

UTILITY CONTACTS

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARING THESE PLANS. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE REASONABILITY TO BE SATISFIED AS TO ITS ACCURACY AND LOCATION OF EXISTING UTILITIES.

CHARTER COMMUNICATIONS
ATT: MARK KELLY
1480 S. VALLEY CENTER DRIVE
BAY CITY, MI 48706

CABLE TV
PHONE: 989-233-9404
mark.kelly@chartercom.com

CITY OF OWOSSO
ATT: CLAYTON WEHNER, P.E.
301 W. MAIN STREET
OWOSSO, MI 48867

ROAD
989-725-0551
clayton.wehner@ci.owosso.mi.us

CITY OF OWOSSO
ATT: RYAN SUCHANEK
301 W. MAIN STREET
OWOSSO, MI 48867

SANITARY SEWER & WATER MAIN
989-725-0550
ryan.suchanek@ci.owosso.mi.us

CONSUMERS ENERGY
ATT: TRACY MAHAR
1801 W. MAIN ST
OWOSSO, MI 48867

ELECTRIC
OFFICE: 989-729-3250
CELL: 517-204-9018
trmahar@cmsenergy.com

CONSUMERS ENERGY
ATT: ADAM BERTRAM
530 W. WILLOW STREET
P.O. BOX 30162
LANSING, MI 48909

GAS
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adam.bertram@cmsenergy.com

DAYSTARR COMMUNICATIONS
ATT: JARED JACKSON
307 N. BALL STREET
OWOSSO, MI 48867

FIBER
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jared.jackson@daystarrfiber.net

FRONTIER COMMUNICATIONS
ATT: HAROLD ROTH
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OWOSSO, MI 48847

FIBER
PHONE: 989-627-9759
harold.roth@fr.com

SHIAWASSEE COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
ATT: STEVE ALWORDEN
201 N. SHIAWASSEE STREET
CORUNNA, MI 48817

SOIL EROSION AND SEDIMENTATION CONTROL
PHONE: 989-743-2289
FAX: 989-743-2413
salworden@shiasseechd.net

CALL MISS DIG AT 1-800-482-7171 OR 811 THREE DAYS, EXCLUDING SATURDAY, SUNDAY, AND HOLIDAY, BEFORE STARTING YOUR PROJECT.

MDOT ROAD STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE MDOT STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

- DRAINAGE STRUCTURES R-1-G*
- COVER B R-7-F
- MONUMENT BOXES R-11-E
- COVER K R-15-F
- COVER Q R-18-F
- SIDEWALK RAMP AND DETECTABLE WARNING DETAILS R-28-J*
- DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALKS R-29-I
- CONCRETE CURB AND CONCRETE GUTTER* R-30-G
- BUMPER & PARKING RAIL, AND MISC. WOOD POSTS R-74-D
- GRANULAR BLANKET, UNDERDRAINS, AND OUTLET ENDINGS FOR SEWER UNDERDRAINS, AND SEWER BULKHEADS R-80-E
- BEDDING AND FILLING AROUND PIPE CULVERTS R-82-D
- UTILITY TRENCHES R-83-C
- SOIL EROSION & SEDIMENT CONTROL MEASURES R-96-E
- SEEDING AND TREE PLANTING R-100-H

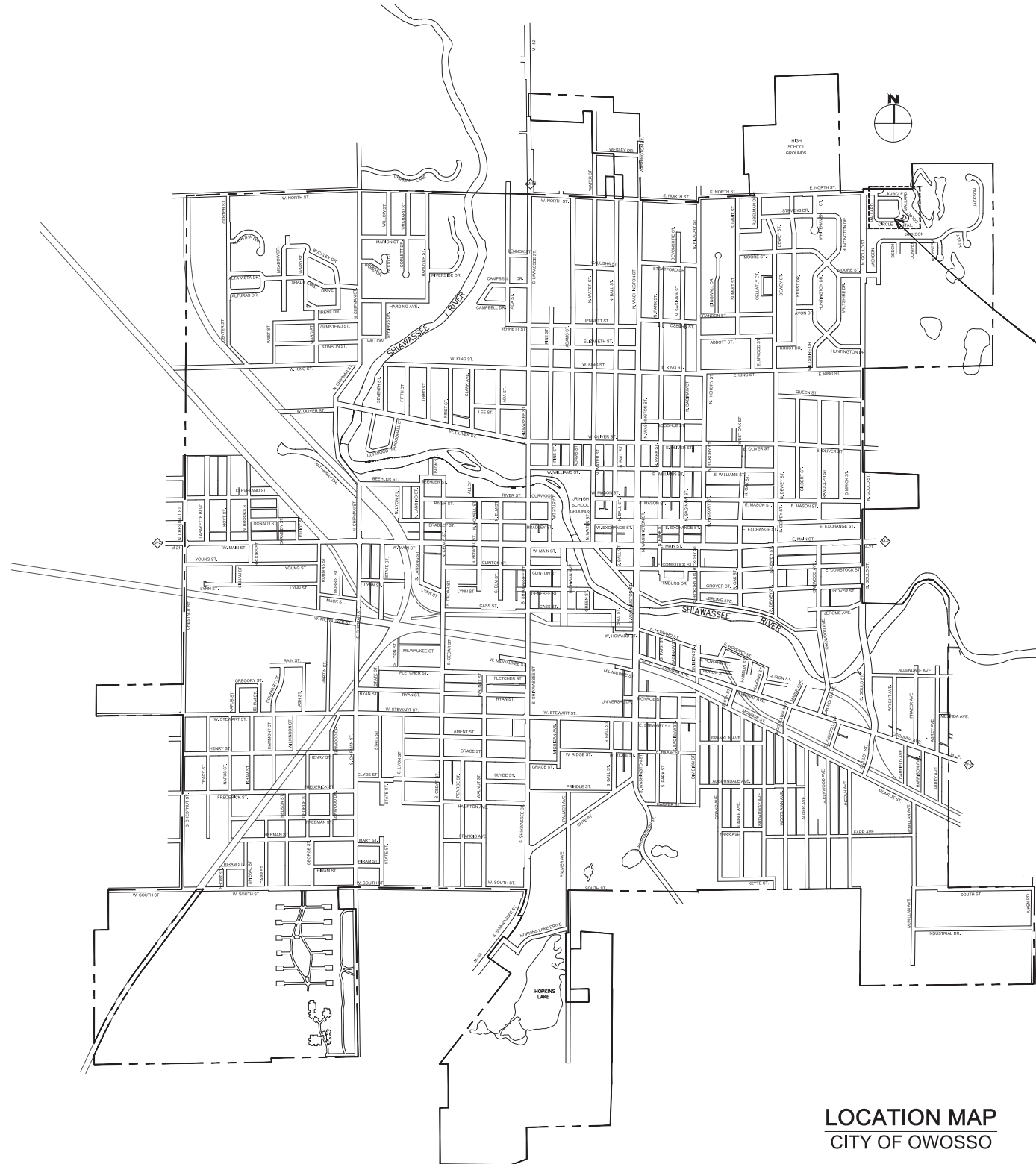
*SPECIAL DETAILS INCLUDED IN PROPOSAL OR MODIFIED IN GENERAL PLANS

CITY OF OWOSSO

WOODLAND TRAILS SANITARY SEWER REPAIR PROJECT

SHIAWASSEE COUNTY
SECTION 18, T7N-R3E, CITY OF OWOSSO
POP: 15,194 (2010 CENSUS)

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES AND DETAILS MISCELLANEOUS ESTIMATES
3	SESC STANDARD NOTES AND DETAILS
4-5	CONSTRUCTION PLANS



LOCATION MAP
CITY OF OWOSSO

PROJECT LOCATION

CITY OF OWOSSO, MICHIGAN
ENGINEERING DIVISION
DEPT. OF PUBLIC SERVICE

NO.	DATE	BY	REVISIONS
1	1/22/24	CW	IFB PLANS
			ORIGINAL PLAN

BENCH MARK DATA	DESCRIPTION
ELEV.	

WOODLAND TRAILS SANITARY SEWER REPAIR PROJECT
COVER SHEET
JANUARY, 2024
PROJECT NO.

FIELD BOOK
P.G.



Know what's below.
Call before you dig.

GENERAL NOTES

UNDERGROUND UTILITIES/MISS DIG

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 1-800-482-7171 FOR A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBER WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE EXISTING UTILITIES ON THESE DRAWINGS HAVE BEEN SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND SHALL NOTIFY THE ENGINEER AS TO WHERE POSSIBLE CONFLICT EXIST.

EXISTING WATER MAINS AND SEWERS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO PROPERLY IDENTIFIED EXISTING WATER MAINS AND / OR EXISTING SEWERS DURING THE CONSTRUCTION OF THE PROJECT.

ADJUSTING OF MONUMENT BOXES

ALL GOVERNMENT CORNERS ON THIS PROJECT SHALL BE PRESERVED, WHETHER SHOWN OR NOT. IT MAY BE NECESSARY TO PLACE OR ADJUST MONUMENT BOXES AS REQUIRED.

PAVEMENT MARKINGS AND SIGNS

ALL PERMANENT PAVEMENT MARKINGS, SHAPES, AND DIMENSIONS SHALL CONFORM WITH MDOT PAVEMENT MARKING TYPICALS PAVE - 900 SERIES.

SOIL EROSION MEASURES

APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO EARTH DISTURBING ACTIVITIES. PLACE LAWN RESTORATION ITEMS AS SOON AS POSSIBLE ON POTENTIAL ERODIBLE SLOPES AS DIRECTED BY THE ENGINEER. CRITICAL DITCH GRADES SHALL BE PROTECTED WITH EITHER SOD OR SEED / MULCH BLANKET AS DIRECTED BY THE ENGINEER.

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE AND MAINTAINED UNTIL THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED. MEASURES SHALL ONLY BE PAID FOR ONCE.

RUBBISH DISPOSAL

SEE MAINTAINING TRAFFIC SPECIAL PROVISIONS.

MAIL DELIVERY

SEE MAINTAINING TRAFFIC SPECIAL PROVISIONS.

STORM SEWER REMOVAL

REMOVAL OF SEWER WITH DIAMETER LESS THAN 12 INCHES, WITHIN THE EXCAVATION LIMITS OF NEW SEWER, IS INCLUDED IN THE UNIT PRICE FOR NEW SEWER AND WILL NOT BE PAID FOR SEPARATELY.

SEWER STRUCTURES

ALL ORIFICES TO RECEIVE SEWER PIPE SHALL BE FITTED WITH KOR-N-SEAL FLEXIBLE CONNECTOR (S) , OR APPROVED EQUAL CONNECTOR. THE FLEXIBLE CONNECTOR WILL NOT BE PAID FOR SEPARATELY, BUT IS CONSIDERED AS PART OF THE DRAINING STRUCTURE PAY ITEM.

SEWER CONNECTIONS

PROPOSED SEWERS SHALL BE CONNECTED TO EXISTING SEWERS WITH A FERNCO COUPLER, OR APPROVED EQUAL, AS DIRECTED BY THE ENGINEER. CONNECTION SHALL BE ACCOMPLISHED WITH COUPLER OF SIMILAR SIZE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. PAYMENT FOR ALL MATERIALS AND LABOR NECESSARY TO ACCOMPLISH THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED AS PART OF OTHER WORK ITEMS.

STREET APPROACHES

STREET APPROACHES SHALL BE PAID FOR AS PART OF THE MAINLINE PAVING PAY ITEMS.

STRUCTURE ADJUSTMENTS

ADJUSTMENTS TO STORM AND SANITARY STRUCTURES LOCATED WITHIN THE PAVEMENT OR CURB AND GUTTER SHALL BE PAID FOR AS: Dr Structure Cover, Adj, Case 1.

CURB AND GUTTER

ALL NEW SECTIONS OF CURB AND GUTTER SHALL BE TIED TO EXISTING CURB AND GUTTER ON BOTH ENDS USING EPOXY COATED #4 BARS.

SIDEWALK RAMPS AND SIDEWALKS

SIDEWALK RAMPS SHALL BE COMPLETED IN ACCORDANCE WITH THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MDOT STANDARD PLAN R-28 SERIES, EXCEPT AS MODIFIED HEREIN. THE PORTION OF RAMP FROM THE CURB AND GUTTER TO THE LANDING SHALL BE 7-INCHES THICK AS IDENTIFIED ON THE SIDEWALK RAMP THICKNESS DETAIL. THE LANDING SHALL BE 4-INCHES THICK. THE PAY ITEMS FOR Curb Ramp, Conc, ___ inch AND Sidewalk, Conc, ___ inch SHALL INCLUDE ALL EXCAVATION AND EMBANKMENT NECESSARY TO CONSTRUCT EACH ITEM AND ALL WORK NECESSARY TO SAW AND TRIM EDGES OF EXISTING CONCRETE. EXCAVATION AND EMBANKMENT WILL NOT BE PAID FOR SEPARATELY.

DETECTIBLE WARNING SURFACES SHALL BE EAST JORDAN DURALAST TM AND BLACK ASPHALT DIPPED, INSTALLED ONTO FRESH CONCRETE, AND IN ACCORDANCE WITH MDOT STANDARD R-28 SERIES. THE WARNING SURFACES SHALL BE 2.5 FEET IN LENGTH SUCH THAT TWO PLATES ARE USED FOR EACH 5 FOOT WIDE RAMP.

SIDEWALKS LOCATED WITHIN RESIDENTIAL DRIVEWAYS SHALL BE 6-INCHES THICK AND WILL BE PAID FOR AS Sidewalk, Conc, 6 inch.

SIDEWALKS LOCATED WITHIN COMMERCIAL DRIVEWAYS SHALL BE 7-INCHES THICK AND WILL BE PAID FOR AS Sidewalk, Conc, 7 inch.

LAWN SPRINKLERS / LANDSCAPING

OWNERS OF EXISTING LAWN SPRINKLER SYSTEMS AND / OR LANDSCAPING SHALL BE NOTIFIED (IN WRITING WITH A COPY SENT TO THE ENGINEER) BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF ANY WORK THAT WILL BE DONE THAT WILL AFFECT THOSE SYSTEMS AND / OR LANDSCAPING. IF THE PROPERTY OWNER FAILS TO RELOCATE THE LAWN SPRINKLER SYSTEM PRIOR TO THE CONTRACTOR BEGINNING WORK, AND IF THE CONTRACTOR CUTS THE SYSTEM DURING CONSTRUCTION, THE CONTRACTOR SHALL CAP THE SYSTEM PIPE AND WITNESS THE LOCATION OF THE CAP WITH A WOODEN STAKE FOR THE PROPERTY OWNERS USE. THE CONTRACTOR SHALL PLACE THE SALVAGED SPRINKLER HEADS ON THE BACK OF THE RIGHT OF WAY. IF THE PROPERTY OWNER FAILS TO RELOCATE THE LANDSCAPING PRIOR TO THE CONTRACTOR BEGINNING WORK, THE CONTRACTOR SHALL CAREFULLY SALVAGE THE LANDSCAPING ITEMS AND STOCKPILE THEM ON THE BACK OF THE RIGHT OF WAY OR AT A LOCATION DESIGNATED BY THE ENGINEER FOR THE PROPERTY OWNER. ANY OTHER MODIFICATION TO THE SPRINKLER SYSTEM AND / OR LANDSCAPING IS THE RESPONSIBILITY OF THE OWNER AND IS NOT PART OF THIS CONTRACT. THIS WORK WILL NOT BE PAID FOR SEPARATELY.

PROPERTY OWNERS

PROPERTY OWNERS' NAMES, WHERE SHOWN, ARE FOR INFORMATION ONLY, AND THEIR ACCURACY IS NOT GUARANTEED.

MAINTAINING TRAFFIC

REFER TO THE CONTRACT SPECIAL PROVISION FOR WORK RESTRICTIONS RELATIVE TO MAINTAINING TRAFFIC.

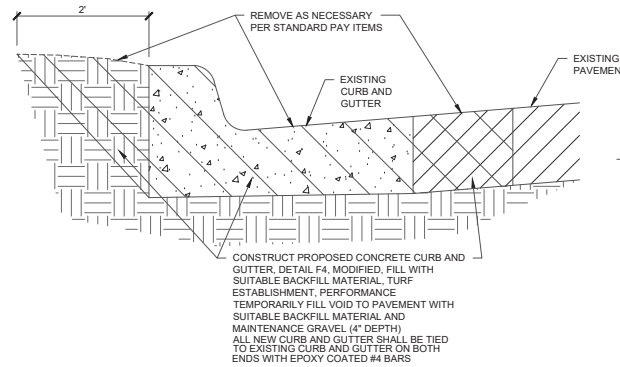
MISCELLANEOUS ESTIMATES

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS

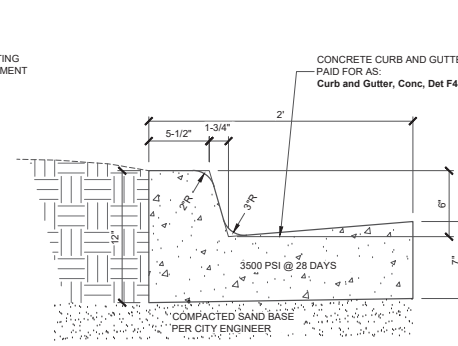
Quantity	Unit	Pay Item
1	LSUM	Mobilization, Max \$10,900
50	Ft	Curb and Gutter, Rem
18	Syd	Pavt, Rem
18	Syd	Aggregate Base, 8 inch, Modified
30	Ton	Maintenance Gravel
10	Ton	Hand Patching
50	Ft	Curb and Gutter, Conc, Det F4, Modified
100	Syd	Turf Establishment, Performance

MAINTAINING TRAFFIC QUANTITIES

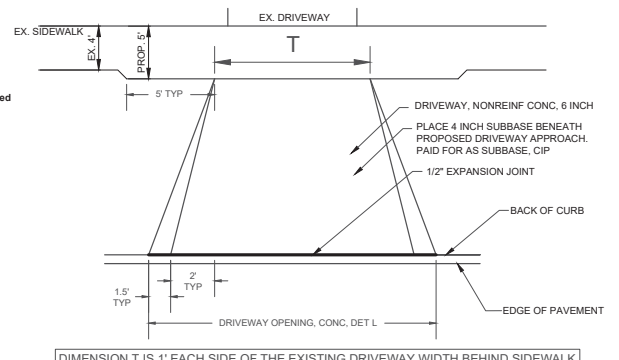
Quantity	Unit	Pay Item
4	Ea	Pedestrian, Type II Barricade, Temp
2	Ea	Lighted Arrow, Type C, Furn & Oper
1	LSUM	Minor Traffic Devices, Max \$10,000
25	Ea	Plastic Drum, Fluorescent, Furn & Oper
220	Sft	Sign, Type B, Temp, Prismatic, Furn & Oper
1	LSUM	Traf Regulator Control



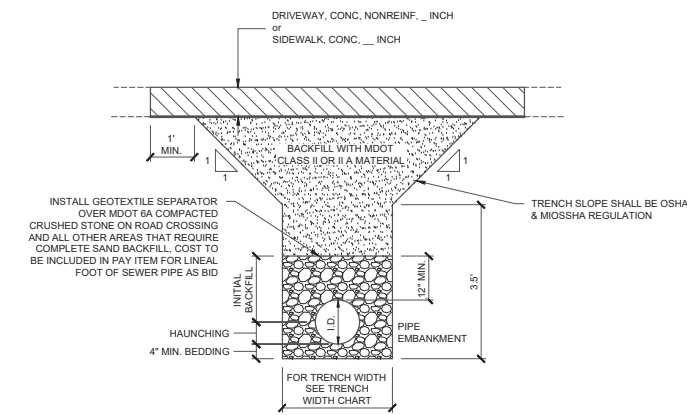
TYPICAL SELECT CURB AND GUTTER REPAIR DETAIL
NOT TO SCALE



CONCRETE CURB AND GUTTER
MDOT F4 - MODIFIED DETAIL
NOT TO SCALE



DRIVEWAY APPROACH DETAIL
NOT TO SCALE



TRENCH DETAIL B, MODIFIED DETAIL
NOT TO SCALE

TRENCH WIDTH CHART		
PIPE SIZE	MINIMUM	MAXIMUM
6", 8" & 10"	24"	30"
12" & 15"	30"	36"
18"	34"	40"
21"	38"	42"
24"	42"	46"
27"	45"	49"
30"	49"	53"
36"	56"	60"
LARGER THAN 36"	I.D. +20"	I.D. +24"

LEGEND		
EX ST	EXISTING STORM SEWER	EXISTING WETLAND LIMITS
OST	EXISTING STORM MANHOLE	EXISTING CULVERT
EX CB	EXISTING STORM CATCH BASIN	PROPOSED WATERMAIN
EX EN	EXISTING END SECTION	PROPOSED WATER SERVICE LEAD
EX RR	EXISTING RIPRAP	PROPOSED HYDRANT
EX SS	EXISTING SANITARY SEWER	PROPOSED VALVE
EX WM	EXISTING WATERMAIN	PROPOSED VALVE MANHOLE
EX HD	EXISTING HYDRANT	PROPOSED SANITARY SEWER
EX V	EXISTING VALVE	PROPOSED SANITARY LEAD
EX GW	EXISTING GATE WELL	PROPOSED STORM SEWER
EX CG	EXISTING CURB AND GUTTER	PROPOSED SUMP LEAD
EX PH	EXISTING TELEPHONE	PROPOSED MANHOLE
EX TR	EXISTING TELEPHONE RISER	PROPOSED CATCH BASIN
EX GAS	EXISTING GAS	PROPOSED END SECTION
EX UM	EXISTING UNDERGROUND MARKER	PROPOSED RIPRAP
EX EL	EXISTING ELECTRIC	PROPOSED CURB AND GUTTER
EX ER	EXISTING ELECTRIC RISER	PROPOSED EASEMENT
EX PA	EXISTING ELECTRIC PAD	PROPOSED RIGHT-OF-WAY
EX TV	EXISTING CABLE TV	TRENCH BACKFILL DETAIL 'B'
EX OW	EXISTING OVERHEAD WIRES	REMOVE EXISTING HMA PAVEMENT
EX UP	EXISTING UTILITY POLE	REMOVE EX. CURB AND GUTTER
EX GA	EXISTING GUY ANCHOR	
EX LP	EXISTING LIGHT POLE	
EX TB	EXISTING TREES AND/OR BRUSH	
EX MB	EXISTING MAIL BOX	
EX SP	EXISTING SIGN POST	

CITY OF OWOSSO, MICHIGAN
ENGINEERING DIVISION
DEPT. OF PUBLIC SERVICE

NO.	DATE	BY	DESCRIPTION
1	1/22/24	CW	IFB PLANS

BENCH MARK DATA
ELEV.

WOODLAND TRAILS SANITARY SEWER REPAIR PROJECT

GENERAL NOTES & DETAILS
MISCELLANEOUS ESTIMATES

JANUARY, 2024
FIELD BOOK
P.G.

MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET
S-E-S-C KEYING SYSTEM

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
EROSION CONTROLS			
E1	SELECTIVE GRADING AND SHAPING		To reduce steep slopes and erosive velocities.
E2	GRUBBING OMITTED		For use on steep slopes to prevent rilling, gullying, 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.

B = BIOENGINEERING

MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET
S-E-S-C KEYING SYSTEM

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/drainageway 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			
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 upstage 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	WATTLES		In areas requiring protection of slopes against surface erosion and gully formation.

B = BIOENGINEERING

MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET
S-E-S-C KEYING SYSTEM

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
SEDIMENT CONTROLS			
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.

B = BIOENGINEERING

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE												
CONSTRUCTION SEQUENCE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
STRIP AND STOCKPILE TOPSOIL												
ROUGH GRADE/ SEDIMENT CONTROL												
TEMP CONTROL MEASURES												
STORM FACILITIES								N/A				
TEMP CONSTRUCTION ROADS								N/A				
FOUNDATION/ BLDG. CONSTRUCTION								N/A				
SITE CONSTRUCTION												
PERM CONTROL MEASURES												
FINISH GRADING												
LANDSCAPING								N/A				

CONSTRUCTION SEQUENCE

1. INSTALLATION OF TEMPORARY EROSION CONTROL MEASURES.
2. TRENCH EXCAVATION, WATER MAIN INSTALLATION, AND BACKFILL.
3. PERMANENT MEASURES, FINAL GRADING, SEEDING AND MULCHING.

NO.	DATE	BY	REVISIONS
1	1/22/24	CW	IFB PLANS

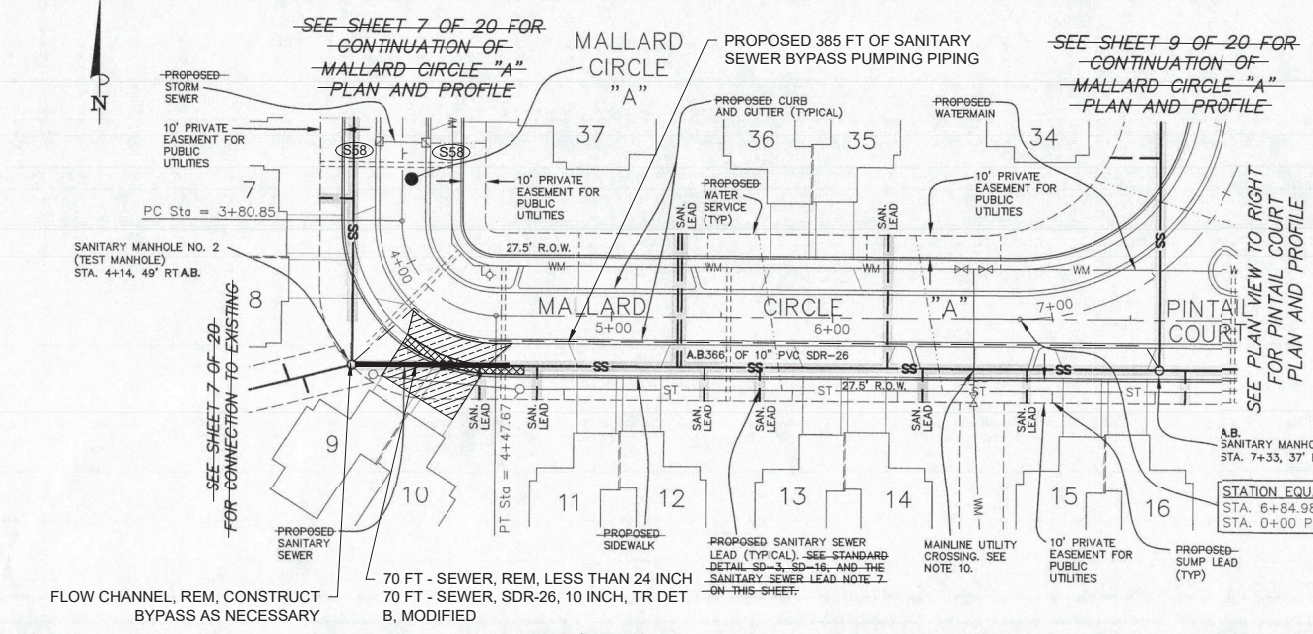
BENCH MARK DATA	DESCRIPTION
ELEV.	

BENCHMARK NO. 1
RIM OF MON. BOX @ GOULD STREET AND NORTH STREET
ELEV = 752.95 (N.G.V.D.)

BENCHMARK NO. 2
CHISELED 'X' NORTH RIM OF WATER VALVE @ NW CORNER OF GOULD STREET AND MOORE AVENUE
ELEV = 745.11 (N.G.V.D.)

BENCHMARK NO. 3
RAILROAD SPIKE, EAST FACE OF LIGHT POLE, SW CORNER OF GOULD STREET AND HUNTINGTON DRIVE
ELEV = 753.39 (N.G.V.D.)

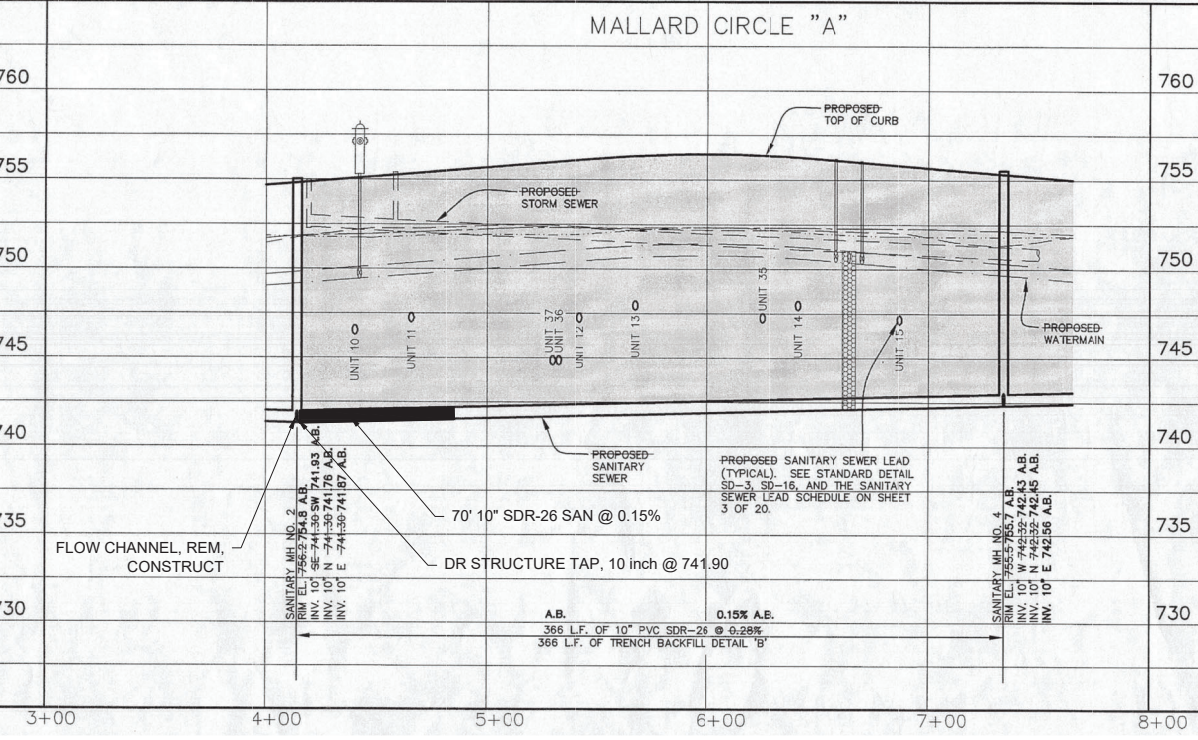
BENCHMARK NO. 4
RIM OF MONUMENT BOX @ GOULD STREET AND KING STREET
ELEV = 752.02 (N.G.V.D.)



- NOTES:
1. PUBLIC UTILITY INFORMATION IS DELINEATED IN ACCORDANCE WITH LOCATIONS PROVIDED BY THE UTILITY OWNERS. GOULD ENGINEERING, INC. IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION OR THE LOCATION AT WHICH SERVICE WILL BE PROVIDED.
 2. GOULD ENGINEERING, INC. HAS NOT REVIEWED THIS PROJECT FOR SOIL CONTENT. WE SUGGEST THE CLIENT CONTACT A SOILS ENGINEER WITH REGARD TO SOIL CONCERNS.
 3. ALL EASEMENTS FOR SANITARY SEWERS, WATERMAIN AND STORM SEWERS, WHICH ARE NOT LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY, SHALL BE DENOTED ON THE MASTER DEED TO BE RECORDED AT THE SHAWASSEE COUNTY REGISTER OF DEEDS.
 4. SEE PROJECT SPECIFICATIONS, GENERAL CONSTRUCTION NOTE NO. 10 AND PROJECT SPECIFICATIONS, BID NOTE NO. 10 FOR CONSTRUCTION STAKING REQUIREMENTS.
 5. ALL STATIONING AND OFFSET DIMENSIONS ARE REFERENCED TO THE CONSTRUCTION CENTERLINE.
 6. ALL SANITARY SEWER MAINLINE SHALL BE TELEVIEWED ACCORDING TO PROJECT SPECIFICATIONS, SANITARY SEWER NOTE NO. 12.
 7. SANITARY SEWER LEAD NOTE
 8. ALL SANITARY SEWER LEADS SHALL BE INSTALLED AS SHOWN ON THE SANITARY SEWER PLAN. SEE SHEET 3 OF 20 FOR SANITARY SEWER LEAD SCHEDULE. USE PVC SDR-26 OR SCH 40 AND INSTALL IN ACCORDANCE WITH STANDARD DETAIL SD-3 AND SD-16.

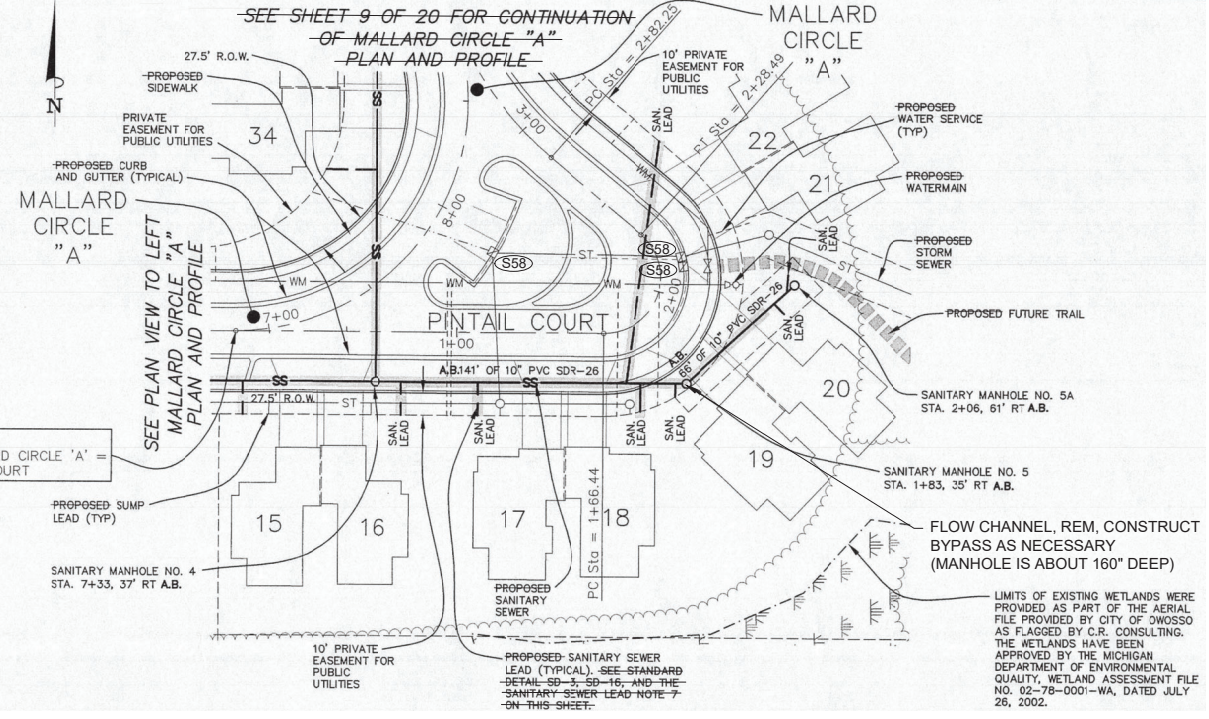
- NOTES: (CONTINUED)
8. SHADING INDICATES COMPACTED SAND BACKFILL (M.D.O.T. GRANULAR MATERIAL CL#1) A.L. COMPACTED SAND BACKFILL SHALL BE TO 95% DENSITY (MODIFIED PROCTOR). THE CONTRACTOR SHALL PROVIDE SUFFICIENT SOIL COMPACTION TESTS FOR THE CONSTRUCTION OBSERVER TO DETERMINE COMPLIANCE WITH REQUIRED DENSITY OF 95% (MODIFIED PROCTOR). TESTS SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND ALL FEES PAID BY THE PROJECT CONTRACTOR. ALL TESTS SHALL BE SUPPLIED TO THE CONSTRUCTION OBSERVER AND/OR THE CITY OF OWOSSO, ALONG WITH THE "AS-BUILT" PLANS. SEE PROJECT SPECIFICATIONS, GENERAL CONSTRUCTION NOTE NO. 22 FOR TESTING REQUIREMENTS.
 9. SEE SHEET 16 OF 20 FOR TRENCH BACKFILL DETAILS.
 10. THE CONTRACTOR SHALL PLACE CRUSHED LIMESTONE FROM THE INVERT OF THE LOWER UTILITY TO THE TOP OF THE HIGHER UTILITY AT THE LOCATION OF ALL MAINLINE UTILITY CROSSINGS, INCLUSIVE TO THE COST OF THE TOTAL PROJECT.
 11. THE TOPOGRAPHIC BASE MAP WAS ESTABLISHED BY AN AERIAL PHOTOGRAMMETRIC SURVEY BY AEROCON AERIAL SURVEY CORPORATION PREPARED FOR CITY OF OWOSSO, CONTOUR INTERVAL 1' (N.G.V. DATUM).
 12. ALL UNITS TO BE SERVED BY AN INDIVIDUAL SANITARY LEAD.
 13. PROPOSED SANITARY SEWER LEADS WHICH ARE BELOW PROPOSED STORM SEWER AND WITHIN 18" OF PROPOSED STORM SEWER SHALL BE PLACED WITHIN 10" OF STEEL CASING CENTERED ON CROSSING. STEEL CASING SHALL BE MINIMUM EIGHT INCHES OUTSIDE DIAMETER WITH A MINIMUM WALL THICKNESS OF 0.300 INCHES, UNLESS OTHERWISE DIRECTED BY DESIGN ENGINEER. STEEL CASING SHALL BE INCLUDED IN SANITARY LEAD PAY ITEM AND NOT PAID FOR SEPARATELY. THE STEEL CASING SHALL BE ENCASED WITH CONCRETE CRADLE AT CROSSING LOCATION AS DIRECTED BY DESIGN ENGINEER. CONCRETE CRADLE SHALL BE INCLUDED IN SANITARY LEAD PAY ITEM AND NOT PAID FOR SEPARATELY.
 14. PROPOSED SANITARY MANHOLES SHALL BE CONSTRUCTED SO THAT CONCENTRIC CONES ARE ROTATED TOWARD ROAD AND AWAY FROM PROPOSED SIDEWALK, OR AWAY FROM PROPOSED BACK OF CURB WHICHEVER APPLIES.

CAUTION!
72 HOURS (3 WORKING DAYS)
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171



STATION EQUATION
STA. 6+84.98 MALLARD CIRCLE 'A' =
STA. 0+00 PINTAIL COURT

STATION EQUATION
STA. 6+84.98 MALLARD CIRCLE 'A' =
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- NOTES:
1. PUBLIC UTILITY INFORMATION IS DELINEATED IN ACCORDANCE WITH LOCATIONS PROVIDED BY THE UTILITY OWNERS. GOULD ENGINEERING, INC. IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION OR THE LOCATION AT WHICH SERVICE WILL BE PROVIDED.
 2. GOULD ENGINEERING, INC. HAS NOT REVIEWED THIS PROJECT FOR SOIL CONTENT. WE SUGGEST THE CLIENT CONTACT A SOILS ENGINEER WITH REGARD TO SOIL CONCERNS.
 3. ALL EASEMENTS FOR SANITARY SEWERS, WATERMAIN AND STORM SEWERS, WHICH ARE NOT LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY, SHALL BE DENOTED ON THE MASTER DEED TO BE RECORDED AT THE SHAWASSEE COUNTY REGISTER OF DEEDS.
 4. SEE PROJECT SPECIFICATIONS, GENERAL CONSTRUCTION NOTE NO. 10 AND PROJECT SPECIFICATIONS, BID NOTE NO. 10 FOR CONSTRUCTION STAKING REQUIREMENTS.
 5. ALL STATIONING AND OFFSET DIMENSIONS ARE REFERENCED TO THE CONSTRUCTION CENTERLINE.
 6. ALL SANITARY SEWER MAINLINE SHALL BE TELEVIEWED ACCORDING TO PROJECT SPECIFICATIONS, SANITARY SEWER NOTE NO. 12.
 7. SANITARY SEWER LEAD NOTE
 8. ALL SANITARY SEWER LEADS SHALL BE INSTALLED AS SHOWN ON THE SANITARY SEWER PLAN. SEE SHEET 3 OF 20 FOR SANITARY SEWER LEAD SCHEDULE. USE PVC SDR-26 OR SCH 40 AND INSTALL IN ACCORDANCE WITH STANDARD DETAIL SD-3 AND SD-16.



QUANTITIES (THIS SHEET)

QUANTITY	UNIT	WORK ITEM
70	Ft	Sewer, Rem, Less than 24 inch
132	Syd	Pavt, Rem
25	Syd	Sidewalk, Rem
5	Ea	Erosion Control, Inlet Protection, Fabric Drop
18	Cyd	Subbase, CIP
70	Ft	Sewer, SDR-26, 10 inch, Tr Det B, Modified
1	Ea	Dr Structure Tap, 10 inch
2	Ea	Flow Channel, Rem, Construct
1	LSUM	Bypass Pumping, Sanitary Sewer
132	Syd	Driveway, Conc, Nonreinf, 6 inch
45	Sft	Sidewalk, Conc, 4 inch
180	Sft	Sidewalk, Conc, 6 inch
40	Syd	Turf Establishment, Performance

CITY OF OWOSSO, MICHIGAN
ENGINEERING DIVISION
DEPT. OF PUBLIC SERVICE

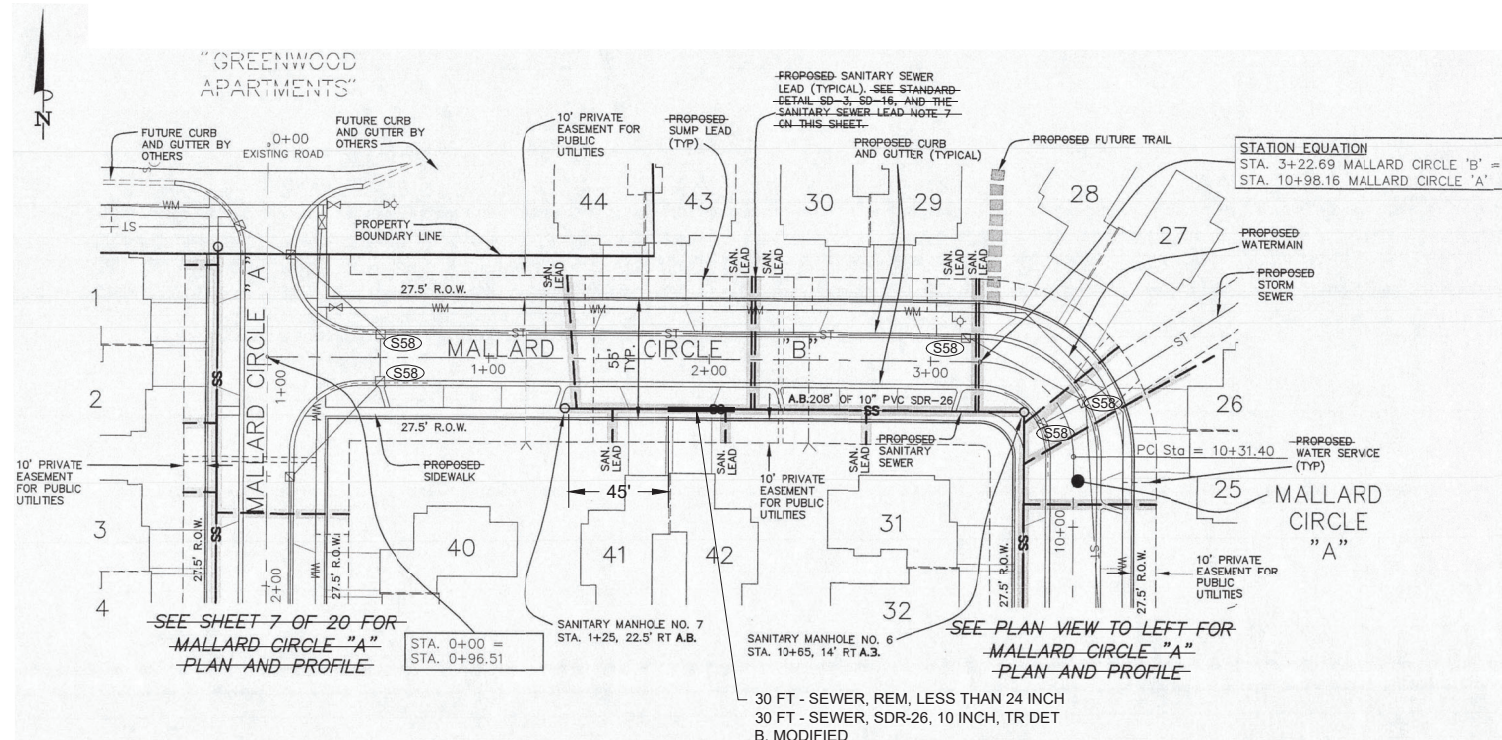
WOODLAND TRAILS SANITARY SEWER REPAIR PROJECT
CONSTRUCTION PLAN

JANUARY, 2024
PROJECT NO.

FIELD BOOK
P.G.

4

NO.	DATE	BY	REVISIONS	CHECKED BY	APPROVED BY
1	1/22/24	CW			

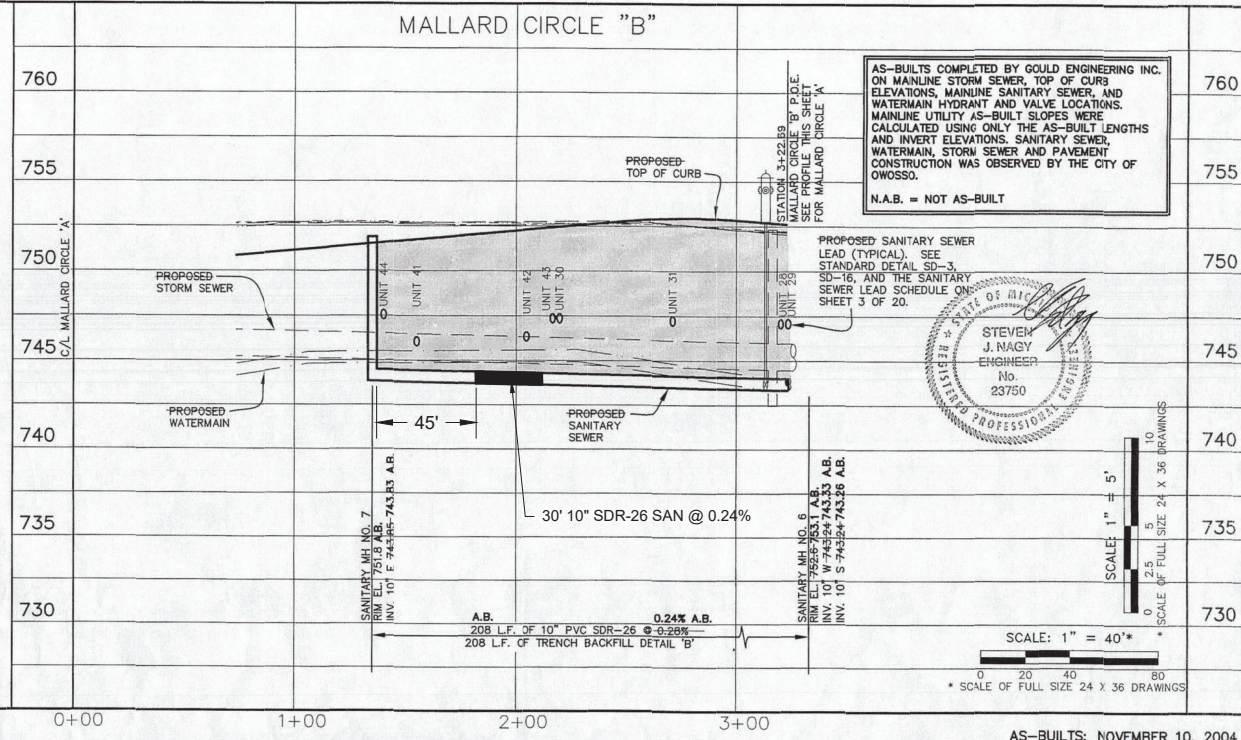


NOTE:
 A 4' SIDEWALK AND PARALLEL PARKING IS TO BE CONSTRUCTED DURING DUAL UNIT CONSTRUCTION AND IS TO BE LOCATED PARALLEL TO AND 1' INSIDE OF THE PROPOSED RIGHT-OF-WAY LINE. ALL EXISTING EXCAVATED MATERIAL, EXCEPT TOPSOIL, USED AS ENGINEER APPROVED BACKFILL IN THESE AREAS WHERE THE SIDEWALK AND PARALLEL PARKING ARE TO BE LOCATED SHALL BE COMPACTED TO 95% DENSITY.

LEGEND

Ex. ST	EXISTING STORM SEWER	---	EXISTING WETLAND LIMITS
Ex. SM	EXISTING STORM MANHOLE	---	EXISTING CULVERT
Ex. SCB	EXISTING STORM CATCH BASIN	---	PROPOSED WATERMAIN
Ex. ES	EXISTING END SECTION	---	PROPOSED WATER SERVICE LEAD
Ex. RR	EXISTING RIPRAP	---	PROPOSED HYDRANT
Ex. SS	EXISTING SANITARY SEWER	---	PROPOSED VALVE
Ex. WM	EXISTING WATERMAIN	---	PROPOSED VALVE MANHOLE
Ex. H	EXISTING HYDRANT	---	PROPOSED SANITARY SEWER
Ex. V	EXISTING VALVE	---	PROPOSED SANITARY LEAD
Ex. GW	EXISTING GATE WELL	---	PROPOSED STORM SEWER
Ex. CG	EXISTING CURB AND GUTTER	---	PROPOSED SUMP LEAD
Ex. PH	EXISTING TELEPHONE	---	PROPOSED MANHOLE
Ex. TR	EXISTING TELEPHONE RISER	---	PROPOSED CATCH BASIN
Ex. GAS	EXISTING GAS	---	PROPOSED END SECTION
Ex. UG	EXISTING UNDERGROUND MARKER	---	PROPOSED RIPRAP
Ex. EL	EXISTING ELECTRIC	---	PROPOSED CURB AND GUTTER
Ex. ER	EXISTING ELECTRIC RISER	---	PROPOSED EASEMENT
Ex. EP	EXISTING ELECTRIC PAD	---	PROPOSED RIGHT-OF-WAY TRENCH BACKFILL DETAIL 'B' AND/OR 'G'
Ex. TV	EXISTING CABLE TV	---	REMOVE EXISTING HMA PAVEMENT
Ex. OW	EXISTING OVERHEAD WIRES	---	REMOVE EX. CURB AND GUTTER
Ex. UP	EXISTING UTILITY POLE	---	
Ex. GA	EXISTING GUY ANCHOR	---	
Ex. LP	EXISTING LIGHT POLE	---	
Ex. TB	EXISTING TREES AND/OR BRUSH	---	
Ex. MB	EXISTING MAIL BOX	---	
Ex. SP	EXISTING SIGN POST	---	

NOTES:
 HATCHING INDICATES TRENCH BACKFILL DETAIL 'B'
 SEE SHEET 16 OF 20 FOR TRENCH BACKFILL DETAILS
 HATCHING INDICATES COMPACTED SAND BACKFILL (M.D.O.T. GRANULAR MATERIAL CL.I). SEE NOTE NO. 8 ON THIS SHEET.
 MAINLINE UTILITY CROSSING
 SEE NOTE NO. 8 ON THIS SHEET



QUANTITIES (THIS SHEET)

QUANTITY	UNIT	WORK ITEM
30	Ft	Sewer, Rem, Less than 24 inch
5	Ea	Erosion Control, Inlet Protection, Fabric Drop
30	Ft	Sewer, SDR-26, 10 inch, Tr Det B, Modified
50	Syd	Turf Establishment, Performance

**CITY OF OWOSSO, MICHIGAN
 ENGINEERING DIVISION
 DEPT. OF PUBLIC SERVICE**

**WOODLAND TRAILS SANITARY SEWER REPAIR PROJECT
 CONSTRUCTION PLAN**

NO. 1 | **IFB PLANS** | **REVISIONS** | **DATE** 1/22/24 | **BY** CW

APPROVED BY [Signature] | **CHECKED BY** [Signature] | **ORIGINAL PLAN**

JANUARY, 2024 | **FIELD BOOK** | **P.G.**

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