRON PIPE
○	FOUND IRON PIPE
○	SET MONUMENT
○	FOUND MONUMENT
○	SET IRON ROD
○	FOUND IRON ROD
△	CONTROL PT.
+	PROPERTY LINE

THERE ARE NO PROPOSED IMPACTS TO EXISTING NATURAL FEATURES

water

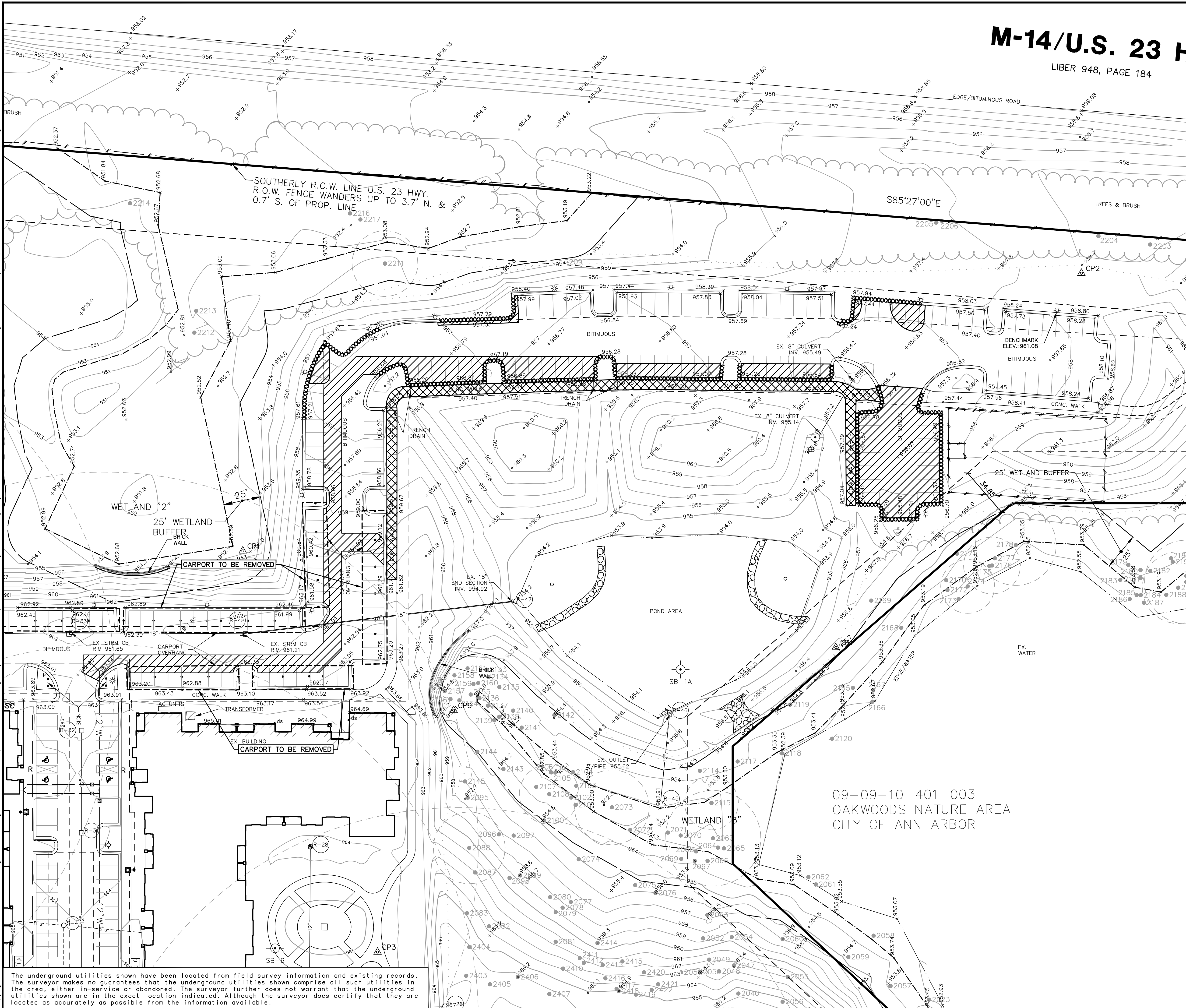
09-09-10-401-003
OAKWOODS NATURE AREA
CITY OF ANN ARBOR

GENERAL SOILS DESCRIPTION
BASED ON SOIL SURVEY OF WASHTENAW COUNTY MICHIGAN

BnC - BOYER LOAMY SAND, 6-12% SLOPES
Br - BROOKSTON LOAM
MmB - MIAMI LOAM, 2-6% SLOPES
MmC - MIAMI LOAM, 6-12% SLOPES

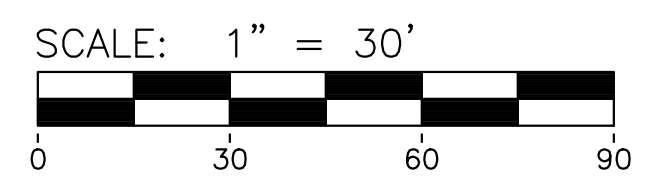
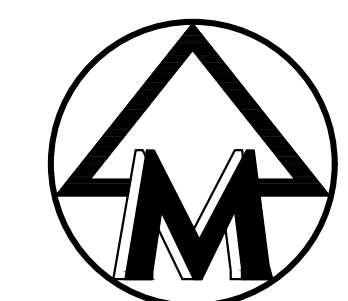
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M:\CIVIL\2023\3015\Site Plan\3015RMI.dwg, 11/10/2023 2:55 PM, Jim Ahern, 5 REGIONAL PLAN, MCLC PDF, .p3
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M-14/U.S. 23 H

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NOTES

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LEGEND

8.38	EXIST. CONTOUR
x836.2	EXIST. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
GP	EXIST. GUY POLE
GW	GUY WIRE
ET	ELEC. TRANSFORMER
OH	EXIST. OVERHEAD UTILITY LINE
TL	EXIST. LIGHT POLE
EL	EXIST. TELEPHONE LINE
EG	EXIST. ELECTRIC LINE
GL	EXIST. GAS LINE
GV	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
WM	EXIST. WATER MAIN
HD	EXIST. HYDRANT
GVB	EXIST. GATE VALVE IN BOX
GVI	EXIST. GATE VALVE IN WELL
CS	EXIST. CURB STOP & BOX
dc	FIRE DEPARTMENT CONNECTION
SS	EXIST. STORM SEWER
CB	EXIST. CATCH BASIN OR INLET
BI	EXIST. BEEHIVE INLET
DS	EXIST. DOWNSPOUT
SS	EXIST. SANITARY SEWER
CS	EXIST. CLEANOUT
SI	SIGN
TR	TELEPHONE RISER
CR	CABLE TELEVISION RISER
EM	ELECTRIC METER
WM	WATER METER
PO	POST
BL	EXIST. BOLLARD
FC	FENCE
GR	GUARDRAIL
ST	SINGLE TREE
TL	TREE OR BRUSH LIMIT
SC	SECTION CORNER
SB-1	SOIL BORING LOCATION
TP	EXIST. TEST PIT LOCATION
IP	SET IRON PIPE
FP	FOUND IRON PIPE
MS	SET MONUMENT
FM	FOUND MONUMENT
PK	SET P.K.
FPK	FOUND P.K.
OR	SET IRON ROD
OFIR	FOUND IRON ROD
CP	CONTROL PT.
CL	CENTERLINE
PL	PROPERTY LINE
CR	CONCRETE TO BE REMOVED
BR	BITUMINOUS TO BE REMOVED
UR	UTILITY TO BE ABANDONED
CR	CURB OR UTILITY TO BE REMOVED
TR	TREE TO BE REMOVED
REL	ITEM TO BE RELOCATED
REM	ITEM TO BE REMOVED

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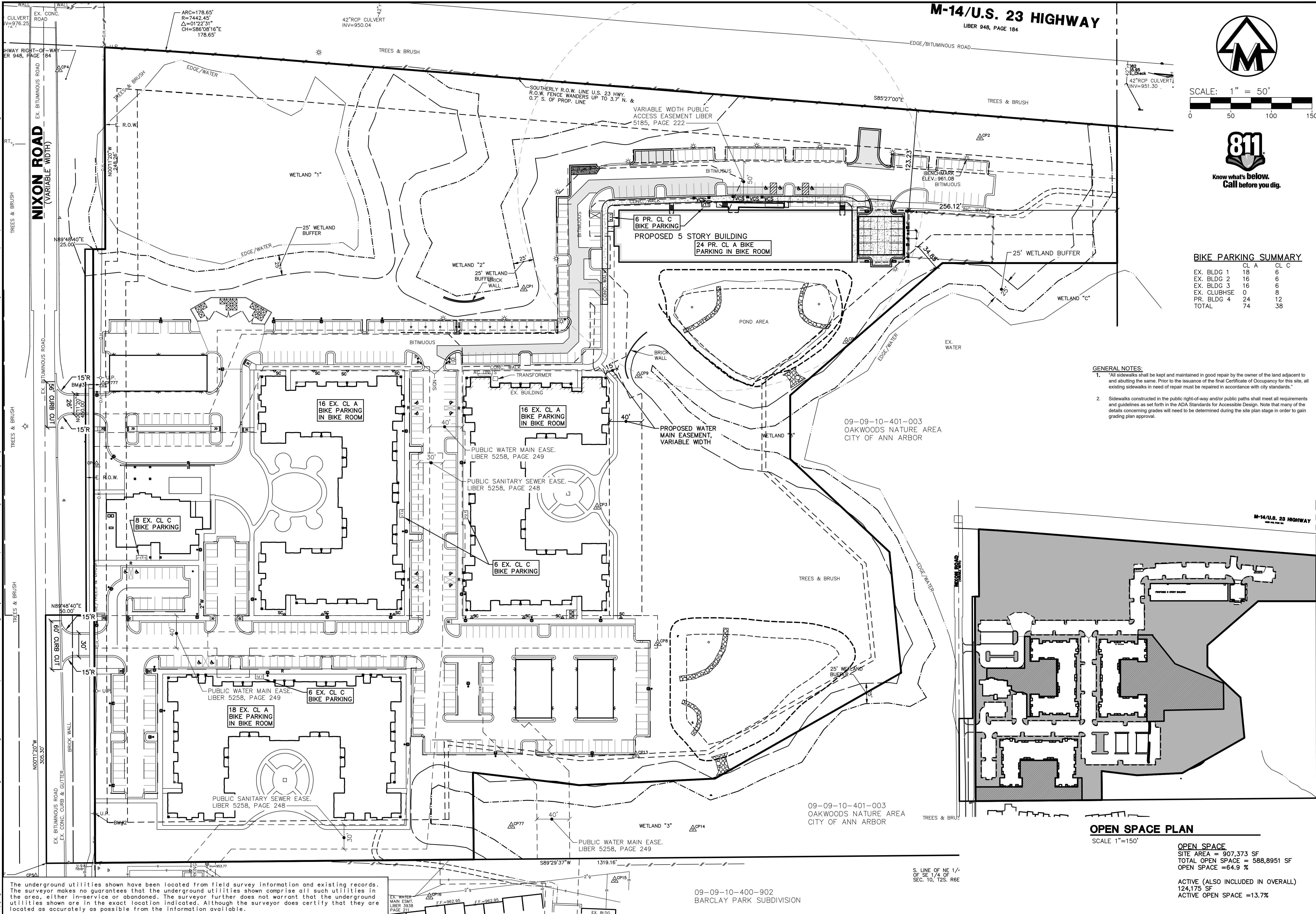
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 280 E. BROWN ST.
 BIRMINGHAM, MICHIGAN 48009
 ADAM BLEZNAK
 (248) 540-9300

OWL CREEK PHASE 2
 SITE PLAN FOR CITY COUNCIL AND REZONING
 REMOVAL PLAN

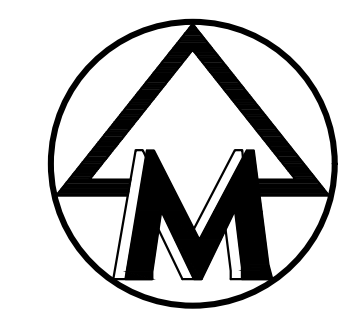
5

JOB No.	23015
DATE:	9/17/23
SHEET:	5 OF 19
REV. DATE:	
REV. NO.:	
PER. CITY REVIEW:	
ENG. JCA	
PM. SWB	
TECH. TSW	
DATE:	9/17/23

M:\Civ\132_Proj\2023\3015\Site Plan\301592.dwg, 11/10/2023 2:55 PM, Jim Albert, 6 OVERALL SITE PLAN, MCLC PDF.p43
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M-14/U.S. 23 HIGHWAY
LIBER 948, PAGE 184



SCALE: 1" = 50'
0 50 100 150

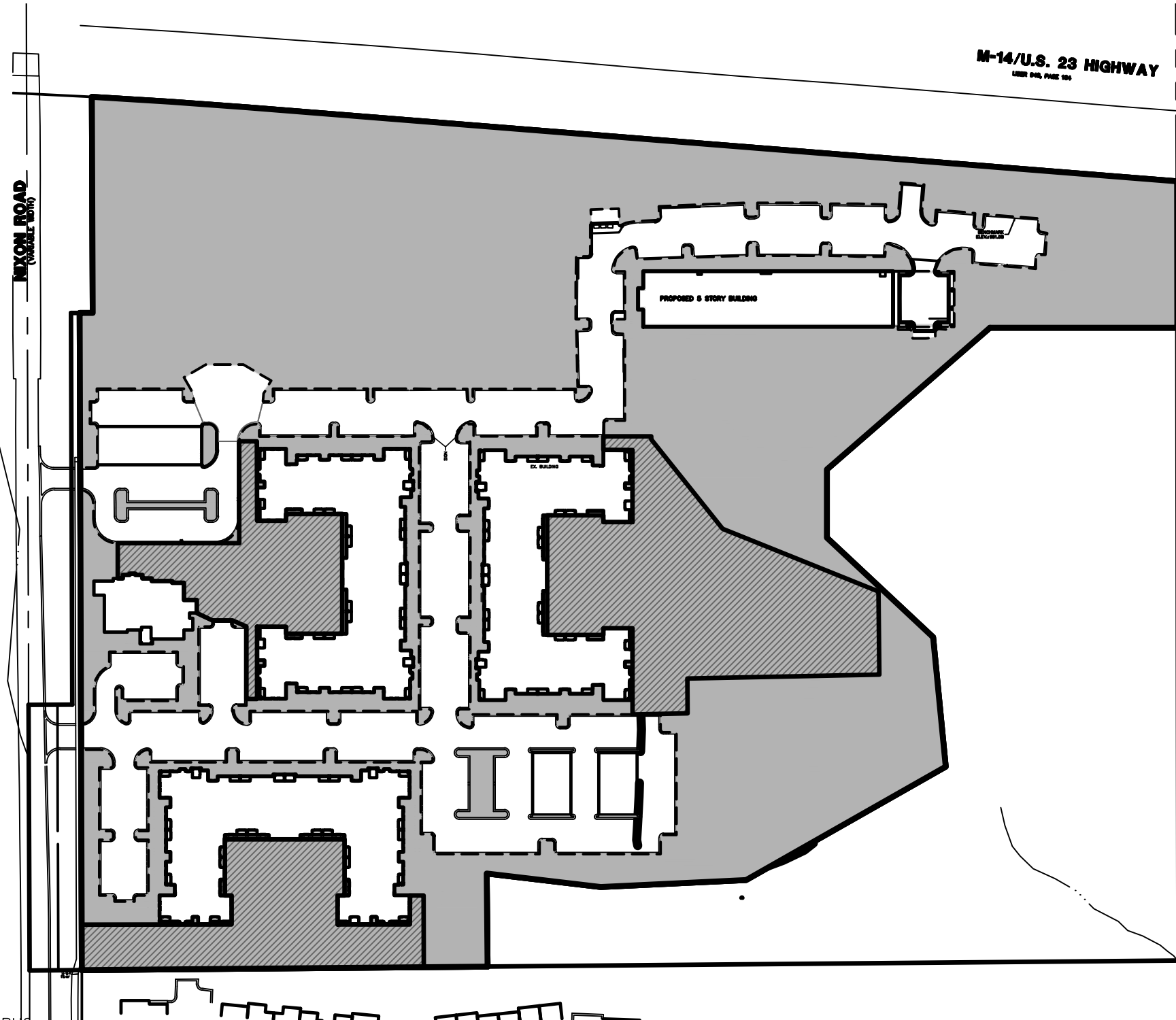


BIKE PARKING SUMMARY

	CL A	CL C
EX. BLDG 1	18	6
EX. BLDG 2	16	6
EX. BLDG 3	16	6
EX. CLUBHSE	0	8
PR. BLDG 4	24	12
TOTAL	74	38

GENERAL NOTES:

- All sidewalks shall be kept and maintained in good repair by the owner of the land adjacent to and abutting the same. Prior to the issuance of the final Certificate of Occupancy for this site, all existing sidewalks in need of repair must be repaired in accordance with city standards.
- Sidewalks constructed in the public right-of-way and/or public paths shall meet all requirements and guidelines as set forth in the ADA Standards for Accessible Design. Note that many of the details concerning grades will need to be determined during the site plan stage in order to gain grading plan approval.



OPEN SPACE
 SITE AREA = 907,373 SF
 TOTAL OPEN SPACE = 588,895 SF
 OPEN SPACE = 64.9 %
 ACTIVE (ALSO INCLUDED IN OVERALL)
 124,175 SF
 ACTIVE OPEN SPACE = 13.7%

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09-09-10-400-902
 BARCLAY PARK SUBDIVISION

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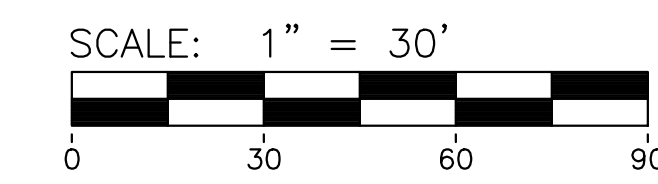
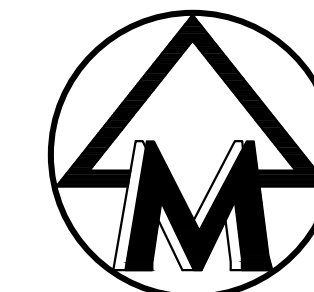
OWL CREEK PHASE 2
 SITE PLAN FOR CITY COUNCIL AND REZONING
 OVERALL SITE PLAN

6

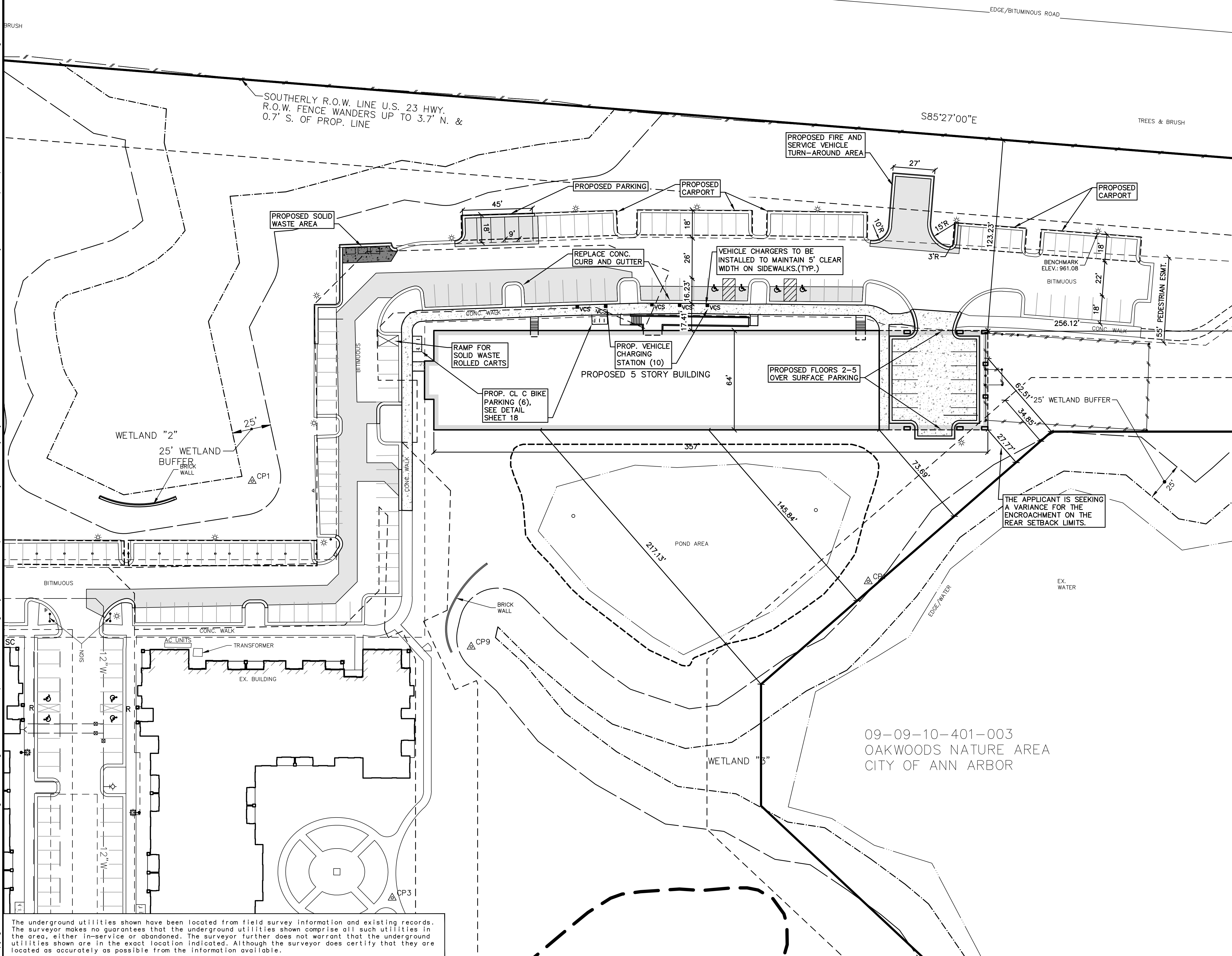
JOB No.	23015
DATE	5/17/23
REV. DATE	5/31/23
REV. DATE	11/9/23
PER CITY REVIEW	
PER CITY REVIEW	

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LIBER 948, PAGE 184



M:\Civ\132_Proj\2023\33015\Site Plan\33015SP1.dwg, 11/10/2023 2:56 PM, Jim Albert, 7 DIMENSIONAL SITE PLAN, MCLLC PDF, p.3
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LEGEND

- ⊙ NUMBER OF STANDARD PARKING SPACES IN ROW
 - ⊠ NUMBER OF SMALL CAR PARKING SPACES IN ROW
 - ⊕ NUMBER OF BARRIER FREE PARKING SPACES IN ROW
 - BF BARRIER FREE PARKING SIGN
 - BFV VAN ACCESSIBLE BARRIER FREE PARKING SIGN
 - R BARRIER FREE SIDEWALK RAMP
 - PROP. CURB & GUTTER
 - ▒ PROP. BITUMINOUS PAVEMENT
 - ▒ PROP. CONCRETE PAVEMENT
 - ▒ PROP. HEAVY DUTY CONCRETE
 - ▒ PROP. GRASS PAVE DRIVE
 - ▒ PROP. PAVERS
 - SIGN
 - PROP. SINGLE LIGHT
 - PROP. DOUBLE LIGHT
 - PROP. WOODCHIP PATH
 - VCS PROP. VEHICLE CHARGING STATION
- NOTE:
OF THE 98 PARKING SPACES IN THE AREA OF THE PROPOSED BUILDING 10 WILL BE INSTALLED WITH CHARGING STATION, 88 OTHERS WILL BE CAPABLE.

THE APPLICANT IS SEEKING A VARIANCE FOR THE ENCROACHMENT ON THE REAR SETBACK LIMITS.

09-09-10-401-003
OAKWOODS NATURE AREA
CITY OF ANN ARBOR

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OWL CREEK PHASE 2

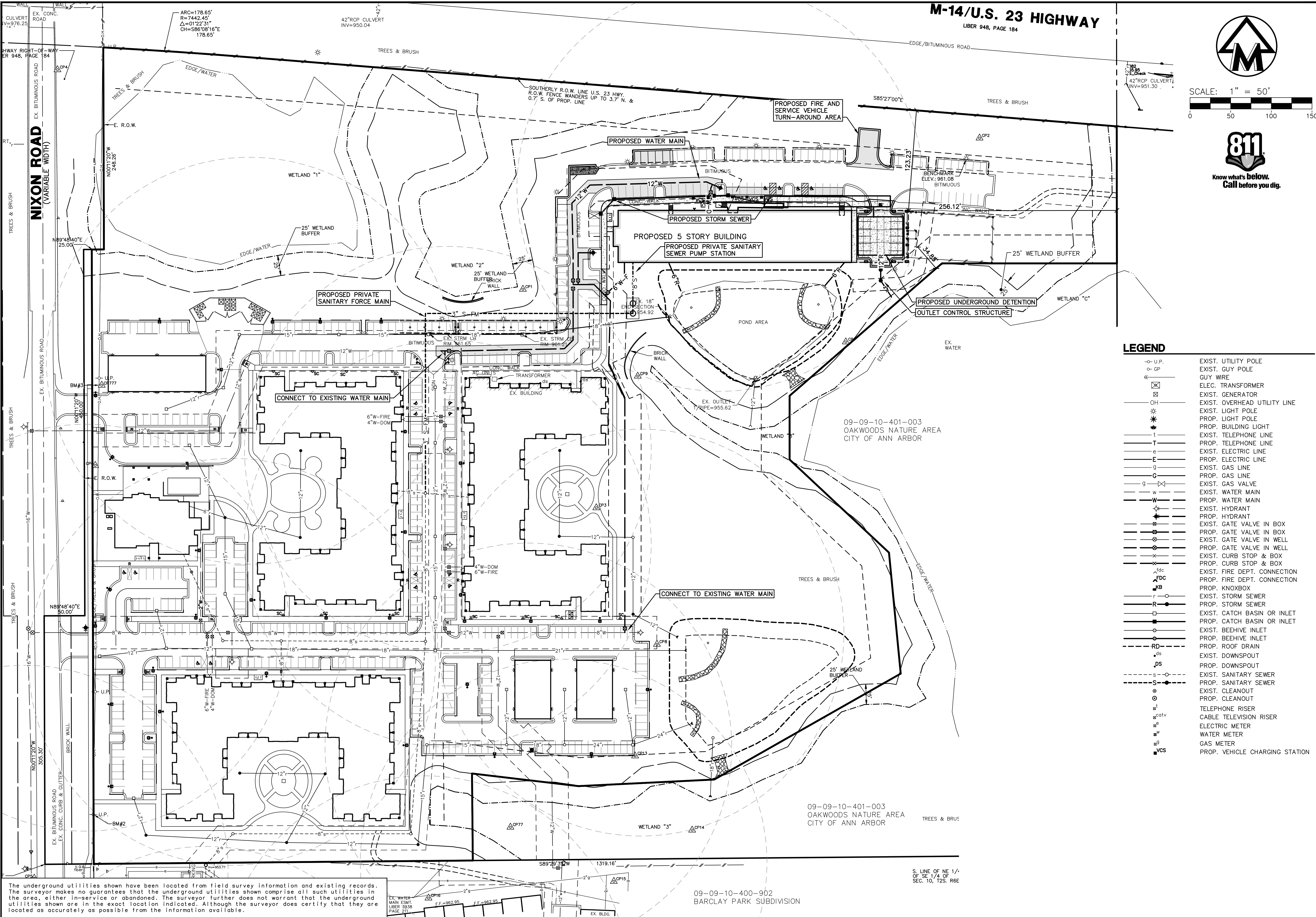
SITE PLAN FOR CITY COUNCIL AND REZONING
DIMENSIONAL SITE PLAN

7

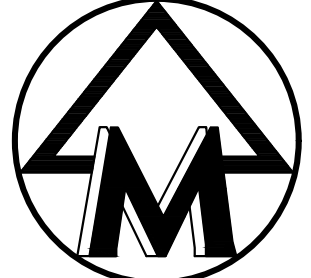
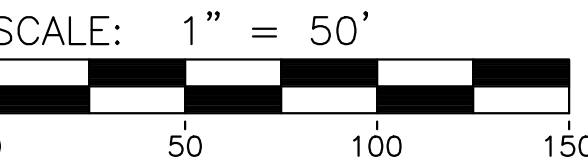

JOB No.	23015
DATE:	9/17/23
SHEET	7 OF 19
REV. DATE	REV. DATE
REV. DATE	6/13/23
REV. DATE	11/9/23
PER CITY REVIEW	ENG. JCA
PER CITY REVIEW	ENG. JCA
PER CITY REVIEW	PM. SWB
PER CITY REVIEW	TECH. SWB
PER CITY REVIEW	7/23/23

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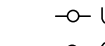
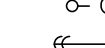
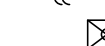

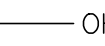


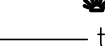
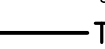
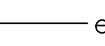
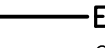
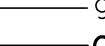
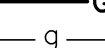
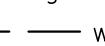




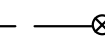
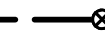




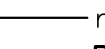




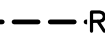


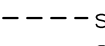















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M-14/U.S. 23 HIGHWAY
LIBER 948, PAGE 184


 SCALE: 1" = 50'


 Know what's below.
 Call before you dig.

LEGEND

	EXIST. UTILITY POLE
	EXIST. GUY POLE
	GUY WIRE
	ELEC. TRANSFORMER
	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	PROP. BUILDING LIGHT
	EXIST. TELEPHONE LINE
	PROP. TELEPHONE LINE
	EXIST. ELECTRIC LINE
	PROP. ELECTRIC LINE
	EXIST. GAS LINE
	PROP. GAS LINE
	EXIST. GAS VALVE
	EXIST. WATER MAIN
	PROP. WATER MAIN
	EXIST. HYDRANT
	PROP. HYDRANT
	EXIST. GATE VALVE IN BOX
	PROP. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	PROP. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
	PROP. CURB STOP & BOX
	EXIST. FIRE DEPT. CONNECTION
	PROP. FIRE DEPT. CONNECTION
	EXIST. KNOXBOX
	PROP. KNOXBOX
	EXIST. STORM SEWER
	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	PROP. BEEHIVE INLET
	EXIST. ROOF DRAIN
	PROP. ROOF DRAIN
	EXIST. DOWNSPOUT
	PROP. DOWNSPOUT
	EXIST. SANITARY SEWER
	PROP. SANITARY SEWER
	EXIST. CLEANOUT
	PROP. CLEANOUT
	TELEPHONE RISER
	CABLE TELEVISION RISER
	ELECTRIC METER
	WATER METER
	GAS METER
	PROP. VEHICLE CHARGING STATION

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09-09-10-400-902
BARCLAY PARK SUBDIVISION

S. LINE OF NE 1/
OF SE 1/4 OF
SEC. 10, T2S. R6E

JOB No. 23015
 DATE: 5/17/23
 SHEET 8 OF 19
 REV. DATE: 5/31/23
 PER. CITY REVIEW:

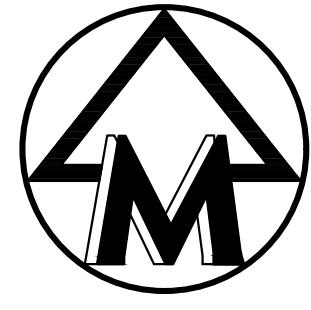
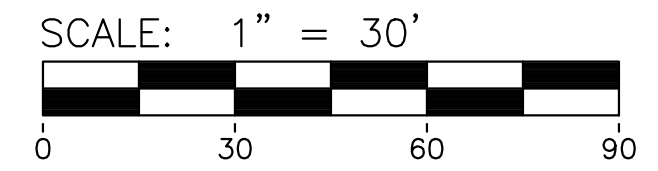
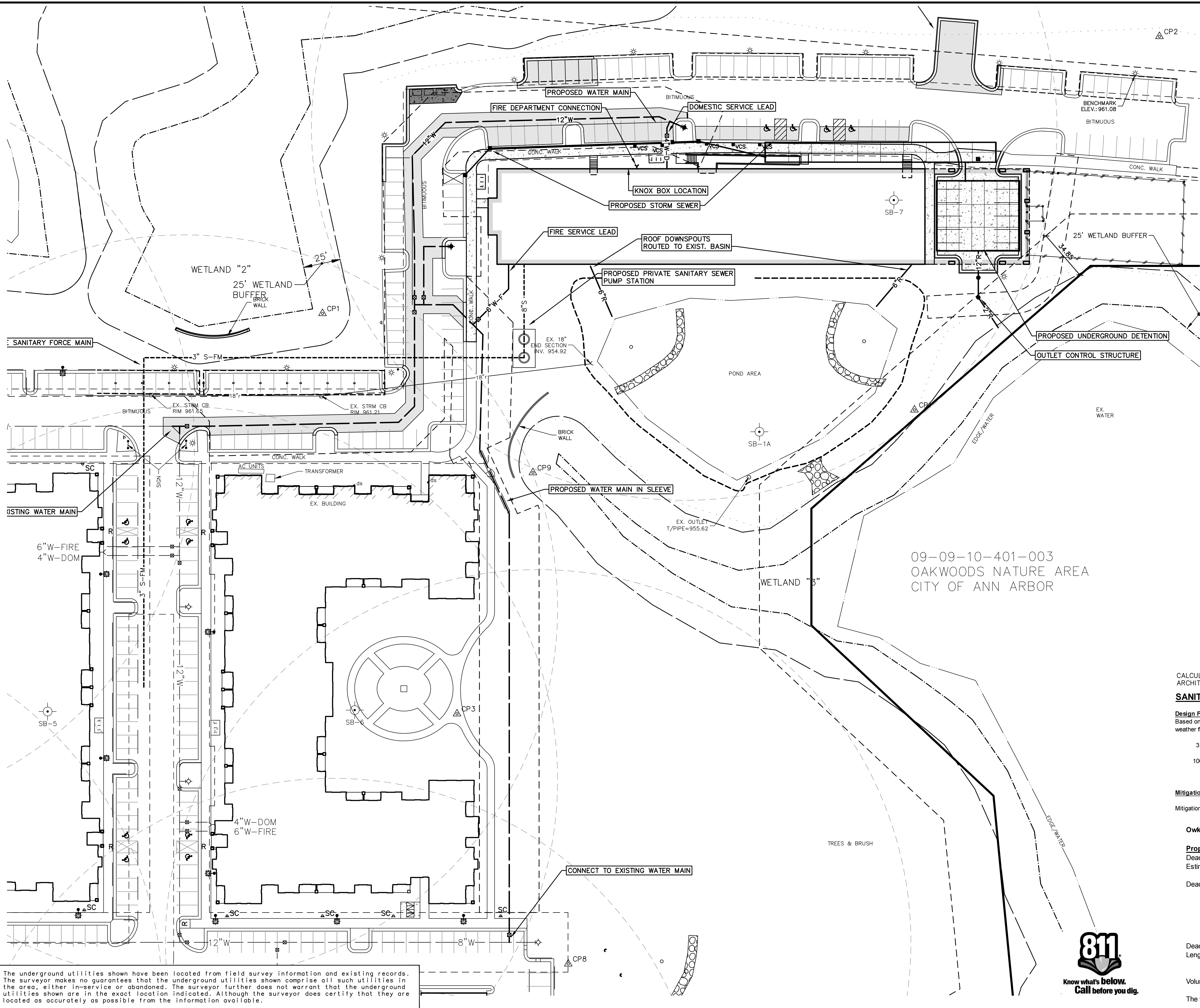
OWL CREEK PHASE 2
 SITE PLAN FOR CITY COUNCIL AND REZONING
 OVERALL UTILITY PLAN

8

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 ADAM BLEZNAK
 (248) 540-9300

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M:\Civ\134_P\01\2023\33015\Site Plan\3301501.dwg, 11/10/2023 2:56 PM, Jim Albert, 9 UTILITY PLAN, MCLC PDF, p.3
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LEGEND

- U.P.
- GP
- ⊠ ELEC. TRANSFORMER
- ⊠ EXIST. GENERATOR
- OH — EXIST. OVERHEAD UTILITY LINE
- ⊠ EXIST. LIGHT POLE
- ⊠ PROP. LIGHT POLE
- ⊠ PROP. BUILDING LIGHT
- t — EXIST. TELEPHONE LINE
- T — PROP. TELEPHONE LINE
- e — EXIST. ELECTRIC LINE
- E — PROP. ELECTRIC LINE
- g — EXIST. GAS LINE
- G — PROP. GAS LINE
- v — EXIST. GAS VALVE
- w — EXIST. WATER MAIN
- W — PROP. WATER MAIN
- ⊠ EXIST. HYDRANT
- ⊠ PROP. HYDRANT
- ⊠ EXIST. GATE VALVE IN BOX
- ⊠ PROP. GATE VALVE IN BOX
- ⊠ EXIST. GATE VALVE IN WELL
- ⊠ PROP. GATE VALVE IN WELL
- ⊠ EXIST. CURB STOP & BOX
- ⊠ PROP. CURB STOP & BOX
- ⊠ EXIST. FIRE DEPT. CONNECTION
- ⊠ PROP. FIRE DEPT. CONNECTION
- ⊠ EXIST. KNOXBOX
- ⊠ PROP. KNOXBOX
- ⊠ EXIST. STORM SEWER
- ⊠ PROP. STORM SEWER
- ⊠ EXIST. CATCH BASIN OR INLET
- ⊠ PROP. CATCH BASIN OR INLET
- ⊠ EXIST. BEEHIVE INLET
- ⊠ PROP. BEEHIVE INLET
- ⊠ EXIST. DOWNSPOUT
- ⊠ PROP. DOWNSPOUT
- ⊠ EXIST. SANITARY SEWER
- ⊠ PROP. SANITARY SEWER
- ⊠ EXIST. CLEANOUT
- ⊠ PROP. CLEANOUT
- ⊠ TELEPHONE RISER
- ⊠ CABLE TELEVISION RISER
- ⊠ ELECTRIC METER
- ⊠ WATER METER
- ⊠ GAS METER
- ⊠ PROP. VEHICLE CHARGING STATION

- UTILITY PLAN NOTES:**
- Domestic water and fire suppression water services are to be connected to proposed 12" water main. The need for Booster pumps will be determined. Refer to MEP plans for booster pump specifications.
 - The sanitary sewer lead will route to the proposed pump station. A force main will then pump to the existing gravity sewer between existing buildings 2 and 3.
 - The proposed storm detention tanks will be placed under the building overhang on the west end of the proposed structure. It will be designed to current WCWRC standards.
 - The proposed building's sump pump will discharge to the storm water management system.
 - Public utility easements shall be clear of obstructions such as buildings, retaining walls, dumpster enclosures, or any other object with a foundation or footing. Existing structures located within proposed utility easements will be the responsibility of the property owner in the event of utility main maintenance, repair or replacement.
 - There are no proposed firewalls proposed for the building construction.

CALCULATIONS ARE ESTIMATED, TO BE UPDATED WITH FINAL ARCHITECTURAL PLANS

SANITARY SEWER FLOW MITIGATION CALCULATIONS

Design Flow
Based on the City of Ann Arbor's sanitary sewer flow evaluation Table 'A', the design dry weather flow rate will be:

31 Apartments (Under 600 Square Feet) @	175	gpd =	5425	gpd
100 Apartments (601-1200 Square Feet) @	250	gpd =	25000	gpd
			Total	30425

Mitigation Flow
Mitigation Peak Flow 30425 gpd x 4(peaking factor) x 1.1(recovery) = 133870 gpd
= 93.0 gpm

Owl Creek Phase 2 7/21/2023

Proposed New Building Construction
Dead end watermain turn over calculations
Estimated time for water volume turnover in dead end main

Dead end watermain has	
31 Apartments (Under 600 SF) @	175 gpd = 5425 gpd
100 Apartments (601 - 1200 SF) @	250 gpd = 25000 gpd
	30425 gpd
	4067.2 CF/day

Dead end watermain diameter is 12"
Length of dead end is 290 LF
A = 0.785 SF
Volume of watermain 0.785 SF x 290 LF = 228 CF
The volume of the water with turn over 17.9 times daily



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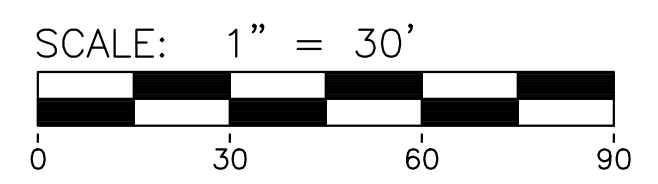
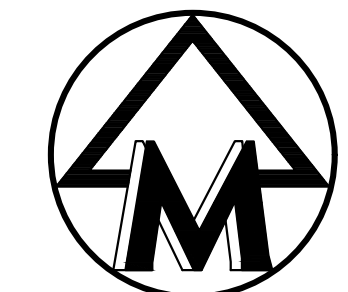
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OWL CREEK PHASE 2
 SITE PLAN FOR CITY COUNCIL AND REZONING
 UTILITY PLAN

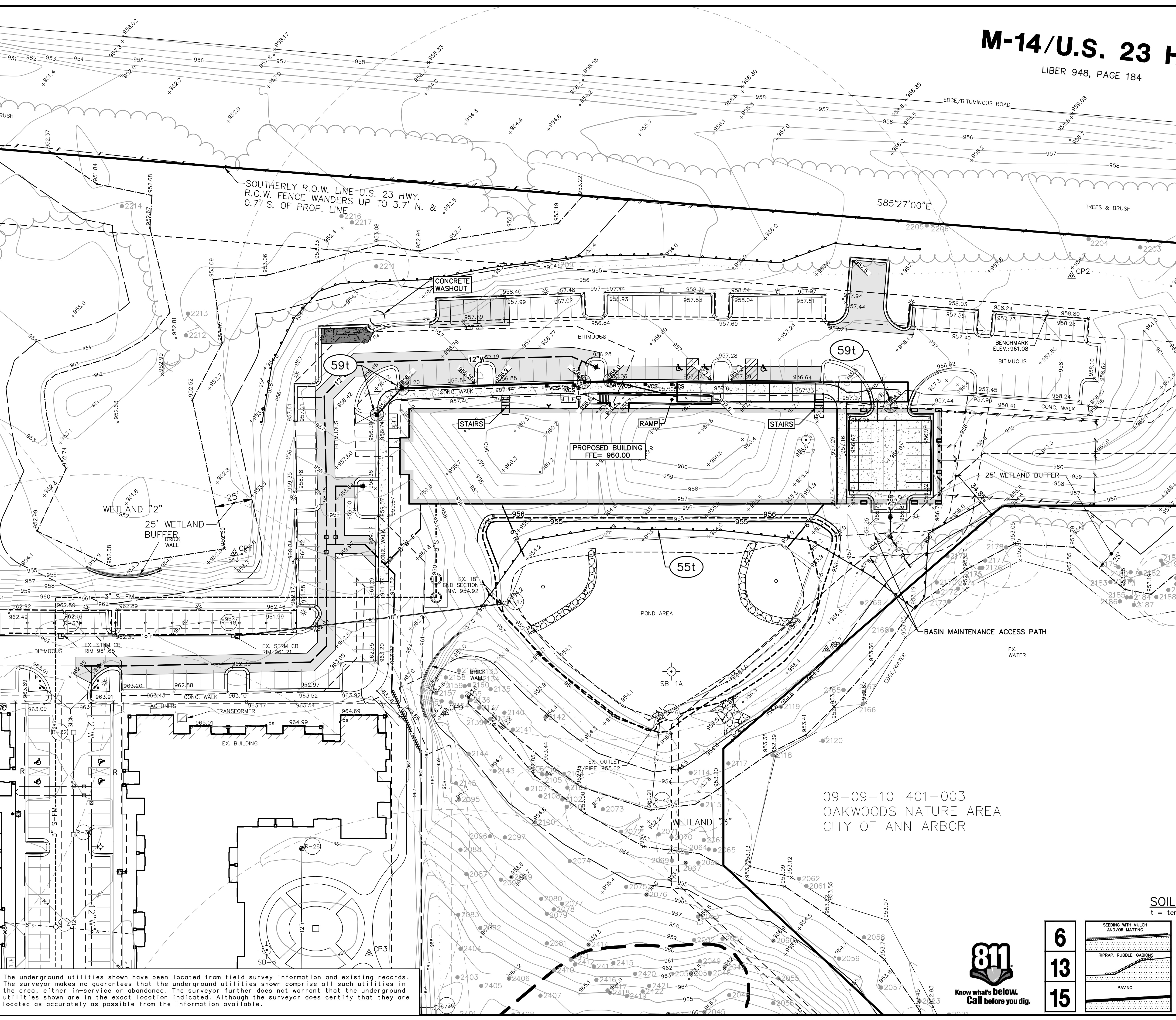
23015
 JOB No. 23015
 REVISIONS: PER CITY REVIEW
 DATE: 5/17/23
 SHEET 9 OF 19
 REV. DATE: 5/17/23
 CADD: JCA
 ENG. JCA
 11/9/23
 P.M.: SWB
 TECH.: SWB
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LIBER 948, PAGE 184



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LEGEND

- EXIST. CONTOUR
- PROP. CONTOUR
- EXIST. SPOT ELEVATION
- PROP. SPOT ELEVATION
- EXIST. UTILITY POLE
- GUY WIRE
- ELEC. TRANSFORMER
- EXIST. AC UNIT
- EXIST. OVERHEAD UTILITY LINE
- EXIST. LIGHT POLE
- PROP. LIGHT POLE
- EXIST. TELEPHONE LINE
- EXIST. ELECTRIC LINE
- EXIST. GAS LINE
- EXIST. GAS VALVE
- EXIST. FIBER OPTIC LINE
- EXIST. WATER MAIN
- PROP. WATER MAIN
- EXIST. HYDRANT
- PROP. HYDRANT
- EXIST. GATE VALVE IN BOX
- PROP. GATE VALVE IN BOX
- EXIST. GATE VALVE IN WELL
- PROP. GATE VALVE IN WELL
- EXIST. CURB STOP & BOX
- PROP. CURB STOP & BOX
- EXIST. FIRE DEPARTMENT CONNECTION
- PROP. FIRE DEPARTMENT CONNECTION
- EXIST. STORM SEWER
- PROP. STORM SEWER
- EXIST. CATCH BASIN OR INLET
- PROP. CATCH BASIN OR INLET
- EXIST. BEEHIVE INLET
- PROP. BEEHIVE INLET
- EXIST. ROOF DRAIN
- PROP. ROOF DRAIN
- END SECTION
- PROP. DOWNSPOUT
- EXIST. SANITARY SEWER
- PROP. SANITARY SEWER
- C/L OF DITCH
- SIGN
- SINGLE TREE
- TREE OR BRUSH LIMIT
- FENCE
- SILTFENCE
- LIMITS OF DISTURBANCE
- CONSTRUCTION FENCE

SOIL EROSION CONTROL NOTES

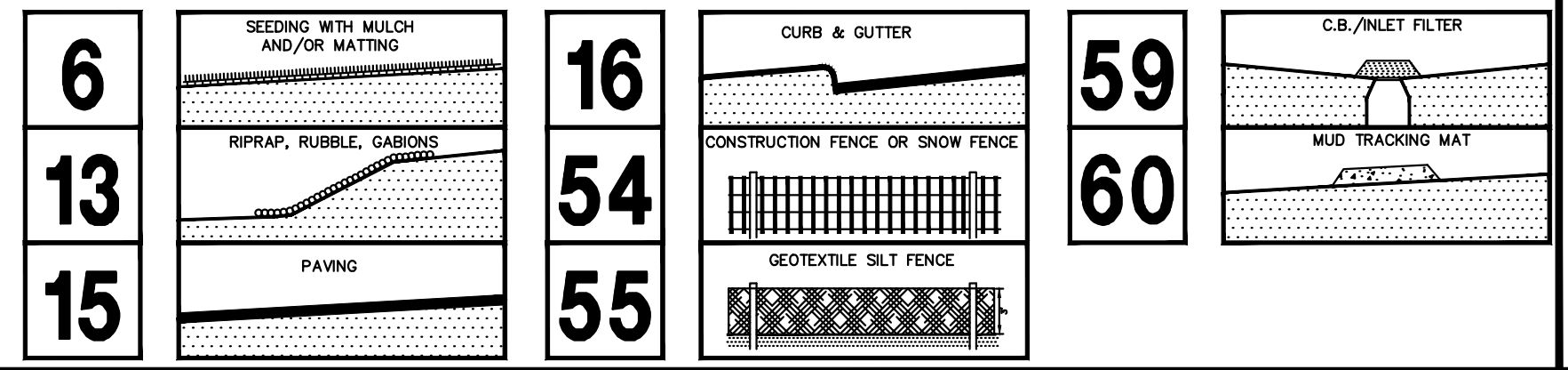
1. All soil erosion control measures shall comply with the current City of Ann Arbor ordinances, Washtenaw County standards and specifications for soil erosion and sedimentation control, and State of Michigan "Soil Erosion and Sedimentation Control Act - P.A. 347".
2. Prior to commencing earthmoving operations, the grading contractor shall install the temporary catch basin filter(s) shown on the plans.
3. The removal of trapped sediment and the cleanout or replacement of clogged storm may be necessary after each storm event during the project.
4. Only upon stabilization of all disturbed areas may the temporary gravel filters be removed. All storm sewers must be also cleaned of all sediment.
5. All inlets and catch basins will have sediment filters installed after their construction. These filters will be maintained until all areas around the structure have been stabilized.
6. The Contractor will maintain all necessary soil erosion control devices until soil stabilization has occurred.
7. Appropriate emergency access will be provided during construction.
8. The estimated cost of soil erosion control measures is \$12,200.
9. The estimated cost to protect all soil surfaces from erosion should construction discontinue is \$4,500.
10. External streets will be immediately cleaned of any tracked mud following each mud-tracking occurrence.
11. Estimated project earthwork is 4,000 CYD excavation and 0 CYD fill.
12. Dewatering operations during construction, if necessary, must be done per City requirements including sediment control and disposal.
13. Final locations and dimensions of the mud tracking mat and concrete washout area are to be determined by the contractor subject to City approval.

MAINTENANCE PROGRAM FOR SOIL EROSION CONTROLS

1. The Owner shall be responsible for maintaining the permanent soil erosion control measures. Maintenance responsibilities shall become part of any sales or exchange agreement for the land on which the permanent SESC measures are located.

SOIL EROSION CONTROL MEASURES

t = temporary p = permanent



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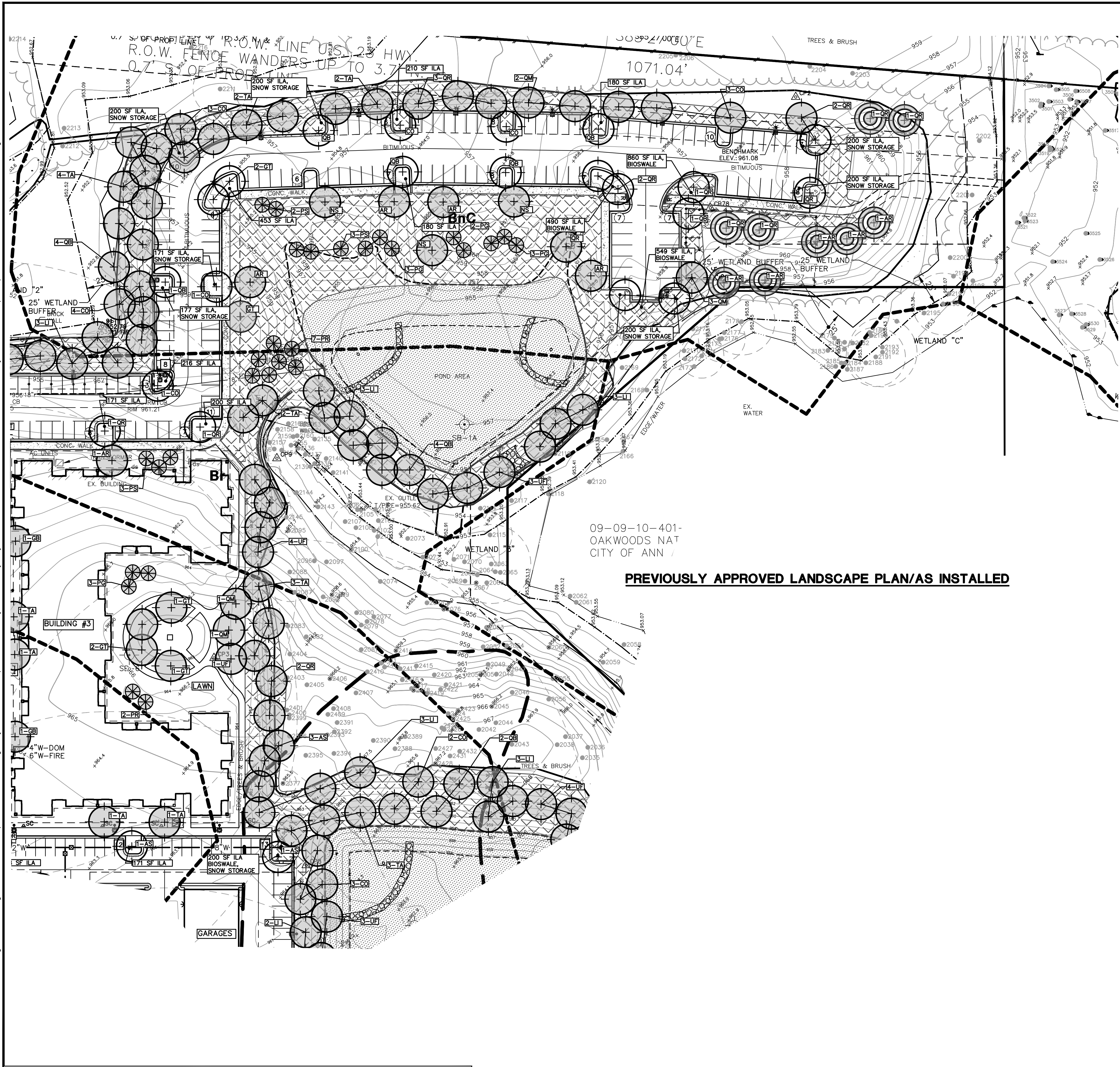
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OWL CREEK PHASE 2
SITE PLAN FOR CITY COUNCIL AND REZONING
PROPOSED GRADING AND SOIL EROSION CONTROL PLAN

10

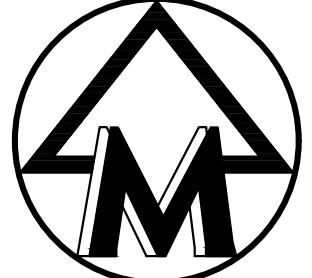
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P.M. SWB
TECH. JCA
7/20/2021

M:\Civ\132_P\132_P\2023\33015\Site Plan\33015_L1.dwg, 11/10/2023 2:57 PM, Jim Ahnert, 11 PREVIOUSLY APPROVED LANDSCAPE PLAN, MLLC PDF-53 Copyright © 2023, Midwestern Consulting L.L.C. All rights reserved. No part of this drawing may be used or reproduced in any form or by any means, or stored in a database or retrieval system, without prior permission of Midwestern Consulting L.L.C.



THE CURRENT BUILDING CONSTRUCTION DOES NOT PROPOSE ANY NEW REQUIRED LANDSCAPING. THE PLAN PROPOSES RELOCATION OF PREVIOUS LANDSCAPE PLANTINGS WHERE POSSIBLE. IF NOT POSSIBLE, REPLACEMENT PLANTINGS OF SAME SPECIES WILL BE PLANTED. PLANTING LABELS NOTED WITH "-REL" ARE TRANSPLANTED FROM PREVIOUSLY PLACED TREES.

THERE ARE NO PROPOSED IMPACTS TO EXISTING NATURAL FEATURES



SCALE: 1" = 40'
0 40 80 120



LANDSCAPE LEGEND

- PROPOSED CANOPY TREE
- PROPOSED EVERGREEN TREE
- PROPOSED DECIDUOUS SHRUBS
- PROPOSED EVERGREEN SHRUBS
- PROPOSED CANOPY TREE (INTERIOR VUA)
- PROPOSED CANOPY TREE (RIGHT-OF-WAY SCREEN)
- PROPOSED CANOPY TREE (CONFLICTING LAND USE BUFFER)
- PROPOSED EVERGREEN TREE (CONFLICTING LAND USE BUFFER)
- PROPOSED CANOPY TREE (LANDMARK/WOODLAND REPLACEMENT)
- PROPOSED EVERGREEN TREE (LANDMARK/WOODLAND REPLACEMENT)
- FIRST FLUSH BASIN/DETENTION POND/WETLAND SEED MIX
- MDOT STANDARD SPECIFICATION SEED MIX THM
- BIOSWALE AREA
- LANDMARK CONSTRUCTION REMOVAL REPLACEMENT MITIGATION
- REL RELOCATED/TRANSPLANTED TREE

I. PARKING LOT LANDSCAPING:

Previous Site Plan
Total Vehicular Use Area (V.U.A.) = 172,744 SF
Interior Landscape Area Required = 1,115 SF
Total Interior Landscape Area Required = 11,516 SF
Total Interior Landscape Area Provided = 11,871 SF

50% bio-retention area required = 6,055 SF
Bio-retention area provided = 6,192 SF

49 Trees Required / 59 Trees Provided

Proposed Site Modifications
Total Vehicular Use Area (V.U.A.) =
An increase of 1,587 sf increases the total site VUA to 174,331 SF

Interior Landscape Area Required = 1,115 SF
Total Interior Landscape Area Required = 11,622 SF
Total Interior Landscape Area Provided = 11,871 SF
No changes are proposed

50% bio-retention area required = 6,055 SF
Bio-retention area provided = 6,192 SF

49 Trees Required / 59 Trees Provided

The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

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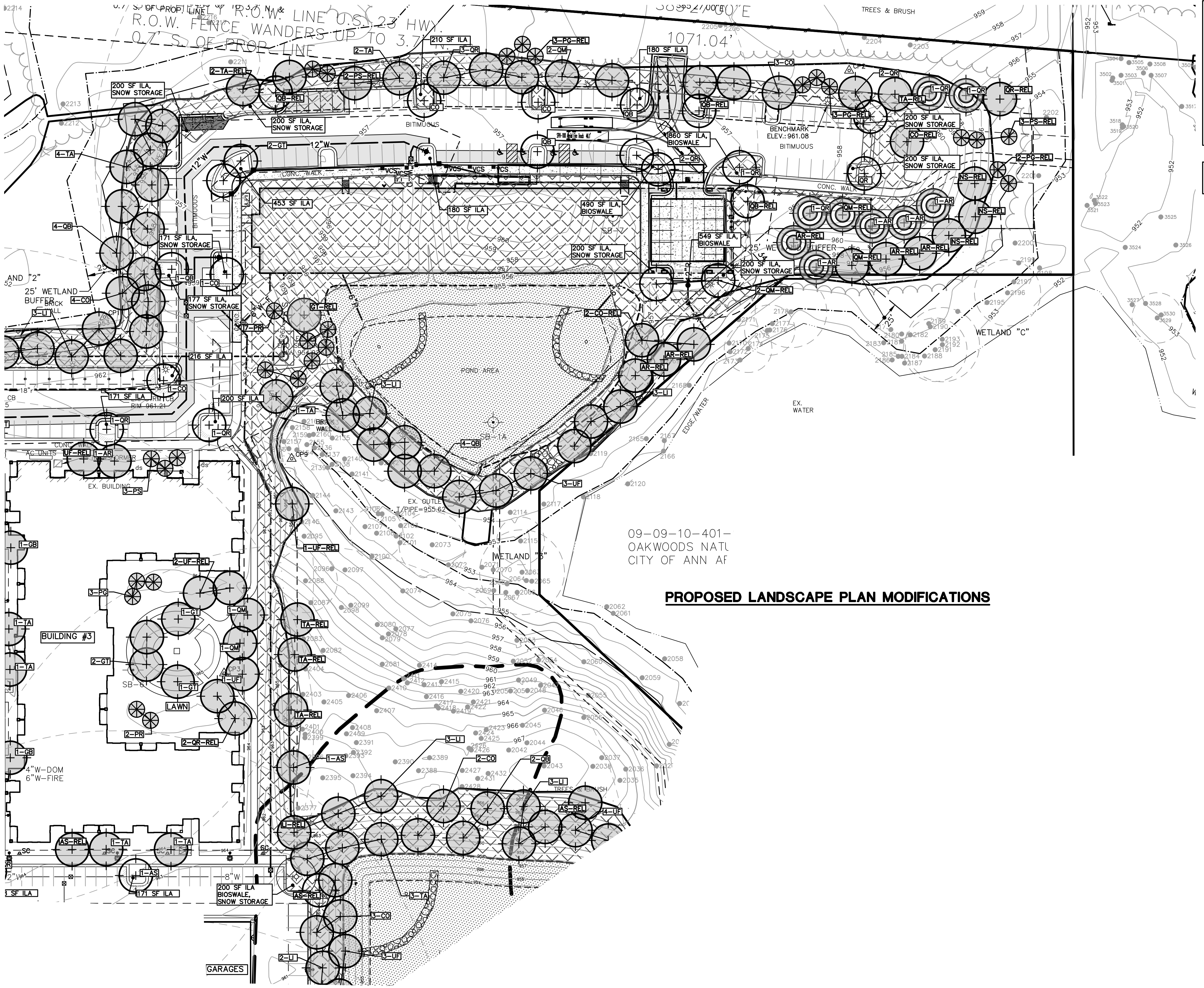
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OWL CREEK PHASE 2
SITE PLAN FOR CITY COUNCIL AND REZONING
PREVIOUSLY APPROVED LANDSCAPE PLAN

11

JOB No.	23015
DATE	11/10/2023
SHEET	11 OF 19
REV. DATE	6/13/23
REV. CITY REVIEW	
ENG. JCA	
PM. SWB	
TECH. SWB	
DATE	7/20/2021

MA:\Civ\132_Proj\2023\33015\Site Plan\33015L1.dwg, 11/10/2023 2:57 PM, Jim Ahern, 12 PROPOSED LANDSCAPE PLAN MODIFICATIONS, MLLC PDF.p3
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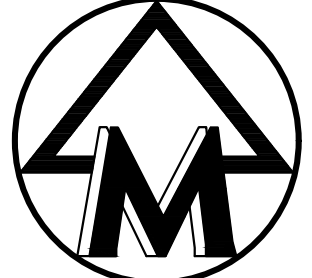


09-09-10-401-
OAKWOODS NATL
CITY OF ANN AF

PROPOSED LANDSCAPE PLAN MODIFICATIONS

THE CURRENT BUILDING CONSTRUCTION DOES NOT PROPOSE ANY NEW REQUIRED LANDSCAPING. THE PLAN PROPOSES RELOCATION OF PREVIOUS LANDSCAPE PLANTINGS WHERE POSSIBLE. IF NOT POSSIBLE, REPLACEMENT PLANTINGS OF SAME SPECIES WILL BE PLANTED. PLANTING LABELS NOTED WITH "-REL" ARE TRANSPLANTED FROM PREVIOUSLY PLACED TREES.

THERE ARE NO PROPOSED IMPACTS TO EXISTING NATURAL FEATURES



SCALE: 1" = 40'
0 40 80 120



LANDSCAPE LEGEND

- PROPOSED CANOPY TREE
- PROPOSED EVERGREEN TREE
- PROPOSED DECIDUOUS SHRUBS
- PROPOSED EVERGREEN SHRUBS
- PROPOSED CANOPY TREE (INTERIOR VUA)
- PROPOSED CANOPY TREE (RIGHT-OF-WAY SCREEN)
- PROPOSED CANOPY TREE (CONFLICTING LAND USE BUFFER)
- PROPOSED EVERGREEN TREE (CONFLICTING LAND USE BUFFER)
- PROPOSED CANOPY TREE (LANDMARK/WOODLAND REPLACEMENT)
- PROPOSED EVERGREEN TREE (LANDMARK/WOODLAND REPLACEMENT)
- FIRST FLUSH BASIN/DETENTION POND/WETLAND SEED MIX
- MDOT STANDARD SPECIFICATION SEED MIX THM
- BIOSWALE AREA
- LANDMARK CONSTRUCTION REMOVAL REPLACEMENT MITIGATION
- REL RELOCATED/TRANSPLANTED TREE

I. PARKING LOT LANDSCAPING:

Previous Site Plan

Total Vehicular Use Area (V.U.A.) = 172,744 SF
 Interior Landscape Area Required = 1,115 SF
 Total Interior Landscape Area Required = 11,516 SF
 Total Interior Landscape Area Provided = 11,871 SF
 50% bio-retention area required = 6,055 SF
 Bio-retention area provided = 6,192 SF
 49 Trees Required / 59 Trees Provided

Proposed Site Modifications

Total Vehicular Use Area (V.U.A.) =
 An increase of 1,587 sf increases the total site VUA to 174,331 SF
 Interior Landscape Area Required = 1,115 SF
 Total Interior Landscape Area Required = 11,622 SF
 Total Interior Landscape Area Provided = 11,871 SF
 No changes are proposed
 50% bio-retention area required = 6,055 SF
 Bio-retention area provided = 6,192 SF
 49 Trees Required / 59 Trees Provided

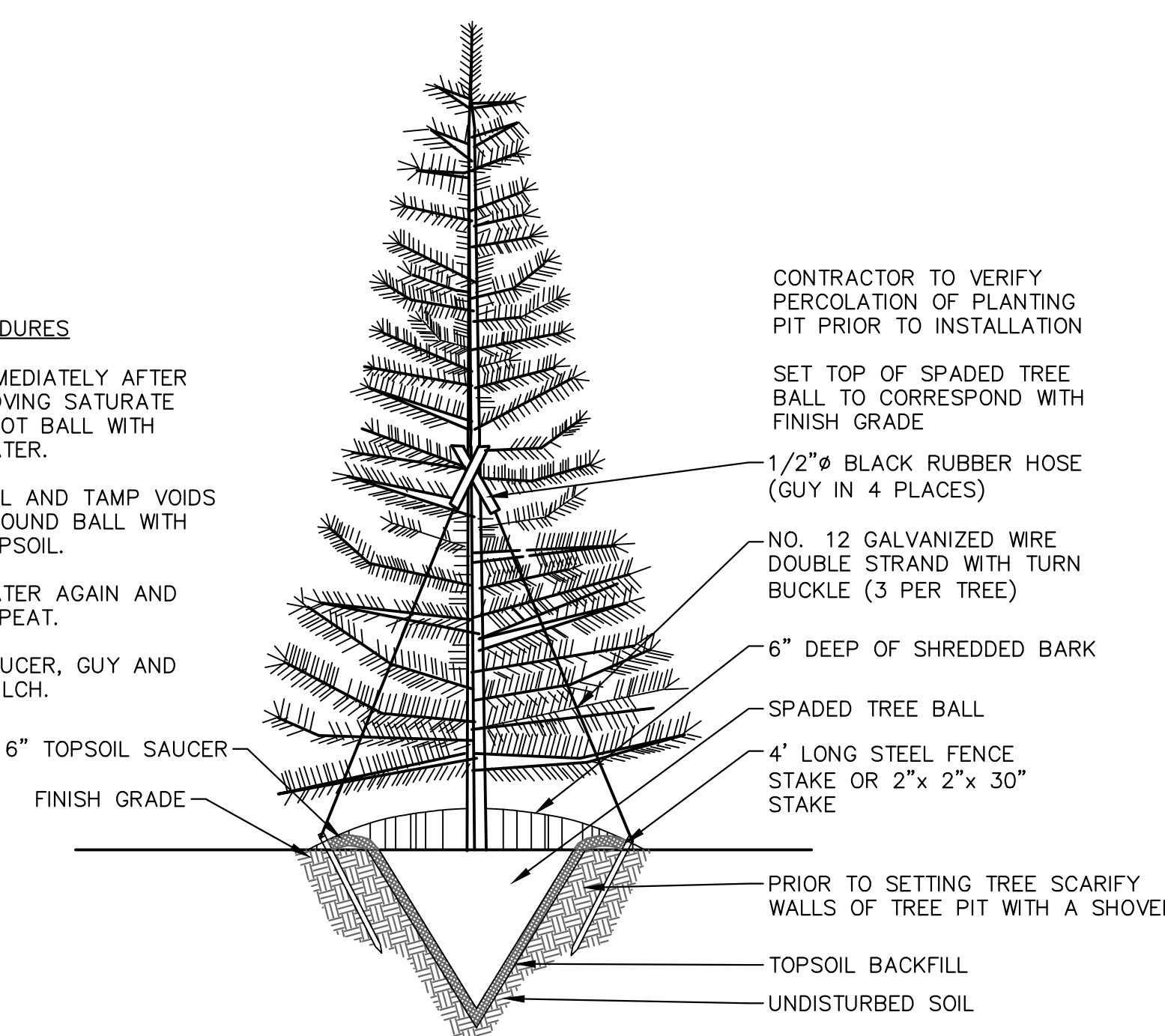
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SHEET	12 OF 19
REV. DATE:	11/10/23
PER CITY REVIEW	ENG. JCA
	11/19/23
	PM: SWB
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	/ZSD/ELPT

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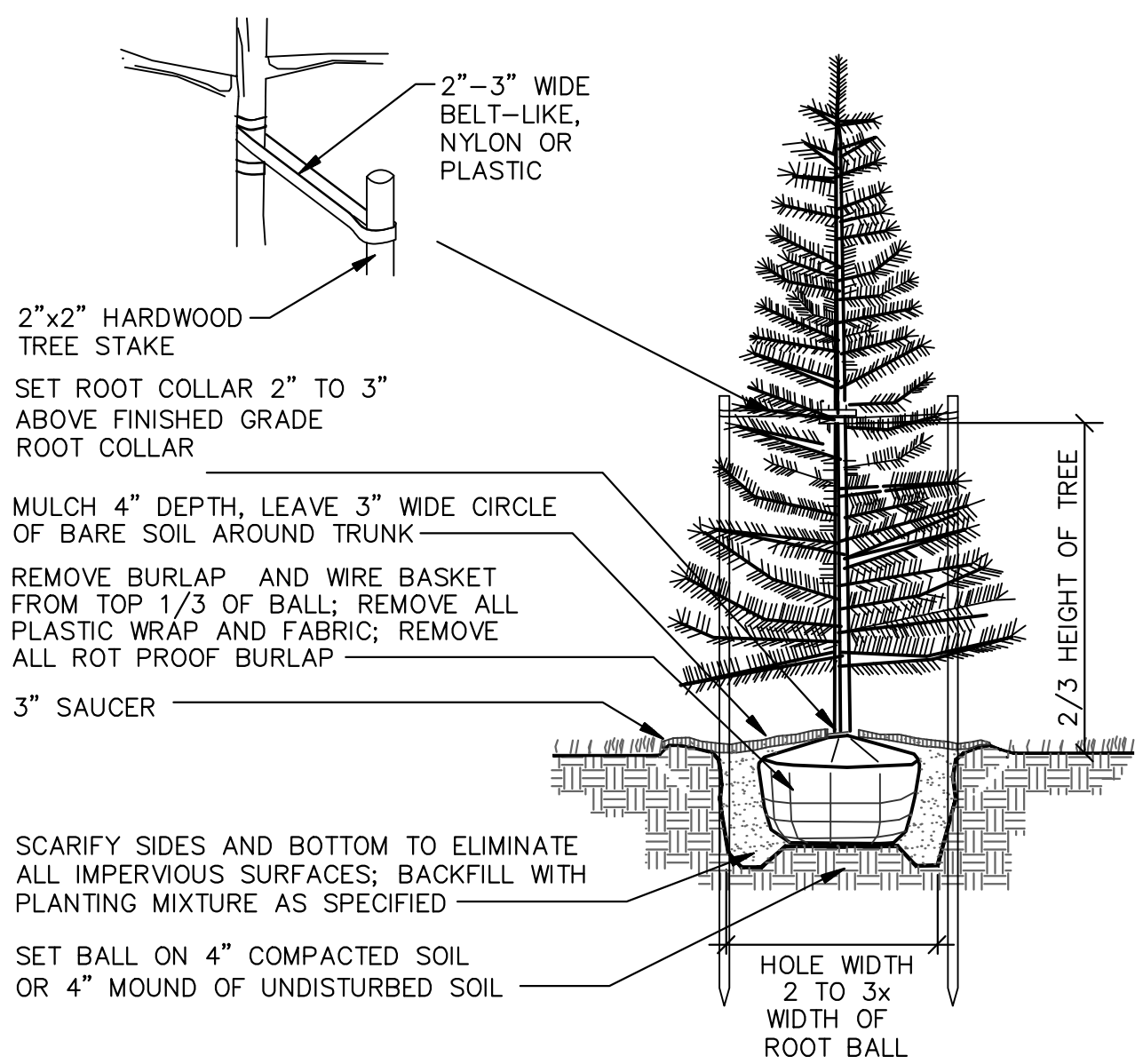
M:\CIVIL\13_LANDSCAPE\13_LANDSCAPE NOTES AND DETAILS.MXD - 11/10/2023 2:57 PM, Jim Ahern, 13 LANDSCAPE NOTES AND DETAILS.MXD PDF - p.3

- PROCEDURES**
1. IMMEDIATELY AFTER MOVING SATURATE ROOT BALL WITH WATER.
 2. FILL AND TAMP VOIDS AROUND BALL WITH TOPSOIL.
 3. WATER AGAIN AND REPEAT.
 4. SAUCER, GUY AND MULCH.

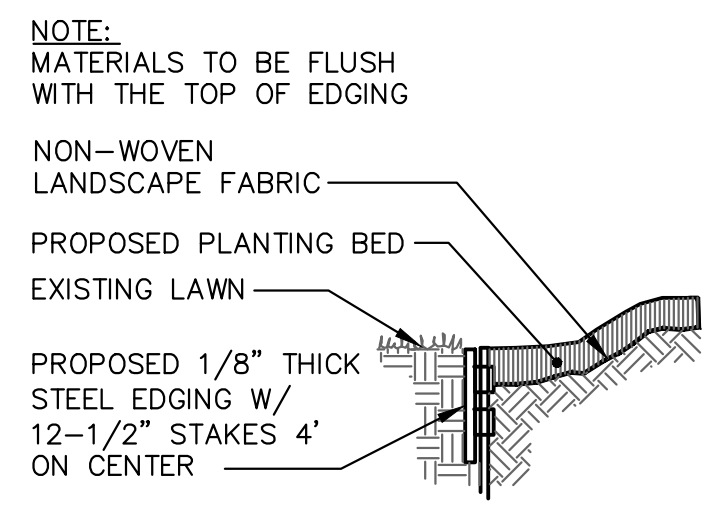


EVERGREEN TREE - TRANSPLANTING DETAIL
NOT TO SCALE

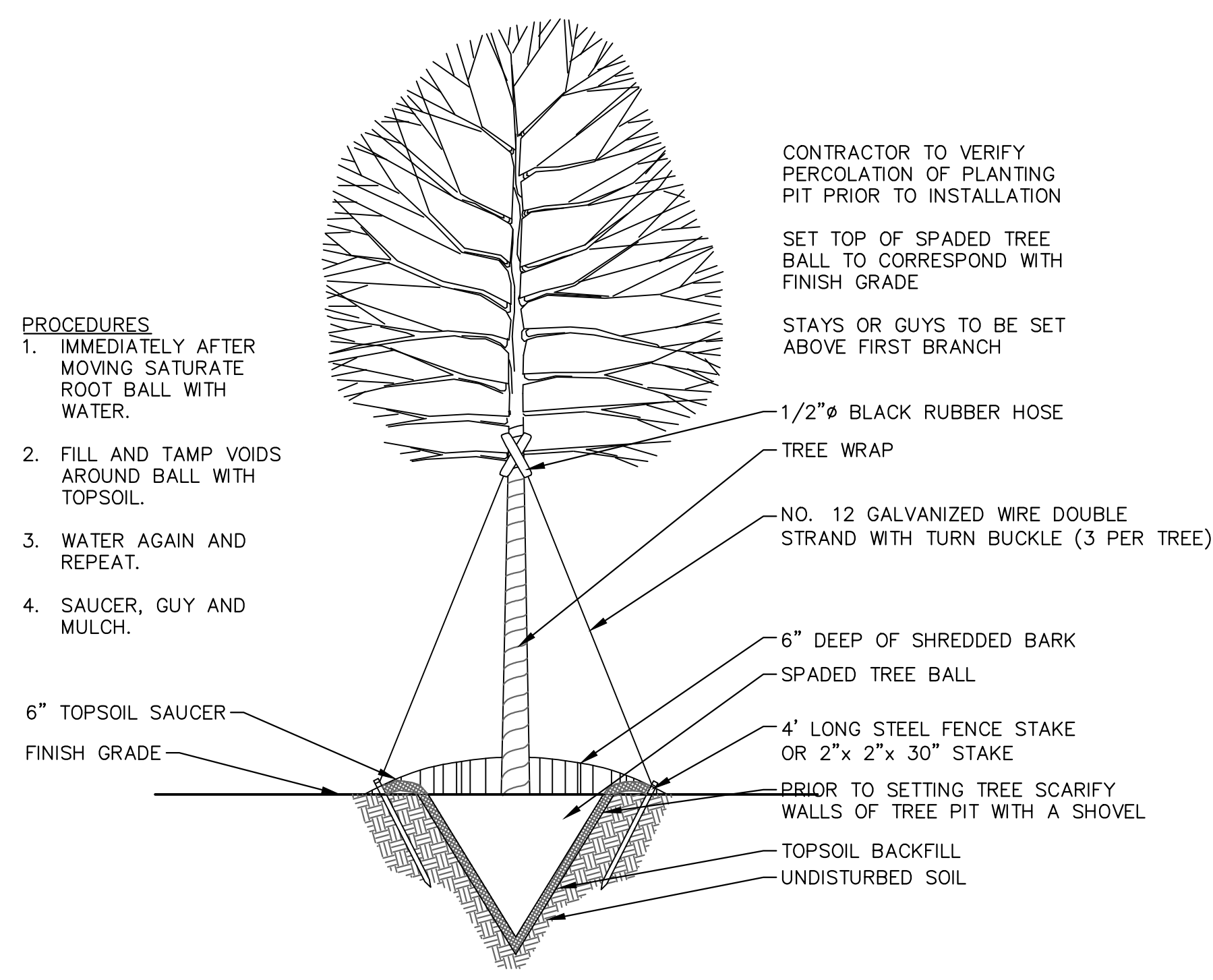
NOTE: A: STAKING IS ONLY REQUIRED IF THE SITE IS WINDY OR THE TREES ARE GREATER THAN 3" CALIPER. IF TREES MUST BE STAKED, THE STAKED SHALL BE REMOVED IN ONE YEAR.



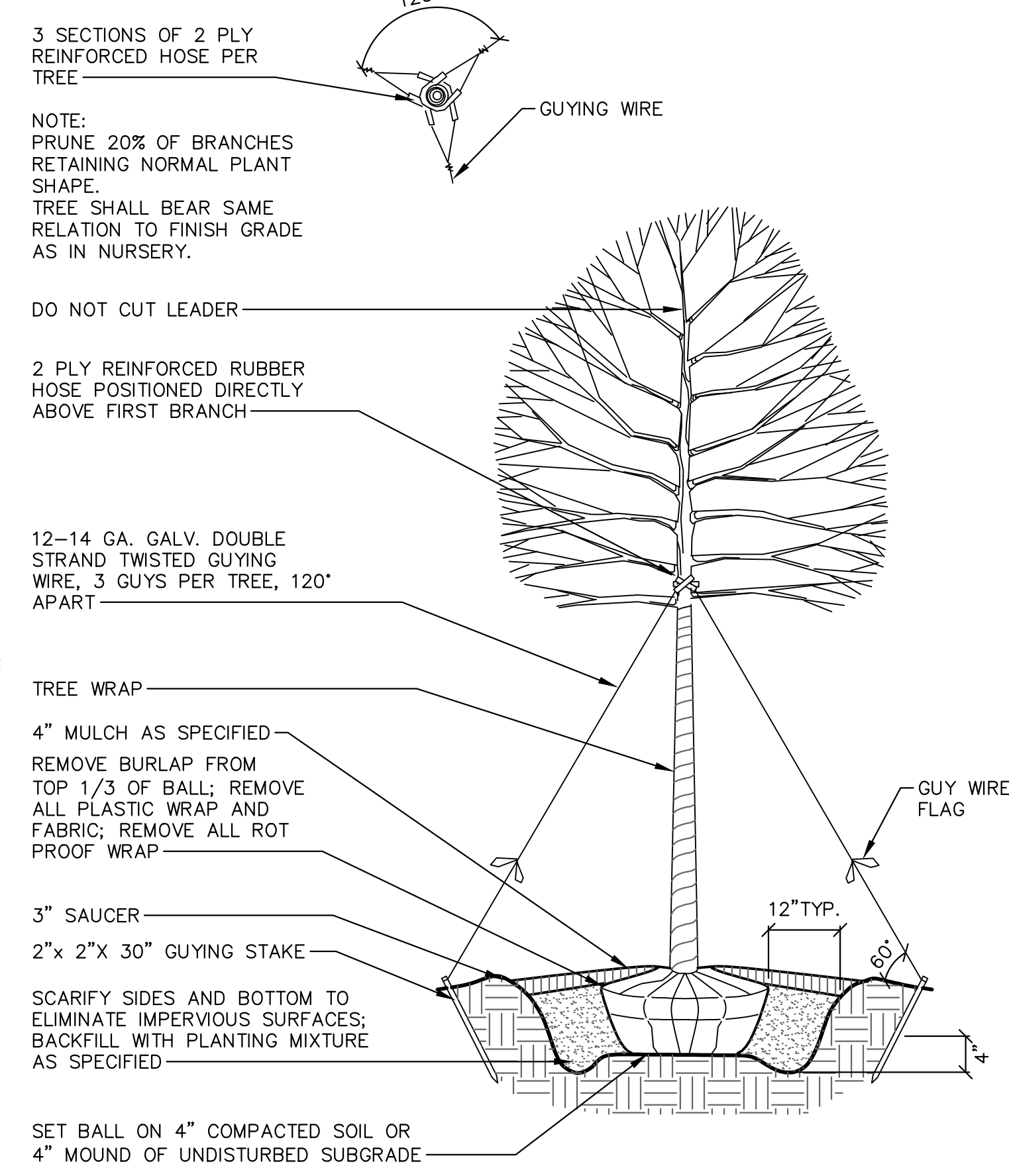
EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



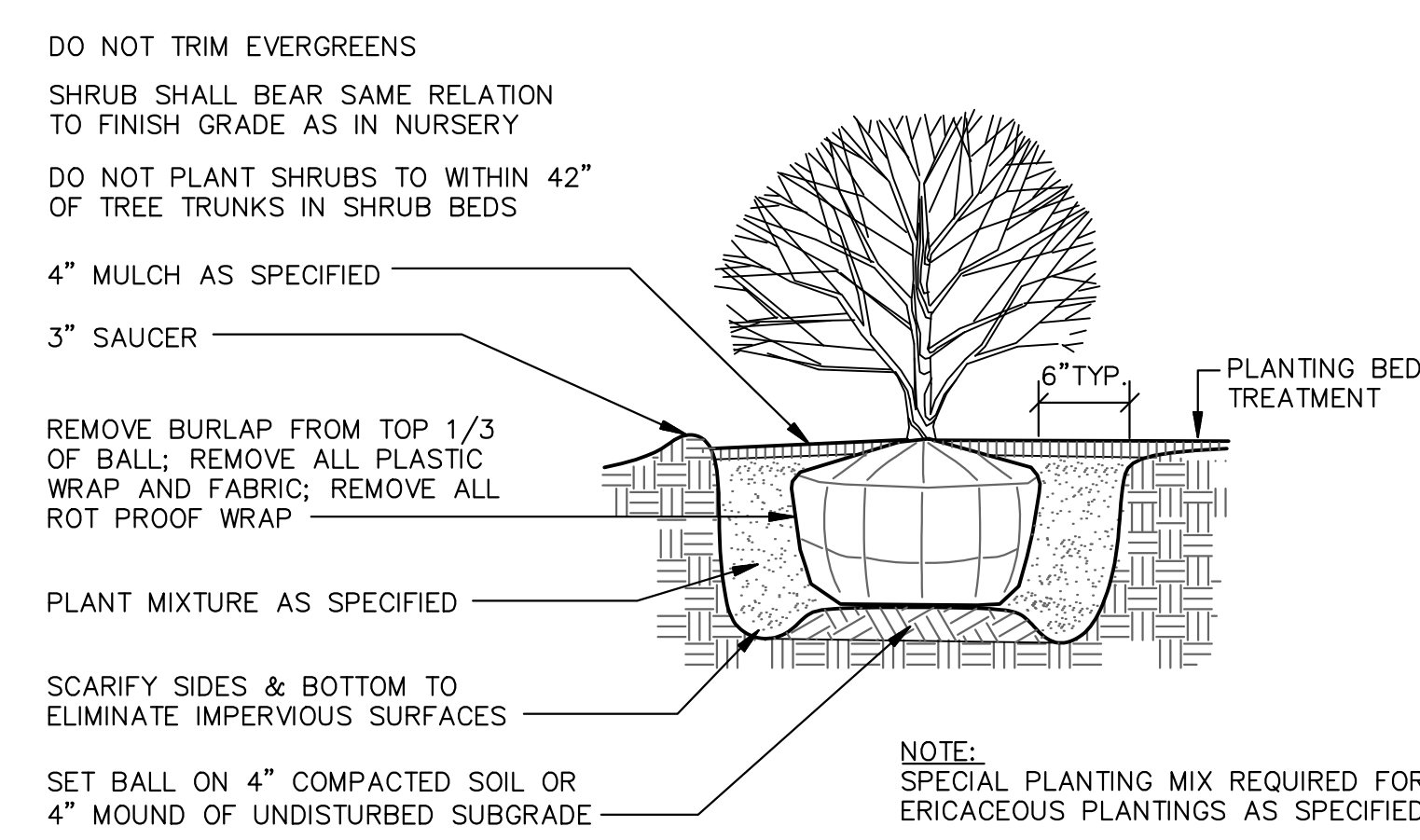
STEEL EDGING DETAIL
NOT TO SCALE



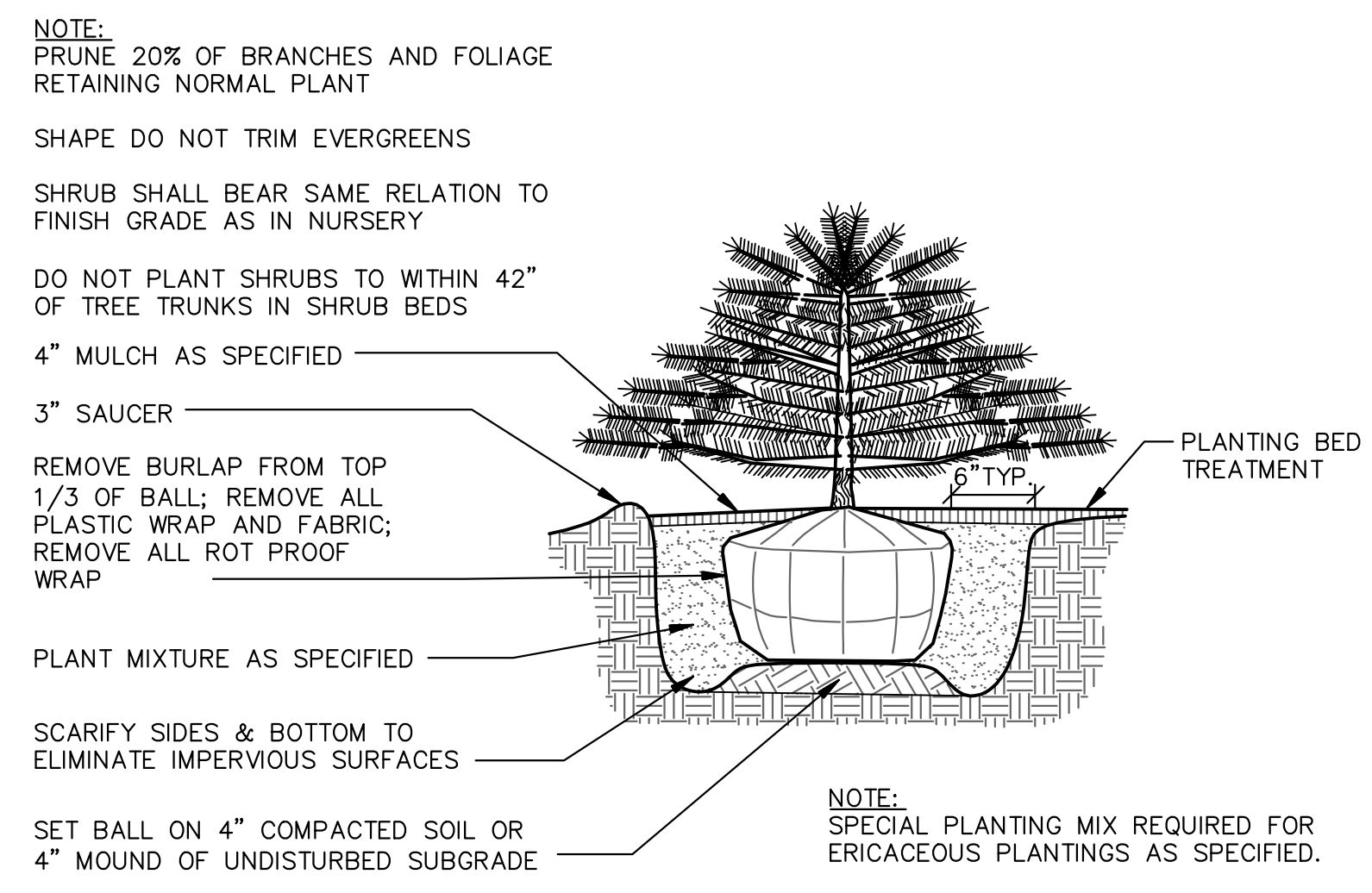
DECIDUOUS TREE - TRANSPLANTING DETAIL
NOT TO SCALE



DECIDUOUS TREE - PLANTING DETAIL
SCALE : NTS



SHRUB PLANTING DETAIL
NOT TO SCALE



EVERGREEN SHRUB PLANTING DETAIL
NOT TO SCALE

LANDSCAPE NOTES

1. For any plant quantity discrepancies between the plan view and the plant schedules, the plant schedule shall take precedence.
2. Plant materials shall be selected and installed in accordance with standards established by the City of Ann Arbor.
3. In-ground automatic irrigation shall be provided for all landscaped planting or water outlets shall be provided within 150 feet of all required plantings.
4. All diseased, damaged or dead material shown on the site plan as proposed plantings shall be replaced by the end of the following growing season.
5. Restore disturbed areas with a minimum of four (4) inches of topsoil and then seed/fertilize/mulch.
6. All disturbed areas not to be seeded with seed mixes identified on the Landscape Plan shall be lawn areas. Fertilizer for the initial installation of lawns shall provide not less than one (1) pound of actual nitrogen per 1,000 sq ft of lawn area and shall contain not less than two percent (2%) potassium and four percent (4%) phosphoric acid.
Lawn (turfgrass) seed mix shall consist of:
15% Rugby Kentucky Bluegrass
10% Park Kentucky Bluegrass
40% Ruby Creeping Red Fescue
15% Pennine Perennial Ryegrass
20% Scalds Hard Fescue
7. Seed shall be applied at a rate of five pounds (5 lbs) per 1000 sq ft. Mulch within 24 hours with two (2) tons of straw per acre, or 71 bales of excelsior mulch per acre. Anchor straw mulch with spray coating of adhesive material applied at the rate of 150 gals. / acre.
8. After the first growing season, only fertilizers that contain NO phosphorus shall be used on the site.
9. All seeded areas with slopes less than 1:3 (one vertical foot for every 3 horizontal feet) shall be mulched with straw mulch at the rate of two (2) bales per 1,000 square feet. All seeded areas with slopes greater than 1:3 shall be seeded and biodegradable erosion control blanket North American Green SC150, or equivalent, shall be applied with biodegradable stakes.
10. Deciduous plants shall be planted between March 1 and May 15 and from October 1 until the prepared soil becomes frozen. Evergreen plants shall be planted between March 1 and June 1 and from August 15 to September 15.
11. All planting beds are to receive four (4) inches of shredded hardwood bark mulch.
12. All trees to be located a minimum of 10 feet from public utilities.
13. All single trunk, deciduous trees shall have a straight and a symmetrical crown with a central leader. One sided trees or those with thin or open crowns shall not be accepted.
14. All evergreen trees shall be branched fully to the ground, symmetrical in shape and have not been sheared in the last three (3) growing seasons.
15. All compacted subgrade soils in proposed landscape areas shall be tilled to a minimum 12-inch depth prior to placement of topsoil, geotextile fabric, or other planting media as specified.
16. Proposed trees will be planted a minimum of 15 feet apart.
17. Planting Soil: Existing, in-place or stockpiled topsoil. Supplement with imported topsoil as needed. Verify suitability of existing surface soil to produce viable planting soil. Final approval of soil composition shall be provided by the landscape contractor. Remove stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth. Mix surface soil with the following soil amendments to produce planting soil:
a. Ratio of Loose Compost to Topsoil by Volume: 1:4.
b. Weight of Lime per 1000 Sq. Ft.: Amend with lime only on recommendation of soil test to adjust soil pH.
c. Weight of Sulfur or Aluminum Sulfate per 1,000 Sq. Ft.: Amend with sulfur or aluminum sulfate only on recommendation of soil test to adjust soil pH.
d. Volume of Sand: Amend with sand only on recommendation of Landscape Architect to adjust soil texture.
e. Weight of Slow-Release Fertilizer per 1,000 Sq. Ft.: Amend with fertilizer only on recommendation of soil test to adjust soil fertility.
18. Snow storage areas are located along the edges and corners of parking areas as shown on the plan.
19. All species deviations must be approved in writing by the City of Ann Arbor prior to installation.
20. The City of Ann Arbor has adopted an ordinance limiting phosphorus in fertilizer. To assist in compliance with the State mandated TMDL for phosphorus within the Middle Huron River basin. Applications of fertilizer beyond the initial topsoil and seeding shall be a fertilizer with no phosphorus.

Maintenance:

1. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
2. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
3. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
4. Contractor shall warranty all plant material and trees to remain alive and be in healthy, vigorous and like new condition for the specified period from installation to Substantial Completion. The entire Landscaping Project, including but not limited to: plants (perennials), trees, shrubs, mulches, shrubs, etc are to be under Warranty for One Year after Substantial Completion date of the Project. At the end of the specified One Year Warranty period the Owner's Representative will inspect plant material for compliance. Contractor shall replace, in accordance with the drawings and specifications, all plants, trees, shrubs, etc or as determined by the Owner's Representative, are in an unhealthy or unsightly condition. Warranty shall not include damage or loss of plants, trees, and shrubs caused by fires, floods, freezing rains, lightning storms, or winds over 75 miles per hour, acts of vandalism or negligence on the part of the owner, or any other incident beyond landscape contractor's control.
5. Watering: The contractor shall keep seed moist for optimum plant growth (1" of total water per week, including rainfall) until the grass and/or flowers are four (4) inches high typical.
6. Protection from traffic and erosion in newly seeded areas is the responsibility of the contractor. Safety fences and/or silt fence with appropriate signage may be used at the contractor's expense until the grasses and flowers are fully established.
7. Erosion shall be repaired by the contractor.
8. Turf installations shall meet the following criteria as determined by Owner:
a. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
b. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
c. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

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OWL CREEK PHASE 2

SITE PLAN FOR CITY COUNCIL AND REZONING
LANDSCAPE NOTES AND DETAILS

13

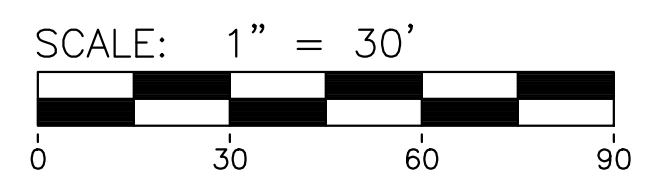
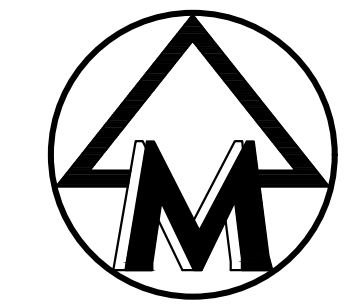
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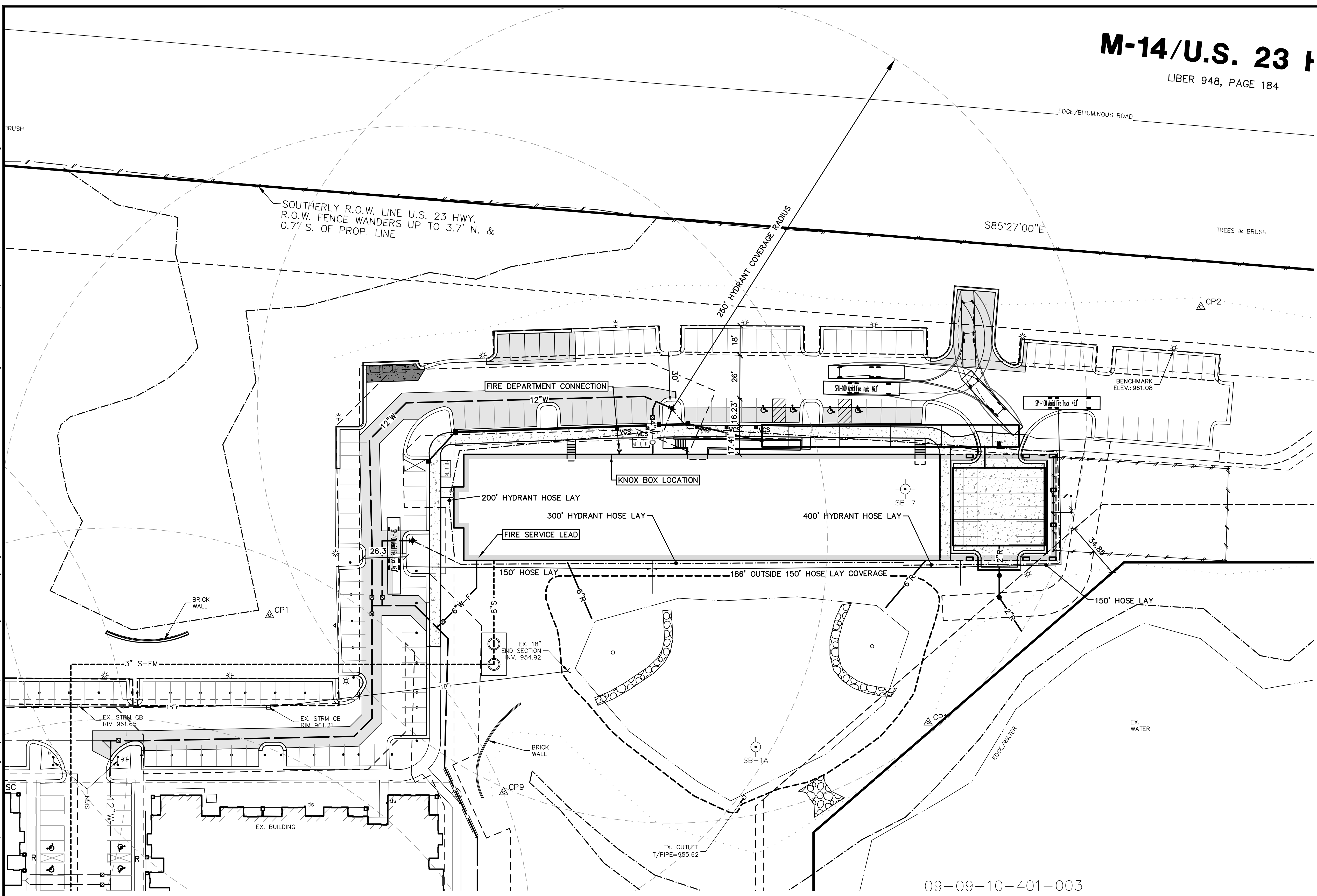
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LIBER 948, PAGE 184



Know what's below.
Call before you dig.

M:\Civ\132_Proj\2023\33015\Site Plan\33015\FPI.dwg, 11/10/2023 2:57 PM, Jim Ahern, 14 FIRE PROTECTION PLAN, MCLC PDF, pgs 3
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FIRE PROTECTION PLAN

09-09-10-401-003

- FIRE PROTECTION PLAN NOTES:**
- Water services are to be separate domestic and fire lines.
 - Addressing: numerics shall be a minimum of 4 inches in height and clearly visible when approaching the building.
 - Flow requirements: flow shall comply with NFPA 13 standards and shall meet 2015 International Fire Code (IFC) standards found in Appendix B, Table B 105.1 of the code.
 - Fire department connections (FDC's) shall be within 100 feet of a hydrant.
 - Fire department connection (FDC): hook-up location is subject to Fire Marshal's approval.
 - FDC's shall be 4 inch Storz connections or (2) 2 1/2 inch NST connections.
 - FDC access shall comply with IFC 912.3.
 - FDC signage shall be provided and shall comply with IFC 912.4.
 - Fire protection alarm and detection system shall be in compliance with all applicable codes adopted by the City of Ann Arbor, including NFPA 72, 2007 edition and all other referenced standards.
 - A horn strobe device shall be installed above the FDC and shall activate upon sprinkler water flow.
 - Emergency responder radio coverage shall comply with 2015 IFC Section 510.
 - Emergency voice/alarm communications system shall comply with 2015 IFC Section 907.6.2.2.
 - Occupant notification appliances shall activate throughout the notification zones upon sprinkler water flow.
 - Place signage on Fire Suppression System Control Room door (IFC 2015 Section 509.1) if applicable.
 - Knox Box emergency access system with keys to access the building, the Fire Suppression System Control Room (if applicable), an elevator key, and any other keys to areas that may be relevant during emergencies will be required. Knox Box with proper keys shall be in place prior to issuance of Certificates of Occupancy for the buildings.
 - The Knox Box shall be mounted no higher than 6 feet from grade in an approved location on the exterior for emergency access to the building as well as access to the Fire Suppression System Control Rooms if applicable.
 - Construction sequencing
 - Hydrants must be in service and approved during construction.
 - Hydrants providing protection coverage for the building must be in service and approved by both engineering and fire departments before the fire department will support permit issuance for new construction phase and before combustible materials are placed on the job site.
 - Storage areas for construction materials must be approved so as not to interfere with fire/emergency site access.
 - If site access is to be restricted during construction, Knox Box locks for gates are to be provided.
 - No firewalls will be constructed within the building.
 - Booster pumps will be provided on the domestic water service and the fire suppression water service leads. The pumps shall meet 2015 IFC standards, Section 914.3.1.2.
 - No separate Fire Suppression System Control Room is required.

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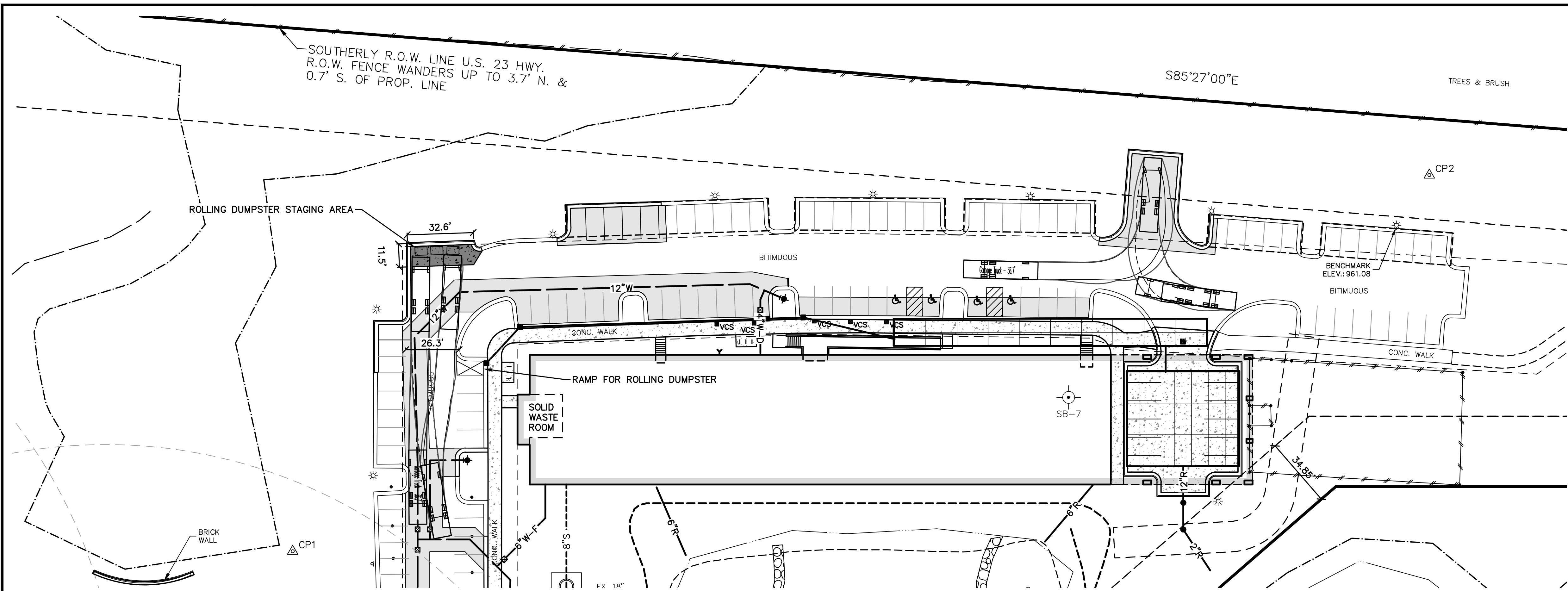
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OWL CREEK PHASE 2
SITE PLAN FOR CITY COUNCIL AND REZONING
FIRE PROTECTION PLAN

14

JOB No.	23015	DATE	9/17/23
REVISIONS:		SHEET	14 OF 19
PER CITY REVIEW		REV. DATE	8/31/23
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SOLID WASTE PLAN

SCALE: 1" = 30'

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REV. NO.	DATE	DRAWN BY	CHECKED BY

SWEPT PATH REQUIREMENTS FOR FRONT LOAD SOLID WASTE VEHICLE

DR. ENG.	CH. ENG.	DRAWING NO.

SCALE: N.T.S. DATE: 10/1/2022 DRAWING NO. SD-SW-4

1. MAINTAIN A CLEAR SPACE DIRECTLY IN FRONT OF THE SOLID WASTE ENCLOSURE, THE CLEAR SPACE SHALL BE A MINIMUM OF FIFTY (50) FEET LONG BY THE WIDTH OF THE INSIDE DIMENSION (I.D.) OF THE ENCLOSURE WALLS PLUS FOUR (4) FEET ON EACH SIDE. A MINIMUM VERTICAL CLEARANCE OF AT LEAST TWENTY-FIVE (25) FEET MUST BE PROVIDED ABOVE THIS AREA.
2. INGRESS AND EGRESS ROUTES MUST BE DEVELOPED BASED ON SOLID WASTE SWEEP PATH REQUIREMENTS PER SD-SW-4. A MINIMUM HORIZONTAL CLEARANCE OF FOUR (4) FEET FROM THE EDGE OF THE SWEEP PATH AND A MINIMUM VERTICAL CLEARANCE OF AT LEAST FIFTEEN (15) FEET MUST BE PROVIDED ALONG THE ENTIRE SOLID WASTE COLLECTION ROUTE.
3. PROVIDE TEN (10) FEET MINIMUM HORIZONTAL CLEARANCE FROM SOLID WASTE ENCLOSURE TO MAJOR ELECTRICAL EQUIPMENT, ABOVE GROUND UTILITY SERVICES, AND EDGE OF OVERHEAD OBSTRUCTIONS SUCH AS TREE BRANCHES, BALCONIES, AND OVERHANGS.
4. IF FORWARD ACCESS TO THE PUBLIC STREET IS NOT AVAILABLE FOR THE SOLID WASTE VEHICLE, THE SITE DEVELOPMENT LAYOUT MUST ACCOMMODATE A TURN-AROUND LOCATION MEETING REQUIREMENTS WITHIN SOLID WASTE REFERENCE SPECIFIC TURN-AROUND DETAIL (SD-SW-5) AND ACCEPTABLE TO THE PSA.
5. FOR SITES THAT CANNOT ACCOMMODATE A TURN-AROUND, THE FOLLOWING ADDITIONAL REQUIREMENTS MUST BE MET:
 - 5.1. SOLID WASTE VEHICLES MUST BE ABLE TO SERVICE DUMPSTERS WITHOUT IMPEDING THE PUBLIC STREET OR SIDEWALK.
 - 5.2. THE COLLECTION LOCATION SHALL BE CLEARLY DELINEATED AND NOT HAVE A SLOPE GREATER THAN 2% IN ANY DIRECTION.
 - 5.3. BOLLARDS OR ADEQUATE CLEAR SPACE MUST BE PROVIDED BEHIND THE LIFT POINT SO THE DUMPSTERS ARE NOT PUSHED INTO ANY BUILDING OR ACCESS ROUTE.
 - 5.4. ALL SWEEP-PATH CLEARANCE AND VERTICAL CLEARANCE REQUIREMENTS PREVIOUSLY IDENTIFIED SHALL BE PROVIDED.
 - 5.5. SOLID WASTE VEHICLE BACK-UP DISTANCES MUST BE LESS THAN 30' ALONG SERVICING ROUTE.
6. GATES ON BIN ENCLOSURES SHALL OPEN A MINIMUM OF 120 DEGREES FROM THE CLOSED POSITION. THE GATES SHALL NOT IMPEDING THE REQUIRED BIN ENCLOSURE OPENING WIDTH, SHALL NOT BLOCK ADJACENT PARKING SPOTS, AND NOT BE IMPEDED BY ADJACENT CURBS OR LANDSCAPING.
7. GATES SHALL BE DESIGNED TO BE FREE STANDING WITHOUT CENTER POLE DESIGN. IF CENTER POLE DESIGN IS NECESSARY, 12 INCHES SHALL BE ADDED TO THE MINIMUM INTERIOR WIDTH OF THE ENCLOSURE.
8. GATE DESIGN SHALL INCLUDE A RELIABLE MEANS TO SECURE THE DOOR IN BOTH THE OPEN AND CLOSED POSITIONS.

REV. NO.	DATE	DRAWN BY	CHECKED BY

SOLID WASTE GENERAL NOTES

DR. ENG.	CH. ENG.	DRAWING NO.

SCALE: N.T.S. DATE: 10/1/2022 DRAWING NO. SD-SW-6A

9. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF NO PARKING SIGNS ALONG THE SOLID WASTE INGRESS/EGRESS ROUTE TO ENSURE THE ROUTE REMAINS FREE OF VEHICLES.
10. REFER TO ASSOCIATED STANDARD DETAILS SD-SW-1 AND SD-SW-2 FOR REQUIREMENTS ON SINGLE AND DOUBLE WIDE SOLID WASTE BIN ENCLOSURE LAYOUT AND DESIGN CRITERIA. THE CITY SHALL HAVE THE ABILITY TO MODIFY OR INTERPRET THESE DETAILS AS NECESSARY TO ACCOMMODATE THE CITY OR CITY CONTRACTOR'S NEEDS FOR SOLID WASTE PICK-UP.
11. SOLID WASTE EQUIPMENT ACCESS ROADS AND SERVICE AREA SURFACES SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF COLLECTION VEHICLES WEIGHING UP TO 66,000 LBS GROSS VEHICLE WEIGHT (GVW) AND SHALL BE PROVIDED WITH AN APPROVED SURFACE SO AS TO PROVIDE ALL WEATHER DRIVING CAPABILITIES. PROPERTY OWNER SHALL BE RESPONSIBLE FOR ALL SNOW AND ICE REMOVAL REQUIRED FOR SAFE ACCESS.
12. FOR SITES THAT CANNOT ACCOMMODATE A STANDARD DUMPSTER ENCLOSURE, THE DUMPSTERS MAY BE ROLLED OUT OF A BUILDING OR ALTERNATE ENCLOSURE BY THE PROPERTY OWNER TO AN APPROVED COLLECTION LOCATION.
13. SOLID WASTE COLLECTION LOCATIONS MUST BE LOCATED WITHIN THE BOUNDARIES OF THE PROPERTY UNLESS AN APPROPRIATE EASEMENT IS OBTAINED.

REV. NO.	DATE	DRAWN BY	CHECKED BY

SOLID WASTE GENERAL NOTES

DR. ENG.	CH. ENG.	DRAWING NO.

SCALE: N.T.S. DATE: 10/1/2022 DRAWING NO. SD-SW-6B

Owl Creek Phase 2 Solid Waste Calculations

There will be a trash room on the first floor of the building with trash chutes on each floor. The trash will utilize a compactor for both trash and recyclables. The solid waste will be collected in 3 cy rolling dumpsters and be placed out on collection day.

	Studio	1 BR	2 BR
1st Floor	5	15	2
2nd Floor	6	19	4
3rd Floor	6	19	4
4th Floor	6	19	4
5th Floor	7	16	1
Total	30	88	15

Studio =	1 Person
1 Bedroom =	2 People
2 Bedroom =	4 People

Total Population 266 People

Assumptions: 4.5 lbs of solid waste per person per day
 225 lbs per cubic yard solid waste
 0.020 cy/person/day
 0.140 cy/person/week
 Compactor will provide a 4:1 compaction ratio
 0.035 cy/person/week compacted solid waste

Total solid waste volume generated per week will be:
 9.31 Cy compacted solid waste

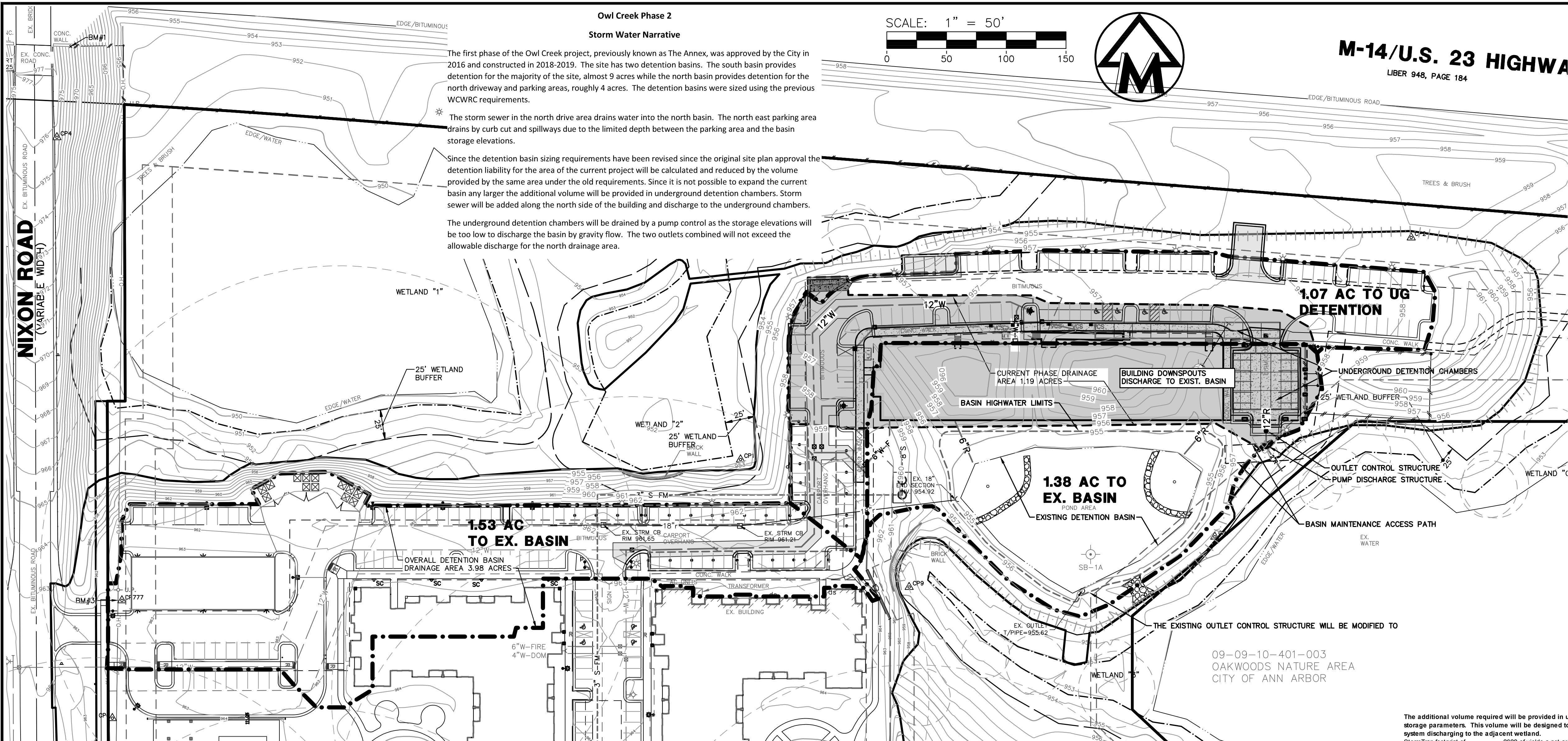
Using 3 Cy rolling dumpsters the new building will require 3-4 dumpsters per week. The rolling dumpsters will be placed out by building staff on pickup day and carts will be moved back in the building's trash room an hour after pickup time. One pickup per week is anticipated.

The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

OWL CREEK PHASE 2
 SITE PLAN FOR CITY COUNCIL AND REZONING
 SOLID WASTE PLAN

15

JOB No.	23015
DATE:	5/17/23
REV. DATE:	5/31/23
SHEET 15 OF 19	
REV. DATE:	11/9/23
PER CITY REVIEW	
PER CITY REVIEW	



LEGEND	
838	EXIST. CONTOUR
838	PROP. CONTOUR
	EXIST. SPOT ELEVATION
	PROP. SPOT ELEVATION
	EXIST. UTILITY POLE
	EXIST. UTILITY POLE W/ TRANS.
	GUY WIRE
	ELEC. TRANSFORMER
	EXIST. AC UNIT
	EXIST. GENERATOR
	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	PROP. LIGHT POLE
	EXIST. TELEPHONE LINE
	EXIST. ELECTRIC LINE
	EXIST. GAS LINE
	EXIST. GAS VALVE
	EXIST. FIBER OPTIC LINE
	EXIST. WATER MAIN
	PROP. WATER MAIN
	EXIST. HYDRANT
	PROP. HYDRANT
	EXIST. GATE VALVE IN BOX
	PROP. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	PROP. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
	PROP. CURB STOP & BOX
	REDUCER
	EXIST. FIRE DEPARTMENT CONNECTION
	PROP. FIRE DEPARTMENT CONNECTION
	EXIST. STORM SEWER
	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	PROP. BEEHIVE INLET
	PROP. ROOF DRAIN
	END SECTION
	EXIST. SANITARY SEWER
	PROP. SANITARY SEWER
	EXIST. CLEANOUT
	PROP. CLEANOUT
	SIGN
	SINGLE TREE
	TREE OR BRUSH LIMIT

Basin Stormwater Calculations - North Detention Basin Modifications - Increase in Volume Required
Based on Current Phase Building Addition and Parking Compared to Previously Approved Siteplan
Required Volume Calculations for current phase and distributed area

W1 - Determining Post-Development Cover Types, Areas, Curve Numbers, and Runoff Coefficients

Rational Method Variables					
Cover Type	Soil Type	Area (sf)	Area (ac)	Runoff Coeff. (C)	(C) x (Area)
Building		22,926	0.53	0.95	0.50
Pavement		16,720	0.38	0.95	0.36
Grass	A	0.00	0.00	0.15	0.00
Grass	B	0.00	0.00	0.25	0.00
Grass	C	0.00	0.00	0.30	0.00
Grass	D	11,974	0.27	0.45	0.12
Water Surface		0.00	0.00	1.00	0.00
Total		51,620	1.19		0.99
Weighted C = (Sum(C)x(Area))/(Area Total)		0.83			

NRCS Variables (Pervious)					
Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	(CN) x (Area)
Grass	A	0	0.00	49	0.00
Grass	B	0	0.00	69	0.00
Grass	C	0	0.00	79	0.00
Grass	D	11,974	0.27	84	0.23
Total		11,974	0.27		0.23
Weighted CN = (Sum(CN)x(Area))/(Area Total)		84			

NRCS Variables (Impervious)					
Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	(CN) x (Area)
Building		22,926	0.53	98	0.52
Pavement		16,720	0.38	98	0.38
Water Surface		0.00	0.00	98	0.00
Total		39,646	0.91		0.89
Weighted CN = (Sum(CN)x(Area))/(Area Total)		98			

W2 - W2 - First Flush Runoff Calculations (Vf)
A. $V_f = 1" \times 1/12" \times 43560 \text{ sf/ac} \times A \times C$ where A = 1.19 and where C = 0.83
 $V_f = 1" \times 1/12" \times 43560 \text{ sf/ac} \times 1.19 \times 0.83 = 3,570 \text{ cf}$

W3 - W3 - Pre-Development Bankfull Runoff Calculations (Vf-pre)
A. 2 year / 24 hour storm event. P = 2.35 in
B. Pre-Development CN
C. (Good Cover Woods, Type D Soils) CN = 79
D. S = (1000 / CN) - 10 = 2,658 in
E. Q = [(P-0.25)/2] (IP+0.85) = 0.738 in
F. Total Site Area excluding "Self-Crediting" BMPs = 51,620 sf
G. $V_{f-pre} = Q \times (1/12) \times \text{Area}$ = 3,177 cf

W4 - W4 - Pervious Cover Post-Development Bankfull Runoff Calculations (Vf-pre-post)
A. 2 year / 24 hour storm event. P = 2.35 in
B. Pervious Cover CN From Worksheet 1 CN = 84
C. S = (1000 / CN) - 10 = 1,905 in
D. Q = [(P-0.25)/2] (IP+0.85) = 1.001 in
E. Pervious Cover Area from Worksheet 1 = 11,974 sf
F. $V_{f-pre-post} = Q \times (1/12) \times \text{Area}$ = 999 cf

W5 - W5 - Impervious Cover Post-Development Bankfull Runoff Calculations (Vf-imp-post)
A. 2 year / 24 hour storm event. P = 2.35 in
B. Impervious Cover CN From Worksheet 1 CN = 98
C. S = (1000 / CN) - 10 = 0.204 in
D. Q = [(P-0.25)/2] (IP+0.85) = 2.122 in
E. Impervious Cover Area from Worksheet 1 = 39,646 sf
F. $V_{f-imp-post} = Q \times (1/12) \times \text{Area}$ = 7,010 cf

W6 - W6 - Pervious Cover Post-Development 100-Year Runoff Calculations (V100-per-post)
A. 100 year / 24 hour storm event. P = 5.11 in
B. Pervious Cover CN From Worksheet 1 CN = 84
C. S = (1000 / CN) - 10 = 1,905 in
D. Q = [(P-0.25)/2] (IP+0.85) = 3.371 in
E. Pervious Cover Area from Worksheet 1 = 11,974 sf
F. $V_{100-per-post} = Q \times (1/12) \times \text{Area}$ = 3,364 cf

W7 - W7 - Impervious Cover Post-Development 100-Year Runoff Calculations (V100-imp-post)
A. 2 year / 24 hour storm event. P = 5.11 in
B. Impervious Cover CN From Worksheet 1 CN = 98
C. S = (1000 / CN) - 10 = 0.204 in
D. Q = [(P-0.25)/2] (IP+0.85) = 4.873 in
E. Impervious Cover Area from Worksheet 1 = 39,646 sf
F. $V_{f-imp-post} = Q \times (1/12) \times \text{Area}$ = 16,100 cf

W8 - Time of Concentration (Tc-hrs)
A. Assume 15-minute minimum time of concentration Tc = 0.25 hr

W9 - Runoff Summary & On-Site Infiltration Requirement
A. Summary from Previous Worksheets
First Flush Volume (Vf) = 3,570 cf
Pre-Development Bankfull Runoff Volume (Vf-pre) = 3,177 cf
Pervious Cover Post-Development Bankfull Volume (Vf-pre-post) = 999 cf
Impervious Cover Post-Development Bankfull Volume (Vf-imp-post) = 7,010 cf
Total BF Volume (Vf-pre-post) = 8,009 cf
Pervious Cover Post-Development 100-Year Volume (V100-per-post) = 3,364 cf
Impervious Cover Post-Development 100-Year Volume (V100-imp-post) = 16,100 cf
Total 100-Year Volume (V100) = 19,464 cf
B. Determine On-Site Infiltration Requirement
Subtract the Pre-Development Bankfull from the Post-Development Bankfull Volume
Total Post-Development Bankfull Volume (Vf-post) = 3,177 cf
Pre-Development Bankfull Runoff Volume (Vf-pre) = 3,177 cf
Bankfull Volume Difference = 4,831 cf
Infiltration Requirement (Vinf) = 4,831 cf

W10 - Detention/Retention Requirement
A. $Q_p = 2.35 \text{ to } 0.82$
B. Total Site Area excluding "Self-Crediting" BMPs = 1.19 ac
C. $Q_{100} = Q_{100-per} + Q_{100-imp}$
D. Peak Flow (PF) = $Q_p \times \text{Area} / 640$
E. Delta = $PF - 0.15 \times \text{Area (ac)}$
F. $V_{det} = \Delta \times PF \times V_{100}$
Required Detention not including infiltration credit or penalty. Sediment Forebay Volume Required (5% of V100) = 973 cf

W11 - Determine Applicable BMPs and Associated Volume Credits
Previous soil boring in the project area indicate the site soils are clay with little opportunity for infiltration. Based on the soils, no infiltration will be incorporated into the propose design.

Proposed BMP	Storage Volume (cf)		Design Infiltr. Rate (in/hr)	Infiltr. Volume in 6-hr Downtime (cf)	Total Volume Reduction (cf)
	Area (sf)	In Soil			
Bioretention Systems		0		0	0
Rain Gardens		0		0	0
Bioswale		0		0	0
Total Volume Reduction Credit by Proposed Structural BMPs (cf)					
Runoff Volume Infiltration Requirement (Vinf) from W9 (cf)					4,831
Runoff Volume Credit (cf)					0

W13 - Site Summary of Infiltration & Detention
A. Stormwater Management Summary
Min Infiltration Requirement (Vinf) = 4,831 cf
Designed/Provided Infiltration Volume = 0 cf
% Minimum Required Infiltration Provided = 0 %
Total Calculated Detention Volume, Vdet = 19,159 cf
Net Required Detention Volume (Vdet - Designed/Provided Infiltration Volume) = 19,159 cf

B. Detention Volume Increase for sites where the required infiltration volume cannot be achieved.
% Required infiltration NOT Provided = 100.0 %
(100% - % Minimum Required Infiltration Provided) = 100.0 %
Net % Penalty (20% x % Required Infiltration NOT Provided) = 20.0 %
Total Required Detention Volume, including penalty = 22,990 cf
[(100% + Net % Penalty) x Net Required Detention Volume]

The previously approved site plan accounted for this area to drain to the north detention basin and accounted for the impervious surface of the parking area. The previous site plan used the old rules of the WCWRC to compute required detention volumes. This new work area is required to design to the current WCWRC rules for the area of the project. The proposed plan calculates the difference in detention storage required by this work area combined with the remaining drainage area computed under the old rules.

STORM WATER DETENTION POND CALCULATIONS
Project: Owl Creek-Existing Site Volume
Midwestern Consulting Project No. 12088

Pond #1 - Main pond
These calculations are to verify the existing outlet control structure will still operate adequately with the proposed additional runoff volume contributing to the basin.

I. Common Items and Assumptions:
A. First Flush = (0.5/12) x 43,560 x area x developed C
B. Bankfull Flood = 8,170 x area x developed C
C. Detention Volume Equation
 $V = (A_1 + A_2 + (A_1 \times A_2)^{0.5}) (H/3)$
where, A_1 = Area at top of storage elevation
 A_2 = Area at bottom of storage elevation
H = Depth of analysis

II. Detention Pond Volumes:
A. First Flush, Bankfull Flood and 100-year Storm Event
1. Contributing Area = 1.19 Ac.
2. Developed Runoff Coefficient:

Area (A), Ac.	Coefficient (C)	A x C
Rooftop / Asphalt Area 0.45	0.95	0.43
Lawn/Landscaped Area 0.73	0.30	0.22

Totals: 1.19 x 0.65 / 1.19 = 0.55 = 0.65
Developed C = 0.65 / 1.19 = 0.55

3. First Flush Volume:
 $V = (0.5/12) \times 43,560 \times 0.55 \times 1.19 = 1183 \text{ CF}$

4. Bankfull Flood Volume:
 $V = 8,170 \times 0.55 \times 1.19 = 5325 \text{ CF}$

5. 100-Year Flood Volume:
 $Q_a = 0.15 \times 1.19 = 0.18 \text{ CFS}$
 $Q_o = 0.1778 / (1.19 \times 0.55) = 0.27 \text{ CFS/Ac-imp.}$
 $T = -25 + (10,312.50 / 0.27)^{0.5} = 169.45 \text{ min.}$
 $V_s = ((16,500 \times 169.45) / (169.45 + 25)) - (40 \times 0.27 \times 169.45) = 12530 \text{ CF/Ac-imp.}$
 $V_t = 12530 \times 1.19 \times 0.55 = 8166.5 \text{ CF}$

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 ADAM BLEZNAK (248) 540-9300

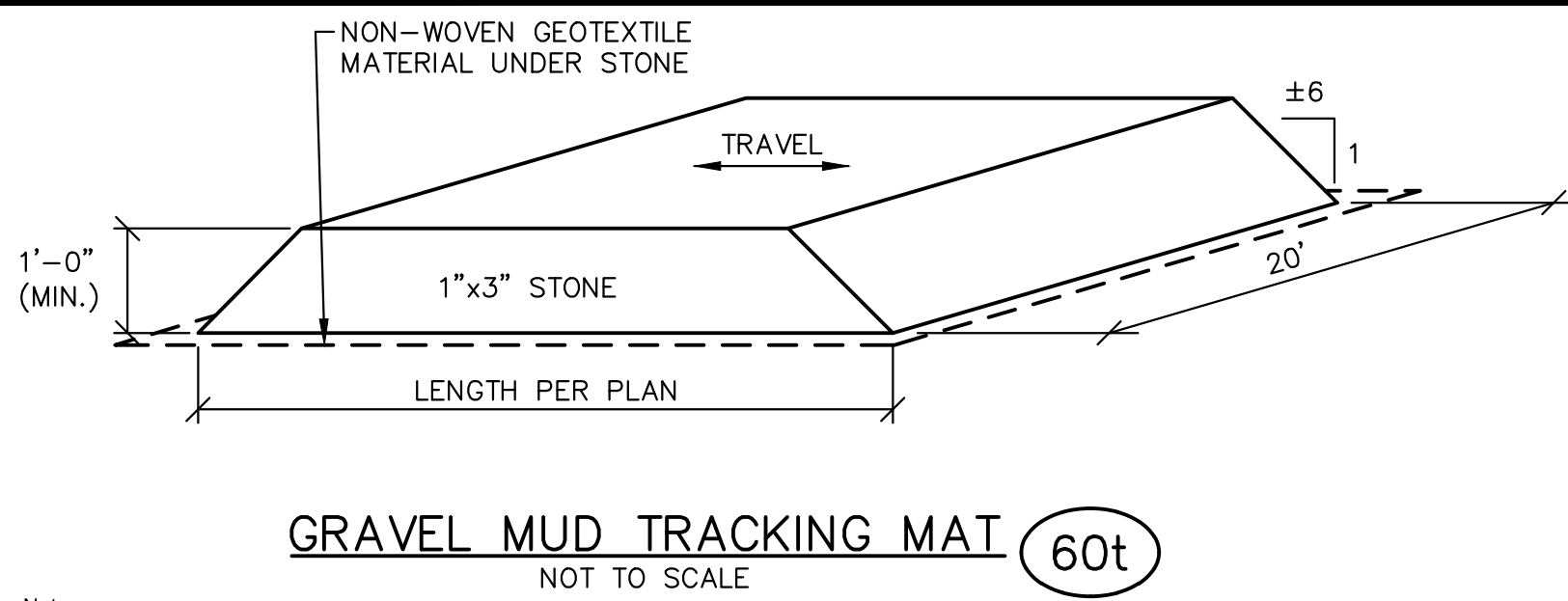
OWL CREEK PHASE 2
 SITE PLAN FOR CITY COUNCIL AND REZONING
 STORM WATER MANAGEMENT PLAN

DATE: 9/17/23
 SHEET 16 OF 19
 REV. DATE: 9/17/23
 PER CITY REVIEW: ENG. JCA
 PER CIVIL REVIEW: P.M. SWB
 PER CIVIL REVIEW: TECH. JES
 /ZSD/ESMT

23015
 JOB NO.

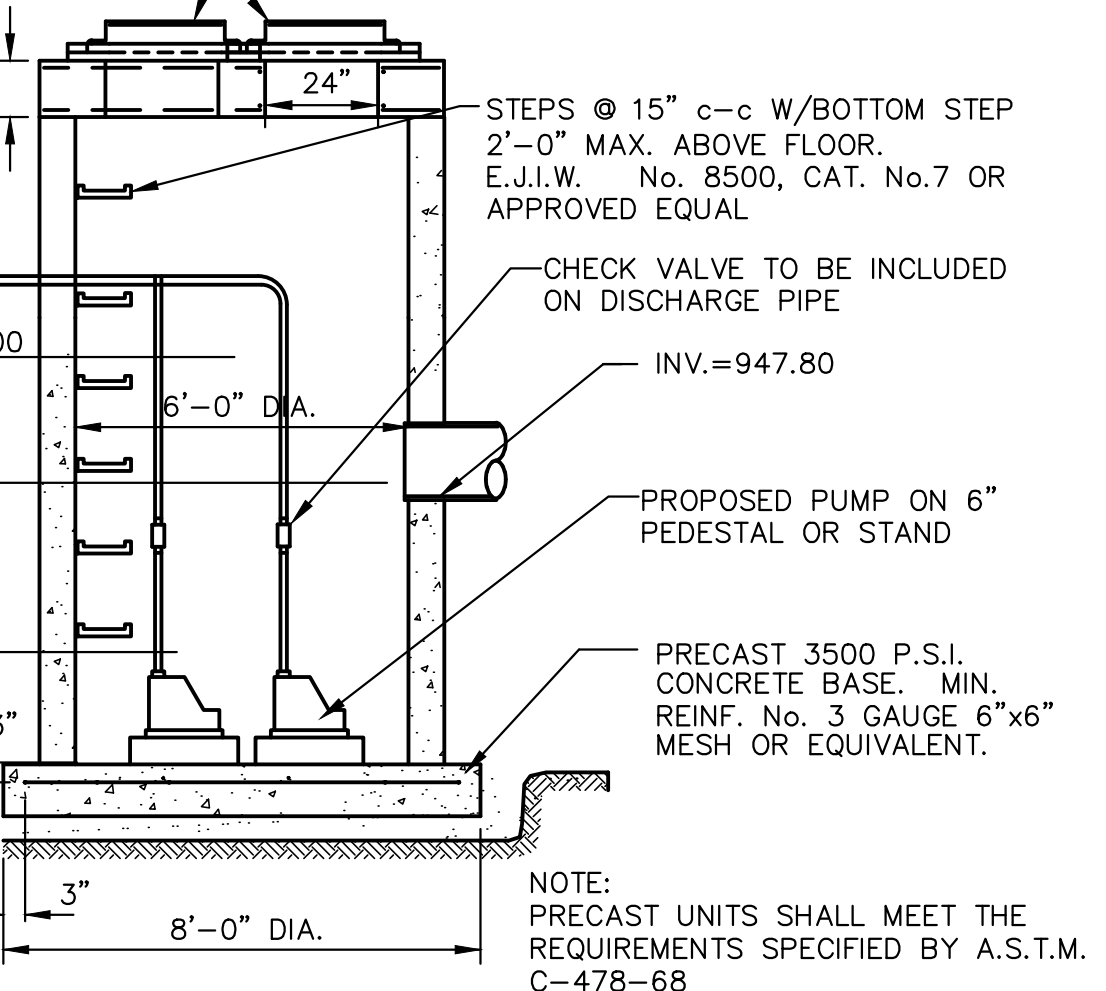
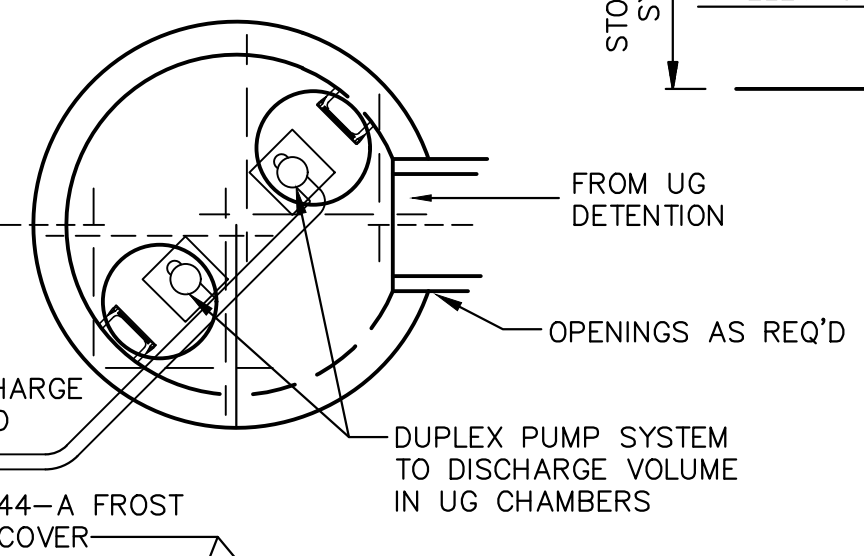
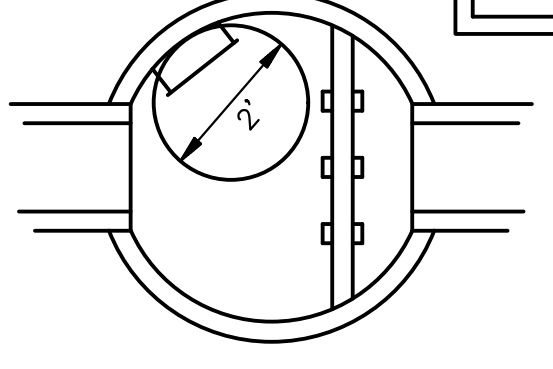
16

M:\CIVIL\2023\33015\Site Plan\3301501.dwg, 11/10/2023 2:58 PM, Jim Ahern, 17 MISCELLANEOUS DETAILS, MLLC PDF, p3
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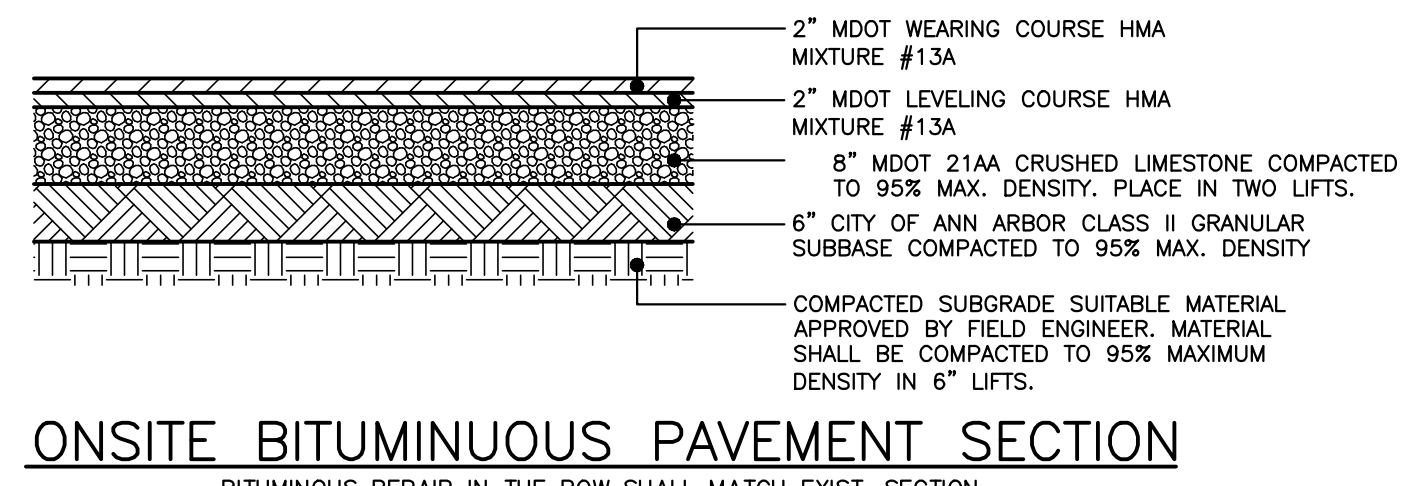


GRAVEL MUD TRACKING MAT (60t)
NOT TO SCALE

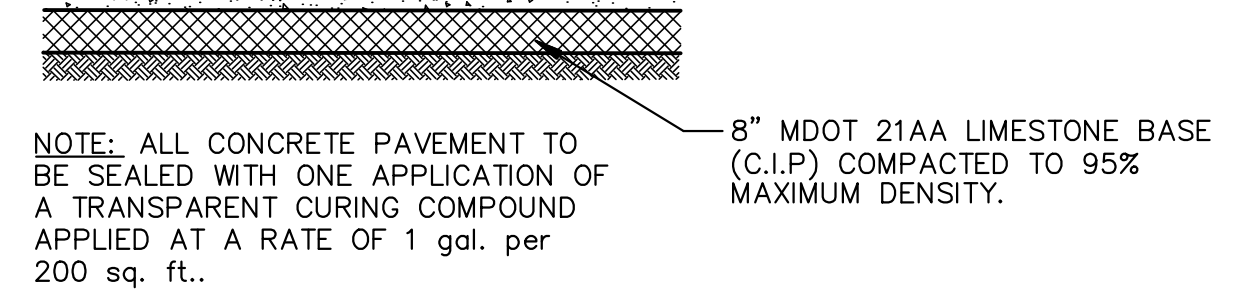
- Storm Water Pump Chamber Notes**
- The detention chambers, pump chamber and all penetrations into each shall be waterproofed and water tight.
 - The MEP designer shall specify the pumps and controls for the pump chamber. Controls shall be located in a secure area. A visible and audible alarm shall be provided on a separate circuit from the pumps. The pumps shall be on a separate circuit from each other.
 - The pump system shall consist of a duplex, submersible system with controls for:
 - Lead pump on/off
 - Lag pump on/off
 - High water alarm
 The lead and lag pump shall alternate run cycles. The alarm shall be located near the chamber and labeled with a sign "Detention Chamber High Water Level Alarm".
 - Two access castings such as an East Jordan Iron Works #1044A shall be located in the roof of the pump chamber in close proximity to a wall of the detention chamber below. Steps or a ladder shall be provided for entry into the chamber.
 - The detention chamber walls and the pump chamber metering wall shall be designed to withstand nine feet of hydraulic pressure.
 - The discharge piping and the force main shall be secured from movement in the pump chamber and manhole.
 - The pumps specified by the MEP will be required to deliver 85 GPM under 15 feet of total dynamic head.
 - Designs, specifications and product selections will be forwarded to the civil engineer for review and approval.



DUPLEX PUMP CHAMBER DETAIL
NOT TO SCALE



ONSITE BITUMINOUS PAVEMENT SECTION
BITUMINOUS REPAIR IN THE ROW SHALL MATCH EXIST. SECTION
NOT TO SCALE

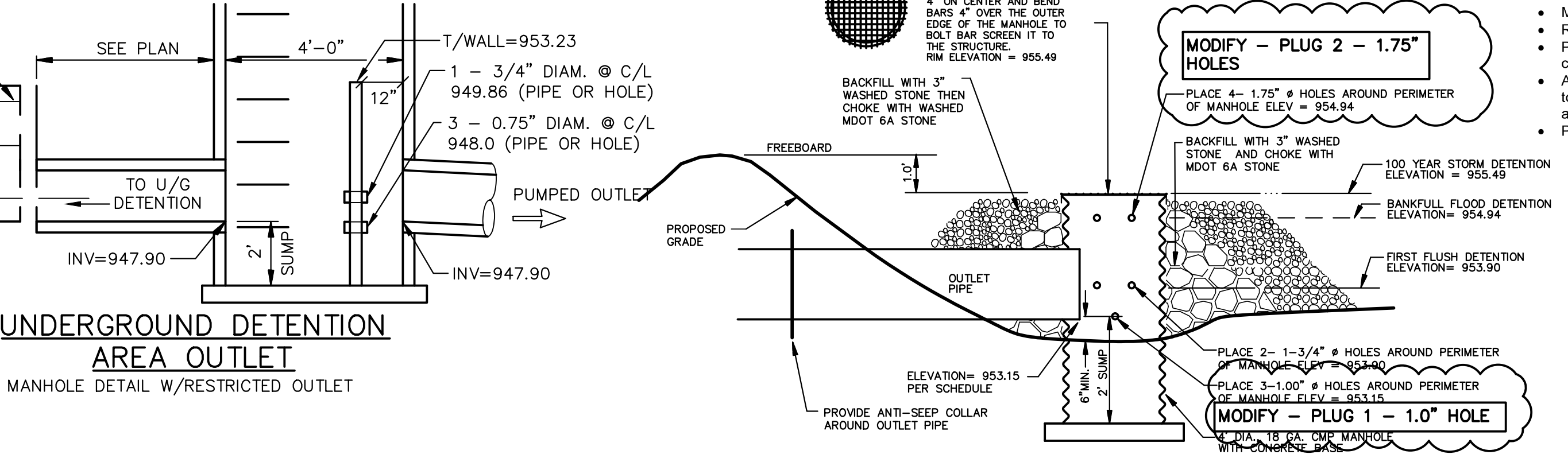


PROP. HEAVY DUTY CONCRETE DETAIL
NOT TO SCALE

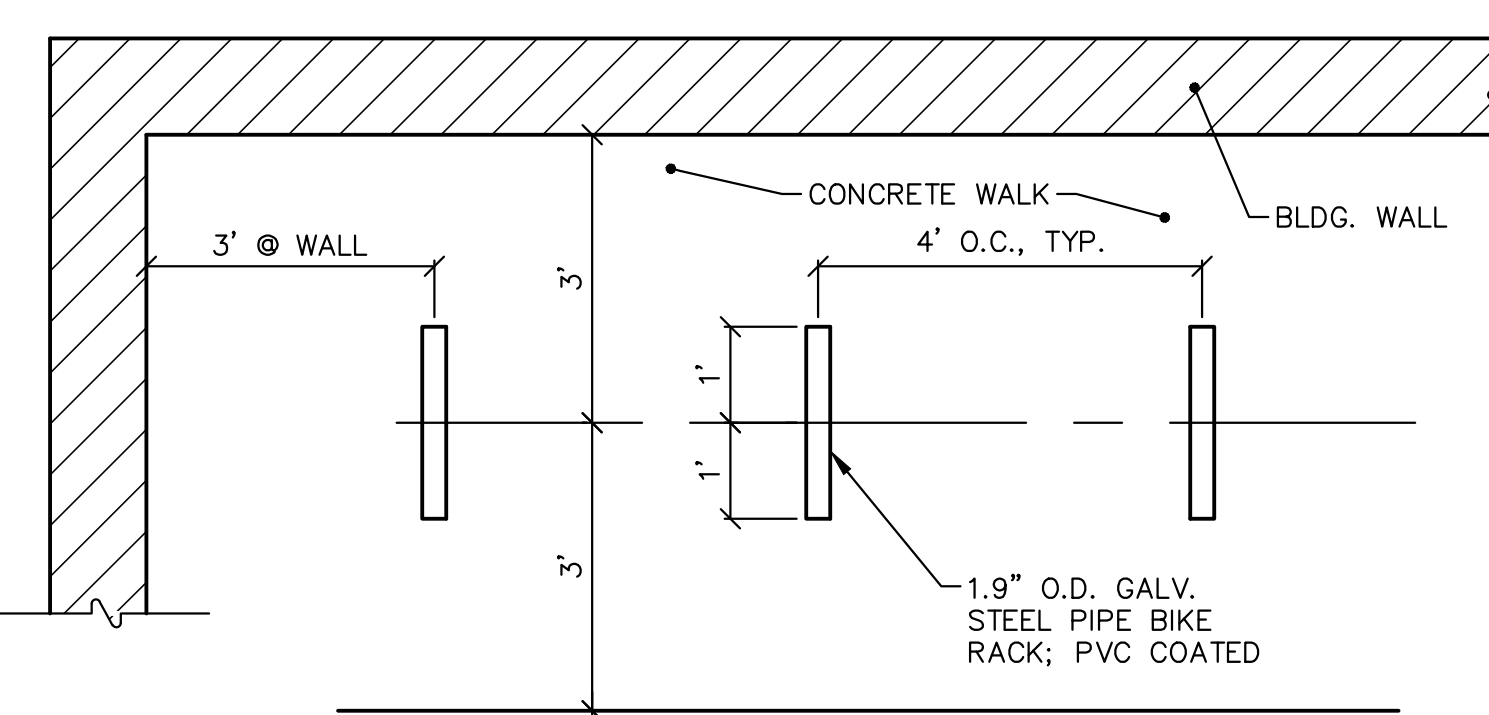
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CONSTRUCTION SEQUENCE	OPERATION TIME SCHEDULE BEGINNING APRIL 2024										
	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.
SESC PRE-GRADING MEETING											
INSTALL AND MAINTAIN SOIL EROSION CONTROL MEASURES AS REQUIRED											
UTILITY INSTALLATION AND SITE DEMOLITION											
FOUNDATION CONSTRUCTION											
BUILDING CONSTRUCTION											
FINAL GRADE SITE											
PLACE MULCH AND SEEDING											
FINAL CLEAN-UP & REMOVAL OF SOIL EROSION CONTROLS											

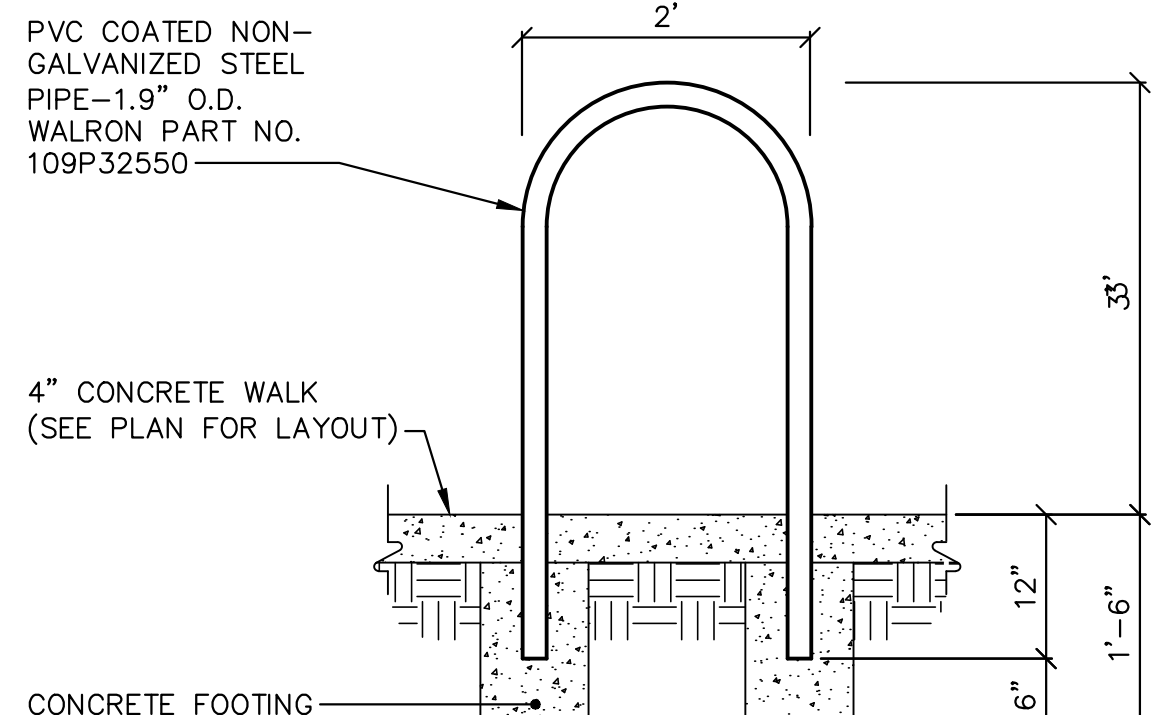
- Estimated Construction Sequence**
4/1/2024 thru 11/1/2024
- Inventory Site: 4/1/2024 (1 week)
 - SESC pre-grading meeting
 - Identify construction limits and define site access
 - Install construction fencing as required to secure site
 - Install Soil Erosion Control Measures: 4/08/2024 (1 week)
 - Install silt fence and mud tracking mat
 - Utility Installation: 4/15/2024 (3 weeks)
 - Install underground detention
 - Install water main and water main leads
 - Install sanitary sewer lead
 - Install silt sack on completed inlets
 - Foundation Construction: 5/8/2024 (3 weeks)
 - Maintain existing controls; install permanent controls within five (5) days after final grading or final grade change
 - Existing Drive will be sufficient for issuance of vertical building permit
 - Building Construction: 5/27/2024 (18 weeks)
 - Maintain existing controls; install permanent controls within five (5) days after final grading or final grade change
 - Construct building above grade
 - Complete roof and plumb roof drains to detention chambers
 - Fine Grade the Site, install Sidewalk, Curb and Gutter, Final Street Paving and continue Building Construction: 9/30/2024 (3 weeks)
 - Maintain existing controls
 - Install Sidewalk, Curb and Gutter and Final Street Paving
 - Plant trees and landscape items
 - Follow-Up After the Site is Stabilized: 10/21/2024 (1 week)
 - Remove construction fence and install new fencing
 - Remove catch basin silt sacks
 - Remove sediment from detention chambers and storm sewer system
 - Clean up debris
 - Finalize Building Construction: 10/28/2024 (1 week)
 - Maintain permanent soil erosion control measures
 - Remove construction fencing
 - Prior to the first Certificate of Occupancy, all Life Safety Systems shall be completed, tested and approved
 - A "Knock Box" emergency responder access system shall be installed prior to the first Certificate of Occupancy. Forms for the Knox Box are available thru Fire Prevention.
 - Provide as-built certification of the storm water detention system.



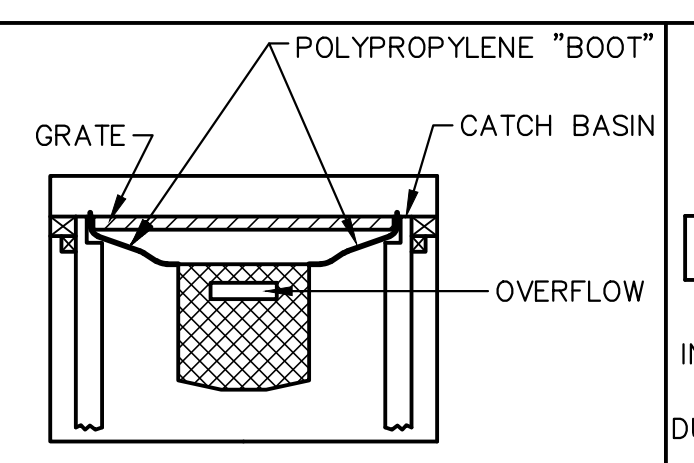
MODIFICATIONS TO NORTH DETENTION POND OUTLET
NOT TO SCALE



LOOP BIKE RACK (PLAN)
NOT TO SCALE

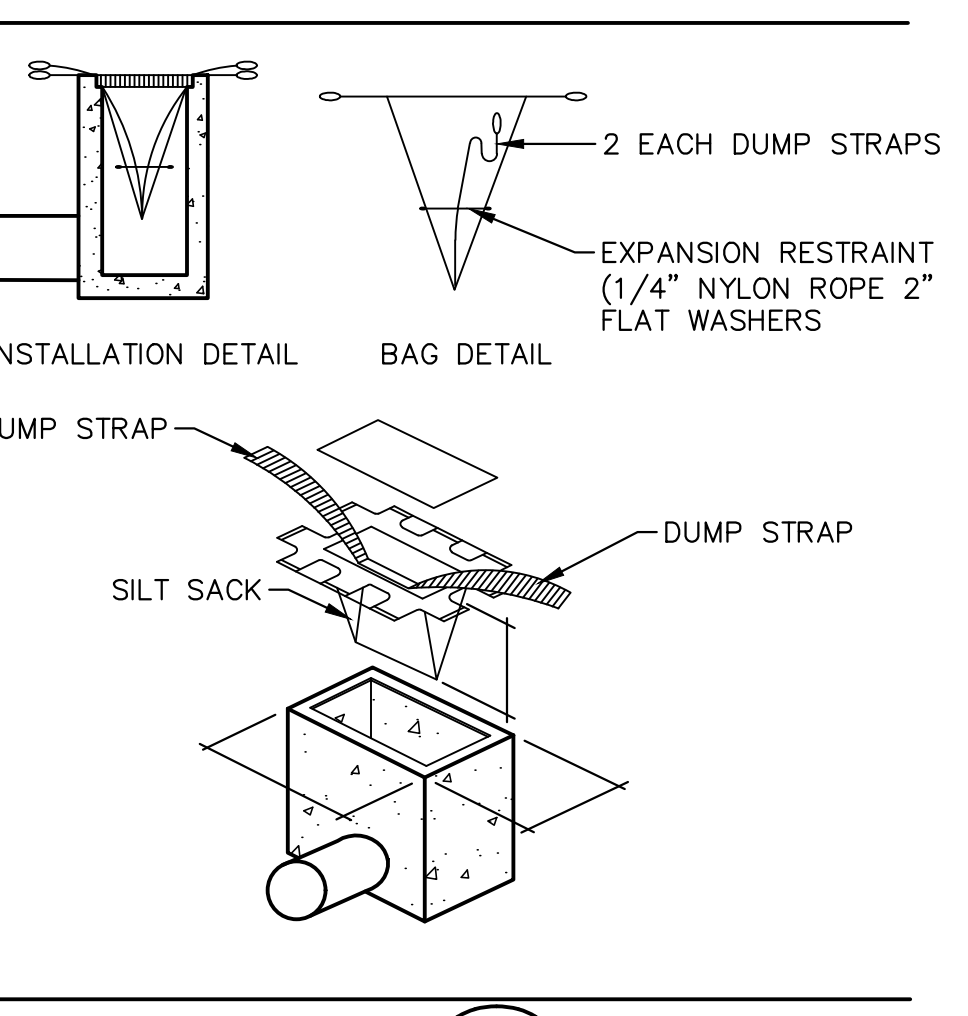


LOOP BIKE RACK (PROFILE)
NOT TO SCALE



NOTE: TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. INLET FILTER TO BE SIMILAR TO "STREAMGUARD" AS MANUFACTURED BY STORMWATER SERVICES CORPORATION (206-767-0441) OR "SILTSACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC. (800-448-3636) OR "CATCH-ALL" BY MARATHON MATERIALS, INC. (248-596-4301). INSPECT FILTER WEEKLY AND CLEAN AS NEEDED.

EROSION CONTROL INLET FILTER (58t)
NOT TO SCALE



SILT SACK DETAIL (59t)
NO SCALE

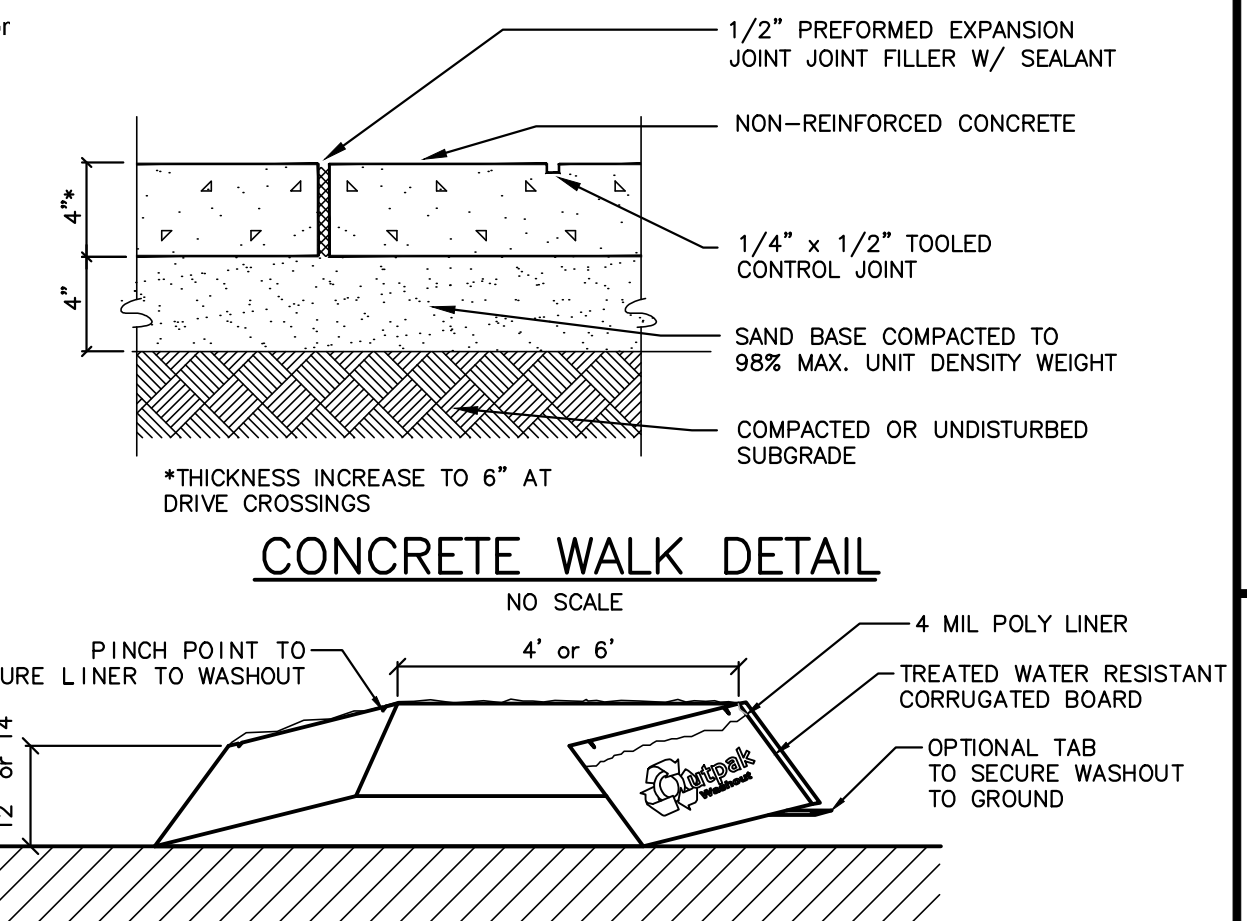
STORM WATER MANAGEMENT SYSTEM PERMANENT MAINTENANCE PLAN, SCHEDULE, AND COST ESTIMATE

MAINTENANCE PLAN BUDGET

Item	Cost
Annual inspection of system for sediment accumulation	\$350.00
Removal of sediment accumulation every two (2) years, as needed	\$600.00
Inspect for floatables and debris annually and after major storms	\$300.00
Removal of floatables and debris annually and after major storms	\$600.00
Inspect system for erosion annually and after major storms	\$300.00
Re-establish permanent vegetation on eroded slopes, as needed	\$200.00
Clean drives semiannually	\$250.00
Total Annual Budget	\$2,600.00

PERMANENT MAINTENANCE TASKS AND SCHEDULE

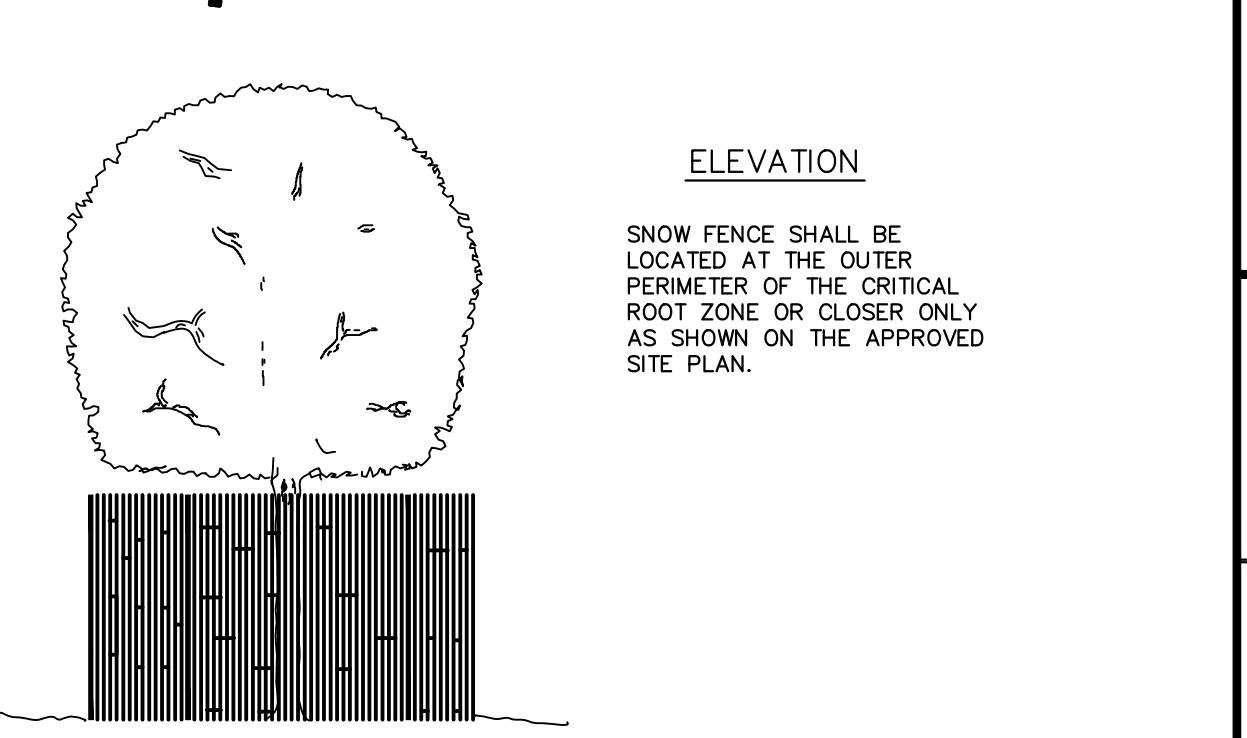
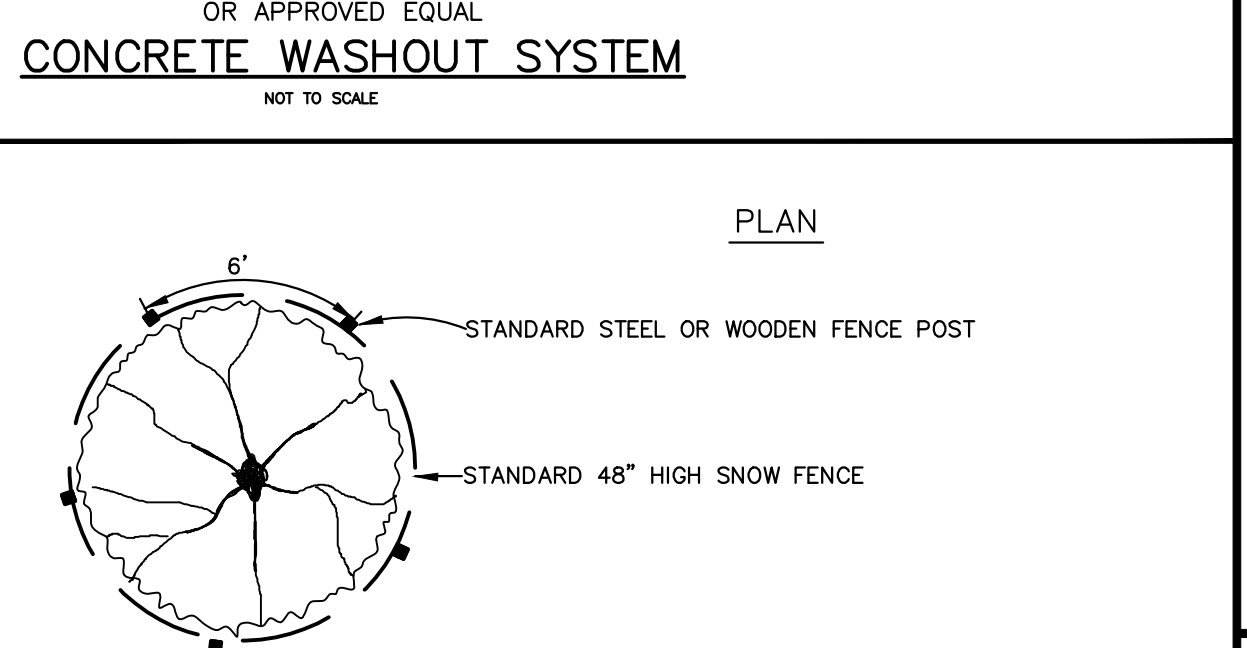
Components	Drives and Walks	Storm Sewer System	Catch Basin Sumps	Catch Basin Inlet Castings	Detention Chambers	Schedule
Inspect for sediment accumulation	X	X	X	X	X	annually
Removal of sediment accumulation		X	X		X	every 2 years, as needed
Inspect for floatables and debris	X	X	X	X	X	annually
Cleaning of floatables and debris	X	X	X	X	X	annually
Clean streets	X					semi-annually



CONCRETE WASHOUT SYSTEM
NOT TO SCALE

NOTES:

- THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THIS PROJECT.
- SIGNS SHALL BE PLACED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT.
- THE CONCRETE WASHOUT AREA WILL BE REPLACED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE AND OTHER LIQUID WASTE.
- WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
- DO NOT MIX EXCESS AMOUNTS OF FRESH CONCRETE OR CEMENT ON-SITE.
- DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
- AVOID DUMPING EXCESS CONCRETE IN NON-DESIGNATED DUMPING AREAS.
- LOCATE WASHOUT AREA AT LEAST 50' (15 METERS) FROM STORM DRAINS, OPEN DITCHES, OR WATERBODIES.
- WASH OUT WASTES INTO THE OUTPACK WASHOUT AS SHOWN WHERE THE CONCRETE CAN SET, BE BROKEN UP, AND THEN DISPOSED OF PROPERLY.



REVISIONS

REV. NO.	DATE	BY	CHK BY
1	5/17/23	JCA	SWB
2	5/17/23	JCA	SWB
3	11/9/23	JCA	SWB

TREE PROTECTION

SCALE	DATE	DRAWING NO.
NONE	11-6-92	SD-M-1

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 ADAM BLEZNAK
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OWL CREEK PHASE 2
 SITE PLAN FOR CITY COUNCIL AND REZONING
 MISCELLANEOUS DETAILS

23015
 DATE: 5/17/23
 SHEET 18 OF 19
 REV. DATE: 5/17/23
 CADD: JCA
 11/9/23
 ENG. JCA
 P.M.: SWB
 TECH.: JCA
 7/23/2021

18

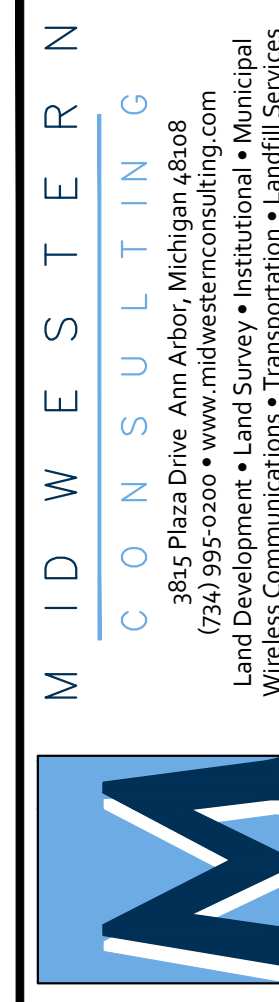
The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

Table with columns: TAG#, DIA, STEMS, COMMON NAME, GENUS / SPECIES, REMARKS, REMOVE. Contains tree inventory data for the first section of the site.

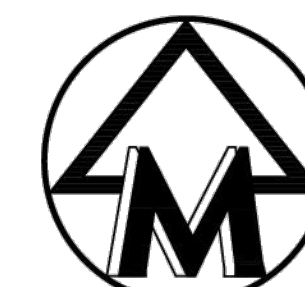
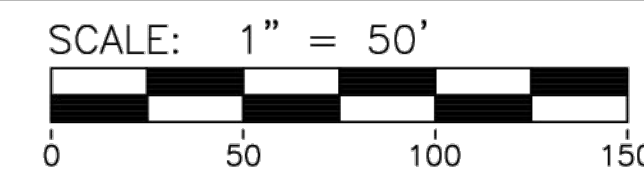
Table with columns: TAG#, DIA, STEMS, COMMON NAME, GENUS / SPECIES, REMARKS, REMOVE. Contains tree inventory data for the second section of the site.

Table with columns: TAG#, DIA, STEMS, COMMON NAME, GENUS / SPECIES, REMARKS, REMOVE. Contains tree inventory data for the third section of the site.

OWL CREEK PHASE 2 SITE PLAN FOR CITY COUNCIL AND REZONING EXISTING TREE LISTING



MIDWESTERN CONSULTING 3845 Plaza Drive Ann Arbor, Michigan 48108 (734) 995-0200 • www.midwesternconsulting.com Land Development • Land Survey • Institutional • Municipal Wireless Communications • Transportation • Landfill Services

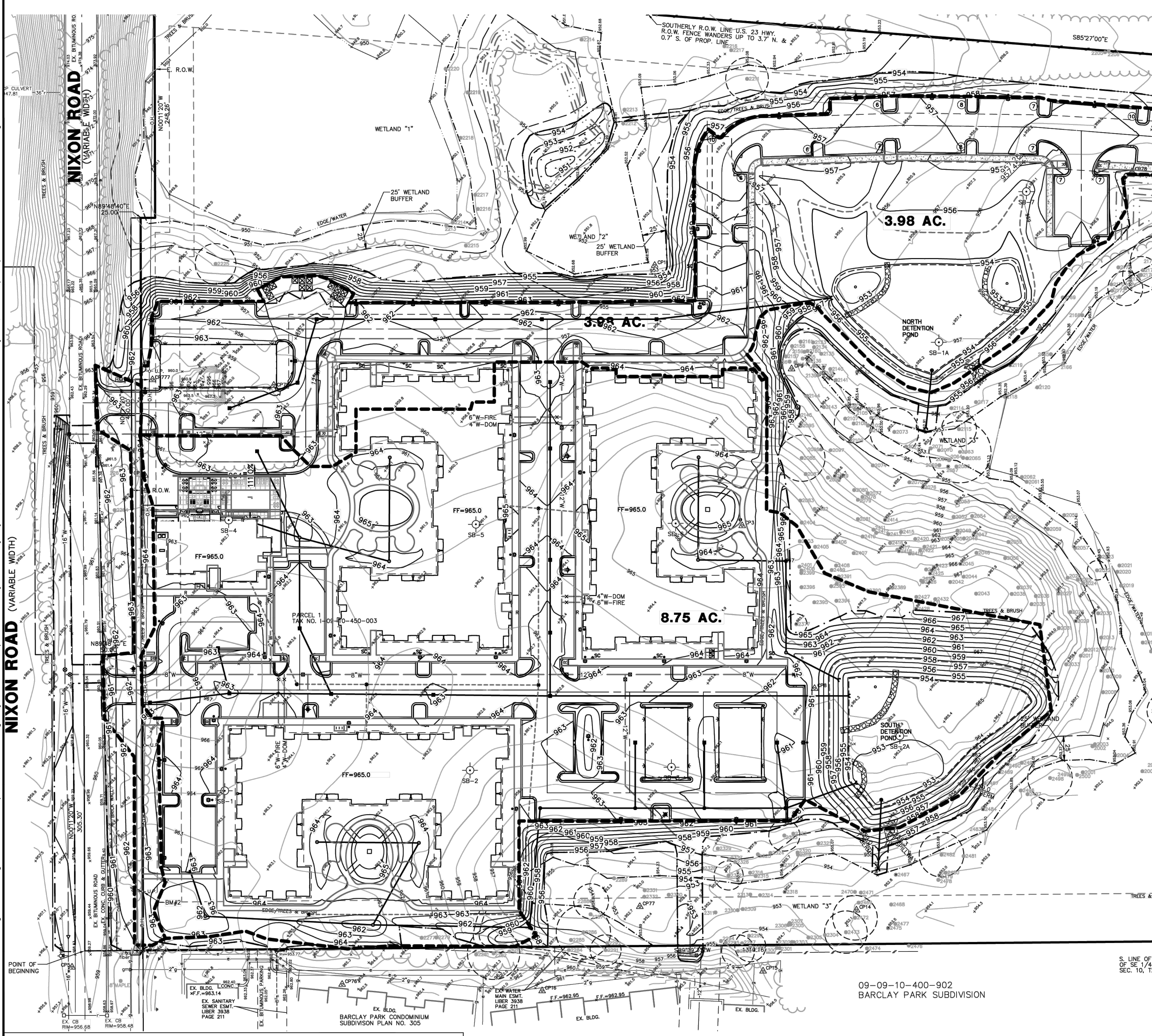


NOTE: RUNOFF FROM ALL IMPERVIOUS AREAS WILL BE DIRECTED TO THE ONSITE STORM WATER MANAGEMENT SYSTEM.

DETENTION CALCULATIONS (SOUTH) DETENTION CALCULATIONS (NORTH)

Table of detention calculations for South and North detention ponds, including parameters like Detention Pond Volume, Contributing Area, Developed Runoff Coefficient, and Detention Volume Proposed.

Detailed technical notes for the detention ponds, including outflow structure descriptions, first flush calculations, and 100-year flood analysis.

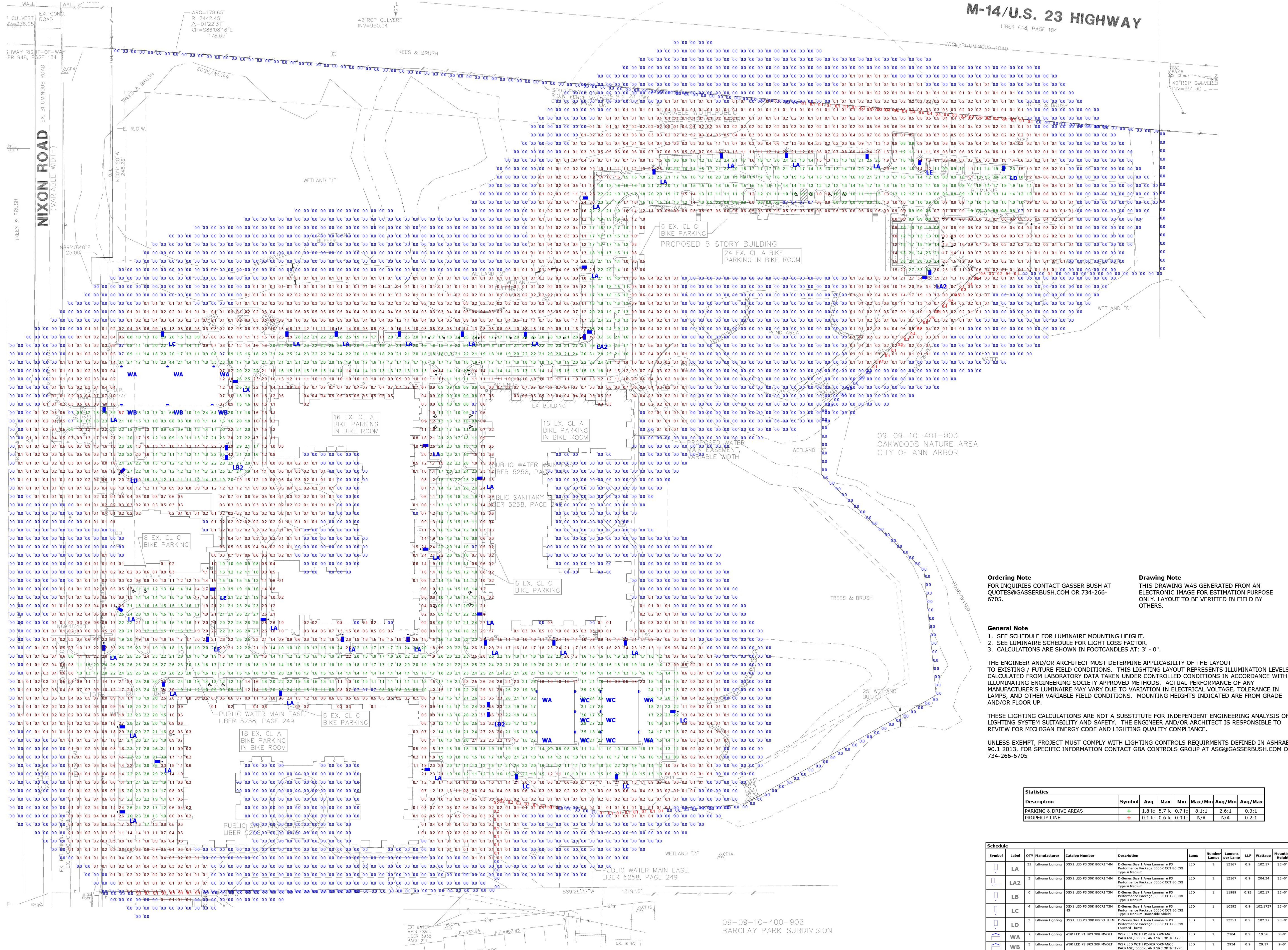


Vertical text on the left edge: 'NIXON ROAD (VARIABLE WIDTH)', 'POINT OF BEGINNING', 'PARCEL 1 TAX NO. 10-450-003', 'BARCLAY PARK CONDOMINIUM SUBDIVISION PLAN NO. 305', 'S. LINE OF NE OF SE 1/4 OF SEC. 10, T2S.'

Project information and contact details: MIDWESTERN CONSULTING, BRE NIXON RD. ASSOC. LLC, 260 E. BROWN ST., BIRMINGHAM, MI 49009. Includes a large '11' and 'FOR REFERENCE ONLY' text.

Disclaimer text: 'The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned.'

Vertical text on the far left: 'M:\Civil\136_Pro\12088\Site Plan - PC Area\12088A1.dwg, 8/31/2020 3:14 PM, Jim Ahern, None Copyright © 2020, Midwestern Consulting LLC. All rights reserved. No part of this drawing may be used or reproduced in any form or by any means, or stored in a database or retrieval system, without prior permission of Midwestern Consulting LLC.'



Ordering Note
FOR INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.

Drawing Note
THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

- General Note**
- SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
 - SEE LUMINAIRE SCHEDULE FOR LIGHT LOSS FACTOR.
 - CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 3' - 0".

THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIREMENTS DEFINED IN ASHRAE 90.1 2013. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT ASG@GASSERBUSH.COM OR 734-266-6705

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
PARKING & DRIVE AREAS	+	1.8 FC	5.7 FC	0.7 FC	8.1:1	2.6:1
PROPERTY LINE	+	0.1 FC	0.6 FC	0.0 FC	N/A	0.2:1

Symbol	Label	Qty	Manufacturer	Catalog Number	Description	Lamp	Number Lamps per Lamp	Lumens per Lamp	LF	Wattage	Mounting Height'
LA	LA1	31	Lithonia Lighting	DSX1 LED P3 30K 80CRI T4M	D-Series Size 1 Area Luminaire P3 Performance Package 3000K CCT 80 CRI Type 4 Medium	LED	1	12167	0.9	102.17	25'-0"
LA	LA2	2	Lithonia Lighting	DSX1 LED P3 30K 80CRI T4M	D-Series Size 1 Area Luminaire P3 Performance Package 3000K CCT 80 CRI Type 4 Medium	LED	1	12167	0.9	204.34	25'-0"
LB	LB	0	Lithonia Lighting	DSX1 LED P3 30K 80CRI T3M	D-Series Size 1 Area Luminaire P3 Performance Package 3000K CCT 80 CRI Type 3 Medium	LED	1	11999	0.92	102.17	25'-0"
LC	LC	4	Lithonia Lighting	DSX1 LED P3 30K 80CRI T3M HS	D-Series Size 1 Area Luminaire P3 Performance Package 3000K CCT 80 CRI Type 3 Medium - Housewide Shield	LED	1	10992	0.9	102.17	25'-0"
LD	LD	2	Lithonia Lighting	DSX1 LED P3 30K 80CRI PFTM	D-Series Size 1 Area Luminaire P3 Performance Package 3000K CCT 80 CRI Forward Throw	LED	1	12251	0.9	102.17	25'-0"
WA	WA	7	Lithonia Lighting	WSR LED P2 S83 30K HVOLT	WSR LED WITH P2-PERFORMANCE PACKAGE, 3000K, AND S83 OPTIC TYPE	LED	1	2194	0.9	19.56	9'-0"
WB	WB	3	Lithonia Lighting	WSR LED P2 S83 30K HVOLT	WSR LED WITH P2-PERFORMANCE PACKAGE, 3000K, AND S83 OPTIC TYPE	LED	1	2934	0.9	29.17	9'-0"
WC	WC	6	Lithonia Lighting	WSR LED P1 S84 30K HVOLT	WSR LED WITH P1-PERFORMANCE PACKAGE, 3000K, AND S84 OPTIC TYPE	LED	1	2053	0.9	19.56	9'-0"

Plan View
Scale - 1" = 50ft

NIXON ROAD MULTI-FAMILY HOUSING
 PHOTOMETRIC SITE PLAN
 C.D. DATE: MICHIGAN
 PREPARED BY: GBA
 WWW.GBAENGINEERING.COM

Designer
 DP/KB
 Date
 09/25/2023
 Scale
 Not to Scale
 #13-16321-V5
 1 of 1