

ANN ARBOR PLANNING DEPARTMENT STAFF REPORT

For Planning Commission Meeting of October 1, 2019

**SUBJECT: Hideaway Lane Planned Project Site Plan
(2000 Traver Road) (SP17-031)**

PROPOSED CITY PLANNING COMMISSION MOTION

The Ann Arbor City Planning Commission hereby recommends that the Mayor and City Council approve the Hideaway Lane Planned Project Site Plan and Development Agreement.

STAFF RECOMMENDATION

Staff recommends that the Planned Project Site Plan be **approved** because it complies with all applicable, local, state, and federal ordinances, standards and regulations; it will not cause a public or private nuisance; and it will not have a detrimental effect on public health, safety or welfare.

STAFF REPORT

The petitioner had requested postponement at the September 4, 2019 Planning Commission hearing since critical staff members from the development team were not able to attend the public hearing. At that hearing, the petitioner heard comments from members of the public as well as Planning Commissioners. The petitioner has provided a memo (attached) responding to questions and concerns raised at the September 4, 2019 Planning Commission hearing.

Prepared by Jeff Kahan
Reviewed by Brett Lenart
mg/9/20/19
revised mg/9/30/19

Attachments: [Site Plan](#)
[Previous Staff Report](#)
[Response Memo](#)

Owner: Trowbridge Homes of Hideaway, LLC
2617 Beacon Hill Drive
Auburn Hills, MI 48326

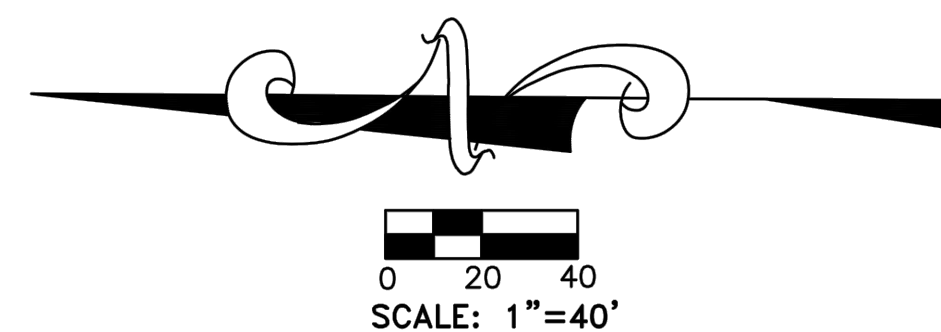
TREE CLEARING NOTES

EXCEPT FOR THE AREA ADJACENT TO THE TRAVER CREEK, THE SUBJECT PROPERTY WAS CLEARED IN THE MID 60'S, EARLY 80'S AND AROUND 2004 WHEN THE SITE WAS DEVELOPED TO IT'S CURRENT CONDITION.

ZONING DISTRICTS

TOWNSHIP:
R-4 SINGLE FAMILY (URBAN RESIDENTIAL)

CITY:
R-4-A MULTIPLE FAMILY DWELLING
PL PUBLIC LANDS



EXISTING WETLAND AREAS:

WETLAND ID	AREA (SF)	COMMENTS
'A'	1959	ON-SITE AREA
'B'	4040	
'C'	180	
'D'	475	
'E'	1050	
'F'	973	

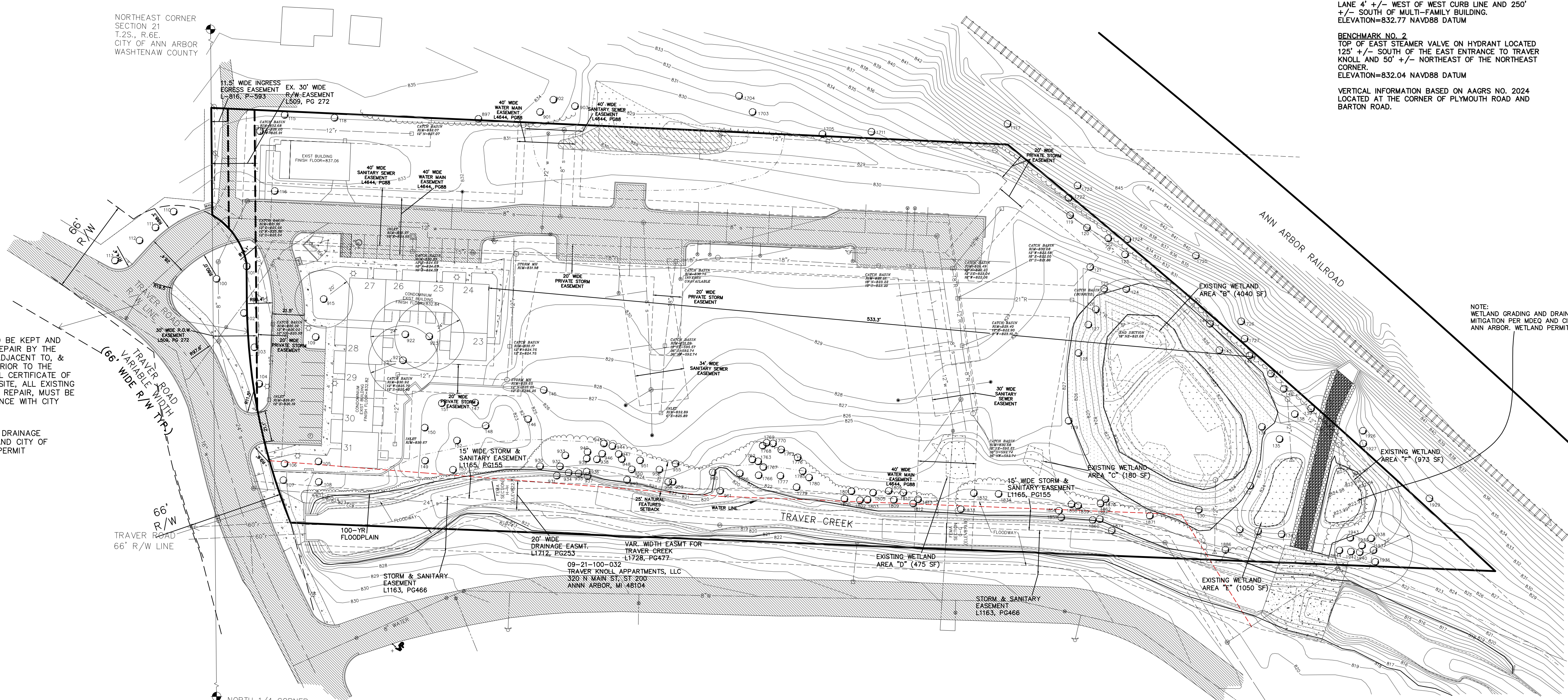
BENCHMARKS:

BENCHMARK NO. 1
ARROW ON HYDRANT ALONG WEST SIDE OF HIDEAWAY LANE 4' +/- WEST OF WEST CURB LINE AND 250' +/- SOUTH OF MULTI-FAMILY BUILDING.
ELEVATION=832.77 NAVD88 DATUM

BENCHMARK NO. 2
TOP OF EAST STEAMER VALVE ON HYDRANT LOCATED 125' +/- SOUTH OF THE EAST ENTRANCE TO TRAVER KNOLL AND 50' +/- NORTHEAST OF THE NORTHEAST CORNER.
ELEVATION=832.04 NAVD88 DATUM

VERTICAL INFORMATION BASED ON AAGRS NO. 2024 LOCATED AT THE CORNER OF PLYMOUTH ROAD AND BARTON ROAD.

NORTHEAST CORNER SECTION 21 T.2S., R.6E. CITY OF ANN ARBOR WASHTENAW COUNTY



SIDEWALK NOTE
ALL SIDEWALKS ARE TO BE KEPT AND MAINTAINED IN GOOD REPAIR BY THE OWNER OF THE LAND ADJACENT TO, & 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.

NOTE:
WETLAND GRADING AND DRAINAGE MITIGATION PER MDEQ AND CITY OF ANN ARBOR, WETLAND PERMIT COMPLETED.

NOTE:
WETLAND GRADING AND DRAINAGE MITIGATION PER MDEQ AND CITY OF ANN ARBOR, WETLAND PERMIT COMPLETED.

SOILS INFORMATION

GENERAL SOILS INFORMATION TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICES SOIL SURVEY FOR WASHTENAW COUNTY, MI

mda - MATHERTON SANDY LOAM, 0-4% SLOPES. THIS SOIL IS IN DEPRESSIONAL AREAS, BROAD LOW-LYING AREAS, AND ALONG DRAINAGE WAYS OF OUTWASH PLAINS, VALLEY TRAINS, AND TERRACES. IT HAS A SEASONAL HIGH WATER TABLE, AND NEARLY LEVEL AREAS ARE SUBJECT TO PONDING. RUNOFF IS SLOW OR VERY SLOW. THE HAZARD OF EROSION IS SLIGHT.

so - SLOAN SILT LOAM, WET. THIS SOIL IS FOUND ON ALLUVIAL FLOOD PLAINS OF STREAMS AND RIVERS. THIS SOIL HAS A HIGH WATER TABLE AND IS SUBJECT TO FLOODING. RUNOFF IS SLOW OR VERY SLOW. THE HAZARD OF EROSION IS SLIGHT.

LEGAL DESCRIPTION

COMMENCING AT THE N 1/4 CORNER OF SECTION 21, T2S., R6E., ANN ARBOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN, THENCE N89°29'00"E 1536.18 FEET ALONG THE NORTH LINE OF SAID SECTION 21 TO THE POINT OF BEGINNING, SAID POINT BEING N89°29'00"E 211.10 FEET FROM THE NW CORNER OF THE E 1/2 OF THE NE 1/4 OF SAID SECTION 21;

THENCE CONTINUING ALONG THE NORTH LINE OF SAID SECTION 21 N89°29'00"E 74.48 FEET; THENCE S02°38'28"W 552.89 FEET; THENCE 449.24 FEET ALONG THE NORTH-WESTERLY ROW LINE OF THE RAILROAD, RADIUS 6561.12 FEET TO THE RIGHT, WITH A CENTRAL ANGLE OF 3°55'23" AND A BEARING OF S41°10'58"W, 449.16 FEET;

THENCE N2°18'09"E, 835.92 FEET ALONG THE WEST LINE OF THE E 1/2 OF THE NE 1/4 OF SAID SECTION 21; THENCE 156.66 FEET ALONG THE SOUTHERLY ROW LINE OF TRAVER CREEK ROAD, RADIUS 415.00 FEET TO THE RIGHT, WITH A CENTRAL ANGLE OF 21°37'44" AND A BEARING OF N78°44'32"E 155.73 FEET;

THENCE N89°29'00"E 27.00 FEET ALONG SAID SOUTHERLY ROW; THENCE 42.27 FEET ALONG SAID ROW, RADIUS 50.00 FEET TO THE LEFT, WITH A CENTRAL ANGLE OF 48°26'29" AND A BEARING OF N54°34'53"E 41.03 FEET TO THE POINT OF BEGINNING. BEING A PART OF THE E 1/2 OF THE NE 1/4 OF SECTION 21, T2S, R6E, ANN ARBOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN CONTAINING 4.57 ACRES OF LAND, MORE OR LESS, SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD IF ANY.

Consulting Civil Engineers
"Engineering A Better Michigan"
Powell Engineering & Associates, LLC
4700 Cornerstone Drive, White Lake, Michigan 48383
P: 248.714.9895 info@powellengineeringllc.com

NOTE: AS AN AID TO THE CONTRACTOR, UTILITY LINES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PRIOR TO CONSTRUCTION THE PLANS AND PROFILES IS TAKEN FROM FIELD TOP AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DOES NOT GUARANTEE THE ACCURACY OF ANY ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES NOT BEING IDENTIFIED AND LOCATED. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES AND STRUCTURES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES AND STRUCTURES AT THE START OF ANY CONSTRUCTION.

BEFORE YOU DIG CALL MISS DIG
1-800-482-7171

EXISTING CONDITION PLAN OVERALL
HIDEWAY LANE CONDOMINIUM
HIDEWAY LANE, CITY OF ANN ARBOR

ISSUE DATES

SITE PLAN	08-10-18
SITE PLAN	11-19-18
SITE PLAN	12-4-18
SITE PLAN	3-19-19
SITE PLAN	5-6-19
SITE PLAN	5-22-19
SITE PLAN	6-20-19
SITE PLAN	7-22-19

DRAWN BBB
DESIGNED BBB
APPROVED MCP
P.E. JOB No. 18-405
SCALE AS-SHOWN

S2

NOTES:

- 1) THE PROPOSED DEVELOPMENT SIGN MUST MEET ALL REQUIREMENTS OF CHAPTER 61. SEPARATE SIGN PERMIT TO BE OBTAINED WHEN SIGN IS DESIGNED. DEVELOPMENT SIGN SHALL NOT BE PLACED IN A LOCATION THAT WOULD CREATE A SIGHT DISTANCE HAZARD.
- 2) ALL PARKING SPACES ALLOW FOR TWO (2) FEET OVERHANG BEYOND CURB.
- 3) "NO PARKING - FIRE LANE" SIGNS SHALL BE LOCATED ON ALL DRIVE/ROAD AREAS AND ARE TO BE LOCATED WITH FIRE DEPARTMENT CONSULTATION PRIOR TO CERTIFICATE OF OCCUPANCY (CO) BEING ISSUED.
- 5) ADDITIONAL SIGHT LIGHTING TO BE PROVIDED VIA A WALL MOUNTED COACH LIGHT ON EACH THE GARAGE DOORS.
- 6) ALL DIMENSIONS ARE TO BACK OF CURB, FACE OF INTEGRAL CURB AND WALK OR EDGE OF MATERIAL UNLESS OTHERWISE NOTED.
- 7) ALL IMPROVEMENTS ARE TO BE PARALLEL OR PERPENDICULAR TO THE EAST PROPERTY LINE UNLESS OTHERWISE NOTED.
- 8) PER CHAPTER 49, SECTION 4:58 OF THE CITY CODE, "ALL SIDEWALKS ARE TO BE KEPT AND MAINTAINED IN GOOD REPAIR BY THE OWNER OF THE LAND ADJACENT TO AND ABUTTING THE SAME." PRIOR TO ISSUANCE OF OCCUPANCY FOR THIS SITE, ALL EXISTING SIDEWALKS IN NEED OF REPAIR MUST BE REPAIRED IN ACCORDANCE WITH CITY STANDARDS.
- 9) UNIT DIMENSIONS SHOWN ARE EXTERIOR BUILDING DIMENSIONS. PORCH AREAS EXTEND BEYOND BUILDING AREAS.

DUMPSTER NOTES:

- 1) SEE DUMPSTER DETAILS ON SHEET S15
- 2) AN 8 CY DUMPSTER SHALL BE USED
- 3) THE OWNER/OWNERS SHALL BE RESPONSIBLE FOR OPENING & CLOSING ENCLOSURES ON SERVICE DAYS.

ENTRANCE CURB NOTE:

CONTRACTOR TO REMOVE EXISTING CURB (20' RADIUS) ON THE WESTERLY SIDE OF THE ENTRANCE DRIVE AND REPLACE WITH NEW CURB OF 15' RADIUS. REMOVE AND REPLACE EXISTING SIDEWALK AS REQUIRED TO MEET NEW CURB LINE AND RESTORE EXISTING LANDSCAPING.

SANITATION NOTE:

The City of Ann Arbor has a single hauler for all commercial refuse collection in the City, which began July 1, 2009. The City's single hauler commercial refuse collection program has the following features: A commercial refuse collection contract has been signed with Waste Management of Michigan, Inc. (WMM). WMM will be providing collection and container rental services for all commercial refuse collection service orders requested by the City. WMM was City of Ann Arbor Solid Waste Review selected to provide these services through a competitive procurement. The service contract extends through June 30, 2017, with one option to extend until June 20, 2019.

PEAK HOUR TRIPS :

(TRIP GENERATION MANUAL, 8TH EDITION)

SINGLE FAMILY DETACHED RESIDENTIAL
2 D.U. * 1.01 TRIPS/D.U. = 2 PEAK HOUR TRIPS

MULTI FAMILY ATTACHED TOWNHOMES
43 D.U. * 0.52 TRIPS/D.U. = 22 PEAK HOUR TRIPS

TOTAL = 24 PEAK HOUR TRIPS

KEY NOTES:

- 1 EXISTING BITUMINOUS PAVEMENT - STANDARD DUTY
- 2 EXISTING BITUMINOUS PAVEMENT - HEAVY DUTY
- 3 PROPOSED BITUMINOUS PAVEMENT - STANDARD DUTY (STD)
- 4 CONCRETE PAVEMENT - STANDARD DUTY
- 5 CONCRETE CURB AND GUTTER
- 6 INTEGRAL CONCRETE CURB AND WALK
- 7 TYPE 'M' DRIVE APPROACH
- 8 WALK FLUSH WITH DRIVE
- 9 EXISTING DETENTION BASIN
- 10 EXISTING RIP RAP CHANNEL
- 11 PROPOSED CONCRETE SEGMENT UNIT RETAINING WALL
- 12 PROPOSED LIGHT POLE
- 13 EXISTING WETLAND MITIGATION AREA
- 14 PROPOSED BIKE PARKING
- 15 GRASS PAVERS (75000 POUND LOAD CAPACITY PER IFC 2003 APPENDIX D, SECTION D102)

HIDEAWAY LANE SQUARE FOOTAGE CALCS:

Unit Type	#	SF/Unit	Total SF
Existing Townhomes Type 1	5	1,200	6,000
Existing Townhomes Type 2	4	1,008	4,032
Existing 3 BR single family	1	1,728	1,728
Existing Vacant Home Site *	1	0	0
Prop 3 BR Single family	1	3,425	3,425
Prop 2 BR Duplexes	12	1,000	12,000
Prop 2 BR Duplexes	22	1440	31680
Total Square Footage			58,865

* Owned by Existing single family home owner.

** Square footages exclude outside porches, garages, basements.

*** Proposed units assume bonus attic rooms are habitable space

and included in total square footage computations

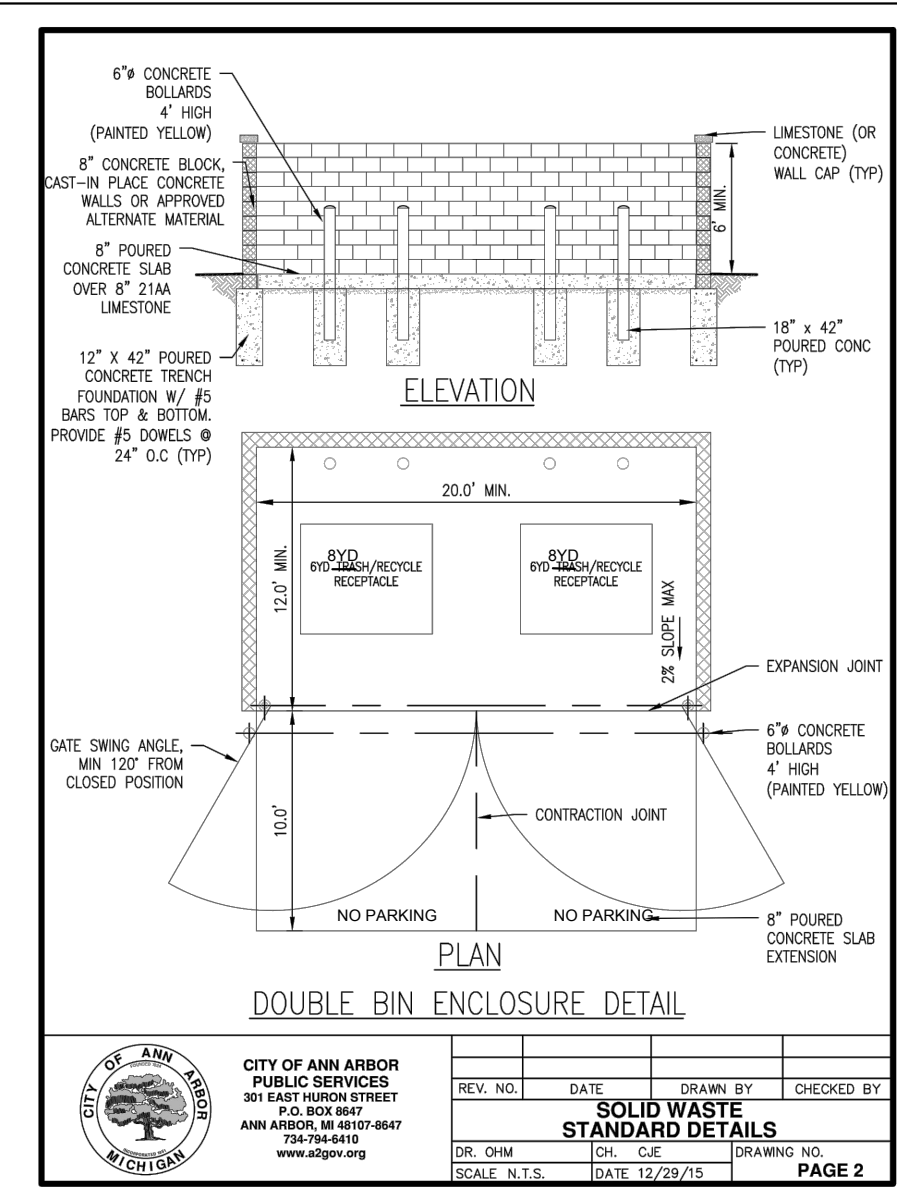
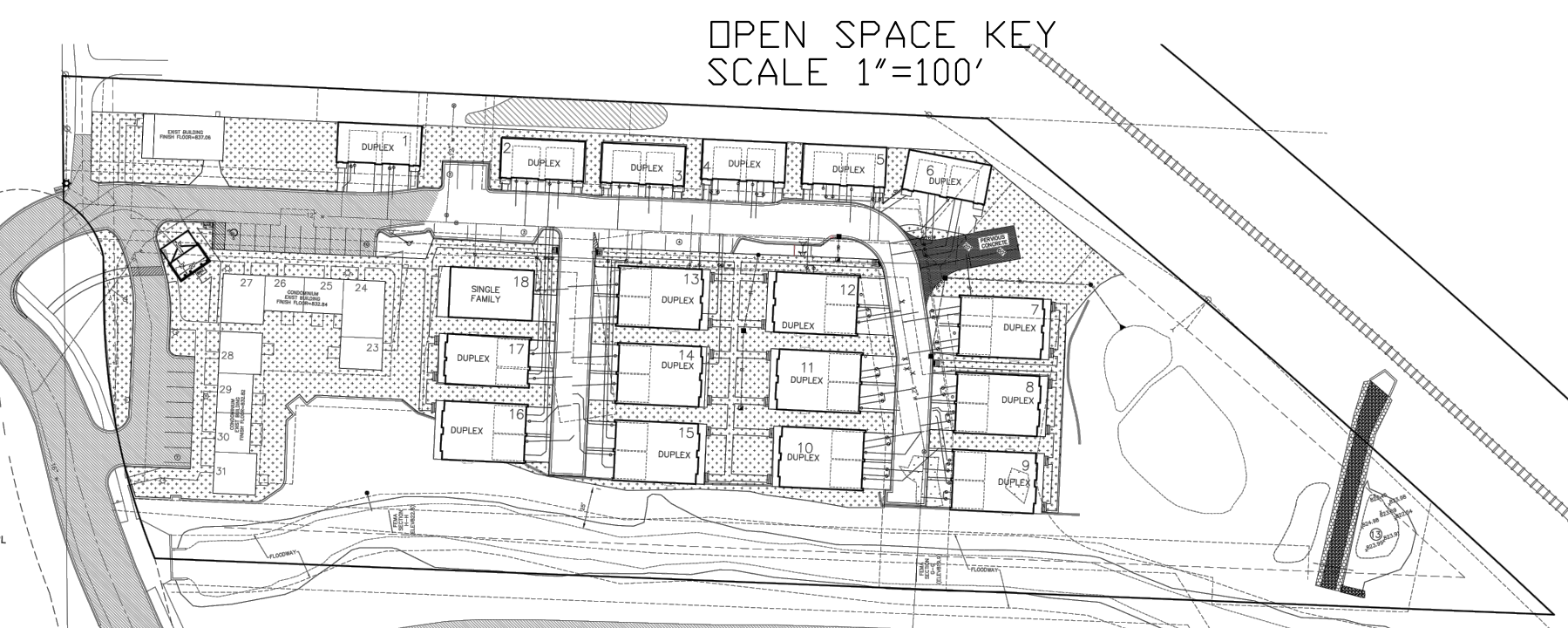
FIRE DEPARTMENT SEQUENCING NOTES:

- 1 FIRE HYDRANTS MUST BE IN SERVICE AND APPROVED DURING CONSTRUCTION.
- 2 HYDRANTS PROVIDING PROTECTION COVERAGE FOR THE BUILDINGS MUST BE IN SERVICE, AND APPROVED BY BOTH ENGINEERING AND FIRE DEPARTMENT BEFORE FIRE DEPARTMENT WILL SUPPORT PERMIT ISSUANCE FOR NEW CONSTRUCTION PHASES, AND BEFORE COMBUSTIBLE MATERIALS ARE PLACED ON THE JOB SITE.
- 3 STORAGE AREAS FOR CONSTRUCTION MATERIALS MUST BE APPROVED SO AS NOT TO INTERFERE WITH FIRE/EMERGENCY SITE ACCESS.
- 4 IF SITE ACCESS IS RESTRICTED DURING CONSTRUCTION, A KNOX BOX LOCK FOR THE GATE IS TO BE PROVIDED.
- 5 MINIMUM FIRE FLOW OF 1000 GAL/MINUTE AT 20 PSI IS REQUIRED (DUPLX RESIDENTIAL CONSTRUCTION UNDER 3600 SF).
- 6 FOR DUPLX RESIDENTIAL CONSTRUCTION 3600 SQ. FT., FIRE FLOW OF 1000 GAL/MIN AT 20 PSI IS REQUIRED.

COMPARISON TABLE

Zoning:	Existing R4A (PP appr 2013)	Required R4A	Proposed R4A (Planned Project)
Existing Dwelling Units	9		
Proposed Dwelling Units		45 per density	45
Single Family	1****		1
Townhome	9*		0
Duplex	0		34
Lot Area	199,069 sf (4.57 ac)	21,780 sf (0.50 ac)	199,069 sf (4.57 ac)
Lot width	280'	120'	280'
Density	6,864 sf/d.u.	4,300 sf/d.u.	4,423 sf/d.u.
	6.34 du/ac	10 du/ac	9.85 du/ac
Useable Open Space	131,551 sf	125,395 sf	130,759 sf
	66%	65%	65.6%
Active Recreation	not required	13,500 sf	17,700 sf
Vehicle Parking Spaces		68	96
1.5 Space per Dwelling Units			69 garage spaces
	17 open		27 open
Bicycle Parking			
2 Space per 5 Dwelling Units	0	9 spaces	37 spaces
	0 Class A	50% class A	37 Class A****
	0 Class C	50% class C	0 class C
Setbacks			
Front	46'	15' min, 40' max	46'
Side	20' East - 40' West	20'	20' East - 40' West
Rear	533**	30'	20'***
Between Bldgs	10***	20'	10****
Height	21	35'	29'

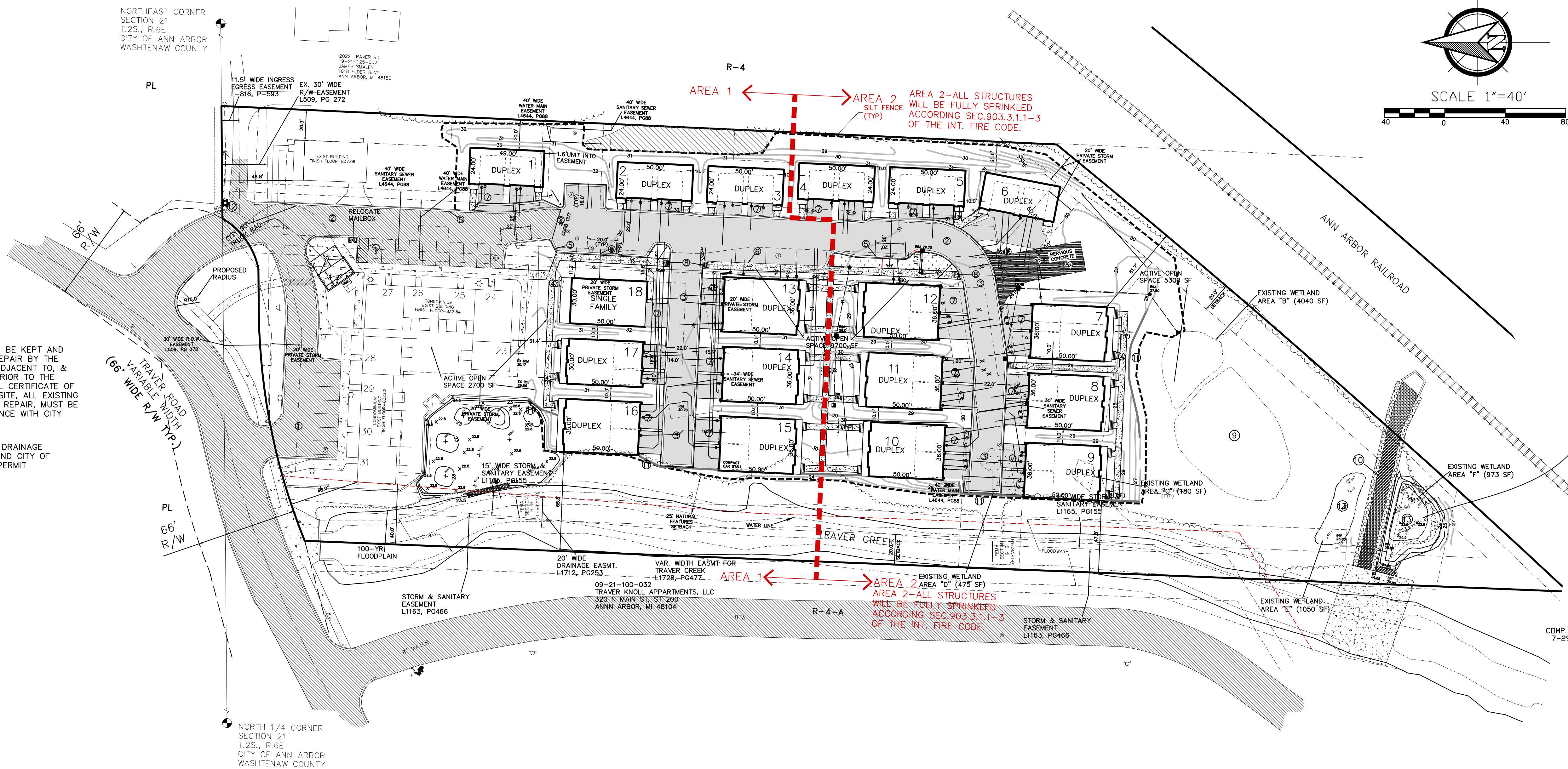
*From SE corner Unit 24 to rear prop line(S2)
** previous Planned Project approval
*** requesting Planned Project re-approval
**** 35 racks in garages and 2 bike lockers
**** Ex Home not part of project but used in density calculation.



SIDEWALK NOTE
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NOTE:
WETLAND GRADING AND DRAINAGE MITIGATION PER MDEQ AND CITY OF ANN ARBOR, WETLAND PERMIT COMPLETED.

- GENERAL NOTES:**
1. A CLEAR SPACE MUST BE MAINTAINED 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 OF THE ENCLOSURE PLUS FOUR (4) FEET ON BOTH SIDES. A MINIMUM VERTICAL CLEARANCE OF AT LEAST TWENTY-FIVE (25) FEET MUST BE PROVIDED ABOVE THIS AREA.
 2. ADDRESS AND EGRESS ROUTES MUST BE DEVELOPED BASED ON SOLID WASTE SHEET PATH REQUIREMENTS. A MINIMUM HORIZONTAL CLEARANCE OF TWO (2) FEET FROM THE EDGE OF THE SHEET PATH AND A MINIMUM VERTICAL CLEARANCE OF AT LEAST FIFTEEN (15) FEET MUST BE PROVIDED ALONG THE ENTIRE ROUTE.
 3. GATES ON ENCLOSURES MUST BE DESIGNED TO OPEN A MINIMUM OF 100 DEGREES FROM THE CLOSED POSITION. THE GATES MUST NOT REDUCE THE REQUIRED ENCLOSURE OPENING WIDTH. BLOCK ADJACENT PARKING SPACES OR BE IMPEDED BY ADJACENT CURBS OR LANDSCAPING.
 4. GATES SHALL BE DESIGNED TO BE FREE SWINGING WITHOUT A CENTER POLE. IF A CENTER POLE DESIGN IS NECESSARY, 12-INCHES SHALL BE ADDED TO THE OVERALL WIDTH OF THE ENCLOSURE.
 5. GATE DESIGN SHALL INCLUDE A RELIABLE MEANS TO SECURE THE GATE IN BOTH THE OPEN AND CLOSED POSITIONS.
 6. THE CONCRETE CURB IN FRONT OF THE BIN ENCLOSURE SHALL HAVE PAVEMENT MARKINGS TO INDICATE NO PARKING, AS APPROVED BY CITY.
 7. 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 OBSTRUCTIONS.
 8. REFER TO ASSIGNED STANDARD DETAILS 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 NEEDS IN REGARDS TO SOLID WASTE PICK-UP.
 9. SOLID WASTE ACCESS ROADS AND SERVICE AREA SURFACES SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPROVED LOADS OF COLLECTION TRUCKS WEIGHING UP TO ALLOW USE OF HIGH 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 OF SOLID WASTE VEHICLES.
 10. THE SOLID WASTE COLLECTION LOCATION SHALL BE LOCATED A MINIMUM OF TEN (10) FEET AWAY FROM NEARBY ELECTRICAL EQUIPMENT, ABOVE GROUND UTILITY SERVICES, TREE BRANCHES, BUSHES OR OTHER OVERHEAD OBSTRUCTIONS.
 11. IF FORWARD ACCESS TO THE PUBLIC STREET IS NOT AVAILABLE FOR THE SOLID WASTE TRUCK, THE SITE DEVELOPMENT LAYOUT MUST ACCOMMODATE A TURN-AROUND LOCATION.
 12. FOR SITES THAT CANNOT ACCOMMODATE A TURN-AROUND, THE FOLLOWING REQUIREMENTS MUST BE MET:
 - 12.1. SOLID WASTE TRUCKS MUST BE ABLE TO SERVICE DUMPSTERS WITHOUT IMPEDING THE PUBLIC STREET OR SIDEWALK.
 - 12.2. THE DUMPSTER COLLECTION LOCATION SHALL BE CLEARLY DELINEATED AND NOT HAVE A SLOPE GREATER THAN 2% IN ANY DIRECTION.
 - 12.3. BOLLARDS OR ADEQUATE CLEAR SPACE MUST BE PROVIDED BEHIND THE LEFT POINT SO THE DUMPSTERS ARE NOT POTENTIALLY PULLED INTO ANY BUILDING OR ACCESS ROUTE.
 - 12.4. ALL SHEET-PATH CLEARANCE REQUIREMENTS PREVIOUSLY IDENTIFIED SHALL BE PROVIDED.
 - 12.5. A VERTICAL CLEARANCE OF 25 FEET SHALL BE PROVIDED ABOVE THE COLLECTION LOCATION.
 13. 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 A PROPOSED COLLECTION LOCATION. A COLLECTION SCHEDULE FOR RESIDUAL AND TRASH COLLECTION SHALL BE PROVIDED ON THE SITE PLAN.
 14. FOR SITES ADJACENT TO A PUBLIC ALLEY, SOLID WASTE TRUCKS ARE PERMITTED TO ACCESS THE PROPERTY THROUGH THE ALLEY IF SHEET-PATH CLEARANCE REQUIREMENTS CAN BE PROVIDED.
 15. SOLID WASTE COLLECTION LOCATIONS MUST BE LOCATED WITHIN THE BOUNDARIES OF THE PROPERTY.



POWELL ENGINEERING & ASSOCIATES, LLC
4700 Cornerstone Drive, White Lake, Michigan 48383
P: 248.714.9895 info@powellengineeringllc.com

AN AID TO THE CONTRACTOR...
DRAWN BY: BBB
DESIGNED BY: BBB
APPROVED BY: MCP
P.E. JOB No.: 18-405
SCALE: AS-SHOWN

S5

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CALL MISS DIG
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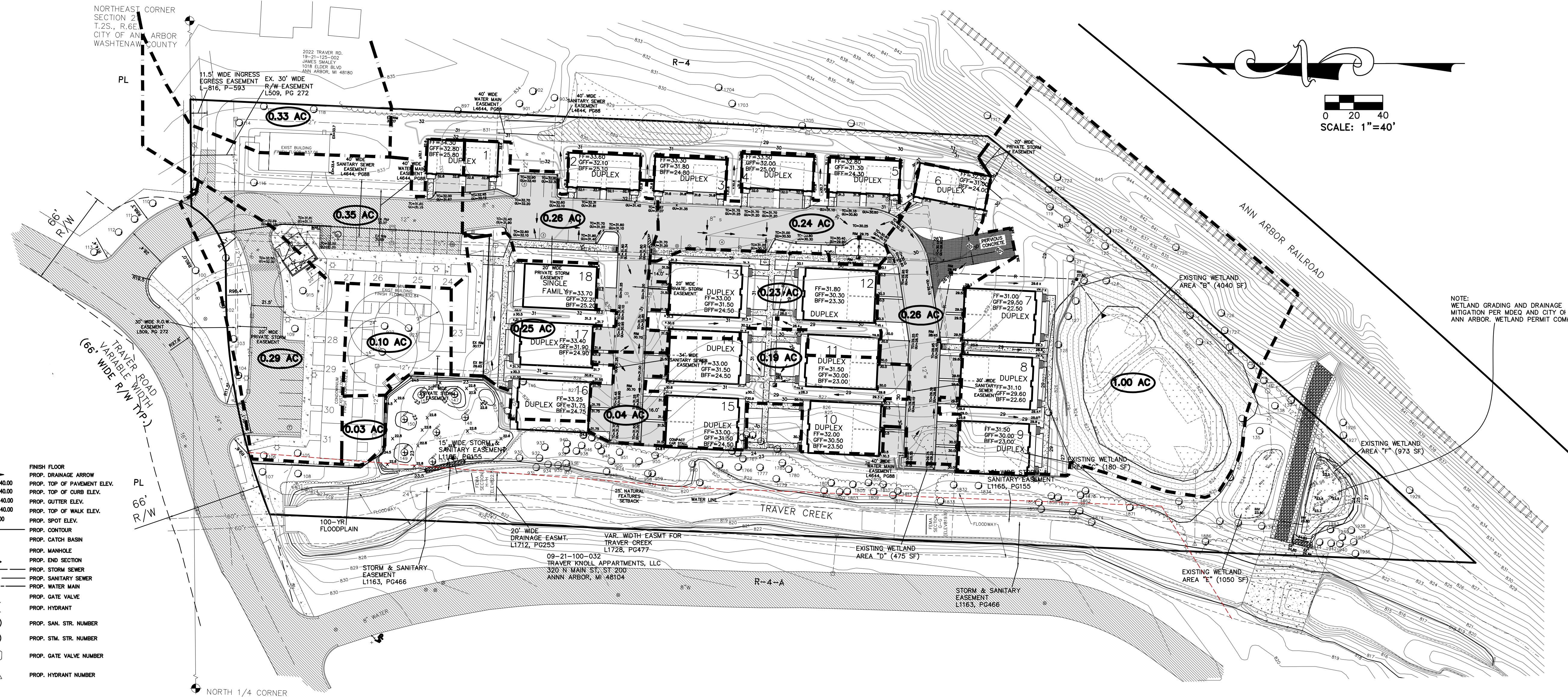
DIMENSIONAL PLAN OVERALL
HIDEAWAY LANE CONDOMINIUM
HIDEAWAY LANE, CITY OF ANN ARBOR

ISSUE DATES

SITE PLAN	10-10-18
SITE PLAN	12-14-18
PER FIRE MARSHALL	01-21-19
SITE PLAN	03-19-19
SITE PLAN	05-19-19
SITE PLAN	5-22-19
SITE PLAN	6-20-19
SITE PLAN	7-22-19
SITE PLAN	7-29-19

CMP. CHART
7-29-19

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NOTE: WETLAND GRADING AND DRAINAGE MITIGATION PER MDEQ AND CITY OF ANN ARBOR. WETLAND PERMIT COM.

LEGEND

EXISTING STORM	FF	FINISH FLOOR
EXISTING WATER MAIN	PROP. DRAINAGE ARROW	PROP. DRAINAGE ARROW
EXISTING SANITARY	TP 40.00	PROP. TOP OF PAVEMENT ELEV.
EXISTING GAS	TC 40.00	PROP. TOP OF CURB ELEV.
FD, IRON PIPE/ROD	QU 40.00	PROP. GUTTER ELEV.
UTILITY POLE	TR 40.00	PROP. TOP OF WALK ELEV.
EX. MANHOLE	40.00	PROP. SPOT ELEV.
EX. CATCH BASIN	940	PROP. CONTOUR
EX. CLEAN OUT	PROP. CATCH BASIN	PROP. CATCH BASIN
EX. HYDRANT	PROP. MANHOLE	PROP. MANHOLE
EX. WATER SHUTOFF	PROP. END SECTION	PROP. END SECTION
EX. SIGN	PROP. STORM SEWER	PROP. STORM SEWER
EX. LIGHT POLE	PROP. SANITARY SEWER	PROP. SANITARY SEWER
EX. SIGNAL POLE	PROP. WATER MAIN	PROP. WATER MAIN
EX. MAILBOX	PROP. GATE VALVE	PROP. GATE VALVE
	PROP. HYDRANT	PROP. HYDRANT
	PROP. SAN. STR. NUMBER	PROP. SAN. STR. NUMBER
	PROP. STM. STR. NUMBER	PROP. STM. STR. NUMBER
	PROP. GATE VALVE NUMBER	PROP. GATE VALVE NUMBER
	PROP. HYDRANT NUMBER	PROP. HYDRANT NUMBER

OUTLET SIZING

OUTLET SIZING FOR FIRST FLUSH
RELEASE FIRST FLUSH VOLUME FROM DETENTION BASIN
OVER A PERIOD OF AT LEAST 24 HOURS

CALCULATE AVERAGE RELEASE RATE WHICH WILL SATISFY THIS REQUIREMENT:
 $Q_{ave} = V_{ff} / 86,400 \text{ sec}$ = 0.05 cfs

PLACE RESTRICTOR AT OUTLET INVERT OF RISER PIPE: = 820.0

CALCULATE AVERAGE HEAD:
 $h_{avg} = 0.667 * (Z_1 - Z_0)$ = 3.00 ft

DETERMINE ORIFICE AREA NEEDED BASED ON THE ORIFICE EQUATION:
 $A = Q_{ave} / 0.62 * \text{sqrt}(2 * g * h_{avg})$ = 0.006 ft²

DETERMINE # OF ORIFI REQUIRED BASED ON AN ORIFICE DIAMETER OF: = 1.00 inch

REQUIRED NUMBER OF ORIFI: = 1

CALCULATE ACTUAL AVERAGE RELEASE RATE:
 $Q_{ave} = 0.62 * A * \text{SQRT}(2 * g * h_{avg})$ = 0.05 cfs

CALCULATE ACTUAL HOLDING TIME:
 $T = V_{ff} / Q_{ave}$ = 24.7 hours

OVERFLOW STRUCTURE

SIZE OVERFLOW STR TO ACCOMMODATE 10 YR STORM FLOW IN THE EVENT THE OUTLET RESTRICTOR PIPE GETS CLOGGED

10 YEAR FLOW FROM CALC. S: = 14.5 cfs

ASSUME HEAD: = 0.5 ft

ASSUME A OVERFLOW MANHOLE STRUCTURE

DIAMETER: = 5 ft

CALCULATE LENGTH OF OVERFLOW STRUCTURE:
LENGTH = 2 * P1 * R = 15.71 ft

CALCULATE CAPACITY OF OVERFLOW STRUCTURE USING WEIR EQUATION:
 $Q = 3.367 * L * H^{3/2}$ = 18.7 cfs

SIZE OVERFLOW OUTLET PIPE

SIZE OVERFLOW OUTLET PIPE TO ACCOMMODATE 100 YR STORM FLOW

10 YEAR FLOW FROM CALC. S: = 14.5 cfs

OUTLET PIPE CAPACITY CALCULATION:

PIPE SIZE:	24	inch
SLOPE:	0.42	%
AREA:	3.14	s.f.
n:	0.013	
CAPACITY:	14.70	c.f.s.

STORMWATER DETENTION CALCULATIONS FROM PREVIOUSLY APPROVED PLANS MODIFIED TO REFLECT THE NEW WEIGHTED RUNOFF COEFFICIENT

100 YEAR STORM INFILTRATION BASIN DESIGN

Contributing Area (A):	3.57	acres
Allowable Discharge (Qa)	0.54	cfs
Coefficient of Runoff (Cr):	0.71	

Calculation of Required Discharge/Acre

$Q_o = ((Q_a)/(A)(Cr))$ = 0.21 cfs/acre imperv.

$T = -25 + ((10312.5/Q_o))0.5$: 195.94 min.

Storage Volume Required:

$V_s = (16500(T)/(T+25)) - 40Q_o(T)$: 12977.15 cf acre imperv.

$V_t = (V_s)(A)(Cr)$: 32,893 cf

First Flush Volume (Sedimentation Basin)

Contributing Area (A): 3.57 acres

Coefficient of Runoff (Cr): 0.71

$V_{1,ff} = 1815 * A * Cr$ = 4,600 cf

Bank Full Volume

Contributing Area (A): 3.57 acres

Coefficient of Runoff (Cr): 0.71

$V_{1,ff} = 8170 * A * Cr$ = 20,708 cf

DETENTION BASIN 2018 AS-BUILT STATUS

THE BASIN IS FULLY VEGETATED AND IS NOT SHOWING SIGNS OF ADVERSE EROSION AND APPEARS TO BE FUNCTIONING PROPERLY. DUE TO WATER IN THE BASIN BELOW THE 822.0 ELEVATION WE WERE ONLY ABLE TO COMPARE AS-BUILT VOLUME BETWEEN THE 822.0 AND 824.5 ELEVATIONS. THE APPROVED PLANS SHOW STORING WATER FROM BETWEEN THE 820.0 AND 824.5 ELEVATIONS. THE BASIN IS DEFICIENT BETWEEN THOSE ELEVATIONS AS SHOWN BELOW.

PREVIOUS APPROVED PLAN VOLUME FROM 822.0 - 824.50 IS **24,388 CF (2017)**
AS-BUILT BASIN 11/18 VOLUME FROM 822.0 - 824.50 IS **20,873 CF (2018)**

THEREFORE, AFTER THE DRIVES AND UTILITIES HAVE BEEN CONSTRUCTED AND VEGETATION HAS BEEN ESTABLISHED THE BASIN CAN BE CLEANED OUT AND REGRADED TO OBTAIN THE DESIGN VOLUME.

2018 AS-BUILT VOLUME

ELEV.	AREA	AVE DEPTH	VOL	TOTAL
822.0	5997			
	6926	1.0	6926	6929
823.0	7588			
	8792	1.0	8792	15721
824.0	9729			
	10310	0.5	5155	20876
824.5	10890			

DETENTION BASIN VOLUME:

THE DETENTION BASIN CALCULATIONS BELOW WERE RE-COMPUTED BASED ON ENLARGING THE BASIN DUE TO NEW BUILDING FOOTPRINTS AND ADDITIONAL PAVEMENT AREAS THAT ALTERED THE WEIGHTED RUNOFF COEFFICIENT FROM 0.68 TO 0.71.

DETENTION BASIN AS-BUILT VOLUME:

ELEVATION	AREA	AVG. AREA	HEIGHT	VOLUME	CUM. VOLUME
820.0	4,304				
	5,072	5.072	1.0	5,072	5,072
821.0	5,839	6,724	1.0	6,724	11,796
822.0	7,609	8,479	1.0	8,479	20,274
823.0	9,348	10,148	1.0	10,148	30,422
824.0	10,948	11,521	0.5	5,761	36,183
824.5	12,094				
825.0	13,060	13,060			

A.B. FREEBOARD ELEV=825.5

VOLUME REQUIRED: 32893 CF
REVISED VOLUME PROVIDED: 36183 CF

PROPOSED LAYOUT

RUNOFF COEFFICIENT CALCULATION

LAND USE	AREA (A) (acres)	RUNOFF COEFFICIENT (C)
EXIST. BLDGS.	0.13	0.95
PROP. BLDGS.	0.76	0.95
ROADWAY & PARKING	0.59	0.95
DRIVEWAYS	0.17	0.95
SIDEWALKS	0.15	0.95
TOTAL AREA	1.80	
GRASS	1.54	0.40
GRAVEL	0.08	0.60
POND	0.15	1.00
TOTAL AREA	3.57	

CALCULATE THE WEIGHTED RUNOFF COEFFICIENT:

$C = \text{SUM}(A_i \times C_i) / A = ((1.80 \times 0.95) + (1.54 \times 0.40) + (0.08 \times 0.60) + (0.15 \times 1.00)) / 3.57$
= 0.71

ANALYSIS:

THE CALCULATIONS INDICATED ON THIS PLAN REPRESENT THE DESIGN FOR THE PLAN AS PREVIOUSLY APPROVED AND CONSTRUCTED.

THE CALCULATIONS FOR THE PROPOSED LAYOUT ANALYZE THE RUNOFF COEFFICIENT FOR THE PROPOSED LAYOUT VS. THAT OF THE PREVIOUSLY APPROVED LAYOUT.

RUNOFF COEFFICIENT:
THE CUMULATIVE RUNOFF COEFFICIENT FOR THE PREVIOUSLY APPROVED PLAN IS 0.68. THE CUMULATIVE RUNOFF COEFFICIENT FOR THE PROPOSED PLAN IS 0.71.

CONCLUSION:
THERE IS A CHANGE IN IMPERVIOUS AREA FOR THE PROPOSED PLAN VS. THAT PREVIOUSLY APPROVED, THEREFORE CHANGES TO THE STORMWATER DETENTION BASIN OR OUTLET STRUCTURE ARE REQUIRED.

Issued For:

08.20.2018	PSP Revised per City
11.29.2018	Revised per City
03.08.2019	Revised per City
05.01.2019	Revision
05.22.2019	Revision per City
06.17.2019	Revision per City

Project:

Hideaway Lane
2000 Traver Road
Ann Arbor, MI 48105

Project Sponsor:

Trowbridge Homes of
Hideaway, LLC
2617 Beacon Hill Drive
Auburn Hills, MI 48326

Sheet Name:

Landscape Plan

Seal:



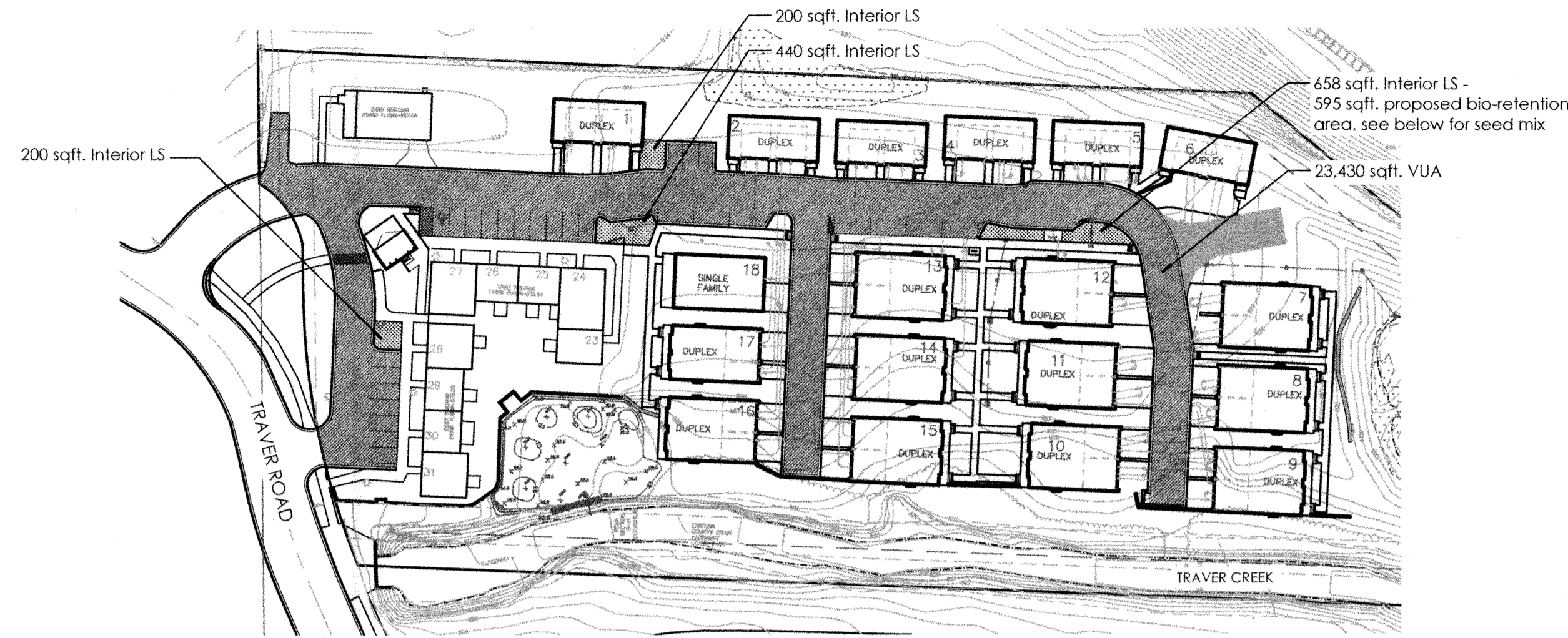
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Project Number:

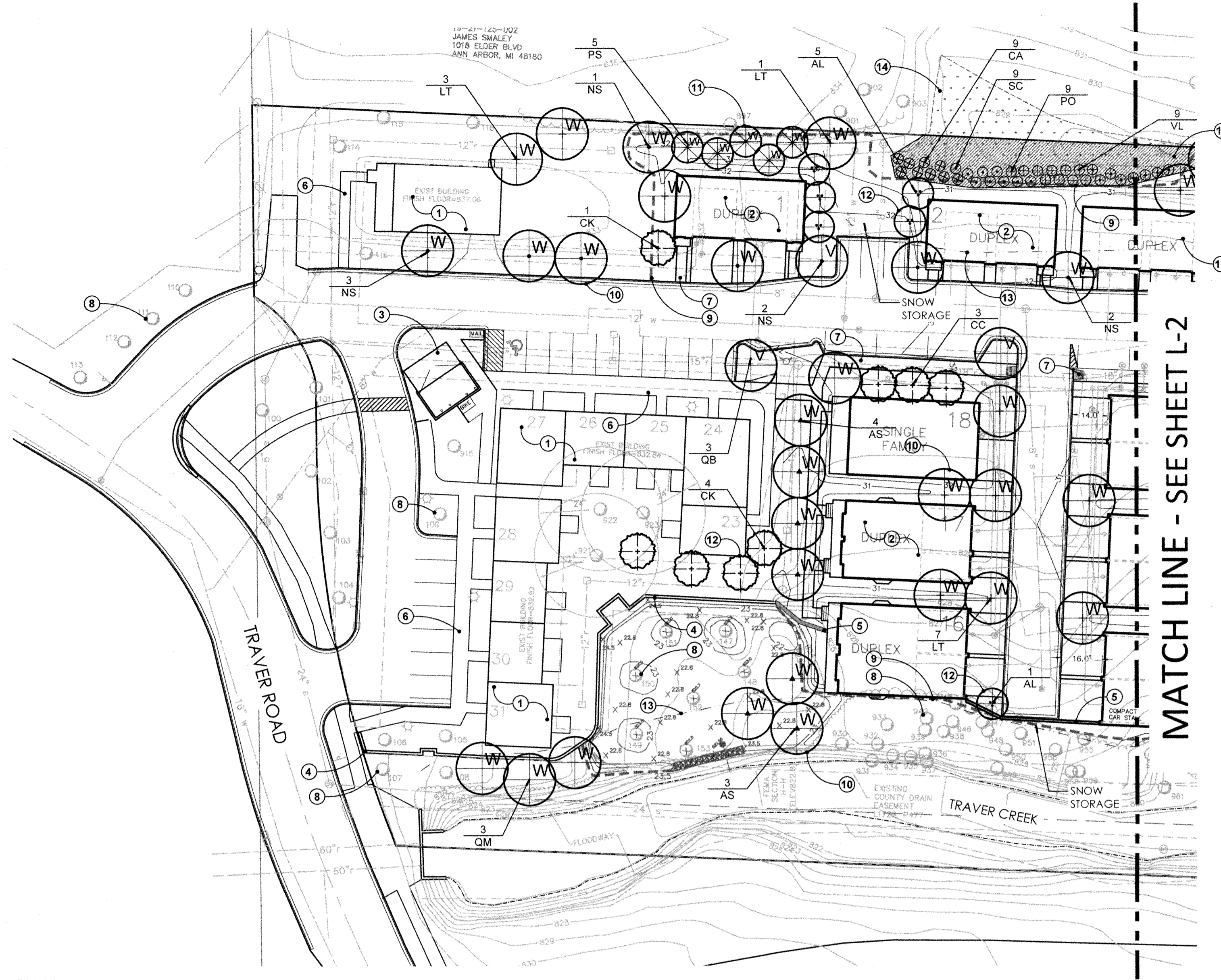
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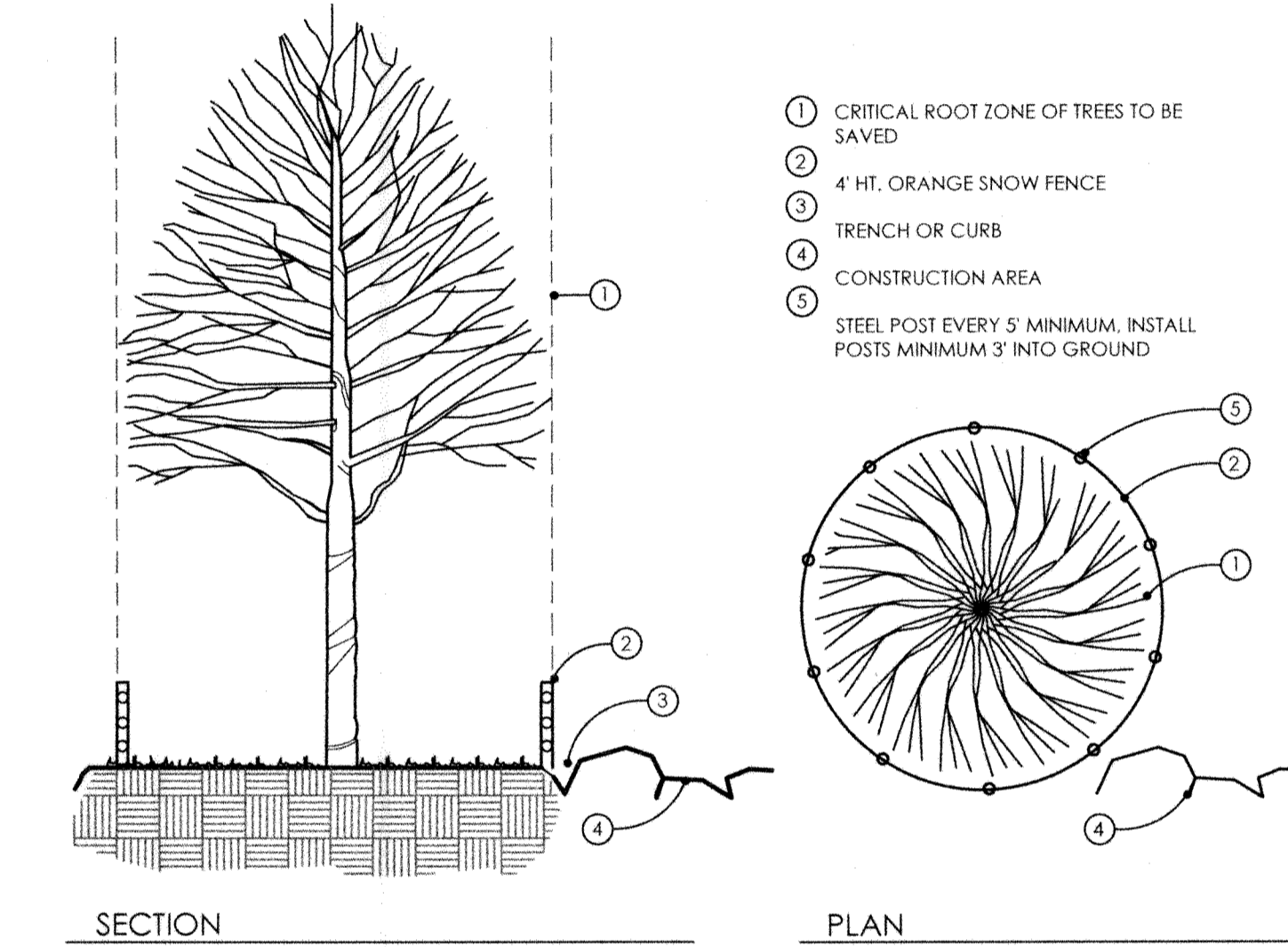
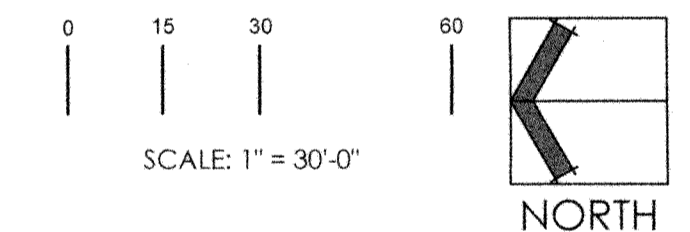
L-2



USE AREA PLAN
NOT TO SCALE



PLAN
SCALE: 1" = 30'-0"



1 TREE PROTECTION
L-1
NOT TO SCALE

- NOTES:**
- CRITICAL ROOT ZONE OF TREES TO BE SAVED
 - 4' HT. ORANGE SNOW FENCE
 - TRENCH OR CURB
 - CONSTRUCTION AREA
 - STEEL POST EVERY 5' MINIMUM. INSTALL POSTS MINIMUM 3" INTO GROUND
- 1 EITHER 4' HT. WOOD OR PLASTIC ORANGE SNOW FENCING SHALL BE PLACED AT OR BEYOND THE CRITICAL ROOT ZONE. UNLESS MORE SUBSTANTIAL FENCING IS REQUIRED.
 - 2 STAKES SHALL BE METAL T POLES SPACED A MINIMUM OF 5' ON CENTER
 - 3 FENCING SHALL NOT BE INSTALLED CLOSER TO THE TREE THAN THE CRITICAL ROOT ZONE OF THOSE TREES TO BE SAVED. SPECIAL CIRCUMSTANCES SHALL BE REVIEWED BY THE CITY
 - 4 ALL FENCING SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITIES. THE CITY SHALL BE NOTIFIED ONCE THE FENCING IS INSTALLED FOR INSPECTION
 - 5 UNDER NO CIRCUMSTANCES SHALL THE PROTECTIVE FENCING BE REMOVED WITHOUT PROPER APPROVAL FROM THE CITY.
 - 6 NO PERSON SHALL CONDUCT ANY ACTIVITY WITHIN THE AREAS PROPOSED TO REMAIN. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO:
 - NO SOLVENTS OR CHEMICALS WITHIN THE PROTECTED AREAS
 - NO BUILDING MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN THE PROTECTED AREAS
 - NO GRADE CHANGE SHALL OCCUR IN THE PROTECTED AREAS
 - NO REMOVAL OF VEGETATION FROM THE GROUND UP SHALL BE ALLOWED WITHOUT PERMISSION FROM THE PROPER AUTHORITY
 - ANY REQUIRED SWALES SHALL BE DIRECTED AROUND THE PROTECTED AREAS. INSTANCES WHERE SWALES ARE APPROVED THROUGH THE PROTECTED AREA, THE SWALES SHALL BE HAND DUG. MACHINERY OF ANY KIND IS PROHIBITED.
 - 7 REGULATED WOODLANDS OR REGULATED TREES ADJACENT TO THE PROPERTY ARE ALSO REQUIRED TO BE PROTECTED WHETHER OR NOT THEY ARE SHOWN ON THE PLAN.

BIO-RETENTION SEED MIX

Botanical Name	Common Name	PLB	Duques/Acra
Permanent Grasses/Sedges:			
<i>Andropogon gerardi</i>	Big Bluestem	12.00	
<i>Carex comosa</i>	Bristly Sedge	2.00	
<i>Carex crinitella</i>	Crested Oval Sedge	1.00	
<i>Carex lunata</i>	Botchgrass Sedge	2.50	
<i>Carex spp.</i>	Prairie Sedge Mix	2.00	
<i>Carex vulpinoidea</i>	Brown Fox Sedge	4.00	
<i>Elymus virginicus</i>	Virginia Wild Ryegrass	8.00	
<i>Panicum virgatum</i>	Switch Grass	2.00	
<i>Scirpus americanus</i>	Dark Green Rush	2.00	
<i>Scirpus cyperinus</i>	Wood Grass	0.50	
<i>Spartina pectinata</i>	Prairie Cord Grass	3.00	
		Total	40.00
Temporary Cover:			
<i>Avena sativa</i>	Common Oat	360.00	
<i>Lolium multiflorum</i>	Annual Ryegrass	100.00	
		Total	460.00
Forbs:			
<i>Achillea millefolium</i>	Water Plantain	1.00	
<i>Asclepias incarnata</i>	Swamp Milkweed	2.00	
<i>Aster novae-angliae</i>	New England Aster	0.50	
<i>Coneopogon sp.</i>	Tall Coneopogon	1.00	
<i>Eupatorium</i>	Spotted Joe-Pye Weed	0.25	
<i>Hibiscus</i>	Blue Flag	4.00	
<i>Lobelia spicata</i>	Marsh Blazing Star	1.00	
<i>Lobelia cardinalis</i>	Cardinal Flower	0.25	
<i>Lobelia siphilitica</i>	Great Blue Lobelia	0.50	
<i>Lythrum americanum</i>	Common Water hyacinth	0.25	
<i>Sagittaria arifolia</i>	Arrowhead	0.75	
<i>Sium</i>	Prairie Dock	1.00	
<i>Verbena hastata</i>	Blue Vervain	1.50	
<i>Zizia aurea</i>	Golden Alexanders	0.75	
		Total	14.75

LANDSCAPE NOTES

- LANDSCAPE CONTRACTOR SHALL VISIT SITE, INSPECT EXISTING CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, THE PLAN SHALL GOVERN QUANTITIES. CONTACT THE LANDSCAPE ARCHITECT WITH ANY CONCERNS.
- THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIS/HER PHASE OF WORK. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES, AND SHALL REPORT ANY UNACCEPTABLE SITE CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT.
- PLANTS SHALL BE FULL, WELL-BRANCHED, AND IN HEALTHY VIGOROUS GROWING CONDITION.
- PLANTS SHALL BE WATERED BEFORE AND AFTER PLANTING IS COMPLETE.
- ALL TREES MUST BE STAKED, FERTILIZED AND MULCHED AND SHALL BE GUARANTEED TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST TWO (2) YEARS FOLLOWING PLANTING.
- ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED IN THE MOST RECENT EDITION OF THE "AMERICAN STANDARDS FOR NURSERY STOCK".
- CONTRACTOR WILL SUPPLY FINISHED GRADE AND EXCAVATE AS NECESSARY TO SUPPLY PLANT MIX DEPTH IN ALL PLANTING BEDS AS INDICATED IN PLANT DETAILS. PROVIDE CLEAN BACKFILL SOIL, USING MATERIAL STOCKPILED ON-SITE. SOIL SHALL BE SCREENED AND FREE OF DEBRIS, FOREIGN MATERIAL, AND STONE. SLOW-RELEASE FERTILIZER SHALL BE ADDED TO THE PLANT PITS BEFORE BEING BACKFILLED. APPLICATION SHALL BE AT THE MANUFACTURERS RECOMMENDED RATES.
- AMENDED PLANT MIX (PREPARED TOPSOIL) SHALL CONSIST OF 1/3 SCREENED TOPSOIL, 1/3 SAND, AND 1/3 COMPOST, MIXED WELL AND SPREAD TO A DEPTH AS INDICATED IN THE PLANTING DETAILS.
- ALL PLANTINGS SHALL BE MULCHED WITH DOUBLE SHREDDED HARDWOOD BARK, SPREAD TO A DEPTH OF 3" FOR TREES AND SHRUBS, AND 2" ON PERENNIALS, AND GROUND-COVER PLANTINGS. MULCH SHALL BE FREE FROM DEBRIS AND FOREIGN MATERIAL, AND PIECES OF INCONSISTENT SIZE.
- NO SUBSTITUTIONS OR CHANGES OF LOCATION, OR PLANT TYPE SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE.
- THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO INSTALLATION.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL IN A VERTICAL CONDITION THROUGHOUT THE GUARANTEED PERIOD.
- THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIAL THAT DOES NOT MEET THE REQUIREMENTS OF THE PLANS AND/OR SPECIFICATIONS.
- THE LANDSCAPE CONTRACTOR SHALL SEED AND MULCH (AS INDICATED ON PLANS) ALL AREAS DESIGNATED AS SUCH ON THE PLANS, THROUGHOUT THE CONTRACT LIMITS. FURTHER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING AREAS DISTURBED DURING CONSTRUCTION, NOT IN THE CONTRACT LIMITS, TO EQUAL OR GREATER CONDITION.
- ALL LANDSCAPE AREAS SHALL HAVE PROPER DRAINAGE THAT PREVENTS EXCESSIVE WATER FROM PONDING ON LAWN AREAS OR AROUND TREES AND SHRUBS.
- ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH THE USE OF HOSE BIBS WHICH WILL BE LOCATED ON THE FRONT AND REAR OF EACH UNIT

GENERAL NOTES:

- UTILITY BOXES WILL BE SCREENED ON 3 SIDES.
- ALL DISTURBED AREAS TO BE SOO OVER MINIMUM 4" DEPTH TOPSOIL.
- SNOW SHALL NOT BE PUSHED ON TO INTERIOR LANDSCAPE ISLANDS UNLESS DESIGNED FOR SNOW STORAGE.
- TREES SHALL BE PLANTED 5'-8" FROM UTILITY LEADS.
- NO PLANT SUBSTITUTIONS ARE PERMITTED WITHOUT APPROVAL OF THE CITY OF ANN ARBOR

ADDITIONAL NOTES:

- Continuing Care:**
Landscaping shall be kept in a neat, orderly and healthy growing condition, free from debris and refuse. All landscape materials shall be maintained by a regular program of mowing, watering, weeding, feeding and pruning. Pruning shall be minimal at the time of installation, only to remove dead or diseased branches. Subsequent pruning shall assure proper maturation of plants to achieve their approved purpose.
- Replanting:**
All dead or diseased plant material shall be removed and replaced within six (6) months after it dies or in the next planting season, whichever occurs first.
- Watering:**
This shall be accomplished by installation of an underground irrigation system to provide water for the landscape areas specified on the landscape plan.
- Clay Soils:**
Construct Earth Bed to Required Grade and Trim. Prior to Placement of Topsoil or Compost, Harrow all Earth Beds to a Minimum of 3" Depth.
- Fertilizer:**
Beyond Initial Fertilization, All Future Fertilizer Applications Shall not Contain Phosphorus.
- Compacted Soil:**
Soil Shall be Decompacting using Mechanical or Aeration Methods to a Minimum Depth of 8" over the Entire Site.

Site Landscape Calculations

STREET TREE REQUIREMENT:
1 Deciduous shade tree / 45 lf of R.O.W length is required
Row of Way Length = 225 lf (Traver Road)

Street Trees Required = 5 Trees (225 lf / 45)
Street Trees Provided = 5 (5 Existing trees to remain)

RIGHT OF WAY SCREENING:
1 Deciduous shade or evergreen tree is required per 30 lf or fraction thereof of public R.O.W street frontage of the vehicular use area

Visible Vehicular Use Length: 170 lf.

Trees Required: 6 (170/30)
Trees Provided: 6 (Existing trees to remain)

VEHICULAR USE AREA: (V)
Required Landscape Area: 1sf. per 20 sf. of Vehicular Use Area
Vehicular Use Area: 23,430 sf.

Landscape Area Required: 1,172 sf.
Landscape Area Provided: **1,498 sf.** [See use area plan above]

Trees Required: 4.68 (1,172 sf. / 250)
Trees Provided: **5**

Bio-retention Area Required: 586 sf. (1,172 sf. x 50%)
Bio-retention Area Provided: **595 sf.**

WOODLAND MITIGATION: (W)
Mitigation Required: 811.5' (Per Allen Design Plan Dated 09/11/2017)
Less Previous Mitigation: 30'
Invasive tree Credit: 240' (Per Allen Design Plan Dated 09/11/2017)
Landscape trees on-site: 240' (As of 08/09/2018)
Replacements Remaining: 541.5'

Mitigation Provided: **541.5'**
Replacement Inches Shown: **541.5'** [Current Plan - See Plant List Sheet L-3]

Note Key:

- EXISTING UNITS
- PROPOSED UNITS
- PROPOSED DUMPSTER AND ENCLOSURE
- EXISTING RETAINING WALL
- PROPOSED RETAINING WALL
- EXISTING CONCRETE SIDEWALKS
- PROPOSED CONCRETE SIDEWALKS
- EXISTING TREES TO REMAIN. SEE TYPICAL TREE PROTECTION DETAIL
- SILT FENCE / TREE PROTECTION FENCING
- DECIDUOUS CANOPY TREE. SEE SHEET L-2 FOR PLANT SCHEDULE AND TYPICAL DETAIL
- EVERGREEN TREE. SEE SHEET L-2 FOR PLANT SCHEDULE AND TYPICAL DETAIL
- ORNAMENTAL TREE. SEE SHEET L-2 FOR PLANT SCHEDULE AND TYPICAL DETAIL
- 25' NATURAL FEATURES SET BACK
- EXISTING WETLAND TO REMAIN. PROTECT AS REQUIRED DURING CONSTRUCTION
- WETLAND ENHANCEMENT AREA "A": CLEAR AND GRUB ALL EXISTING GROUND VEGETATION. SEED WITH PROPOSED NATIVE UPLAND BUFFER SEED MIX AS SPECIFIED ON ORIGINAL WETLAND MITIGATION DRAWINGS (SHEET WM-2) PREPARED BY PR ENVIRONMENTAL CONSULTING AND DATED JANUARY 30, 2013. SEE PLANT SCHEDULE SHEET L-3 FOR PROPOSED SHRUBS

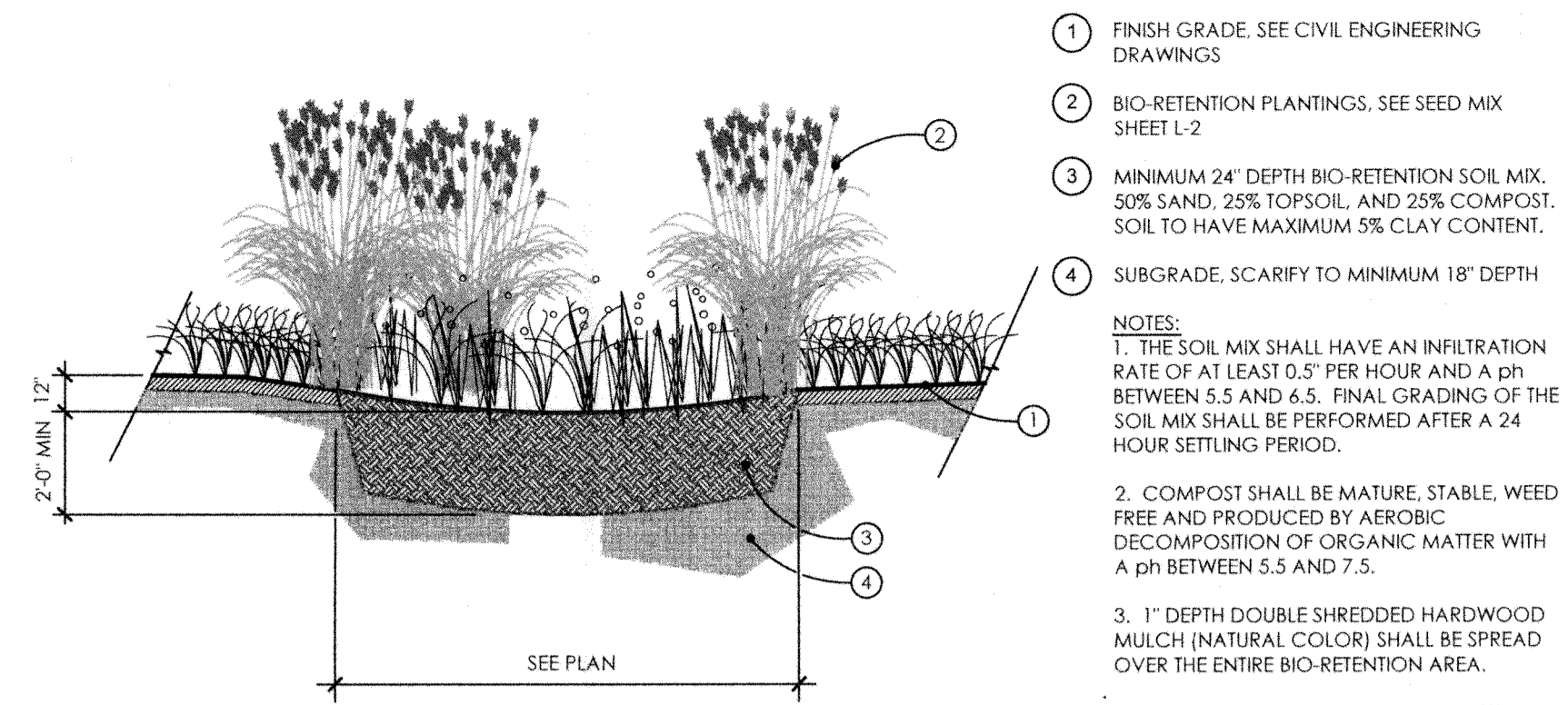
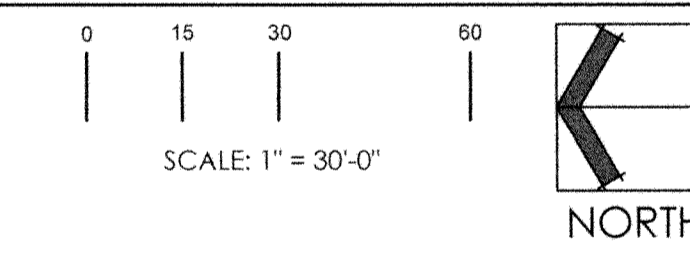
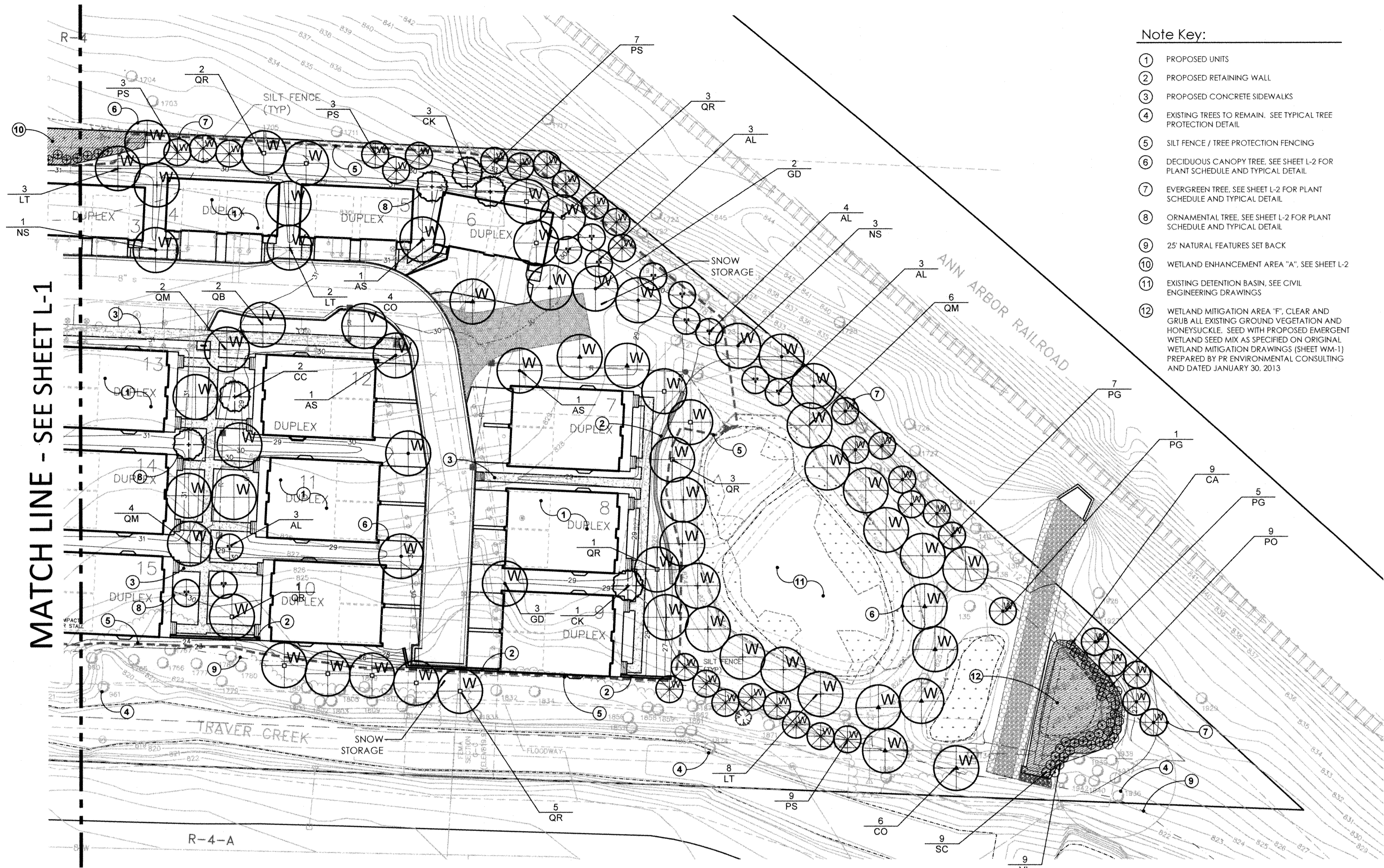
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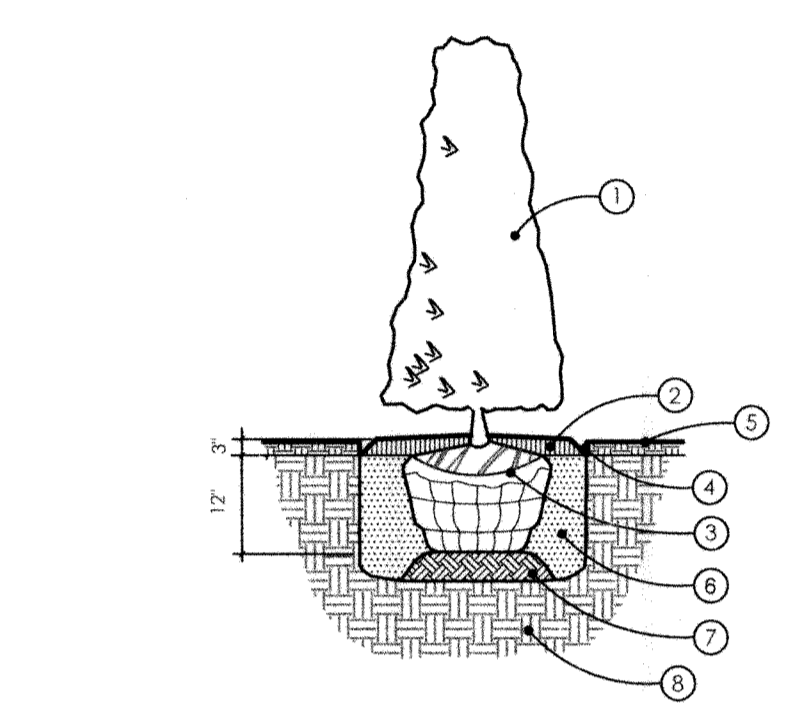
Note Key:

- 1 PROPOSED UNITS
- 2 PROPOSED RETAINING WALL
- 3 PROPOSED CONCRETE SIDEWALKS
- 4 EXISTING TREES TO REMAIN. SEE TYPICAL TREE PROTECTION DETAIL
- 5 SILT FENCE / TREE PROTECTION FENCING
- 6 DECIDUOUS CANOPY TREE. SEE SHEET L-2 FOR PLANT SCHEDULE AND TYPICAL DETAIL
- 7 EVERGREEN TREE. SEE SHEET L-2 FOR PLANT SCHEDULE AND TYPICAL DETAIL
- 8 ORNAMENTAL TREE. SEE SHEET L-2 FOR PLANT SCHEDULE AND TYPICAL DETAIL
- 9 25' NATURAL FEATURES SET BACK
- 10 WETLAND ENHANCEMENT AREA "A". SEE SHEET L-2
- 11 EXISTING DETENTION BASIN. SEE CIVIL ENGINEERING DRAWINGS
- 12 WETLAND MITIGATION AREA "T". CLEAR AND GRUB ALL EXISTING GROUND VEGETATION AND HONEYSUCKLE. SEED WITH PROPOSED EMERGENT WETLAND SEED MIX AS SPECIFIED ON ORIGINAL WETLAND MITIGATION DRAWINGS (SHEET WMA-1) PREPARED BY PE ENVIRONMENTAL CONSULTING AND DATED JANUARY 30, 2013



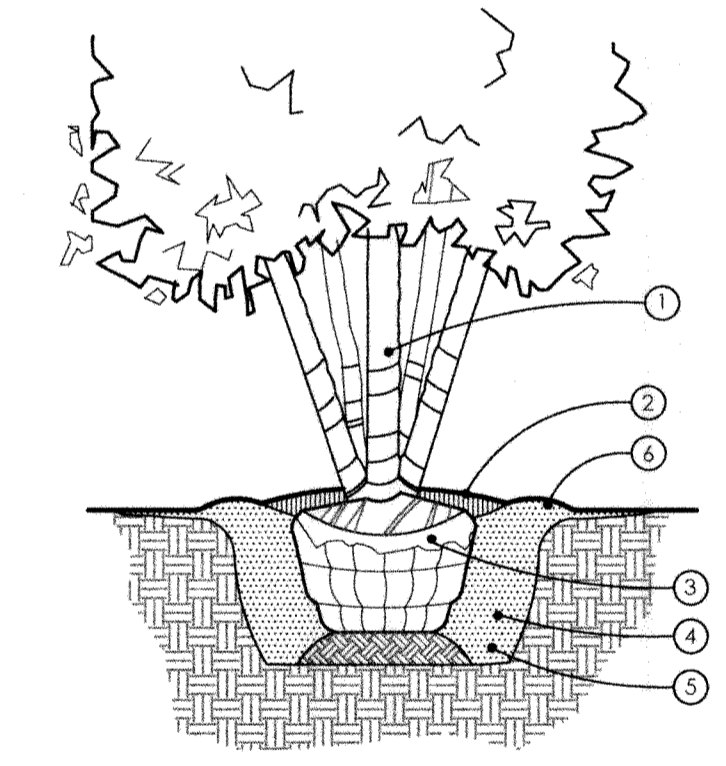
4 BIO-RETENTION DETAIL
NOT TO SCALE

- 1 FINISH GRADE. SEE CIVIL ENGINEERING DRAWINGS
 - 2 BIO-RETENTION PLANTINGS. SEE SEED MIX SHEET L-2
 - 3 MINIMUM 24" DEPTH BIO-RETENTION SOIL MIX. 50% SAND, 25% TOPSOIL, AND 25% COMPOST. SOIL TO HAVE MAXIMUM 5% CLAY CONTENT.
 - 4 SUBGRADE. SCARIFY TO MINIMUM 18" DEPTH
- NOTES:**
1. THE SOIL MIX SHALL HAVE AN INFILTRATION RATE OF AT LEAST 0.5" PER HOUR AND A pH BETWEEN 5.5 AND 6.5. FINAL GRADING OF THE SOIL MIX SHALL BE PERFORMED AFTER A 24 HOUR SETTLING PERIOD.
 2. COMPOST SHALL BE MATURE, STABLE, WEED FREE AND PRODUCED BY AEROBIC DECOMPOSITION OF ORGANIC MATTER WITH A pH BETWEEN 5.5 AND 7.5.
 3. 1" DEPTH DOUBLE SHREDDED HARDWOOD MULCH (NATURAL COLOR) SHALL BE SPREAD OVER THE ENTIRE BIO-RETENTION AREA.
 4. NO HEAVY EQUIPMENT SHALL BE USED WITHIN THE BIO-SWALE BEFORE, DURING OR AFTER PLACEMENT OF THE SOIL MIXTURE.



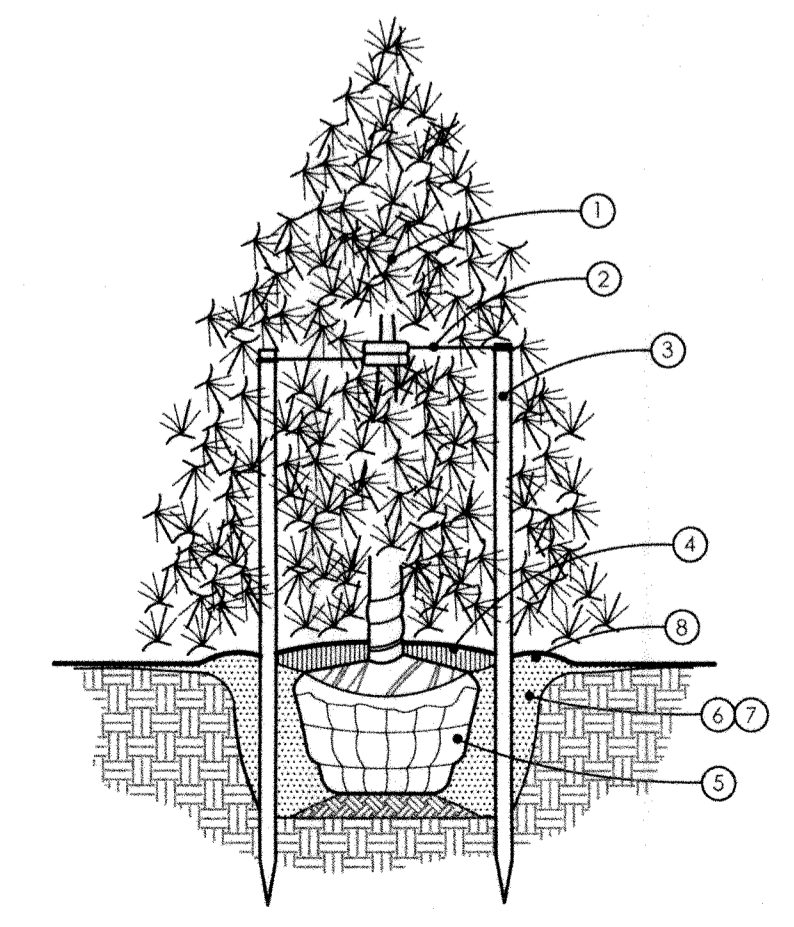
3 HEDGE PLANTING
NOT TO SCALE

- NOTES:**
1. CONTRACTOR TO VERIFY PERCOLATION OF PLANTING FIT PRIOR TO INSTALLATION
 2. SET TOP OF ROOTBALL 2" ABOVE FINISH GRADE
- 1 HEDGE MATERIAL. SEE PLAN FOR LOCATION AND PLANT SCHEDULE
 - 2 3" DEPTH DOUBLE SHREDDED HARDWOOD MULCH, TYPICAL
 - 3 REMOVE ALL NON-BIODEGRADABLE TWINE FROM ENTIRE ROOTBALL. REMOVE BURLAP FROM TOP 1/2 OF ROOTBALL
 - 4 SHOVEL CUT OR METAL EDGE. SEE PLAN
 - 5 FINISH GRADE
 - 6 EXCAVATE EXISTING SOIL TO 12" DEPTH, REPLACE WITH PLANT MIX. SEE GENERAL LANDSCAPE NOTES SHEET L-2
 - 7 SCARIFY TO 4" DEPTH AND RECOMPACT
 - 8 UNDISTURBED SUBGRADE



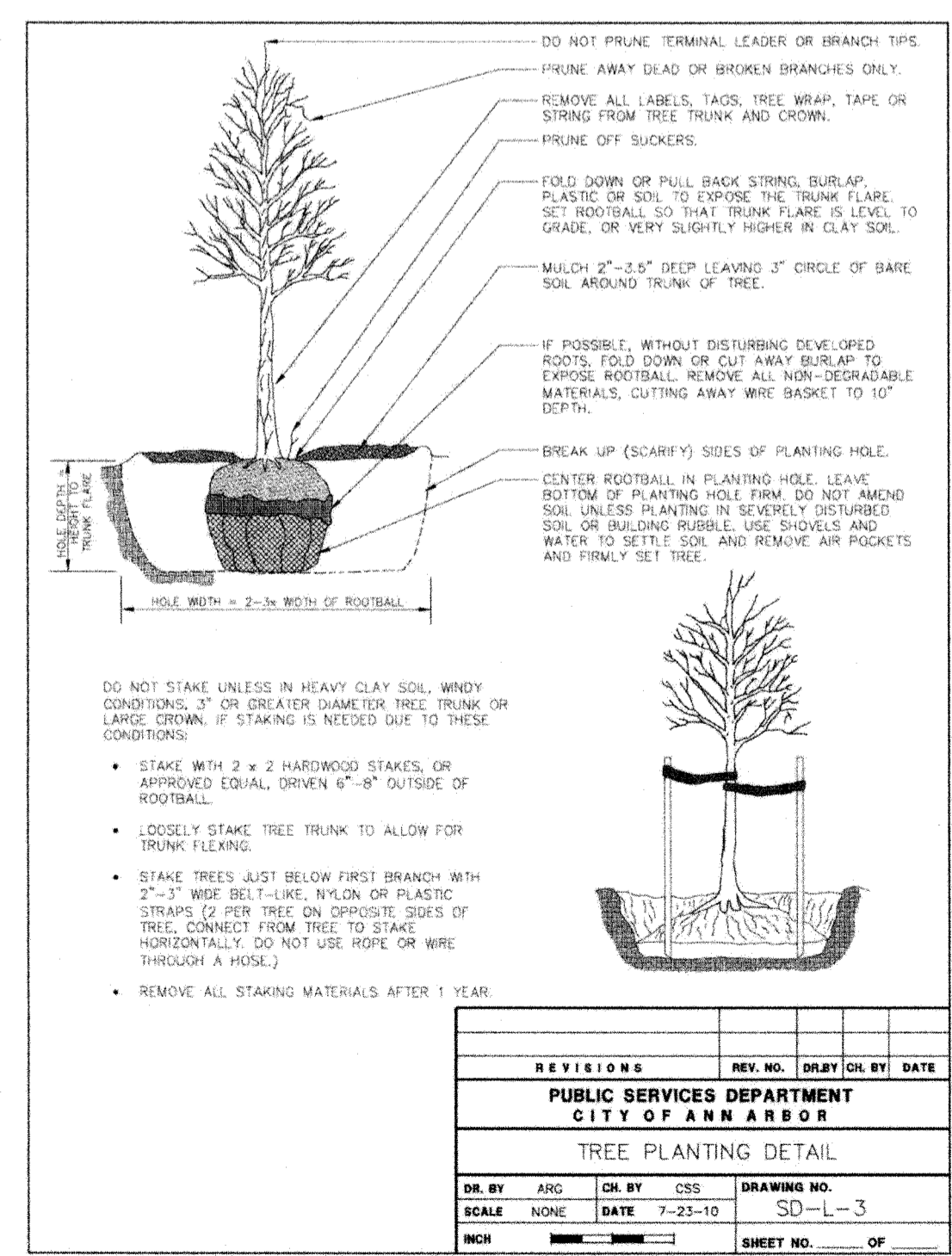
2 MULTISTEM TREE PLANTING
NOT TO SCALE

- NOTES:**
1. CONTRACTOR TO VERIFY PERCOLATION OF PLANTING FIT PRIOR TO INSTALLATION
 2. SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE
- 1 REMOVE ALL TAGS, STRINGS, PLASTICS, AND ANY OTHER MATERIALS WHICH ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
 - 2 COVER PLANTING W/ 3" DOUBLE SHREDDED HARDWOOD BARK MULCH. MINIMUM 6" DIA. LEAVE 3" CIRCLE OF BARE SOIL AROUND BASE OF THE STEMS.
 - 3 REMOVE ALL NON-BIODEGRADABLE MATERIALS FROM THE ROOTBALL. FOLD DOWN ALL BURLAP AND REMOVE WIRE BASKET FROM THE TOP 1/3 OF THE ROOTBALL.
 - 4 PLANT MIX. SEE GENERAL LANDSCAPE NOTES SHEET L-2
 - 5 TREE FIT TO BE THREE TIMES WIDTH OF ROOTBALL
 - 6 4" TOPSOIL SAUCER



1 EVERGREEN TREE PLANTING
NOT TO SCALE

- 1 REMOVE ALL TAGS, STRINGS, PLASTICS, AND ANY OTHER MATERIALS WHICH ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
 - 2 STAKE TREES WITH 2-3" WIDE BELT-LIKE FABRIC STRIPS ONLY. ARBOR TIE OR APPROVED EQUAL. (CONNECT FROM TREE TO STAKE OPPOSITE FROM EACH OTHER, AND ALLOW FOR SOME "FLEXING") DO NOT USE WIRE OR ROPE THROUGH A HOSE. REMOVE AFTER ONE YEAR.
 - 3 [3] 2"x2" HARDWOOD STAKES OR EQUIVALENT DRIVEN 6-8" OUTSIDE OF ROOTBALL. REMOVE AFTER ONE YEAR.
 - 4 COVER PLANTING W/ 3" SHREDDED HARDWOOD BARK MULCH. MINIMUM 6" DIAMETER. CONNECT EVERGREEN PLANTINGS WHERE POSSIBLE.
 - 5 REMOVE ALL NON-BIODEGRADABLE MATERIALS FROM THE ROOTBALL. FOLD DOWN ALL BURLAP AND REMOVE WIRE BASKET FROM THE TOP 1/3 OF THE ROOTBALL.
 - 6 PLANT MIX. SEE GENERAL LANDSCAPE NOTES SHEET L-2
 - 7 TREE FIT TO BE 3 TIMES WIDTH OF ROOTBALL
 - 8 4" TOPSOIL SAUCER
- NOTES:**
1. STAKE EVERGREENS UNDER 12' HEIGHT
 2. GUY EVERGREENS 12' HEIGHT AND OVER
 3. NEVER CUT OR PRUNE CENTRAL LEADER
 4. SET STAKES VERTICAL AND EVENLY SPACED
 5. PRUNE ONLY TO REMOVE DEAD OR BROKEN BRANCHES

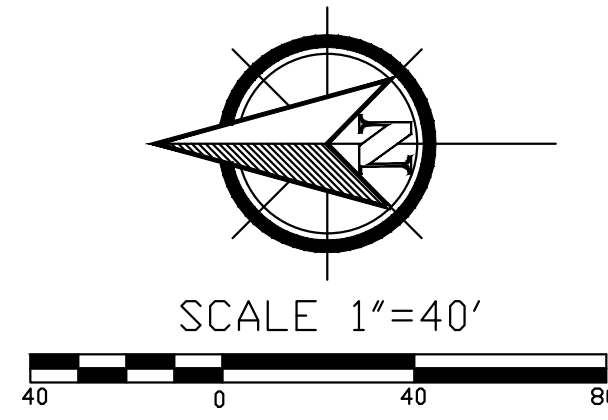


PLANT SCHEDULE

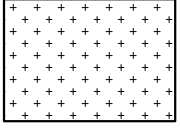
Sym.	Qty.	Botanical Name	Common Name	Caliper	Spacing	Root	Height	Replacement Credits	Requirement Met
AL	18	Amelanchier laevis	Downy Serviceberry	3	as shown	B&B		54	Woodland Mitigation
CC	5	Cercis canadensis	Eastern Red Bud	2.5	as shown	B&B	7'-8'	12.5	Woodland Mitigation
CK	9	Comus kousa	Kousa Dogwood		as shown	B&B	6'-7'	0	
CO	11	Celtis occidentalis	Hackberry	4	as shown	B&B		44	Woodland Mitigation
AS	10	Acer saccharum	Sugar Maple	3	as shown	B&B		30	Woodland Mitigation
GD	5	Gymnocladus dioica	Kentucky Coffeetree	3	as shown	B&B		15	Woodland Mitigation
LT	24	Liriodendron tulipifera	Tulip Tree	4	as shown	B&B		96	Woodland Mitigation
NS	12	Nyssa sylvatica	Black Gum	3	as shown	B&B		36	Woodland Mitigation
PG	14	Picea glauca	White Spruce	4	as shown	B&B	12'	56	Woodland Mitigation
PS	27	Pinus strobus	White Pine	4	as shown	B&B	12'	108	Woodland Mitigation
QB	5	Quercus bicolor	Swamp White Oak	2.5	as shown	B&B		0	Vehicular Use Area
QM	15	Quercus macrocarpa	Burr Oak	3	as shown	B&B		45	Woodland Mitigation
QR	15	Quercus rubra	Red Oak	3	as shown	B&B		45	Woodland Mitigation
								Replacement Credits	541.5
CA	18	Comus alba	Red Osier Dogwood			B&B	36"-42"		
PO	18	Physocarpus opulifolius	Ninebark			B&B	36"-42"		
SC	18	Sambucus canadensis	American Elderberry			B&B	36"-42"		
VL	18	Viburnum lentago	Nannyberry Viburnum			B&B	36"-42"		

NOT FOR CONSTRUCTION

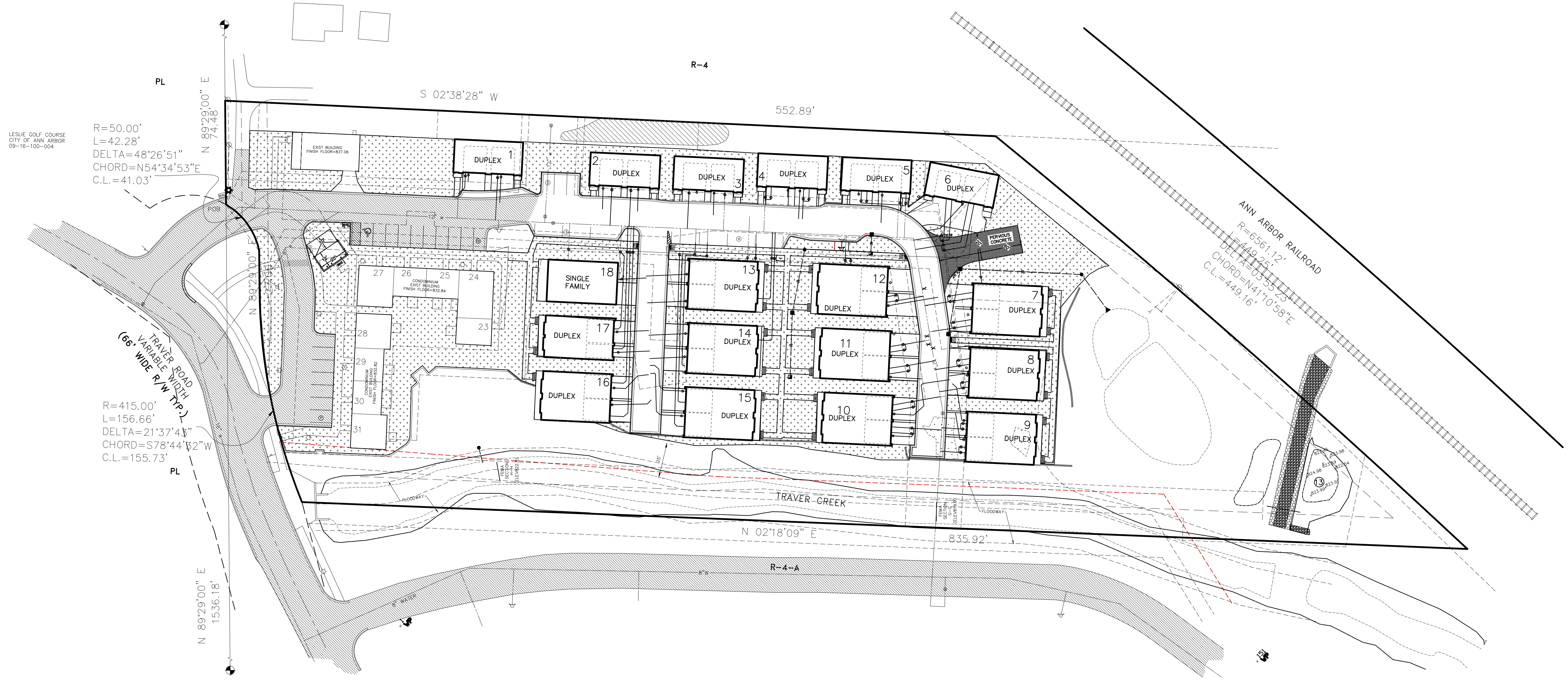




OPEN SPACE REQUIRED:
 45 UNITS X 300SF/UNIT = 13,500 SF

 OPEN SPACE SUPPLIED = 42,691 SF

(SEE SHEET S5 FOR TABLES AND ADDITIONAL DETAILS)



LESIE GOLF COURSE
 CITY OF ANN ARBOR
 09-16-100-004

R=50.00'
 L=42.28'
 DELTA=48°26'51"
 CHORD=N54°34'53"E
 C.L.=41.03'

R=415.00'
 L=156.66'
 DELTA=21°37'43"
 CHORD=S78°44'52"W
 C.L.=155.73'

ANN ARBOR RAILROAD

R=6561.12'
 L=449.95'
 DELTA=03°55'23"
 CHORD=N41°10'58"E
 C.L.=449.16'

NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING THE LOCATION, DEPTH, AND TYPE OF UTILITIES AND STRUCTURES SHOWN ON THESE PLANS AND PROFILES IS TAKEN FROM FIELD TYPING AND AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION. ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE IDENTIFIED AND IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES SHOWN ON THESE PLANS AND PROFILES IS LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES, NOTWITHSTANDING THE START OF ANY CONSTRUCTION.



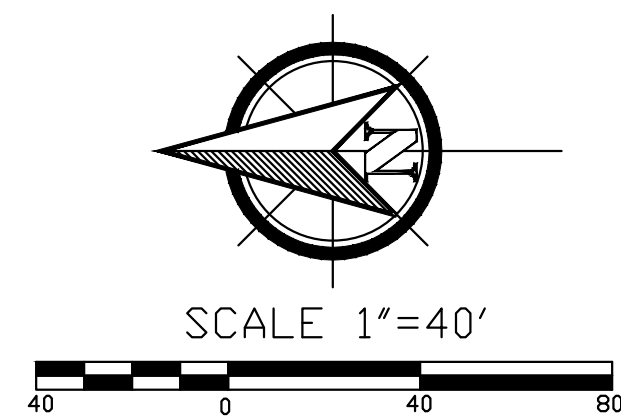
OPEN SPACE PLAN
 HIDEWAY LANE CONDOMINIUM
 HIDEWAY LANE, CITY OF ANN ARBOR

ISSUE DATES

SITE PLAN	08-10-18
SITE PLAN	3-19-19
SITE PLAN	5-22-19
SITE PLAN	7-22-19
SITE PLAN	7-29-19

DRAWN	BBB
DESIGNED	BBB
APPROVED	MCP
P.E. JOB No.	18-405
SCALE	AS-SHOWN

S23



LEGEND

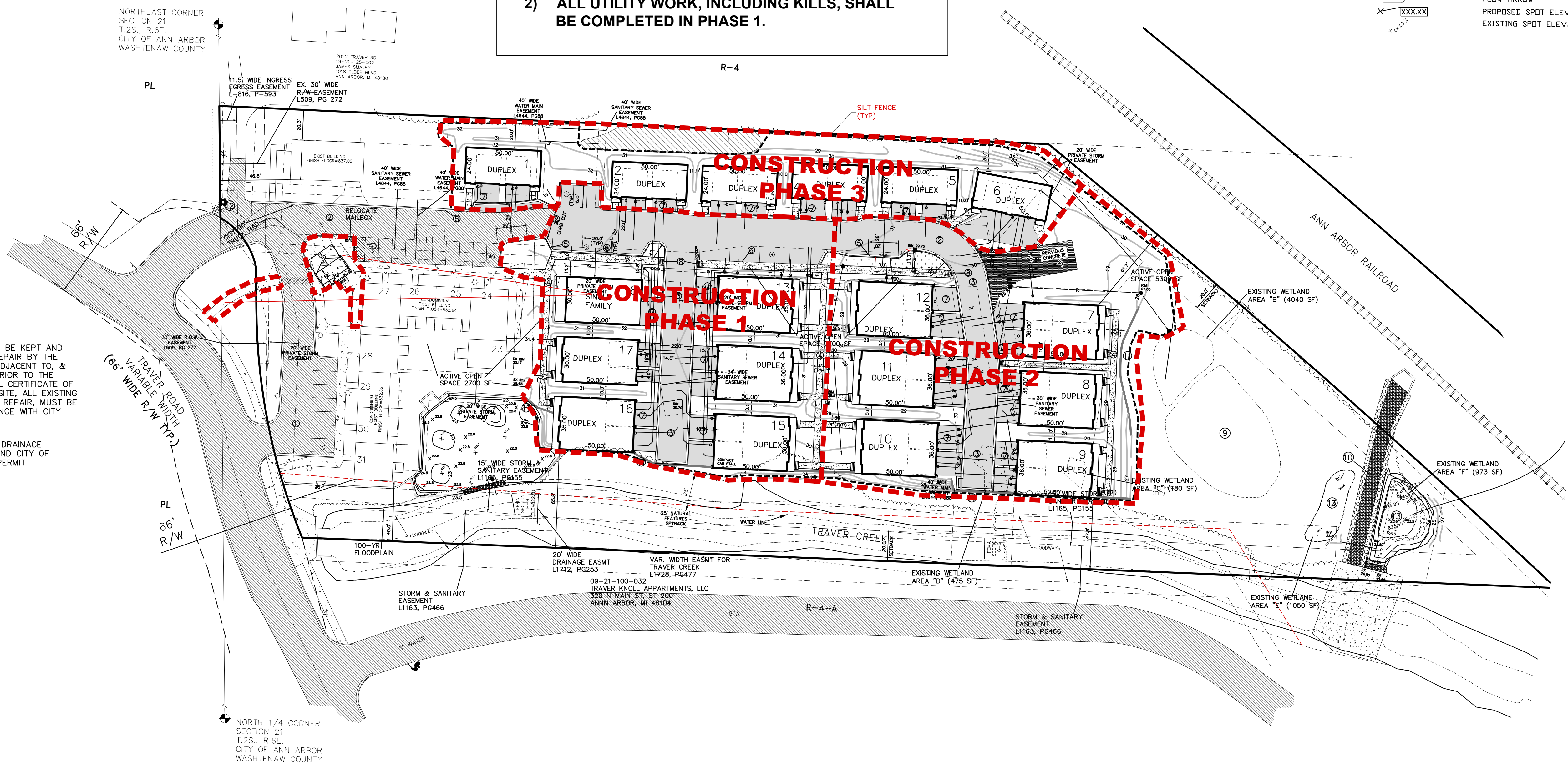
	EXISTING PROPERTY BOUNDARY
	EXISTING CONTOUR
	EXISTING OFFSITE PROPERTY BOUNDARY
	EXISTING EDGE OF PAVEMENT
	EXISTING WATERMAIN, HYDRANT AND GV
	EXISTING STORM SEWER, CATCH BASIN, MANHOLE
	EXISTING SANITARY, SANITARY MANHOLE
	EXISTING OFFSITE BUILDING
	PROPOSED BUILDING
	PROPOSED CONTOUR
	PROPOSED UTILITY EASEMENT
	PROPOSED CURB WITH REVERSE GUTTER
	PROPOSED EDGE OF PAVEMENT
	PROPOSED CONCRETE WALK
	PROPOSED SANITARY SEWER, SANITARY MANHOLE
	PROPOSED STORM SEWER, CATCH BASIN, MANHOLE
	PROPOSED WATERMAIN, HYDRANT, GATE VALVE
	EXISTING ROAD PAVEMENT
	EXISTING CONCRETE WALK/PAVEMENT
	PROPOSED CONCRETE WALK W/ THICKENED EDGE
	PROPOSED ASPHALT PAVING
	FLOW ARROW
	PROPOSED SPOT ELEVATION
	EXISTING SPOT ELEVATION

PHASING NOTES:

- 1) THE DUMPSTER ENCLOSURE AND TRAVER ROAD SIDEWALK WILL BE CONSTRUCTED DURING PHASE 1
- 2) ALL UTILITY WORK, INCLUDING KILLS, SHALL BE COMPLETED IN PHASE 1.

SIDEWALK NOTE
ALL SIDEWALKS ARE TO BE KEPT AND MAINTAINED IN GOOD REPAIR BY THE OWNER OF THE LAND ADJACENT TO, & 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.

NOTE:
WETLAND GRADING AND DRAINAGE MITIGATION PER MDEQ AND CITY OF ANN ARBOR, WETLAND PERMIT COMPLETED.



Consulting Civil Engineers
"Engineering A Better Michigan"

Powell Engineering & Associates, LLC
4700 Cornerstone Drive, White Lake, Michigan 48383
P: 248.714.9895 info@powellengineeringllc.com

NOTE: AS AN AID TO THE CONTRACTOR, UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING THE LOCATION AND DEPTH OF THESE UTILITIES AND STRUCTURES IS BASED ON FIELD TIPS AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION. ADDITIONAL UNDERGROUND UTILITIES OR STRUCTURES MAY BE ENCOUNTERED IF THE CONTRACTOR DOES NOT ENCOUNTER A PREVIOUSLY UNDETECTED UTILITY AND/OR STRUCTURE. OR DETERMINES THAT ONE OF THE UTILITIES / STRUCTURES LOCATED THE CONTRACTOR WILL BE RESPONSIBLE FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES, NOTWITHSTANDING THE START OF ANY CONSTRUCTION.

BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

CONSTRUCTION PHASE PLAN OVERALL
HIDEWAY LANE CONDOMINIUM
HIDEWAY LANE, CITY OF ANN ARBOR

ISSUE DATES

SITE PLAN	08-10-18
SITE PLAN	12-11-18
PER FIRE MARSHALL	01-21-19
SITE PLAN	03-19-19
SITE PLAN	5-6-19
SITE PLAN	5-22-19
SITE PLAN	6-18-19
SITE PLAN	7-22-19

DRAWN BBB
DESIGNED BBB
APPROVED MCP
P.E. JOB No. 18-405
SCALE AS-SHOWN

S24



FRONT ELEVATION

SCALE: 1/4" = 1'-0"



REAR ELEVATION

SCALE: 1/4" = 1'-0"



SIDE ELEVATION

SCALE: 1/4" = 1'-0"

HIDEAWAY DUPLEX 24' LAYOUT



HIDEAWAY DUPLEX
30' & 36' LAYOUT


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D'Anna Associates Architecture & Engineering
 1704 SOUTH ALYS S. SUITE 201 - HOCHGATER HILLS, WI 53047
 262-662-7702 PHONE • 262-662-7701 FAX
dannaassoc.com