CITY OF OWOSSO

2025 STREET PROGRAM

SHIAWASSEE COUNTY

SECTION 24, T7N-R2E, CITY OF OWOSSO

POP: 15,194 (2010 CENSUS)

SHEET NO.	DESCRIPTION
CS	COVER SHEET
D1	STREET ITEMS GENERAL NOTES AND DETAILS
D2	SESC STANDARD NOTES AND DETAILS
HL1	HOWELL ST & LYNN ST - TRAFFIC CONTROL PLAN
HL2	HOWELL ST & LYNN ST - TYPICAL CROSS SECTIONS
HL3	HOWELL ST & LYNN ST - REMOVAL PLAN
HL4	HOWELL ST & LYNN ST - CONSTRUCTION PLAN
HL5	HOWELL ST & LYNN ST - SOIL BORINGS

UTILITY CONTACTS

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AT THE TOME OF PREPARING THESES PANS. 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
1601 W. MAIN ST
OWOSSO, MI 48867

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

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

GAS
OFFICE: 517-374-2375
CELL: 517-614-8570
adam.bertram@cmsenergy.com

DAYSTARR COMMUNICATIONS
ATT: BRENT KLEIN
307 N. BALL STREET
OWOSSO, MI 48867

FIBER
PHONE: 989-720-6000
FAX: 989-720-6060
brent.klein@daystarrfiber.net

FRONTIER COMMUNICATIONS
ATT: MARK V. STEVENS
1943 W. M-21
OWOSSO, MI 48847

FIBER
PHONE: 989-723-0373
mark.stevens@ftr.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@shiawasseechd.net

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

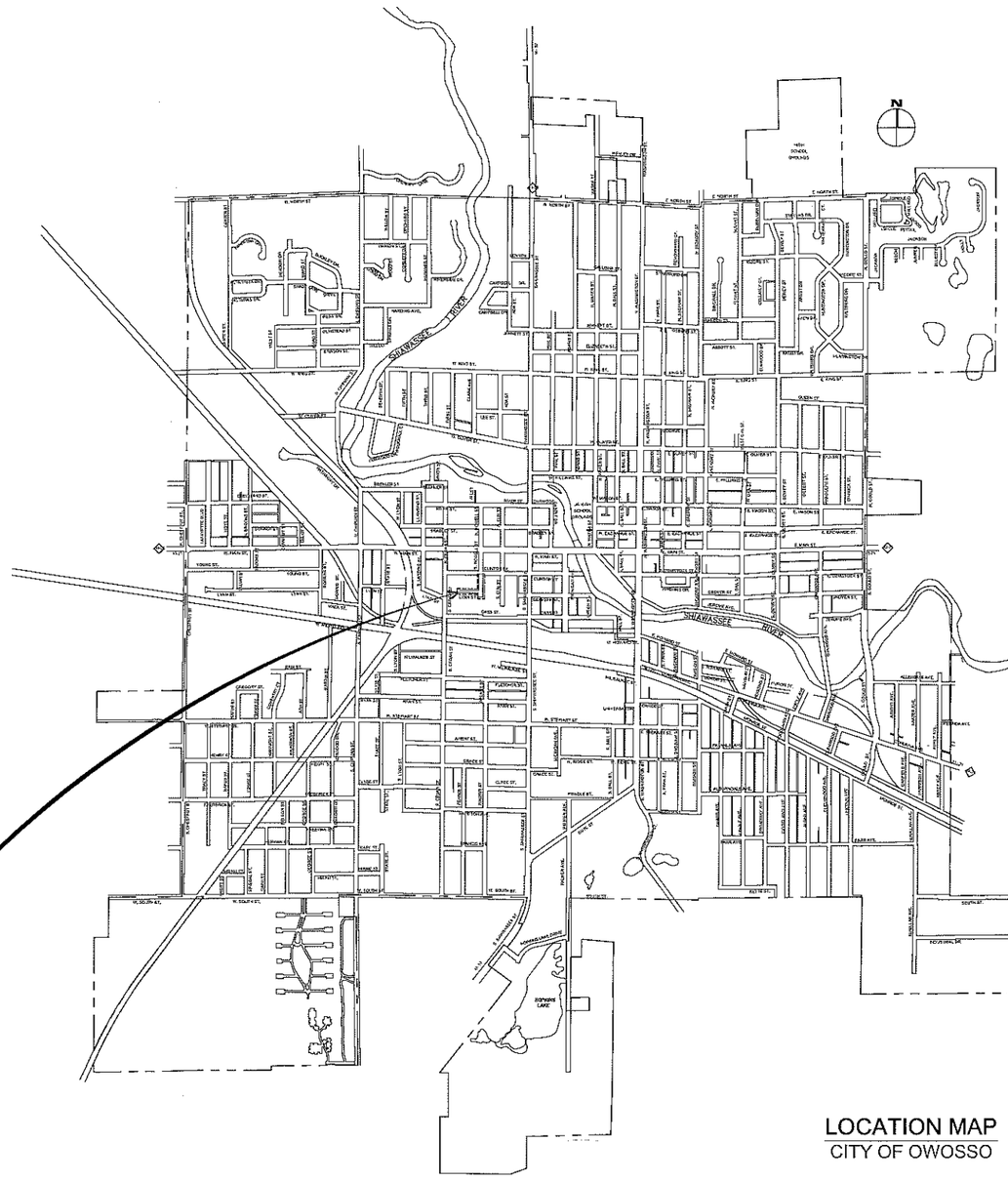
MDOT ROAD STANDARD PLANS

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 CURB AND 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

PROJECT LOCATION - LYNN STREET & HOWELL ST



LOCATION MAP
CITY OF OWOSSO

THE DESIGN OF THIS ROAD IS BASED ON THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS OF CONSTRUCTION, 2020 EDITION, AND THE AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2011 EDITION, AND THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 2011 EDITION.

CONTRACT FOR: 0.125 MILE OF HMA CRUSH AND SHAPE, INTERSECTION IMPROVEMENTS, AND DRAINAGE IMPROVEMENTS.

CITY OF OWOSSO APPROVAL

STATE OF MICHIGAN
CLAYTON ROBERT WEHNER
ENGINEER
No. 6201000052
LICENSED PROFESSIONAL ENGINEER

Clayton Wehner — DIRECTOR OF ENGINEERING CLAYTON WEHNER, PE
6201000052 — REGISTRATION NUMBER
9/9/2024 — DATE

Know what's below. Call before you dig.

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

NO.	REVISIONS	DATE	BY
1	IFB PLANS	9/9/24	OW

BENCH MARK DATA
DESCRIPTION
ELEV.

ORIGINAL PLAN
APPROVED BY
CHECKED BY

2025 STREET PROGRAM
COVER SHEET
CS

DECEMBER, 2022
PROJECT NO.
FIELD BOOK
PG.

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 PAIR 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 ITMES.

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 2020 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 Sidewalk Ramp, Conc, 7 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.

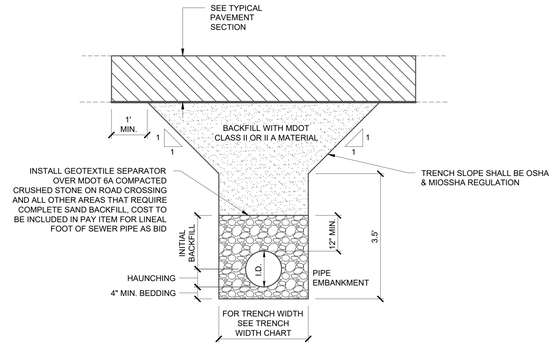
LAWN SPRINKLERS / LANDSCAPING
OWNERS OF EXISTING LAWN SPRINKLER SYSTEMS AND / OR LANDSCAPING SHALL BE NOTIFIED (IN WRITING WITH A COPY SENT TO THE ENGINEER) BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF ANY WORK THAT WILL BE DONE THAT WILL AFFECT THOSE SYSTEMS AND / OR LANDSCAPING. IF THE PROPERTY OWNER 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 THIER ACCURACY IS NOT GUARANTEED.

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

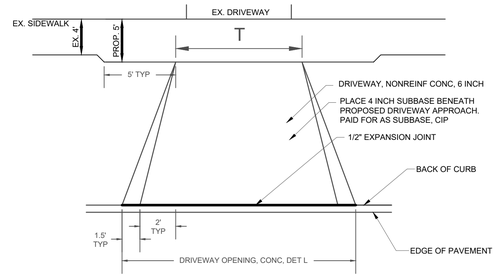
MAINTAINING TRAFFIC QUANTITIES

Quantity	Unit	Pay Item
1	Ea	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn & Oper
1	LSUM	Minor Traffic Devices, Max $5,000
25	Ea	Plastic Drum, Fluorescent, Furn & Oper
66	Sft	Sign, Type B, Temp, Prismatic, Furn & Oper
4	Ea	Pedestrian, Type II Barricade, Temp



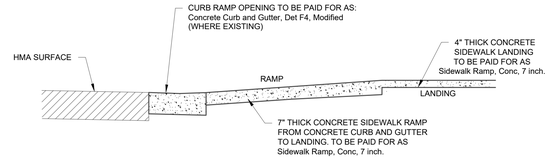
TRENCH DETAIL B, MODIFIED DETAIL
NOT TO SCALE

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

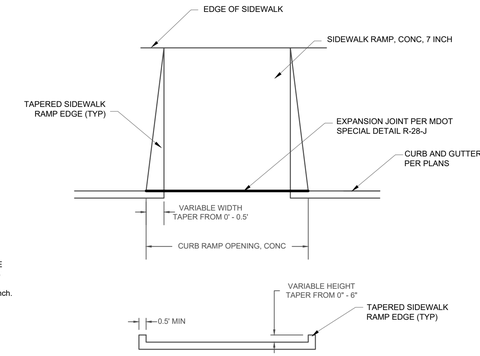


DIMENSION T IS 1' EACH SIDE OF THE EXISTING DRIVEWAY WIDTH BEHIND SIDEWALK

DRIVEWAY APPROACH DETAIL
NOT TO SCALE



SIDEWALK RAMP THICKNESS DETAIL
NOT TO SCALE



SIDEWALK RAMP DETAIL
NOT TO SCALE

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 $17,200
11	Syd	Pavt, Rem
100	Cyd	Subgrade Undercutting, Special
7	Cyd	Subbase, CIP
50	Ton	Maintenance Gravel
2	Ea	Sanitary Service, Conflict
2	Ea	Abandoned Gas Main, Conflict
2	Ea	Dr Structure, Tap, 10 inch
2	Ton	Cement
11	Syd	Driveway, Nonreinf Conc, 6 inch
12	Ea	Water Shutoff, Adj, Temp, Case 1
225	Syd	Turf Establishment, Performance
48	Ft	Post, Steel, 3 lb
3	Ea	Sign, Type III, Rem
3	Ea	Sign, Type III, Erect, Salv

EXISTING FEATURES LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	TREE (DECIDUOUS)	CB	CABLE BOX	SCP	SURVEY CONTROL POINT
	BUSH	TR	TELEPHONE RISER	BM #1	BENCHMARK
	TREE (CONIFEROUS)	TM	TELEPHONE MANHOLE		SECTION CORNER
	DEAD TREE	TH	TELEPHONE HANDHOLE		BOUNDARY LINE
	STUMP	ER	ELECTRICAL RISER		PROPERTY LINE
	MANHOLE	EM	ELECTRICAL MANHOLE		WATERMAIN
	SANITARY CLEANOUT	EH	ELECTRICAL HANDHOLE		SANITARY SEWER
	RD. CATCH BASIN		POWER POLE		STORM SEWER
	SQ. CATCH BASIN		LIGHT POLE		CULVERT (21" AND UNDER)
	FIRE HYDRANT		GUY POLE		CULVERT (24" AND UP)
	WATER VALVE		GUY ANCHOR	CATV	CABLE T.V.
	CURB STOP & BOX		PED CROSSING SIGNAL	T	TELEPHONE
W	WELL		YARD LIGHT	E	ELECTRIC
	WATER MANHOLE		SIGN	G	GAS
	WATER METER	MB	MAILBOX	OH	OVERHEAD LINES
B#	SOIL BORING		GUARD POST		GUARDRAIL
	MONITORING WELL		FOUND CONC. MONUMENT		FENCE
			FOUND IRON ROD		WOODLINE
			SET IRON ROD		

NOTE: ALL ITEMS LISTED ON THE LEGEND MAY NOT BE PRESENT ON DRAWING.

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

NO.	REVISIONS	DATE	BY
1	IFB PLANS	9/9/24	CW

ORIGINAL PLAN APPROVED BY
CHECKED BY

BENCH MARK DATA

ELEV.	DESCRIPTION

2025 STREET PROGRAM

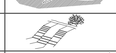
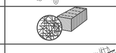
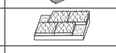
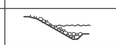
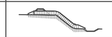
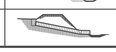
STREET ITEMS GENERAL NOTES & DETAILS

FIELD BOOK PG.

DECEMBER, 2022
PROJECT NO.

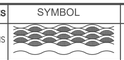
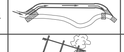
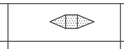
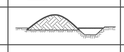
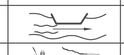
D1

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 velocites. 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.

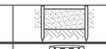
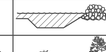
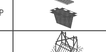
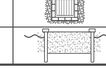
B = BIOENGINEERING

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	 B	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	 B	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 PILINGS		Constructed along or within water corridor or waterbody to provide dry construction area.
ES39	STREAMBANK BIOSTABILIZATION	 B	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	 B	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 esource, 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, STORM INSTALLATION, AND BACKFILL.
3. PERMANENT MEASURES, FINAL GRADING, SEEDING AND MULCHING.

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

REVISIONS

NO.		DATE	BY
1	IFB PLANS	9/9/24	CW

ORIGINAL PLAN APPROVED BY

CHECKED BY

BENCH MARK DATA

ELEV.	DESCRIPTION

2025 STREET PROGRAM

SESC STANDARD NOTES AND DETAILS

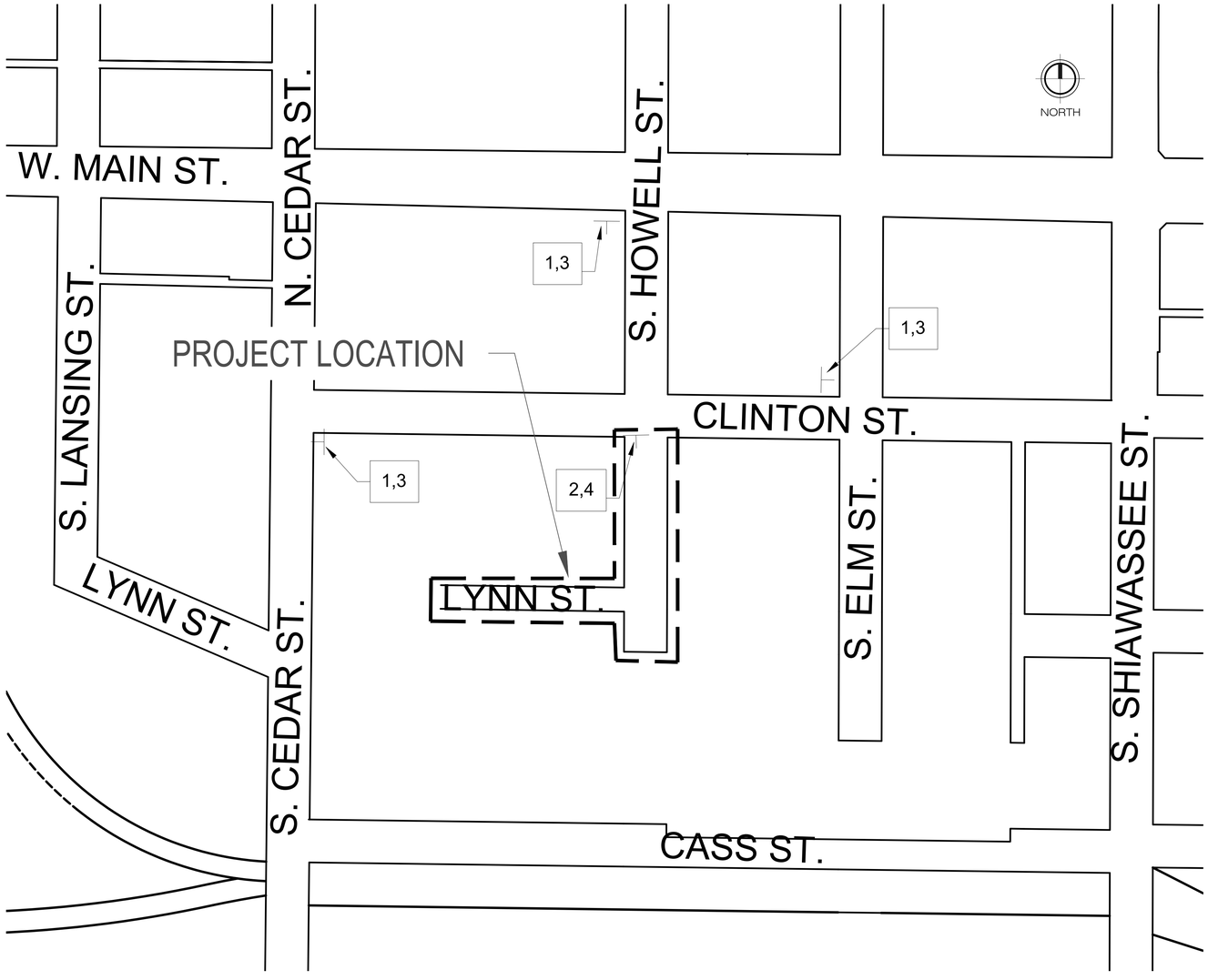
DECEMBER, 2022
PROJECT NO.

FIELD BOOK
PG.

D2

HOWELL STREET & LYNN STREET
CITY OF OWOSSO
2025 STREET PROGRAM

SHEET NO.	DESCRIPTION
HL1	HOWELL ST & LYNN ST - COVER SHEET & TRAFFIC CONTROL PLAN
HL2	HOWELL ST & LYNN ST - TYPICAL CROSS SECTIONS
HL3	HOWELL ST & LYNN ST - REMOVAL PLAN
HL4	HOWELL ST & LYNN ST - CONSTRUCTION PLAN
HL5	HOWELL ST & LYNN ST - SOIL BORINGS



SIGNING REQUIREMENTS

NO.	SIGN	SIGN DESIGNATOIN	SIZE	NO. REQ.	TOTAL AREA (SFT)
1	ROAD WORK AHEAD	W20-1	48 x 48	3	48
2	ROAD CLOSED LOCAL TRAFFIC ONLY	R11-3A	60 x 30	1	13
3	HOWELL ST	M4-8 MOD	30 X 8	3	5
4		TYPE III BARRICADE		1	

MAINTAINING TRAFFIC LEGEND

PROJECT LOCATION

TEMPORARY SIGN

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

NO.	REVISIONS	DATE	BY
1	IFB PLANS	9/9/24	CW

ORIGINAL PLAN APPROVED BY

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ELEV. DESCRIPTION

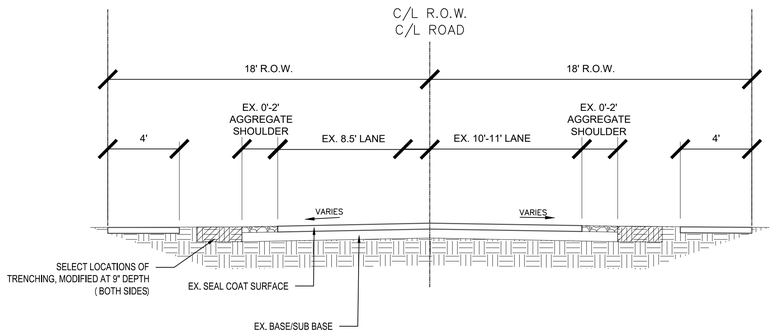
2025 STREET PROGRAM

HOWELL ST & LYNN ST
TRAFFIC CONTROL PLAN

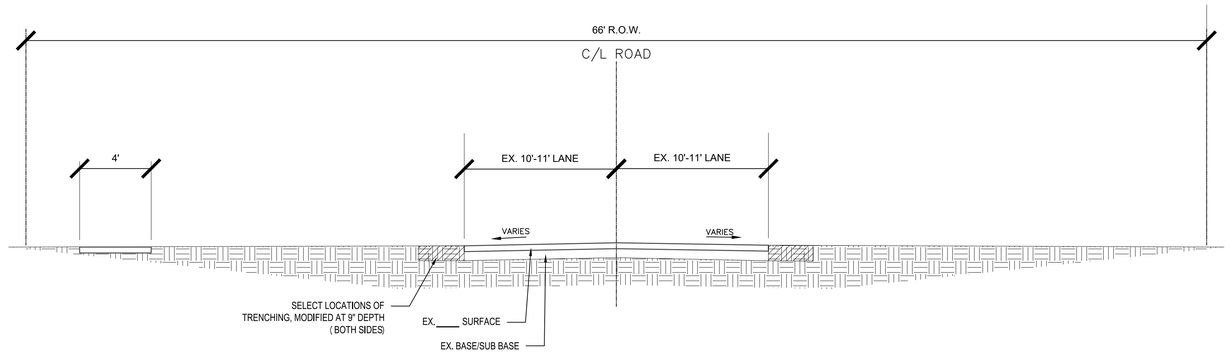
DECEMBER, 2022 PROJECT NO.

FIELD BOOK PG.

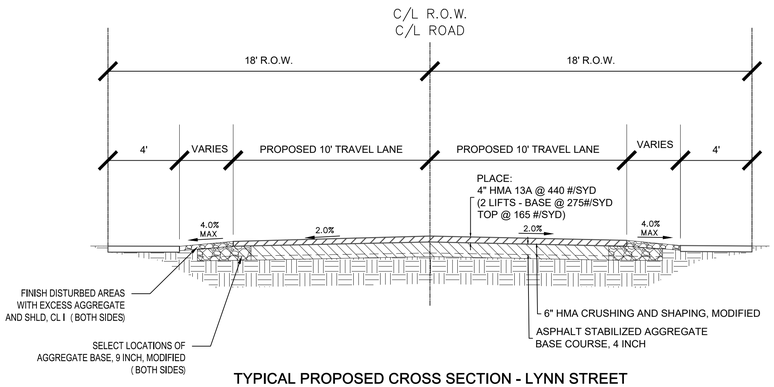
HL1



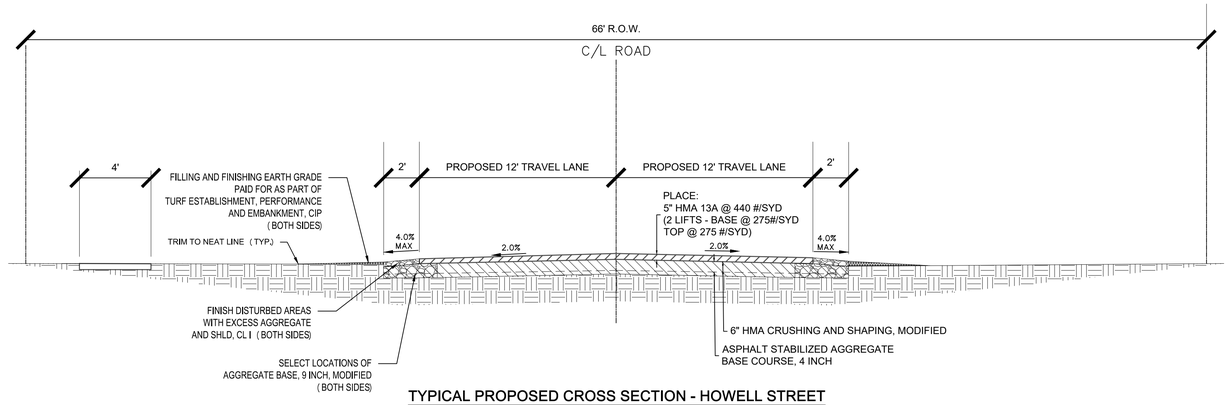
TYPICAL EXISTING CROSS SECTION - LYNN STREET
APPLIES TO STATIONS:
0+00.50 (POB) TO 2+83 (SPRING POINT OF HOWELL INTERSECTION)
SCALE: 1" = 4'



TYPICAL EXISTING CROSS SECTION - HOWELL STREET
APPLIES TO STATIONS:
0+33 (POB) TO 3+63 (POE)
SCALE: 1" = 4'



TYPICAL PROPOSED CROSS SECTION - LYNN STREET
APPLIES TO STATIONS:
0+00.50 (POB) TO 2+83 (SPRING POINT OF HOWELL INTERSECTION)
SCALE: 1" = 4'



TYPICAL PROPOSED CROSS SECTION - HOWELL STREET
APPLIES TO STATIONS:
0+33 (POB) TO 3+63 (POE)
SCALE: 1" = 4'

NOTES:
1. WIND ROW SUFFICIENT AMOUNT OF AGGREGATE ALONG ROAD EDGES FOR BLENDING PROPOSED PAVEMENT WITH EX. GROUND. NOT TO BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED AS PART OF MAJOR WORK ITEMS.
2. MATCH PROPOSED ROAD SURFACE WITH ADJACENT PAVEMENT OF OTHER STREETS, PARKING AREAS, ETC. AS DIRECTED BY THE ENGINEER.
3. RESIDENTIAL GRAVEL DRIVEWAYS: CONSTRUCT A 2' ASPHALT WING TO FIT PROPOSED ROAD TO ADJACENT DRIVEWAYS AS DIRECTED BY THE ENGINEER. PLACE ADDITIONAL GRAVEL BEHIND ASPHALT WING AND BLEND INTO EXISTING DRIVEWAY PAID FOR AS APPROACH, CL I, LM.

LYNN STREET - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
HMA	HMA, 13A	165 LBS.	64-28	1.5"	TOP COURSE - AWI = 220 (MIN)
	HMA, 13A	275 LBS	64-28	2.5"	BASE COURSE
DRIVE APPROACH	HMA APPROACH	220 LBS.	58-28	2"	TOP COURSE - AWI = 220 (MIN) HMA, 13A
	HMA APPROACH	330 LBS.	58-28	3"	BASE COURSE HMA, 13A
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)

NOTES:
1. WIND ROW SUFFICIENT AMOUNT OF AGGREGATE ALONG ROAD EDGES FOR BLENDING PROPOSED PAVEMENT WITH EX. GROUND. NOT TO BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED AS PART OF MAJOR WORK ITEMS.
2. MATCH PROPOSED ROAD SURFACE WITH ADJACENT PAVEMENT OF OTHER STREETS, PARKING AREAS, ETC. AS DIRECTED BY THE ENGINEER.
3. RESIDENTIAL GRAVEL DRIVEWAYS: CONSTRUCT A 2' ASPHALT WING TO FIT PROPOSED ROAD TO ADJACENT DRIVEWAYS AS DIRECTED BY THE ENGINEER. PLACE ADDITIONAL GRAVEL BEHIND ASPHALT WING AND BLEND INTO EXISTING DRIVEWAY PAID FOR AS APPROACH, CL I, LM.

HOWELL STREET - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
HMA	HMA, 13A	275 LBS.	64-28	1.5"	TOP COURSE - AWI = 220 (MIN)
	HMA, 13A	275 LBS	64-28	2.5"	BASE COURSE
DRIVE APPROACH	HMA APPROACH	220 LBS.	58-28	2"	TOP COURSE - AWI = 220 (MIN) HMA, 13A
	HMA APPROACH	330 LBS.	58-28	3"	BASE COURSE HMA, 13A
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)

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

NO.	REVISIONS	DATE	BY
1	IFB PLANS	9/9/24	CW
	ORIGINAL PLAN		APPROVED BY
			CHECKED BY

BENCH MARK DATA

ELEV.	DESCRIPTION

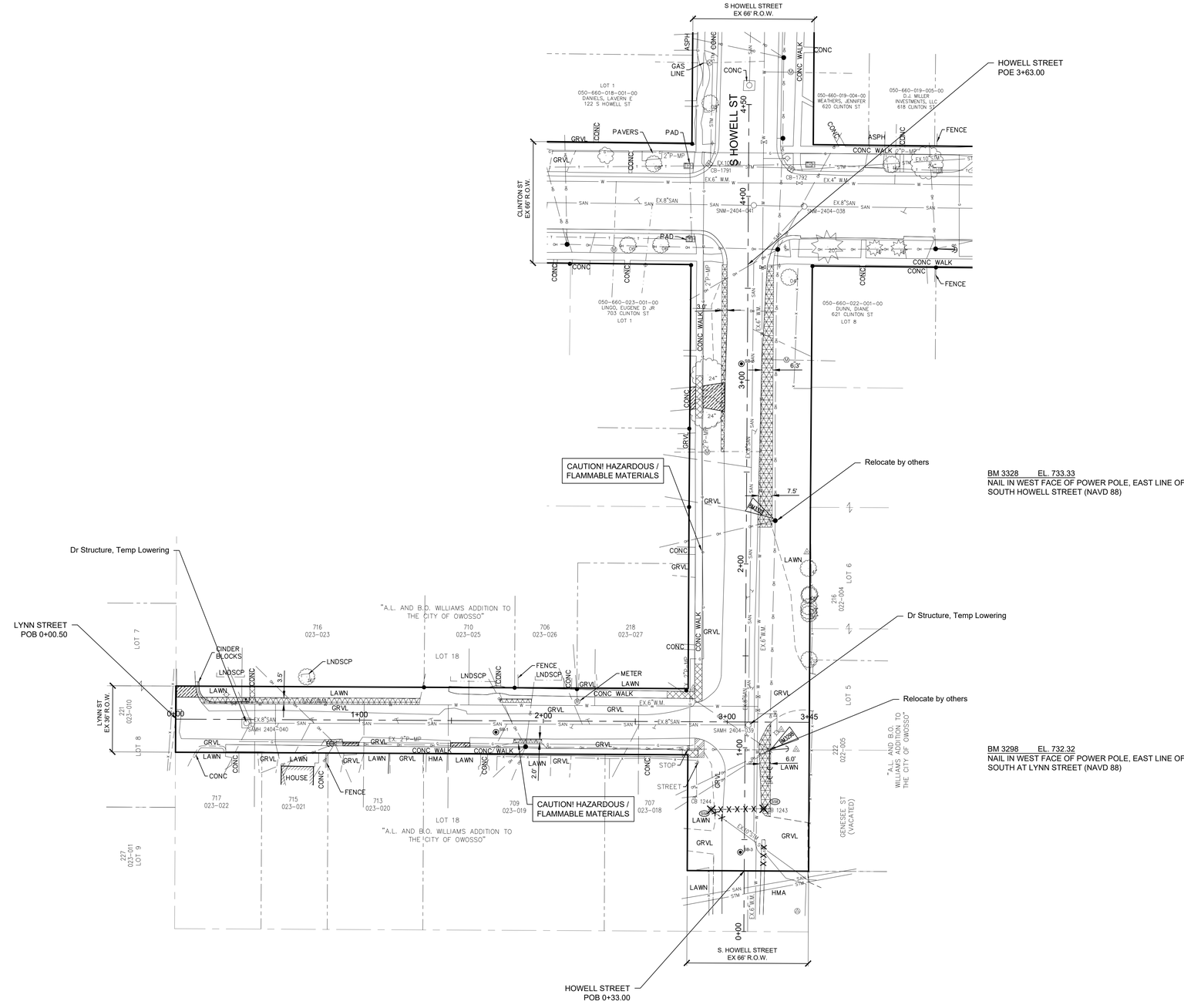
2025 STREET PROGRAM

HOWELL ST & LYNN ST
TYPICAL CROSS SECTIONS

FIELD BOOK PG.

DECEMBER, 2022
PROJECT NO.

HL2



BM 3328 EL. 733.33
NAIL IN WEST FACE OF POWER POLE, EAST LINE OF SOUTH HOWELL STREET (NAVD 88)

BM 3298 EL. 732.32
NAIL IN WEST FACE OF POWER POLE, EAST LINE OF SOUTH AT LYNN STREET (NAVD 88)

LEGEND

- Curb and Gutter, Rem
- Sewer, Rem
- Dr Structure, Rem
- HMA Surface, Rem
- Trenching, Modified
- Pavt, Rem
- Sidewalk, Rem
- Excavation Earth
- STANDARD SOIL EROSION KEY

HOWELL ST REMOVAL QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
2	Ea	Dr Structure, Rem
36	Ft	Sewer, Rem, Less than 24 inch
17	Ft	Curb and Gutter, Rem
23	Syd	Pavt, Rem
20	Syd	Sidewalk, Rem
5	Cyd	Excavation, Earth
2	Ea	Erosion Control, Inlet Protection, Fabric Drop
30	Sta	Trenching, Modified
1	Ea	Dr Structure, Temp Lowering

LYNN ST REMOVAL QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
13	Syd	Pavt, Rem
13	Syd	Sidewalk, Rem
2	Cyd	Excavation, Earth
17	Sta	Trenching, Modified
1	Ea	Dr Structure, Temp Lowering

HOWELL ST & LYNN ST
REMOVAL PLAN

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

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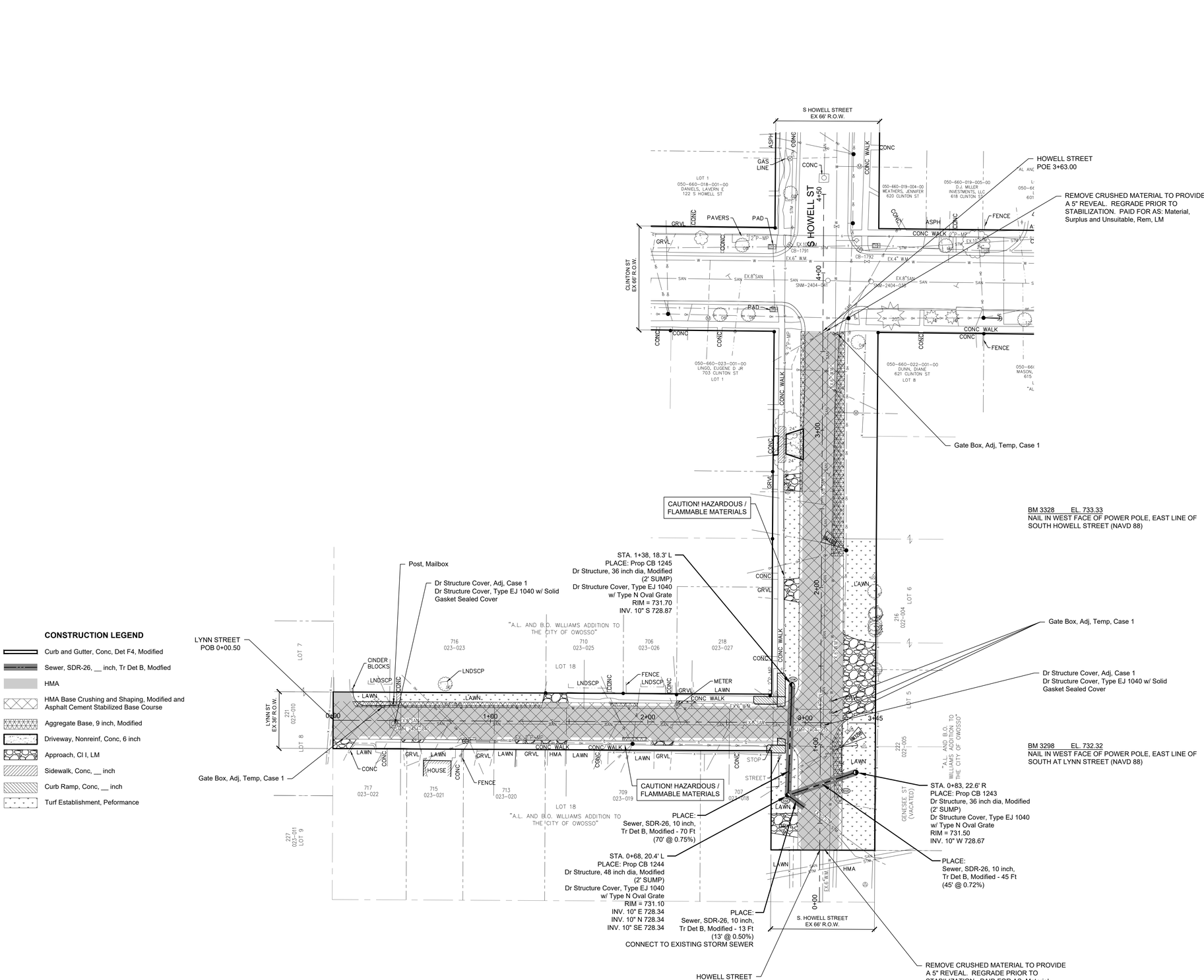
ELEV. DESCRIPTION

2025 STREET PROGRAM
HOWELL ST & LYNN ST
REMOVAL PLAN
DECEMBER, 2022 PROJECT NO.
FIELD BOOK PG

HL3



N

0 30 60

SCALE IN FEET

HOWELL ST CONSTRUCTION QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
50	Cyd	Embankment, CIP
1	Ea	Erosion Control, Inlet Protection, Fabric Drop
6	Cyd	Subbase, CIP
153	Syd	Aggregate Base, 9 inch, Modified
1069	Syd	HMA Base Crushing and Shaping, Modified
1069	Syd	Asphalt Cement Stabilized Base Course
1709	Gal	Asphalt Cement Binder
40	Cyd	Material, Surplus and Unsuitable, Rem, LM
28	Cyd	Approach, CI I, LM
48	Ton	Shoulder, CI I
129	Ft	Sewer, SDR-26, 10 inch, Tr Det B, Modified
1	Ea	Dr Structure Cover, Adj, Case 1
1	Ea	Dr Structure Cover, Type EJ 1040 w/ Soild Gasket Sealed Cover
3	Ea	Dr Structure Cover, Type EJ 1040 w/ Type N Oval Grate
2	Ea	Dr Structure, 36 inch dia, Modified
1	Ea	Dr Structure, 48 inch dia, Modified
286	Ton	HMA, 13A
24	Syd	Driveway, Nonreinf Conc, 6 inch
10	Ft	Detectable Warning Surface, Modified
114	Sft	Sidewalk, Conc, 6 inch
75	Sft	Curb Ramp, Conc, 4 inch
52	Sft	Curb Ramp, Conc, 7 inch
600	Syd	Turf Establishment, Performance
4	Ea	Gate Box, Adj, Temp, Case 1

LYNN ST CONSTRUCTION QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
10	Cyd	Embankment, CIP
2	Cyd	Subbase, CIP
55	Syd	Aggregate Base, 9 inch, Modified
753	Syd	HMA Base Crushing and Shaping, Modified
753	Syd	Asphalt Cement Stabilized Base Course
1204	Gal	Asphalt Cement Binder
4	Cyd	Approach, CI I, LM
51	Ton	Shoulder, CI I
1	Ea	Dr Structure Cover, Adj, Case 1
1	Ea	Dr Structure Cover, Type EJ 1040 w/ Soild Gasket Sealed Cover
162	Ton	HMA, 13A
24	Sft	Sidewalk, Conc, 4 inch
134	Sft	Curb Ramp, Conc, 4 inch
100	Syd	Turf Establishment, Performance
1	Ea	Post, Mailbox
1	Ea	Gate Box, Adj, Temp, Case 1

CONSTRUCTION LEGEND

- Curb and Gutter, Conc, Det F4, Modified
- Sewer, SDR-26, __ inch, Tr Det B, Modfied
- HMA
- HMA Base Crushing and Shaping, Modified and Asphalt Cement Stabilized Base Course
- Aggregate Base, 9 inch, Modified
- Driveway, Nonreinf, Conc, 6 inch
- Approach, CI I, LM
- Sidewalk, Conc, __ inch
- Curb Ramp, Conc, __ inch
- Turf Establishment, Peformance

HOWELL ST & LYNN ST

CONSTRUCTION PLAN

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

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2025 STREET PROGRAM

HOWELL ST & LYNN ST
CONSTRUCTION PLAN

DECEMBER, 2022
PROJECT NO.

FIELD BOOK
PG.

HL4

BORING SB-01

DATE STARTED: 5/2/24 **DRILL COMPANY:** PSI
DATE COMPLETED: 5/2/24 **DRILLER:** D. Guajardo **LOGGED BY:** I. Al-Hemyari
COMPLETION DEPTH 5.0 ft **DRILL RIG:** CME-55
BENCHMARK: N/A **DRILLING METHOD:** 3 1/4" HSA
ELEVATION: 729 ft **SAMPLING METHOD:** SS
LATITUDE: **HAMMER TYPE:** Automatic
LONGITUDE: **EFFICIENCY** N/A
STATION: N/A **OFFSET:** N/A **REVIEWED BY:** T. Khalaff
REMARKS: Borehole backfilled with auger cuttings and bitumen cold patch upon completion

Water		
▽	While Drilling	N/A
▼	Upon Completion	N/A
▼	Cave In Depth	N/A

BORING LOCATION: See Boring Location Diagram
Lynn Street

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @ × Moisture ◪ PL ◆ LL (0 25 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 2.0 4.0)	Additional Remarks
	0					Approximately 4" of ASPHALT					
						Dark brown and black fine to coarse SILTY SAND, trace Gravel, moist (BASE)					
				1	14	Yellowish brown to brown fine to coarse SILTY SAND with Gravel, moist, medium dense	SM	3-5-6-2 N=11	13	×	
725				2	12			3-7-8-3 N=15	16	×	
	5					Boring terminated approximately 5' beneath the existing pavement surface					

intertek psi
Professional Service Industries, Inc.
3120 Sovereign Drive, Suite C
Lansing, MI 48911
Telephone: (517) 394-5700

PROJECT NO.: 0406-1030
PROJECT: 2025 Street Program Rehabilitation
LOCATION: S. Howell St., Lynn St., Clyde St. Owosso, Shiawassee County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING SB-02

DATE STARTED: 5/2/24 **DRILL COMPANY:** PSI
DATE COMPLETED: 5/2/24 **DRILLER:** D. Guajardo **LOGGED BY:** I. Al-Hemyari
COMPLETION DEPTH 5.0 ft **DRILL RIG:** CME-55
BENCHMARK: N/A **DRILLING METHOD:** 3 1/4" HSA
ELEVATION: 732 ft **SAMPLING METHOD:** SS
LATITUDE: **HAMMER TYPE:** Automatic
LONGITUDE: **EFFICIENCY** N/A
STATION: N/A **OFFSET:** N/A **REVIEWED BY:** T. Khalaff
REMARKS: Borehole backfilled with auger cuttings and bitumen cold patch upon completion

Water		
▽	While Drilling	N/A
▼	Upon Completion	N/A
▼	Cave In Depth	N/A

BORING LOCATION: See Boring Location Diagram
S. Howell Street

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @ × Moisture ◪ PL ◆ LL (0 25 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 2.0 4.0)	Additional Remarks
	0					Approximately 3" of ASPHALT					
						Dark brown and black fine to coarse SILTY SAND, trace Gravel, moist (BASE)					
730				1	10			6-5-4-4 N=9	9	×	
						Yellowish brown fine to coarse SILTY SAND, trace Gravel, moist, medium dense					
				2	15		SM	8-6-6-7 N=12	9	×	
	5					Boring terminated approximately 5' beneath the existing pavement surface					

intertek psi
Professional Service Industries, Inc.
3120 Sovereign Drive, Suite C
Lansing, MI 48911
Telephone: (517) 394-5700

PROJECT NO.: 0406-1030
PROJECT: 2025 Street Program Rehabilitation
LOCATION: S. Howell St., Lynn St., Clyde St. Owosso, Shiawassee County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING SB-03

DATE STARTED: 5/2/24 **DRILL COMPANY:** PSI
DATE COMPLETED: 5/2/24 **DRILLER:** D. Guajardo **LOGGED BY:** I. Al-Hemyari
COMPLETION DEPTH 5.0 ft **DRILL RIG:** CME-55
BENCHMARK: N/A **DRILLING METHOD:** 3 1/4" HSA
ELEVATION: 728 ft **SAMPLING METHOD:** SS
LATITUDE: **HAMMER TYPE:** Automatic
LONGITUDE: **EFFICIENCY** N/A
STATION: N/A **OFFSET:** N/A **REVIEWED BY:** T. Khalaff
REMARKS: Borehole backfilled with auger cuttings and bitumen cold patch upon completion

Water		
▽	While Drilling	N/A
▼	Upon Completion	N/A
▼	Cave In Depth	N/A

BORING LOCATION: See Boring Location Diagram
S. Howell Street

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @ × Moisture ◪ PL ◆ LL (0 25 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 2.0 4.0)	Additional Remarks
	0					Approximately 2" of ASPHALT					
						Dark brown and black fine to coarse SILTY SAND, trace Gravel, moist (BASE)					
						Grayish brown and black SANDY CLAY with Silt, trace Organic, trace Gravel, moist, firm	CL				
				1	16			5-4-3-4 N=7	14	×	Qp = 1.0 tsf
725						Yellowish brown fine to coarse SILTY SAND, trace Gravel, moist, medium dense					
				2	10		SP-SM	6-6-8-12 N=14	9	×	
	5					Boring terminated approximately 5' beneath the existing pavement surface					

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Professional Service Industries, Inc.
3120 Sovereign Drive, Suite C
Lansing, MI 48911
Telephone: (517) 394-5700

PROJECT NO.: 0406-1030
PROJECT: 2025 Street Program Rehabilitation
LOCATION: S. Howell St., Lynn St., Clyde St. Owosso, Shiawassee County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

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

NO.	REVISIONS	DATE	BY
1	IFB PLANS	9/9/24	CW

ORIGINAL PLAN APPROVED BY
CHECKED BY

BENCH MARK DATA
ELEV. DESCRIPTION

2025 STREET PROGRAM
HOWELL ST & LYNN ST
SOIL BORINGS
DECEMBER, 2022 PROJECT NO.
FIELD BOOK PG.

HL5