

# CITY OF OWOSSO

## 2019 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)

### 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

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ATT: RANDY CHESNEY, P.E.  
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OWOSSO, MI 48867

ROAD  
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randy.chesney@ci.owosso.mi.us

CITY OF OWOSSO  
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OWOSSO, MI 48867

SANITARY SEWER & WATER MAIN  
989-725-0550  
glenn.chinavare@ci.owosso.mi.us

CONSUMERS ENERGY  
ATT: TRACY MAHAR  
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OWOSSO, MI 48867

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CELL: 517-204-9018  
tmahar@cmsenergy.com

CONSUMERS ENERGY  
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530 W. WILLOW STREET  
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GAS  
OFFICE: 517-374-2375  
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adam.bertram@cmsenergy.com

DAYSTARR COMMUNICATIONS  
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307 N. BALL STREET  
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FRONTIER COMMUNICATIONS  
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OWOSSO, MI 48847

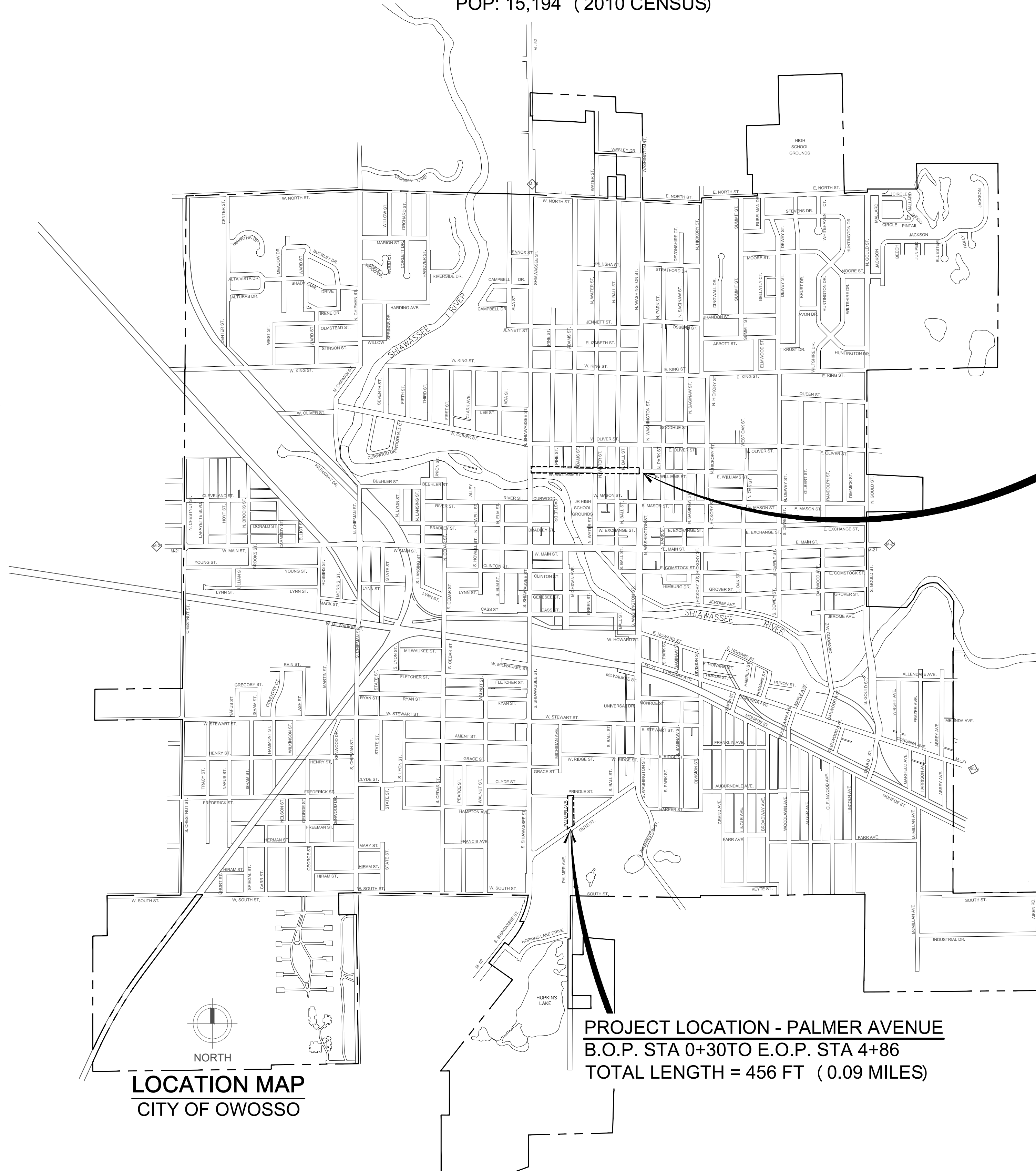
FIBER  
PHONE: 989-723-0373  
mark.stevens@ftr.com

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.

SHEET NO.	DESCRIPTION
CS	COVER SHEET
D1	NOTES AND MISCELLANEOUS ESTIMATES
D2	ROAD AND STORM SEWER DETAILS
	SESC STANDARD NOTES AND DETAILS
PL1	PALMER AVE - TRAFFIC CONTROL PLAN
PL2	PALMER AVE - TYPICAL CROSS SECTIONS
PL3	PALMER AVE - REMOVAL PLAN & SOIL BORINGS
PL4	PALMER AVE - CONSTRUCTION PLAN
WI1	W. WILLIAMS ST - TRAFFIC CONTROL PLAN
WI2-WI4	W. WILLIAMS ST - TYPICAL CROSS SECTION
WI5	W. WILLIAMS ST - SIDEWALK RAMP DETAILS
WI6	W. WILLIAMS ST - REMOVAL PLAN
WI7-WI8	W. WILLIAMS ST - ROAD PLAN AND PROFILE



**PROJECT LOCATION - W. WILLIAMS STREET**  
B.O.P. STA 1+13 TO E.O.P. STA 17+26  
TOTAL LENGTH = 1,613 FT (0.30 MILES)

**PROJECT LOCATION - PALMER AVENUE**  
B.O.P. STA 0+30 TO E.O.P. STA 4+86  
TOTAL LENGTH = 456 FT (0.09 MILES)

### 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, MICHIGAN  
ENGINEERING DIVISION  
DEPT. OF PUBLIC SERVICE

BENCHMARK DATA	NO.	REVISIONS	DATE	BY	APPROVED BY

2019 STREET PROGRAM CONTRACT 1

COVER SHEET

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

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

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

**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. 4 inch AND Sidewalk, Conc. 4 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 RED IN COLOR, INSTALLED ONTO FRESH CONCRETE, AND IN ACCORDANCE WITH MDOT STANDARD R-28 SERIES.

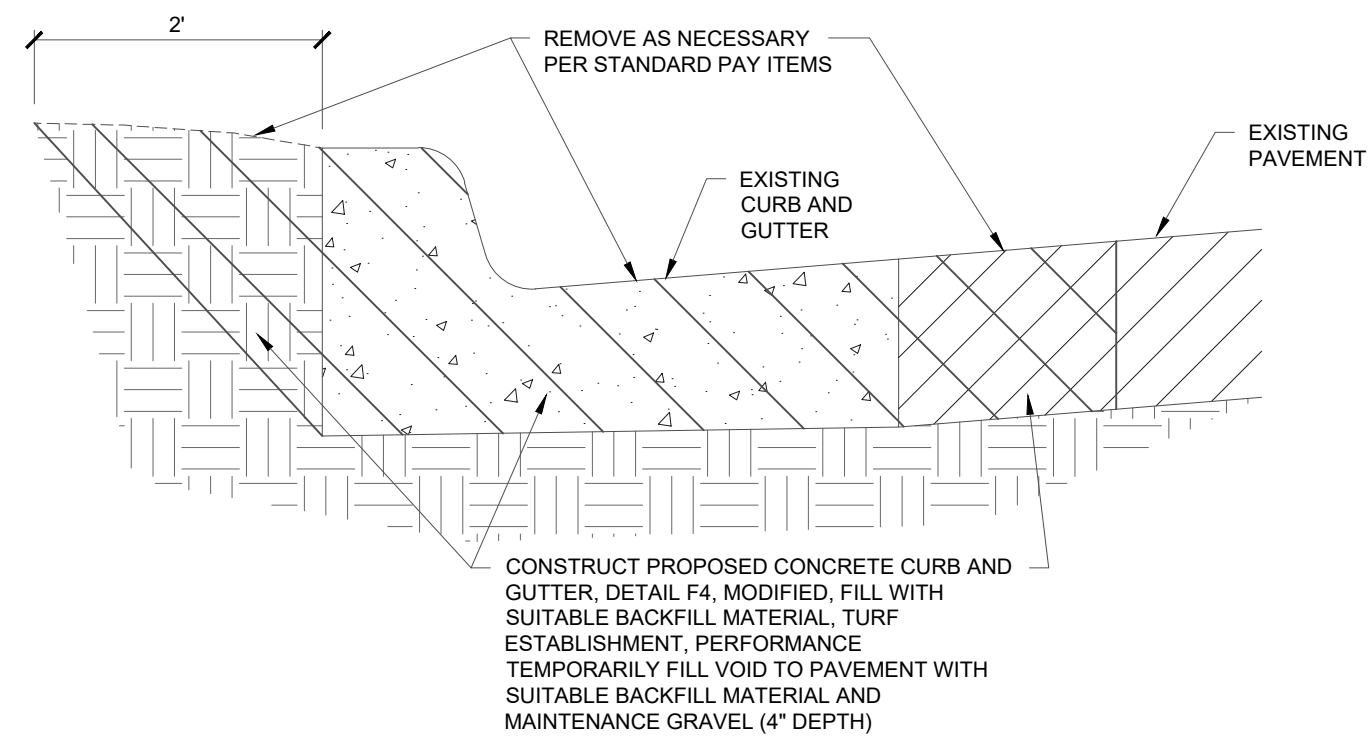
SIDEWALKS LOCATED WITHIN RESIDENTIAL DRIVEWAYS SHALL BE 6-INCHES THICK AND WILL BE PAID FOR AS Sidewalk, Conc, 6 inch.

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

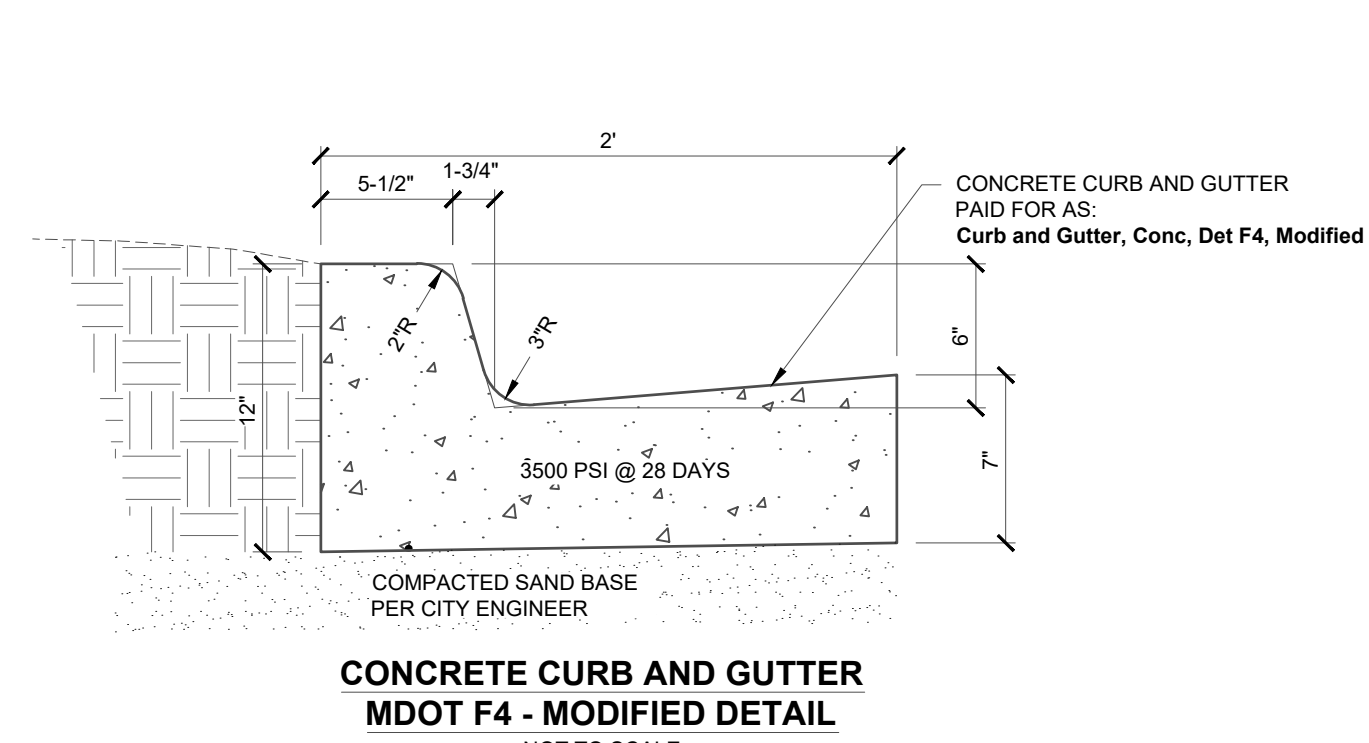
**LAWN SPRINKLERS / LANDSCAPING**  
OWNERS OF EXISTING LAWN SPRINKLER SYSTEMS AND / OR LANDSCAPING SHALL BE NOTIFIED ( IN WRITING WITH A COPY SENT TO THE ENGINEER ) BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF ANY WORK THAT WILL BE DONE THAT WILL AFFECT THOSE SYSTEMS AND / OR LANDSCAPING. IF THE PROPERTY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

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

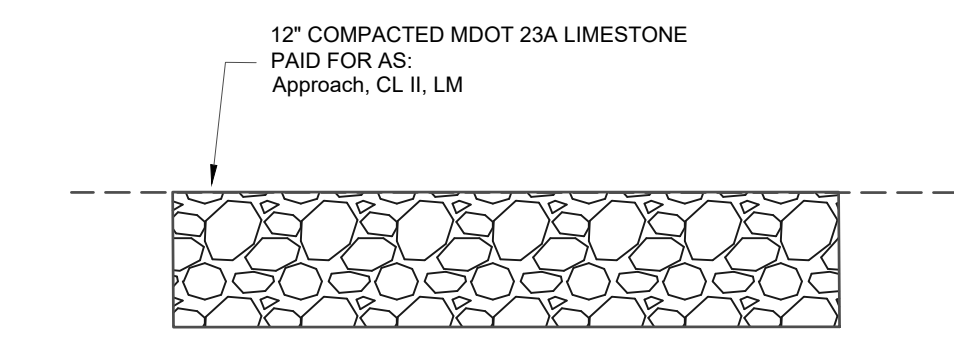
**MAINTAINING TRAFFIC**  
REFER TO THE CONTRACT SPECIAL PROVISION FOR WORK RESTRICTIONS RELATIVE TO MAINTAINING TRAFFIC.



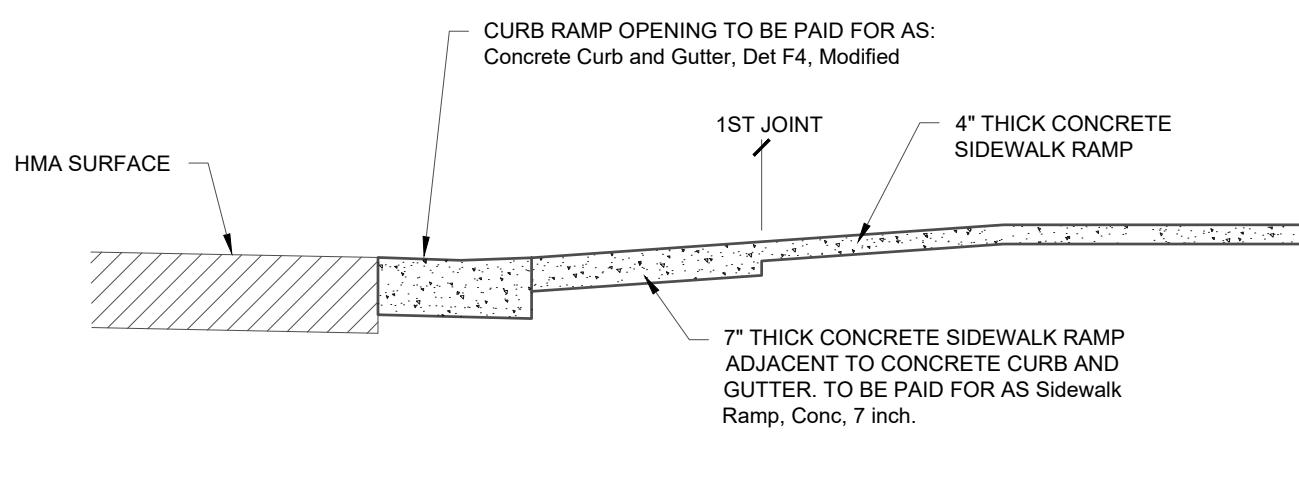
**TYPICAL SELECT CURB AND GUTTER REPAIR DETAIL**  
NOT TO SCALE



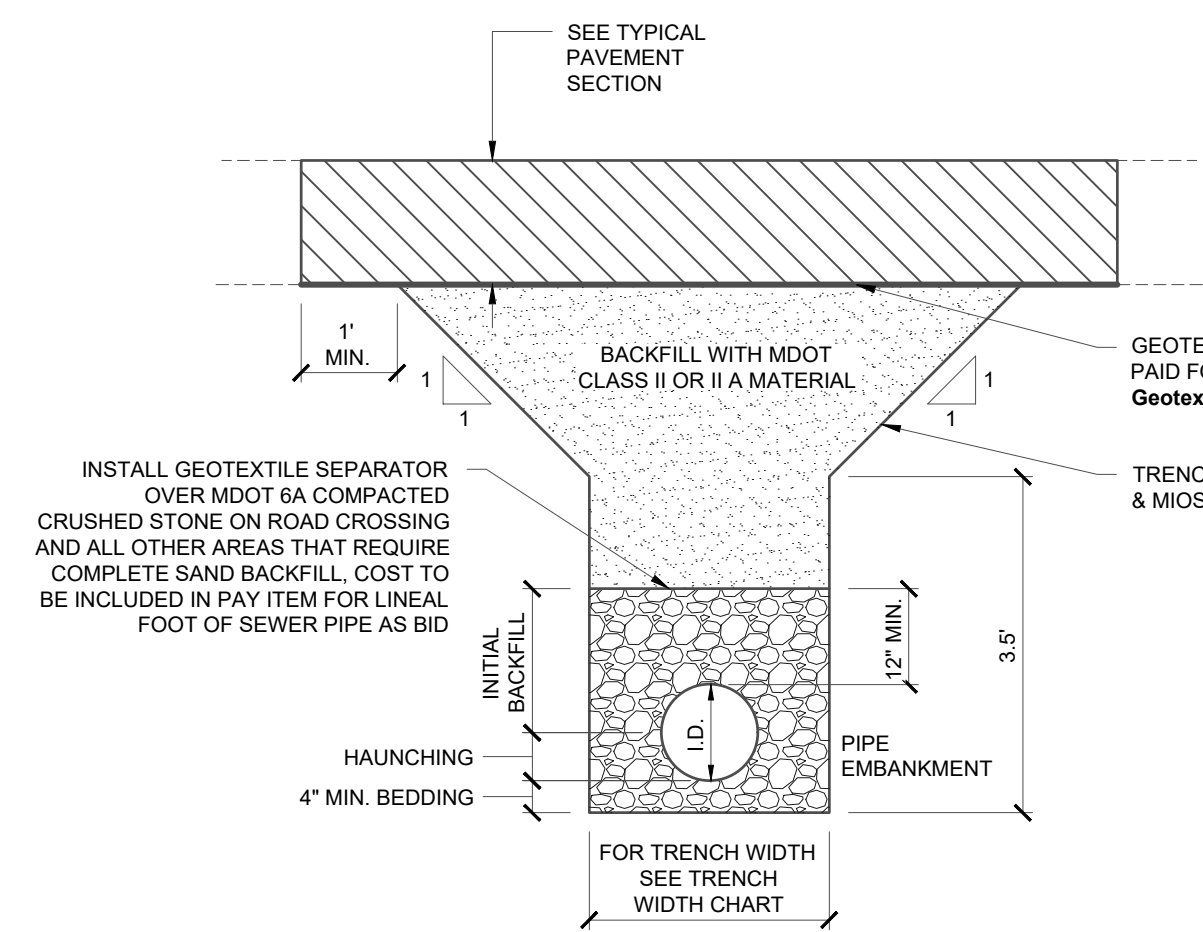
**CONCRETE CURB AND GUTTER MDOT F4 - MODIFIED DETAIL**  
NOT TO SCALE



**RESIDENTIAL AGGREGATE DRIVE RESTORATION DETAIL**  
NOT TO SCALE

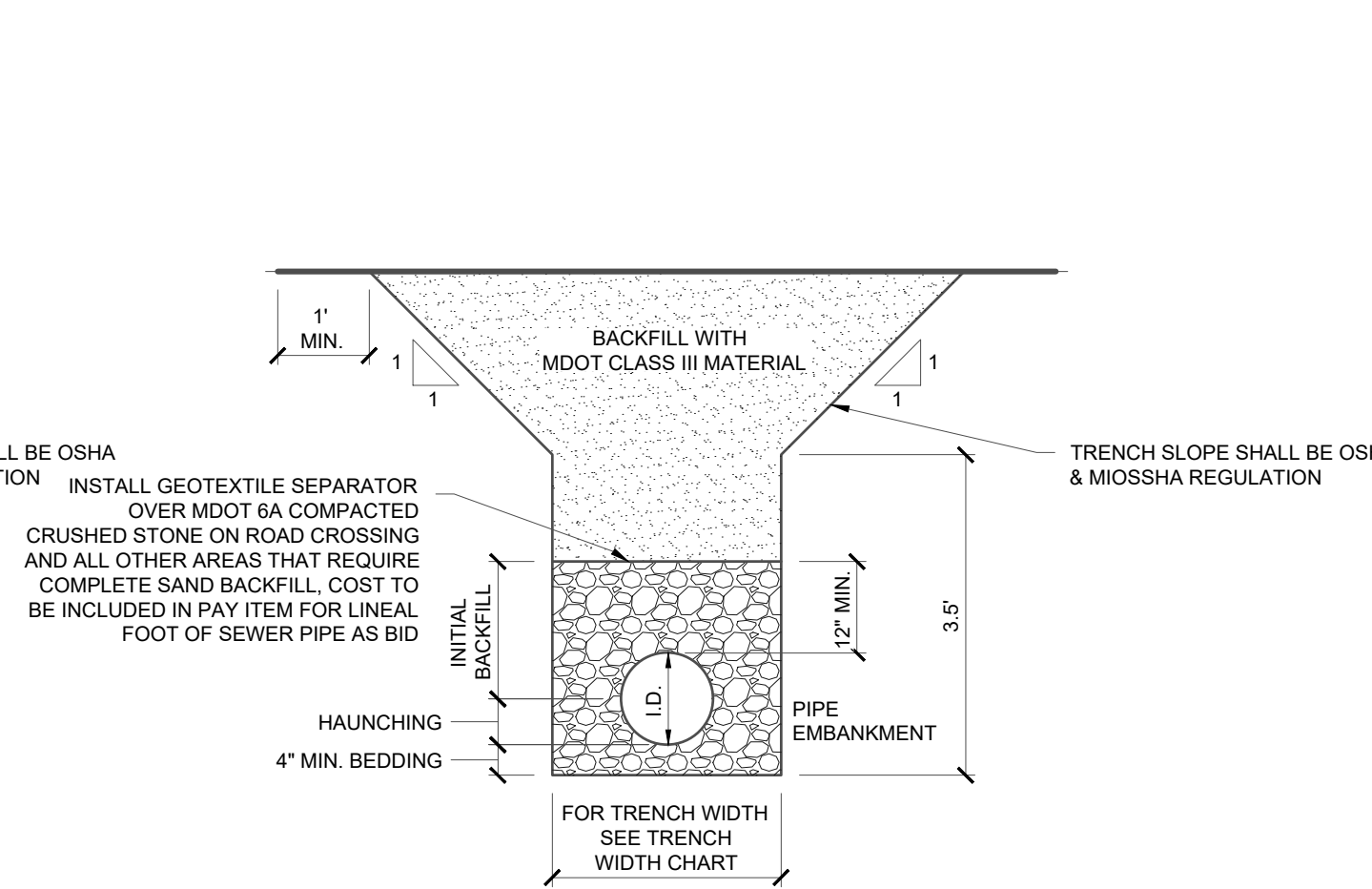


**SIDEWALK RAMP THICKNESS DETAIL**  
NOT TO SCALE



**TRENCH DETAIL B, MODIFIED DETAIL**  
NOT TO SCALE

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



**TRENCH DETAIL A, MODIFIED DETAIL**  
NOT TO SCALE

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

**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
200	Ft	Erosion Control, Silt Fence
200	Cyd	Subgrade Undercutting, Type II
300	Ton	Maintenance Gravel
5	Ea	Sanitary Serv Conflict
10	Ea	Abandoned Gas Main Conflict
4	Ea	Sewer Bulkhead, 12 inch
100	Syd	Pavt, Rem
55	Syd	Sidewalk, Rem
30	Syd	Driveway, Nonreinf Conc, 6 inch
200	Sft	Sidewalk, Conc, 4 inch
100	Sft	Sidewalk, Conc, 6 inch
2	Ton	Cement
200	Ft	Saw Cutting
200	Ft	Curb and Gutter, Rem
200	Ft	Curb and Gutter, Conc, Det F4, Modified
10	Ton	Hand Patching
15	Ton	HMA Approach
10	Cyd	Approach, CL II, LM
4	Ea	Valve Box, Adj
700	Syd	Turf Establishment, Performance

**MAINTAINING TRAFFIC QUANTITIES**

10	Ea	Barricade, Type III, High Intensity, Double Sided, Furn & Oper
20	Ea	Pedestrian, Type II Barricade, Temp
2	Ea	Lighted Arrow, Type C, Furn & Oper
90	Ea	Plastic Drum, High Intensity, Furn & Oper
475	Sft	Sign, Type B, Temp, Prismatic, Furn & Oper
1	LSUM	Minor Traffic Devices

**EXISTING FEATURES LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
(Circle with dot)	TREE (DECIDUOUS)	(Square with X)	CABLE BOX	(Triangle with dot)	SURVEY CONTROL POINT
(Circle with horizontal lines)	BUSH	(Square with vertical lines)	TELEPHONE RISER	(Square with B.M.#)	BENCHMARK
(Circle with vertical lines)	TREE (CONIFEROUS)	(Circle with horizontal lines)	TELEPHONE MANHOLE	(Square with dot)	SECTION CORNER
(Circle with cross)	DEAD TREE	(Square with horizontal lines)	TELEPHONE HANDHOLE	(Dashed line)	BOUNDARY LINE
(Circle with diagonal lines)	STUMP	(Square with vertical lines)	ELECTRICAL RISER	(Dashed line)	PROPERTY LINE
(Circle with dot)	MANHOLE	(Circle with horizontal lines)	ELECTRICAL MANHOLE	(Dashed line)	WATERMAIN
(Circle with cross)	SANITARY CLEANOUT	(Square with horizontal lines)	ELECTRICAL HANDHOLE	(Dashed line)	SANITARY SEWER
(Square with X)	RD. CATCH BASIN	(Circle with dot)	POWER POLE	(Dashed line)	STORM SEWER
(Square with vertical lines)	SQ. CATCH BASIN	(X)	LIGHT POLE	(Dashed line)	CULVERT (21" AND UNDER)
(Circle with dot)	FIRE HYDRANT	(Circle with dot)	GUY POLE	(Dashed line)	CULVERT (24" AND UP)
(Circle with vertical lines)	WATER VALVE	(Circle with vertical lines)	GUY ANCHOR	(Dashed line)	CABLE T.V.
(Circle with X)	CURB STOP & BOX	(Square with vertical lines)	PED CROSSING SIGNAL	(Dashed line)	TELEPHONE
(Circle with dot)	WELL	(X)	YARD LIGHT	(Dashed line)	ELECTRIC
(Circle with vertical lines)	WATER MANHOLE	(Circle with dot)	SIGN	(Dashed line)	GAS
(Circle with horizontal lines)	WATER METER	(Square with X)	MAILBOX	(Dashed line)	OVERHEAD LINES
(Circle with dot)	SOIL BORING	(Circle with dot)	GUARD POST	(Dashed line)	GUARDRAIL
(Triangle with dot)	MONITORING WELL	(Square with dot)	FOUND CONC. MONUMENT	(Dashed line)	FENCE
		(Circle with dot)	FOUND IRON ROD	(Dashed line)	WOODLINE
		(Circle with dot)	SET IRON ROD		

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

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

NO. REVISIONS DATE BY

ORIGINAL PLAN CHECKED BY APPROVED BY

BENCHMARK DATA ELEV. DESCRIPTION

2019 STREET PROGRAM CONTRACT 1  
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/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.
<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, STORM SEWER INSTALLATION, AND BACKFILL.
3. PERMANENT MEASURES, FINAL GRADING, SEEDING AND MULCHING.

CONSTRUCTION SEQUENCE	OPERATION TIME SCHEDULE											
	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

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

2019 STREET PROGRAM CONTRACT 1

S-E-S-C STANDARD NOTES AND DETAILS

D2

# PALMER AVENUE

## CITY OF OWOSSO

### 2019 STREET PROGRAM

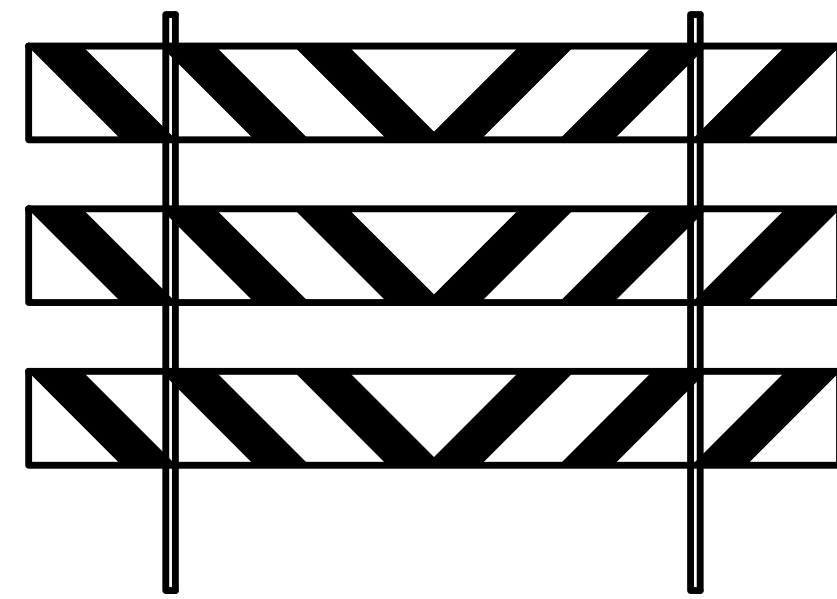
#### CONTRACT 1

SHEET NO.	DESCRIPTION
PL1	PALMER AVE - TRAFFIC CONTROL PLAN
PL2	PALMER AVE - TYPICAL CROSS SECTIONS
PL3	PALMER AVE - REMOVAL PLAN & SOIL BORING
PL4	PALMER AVE - CONSTRUCTION PLAN

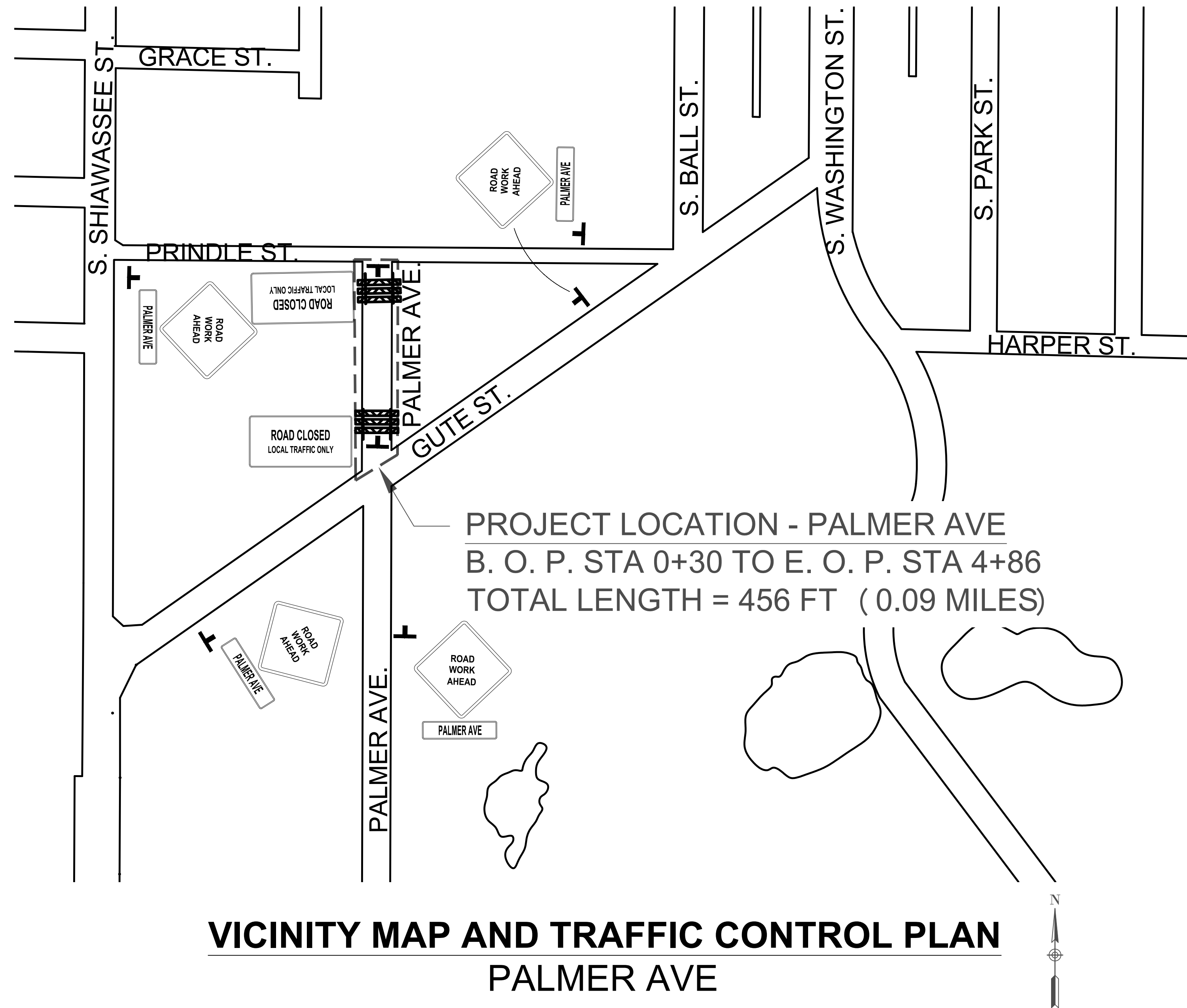
CITY OF OWOSSO, MICHIGAN  
ENGINEERING DIVISION  
DEPT. OF PUBLIC SERVICE



R11-3a  
60" x 30"



TYPE III BARRICADE



VICINITY MAP AND TRAFFIC CONTROL PLAN  
PALMER AVENUE



W20-1  
48" x 48"



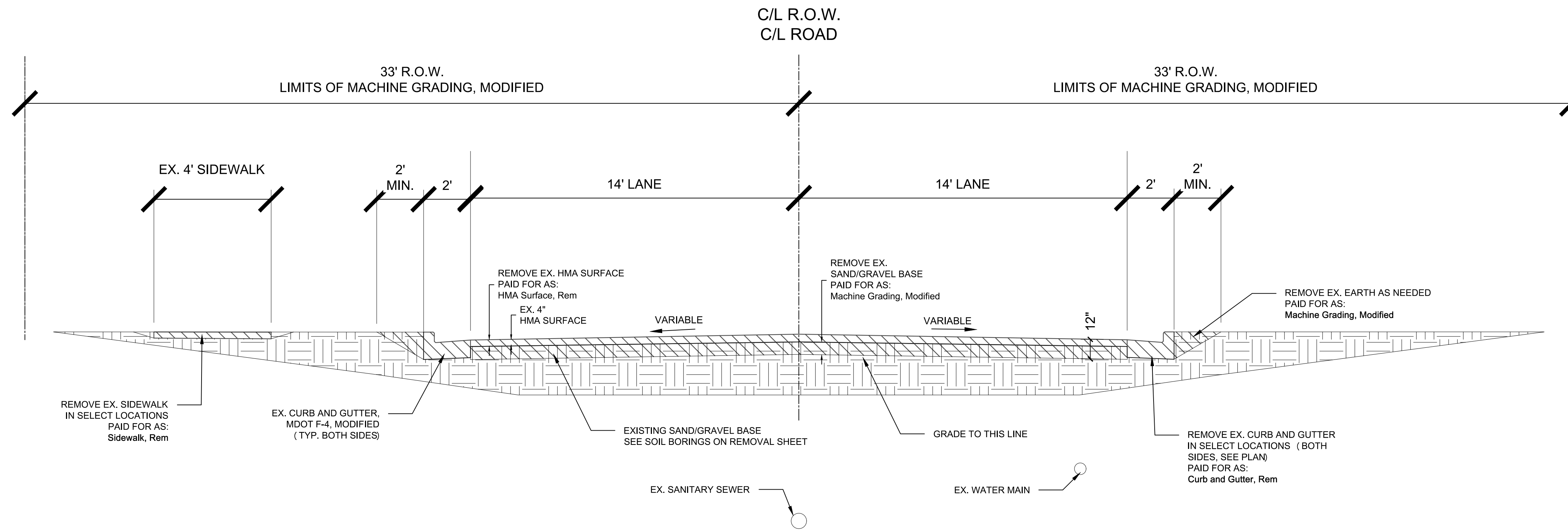
M4-8 (MOD)  
30" x 8"

BENCHMARK DATA	NO.	REVISIONS	DATE	BY
ELEV.				
DESCRIPTION				

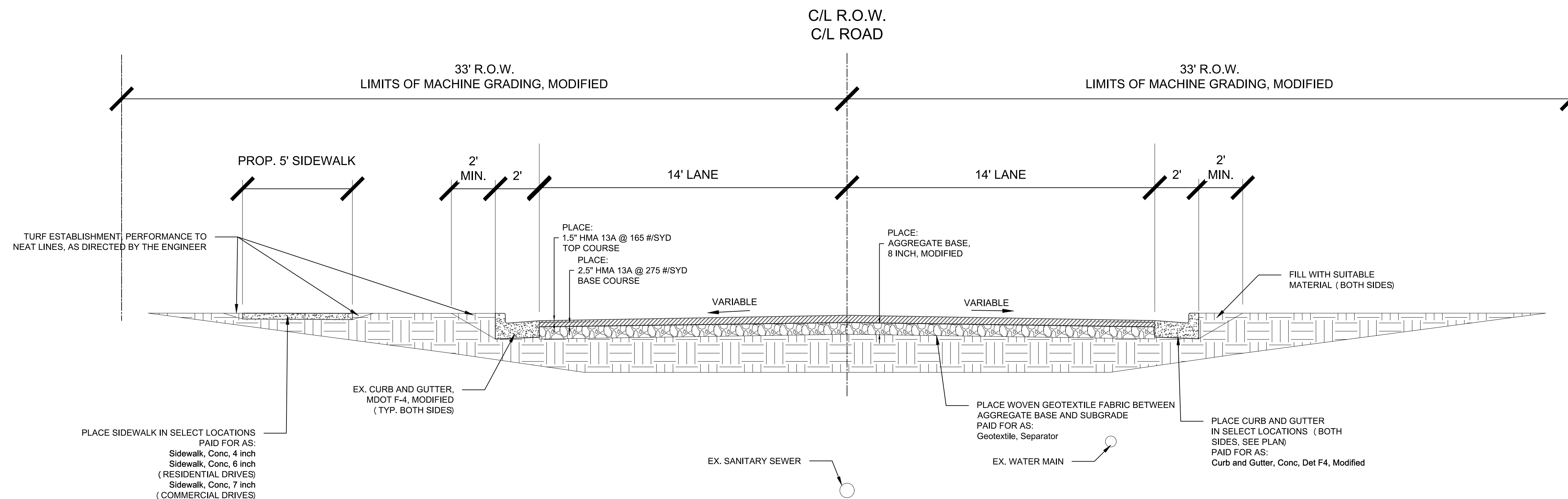
2019 STREET PROGRAM CONTRACT 1	
PALMER AVENUE TRAFFIC CONTROL PLAN	
DATE PROJECT NO.	FIELD BOOK PG.

PL1

CHECKED BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_



**TYPICAL EXISTING CROSS SECTION - PALMER AVENUE**  
 APPLIES TO STATIONS:  
 0+30 (B.O.P.) TO 4+86 (E.O.P.)  
 SCALE: 1" = 3'



**TYPICAL PROPOSED CROSS SECTION - PALMER AVENUE**  
 APPLIES TO STATIONS:  
 0+30 (B.O.P.) TO 4+86 (E.O.P.)  
 SCALE: 1" = 3'

PALMER 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	2.0"	TOP COURSE - AWI = 260 (MIN)
	HMA, 13A	220 LBS.	58-28	2.0"	BASE COURSE
BOND COAT		0.1 GAL.			SS-1H (FOR INFORMATION ONLY)

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

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**2019 STREET PROGRAM CONTRACT 1**

PALMER AVENUE  
 TYPICAL CROSS SECTIONS

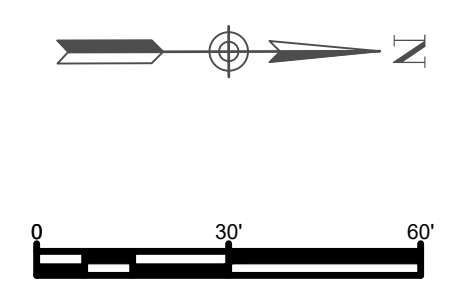
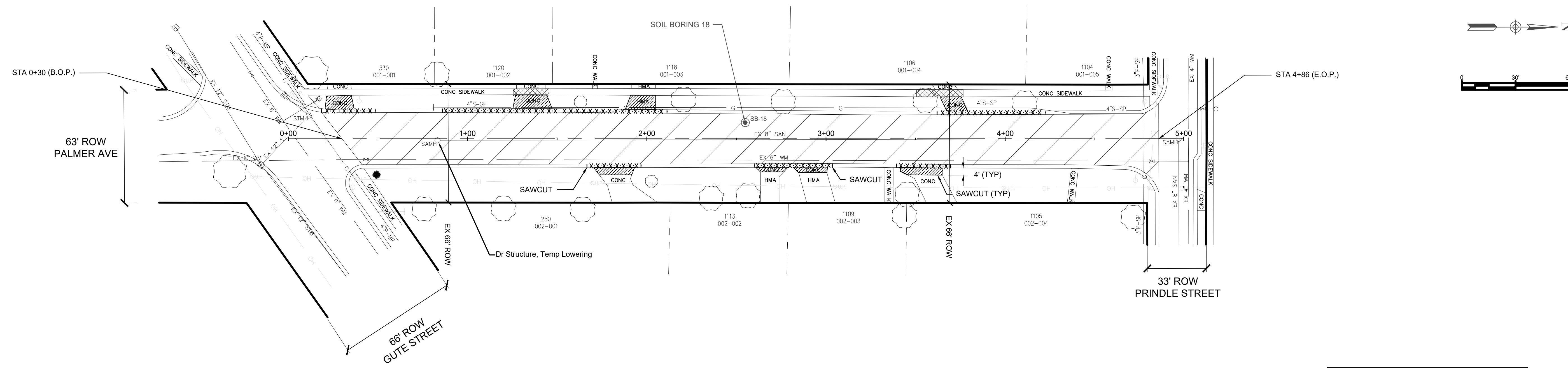
FIELD BOOK  
 PG.

DATE PROJECT NO.

**PL2**

BENCHMARK DATA	NO.	REVISIONS	DATE	BY
ELEV.				
DESCRIPTION				

ORIGINAL PLAN	APPROVED BY
CHECKED BY	APPROVED BY



- LEGEND**
- X-X-X-X- Curb and Gutter, Rem
  - X-X-X-X- Sewer, Rem
  - XXXXX Dr Structure, Rem
  - ▨ HMA Surface, Rem
  - ▨ Pavt, Rem
  - ▨ Sidewalk, Rem
  - ▨ Excavation Earth (Cost inclusive to Machine Grading, Modified)
  - ⊙ STANDARD SOIL EROSION KEY

**PALMER AVE.**  
REMOVAL PLAN

REMOVAL QUANTITIES (THIS SHEET)

QUANTITY	UNIT	WORK ITEM
320	Ft	Curb and Gutter, Rem
83	Syd	Pavt, Rem
21	Syd	Sidewalk, Rem
9	Sta	Machine Grading, Modified
1443	Syd	HMA Surface, Rem
50	Cyd	Subgrade Undercutting, Type II
1	Ea	Dr Structure, Temp Lowering



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

JOB NO. S-18-245 LOG OF SOIL BORING NO. 18  
PROJECT: City of Owosso 2019 Street Program  
LOCATION: Owosso, Michigan  
DATE: 9/20/18 SURFACE ELEVATION: Existing

Sample & Type	Depth	Legend	Soil Description	SPT Blows per Ft.	Moisture %	Natural Wt. U.C.F.	U.C. Comp. Strength	Str. %
	1		4" Asphalt - Lower 2.25" Deteriorated					
	2		9" Sand - Medium Compact, Moist, Brown w/Gravel					
18A	2			2				
SS	3			2				
	4			4				
18B	4		Clay - Firm to Very Stiff, Sandy, Variegated w/occ Pebble & occ/Stone					
SS	5			7				
	6			10				
18C	6			14				
SS	7			9				
	7		7'0" End of Boring	11				
	8			15				
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							

**TYPE OF SAMPLE**  
 G - 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

NO.	REVISIONS	DATE	BY

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

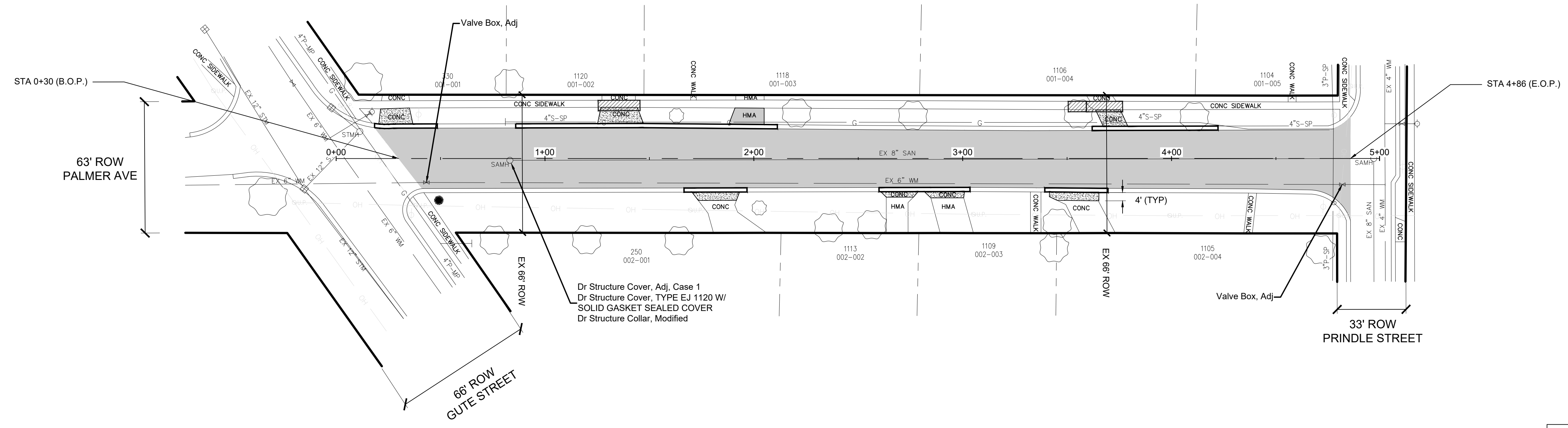
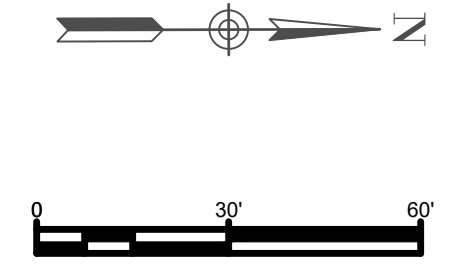
2019 STREET PROGRAM CONTRACT 1

PALMER AVE  
REMOVAL PLAN & SOIL BORING

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

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

**PL3**



- LEGEND**
- Curb and Gutter, Conc. Det F4, Modified
  - Sewer, SDR-26, \_\_\_ inch, Tr Det B, Modified
  - HMA / HMA Approach
  - Driveway, Nonreinf. Conc. \_\_\_ inch
  - Aggregate Approach, \_\_\_ inch
  - Sidewalk, Conc. \_\_\_ inch
  - Sidewalk, Ramp, Conc. \_\_\_ inch
  - STANDARD SOIL EROSION KEY

**PALMER AVE.**  
CONSTRUCTION PLAN

CONSTRUCTION QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
1443	Syd	Aggregate Base, 8 inch, Modified
1443	Syd	Geotextile, Separator
1	Ea	Dr Structure Cover, Adj, Case 1
1	Ea	Dr Structure Cover, Type EJ 1120 w/ SOLD GASKET SEALED COVER
1	Ea	Dr Structure Collar, Modified
321	Tons	HMA, 13A
70	Syd	Driveway, Nonreinf Conc, 6 inch
320	Ft	Curb and Gutter, Conc. Det F4, Modified
43	Sft	Sidewalk, Conc, 4 inch
230	Sft	Sidewalk, Conc, 6 inch
142	Syd	Turf Establishment, Performance
15	Tons	Maintenance Gravel
2	Ea	Valve Box, Adj

<p><b>2019 STREET PROGRAM CONTRACT 1</b></p> <p>PALMER AVE CONSTRUCTION PLAN</p>		<p>FIELD BOOK PG.</p>
<p>DATE PROJECT NO.</p>		<p>PL4</p>
<p>2019 STREET PROGRAM CONTRACT 1</p>	<p>BENCHMARK DATA</p>	<p>NO. REVISIONS</p>
<p>ELEV. DESCRIPTION</p>	<p>DATE BY</p>	<p>APPROVED BY</p>
<p>CITY OF OWOSO, MICHIGAN ENGINEERING DIVISION DEPT. OF PUBLIC SERVICE</p>		<p>ORIGINAL PLAN</p>

# W. WILLIAMS STREET

CITY OF OWOSSO  
2019 STREET PROGRAM  
CONTRACT 1

SHEET NO.	DESCRIPTION
W11	W. WILLIAMS ST - TRAFFIC CONTROL PLAN
W12 - W14	W. WILLIAMS ST - TYPICAL CROSS SECTION
W15	W. WILLIAMS ST - SIDEWALK RAMP DETAILS
W16	W. WILLIAMS ST - REMOVAL PLAN
W17 - W18	W. WILLIAMS ST - ROAD PLAN AND PROFILE



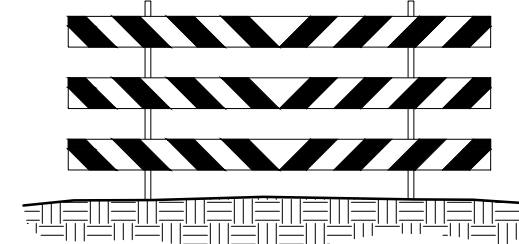
W20-1  
48" x 48"



M4-8 (MOD)  
30" X 8"

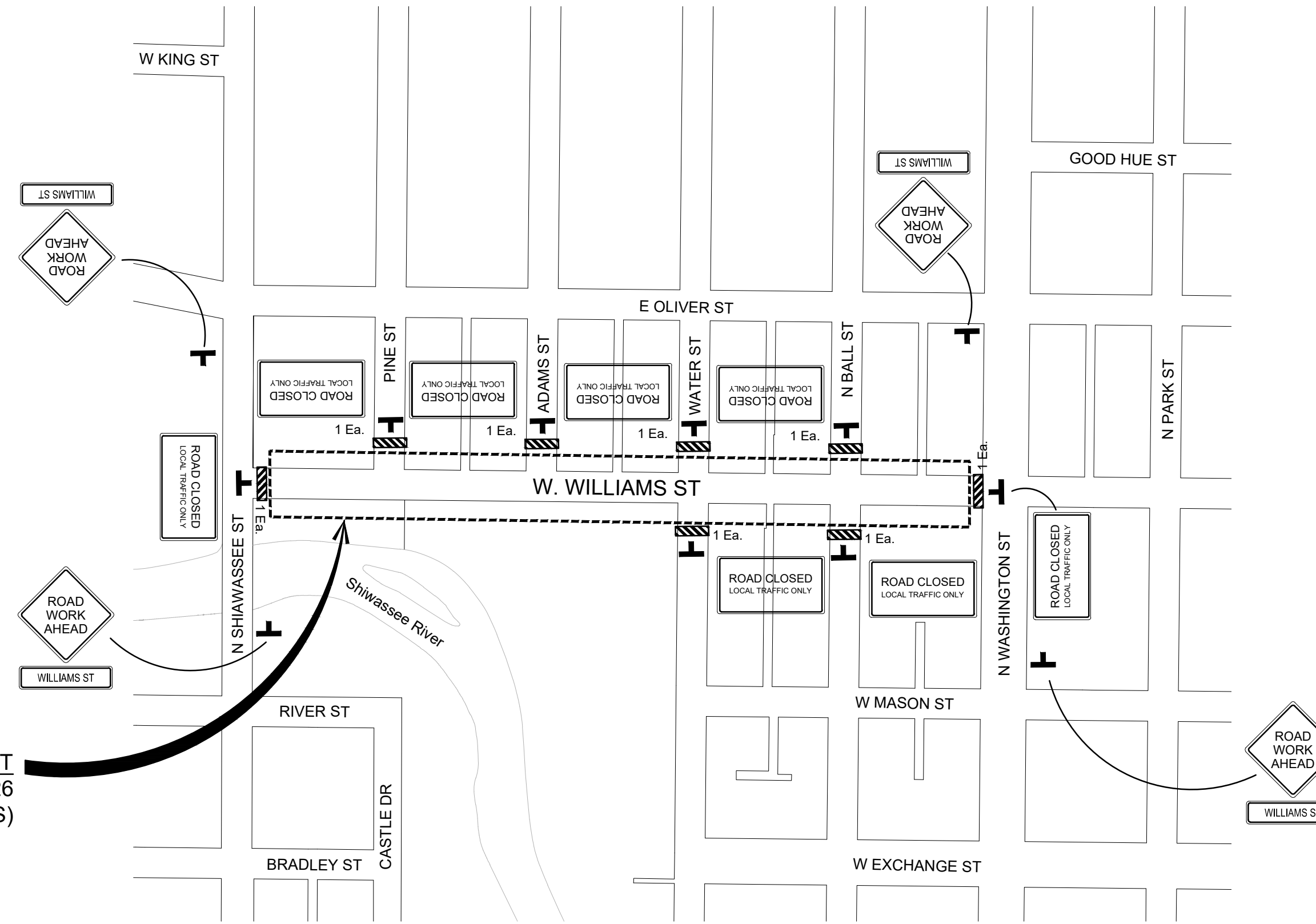


R11-3a  
60" x 30"



TYPE III BARRICADE

PROJECT LOCATION - W. WILLIAMS ST  
B.O.P. STA. 1+13 TO E.O.P. STA. 17+26  
TOTAL LENGTH = 1,613 FT (0.30 MILES)



VICINITY MAP AND TRAFFIC CONTROL PLAN  
W. WILLIAMS STREET



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

NO.	REVISIONS	DATE	BY
1	ISSUED FOR BIDDING	12/17/18	GLR

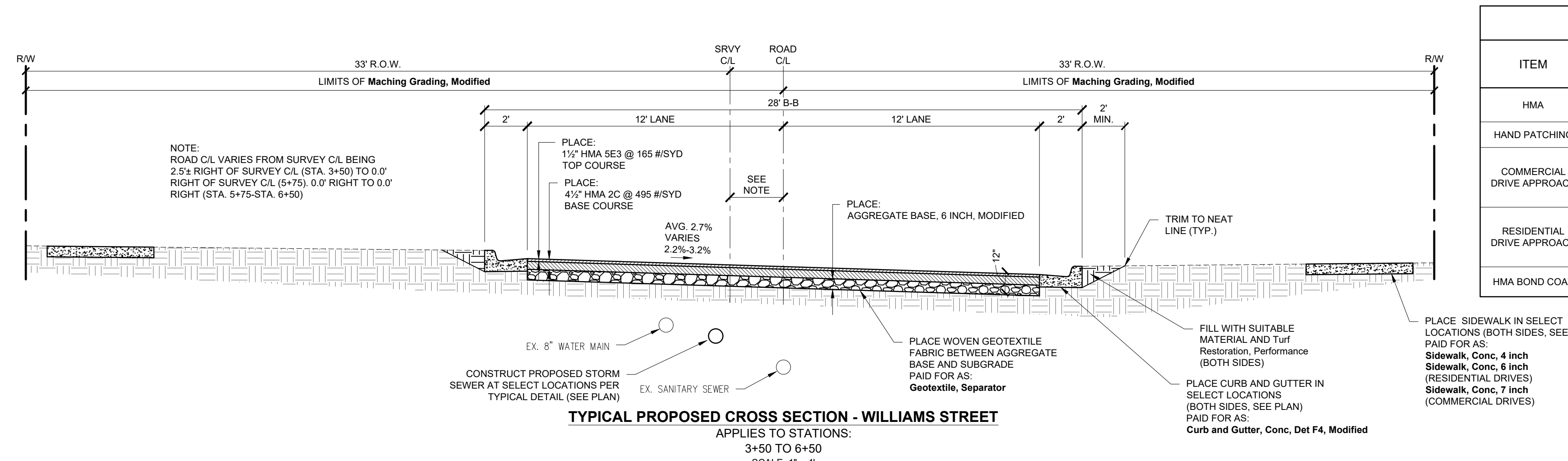
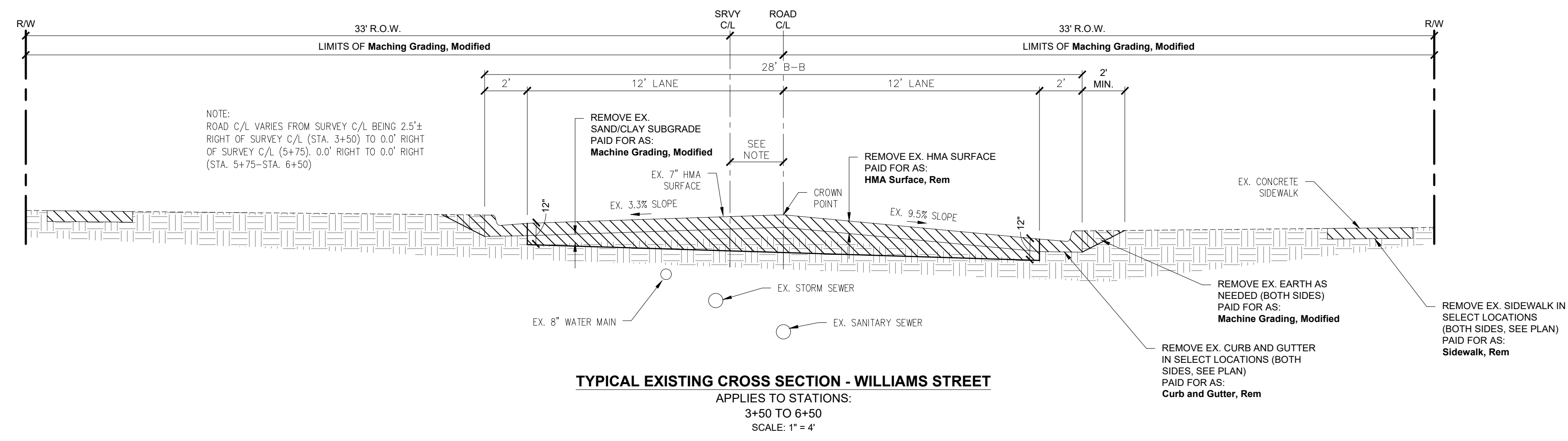
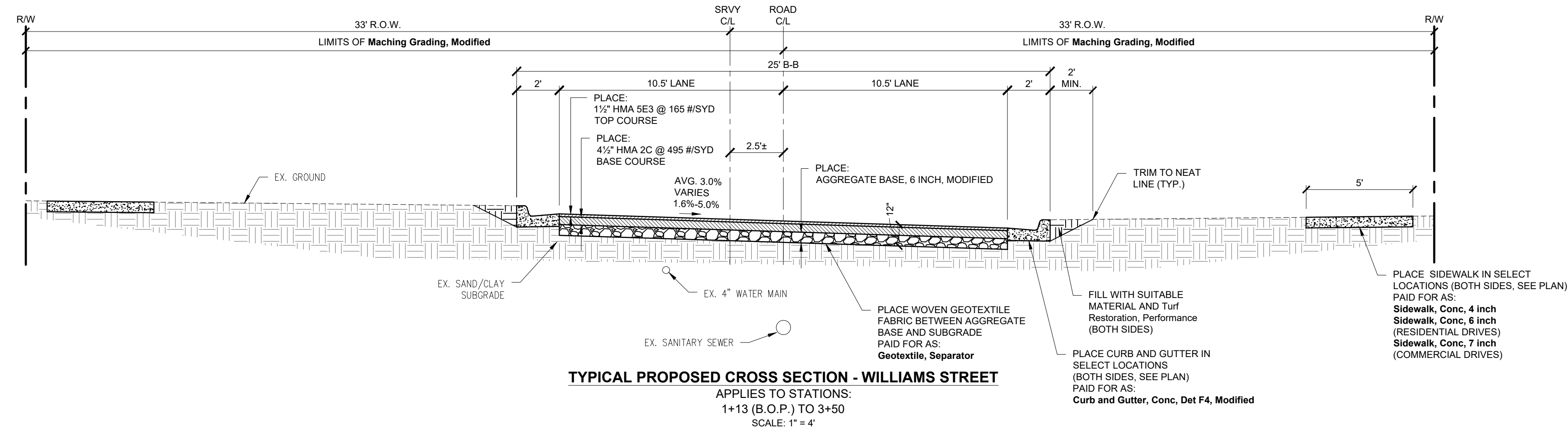
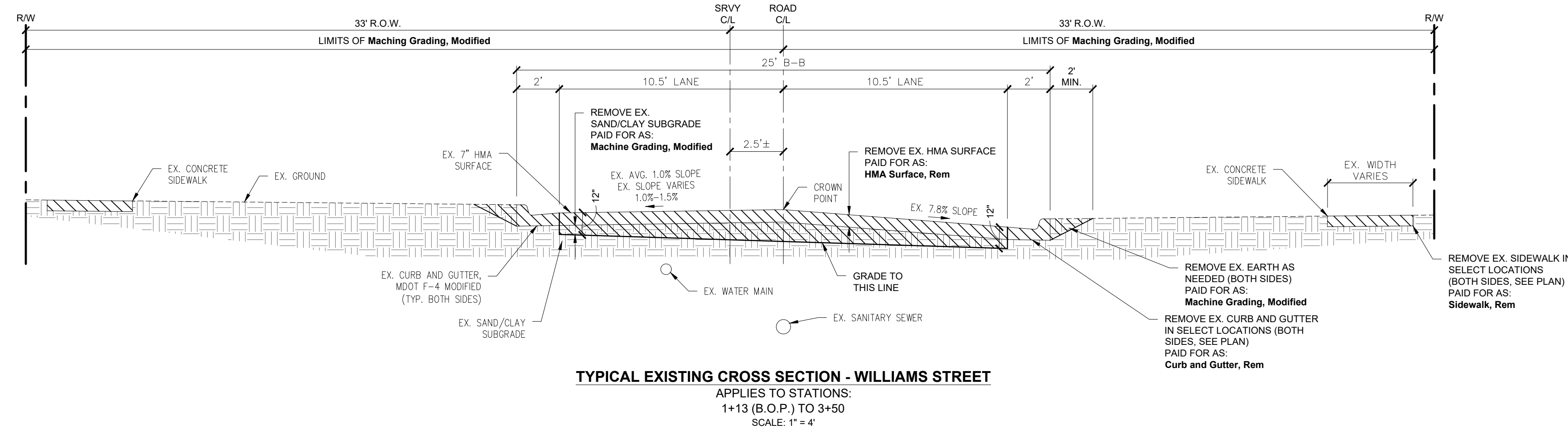
BENCH MARK DATA	DESCRIPTION
ELEV.	

2019 STREET PROGRAM CONTRACT 1  
W. WILLIAMS ST  
TRAFFIC CONTROL PLAN  
DECEMBER, 2018  
PROJECT NO. 832190  
FIELD BOOK  
PG.

W11

CHECKED BY: ORIGINAL PLAN APPROVED BY:



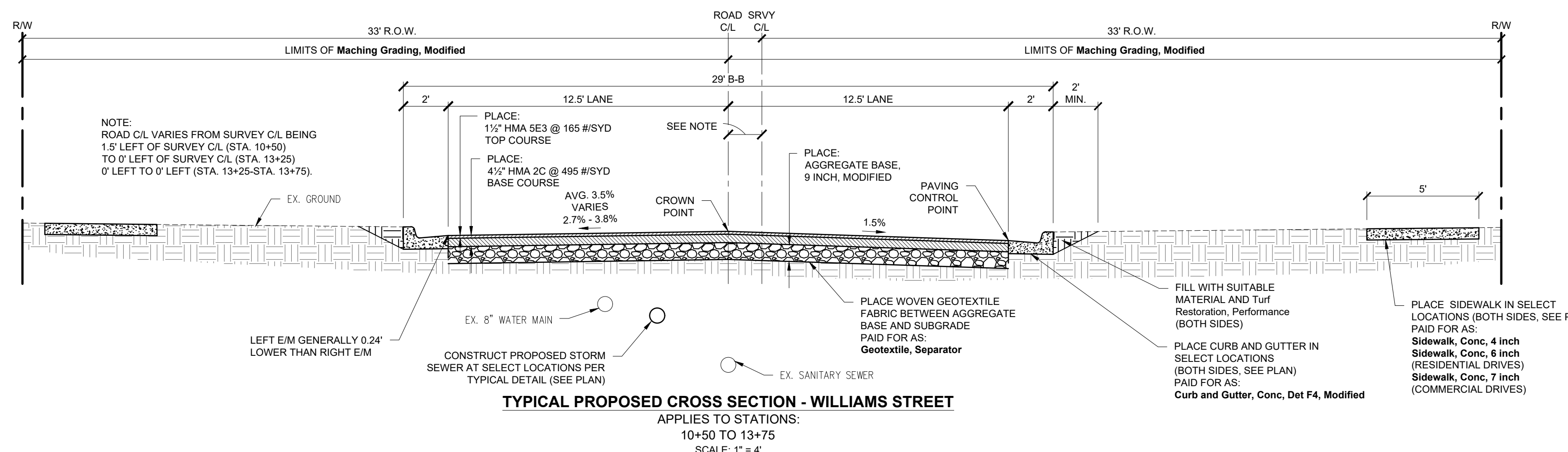
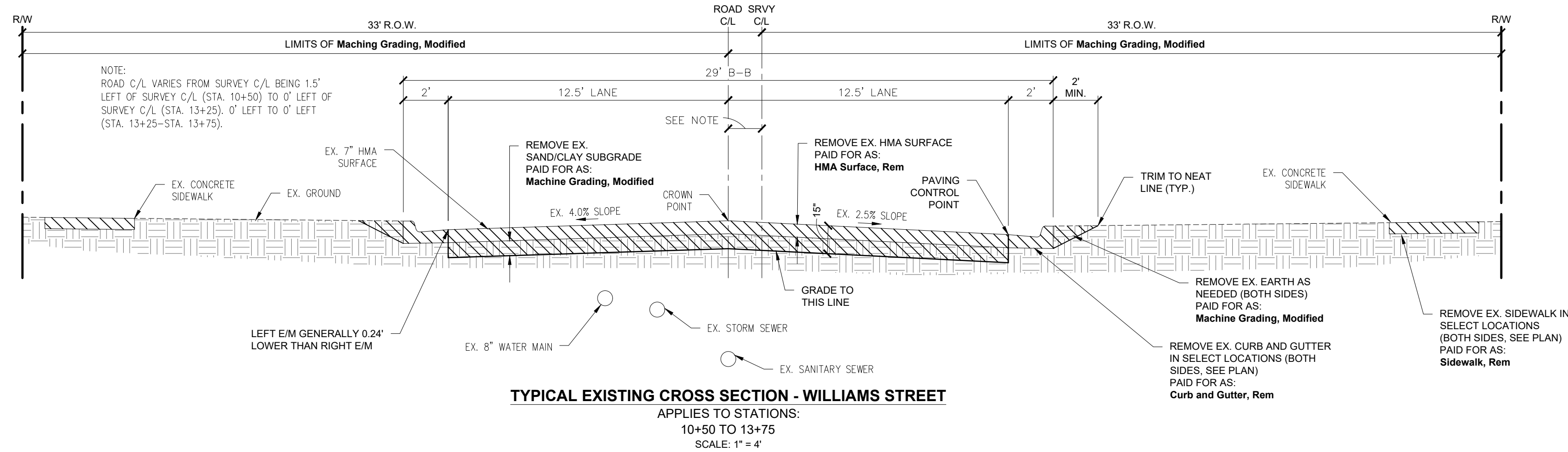
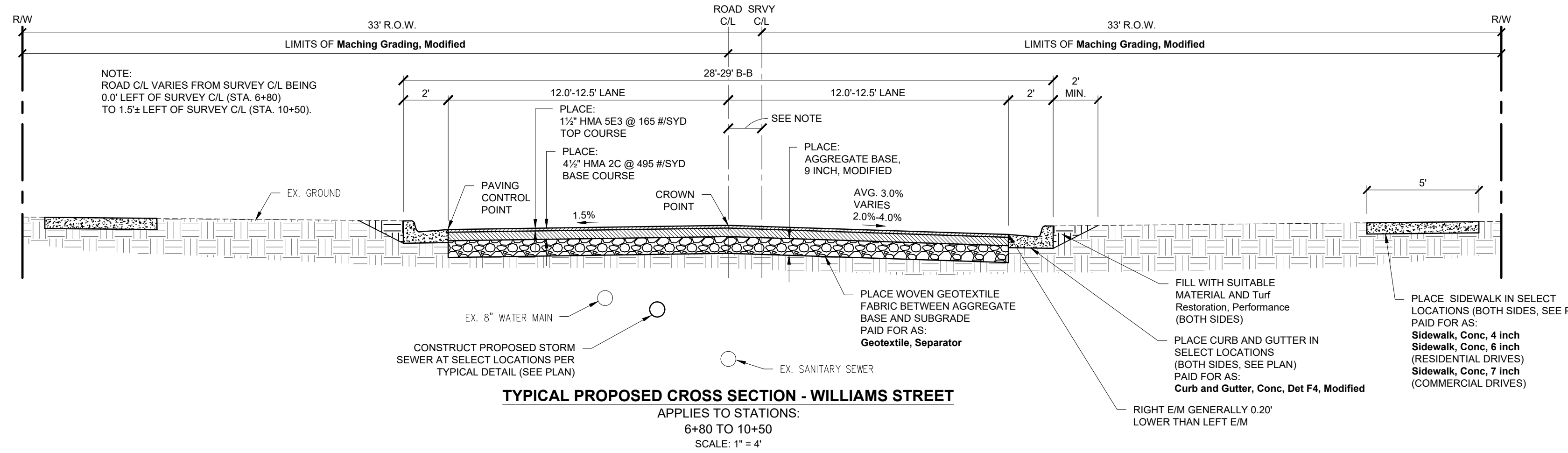
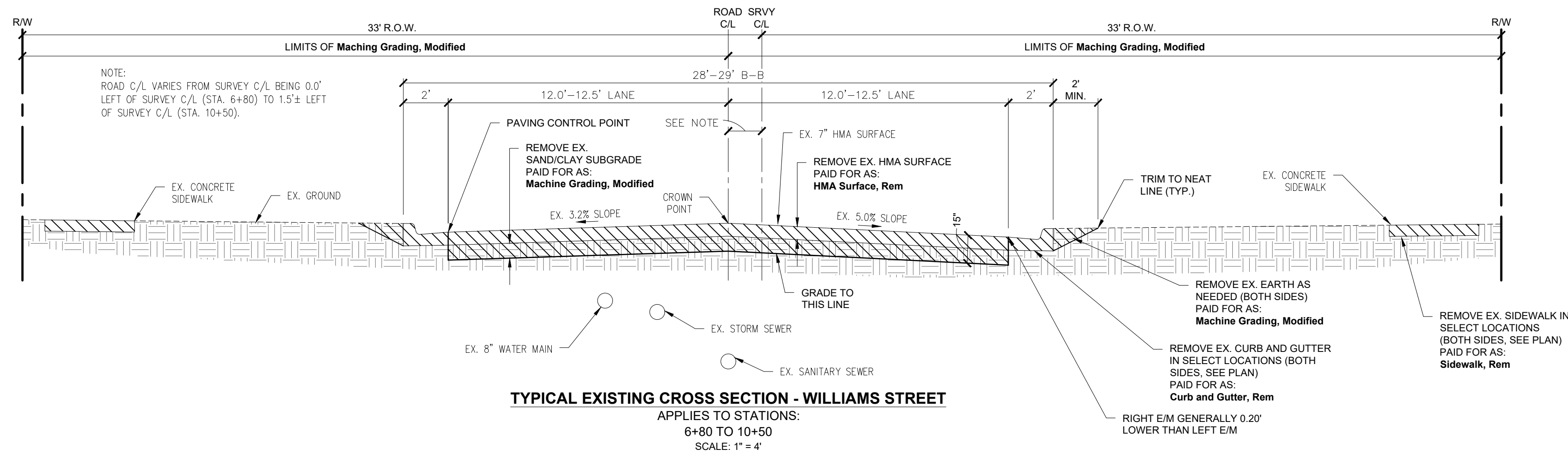


ITEM	PAY ITEM	RATE PER SYD	PERFORMANCE GRADE	ESTIMATED THICKNESS, INCH	REMARKS
HMA	HMA, SE3	165 LBS.	64 - 28	1.5"	TOP COURSE - AWI = 260 (MIN.)
	HMA, 2C	495 LBS.	64 - 28	4.5"	BASE COURSE
HAND PATCHING	Hand Patching	110 LBS / SYD / INCH	64 - 28		HMA, 2C (PLACED IN EQUAL LIFTS)
COMMERCIAL DRIVE APPROACH	HMA Approach	165 LBS.	58 - 28	1.5"	TOP COURSE - AWI = 220 (MIN.) (HMA, 13A)
	HMA Approach	935 LBS.	58 - 28	8.5"	BASE COURSE (HMA, 13A) PLACED IN 3 EQUAL LIFTS
RESIDENTIAL DRIVE APPROACH	HMA Approach	220 LBS.	58 - 28	2"	TOP COURSE - AWI = 220 (MIN.) HMA, 13A
	HMA Approach	330 LBS.	58 - 28	3"	BASE COURSE HMA, 13A
HMA BOND COAT		0.10 GAL.			SS-1H (FOR INFORMATION ONLY)

STA. 6+50 TO STA. 6+80 - TRANSITION TO CROWN SECTION  
(SEE SIDEWALK RAMP DETAILS SHEET FOR GRADES)

NO.	REVISIONS	DATE	BY	BENCH MARK DATA	
				ELEV.	DESCRIPTION
1	ISSUED FOR BIDDING	12/17/18	GLR		





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

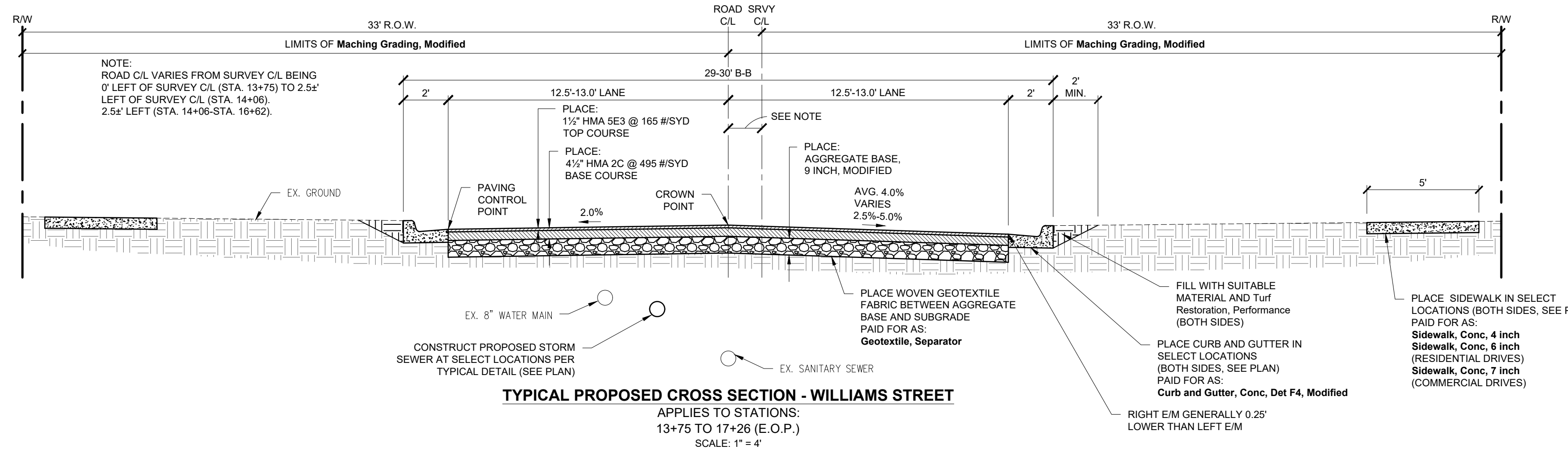
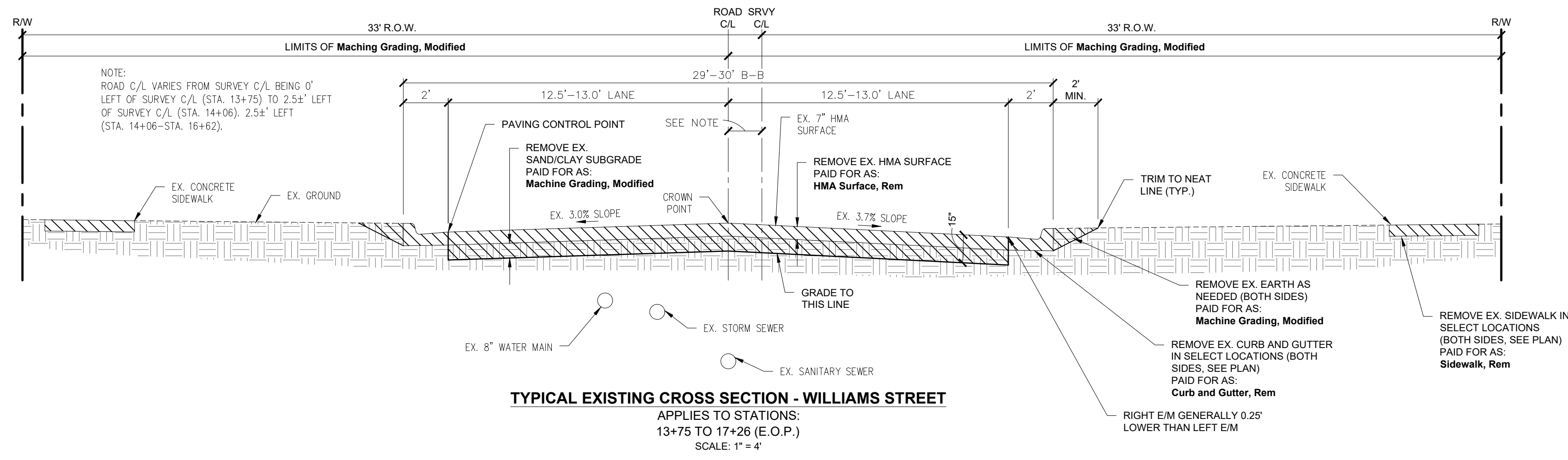
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1	ISSUED FOR BIDDING	12/17/18	GLR

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ELEV.		ORIGINAL PLAN	CHECKED BY

**2019 STREET PROGRAM CONTRACT 1**  
**W. WILLIAMS ST**  
**TYPICAL CROSS SECTION**

FIELD BOOK  
 PG.  
 DECEMBER, 2018  
 PROJECT NO. 832190

W13



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

NO.	REVISIONS	DATE	BY
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			APPROVED BY
			ORIGINAL PLAN
			CHECKED BY

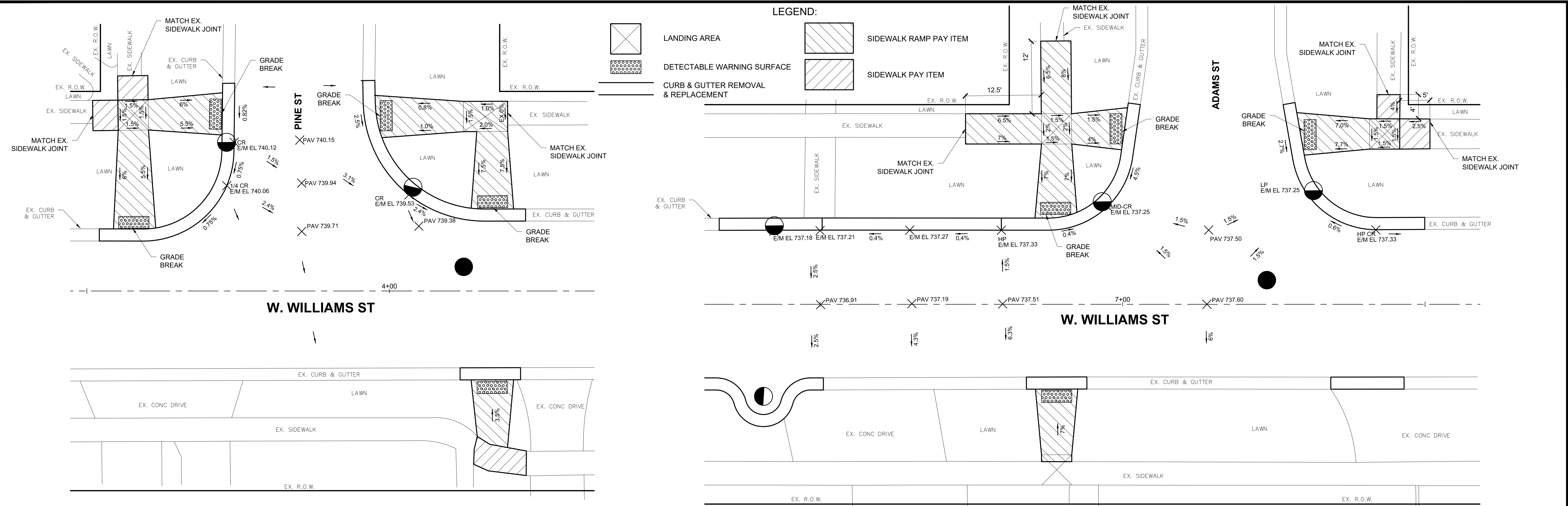
**2019 STREET PROGRAM CONTRACT 1**

**W. WILLIAMS ST**

**TYPICAL CROSS SECTION**

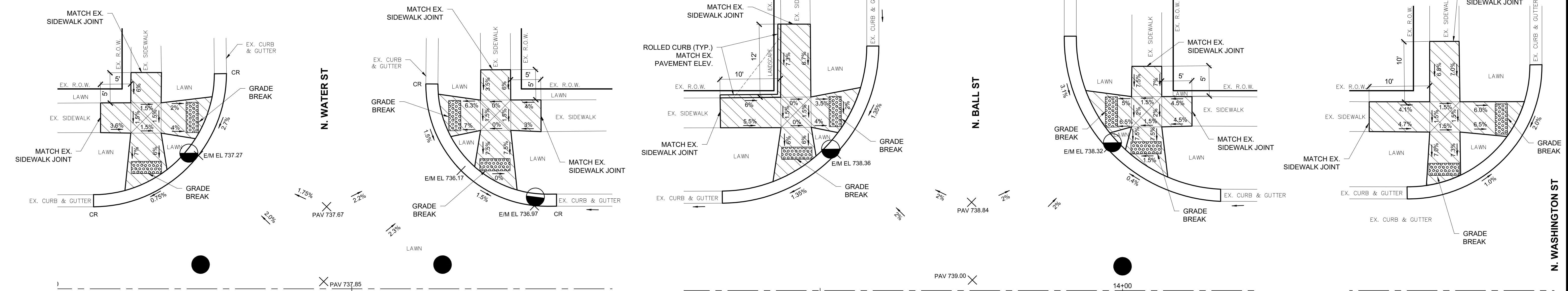
DECEMBER, 2018  
 PROJECT NO. 832190

FIELD BOOK  
 PG.



**SIDEWALK RAMPS ALL QUADS AT PINE ST**  
SCALE: 1" = 8'

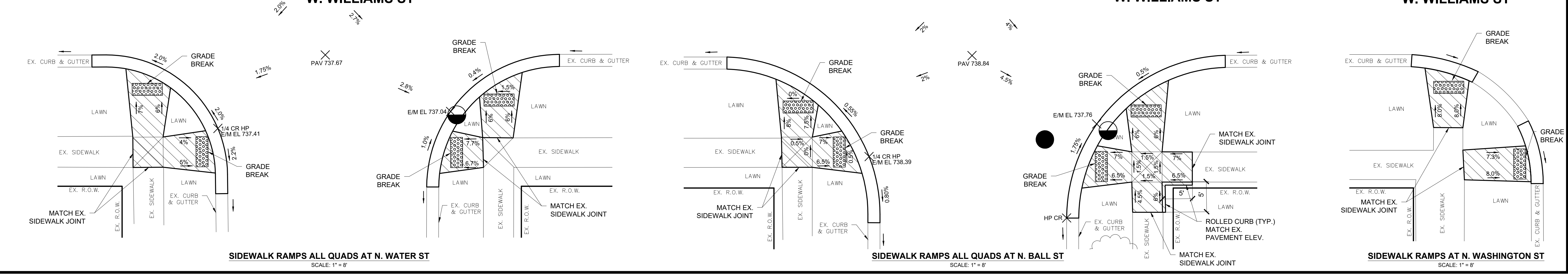
**SIDEWALK RAMPS ALL QUADS AT ADAMS ST**  
SCALE: 1" = 8'



**SIDEWALK RAMPS ALL QUADS AT N. WATER ST**  
SCALE: 1" = 8'

**SIDEWALK RAMPS ALL QUADS AT N. BALL ST**  
SCALE: 1" = 8'

**SIDEWALK RAMPS AT N. WASHINGTON ST**  
SCALE: 1" = 8'



**SIDEWALK RAMPS ALL QUADS AT N. WATER ST**  
SCALE: 1" = 8'

**SIDEWALK RAMPS ALL QUADS AT N. BALL ST**  
SCALE: 1" = 8'

**SIDEWALK RAMPS AT N. WASHINGTON ST**  
SCALE: 1" = 8'

NO.	ISSUED FOR BIDDING	REVISIONS	DATE	BY
1			12/17/18	GLR

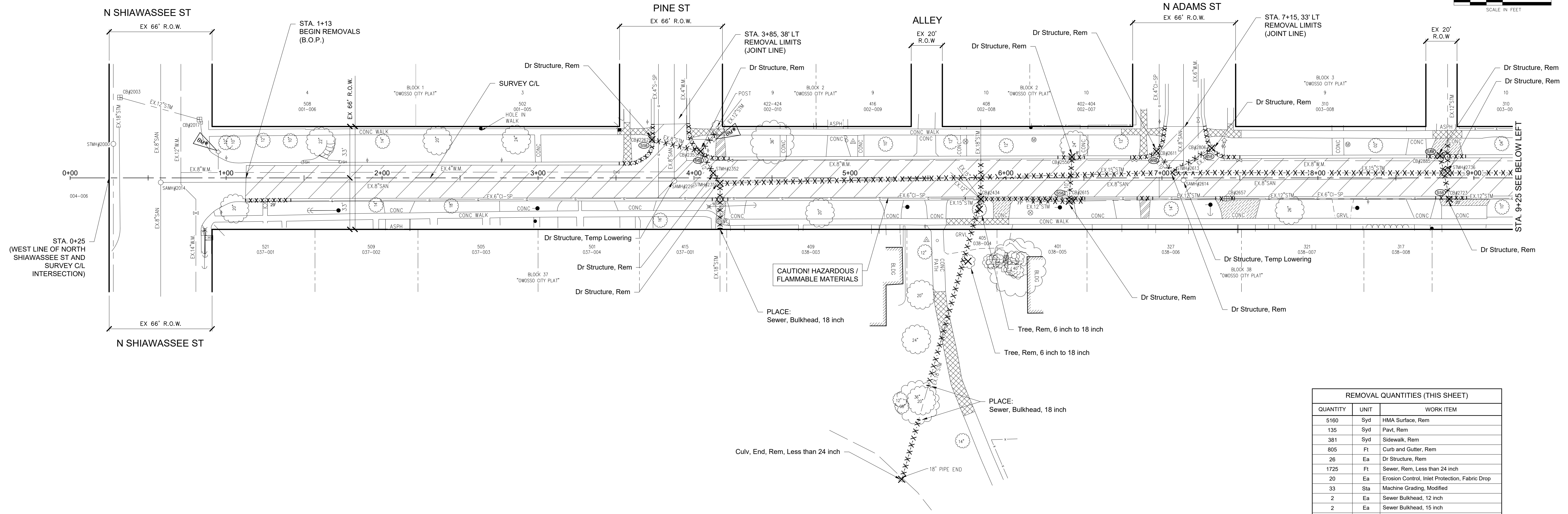
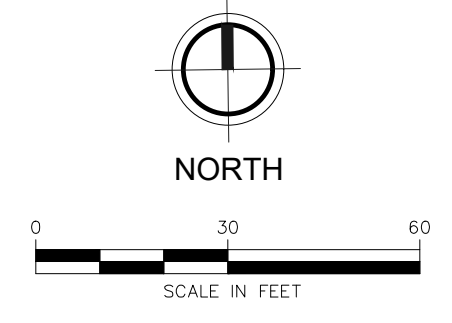
  

NO.	DESCRIPTION	BENCH MARK DATA
		ELEV.

CHECKED BY: ORIGINAL PLAN  
APPROVED BY:

BM EL. 737.93  
 ARROW AT TOP OF CASTING OF HYDRANT,  
 NORTHEAST CORNER OF WEST WILLIAMS STREET  
 AND NORTH SHIAWASSEE STREET (M-52), (NAVD 88)

BM EL. 742.75  
 ARROW AT TOP OF CASTING OF HYDRANT,  
 NORTHEAST CORNER OF WEST WILLIAMS STREET  
 AND PINE STREET (M-52), (NAVD 88)



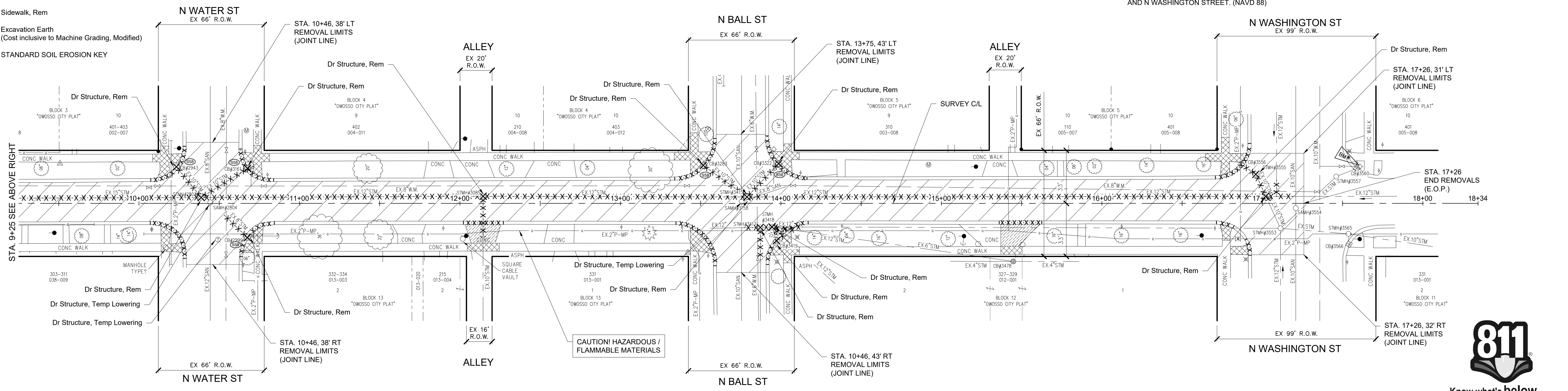
REMOVAL QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	WORK ITEM
5160	Syd	HMA Surface, Rem
135	Syd	Pavt, Rem
381	Syd	Sidewalk, Rem
805	Ft	Curb and Gutter, Rem
26	Ea	Dr Structure, Rem
1725	Ft	Sewer, Rem, Less than 24 inch
20	Ea	Erosion Control, Inlet Protection, Fabric Drop
33	Sta	Machine Grading, Modified
2	Ea	Sewer Bulkhead, 12 inch
2	Ea	Sewer Bulkhead, 15 inch
3	Ea	Sewer Bulkhead, 18 inch
7	Ea	Dr Structure, Temp Lowering

- LEGEND**
- XXXXXX Curb and Gutter, Rem
  - X-X-X- Sewer, Rem
  - XXX Dr Structure, Rem
  - ▨ HMA Surface, Rem
  - ▨ Pavt, Rem
  - ▨ Sidewalk, Rem
  - ▨ Excavation Earth (Cost inclusive to Machine Grading, Modified)
  - ⊙ STANDARD SOIL EROSION KEY

NOTE:  
 CONTRACTOR SHALL PROVIDED SUFFICIENT PROTECTION  
 FOR BOTH MOTORISTS AND WORKERS THROUGHOUT  
 WORKSITE SO AS TO ALLOW SAFE PASSAGE AROUND  
 WORK AREAS - AS DIRECTED BY THE ENGINEER

**WEST WILLIAMS STREET  
 REMOVAL PLAN**

BM EL. 742.41  
 ARROW AT TOP OF CASTING OF HYDRANT,  
 NORTHEAST CORNER OF WEST WILLIAMS STREET  
 AND N WASHINGTON STREET. (NAVD 88)



**WEST WILLIAMS STREET  
 REMOVAL PLAN**



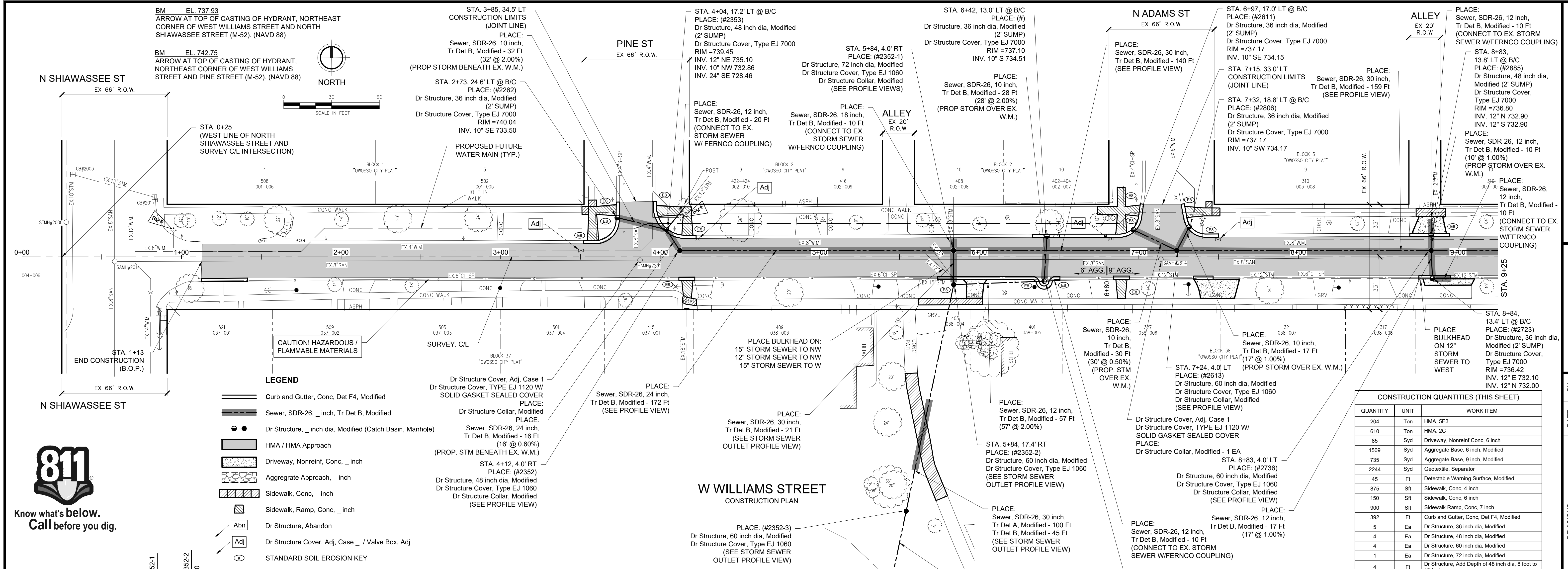
CITY OF OWOSSO, MICHIGAN  
 ENGINEERING DIVISION  
 DEPT. OF PUBLIC SERVICE

NO.	DATE	BY	REVISIONS
1	12/17/18	DPH	ISSUED FOR BIDDING

NO.	DATE	DESCRIPTION

2019 STREET PROGRAM CONTRACT 1  
 W. WILLIAMS ST  
 REMOVAL PLAN  
 DECEMBER, 2018  
 PROJECT NO. 832190  
 FIELD BOOK  
 PG.

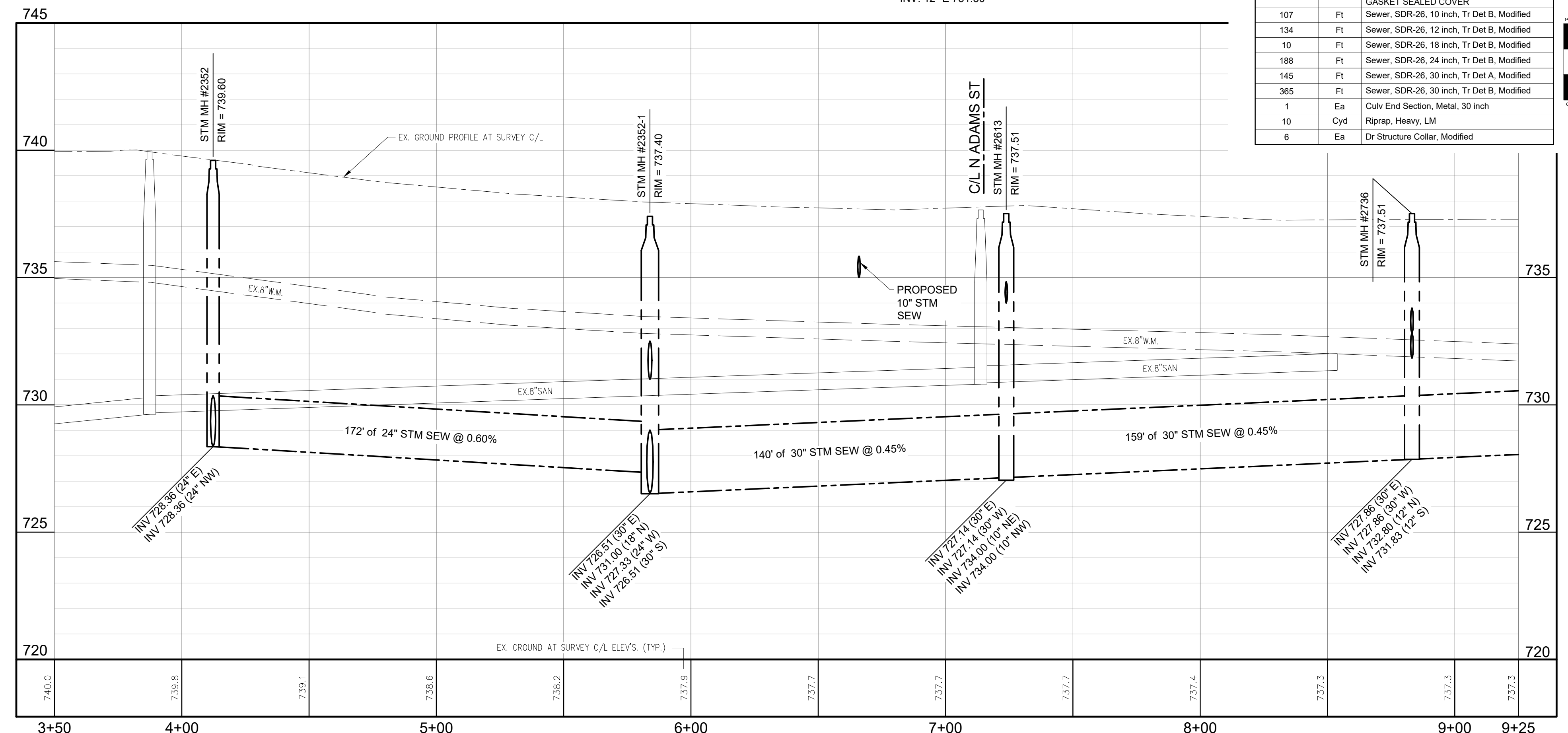
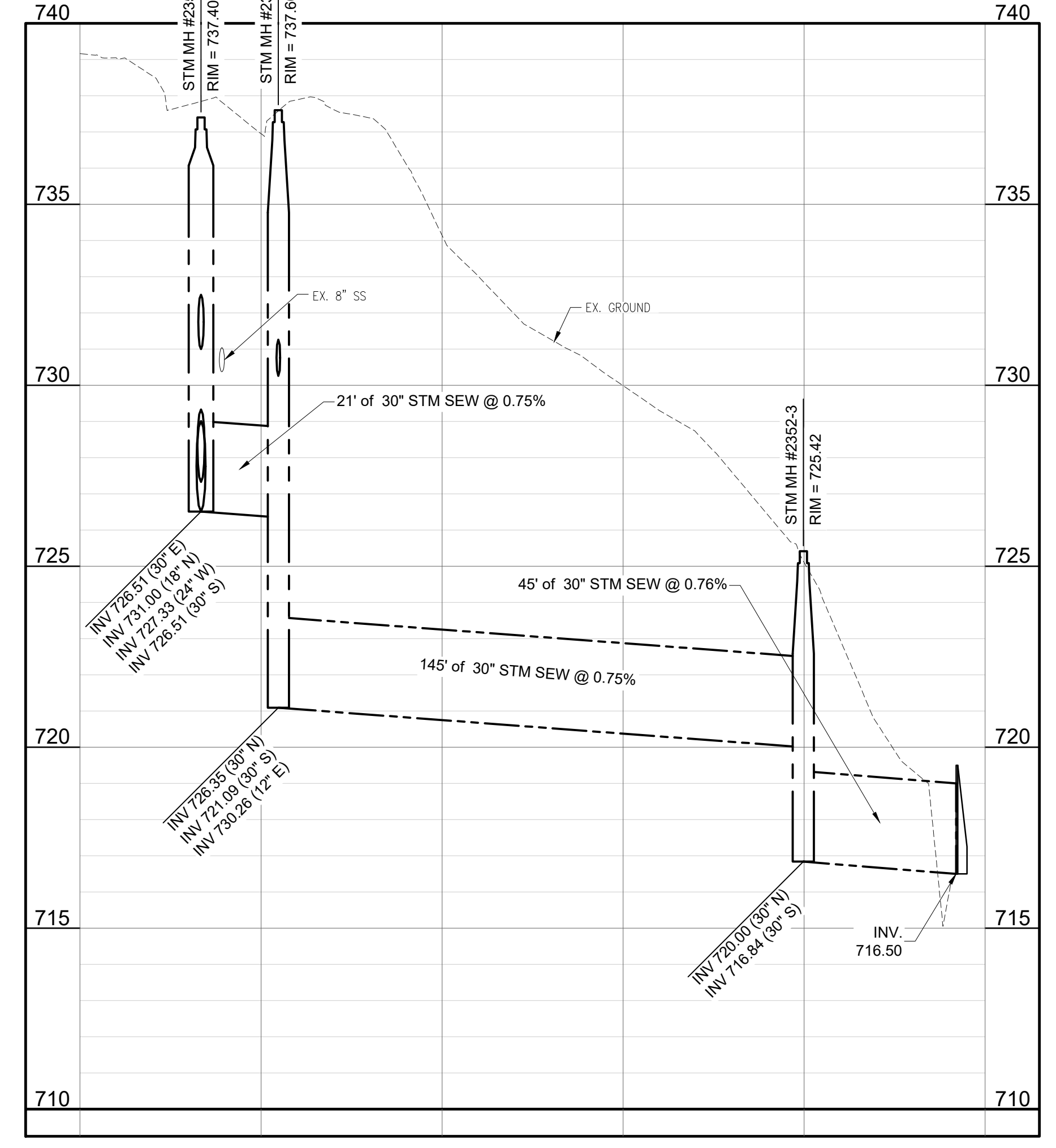




- LEGEND**
- Curb and Gutter, Conc, Det F4, Modified
  - Sewer, SDR-26, 1/2 inch, Tr Det B, Modified
  - Dr Structure, 1/2 inch dia, Modified (Catch Basin, Manhole)
  - HMA / HMA Approach
  - Driveway, Nonreinf, Conc, 1/2 inch
  - Aggregate Approach, 1/2 inch
  - Sidewalk, Conc, 1/2 inch
  - Sidewalk, Ramp, Conc, 1/2 inch
  - Abn Dr Structure, Abandon
  - Adj Dr Structure Cover, Adj, Case 1 / Valve Box, Adj
  - STANDARD SOIL EROSION KEY

**CONSTRUCTION QUANTITIES (THIS SHEET)**

QUANTITY	UNIT	WORK ITEM
204	Ton	HMA, 5E3
610	Ton	HMA, 2C
85	Syd	Driveway, Nonreinf Conc, 6 inch
1509	Syd	Aggregate Base, 6 inch, Modified
735	Syd	Aggregate Base, 9 inch, Modified
2244	Syd	Geotextile, Separator
45	Ft	Detectable Warning Surface, Modified
875	Sft	Sidewalk, Conc, 4 inch
150	Sft	Sidewalk, Conc, 6 inch
900	Sft	Sidewalk Ramp, Conc, 7 inch
392	Ft	Curb and Gutter, Conc, Det F4, Modified
5	Ea	Dr Structure, 36 inch dia, Modified
4	Ea	Dr Structure, 48 inch dia, Modified
4	Ea	Dr Structure, 60 inch dia, Modified
1	Ea	Dr Structure, 72 inch dia, Modified
4	Ft	Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot
18	Ft	Dr Structure, Add Depth of 60 inch dia, 8 foot to 15 foot
3	Ft	Dr Structure, Add Depth of 72 inch dia, 8 foot to 15 foot
2	Ea	Dr Structure Cover, Adj, Case 1
6	Ea	Dr Structure Cover, Type EJ 1060
8	Ea	Dr Structure Cover, Type EJ 7000
2	Ea	Dr Structure Cover, Type EJ 1120 W/ SOLID GASKET SEALED COVER
107	Ft	Sewer, SDR-26, 10 inch, Tr Det B, Modified
134	Ft	Sewer, SDR-26, 12 inch, Tr Det B, Modified
10	Ft	Sewer, SDR-26, 18 inch, Tr Det B, Modified
188	Ft	Sewer, SDR-26, 24 inch, Tr Det B, Modified
145	Ft	Sewer, SDR-26, 30 inch, Tr Det A, Modified
365	Ft	Sewer, SDR-26, 30 inch, Tr Det B, Modified
1	Ea	Culv End Section, Metal, 30 inch
10	Cyd	Riprap, Heavy, LM
6	Ea	Dr Structure Collar, Modified



**2019 STREET PROGRAM CONTRACT 1**

**W. WILLIAMS ST ROAD PLAN AND PROFILE**

DECEMBER, 2018  
PROJECT NO. 832190

**WI7**

FIELD BOOK PG.

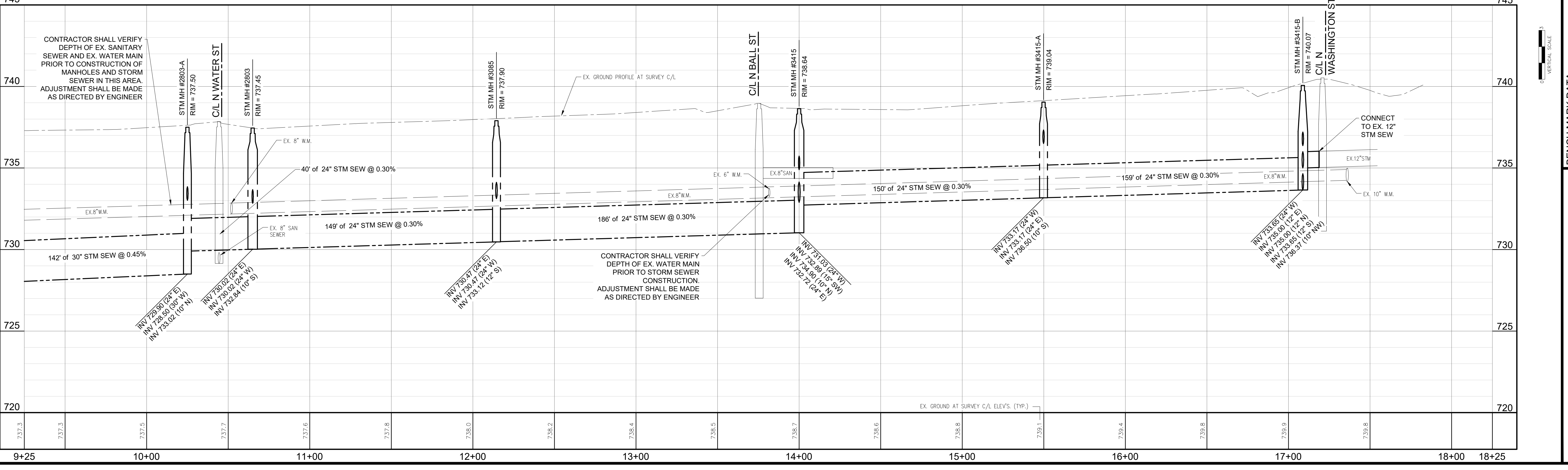
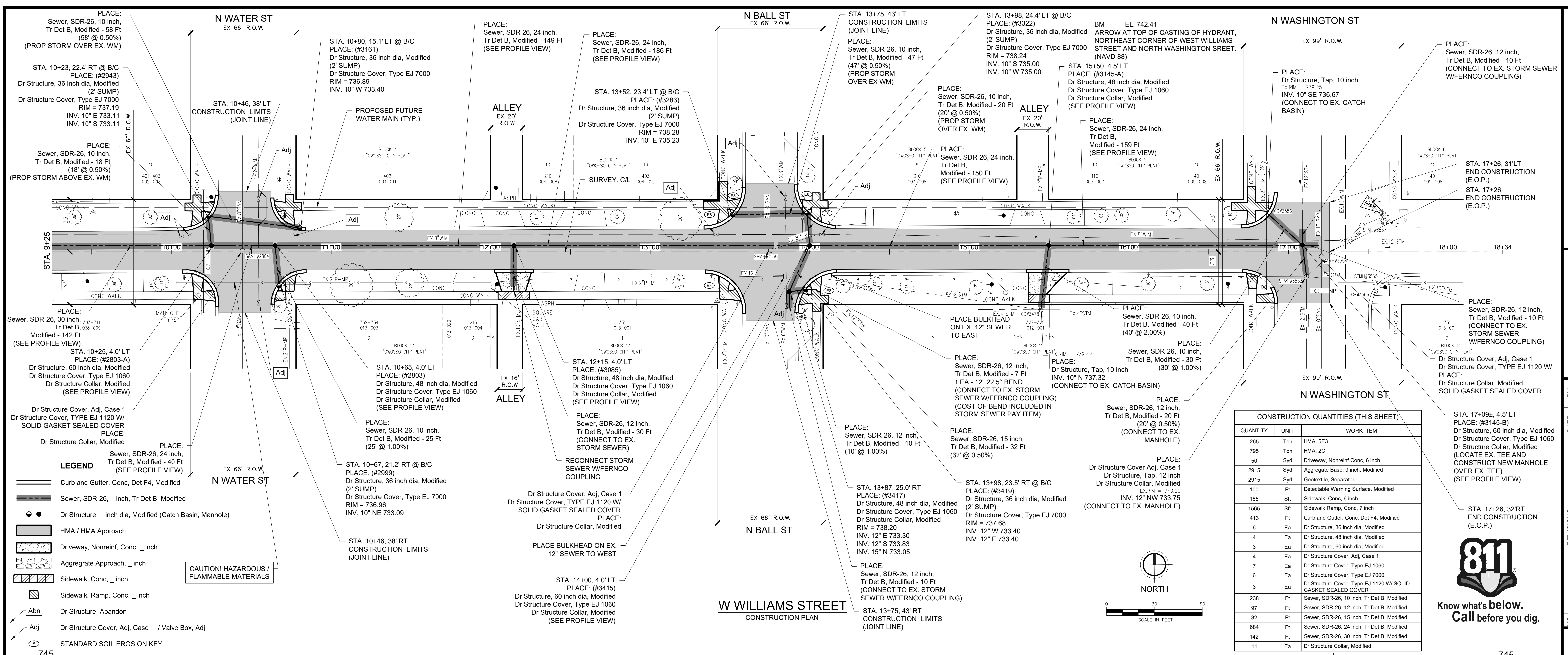
NO.	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
1	12/17/18	ISSUED FOR BIDDING	DPH		

REVISIONS

APPROVED BY

CHECKED BY

ORIGINAL PLAN



NO.	ISSUED FOR BIDDING	REVISIONS	DATE	BY	DPH
1			12/17/18		

BENCH MARK DATA	DESCRIPTION	ELEV.

