

STANDARD CONSTRUCTION NOTES

- 1. The Contractor shall notify Meridian Township, Department of Public Works, Engineering office at (517)853-4440, a minimum of 72 hours prior to the start of any construction for this project.
2. All construction shall conform to the current standards and specifications of the Meridian Township, which are included as part of these plans in effect at the time of construction.
3. After the completion of construction of public utilities or construction within public right-of-way, the Contractor must request a final inspection. Any punchlist items resulting from the final inspection must be resolved prior to final release and acceptance.
4. The existing utilities indicated on the plans are in accordance with available information. It shall be the Contractor's obligation to verify the exact location of all existing utilities, which might affect this job.
5. The Contractor shall notify "MIS DIG" 811 at least 72 hours prior to the start of construction.
6. The Contractor shall at all times be aware of inconveniences caused to the abutting property owners and the general public. Where the Contractor does not remedy undue inconveniences, Meridian Township, upon four hours notice, reserves the right to perform the work and deduct the cost from the money due the Contractor.
7. A Registered Land Surveyor provided by the Contractor at the Contractor's expense shall replace all property irons and monuments disturbed or destroyed by the Contractor's operations.
8. Contractor shall provide Owner and Township Engineer a copy of written permission to use private property for storage of equipment and materials or for their construction operations.
9. Trench backfill under existing or proposed roadways, driveways, and parking areas, shall be sand or gravel, placed in 12" layers (maximum) and consolidated to 95% of maximum density as measured by modified proctor, unless otherwise noted.
10. Trees and shrubs are to be protected during construction and bored where necessary.
11. Existing fences shall be removed and restored to their original condition or better where in conflict with construction.
12. Driveways, culverts, ditches, drain tile, tile fields, drainage structures, etc., that are disturbed by the Contractor's operations shall be immediately restored.
13. All established lawn areas disturbed by the Contractor's operations shall be seeded and mulched. Seeding and mulching shall be done in accordance with the contract specifications.
14. All ditch slopes shall have established vegetation and be protected from erosion.
15. All utility poles in close proximity to construction shall be supported in a manner satisfactory to the utility owner.
16. Prior to acceptance of the public utility, one complete set as-built plans, in AutoCAD and PDF format, shall be submitted to the Engineer.
17. Onsite parking and sanitary facilities shall be provided for construction workers. The facilities shall be constructed and operated (with minimal impact to the surrounding area) to the satisfaction of the Township.

PATHWAY / SIDEWALK NOTES

- 1. Width:
- Sidewalk, 5' min.
- Pathway (roadside), 7' min; 8' when next to a wall, curb, fence, or other object;
- Pathway (off-road), 8' min.
2. Thickness:
- Regular walk - 4" concrete, 3" sand base;
- Residential drive - 4" concrete;
- Commercial or Multi-family Residential - 7" concrete.
3. Off-road Trails: May be concrete or asphalt. Asphalt shall be a minimum of 10' wide and 4" thick of 13A on 6" of 21AA crushed limestone.
4. Sidewalks and pathways shall generally be placed one (1) foot from the ultimate right-of-way as established by the Ingham County Road Department.
5. A boardwalk may be required to be installed instead of a standard sidewalk/pathway if regulations do not allow their installation.
6. Pathways and sidewalks shall be constructed with proper, positive surface drainage. Wherever possible, the sidewalk/pathway shall be constructed six inches higher than the curb.
7. Retaining walls shall only be installed where all other efforts (offsite grading easements, tree relocation, etc.) to mitigate the need for such wall have been evaluated for cost effectiveness and feasibility, and have been dismissed.
8. Fencing shall be installed where the slopes adjacent to the pathway/sidewalk cannot be constructed to one foot vertical for every three foot horizontal. The depth to the toe of the slope area will be considered when implementing this requirement.
9. Pathways or sidewalks that do not connect to an existing pathway/sidewalk shall provide a gradual transition to existing ground. A "path ending" sign shall be posted at all pathway/sidewalk terminus.
10. Maximum running slope of pathway and sidewalk is 5% (8.33% maximum). Cross slope is 2%. For detailed specifications, see the current version of MDOT Special Detail R-28.
11. All existing asphalt and concrete to be removed shall be sawcut.
12. Expansion joint to be placed at 100 foot intervals.
13. All lumber to be pressure treated (Osborne 33 or equal) to 0.4 retention.

SANITARY SEWER NOTES

- 1. All sewers to be placed in Class "B" bedding or better.
2. Wyes, risers, and house leads are to be placed at location shown on the plans or as directed by the Engineer. All wyes are incidental.
3. Each wye or house lead shall have a plug of the same type of joint as the house lead.
4. House leads shall be a minimum of nine feet deep at the property line. Individual site topography may require a deviation of this minimum.
5. Downspouts or other conduits carrying storm or ground water shall not be connected to the sanitary sewer.
6. Whenever existing manholes or sewer pipe are to be tapped, holes are to be core sawed with either an integrally cast seal box or a tapping sleeve.
7. All sanitary sewer manholes shall be provided with watertight covers.
8. All manhole covers shall bear the legend "Meridian Sanitary Sewer" with current logo.
9. All public sanitary sewer main lines shall be SDR 26 or greater, or ABS Truss Pipe.
10. The PVC (SDR-26) pipe material shall conform to ASTM D2241, with bell and gasket joints in accordance with ASTM F477.
11. Pipe installation shall be in accordance with ASTM D2321. All pipe shall be marked to provide ASTM designation, SDR number, manufacturer's name, and pipe diameter.
12. The Contractor shall test the flexible pipe main for deflection by pulling a mandrel through the sewer after all backfill has been placed and compacted over the pipe. The maximum allowable deflection shall not exceed 5% of the inside diameter of the pipe. The outside diameter of the test mandrel shall be equal to the inside diameter of the pipe less 5%. The initial test shall be performed at least 30 days after pipe installation. A second test shall be performed after 10 months of pipe installation or just before the intended use of the line is to begin.
13. Inspection and testing of the sanitary system shall also include video inspection by CCTV method of sanitary main, air testing of sanitary main, and vacuum testing of sanitary manholes. All inspections and testing shall be performed in the presence of Township inspectors.
14. All ductile iron sewer pipe will require acid resistant liner.

WATER MAIN NOTES

- 1. Hydrant elevations and gate well tap elevations shall be set to existing ground elevations unless otherwise directed by the Township Engineer.
2. All water mains shall be constructed with 5 feet of cover below finish grade, unless otherwise indicated on the plans.
3. Connection to the existing water main shall not be made until after the successful completion of pressure and bacteriological tests. Pressure testing shall be performed in accordance with AWWA C600. Additionally, all corporation stops for proposed house services shall be installed prior to pressure testing. Disinfection and bacteriological testing shall be in accordance with the AWWA C651. Before the mains are chlorinated, they shall be thoroughly flushed. All mains shall be chlorinated for a period of at least twenty-four (24) hours. Chlorine shall be added in sufficient quantity to give a 50-ppm residual of free chlorine after a twenty-four (24) hour period. After completion of the chlorine procedure, the main shall be flushed. Then water samples shall be taken from the main for bacteriological tests. If the tests should result in unsafe conditions, the chlorinating shall be repeated by the Contractor. Two consecutive passing samples at least 24 hours apart must be obtained before the main can be connected to the existing water system.
4. All valves shall be counter-clockwise open (open left).
5. All fire hydrants shall be EJW SBR (54915) Traffic Type with breakaway flange or approved equal.
6. Hydrants shall be painted OSHA red.
7. Two brass wedges shall be installed at each joint on ductile iron pipe.
8. Polyethylene encasement of pipes will be required in all areas. The encasement shall be V-Bio® Enhanced Polyethylene Encasement, in accordance with ANSI/AWWA C105/A215, installed per the manufacturer's instructions.
9. For existing lines: service taps, shut off valves, and service line extensions to the property shall be made by Township Department of Public Works personnel for connections 2" and smaller.
10. Where water mains must dip to pass under a storm sewer or sanitary sewer, the sections which are deeper than normal shall be kept to a minimum length by the use of 45, 22.5 or 11.25 degree bends properly restrained.
11. All manhole covers shall bear the legend "Meridian Water" with current logo, where available.
12. Lead content requirements for all pipes, piping fittings, plumbing fittings, and fixtures that are used for potable water shall comply with NSF/ANSI 372 Standard.
13. All mechanical joints and fittings shall be restrained using MEGALUG® style restrainers, or approved equal. All exposed metal components of the restrained-joint system shall be treated with a corrosion resistant coating, including the collar, breakaway bolts, wedges, and connecting nuts and bolts.

STORM SEWER NOTES

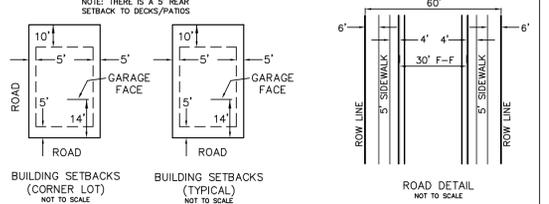
- 1. All storm sewer construction shall comply with the requirements of the Ingham County Drain Commissioner and the Ingham County Road Department and shall be subject to their inspection and approval.
2. All storm sewer 8" and smaller shall be PVC SDR 35, or Vitrified Clay C-700 ES.
3. All storm sewer pipe 10" and larger shall be C-7.5, Class III reinforced concrete pipe.
4. All storm sewer joints shall be wrapped with Mirafi Geotextile 140N or equal, no joint mastic shall be used. Fabric shall be 18" wide, overlapped by not less than 6" and held in place by duct taping the overlap and/or equal holding material, until backfilled. "O" ring rubbers on PVC pipe shall be removed and wrapped as indicated above.
5. All pipe to be laid with the aid of laser equipment.
6. All storm sewer manholes and catch basins shall be in accordance with the Ingham County Drain Commissioner and the Ingham County Road Department Standards with Neenah R-1794 or E.L.I.W. 1060-B covers for manholes. E.L.I.W. 7045 or Neenah R-3031-B for standard curb inlets, E.L.I.W. 7065 or Neenah R-3034-B for rolled curb inlets, E.L.I.W. 6508 or Neenah R-4340-A for beehive grate or castings as indicated on the plans.
7. All catch basins and yard drains shall have a three foot deep sump.
8. All storm leads shall be 4" Polyvinylchloride (PVC) tubing, installed at a minimum slope of 1%.
9. All 7 foot dia storm manhole, as approved by Ingham County Drain Commission, may be constructed with concrete radial block provided that precast bases and precast reducer tops are used. Construction with MDOT Standard Plan 1-E, Sheets 1 to 4 and all applicable MDOT Specifications. All 4 foot and 5 foot diameter storm manholes shall be precast in accordance with ASTM C-478 and applicable MDOT Standards and Specifications.

STREET TREE NOTES

- 1. Street trees shall be 2" min. caliper when planted.
2. No more than two planted trees in a row shall be the same species.
3. No more than 25% of street trees can be the same species.
4. Proposed trees shown in close proximity together shall be planted further apart once locations are determined.
5. Allowable species include: Norway Maple, Red Maple, Little Leaf Linden, White Oak and Red Oak.

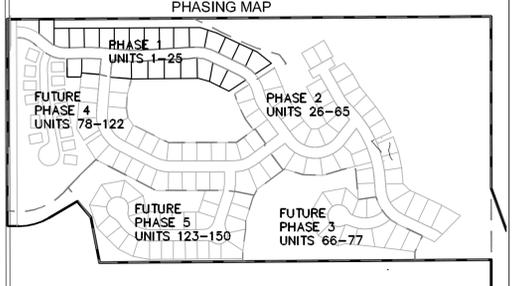
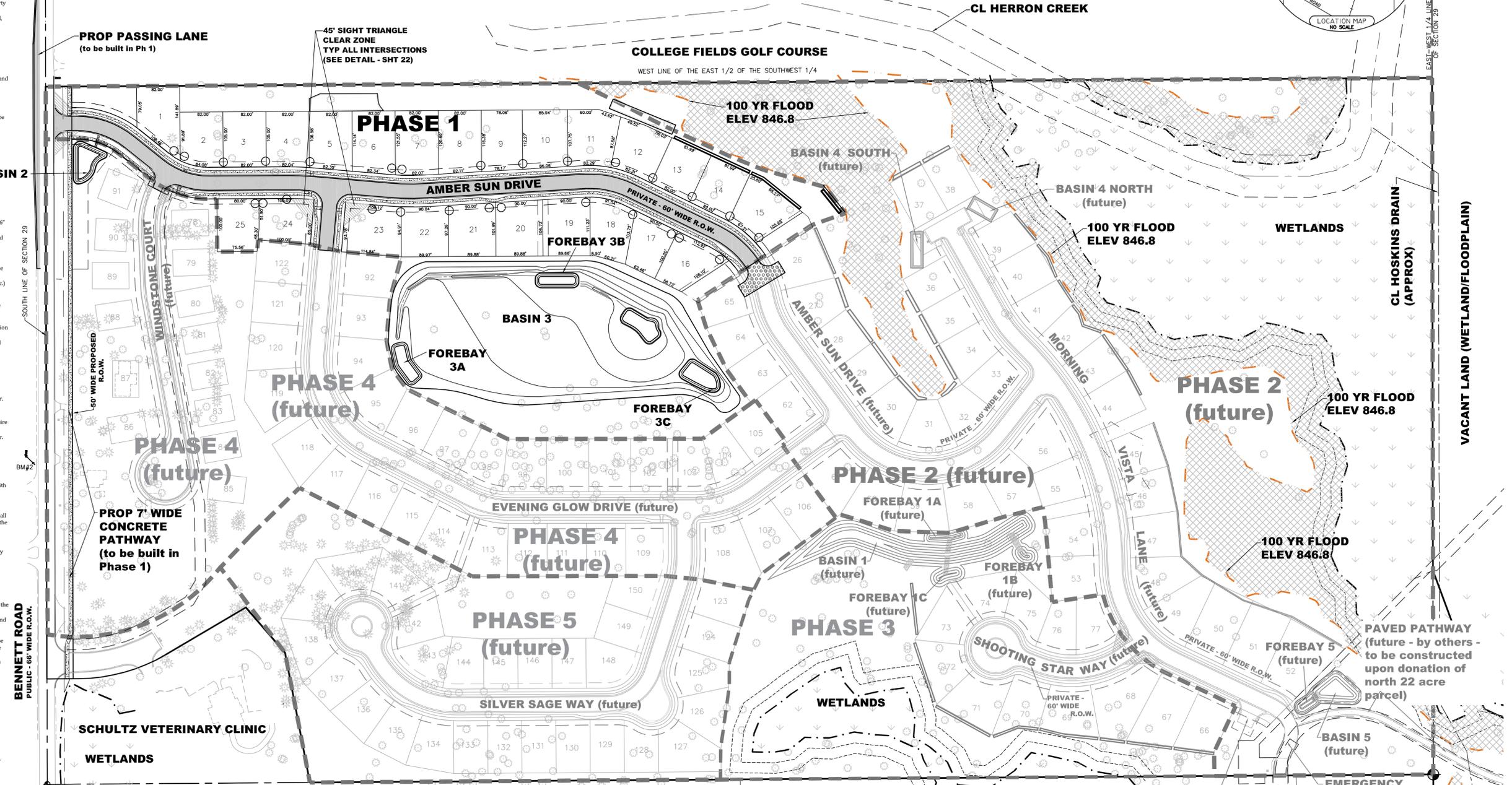
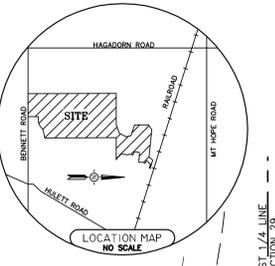
STREET LIGHTING

- 1. Street lighting to be provided by Consumers Energy.



CONSTRUCTION PLANS - PHASE 1
SILVERLEAF CONDOMINIUM
MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN

DESCRIPTION OF PROJECT: SILVERLEAF CONDOMINIUM IS A MULTI-PHASE RESIDENTIAL DEVELOPMENT ON BENNETT ROAD IN MERIDIAN TOWNSHIP. THE 94 ACRE SITE WILL BE DEVELOPED IN 5 PHASES, RESULTING IN 150 PROPOSED "LOTS"/UNITS. PHASE 1 CONSISTS OF UNITS 1-25. THESE PLANS ARE FOR PHASES 1 & 2, WITH THE PHASE 2 PORTION INCLUDED FOR INFORMATION AND SHOWN WITH LIGHT GRAY COLOR. THE SITE CONTAINS AREAS OF FLOODPLAIN, WETLANDS, FORESTED AREAS AND OPEN GRASSED AREAS, BOUNDED BY THE HERRON CREEK ON THE WEST SIDE AND THE HOSKINS DRAIN ON THE NORTH SIDE.
NOTE: GRAYED ITEMS INDICATES THAT IT WILL BE BUILT IN A FUTURE PHASE.



- TREE LEGEND:
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- DENOTES PROPOSED STREET TREE LOCATIONS
1 STREET TREE FOR EVERY 70 FEET OF FRONTAGE

- SHEET INDEX:
1. COVER SHEET
2. OVERALL UTILITY PLAN - ALL PHASES
3. OVERALL GRADING PLAN - ALL PHASES
4. GRADING & SECS PLAN - SOUTH HALF
5. GRADING & SECS PLAN - NORTH HALF
6. PLAN & PROFILE - AMBER SUN DRIVE P.O.B. STA 20+00 TO STA 31+50
7. PLAN & PROFILE - MORNING VISTA LANE P.O.B. STA 31+50 TO P.O.E. STA 42+61
8. PLAN & PROFILE - MORNING VISTA LANE P.O.B. STA 0+00 TO STA 9+50 (FUTURE PH2)
9. PLAN & PROFILE - MORNING VISTA LANE P.O.B. STA 70+00 TO P.O.E. 73+67 (FUTURE PH3)
10. PLAN & PROFILE - EVENING GLOW DRIVE P.O.B. STA 50+00 TO 56+50 (FUTURE PH4) AND G2+50 TO P.O.E. STA 65+34 (FUTURE PH4)
11. PLAN & PROFILE - BENNETT ROAD P.O.B. STA 110+00 TO STA 120+00
12. PLAN & PROFILE - BENNETT ROAD STA 120+00 TO P.O.E. STATION 131+00
13. PLAN & PROFILE - BASIN #3 STORM SEWER INLETS
14. PLAN & PROFILE - BASIN #3 STORM SEWER OUTLET
15. PLAN & PROFILE - BASIN #1 OUTLET (FUTURE)
16. PLAN & PROFILE - BASIN #1 & #5 STORM SEWER INLETS (FUTURE)
17. PAVED PATHWAY PLAN - SOPHIEA PWY TO CREEKSTONE TRAIL (BY OTHERS)
18. DEMOLITION PLAN
19. PLAN & PROFILE - WATERMAIN ALONG FUTURE WINDSTONE COURT
19A. PLAN & PROFILE - WINDSTONE COURT P.O.B. STA 90+00 TO STA 97+02 (FUTURE PH5)
20. SOIL EROSION & SEDIMENTATION CONTROL DETAILS
21. STORM WATER MANAGEMENT DETAILS
22. GENERAL DETAILS & NOTES

Professional Engineer seal for Allen J. Patrick, License No. 49313, State of Michigan.

Project information including: KEBS, INC. (2116 Haslett Rd, Haslett, MI 48840), KYES Engineering (2116 Haslett Rd, Haslett, MI 48840), Silverleaf Condominium, Cover Sheet, Date: 4/1/21, Sheet 1 of 22, Job #: 97343.