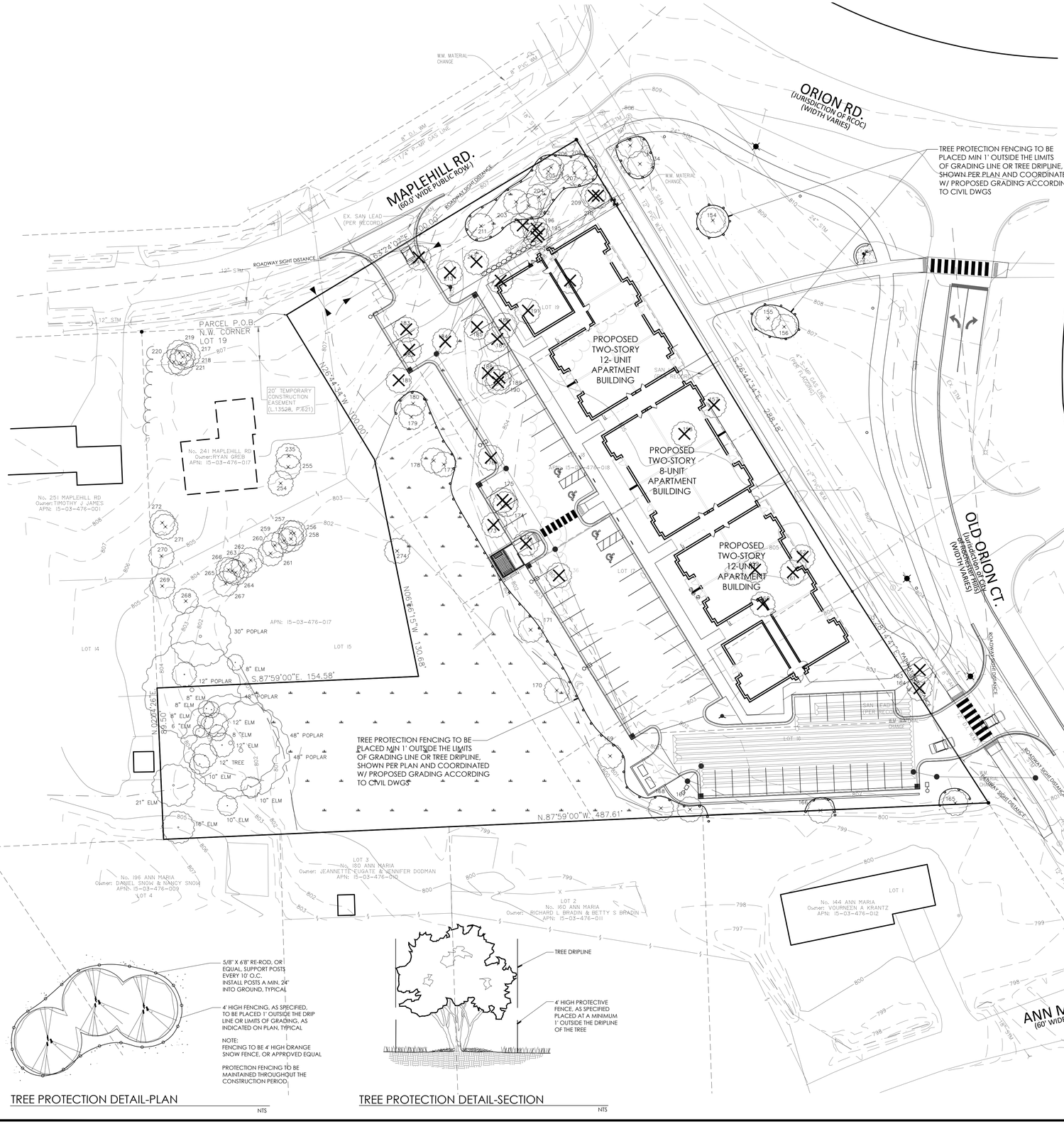






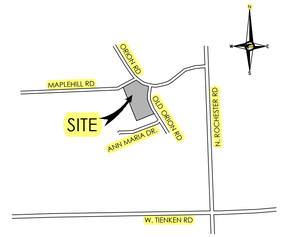
TREE PROTECTION DETAIL-PLAN

NTS




TREE PROTECTION DETAIL-SECTION

NTS




LOCATION MAP

N.T.S.

## TREE PRESERVATION SUMMARY:

| | |
|---|---|
| TOTAL NUMBER OF TREES SURVEYED: | 76 |
| LESS NUMBER OF DEAD TREES: | 1 |
| LESS NUMBER OF R.O.W. TREES: | 7 |
| NET TREES ON-SITE: | 68 |
| TOTAL REGULATED TREES TO BE REMOVED: | 30 |
| TOTAL SPECIMEN TREES TO BE REMOVED: | 5 (1 EXEMPT) |
| TOTAL TREES TO REMAIN: | 33 |
| MINIMUM PRESERVATION REQUIREMENT | |
| 68 TREES - 6 TREES IN BUILDING ENVELOPE = 62 X 40% = | 25 TREES NEED TO BE PRESERVED |
| | 33 TREES PROPOSED TO BE SAVED |
| TREE REPLACEMENT | |
| TOTAL REMOVALS: | 35 TREES |
| TOTAL REGULATED REPLACEMENT TREES REQUIRED: | 30 TREES |
| TOTAL SPECIMEN REPLACEMENT TREES REQUIRED (109" x 50% = 54.5/2"): | 28 TREES |
| LESS SPECIMEN CREDITS: | -1 TREES |
| TOTAL REPLACEMENT TREES REQUIRED: | 57 TREES |
| TOTAL REPLACEMENT TREES PROVIDED: | MONIES FOR 57 TREES TO BE PAID INTO TREE FUND ($334 X 57 = $19,038) |

TRP

## GENERAL TREE PROTECTION NOTES

1. APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL THE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
2. ALL UNDERSTORY VEGETATION WITHIN THE LIMITS OF PROTECTIVE FENCING SHALL BE PRESERVED.
3. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINE.
4. WHERE GROUPINGS OF TREES ARE TO REMAIN, TREE FENCING SHALL BE PLACED AT THE LIMITS OF GRADING LINE.
5. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY TREE SCHEDULED TO REMAIN.
6. ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
7. SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
8. TREES LOCATED ON ADJACENT PROPERTIES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
9. ROOT ZONES OF PROTECTED TREES SHOULD BE SURROUNDED WITH RIGIDLY STAKED FENCING.
10. THE PARKING OF IDLE AND RUNNING EQUIPMENT SHALL BE PROHIBITED UNDER THE DRIP LINE OF PROTECTED TREES.
11. THE STRIPPING OF TOPSOIL FROM AROUND PROTECTED TREES SHALL BE PROHIBITED.
12. ALL TREES TO BE REMOVED SHALL BE CUT AWAY FROM TREES TO REMAIN.
13. THE GRUBBING OF UNDERSTORY VEGETATION WITHIN CONSTRUCTION AREAS SHOULD BE CLEARED BY CUTTING VEGETATION AT THE GROUND WITH A CHAIN SAW OR MINIMALLY WITH A HYDRO-AXE.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT PER ORDINANCE GUIDELINES, FOR THE DAMAGE OR REMOVAL OF ANY TREE DESIGNATED TO REMAIN.
15. TREES TO BE REMOVED SHALL BE FIELD VERIFIED, EVALUATED AND FLAGGED FOR REMOVAL, BY THE LANDSCAPE ARCHITECT OR FORESTER, ONLY AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.

## PROTECTIVE FENCING NOTE:

TREE PROTECTION AND SILT FENCING, AS REVIEWED AND APPROVED BY CITY STAFF, SHALL BE INSTALLED PRIOR TO THE ISSUANCE OF THE LAND IMPROVEMENT PERMIT.

## LEGEND:

- TREES TO BE REMOVED
- TREES TO REMAIN
- TREE PROTECTION FENCING


NF ENGINEERS

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257


SEAL

PROJECT

Old Orion Court Development

CLIENT

Mark Bismack
5319 23 Mile Road
Shelby Township, MI 48306

Care of:
Krieger Klatt Architects
Contact: Mr. Jeff Klatt, AIA
Phone: (248) 414-9270
Email: Jeff@kriegerklatt.com

PROJECT LOCATION

Part of the SE ¼
of Section 3
T. 3N., R. 11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET

Tree Preservation Plan

811 Know what's below Call before you dig.

REVISIONS

04/24/24 SPA
07/15/24 SPA
11/06/24 REVISED PER CITY
01/13/25 SPA REV #2

DRAWN BY: G. Ostrowski
DESIGNED BY: G. Ostrowski
APPROVED BY: G. Ostrowski
DATE: January 9, 2024
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. K176-01
SHEET NO. L1

ROCHESTER HILLS MICHIGAN

JRMFD2023-0004
PSP2024-0008
Revision #2

Received 1/21/2025
City of Rochester Hills Planning & Economic Development

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to clarify - new trees should be generally maintained (water/mulch) in this location by developer. However, long term trimming will be completed by City to address public safety, etc. being that they are on the ROW.

## NOTE:

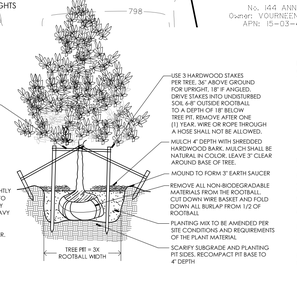
PRIOR APPROVAL IS REQUIRED TO PLANT ANY TREE OR SHRUB ON THE PUBLIC RIGHT-OF-WAY. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC ROAD. (TREES MUST BE PLANTED AT LEAST 15' AWAY FROM CURB OR ROAD EDGE WHERE THE SPEED IS MORE THAN 35 MPH.) SHADE TREES AND SHRUBS MUST BE PLANTED AT LEAST 5' FROM THE EDGE OF THE PUBLIC WALKWAY. EVERGREEN AND ORNAMENTAL TREES MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC WALKWAY. NO TREES OR SHRUBS MAY BE PLANTED WITHIN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY STREET RIGHT-OF-WAY LINES AT A DISTANCE ALONG EACH LINE OF 25' FROM THEIR POINT OF INTERSECTION. NO TREES OR SHRUBS MAY BE PLANTED IN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY DRIVEWAY WITH A PUBLIC WALKWAY AT A DISTANCE ALONG EACH LINE OF 15' FROM THEIR POINT OF INTERSECTION. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM ANY FIRE HYDRANT. SHADE AND EVERGREEN TREES MUST BE AT LEAST 15' AWAY FROM THE NEAREST OVERHEAD WIRE. TREES MUST BE PLANTED A MINIMUM OF 5' FROM AN UNDERGROUND UTILITY, UNLESS THE CITY'S LANDSCAPE ARCHITECT REQUIRES A GREATER DISTANCE.

PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS FORESTRY DIVISION NEEDS TO INSPECT ALL TREES, EXISTING OR PLANTED, TO IDENTIFY ANY THAT POSE A HAZARD TO THE SAFE USE OF THE PUBLIC RIGHT-OF-WAY. FORESTRY MAY REQUIRE THE DEVELOPER TO REMOVE, AND POSSIBLY REPLACE, ANY SUCH TREES.

THESE REQUIREMENTS ARE INCORPORATED INTO THE PLAN.

## CITY MAINTENANCE NOTES:

1. LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.
2. PRUNING SHALL BE MINIMAL AT THE TIME OF INSTALLATION, ONLY TO REMOVE DEAD AND DISEASED BRANCHES. SUBSEQUENT PRUNING SHALL ASSUME PROPER MATURATION OF PLANTS TO ACHIEVE THEIR APPROVED PURPOSE.
3. ALL DEAD, DISEASED PLANT MATERIAL SHALL BE REMOVED IMMEDIATELY AND REPLACED WITHIN SIX (6) MONTHS AFTER IT DIES, OR IN THE NEXT PLANTING SEASON, WHICHEVER OCCURS FIRST. FOR PURPOSES OF THIS SECTION, THE PLANTING SEASON FOR DECIDUOUS PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1. PLANT MATERIAL INSTALLED TO REPLACE DEAD OR DISEASED MATERIAL SHALL BE AS CLOSE AS PRACTICAL TO THE SIZE OF THE MATERIAL IT IS INTENDED TO REPLACE. THE CITY MAY NOTIFY PROPERTY OWNERS OF THE NEED TO REPLACE DEAD, DAMAGED, OR DISEASED MATERIAL.
4. THE APPROVED LANDSCAPE PLAN SHALL BE CONSIDERED A PERMANENT RECORD AND INTEGRAL PART OF THE SITE PLAN APPROVAL. UNLESS OTHERWISE APPROVED IN ACCORDANCE WITH THE AFOREMENTIONED PROCEDURES, ANY REVISIONS TO, OR REMOVAL OF PLANT MATERIALS, NON-COMPLIANCE WITH THE MAINTENANCE REQUIREMENTS OF THIS SECTION 138-12.109 WILL PLACE THE PARCEL IN NON-CONFORMITY WITH THE APPROVED LANDSCAPE PLAN AND BE A VIOLATION OF THIS ORDINANCE.
5. IF PROTECTED TREES ARE DAMAGED, A FINE SHALL BE ISSUED ON AN INCH-BY-INCH BASIS AT A MONETARY RATE AS DEFINED BY THE FORESTRY DEPARTMENT.

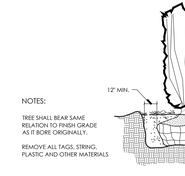



DECIDUOUS TREE PLANTING DETAIL

NTS

EVERGREEN TREE PLANTING DETAIL

NTS




UPRIGHT EVERGREEN SHRUB PLANTING DETAIL

NTS

## LANDSCAPE REQUIREMENTS

EXISTING SITE AREA: 90,529.37 S.F. OR 2.08 ACRES

FRONTAGE LANDSCAPE (F)
2 DECIDUOUS TREES, 4 ORNAMENTAL TREES AND 12 SHRUBS PER 100 L.F.
MAPLEHILL: 172.98 L.F.
REQUIRED: 4 DECIDUOUS TREES, 7 ORNAMENTAL TREES AND 21 SHRUBS
PROVIDED: 6 EXISTING TREES, 7 ORNAMENTAL TREES AND 26 SHRUBS, 30 GRASSES

ORION COURT: 461.16 L.F.
REQUIRED: 9 DECIDUOUS TREES, 18 ORNAMENTAL TREES, AND 55 SHRUBS
PROVIDED: 7 DECIDUOUS TREES, 2 EXISTING, 18 ORNAMENTAL TREES, AND 60 SHRUBS

BUFFER REQUIREMENT (B)
TYPE 'C' SOUTH PROPERTY LINE: 197 L.F.
2 DECIDUOUS TREES, 1.5 ORNAMENTAL TREES,
4 EVERGREEN TREES AND 6 SHRUBS PER 100 L.F.
REQUIRED: 4 DECIDUOUS TREES, 3 ORNAMENTAL TREES, 8 EVERGREENS AND 12 SHRUBS
PROVIDED: PROPOSED 48" HT SCREEN/RETAINING WALL, 4 EXISTING TREES, 6 DECIDUOUS TREES AND 32 SHRUBS

TYPE 'C' WEST PROPERTY LINE: 320.18 L.F.
2 DECIDUOUS TREES, 1.5 ORNAMENTAL TREES,
4 EVERGREEN TREES AND 6 SHRUBS PER 100 L.F.
REQUIRED: 6 DECIDUOUS TREES, 5 ORNAMENTAL TREES, 13 EVERGREENS AND 19 SHRUBS
PROVIDED: 7 EXISTING TREES, 13 EVERGREEN AND 5 ORNAMENTAL, 37 SHRUBS

R.O.W. LANDSCAPE REQUIREMENTS (R)
1 DECIDUOUS PER 35 L.F. + ORNAMENTAL PER 60 L.F.
MAPLEHILL: 200 L.F.
200 L.F. / 35 L.F. = 5.7 OR 6 CANOPY TREES
200 L.F. / 60 L.F. = 3.33 OR 3 ORNAMENTAL TREES
PROVIDED: 6 CANOPY AND 3 ORNAMENTAL TREES PROVIDED ALONG PARKING ON-SITE DUE TO EXISTING DITCH AND UTILITIES

ORION COURT: 461.16 L.F.
461.16 L.F. / 35 L.F. = 13.18 OR 13 CANOPY TREES
461.16 L.F. / 60 L.F. = 7.7 OR 8 ORNAMENTAL TREES
PROVIDED: 3 EXISTING TREES, 10 CANOPY TREES, 2 EXISTING ORNAMENTAL TREES, 6 ORNAMENTAL TREES

PARKING INTERIOR LANDSCAPE (I)
REQUIRED: 5% OF THE PARKING LOT SHALL BE LANDSCAPED WITH 1 TREE PER 150 S.F.
REQUIRED AREA: 23,640.48 S.F. X 5% = 1,182 S.F.
1,182 S.F. / 150 S.F. = 7.88 OR 8 TREES REQUIRED
PROVIDED: 8 TREES

STORMWATER BASIN LANDSCAPE
N/A WITH UNDERGROUND SYSTEM

PCM

NOTE:
A PLANNING COMMISSION MODIFICATION IS REQUESTED FOR THE REQUIRED TYPE 'C' 20' WIDE BUFFER. THE BUFFER MODIFICATION IS REQUESTED TO ACCOMMODATE THE PROPOSED UNDERGROUND DETENTION SYSTEM AND REQUIRED PARKING ON-SITE AND EXISTING GRADE DIFFERENTIAL, IN LIEU OF THE REQUIRED BUFFER, A RETAINING IS PROPOSED WHICH WILL EXTEND 4' HIGH ABOVE THE TOP OF CURB ELEVATION, IN ORDER TO SCREEN HEADLIGHTS. IN ADDITION, THE AREA WILL BE HEAVILY PLANTED WITH EVERGREEN TREES AND NARROW CANOPY TREES, TO FURTHER SCREEN THE SITE, FROM NEIGHBORING PROPERTIES

## GENERAL SEED NOTE:

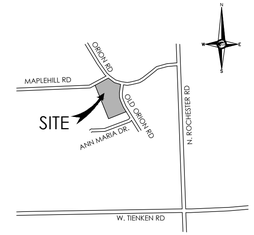
ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDRO-SEEDED WITH SPECIFIED BLENDS, AND STABILIZED WITH WOOD CELLULOSE FIBER MULCH (2,000 LBS PER ACRE) . IN AREAS SUBJECT TO EROSION, SEEDED LAWN SHALL BE FURTHER STABILIZED WHERE NECESSARY WITH BIODEGRADABLE EROSION BLANKET AND STAKED UNTIL ESTABLISHED. ALL SEED SHALL BE APPLIED OVER A MINIMUM 3" PREPARED TOPSOIL, AND SHALL BE KEPT MOIST AND WATERED DAILY UNTIL ESTABLISHED.
SEEDING INSTALLATION SHALL OCCUR ONLY:
SPRING: APRIL1 TO JUNE1
FALL: AUGUST 15 TO OCTOBER 15

## PLANT SCHEDULE

| KEY | QTY | BOTANICAL/COMMON NAME | SIZE | SPACING | ROOT | COMMENT | UNIT /TOTAL COST |
|---|---|---|---|---|---|---|---|
| TREES | | | | | | | |
| AL | 5 | Amelanchier laevis 'Allegheny Serviceberry | 6-8' HT | SEE PLAN | B&B | CLUMP FORM, 3 CANES | $275/$1,375 |
| CO | 12 | Cellis occidentalis 'Prairie Sentinel' Prairie Sentinel Hackberry | 3" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $325/$3,900 |
| CC | 10 | Cercis canadensis 'Forest Pansy' Forest Pansy Redbud | 3" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $325/$3,250 |
| CK | 7 | Cornus kousa chinensis Kousa Dogwood | 2" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $275/$1,925 |
| GB | 7 | Ginkgo biloba 'Princeton Sentry' Princeton Sentry Gingko | 3" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $325/$2,275 |
| GT | 2 | Gleditsia triacanthos 'StreetKeeper' Street Keeper Honey Locust | 3" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $325/$650 |
| MS | 3 | Magnolia stellata 'Royal Star' Royal Star Magnolia | 2" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $275/$825 |
| MA | 18 | Malus 'Adirondack' Adirondack Crabapple | 2" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $275/$4,950 |
| NS | 8 | Nyssa sylvatica 'Red Rage' Red Rage Black Tupelo | 3" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $325/$2,600 |
| PG | 7 | Picea glauca 'Densata' Black Hills Spruce | 10' HT | SEE PLAN | B&B | FULLY BRANCHED HEADS | $350/$2,450 |
| TD | 6 | Taxodium distiucm Bald Cypress | 3" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $325/$1,950 |
| TA | 8 | Tilia americana 'McKSentry' American Sentry Linden | 3" CAL | SEE PLAN | B&B | FULLY BRANCHED HEADS | $325/$2,600 |
| SHRUBS | | | | | | | |
| CS | 18 | Cornus sericea 'Arctic Fire' Arctic Fire Dogwood | 30" HT | 30" OC | CONT | | $50/$900 |
| DL | 98 | Diervilla lonicera 'Michigan Sunset' Dwarf Bronzeleaf Honeysuckle | 5 GAL | 30" OC | CONT | | $50/$4,900 |
| IG | 157 | Ilex glabra 'Strongbox' Strongbox Holly | 30" HT | 30" OC | B&B | | $75/$11,775 |
| RK | 48 | Rosa 'Double Knockout' Double Knockout Red Rose | 5 GAL | 30" OC | CONT | | $50/$2,400 |
| TO | 16 | Thuja occidentalis 'DeGroot's Spire' DeGroot's Spire Arborvitae | 5' HT | 4' OC | B&B | | $75/$1,200 |
| TP | 48 | Thuja x plicatum 'Green Giant' Green Giant Arborvitae | 6-8' HT | 5' OC | B&B | | $75/$3,600 |
| GROUNDCOVERS/PERENNIALS | | | | | | | |
| CA | 36 | Calamagrostis a. 'Karl Foerster' Karl Foerster Feather Reed Grass | 3 GAL | 30" OC | CONT | | $30/$1,080 |
| HM | 54 | Hakonechloa macra Japanese Forest Grass | 2 GAL | 30" OC | CONT | | $30/$1,620 |
| HS | 80 | Hemerocallis 'Happy Returns' Happy Returns Daylily | 2 GAL | 30" OC | CONT | | $15/$1,200 |
| GROUNDCOVERS/PERENNIALS | | | | | | | |
| SEED1 | 5,778 | HYDROSEED AND MULCH | SY | | | | $4/23,112 |
| SEED2 | 2,400 | ECO-TURF LOW MAINTENANCE SEED MIX | SF | | | | $65/$156 |
| IRR | 1 LS | COMPLETE IRRIGATION SYSTEM, INSTALLED | LS | | | | $15,000 |
| | | | | | | TOTAL COST | $95,693.00 |

## ECO-TURF LOW MAINTENANCE FESCUE MIX:

ALL LAWN AREAS DESIGNATED TO BE SEEDED SHALL BE DONE SO WITH LOW-GROW LAWN SEED MIX, AT A RATE OF 7 LBS/1,000 S.F.
SEED AVAILABLE FROM:
MICHIGAN WILDFLOWER FARM
(T) 1-517-647-6010
* MIX IS COMPRISED OF A MIX OF FIVE (5) FESCUE VARIETIES SUITABLE FOR SUN/SHADE




LOCATION MAP N.T.S.

## IRRIGATION NOTE:

ALL LANDSCAPE AREAS, INCLUDING THOSE WITHIN THE R.O.W, SHALL BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. THE SYSTEM SHALL OPERATE IN COMPLIANCE WITH LOCAL STANDARDS AND SEASONAL RESTRICTIONS. SEPARATE ZONES SHALL BE PROVIDED FOR LAWN AREAS AND PLANTING BEDS. IRRIGATION SHALL BE DESIGNED IN THE MOST EFFICIENT MANNER NECESSARY TO FULLY IRRIGATE ALL PLANTING AREAS. OVERSPRAY ONTO CITY ROADS OR PATHWAYS IS PROHIBITED.

## KEY LEGEND

1. TYPICAL SEED LAWN AREAS, SOWN ON 3" TOPSOIL
2. RESTORE DISTURBED AREAS W/ ECO-TURF LOW MAINTENANCE MIX
3. 4' DIA SPADE CUT EDGE W/ 3" SHREDDED BARK MULCH
4. 4" DEPTH DOUBLE SHREDDED HARDWOOD BARK MULCH
5. PUBLIC PLAZA W/ 24" SEATWALL AND BIKE REPAIR STATION
6. 5' LONG GROUND MOUNT PARK BENCH, 4 TOTAL
7. RETAINING WALL W/ 36" WALL ABOVE PARKING LOT GRADE
8. SNOW PILING AREA TO BE COORDINATED WITH SNOW REMOVAL CONTRACTOR


NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257


SEAL

PROJECT
Old Orion Court Development

CLIENT
Mark Bismack
5319 23 Mile Road
Shelby Township, MI 48306

Care of:
Krieger Klatt Architects
Contact: Mr. Jeff Klatt, AIA
Phone: (248) 414-9270
Email: Jeff@kriegerklatt.com

PROJECT LOCATION
Part of the SE ¼ of Section 3 T. 3N., R. 11E. City of Rochester Hills, Oakland County, Michigan

SHEET
Landscape Plan

811 Know what's below Call before you dig.

REVISIONS
04/24/24 SPA
07/15/24 SPA
11/06/24 REVISED PER CITY
01/13/25 SPA REV #2

DRAWN BY: G. Ostrowski
DESIGNED BY: G. Ostrowski
APPROVED BY: G. Ostrowski
DATE: January 9, 2024
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30 15 0 15 30 45

NFE JOB NO. K176-01
SHEET NO. L2

ROCHESTER HILLS MICHIGAN
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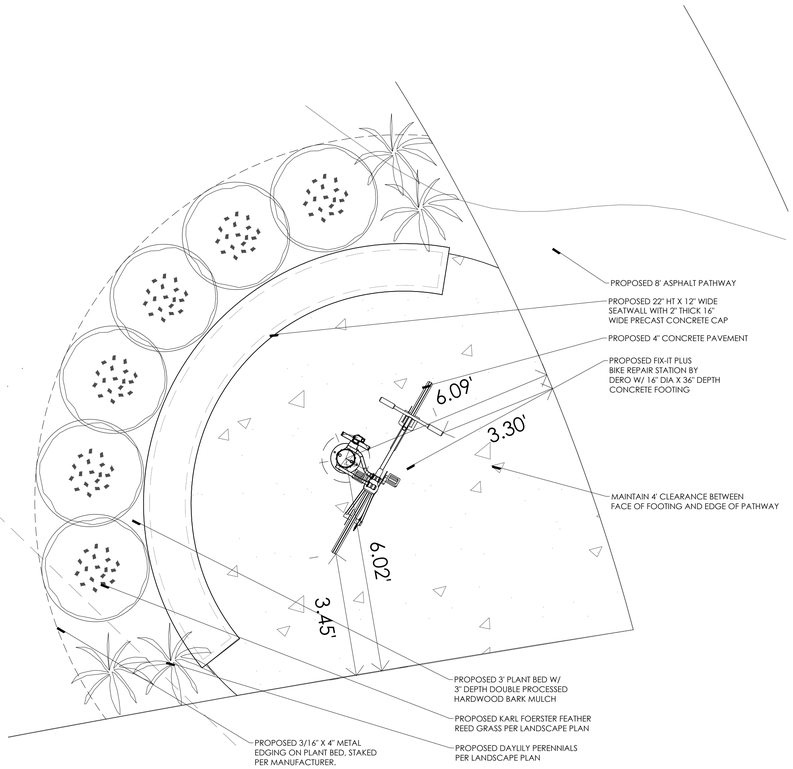
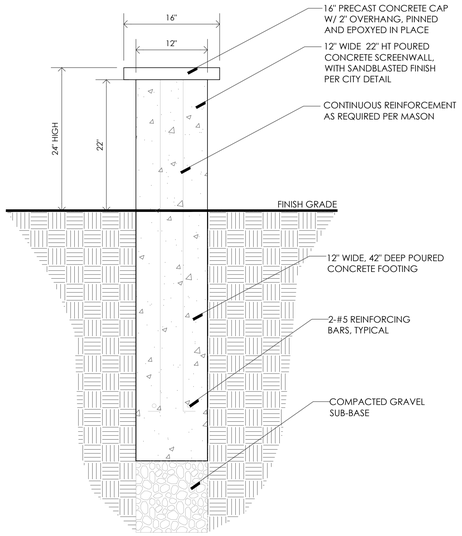


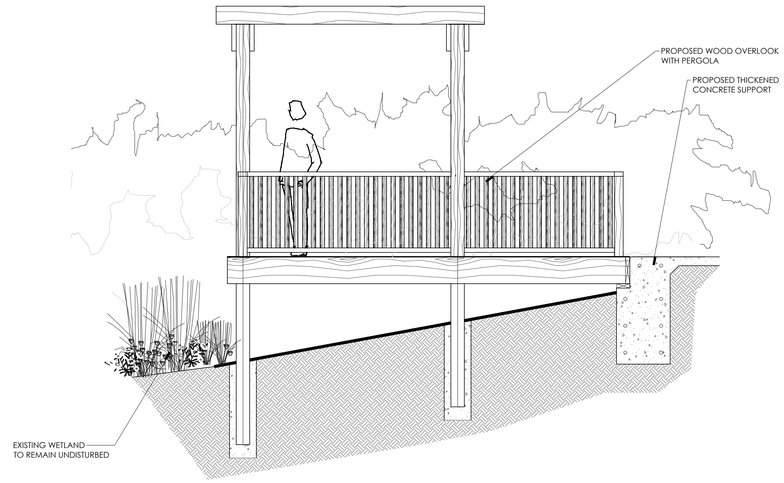

A1 SEATWALL/BIKE REPAIR STATION DETAIL

NTS



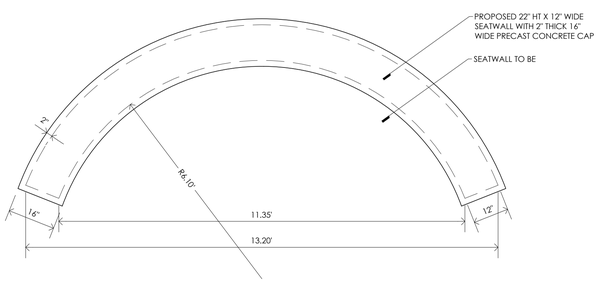

SEATWALL WALL DETAIL

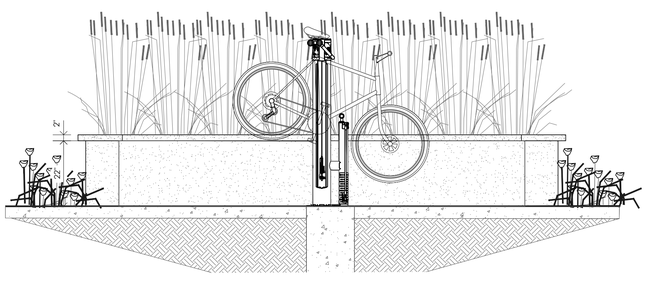
NTS




WETLAND OVERLOOK SECTION

NTS

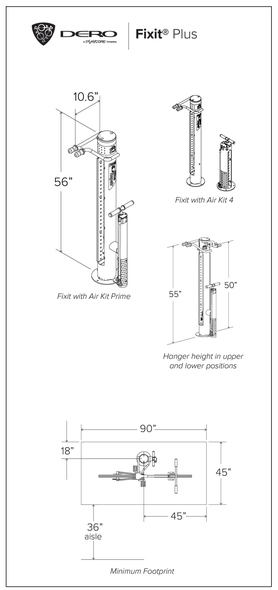



SEATWALL / BIKE REPAIR STATION

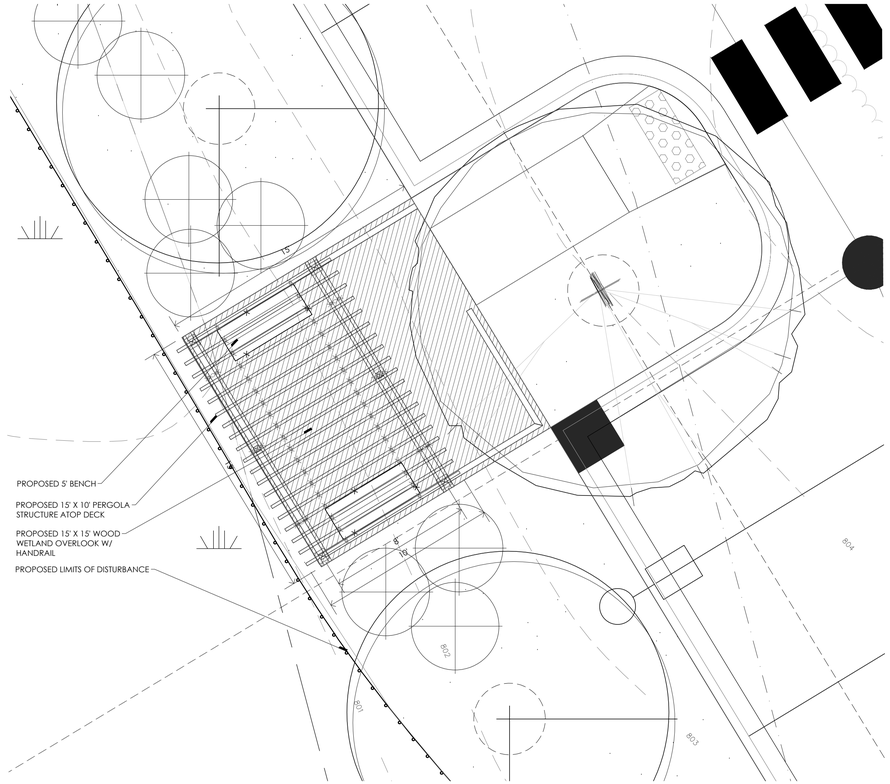
PARTIAL SECTION /ELEVATION

NTS




FIX-IT PLUS BIKE REPAIR STATION

DERO BIKE RACKS, 888-337-6729




A2 WETLAND OVERLOOK DETAIL

1" = 4'-0"

ROCHESTER HILLS MICHIGAN

JRMFD2023-0004
PSP2024-0008
Revision #2

Received 1/21/2025
City of Rochester Hills Planning & Economic Development

NF ENGINEERS

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
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SEAL

PROJECT
Old Orion Court Development

CLIENT
Mark Bismack
5319 23 Mile Road
Shelby Township, MI 48306

Care of:
Krieger Klatt Architects
Contact: Mr. Jeff Klatt, AIA
Phone: (248) 414-9270
Email: Jeff@kriegerklatt.com

PROJECT LOCATION
Part of the SE ¼ of Section 3
T. 3N., R. 11E.
City of Rochester Hills, Oakland County, Michigan

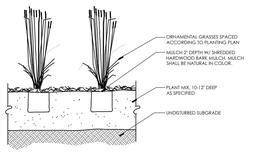
SHEET
Landscape Notes and Details

811 Know what's below Call before you dig.

REVISIONS
04/24/24 SPA
07/15/24 SPA
11/06/24 REVISED PER CITY
01/13/25 SPA REV #2

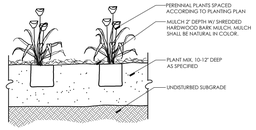
DRAWN BY: G. Ostrowski
DESIGNED BY: G. Ostrowski
APPROVED BY: G. Ostrowski
DATE: January 9, 2024
SCALE: VARIES

NFE JOB NO. K176-01
SHEET NO. L3




ORNAMENTAL GRASS PLANTING DETAIL

NTS




PERENNIAL PLANTING DETAIL

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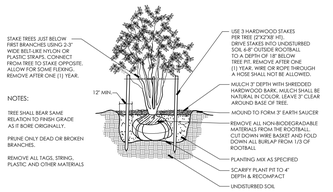
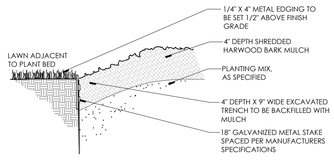



MULTI-STEM TREE PLANTING DETAIL

NTS

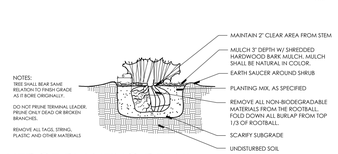
SPADE CUT EDGE DETAIL

NTS



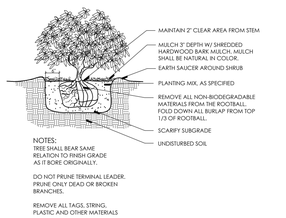

METAL EDGING DETAIL

NTS




HEDGE PLANTING DETAIL

NTS




SHRUB PLANTING DETAIL

DECIDUOUS SHRUB

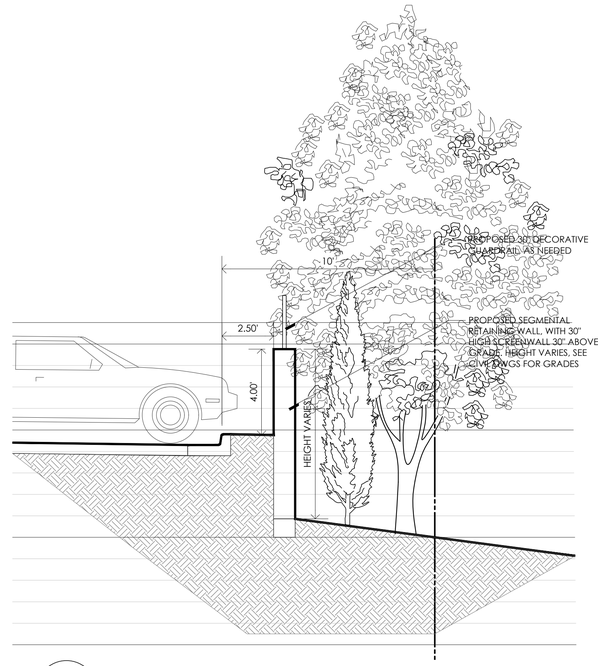
NTS

## PLANTING NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL RIGHTS OF WAY, EASEMENTS, PROPERTY LINES AND LIMITS OF WORK, ETC. PRIOR TO COMMENCING WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH ALL PERTINENT UTILITY COMPANIES 72 HOURS IN ADVANCE OF ANY DIGGING TO MAKE HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. THE CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF SAID UTILITIES.
3. THE CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
4. ANY DISCREPANCIES BETWEEN DIMENSIONED LAYOUT AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT. FAILURE TO MAKE SUCH DISCREPANCIES KNOWN WILL RESULT IN CONTRACTOR'S RESPONSIBILITY AND LIABILITY FOR ANY CHANGES AND ASSOCIATED COST.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH CONSTRUCTION INSTALLATION OPERATIONS.
6. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN POSITIVE SURFACE DRAINAGE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, AND OR OWNER'S REPRESENTATIVE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXISTING MATERIALS THAT ARE DAMAGED DURING CONSTRUCTION.
8. SEE SPECIFICATIONS, PLANT LIST AND PLANTING DETAILS FOR PLANTING REQUIREMENTS, MATERIALS AND EXECUTION.
9. ALL TREES TO HAVE CLAY LOAM OR CLAY BALLS - TREES WITH SAND BALLS SHALL NOT BE ACCEPTED.
10. ALL TREES TO BE APPROVED BY OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT PRIOR TO DELIVERY TO THE SITE. ANY TREES DELIVERED TO THE SITE NOT PREVIOUSLY APPROVED MAY BE REJECTED AND ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
11. FINAL LOCATION OF ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
12. THE CONTRACTOR TO VERIFY PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION OF PLANT MATERIAL.
13. THE CONTRACTOR SHALL PLACE 3" DEPTH OF SHREDDED BARK MULCH IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED.

## DEMOLITION NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SURVEY INFORMATION INCLUDING THE UTILITY SYSTEMS BEFORE ANY DEMOLITION OR CONSTRUCTION WORK OCCURS. ANY DISCREPANCIES WITH THE SURVEY INFORMATION SHALL BE REPORTED TO THE ARCHITECT AND OWNER'S REPRESENTATIVE IMMEDIATELY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
3. ALL EXISTING IMPROVEMENTS, MATERIALS AND PLANT MATERIAL TO REMAIN WITHIN THE NEW CONSTRUCTION AREA, SHALL BE PROPERLY AND ADEQUATELY PROTECTED FROM DAMAGE DURING THE DEMOLITION OPERATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE TO THE ORIGINAL CONDITION ANY OF THESE EXISTING ITEMS THAT ARE DAMAGED OR DISTURBED IN ANY WAY.
4. ALL MATERIALS TO BE REUSED OR SALVAGED SHALL BE STORED IN AN AREA DESIGNATED BY THE CITY ENGINEER FOR THAT PURPOSE. ALL SALVAGED MATERIALS SHALL REMAIN THE PROPERTY OF THE CITY ENGINEER.
5. STREETS, SIDEWALKS AND ADJACENT PROPERTIES SHALL BE PROTECTED THROUGHOUT THE WORK AS REQUIRED BY LOCAL CODES AND REGULATIONS AND APPROVED BY THE OWNER.
6. ALL MATERIAL SPECIFIED TO BE REMOVED SHALL BE DISPOSED OF OFF-SITE PER LOCAL CODES AND REGULATIONS. CONTRACTOR SHALL COORDINATE METHOD OF DISPOSAL WITH CITY ENGINEER PRIOR TO COMMENCEMENT OF WORK.
7. MATERIALS TO BE REUSED OR SALVAGED SHALL BE STORED IN AN AREA DESIGNATED BY THE OWNERS REPRESENTATIVE FOR THAT PURPOSE. ALL SALVAGED MATERIALS SHALL REMAIN THE PROPERTY OF THE OWNER.
8. DURING DEMOLITION OPERATIONS EVERY EFFORT SHALL BE MADE TO CONTROL DUST, PER CITY REQUIREMENTS.
9. TREES AND SHRUBS TO BE REMOVED WITHIN THE LIMITS OF WORK SHALL BE CLEARLY IDENTIFIED WITH BRIGHTLY COLORED RIBBON.
10. GRUBBING SHALL INCLUDE ALL WEEDS, SHRUBS, STUMPS AND ROOT SYSTEMS OF REMOVED PLANT MATERIAL, IRRIGATION PIPING AND ANY OTHER IRRIGATION MATERIALS WITHIN THE LIMITS OF DEMOLITION. GRUBBING SHALL BE TO THE DEPTHS BELOW PROPOSED IMPROVEMENTS INDICATED AS FOLLOWS: CONCRETE PAVING AND WALKWAYS-TOTAL DEPTH OF PAVING AND SUB-BASE; ASPHALT PAVING-TOTAL DEPTH OF PAVING AND SUB-BASE; LAWN AND OTHER PLANTINGS AREAS-REMOVE DEPTH REQUIRED OF STUMPS AND ROOTS OVER TWO (2) INCHES IN DIAMETER AND TURF.
11. PROTECT EXISTING TREES TO REMAIN PER TYPICAL TREE PROTECTION DETAIL.
12. STOCKPILED TOPSOIL SHALL BE STORED ON SITE AND REMAIN PROTECTED FROM CONTAMINATION PRIOR TO REDISTRIBUTION.
13. SAWCUT AND REMOVE EXISTING ASPHALT AS REQUIRED TO INSTALL NEW SITE IMPROVEMENTS AND ADJUST GRADES WITHIN CITY STREETS. ALL WORK WITHIN CITY RIGHT OF WAY SHALL MEET CITY STANDARDS AND SPECIFICATIONS.
14. ARRANGE FOR APPLICABLE UTILITY COMPANY TO RELOCATE EXISTING CABLES, WIRES, PHONE LINES, ETC. ALONG WITH EDISON POWER LINES AS REQUIRED.
15. CONTRACTOR SHALL SECURE AND PAY FOR ALL APPLICABLE PERMITS AND FEES NECESSARY FOR THE COMPLETE CONSTRUCTION OF THE PROJECT.




A3 PARTIAL RETAINING/SCREENWALL SECTION

NTS

## GRADING NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SURVEY INFORMATION INCLUDING THE UTILITY SYSTEMS BEFORE ANY DEMOLITION OR CONSTRUCTION WORK OCCURS. ANY DISCREPANCIES WITH THE SURVEY INFORMATION SHALL BE REPORTED TO THE ARCHITECT AND OWNER'S REPRESENTATIVE IMMEDIATELY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
3. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND / OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING THE DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CITY ENGINEER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO LACK OF SUCH NOTIFICATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH OPERATIONS.
5. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY EXISTING MATERIALS THAT ARE DAMAGED DURING CONSTRUCTION.
6. NO CHANGE IN CONTRACT PRICE WILL BE ALLOWED FOR ACTUAL OR CLAIMED BETWEEN EXISTING GRADE AND THOSE SHOWN ON PLANS AFTER CONTRACTOR HAS ACCEPTED EXISTING GRADES AND MOVED ON TO THE SITE.
7. ALL PROPOSED GRADES ARE TO MEET AND BLEND IN WITH THE EXISTING GRADE AT PROJECT LIMIT. PRECISE ELEVATIONS INDICATED ON THE PLANS TO BE VERIFIED IN FIELD TO AS-BUILT CONDITION.
8. ALL GRADING AND PLACEMENT OF DRAINAGE STRUCTURES TO BE SUPERVISED IN THE FIELD BY THE OWNER'S REPRESENTATIVE.
9. INSTALL 3" DEPTH TOPSOIL OVER ALL DISTURBED LAWN AREAS.
10. SEED ALL PROPOSED OR DISTURBED LAWN AREAS.

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of Section 3
T. 3N., R. 11E.
City of Rochester Hills,
Oakland County, Michigan

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Landscape Notes
and Details

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Call before you dig.

REVISIONS
04/24/24 SPA
07/15/24 SPA
11/06/24 REVISED PER CITY
01/13/25 SPA REV #2

DRAWN BY:
G. Ostrowski
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
January 9, 2024
SCALE: VARIES

NFE JOB NO.
K176-01

SHEET NO.
L4

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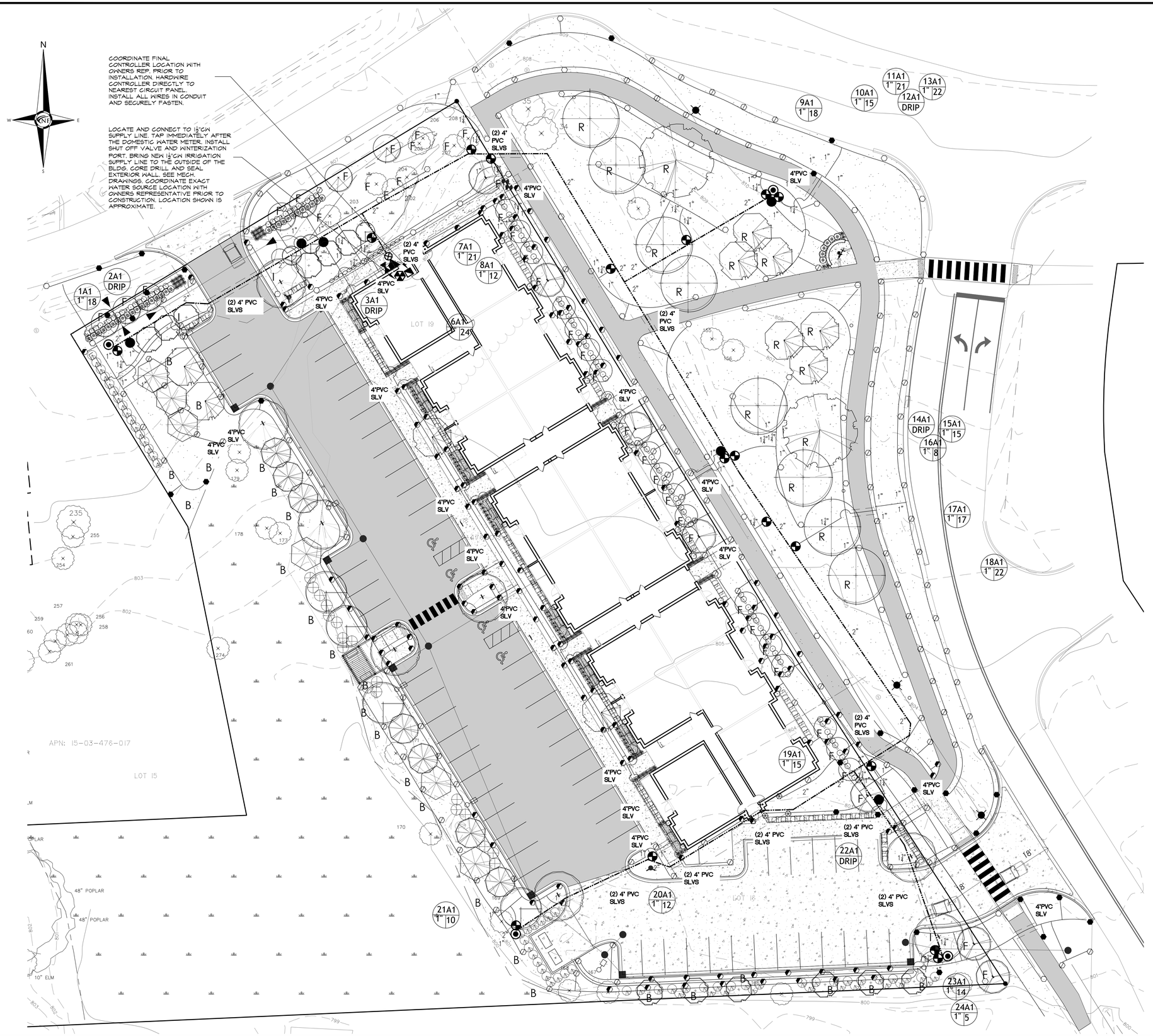


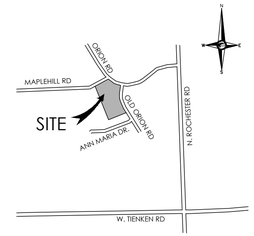


LOCATION MAP
N.T.S.

## IRRIGATION NOTE:

ALL LANDSCAPE AREAS, INCLUDING THOSE WITHIN THE R.O.W. SHALL BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. THE SYSTEM SHALL OPERATE IN COMPLIANCE WITH LOCAL STANDARDS AND SEASONAL RESTRICTIONS. SEPARATE ZONES SHALL BE PROVIDED FOR LAWN AREAS AND PLANTING BEDS. IRRIGATION SHALL BE DESIGNED IN THE MOST EFFICIENT MANNER NECESSARY TO FULLY IRRIGATE ALL PLANTING AREAS. OVERSPRAY ONTO CITY ROADS OR PATHWAYS IS PROHIBITED.

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of Section 3
T. 3N., R. 11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Irrigation Plan

811 Know what's below Call before you dig.

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LIQUID ASSETS LLC
IRRIGATION DESIGN & WATER MANAGEMENT
4843 Kittery NW
Comstock Park, Michigan 49321
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email: abarnes@lqdassets.org
www.lqdassets.org

DRAWN BY: AJB
DESIGNED BY: AJB
APPROVED BY: G. Ostrowski
DATE: July 15, 2024
SCALE: 1" = 30'
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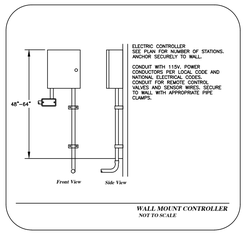
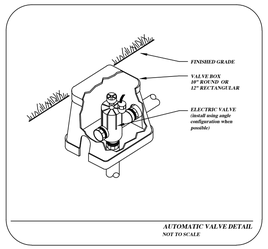
NFE JOB NO. K176-01
SHEET NO. IR1




**WALL MOUNT CONTROLLER**
NOT TO SCALE




**AUTOMATIC VALVE DETAIL**
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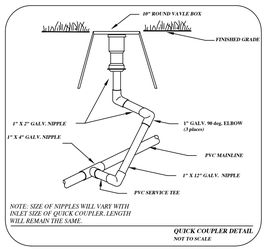


**QUICK COUPLER DETAIL**
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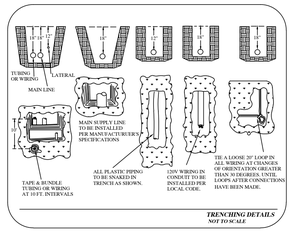
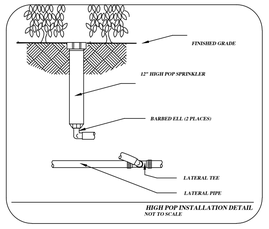
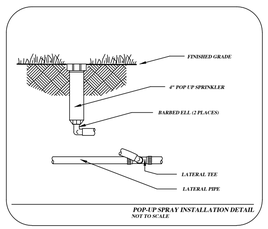


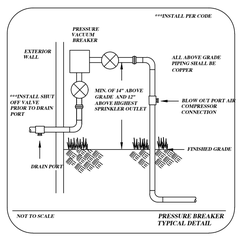

**TRENCHING DETAILS**
NOT TO SCALE




**HIGH POP INSTALLATION DETAIL**
NOT TO SCALE




**POP-UP SPRAY INSTALLATION DETAIL**
NOT TO SCALE




NOT TO SCALE

**PRESSURE BREAKER TYPICAL DETAIL**

## NOTES:

1. Refer to the specifications for installation details and descriptions, as well as, construction methods which will be accepted.
2. All work shall be in compliance with all local, state, and federal codes and ordinances.
3. All electrical connections shall be made using 3m DBY–6 splice kits.
4. All control wiring downstream of the controller shall be Hunter IDWIRE communication cable – approved for direct bury.
5. All clamps shall be stainless steel worm gear type clamps. Pipes 1–1/2" or larger shall be double clamped.
6. Pipe routing is schematic. All heads are to be field adjusted to within 2' to take into consideration any obstruction. Final head placements are subject to the landscape architects approval.
7. All sprinkler heads shall be mounted on 2 elbow poly swing joints as specified.
8. Contractor to verify final controller location with owner's authorized representative prior to installation.
9. All pipe not sized downstream of control valve is 1".
10. Irrigation contractor's point of connection to water source shall be as noted on this sheet.
11. Locate and connect to indicated water source. All pipe installed above grade shall be copper type "M".
12. 120v power to the controller locations should be provided others. Coordinate with owner's representative. Hardwire controller directly to nearest circuit panel. Place all wires in conduit per code.
13. Design pressure does not take into account seasonal supply fluctuations. Periods of drought may cause temporary pressure losses to the city water supply resulting in inadequate irrigation system performance. Irrigation design is based on normal weather conditions and typical municipal water supply abilities.
14. Irrigation contractor shall be responsible for determining and maintaining the irrigation schedule during the project construction and throughout the length of the warranty period.
15. The irrigation schedule shall deliver 1" of precipitation per week +/– natural rainfall quantities for turf grass.
16. Landscape material shall receive adjusted amounts of precipitation to maintain proper plant health.
17. Landscape and turf grass shall be irrigated separately.
18. Rotors and spray zones may not be combined to operate at the same time.
19. When specified, follow manufacturer's product recommendations concerning proper installation of water flow sensors. Allow proper straight pipe distances before and after flow sensors.

## IRRIGATION LEGEND:

| | | Hunter |
|---|---|---|
| | FIXED SPRAY POP-UP (4") w/ MPR nozzle | PRO5Ø4-PRS4Ø-CV |
| MP8ØØØSR MP1ØØØ MP2ØØØ MP3ØØØ MPSS53Ø/MPLC/RC/I5 | | |
| | FIXED SPRAY POP-UP (12") | PRO5-12-CV |
| | 2 RADIUS SPECIALTY 4 RADIUS SPECIALTY NOZZLE | |
| | MASTER VALVE WITH EZ DECODER | ICV-Series |
| | ELECTRIC VALVE WITH EZ DECODER | ICV-Series |
| | QUICK COUPLER VALVE | HQ44RC |
| | ELECTRIC CONTROLLER | HPC-PCDM |
| | BACKFLOW PREVENTION DEVICE PVB | FEBCO 765PI50 |
| | ISOLATION GATE VALVE (LINE SIZE) | |
| | RAIN SENSOR DEVICE | WR-CLIK |
| | POINT OF CONNECTION TO WATER SOURCE | See note this sheet |
| | PVC MAINLINE, SDR 26, BE, Size as shown | |
| | POLYETHYLENE PIPE, 100#, NSF APPROVED, Size as shown | |
| | PVC SLEEVES - SDR 21 - Size as shown | VALVE DESIGNATION: |

WATER REQUIREMENTS: 26 GPM @ 55 PSI
(CONTRACTOR TO VERIFY PSI AVAILABLE ON SITE PRIOR TO SYSTEM INSTALLATION)

Controller and Station Number
Valve Size
Gallons Per Minute

## *DRIP IRRIGATION LEGEND:*

*NETAFIM or equal*

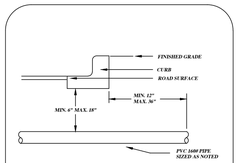
| | | |
|---|---|---|
| ● | *LOW VOLUME CONTROL ZONE* | *LVCZ-10075LF* |
| AV | *AIR RELIEF VALVE* | *TLAVRV* |
| FV | *LINE FLUSHING VALVE* | *TL050MFV-1* |
| | *DRIPPERLINE Lanscape zones 12" row spacing* | *TLCV4-12* |

## *NOTES:*

1. Install 12"x12"x12" sump of pea gravel below all line flushing valves for adequate drainage.
2. Install techline above grade in the shrub beds and use techline staples as recommended within the specifications. Shrub beds cover techline with 3" mulch. Perennials beds cover techline with 1-1/2" mulch.
3. Do not snake tubing back and forth in planting beds.
4. Place tubing on each side of hedges and grass plant types.
5. Begin and end each row of tubing at a PVC header pipe as detailed
6. Perenials and groundcover place tubing in rows with 12" on center spacing maximum.
7. Install a zone indicator flag or pop up stem on each dripzone to give visual notice of zone operation. Install flag/stem in an inconspicuous location within the drip zone safe from vandals.

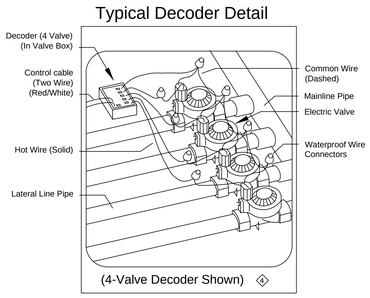
## PIPE SIZE CHART

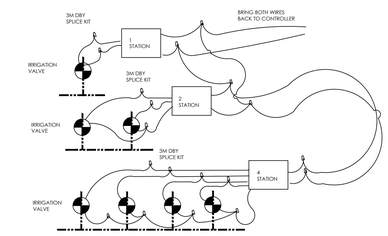
0–12 GPM = 1" DIAMETER POLYETHYLENE PIPE
12–24 GPM = 1 1/4" DIAMETER POLYETHYLENE PIPE
24–30 GPM = 1 1/2" DIAMETER POLYETHYLENE PIPE
30–60 GPM = 2" DIAMETER POLYETHYLENE PIPE



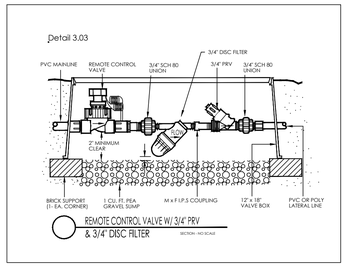

**SLEEVE INSTALLATION DETAIL**
NOT TO SCALE

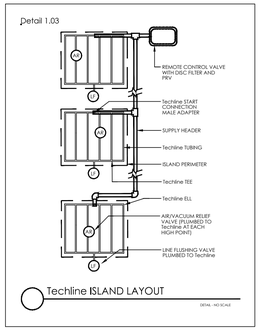
## Typical Decoder Detail

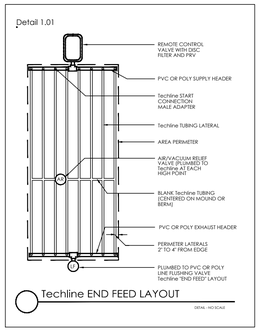


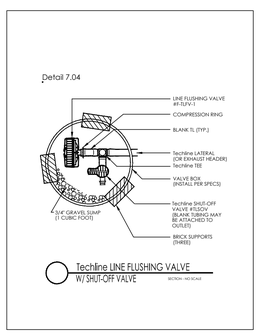



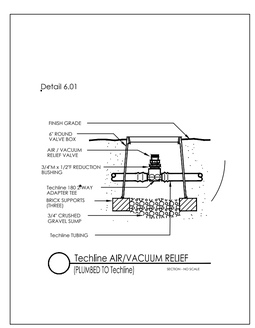

SAMPLE DECODER WIRING DIAGRAM





LIQUID ASSETS
IRRIGATION DESIGN & WATER MANAGEMENT
4843 Kittery NW
Comstock Park, Michigan 49321
Tel. (248) 789–0330
email: abarnes@lqdassets.org
www.lqdassets.org


ROCHESTER HILLS MICHIGAN

JRMFD2023-0004
PSP2024-0008
Revision #2

Received
1/21/2025
City of Rochester Hills
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Development


NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257


SEAL

PROJECT
Old Orion Court
Development

CLIENT
Mark Bismack
5319 23 Mile Road
Shelby Township, MI 48306

Care of:
Krieger Klatt Architects
Contact: Mr. Jeff Klatt, AIA
Phone: (248) 414-9270
Email: Jeff@kriegerklatt.com

PROJECT LOCATION
Part of the SE ¼
of Section 3
T. 3N., R. 11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Irrigation Notes
and Details

811 Know what's below Call before you dig.

REVISIONS
01/13/2025 SPA REV #2

DRAWN BY:
G. Ostrowski

DESIGNED BY:
G. Ostrowski

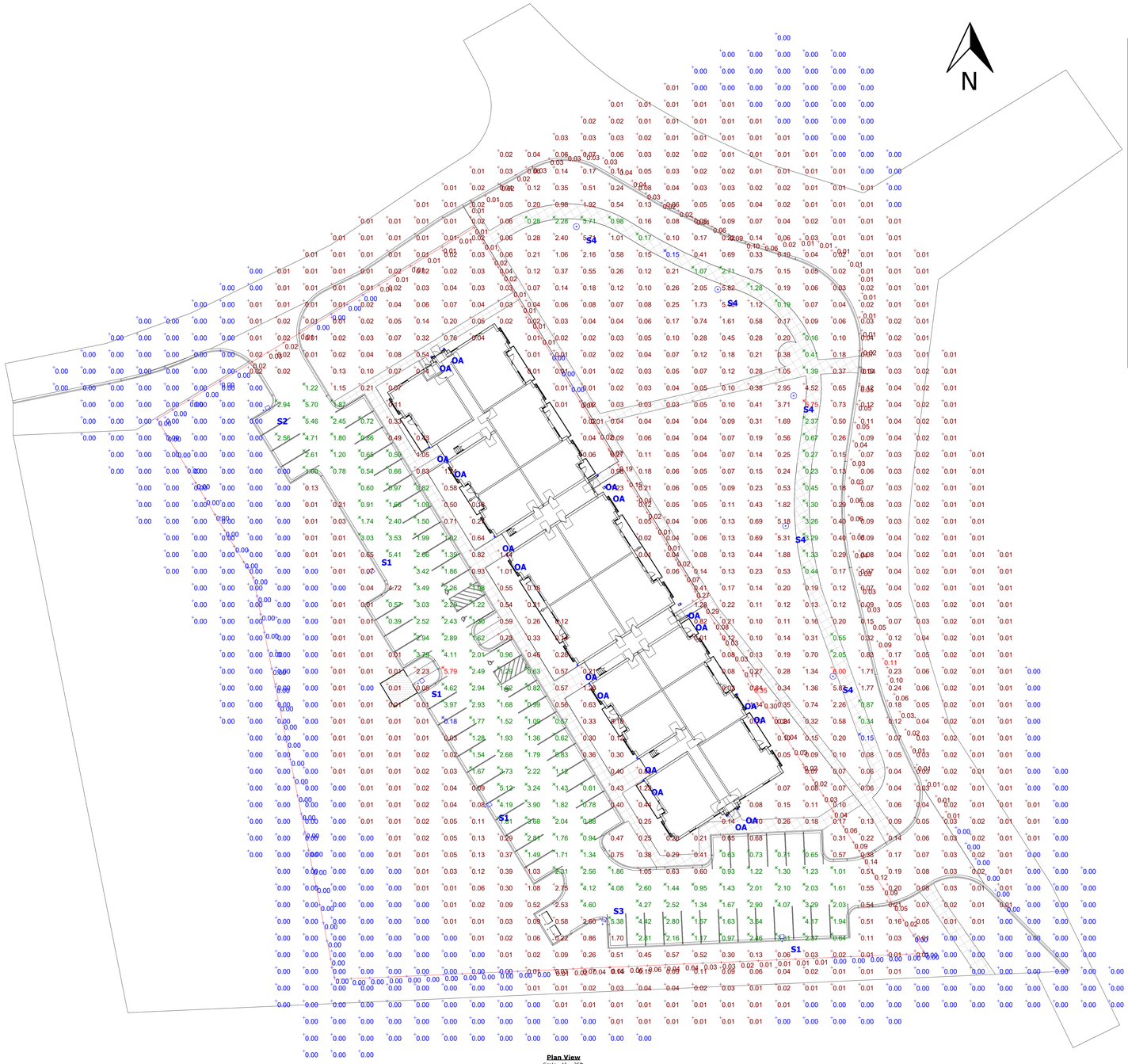
APPROVED BY:
G. Ostrowski

DATE:
July 15, 2024

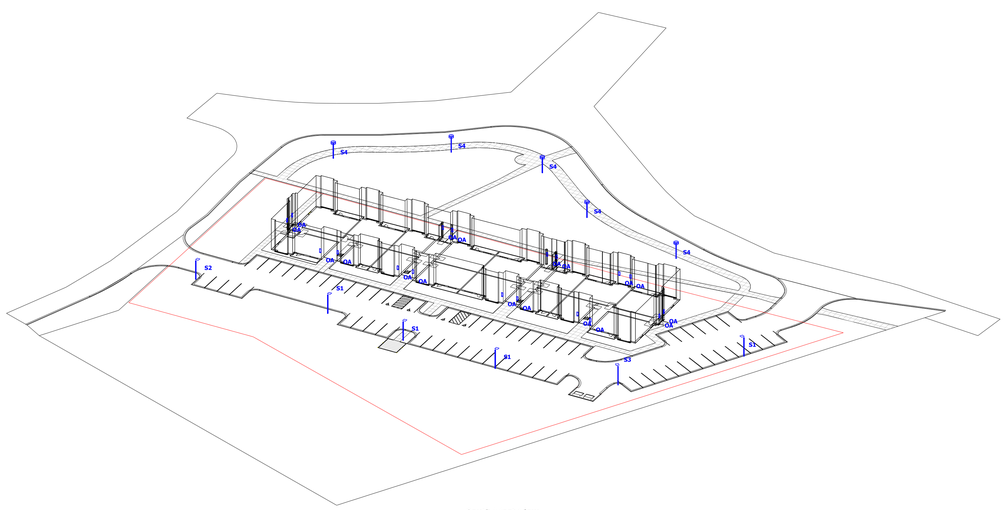
SCALE: VARIES
X X 0 X X X

NFE JOB NO. K176-01
SHEET NO. IR-2

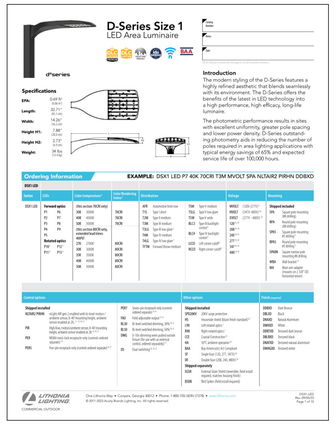
W:\GSD\2020 Files\4000-4549\4176-01\Office\Landscape\4176-01_IR_1-15-25.dwg, 1/17/2025 2:38:39 AM, 1-15-25 - Standard(4).ctb

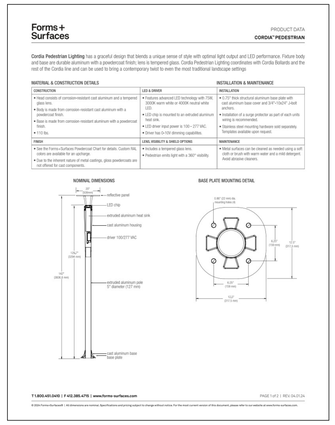



Plan View
Scale - 1" = 25ft




South West View



## Statistics

| Description | Symbol | Avg | Max | Min | Max/Min | Avg/Min |
|---|---|---|---|---|---|---|
| Overall | + | 0.39 fc | 6.00 fc | 0.00 fc | N/A | N/A |
| Parking Area | X | 2.11 fc | 5.79 fc | 0.18 fc | 32.2:1 | 11.7:1 |
| Property Line | + | 0.03 fc | 0.35 fc | 0.00 fc | N/A | N/A |
| Roadway Boundary | + | 0.03 fc | 0.11 fc | 0.00 fc | N/A | N/A |
| Sidewalk | X | 1.38 fc | 5.75 fc | 0.15 fc | 38.3:1 | 9.2:1 |

**Schedule**

| Symbol | Label | QTY | Manufacturer | Catalog | Description | LLF | Mounting Height |
|---|---|---|---|---|---|---|---|
| | OA | 18 | Brownlee Lighting Inc | 7115-15-H08-30K | Aluminum housing, frosted lens enclosure, 3000K | 0.9 | 6' |
| | S1 | 4 | Lithonia Lighting | DSX1 LED 30K 70CRI | D-Series Size 1 Area Luminaire Performance Package 3000K CCT 70 CRI | 0.9 | 15' |
| | S2 | 1 | Lithonia Lighting | DSX1 LED 30K 70CRI | D-Series Size 1 Area Luminaire Performance Package 3000K CCT 70 CRI | 0.9 | 15' |
| | S3 | 1 | Lithonia Lighting | DSX1 LED 30K 70CRI | D-Series Size 1 Area Luminaire Performance Package 3000K CCT 70 CRI | 0.9 | 15' |
| | S4 | 5 | FORMS AND SURFACES | CRT2011160915--001, | POST TOP Pedestrian, 3000K, From City Gateway and Streetscape Master Plan. | 0.9 | 12' |

**General Note**
1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
2. SEE LUMINAIRE SCHEDULE FOR LIGHT LOSS FACTOR.
3. CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0" & 5' - 0"

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

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

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

**Alternates Note**
THE USE OF FIXTURE ALTERNATES MUST BE RESUBMITTED TO THE CITY FOR APPROVAL.

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

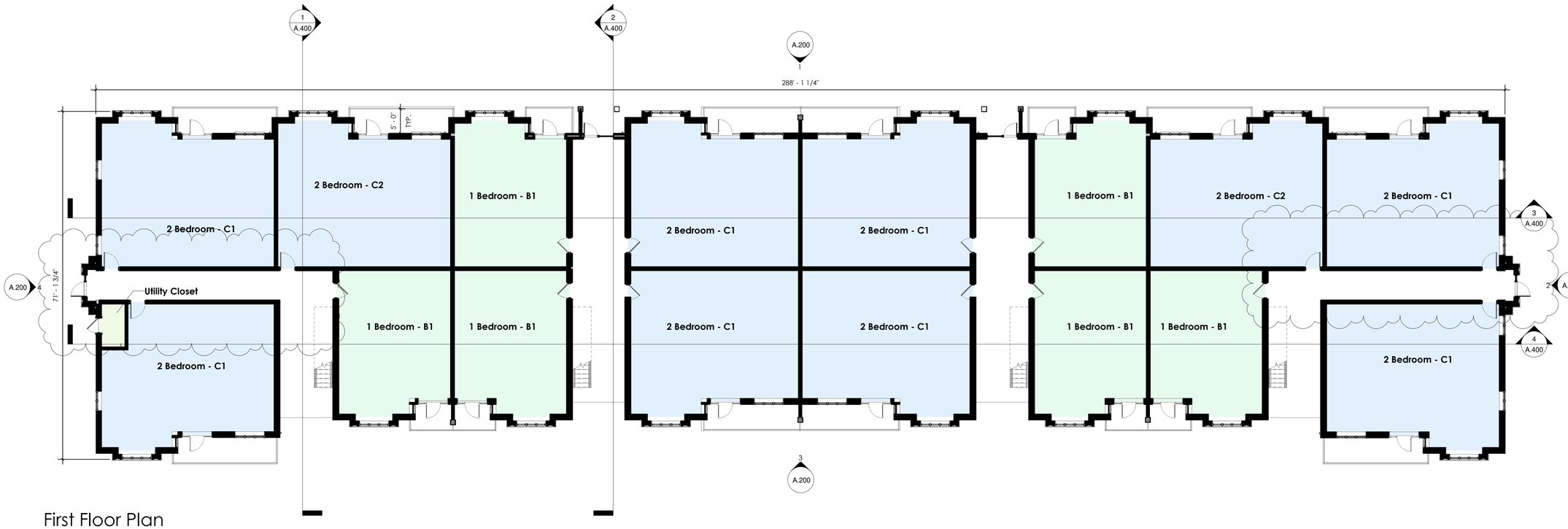
**Drawing Note**
THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

**Mounting Height Note**
MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

ROCHESTER HILLS MICHIGAN
JRMFD2023-0004
PSP2024-0008
Revision #2
Received 12/10/2025
City of Rochester Hills Planning & Economic Development


6780 OLD ORION CT.
PHOTOMETRIC LAYOUT
GASSER BUSH ASSOCIATES
WWW.GASSERBUSH.COM


**Designer** KS
**Date** 01/15/2025
**Scale** Not to Scale
**Drawing No.** #24-25819_V3




First Floor Plan

3/32" = 1'-0"

Second Floor Plan

3/32" = 1'-0"

| 2-STORY WALK-UPS | | | | |
|---|---|---|---|---|
| | FIRST FLOOR | SECOND FLOOR | TOTAL | RATIO |
| 1-BEDROOM | 6 UNITS | 4 UNITS | 10 UNITS | 31 % |
| 2-BEDROOM | 10 UNITS | 12 UNITS | 22 UNITS | 69 % |
| **TOTAL/BLDG** | 16 UNITS | 16 UNITS | **32 UNITS** | |

ROCHESTER HILLS MICHIGAN

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Development

**KRIEGER KLATT** ARCHITECTS
400 E. Lincoln Ave. | Royal Oak, MI 48067
**P:** 248.414.9270 **F:** 248.414.9275
**www.kriegerklatt.com**

Client:
Mark & Pat Bismack

Project:
Old Orion Ct. Apartments
6780 Old Orion Ct.
Rochester Hills, MI 48306

| Issued | Description | By |
|---|---|---|
| 04.24.2024 | SPA | |
| 07.15.2024 | SPA REV #1 | |
| 01.13.2025 | SPA REV #2 | |

PRELIMINARY NOT FOR CONSTRUCTION

Seal:

Note:
Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:
North

Sheet Title:
Floor Plans

Project Number:
Project Number

Scale:
As indicated

Sheet Number:
A.100

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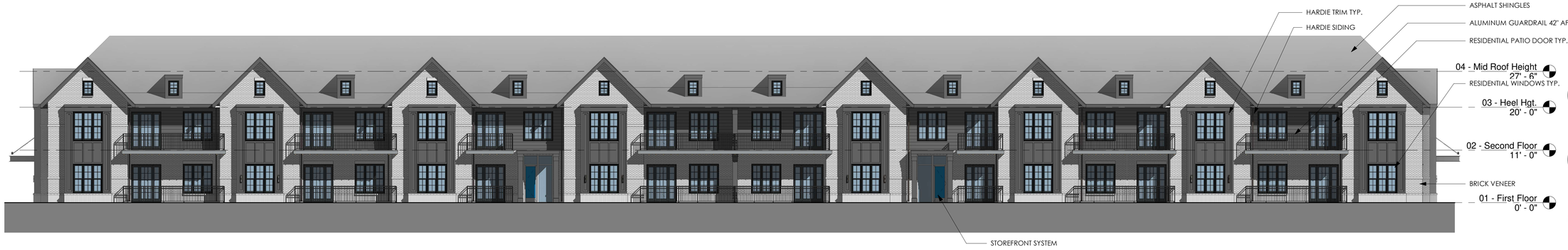
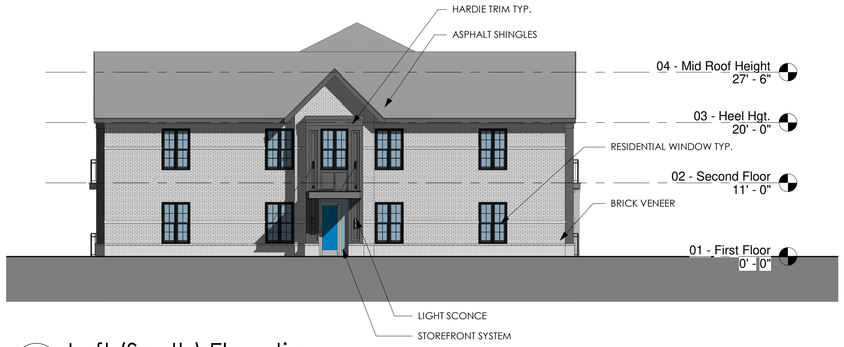
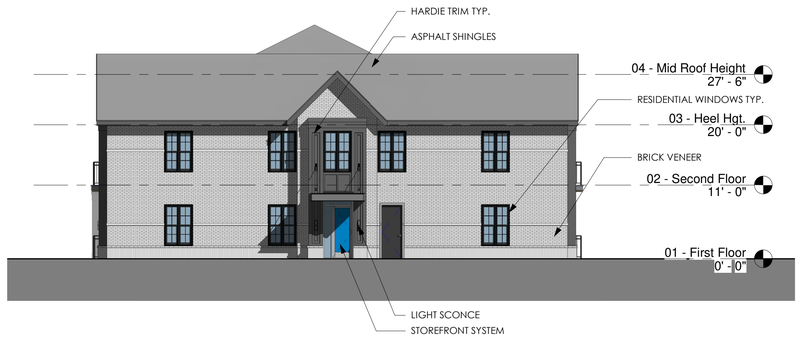



1 A.100 Front (East) Elevation
3/32" = 1'-0"




2 A.100 Left (South) Elevation
3/32" = 1'-0"




4 A.100 Right (North) Elevation
3/32" = 1'-0"

## Material Calculations

| | Brick | | Hardie Trim | |
|---|---|---|---|---|
| | Area | Percentage | Area | Percentage |
| Front | 2,836 SF | 66 % | 1,480 SF | 34 % |
| Rear | 2,563 SF | 67 % | 1,244 SF | 33 % |
| Left | 1,039 SF | 91 % | 101 SF | 9 % |
| Right | 1,039 SF | 91 % | 101 SF | 9 % |

## Opening Calculations

| First Floor | Second Floor |
|---|---|
| 26 % | 30 % |

3 A.100 Rear (West) Elevation
3/32" = 1'-0"

Seal:

Note:
Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:

Sheet Title:
Elevations

Project Number:
Project Number

Scale:
As indicated

Sheet Number:
A.200

ROCHESTER HILLS MICHIGAN
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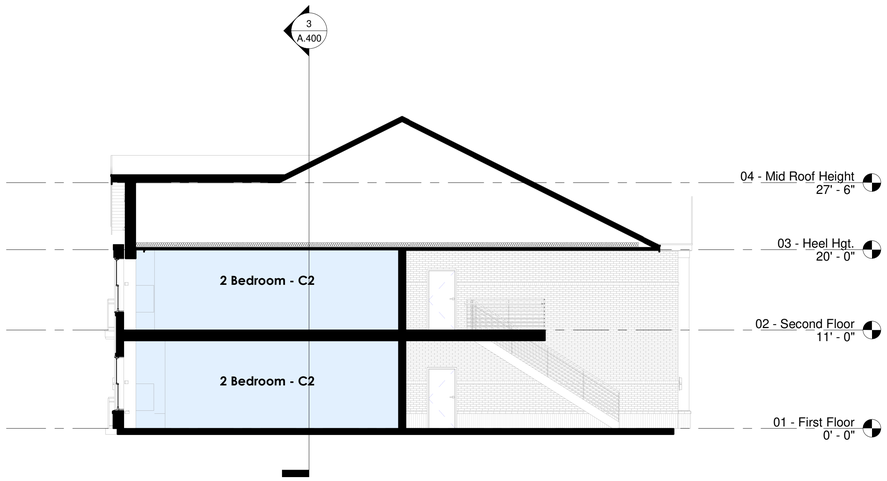
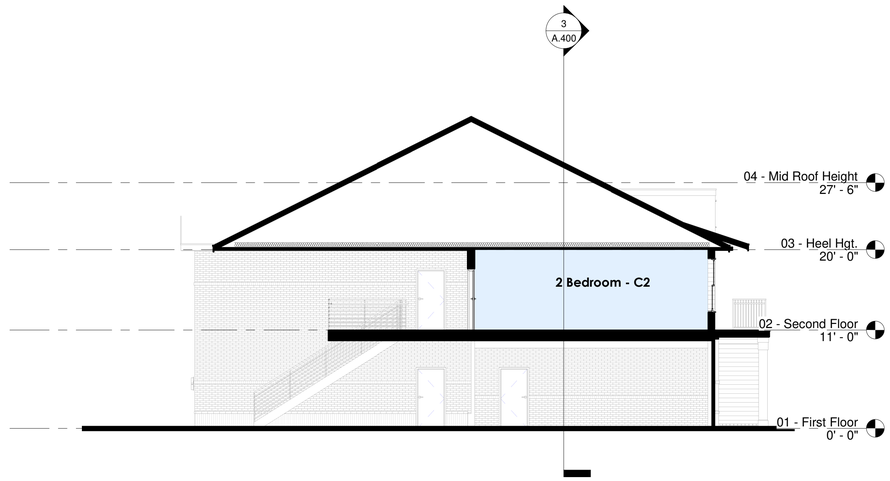
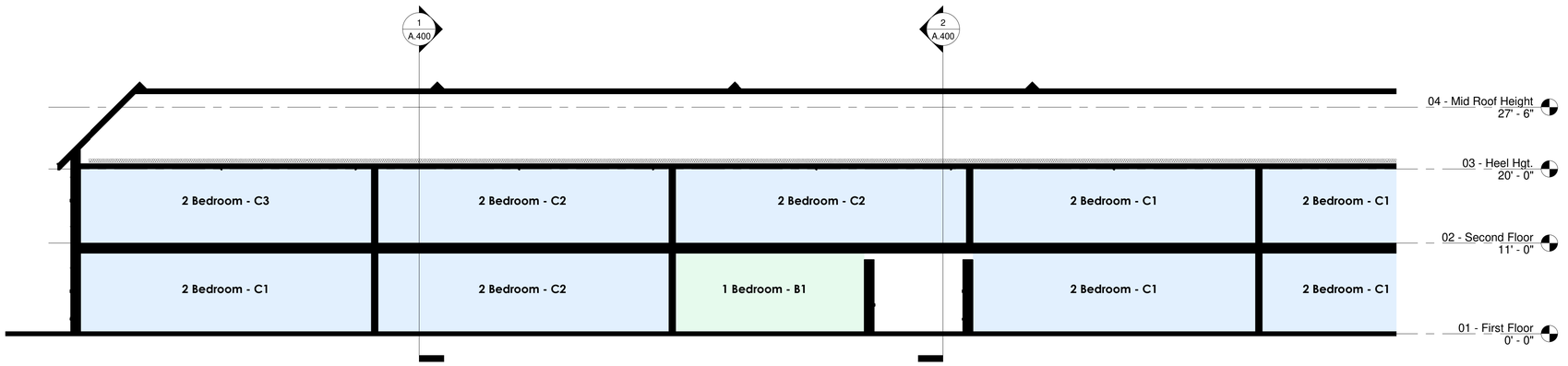
Development




1 A.100 East-West Section 1
1/8" = 1'-0"




2 A.100 East-West Section 2
1/8" = 1'-0"




3 A.100 North-South Section 1
1/8" = 1'-0"

4 A.100 North-South Section 2
1/8" = 1'-0"

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Seal:

Note:
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North Arrow:

Sheet Title:
Building Sections

Project Number:
Project Number

Scale:
1/8" = 1'-0"

Sheet Number:
A.400

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