

SHEET NO.	DESCRIPTION
CS	COVER SHEET
D1	NOTES AND MISCELLANEOUS ESTIMATES ROAD AND STORM SEWER DETAILS
D2	SESC STANDARD NOTES AND DETAILS
GA1	GARFIELD AVE - TRAFFIC CONTROL PLAN
GA2	GARFIELD AVE - TYPICAL CROSS SECTIONS
GA3	GARFIELD AVE - REMOVAL PLAN & SOIL BORINGS
GA4	GARFIELD AVE - CONSTRUCTION PLAN & PROFILE
GL1	GLENWOOD AVE - TRAFFIC CONTROL PLAN
GL2	GLENWOOD AVE - TYPICAL CROSS SECTIONS
GL3	GLENWOOD AVE - REMOVAL PLAN & SOIL BORINGS
GL4	GLENWOOD AVE - CONSTRUCTION PLAN
GL5	GLENWOOD AVE - CONSTRUCTION PROFILE
LI1	LINCOLN AVE - TRAFFIC CONTROL PLAN
LI2	LINCOLN AVE - TYPICAL CROSS SECTIONS
LI3	LINCOLN AVE - REMOVAL PLAN & SOIL BORINGS
LI4	LINCOLN AVE - CONSTRUCTION PLAN
LI5	LINCOLN AVE - CONSTRUCTION PROFILE
MC1	MCMILLAN AVE - TRAFFIC CONTROL PLAN
MC2	MCMILLAN AVE - TYPICAL CROSS SECTION
MC3	MCMILLAN AVE - REMOVAL PLAN & SOIL BORINGS
MC4	MCMILLAN AVE - CONSTRUCTION PLAN
MC5	MCMILLAN AVE - CONSTRUCTION PROFILE
PA1	PARK ST - TRAFFIC CONTROL PLAN
PA2	PARK ST - TYPICAL CROSS SECTION
PA3	PARK ST - REMOVAL PLAN & SOIL BORINGS
PA4	PARK ST - CONSTRUCTION PLAN
PA5	PARK ST - CONSTRUCTION PROFILE
PE1	PEARCE ST - TRAFFIC CONTROL PLAN
PE2	PEARCE ST - TYPICAL CROSS SECTION
PE3	PEARCE ST - REMOVAL PLAN & SOIL BORINGS
PE4	PEARCE ST - CONSTRUCTION PLAN
PE5	PEARCE ST - CONSTRUCTION PROFILE

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

CITY OF OWOSSO

2021 STREET PROGRAM CONTRACT 1

SHIAWASSEE COUNTY

SECTION 14, T7N-R2E, CITY OF OWOSSO

SECTION 19, T7N-R3E, CITY OF OWOSSO

POP: 15,194 (2010 CENSUS)



LOCATION MAP
CITY OF OWOSSO

PROJECT LOCATION - PARK STREET
B.O.P. STA 0+49.80 TO E.O.P. STA 7+91.80
TOTAL LENGTH = 742 FT (0.14 MILES)

PROJECT LOCATION - LINCOLN AVENUE
B.O.P. STA 0+74.76 TO E.O.P. STA 10+60.74
TOTAL LENGTH = 986 FT (0.19 MILES)

PROJECT LOCATION - GARFIELD AVENUE
B.O.P. STA 1+49.21 TO E.O.P. STA 5+82.85
TOTAL LENGTH = 434 FT (0.08 MILES)

PROJECT LOCATION - GLENWOOD AVENUE
B.O.P. STA 0+50.00 TO E.O.P. STA 7+90.85
TOTAL LENGTH = 741 FT (0.14 MILES)

PROJECT LOCATION - PEARCE STREET
B.O.P. STA 0+71.93 TO E.O.P. STA 7+53.93
TOTAL LENGTH = 682 FT (0.13 MILES)

PROJECT LOCATION - MCMILLAN AVENUE
B.O.P. STA 0+35.07 TO E.O.P. STA 4+21.65
TOTAL LENGTH = 387 FT (0.07 MILES)

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 & STORM SEWER
989-725-0550
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
trmmahar@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 W. BALL STREET
OWOSSO, MI 48867

FIBER
PHONE: 989-720-6000
FAX: 989-720-6000
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.



Know what's below.
Call before you dig.

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

NO.	DATE	BY
1	5/17/21	CW
2	6/4/21	CW

NO.	DATE	BY
1	5/17/21	CW
2	6/4/21	CW

NO.	DATE	BY
1	5/17/21	CW
2	6/4/21	CW

2021 STREET PROGRAM - CONTRACT 1
COVER SHEET

FIELD BOOK
PG.
MAY 2021
PROJECT NO.

CS

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.

STORM SEWER STRUCTURES
ALL STORM 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.

STORM SEWER CONNECTIONS
PROPOSED STORM SEWERS SHALL BE CONNECTED TO EXISTING STORM 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.

SIDEWALK RAMPS AND SIDEWALKS
SIDEWALK RAMPS SHALL BE COMPLETED IN ACCORDANCE WITH THE MDOT 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MDOT STANDARD PLAN R-28 SERIES, EXCEPT AS MODIFIED HEREIN. THE PORTION OF RAMP NEAREST THE CURB AND GUTTER SHALL BE 7-INCHES THICK AS IDENTIFIED ON THE SIDEWALK RAMP THICKNESS DETAIL. THE REMAINDER OF THE RAMP SHALL BE 4-INCHES THICK. THE PAY ITEMS FOR Sidewalk 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 BLACK IN COLOR, INSTALLED ONTO FRESH CONCRETE, AND IN ACCORDANCE WITH MDOT STANDARD R-28 SERIES.

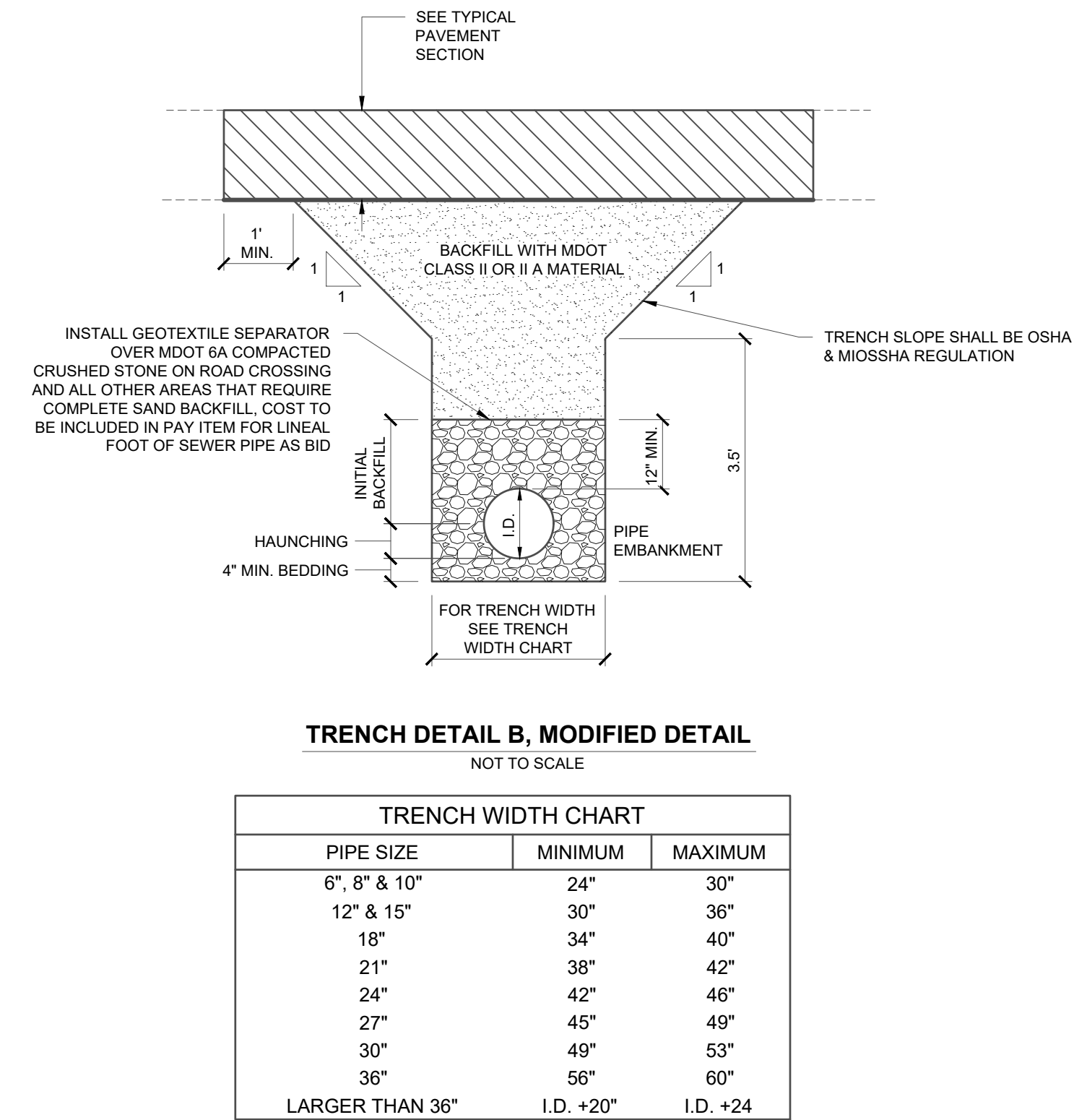
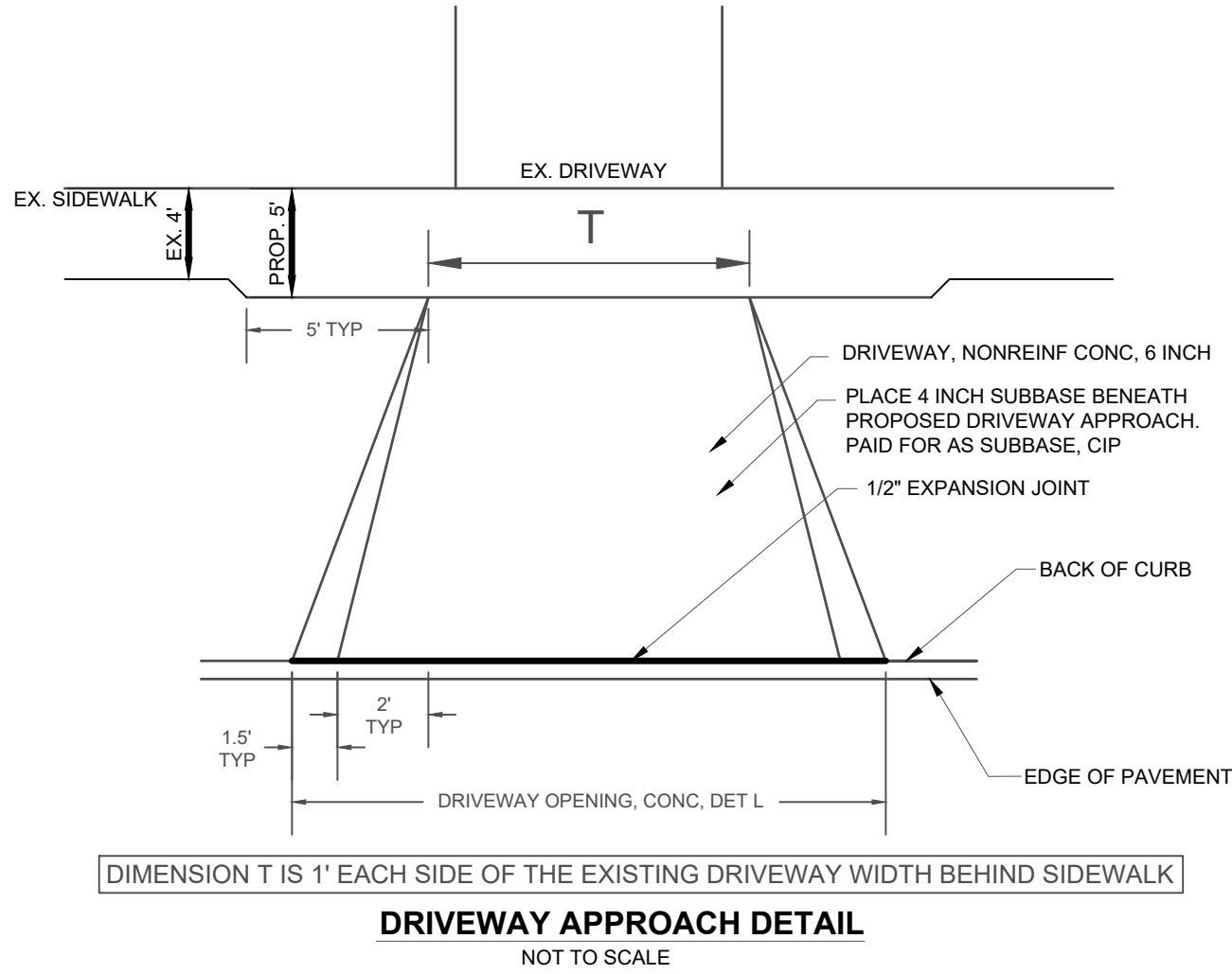
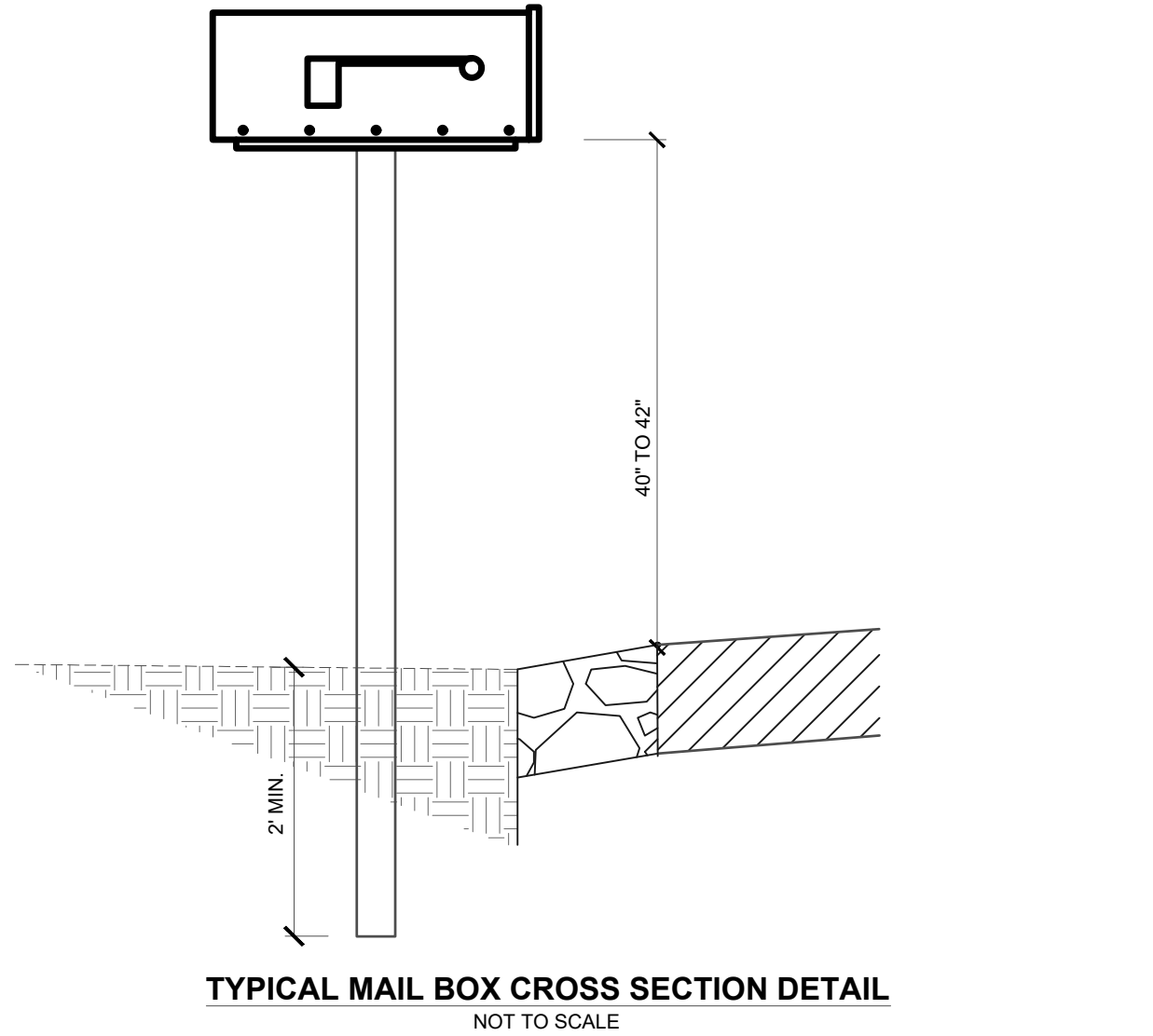
SIDEWALKS LOCATED WITHIN RESIDENTIAL DRIVEWAYS SHALL BE 6-INCHES THICK AND WILL BE PAID FOR AS Sidewalk, Conc, 6 inch.

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.



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

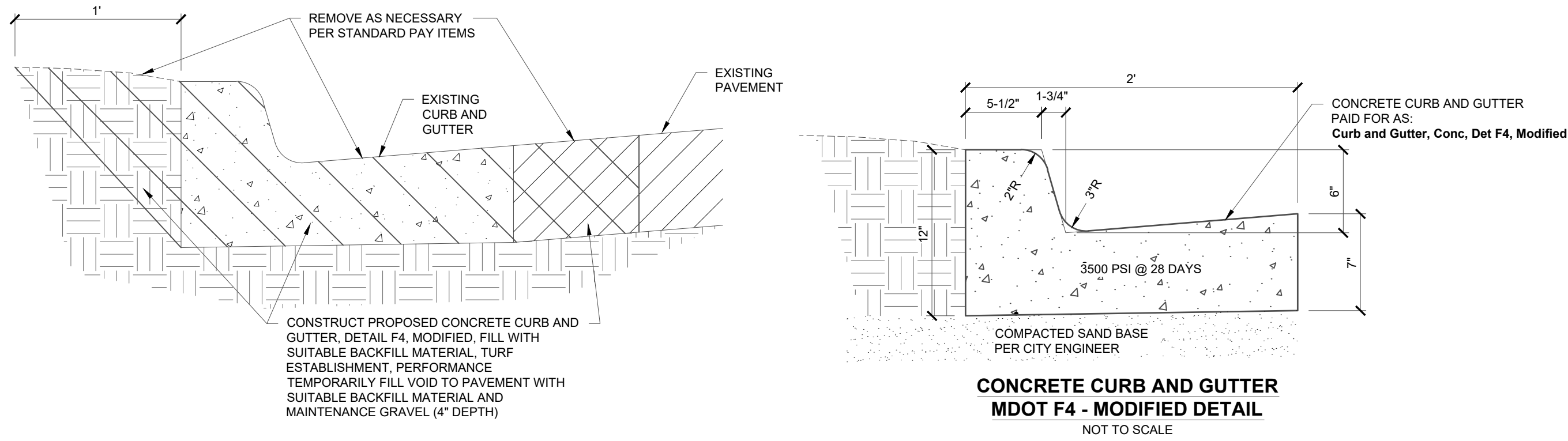
MISCELLANEOUS ESTIMATES

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

1	LSUM	Mobilization, Max \$55,700
300	Syd	Subgrade Undercutting, Special
100	Ton	Maintenance Gravel
25	Syd	Pavt, Rem
25	Cyd	Aggregate Base, LM, Modified
25	Cyd	Material Surplus and Unsuitable, Rem
10	Cyd	Salv Crushed Material, LM
5	Ea	Sanitary Service, Conflict
5	Ea	Abandoned Gas Main, Conflict
2	Ton	Cement
5	Ea	Sign, Type III, Rem
5	Ea	Sign, Type III, Erect, Salv
80	Ft	Post, Steel, 3 Pound

MAINTAINING TRAFFIC QUANTITIES

9	Ea	Barricade, Type III, High Intensity, Double Sided, Furn & Oper
25	Ea	Plastic Drum, Fluorescent, Furn & Oper
523	Sft	Sign, Type B, Temp, Prismatic, Furn & Oper
5	Ea	Pedestrian Type II Barricade, Temp
1	LSUM	Minor Traffic Devices, Max \$10,000

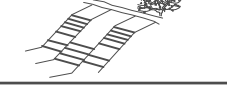
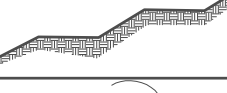
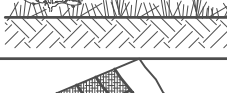
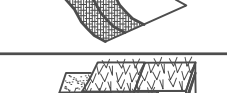
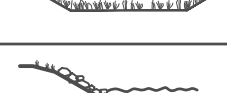
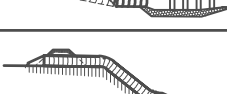
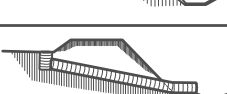


EXISTING FEATURES LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	TREE (DECIDUOUS)		CABLE BOX		SURVEY CONTROL POINT
	BUSH		TELEPHONE RISER		BENCHMARK
	TREE (CONIFEROUS)		TELEPHONE MANHOLE		SECTION CORNER
	DEAD TREE		TELEPHONE HANDHOLE		BOUNDARY LINE
	STUMP		ELECTRICAL RISER		PROPERTY LINE
	MANHOLE		ELECTRICAL MANHOLE		WATERMAIN
	SANITARY CLEANOUT		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		CABLE T.V.
	CURB STOP & BOX		PED CROSSING SIGNAL		TELEPHONE
	WELL		YARD LIGHT		ELECTRIC
	WATER MANHOLE		SIGN		GAS
	WATER METER		MAILBOX		OVERHEAD LINES
	SOIL BORING		GUARD POST		GUARDRAIL
	MONITORING WELL		FOUND CONC. MONUMENT		FENCE
			FOUND IRON ROD		WOODLINE
			SET IRON ROD		

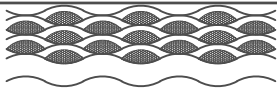
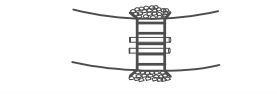
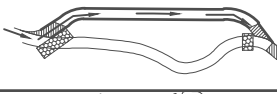
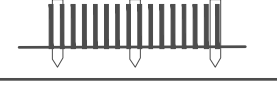
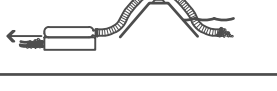
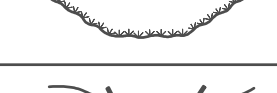
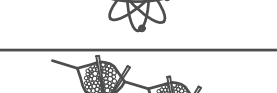
NOTE: ALL ITEMS LISTED ON THE LEGEND MAY NOT BE PRESENT ON DRAWING.

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, 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.

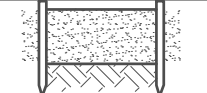
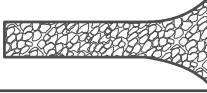
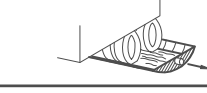
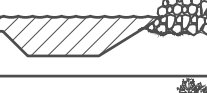
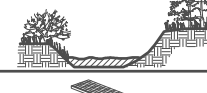
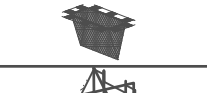
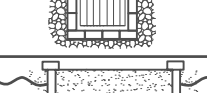
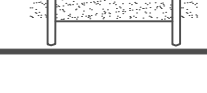
B = BIOENGINEERING

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/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			
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	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 esource, to contain sediment within the work area when other BMP's cannot be used.

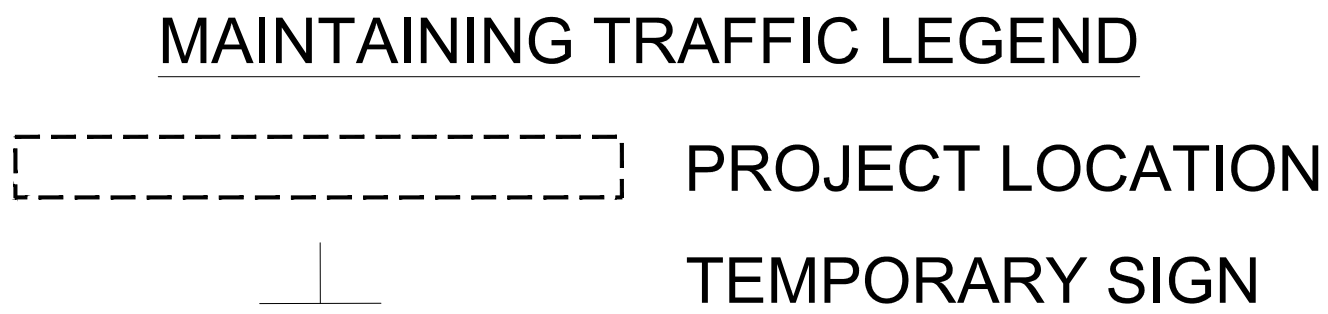
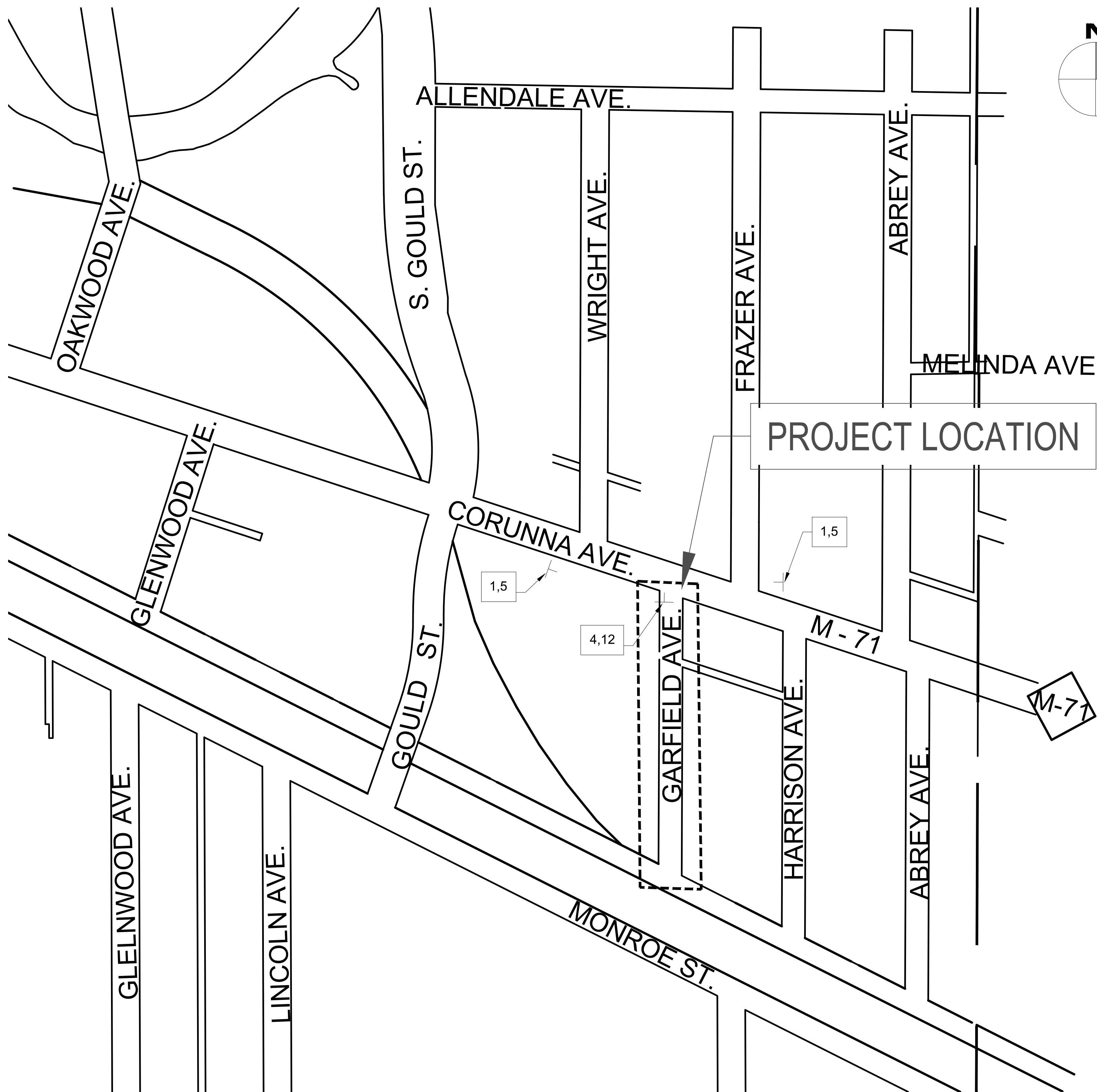
B = BIOENGINEERING

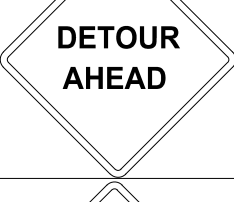
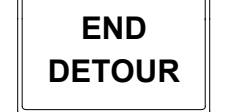
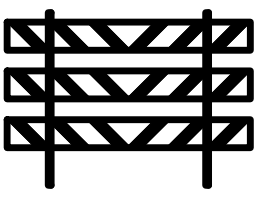
CONSTRUCTION SEQUENCE

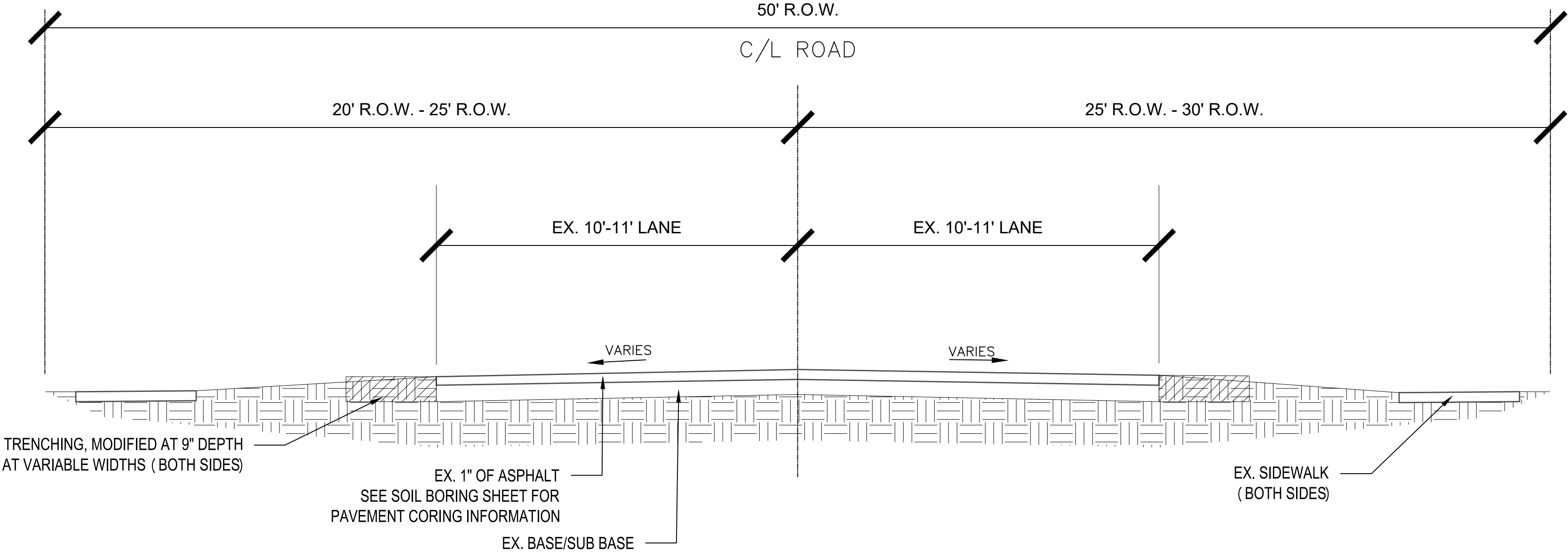
1. INSTALLATION OF TEMPORARY EROSION CONTROL MEASURES.
2. TRENCH EXCAVATION, AGGREGATE PLACEMENT, AND PULVERIZING.
3. PERMANENT MEASURES, FINAL GRADING, SEEDING AND MULCHING.

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			

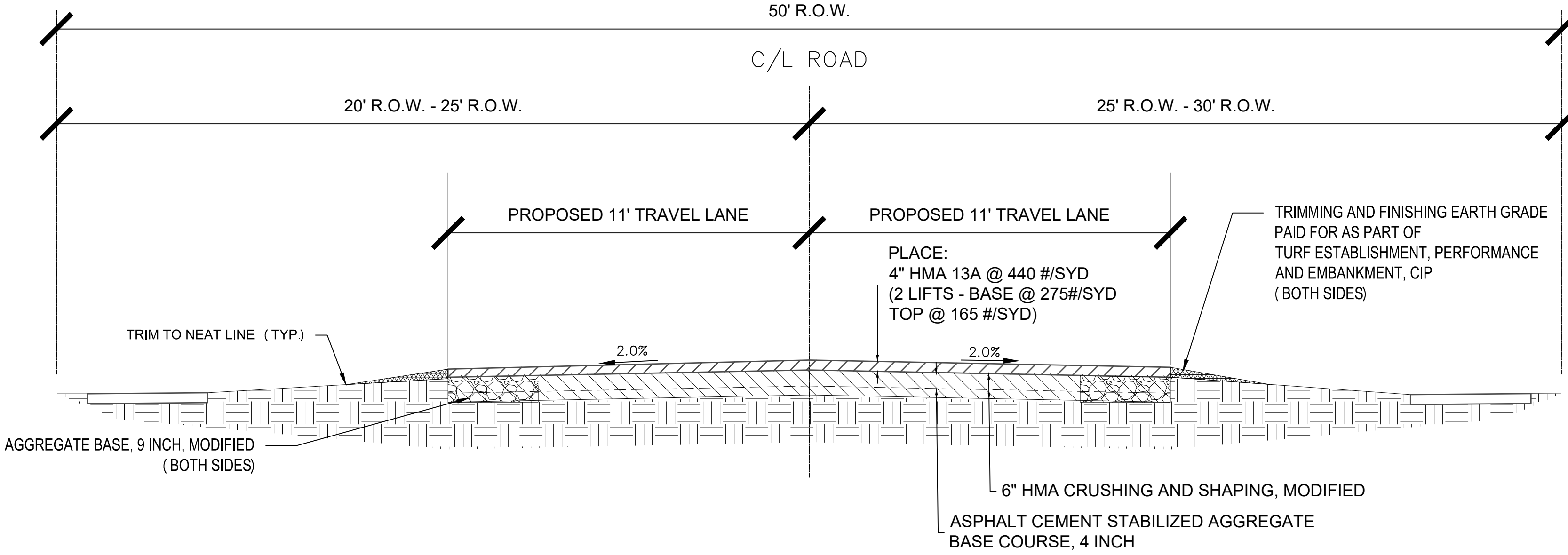
NO.		REVISIONS		BY	
1		DRAFT		5/17/21	CW
2		ISSUED FOR BID		6/4/21	CW



SIGNING REQUIREMENTS					
NO.	SIGN	SIGN DESIGNATOIN	SIZE	NO. REQ.	TOTAL AREA (SFT)
1		W20-1	48 x 48	2	32
2		W20-2A	48 x 48	0	0
3		W20-3	48 x 48	0	0
4		R11-3A	60 x 30	1	13
5		M4-8 MOD	30 x 12	2	5
6		M4-8A	24 x 18	0	0
7		M4-9L	30 x 24	0	0
8		M4-9S	30 x 24	0	0
9		M4-9R	30 x 24	0	0
10		M4-10L	48 x 18	0	0
11		M4-10R	48 x 18	0	0
12		TYPE III BARRICADE		1	



TYPICAL EXISTING CROSS SECTION - GARFIELD AVENUE
APPLIES TO STATIONS:
1+49.21 (B.O.P.) TO 5+82.85 (E.O.P.)
SCALE: 1" = 3'



TYPICAL PROPOSED CROSS SECTION - GARFIELD AVENUE
APPLIES TO STATIONS:
1+49.21 (B.O.P.) TO 5+82.85 (E.O.P.)
SCALE: 1" = 3'

GARFIELD AVE - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
MAINLINE PAVING	HMA, 13A	165 LBS.	64-28	1.5"	TOP COURSE - AWI = 220 (MIN)
	HMA, 13A	275 LBS.	64-28	2.5"	BASE COURSE
HMA DRIVEWAYS	HMA, 13A	440 LBS.	64-28	4"	PLACE IN TWO LIFTS
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)

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

NO.

1 DRAFT

2 ISSUED FOR BID

DATE

5/17/21

6/4/21

BY

CW

CW

REVISIONS

CHECKED BY

ORIGINAL PLAN

APPROVED BY

2021 STREET PROGRAM - CONTRACT 1

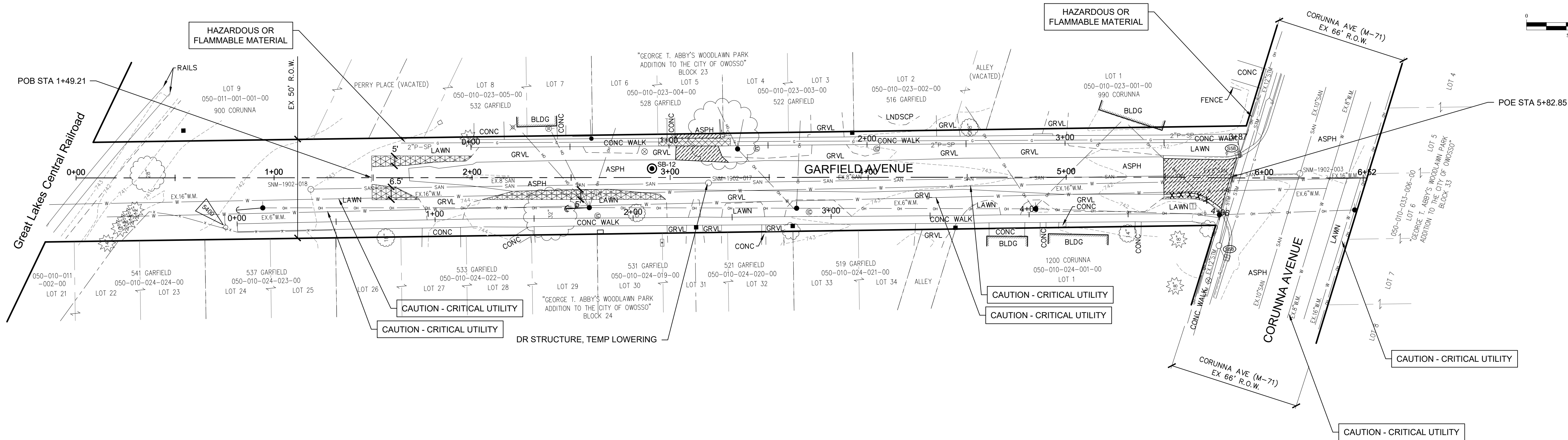
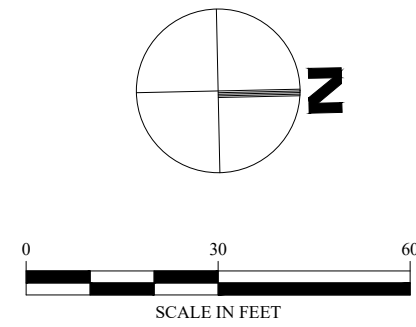
TYPICAL CROSS SECTIONS

MAY, 2021
PROJECT NO.

FIELD BOOK
PG.

GA2

BM 5400 744.72
ARROW AT TOP OF HYDRANT, EAST SIDE OF
GARFIELD AVENUE AT SOUTH END OF
CONCRETE WALK (NAVD 88)



- LEGEND**
- ▬-X-X-X-▬ Curb and Gutter, Rem
 - X-X-X-X- Sewer, Rem
 - ▬-X-X-X-▬ Dr Structure, Rem
 - ▬ HMA Surface, Rem
 - ▬ Trenching, Modified
 - ▬ Pavt, Rem
 - ▬ Sidewalk, Rem
 - ▬ Excavation Earth
 - ① STANDARD SOIL EROSION KEY

GARFIELD AVENUE REMOVAL PLAN

REMOVAL QUANTITIES - GARFIELD AVENUE		
QUANTITY	UNIT	WORK ITEM
26	Ft	Curb and Gutter, Rem
97	Syd	Pavt, Rem
17	Syd	Sidewalk, Rem
16	Cyd	Excavation, Earth
2	Ea	Erosion Control, Inlet Protection, Fabric Drop
2	Sta	Trenching, Modified
1	Ea	Dr Structure, Temp Lowering

DATE STARTED: 2/22/21 DATE COMPLETED: 2/22/21 COMPLETION DEPTH: 5.0 ft BENCHMARK: N/A ELEVATION: N/A LONGITUDE: N/A STATION: N/A REMARKS:		DRILL COMPANY: PSI DRILLER: D. Guajardo LOGGED BY: Alhowshabi DRILL RIG: N/A DRILLING METHOD: Hollow Stem Auger SAMPLING METHOD: Automatic HAMMER TYPE: N/A EFFICIENCY: N/A REVIEWED BY: T. Khalaf		BORING SB-12 Water: While Drilling N/A Upon Completion N/A Cave Depth N/A BORING LOCATION: Garfield Street								
Elevation (feet)	Depth (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	STANDARD PENETRATION TEST DATA N in blow/ft @ X Moisture PL LL Y STRENGTH, tsf ▲ Qu 2.0 Y Qp 4.0	Additional Remarks			
0	0					1" ASPHALT Dark brown SANDY GRAVEL, trace Silt, moist (FILL)		8	X			
						Brown fine to coarse SAND with Gravel and Silt, moist (FILL)		12	X			
						Hand auger terminated at approximately 5 feet below existing pavement surface. DCP TEST RESULTS: At 8": 25+ blows per 4" At 1": 25+ blows per 4" At 2": 25+ blows per 4" At 3": 21 blows per 4" At 4": 19 blows per 4" At 5": 19 blows per 4"		11	X			

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

PROJECT NO.: 0406-646
PROJECT: City of Owosso Road Rehabilitation
LOCATION: Owosso, Michigan

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

Sheet 1 of 1

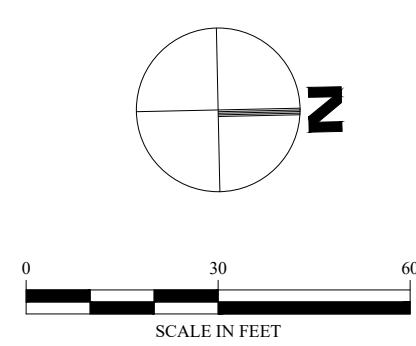
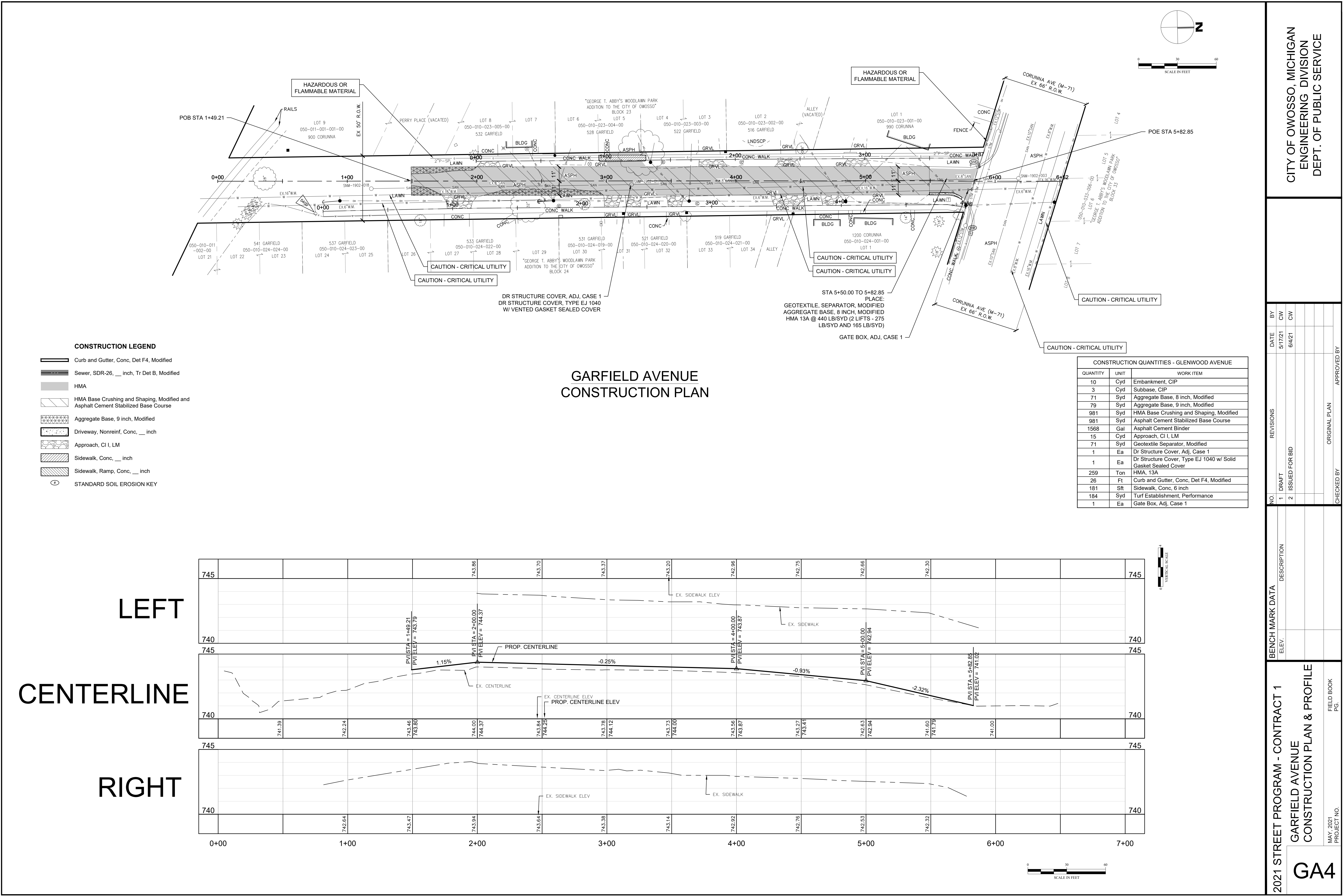
NO.	DATE	BY	REVISIONS	CW
1	5/17/21	DRAFT		
2	6/4/21	ISSUED FOR BID		

NO.	DATE	BY	REVISIONS	CW
1	5/17/21	DRAFT		
2	6/4/21	ISSUED FOR BID		

NO.	DATE	BY	REVISIONS	CW
1	5/17/21	DRAFT		
2	6/4/21	ISSUED FOR BID		

NO.	DATE	BY	REVISIONS	CW
1	5/17/21	DRAFT		
2	6/4/21	ISSUED FOR BID		



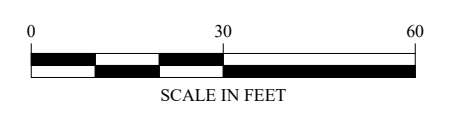
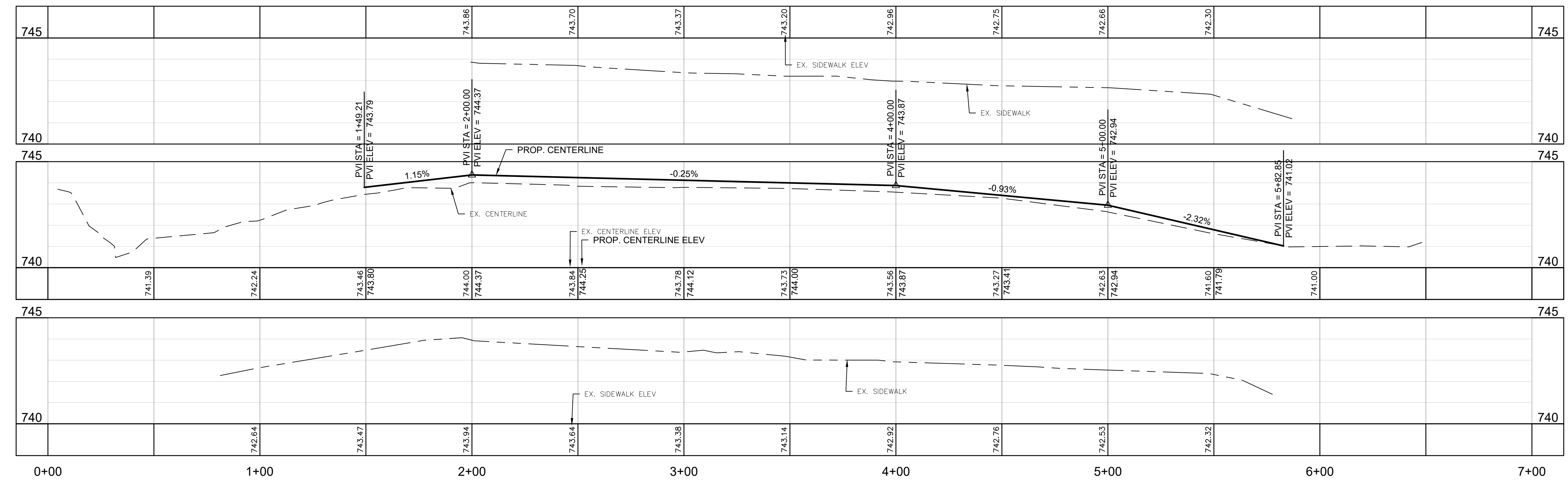


- CONSTRUCTION LEGEND**
- Curb and Gutter, Conc, Det F4, Modified
 - Sewer, SDR-26, __ inch, Tr Det B, Modified
 - HMA
 - HMA Base Crushing and Shaping, Modified and Asphalt Cement Stabilized Base Course
 - Aggregate Base, 9 inch, Modified
 - Driveway, Nonreinf, Conc, __ inch
 - Approach, CI I, LM
 - Sidewalk, Conc, __ inch
 - Sidewalk, Ramp, Conc, __ inch
 - STANDARD SOIL EROSION KEY

**GARFIELD AVENUE
CONSTRUCTION PLAN**

CONSTRUCTION QUANTITIES - GLENWOOD AVENUE		
QUANTITY	UNIT	WORK ITEM
10	Cyd	Embankment, CIP
3	Cyd	Subbase, CIP
71	Syd	Aggregate Base, 8 inch, Modified
79	Syd	Aggregate Base, 9 inch, Modified
981	Syd	HMA Base Crushing and Shaping, Modified
981	Syd	Asphalt Cement Stabilized Base Course
1568	Gal	Asphalt Cement Binder
15	Cyd	Approach, CI I, LM
71	Syd	Geotextile Separator, Modified
1	Ea	Dr Structure Cover, Adj, Case 1
1	Ea	Dr Structure Cover, Type EJ 1040 w/ Solid Gasket Sealed Cover
259	Ton	HMA, 13A
26	Ft	Curb and Gutter, Conc, Det F4, Modified
181	Sft	Sidewalk, Conc, 6 inch
184	Syd	Turf Establishment, Performance
1	Ea	Gate Box, Adj, Case 1

LEFT
CENTERLINE
RIGHT



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

NO.	DATE	BY	REVISIONS		APPROVED BY
			NO.	DATE	
1	5/17/21	CW			
2	6/4/21	CW			

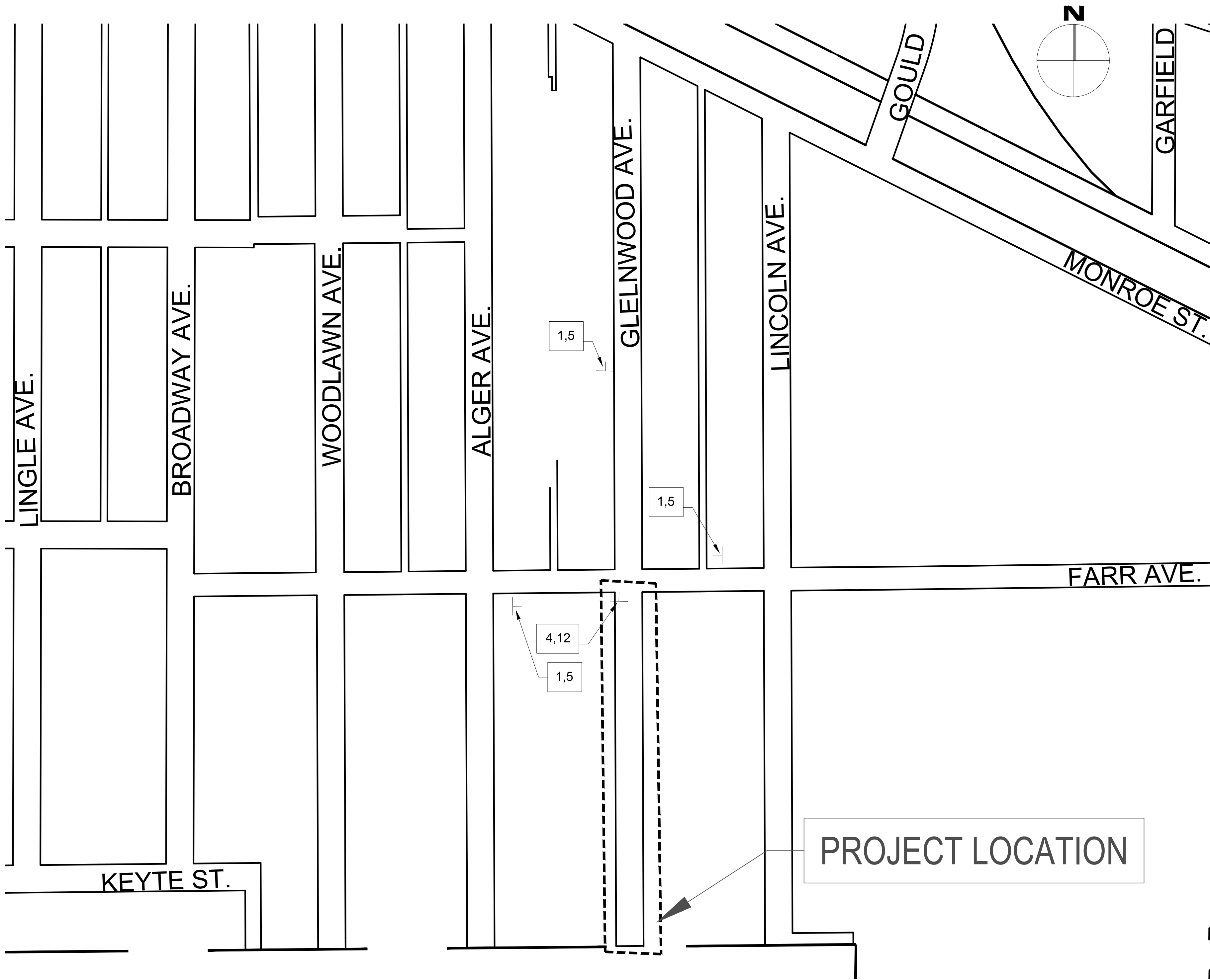
2021 STREET PROGRAM - CONTRACT 1

GARFIELD AVENUE
CONSTRUCTION PLAN & PROFILE

MAY, 2021
PROJECT NO.

FIELD BOOK
PG.

GA4

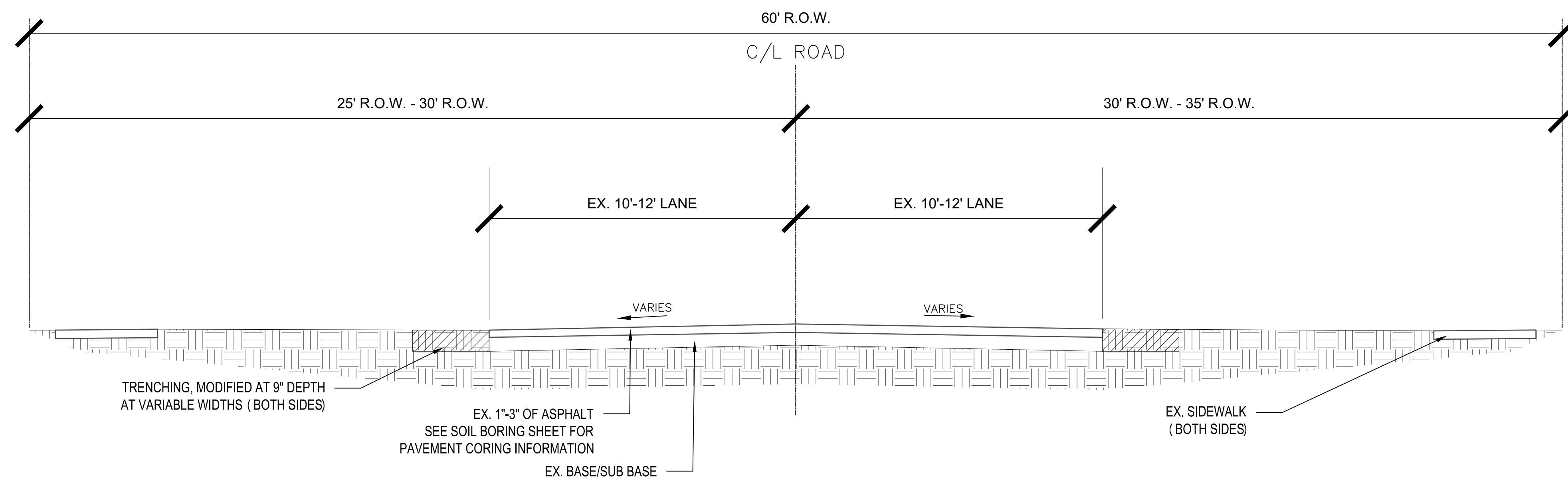


SIGNING REQUIREMENTS					
NO.	SIGN	SIGN DESIGNATOIN	SIZE	NO. REQ.	TOTAL AREA (SFT)
1		W20-1	48 x 48	3	48
2		W20-2A	48 x 48	0	0
3		W20-3	48 x 48	0	0
4		R11-3A	60 x 30	1	13
5		M4-8 MOD	30 x 12	3	8
6		M4-8A	24 x 18	0	0
7		M4-9L	30 x 24	0	0
8		M4-9S	30 x 24	0	0
9		M4-9R	30 x 24	0	0
10		M4-10L	48 x 18	0	0
11		M4-10R	48 x 18	0	0
12		TYPE III BARRICADE		1	

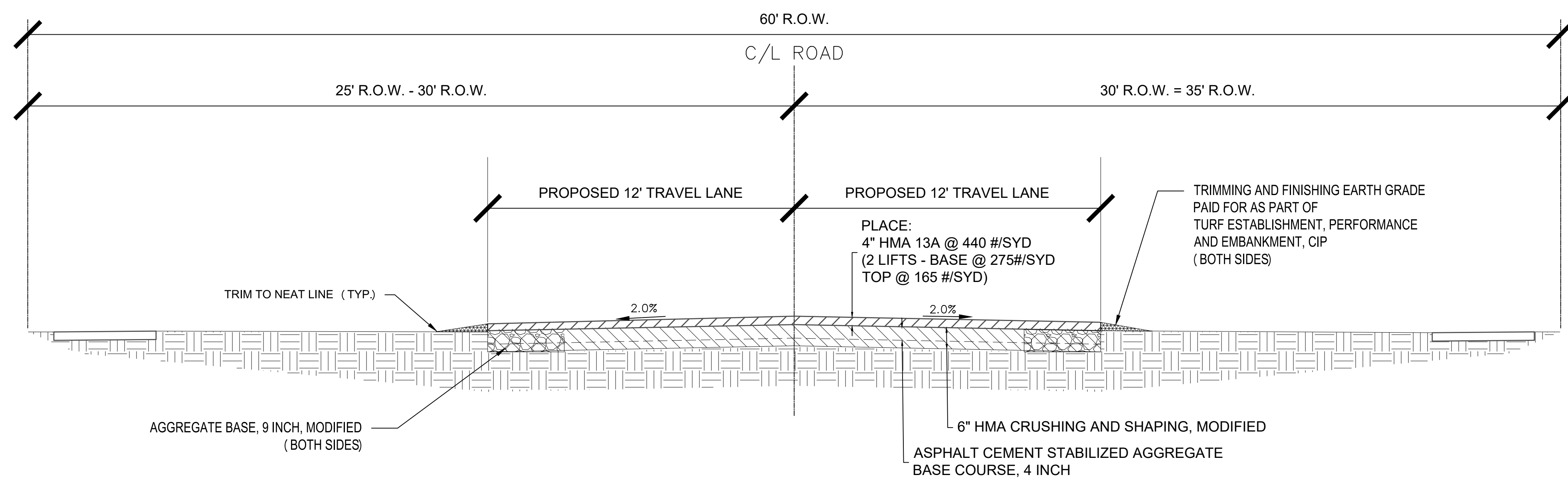
MAINTAINING TRAFFIC LEGEND

PROJECT LOCATION

TEMPORARY SIGN

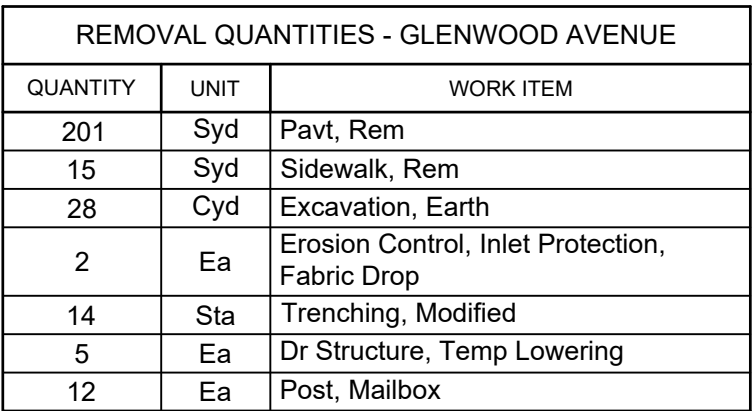


TYPICAL EXISTING CROSS SECTION - GLENWOOD AVENUE
APPLIES TO STATIONS:
0+50.00 (B.O.P.) TO 7+90.85 (E.O.P.)
SCALE: 1" = 3'



TYPICAL PROPOSED CROSS SECTION - GLENWOOD AVENUE
APPLIES TO STATIONS:
0+50.00 (B.O.P.) TO 7+90.85 (E.O.P.)
SCALE: 1" = 3'

GLENWOOD AVE - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
MAINLINE PAVING	HMA, 13A	165 LBS.	64-28	1.5"	TOP COURSE - AWI = 220 (MIN)
	HMA, 13A	275 LBS.	64-28	2.5"	BASE COURSE
HMA DRIVEWAYS	HMA, 13A	440 LBS.	64-28	4"	PLACE IN TWO LIFTS
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)



REMOVAL QUANTITIES - GLENWOOD AVENUE		
QUANTITY	UNIT	WORK ITEM
201	Syd	Pavt, Rem
15	Syd	Sidewalk, Rem
28	Cyd	Excavation, Earth
2	Ea	Erosion Control, Inlet Protection, Fabric Drop
14	Sta	Trenching, Modified
5	Ea	Dr Structure, Temp Lowering
12	Ea	Post, Mailbox

DATE STARTED:2/22/21

DATE COMPLETED:2/22/21

COMPLETION DEPTH:5.0 ft

BENCHMARK:N/A

ELEVATION:N/A

LATITUDE:

LONGITUDE:

STATION:N/A

REMARKS:

DRILL COMPANY:PSI

DRILLER: D. Guajardo

DRILL RIG:

DRILLING METHOD:Hollow Stem Auger

SAMPLING METHOD:

HAMMER TYPE:Automatic

EFFICIENCY:N/A

REVIEWED BY:T. Khalaff

BORING SB-09

Water

White Drilling

Upon Completion

Cave Depth

BORING LOCATION:

Glenwood Avenue

Elevation (feet)	Depth (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	Moisture, %	STANDARD PENETRATION TEST DATA N in blow/rf	Additional Remarks
0						3" ASPHALT Brown fine to coarse SAND with Silt, trace Gravel, moist (FILL) Brown fine to medium SILTY SAND with Clay, trace Gravel, moist		Moisture, % X Moisture PL LL 0 20 40 STRENGTH, tsf ▲ Qu * Cp 0 2.0 4.0		
							SP	11	X	
								20	X	
5						Hand auger terminated at approximately 5 feet below existing pavement surface. DCP TEST RESULTS: At 8": 25+ blows per 4" At 1": 25+ blows per 4" At 2": 25+ blows per 4" At 3": 23 blows per 4" At 4": 18 blows per 4" At 5": 28 blows per 4"		20	X	

intertek

psi

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

PROJECT NO:0406-646

PROJECT:City of Owosso Road Rehabilitation

LOCATION:Owosso, Michigan

Sheet 1 of 4

DATE STARTED: 2/22/21		DRILLER: D. Guajardo		PSI		BORING LOCATION: SB-08		N/A	
DATE COMPLETED: 2/22/21		LOGGED BY: Alhowsheh				Water		N/A	
COMPLETION DEPTH: 5.0 R		DRILL RIG:				Upon Completion		N/A	
BENCHMARK: N/A		DRILLING METHOD: Hollow Stem Auger				Cave Depth		N/A	
ELEVATION: N/A		SAMPLING METHOD:				BORING LOCATION: Glenwood Avenue			
LATITUDE:		HAMMER TYPE: Automatic							
LONGITUDE:		EFFICIENCY: N/A							
STATION: N/A		OFFSET: N/A		REVIEWED BY: T. Khalaff					
REMARKS:									

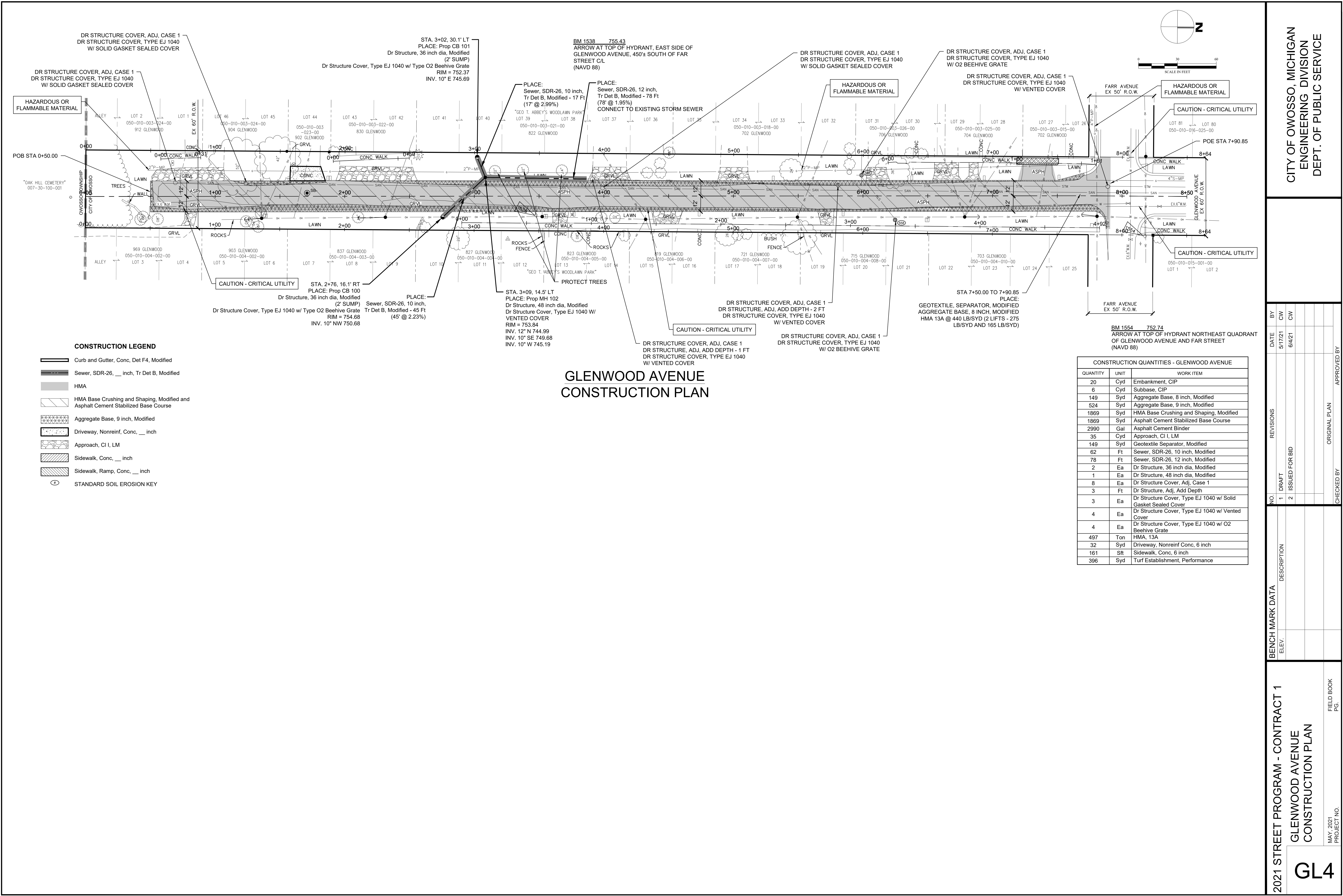
Elevation (feet)	Depth (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	STANDARD PENETRATION TEST DATA				Additional Remarks
								TEST DATA				
								N in blows/ft				
								Moisture, %	Mo	PL	LL	
								STRENGTH, tsf				
								Qu	20	Op	40	
0						1" ASPHALT	SP					
						Brown SANDY GRAVEL, trace Silt, moist (FILL)						
						Brown fine to coarse SAND with Silt, trace Gravel, moist						
								7	×			
								9	×			
								10	×			
-5						Hand auger terminated at approximately 5 feet below existing pavement surface.						
						DCP TEST RESULTS:						
						At 8": 25+ blows per 4"						
						At 1": 25+ blows per 4"						
						At 2": 25+ blows per 4"						
						At 3": 21 blows per 4"						
						At 4": 19 blows per 4"						
						At 5": 23 blows per 4"						

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

PROJECT NO.: 0406-646
PROJECT: City of Owosso Road Rehabilitation
LOCATION: Owosso, Michigan

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

Sheet 1 of 4



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

2021 STREET PROGRAM - CONTRACT 1
GLENWOOD AVENUE
CONSTRUCTION PLAN

GL4

NO. 1
DATE 5/17/21
BY CW

NO. 2
DATE 6/4/21
BY CW

REVISIONS

NO. 1
DATE 5/17/21
BY CW

NO. 2
DATE 6/4/21
BY CW

BENCH MARK DATA

ELEV.

DESCRIPTION

NO. 1
DATE 5/17/21
BY CW

NO. 2
DATE 6/4/21
BY CW

APPROVED BY

ORIGINAL PLAN

CHECKED BY

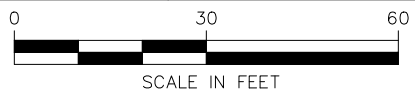
2021 STREET PROGRAM - CONTRACT 1
GLENWOOD AVENUE
CONSTRUCTION PLAN

FIELD BOOK
PG.

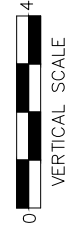
MAY, 2021
PROJECT NO.

GL4

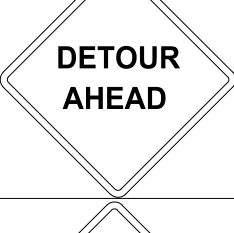
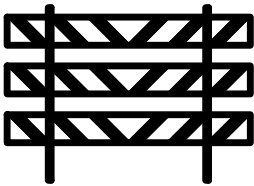
THE



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





SIGNING REQUIREMENTS					
NO.	SIGN	SIGN DESIGNATOIN	SIZE	NO. REQ.	TOTAL AREA (SFT)
1		W20-1	48 x 48	5	80
2		W20-2A	48 x 48	0	0
3		W20-3	48 x 48	0	0
4		R11-3A	60 x 30	2	25
5		M4-8 MOD	30 x 12	5	13
6		M4-8A	24 x 18	0	0
7		M4-9L	30 x 24	0	0
8		M4-9S	30 x 24	0	0
9		M4-9R	30 x 24	0	0
10		M4-10L	48 x 18	0	0
11		M4-10R	48 x 18	0	0
12		TYPE III BARRICADE	2		

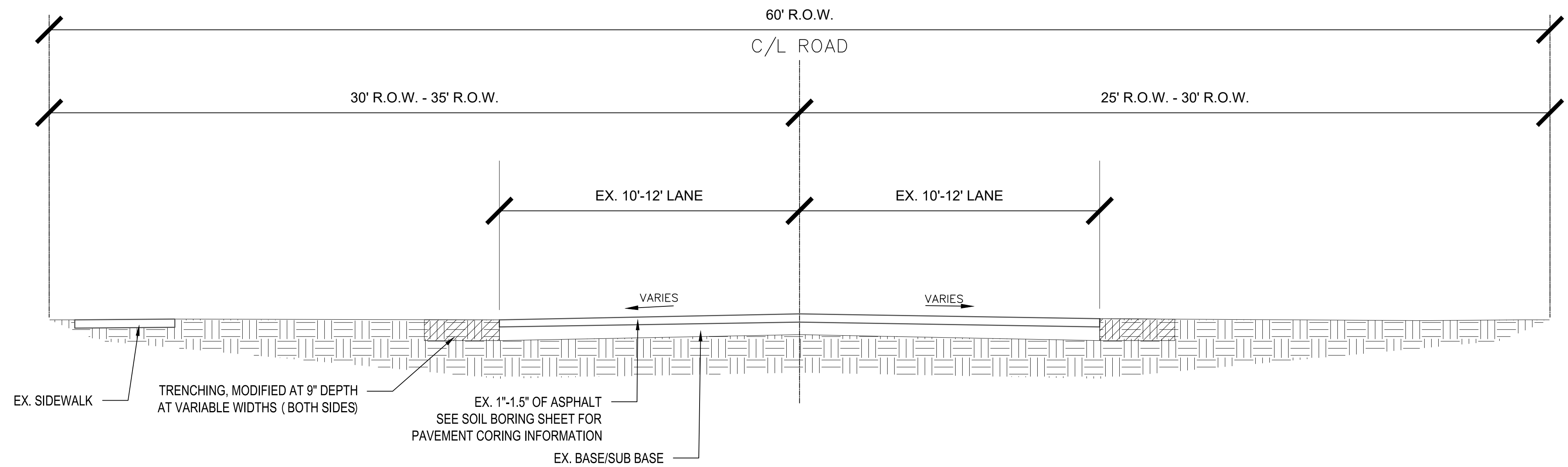
MAINTAINING TRAFFIC LEGEND



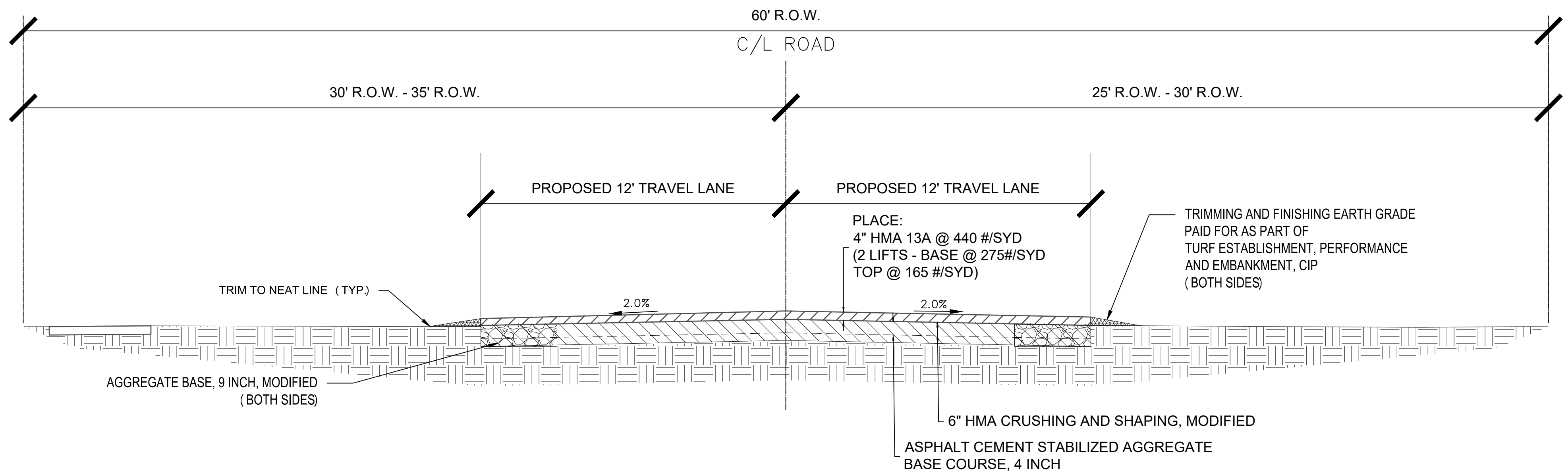
PROJECT LOCATION



TEMPORARY SIGN

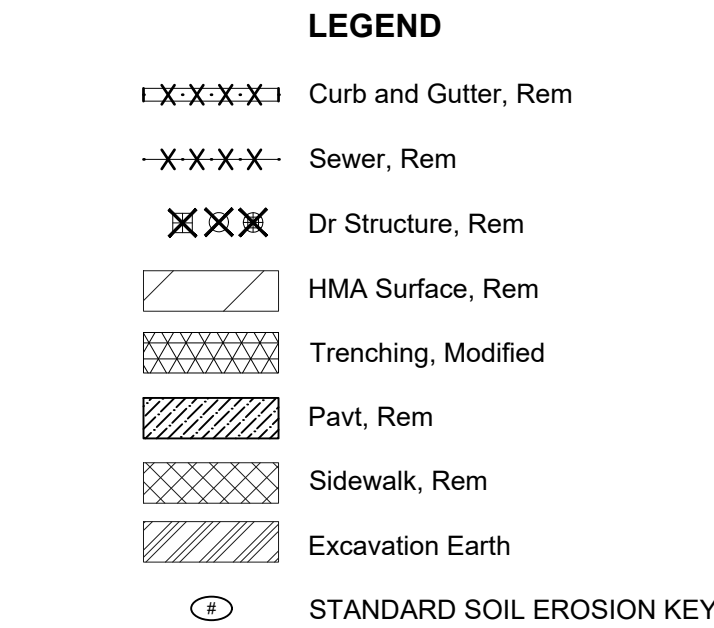


TYPICAL EXISTING CROSS SECTION - LINCOLN AVENUE
APPLIES TO STATIONS:
0+74.76 (B.O.P.) TO 10+60.74 (E.O.P.)
SCALE: 1" = 3'

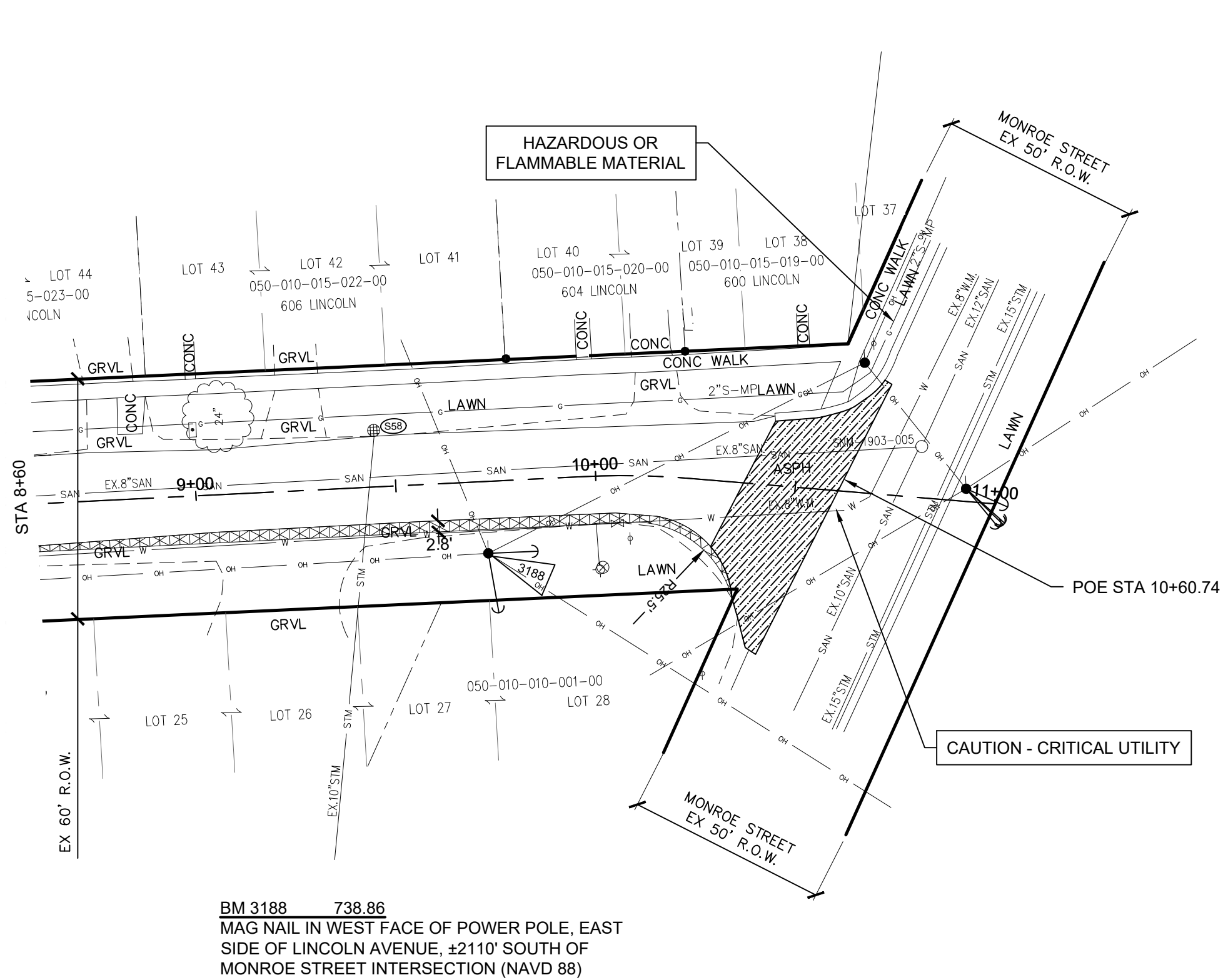
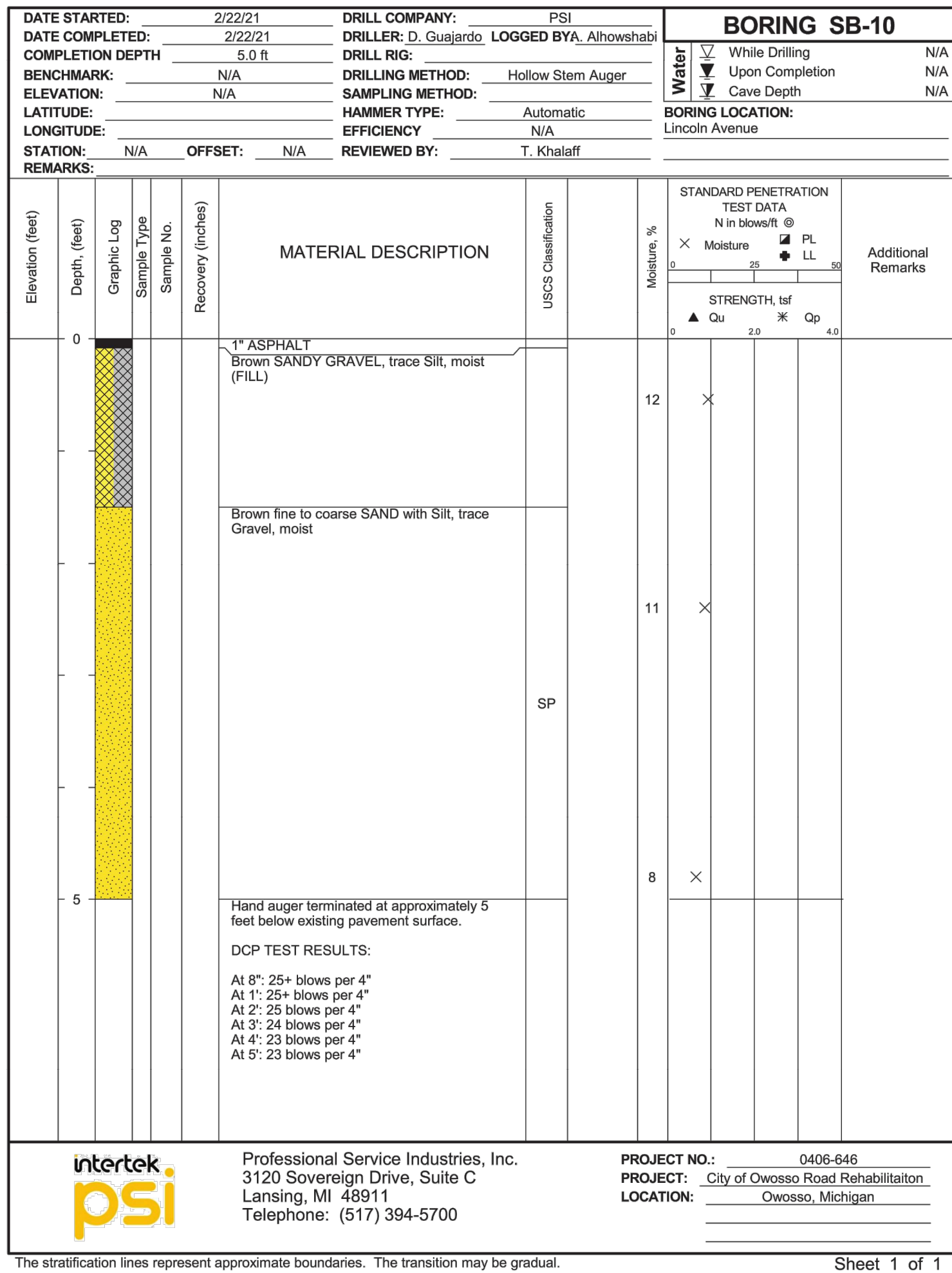
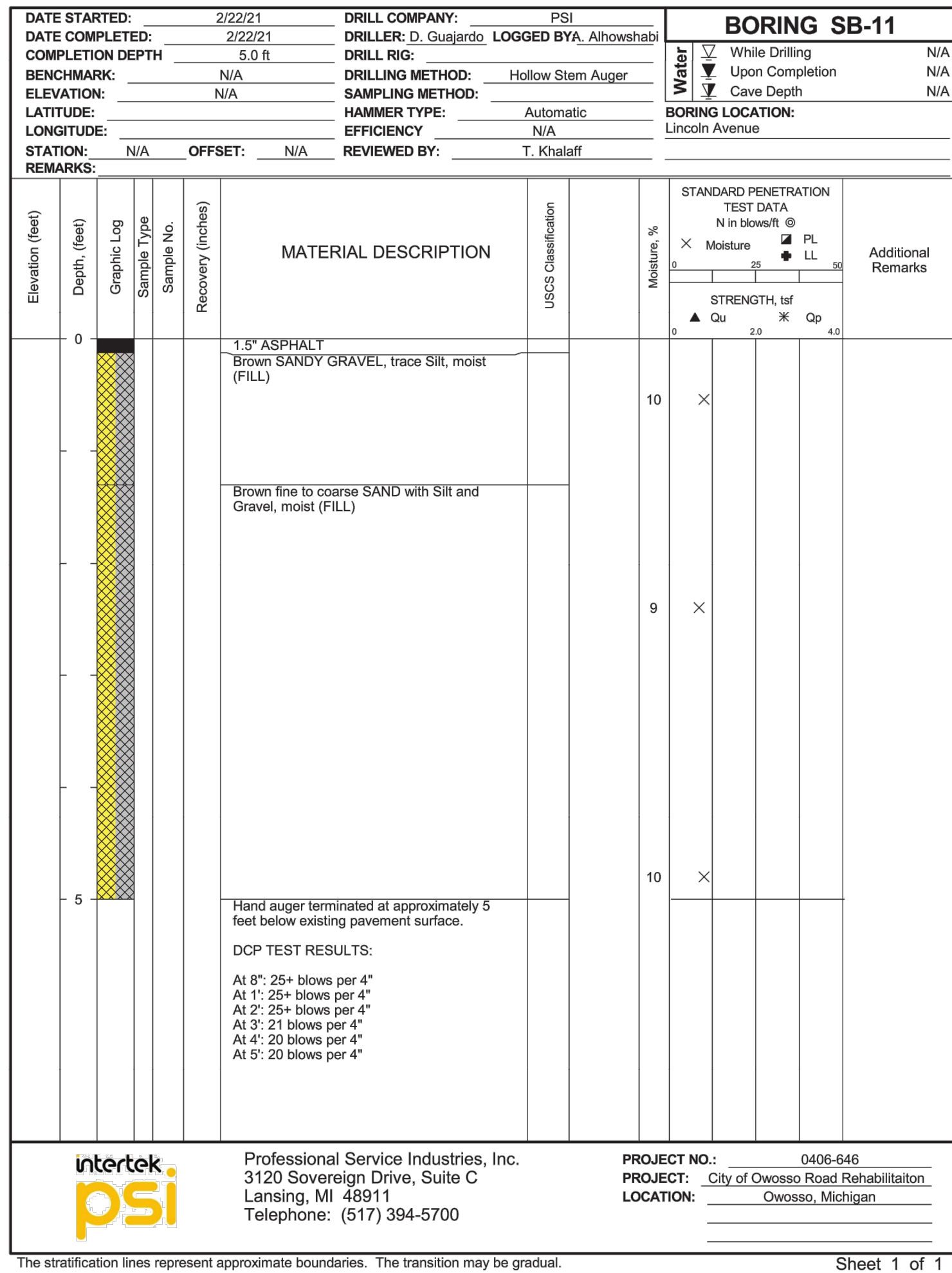


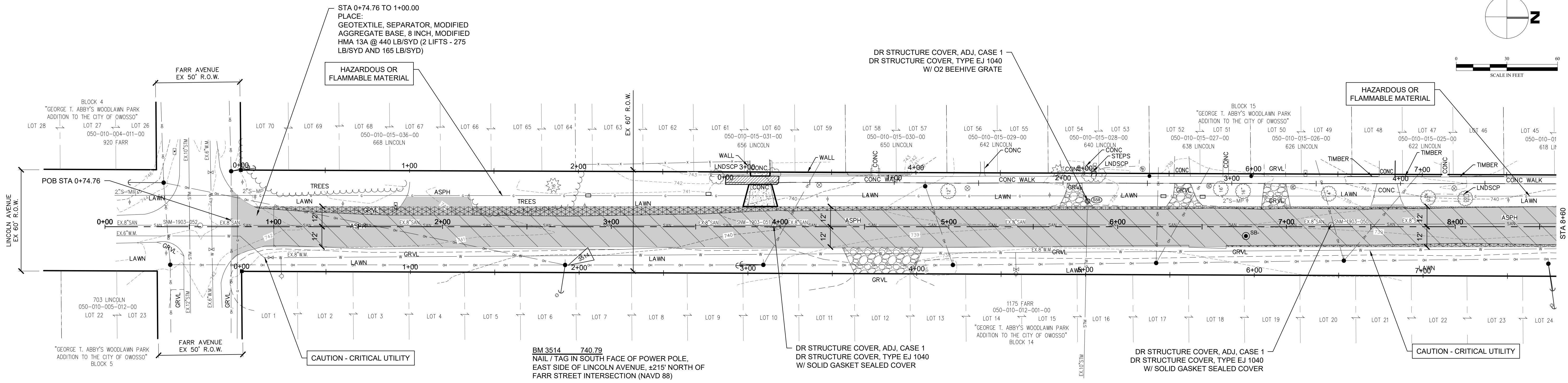
TYPICAL PROPOSED CROSS SECTION - LINCOLN AVENUE
APPLIES TO STATIONS:
0+74.76 (B.O.P.) TO 10+60.74 (E.O.P.)
SCALE: 1" = 3'

LINCOLN AVE - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
MAINLINE PAVING	HMA, 13A	165 LBS.	64-28	1.5"	TOP COURSE - AWI = 220 (MIN)
	HMA, 13A	275 LBS.	64-28	2.5"	BASE COURSE
	HMA, 13A	440 LBS.	64-28	4"	PLACE IN TWO LIFTS
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)



REMOVAL QUANTITIES - LINCOLN AVENUE		
QUANTITY	UNIT	WORK ITEM
290	Syd	Pavt, Rem
14	Syd	Sidewalk, Rem
47	Cyd	Excavation, Earth
2	Ea	Erosion Control, Inlet Protection, Fabric Drop
12	Sta	Trenching, Modified
2	Ea	Dr Structure, Temp Lowering

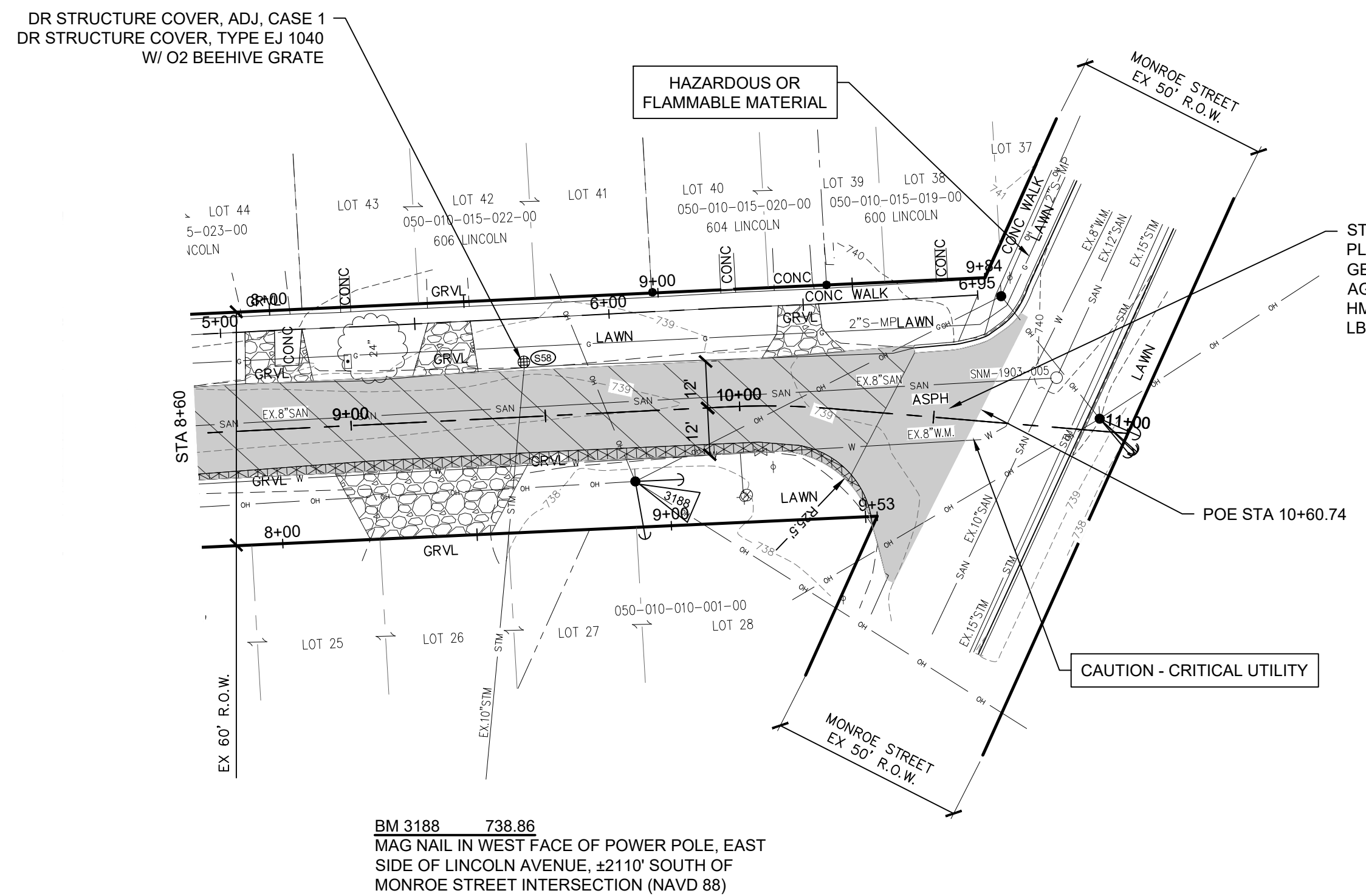




- CONSTRUCTION LEGEND**
- Curb and Gutter, Conc, Det F4, Modified
 - Sewer, SDR-26, __ inch, Tr Det B, Modified
 - HMA
 - HMA Base Crushing and Shaping, Modified and Asphalt Cement Stabilized Base Course
 - Aggregate Base, 9 inch, Modified
 - Driveway, Nonreinf, Conc, __ inch
 - Approach, CI I, LM
 - Sidewalk, Conc, __ inch
 - Sidewalk, Ramp, Conc, __ inch
 - STANDARD SOIL EROSION KEY

**LINCOLN AVENUE
CONSTRUCTION PLAN**

CONSTRUCTION QUANTITIES - GLENWOOD AVENUE		
QUANTITY	UNIT	WORK ITEM
33	Cyd	Embankment, CIP
6	Cyd	Subbase, CIP
131	Syd	Aggregate Base, 8 inch, Modified
311	Syd	Aggregate Base, 9 inch, Modified
2514	Syd	HMA Base Crushing and Shaping, Modified
2514	Syd	Asphalt Cement Stabilized Base Course
4022	Gal	Asphalt Cement Binder
31	Cyd	Approach, CI I, LM
131	Syd	Geotextile Separator, Modified
4	Ea	Dr Structure Cover, Adj, Case 1
2	Ea	Dr Structure Cover, Type EJ 1040 w/ Solid Gasket Sealed Cover
2	Ea	Dr Structure Cover, Type EJ 1040 w/ O2 Beehive Grate
666	Ton	HMA, 13A
31	Syd	Driveway, Nonreinf Conc, 6 inch
157	Sft	Sidewalk, Conc, 6 inch
591	Syd	Turf Establishment, Performance



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

NO.	DATE	BY
1	5/17/21	CW
2	6/4/21	CW

2021 STREET PROGRAM - CONTRACT 1
LINCOLN AVENUE
CONSTRUCTION PLAN

FIELD BOOK
PG.

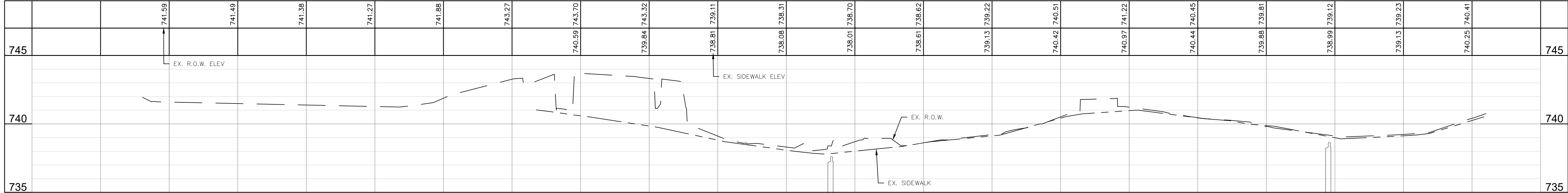
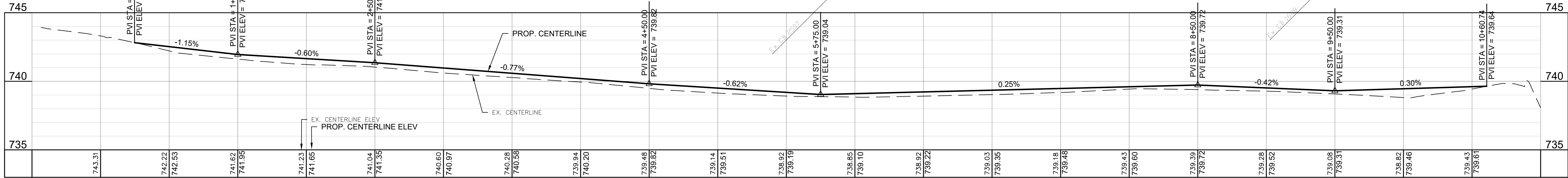
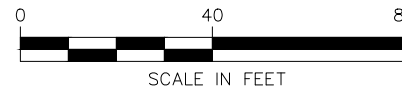
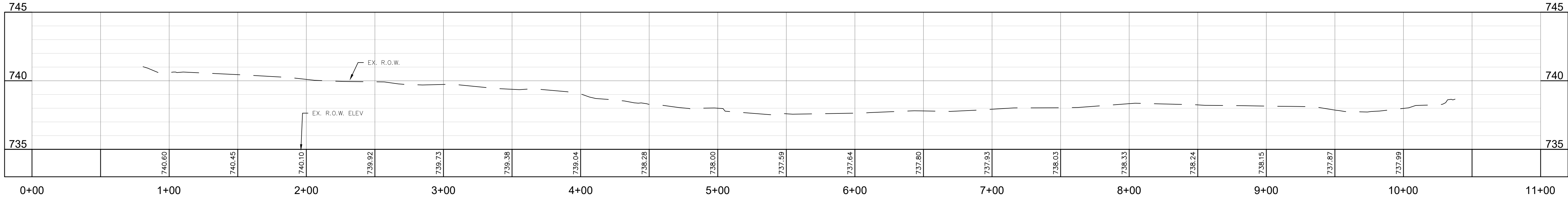
MAY, 2021
PROJECT NO.

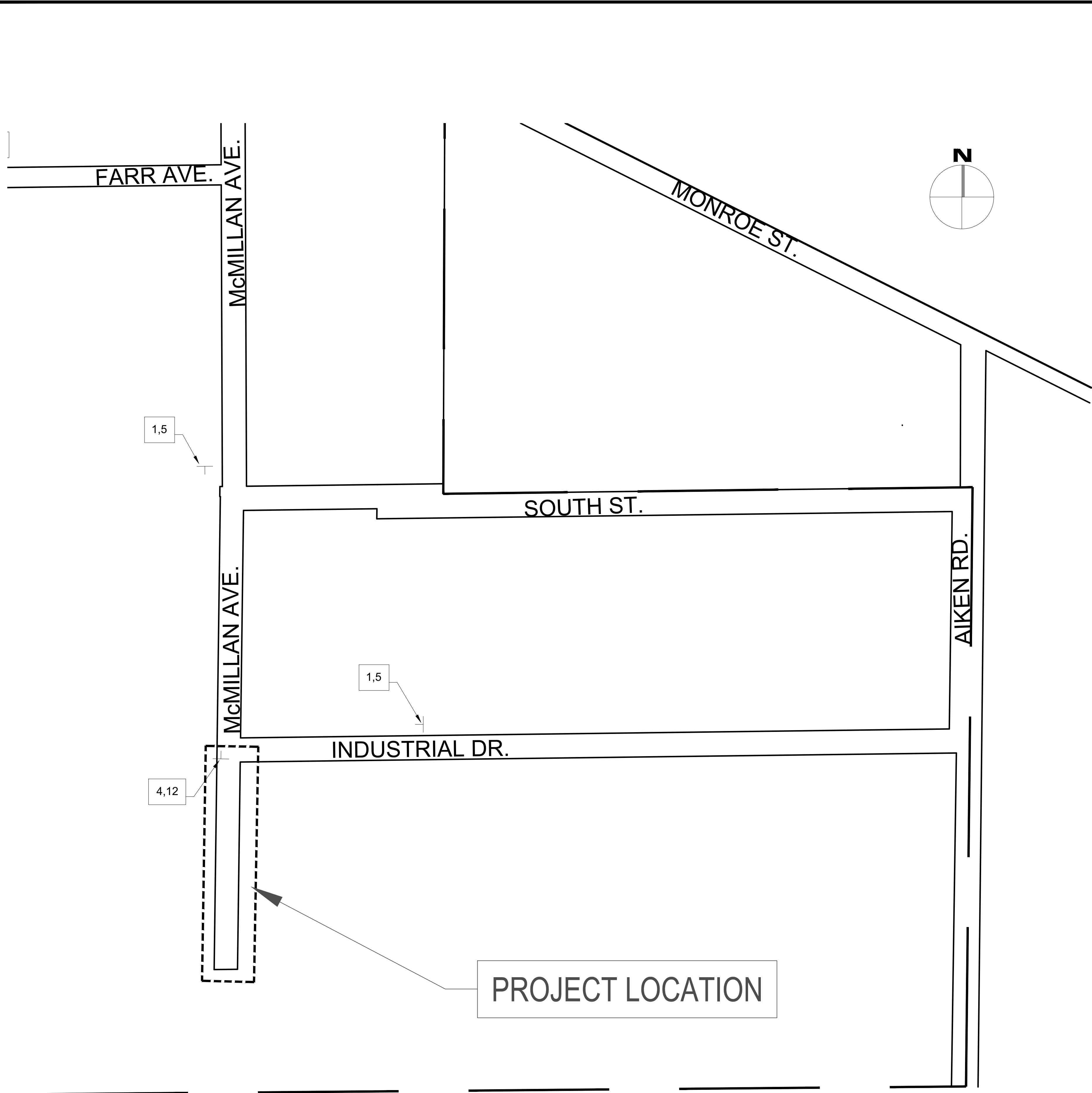
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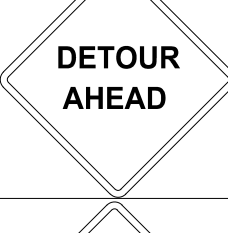
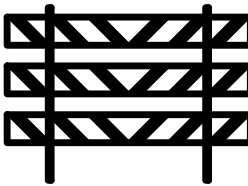
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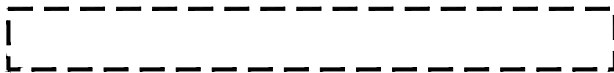
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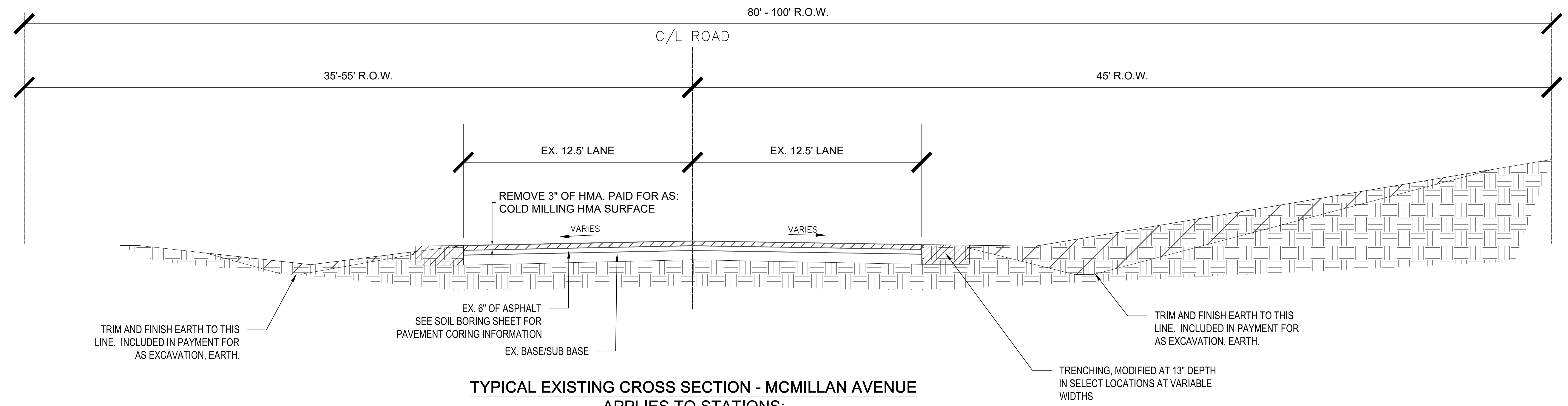




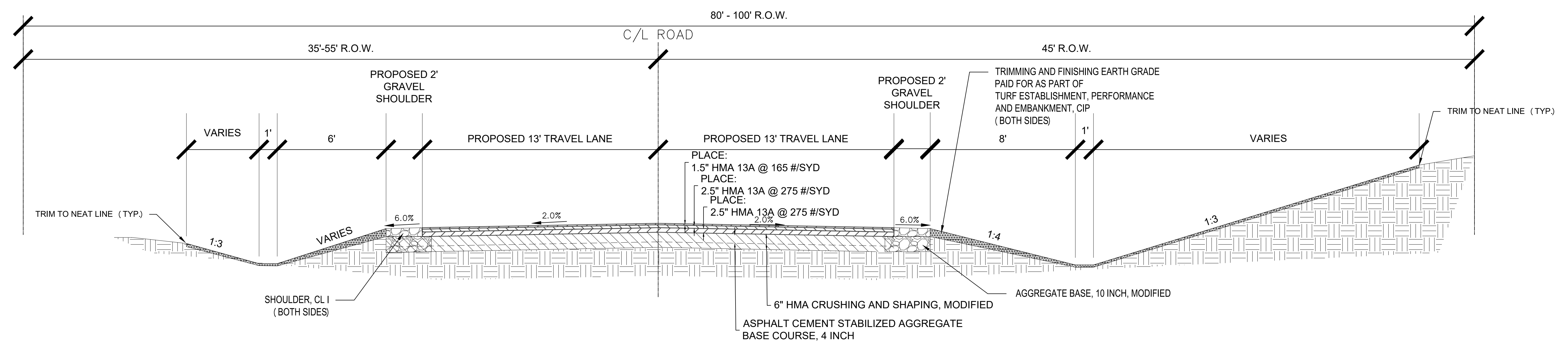
SIGNING REQUIREMENTS					
NO.	SIGN	SIGN DESIGNATOIN	SIZE	NO. REQ.	TOTAL AREA (SFT)
1		W20-1	48 x 48	2	32
2		W20-2A	48 x 48	0	0
3		W20-3	48 x 48	0	0
4		R11-3A	60 x 30	1	13
5		M4-8 MOD	30 x 12	2	5
6		M4-8A	24 x 18	0	0
7		M4-9L	30 x 24	0	0
8		M4-9S	30 x 24	0	0
9		M4-9R	30 x 24	0	0
10		M4-10L	48 x 18	0	0
11		M4-10R	48 x 18	0	0
12		TYPE III BARRICADE		1	

MAINTAINING TRAFFIC LEGEND

-  PROJECT LOCATION
-  TEMPORARY SIGN



TYPICAL EXISTING CROSS SECTION - MCMILLAN AVENUE
APPLIES TO STATIONS:
0+35.07 (B.O.P.) TO 4+21.65 (E.O.P.)
SCALE: 1" = 3'



TYPICAL PROPOSED CROSS SECTION - MCMILLAN AVENUE
APPLIES TO STATIONS:
0+35.07 (B.O.P.) TO 4+21.65 (E.O.P.)
SCALE: 1" = 3'

MCMILLAN AVE - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
MAINLINE PAVING	HMA, 13A	165 LBS.	64-28	1.5"	TOP COURSE - AWI = 220 (MIN)
	HMA, 13A	220 LBS.	64-28	2.5"	
	HMA, 13A	330 LBS.	64-28	2.5"	BASE COURSE
HMA DRIVEWAYS	HMA, 13A	165 LBS.	64-28	1.5"	TOP COURSE - AWI = 220 (MIN)
	HMA, 13A	220 LBS.	64-28	2.5"	
	HMA, 13A	330 LBS.	64-28	2.5"	BASE COURSE
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)

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

2021 STREET PROGRAM - CONTRACT 1
TYPICAL CROSS SECTIONS

FIELD BOOK
PG.
MAY, 2021
PROJECT NO.

MC2

NO.

1

2

REVISIONS

DRAFT

ISSUED FOR BID

DATE

5/17/21

6/4/21

BY

CW

CW

APPROVED BY

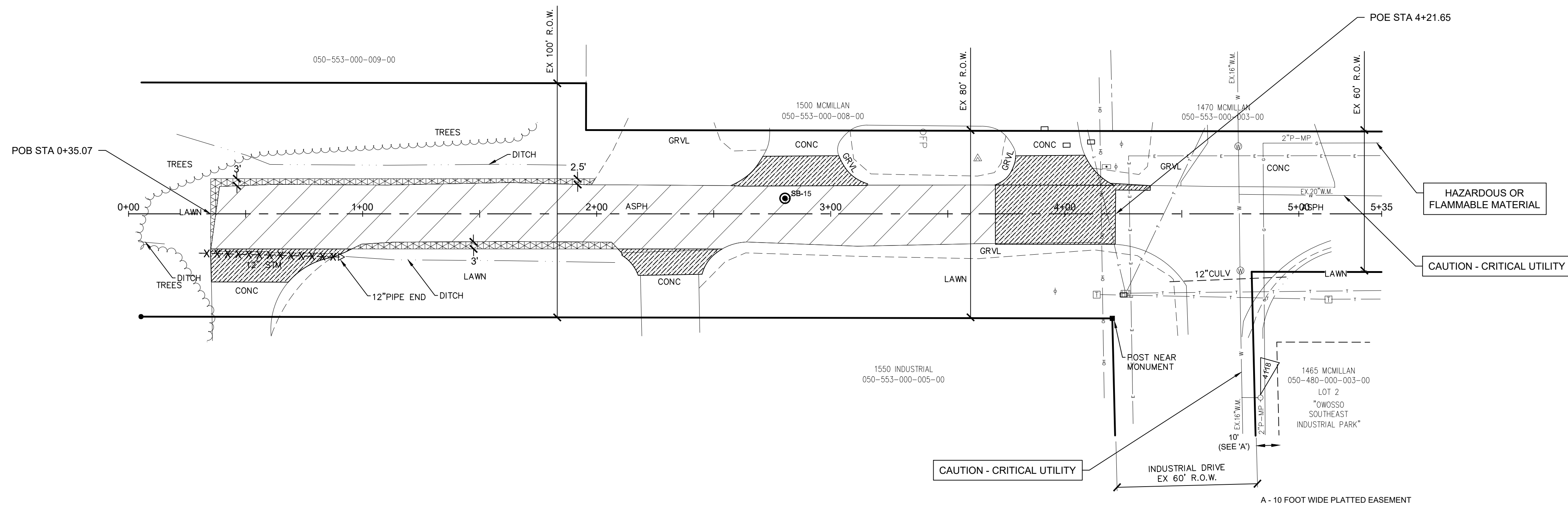
CHECKED BY

ORIGINAL PLAN

BENCH MARK DATA

ELEV.

DESCRIPTION



BM 4118 790.91
ARROW AT TOP OF HYDRANT, NE QUADRANT OF
McMILLAN STREET AND INDUSTRIAL DRIVE
(NAVD 88)

REMOVAL QUANTITIES - MCMILLAN AVENUE		
QUANTITY	UNIT	WORK ITEM
1	Ea	Culv, Rem, Less than 24 inch
371	Syd	Pavt, Rem
392	Cyd	Excavation, Earth
3	Syd	Trenching, Modified
953	Sta	Cold Milling HMA Surface

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

DATE STARTED: 2/22/21 DATE COMPLETED: 2/22/21 COMPLETION DEPTH: 5.0 ft				DRILLER: D. Guajardo DRILL RIG: DRILLING METHOD: Hollow Stem Auger SAMPLING METHOD: HAMMER TYPE: Automatic EFFICIENCY: N/A				LOGGED BY: Alhowshabi BORING LOCATION: McMillan Avenue			
STATION: N/A				OFFSET: N/A				REVIEWED BY: T. Khalaff			
REMARKS:											
Elevation (feet)	Depth (feet)	Graphic Log Sample Type Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	Moisture, %	STANDARD PENETRATION TEST DATA N in blow/sft, @ X Moisture PL LL Sw ▲ Qu	STRENGTH, tsf Op	Additional Remarks		
0				6" ASPHALT							
				Brown SANDY GRAVEL, trace Silt, moist (FILL)		12	X				
				Dark brown fine to coarse CLAYEY SAND with Silt, trace Gravel, moist (FILL)							
				Brown fine to medium SILTY SAND with Clay, trace Gravel, moist		9	X				
					SP						
5				Hand auger terminated at approximately 5 feet below existing pavement surface.		10	X				
				DCP TEST RESULTS:							
				At 8": 25+ blows per 4"							
				At 1": 25+ blows per 4"							
				At 2": 25+ blows per 4"							
				At 3": 25 blows per 4"							
				At 4": 22 blows per 4"							
				At 5": 23 blows per 4"							

Professional Service Industries, Inc.

3120 Sovereign Drive, Suite C

Lansing, MI 48911

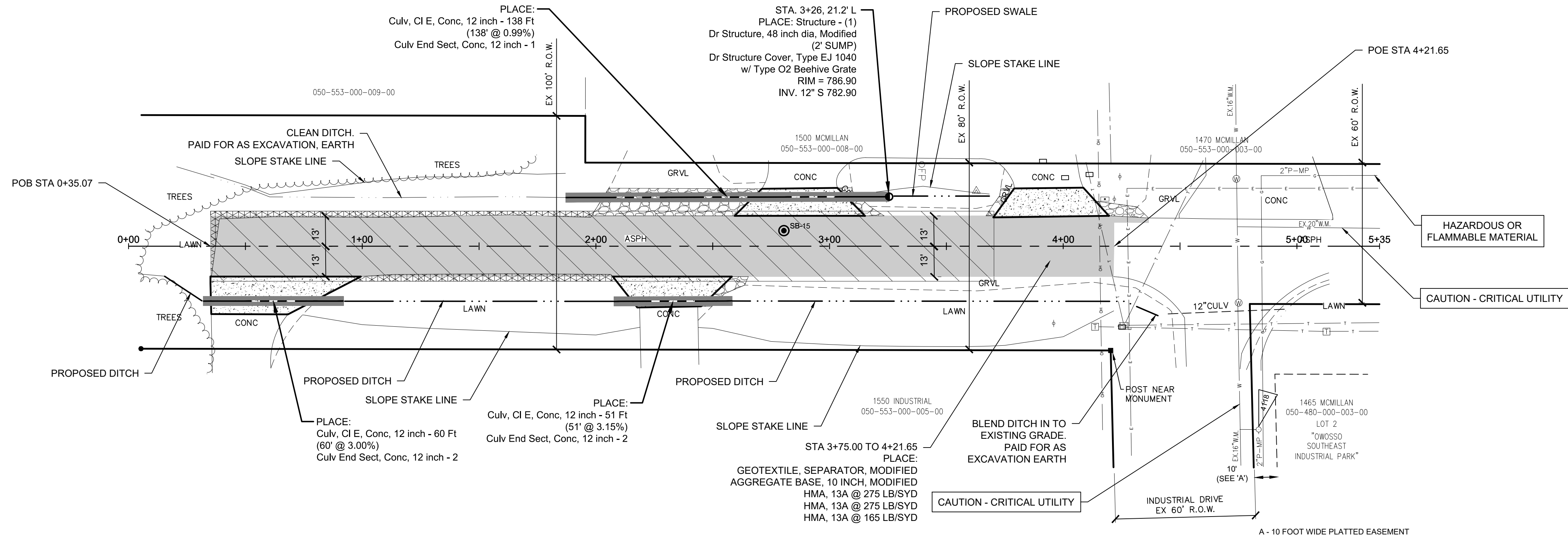
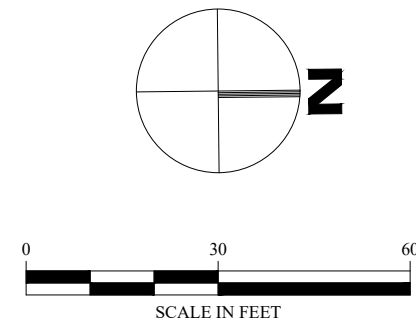
Telephone: (517) 394-5700

PROJECT NO.: 0406-646

PROJECT: City of Owosso Road Rehabilitation

LOCATION: Owosso, Michigan

Sheet 1 of 7



CONSTRUCTION LEGEND

- Curb and Gutter, Conc, Det F4, Modified
- Culv, CI E, Conc, __ inch
- HMA
- HMA Base Crushing and Shaping, Modified and Asphalt Cement Stabilized Base Course
- Aggregate Base, 10 inch, Modified
- Driveway, Nonreinf, Conc, __ inch
- Approach, CI I, LM
- Sidewalk, Conc, __ inch
- Sidewalk, Ramp, Conc, __ inch
- STANDARD SOIL EROSION KEY

MCMILLAN AVENUE
CONSTRUCTION PLAN

BM 4118 790.91
ARROW AT TOP OF HYDRANT, NE QUADRANT OF
McMILLAN STREET AND INDUSTRIAL DRIVE
(NAVD 88)

CONSTRUCTION QUANTITIES - MCMILLAN AVENUE		
QUANTITY	UNIT	WORK ITEM
5	Cyd	Embankment, CIP
29	Cyd	Subbase, CIP
234	Syd	Aggregate Base, 10 inch, Modified
1118	Syd	HMA Base Crushing and Shaping, Modified
1118	Syd	Asphalt Cement Stabilized Base Course
1788	Gal	Asphalt Cement Binder
13	Cyd	Approach, CI I, LM
68	Ton	Shoulder, CI I
148	Syd	Geotextile Separator, Modified
5	Ea	Culv End Sect, Conc, 12 inch
250	Ft	Culv, CI E, Conc, 12 inch
1	Ea	Dr Structure, 48 inch dia, Modified
1	Ea	Dr Structure Cover, Type EJ 1040 w/ O2 Beehive Grate
441	Ton	HMA, 13A
255	Syd	Driveway, Nonreinf Conc, 9 inch
1254	Syd	Turf Establishment, Performance

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

2021 STREET PROGRAM - CONTRACT 1
MCMILLAN AVENUE
CONSTRUCTION PLAN

MC4

FIELD BOOK
PG.

MAY, 2021
PROJECT NO.

BENCH MARK DATA

NO.	ELEV.	DESCRIPTION
1		
2		

REVISIONS

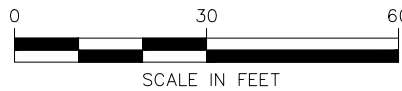
NO.	DATE	BY
1	5/17/21	CW
2	6/4/21	CW

CHECKED BY

APPROVED BY

THE

THE



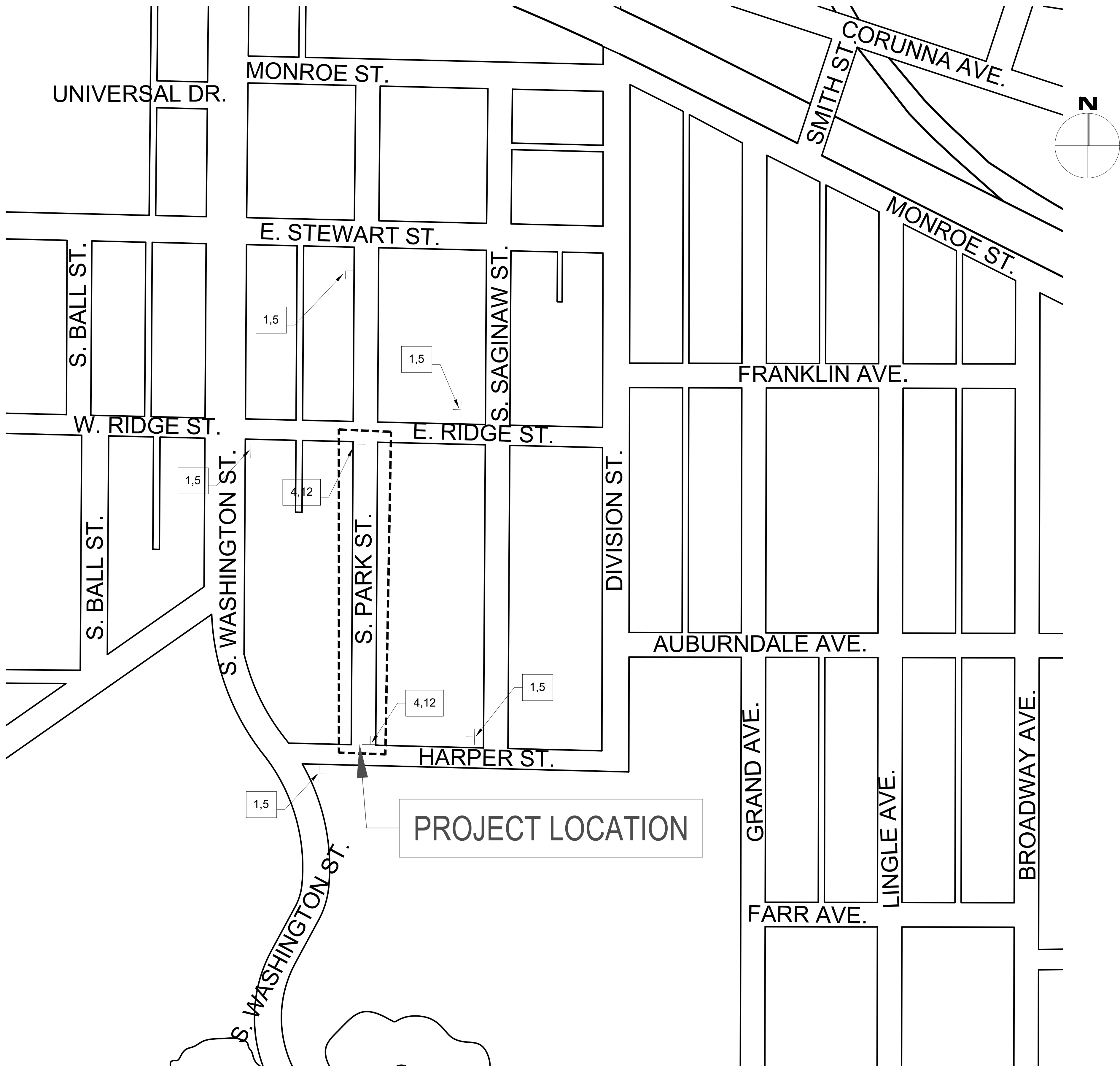
MCMILLAN AVENUE
CONSTRUCTION PROFILE

MAY, 2021
PROJECT I

2	ISSUED FOR BID
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	6/4/21	CW

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

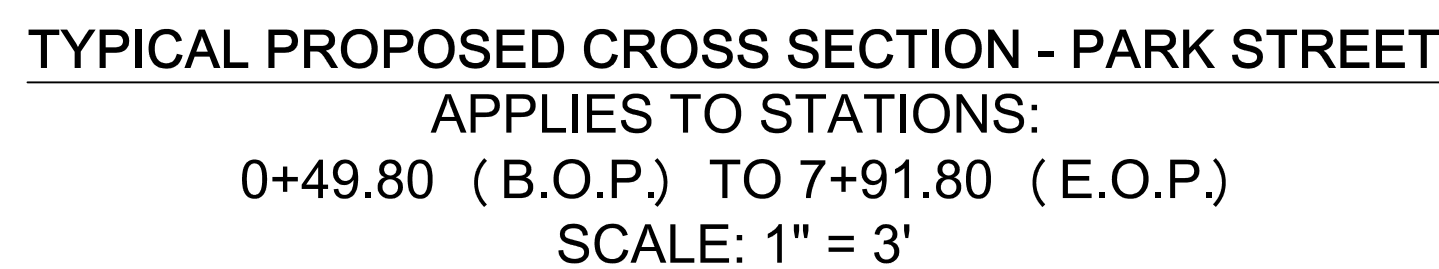
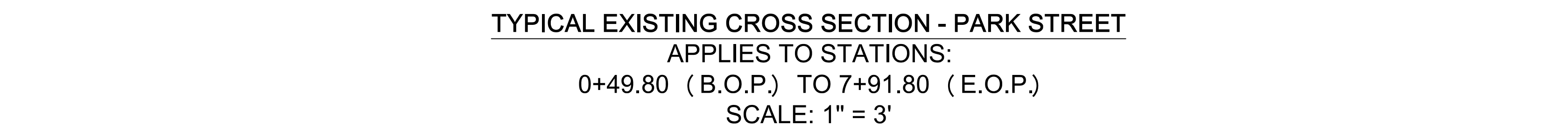


SIGNING REQUIREMENTS					
NO.	SIGN	SIGN DESIGNATOIN	SIZE	NO. REQ.	TOTAL AREA (SFT)
1		W20-1	48 x 48	5	80
2		W20-2A	48 x 48	0	0
3		W20-3	48 x 48	0	0
4		R11-3A	60 x 30	2	25
5		M4-8 MOD	30 x 12	5	13
6		M4-8A	24 x 18	0	0
7		M4-9L	30 x 24	0	0
8		M4-9S	30 x 24	0	0
9		M4-9R	30 x 24	0	0
10		M4-10L	48 x 18	0	0
11		M4-10R	48 x 18	0	0
12		TYPE III BARRICADE		2	

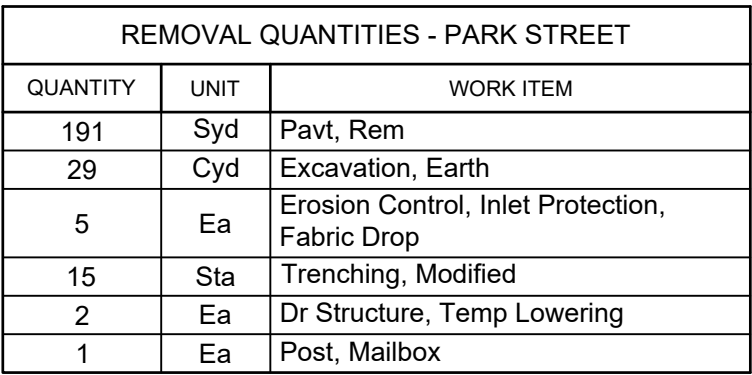
MAINTAINING TRAFFIC LEGEND

PROJECT LOCATION

TEMPORARY SIGN



PARK ST - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
MAINLINE PAVING	HMA, 13A	165 LBS.	64-28	1.5"	TOP COURSE - AWI = 220 (MIN)
	HMA, 13A	275 LBS.	64-28	2.5"	BASE COURSE
HMA DRIVEWAYS	HMA, 13A	440 LBS.	64-28	4"	PLACE IN TWO LIFTS
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)



DATE STARTED:2/22/21

DATE COMPLETED:2/22/21

COMPLETION DEPTH:5.0 ft

BENCHMARK:N/A

ELEVATION:N/A

LATITUDE:

LONGITUDE:

STATION:N/A

DRILL COMPANY:PSI

DRILLER: D. Guajardo

DRILL RIG:

DRILLING METHOD:Hollow Stem Auger

SAMPLING METHOD:

HAMMER TYPE:Automatic

EFFICIENCY:N/A

REVIEWED BY:T. Khalaff

BORING LOGGED BY: Aihowshab

Water

White Drilling

Upon Completion

Cave Depth

N/A

N/A

N/A

BORING LOCATION:

S Park Street

Elevation (feet)

Depth (feet)

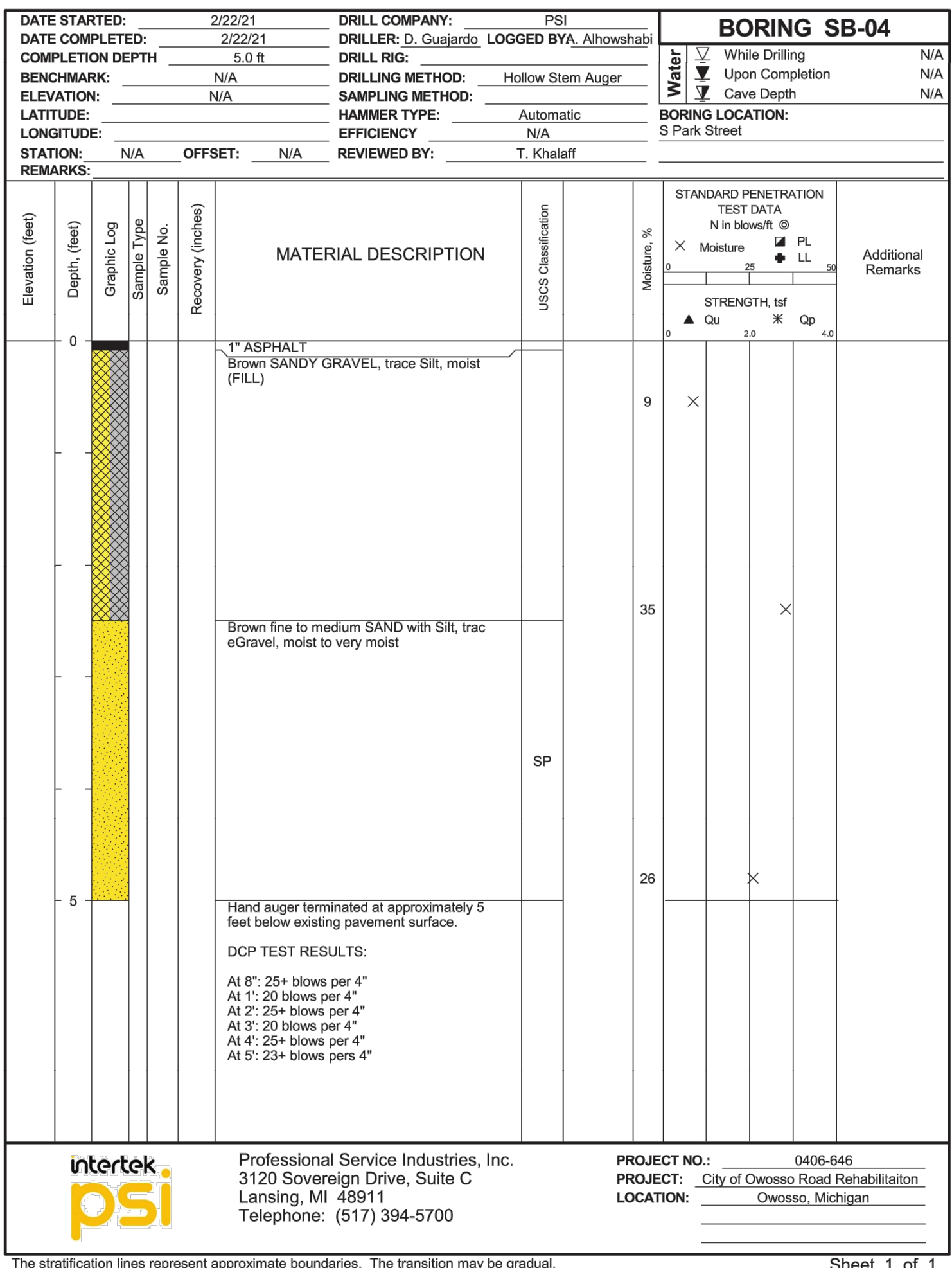
Graphic Log

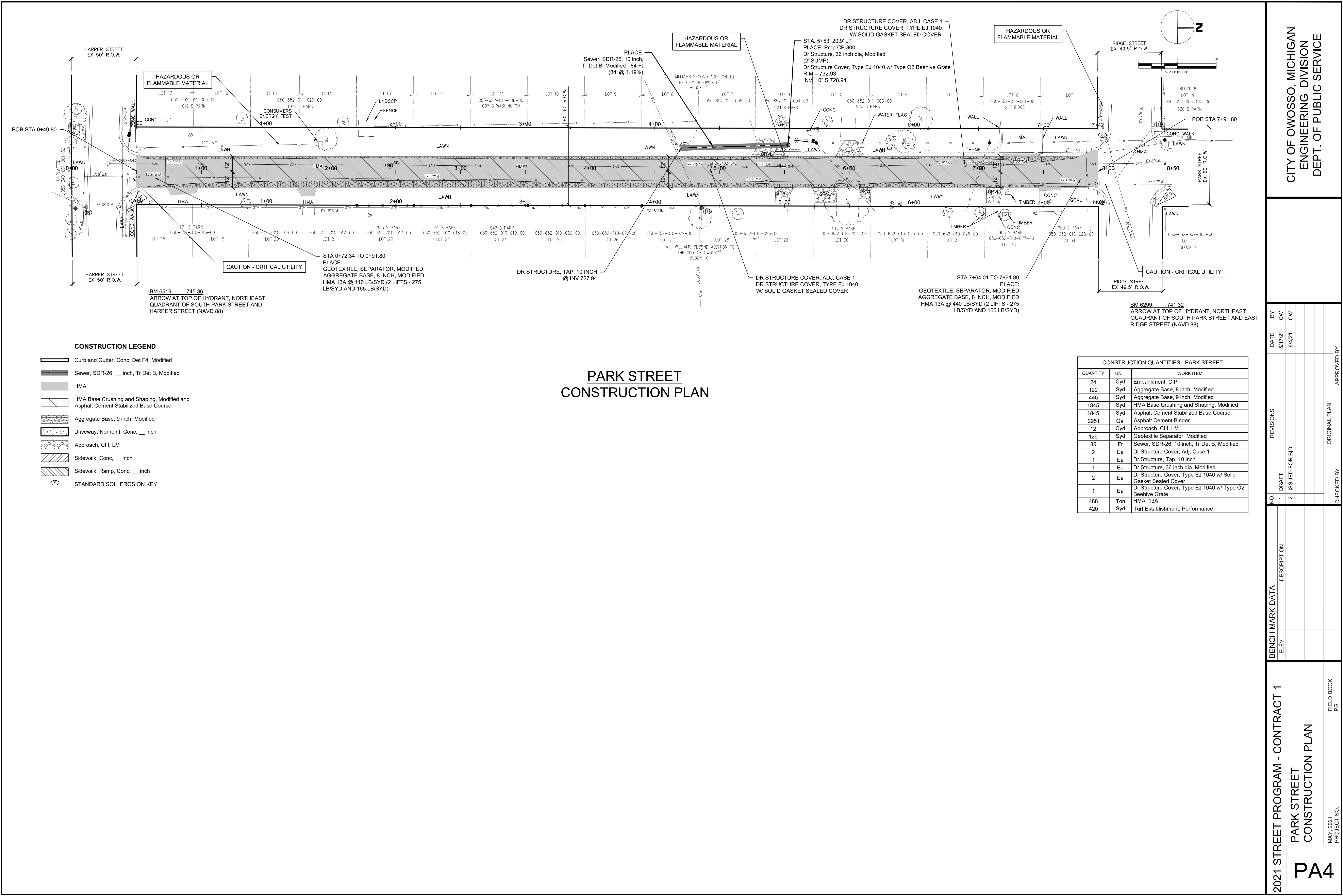
Sample Type

Sample No.

Recovery (inches)

0





PARK STREET
CONSTRUCTION PLAN

CONSTRUCTION LEGEND

- Curb and Gutter, Conc, Det F4, Modified
- Sewer, SDR-26, __ inch, Tr Det B, Modified
- HMA
- HMA Base Crushing and Shaping, Modified and Asphalt Cement Stabilized Base Course
- Aggregate Base, 9 inch, Modified
- Driveway, Nonreinf, Conc, __ inch
- Approach, CI I, LM
- Sidewalk, Conc, __ inch
- Sidewalk, Ramp, Conc, __ inch
- STANDARD SOIL EROSION KEY

CONSTRUCTION QUANTITIES - PARK STREET		
QUANTITY	UNIT	WORK ITEM
24	Cyd	Embankment, CIP
129	Syd	Aggregate Base, 8 inch, Modified
445	Syd	Aggregate Base, 9 inch, Modified
1845	Syd	HMA Base Crushing and Shaping, Modified
1845	Syd	Asphalt Cement Stabilized Base Course
2951	Gal	Asphalt Cement Binder
12	Cyd	Approach, CI I, LM
129	Syd	Geotextile Separator, Modified
85	Ft	Sewer, SDR-26, 10 inch, Tr Det B, Modified
2	Ea	Dr Structure Cover, Adj, Case 1
1	Ea	Dr Structure, Tap, 10 inch
1	Ea	Dr Structure, 36 inch dia, Modified
2	Ea	Dr Structure Cover, Type EJ 1040 w/ Solid Gasket Sealed Cover
1	Ea	Dr Structure Cover, Type EJ 1040 w/ Type O2 Beehive Grate
488	Ton	HMA, 13A
420	Syd	Turf Establishment, Performance

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

2021 STREET PROGRAM - CONTRACT 1

PARK STREET
CONSTRUCTION PLAN

PA4

FIELD BOOK
PG.

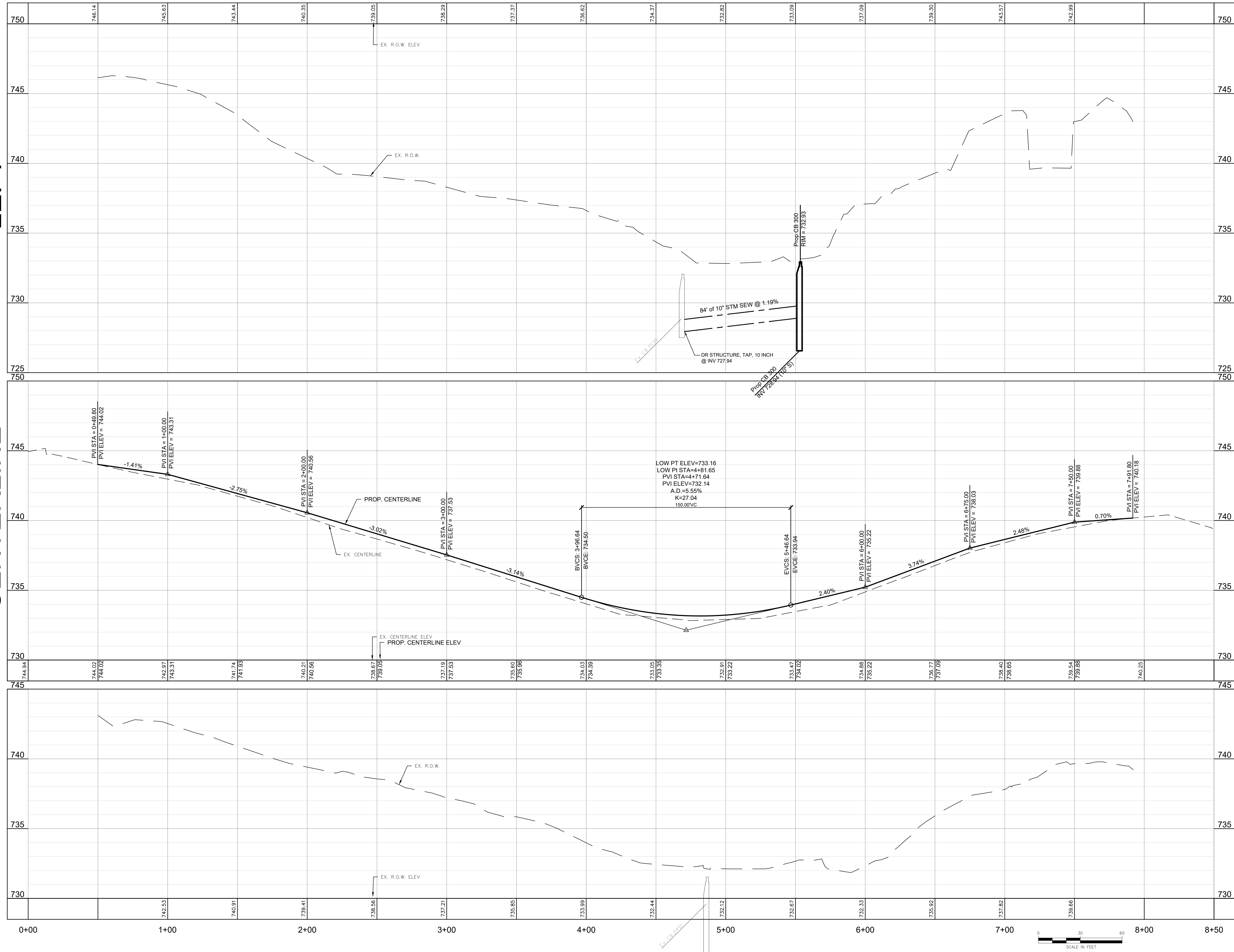
MAY, 2021
PROJECT NO.

BENCH MARK DATA		DESCRIPTION	
ELEV.			
NO.		REVISIONS	
1	DRAFT	DATE	BY
2	ISSUED FOR BID	5/17/21	CW
		6/4/21	CW
CHECKED BY		APPROVED BY	
		ORIGINAL PLAN	

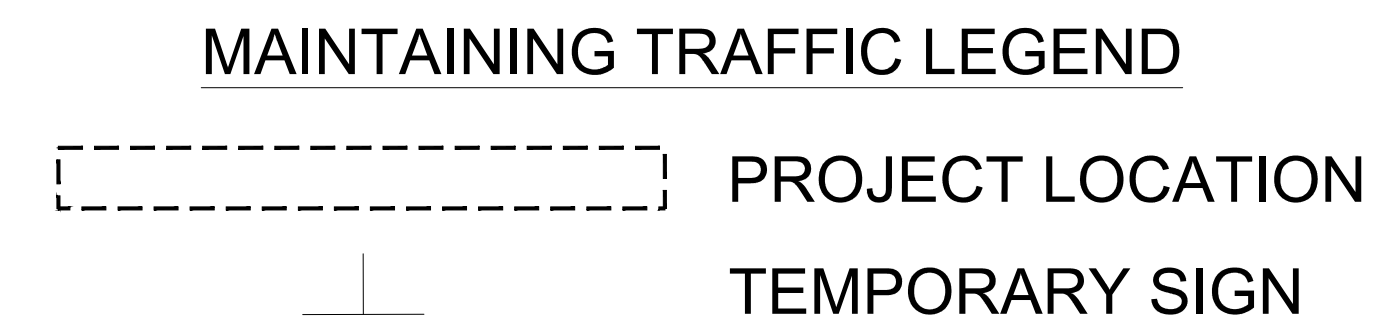
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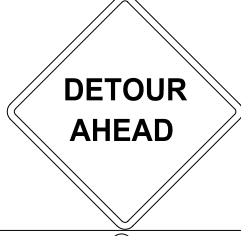
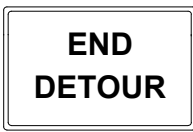
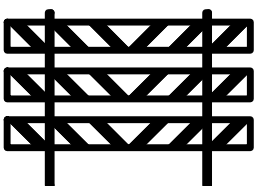
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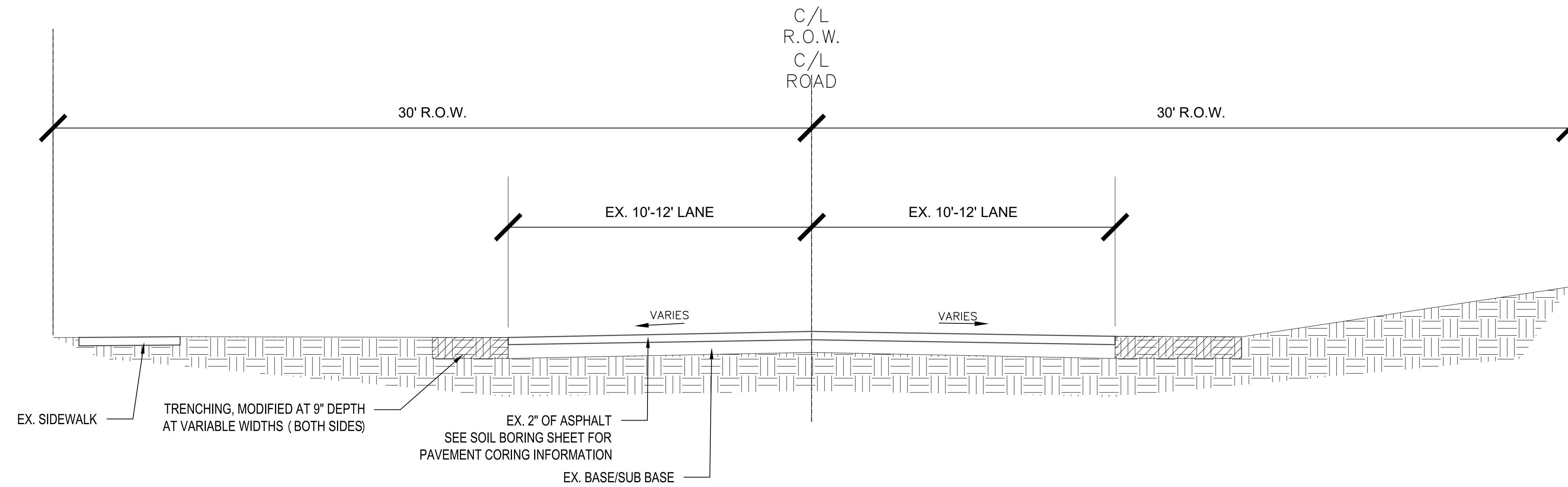
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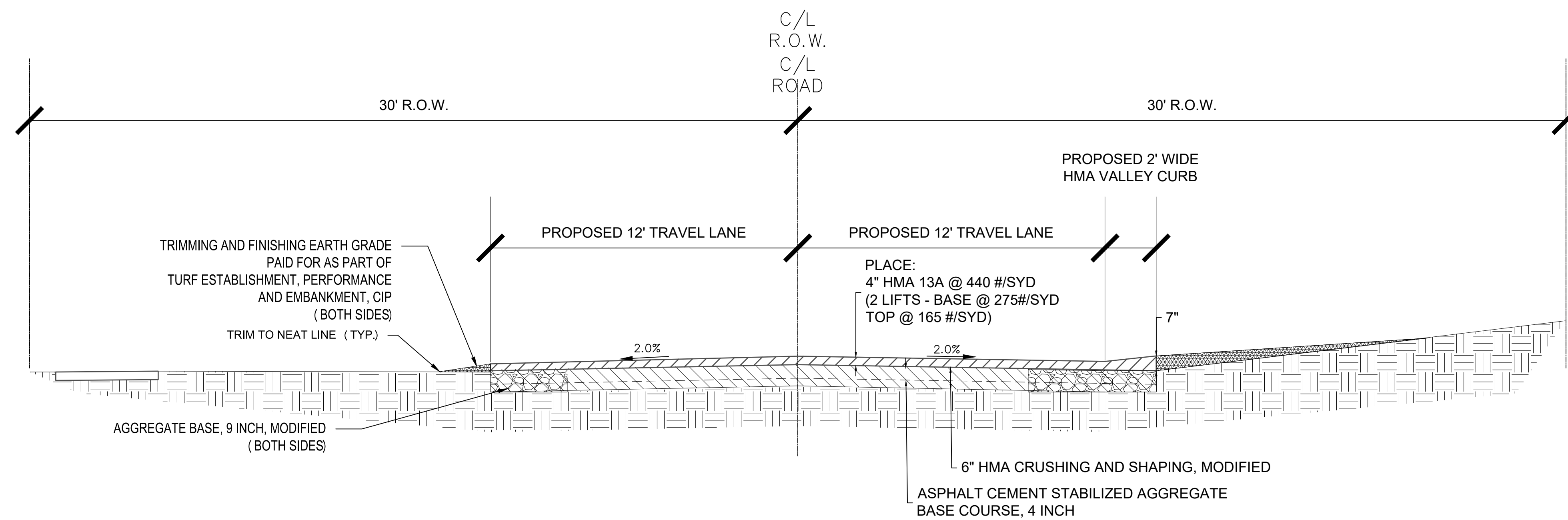
PA5 2021 STREET PROGRAM - CONTRACT 1 MAY, 2021 PROJECT NO. FIELD BOOK PG.	BENCH MARK DATA		NO.		REVISIONS		DATE	BY
	ELEV.	DESCRIPTION	1	DRAFT			5/17/21	OW
			2	ISSUED FOR BID			6/4/21	OW
			CHECKED BY		ORIGINAL PLAN		APPROVED BY	
CITY OF OWOSSO, MICHIGAN ENGINEERING DIVISION DEPT. OF PUBLIC SERVICE								



SIGNING REQUIREMENTS					
NO.	SIGN	SIGN DESIGNATION	SIZE	NO. REQ.	TOTAL AREA (SFT)
1		W20-1	48 x 48	5	80
2		W20-2A	48 x 48	0	0
3		W20-3	48 x 48	0	0
4		R11-3A	60 x 30	2	25
5		M4-8 MOD	30 x 12	5	13
6		M4-8A	24 x 18	0	0
7		M4-9L	30 x 24	0	0
8		M4-9S	30 x 24	0	0
9		M4-9R	30 x 24	0	0
10		M4-10L	48 x 18	0	0
11		M4-10R	48 x 18	0	0
12		TYPE III BARRICADE		2	

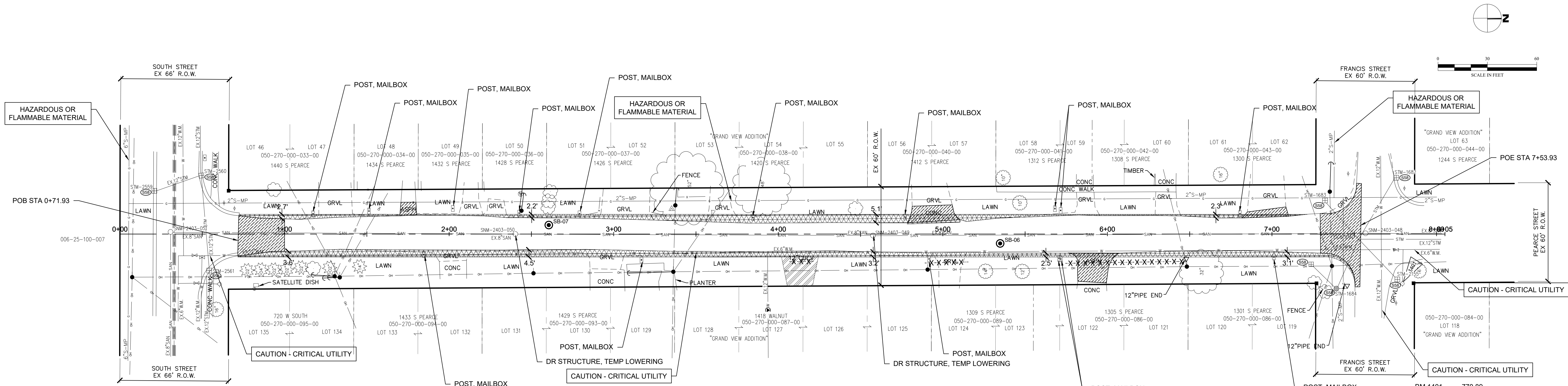


TYPICAL EXISTING CROSS SECTION - PEARCE STREET
APPLIES TO STATIONS:
0+71.93 (B.O.P.) TO 7+53.93 (E.O.P.)
SCALE: 1" = 3'



TYPICAL PROPOSED CROSS SECTION - PEARCE STREET
APPLIES TO STATIONS:
0+71.93 (B.O.P.) TO 7+53.93 (E.O.P.)
SCALE: 1" = 3'

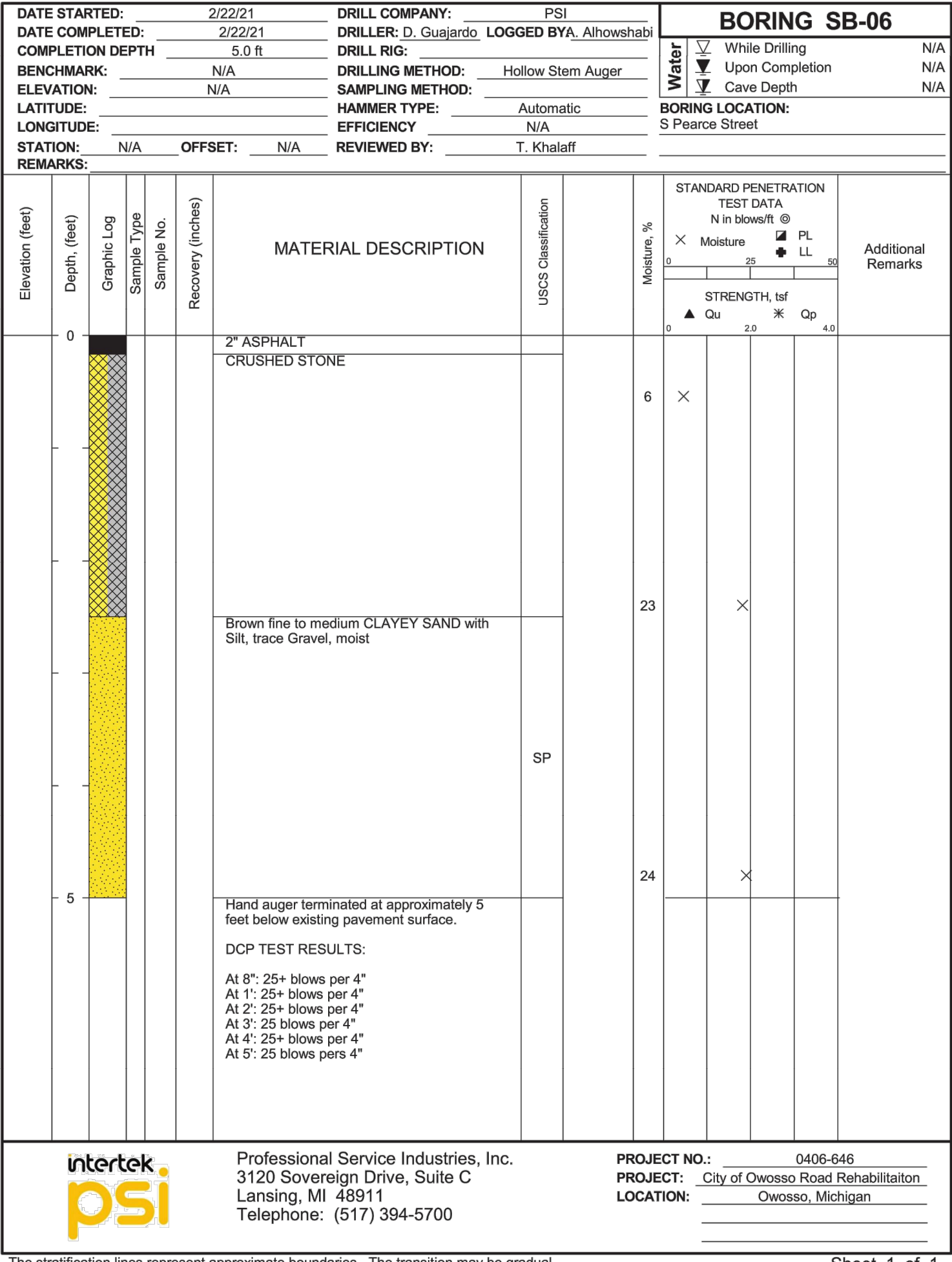
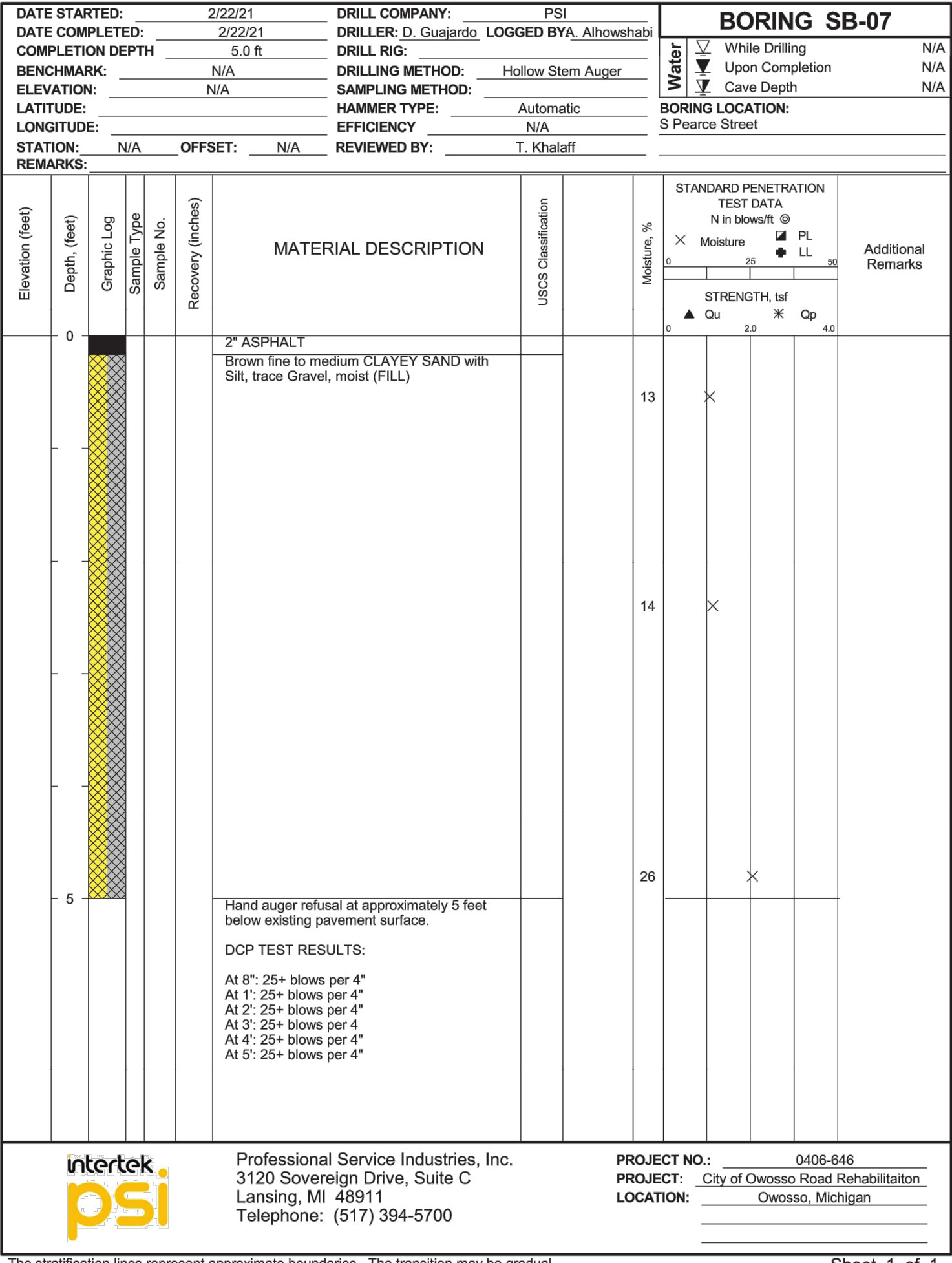
PEARCE ST - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
MAINLINE PAVING	HMA, 13A	165 LBS.	64-28	1.5"	TOP COURSE - AWI = 220 (MIN)
	HMA, 13A	275 LBS.	64-28	2.5"	BASE COURSE
HMA DRIVEWAYS	HMA, 13A	440 LBS.	64-28	4"	PLACE IN TWO LIFTS
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)



- LEGEND**
- X-X-X-X- Curb and Gutter, Rem
 - X-X-X-X- Sewer, Rem or Culv, Rem
 - XXX Dr Structure, Rem
 - HMA Surface, Rem
 - Trenching, Modified
 - Pavt, Rem
 - Sidewalk, Rem
 - Excavation Earth
 - STANDARD SOIL EROSION KEY

PEARCE STREET
REMOVAL PLAN

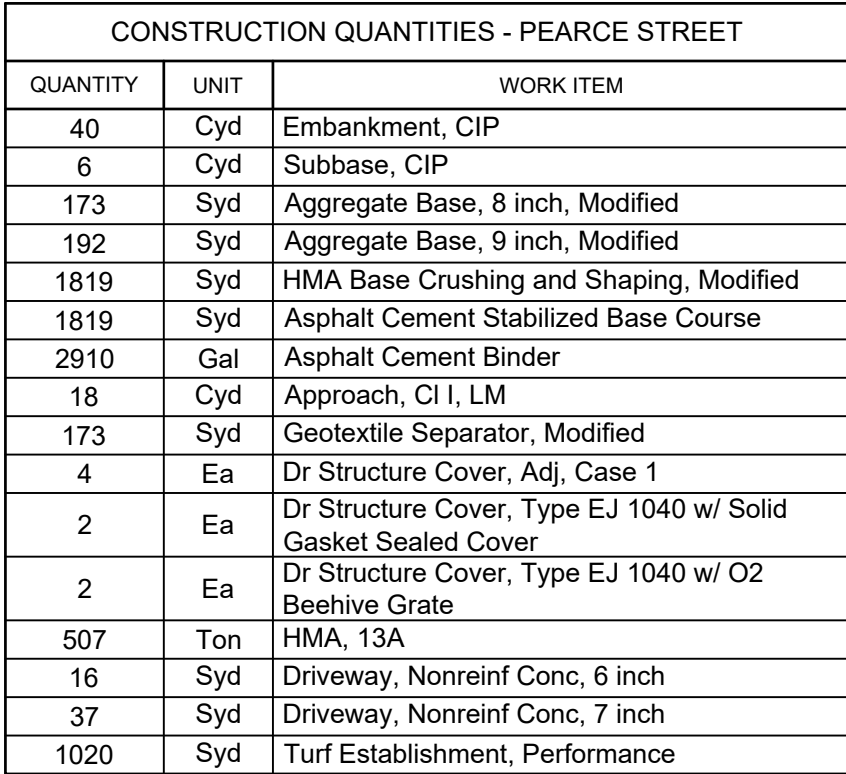
REMOVAL QUANTITIES - PEARCE STREET		
QUANTITY	UNIT	WORK ITEM
3	Ea	Culv, Rem, Less than 24 inch
251	Syd	Pavt, Rem
75	Cyd	Excavation, Earth
8	Ea	Erosion Control, Inlet Protection, Fabric Drop
14	Sta	Trenching, Modified
2	Ea	Dr Structure, Temp Lowering
15	Ea	Post, Mailbox

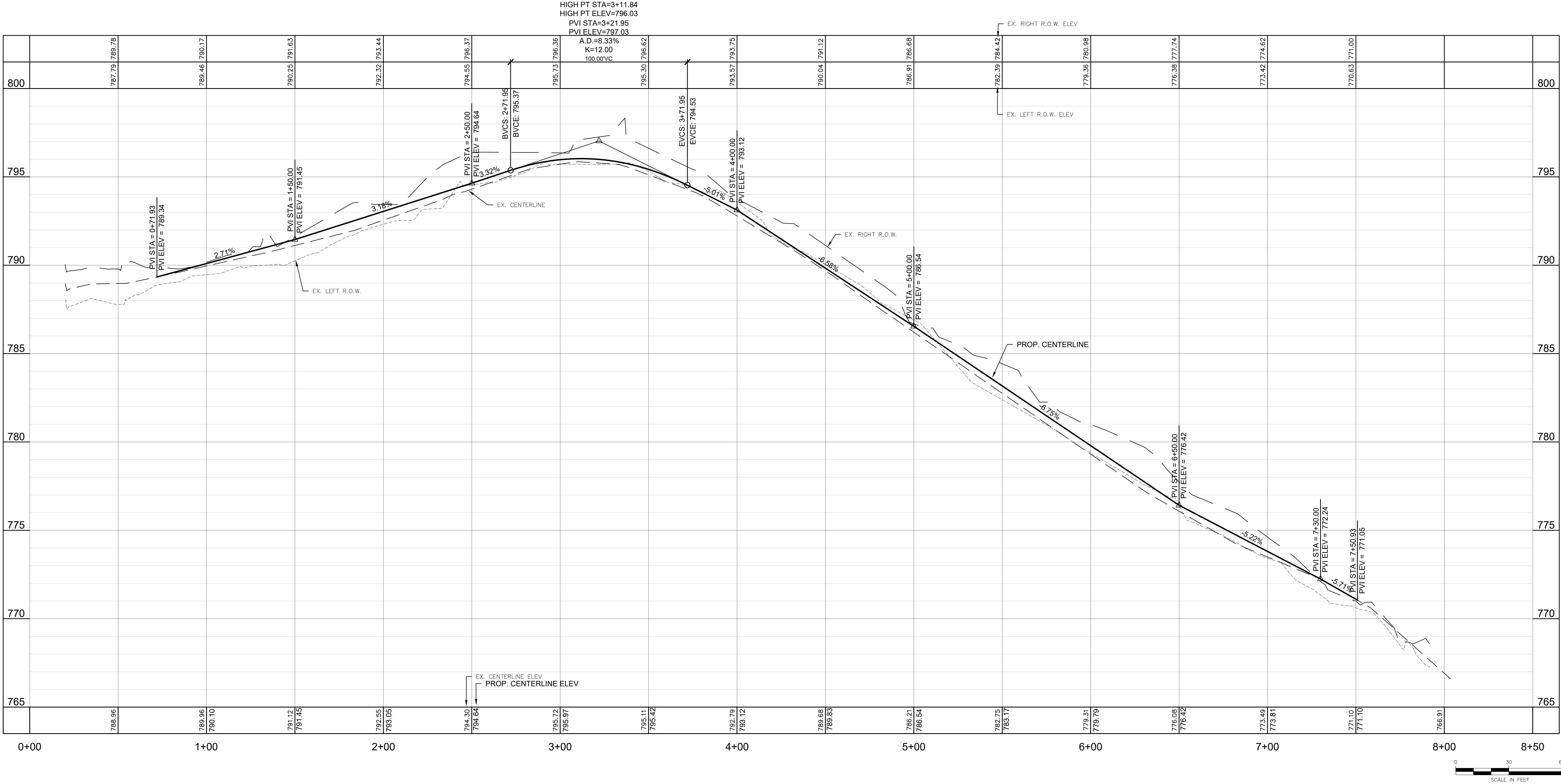


REVISIONS		BY	DATE
1	DRAFT	CW	5/17/21
2	ISSUED FOR BID	CW	6/4/21

BENCH MARK DATA		DESCRIPTION
ELEV.		

2021 STREET PROGRAM - CONTRACT 1	PEARCE STREET REMOVAL PLAN & SOIL BORINGS	FIELD BOOK PG.
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BENCH MARK DATA	
ELEV.	DESCRIPTION

NO.		REVISIONS	DATE	BY
1	DRAFT		5/17/21	CW
2	ISSUED FOR BID		6/4/21	CW

CHECKED BY	ORIGINAL PLAN	APPROVED BY