

# CITY OF OWOSSO

## 2019 STREET PROGRAM CONTRACT 2

SHIAWASSEE COUNTY  
SECTION 14, T7N-R2E, CITY OF OWOSSO  
SECTION 19, T7N-R3E, CITY OF OWOSSO  
POP: 15,194 (2010 CENSUS)

### UTILITY CONTACTS

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARING THESE 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: RANDY CHESNEY, P.E.  
301 W. MAIN STREET  
OWOSSO, MI 48867

ROAD  
989-725-0550  
randy.chesney@ci.owosso.mi.us

CITY OF OWOSSO  
ATT: GLENN CHINAVARE  
301 W. MAIN STREET  
OWOSSO, MI 48867

SANITARY SEWER & WATER MAIN  
989-725-0550  
glenn.chinavare@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  
tmahar@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  
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307 N. BALL STREET  
OWOSSO, MI 48867

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

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

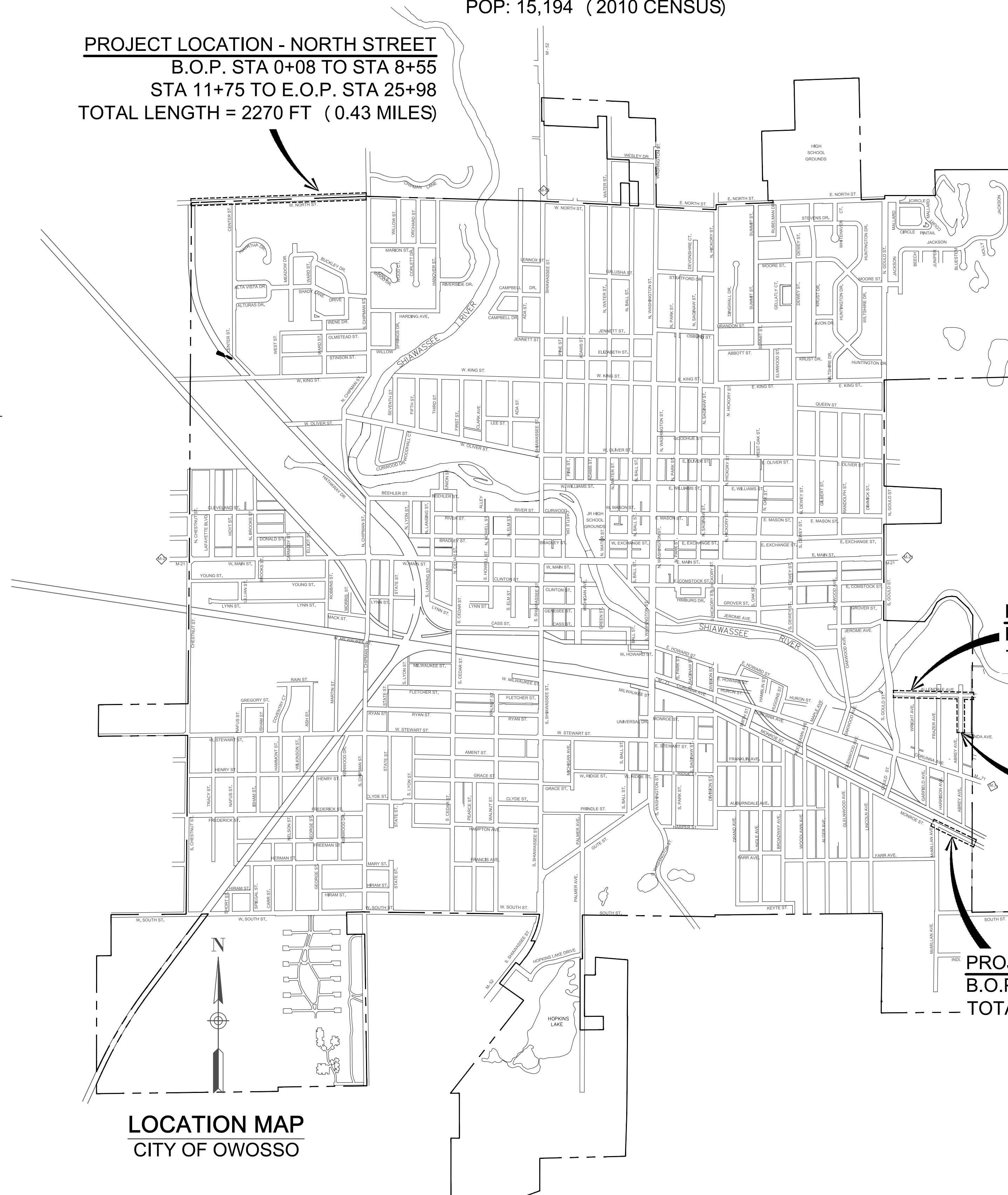
FIBER  
PHONE: 989-723-0373  
mark.stevens@ftr.com

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.

**PROJECT LOCATION - NORTH STREET**  
B.O.P. STA 0+08 TO STA 8+55  
STA 11+75 TO E.O.P. STA 25+98  
TOTAL LENGTH = 2270 FT (0.43 MILES)



**PROJECT LOCATION - ALLENDALE AVENUE**  
B.O.P. STA 0+60 TO E.O.P. STA 12+25  
TOTAL LENGTH = 1165 FT (0.22 MILES)

**PROJECT LOCATION - ABREY AVENUE**  
B.O.P. STA 0+44 TO E.O.P. STA 5+91  
TOTAL LENGTH = 547 FT (0.10 MILES)

**PROJECT LOCATION - MONROE STREET**  
B.O.P. STA 0+48 TO E.O.P. STA 6+00  
TOTAL LENGTH = 551 FT (0.10 MILES)

SHEET NO.	DESCRIPTION
CS	COVER SHEET
D1	NOTES AND MISCELLANEOUS ESTIMATES ROAD AND STORM SEWER DETAILS
D2	SESC STANDARD NOTES AND DETAILS
NR1	NORTH ST - TRAFFIC CONTROL PLAN
NR2	NORTH ST - TYPICAL CROSS SECTIONS
NR3	NORTH ST - REMOVAL PLAN
NR4	NORTH ST - CONSTRUCTION PLAN
NR5	NORTH ST - SOIL BORINGS
AL1	ALLENDALE AVE - TRAFFIC CONTROL PLAN
AL2	ALLENDALE AVE - TYPICAL CROSS SECTIONS
AL3	ALLENDALE AVE - REMOVAL PLAN
AL4	ALLENDALE AVE - CONSTRUCTION PLAN
SB1	ALLENDALE AVE - SOIL BORINGS
AB1	ABREY AVE - TRAFFIC CONTROL PLAN
AB2	ABREY AVE - TYPICAL CROSS SECTIONS
AB3	ABREY AVE - REMOVAL & CONSTRUCTION PLAN
SB1	ABREY AVE - SOIL BORING
MN1	MONROE ST - TRAFFIC CONTROL PLAN
MN2	MONROE ST - TYPICAL CROSS SECTION
MN3	MONROE ST - REMOVAL PLAN & SOIL BORINGS
MN4	MONROE ST - CONSTRUCTION PLAN

### 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

**LOCATION MAP**  
CITY OF OWOSSO



Know what's below.  
Call before you dig.

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

NO.	REVISIONS	DATE	BY

BENCHMARK DATA  
ELEV.      DESCRIPTION

2019 STREET PROGRAM CONTRACT 2

COVER SHEET

ORIGINAL PLAN  
CHECKED BY      APPROVED BY

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.

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.

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.

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.

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.

DETECTIBLE WARNING SURFACES SHALL BE RED 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

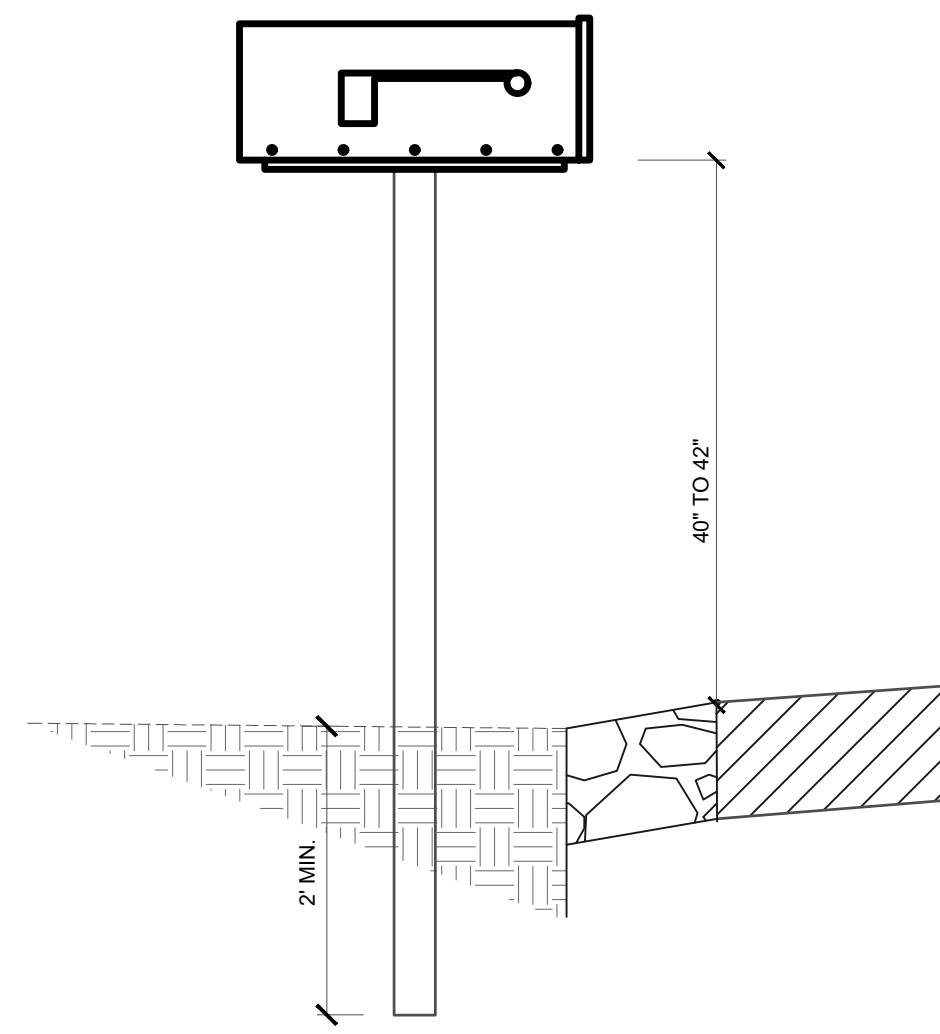
OWNERS OF EXISTING LAWN SPRINKLER SYSTEMS AND / OR LANDSCAPING SHALL BE NOTIFIED ( IN WRITING WITH A COPY SENT TO THE ENGINEER) BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF ANY WORK THAT WILL BE DONE THAT WILL AFFECT THOSE SYSTEMS AND / OR LANDSCAPING.

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.



TYPICAL MAIL BOX CROSS SECTION 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

- 1 LSUM Mobilization, Max...
100 Cyd Subgrade Undercutting, Type II
25 Ton Maintenance Gravel
25 Syd Pavt, Rem
10 Ton Approach, Cl II
34 Ft Sawcutting
10 Ea Post, Mailbox
4 Ea Sign, Type III, Rem
4 Ea Sign, Type III, Erect, Salv
64 Ft Post, Steel, 3 Pound
500 Syd Turf Establishment, Performance

MAINTAINING TRAFFIC QUANTITIES

- 12 Ea Barricade, Type III, High Intensity, Double Sided, Furn & Oper
81 Ea Plastic Drum, High Intensity, Furn & Oper
573 Sft Sign, Type B, Temp, Prismatic, Furn & Oper
1 LSUM Minor Traffic Devices

EXISTING FEATURES LEGEND

Table with 6 columns: SYMBOL, DESCRIPTION, SYMBOL, DESCRIPTION, SYMBOL, DESCRIPTION. Lists various engineering symbols for features like trees, manholes, cables, and landmarks.

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

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

Table for revisions and approval: REVISIONS, DATE, BY, APPROVED BY.

BENCHMARK DATA table with columns for ELEV., DESCRIPTION.

2019 STREET PROGRAM CONTRACT 2
NOTES AND MISCELLANEOUS ESTIMATES
ROAD AND STORM SEWER DETAILS
D1



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

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

B = BIOENGINEERING



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

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
E17	CELLULAR CONFINEMENT SYSTEMS		Used on steep slopes and high velocity channels.
E18	PLASTIC SHEETS		Used on exposed slopes, seeded areas, new ditch bottoms, and areas subject to surface runoff and erosion. Used as a liner in temporary channels and to stabilize stockpiles.
E19	TEMPORARY DRAINAGEWAY / STREAM CROSSING		Use on construction sites where stream/drainageway crossings are required.
E20	TEMPORARY BYPASS CHANNEL		Use within existing stream corridors when existing flow cannot be interrupted, and at culvert and bridge repair sites.
E21	LIVE STAKING		In areas requiring protection of slopes against surface erosion and shallow mass wasting.
<b>EROSION / SEDIMENT CONTROLS</b>			
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
<b>SEDIMENT CONTROLS</b>			
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
S52	CATCH BASIN SEDIMENT GUARD		Use in or at stormwater inlets, especially at construction sites.
S53	STABILIZED CONSTRUCTION ACCESS		Used at every point where construction traffic enters or leaves a construction site.
S54	TIRE WASH		For use on construction sites where vehicular traffic requires sediment removed from its tires in highly erosive areas.
S55	SEDIMENT BASIN		At the outlet of disturbed areas and at the location of a permanent detention basin.
S56	SEDIMENT TRAP		In small drainage areas, along construction site perimeters, and above check dams or drain inlets.
S57	VEGETATED BUFFER/FILTER STRIP		Use along shorelines, waterways, or other sensitive areas. Slows velocity, reduces sediment load, and reduces erosion in areas of sheet flow.
S58	INLET PROTECTION FABRIC DROP		Use at stormwater inlets, especially at construction sites.
S59	INLET PROTECTION FABRIC FENCE		Use at stormwater inlets, especially at construction sites.
S60	INLET PROTECTION STONE		Use around urban stormwater inlets.
S61	TURBIDITY CURTAIN		Use during construction adjacent to a water source, to contain sediment within the work area when other BMP's cannot be used.

B = BIOENGINEERING

**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	

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

NO. REVISIONS DATE BY

ORIGINAL PLAN  
CHECKED BY APPROVED BY

BENCHMARK DATA  
ELEV. DESCRIPTION

2019 STREET PROGRAM CONTRACT 2  
SESC STANDARD NOTES AND DETAILS  
D2

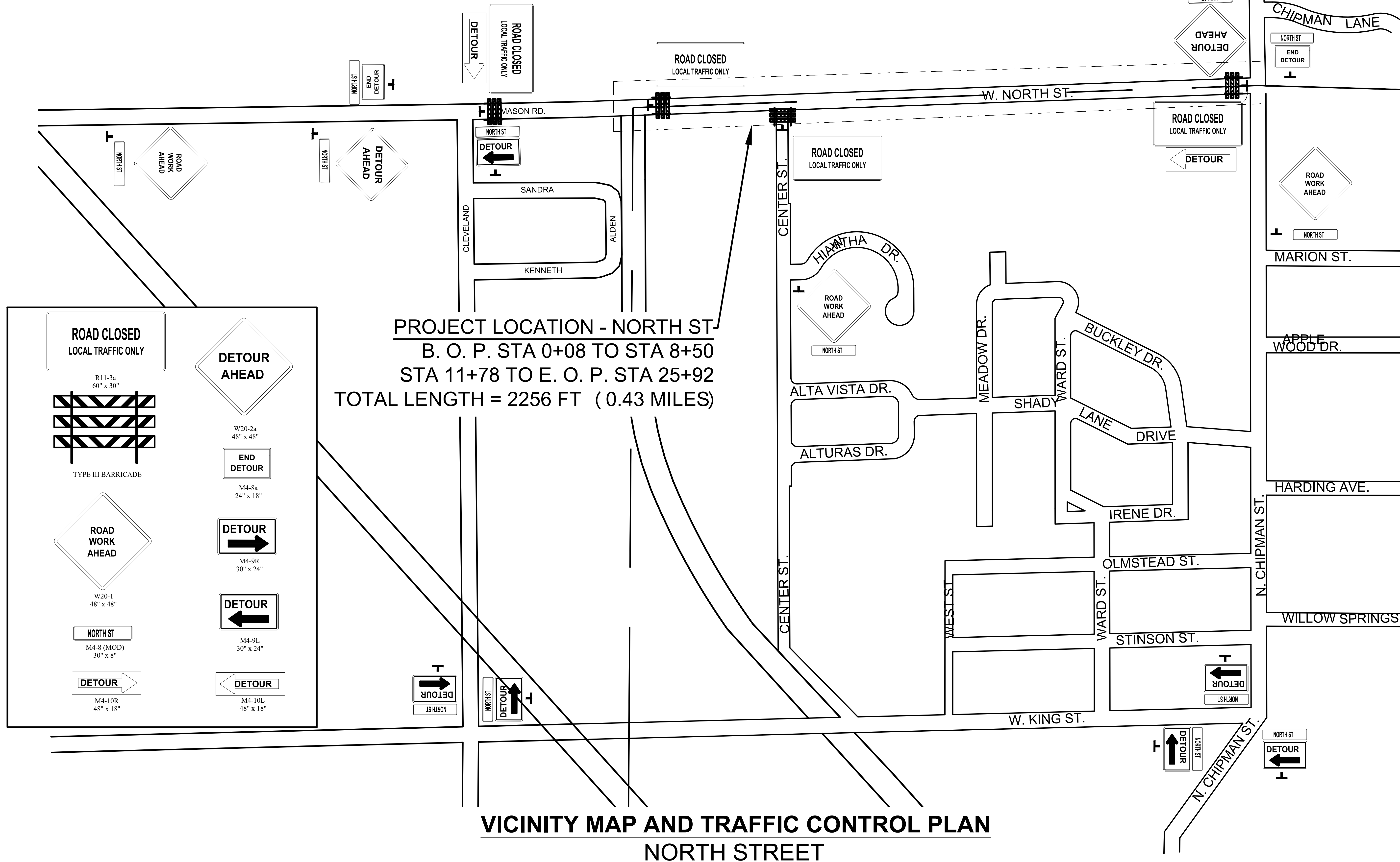
# NORTH STREET

## CITY OF OWOSSO

### 2019 STREET PROGRAM

### CONTRACT 2

SHEET NO.	DESCRIPTION
NR1	NORTH ST - TRAFFIC CONTROL PLAN
NR2	NORTH ST - TYPICAL CROSS SECTIONS
NR3	NORTH ST - REMOVAL PLAN
NR4	NORTH ST - CONSTRUCTION PLAN
NR5	NORTH ST - SOIL BORINGS



**PROJECT LOCATION - NORTH ST**  
 B. O. P. STA 0+08 TO STA 8+50  
 STA 11+78 TO E. O. P. STA 25+92  
 TOTAL LENGTH = 2256 FT ( 0.43 MILES)

**VICINITY MAP AND TRAFFIC CONTROL PLAN**  
 NORTH STREET

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

NO.	REVISIONS	DATE	BY	BENCHMARK DATA	
				ELEV.	DESCRIPTION

**2019 STREET PROGRAM CONTRACT 2**

NORTH STREET  
 TRAFFIC CONTROL PLAN

DATE PROJECT NO.

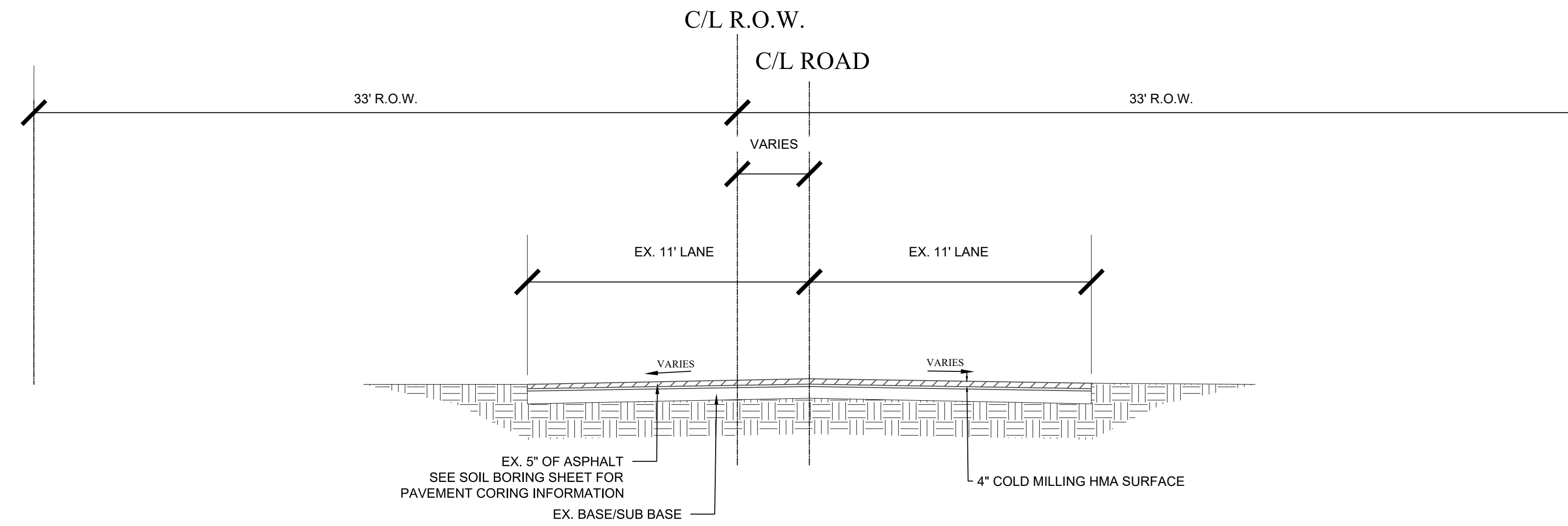
FIELD BOOK PG.

APPROVED BY

ORIGINAL PLAN

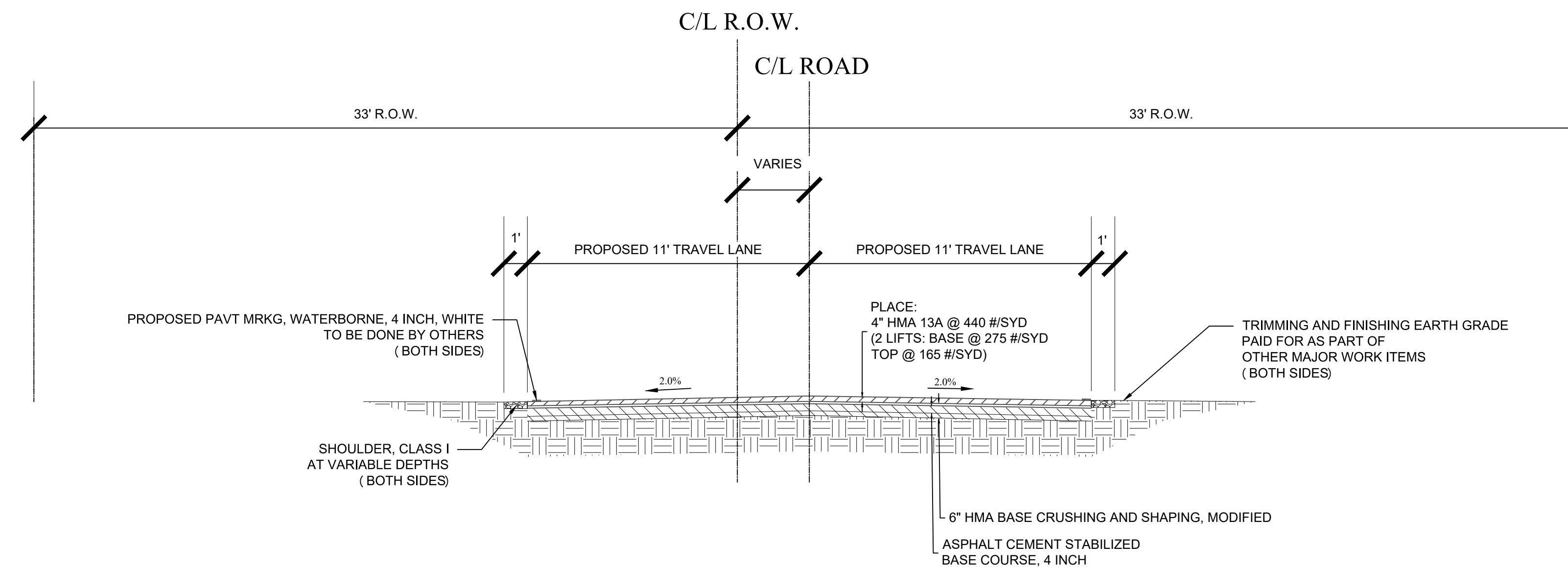
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NR1



**TYPICAL EXISTING CROSS SECTION - NORTH STREET**

APPLIES TO STATIONS:  
 0+08 (B.O.P.) TO 8+50  
 11+78 TO 25+92 (E.O.P.)  
 SCALE: 1" = 4'



**TYPICAL PROPOSED CROSS SECTION - NORTH STREET**

APPLIES TO STATIONS:  
 0+08 (B.O.P.) TO 8+50  
 11+78 TO 25+92 (E.O.P.)  
 SCALE: 1" = 4'

**NOTES:**

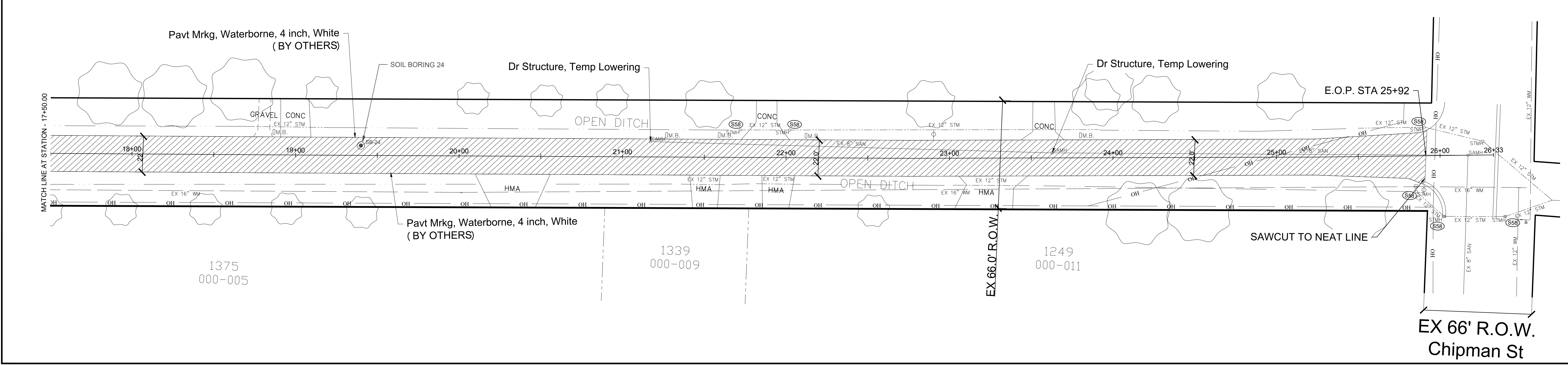
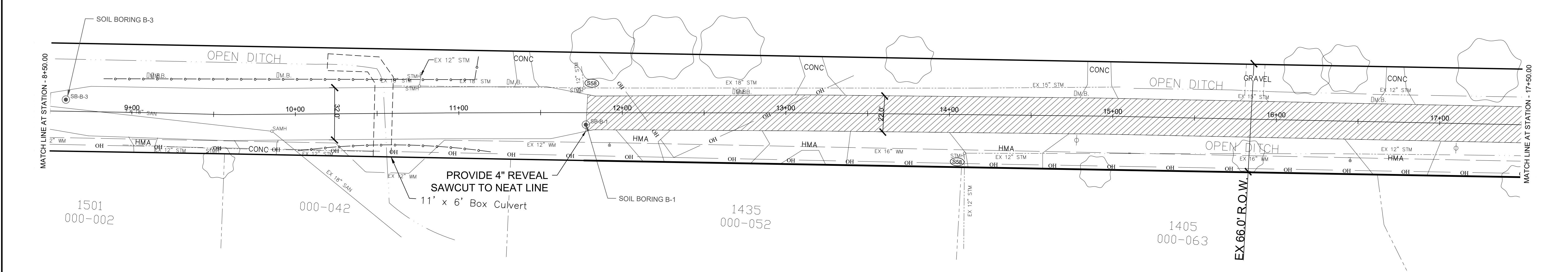
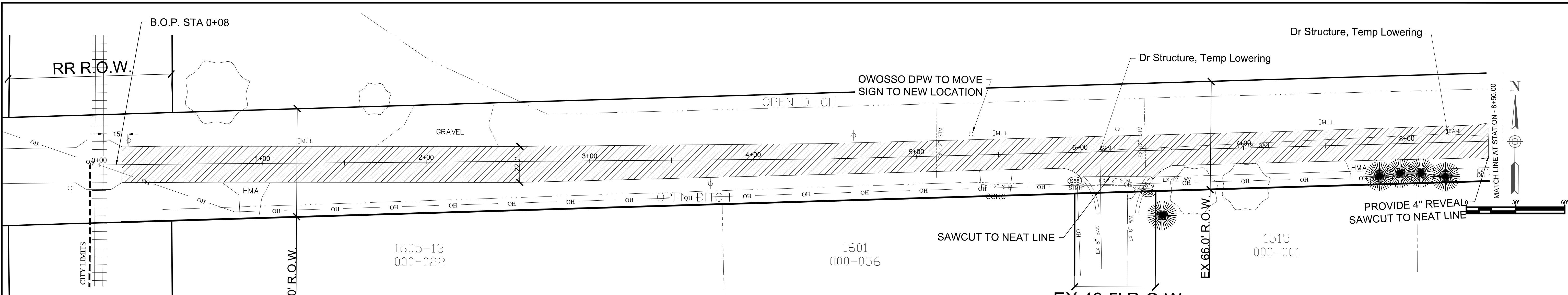
1. WIND ROW SUFFICIENT AMOUNT OF AGGREGATE ALONG ROAD EDGES FOR BLENDING PROPOSED PAVEMENT WITH EX. GROUND. NOT TO BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED AS PART OF MAJOR WORK ITEMS.
2. MATCH PROPOSED ROAD SURFACE WITH ADJACENT PAVEMENT OF OTHER STREETS, PARKING AREAS, ETC.
3. RESIDENTIAL DRIVEWAYS: CONSTRUCT 1' - 2' WING WITH HMA, 13A TO FIT PROPOSED ROAD TO ADJACENT DRIVEWAYS, AS DIRECTED BY THE ENGINEER.
4. GRAVEL DRIVEWAYS: BLEND UP TO 3 FEET (3') WIDTH FROM PROPOSED ROAD TO EXISTING GRAVEL DRIVEWAYS WITH APPROACH, CL II, LM.

NORTH STREET - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
HMA	HMA, 13A	165 LBS.	58-28	1.5"	TOP COURSE - AWI = 260 (MIN)
	HMA, 13A	275 LBS.	58-28	2.5"	BASE COURSE
DRIVE APPROACH	HMA, 13A	220 LBS.	58-28	2"	TOP COURSE - AWI = 260 (MIN)
	HMA, 13A	330 LBS.	58-28	3"	BASE COURSE
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)

BENCHMARK DATA	REVISIONS	DATE	BY
ELEV.	NO.		
DESCRIPTION			

CHECKED BY	APPROVED BY
ORIGINAL PLAN	



**REMOVAL LEGEND**  
 Cold Milling HMA Surface  
 STANDARD SOIL EROSION KEY

# NORTH ST.

## REMOVAL PLAN

REMOVAL QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
8	Ea	Erosion Control, Inlet Protection, Fabric Drop
4	Ea	Dr Structure, Temp Lowering
5387	Syd	Cold Milling HMA Surface

CITY OF OWOSSO, MICHIGAN  
 ENGINEERING DIVISION  
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NO.	REVISIONS	DATE	BY


BENCHMARK DATA	DESCRIPTION
ELEV.	

2019 STREET PROGRAM CONTRACT 2

NORTH STREET  
REMOVAL PLAN

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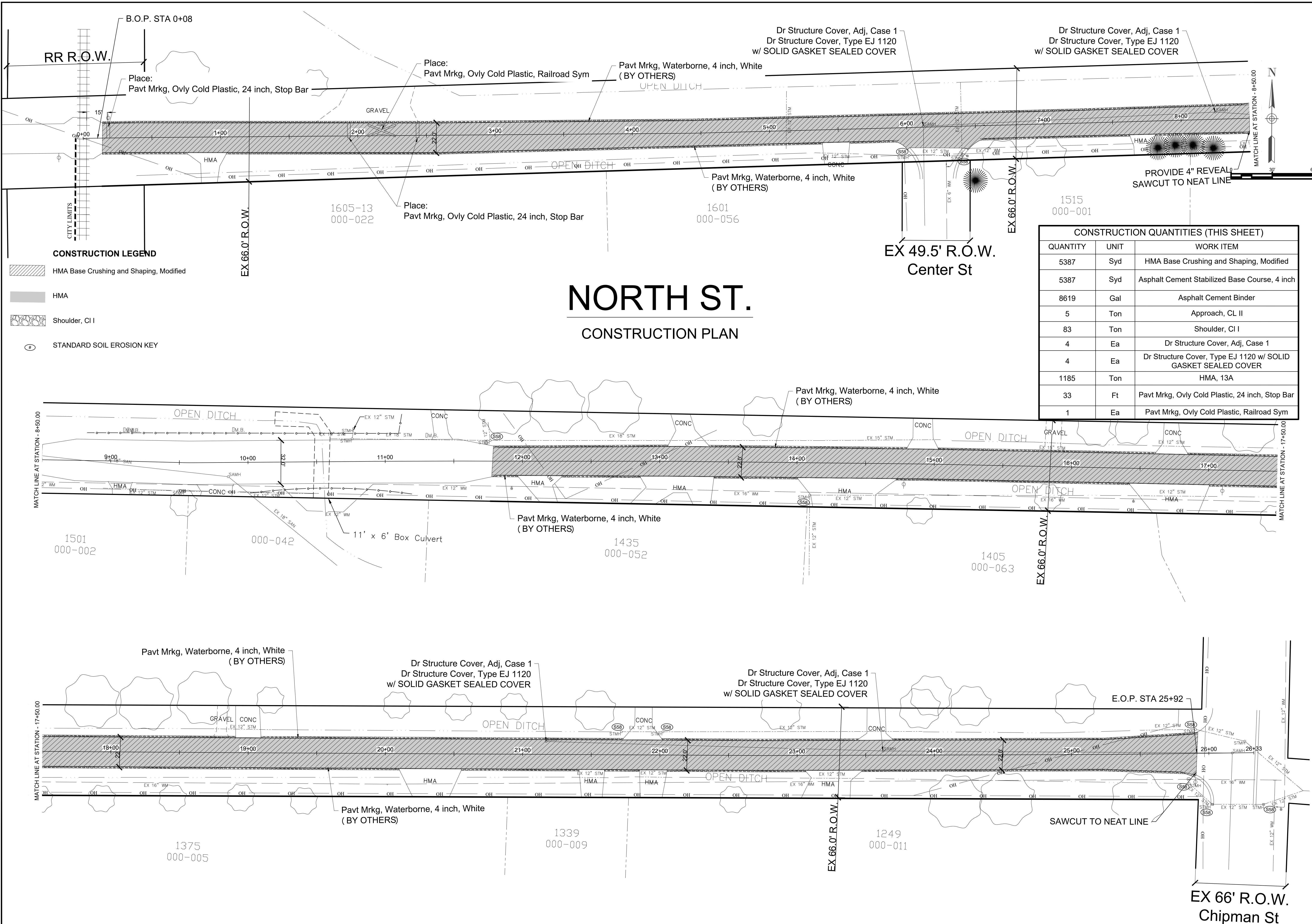
DATE  
PROJECT NO.

APPROVED BY

CHECKED BY

ORIGINAL PLAN

NR3



# NORTH ST.

## CONSTRUCTION PLAN

**CONSTRUCTION LEGEND**

- HMA Base Crushing and Shaping, Modified
- HMA
- Shoulder, CI I
- STANDARD SOIL EROSION KEY

**CONSTRUCTION QUANTITIES (THIS SHEET)**

QUANTITY	UNIT	WORK ITEM
5387	Syd	HMA Base Crushing and Shaping, Modified
5387	Syd	Asphalt Cement Stabilized Base Course, 4 inch
8619	Gal	Asphalt Cement Binder
5	Ton	Approach, CL II
83	Ton	Shoulder, CI I
4	Ea	Dr Structure Cover, Adj, Case 1
4	Ea	Dr Structure Cover, Type EJ 1120 w/ SOLID GASKET SEALED COVER
1185	Ton	HMA, 13A
33	Ft	Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar
1	Ea	Pavt Mrkg, Ovly Cold Plastic, Railroad Sym

BENCHMARK DATA	NO.	REVISIONS	DATE	BY	APPROVED BY	
					ORIGINAL PLAN	CHECKED BY
ELEV.						
DESCRIPTION						

**2019 STREET PROGRAM CONTRACT 2**

**NORTH STREET  
CONSTRUCTION PLAN**

DATE PROJECT NO. \_\_\_\_\_

FIELD BOOK PG. \_\_\_\_\_

NR4

NO.	REVISIONS	DATE	BY	APPROVED BY

BENCHMARK DATA	DESCRIPTION
ELEV.	

ConstructionTesting Services  
3300 E. Bristol Road, Burton, MI 48529  
PHONE: (810) 603-0766  
FAX: (810) 603-0786

JOB NO. S-18-240 LOG OF SOIL BORING NO. 24  
PROJECT: City of Owosso Street Improvements  
LOCATION: Owosso, Michigan  
DATE: 9/11/18 SURFACE ELEVATION: Existing



Sample & Type	Depth	Legend	Soil Description	SPT Blows per 6"	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
	1		5" Asphalt					
			9" Fill Crushed Limestone					
24A SS	2		Possible Fill Clay - Firm, Moist, Silty, Sandy, Brown w/occ	2				
	3		Pebble & occ/Dark Streaks	3				
	3			3				
	4		3'5"					
24B SS	5		Possible Fill Clay - Soft, Moist, Silty, Sandy, Brown w/occ	1				
	5		Pebble & occ/Dark Streaks	1				
24C SS	6			2				
	6			2				
	7		6'6" 7'0" Clay - Firm, Moist, Silty, Sandy, Variegated w/occ Pebble	3				
	7		End of Boring	5				
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							

### SOIL BORING NO. B-1

NORTH STREET CULVERT REPLACEMENT  
LOCATION: WB TRAVEL LANE  
APPROXIMATE OFFSET: AT STAKED LOCATION  
DATE STARTED: 06-05-2015, DATE COMPLETED: 06-05-2015  
INSPECTOR: D. YIP  
APPROXIMATE GROUND SURFACE ELEVATION: 740.1 FT +/-  
APPROXIMATE BORING COORDINATES: N 551159.24, E 13170126.7

ELEV. (FT)

SOIL SAMPLE DATA  
MC DD PP UCS (%) (PCF) (PSF) (PSF)

740.1 PAVEMENT: ASPHALT (5')  
739.7 FILL: LIGHT GRAY SAND AND GRAVEL WITH TRACE OF SILT  
739.4

3

STIFF TO VERY STIFF BROWN AND GRAY SANDY CLAY WITH TRACE OF GRAVEL

735.1

E.O.B. 5 FT

3000

GROUNDWATER LEVELS:  
AT TIME OF DRILLING: DRY  
AT END OF DRILLING: DRY  
BACKFILL PROCEDURE: BOREHOLE BACKFILLED WITH EXCAVATED MATERIAL AND PAVEMENT REPAIRED WITH COLD PATCH.

NOTES:  
3 1ST 8 IN  
4 2ND 8 IN  
6 3RD 8 IN  
NUMBERS IN CIRCLES DENOTE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. (1 1/2" I.D.) SPLIT SPOON SAMPLER 3 SUCCESSIVE 6" INCREMENTS USING A 140 LB HAMMER FALLING 30".  
CONSISTENCY WAS DETERMINED BY INSPECTION OF SAMPLES AND SUBSTANTIATED BY SOILS RESISTANCE TO DRILLING TOOLS.

THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.  
ELEVATIONS AT THE AS-DRILLED BORING LOCATIONS WERE PROVIDED BY SPICER GROUP. BORING COORDINATES WERE ESTIMATED FROM THE TOPOGRAPHIC PLAN PROVIDED BY SPICER GROUP.

### SOIL BORING NO. B-3

NORTH STREET CULVERT REPLACEMENT  
LOCATION: EB TRAVEL LANE  
APPROXIMATE OFFSET: AT STAKED LOCATION  
DATE STARTED: 06-05-2015, DATE COMPLETED: 06-05-2015  
INSPECTOR: D. YIP  
APPROXIMATE GROUND SURFACE ELEVATION: 740.7 FT +/-  
APPROXIMATE BORING COORDINATES: N 551156.5, E 13169821.1

ELEV. (FT)

SOIL SAMPLE DATA  
MC DD PP UCS (%) (PCF) (PSF) (PSF)

740.7 PAVEMENT: ASPHALT (4')  
740.4 FILL: BROWN SAND WITH TRACE OF CLAY AND GRAVEL  
739.2

4

FILL: STIFF DARK GRAY SANDY CLAY WITH TRACE OF GRAVEL AND ORGANIC FIBERS 2500

737.7

STIFF TO VERY STIFF BROWN AND GRAY SANDY CLAY WITH TRACE OF GRAVEL

735.7

E.O.B. 5 FT

5500

GROUNDWATER LEVELS:  
AT TIME OF DRILLING: DRY  
AT END OF DRILLING: DRY  
BACKFILL PROCEDURE: BOREHOLE BACKFILLED WITH EXCAVATED MATERIAL AND PAVEMENT REPAIRED WITH COLD PATCH.

LEGEND  
MC (%) - PERCENT MOISTURE CONTENT  
DD (PCF) - DRY DENSITY, POUNDS PER CUBIC FOOT  
PP (PSF) - POCKET PENETROMETER VALUE, POUNDS PER SQUARE FOOT  
UCS (PSF) - UNCONFINED COMPRESSIVE STRENGTH, POUNDS PER SQUARE FOOT

E.O.B - END OF BORING  
WOH - WEIGHT OF HAMMER

TYPE OF SAMPLE  
D. - DISTURBED  
U.L. - UNDIST. LINER  
S.T. - SHELBY TUBE  
S.S. - SPLIT SPOON  
R.C. - ROCK CORE  
OTHER -

BORING PLUGGED WITH NATURAL SOIL  
\* The soil descriptions shown on the logs are from visual observations. No classification tests were performed.  
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS  
G.W. ENCOUNTERED AT FT. INS.  
G.W. ENCOUNTERED AT FT. INS.  
G.W. ON COMPLETION FT. INS.  
G.W. AFTER HOURS FT. INS.  
G.W. VOLUMES None

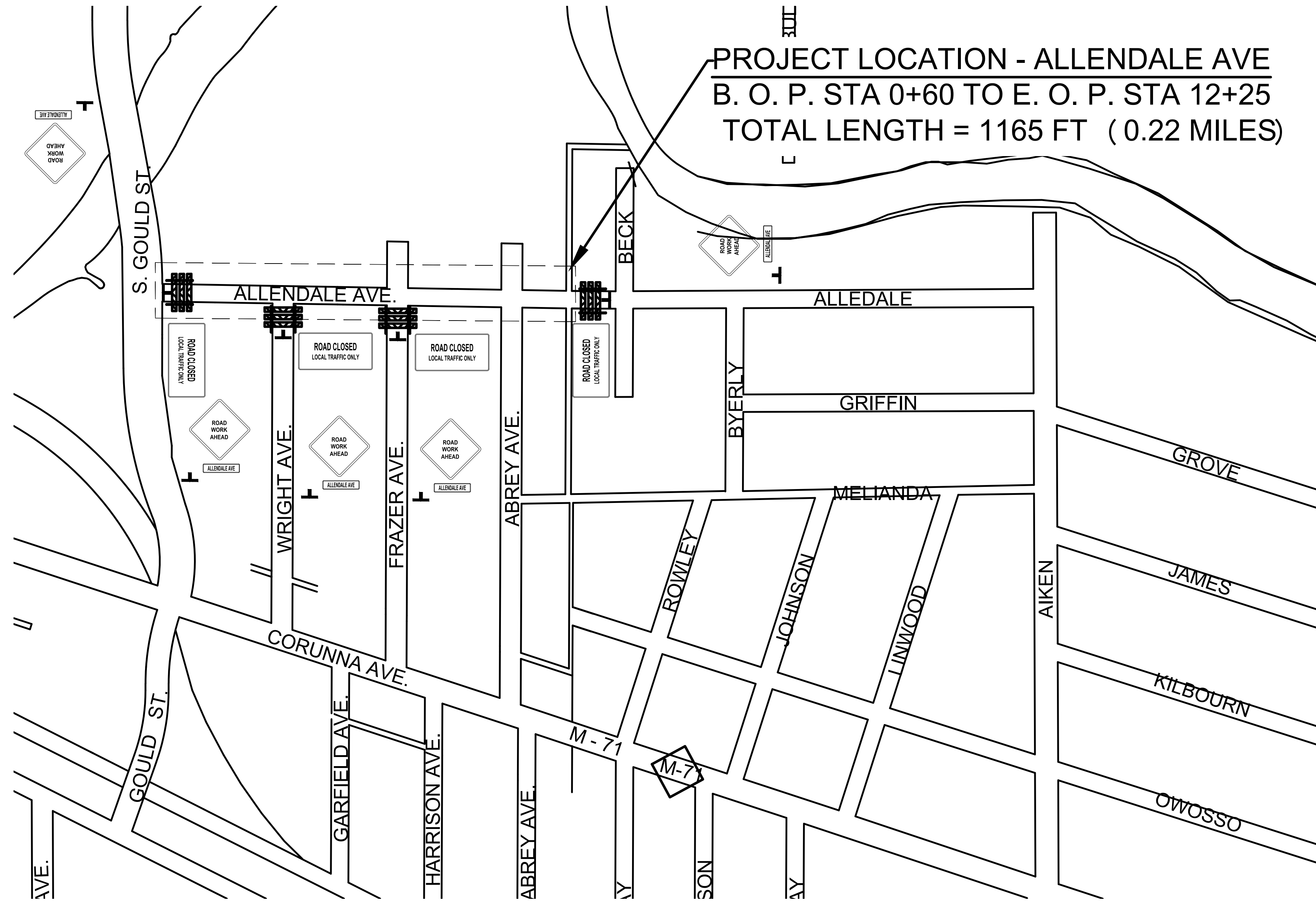


# ALLENDALE AVENUE

## CITY OF OWOSSO 2019 STREET PROGRAM CONTRACT 2

SHEET NO.	DESCRIPTION
AL1	ALLENDALE AVE - TRAFFIC CONTROL PLAN
AL2	ALLENDALE AVE - TYPICAL CROSS SECTIONS
AL3	ALLENDALE AVE - REMOVAL PLAN
AL4	ALLENDALE AVE - CONSTRUCTION PLAN
SB1	ALLENDALE AVE - SOIL BORINGS

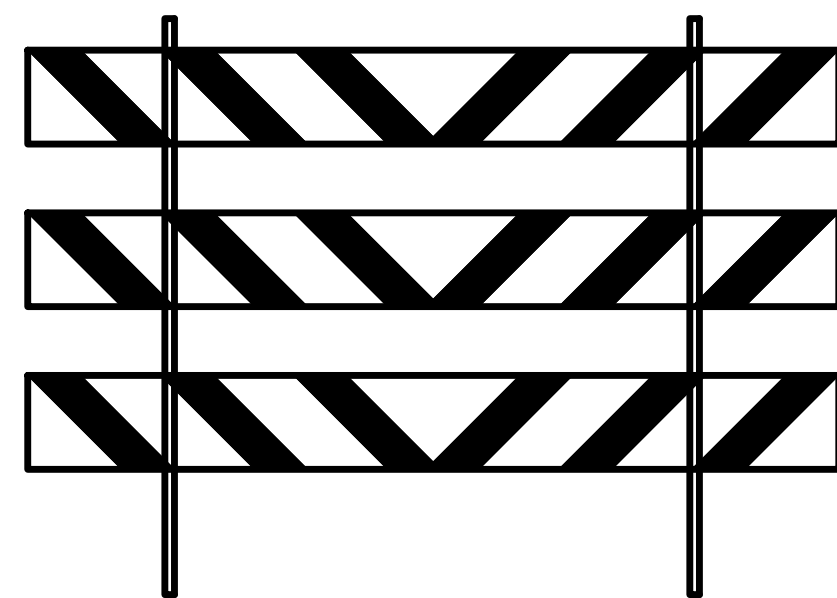
CITY OF OWOSSO, MICHIGAN  
ENGINEERING DIVISION  
DEPT. OF PUBLIC SERVICE



PROJECT LOCATION - ALLENDALE AVE  
B. O. P. STA 0+60 TO E. O. P. STA 12+25  
TOTAL LENGTH = 1165 FT (0.22 MILES)

**ROAD CLOSED  
LOCAL TRAFFIC ONLY**

R11-3a  
60" x 30"



TYPE III BARRICADE



W20-1  
48" x 48"

**ALLENDALE AVE**

M4-8 (MOD)  
30" x 8"

VICINITY MAP AND TRAFFIC CONTROL PLAN  
ALLENDALE AVENUE

BENCHMARK DATA	NO.	REVISIONS	DATE	BY	APPROVED BY
ELEV.					CHECKED BY
					APPROVED BY

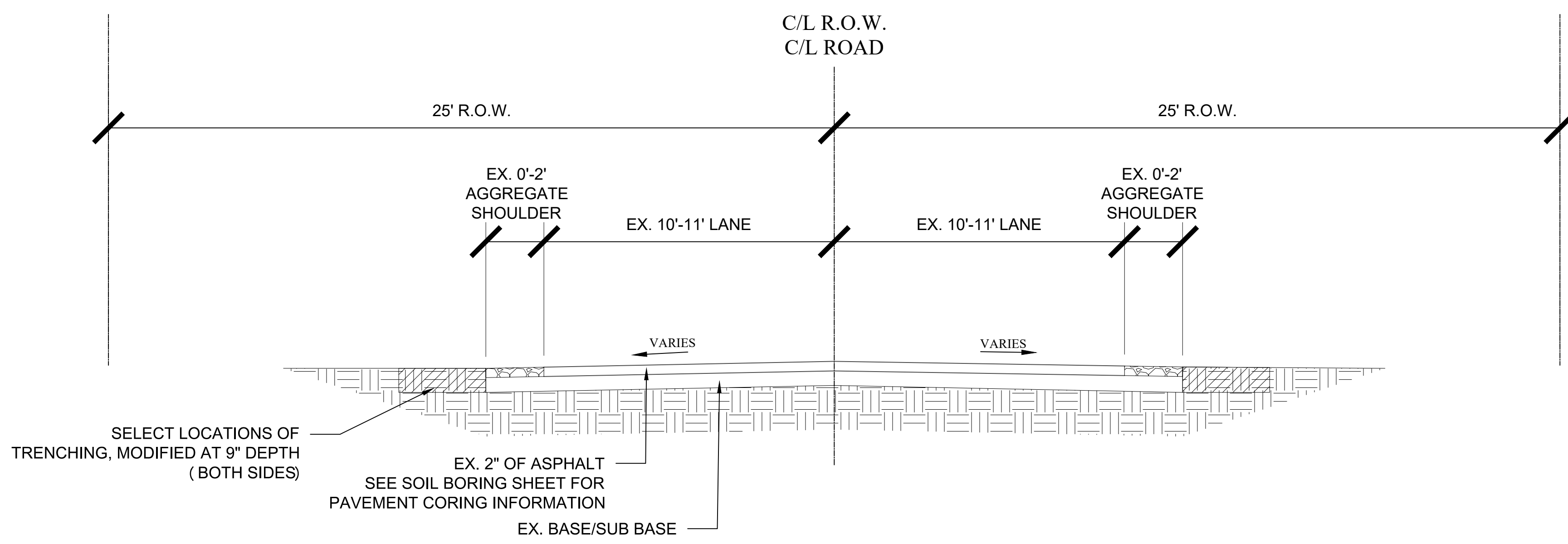
2019 STREET PROGRAM CONTRACT 2

ALLENDALE AVENUE  
TRAFFIC CONTROL PLAN

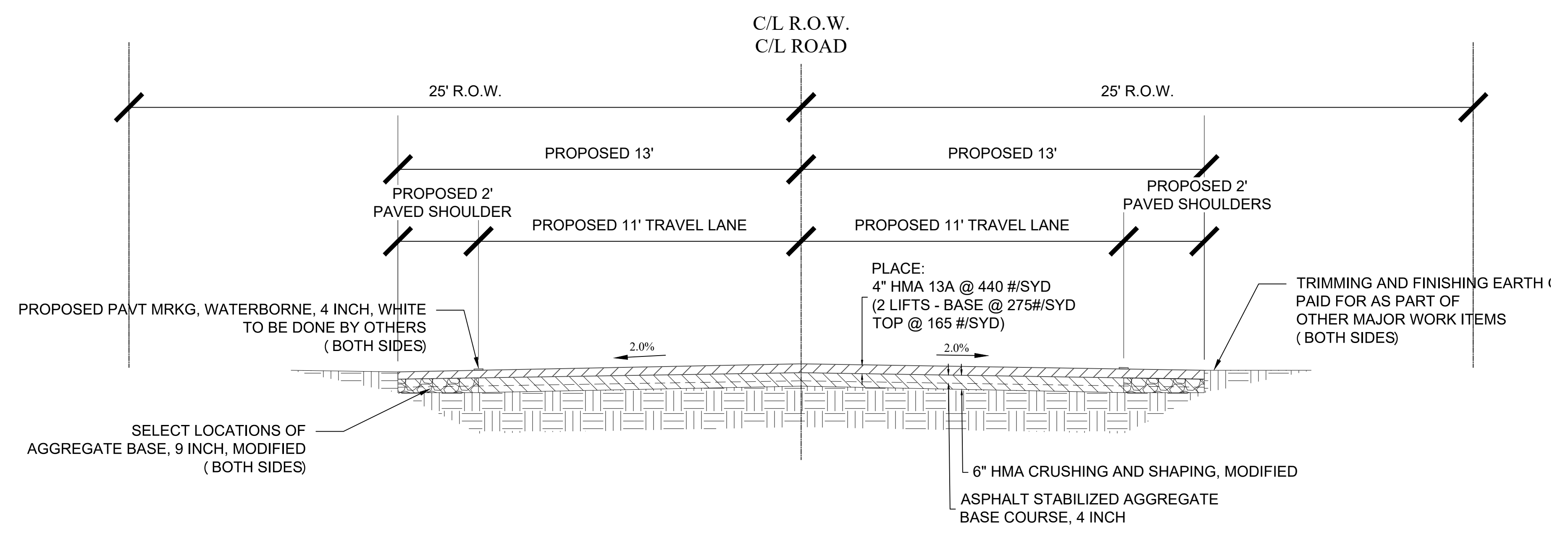
DATE PROJECT NO.

FIELD BOOK PG.

AL1



**TYPICAL EXISTING CROSS SECTION - ALLENDALE AVENUE**  
APPLIES TO STATIONS:  
0+60 (B.O.P.) TO 12+25 (E.O.P.)  
SCALE: 1" = 3'

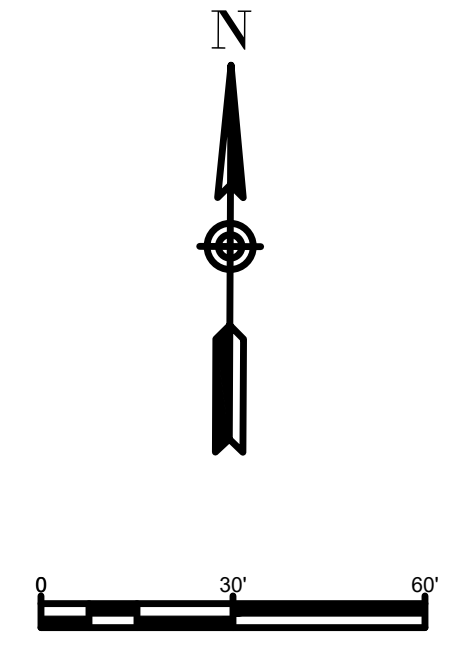
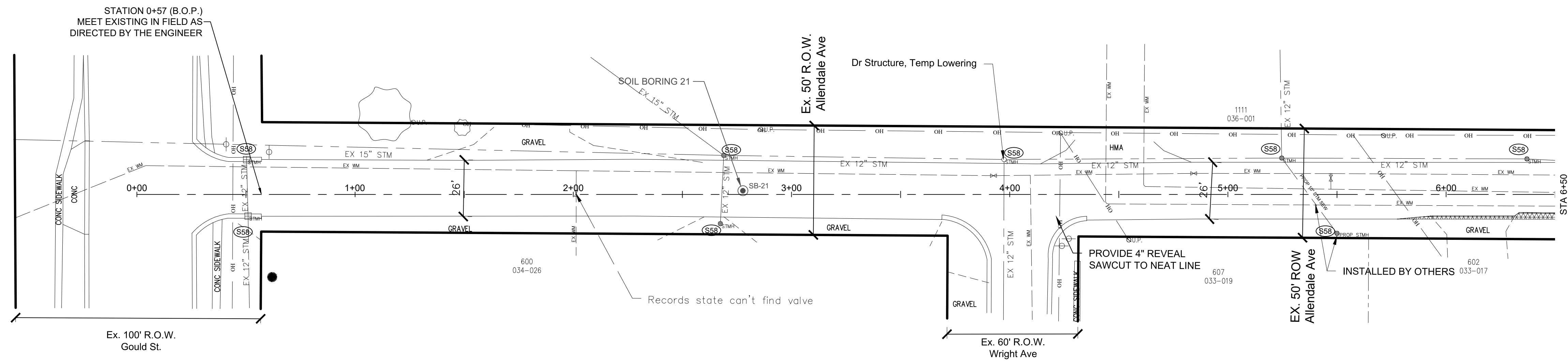


**TYPICAL PROPOSED CROSS SECTION - ALLENDALE AVENUE**  
APPLIES TO STATIONS:  
0+60 (B.O.P.) TO 12+25 (E.O.P.)  
SCALE: 1" = 3'

ALLENDALE AVENUE - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
HMA	HMA, 13A	165 LBS.	58-28	1.5"	TOP COURSE - AWI = 260 (MIN)
	HMA, 13A	275 LBS.	58-28	2.5"	BASE COURSE
DRIVE APPROACH	HMA, 13A	220 LBS.	58-28	2"	TOP COURSE - AWI = 260 (MIN)
	HMA, 13A	330 LBS.	58-28	3"	BASE COURSE
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.
  3. RESIDENTIAL DRIVEWAYS: CONSTRUCT 1' - 2' WING WITH HMA, 13A TO FIT PROPOSED ROAD TO ADJACENT DRIVEWAYS, AS DIRECTED BY THE ENGINEER.
  4. GRAVEL DRIVEWAYS: BLEND UP TO 3 FEET (3) WIDTH FROM PROPOSED ROAD TO EXISTING GRAVEL DRIVEWAYS WITH APPROACH, CL II, LM.

BENCHMARK DATA	NO.	REVISIONS	DATE	BY	APPROVED BY
ELEV.					CHECKED BY

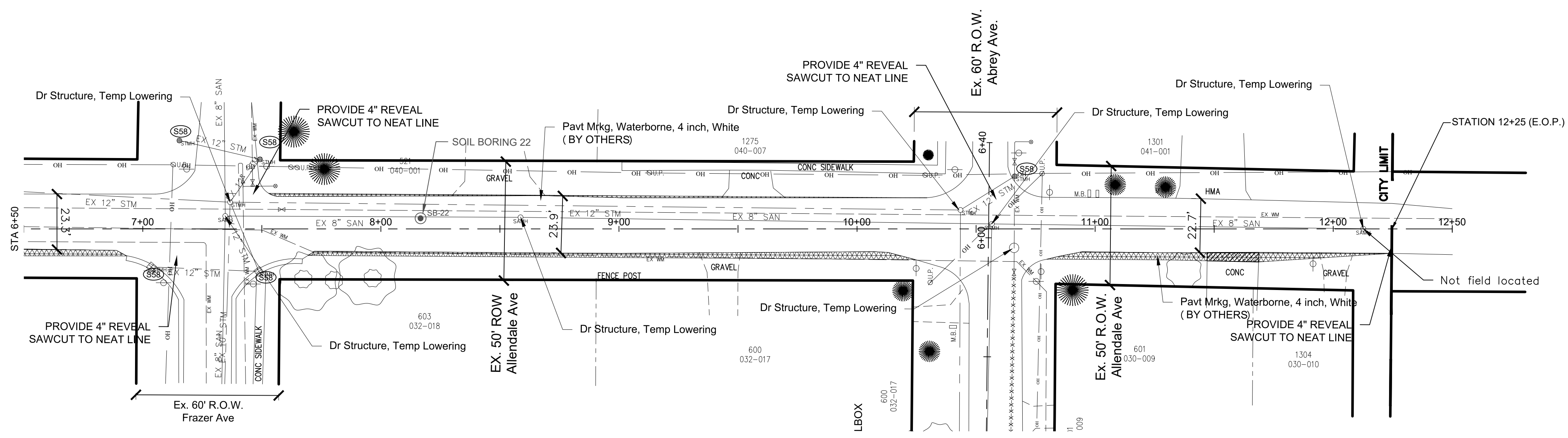


- REMOVAL LEGEND**
- Trenching, Modified
  - Pavt, Rem
  - STANDARD SOIL EROSION KEY

# ALLENDALE AVE.

## REMOVAL PLAN

REMOVAL QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
10	Syd	Pavt, Rem
13	Ea	Erosion Control, Inlet Protection, Fabric Drop
8	Sta	Trenching, Modified
8	Ea	Dr Structure, Temp Lowering



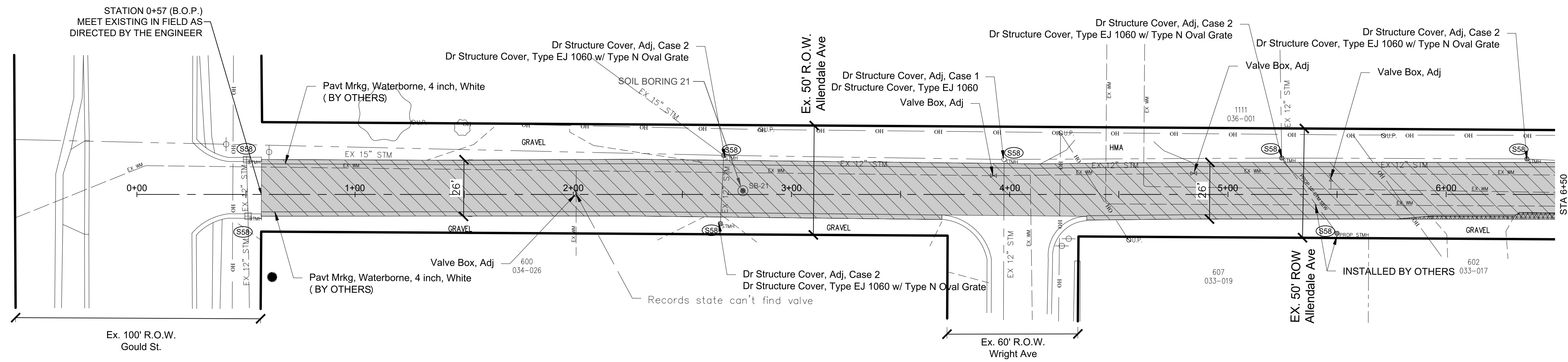
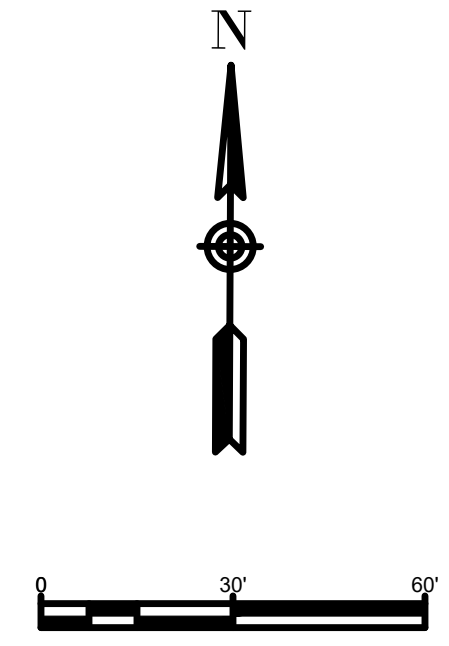
CITY OF OWOSSO, MICHIGAN  
ENGINEERING DIVISION  
DEPT. OF PUBLIC SERVICE

BENCHMARK DATA	ELEV.	DESCRIPTION	NO.	REVISIONS	DATE	BY

2019 STREET PROGRAM CONTRACT 2  
ALLENDALE AVENUE  
REMOVAL PLAN

DATE PROJECT NO.  
FIELD BOOK PG.

AL3



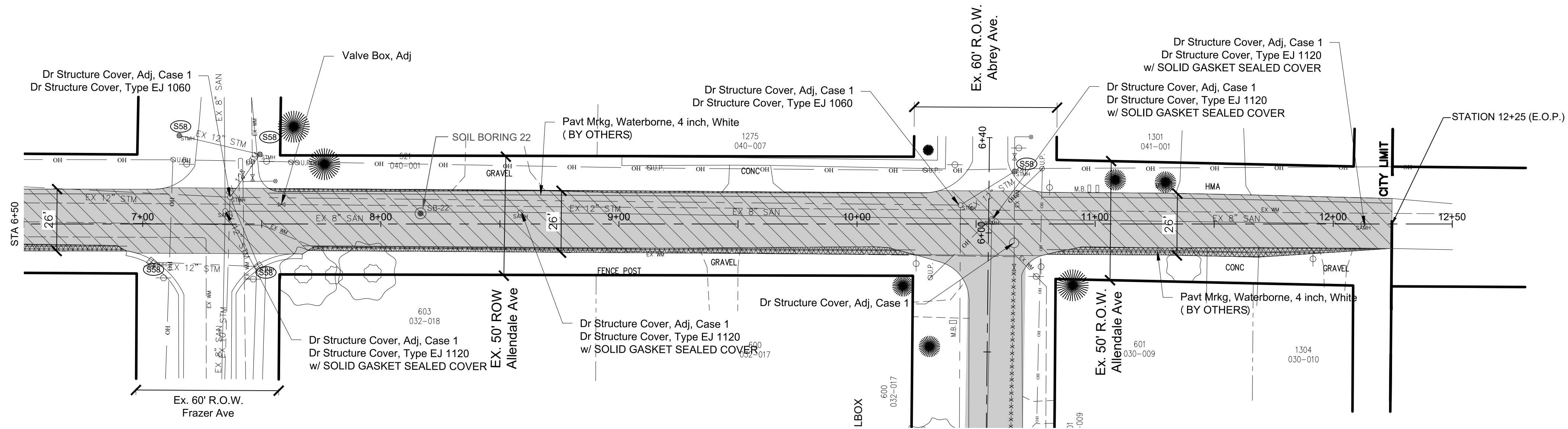
**CONSTRUCTION LEGEND**

- HMA Base Crushing and Shaping, Modified
- HMA
- Aggregate Base, 9 inch, Mod
- STANDARD SOIL EROSION KEY

# ALLENDALE AVE.

## CONSTRUCTION PLAN

CONSTRUCTION QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
145	Syd	Aggregate Base, 9 inch, Modified
3354	Syd	HMA Base Crushing and Shaping, Modified
3354	Syd	Asphalt Cement Stabilized Base Course, 4 inch
5367	Gal	Asphalt Cement Binder
10	Tons	Approach, CI II
8	Ea	Dr Structure Cover, Adj, Case 1
4	Ea	Dr Structure Cover, Adj, Case 2
3	Ea	Dr Structure Cover, Type EJ 1060
4	Ea	Dr Structure Cover, Type EJ 1060 w/ Type N Oval Grate
4	Ea	Dr Structure Cover, Type EJ 1120 w/ SOLID GASKET SEALED COVER
738	Tons	HMA, 13A
5	Ea	Valve Box, Adj



BENCHMARK DATA	NO.	REVISIONS	DATE	BY	APPROVED BY	
					ORIGINAL PLAN	CHECKED BY
ELEV.						
DESCRIPTION						

2019 STREET PROGRAM CONTRACT 2

ALLENDALE AVENUE  
CONSTRUCTION PLAN

FIELD BOOK  
PG.

DATE  
PROJECT NO.

AL4

# ABREY AVENUE

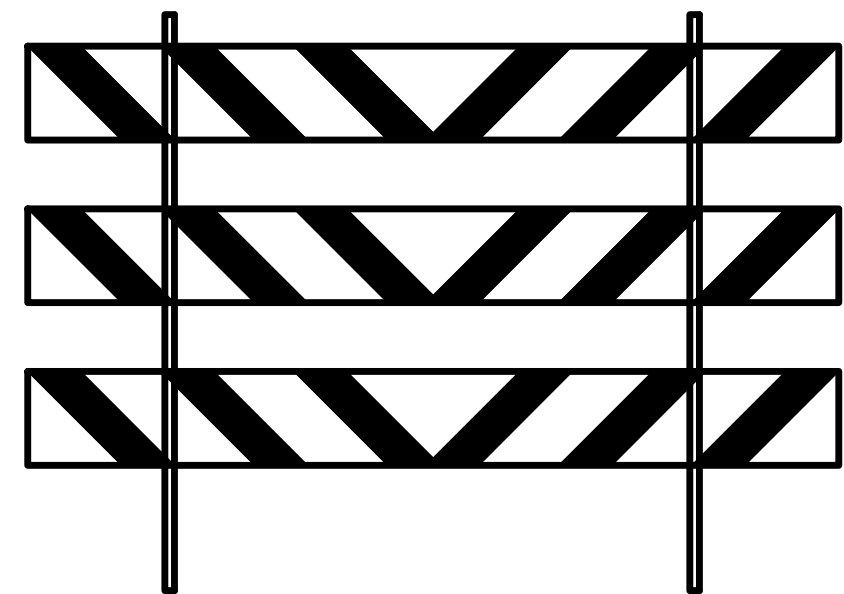
## CITY OF OWOSSO 2019 STREET PROGRAM CONTRACT 2

SHEET NO.	DESCRIPTION
AB1	ABREY AVE - TRAFFIC CONTROL PLAN
AB2	ABREY AVE - TYPICAL CROSS SECTIONS
AB3	ABREY AVE - REMOVAL & CONSTRUCTION PLANS
SB1	ABREY AVE - SOIL BORINGS

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

**ROAD CLOSED  
LOCAL TRAFFIC ONLY**

R11-3a  
60" x 30"



TYPE III BARRICADE



**PROJECT LOCATION - ABREY AVE**  
B. O. P. STA 0+44 TO E. O. P. STA 5+91  
TOTAL LENGTH = 547 FT (0.10 MILES)



W20-1  
48" x 48"

**ABREY AVE**

M4-8 (MOD)  
30" x 8"

**VICINITY MAP AND TRAFFIC CONTROL PLAN  
ABREY AVENUE**

BENCHMARK DATA	NO.	REVISIONS	DATE	BY	APPROVED BY
ELEV.					CHECKED BY

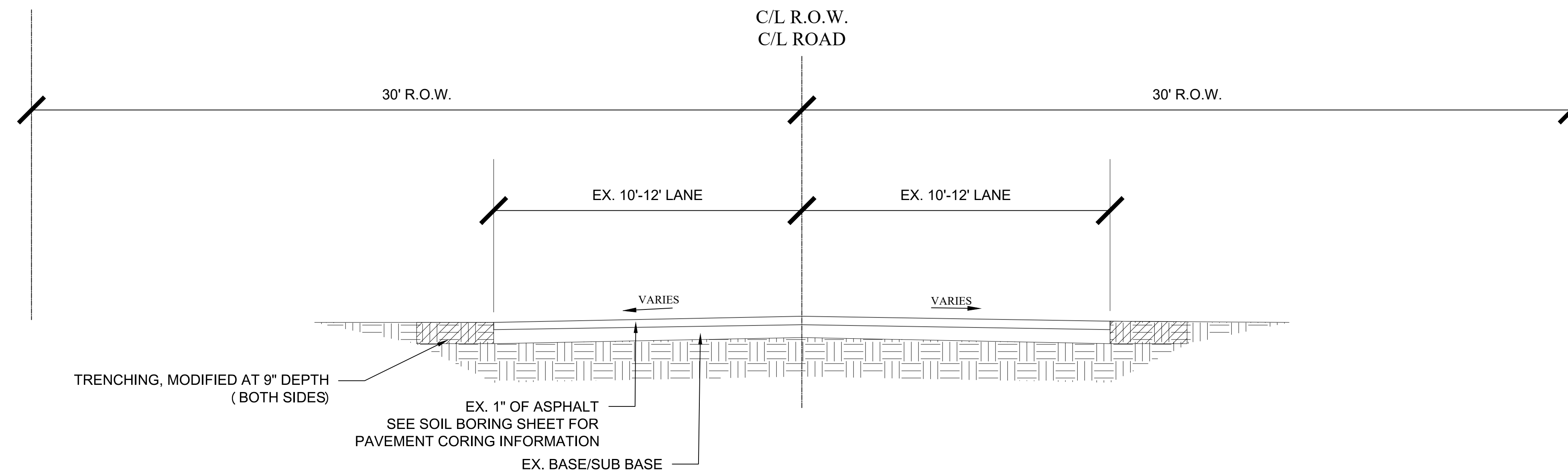
2019 STREET PROGRAM CONTRACT 2

ABREY AVENUE  
TRAFFIC CONTROL PLAN

DATE PROJECT NO.

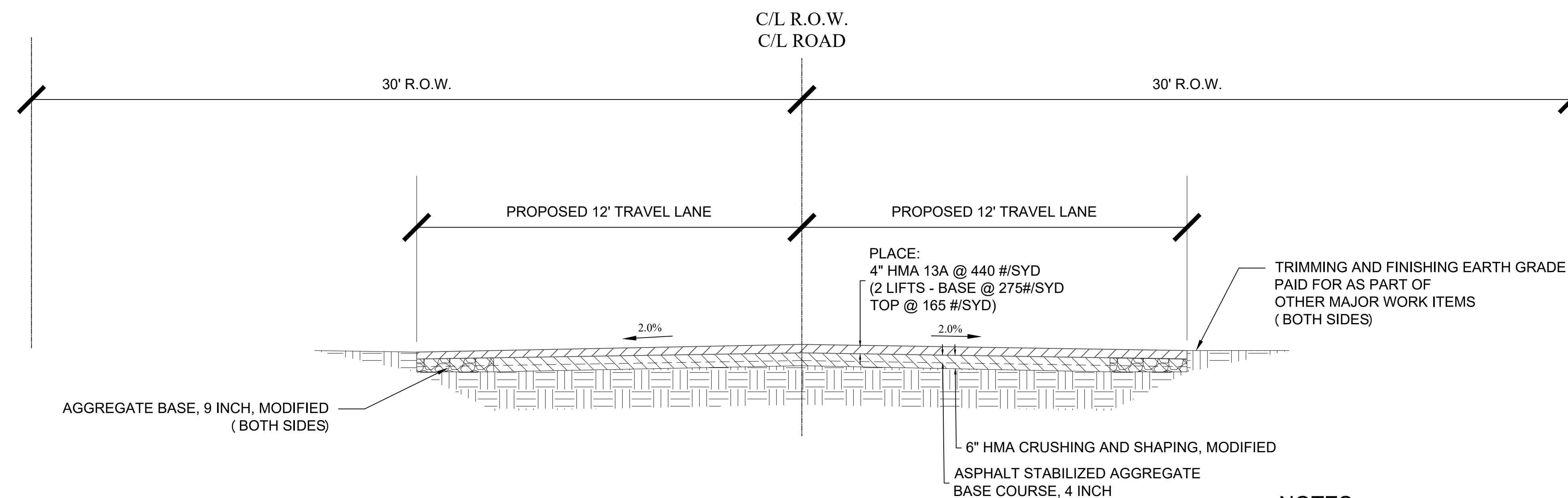
FIELD BOOK PG.

**AB1**



**TYPICAL EXISTING CROSS SECTION - ABREY AVENUE**

APPLIES TO STATIONS:  
0+44 (B.O.P.) TO 5+91 (E.O.P.)  
SCALE: 1" = 3'



**TYPICAL PROPOSED CROSS SECTION - ABREY AVENUE**

APPLIES TO STATIONS:  
0+44 (B.O.P.) TO 5+91 (E.O.P.)  
SCALE: 1" = 3'

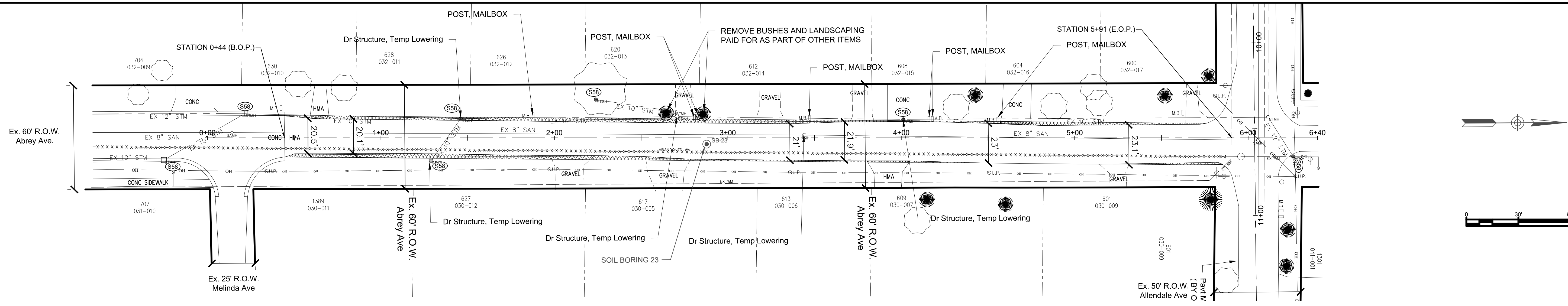
**NOTES:**

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.
3. RESIDENTIAL DRIVEWAYS: CONSTRUCT 1' - 2' WING WITH HMA, 13A TO FIT PROPOSED ROAD TO ADJACENT DRIVEWAYS, AS DIRECTED BY THE ENGINEER.
4. GRAVEL DRIVEWAYS: BLEND UP TO 3 FEET (3) WIDTH FROM PROPOSED ROAD TO EXISTING GRAVEL DRIVEWAYS WITH APPROACH, CL II, LM.




**ABREY AVENUE - HMA APPLICATION RATE**

ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
HMA	HMA, 13A	165 LBS.	58-28	1.5"	TOP COURSE - AWI = 260 (MIN)
	HMA, 13A	275 LBS.	58-28	2.5"	BASE COURSE
DRIVE APPROACH	HMA, 13A	220 LBS.	58-28	2"	TOP COURSE - AWI = 260 (MIN)
	HMA, 13A	330 LBS.	58-28	3"	BASE COURSE
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)

NO.	REVISIONS	DATE	BY	APPROVED BY



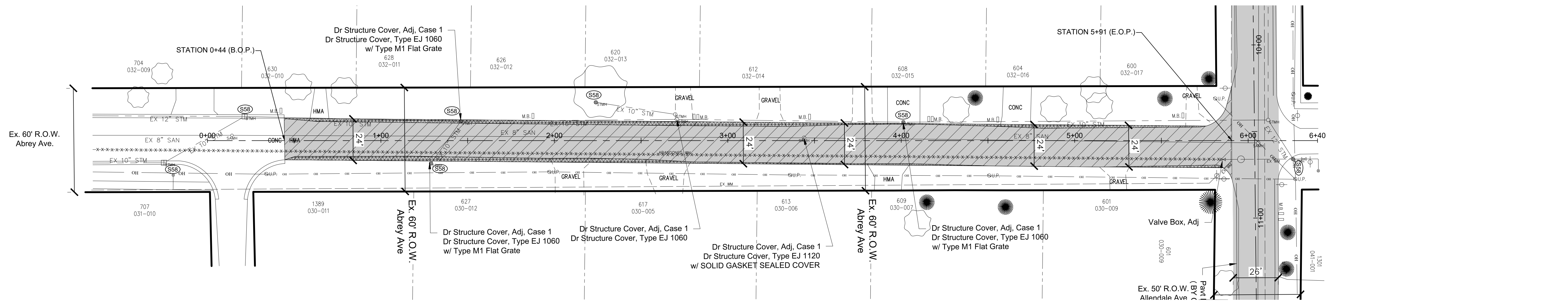
**REMOVAL LEGEND**

-  Trenching, Modified
-  Pavt, Rem
-  STANDARD SOIL EROSION KEY



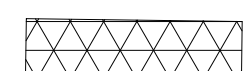

# ABREY AVE.

## REMOVAL PLAN

REMOVAL QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
8	Syd	Pavt, Rem
6	Ea	Erosion Control, Inlet Protection, Fabric Drop
10	Sta	Trenching, Modified
5	Ea	Dr Structure, Temp Lowering
7	Ea	Post, Mailbox



**CONSTRUCTION LEGEND**

-  HMA Base Crushing and Shaping, Modified
-  HMA
-  Aggregate Base, 9 inch, Modified
-  STANDARD SOIL EROSION KEY

# ABREY AVE.

## CONSTRUCTION PLAN

CONSTRUCTION QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
173	Syd	Aggregate Base, 9 inch, Modified
1475	Syd	HMA Base Crushing and Shaping, Modified
1475	Syd	Asphalt Cement Stabilized Base Course, 4 inch
2359	Gal	Asphalt Cement Binder
10	Tons	Approach, CI II
5	Ea	Dr Structure Cover, Adj, Case 1
1	Ea	Dr Structure Cover, Type EJ 1060
1	Ea	Dr Structure Cover, Type EJ 1120 w/ SOLID GASKET SEALED COVER
3	Ea	Dr Structure Cover, Type EJ 1060 w/ Type M1 Flat Gate
324	Tons	HMA, 13A
1	Ea	Valve Box, Adj

NO.	REVISIONS	DATE	BY

BENCHMARK DATA	
ELEV.	DESCRIPTION

2019 STREET PROGRAM CONTRACT 2

ABREY AVENUE  
REMOVAL & CONSTRUCTION PLAN

DATE PROJECT NO.

FIELD BOOK PG.

APPROVED BY

CHECKED BY

ORIGINAL PLAN

**AB3**



Construction Testing Services  
3300 E. Bristol Road, Burton, MI 48529  
PHONE: (810) 603-0766  
FAX: (810) 603-0786

JOB NO. S-18-240 LOG OF SOIL BORING NO. 21  
PROJECT: City of Owosso Street Improvements  
LOCATION: Owosso, Michigan  
DATE: 9/11/18 SURFACE ELEVATION: Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per Ft.	Moisture %	Natural Wt. P.C.F.	U.C. Comp. Strength	Str. %
	1		2" Asphalt					
21A	2	SS	23" Fill Sand - Compact, Moist, Brown w/Pebble (Drove Rock)	15				
	25							
	35							
	4		4" Fill Sand - Compact, Moist, Dark Greyish Brown w/Pebble	4				
21B	5	SS						
	5							
21C	6	SS	56" Sand - Medium Compact, Moist, Greyish Brown w/Pebble	3				
	6							
	7		6'11" Possible Peat - Soft, Moist, Black	2				
	7			70" End of Boring	3			
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							

TYPE OF SAMPLE: D - DISTURBED, U.L. - UNDIST. LINER, S.T. - SHELBY TUBE, S.S. - SPLIT SPOON, R.C. - ROCK CORE, OTHER -

BORING PLUGGED WITH NATURAL SOIL

GROUND WATER OBSERVATIONS: G.W. ENCOUNTERED AT FT. INS., G.W. ON COMPLETION FT. INS., G.W. AFTER HOURS FT. INS., G.W. VOLUMES None

\* The soil descriptions shown on the logs are from visual observations. No classification tests were performed.

Standard Penetration Test - Driving 2" OD Sampler 1" With 140# Hammer Falling 30". Count Made At 6" Intervals.



Construction Testing Services  
3300 E. Bristol Road, Burton, MI 48529  
PHONE: (810) 603-0766  
FAX: (810) 603-0786

JOB NO. S-18-240 LOG OF SOIL BORING NO. 22  
PROJECT: City of Owosso Street Improvements  
LOCATION: Owosso, Michigan  
DATE: 9/11/18 SURFACE ELEVATION: Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per Ft.	Moisture %	Natural Wt. P.C.F.	U.C. Comp. Strength	Str. %
	1		1.5" Asphalt					
22A	2	SS	16" Fill Sand - Medium Compact, Moist, Fine, Brown w/Gravel	2				
	2							
	3							
	4		40" Fill Sand - Loose, Wet, Fine, Brown w/Pebble & Topsoil	2				
22B	5	SS						
	5							
22C	6	SS	Possible Fill Sand - Medium Compact, Moist, Fine, Light Brown w/occ Clay Seams	3				
	6							
	7		70" End of Boring	4				
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							

TYPE OF SAMPLE: D - DISTURBED, U.L. - UNDIST. LINER, S.T. - SHELBY TUBE, S.S. - SPLIT SPOON, R.C. - ROCK CORE, OTHER -

BORING PLUGGED WITH NATURAL SOIL

GROUND WATER OBSERVATIONS: G.W. ENCOUNTERED AT FT. INS., G.W. ON COMPLETION FT. INS., G.W. AFTER HOURS FT. INS., G.W. VOLUMES None

\* The soil descriptions shown on the logs are from visual observations. No classification tests were performed.

Standard Penetration Test - Driving 2" OD Sampler 1" With 140# Hammer Falling 30". Count Made At 6" Intervals.



Construction Testing Services  
3300 E. Bristol Road, Burton, MI 48529  
PHONE: (810) 603-0766  
FAX: (810) 603-0786

JOB NO. S-18-240 LOG OF SOIL BORING NO. 23  
PROJECT: City of Owosso Street Improvements  
LOCATION: Owosso, Michigan  
DATE: 9/11/18 SURFACE ELEVATION: Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per Ft.	Moisture %	Natural Wt. P.C.F.	U.C. Comp. Strength	Str. %
	1		0.75" Asphalt					
23A	2	SS	Fill Sand - Compact, Moist, Brown w/Gravel & tr/Broken Asphalt	8				
	2							
	3							
	4		32" Possible Fill Topsoil - Loose, Moist, Peaty, Black	5				
23B	5	SS						
	5		56" Sand - Medium Compact, Moist, Fine, Brown	1				
	5							
	6							
23C	6	SS	Sand - Loose, Wet, Fine, Brown	1				
	6							
	7		70" End of Boring	1				
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							

TYPE OF SAMPLE: D - DISTURBED, U.L. - UNDIST. LINER, S.T. - SHELBY TUBE, S.S. - SPLIT SPOON, R.C. - ROCK CORE, OTHER -

BORING PLUGGED WITH NATURAL SOIL

GROUND WATER OBSERVATIONS: G.W. ENCOUNTERED AT 5 FT. 6 INS., G.W. ON COMPLETION 5 FT. 9 INS., G.W. AFTER HOURS FT. INS., G.W. VOLUMES Heavy

\* The soil descriptions shown on the logs are from visual observations. No classification tests were performed.

Standard Penetration Test - Driving 2" OD Sampler 1" With 140# Hammer Falling 30". Count Made At 6" Intervals.

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

NO.	REVISIONS	DATE	BY

BENCHMARK DATA	DESCRIPTION
ELEV.	

2019 STREET PROGRAM CONTRACT 2

ALLEDALE AVE AND ABREY AVE  
SOIL BORINGS

DATE PROJECT NO.

FIELD BOOK PG.

SB1

APPROVED BY

CHECKED BY

ORIGINAL PLAN



# MONROE STREET

## CITY OF OWOSSO

### 2019 STREET PROGRAM

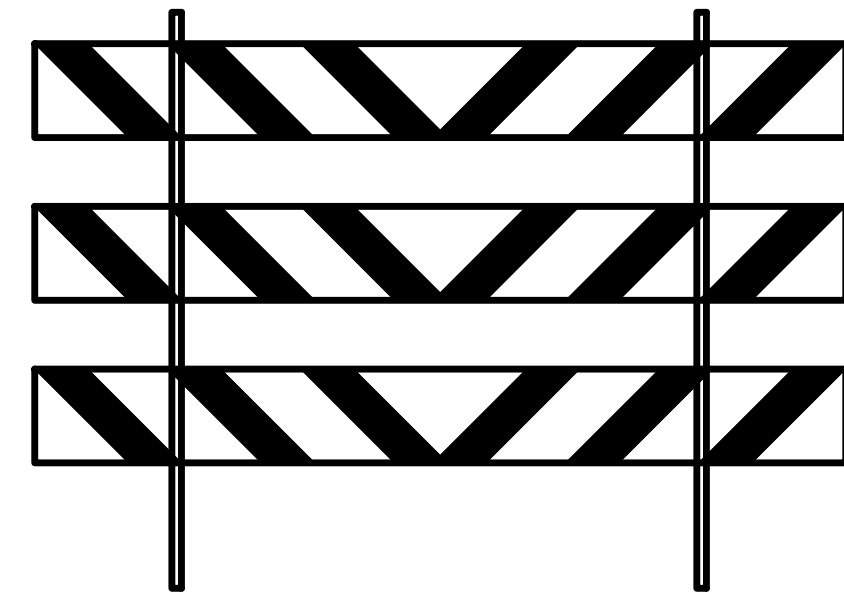
### CONTRACT 2

SHEET NO.	DESCRIPTION
MN1	MONROE ST - TRAFFIC CONTROL PLAN
MN2	MONROE ST - TYPICAL CROSS SECTIONS
MN3	MONROE ST - REMOVAL PLAN & SOIL BORINGS
MN4	MONROE ST - CONSTRUCTION PLAN

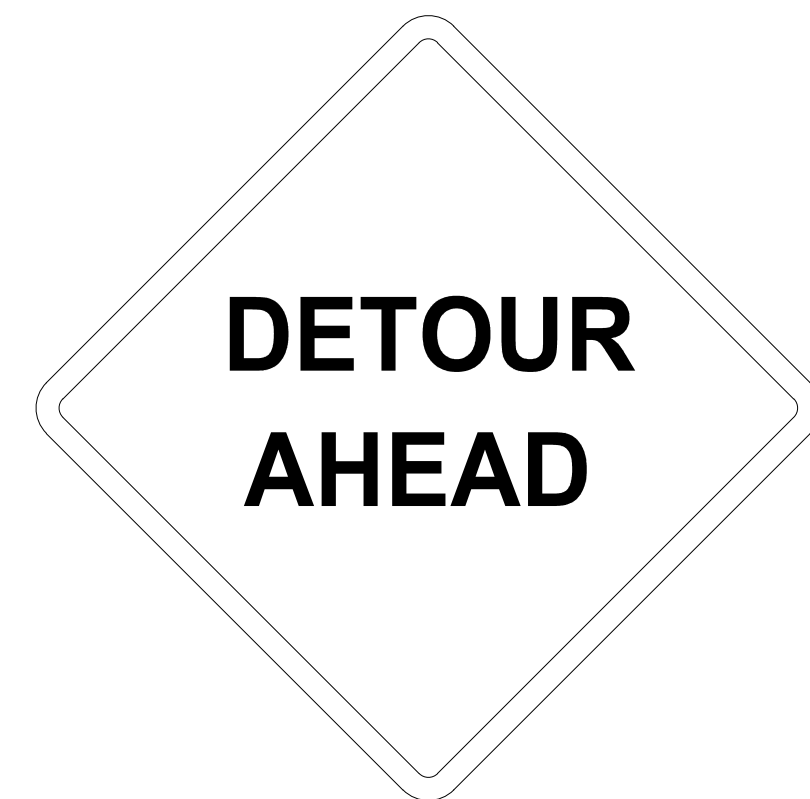
CITY OF OWOSSO, MICHIGAN  
 ENGINEERING DIVISION  
 DEPT. OF PUBLIC SERVICE

**ROAD CLOSED**  
LOCAL TRAFFIC ONLY

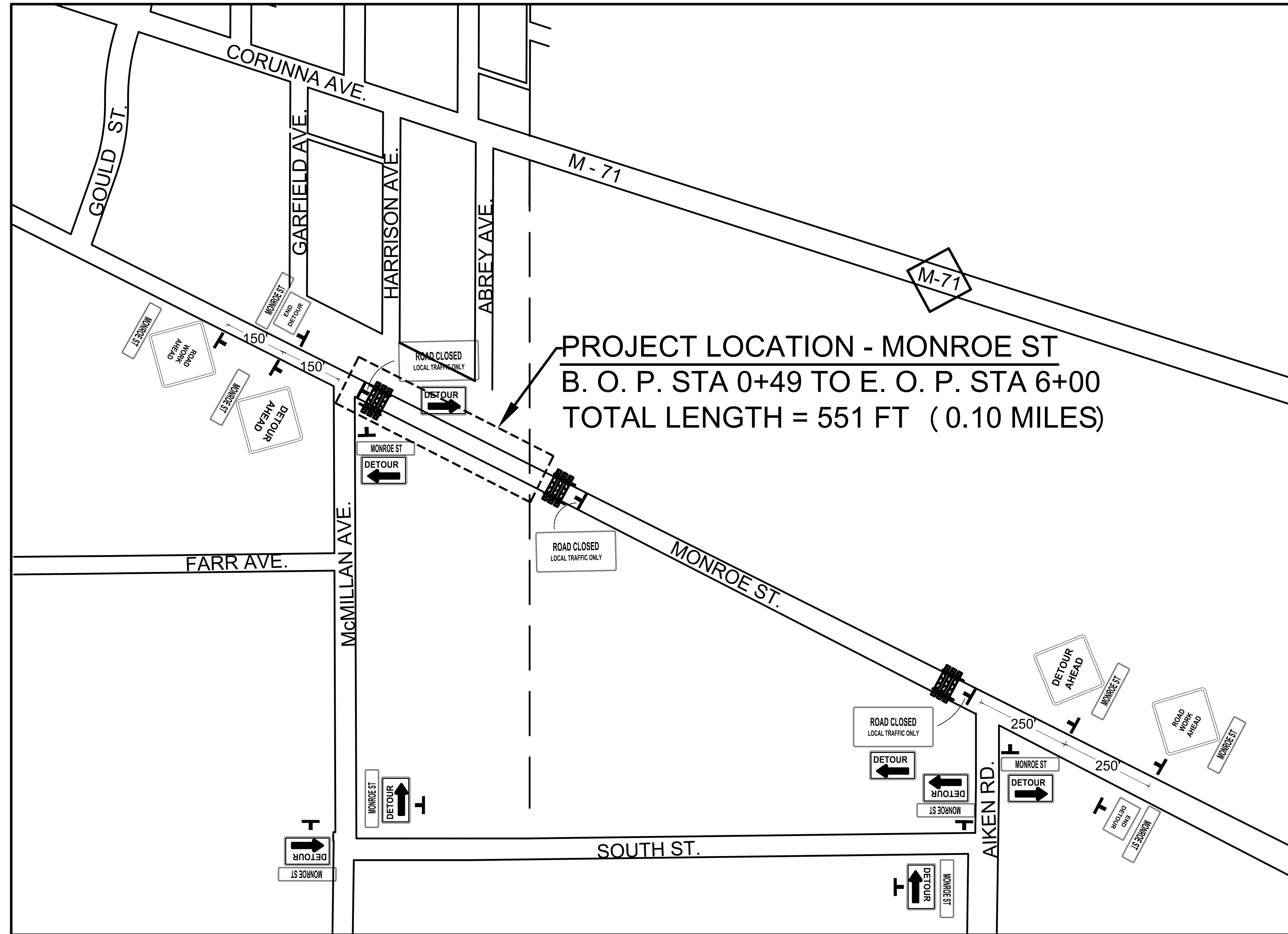
R11-3a  
60" x 30"



TYPE III BARRICADE



W20-2a  
48" x 48"



**VICINITY MAP AND TRAFFIC CONTROL PLAN**  
MONROE STREET



W20-1  
48" x 48"

**MONROE ST**

M4-8 (MOD)  
30" x 8"

**END**  
**DETOUR**

M4-8a  
24" x 18"



M4-9R  
30" x 24"

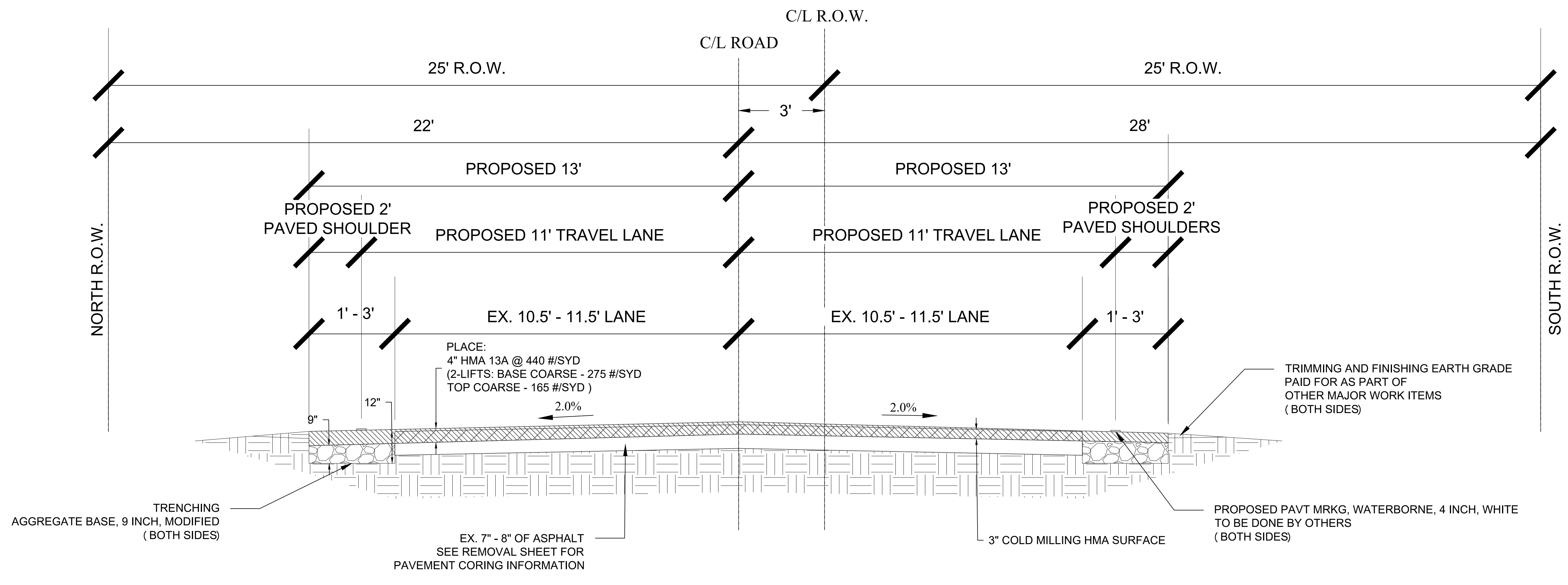


M4-9L  
30" x 24"

NO.	REVISIONS	DATE	BY	BENCHMARK DATA	
				ELEV.	DESCRIPTION

2019 STREET PROGRAM CONTRACT 2	MONROE STREET TRAFFIC CONTROL PLAN	FIELD BOOK PG.
DATE PROJECT NO.	CHECKED BY	APPROVED BY

MN1



**TYPICAL EXISTING/PROPOSED CROSS SECTION - MONROE STREET**  
**APPLIES TO STATIONS:**  
**0+49 (B.O.P.) TO 6+00 (E.O.P.)**  
**SCALE: 1" = 2'**

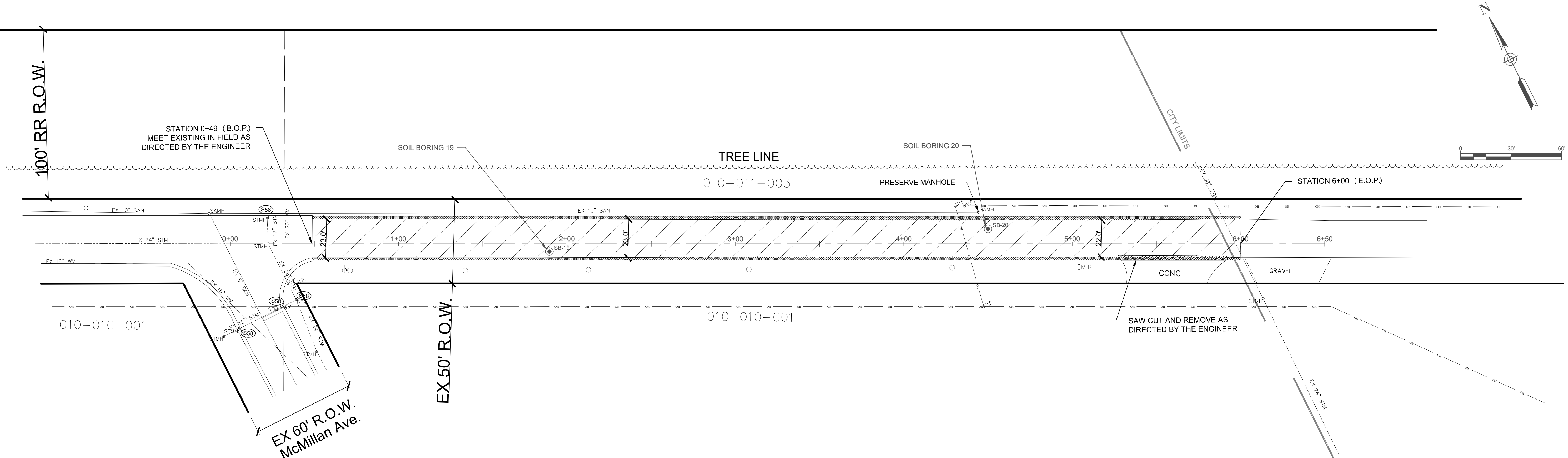
MONROE STREET - HMA APPLICATION RATE					
ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS	REMARKS
HMA	HMA, 13A	165 LBS.	58-28	1.5"	TOP COURSE - AWI = 260 (MIN)
	HMA, 13A	275 LBS.	58-28	2.5"	BASE COURSE
DRIVE APPROACH	HMA, 13A	220 LBS.	58-28	2"	TOP COURSE - AWI = 260 (MIN)
	HMA, 13A	330 LBS.	58-28	3"	BASE COURSE
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)

BENCHMARK DATA	ELEV.	DESCRIPTION	NO.	REVISIONS	DATE	BY	APPROVED BY	
							CHECKED BY	ORIGINAL PLAN

2019 STREET PROGRAM CONTRACT 2

MONROE STREET  
TYPICAL CROSS SECTIONS  
DATE PROJECT NO.  
FIELD BOOK PG.

MN2



- REMOVAL LEGEND**
- Cold Milling HMA Surface
  - Pavt, Rem
  - Trenching
  - STANDARD SOIL EROSION KEY

# MONROE ST.

## REMOVAL PLAN

REMOVAL QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
1367	Syd	Cold Milling HMA Surface
66	Ft	Saw Cutting
20	Syd	Pavt, Rem
4	Ea	Erosion Control, Inlet Protection, Fabric Drop
11	Sta	Trenching

Construction Testing Services  
3300 E. Bristol Road, Burton, MI 48529  
PHONE: (810) 603-0766  
FAX: (810) 603-0786

JOB NO. S-18-240    LOG OF SOIL BORING NO. 19  
PROJECT: City of Owosso Street Improvements  
LOCATION: Owosso, Michigan  
DATE: 9/11/18    SURFACE ELEVATION: Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per ft	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
	1		8" Asphalt					
19A SS	2		Fill Sand - Compact, Moist, Fine, Brown w/Gravel	6				
	3			7				
	4		Possible Fill Sand - Compact, Moist, Fine, Brown w/occ Pebble	5				
19B SS	5		Possible Fill Clay - Stiff, Moist, Silty, Sandy, Dark Brown w/Pebble	3				
	6			4				
19C SS	7		Possible Fill Clay - Very Stiff, Moist, Silty, Sandy, Brown & Blue w/Pebble	6				
	8			8				
	9		End of Boring	10				
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							

TYPE OF SAMPLE  
D. - DISTURBED  
U.L. - UNDIST. LINER  
S.T. - SHELBY TUBE  
S.S. - SPLIT SPOON  
R.C. - ROCK CORE  
OTHER -

BORING PLUGGED WITH NATURAL SOIL  
\* The soil descriptions shown on the logs are from visual observations. No classification tests were performed.  
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30". Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS  
G.W. ENCOUNTERED AT FT. INS.  
G.W. ENCOUNTERED AT FT. INS.  
G.W. ON COMPLETION FT. INS.  
G.W. AFTER HOURS FT. INS.  
G.W. VOLUMES None

Construction Testing Services  
3300 E. Bristol Road, Burton, MI 48529  
PHONE: (810) 603-0766  
FAX: (810) 603-0786

JOB NO. S-18-240    LOG OF SOIL BORING NO. 20  
PROJECT: City of Owosso Street Improvements  
LOCATION: Owosso, Michigan  
DATE: 9/11/18    SURFACE ELEVATION: Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per ft	Moisture %	Natural Wt. P.C.F.	Unc. Comp. Strength	Str. %
	1		7.25" Asphalt					
20A SS	2		Fill Sand - Compact, Moist, Greenish Brown w/Gravel, Pebble & Crushed Concrete	3				
	3			5				
	4			6				
20B SS	5		Clay - Stiff, Moist, Silty, Sandy, Variegated w/occ Pebble	3				
	6			5				
20C SS	7		Clay - Very Stiff, Moist, Silty, Sandy, Brown w/occ Pebble & tr/Oxidation	5				
	8			9				
	9		End of Boring	14				
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							

TYPE OF SAMPLE  
D. - DISTURBED  
U.L. - UNDIST. LINER  
S.T. - SHELBY TUBE  
S.S. - SPLIT SPOON  
R.C. - ROCK CORE  
OTHER -

BORING PLUGGED WITH NATURAL SOIL  
\* The soil descriptions shown on the logs are from visual observations. No classification tests were performed.  
Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30". Count Made At 6" Intervals.

GROUND WATER OBSERVATIONS  
G.W. ENCOUNTERED AT FT. INS.  
G.W. ENCOUNTERED AT FT. INS.  
G.W. ON COMPLETION FT. INS.  
G.W. AFTER HOURS FT. INS.  
G.W. VOLUMES None

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

NO.	REVISIONS	DATE	BY

APPROVED BY: \_\_\_\_\_  
ORIGINAL PLAN  
CHECKED BY: \_\_\_\_\_

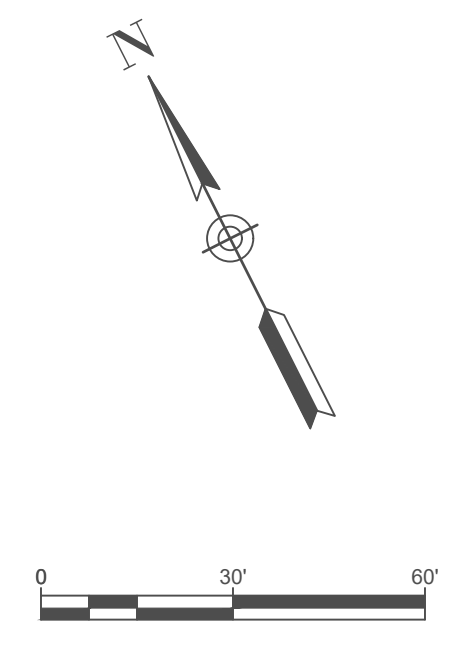
BENCHMARK DATA	DESCRIPTION
ELEV.	

2019 STREET PROGRAM CONTRACT 2

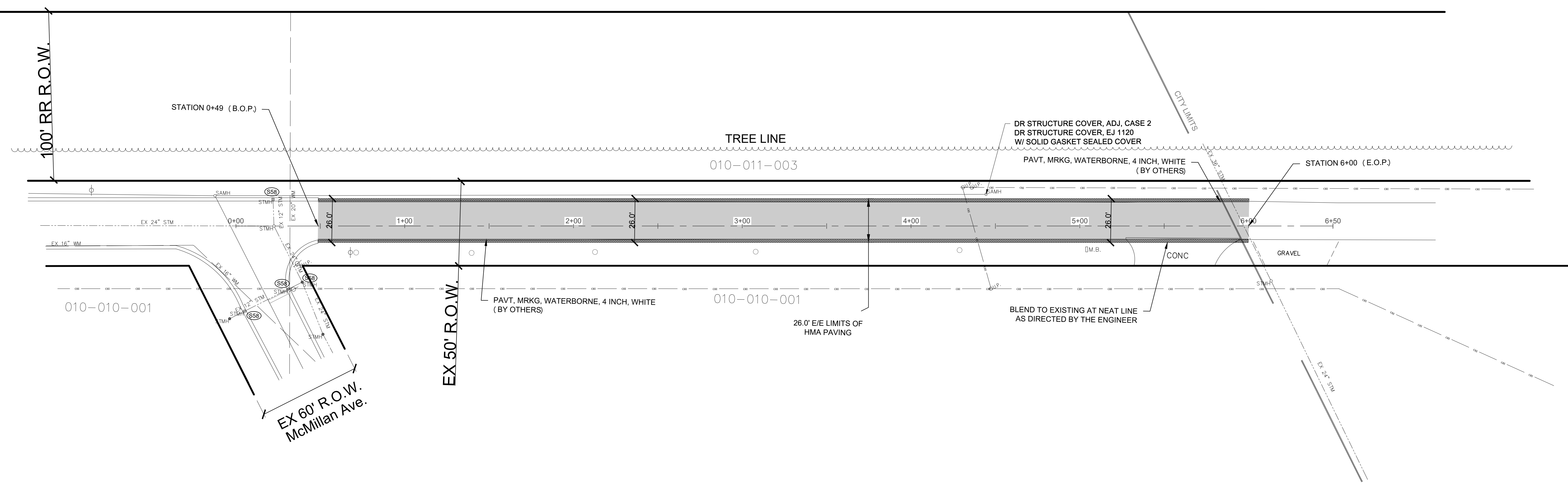
MONROE STREET  
REMOVAL PLAN & SOIL BORINGS

DATE PROJECT NO. \_\_\_\_\_  
FIELD BOOK PG. \_\_\_\_\_

MN3



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



NO.	REVISIONS	DATE	BY

BENCHMARK DATA	DESCRIPTION
ELEV.	

2019 STREET PROGRAM CONTRACT 2  
MONROE STREET  
CONSTRUCTION PLAN  
DATE PROJECT NO.  
FIELD BOOK PG.

MN4

# MONROE ST.

## CONSTRUCTION PLAN

- CONSTRUCTION LEGEND**
- Aggregate Base, 9 inch, Modified
  - HMA
  - STANDARD SOIL EROSION KEY

QUANTITY	UNIT	WORK ITEM
207	Syd	Aggregate Base, 9 inch, Modified
1	Ea	Dr Structure Cover, Adj, Case 2
1	Ea	Dr Structure Cover, Type EJ 1120 w/ SOILD GASKET SEALED COVER
350	Ton	HMA, 13A