

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/8/29/19

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

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

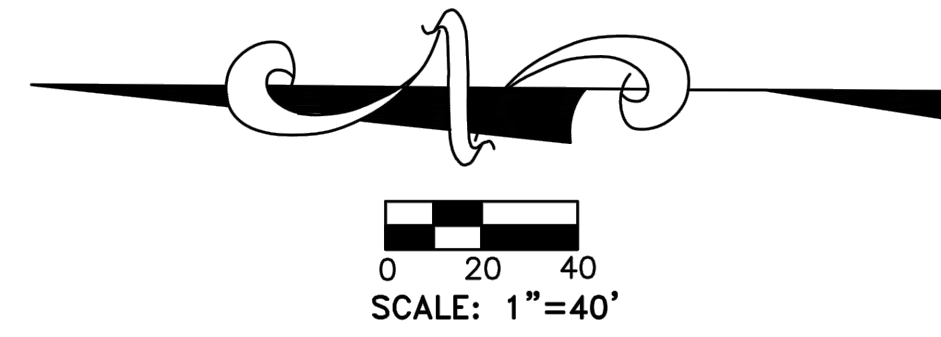
TREE CLEARING NOTES

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 | |

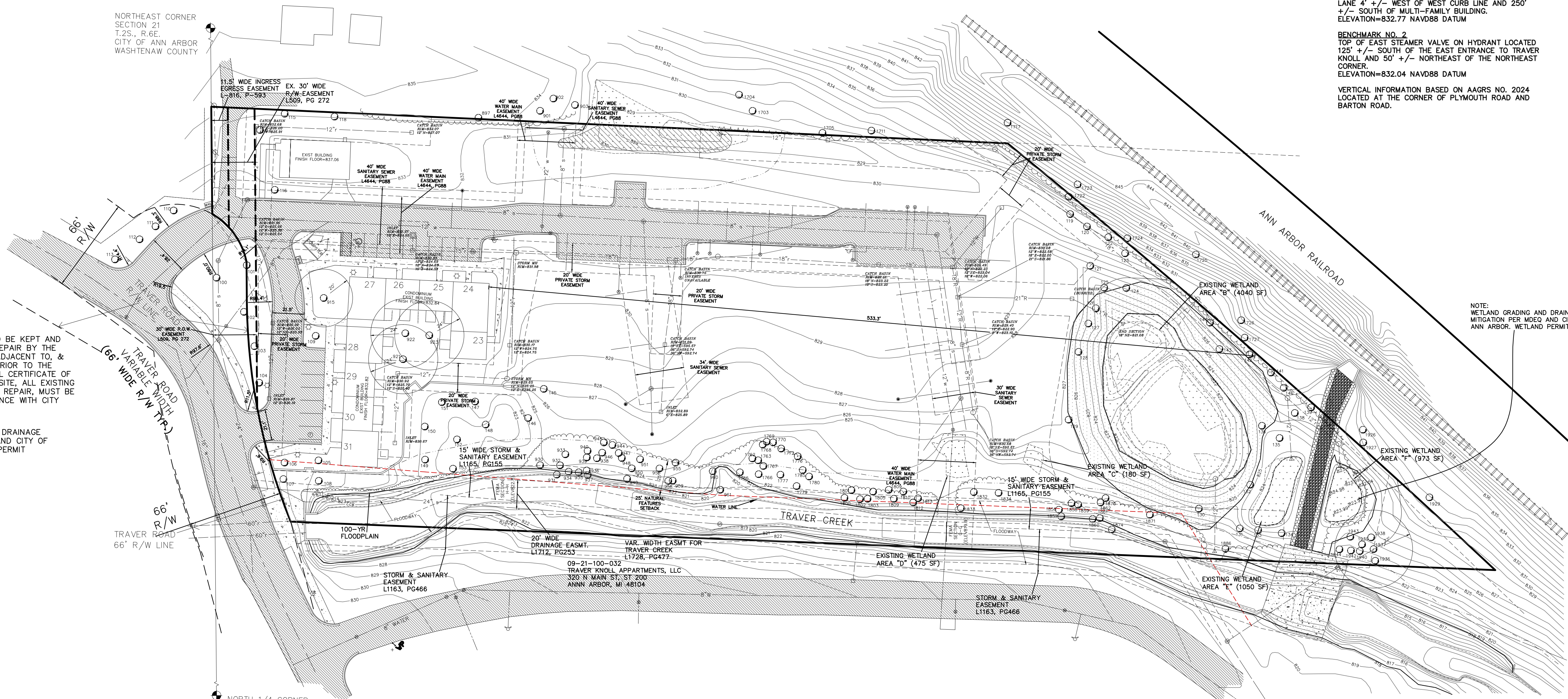
BENCHMARKS:

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



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

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.

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

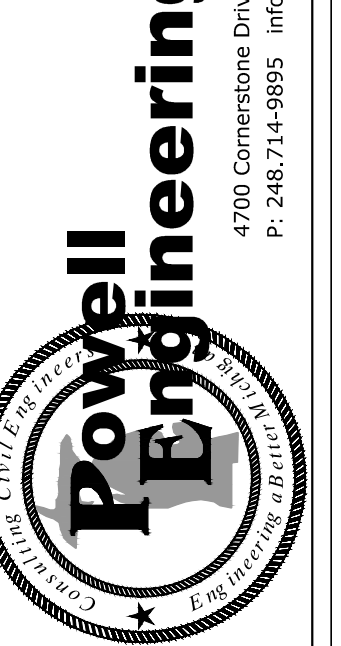
COMMENCING AT THE N 1/4 CORNER OF SECTION 21, T2S., R6E., ANN ARBOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN, THENCE N89°29'00"E 1536.18 FEET ALONG THE NORTH LINE OF SAID SECTION 21 TO THE POINT OF BEGINNING, SAID POINT BEING N89°29'00"E 211.10 FEET FROM THE NW CORNER OF THE E 1/2 OF THE NE 1/4 OF SAID SECTION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



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 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 SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES FROM 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 |
|-----------------------------|----|---------|--------|
| 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

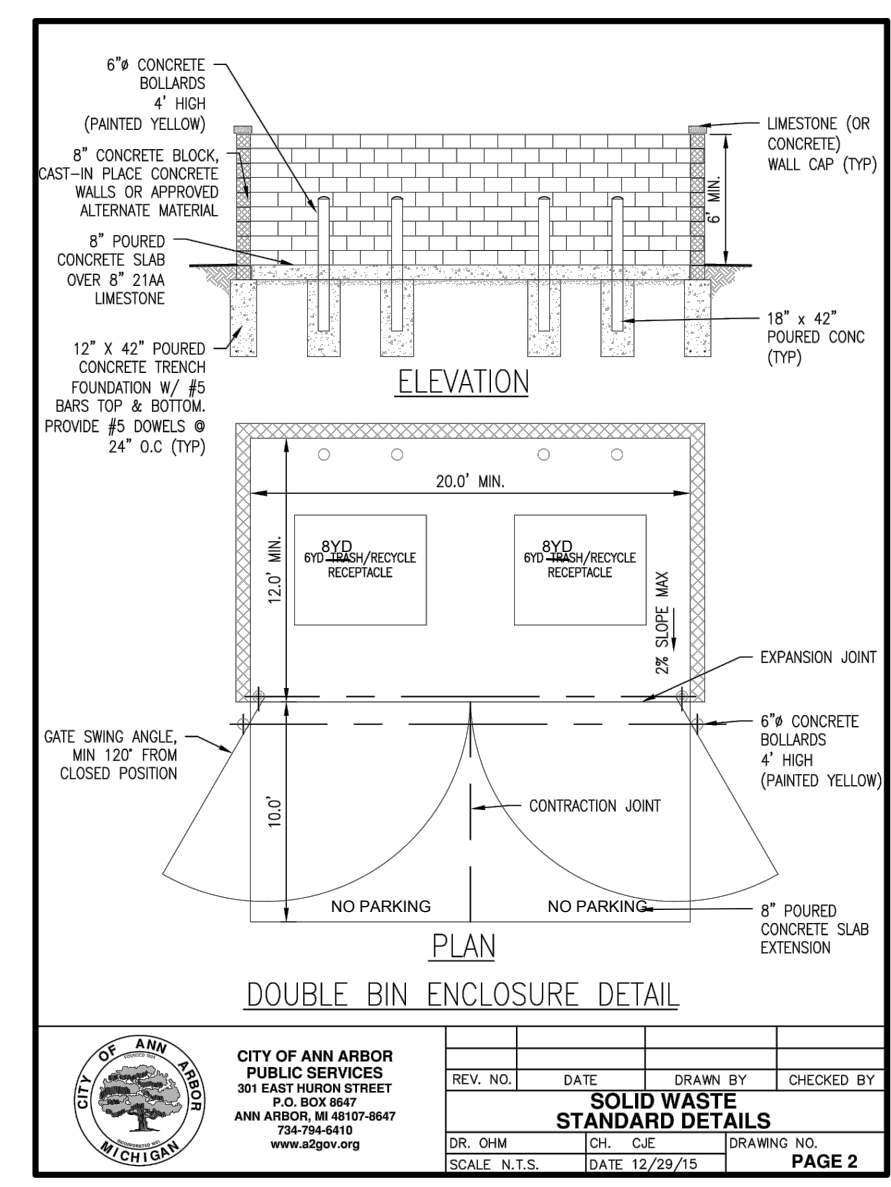
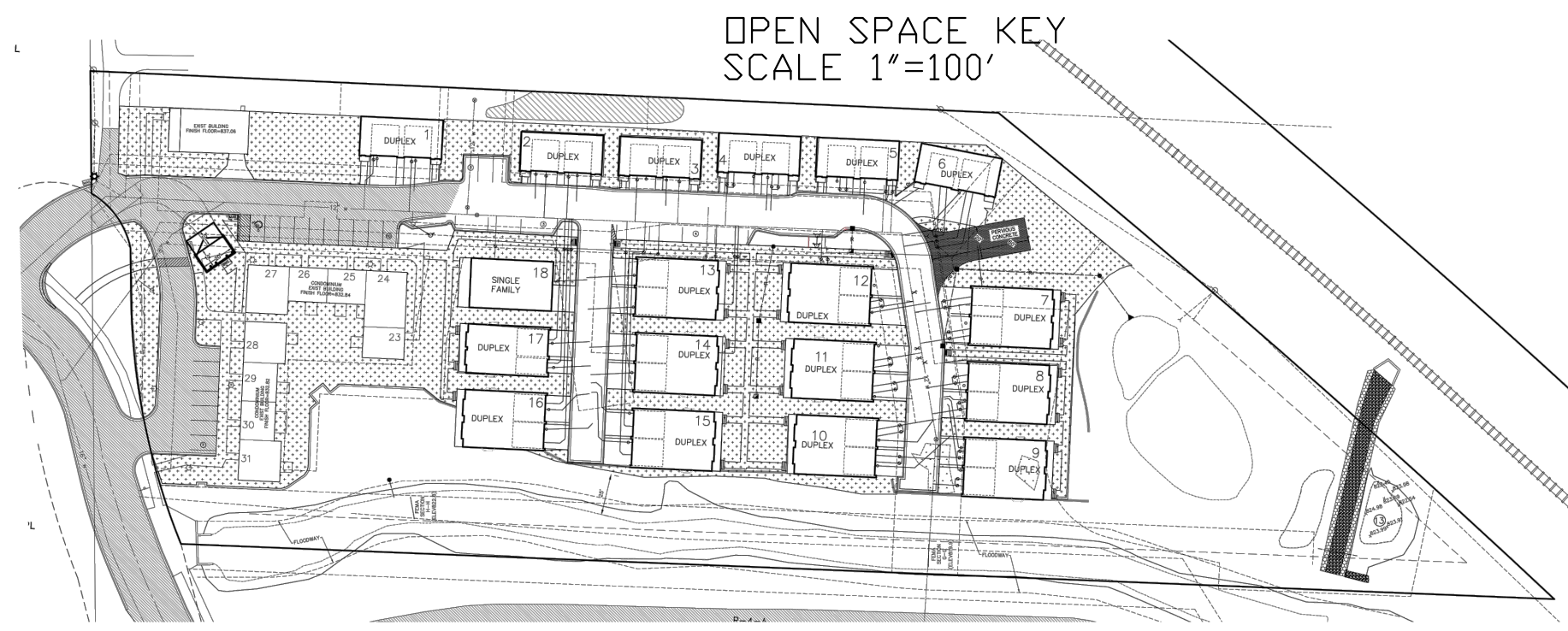
FIRE DEPARTMENT SEQUENCING NOTES:

- 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' |

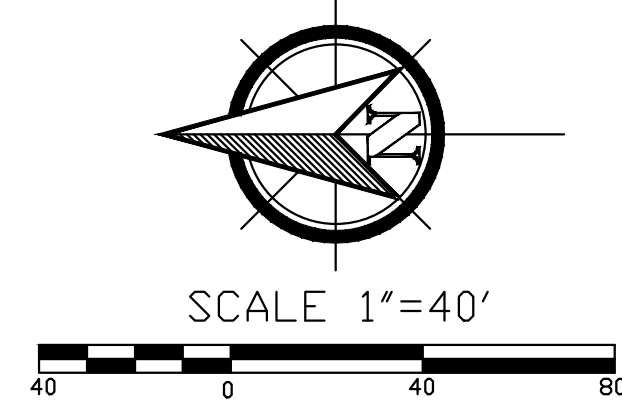
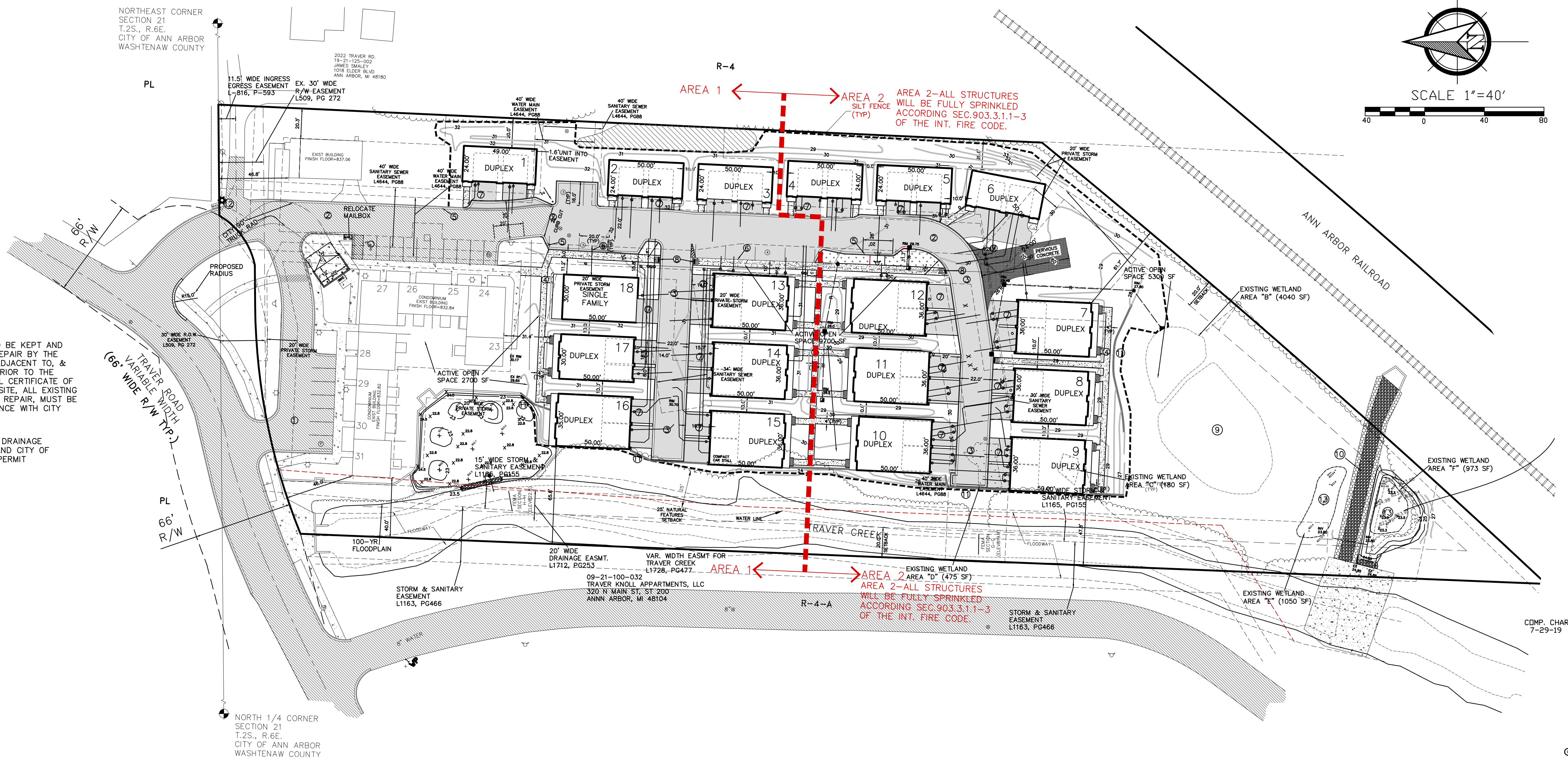
*From SE corner Unit 24 to rear prop line(S2)
** previous Planned Project approval
*** requesting Planned Project re-approval
**** 35 racks in garages and 2 bike lockers
***** Ex Home not part of project but used in density calculation.



- 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 SLAB 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 OPTIONS. THE CITY SHALL HAVE THE ABILITY TO MODIFY OR INTERPRET THESE DETAILS AS NECESSARY, TO ACCOMMODATE THE CITY OR CITY CONTRACTOR'S 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 40,000 LBS (GROSS VEHICLE WEIGHT) (GVW) AND SHALL BE PROVIDED WITH AN APPROVED SURFACE SO AS TO PROVIDE ALL WEATHER DRIVING CAPABILITIES. PROPERTY OWNERS 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, BACKLAYS OR OTHER OVERHEAD OBSTRUCTIONS.
- 11. IF FORWARD ACCESS TO A 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 PUSHED 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.

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.



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

AN AID TO THE CONTRACTOR...
...FOR ALL DAMAGE TO...
...DURING CONSTRUCTION...

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

DIMENSIONAL PLAN OVERALL
HIDEAWAY LANE CONDOMINIUM
HIDEAWAY LANE, CITY OF ANN ARBOR

ISSUE DATES

| |
|----------------------------|
| SITE PLAN 10-16-18 |
| SITE PLAN 12-11-18 |
| PER FIRE MARSHALL 01-21-19 |
| SITE PLAN 03-19-19 |
| SITE PLAN 5-16-19 |
| SITE PLAN 5-22-19 |
| SITE PLAN 6-18-19 |
| SITE PLAN 6-20-19 |
| 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
S5

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

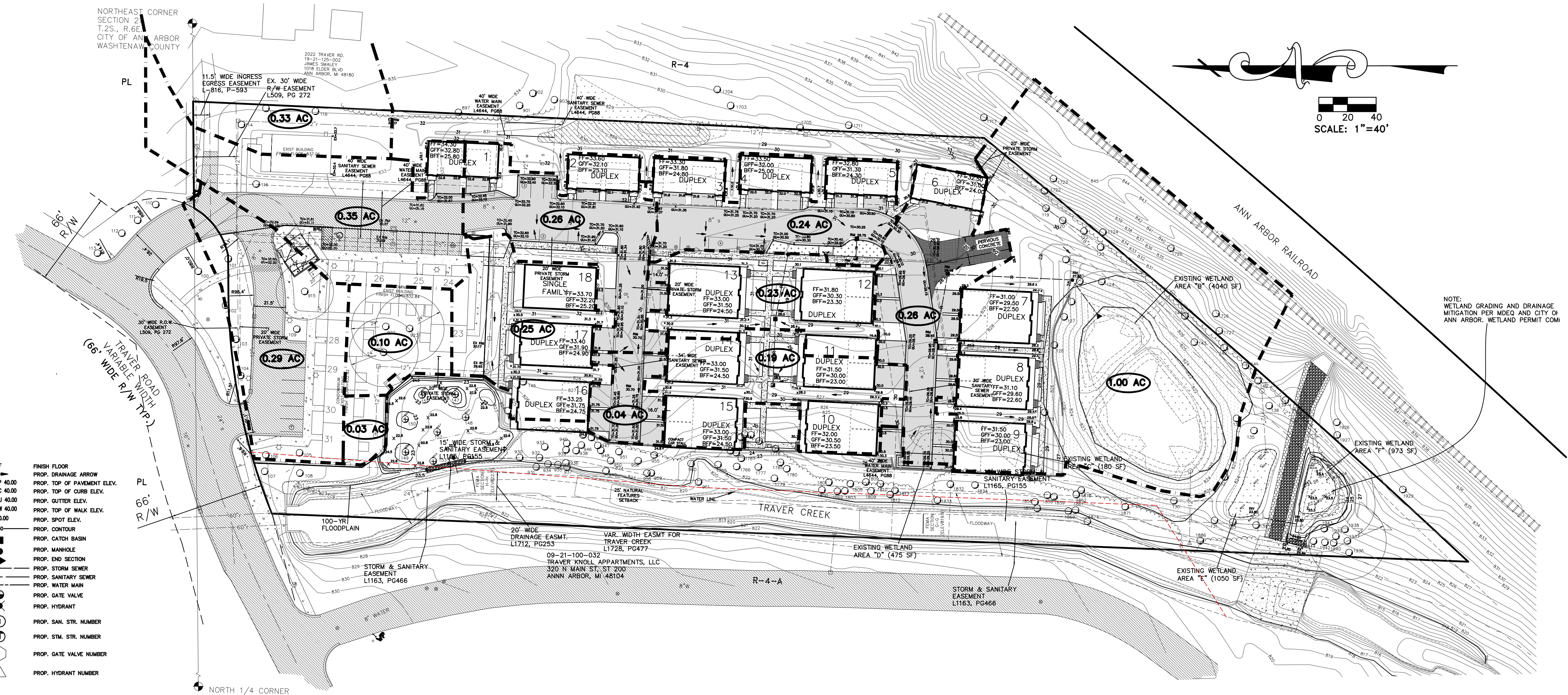
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

STORM MANAGEMENT PLAN
HIDEWAY LANE CONDOMINIUM
HIDEWAY LANE, CITY OF ANN ARBOR

ISSUE DATES

| | |
|--------------|----------|
| SITE PLAN | 08-10-18 |
| BASIN UPDATE | 12-2-18 |
| SITE PLAN | 3-19-19 |
| SITE PLAN | 5-6-19 |
| 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
S17



LEGEND

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

| | | |
|-----------------------------|--------|------------------|
| Qo = ((Qa)/(A)(Cr): | 0.21 | cfs/acre imperv. |
| T = -25 + ((10312.5/Qo)0.5: | 195.94 | min. |

Storage Volume Required:

| | | |
|-----------------------------------|----------|------------------|
| Vs = (16500(T)/(T+25)) - 40Qo(T): | 12977.15 | cf/ acre imperv. |
| Vt = (Vs)(A)(Cr): | 32,893 | cf |

First Flush Volume (Sedimentation Basin)

| | | |
|----------------------------------|-------|-------|
| Contributing Area (A): | 3.57 | acres |
| Coefficient of Runoff (Cr): | 0.71 | |
| V _{1ff} = 1815 * A * Cr | 4,600 | cf |

Bank Full Volume

| | | |
|----------------------------------|--------|-------|
| Contributing Area (A): | 3.57 | acres |
| Coefficient of Runoff (Cr): | 0.71 | |
| V _{1ff} = 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=SUM (A x C) / A = (1.80 x 0.95) + (1.54 x 0.40) + (0.08 x 0.60) + (0.15 x 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

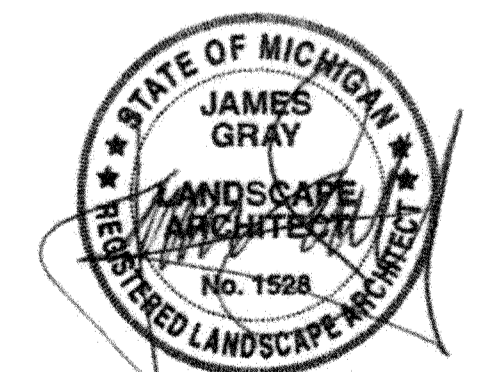
Project Sponsor:

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

Sheet Name:

Landscape Plan

Seal:



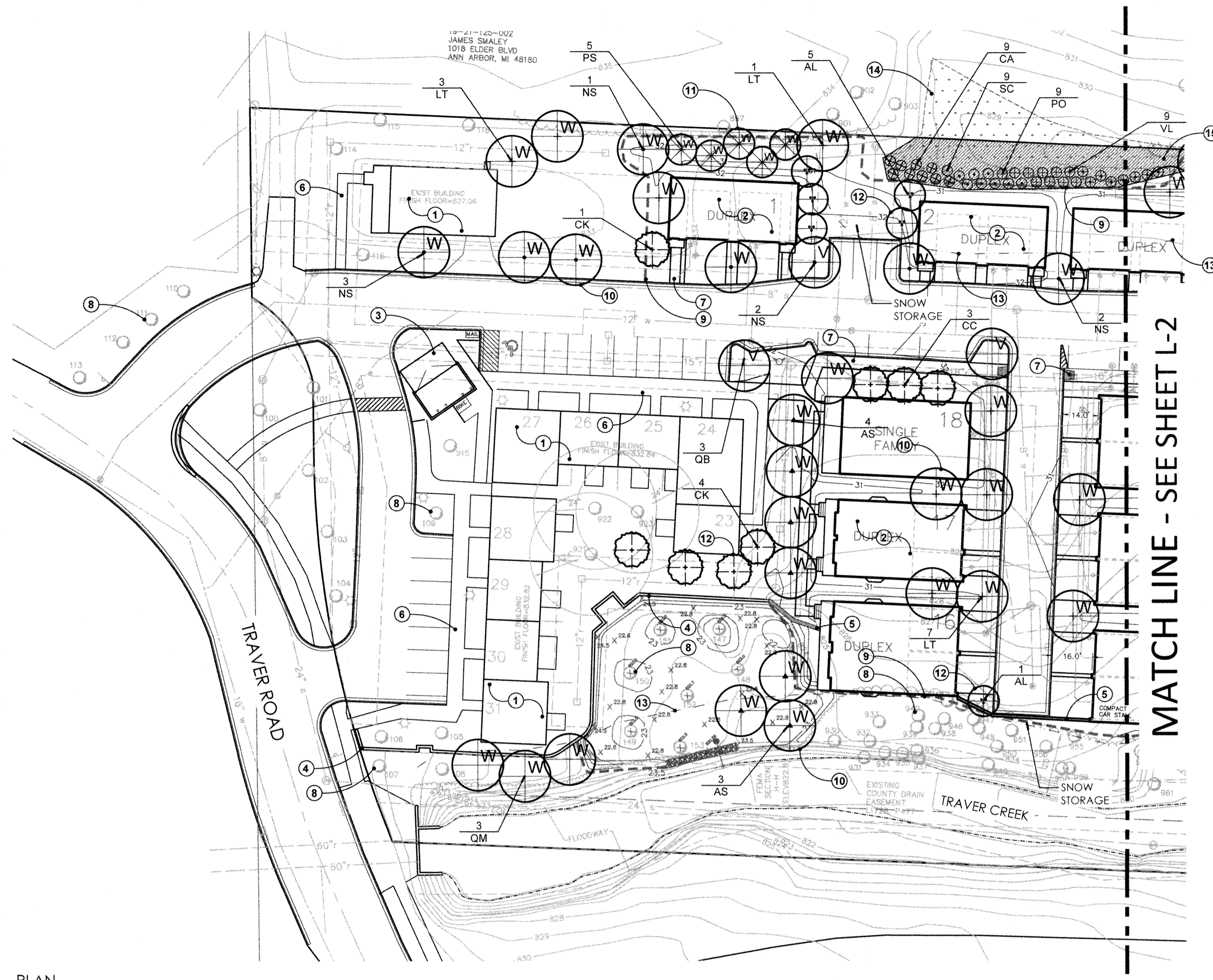
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Date: 08.06.2018
Scale: As Noted

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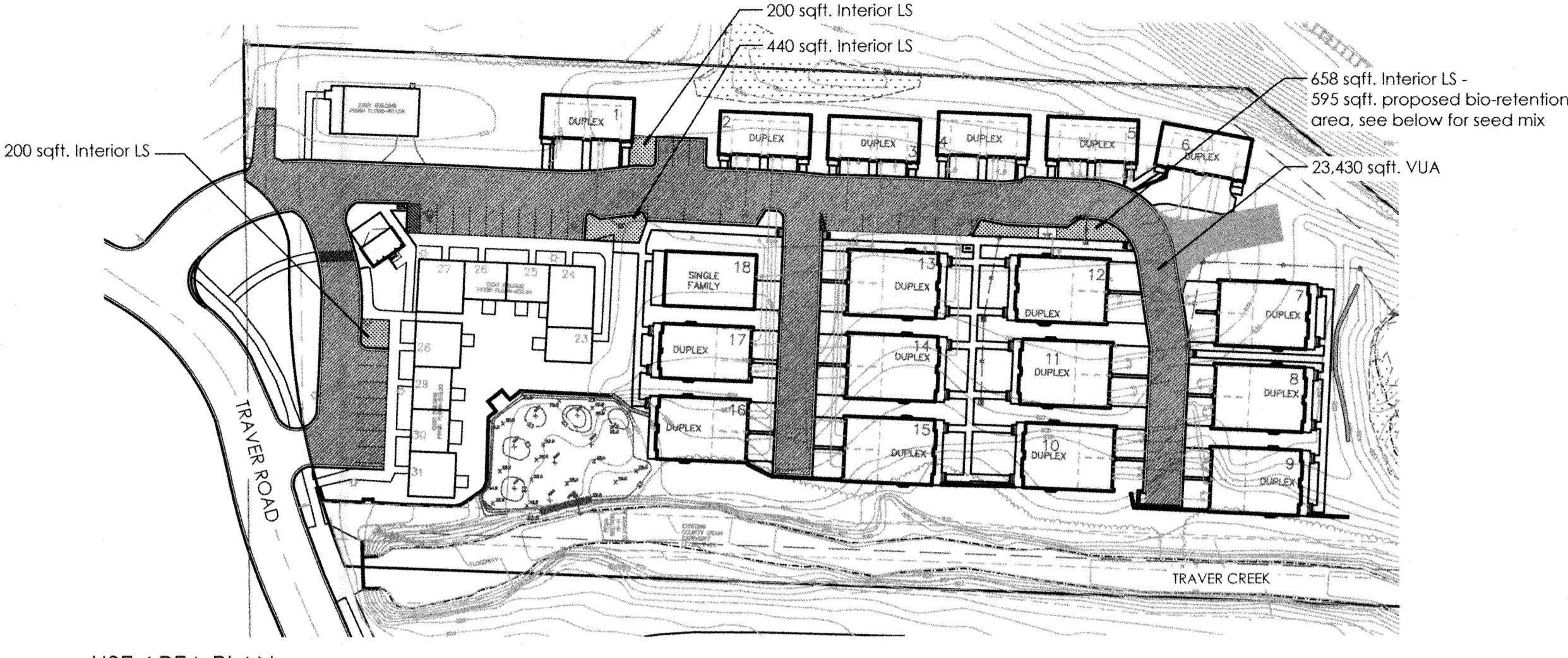
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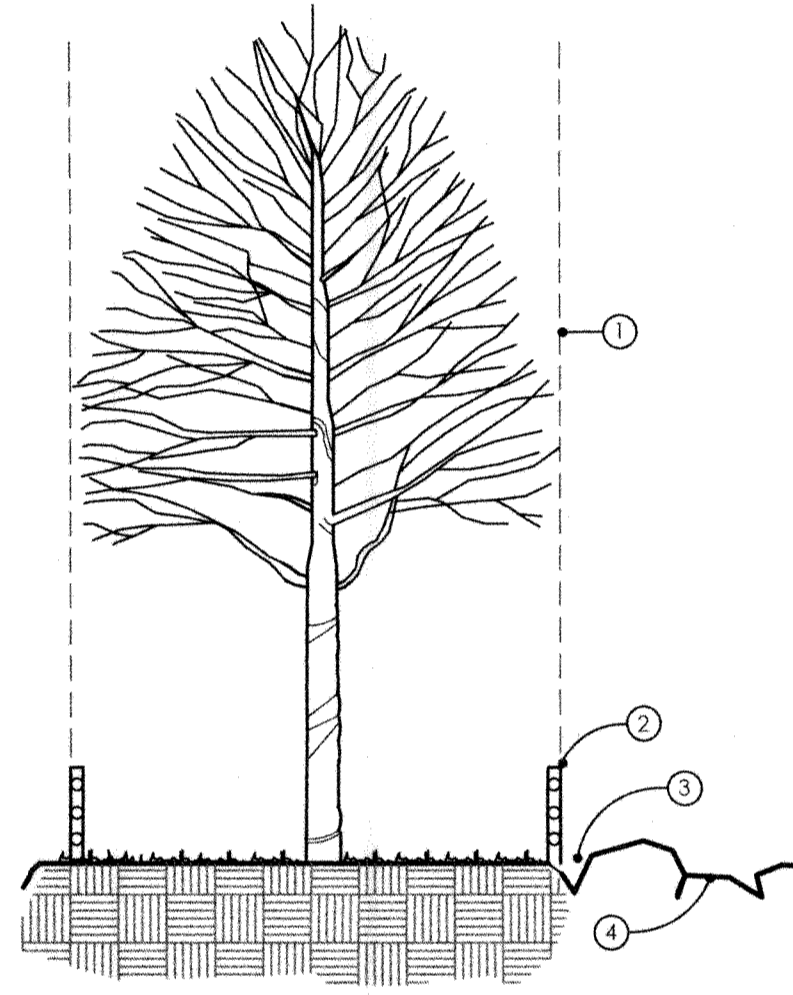
L-2



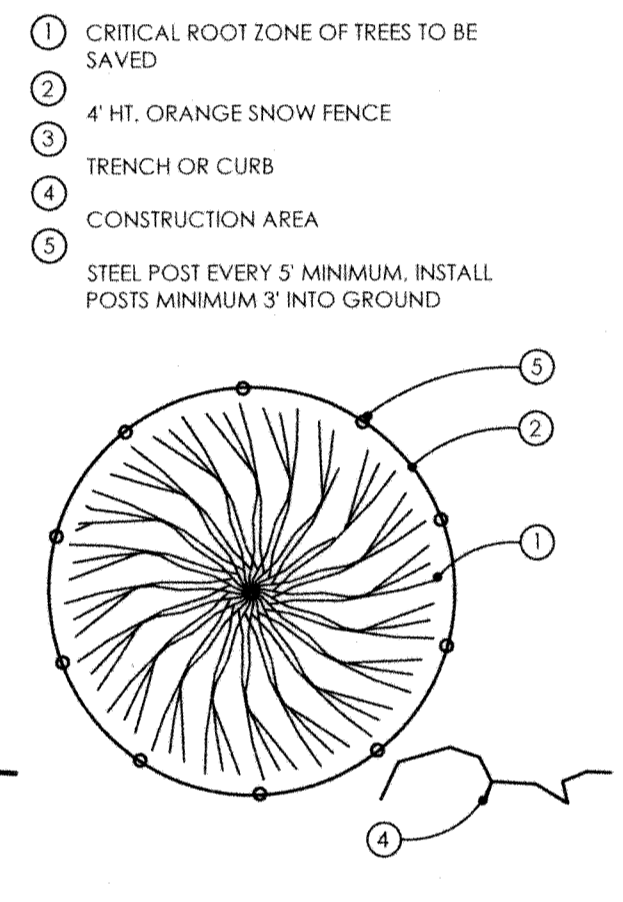
PLAN
SCALE: 1" = 30'-0"



USE AREA PLAN
NOT TO SCALE



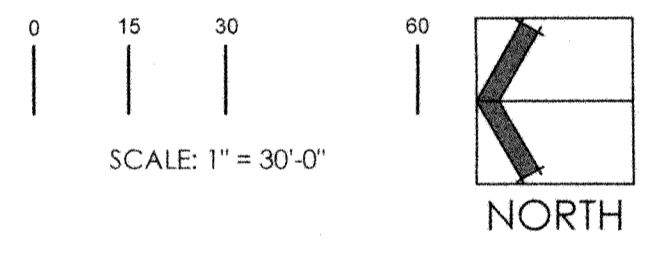
SECTION



PLAN

- 1 CRITICAL ROOT ZONE OF TREES TO BE SAVED
 - 2 4' HT. ORANGE SNOW FENCE
 - 3 TRENCH OR CURB
 - 4 CONSTRUCTION AREA
 - 5 STEEL POST EVERY 5' MINIMUM. INSTALL POSTS MINIMUM 3" INTO GROUND
- NOTES:
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:
 - A. NO SOLVENTS OR CHEMICALS WITHIN THE PROTECTED AREAS
 - B. NO BUILDING MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN THE PROTECTED AREAS
 - C. NO GRADE CHANGE SHALL OCCUR IN THE PROTECTED AREAS
 - D. NO REMOVAL OF VEGETATION FROM THE GROUND UP SHALL WITHOUT PERMISSION FROM THE PROPER AUTHORITY
 - E. 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.

1
L-1
TREE PROTECTION
NOT TO SCALE



SCALE: 1" = 30'-0"

NORTH

BIO-RETENTION SEED MIX

| Botanical Name | Common Name | PLB | Quinces/Acre |
|----------------------------------|-----------------------|---------------|--------------|
| Permanent Grasses/Sedges: | | | |
| <i>Andropogon gerardi</i> | Big Bluestem | 12.00 | |
| <i>Carex comosa</i> | Bristly Sedge | 2.00 | |
| <i>Carex cristata</i> | Crested Oval Sedge | 1.00 | |
| <i>Carex lunata</i> | Bobber's 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 Rye | 8.00 | |
| <i>Panicum virgatum</i> | Swamp Manna Grass | 1.00 | |
| <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 Rye | 100.00 | |
| | Total | 460.00 | |
| Forbs: | | | |
| <i>Achillea</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>Impatiens</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

1. 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.
2. 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.
3. 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.
4. PLANTS SHALL BE FULL, WELL-BRANCHED, AND IN HEALTHY VIGOROUS GROWING CONDITION.
5. PLANTS SHALL BE WATERED BEFORE AND AFTER PLANTING IS COMPLETE.
6. 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.
7. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED IN THE MOST RECENT EDITION OF THE "AMERICAN STANDARDS FOR NURSERY STOCK".
8. CONTRACTOR WILL SUPPLY FINISHED GRADE AND EXCAVATE AS NECESSARY TO SUPPLY PLANT MIX DEPTH IN ALL PLANTING BEDS AS INDICATED IN PLANT DETAILS.
9. 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 MANUFACTURER'S RECOMMENDED RATES.
11. 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.
12. 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.
13. NO SUBSTITUTIONS OR CHANGES OF LOCATION, OR PLANT TYPE SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE.
14. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO INSTALLATION.
15. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL IN A VERTICAL CONDITION THROUGHOUT THE GUARANTEED PERIOD.
16. 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.
17. 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.
18. ALL LANDSCAPE AREAS SHALL HAVE PROPER DRAINAGE THAT PREVENTS EXCESSIVE WATER FROM PONDING ON LAWN AREAS OR AROUND TREES AND SHRUBS.
19. 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

Bioretention Area Required: 586 sf. (1,172 sf. x 50%)
Bioretention 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:

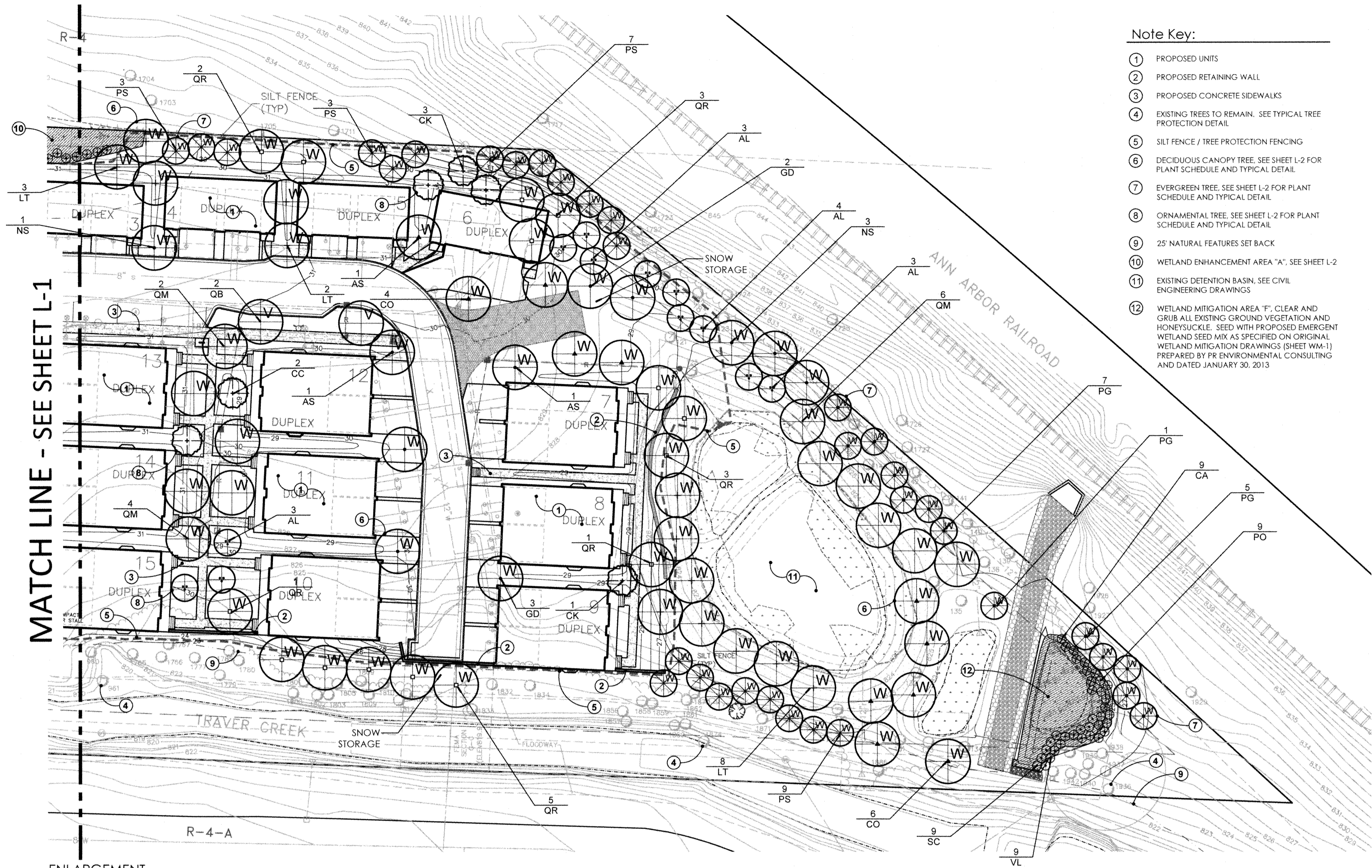
- 1 EXISTING UNITS
- 2 PROPOSED UNITS
- 3 PROPOSED DUMPSTER AND ENCLOSURE
- 4 EXISTING RETAINING WALL
- 5 PROPOSED RETAINING WALL
- 6 EXISTING CONCRETE SIDEWALKS
- 7 PROPOSED CONCRETE SIDEWALKS
- 8 EXISTING TREES TO REMAIN. SEE TYPICAL TREE PROTECTION DETAIL
- 9 SILT FENCE / TREE PROTECTION FENCING
- 10 DECIDUOUS CANOPY TREE. SEE SHEET L-2 FOR PLANT SCHEDULE AND TYPICAL DETAIL
- 11 EVERGREEN TREE. SEE SHEET L-2 FOR PLANT SCHEDULE AND TYPICAL DETAIL
- 12 ORNAMENTAL TREE. SEE SHEET L-2 FOR PLANT SCHEDULE AND TYPICAL DETAIL
- 13 25' NATURAL FEATURES SET BACK
- 14 EXISTING WETLAND TO REMAIN. PROTECT AS REQUIRED DURING CONSTRUCTION
- 15 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

NOT FOR CONSTRUCTION



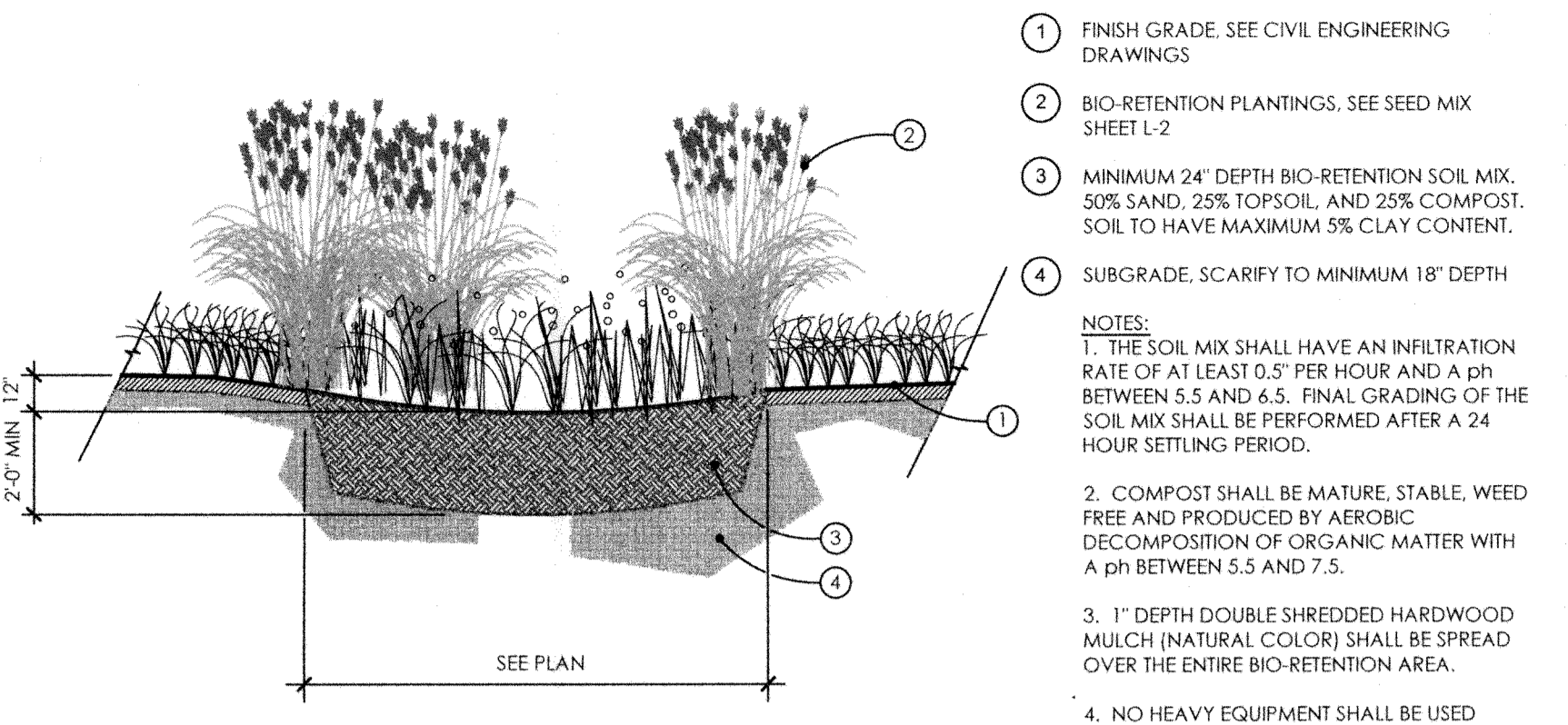
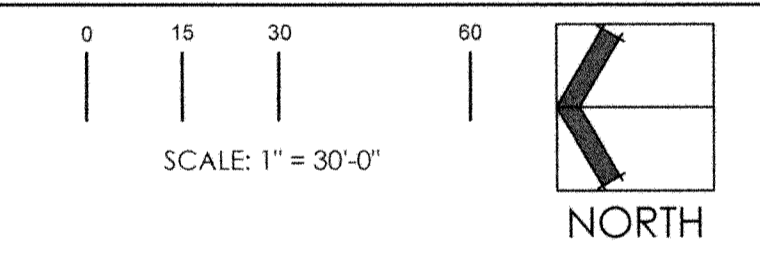
Note Key:

- 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

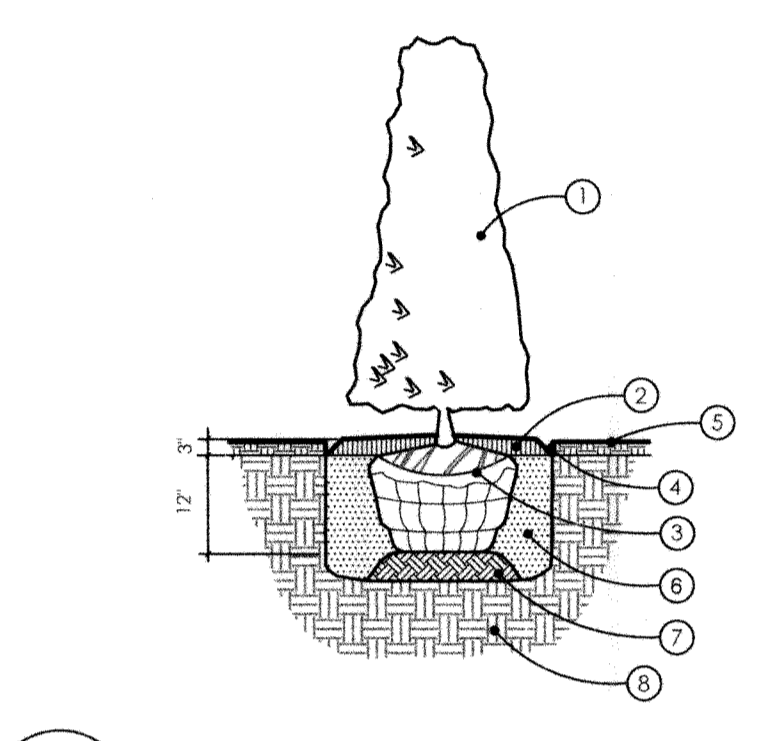


MATCH LINE - SEE SHEET L-1

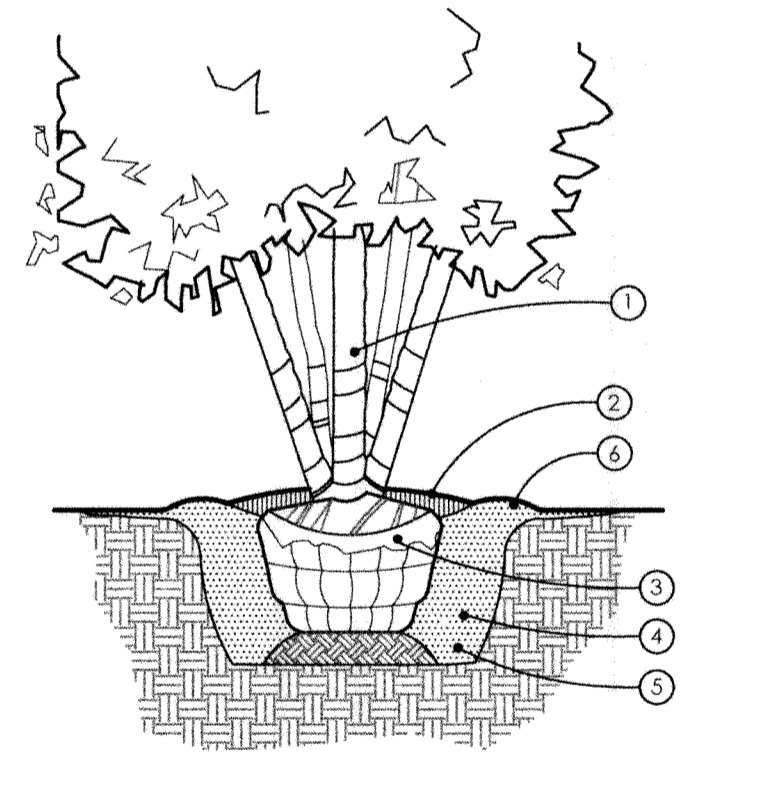
ENLARGEMENT
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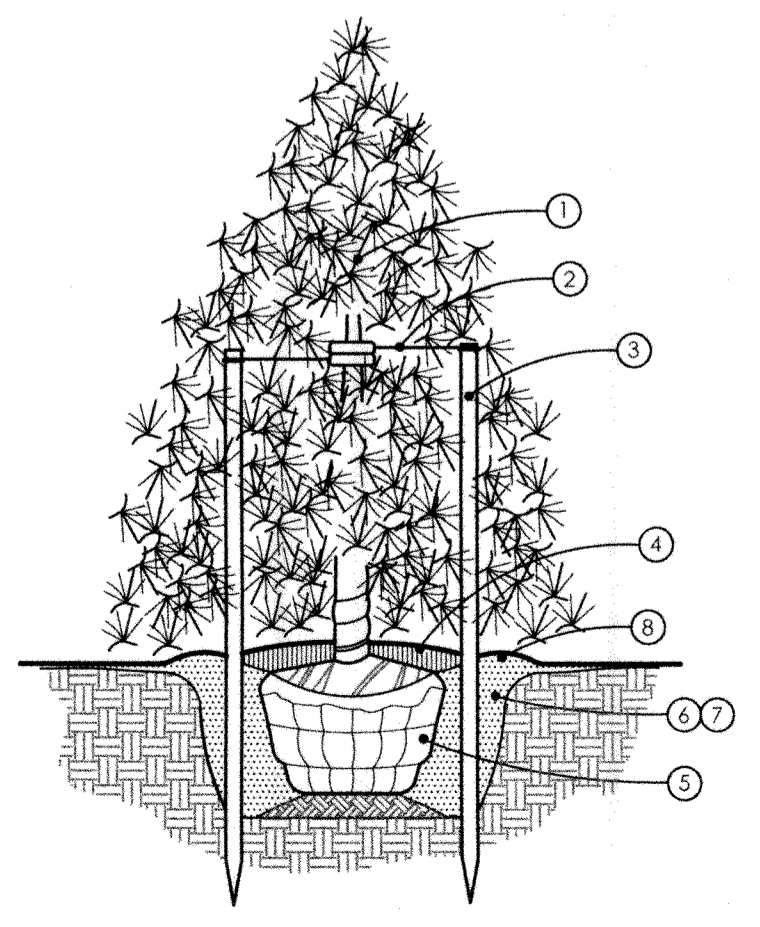
4 BIO-RETENTION DETAIL
NOT TO SCALE



3 HEDGE PLANTING
NOT TO SCALE



2 MULTISTEM TREE PLANTING
NOT TO SCALE

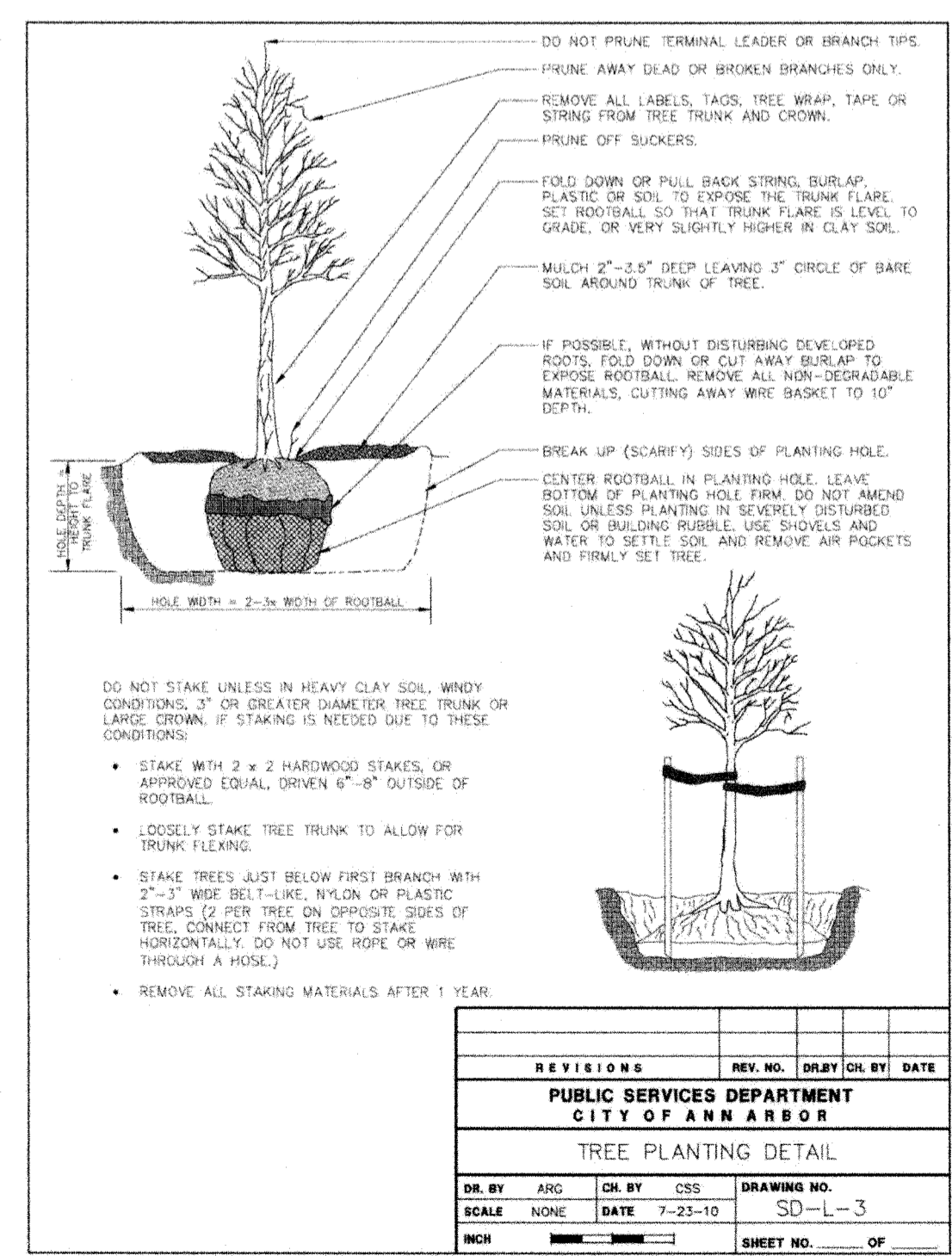


1 EVERGREEN TREE PLANTING
NOT TO SCALE

- NOTES:**
1. CONTRACTOR TO VERIFY PERCOLATION OF PLANTING FIT PRIOR TO INSTALLATION.
2. SET TOP OF ROOTBALL 3" ABOVE FINISH GRADE.
- 1 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

- 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 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

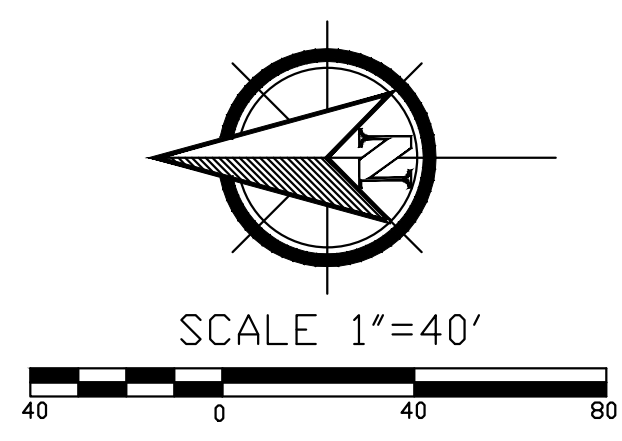


PLANT SCHEDULE

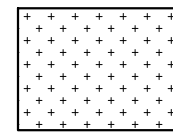
| Sym. | Qty. | Botanical Name | Common Name | Caliper | Spacing | Root | Height | Replacement Credits | Requirement Met |
|------|------|-------------------------|---------------------|---------|----------|------|---------|----------------------------|---------------------|
| AL | 18 | Amelanchier laevis | 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 dioicus | 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

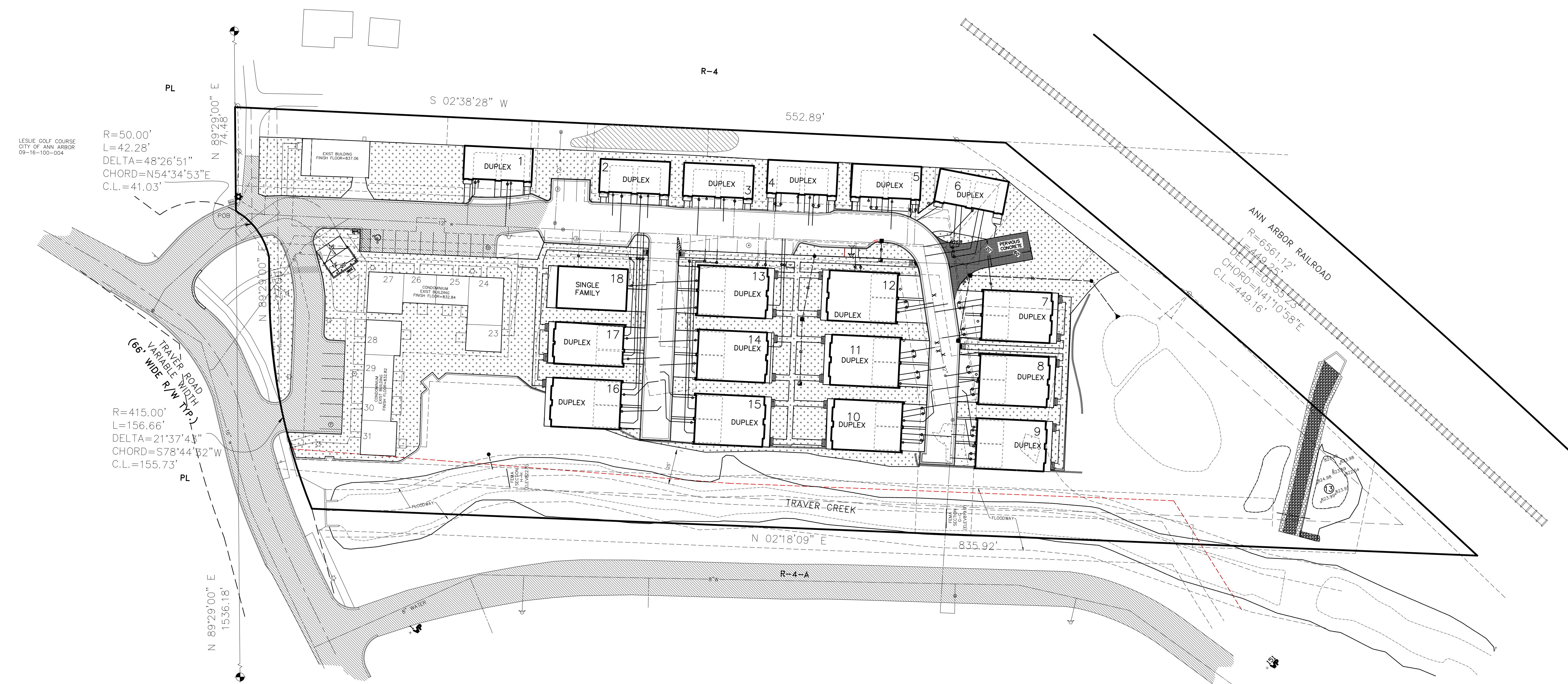




OPEN SPACE REQUIRED:
 45 UNITS X 300SF/UNIT = 13,500 SF

 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, MAJOR 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 RECORDED. 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.



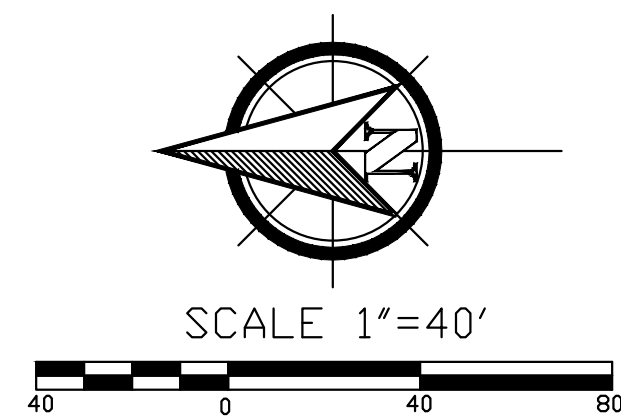
OPEN SPACE PLAN
 HIDEWAY LANE CONDOMINIUM
 HIDEWAY LANE, CITY OF ANN ARBOR

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

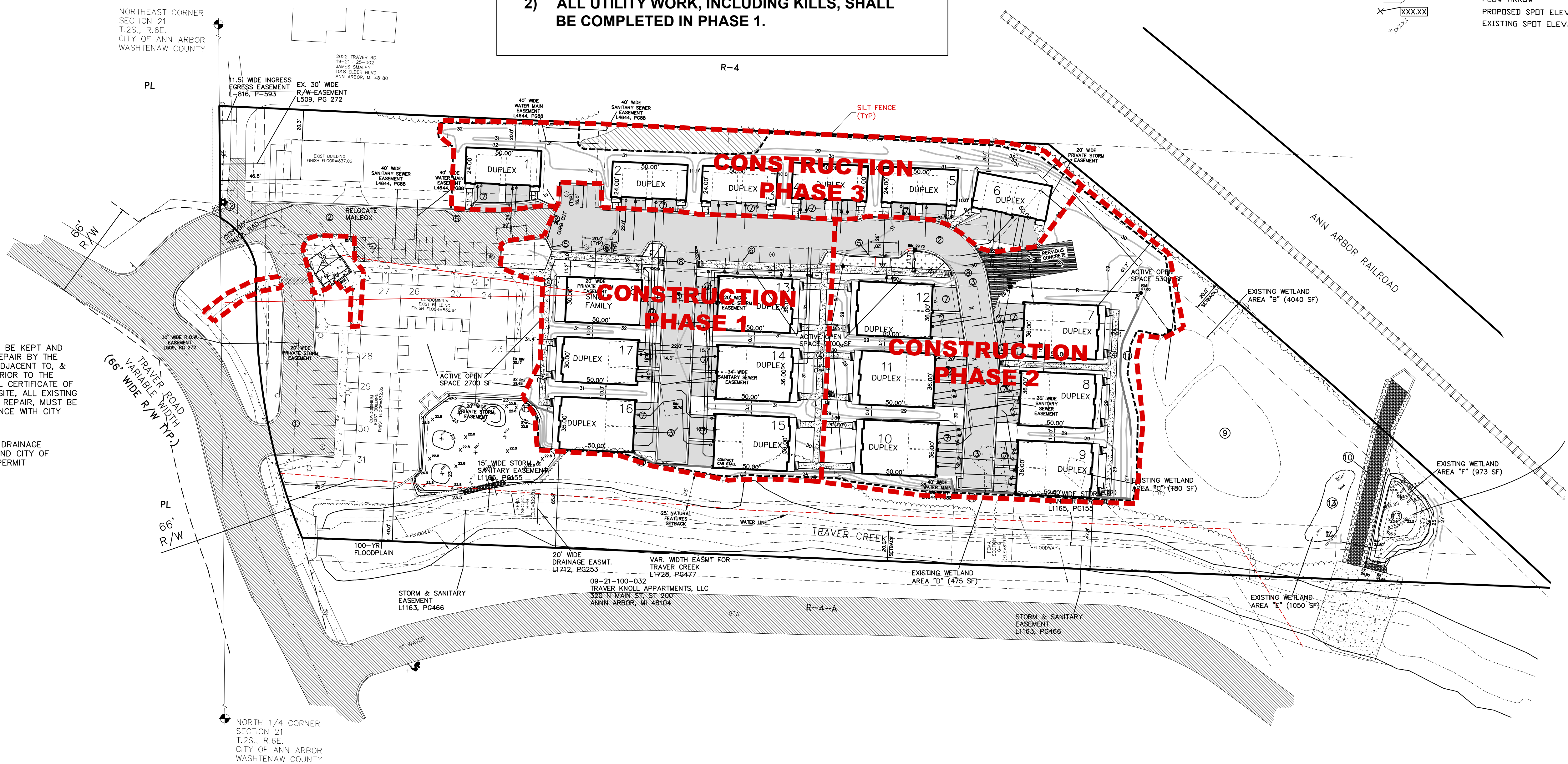
| | |
|--|--------------------------------------------|
| | EXISTING PROPERTY BOUNDARY |
| | EXISTING CONTOUR |
| | EXISTING OFFSITE PROPERTY BOUNDARY |
| | EXISTING EDGE OF PAVEMENT |
| | EXISTING WATERMAIN, HYDRANT AND GV |
| | EXISTING STORM SEWER, CATCH BASIN, MANHOLE |
| | EXISTING SANITARY, SANITARY MANHOLE |
| | EXISTING OFFSITE BUILDING |
| | PROPOSED BUILDING |
| | PROPOSED CONTOUR |
| | PROPOSED UTILITY EASEMENT |
| | PROPOSED CURB WITH REVERSE GUTTER |
| | PROPOSED EDGE OF PAVEMENT |
| | PROPOSED SANITARY SEWER, SANITARY MANHOLE |
| | PROPOSED STORM SEWER, CATCH BASIN, MANHOLE |
| | PROPOSED WATERMAIN, HYDRANT, GATE VALVE |
| | EXISTING ROAD PAVEMENT |
| | EXISTING CONCRETE WALK |
| | PROPOSED 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, VERTICAL UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING THE LOCATION AND DEPTH OF FIELD TIES AND AVAILABLE RECORDS, BUT THE OWNER AND ENGINEER DOES NOT GUARANTEE THE ACCURACY OF ANY ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES NOT BEING IDENTIFIED. IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES 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.

**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

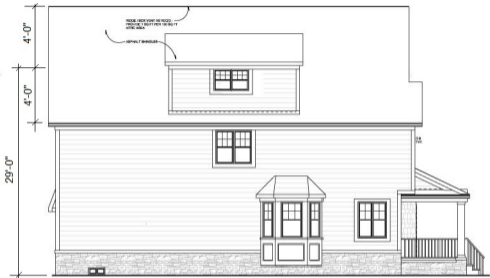
SCALE 1/4" = 1'-0"



SIDE ELEVATION

SCALE 1/4" = 1'-0"

HIDEAWAY DUPLEX 24' LAYOUT



HIDEAWAY DUPLEX
30' & 36' LAYOUT

