

PUBLIC UTILITIES

AT&T
337 N. ABBOTT, RM. 201
EAST LANSING, MI 48823
517.337.3660

TELEPHONE

CONSUMERS ENERGY
530 W. WILLOW ST.
P.O. BOX 30162
LANSING, MI 48909
517.373.6100

GAS
ELECTRIC

COMCAST
1070 TROWBRIDGE ROAD
EAST LANSING, MI 48823
517.332.1012

CABLE TV

MERIDIAN TOWNSHIP
5151 MARSH RD.
OKEMOS, MI 48864
517.853.4440

WATER MAINS
SANITARY SEWER
PATHWAYS

WOLVERINE PIPE LINE
8105 VALLEYWOOD LANE
PORTAGE, MI 49024-5251
231.323.2491

PETROLEUM PIPELINE

INGHAM COUNTY DRAIN
COMMISSIONER
707 BUHL ST.
MASON, MI 48854
517.676.8395

DRAINS
STORM SEWER

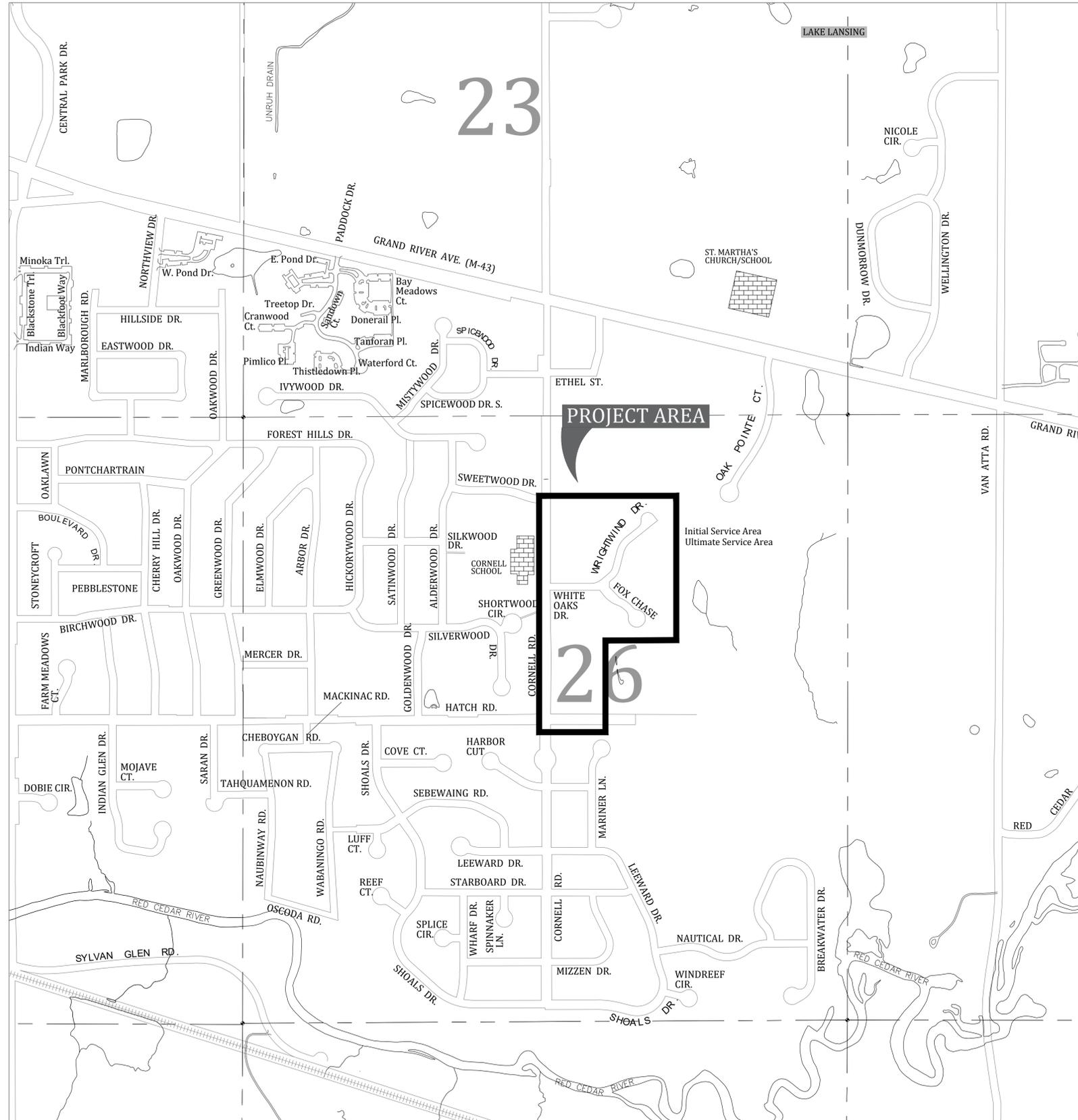
INGHAM COUNTY ROAD DEPT
301 BUSH ST.
MASON, MI 48854
517.676.9722

PUBLIC ROADS AND
RIGHTS OF WAY

SOIL EROSION & SEDIMENTATION CONTROL NOTES

- All soil erosion and sediment control (SESC) work shall conform to the standards and specifications of the Ingham County Drain Commissioner's Office and Meridian Township.
- Daily inspections shall be made by the contractor for effectiveness of SESC measures. Any necessary repairs shall be performed without delay.
- Erosion of any sediment from work on the site shall be contained on-site and not allowed to collect on any off-site areas or in waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes, ponds, and wetlands.
- The Contractor shall apply temporary SESC measures when required and as directed on these plans. The Contractor shall remove temporary measures as soon as permanent stabilization of slopes, ditches, and other changes have been established.
- Staging the work shall be done by the Contractor as directed in these plans and as required to ensure progressive stabilization of disturbed earth.
- Soil erosion control practice shall be established in the early stages of construction by the Contractor. Sedimentation control practices shall be applied as a perimeter defense against any transporting of soil off the site.
- The Contractor shall preserve natural vegetation as much as possible.
- Vegetative stabilization of all disturbed areas shall be established within 15 days of completion of the final grading.

**2026 FORCEMAIN PROJECT
CONSTRUCTION PLANS**
for
**MERIDIAN TOWNSHIP
INGHAM COUNTY, MICHIGAN**



STANDARD CONSTRUCTION NOTES

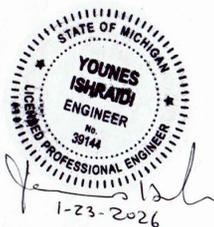
- The Contractor shall notify the Charter Township of Meridian, Department of Public Works, Office of Engineering 517-853-4440 a minimum of 72 hours prior to the start of construction of public utilities or of construction within the public right-of-way.
- All construction shall conform to the current standards and specifications of the Charter Township of Meridian which are included as part of these plans in effect at the time of construction.
- 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.
- 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.
- The contractor shall notify "MISS DIG" 811 at least 72 hours prior to the start of construction.
- The contractor shall at all times be aware of inconvenience caused to the abutting property owners and the general public. Where the contractor does not remedy undue inconveniences, the Charter Township of Meridian, upon four hours notice, reserves the right to perform the work and deduct the cost therefore from the money due the contractor.
- 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.
- Contractor shall provide Owner and Township Engineer a copy of written permission to use private property for storage of equipment and materials or for his construction operations.
- 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.
- Trees and shrubs are to be protected during construction and bored where necessary.
- Existing fences shall be removed and restored to their original condition or better where in conflict with construction.
- Driveways, culverts, ditches, drain tile, tile fields, drainage structures, etc., that are disturbed by the contractor's operations shall be immediately restored.
- All established lawn areas disturbed by the contractor's operations shall be resodded with matching sod. All other areas shall be seeded and mulched. Seeding and mulching shall be done in accordance with the General Specifications.
- All ditch slopes shall have established vegetation and be protected from erosion.
- All utility poles in close proximity to construction shall be supported in a manner satisfactory to the utility owner.
- 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.

SANITARY SEWER NOTES

- All sewers to be placed in class "B" bedding or better.
- Wyes, risers, and house leads are to be placed at locations shown on the plans or as directed by the Township Engineer. All wyes are incidental.
- Each wye or house lead shall have a plug of the same type of joint as the house lead.
- House leads shall have a minimum of 9 ft. deep at the property line. Individual site topography may require a deviation of this minimum.
- Down spouts or other conduits carrying storm or ground water shall not be connected to the sanitary sewer.
- Whenever existing manholes or sewer pipe are to be tapped holes are to be drilled at 4-inch center to center spacing around the periphery of the proposed opening to create a plane of weakness joint (or core saw the diameter) - a 12 inch thick collar is to encase the new pipe and opening.
- All sanitary sewer manholes shall be provided with watertight covers.
- All manhole covers shall bear the legend "MERIDIAN SANITARY SEWER" with tree logo.
- All public sanitary sewer main lines shall be SDR-26, or ABS truss pipe. Clay pipe may be installed in locations approved by the Township Engineer.
- The PVC (SDR-26) pipe material shall conform to ASTM D 2241, with bell and spigot joints in accordance with ASTM F 477.
- Pipe installation shall be in accordance with ASTM D 2321. All pipe shall be marked to provide ASTM designation, SDR number, manufacturer's name and pipe diameter.
- 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 outside diameter of the test mandrel shall be equal to the inside diameter. The outside diameter of the test mandrel shall be equal to the inside diameter of the pipe installation. A second test shall be performed after ten months of pipe installation or just before line's intended use.
- 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.

SHEET INDEX

SHT #	TITLE
1	COVER SHEET
2	SESC KEYS
3	SESC SITE PLAN
4	SESC DETAILS
5	NORTH SECTION OF CORNELL ROAD
6	SOUTH SECTION OF CORNELL ROAD
7	WHITE OAKS DR AND SOUTH WRIGHTWIND DR
8	WRIGHTWIND DR & FOX CHASE
9	STANDARD SANITARY SEWER SYSTEM DETAILS





KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
EROSION CONTROLS			Ⓟ = PERMANENT MEASURE
E1	SELECTIVE GRADING AND SHAPING Ⓟ		To reduce steep slopes and erosive velocities.
E2	GRUBBING OMITTED		For use on steep slopes to prevent rilling, gulying, and reduce sheet flow velocity or where clear vision corridors are necessary.
E3	SLOPE ROUGHENING AND SCARIFICATION		Where created grades cause increased erosive velocities. Promotes infiltration and reduces runoff velocity.
E4	TERRACES Ⓟ		On relatively long slopes up to 8% grades with fairly stable soils.
E5	DUST CONTROL		For use on construction sites, unpaved roads, etc. to reduce dust and sedimentation from wind and construction activities.
E6	MULCH		For use in areas subject to erosive surface flows or severe wind or on newly seeded areas.
E7	TEMPORARY SEEDING		Stabilization method utilized on construction sites where earth change has been initiated but not completed within a 2 week period.
E8	PERMANENT SEEDING Ⓟ		Stabilization method utilized on sites where earth change has been completed (final grading attained).
E9	MULCH BLANKETS		On exposed slopes, newly seeded areas, new ditch bottoms, or areas subject to erosion.
E10	SODDING Ⓟ		On areas and slopes where immediate stabilization is required.
E11	VEGETATED CHANNELS Ⓟ		For use in created stormwater channels. Vegetation is used to slow water velocity and reduce erosion within the channel.
E12	RIPRAP Ⓟ		Use along shorelines, waterways, or where concentrated flows occur. Slows velocity, reduces sediment load, and reduces erosion.
E13	GABION WALLS		On newly created or denuded stream banks to reduce velocity until permanent stabilization is achieved or on existing banks to retard erosive velocities.
E14	ENERGY DISSIPATOR Ⓟ		Where the energy transmitted from a concentrated flow of surface runoff is sufficient to erode receiving area or watercourse.
E15	TEMPORARY SLOPE DRAIN		Where surface runoff temporarily accumulates or sheet flows over the top of a slope and must be conveyed down a slope in order to prevent erosion.
E16	SLOPE DRAIN Ⓟ		Where concentrated flow of surface runoff must be permanently conveyed down a slope in order to prevent erosion.

SOIL EROSION AND SEDIMENT CONTROL NOTES

- All erosion and sediment work shall conform to standards and specifications of the Ingham County Drain Commission and Meridian Township.
- Daily inspections shall be made by contractor for effectiveness of erosion and sediment control measures, and necessary repairs shall be performed without delay.
- Erosion and any sediment from work on this site shall be contained on site and not allowed to collect on any off-site areas or waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes, ponds and wetlands.
- Contractor shall apply temporary erosion and sedimentation control measures when required and as directed on these plans. They shall remove temporary measures as soon as permanent stabilization of slopes, ditches and other changes have been established.
- Staging the work shall be done by contractor as directed in these plans and as required to ensure progressive stabilization of disturbed earth.
- Soil erosion control practice will be established in early stages of construction by the contractor. Sediment control practices will be applied as a perimeter defense against any transporting of dirt off the site.
- The contractor shall preserve natural vegetation as much as possible.
- Vegetation stabilization of all disturbed areas shall be established within 15 days of completion of final grading.

REQUIRED COMPLIANCE WITH PART 91 OF ACT 451 OF 1994

R 323.1709 - RULE 1709

- A person shall design, construct, and complete an earth change in a manner that limits the exposed area of any disturbed land for the shortest possible period of time as determined by the county or local enforcing agency.
- A person shall remove sediment caused by accelerated soil erosion from runoff water before it leaves the site of the earth change.
- A person shall design a temporary or permanent control measure that is designed and constructed for the conveyance of water around, through, or from the earth change area to limit the water flow to a non-erosive velocity.
- A person shall install temporary soil erosion and sedimentation control measures before or upon commencement of the earth change activity and shall maintain the measures on a daily basis. A person shall remove temporary soil erosion and sedimentation control measures after permanent soil erosion measures are in place and the area is stabilized. A person shall stabilize the area with permanent soil erosion control measures under approved standards and specifications as prescribed by R323.1710.
- A person shall complete permanent soil erosion control measures for all slopes, channels, ditches, or any disturbed land area within 5 calendar days after final grading or the final earth change has been completed. If it is not possible to permanently stabilize a disturbed area after an earth change has been completed or if significant earth change activity ceases, then a person shall maintain temporary soil erosion and sedimentation control measures until permanent soil erosion control measures are in place and the area is stabilized.

CORRECTIVE ACTIONS

In the event that township personnel, or their contracted inspector, is unsuccessful in getting a contractor to perform corrective actions, the Township will assume responsibility for ensuring that SESC corrective actions are implemented. The following progressive steps shall be taken if a contractor fails to comply with their contract or Part 91 regulations:

- Issue or reissue a work order describing the work to be completed by the contractor specifying a completion date.
- Issue a notice of noncompliance with contract requirements for failure to respond to SESC corrective actions in a timely matter.
- Contract with another specialty contractor to complete the required corrective actions to ensure compliance with regulations.
- Prepare and place on file a contractor evaluation to document the contractor's inability to meet contract obligations and implementation of required SESC measures.

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
E17	CELLULAR CONFINEMENT SYSTEMS Ⓟ		Used on steep slopes and high velocity channels.
E18	PLASTIC SHEETS		Used on exposed slopes, seeded areas, new ditch bottoms, and areas subject to surface runoff and erosion. Used as a liner in temporary channels and to stabilize stockpiles.
E19	TEMPORARY DRAINAGEWAY/STREAM CROSSING		Use on construction sites where stream/drainage way crossings are required.
E20	TEMPORARY BYPASS CHANNEL		Use within existing stream corridors when existing flow cannot be interrupted, and at culvert and bridge repair sites.
E21	LIVE STAKING Ⓟ		In areas requiring protection of slopes against surface erosion and shallow mass wasting.
EROSION / SEDIMENT CONTROLS			Ⓟ = PERMANENT MEASURE
ES31	CHECK DAM Ⓟ		Used to reduce surface flow velocities within constructed and existing flow corridors.
ES32	STONE FILTER BERM		Use primarily in areas where sheet or rill flow occurs and to accommodate dewatering flow.
ES33	FILTER ROLLS		In areas requiring immediate protection of slopes against surface erosion and gully formation and for perimeter sediment control.
ES34	SAND FENCE		For use in areas susceptible to wind erosion, especially where the ground has not yet been stabilized by other means.
ES35	DEWATERING		Use where construction activities are limited by the presence of water and dry work is required.
ES36	DIVERSION DIKE/BERM		Within existing flow corridors to address or prevent erosion and sedimentation, or on disturbed or unstable slopes subject to erosive surface water velocities.
ES37	DIVERSION DITCH		In conjunction with a diversion dike, or where diversion of upslope runoff is necessary to prevent damage to unstabilized or disturbed construction areas.
ES38	COFFERDAM/SHEET PILING		Constructed along or within water corridor or waterbody to provide dry construction area.
ES39	STREAMBANK BIOSTABILIZATION		For use along banks where stream and riparian zones may have difficulty recovering from the long-term effects of erosion.
ES40	POLYMERS		To minimize soil erosion and reduce sedimentation in water bodies by increasing soil particle size.
ES41	WATILES		In areas requiring protection of slopes against surface erosion and gully formation.

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
SEDIMENT CONTROLS			Ⓟ = PERMANENT MEASURE
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
S52	CATCH BASIN SEDIMENT GUARD		Use in or at stormwater inlets, especially at construction sites.
S53	STABILIZED CONSTRUCTION ACCESS		Used at every point where construction traffic enters or leaves a construction site.
S54	TIRE WASH		For use on construction sites where vehicular traffic requires sediment removed from its tires in highly erosive areas.
S55	SEDIMENT BASIN Ⓟ		At the outlet of disturbed areas and at the location of a permanent detention basin.
S56	SEDIMENT TRAP Ⓟ		In small drainage areas, along construction site perimeters, and above check dams or drain inlets.
S57	VEGETATED BUFFER/FILTER STRIP Ⓟ		Use along shorelines, waterways, or other sensitive areas. Slows velocity, reduces sediment load, and reduces erosion in areas of sheet flow.
S58	INLET PROTECTION FABRIC DROP		Use at stormwater inlets, especially at construction sites.
S59	INLET PROTECTION FABRIC FENCE		Use at stormwater inlets, especially at construction sites.
S60	INLET PROTECTION STONE		Use around urban stormwater inlets.
S61	TURBIDITY CURTAIN		Use during construction adjacent to a water source, to contain sediment within the work area when other BMP's cannot be used.

TEMPORARY SESC MAINTENANCE

- PERSON RESPONSIBLE:** Contractor
- GENERAL MAINTENANCE:**
 - Temporary sesc measures to be maintained by the contractor unless otherwise indicated.
 - Temporary measures must be maintained and in place until areas are permanently stabilized.
- DUST CONTROL:**
 - Frequent, even daily application of water or chloride may be required to increase effectiveness.
 - Do not over water, as over watering may cause erosion.
- SILT FENCE:**
 - Silt fence is to be trenched in no less than 6 inches below the ground surface.
 - Inspect silt fence daily and immediately following each rainfall.
 - Repair silt fence when sagging or when silt fence has been removed / torn down.
 - When silt collects to half the height of the silt fence all silt is to be removed and silt fence repaired.
 - Remove silt fence when permanent sesc measures are in place and vegetation is established.
- SEEDING AND MULCHING:**
 - Seeding practices include topsoil (as directed by engineer), seed, soil binding polymers, and tackified mulch or mulch matting (as directed by engineer or shown on plans).
 - Dormant fall seeding. In late fall after the soil temperature remains consistently below 50°F prior to the ground freezing.
 - No seed germination will take place until spring therefore mulch or another stabilization technique may be required to prevent erosion and off-site sedimentation, a cool season annual grass may be added in an attempt to have some fall growth.
 - Dormant winter seeding. Apply seed daily to disturbed areas and dredged spoil piles before they freeze. Seed will germinate in the early spring.
 - Where necessary, appropriate mulch matting must be applied based on slope and growing conditions as approved by the project engineer.
 - All slopes and highly erosive areas will be temporarily seeded, apply soil binding polymers and mulch when construction activity is not taking place.
 - Seed and mulch is to be inspected following each rain event to determine if concentrated flows are present.
 - In the event that seed and mulch are removed by erosive runoff, repairs are to be made immediately.
 - All areas during construction will be permanently stabilized within 24 hours of final grade.
- COMPLIANCE:**
 - Respond immediately to stormwater operator and/or soil erosion and sedimentation control inspector concerns. Make corrective measures as required.

PERMANENT SESC MAINTENANCE

- PERSON RESPONSIBLE:** Contractor responsible for 1-year after substantial completion. Landowner responsible afterwards.
- GENERAL MAINTENANCE:**
 - Inspect permanent SESC measures monthly during the first growing season, after completion of construction or as needed after significant storm event
- SEEDING:**
 - Repair bare areas, applying supplemental seed, mulch and water as needed. Mowing can be used periodically to discourage weeds.

Meridian Charter Township
Ingham County, Michigan
PUBLIC WORKS DEPARTMENT

SOIL EROSION AND SEDIMENT CONTROL RULES AND KEYS

REVISIONS:		
DATE	BY:	COMMENTS:
1/21/26	JH	For Permitting
1/29/26	JH	Bid Set

DRAWN BY:

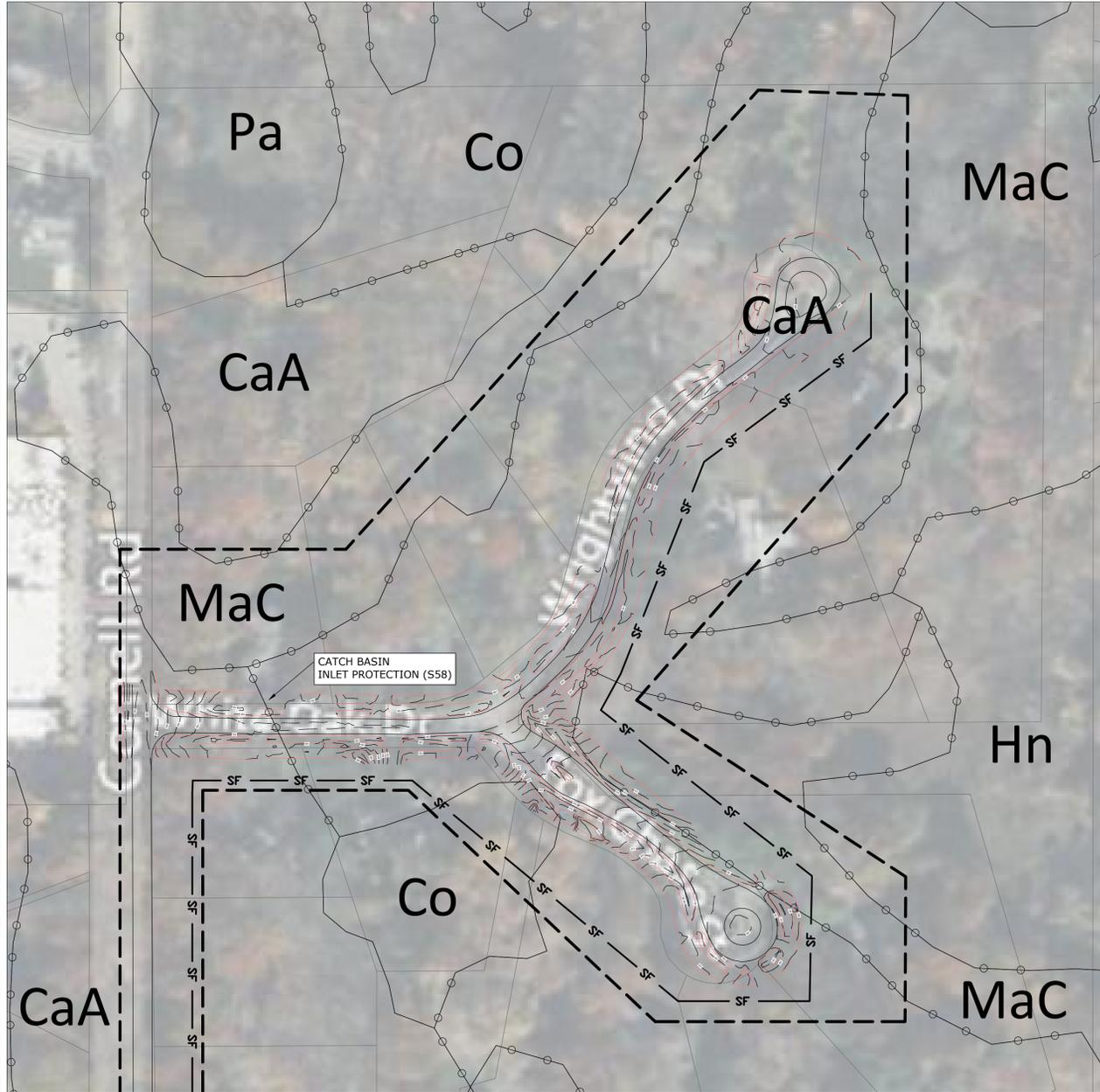
CHECKED BY:

SCALE:

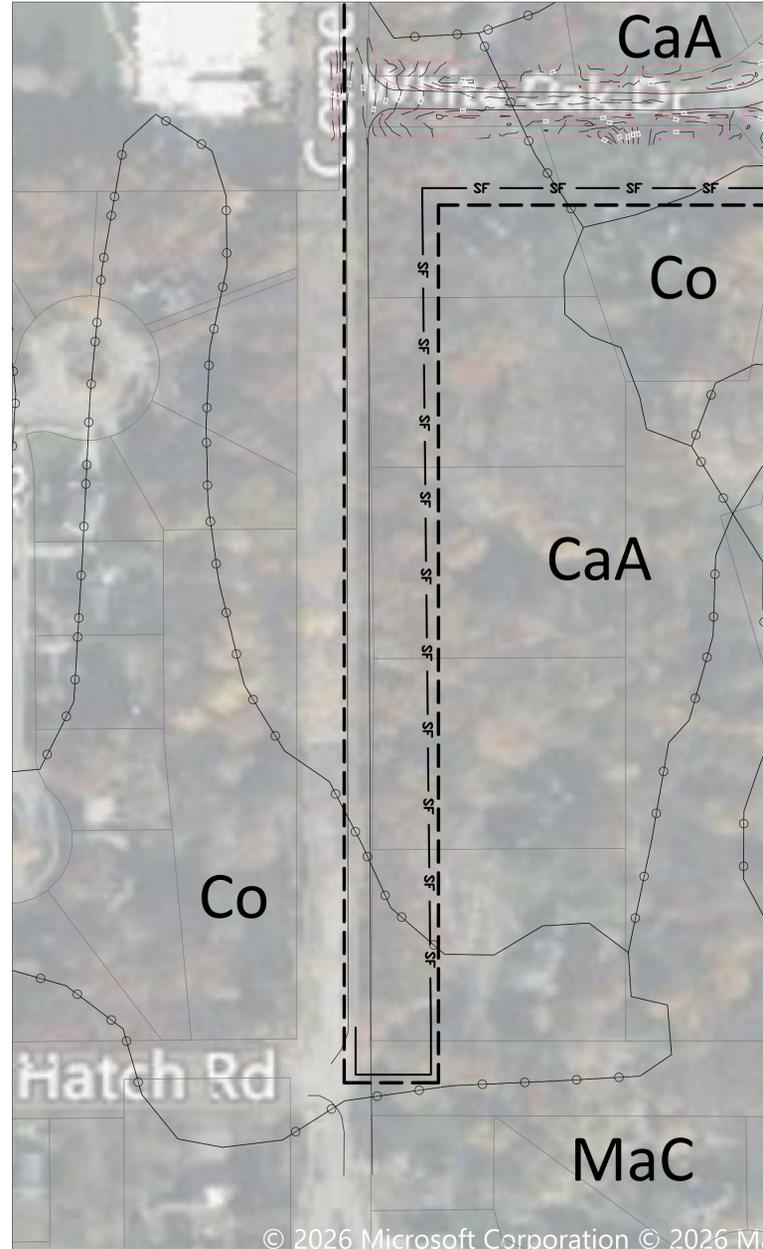
SHEET 2

SHEET

WHITE OAK DR, WRIGHTWIND DR, FOX CHASE

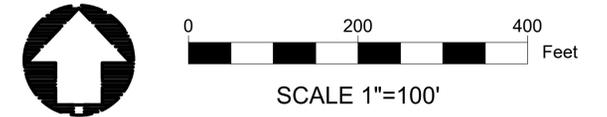


CORNELL RD

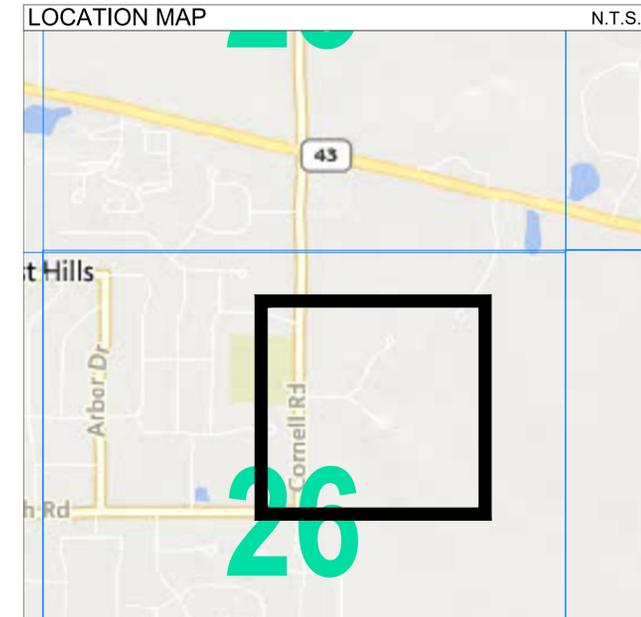


PROPOSED CONSTRUCTION SCHEDULE & SEQUENCING	START DATE	COMPLETE	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PLACE AND MAINTAIN TEMPORARY EROSION CONTROLS														
OPEN-CUT EXCAVATION														
ON-SITE UTILITIES CONSTRUCTION														
SITE RESTORATION														
FINAL INSPECTIONS & TEMPORARY EROSION REMOVAL														

SOIL TYPES
 Pa - PALMSMUCK
 CaA - CAPAC LOAM, 0-3% SLOPES
 Co - COLWOOD-BROOKSTON LOAMS
 MaC - MARLETTE FINE SANDY LOAM, 6-12% SLOPES
 Hn - HOUGHTON MUCK



LEGEND	
Soil Boundary	—○—○—○—○—
Silt Fencing (Key S51)	—SF—SF—SF—SF—
Limits of Disturbance	- - - - -



PARCEL NUMBER:
Multiple

PREDOMINANT LAND FEATURES:
N/A

DISTANCE TO NEAREST LAKE / STREAM / DRAIN:
280 feet west of Hathaway Drain
1170 feet northwest of Shoals Drain

SIZE OF EARTH CHANGE:
If Open-cut: 0.33 ac. If Trenchless: 0.005 ac

LANDOWNER INFORMATION:
 NAME: Meridian Township
 ADDRESS: 5151 Marsh Rd, Okemos, MI, 48864
 PHONE: 517-853-4440
 EMAIL: DPW@Meridian.mi.us

PROJECT DESCRIPTION:

- Installation of 2880 feet of 3" HDPE DR 11 Sanitary Pressure Sewer by open-cut or trenchless methods;
- Installation of 15 new curb boxes and 1.5" Service Laterals to Property Lines;
- Installation of 4 new 48" diameter Manholes;
- Connection of the new Sanitary Sewer to an existing Manhole with an internal drop connection.

LEGAL DESCRIPTION:
 White Oaks Estates: A subdivision on part of the West 1/2 of NE 1/4 of Sec 26, T4N, R1W, Meridian Township, Ingham County, Michigan.
 Ashbury Commons: A subdivision of part of the NE 1/4 of Sec 26, T4N, R1W, Meridian Township, Ingham County, Michigan.

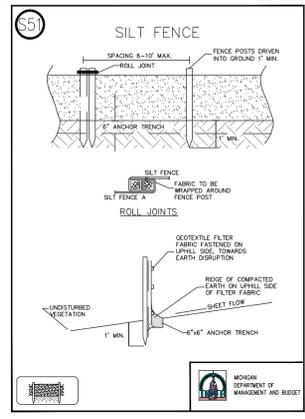
Meridian Charter Township
 Ingham County, Michigan
 PUBLIC WORKS DEPARTMENT

SOIL EROSION AND SEDIMENT CONTROL SITE PLAN

DRAWN BY: JH CHECKED BY: YI

REVISIONS:		
DATE	BY:	COMMENTS:
1/21/26	JH	For Permitting
1/29/26	JH	Bid Set

SCALE: 1"=100' SHEET 3



S51 SILT FENCE SPECIFICATIONS

When

- A temporary measure for preventing sediment movement.
- Used to prevent sediment suspended in runoff from leaving an earth change area.

Why

- Use adjacent to critical areas, wetlands, base of slopes, and watercourses.

Where

- Use adjacent to critical areas, wetlands, base of slopes, and watercourses.

How

- Install parallel to a contour.
- The silt fence should be made of woven geotextile fabric.
- Silt fence should accommodate no more than 1/2 to 1 acre of drainage per 100' of fence and on slopes less than 1:2 (v:h).
- Dig a 6" trench along the area where the fence is to be installed.
- Place 6" of the silt fence bottom flap into the trench.
- Backfill the trench with soil and compact the soil on both sides. Create a small ridge on the up-slope side of the fence.
- Install wooden stakes 6 - 10' apart and drive into the ground a minimum of 12".
- Staple the geotextile fabric to the wooden stakes.
- Join sections of silt fence by wrapping ends together (See drawing).

Maintenance

- Inspect frequently and immediately after each storm event. Check several times during prolonged storm events. If necessary, repair immediately.
- If the sediment has reached 1/3 the height of the fence, the soil should be removed and disposed of in a stable upland site.
- The fence should be re-installed if water is seeping underneath it or if the fence has become ineffective.
- Silt fence should be removed once vegetation is established and up-slope area has stabilized.

Limitations

- Silt fence may cause temporary ponding and could fail if too much water flows through the area.
- Do not use in areas with concentrated flows.
- Chance of failure increases if fence is installed incorrectly or if sediment accumulation is not removed.

S51 SILT FENCE SPECIFICATIONS

When

- A temporary measure for preventing sediment movement.
- Used to prevent sediment suspended in runoff from leaving an earth change area.

Why

- Use adjacent to critical areas, wetlands, base of slopes, and watercourses.

Where

- Use adjacent to critical areas, wetlands, base of slopes, and watercourses.

How

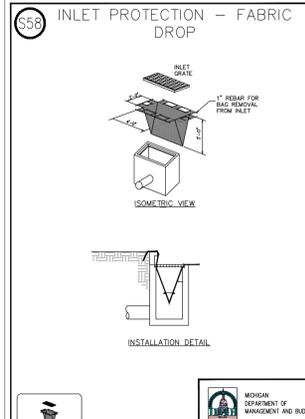
- Install parallel to a contour.
- The silt fence should be made of woven geotextile fabric.
- Silt fence should accommodate no more than 1/2 to 1 acre of drainage per 100' of fence and on slopes less than 1:2 (v:h).
- Dig a 6" trench along the area where the fence is to be installed.
- Place 6" of the silt fence bottom flap into the trench.
- Backfill the trench with soil and compact the soil on both sides. Create a small ridge on the up-slope side of the fence.
- Install wooden stakes 6 - 10' apart and drive into the ground a minimum of 12".
- Staple the geotextile fabric to the wooden stakes.
- Join sections of silt fence by wrapping ends together (See drawing).

Maintenance

- Inspect frequently and immediately after each storm event. Check several times during prolonged storm events. If necessary, repair immediately.
- If the sediment has reached 1/3 the height of the fence, the soil should be removed and disposed of in a stable upland site.
- The fence should be re-installed if water is seeping underneath it or if the fence has become ineffective.
- Silt fence should be removed once vegetation is established and up-slope area has stabilized.

Limitations

- Silt fence may cause temporary ponding and could fail if too much water flows through the area.
- Do not use in areas with concentrated flows.
- Chance of failure increases if fence is installed incorrectly or if sediment accumulation is not removed.



S58 INLET PROTECTION - FABRIC DROP SPECIFICATIONS

When

- When sediment laden stormwater requires treatment before entering a stormwater drainage system.
- Do not use in areas with concentrated flows.

Why

- To prevent sediment from entering stormwater systems.

Where

- Use in or at stormwater inlets, especially at construction sites or in streets.

How

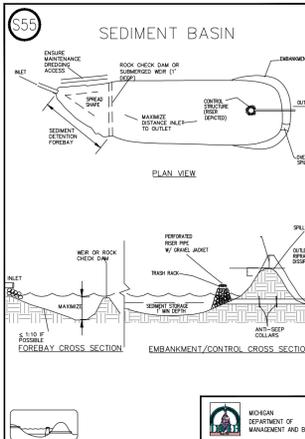
- A filter fabric bag is hung inside the inlet, beneath the grate.
- Anchor filter bag with 1" rebar for removal from inlet.
- Flaps of bag that extend beyond the bag can be buried in soil in earth areas.

Maintenance

- Drop inlet filters should be inspected routinely and after each major rain event.
- Damaged filter bags should be replaced.
- Clean and/or replace filter bag when 1/2 full.
- Replace clogged fabric immediately.
- If needed, initiate repairs immediately upon inspection.
- Remove entire protective mechanism when upgradient areas are stabilized and streets have been swept.

Limitations

- Can only accommodate small flow quantities.
- Requires frequent maintenance.
- Ponding may occur around storm drains if filter is clogged.



S55 SEDIMENT BASIN SPECIFICATIONS

When

- When site runoff is sediment-laden and/or runoff release rate is required.

Why

- To detain runoff sufficiently to allow excessive sediment to settle out before stormwater leaves construction site.

Where

- At the outlet of any disturbed area or at the ultimate site outlet.
- Should be used in association with dikes, temporary channels, and pipes to divert stormwater from the disturbed area into the basin.
- May be combined with permanent detention basin.

How

- Basin to be designed by engineer or CPESC to ensure adequate storage volume from the contributing drainage area.
- Basins should be constructed before clearing and grading work begins.
- Basins should be located at the stormwater outlet for the site and multiple basins may be located throughout the site.
- Basin location should ensure suitable access for maintenance and cleanout.
- Do not locate in a stream.
- All basin sites should be located where embankment failure will not compromise safety or result in property damage.
- The basin volume should be designed to handle the volume of stormwater expected from the disturbed acreage for a minimum 10-year storm event.
- The basin volume consists of two zones:
 - A sediment storage zone to a 1' minimum depth.
 - A settling zone of at least 2 feet deep.

S55 SEDIMENT BASIN SPECIFICATIONS

When

- When site runoff is sediment-laden and/or runoff release rate is required.

Why

- To detain runoff sufficiently to allow excessive sediment to settle out before stormwater leaves construction site.

Where

- At the outlet of any disturbed area or at the ultimate site outlet.
- Should be used in association with dikes, temporary channels, and pipes to divert stormwater from the disturbed area into the basin.
- May be combined with permanent detention basin.

How

- Basin to be designed by engineer or CPESC to ensure adequate storage volume from the contributing drainage area.
- Basins should be constructed before clearing and grading work begins.
- Basins should be located at the stormwater outlet for the site and multiple basins may be located throughout the site.
- Basin location should ensure suitable access for maintenance and cleanout.
- Do not locate in a stream.
- All basin sites should be located where embankment failure will not compromise safety or result in property damage.
- The basin volume should be designed to handle the volume of stormwater expected from the disturbed acreage for a minimum 10-year storm event.
- The basin volume consists of two zones:
 - A sediment storage zone to a 1' minimum depth.
 - A settling zone of at least 2 feet deep.

E7 TEMPORARY SEEDING SPECIFICATIONS

When

- When an area needs stabilization during a break in construction.
- Stabilizes soil.
- Prevents erosion/sedimentation problems from developing.
- Allows runoff to infiltrate soil.

Why

- Used on construction and earth change sites where earth change has been initiated but will not be completed within two normal work weeks.
- A temporary measure when an area needs stabilization during a break in construction.

Where

- Used on construction and earth change sites where earth change has been initiated but will not be completed within two normal work weeks.
- A temporary measure when an area needs stabilization during a break in construction.

How

- Review construction phasing and soil erosion control plan to identify areas requiring temporary seeding.
- Select annual grass seed for temporary cover areas.
- Seed mixes may vary, should only contain annual, non-aggressive species, and generally include eye, wheat, or oat species. Seed mixes should be obtained from a seed supplier as seed mixes are dependent on soil type, light, moisture, and use application.
- Prepare seedbed by removal of construction/woody debris. Then scarify or rake seedbed.
- Slopes steeper than 1:3 should be roughened.
- Apply seed as soon as possible after seedbed preparation. Mulch immediately after seeding all slopes, unstable soils, heavy clay soils, and oil areas adjacent to wetlands, watercourses, or sensitive areas.
- The time to seed is dependent on the climate of the area. Michigan has three climatic zones.
- Protect seeded areas from pedestrian/vehicular traffic.
- Divert concentrated flows away from seeded area until vegetation is established.

E7 TEMPORARY SEEDING DATES

How (cont.)

- Inspect temporary seeded areas weekly and following each rain event until final grading and stabilization activities are completed.
- Must be followed by permanent seeding.

Limitations

- Seeds need adequate time to establish.
- May not be appropriate in areas with frequent traffic.
- Seeded area may require irrigation in dry periods.

Seed Type	Zone 1 (South of U.S. 10)		Zone 2 (North of U.S. 10)		Zone 3 (Upper Peninsula)		Use (lbs per acre)
	Lower Peninsula	Upper Peninsula	Lower Peninsula	Upper Peninsula	Lower Peninsula	Upper Peninsula	
Oats, barley	4/1 - 9/15	4/15 - 8/1	5/1 - 8/1	5/1 - 8/1	2 lbs.	2 lbs.	96 lbs
Annual Rye	8/1 - 10/15	8/1 - 10/15	8/1 - 11/1	8/1 - 11/1	3 lbs.	3 lbs.	120 lbs
Wheat	9/20 - 10/15	9/10 - 10/10	8/10 - 10/1	8/10 - 10/1	3 lbs.	3 lbs.	120 lbs
Buckwheat	6/1 - 7/15	6/1 - 7/15	6/15 - 7/15	6/15 - 7/15	2 lbs.	2 lbs.	75 lbs
Perennial Ryegrass	8/1 - 10/15	8/1 - 8/1	8/1 - 10/1	8/1 - 10/1	0.5 lbs.	0.5 lbs.	20 lbs

Source: Adapted from USDA NRCS Technical Guide #342 (1999)

E7 TEMPORARY SEEDING DATES

How (cont.)

- Inspect temporary seeded areas weekly and following each rain event until final grading and stabilization activities are completed.
- Must be followed by permanent seeding.

Limitations

- Seeds need adequate time to establish.
- May not be appropriate in areas with frequent traffic.
- Seeded area may require irrigation in dry periods.

Planting Zones	Zone 1 (South of U.S. 10)		Zone 2 (North of U.S. 10)		Zone 3 (Upper Peninsula)	
	Lower Peninsula	Upper Peninsula	Lower Peninsula	Upper Peninsula	Lower Peninsula	Upper Peninsula
Seeding Window	4/15 - 10/10	5/1 - 10/1	5/1 - 10/1	5/1 - 10/1	5/1 - 9/20	5/1 - 9/20
Seeding Window	4/15 - 10/10	5/1 - 10/1	5/1 - 10/1	5/1 - 10/1	5/1 - 9/20	5/1 - 9/20
Dormant Seeding Dates	11/1 - 10/25	10/25 - 11/21	10/25 - 11/21	10/25 - 11/21	10/25 - 11/21	10/25 - 11/21

Source: Adapted from MDDT Interim 2003 Standard Specifications for Contractors

E8 PERMANENT SEEDING SPECIFICATIONS

When

- To finalize stabilization of temporary seeding areas or when an area needs permanent stabilization following completion of construction. Also used when vegetative establishment can correct existing soil erosion or sedimentation problem.
- Within 5 days of final grade.

Why

- To stabilize soil and prevent or reduce soil erosion/sedimentation problems from developing.

Where

- Used on construction and earth change sites which require permanent vegetative stabilization.

How

- Review SEEC plan and construction phasing to identify areas in need of permanent vegetative stabilization.
- Select perennial grass and ground cover for permanent seeding.
- SEEC mixes vary. However, they should contain native species.
- SEEC mixes should be selected through consultation with a certified seed provider and with consideration of soil type, light, moisture, use applications, and native species.
- SEEC tests should be performed to determine the nutrient and pH levels in the soil. The pH may need to be adjusted to between 6.5 and 7.0.
- Prepare a 3-5" deep seedbed, with the top 3-4" consisting of topsoil.
- Slopes steeper than 1:3 should be roughened.
- Apply seed as soon as possible after seedbed preparation. Seed may be broadcast by hand, hydroseeding, or by using mechanical drills.
- Mulch immediately after seeding.
- Dormant seed mixes are for use after the growing season, using seed which lies dormant in the winter and begins growing as soon as site conditions become favorable.

E8 PERMANENT SEEDING SPECIFICATIONS

When

- To finalize stabilization of temporary seeding areas or when an area needs permanent stabilization following completion of construction. Also used when vegetative establishment can correct existing soil erosion or sedimentation problem.
- Within 5 days of final grade.

Why

- To stabilize soil and prevent or reduce soil erosion/sedimentation problems from developing.

Where

- Used on construction and earth change sites which require permanent vegetative stabilization.

How

- Review SEEC plan and construction phasing to identify areas in need of permanent vegetative stabilization.
- Select perennial grass and ground cover for permanent seeding.
- SEEC mixes vary. However, they should contain native species.
- SEEC mixes should be selected through consultation with a certified seed provider and with consideration of soil type, light, moisture, use applications, and native species.
- SEEC tests should be performed to determine the nutrient and pH levels in the soil. The pH may need to be adjusted to between 6.5 and 7.0.
- Prepare a 3-5" deep seedbed, with the top 3-4" consisting of topsoil.
- Slopes steeper than 1:3 should be roughened.
- Apply seed as soon as possible after seedbed preparation. Seed may be broadcast by hand, hydroseeding, or by using mechanical drills.
- Mulch immediately after seeding.
- Dormant seed mixes are for use after the growing season, using seed which lies dormant in the winter and begins growing as soon as site conditions become favorable.

E8 PERMANENT SEEDING

Planting Zones	Zone 1 (South of U.S. 10)		Zone 2 (North of U.S. 10)		Zone 3 (Upper Peninsula)	
	Lower Peninsula	Upper Peninsula	Lower Peninsula	Upper Peninsula	Lower Peninsula	Upper Peninsula
Seeding Window	4/1 - 8/1	5/1 - 9/20	5/1 - 9/10	5/1 - 9/10	5/1 - 9/20	5/1 - 9/20
Seeding Window	4/1 - 8/1	5/1 - 9/20	5/1 - 9/10	5/1 - 9/10	5/1 - 9/20	5/1 - 9/20
Dormant Seeding Dates	11/1 - 10/25	10/25 - 11/21	10/25 - 11/21	10/25 - 11/21	10/25 - 11/21	10/25 - 11/21

Source: Adapted from MDDT Interim 2003 Standard Specifications for Contractors

* Dormant seeding is for use in the late fall after the soil temperature remains consistently below 50 F, prior to the ground freezing. This practice is appropriate if construction on a site is completed in the fall but the seed was not planted prior to recommended seeding dates. No seed germination will take place until spring. A cool season annual grass may be added in an attempt to have some fall growth.

* Mulch must be used with dormant seed.

* Do not seed when the ground is frozen or snow covered.

* Do not use a dormant seed mix on grassed waterways.

Meridian Charter Township
Ingham County, Michigan
PUBLIC WORKS DEPARTMENT

**SOIL EROSION AND
SEDIMENT CONTROL
DETAIL SHEETS**

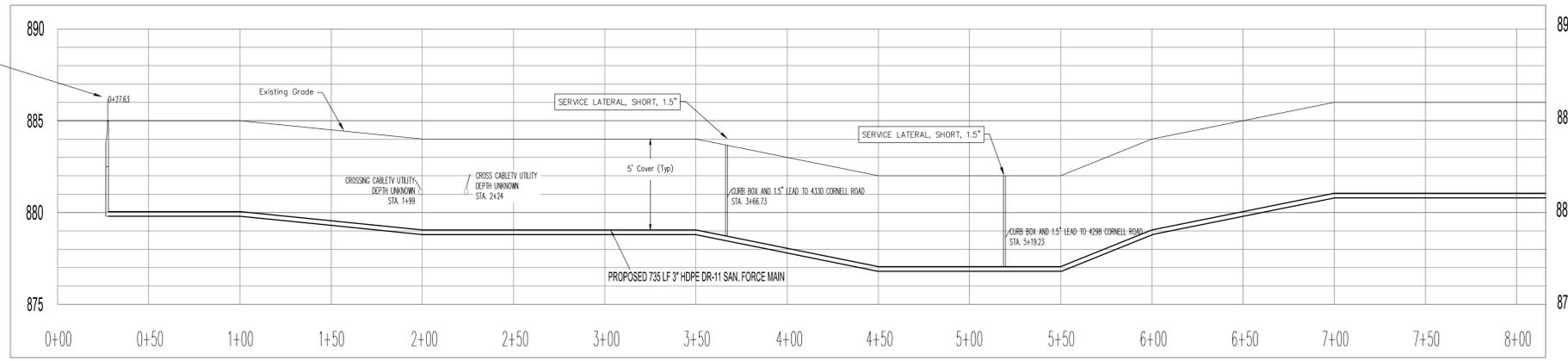
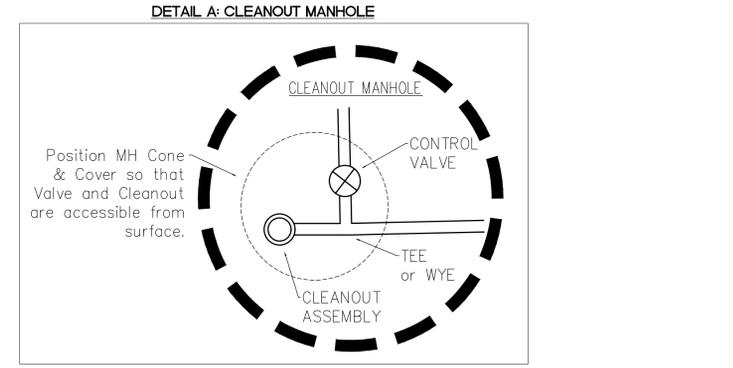
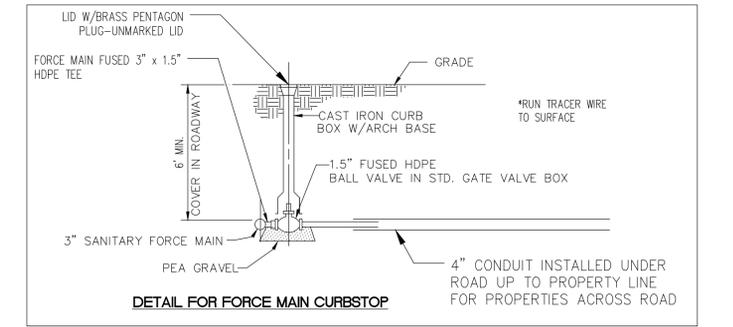
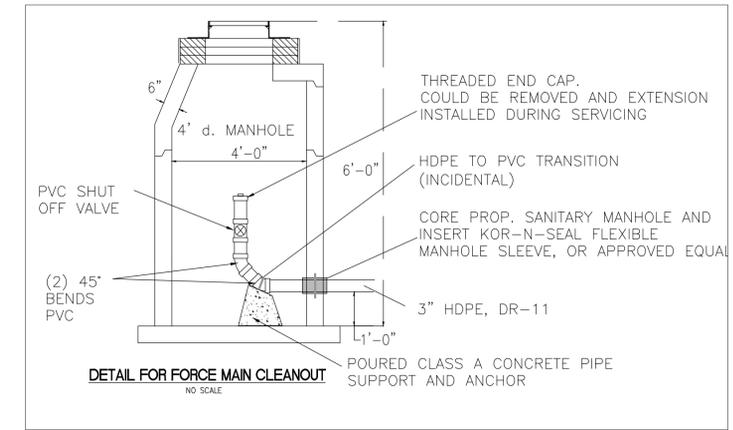
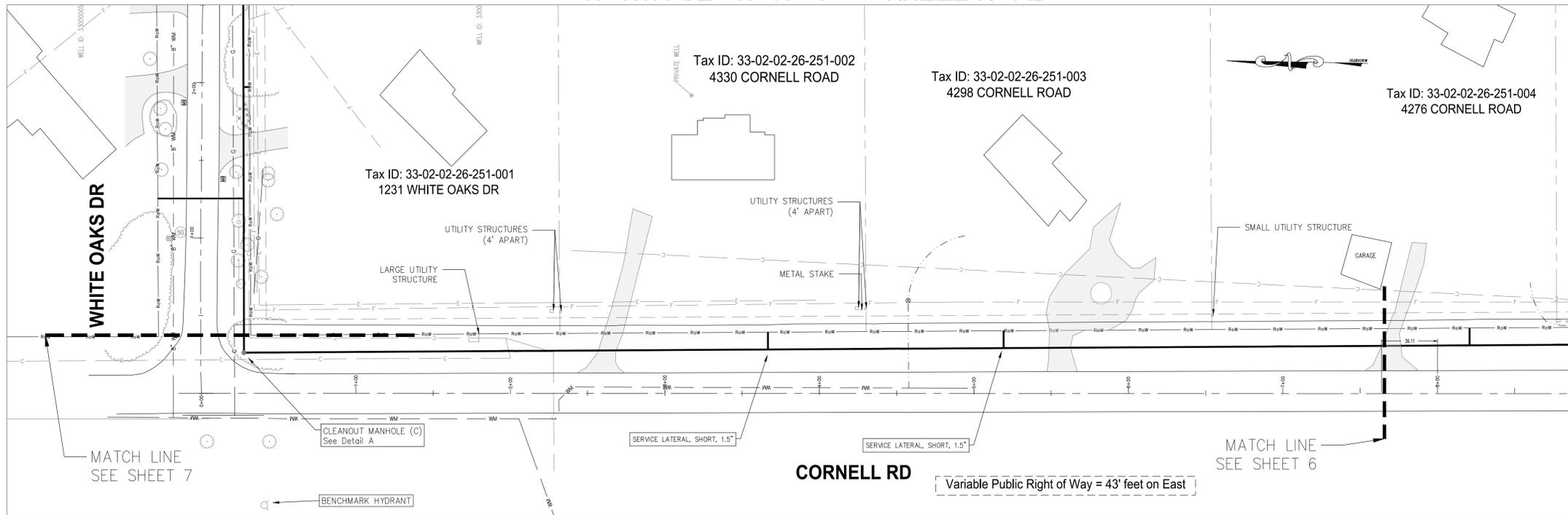
REVISIONS:

DATE	BY:	COMMENTS:
1/21/26	JH	For Permitting
1/29/26	JH	Bid Set

DRAWN BY: CHECKED BY:

SCALE: SHEET **4** SHEET

NORTH SECTION OF CORNELL ROAD



BENCHMARK:
Hydrant @ SW Corner of
Cornell Rd & White Oaks Dr
Elevation: 890.51
Top of NW Flange Bolt under
"E" of "EJW"

QUANTITIES THIS SHEET			
ITEM	DESCRIPTION	QTY	UNIT
20b.	Sanitary Sewer, 3 inch, Force Main	735	FT
20d.	Sanitary Sewer Control Valve	1	EA
21a.	Sanitary Structure, 48 inch dia, Cleanout Manhole	1	EA
22a.	Sanitary Sewer, Service Lateral, Short, 1.5 inch	2	EA

SYMBOLS:

- PINE
- DECID.
- BUSH
- STUMP
- SAN. MH
- F.H.
- CATV BOX
- U.P. (W/GUY)
- TELE. MH
- STREET SIGN
- SIGN
- SAN. MH
- STM. MH
- TELE. BOX
- WTR. MH
- CATV MH
- LIGHT
- MAILBOX
- SITE BORING
- P.I.
- C.M.P.
- C.B.
- G.V.
- F.H.
- CATV (AT&T)
- C/L OF ROADS
- ELEC (CONSUMERS)
- GAS (CONSUMERS)
- FIBER (COMCAST)
- PROPERTY LINE
- ROW (ICRD, MDOT)
- EXISTING 5' / 7' SIDEWALK / PATHWAY
- UTILITY EASEMENT
- EX SAN MAIN
- EX WTR MAIN
- PROPOSED SAN
- PROPOSED STM
- PROPOSED WTR
- PROPOSED 5' / 7' SIDEWALK / PATHWAY

LINE WEIGHTS:

- LESS BOLD
- LESS BOLD
- BOLD
- BOLD
- BOLD

Call 811 before you dig.

WOLVERINE PIPE LINE COMPANY 219-844-9510

Meridian Charter Township
Ingham County, Michigan
Sanitary Sewer Main System

NORTH SECTION OF
CORNELL ROAD

DRAWN BY: SB CHECKED BY: YI

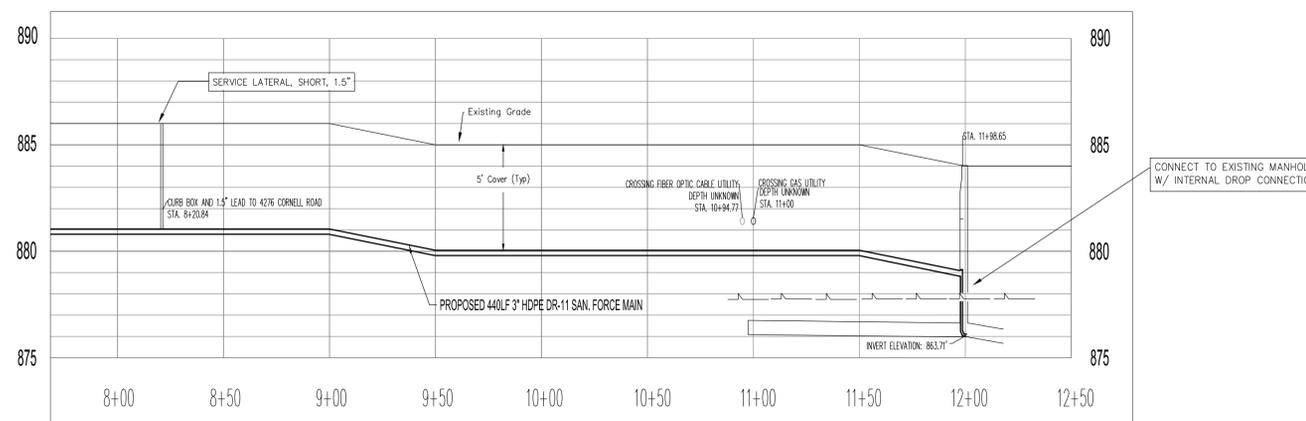
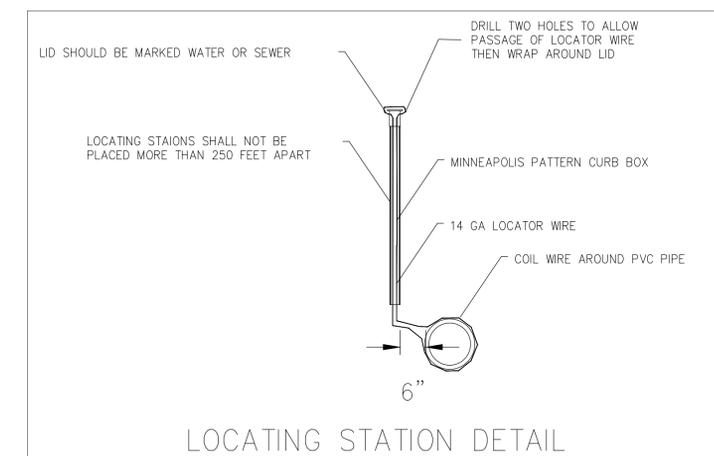
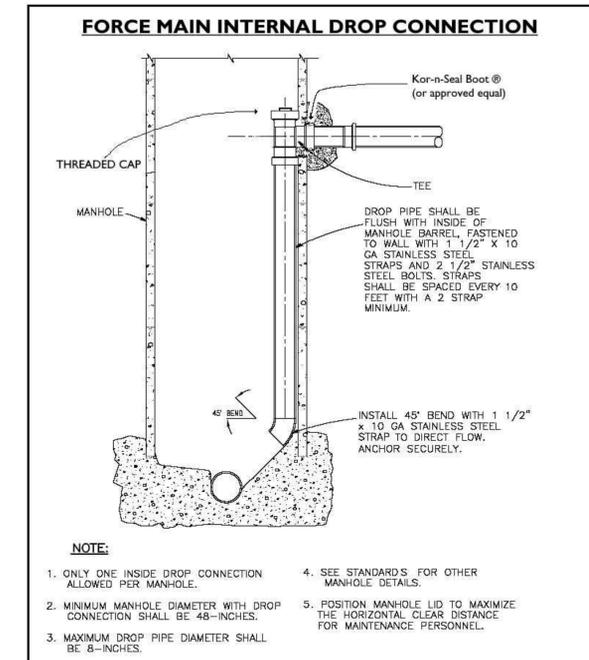
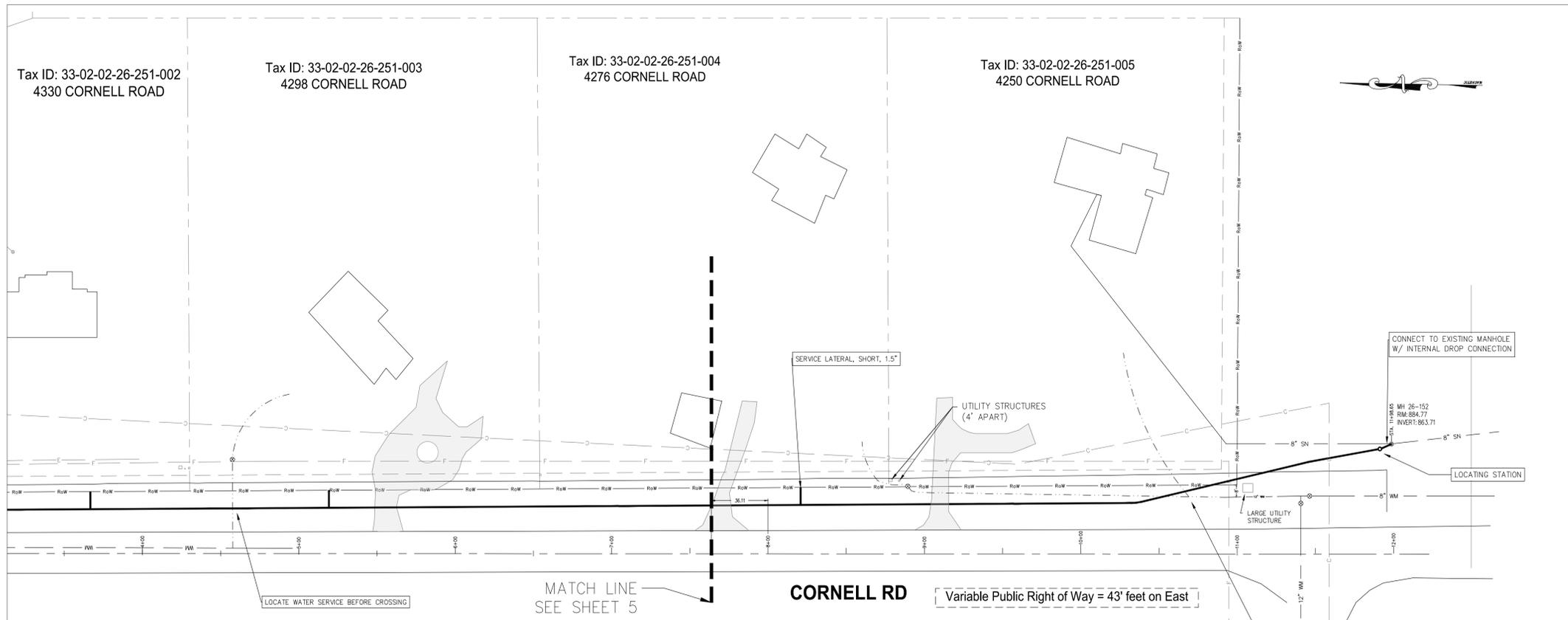
REVISIONS:

DATE	BY	COMMENTS
1/20/26	SB	For Permitting
1/29/26	JH	Bid Set

SCALE:
1" = 40' HOR
1" = 4' VERT

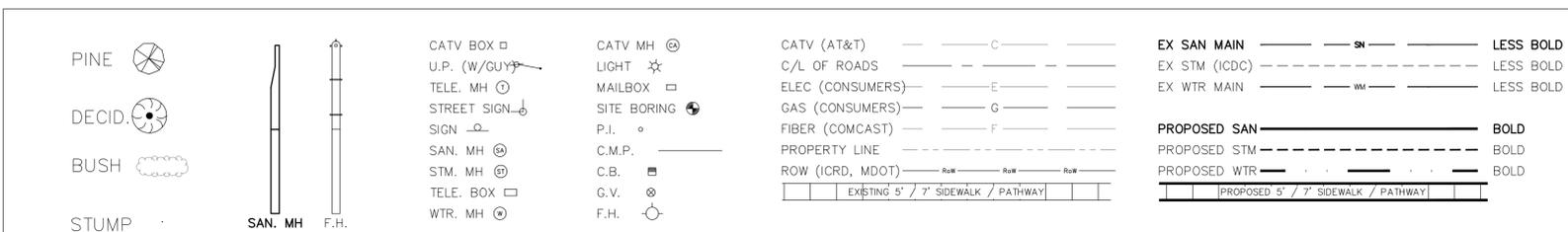
PAGE: 5 OF 9 FILE:

SOUTH SECTION OF CORNELL ROAD



BENCHMARK:
Hydrant @ SW Corner of
Cornell Rd & White Oaks Dr
Elevation: 890.51
Top of NW Flange Bolt under
"E" of "EJW"

QUANTITIES THIS SHEET			
ITEM	DESCRIPTION	QTY	UNIT
20b.	Sanitary Sewer, 3 inch, Force Main	440	FT
20c.	Sanitary Sewer Locating Station	1	EA
21c.	Sanitary Structure, Internal Drop Connection	1	EA
22a.	Sanitary Sewer, Service Lateral, Short, 1.5 inch	1	EA



Call 811 before you dig.

WOLVERINE PIPE LINE COMPANY 219-844-9510

Meridian Charter Township
Ingham County, Michigan
Sanitary Sewer Main System

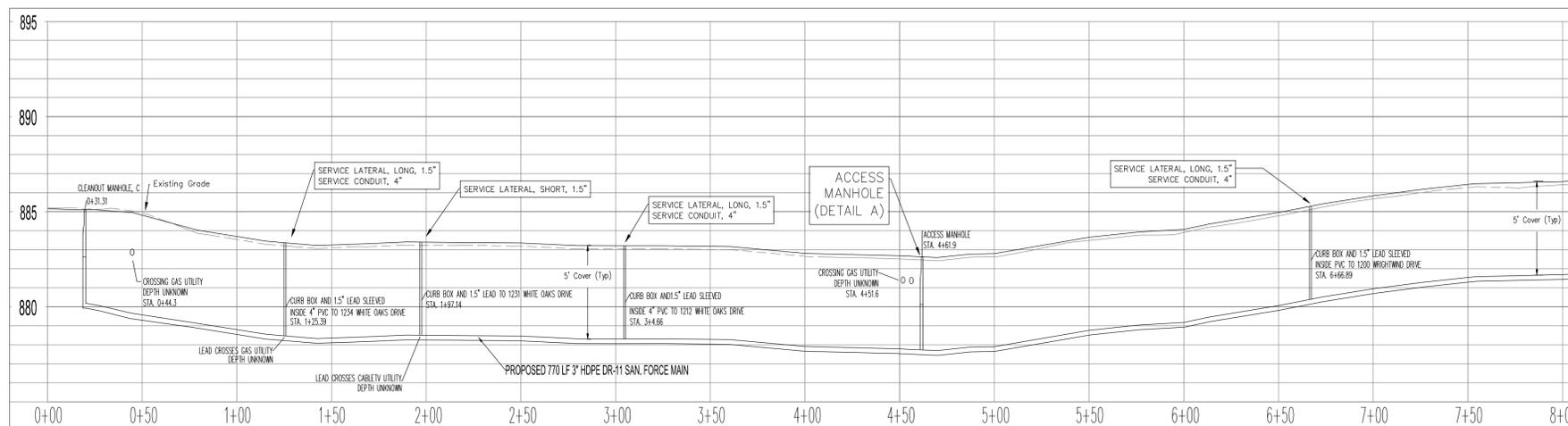
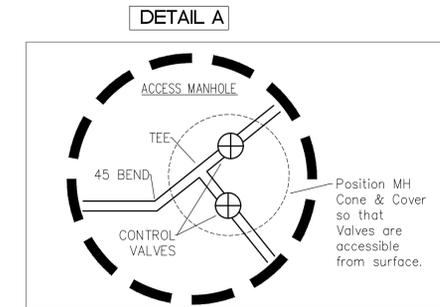
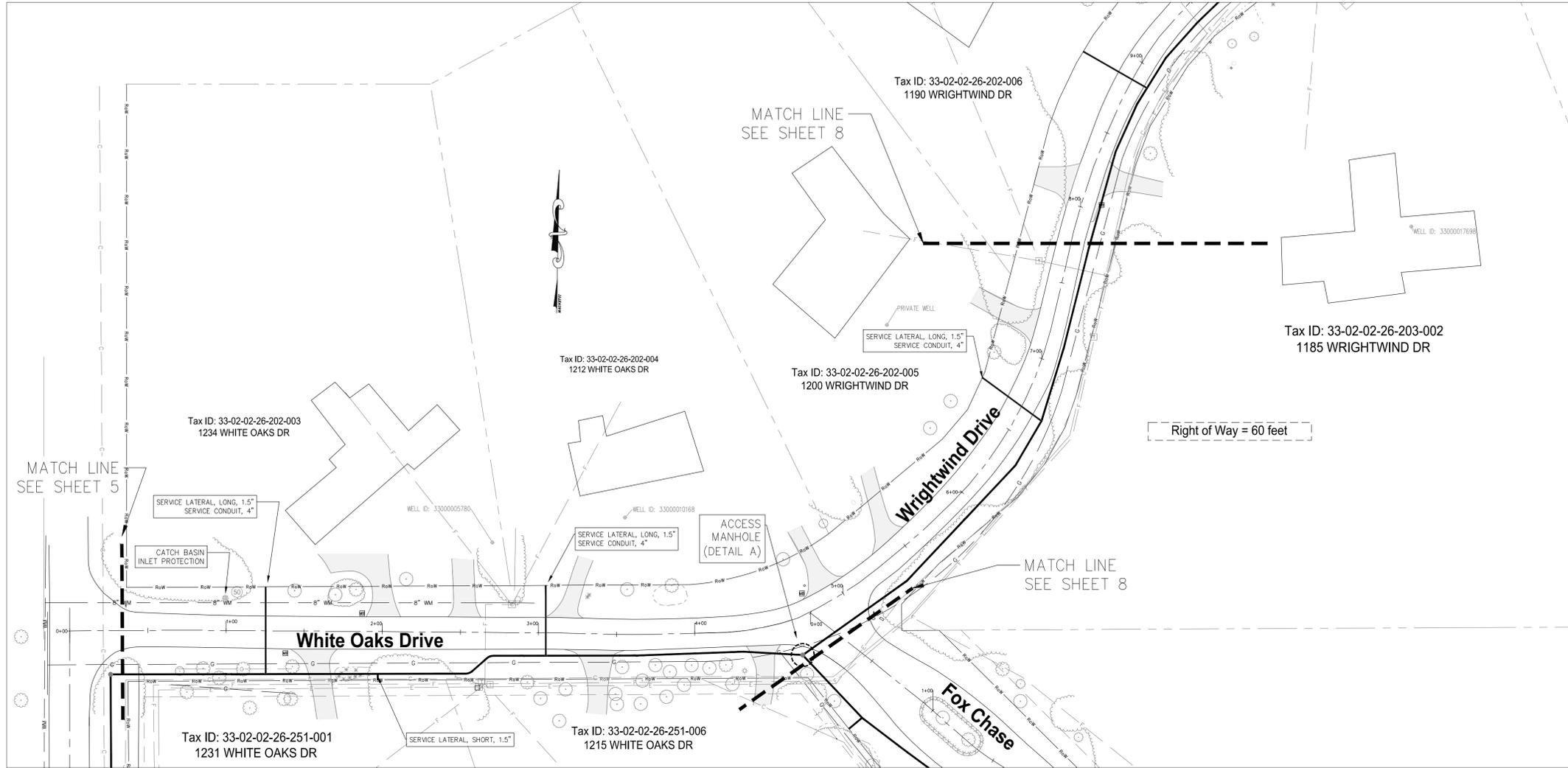
SOUTH SECTION OF
CORNELL ROAD

DRAWN BY: SB CHECKED BY: YI

REVISIONS:		
DATE:	BY:	COMMENTS:
1/20/26	SB	For Permitting
1/29/26	JH	Bid Set

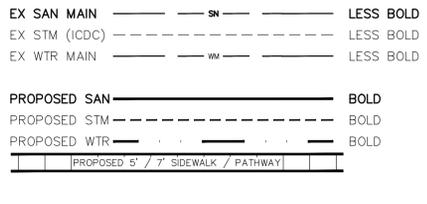
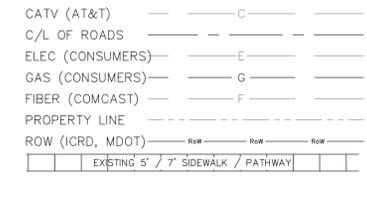
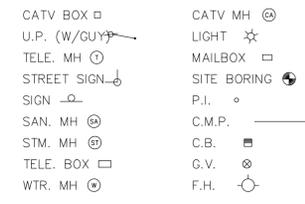
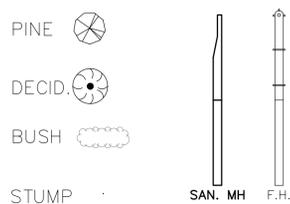
SCALE: 1" = 40' HOR 1" = 4' VERT	PAGE: 6 OF 9	FILE:
----------------------------------------	-----------------	-------

WHITE OAKS DR AND SOUTHERN WRIGHTWIND DR



QUANTITIES THIS SHEET			
ITEM	DESCRIPTION	QTY	UNIT
20b.	Sanitary Sewer, 3 inch, Force Main	770	FT
20d.	Sanitary Sewer Control Valve	2	EA
21b.	Sanitary Structure, 48 inch dia, Access Manhole	1	EA
22a.	Sanitary Sewer, Service Lateral, Short, 1.5 inch	1	EA
22b.	Sanitary Sewer, Service Lateral, Long, 1.5 inch	3	EA
22c.	Sanitary Sewer, Service Conduit, 4 inch	3	EA

BENCHMARK:
Hydrant @ SW Corner of
Cornell Rd & White Oaks Dr
Elevation: 890.51
Top of NW Flange Bolt under
"E" of "EJW"



Call 811 before you dig.

WOLVERINE PIPE LINE COMPANY 219-844-9510

Meridian Charter Township
Ingham County, Michigan
Sanitary Sewer Main System

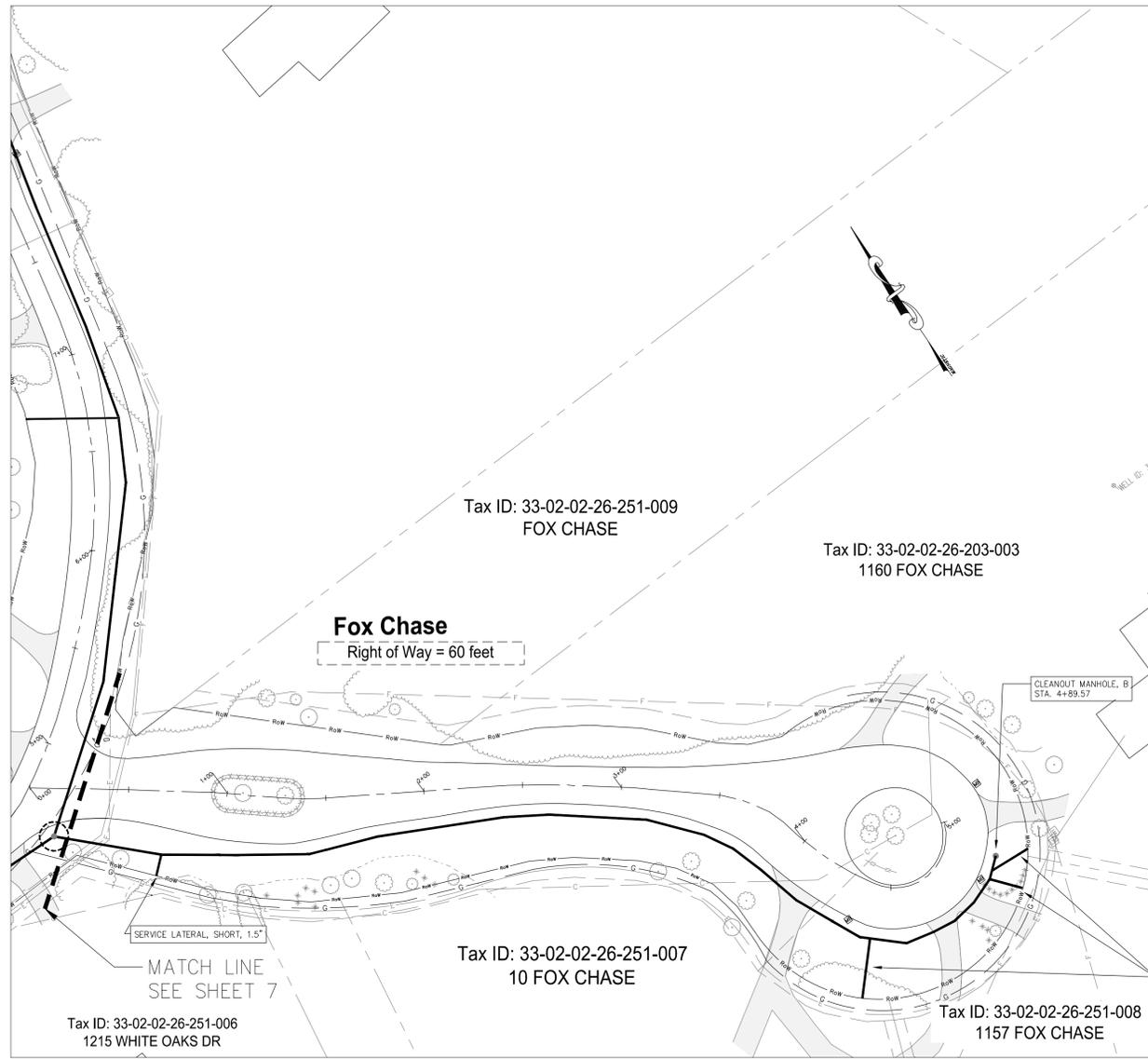
WHITE OAKS DR AND
SOUTHERN WRIGHTWIND DR

REVISIONS:		
DATE:	BY:	COMMENTS:
1/20/26	SB	For Permitting
1/29/26	JH	Bid Set

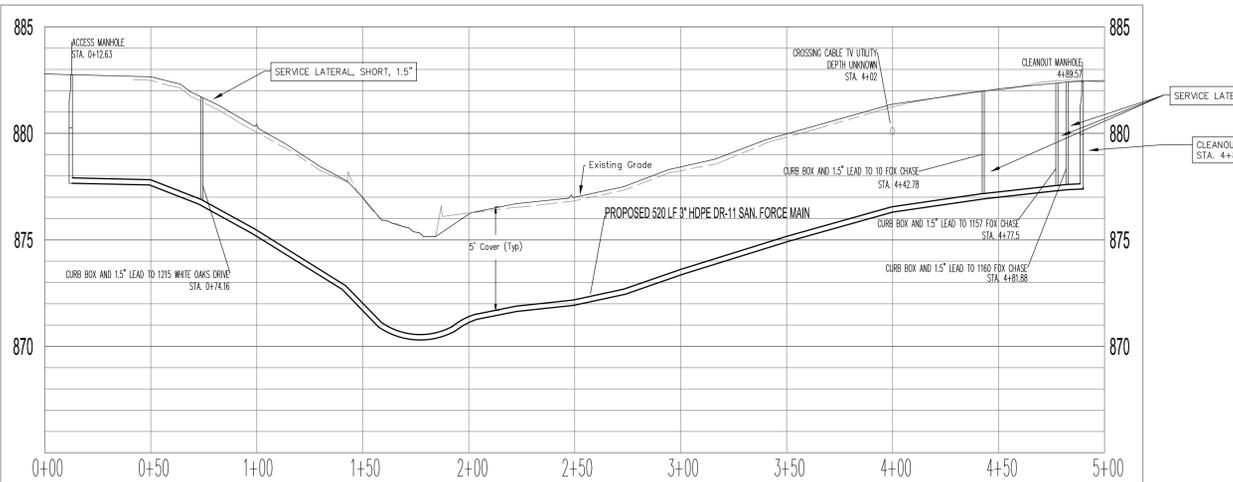
SCALE: 1" = 40' HOR 1" = 4' VERT	PAGE: 7 OF 9	FILE:
----------------------------------------	-----------------	-------

DRAWN BY: SB CHECKED BY: YI

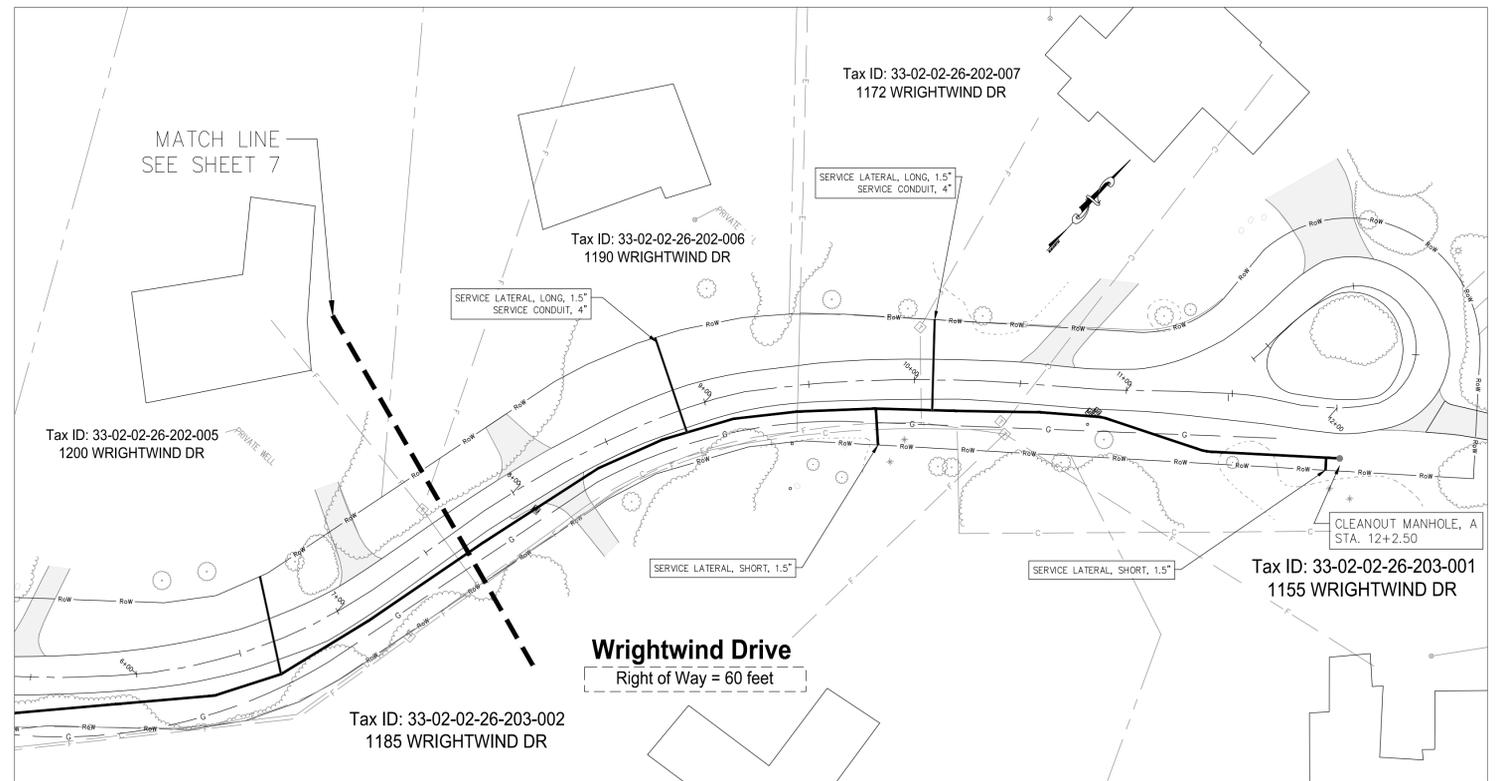
FOX CHASE PLAN



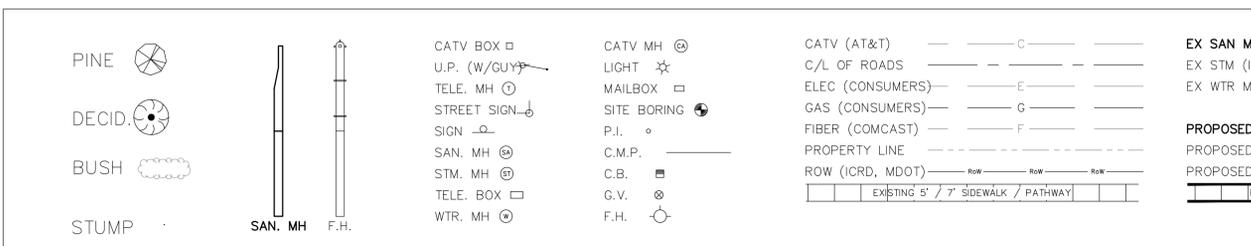
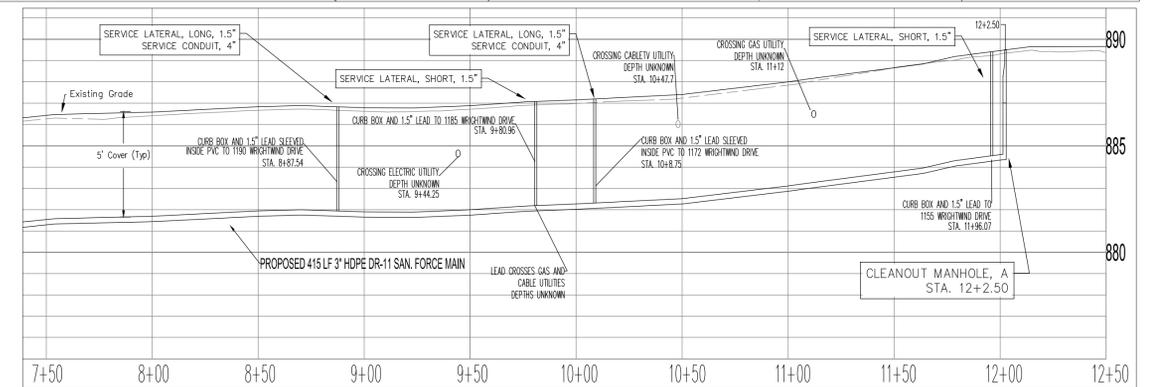
FOX CHASE PROFILE



NORTHERN SECTION OF WRIGHTWIND DRIVE



NORTHERN SECTION OF WRIGHTWIND DRIVE PROFILE



Call 811 before you dig.

WOLVERINE PIPE LINE COMPANY 219-844-9510

QUANTITIES THIS SHEET			
ITEM	DESCRIPTION	QTY	UNIT
20b.	Sanitary Sewer, 3 inch, Force Main	935	FT
21a.	Sanitary Structure, 48 inch dia, Cleanout Manhole	2	EA
22a.	Sanitary Sewer, Service Lateral, Short, 1.5 inch	6	EA
22b.	Sanitary Sewer, Service Lateral, Long, 1.5 inch	2	EA
22c.	Sanitary Sewer, Service Conduit, 4 inch	2	EA

Meridian Charter Township
Ingham County, Michigan
Sanitary Sewer Main System

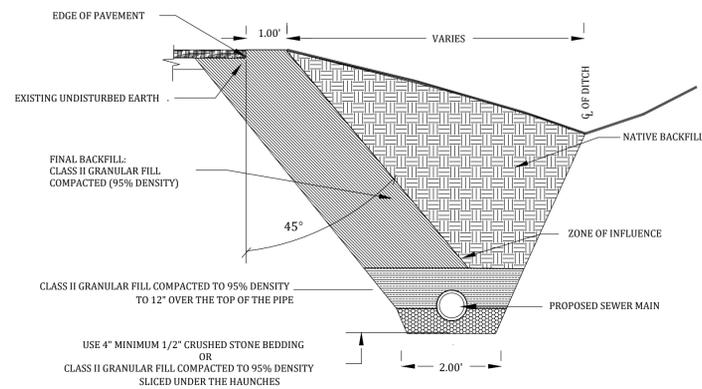
**WRIGHTWIND DRIVE &
FOX CHASE**
FROM WHITE OAKS DRIVE

REVISIONS:
DATE: 1/20/26 BY: SB COMMENTS: For Permitting
1/29/26 JH Bid Set

SCALE: 1" = 40' HOR 1" = 4' VERT

PAGE: 8 OF 9

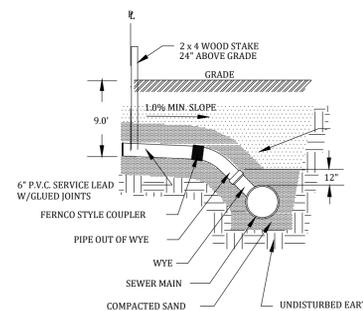
DRAWN BY: SB CHECKED BY: YI



CLASS-B TRENCH DETAIL

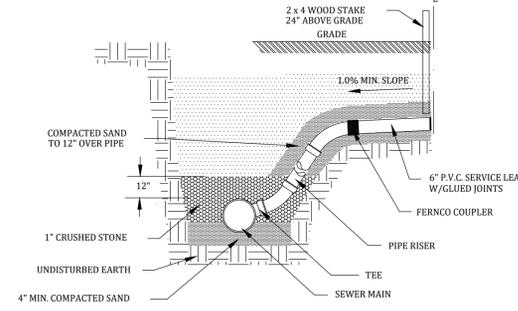
- NOTES:
- LEADS AND RISERS SHALL BE CONSTRUCTED OF MATERIALS AS SPECIFIED AND OF SIZES AS SHOWN ON THE PLANS.
 - DEPTH AT PROPERTY LINE SHALL BE 9' UNLESS OTHERWISE SHOWN ON THE PLANS.
 - IF CONCRETE PIPE IS USED, AN ASBESTOS CEMENT BELLS TO BE CAST IN THE WALL OF THE PIPE FOR USE AS A TEE BRANCH.
 - FERNCO-STYLE FLEXIBLE COUPLINGS SHALL BE USED WHEN CONNECTING THE HOUSE TO THE STUB.
 - MIN. 3" SEPARATION BETWEEN WATER & SEWER SERVICES.
 - ALL REFERENCES TO STONE BEDDING SHALL MEAN CRUSHED STONE.

PLAN WITHOUT RISER



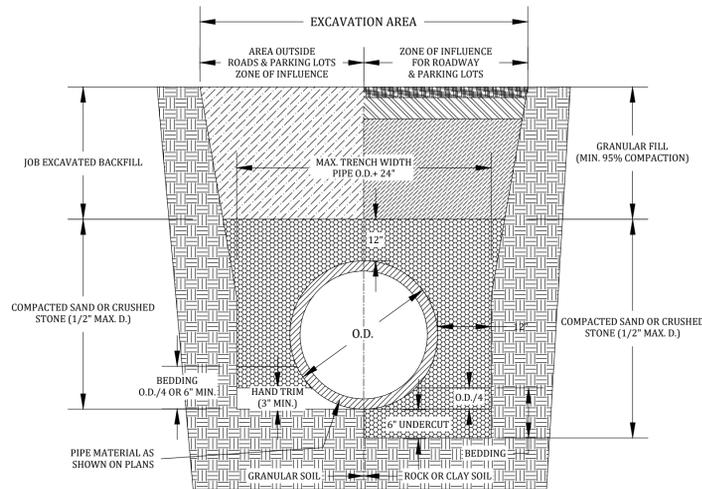
SECTION WITHOUT RISER

PLAN WITH RISER



SECTION WITH RISER

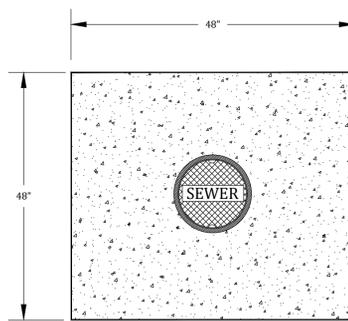
SERVICE/CONNECTION DETAIL



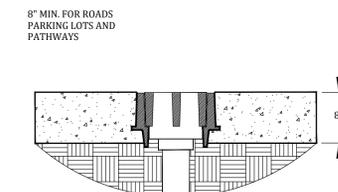
TYPICAL TRENCH DETAIL (SDR26 PVC ONLY)

THE PVC (SDR-26) PIPE MATERIAL SHALL CONFIRM TO ASTM D 2241, WITH BELL AND SPIGOT JOINTS IN ACCORDANCE WITH ASTM F 47. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM D 2321. ALL PIPE SHALL BE MARKED TO PROVIDE ASTM DESIGNATIONS, SDR NUMBER, MANUFACTURERS NAME AND PIPE DIAMETER.

THE CONTRACTOR SHALL TEST THE 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 PIPE'S INSIDE DIAMETER. 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.

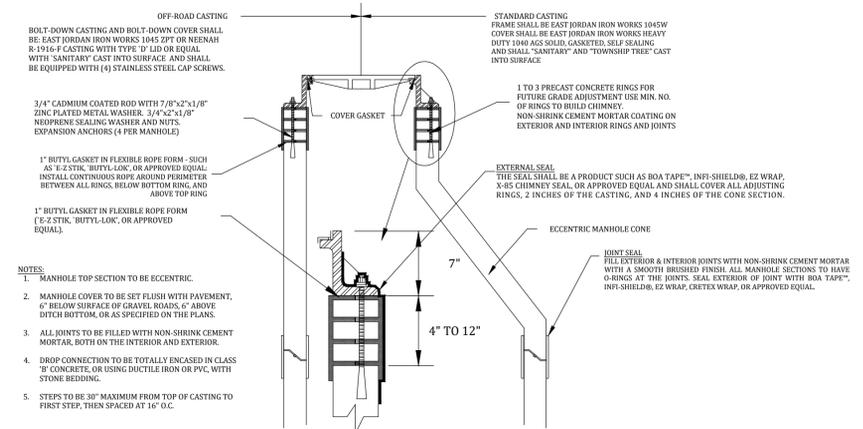


PLAN

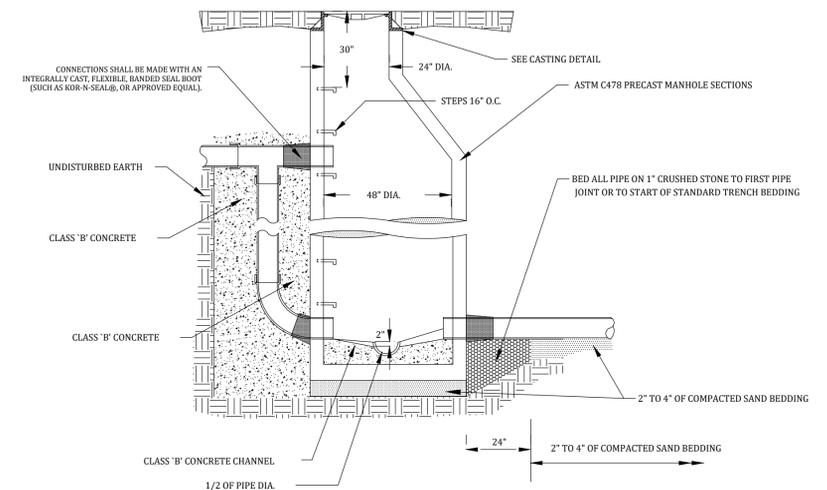


CROSS SECTION

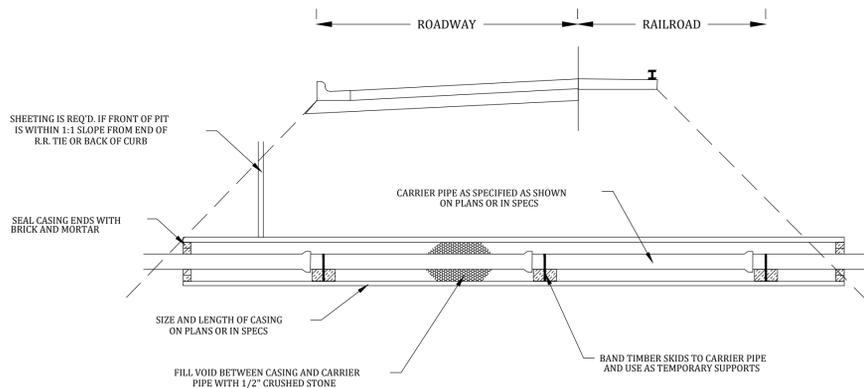
CLEANOUT BOXES IN CONCRETE



MANHOLE CASTING DETAIL



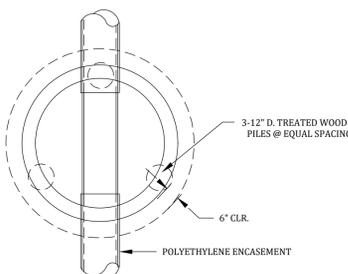
MANHOLE-SECTION DETAIL



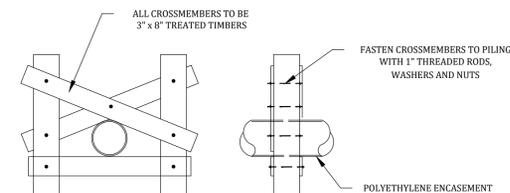
CASING INSTALLATION DETAIL FOR ROADS & RAILROADS

*CASING AND CARRIER PIPE TO BE INSTALLED BY METHOD OTHER THAN OPEN CUT

- NOTES:
- WORK IN ROAD OR RAILROAD RIGHTS-OF-WAY SHALL BE IN ACCORDANCE WITH THE APPROPRIATE REGULATORY AGENCY'S REQUIREMENTS.
 - CASING PIPE SHALL MEET THE GRADE B REQUIREMENTS OF ASTM 139, ASTM A-53, OR API 5-L, WITH 0.375" MINIMUM WALL THICKNESS.

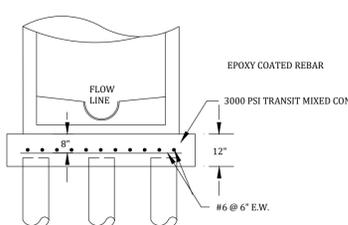


MANHOLE PLAN

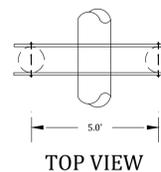


FRONT VIEW

SIDE VIEW

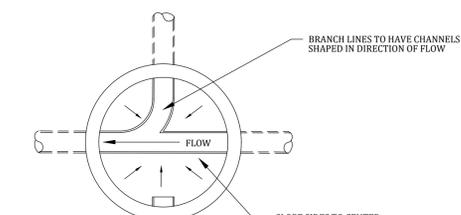


MANHOLE SECTION



TOP VIEW

PILING DETAILS



MANHOLE FLOWLINE PLAN

NOTE: USE A HALF PIPE AS A FORM FOR A CONCRETE FLOW CHANNEL.

Meridian Charter Township
Ingham County, Michigan
Public Works Department

STANDARD DETAILS FOR
SANITARY SEWER SYSTEM

DRAWN BY: MK 03/1983

REVISIONS:		
DATE:	BY:	COMMENTS:
07/02/99	JG	Add Bolts to Casting Detail
01/13/00	JG	Add SDR 26 Detail
05/12/08	JG	Add "Wrap/Seal" & Grout to Casting Detail
07/31/12	JG	Clarified "Crushed Stone"
05/15/15	JG	Add Cleanout in Concrete
03/09/21	NN	Butyl btwn Rings
03/23/21	NN	Additional Chimney/Join Seal
06/12/23	JH	Pile Support Update

SCALE: NTS
PAGE: 9
FILE: